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ILAWYER

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Abstract

Artificially intelligent technologies have entered the United States legal market—and it appears they are here to stay. In 2019 alone, investments in legal technology amounted to over 1.2 billion dollars. Presently, AI legal tools fall into six major categories: (1) due diligence, (2) legal analytics, (3) document drafting, (4) intellectual property, (5) legal advice, and (6) practice management. This Article seeks to provide a descriptive synthesis of the functions that each of these tools serve in addition to assessing some of their immediate impacts on legal practice. Part I provides a brief overview of important definitional terms and technical processes that underlie AI technologies. Part II addresses how the market for legal technologies developed. Part III takes a deep dive into the features of the various tools outlined above and assesses how they are changing the legal landscape. Part IV presents several points of concern or skepticism surrounding each tool or category of tools, and on occasion, attempts to ease those concerns. Finally, Part V argues that despite these concerns, AI technologies in the legal industry have a net positive impact because they expand avenues for access to justice.

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Introduction

Artificial Intelligence (AI) has the potential "to systematize and automate . . . any area of human intellectual endeavor."[1] Indeed in many respects, it already has. Some high-profile examples of AI applications include Tesla's self-driving cars,[2] Apple's Siri,[3] and IBM's Watson.[4] Surprisingly and despite the perceived "[l]uddite-lawyer resistance,"[5] AI technologies have even permeated the often-antiquated legal profession. The literature is rife with discussions regarding

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[1] STUART RUSSELL & PETER NORVIG, ARTIFICIAL INTELLIGENCE: A MODERN APPROACH 2 (3d ed. 2014). Although there are many competing definitions for AI, according to Russell and Norvig, the definitions "vary along two main dimensions"—"thought process and reasoning" or "behavior"—and may be categorized in four buckets: "systems that think like humans," "systems that think rationally," "systems that act like humans," and "systems that act rationally." *Id.* Thus, "AI can have a bodied form (e.g., robots) or operate without any physical presence (e.g., algorithms)." Richard M. Re & Alicia Solow-Niederman, *Developing Artificially Intelligent Justice*, 22 STAN. TECH. L. REV. 242, 243 n.1 (2019).

[2] *See* Stephen Shankland, *Meet Tesla's Self-Driving Car Computer and Its Two AI Brain*s, CNET (Aug. 20, 2019, 11:59 AM), https://www.cnet.com/news/meet-tesla-self-driving-car-computer-and-its-two-ai-brains.

[3] *See* Jeffrey Allen & Ashley Hallene, *Siri, Alexa, Cortana . . . Oh, My! Artificial Intelligence Has Become a Household Tool. Here's What to Know to Get You Started*, EXPERIENCE, April/May 2019, at 4 ("Currently there are four frontrunners in the artificial intelligence, or AI, digital assistant race: Amazon's Alexa, Apple's Siri, Google's Google Assistant, and Microsoft's Cortana. You can find these assistants integrated in a lot of places."); Bernard Marr, *Are Alexa and Siri Considered AI*, BERNARD MARR & CO., https://bernardmarr.com/default.asp?contentID=1830 ("Alexa and Siri, Amazon and Apple's digital voice assistants, are much more than a convenient tool—they are very real applications of artificial intelligence that is increasingly integral to our daily life.").

[4] *See* Eugene Volokh, *Chief Justice Robots*, 68 DUKE L.J. 1135, 1137 (2019) ("IBM's Watson can beat the top Jeopardy players in answering English-language factual questions."); John Markoff, *Computer Wins on 'Jeopardy!': Trivial, It's Not*, N.Y. TIMES (Feb. 16, 2011), https://www.nytimes.com/2011/02/17/science/17jeopardy-watson.html [https://perma.cc/ D6SG-X4NF].

[5] Nelson P. Miller & Derek S. Witte, *Helping Law Firm Luddites Cross the Digital Divide-Arguments for Mastering Law Practice Technology*, 12 SMU SCI. & TECH. L. REV. 113, 121 (2009). Miller and Witte compare technophobe lawyers to luddites: "a group of British workers who between 1811 and 1816 rioted and destroyed laborsaving textile machinery in the belief that such machinery would diminish employment." *Id.*

the prospect of robot judges[6] and juries.[7] But, even as scholars debate the capability of AI tools to replace traditional state actors—which remains an open question—there are AI technologies that are already in play.

A growing number of AI legal tools are surfacing in the United States. So much so that a consortium of large law firms have ventured to create a legal tech app store.[8] And in 2019, investments in legal technology amounted to over 1.2 billion dollars.[9] Presently, AI legal tools fall into six major categories: (1) due diligence, (2) legal analytics, (3) document drafting, (4) intellectual property, (5) legal advice, and (6) practice management. For instance, one tool that assists attorneys to automate the due diligence process is Kira Systems. Another such tool is ThoughtRiver. In the realm of legal analytics, there are Lex Machina and Voltaire. Some big players in document automation are PerfectNDA and Compose. And with regard to intellectual property, legal advice, and practice management, there are TrademarkNow, DoNotPay and Josef, and Smokeball, respectively.

This Article seeks to provide a descriptive synthesis of the functions that each of these tools serve in addition to assessing some of their immediate impacts on legal practice. Though the discussion and conclusions drawn in this Article are largely based on a review of scholarly literature and other internet sources, I did have the opportunity to demo many of these products. Part I provides a brief overview of important definitional terms and technical processes that underlie AI technologies. Part II addresses how the market for legal tech developed. Part III takes a deep dive into the features of each of the tools outlined above and assesses how they are changing the legal landscape. Part IV presents some points of concern or skepticism surrounding each tool or category of tools, and on occasion, attempts to ease those concerns. Finally, Part V argues that despite these concerns, AI technologies in the legal industry have a net positive impact because they expand avenues for access to justice.

I.   AI in Legal Tech: How Does it Work?

AI does not have a strict definition—it can have a bodied form or no physical presence at all.[10] But we are not talking robot lawyers just yet. The AI tools on the legal market today are

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[6] *See, e.g.*, Volokh, *supra* note 4.

[7] *See, e.g.*, Kiel Brennan-Marquez & Stephen E. Henderson, *Artificial Intelligence and Role-Reversible Judgment*, 109 J. CRIM. L. & CRIMINOLOGY 137 (2019).

[8] Sam Skolnik, *Legal Tech 'App Store' Reynen Court Launches With Big Law Help*, BLOOMBERG L. (Jan. 31, 2020, 7:58 PM) [hereinafter Skolnik, *Legal Tech 'App Store'*], https://news.bloomberglaw.com/us-law-week/legal-tech-app-store-reynen-court-launches-with-big-law-help.

[9] Robert J. Ambrogi, *At $1.2 Billion, 2019 Is a Record Year for Legal Tech Investments – And It's Only September*, LAWSITES (Sep. 16, 2019), https://www.lawsitesblog.com/2019/09/at-1-1-billion-2019-is-a-record-year-for-legal-tech-investments-and-its-only-september.html.

[10] *See supra* note 1 and accompanying text.

essentially computer programs. They rely on a vast swath of algorithms[11] and data[12] to keep the wheels churning. From a technical standpoint, these tools generally operate in one of three ways: (1) rules-based reasoning, (2) machine learning, or (3) some combination of both.[13]

Rules-based systems take a top-down approach.[14] This means that the operating and decision rules that the tools rely on are encoded into the system beforehand by sophisticated programmers.[15] The goal here is to "model real-world phenomena or processes in a form that computers can use."[16] This requires computer scientists to consult experts in some field, such as law, and translate their knowledge into a series of formal rules and structures, which the computer can then manipulate to come to logical, but often not obvious, conclusions about the world.[17]

Machine learning systems, on the other hand, employ a bottom-up approach—that is, one in which the system determines its own operating rules.[18] Although machine learning may be reduced to this one simple proposition, the term is best understood as encompassing various methods and techniques.[19] Systems that operate through machine learning are informed by big

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[11] Algorithms "are sequences of steps to move toward a goal," and they are all around us. John Villasenor, *In Defense of Algorithms*, SLATE (Dec. 1, 2015), https://slate.com/technology/2015/12/in-defense-of-the-algorithms-that-guide-tasks-technical-and-mundane.html. Indeed, they "underlie our approach to tasks from the momentous to the mundane," such as cooking a meal or tying a shoelace. *Id.* For the purposes of this Article, however, "[a]n 'algorithm' is a formally specified sequence of logical operations that provides step-by-step instructions for computers to act on data and thus automate decisions." Solon Barocas & Andrew D. Selbst, *Big Data's Disparate Impact*, 104 CAL. L. REV. 671, 674 n.10 (2016).

[12] *See* John Villasenor, *Artificial Intelligence and Bias: Four Key Challenges*, BROOKINGS (Jan. 3, 2019), https://www.brookings.edu/blog/techtank/2019/01/03/artificial-intelligence-and-bias-four-key-challenges ("After all, data give AI sustenance . . . .").

[13] Harry Surden, *Artificial Intelligence and Law: An Overview*, 35 GA. ST. U. L. REV. 1305, 1310–19 (2019).

[14] *See id.* at 1317.

[15] *See id.*

[16] *See id.* at 1316.

[17] *See id.* at 1316–18.

[18] *See id.* at 1317; *see also* Re & Solow-Niederman, *supra* note 1, at 245 n.9 ("'Machine Learning' refers to a system's ability to learn without ex ante, explicit programming.").

[19] *See* David Fumo, *Types of Machine Learning Algorithms You Should Know*, TOWARDS DATA SCI. (June 15, 2017), https://towardsdatascience.com/types-of-machine-learning-algorithms-you-should-know-953a08248861 [https://perma.cc/3QQU-6LXT] (discussing how machine learning includes various techniques, such as deep learning, neural networks, predictive coding, and decision trees).

data.[20] They detect useful trends in large amounts of data and then apply those trends to make reasonable, automated decisions in the future.[21] Thus, the more quality data that is available for the system to analyze, the better its results.[22]

Two subsets of machine learning that are especially relevant to AI-assisted legal technologies are predictive coding and natural language processing. Predictive coding "is a form of machine learning that takes data input by people about document relevance and then applies it to much larger document sets."[23] Predictive coding's utility is most notable for electronic discovery tools. Natural language processing, on the other hand, allows computer programs to analyze, understand, and derive meaning from human language.[24] By doing so, it enables programs to summarize text, analyze sentiments in text, extract topics from text, and more.[25] We will see later how helpful natural language processing tools are for analyzing contracts, summarizing briefs, or deciphering case law.

The third category of AI tools is hybrid systems.[26] Oftentimes, AI tools do not operate exclusively on the basis of rules and knowledge or machine learning, but rather some

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[20] Surden, *supra* note 13, at 1311. Similar to AI, scholars have varying opinions on how big data is defined. *See, e.g.*, VIKTOR MAYER-SCHÖNBERGER & KENNETH CUKIER, BIG DATA: A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK 6 (2013) ("There is no rigorous definition of big data. . . . One way to think about the issue today . . . is this: big data refers to things one can do at a large scale that cannot be done at a smaller one, to extract new insights or create new forms of value . . . ."); EXEC. OFF. OF THE PRESIDENT, BIG DATA: SEIZING OPPORTUNITIES, PRESERVING VALUES 2 (2014), https://www.obamawhitehouse.gov/sites/default/files/docs/big_data_privacy_report_may_1_2014.pdf ("There are many definitions of 'big data' which may differ depending on whether you are a computer scientist, a financial analyst, or an entrepreneur pitching an idea to a venture capitalist. Most definitions reflect the growing technological ability to capture, aggregate, and process an ever-greater volume, velocity, and variety of data.").

[21] *See* Surden, *supra* note 13, at 1311; *see also* Jonas Lerman, *Big Data and Its Exclusions*, 66 STAN. L. REV. ONLINE 55, 57 (2013) ("Big data, for all its technical complexity, springs from a simple idea: gather enough details about the past, apply the right analytical tools, and you can find unexpected connections and correlations, which can help you make unusually accurate predictions about the future—how shoppers decide between products, how terrorists operate, how diseases spread.").

[22] The massive increase in computing capacity and availability of data on the internet has elevated machine learning capabilities. *See* John O. McGinnis & Russell G. Pearce, *The Great Disruption: How Machine Intelligence Will Transform the Role of Lawyers in the Delivery of Legal Services*, 82 FORDHAM L. REV. 3041, 3043–46 (2014); Surden, *supra* note 13, at 1315–16.

[23] EXTERRO, https://www.exterro.com/basics-of-e-discovery/predictive-coding (last visited Nov. 13, 2020).

[24] *What Is Natural Language Processing? Introduction to NLP,* ALGORITHMIA https://algorithmia.com/blog/introduction-natural-language-processing-nlp (last visited Nov. 13, 2020).

[25] *Id.*

[26] Surden, *supra* note 13, at 1319.

combination of both. Some tools have a series of hand-coded rules that supplement their machine learning counterparts.[27] Others perform autonomously to the extent possible but defer to humans to make difficult judgments that "remain[] outside of the system's capability or for which a computer decision is deemed societally inappropriate."[28] It is important to note that these categories are not mutually exclusive. Many of the tools on the legal market combine built-in rules with machine learning—but because decisions that lawyers make are often theory-laden or involve some level of human judgment—they also opt to keep humans in the loop. For instance, a contract analyzer like Kira Systems has over nine hundred built-in provisions but also uses machine learning to identify other relevant provisions over time and allows for human review at every stage.[29]

Now that we have a preliminary understanding of AI tools and how they operate, let us address their development in the legal market.

II.   The AI Revolution in Legal Tech

In 1970, Bruce Buchanan and Thomas Headrick suggested that AI has the potential to remove "the 'dog work' that underlies quality legal service."[30] This was a bold prediction. The study of AI was in its infancy.[31] And writing a brief still required intense library research and a typewriter. Fast forward about one-half century though, and AI-assisted legal technologies make up a multi-million-dollar industry that will continue to grow.[32] Broadly speaking, these technologies have gone through three distinct phases of transformational innovation: (1) electronic databases, (2) the Internet and World Wide Web, and (3) Lexis and Westlaw's eventual integration of artificially intelligent processes.

A.   The Era of Electronic Databases

What became the AI revolution in legal tech began with relatively crude electronic databases. By the early 1960s, an immense number of opinions were being published, and it had become

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[27] *Id.* at 1319–20 (writing that although most autonomous vehicles "operate using trained machine-learning systems that help them drive," they also have "a series of rules, based upon the knowledge of driving, that represent generally appropriate behavior," such as stopping at a stop sign).

[28] *Id.* at 1320. This "system design is known as having 'a human in the loop.'" *Id.*; Richard Waters, *Artificial Intelligence: When Humans Coexist With Robots*, FIN. TIMES (Oct. 9, 2018), https://www.ft.com/content/bcd81a88-cadb-11e8-b276-b9069bde0956.

[29] *See Kira's Built-In Intelligence*, KIRA, https://kirasystems.com/platform/built-in-intelligence/ (last visited Nov. 13, 2020).

[30] Bruce G. Buchanan & Thomas E. Headrick, *Some Speculation About Artificial Intelligence and Legal Reasoning*, 23 STAN. L. REV. 40, 61 (1970).

[31] RUSSELL & NORVIG, *supra* note 1, at 16 (discussing the 1940s and 1950s as "[t]he gestation of artificial intelligence").

[32] Ambrogi, *supra* note 9.

increasingly difficult for lawyers to find case law and secondary sources that were relevant to their cases.[33] Recognizing the enormous burden that manually sifting through sources placed on lawyers, a group of attorneys from Ohio set out to create a solution that enlisted the aid of computers.[34] The Ohio attorneys collaborated with Data Corporation and, in 1973, they together launched the first true innovation in legal tech—an electronic legal research database called Lexis.[35] The service was so revolutionary that four New York law firms immediately subscribed to it.[36] Lexis's success inspired the West Publishing Company (West) to develop its own database, Westlaw, which it released in 1975.[37] And soon enough, gone would be the days when lawyers spent hours upon hours rummaging through the library and sifting through casebooks to find their golden case. For the first time, Lexis and Westlaw provided lawyers with comprehensive, searchable databases that could be accessed via dial-up service or hard-wired terminals.[38] Lexis and Westlaw would dominate the legal technology market for years to come.

B.   The Internet and the World Wide Web

The next technological innovation in the legal sector was the Internet. Although the Internet was created in 1969 (in a research lab at UCLA),[39] it did not come into mainstream use until 1990

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[33] See F. Allan Hanson, From Key Numbers to Keywords: How Automation Has Transformed the Law, 94 LAW LIBR. J. 563, 573 (2002).

[34] See id.; see also GEORGE S. GROSSMAN, LEGAL RESEARCH: HISTORICAL FOUNDATIONS OF THE ELECTRONIC AGE 90 (1994).

[35] See Hanson, supra note 33, at 573; William G. Harrington, *A Brief History of Computer-Assisted Legal Research*, 77 LAW LIBR. J. 543, 547–53 (1984).

[36] See Katherine Medianik, Artificially Intelligent Lawyers: Updating the Model Rules of Professional Conduct in Accordance With the New Technological Era, 39 CARDOZO L. REV. 1497, 1502 (2018).

[37] See Stephen Miller, *For Future Reference, a Pioneer in Online Reading*, WALL ST. J. (Jan. 12, 2012, 9:39 PM), https://www.wsj.com/articles/SB10001424052970203721704577157211501855648 ("Lexis changed legal practice from the ground up . . . . It inspired all the databases that came after it."); Medianik, supra note 36, at 1503; see also GROSSMAN, supra note 34, at 90.

[38] Robert J. Ambrogi, Westlaw's Days Are Numbered, LAWSITES (May 26, 2015) [hereinafter Ambrogi, Westlaw's Days], https://www.lawsitesblog.com/2015/05/westlaws-days-are-numbered.html ("Those early systems pre-dated the Web. They were dial-up services using dedicated terminals and ASCII-style commands."). Initially, Westlaw lagged behind Lexis. Whereas Lexis provided a full-text database, Westlaw's database was only made up of West headnotes. But by 1984 Westlaw was done playing catch-up and "had become an automated research service equal in power to Lexis." Hanson, supra note 33, at 573; see also Harrington, supra note 35, at 553–54.

[39] "On October 29, 1969, ARPAnet delivered its first message: a 'node-to-node' communication from one computer to another. (The first computer was located in a research lab at UCLA and the second was at Stanford; each one was the size of a small house.)" Evan Andrews, Who Invented the Internet?, HISTORY (Oct. 28, 2019), https://www.history.com/news/who-invented-the-internet.

when computer scientist Tim Berners-Lee invented the World Wide Web.[40] Perhaps one of the World Wide Web's greatest features was the speed with which it allowed people to communicate.

In the context of legal technologies, the World Wide Web was a major innovation because it brought Westlaw and Lexis to online platforms. Before the Internet and World Wide Web became widely available, Lexis and Westlaw only provided access to their databases via dial-up or hard-wired terminals.[41] Then, in the mid to late-90s, the two legal tech giants moved their services online.[42] Lexis made the first move in 1996 with the introduction of its new software suite called LexisNexis Office.[43] And again, West followed suit with Westlaw.com in 1998.[44] For the next decade or so, innovation in legal tech remained largely stagnant. But in 2010, Bloomberg entered the market with its own online legal research database called Bloomberg Law,[45] marking the end of LexisNexis and Westlaw's duopoly over the legal technology market.

C.   The Integration of AI

But West and Lexis had a response brewing that brought the legal practice one step closer to the AI revolution in legal tech. In 2010, West introduced WestlawNext, "the first major overhaul of Westlaw since its initial Web version was launched 12 years earlier."[46] WestlawNext became the first piece of legal technology to employ a machine learning algorithm to deliver better

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[40] *Id.* ("While it's often confused with the internet itself, the web is actually just the most common means of accessing data online in the form of websites and hyperlinks. The web helped popularize the internet among the public, and served as a crucial step in developing the vast trove of information that most of us now access on a daily basis.").

[41] *See* Jim Haggerty, *LexisNexis Versus Westlaw Revisited: Comparison of Top Legal Research Platforms*, LAC GROUP: BLOG (Feb 22, 2018), https://lac-group.com/blog/lexisnexis-versus-westlaw-revisited; *see also* Ambrogi, *Westlaw's Days*, *supra* note 38 ("In 1983, West introduced a custom computer terminal to make life easier for its users. Called the West Automated Law Terminal, or WALT, it eliminated telephone dialing and provided a color-coded keyboard with dedicated keys for Shepardizing, page forward, page back, next case, previous case, and proximity commands.").

[42] *See* Ambrogi, *Westlaw's Days*, *supra* note 38; *The LexisNexis Timeline*: *Celebrating Innovation . . . and 30 Years of Online Legal Research*, LEXISNEXIS, http://www.lexisnexis.com/anniversary/30th_timeline_fulltxt.pdf (last visited Nov. 13, 2020).

[43] *The LexisNexis Timeline*: *Celebrating Innovation . . . and 30 Years of Online Legal Research*, *supra* note 42.

[44] Ambrogi, *Westlaw's Days*, *supra* note 38.

[45] Greg McFarlane, *How Bloomberg Makes Money*: *Terminals, News, Business*, INVESTOPEDIA (Apr. 13, 2020), https://www.investopedia.com/articles/investing/102015/how-bloomberg-makes-billions-hint-not-just-news.asp.

[46] Robert J. Ambrogi, *The Decade in Legal Tech: The 10 Most Significant Developments*, LAWSITES (Jan. 1, 2020), https://www.lawsitesblog.com/2020/01/the-decade-in-legal-tech-the-10-most-significant-developments.html.

search results.[47] Lexis followed West's lead, and in 2011, launched its own streamlined platform powered by machine learning, Lexis Advance.[48] The goal of both platforms was to mimic Google's simple search function, but for legal research.[49] Moreover, it was to maintain the two firms' long-time dominance over the legal technology market. Through their progress, however, Westlaw and LexisNexis inspired a new generation of AI-assisted legal tech startups that would soon diminish their market share.

III. The 'New' Tools

AI legal tools may be classified into six major categories: (1) due diligence, (2) legal analytics, (3) document drafting, (4) intellectual property, (5) legal advice, and (6) practice management. In this Part, this Article addresses each of these categories and defines their boundaries. Then, it explores some of the most prevalent tools within each category. Some of the tools presented perform a number of functions. Therefore, they may fall into more than one category. To the extent that they do, that is discussed below. It is important to note that these categories are not all-encompassing. And as AI technologies continue to develop, this list will likely expand.

A. Due Diligence

Generally, "[d]ue diligence is an investigation, audit, or review performed to confirm the facts of a matter under consideration."[50] In law, it is the care that a reasonable person is expected to exercise in order to "avoid harm to other persons or their property."[51] It is often used to characterize the review process that transactional attorneys undertake when advising on a deal. But litigators also perform due diligence when they uncover background information that is relevant to their case. Thus, for the purposes of this Article, due diligence includes transactional functions, such as contract review and analysis, and litigation functions like legal research and discovery.

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[47] *Id.*

[48] Robert J. Ambrogi, *Lexis Launches Advance, Its Next-Generation Research Platform*, LAWSITES (Dec. 5, 2011), https://www.lawsitesblog.com/2011/12/lexis-launches-advance-its-next-generation-research-platform.html.

[49] *See id.* ("As WestlawNext did for Westlaw, Lexis Advance does for Lexis.com, incorporating a streamlined, simplified, Google-like search bar that searches universally across all libraries and then lets you use smart filters to zero in on precisely what you want.").

[50] James Chen & Gordon Scott, *Due Diligence*, INVESTOPEDIA (Mar. 14, 2020), https://www.investopedia.com/terms/d/duediligence.asp.

[51] *Due Diligence*, MERRIAM-WEBSTER, https://www.merriam-webster.com/dictionary/due%20diligence (last visited Nov. 13, 2020).

1.   Contract Review and Analysis

Clients usually ask lawyers to review and analyze their contracts in order to minimize exposure. Depending on the client's budget, contract review and analysis can take different forms. For instance, if a client is on a tight budget, they might ask an attorney to identify specific issues in a contract, such as a non-compete clause, or note special areas of concern in the contract as a whole.[52] If they want to take it one step further, however, they might ask an attorney to provide edits or negotiate the contract's terms.[53] Whether a client is looking for a basic review or something more comprehensive, AI-assisted technologies like Kira Systems and ThoughtRiver can make that process more efficient.

a)   Kira Systems

Kira is a powerful hybrid AI system that identifies, extracts, and analyzes text in contracts and other documents.[54] It was founded in 2011 by a computer scientist and a transactional attorney.[55] Users begin by importing documents into Kira's interface.[56] Kira then converts the documents into a machine-readable format and—using over nine hundred built-in provision models and natural language processing techniques—identifies important concepts and clauses.[57] The software also summarizes key findings and allows users to export a full report in their preferred format.[58] Kira's natural language processing methods are so advanced that it can even understand clauses in foreign languages, such as German, French, and Spanish.[59] Moreover, Kira can compare contracts to form agreements and, using a form deviation "heat map," identify changes that have been made across an entire pool of agreements.[60] To date, Kira has received over $50 million in funding.[61] It is trusted by some of the world's largest firms, including Allen & Overy, Clifford Chance, DLA Piper, Fenwick, Freshfields, Goodwin, and Latham & Watkins, and has been used in over $100 billion of transactions.[62]

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[52] *Contract Review Attorney Fee*: *Everything You Need to Know*, UPCOUNSEL, https://www.upcounsel.com/contract-review-attorney-fee (last updated June 15, 2020).

[53] *Id.*

[54] *See* KIRA, https://kirasystems.com (last visited Nov. 13, 2020).

[55] Antoine Tardiff, *Alexander Hudek, Co-Founder & CTO of Kira Ststems – Interview Series*, UNITE.AI (Mar. 18, 2020), https://www.unite.ai/alexander-hudek-co-founder-cto-of-kira-systems-interview-series.

[56] *See Contract Analysis*, KIRA, https://www.kirasystems.com/how-it-works/contract-analysis (last visited Nov. 13, 2020).

[57] *See id.*; *see also* Sergio David Becerra, *The Rise of Artificial Intelligence in the Legal Field: Where We Are and Where We Are Going*, 11 J. BUS. ENTREPRENEURSHIP & L. 27, 46 (2018).

[58] *See* Becerra, *supra* note 57, at 46.

[59] *See Contract Analysis*, *supra* note 56.

[60] *See id.*

[61] *Kira Systems*, CRAFT, https://craft.co/kira-systems (last visited Nov. 13, 2020).

[62] *See* KIRA, *supra* note 54.

ThoughtRiver is another hybrid AI system that assists in contract review and analysis.[63] The platform's pre-screening technology combines human legal intelligence and machine learning to automate the initial scan and analysis of contracts and produce actionable recommendations.[64] The pre-screening technology is underpinned by Lexible, a universal contract knowledge tree[65] and a sophisticated natural language processing engine that was developed in collaboration with Cambridge University.[66] In short, Lexible translates complex legalese into plain English.[67] Like Kira, users begin by uploading a contract to ThoughtRiver's platform. Then, by asking a series of questions, ThoughtRiver's pre-screening tool automatically determines what issues are relevant to that contract and answers questions associated with those issues.[68] Moreover, it tells users how risky certain provisions are when compared to a bespoke playbook and provides attorneys with recommendations to act upon.[69] In that respect, ThoughtRiver goes beyond merely identifying key provisions to administering actionable advice. It is utilized by firms such as Clifford Chance, Eversheds Sutherland, and Taylor Vinters.[70]

2. Legal Research

This Article previously discussed in Part II how legal research has evolved from searching casebooks to electronic databases, and more recently, online databases that incorporate some

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[63] *See ThoughtRiver*, CRUNCHBASE, https://www.crunchbase.com/organization/thoughtriver#section-overview (last visited Nov. 13, 2020).

[64] *See id.*

[65] "[D]ecision trees are constructed via an algorithmic approach that identifies ways to split a data set based on different conditions. . . . The goal is create a model that predicts the value of a target variable by learning simple decision rules inferred from the data features." *Decision Tree*, HACKEREARTH, https://www.hackerearth.com/practice/machine-learning/machine-learning-algorithms/ml-decision-tree/tutorial (last visited Nov. 13, 2020).

[66] *See How It Works*, THOUGHTRIVER, https://www.thoughtriver.com/how-it-works (last visited Nov. 13, 2020).

[67] "The Lexible contract description framework is an ontology of meaning-based properties that together encapsulate the complex legal logic and relationships present in an agreement. It includes thousands of individual questions that together build a granular picture of obligations and rights within a document." *Id.* Lexible is the product of "more than 200,000 hours of expert analysis across 4,000,000 legal documents. This has created a dictionary of reference terms, expressed as simple, universal legal questions crafted by a team of lawyers." Edward Clark, *The End of 'Legal-ese': ThoughtRiver Launches New AI-powered Legal Language*, REALWIRE (Jun. 25, 2019), https://www.realwire.com/releases/The-end-of-Legal-ese-ThoughtRiver-Launches-new-AI-powered-Legal-Language.

[68] *See How It Works*, *supra* note 66.

[69] *Id.*

[70] *See id.*

form of AI.[71] The two companies leading the charge in this area have been LexisNexis and Westlaw. Although the technologies LexisNexis and Westlaw employ have seen considerable advancement, they face several fundamental limitations. First, they operate using keyword searches rather than semantic searches.[72] Second, they fail to evaluate the value of certain precedents as measured against others.[73] And third, their searches yield mass amounts of data that attorneys must comb through.[74] Programs like Casetext have stepped in to try and solve these problems.

a)   Casetext (CARA)

Casetext is another legal research database that competes directly with LexisNexis and Westlaw. It was founded in 2013 by two Stanford Law School graduates.[75] Casetext performs many of the traditional functions that Westlaw and LexisNexis perform. What sets it apart, however, is its AI mechanism, CARA, which has seen continuous improvement since its launch in 2016.[76] Users can simply upload a complaint, motion, or brief to the platform, and CARA will analyze it and search Casetext's database for relevant authorities.[77] Users may also upload opposing briefs andCARA will produce a list of authorities that were cited in the brief with hyperlinks to the underlying cases and statutes.[78] Better still, CARA will identify authorities that the opposing party missed or perhaps, purposefully omitted.[79] In this respect, CARA is like a personal legal assistant that is available 24 hours a day, seven days a week.

With CARA, Casetext has emerged as one of the leading legal research databases. Indeed, Casetext outperforms both LexisNexis and Westlaw in performance metrics like user efficiency. A 2018 study conducted by the National Legal Research Group (NLRG), found that attorneys conducting research using Casetext were on average 24.5 percent faster than attorneys using

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[71] *See supra* Part II.

[72] McGinnis & Pearce, *supra* note 22, at 3048–49 ("Semantic search will allow lawyers to input natural language queries to computers, and the computers will respond semantically to those queries with directly relevant information. If one searches for assumption of risk, the search may bring up cases that did not use these words but nevertheless deployed the same concept.").

[73] *Id.*

[74] Becerra, *supra* note 57, at 41.

[75] *Jake Heller*, CRUNCHBASE, https://www.crunchbase.com/person/jake-heller#section-overview (last visited Nov. 13, 2020); *Pablo Arredondo*, CRUNCHBASE, https://www.crunchbase.com/person/pablo-arredondo (last visited Nov. 13, 2020).

[76] *See* Jean O'Grady, *CARA AI*: *Did Casetext Just "Dop Kick" Keywords Out of The Legal Research Process?*, DEWEY B STRATEGIC (May 1, 2018), https://www.deweybstrategic.com/2018/05/cara-ai-casetext-just-drop-kick-keywords-legal-research-process.html.

[77] *See CARA A.I.*, CASETEXT, https://casetext.com/cara-ai (last visited Nov. 13, 2020).

[78] *Id.*

[79] *Id.*

traditional legal research tools, saving them 132–210 hours per year.[80] This was partly due to the fact that the results Casetext produced "were on average better in every dimension of relevance judged in the study, including legal relevance, factual relevance, similar parties, jurisdiction, and procedural posture."[81] Moreover, according to the study, nearly half of the attorneys believed they would have missed important precedents without CARA, and three-quarters of them preferred their research experience on Casetext over LexisNexis.[82] Casetext's utility is further evidenced by its funding and market share. To date, Casetext has raised close to $40 million.[83] Moreover, there are over 4,500 U.S. law firms that subscribe to Casetext like DLA Piper, Greenberg Traurig, O'Melveny, and Quinn Emanuel paving the way.[84] David Eiseman, a partner at Quinn Emanuel, says:

> CARA is a valuable, innovative research tool. With CARA, we can upload a brief and within seconds receive additional case law suggestions and relevant information on how cases have been used in the past, all in a user-friendly interface. This feature is unique to CARA, and a major step forward in how legal research is done.[85]

3.   Discovery

AI tools are impacting the way discovery is conducted. Historically, discovery was a painstaking and laborious process reserved for junior associates. First or second-year associates were forced to review thousands—if not hundreds of thousands—of paper documents. But the rise of electronically stored information brought with it electronic discovery.[86] Although electronic discovery made document review somewhat more efficient, it is still highly labor intensive and is not entirely reliable. Therefore, discovery remains an expensive process.[87] More recently,

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[80] NAT'L LEGAL RSCH. GRP., INC., THE REAL IMPACT OF USING ARTIFICIAL INTELLIGENCE IN LEGAL RESEARCH 1 (2018), https://www.lawsitesblog.com/wp-content/uploads/sites/509/2018/09/The-Real-Impact-of-Using-Artificial-Intelligence-in-Legal-Research-FINAL2.pdf.

[81] *Id.*

[82] *Id.*

[83] *Casetext*, CRUNCHBASE, https://www.crunchbase.com/organization/casetext#section-overview (last visited Nov. 13, 2020).

[84] Rob Toews, *AI Will Transform the Field of Law*, FORBES (Dec. 19, 2019, 2:09 PM), https://www.forbes.com/sites/robtoews/2019/12/19/ai-will-transform-the-field-of-law/#17545a177f01.

[85] *Customers: Big Firms*, CASETEXT, https://casetext.com/big-firm (last visited Nov. 13, 2020).

[86] "[E]lectronic discovery . . . is the process by which computers search a database for keywords that lawyers agree are marks of relevance." McGinnis & Pearce, *supra* note 22, at 3047.

[87] According to Katz, even with the advent of electronic discovery, document review is still an expensive process because the proliferation of electronically stored information has made the review process more expansive. *See* Daniel Martin Katz, *Quantitative Legal Prediction-or-How I Learned to Stop Worrying and Start Preparing for the Data-Driven Future of the Legal Services Industry*, 62 EMORY L.J. 909, 943 (2013); *see also* Rachel Sandler, *This Fast-Growing Startup Just Got $25 Million From Silicon Valley Investors to Help Lawyers Everywhere Save Time and Win Case*, BUS. INSIDER (Jun. 28, 2018, 6:34 PM), https://www.businessinsider.com/everlaw-legal-tech-aj-shankar-raises-25-million-2018-6 (discussing how

however, a number of AI-assisted tools have emerged that seek to make the discovery process more efficient. Everlaw is one example.

a) Everlaw

Everlaw uses machine learning methods, such as predictive coding, to automate the discovery process. The company was founded in 2010 by a former Assistant U.S. Attorney and a computer scientist.[88]

Everlaw has several novel features. Users begin by uploading a document set to the program.[89] Then, Everlaw immediately begins scanning the document set and identifying relevant documents, either through its built-in prediction models or custom models that users may input.[90] In addition, Everlaw allows for a seamless transition from document review to case preparation using its Storybuilder function.[91] Teams can curate the most important documents in a matter, centralize and consolidate knowledge, and create timelines to visualize how storylines are related.[92] Further, teams can use the platform to collaboratively create review protocols, case strategies, deposition outlines, and many other types of work.[93] Thus, Everlaw essentially streamlines the entire pretrial process.

Since its founding, Everlaw has become increasingly popular. It is employed by seventy-six of the Am Law 100 firms[94] and United States Attorney General offices in all fifty states.[95] This is

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e-discovery can account for up to 70 percent of the total cost of a lawsuit). Moreover, according to McGinnis and Pierce, the keyword search function that traditional e-discovery tools employ "may be both over- and underinclusive because keywords may be absent from some relevant documents and yet present in some irrelevant documents." McGinnis & Pearce, *supra* note 22, at 3047.

[88] *See* Steven Sinofsky, *Everlaw*, ANDRESEEN HOROWITZ (Jan. 14, 2016), https://a16z.com/2016/01/14/everlaw/.

[89] *Solutions: Ediscovery*, EVERLAW, https://www.everlaw.com/solutions/ediscovery/ (last visited Nov. 13, 2020).

[90] Sandler, *supra* note 87; *Solutions: Ediscovery*, *supra* note 100.

[91] Sandler, *supra* note 87.

[92] *Id.*

[93] *Solutions*, *supra* note 89.

[94] *Everlaw Achieves FedRAMP Security Authorization With Support From the U.S. Department of Justice*, BLOOMBERG (Mar. 10, 2020, 7:00 AM) [hereinafter Everlaw Achieves FedRAMP], https://www.bloomberg.com/press-releases/2020-03-10/everlaw-achieves-fedramp-security-authorization-with-support-from-the-u-s-department-of-justice.

[95] *See* Sandler, *supra* note 87.

partially due to Everlaw's easy-to-use, collaborative platform, but also its superior security capabilities.[96] To date, Everlaw has received almost $100 million in funding.[97]

B.   Legal Analytics

Aside from aiding the due diligence process, AI-assisted technologies have created an entirely new discipline in legal practice known as legal analytics. Companies are now collecting mass amounts of data and using machine learning methods to analyze trends and patterns in that data, which can then be used to predict what will happen in situations that have not yet occurred.[98] Currently, legal analytics tools have made their greatest impact in predicting case outcomes and in jury evaluation.

1.   Predicting Case Outcomes

Before the advent of legal analytics, lawyers would rely on their intuition and experience to predict case outcomes.[99] That was largely because it was impossible for lawyers to sift through previous cases and predict trends based on them. Tools like Lex Machina, however, are making that easier by using AI.

a)   Lex Machina

Lex Machina is another hybrid AI system that uses a unique combination of machine learning and expert human review to predict case outcomes. It was founded in 2006 by a law professor and two of his students.[100] Lex Machina began as a public interest project at Stanford University,[101] but it quickly garnered the attention of institutional investors, and by 2009, the company made its official commercial launch.[102] At first, Lex Machina only provided insights for intellectual property matters, but since its founding, it has drastically expanded to a wide

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[96] Everlaw was one of the first cloud-native AI technologies to receive authorization from the Federal Risk and Authorization Management Program. *See Everlaw Achieves FedRAMP*, *supra* note 94.

[97] *Everlaw*, CRUNCHBASE, https://www.crunchbase.com/organization/everlaw#section-overview (last visited Nov. 13, 2020).

[98] *See* McGinnis & Pearce, *supra* note 22, at 3052–53.

[99] *Id.*

[100] *Lex Machina*, CRUNCHBASE, https://www.crunchbase.com/organization/lex-machina#section-overview (last visited Nov. 13, 2020).

[101] *See* Press Release, Lex Machina, Lex Machina Celebrates 10 Years of Legal Analytics, Bringing Greater Knowledge, Efficiency and Transparency to the Legal Industry (Feb. 4, 2020, 8:00 AM) [hereinafter Lex Machina Celebrates 10 Years], https://www.prnewswire.com/news-releases/lex-machina-celebrates-10-years-of-legal-analytics-bringing-greater-knowledge-efficiency-and-transparency-to-the-legal-industry-300998256.html.

[102] *See* Daniel McKenzie, *Know Your Enemy*: *Lex Machina Raises $2 Million For IP Litigation Analytics*, TECHCRUNCH (July 26, 2020, 5:16 PM), https://techcrunch.com/2012/07/26/know-your-enemy-lex-machina-raises-2-million-for-ip-litigation-analytics/.

range of practice areas.[103] In 2015, it was acquired by LexisNexis, bringing it to the forefront of the legal tech market.[104]

Lex Machina offers three features that help lawyers predict case outcomes. First, using the Motion Metrics Report, attorneys can assess their case by analyzing the judge and court to which the case has been assigned.[105] The Motion Metrics Report predicts how likely it is that a certain judge will grant or deny a specific motion, or how long it will take for a certain case to go to trial before that judge.[106] This, in turn, allows lawyers to set realistic litigation budgets. Second, using the Law Firms Report, lawyers can "size up opposing counsel" by researching their experience before specific judges and courts, or their client list.[107] The Law Firms Report function is especially useful for in-house counsel because it provides insights as to what law firms have the most experience being adverse to opposing counsel.[108] This allows in-house counsel to make informed decisions about which firms to hire.[109] Third, using Lex Machina, lawyers can evaluate the likely damages award that the prevailing party would receive in a specific type of case, which may inform potential decisions regarding a change of venue or settlement.[110]

Today, Lex Machina is used by major corporations, such as Facebook and Microsoft, and litigation powerhouses, such as White & Case and Winston & Strawn.[111]

2. Jury Evaluation

Before an eligible juror can sit on a jury, they must survive voir dire.[112] Voir dire is the process by which litigants and judges survey the jury pool to determine if any potential jurors have biases

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[103] *See id.*

[104] *LexisNexis Acquires Premier Legal Analytics Provider Lex Machina,* LEX MACHINA, https://lexmachina.com/media/press/lexisnexis-acquires-lex-machina/ (last visited Nov. 13, 2020).

[105] *Legal Analytics Platform*, LEX MACHINA, https://lexmachina.com/legal-analytics/ (last visited Nov. 13, 2020).

[106] *Id.*

[107] *Id.*

[108] *See* Allison Trimble et al., *Big Data, Big Business: Leveraging Analytics to Strengthen Your Legal Department*, 36 No. 2 ACC Docket 24, 25 (Mar. 2018) (discussing how "[d]ata can play an important part in your relationship with outside counsel by providing better decision-making tools to improve outcomes.").

[109] *Legal Analytics Platform*, LEX MACHINA, *supra* note 105.

[110] *Id.*

[111] *See* Lex Machina Celebrates 10 Years, *supra* note 101.

[112] Nancy J. King, *Racial Jurymandering: Cancer or Cure? A Contemporary Review of Affirmative Action in Jury Selection,* 68 N.Y.U. L. REV. 707, 712 (1993) (discussing the four phases of jury selection, the last of which is voir dire).

that would prevent them from being able to judge a case fairly.[113] If a juror indicates bias, they may be excused by a challenge for cause.[114] Thus, the more a litigant knows about a potential juror, the better their chances are to discover bias and remove the juror. In addition to challenges for cause, jurors may be removed for no reason at all via peremptory strikes (save for a couple exceptions).[115] Whereas litigants have an unlimited number of challenges for cause, they are usually afforded only three peremptory strikes.[116] Thus, litigants expend a considerable amount of energy investigating jurors and developing jury selection strategies either by hiring jury consultants or doing it themselves. This is often a time-consuming and expensive process. But the AI revolution in legal tech has brought with it a tool that promises to cut those transactional costs. That tool is Voltaire.

a)   Voltaire

Voltaire is a jury selection tool that leverages the power of IBM's Watson.[117] It was founded in 2014 by a former IBM staffer.[118] To use Voltaire, lawyers simply enter a potential juror's name into the program, and from there, Voltaire handles the rest. By accessing and aggregating information from public records and social media, Voltaire examines the potential juror's educational background, employment history, voter registration, original authorship, property ownership, criminal background, and more to uncover biases.[119] Then, it provides users with a

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[113] *Voir Dire*, LAW.COM, https://dictionary.law.com/Default.aspx?selected=2229 (last visited Nov. 13, 2020).

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> A challenge for cause is a request to dismiss a prospective juror that is unqualified to serve
> under 28 U.S.C.A. §§ 1865, 1866, has demonstrated an unconstitutional level of actual bias, is
> unwilling to follow the law as instructed by the court, or is otherwise unable to perform the duties
> of a juror. Challenges for cause serve the important goal of advancing a party's constitutional
> right to a fair and impartial jury.

STEPHEN E. ARTHUR & ROBERT S. HUNTER, FEDERAL TRIAL HANDBOOK CIVIL § 17:8 (4th ed. Sept. 2020 update).

[115] *See* Batson v. Kentucky, 476 U.S. 79, 89 (1986) (holding that intentional discrimination on the basis of gender in use of preemptory strikes is unconstitutional); J.E.B. v. Alabama ex rel. T.B., 511 U.S. 127, 128–29 (1994) (holding that intentional discrimination on the basis of gender in use of peremptory strikes is unconstitutional).

[116] "Unlike peremptory challenges, there is no limit to the number of challenges for cause a party may assert." ARTHUR & HUNTER, *supra* note 114, at §17:8.

[117] *See* Scott Carlson, *Software Provides Real-Time Predictions on How Potential Jurors Might Vote*, ABA J. (Nov. 1, 2017, 1:05 AM), https://www.abajournal.com/magazine/article/voltaires_software_provides_realtime_predictions_on_how_potential_jurors_mi.

[118] *See Voltaire Uses AI and Big Data to Help Pick Your Jury*, ARTIFICIAL LAW. (Apr. 26, 2017), https://www.artificiallawyer.com/2017/04/26/voltaire-uses-ai-and-big-data-to-help-pick-your-jury/.

[119] *See* VOLTAIRE, https://voltaireapp.com/ (last visited Nov. 13, 2020).

concise dossier-style report that gives attorneys a whole picture of the juror.[120] All of this is done in mere minutes, cutting investigation costs considerably.

C.   Document Drafting

Beyond due diligence and legal analytics, the AI revolution in legal tech is changing how documents are drafted. Document drafting was likely not the type of "dog work underlying quality legal service" that Buchanan and Headrick envisioned AI would take over; nevertheless, it is here to stay. Generally, attorneys engage in one of two types of document drafting: (1) documents as forms, or (2) documents as briefs and memorandums.[121]

1.   Documents as Forms

According to John McGinnis and Russell G. Pearce, "[l]egal forms are hardly new. Since the middle ages when lawyers used forms of action, templates helped reduce the cost of law. But machine intelligence will revolutionize the use of legal forms."[122] Writing in 2014, the two scholars predicted that within ten to fifteen years, AI technologies would become so powerful that they would be able to produce first drafts of routine transactional documents on their own.[123] But these tools have arrived sooner than they thought. Neota Logic's PerfectNDA constitutes one example.

a)   Neota Logic (PerfectNDA)

Neota Logic develops AI platforms for legal and compliance sectors.[124] It was founded in 2010 by two practicing attorneys.[125] One of the solutions that Neota Logic offers is PerfectNDA.[126] PerfectNDA applies the power of Neota Logic's AI automation platform to streamline the drafting process for non-disclosure agreements.[127] Users need only upload their firm's existing non-disclosure agreement templates, and from there, PerfectNDA can draft all future non-disclosure agreements on its own.[128] The program claims that "the correct template is selected

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[120] *Id.*

[121] *See* McGinnis & Pearce, *supra* note 22, at 3050–52.

[122] *Id.* at 3050.

[123] *Id.* at 3051.

[124] *Neota Logic*, CRUNCHBASE, https://www.crunchbase.com/organization/neota-logic#section-overview (last visited Nov. 13, 2020).

[125] *See Team*, NEOTA LOGIC, https://www.neotalogic.com/team/#:~:text=Fred%20Parnon%20Co%2DFounder,%2C%20Jnana%20Technologies%2C%20in%201995 (last visited Nov. 13, 2020).

[126] *See Perfect NDA*, NEOTA LOGIC, https://www.neotalogic.com/product/perfectnda/ (last visited Nov. 13, 2020).

[127] *Id.*

[128] *See id.*

for every scenario."[129] Then, it fills out the template and even emails it to the signing party.[130] Its built-in dashboard also gives users instant insight into the status of every NDA.[131] A number of firms, including White & Case, Clifford Chance, and Allen & Overy, already employ Neota Logic's software.[132]

2.   Documents as Briefs

Brief drafting is the second category of drafting that lawyers typically engage in. Brief drafting is generally thought to require more human thought and expertise than drafting forms or contracts because it is less formulaic by nature. Brief drafting requires crafting sophisticated legal arguments. This is the reason why brief drafting is often reserved for more senior associates and partners. It is hard to imagine that firms would trust a computer to do something that they do not even trust their own junior associates to do. But drafting automators, such as Casetext's Compose, have entered the market, and firms are buying in.

a)   Casetext (Compose)

Compose is a first-of-its-kind motion drafting automator that Casetext launched in February 2020.[133] Compose drastically reduces the amount of work that typically goes into drafting a motion. In short, lawyers begin by entering basic information about the brief, such as the nature of the brief, the jurisdiction, and the lawyer's position on the issue.[134] Then, Compose generates a list of arguments and "legal standards or rules" that are relevant to the brief in question by using innovative natural language processing technology.[135] Users may then click whichever arguments they like and quickly populate the brief.[136] Currently, Compose can assist in drafting eleven different types of motions, including Motions to Dismiss, Motions to Compel, Motions to Exclude Expert Testimony, Motions for Preliminary Injunctions, and Motions to Remand.[137] Over time, however, Compose will release additional automations and collections.[138] Compose

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[129] *Id.*

[130] *Id.*

[131] *Id.*

[132] *See Legal*, NEOTA LOGIC, https://www.neotalogic.com/industry/ai-expertise-automation-for-legal-industry/ (last visited Nov. 13, 2020).

[133] *See Casetext Launches 'Compose' Legal Brief Drafting System in Major Step Forward*, ARTIFICIAL LAW. (Feb. 25, 2020), https://www.artificiallawyer.com/2020/02/25/casetext-launches-compose-legal-brief-drafting-system-in-major-step-forward/.

[134] Robert J. Ambroji, *Notable New Casetext Product Drafts Your Litigation Briefs for You*, LAWSITES, (Feb. 25, 2020) [hereinafter Ambroji, *New Casetext Product*], https://www.lawsitesblog.com/2020/02/notable-new-casetext-product-drafts-your-litigation-briefs-for-you.html.

[135] *See id.*

[136] *See* COMPOSE, https://compose.law/ (last visited Nov. 13, 2020).

[137] *See id.*

[138] Ambroji, *New Casetext Product*, *supra* note-134.

might be a scary sight for some attorneys, but for clients, it is a real win, as it significantly cuts the number of hours attorneys can bill for their work. Two firms that already use Compose are Sheppard Mullin and Ogletree Deakins.[139]

D.   Intellectual Property

The fourth legal domain that AI technologies are impacting is intellectual property. Intellectual property encompasses all "creations of the mind," including inventions, literary and artistic works, designs, symbols, names, and images.[140] In order to foster creativity and innovation, the law protects intellectual property through patents, copyrights, and trademarks.[141] Intellectual property practice has litigation and transactional components. Until recently, AI tools could only assist in the litigation aspects of intellectual property practice.[142] But now, there are tools like TrademarkNow that can assist attorneys in the transactional realm as well.

1.   TrademarkNow

TrademarkNow is a hybrid AI tool that combines machine learning techniques with human trademark law expertise[143] to streamline trademark management—from searching and clearing to watching and protecting trademarks.[144] It was founded in 2012 by a trademark attorney and three technology experts.[145] Before TrademarkNow, searching for a trademark consisted of a long and tedious process requiring significant manual labor for paralegals and attorneys.[146] They had to search for identical and similar marks in global trademark registries across multiple product classes, explore word meaning in multiple languages, investigate internet domains, and assess common law risks—all of which could take an entire week or longer.[147] TrademarkNow claims with its software, however, "enterprise trademark teams, outside counsel, and branding agencies can get a comprehensive trademark search report in 15 seconds. . ."[148]

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[139] *See* COMPOSE, *supra* note 136.

[140] World Intell. Prop. Org. [WIPO], What Is Intellectual Property?, at 2, pub. no. 450(E) (2004).

[141] *See id.* at 3.

[142] Remember that Lex Machina began as a mechanism for predicting case outcomes in intellectual property disputes before expanding to a wider range of practice areas. *See* McKenzie, *supra* note 102; discussion *supra* Section III.B.i.a.

[143] *See TrademarkNow*, WELCOMEAI, https://www.welcome.ai/trademarknow (last visited Nov. 13, 2020).

[144] *See AI-Powered IP*: *The Benefits of TrademarkNow,* AI BUS. (Jan. 15, 2016) https://aibusiness.com/ai-powered-legal-shortcut-the-benefits-of-trademarknow/.

[145] *Id.*

[146] *See id.*

[147] *Id.*

[148] *Id.*

TrademarkNow has three consumer products: Basic Knockout Search, Enhanced Knockout Search, and AI Clearance Search.[149] Basic Knockout Search is free and gives firms access to exact match trademarks from the European Union Intellectual Property Office and the U.S. Patent and Trademark Office.[150] Enhanced Knockout Search and AI Clearance Search, on the other hand, are paid options that expand the exact match search to five or ten countries of choice, respectively—in addition to common law and web data.[151] Besides the search options, TrademarkNow also allows firms to actively monitor their clients' marks and receive alerts on potentially infringing trademark applications as they happen through its NameWatch feature.[152] TrademarkNow is already being employed by large firms, such as Wilson Sonsini, in addition to huge corporations like Ford, Google, and Mastercard.[153]

E.   Legal Advice

In addition to modernizing how lawyers conduct due diligence, predict case outcomes or evaluate juries, draft documents, and conduct trademark searches, AI technologies are transforming how lawyers (and non-lawyers) offer legal advice through the use of chatbots. At a rudimentary level, "a chatbot is a computer program that simulates and processes human conversation (either written or spoken), allowing humans to interact with digital devices as if they were communicating with a real person."[154] Chatbots generally take on one of two forms— they may be either: (1) task-oriented (declarative) or (2) data-driven and predictive (conversational).[155]

Task-oriented chatbots are largely rules-based.[156] They generate conversational responses to specific user inquiries and are usually focused on performing a single function.[157] Task-oriented chatbots are most applicable to support and service functions, such as answering frequently

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[149] Press Release, TrademarkNow, TrademarkNow Launches Trademark Clearance Tools for the Masses, (May 14, 2019), https://news.cision.com/trademarknow/r/trademarknow-launches-trademark-clearance-tools-for-the-masses,c2808042.

[150] *Id.*

[151] *Id.*

[152] BRAND PROTECTION – NAME WATCH ™, TRADEMARKNOW, https://www.trademarknow.com/products/namewatch (last visited Nov. 13, 2020).

[153] *TrademarkNow's Growing Client List*, TRADEMARKNOW, https://www.trademarknow.com/clients (last visited Nov. 13, 2020).

[154] *What Is a Chatbot?,* ORACLE, https://www.oracle.com/solutions/chatbots/what-is-a-chatbot/ (last visited Nov. 13, 2020).

[155] *Id.*

[156] *Id.* ("Though [declarative chatbots] do use [natural language processing] so end users can experience them in a conversational way, their capabilities are fairly basic.").

[157] *Id.*

asked questions.[158] In contrast, data-driven and predictive chatbots incorporate a greater level of machine learning.[159] They are often referred to as digital assistants and are "much more sophisticated, interactive, and personalized" than task-oriented chatbots.[160] Digital assistants are capable of learning a user's preferences over time, providing recommendations, anticipating needs, and even initiating conversations.[161] In the legal tech market, chatbots are predominantly task-oriented, helping immigrants file visa applications [162] or accident victims learn about their personal injury claim rights, for example.[163]

Beyond their underlying processes, chatbots may also be classified based on their intended customer—that is, whether they are consumer-oriented or businesses-oriented. On the consumer side, chatbots perform a variety of public and private sector customer service functions, such as ordering event tickets or submitting requests for city services.[164] On the business side, they are "commonly used in customer contact centers to manage incoming communications and direct customers to the appropriate resource" or "for internal purposes, such as onboarding new employees."[165] In the legal realm though, consumer-oriented products generally bypass lawyers to provide users with real-time legal solutions. One example of a consumer-oriented product is DoNotPay. Business-oriented solutions, on the other hand, are designed to facilitate more efficient communications between lawyers and clients. One product that has made significant strides in this arena is Josef.

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[158] *Id.* One example of a declarative chatbot is American Express's "AI chatbot that enables eligible customers to get on-demand answers to commonly asked account- and card-related queries." Natalie Petouhoff, *What Is a Chatbot and How Is It Changing Customer Experience?*, SALESFORCE: 360 BLOG (Apr. 25, 2019), https://www.salesforce.com/blog/what-is-a-chatbot/. Another example is Sephora's messenger chatbot service that includes features, such as "Sephora Reservation Assistant (a chatbot that helps clients quickly identify store locations and make appointments) and Color Match (a bot that allows users to scan an image with a smartphone and instantly receive the closest color match from Sephora's range of products)." *Id.*

[159] *See What Is a Chatbot?*, *supra* note 154.

[160] *Id.*

[161] *Id.* Examples of digital assistants include Apple's Siri or Amazon's Alexa.

[162] Khari Johnson, *Visabot Helps You Cut Green-Card Red Tape,* VENTUREBEAT (July 11, 2017, 11:20 AM) [hereinafter Johnson, *Visabot Helps*], https://venturebeat.com/2017/07/11/visabot-helps-you-cut-green-card-red-tape/.

[163] *Meet PatBot – The New Personal Injury Legal Bot by LawDroid,* ARTIFICIAL LAW. (May 15, 2018), https://www.artificiallawyer.com/2018/05/15/meet-patbot-the-new-personal-injury-legal-bot-by-lawdroid/.

[164] *What Is a Chatbot?*, *supra* note 154.

[165] *Id.*

1.   DoNotPay

DoNotPay is a free task-oriented, direct-to-consumer chatbot. The company was founded in 2016 by Joshua Browder,[166] a Stanford University graduate,[167] although the application was operational for some time before that.[168] Browder originally launched DoNotPay to challenge parking tickets in London and New York after he received thirty of them in London by the time he was eighteen years old.[169] According to Browder, he created the application because "the people getting parking tickets are the most vulnerable in society . . . These people aren't looking to break the law . . . they're being exploited as a revenue source by the local government."[170] To dispute a ticket, users log on to DoNotPay, where a bot asks them a series of questions "like whether signs were visible at the time a fine was issued or the size of a parking space."[171] The bot then uses that information to provide the user with a recommendation for appealing the fine.[172] In its first twenty-one months, DoNotPay overturned 160,000 parking tickets, worth over $4 million, at a 64 percent success rate.[173]

Since its inception, however, DoNotPay has expanded beyond disputing parking tickets to a wider-range of task-oriented functions.[174] For instance, DoNotPay can help users file suits in small claims courts or cancel services and subscriptions.[175] One of its most recent applications utilizes legal terms in airline tickets to help users get automatic reductions in price when cheaper tickets are available.[176] DoNotPay analyzes the terms of the ticket, or contract, and extracts clauses that allow users to rebook the flight at a cheaper price.[177] The application works with all

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[166] *DoNotPay*, CRUNCHBASE, https://www.crunchbase.com/organization/donotpay#section-overview (last visited Nov. 13, 2020).

[167] *DoNotPay Launches Fully Automated Flight Price Reduction Consumer App*, ARTIFICIAL LAW. (Mar. 14, 2018), https://www.artificiallawyer.com/2018/03/14/donotpay-launches-fully-automated-flight-price-reduction-consumer-app.

[168] *See* Samuel Gibbs, *Chatbot Lawyer Overturns 160,000 Parking Tickets in London and New York*, GUARDIAN (June 28, 2016, 6:07 AM), https://www.theguardian.com/technology/2016/jun/28/chatbot-ai-lawyer-donotpay-parking-tickets-london-new-york.

[169] *Id.*

[170] Khari Johnson, *The DoNotPay Bot Has Beaten 160,000 Traffic Tickets — and Counting*, VENTUREBEAT (June 27, 2016, 2:51 PM), https://venturebeat.com/2016/06/27/donotpay-traffic-lawyer-bot.

[171] *Id.*

[172] *See* Gibbs, *supra* note 168.

[173] *Id.*

[174] *See DoNotPay Launches Fully Automated Flight Price Reduction Consumer App*, *supra* note 167.

[175] *See Category: Sue Anyone in Small Claims Court*, DONOTPAY, https://donotpay.com/learn/small-claims-court/ (last visited Nov. 15, 2020).

[176] *See DoNotPay Launches Fully Automated Flight Price Reduction Consumer App*, *supra* note167.

[177] *Id.*

US airlines and travel booking websites and does not require any input from the user.[178] Rather, it "finds all the travel confirmations in [a user's] email and checks for a cheaper price for the same type of ticket 17,000 [times] a day (every five seconds) until [the user's] flight departs."[179] In this way, DoNotPay offers consumer rights protections for issues that, economically, may not make sense to hire a traditional lawyer for.

2.   Josef

Unlike DoNotPay, Josef is a for-profit platform that allows lawyers to build their own task-oriented chatbots that make communicating with clients more efficient.[180] Josef was founded in 2018 by a software developer and two practicing attorneys,[181] who named the platform after the protagonist of Franz Kafka's book: The Trial.[182] Josef "was originally built to help community legal centres overcome capacity constraints," but it has since moved into in-house legal departments and larger law firms.[183] The platform does not require lawyers to understand sophisticated coding language.[184] Instead, lawyers build the bot by inputting a series of questions regarding a specific legal issue that lawyers would normally ask clients themselves.[185] The bot then poses those questions to the client and uses the client's answers to produce an output.[186] Depending on how the bot is customized, that output may be a draft letter, agreement, or court document.[187] Thus, bots built with Josef are capable of performing document automation functions as well.

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[178] *Id.*

[179] *Id.*

[180] *See* JOSEF, https://joseflegal.com/#how-it-works (last visited Nov. 15, 2020).

[181] *Josef*, CRUNCHBASE, https://www.crunchbase.com/organization/josef#section-overview (last visited Nov. 15, 2020); *Kirill Kliavin*, CRUNCHBASE, https://www.crunchbase.com/person/kirill-kliavin (last visited Nov. 15, 2020); *Sam Flynn*, CRUNCHBASE, https://www.crunchbase.com/person/sam-flynn (last visited Nov. 15, 2020); *Tom Dreyfus*, CRUNCHBASE https://www.crunchbase.com/person/tom-dreyfus (last visited Nov. 15, 2020).

[182] George Nott, *Legal Chatbot Builder Making Justice More Accessible*, COMPUTERWORLD (June 7, 2018, 12:50 PM), https://www2.computerworld.com.au/article/642083/legal-chatbot-builder-josef-making-justice-more-accessible/.

[183] Caroline Hill, *A Cool Mil: Legaltech Startups Josef and rfrnz Raise Seven Figure Seed Financing,* LEGAL IT INSIDER (May 7, 2019), https://legaltechnology.com/a-cool-mil-legaltech-startups-josef-and-rfrnz-raise-seven-figure-seed-financing/.

[184] JOSEF, *supra* note 180.

[185] *See* Kirill Kliavin, Tom Dreyfus & Sam Flynn, *Meet Josef a 'Next Generation' Legal Automation Platform,* ARTIFICIAL LAW. (Oct. 8, 2018), https://www.artificiallawyer.com/2018/10/08/meet-josef-a-next-generation-legal-automation-platform/; Nott, *supra* note 182.

[186] *See* Kliavin, Dreyfus & Flynn, *supra* note 185.

[187] *Id.*

Josef's first chatbot—dubbed Health Complaints Assist—was built by Polaris Lawyers in Australia.[188] Health Complaints Assist helps users "make complaints against any Victorian health care practitioner be it around misdiagnosis, unnecessary and expensive prescriptions, or unexplained and painful side effects of treatment."[189] After asking several questions, the chatbot takes a user's responses and drafts a "letter or email for the user to send to their health services provider."[190] Since Health Complaints Assist went live in June 2018, more than six hundred bots—dealing with over 30,000 legal problems ranging from employment law to environmental law and bankruptcy and consumer law—have been built on Josef.[191]

F. Practice Management

The final area of legal practice—at least for now—that AI technologies are revolutionizing is practice management. Practicing law and running a law practice are two different things. While many of the tools discussed above are concerned with the former, practice management tools, such as Smokeball, are concerned with the latter.

1. Smokeball

Smokeball is a machine learning software that allows firms to capture meaningful data about day-to-day activities within a firm.[192] Smokeball was founded in 2010[193] by an information technology specialist.[194] Interestingly, its name comes from the famous contracts case: Carlill v. Carbolic Smoke Ball Company.[195] Smokeball streamlines what is the epitome of "dog work" in the legal industry—keeping track of billable hours.[196] Without any input from attorneys or staff, Smokeball tracks every attorney's activities from client appointments to emails and phone calls and automatically determines what is billable and what is not.[197] Then, it provides firm

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[188] Nott, *supra* note 182.

[189] *Id.*

[190] *Id.*

[191] George Nott, *Legal Bot Builder Platform Josef Raises $1M,* COMPUTERWORLD (May 7, 2019, 5:52 AM), https://www.cio.com/article/3515368/legal-bot-builder-platform-josef-raises-1m.html.).

[192] Chelsea Lambert, *Revolutionize Your Small Law Firm With Smokeball Activity Intelligence*, ATT'Y WORK (Apr. 25, 2016), https://www.attorneyatwork.com/revolutionize-small-law-firm-activity-intelligence/.

[193] *Smokeball*, CRUNCHBASE, https://www.crunchbase.com/organization/smokeball#section-overview (last visited Nov. 15, 2020).

[194] *See I Invented It – An Interview With Smokeball Founder & CEO Hunter Steele*, SMOKEBALL (Feb. 3, 2020), https://www.smokeball.com/blog/i-invented-it-an-interview-with-smokeball-founder-ceo-hunter-steele/.

[195] 1 Q.B. 256 (1893); *see also Our Company*, SMOKEBALL, https://www.smokeball.com/our-company/ (last visited Nov. 15, 2020).

[196] *See* Lambert, *supra* note 192.

[197] *Id.*

managers with digestible reports about what each attorney is working on and how they are performing.[198] Thus, using Smokeball's technology firms can better predict hiring needs, measure employee performance and margins, and justify their fees.[199] Smokeball's services are mostly catered to smaller firms or solo practitioners[200] so that those firms can focus on what counts: servicing their clients and focusing on the law.

IV. Concerns or Skepticisms Regarding AI Technologies in the Legal Sector

Any time that technology as disruptive as AI enters an industry it is bound to cause concern and arouse skeptics. In the legal sector, two of the main concerns that arise with AI-assisted technologies pertain to legal ethics and employment. In this Part, this Article discusses some of these concerns and how the tools above may be implicated. While some of the concerns are valid, others are misplaced or exaggerated.

A. Legal Ethics and AI

To date, there are no published ethics opinions regarding the use of AI in delivering legal services.[201] But, like most professional services, the practice of law is governed by professional rules of conduct.[202] Several of those rules are implicated by the use of AI—most notable are the duty to communicate, the duty of confidentiality, the duty to supervise and refrain from the unauthorized practice of the law, and the duty of competence.

The duty to communicate is outlined in Model Rule 1.4.[203] According to Rule 1.4, a lawyer must, among others things, "reasonably consult with the client about the means by which the client's objectives are to be accomplished" and "keep the client reasonably informed about the status of the matter."[204] Thus, under Rule 1.4, a lawyer must inform her client that she is using AI. To be sure she is not violating Rule 1.4, the lawyer should discuss the risks and limitations of the AI tool and obtain the client's informed consent.[205] As long as lawyers follow these procedures, Rule 1.4 should largely be a non-issue when considering most of the tools above. In

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[198] *Id.*

[199] *Id.*

[200] *Id.*

[201] Janine Cerny et al., *Legal Ethics in the Use of Artificial Intelligence*, SQUIRE PATTON BOGGS, 3 (May 20, 2020), https://www.squirepattonboggs.com/-/media/files/insights/publications/2019/02/legal-ethics-in-the-use-of-artificial-intelligence/legalethics_feb2019.pdf.

[202] In the United States, although each state has the right to institute its own set of guidelines, most states' rules mirror the Model Rules of Professional Conduct proffered by the American Bar Association. Therefore, I use the Model Rules as a baseline for this discussion. *See* MODEL RULES OF PRO. CONDUCT (AM. BAR ASS'N 2020).

[203] Model Rules of Pro. Conduct r. 1.4 (Am. Bar Ass'n 2020).

[204] *Id.*

[205] Cerny et al., *supra* note 201, at 4.

fact, to some extent, these tools have the potential to keep clients reasonably informed on their own. For instance, PerfectNDA automatically emails contracts to the signing party.[206]

The duty of confidentiality is governed by Model Rule 1.6.[207] Under Rule 1.6(c), "a lawyer shall make reasonable efforts to prevent the inadvertent or unauthorized disclosure of, or unauthorized access to, information relating to the representation of a client."[208] This duty of confidentiality is put at risk when law firms tap third-party vendors to assist in delivering legal services, as those vendors are capable of being hacked and thus making unauthorized disclosures. But this risk should not be overplayed, as it is not new. Law firms, themselves, are also at risk of being hacked.[209] And employees at law firms are capable of making unauthorized disclosures. That is why law firms employ firewalls, and in some cases, only allow employees to visit secure websites.[210] Therefore, lawyers should not be swayed from using a third-party's AI technologies solely out of fear that they may violate their duty of confidentiality. Rather, lawyers should inquire about what safeguards the vendor has in place to protect against breaches and make an informed decision on that basis.[211] In most cases, lawyers will be happy to find that client confidentiality is a consideration that third-party vendors have already taken into account. For example, Everlaw's secure platform is one of the main reasons why all fifty attorney general offices and seventy-six of the Am Law 100 firms use the application.[212]

In addition to the duty to communicate and the duty of confidentiality, under Model Rules 5.1 and 5.3, lawyers have a duty "to supervise lawyers and nonlawyers who are assisting lawyers in the provision of legal services to ensure that their conduct complies with the Rules of Professional Conduct."[213] Before AI technologies entered the legal sector, this rule largely pertained to other human actors, such as paralegals or clerks, that typically assisted with legal work. But in 2012, the American Bar Association changed the title of Rule 5.3 from "Responsibilities Regarding Nonlawyer Assistants" to "Responsibilities Regarding Nonlawyer Assistance," clarifying that the rule encompasses more than human assistants.[214] While the change is indicative of a greater receptivity to AI technologies in the legal community, it raises

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[206] *See supra* note 130 and accompanying text.

[207] MODEL RULES OF PRO. CONDUCT r. 1.6 (AM. BAR ASS'N 2020).

[208] *Id.*

[209] Sean Semmler & Zeeve Rose, *Artificial Intelligence: Application Today and Implications Tomorrow*, 16 DUKE L. & TECH. REV. 85, 93–95 (2017) (discussing how hackers have generally become more sophisticated and why law firms are at risk).

[210] *Id.* at 93–94.

[211] Cerny et al., *supra* note 201, at 4.

[212] *See supra* Section III(A)(iii)(a).

[213] Cerny et al., *supra* note 201, at 4; *see also* Ed Walters, *The Model Rules of Autonomous Conduct: Ethical Responsibilities of Lawyers and Artificial Intelligence*, 35 GA. ST. U. L. REV. 1073, 1085–87 (2019) (discussing the duty of supervision).

[214] Cerny et al., *supra* note 201, at 4–5 (emphasis added).

some difficult concerns for the lawyers employing these technologies. According to Rules 5.1 and 5.3, lawyers with managerial authority must make "reasonable efforts" to ensure that other lawyers and nonlawyers assisting with legal work comply with ethical guidelines.[215] But what does "reasonable efforts" mean in the context of AI technologies? Does a lawyer need to understand the underlying processes of a document automator like PerfectNDA or Compose? What about an e-discovery tool like Everlaw or a chatbot created through Josef? Likely not. It would be unreasonable to expect a lawyer to inspect a software's code base.[216] Rather, a lawyer's role is to make sure that the AI technology produces accurate and complete work and does not violate other rules, such as the duty of confidentiality discussed above.[217]

Furthermore, Rule 5.5 prohibits lawyers from practicing law without authorization.[218] Read narrowly, this rule only applies to actual lawyers. Thus, chatbot applications like DoNotPay or Josef do not fall within its ambit. But "almost every state has a statute or regulation prohibiting someone who does not have a law degree from engaging in the practice of law."[219] What it means to "practice law" though remains unclear.[220] Most states "restrict activities such as representing clients in court, drafting paid legal documents, or signing opinion letters as the 'practice of law,'" but definitions vary greatly from state to state.[221] Thus, lawyers and companies alike should be cautious of the rules in each state where they operate their chatbots. Perhaps the reason why DoNotPay has had such great success in New York is New York law does not consider basic form-filling to be law practice.[222] Thus, unlicensed people (and computer programs) can assist consumers with filling basic forms,[223] such as parking ticket appeals.

All the ethical concerns outlined above must be balanced against the duty of competence governed by Model Rule 1.1. Under this rule, "[a] lawyer shall provide competent representation to a client," which "requires the legal knowledge, skill, thoroughness and preparation reasonably necessary for the representation."[224] And according to Comment 8, "[t]o

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[215] Model Rules of Pro. Conduct r. 5.1, 5.3 (Am. Bar Ass'n 2020).

[216] Walters, *supra* note 213, at 1087.

[217] Cerny et al., *supra* note 201, at 4–5.

[218] Model Rules of Pro. Conduct r. 5.5 (Am. Bar Ass'n 2020).

[219] Walters, *supra* note 213, at 1088.

[220] *Id.* at 1088–89 ("There is no universal standard for what constitutes 'the practice of law' in the United States. Instead, [unauthorized practice of law] rules are set by a patchwork quilt of regulations, state statutes, case law, bar ethics committee opinions, and attorney general opinions. Each state has its own standards and its own understanding of what constitutes unauthorized practice, and those standards are rarely well-defined.").

[221] *See id.*

[222] *See id.* at 1089–90.

[223] *See id.*

[224] Model Rules of Pro. Conduct r. 1.1 (Am. Bar Ass'n 2020).

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."[225] Thus, in some instances Comment 8 may require lawyers to employ a particular AI technology when delivering legal services. Moreover, according to Model Rule 1.5, a lawyer's fees must be reasonable.[226] So, if the failure to use a given technology, say AI-assisted discovery, makes a lawyer's fees unreasonable, that too may be an ethical violation. For these reasons, some scholars have argued that lawyers who fail to advance with technology could be committing malpractice.[227]

Ultimately, ethics regulations as they presently stand require lawyers to play a careful balancing act. As the industry continues to expand, litigation is bound to arise, which may cause the American Bar Association to address AI technologies more specifically.

B. Legal Employment and AI

In addition to raising ethical concerns, AI's significant advancement in the legal sector is causing lawyers to fear for their jobs. Scholars and commentators have suggested that AI technologies will soon displace many lawyers for good.[228] Although this may be true in the long term, in the short term, it seems unlikely.

With many of the tools above, the goal is not to replace lawyers, but rather, to make their lives easier. For instance, Kira Systems and ThoughtRiver might identify key provisions in a contract, but they cannot negotiate those terms with another party or communicate issues to a client. CARA might help a lawyer find a key case quicker than usual, but they cannot do so without input from the lawyer. Similarly, Compose may provide lawyers with a series of relevant arguments, but what arguments are selected for the brief is still a matter for the lawyer. Likewise, even though Lex Machina can provide a lawyer with crucial data regarding the likelihood of a case going to trial, the outcome ultimately depends on a multitude of factors, such as a case's merit or the lawyer's ability to craft creative arguments—not just historical data. Lastly, practice management tools like Smokeball simply save time, thus allowing lawyers to focus on the law and better serve their clients.

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[225] MODEL RULES OF PRO. CONDUCT, r. 1.1 cmt. 8 (AM. BAR ASS'N 2020) (emphasis added). Comment 8 was amended by the American Bar Association and has been adopted by 38 states since. *See* Brittainy Boessel, *Can AI Be Problematic in the Legal Sector*, KIRA SYS.: LEARNING HUB (Apr. 16, 2020), https://kirasystems.com/learn/can-ai-be-problematic-in-legal-sector.

[226] MODEL RULES OF PRO. CONDUCT, r. 1.5 (AM. BAR ASS'N 2020).

[227] *See* Agnieszka McPeak, *Disruptive Technology and the Ethical Lawyer*, 50 U. TOL. L. REV. 457, 472 (2019) (arguing that "whole-cloth rejection" of new technology can be an ethical violation); *see also* Miller & Witte, *supra* note 5, at 116.

[228] *See, e.g.*, John Markoff, *Armies of Expensive Lawyers, Replaced by Cheaper Software*, N.Y. TIMES (Mar. 4, 2011), https://www.nytimes.com/2011/03/05/science/05legal.html.

At present, the only tools that are actively displacing lawyers are AI-assisted discovery tools and chatbots. According to a study conducted by scholars Dana Remus and Frank Levy, of all the tools on the market, AI-assisted discovery tools have had the strongest impact on employment.[229] But even so, the impact is minimal when considered in light of the industry as a whole because it only affects junior associates in litigation departments.[230] In fact, before COVID-19 was a factor, the U.S. Department of Labor's Bureau of Labor Statistics, projected that legal employment would grow by nine percent from 2016 to 2026, "which is about as fast as average for all occupations."[231] More importantly, the impact on junior litigation associates may have been caused by factors partially distinct from the advancement of AI in the legal sector.[232] According to Remus and Levy:

> [C]lients have been pressuring law firms for over a decade to hold down litigation costs through outsourcing, offshoring, and using contract attorneys to perform document review. These pressures intensified following the 2008 financial collapse, when a shift in supply versus demand empowered clients to insist on cost-cutting measures, including outsourcing and the exclusion of junior associates from their matters. Thus, the task may already have been pushed out of the domain of firm lawyers work by 2012.[233]

Nevertheless, according to research conducted by the National Association of Law Placement, large firms (with more than 500 lawyers) hired about 370 more new associates in 2018 than in 2017.[234] Thus, the impact that AI-assisted discovery tools have had on employment—especially in large firms—should not be exaggerated.

Chatbots are also taking the place of lawyers, though not always in the traditional sense. Applications like DoNotPay offer services that consumers would not generally seek help from lawyers for, such as appealing parking tickets or enforcing contractual rights in airline tickets. Therefore, their impact on legal employment is minimal. Where chatbots become more disconcerting for the future of legal employment is with applications like Visabot. Visabot is replacing traditional immigration lawyers to help people apply for green cards at a modest $150 rate.[235] While Visabot is a stand-alone application, firms can build similar applications for their services through Josef. These technologies have only begun to scratch the surface with their capabilities, but it is difficult to deny that they will have an impact on legal employment—especially as their use becomes more widespread. This impact will become even greater as

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[229] Dana Remus & Frank Levy, *Can Robots Be Lawyers? Computers, Lawyers, and the Practice of Law*, 30 GEO. J. LEGAL ETHICS 501, 516–17, 533–34 (2017).

[230] *See id.* at 530–31.

[231] *4 Thing to Know About the 2019 Legal Job Market*, GQR (Jan. 3, 2019), https://www.gqrgm.com/2019-legal-job-market-4-things-to-know/.

[232] *See* Remus & Levy, *supra* note 229, at 530–31.

[233] *Id.*

[234] *4 Thing To Know About The 2019 Legal Job Market*, *supra* note 231.

[235] Johnson, *Visabot Helps*, *supra* note 162.

chatbots evolve from task-oriented models to data-driven and predictive models. This is indeed the direction that Josef is headed.[236]

All things considered, AI-assisted software programs are not replacing "armies of expensive lawyers" just yet—as some would suggest.[237] But while this concern is premature, it is not invalid. One can imagine a future where data-driven and predictive chatbots combine forces with the likes of a Kira or TrademarkNow and become so advanced that they no longer need to keep humans in the loop for certain tasks. That is when legal employment will truly be at risk.

V.   Access to Justice

Despite some of the concerns outlined above, our society should be celebrating the integration of AI tools in the legal industry because these tools create greater access to justice by bringing the cost of legal services down. They do this by making traditional lawyerly functions more efficient, inviting greater competition, and in some cases, altogether transforming how legal services are delivered.

If there is one theme that may be drawn from all the tools discussed in this Article, it is that they are making the delivery of legal services more efficient. By automating certain functions, AI technologies in the legal sector are reducing the number of hours that lawyers can bill for their services. This in turn brings the cost of legal services down.

AI technologies that assist in contract review illustrate this point well. With tools like Kira or ThoughtRiver, lawyers no longer have to spend hours reading through a contract and manually highlighting specific terms anymore. They can just upload that contract to one of these platforms, and the AI technology will identify key provisions for them—in a fraction of the time. This dramatically reduces the price of a basic contract review. As a result, the client can pocket the savings or opt for a more comprehensive review that previously seemed unaffordable.

AI technologies in the legal world are also eliminating economic barriers to justice by increasing competition among the companies offering them. In the past ten years, the legal tech industry has transformed from one dominated by two firms—namely, Lexis and Westlaw—to one that is flourishing with various startups offering AI-assisted technologies.[238] These startups are fundamentally shifting the years-long power imbalance that existed between law firms and legal techcompanies. It is a basic economic principle that increased competition in a given sector will bring down the cost of services offered within that sector. The legal tech market is no exception. The reduced costs of these services make them accessible to more law firms. And because these

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[236] Josef has begun tagging and systematizing all of the data it collects in order to build chatbots that are more akin to digital assistants in the future. *See* Kliavin et al., *supra* note 185.

[237] Markoff, *supra* note 228, at 1.

[238] *See supra* Part III and accompanying text.

technologies reduce costs for the client through efficiency, the firms that adopt them will be able to offer better rates—further driving down the costs for the client through competition.

In addition to efficiency and greater competition, the AI revolution in legal tech is lowering the cost of legal services by altogether transforming the way legal services are delivered. This is most apparent in the case of chatbots. For instance, Visabot helps immigrants apply for green cards for $150 without ever having to see an immigration lawyer. The emergence and continued progress of such companies also increase competition and ultimately drive down costs for the consumer. Now, law firms not only have to adjust their rates against other law firms but also companies that offer similar legal services.

Conclusion

The AI revolution in legal technology has already caused a titanic shift in how legal services are being delivered. Presently, AI legal tools fall into six major categories: (1) due diligence, (2) legal analytics, (3) document drafting, (4) intellectual property, (5) legal advice, and (6) practice management. Trends suggest that this list of categories will likely continue to expand. It will be interesting to see how AI legal technologies continue to shape the practice of law, and what other areas of the law AI technologies will impact in the future.