Hype vs. Reality: Is everything AI now? (Live #COLPM)

AI in Action in Legal Today

Intro: AI in the News Today (DoNotPay): Chris Boyd kicks off with some real world examples of AI in legal. He cites a WSJ squibb from today that describes Joshua Browder's DoNotPay app, started to fight parking tickets in London. Browder is trying to make the law free for everyone. Browder has expanded the chat service to airline issues, telemarketers, and other issues.

Due Diligence (Chris Boyd): In an acquisition, lawyers need to review many contracts. Wrangling the contracts, assigning them for review, and report on them is time consuming. Today, Kira and competing products make this process much easier. WSGR is a Kira customer. Chris cites a 20 hours savings (from 30 to 10) to review 1000 contracts in a due diligence review. To find change-of-control clauses, Kira can reduce hours from 40 to 10. To find variations from standard templates, Kira drops time from 17 to 2 hours.

Substantive Legal Advice (Michael Mills): Littler uses Neota Logic to deliver labor advice over the web through Compliance HR, a joint venture between Littler and Neota.

Contract Process in a Law Department (Andy Daws): A seasoned legal operations function with mature processes, tool, team, and playbook sought a way to apply AAI to streamline contracting projects. Using KIM, they were able to focus on "configuration, not coding". The system automatically triages contracts, routing them for appropriate action or to appropriate person. Options includes self-service on one end or a very senior lawyer on the other end.

AI in Other Markets (Michael Mills)

Dermatology: deep neural networks identify skin cancer / suspicious lesions. The machine input was 130,000 images classified by four very experienced dermatologist. This system now works with a smartphone system and works better then human doctors.

Language Translation: Google not long ago moved from a rules-based approach to translation to one based on machine learning. This markedly improved its translations. Cites Google Pixel ear buds that does simultaneous voice translation

Games: AlphaGo wins at Go, the most complex game.

Implications… All of the above is about **inference.** Machines find patterns, at least where there is some pattern to find in a large enough dataset, then the software can draw inference on new data. Most AI systems assign a confidence rating to each inference it makes. Ideally, the system can explain why it reaches its conclusions. But this remains the holy grail of AI.

Short Overview of How AI Works

One is logical. Others are statistical…. The statistical approach is driven by very heavy-duty, opaque, can complex math. Statistical inference can be based on unsupervised learning: the system groups (clusters) the data without human intervention. Or supervised learning: an external source, typically human, identify inputs by category (cancerous or not, responsive or not). Algorithms, with enough inputs, can mimic human decision making. Or reinforcement learning: self-train with rewards over time. Example: a system that was wired to an Atari game and reinforced winning strategies.

AI – More

Branches and Products: AI is not one thing. There are many products, many algorithms, and many approaches. Michael Mills shows a great diagram. (RF: uploading media to my blog temporarily broken ????) There are many options along the major branches: expertise automation, legal research, contract analytics, e-discovery, and analytics + prediction.

Access to Justice: Multiple products help with A2J.

Computing Power: The power of AI computing is rapidly rising, especially with specialized chipsets and the rise of cloud computing.

Susskind: Lawyers face "A future of increasingly capable machines"

Implications of AI for the Legal Ecosystem

Chris Boyd on Big Law Perspective: Large firms should embrace AI to deliver more value to current clients and to serve under- or un-served markets. Chris to focus on former. Market is stagnant (citing 2016 Altman Weil survey). Same survey found that firms with stronger financial performance used more technologies (not AI specific). So, how can firms use AI to deliver more value? WSGR focuses on the ACC Value Challenge, which drives lower costs, better outcomes, and higher predictability. One example is using Lex Machina to predict outcomes in IP matters. Use AI tools to match up past cases with financials to make predicting cost faster and easier.

Andy Daws on NewLaw Perspective: AI is both a threat and opportunity for legal service providers. Alternative business models and process reengineering is not enough… continued tech investment necessary.

Michael Mills on Client Perspective: GCs read what we read, they attend conferences we attend. They are experimenting with AI (eg, contract analytics, data analytics for outside counsel management, and self-help for their internal business clients). They are asking their law firms questions. GCs want to learn from firms that are on the leading edge of using AI, tech, and better ways of working.

AI and the Billable Hour

Michael: If lawyers fear a Neota Logic system, they cannot be all that smart. The systems are not that smart. [RF: Many others have said similar things – AI is not that sophisticated yet.]

Boyd: Market is so competitive, we have to find ways to reduce fees. More and more, WSGR is charging fixed fees (or having to treat estimates as such).

ARTICLE: ARTIFICIAL INTELLIGENCE: APPLICATION TODAY AND IMPLICATIONS TOMORROW

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Highlight

ABSTRACT

This paper analyzes the applications of artificial intelligence to the legal industry, specifically in the fields of legal research and contract drafting. First, it will look at the implications of artificial intelligence (A.I.) for the current practice of law. Second, it will delve into the future implications of A.I. on law firms and the possible regulatory challenges that come with A.I. The proliferation of A.I. in the legal sphere will give laymen (clients) access to the information and services traditionally provided exclusively by attorneys. With an increase in access to these services will come a change in the role that lawyers must play. A.I. is a tool that will increase access to cheaper and more efficient services, but non-lawyers lack the training to analyze and understand information it puts out. The role of lawyers will change to fill this role, namely utilizing these tools to create a better work product with greater efficiency for their clients.

Text

[*85] INTRODUCTION

On multiple occasions, Steve Jobs described his vision for the personal computer in society as "a bicycle for our minds." [1] Humans are inefficient when it comes to moving from one place to the next, meaning that humans require more calories than many other animals to move the same amount of weight. [2] However, with a bicycle, people can move more efficiently than any other animal. [3] Steve Jobs understood that the potential **[*86]** of personal computing could have similar implications for the efficacy of the human mind. It is useful to frame computers, and the artificial intelligence (A.I.) discussed further in this paper, in this context because both are tools to be used and managed by humans. As artificial intelligence looms over the practice of law, it is important to dispel the notion that artificially-intelligent machines will replace humans. The promise of A.I. in the legal industry should be reframed as developing a better bicycle for the legal mind.

This issue brief has three parts. First, it will give a general overview of A.I. Second, it will illustrate the legal applications of A.I. by looking at three legal tech companies using A.I. to perform legal research, draft documents, and perform due diligence and review. Third, it will discuss the impacts these technologies may have on the future practice of law.

I. ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Artificial intelligence is the process of simulating human intelligence through machine processes. [4] Science fiction loves to show artificially-intelligent machines, often in the form of robots that can perform traditionally human tasks better and more efficiently than humans ever could. [5] These extremely complex (and fictional) machines think like people and have the ability to reason generally, incorporating a type of artificial intelligence called general A.I. [6] Conversely, narrow A.I. systems are those which are designed to execute specific tasks. [7] Machines built on narrow A.I. perform a single function, like attaching the front bumper on a car in the assembly line, and will never rival the cognitive depth of a human being. [8] These two approaches to A.I. rely on machine learning. [9]

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[1] Carlton Reid, *How the Bicycle Beats Evolution*, BIKEBOOM.COM (Mar. 14, 2017), http://www.bikeboom.info/efficiency/.

[2] *Id.*

[3] *Id.*

[4] *See generally* Michael Copeland, *Difference Between Artificial Intelligence, Machine Learning, and Deep Learning*, NVIDIA (July 29, 2016), https://blogs.nvidia.com/blog/2016/07/29/whats-difference-artificial-intelligence-machine-learning-deep-learning-ai/.

[5] Adam Hadhazy, *Science Fiction or Fact*, LIVESCIENCE (Apr. 25, 2012, 12:46 PM), https://www.livescience.com/19895-artificial-intelligence-machines.html.

[6] Kris Hammond, *What is Artificial Intelligence*?, COMPUTERWORLD (Apr. 10, 2015, 4:05 AM), https://www.computerworld.com/article/2906336/emergingtechnology/what-is-artificial-intelligence.html.

[7] *Id.*

[8] *Id.*

[9] Copeland, *supra* note 4.

Machine learning is the process of teaching a program to learn from user-fed data to respond to completely new data, whereas traditionally an engineer merely programed a specific set of instructions for every possible **[*87]** data point. [10] Machine learning is so revolutionary because programs using this process learn how to give the proper outputs--that is, correctly accomplish their tasks--with limited or no instruction as to how they should accomplish the specific task. [11] These programs use iteration, a process of repetitively feeding data into an algorithm, to improve their outputs. [12] Over time, these programs can make their own judgments based on previous data from similar, but not identical, tasks.

One of the most relevant applications of machine learning is natural language processing. [13] What makes natural language processing unique from standard machine learning is how the program interprets commands. [14] Rather than breaking a set of commands into a string of symbols or computer code, systems that use natural language processing are trained to interpret and understand questions presented in plain English, or any other language, by analyzing the words, sentence structure, syntax, and patterns of human communications. Thus, when a system using natural language processing system analyzes text, it learns to process the text without first having to break it down into a series of codes, which gives it practical applications such as summarizing text, analyzing emotional undertones, and recognizing patterns. [15]

II. CURRENTLY LEGAL A.I. TECHNOLOGIES

In this section, we discuss three legal tech companies and their respective approaches to incorporating A.I. in the legal sphere. The first company, ROSS Intelligence, uses natural language processing to perform legal research and memo drafting. The next company, LawGeex, a recently funded start-up, uses machine learning for contract drafting. The final company, Beagle, uses A.I. to review and organize contracts. [16]

A. ROSS Intelligence

ROSS Intelligence's software is a tool powered by natural language processing and the company's own proprietary system, Legal Cortex, where the user can pose full sentences (as questions) to the system, and the system **[*88]** performs legal research based on its understanding of that question. [17] Additionally, the system will draft legal memorandums on that research (and deliver it by email), if the

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[10] *Id.*

[11] *See id.*

[12] Nick McCrea, *An Introduction to Machine Learning Theory and Its Applications*, TOPTAL, https://www.toptal.com/machine-learning/machine-learning-theory-an-introductory-primer (last visited Sept. 19, 2017).

[13] Matt Kiser, *Introduction to Natural Language Processing*, ALGORITHMIA (Aug. 11, 2016), http://blog.algorithmia.com/introduction-natural-language-processing-nlp/.

[14] *Id.*

[15] *See id.*

[16] DELOITTE, ARTIFICIAL INTELLIGENCE INNOVATION REPORT 24 (2016).

[17] *Bryan Cave Signs Up to ROSS Intelligence*, LEGALIT INSIDER (Dec. 6, 2016, 5:38 AM), https://www.legaltechnology.com/latest-news/bryan-cave-signs-up-to-ross-intelligence-and-launches-techx/.

user enters, "'[w]rite me a memo' in front of a search question." [18] The user can give ROSS' tool feedback at any stage, telling it how useful its results were, so that it can improve itself for future searches. [19] Currently, the tool can only be used for bankruptcy, intellectual property, and labor and employment research. However, ROSS is "considering applications for tax, . . . securities law, [and] family law." [20]

B. LawGeex

LawGeex provides a contract review and management tool primarily targeted at in-house practitioners. The tool relies on natural language processing to read contracts, summarize them, and make suggestions for possible edits. As of March 2017, LawGeex has raised a Series A round of $ 7 million, bringing their total funding to $ 9.5 million. [21]

To use LawGeex, a user first uploads contracts into the platform. Once on the platform, multiple users can access these contracts from different firms and locations, making it easier for in-house attorneys to collaborate with outside counsel. The program identifies uncommon or problematic clauses, as well as missing clauses which are usually included in typical contracts. [22] LawGeex claims that their A.I. tool allows attorneys to save roughly eighty percent (80%) of the time it normally takes to review and approve documents by using natural language processing to edit and summarize contracts. [23]

[*89] *C. Beagle*

Unlike ROSS Intelligence and LawGeex, Beagle is an A.I. tool for contract review that is primarily targeted at non-lawyers. Beagle is designed for users who need to review and manage contracts, but lack the expertise to do it themselves or the money to hire an attorney. First, users upload their contracts to the platform. [24] Then, the natural language processing system identifies key clauses for review. [25] This is done by identifying which clauses are used most often (for the type of contract at hand) and analyzing how this contract deviates from the norm. [26] It also has a built-in communication system where users

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[18] Susan Beck, *Inside ROSS: What Artificial Intelligence Means for Your Firm*, LAW.COM (Sept. 28, 2016), http://www.law.com/sites/almstaff/2016/09/28/inside-ross-what-artificial-intelligence-means-for-your-firm/.

[19] *Id.*

[20] Beck, *supra* note 18

[21] *A.I. Platform LawGeex Raises $ 7 Million in Funding Round*, PRNEWS WIRE (Mar. 7, 2017), http://www.prnewswire.com/news-releases/legal-saas-ai-platform-lawgeex-raises-7-million-in-funding-round-615570484.html.

[22] Zach Abramowitz, *Lawgeex Free Contract Review Could Be a Gamechanger*, ABOVE THE LAW (Apr. 21, 2016, 3:44 PM), http://abovethelaw.com/2016/04/lawgeex-free-contract-review-could-be-a-gamechanger/?rf=1.

[23] LAWGEEX, HTTPS://WWW.LAWGEEX.COM/FEATURES/#AI, (LAST VISITED APR. 17, 2017).

[24] BEAGLE, HTTP://BEAGLE.AI/, (LAST VISITED APR. 17, 2017).

[25] *Id.*

[26] *Id.*

can interact with each other and discuss their documents. [27] In addition to the system's ability to learn from the individuals who use the tool, the system is able to learn the personal preferences of different users, and incorporate those preferences in future documents. [28]

III. FUTURE IMPLICATIONS OF ARTIFICIAL INTELLIGENCE IN THE LAW OFFICE

We now look to A.I. and its potential impact on the future of the legal practice. In this section, we analyze the effect disruptive technologies will have on law firms, as well as possible regulatory issues they may pose in the future.

The traditional big firm model relies on the pyramid workforce model, where associates are hired in droves to work 2,300 hours a year. Most of the work of associates is geared towards research and due diligence. Emerging legal tech companies allow these associates to use "machine learning capabilities to identify legal authorities relevant to particular questions." [29]

One of the main problems with legal tech tools is that there is little data at this stage in the development of legal tech to support the assertion that such tools are more effective than the traditional pyramid approach utilized by most big firms today. Therefore, it is important to demonstrate that legal tech companies: 1) have information retrieval quality that is better than that of Boolean or Natural Language searches; 2) are intuitive to use, requiring little to no formal training; and 3) will drastically cut the hours **[*90]** firms need to dedicate to research, freeing associates up for other activities. [30]

A. Possible Consequences

What does this mean for the future of the legal practice and artificial intelligence? The hierarchy of law firms is subject to serious overhaul in the near future. Firms will no longer need to hire fifty (50) associates to sift through contracts and conduct legal research. ROSS will maximize the efficiency of each research project, forcing firms to either cut down on hiring associates, or more likely, put their associates to better use. With legal grunt work becoming automated, associates will be free to engage in more substantive work at earlier stages in their careers. While this could mean that certain positions, such as paralegals, may become obsolete, it does not mean that all lawyers will become obsolete. It simply means that the role of lawyers is changing.

There is the real possibility that the Big Law model will disappear in the near future. A.I. will create universal access to services that previously could only be accomplished by teams of highly educated attorneys. With the advent of more efficient research tools, and contracts that draft themselves, smaller firms can compete with larger firms. This could force larger firms to restructure their business model, mainly because it is not feasible to charge clients exorbitant prices if they can go down the street to a smaller firm to get the same services for a lesser price. The over-the-top fees that larger firms charge by having thirty (30) associates conduct legal research all night may soon be behind us.

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[27] *Id.*

[28] *Id.*

[29] David Houlihan, *Ross Intelligence: Artificial Intelligence in Legal Research*, BLUE HILL RESEARCH (Jan. 2017), *http://bluehillresearch.com/ross-intelligence-and-artificial-intelligence-in-legal-research/*.

[30] *See generally id.*

The flip side of this is the possibility that big firms, with their resources and profit margins, are well situated to gain access to this ***disruptive technology*** at an earlier stage than smaller firms. Subscriptions to legal A.I. applications may be expensive (early on), and if big firms can buy this technology, become familiar with it now, and use it to attract new clients while retaining their old clientele, then by the time smaller firms get access to the same technology, it may be too late. Legal tech companies that wish to create more universal access to legal technology should be careful to ensure that their technology is not used to entrench larger firms in positions of power (even more than they already are).

Similarly, client expectations could change. As touched on above, clients will no longer be willing to pay six-figure bills for legal research. Currently, it is common for clients to demand that associate work not be included in their bill. Clients are beginning to expect more value for their money. This is due, in part, to an increase in the number of tech-savvy **[*91]** clients (e.g. entrepreneurs from Silicon Valley). This emerging clientele does not accept that the old way of doing things is simply better, and have begun to question the traditional methods of legal work. With these changing client expectations, firms must lower their prices and adapt, or lose huge amounts of business. Alternative-fee systems may become more popular, especially for simple form contracts and everyday documents.

IV. REGULATORY ISSUES OF ARTIFICIAL INTELLIGENCE

A. Misplaced Fear

The fear that emerging legal technologies will replace lawyers is fueled by a misunderstanding of what A.I. is at its core Using ROSS Intelligence as an example, A.I. is a (research) tool. Like all tools, it requires not only an operator, but one who knows how to best use the tool for its intended purpose. Legal technology research tools ultimately require a human to monitor them, to tell them what to search, and to sift through that research to make sure that all of the relevant information is there. This is the type of work that requires intelligent, savvy lawyers.

There is a growing concern amongst recent law school graduates that as A.I. increases efficiency in areas traditionally performed by teams of junior associates, firms will hire fewer recent graduates. However, in the future, there will likely be an increase in the demand for associates who know how to use these technologies to meet the changing demands of clients (discussed below). These associates, though fewer in number, will find that the time they do not spend doing research and due diligence can be spent of more substantive work traditionally reserved for senior associates and partners. Furthermore, it is also likely that while fewer associates will be needed to perform the tasks historically reserved for newer attorneys (e.g. due diligence), A.I. will create new roles (which we cannot yet envision) for those who it displaces to assume.

While it is true that some attorneys will lose their jobs to this emerging legal technology, it is also true that in a profession of intelligent professionals, those that lose their jobs to these new tools will not be those with the least practical experience, or those with lower test scores coming out of school, but those who refuse to recognize that change is happening, and adapt.

B. Near-Future Implications

How do you tell a partner who has been making three million dollars a year for the last twenty (20) years that his business model is no longer profitable? Clients are starting to demand fixed fees for work that was traditionally billed by the hour. Many clients are also stipulating that **[*92]** they will not pay for any work that junior associates do on their account, because they do not want to foot the bill for young

lawyers to gain experience. [31] Firms can either adapt to these new demands, embracing technology that will make their associates more efficient, or they can lose clients to more progressive competitors.

Thanks to new companies like ROSS Intelligence and Beagle, and the availability of such programs through the internet, smaller firms are now in a rare position to compete with the more storied "big firms" for clients. Every lawyer is capable of completing for more work in less time with a program like ROSS Intelligence. This technology is a boon for the smaller firms trying to provide services equal to those of larger firms, and threatens the billable-hour-pyramid structure of traditional big firms. Partners worry that as more efficient technology diminishes their billable hours, it must similarly diminish their profit margins.

Here are what big firms are missing. With the advent of new legal technology, like LawGeex and ROSS Intelligence, it is true that an individual task may take less time. However, a firm could make the same amount of money, if not more, by negotiating for an associate to complete multiple employment agreements in an hour, at a fixed fee rate, using LawGeex, rather than having that same associate to spend that same hour on a single contract, using the billable hour structure, without LawGeex. Firms have the potential to increase their output and allow their associates to gain more substantive experience early on (now that the drudgery of traditional grunt work can be taken care of more efficiently), both at the same time. Clinging to the traditional billable hours structure, and ignoring client demands based on the available output that legal tech provides, could shift business towards more technologically progressive firms.

The billable hour structure is outdated, based on a system that is no longer relevant in a rapidly evolving world. If law firms do not want to be left behind, they need to embrace change and the technology that brings it.

V. ETHICAL ISSUES OF LAWYERS AND TECH

Another impact of A.I. and legal tech on the practice of law will be the ethical issues it creates for practitioners. First, this section will look at some of the Model Rules and their attempt to clarify the ethical issues these emerging technologies will pose. Second, this section will look at hackers and ransomware, and the steps lawyers should take to protect client information. Finally, we will look at metadata as an example of how **[*93]** lawyers are increasingly required to possess a minimum level of technological sophistication.

A. Model Rule 1.1

The American Bar Association's (ABA's) House of Delegates amended Comment 8 to Model Rule 1.1 to say:

> To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, including the benefits and risks associated with relevant technology, engage in continuing study and education and comply with all continuing legal education requirements to which the lawyer is subject. [32]

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[31] Staci Zaretsky, *Trendspotting? Major U.K. Client Refuses To Pay Junior Biglaw Attorneys*, ABOVE THE LAW (May 22, 2017), *https://abovethelaw.com/2017/03/trendspotting-major-u-k-client-refuses-to-pay-junior-biglaw-attorneys/*.

[32] MODEL RULES OF PROF'L CONDUCT r. 1.1 cmt. n.8 (AM. BAR ASS'N 2016).

As of September 2017, twenty-eight states had adopted the duty of technology competence into law.[33] So how do lawyers meet this new requirement to stay abreast of ever-expanding technology in the practice of law, and what types of issues are most pertinent here?

Confidentiality is a key aspect of the attorney-client relationship. It is the bedrock of trust between an attorney and his client: the client's belief that an attorney can safeguard the information to which he is entrusted is crucial for the reputation of any lawyer. However, dangers lurk in every email; there are hackers, ransomware attacks, and metadata leaks, to name a few. We will address the three listed here, and their implications for a lawyer's ethical duties towards his client.

B. Hackers

Hackers are becoming more sophisticated in the technology they use, as well as the information they seek. Hackers will steal information in search of everything from bank accounts to email addresses to private legal notes summarizing a lawyer's impressions about the strength of a given case. Hackers then sell this information to the highest bidder, potentially a competitor of the firm, or the client. Lawyers cannot possibly be expected to have the technical skills to combat hackers, but that does not excuse them from taking basic steps to combat these types of intrusions.

Installing a strong firewall is a great start. There are numerous sites that help generate passwords, as well as a plethora of storage options that allow people to safely put all of their passwords in one secure place (also **[*94]** password protected, of course). There are extensions that can be downloaded to ensure that you only log on to secure sites on the internet. Ad blockers can be downloaded, and lawyers can adjust their settings to make sure that they do not leave cookies, which give hackers valuable information with which to impersonate others. Using a cloud-based storage system that does not allow the company to store or share your client's data is also a great idea.

C. Ransomware

Ransomware is a relatively new phenomenon where, in the case of a law firm, a hacker might send an associate an email, with a return address of a partner (or other higher-up at the firm), requesting that the associate email the partner sensitive information about a case. The associate, always eager to make a good impression on the partner, writes up a memo containing the sensitive information and replies to the email. Little does the associate know that this email was not actually sent by a partner. Rather, it was carefully constructed by a hacker to mimic the appearance of an email sent by a member of the firm, and now that lawyer and his client are in deep trouble.

The hacker could either take the information and sell it to the highest bidder or ransom the firm for the information to be returned. If the ransom is not paid, then the hacker releases the information, or sells it to a competitor. More commonly, however, the email contains a computer virus, and once the associate opens the email, the hacker is able to take over the firm's entire computer network. From there, the hacker freezes all the computers at the firm, and holds the firm hostage until it pays a ransom.

So how might a lawyer proceed? What are his ethical obligations? Every firm should have a plan in place. They should have insurance to cover any losses, a plan for contacting their clients to let them know that there has been a breach, and an agreement among management as to whether the firm's policy will be to pay off such hackers. Does the firm want to run the risk of inviting future attacks by paying the money, or

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[33] Robert Ambrogi, *28 States Have Adopted Ethical Duty of Technology Competence*, LAW SITES BLOG (last updated Sept. 5, 2017), https://www.lawsites blog.com/2015/03/11-states-have-adopted-ethical-duty-of-technology-competence.html.

does it forgo the client's information in the hopes that, by refusing to pay, they will be less of a target in the future? More interestingly, the argument could be made that lawyers, who have a fiduciary duty to their clients, may be obligated to pay the ransom based on the sensitivity of the information stolen. Each lawyer is under an obligation to be aware that these types of threats are out there, and to prepare for them as best as they can in advance.

D. Metadata

Metadata is data that describes other data; for instance, the author, date drafted, date modified and file size of a word document are all **[*95]** instances of metadata. [34] Whenever you create a Microsoft Word document, for instance, every edit you make, every spelling correction and every sentence you delete are recorded as metadata. It is possible for someone to see the tracked changes, after you have accepted all changes, and figure out how you edited your document. This is extremely relevant in the legal sphere. Imagine a prosecutor and defense attorney emailing word documents back and forth during discovery. How useful would it be to be able to look beyond the final product that the opposing counsel emailed you, and be able to look at all the edits that give insight into their thought process about the case?

Here, as with all advances in technology, attorneys have an obligation to educate themselves about these potential landmines, or be sued for a breach of ethics by their clients. There are ways to scrub the metadata from a word document. Additionally, an easy fix could be to just send your finished product in PDF format.

E. A.I. Will Rule These Fields

Each of these examples--hacking, ransomware and metadata--could easily incorporate some form of A.I. in the next few years. Some companies, like Lex Machina, are already using A.I. to apply metadata to the legal sphere. [35] No matter the issue, whether it be hackers in another country, or metadata on your personal computer, lawyers have an ethical obligation to know of these risks, and to prepare for them as best as they can. This includes keeping abreast of technology (e.g. A.I.) that could be critical components of everyday legal practice.

VI. REGULATORY ISSUES OF ARTIFICIAL INTELLIGENCE

Perhaps the more interesting question to analyze is what regulatory problems these disruptive technologies will pose. Take ROSS for instance: imagine that ROSS has evolved to the point, much further into the future, where you simply tell the search tool what you want, it compiles a list of sources, and then writes the issue brief for you to present to the judge. The problem is, the issue brief states something which you know, from the facts of the case, is false. Surely, we are not going to sanction a piece of machinery, a glorified search bar. However, we need to regulate and hold someone accountable for these machines' mistakes.

One way to look at this issue is through the lens of product liability. Perhaps legal tech software could be likened to a defective car, in which **[*96]** case the manufacturer, here the team of engineers that built the software, would be liable for any mistakes, rather than the user (the attorney). One counter-argument to this way of analyzing the program would be that legal tech is far more accurate than even the best

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[34] *Definition: Metadata*, WHATIS.COM, http://whatis.techtarget.com/definition/metadata (last visited Mar. 16, 2017).

[35] LEX MACHINA, HTTPS://LEXMACHINA.COM/WHAT-WE-DO/HOW-IT-WORKS/ (LAST VISITED SEPT. 19, 2017).

attorneys left to their own devices, so how could we justify holding the engineers accountable for making fewer mistakes than its predecessors (really smart attorneys)? Conversely, even though humans have traditionally made far more mistakes than machines, they have always held lawyers liable for their errors, so why should the same not be true for the engineers of these research tools?

Another way to analyze mistakes made by legal tech tools is to hold the user responsible. The argument could be made that the tool is not the problem; rather, user error could be the problem, in which case said lawyer, and not the engineers, would be liable for any mistakes. This is certainly the more palatable option for emerging legal technology engineers, but because legislation is not forthcoming on the subject of emerging legal technology, it is unclear who is liable at the moment for these types of mistakes.

The legislature's inability to create timely regulations for these types of companies is dangerous. Emerging companies can have a hard time developing a business model if they do not know what is, and is not, legal. Often, legislation is passed in reaction to a high profile case, where something has gone terribly wrong and now the courts, and the public, question what types of boundaries should be placed on whichever piece of new technology is currently the focus of public scrutiny. A better solution would be to develop regulations in advance, so that emerging companies can structure their business plans around these regulations, and so that courts will not have to navigate the first few cases involving these emerging technologies without any guidance.

Eventually, we will face a dilemma where we must decide whether to hold an artificially intelligent tool accountable for its own actions. There will come a point, many believe, when a general A.I. machine will make the transition into a sentient entity. When that happens, and if we are able to determine that it has happened, does that entity now become subject to the same rules and regulations as other attorneys? Remember, this entity has not gone to law school, or taken the bar exam. We will have to decide whether to create different requirements on when, and to what extent, these types of entities can participate in professions like the law.

How could these sentient, artificially intelligent beings be regulated? You cannot throw a computer in jail. Even if you did, twenty (20) years in jail is hardly a deterrent to a being that can live forever. It is unclear whether there would be an effective way to punish an artificially intelligent being. Without a means of punishment, there is no way to regulate artificially intelligent behavior and to ensure that it would follow **[*97]** the ethical guidelines to which all other attorneys are subject (or even broader, the rules by which our society operates). We cannot control sentient machines if we cannot create real consequences for undesirable actions.

ROSS Intelligence and LawGeex both learn from your past decisions, training themselves to be both smarter and faster, and to make improvements based on your preferences at a more efficient rate. So, if the A.I. makes a mistake using your preferences, are you vicariously liable (because it was acting as you would have and under your "instructions") or does the liability stay with the machine? Essentially, the machine becomes an extension of your preferences and abilities, narrowing its focus to accommodate your specific tendencies. Your tendencies could cause the tool to intentionally commit an error (to comply with your preferences) on a particular assignment. It could be argued that the A.I. tool is not the same product as the tool you bought once it has integrated itself to your preferences, but what is that threshold? Without any real rules governing these types of situations, it's anyone's guess who (or what) would be liable in this scenario. We cannot wait until the lawsuits are filed to decide how to adjudicate these matters.

Suppose you sue an artificially-intelligent lawyer, a program that exists only on the internet. What jurisdiction do you sue in? The program is disseminated over the entire internet. It is everywhere and nowhere all at once. Any given court may not have jurisdictional rights to adjudicate a case like that. You

also have to consider the possibility that the artificially-intelligent lawyer being used in San Francisco may be different from the same program being used in a New York firm, due to different preferences it has adapted to, et cetera. Therefore, you could make the argument that the program is a different entity on every computer, or you could similarly make the argument that it is all one large system.

More importantly, there may not be anything for you to recover if you win. After all, the program does not have a bank account. However, you could sue the company that made the program, arguing that it is vicariously liable for its "employee." The fact is, in the absence of regulation, companies, attorneys and the courts themselves are working without a (regulatory) net.

VII. EXTENDED METAPHOR

Consider Kodak cameras. At one time, Kodak was to cameras what big city, top tier firms are to legal field right now. Kodak was so successful that, even with the advent of new camera technology (the digital camera), it felt that its superior reputation and client base would allow it to remain "analog" and that it would not have to use this new technology in its **[*98]** cameras. Fast forward to today: Kodak is a company that has been bankrupt for years.

Kodak refused to embrace new technology, and companies like Nikon, who embraced digital technology, were able to take its place. Top tier firms should heed this lesson. No company or business, no matter how successful, is so successful that it is impervious to the effects of change. A business must either adapt or die. Those firms that continue to bill by the hour, that insist on using five associates to perform contract diligence, and that continue to shun new technology will find themselves on the wrong end of a Chapter 11 filing. Smaller firms are already using technology to narrow the gap and attract clients who previously could not afford legal services or who larger firms would not represent. Now, with tools like LawGeex and Beagle, smaller firms may start to provide the same services, in the same amount of time (or less) as larger firms. Larger firms should take heed and prepare. The future is coming.

CONCLUSION

Law firms cannot afford to pretend that the rest of the world will stop developing so that they can cling to a way of life that no longer exists. Sixty-year-old partners, sitting in leather chairs and smoking cigars while their associates bill 2,300 hours per year is no longer a sustainable business model. While this may matter very little to the partners who are trying to ride out the clock to retirement, for associates and junior partners who hope to run the firm someday, the idea that the firm could go under for failing to keep up with emerging legal technology trends should be a startling thought.

There is no reason to be afraid of these tools. Legal technology is a tool meant to help attorneys become more efficient and serve a wider range of clients on a broader range of issues. If anything, legal technology will allow lawyers to perform more work, with less effort, for more money. The only lawyers with anything to fear are those who refuse to embrace change.

It is possible that as well as becoming more efficient, the role of a lawyer could change over the next several years. More and more, clients have access to the same information as their attorneys. The continuing problem is that most laypeople have not been trained to analyze this information and dissect the relevant parts. Lawyers still have relevant skills, but they must be willing to adapt.

The current and future applications of legal technology will likely disrupt legal services in ways that are difficult to predict. Furthermore, if we are going to be able to regulate these emerging technologies, we need to start thinking about these issues right now. A.I. has the potential to break into almost every

aspect of the legal practice. To be prepared, and to best **[*99]** serve the public, we need to start educating ourselves about the possible future applications of A.I. to the law.

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