

The Jackson Lewis Corporate Counsel Conference

THE FUTURE OF WORK

How Emerging Technologies, including Artificial Intelligence, are Transforming the Legal Profession

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Emerging technologies are expected to have a significant impact on the legal profession, both in terms of new electronic devices containing discoverable information as well as the increased use of artificial intelligence to perform tasks typically performed by attorneys. While there are some who predict that lawyers may be the next profession to be replaced by artificial intelligence, the more likely outcome is that, in the near term, artificial intelligence will only have a significant impact on those routine tasks performed by attorneys that can be standardized or that fit within a defined structure of rules. Conversely, the rise of artificial intelligence will have less of an impact on those attorneys who operate in an unstructured environment where there is a high degree of human interaction and where the ability to recognize non-verbal cues and to think creatively is paramount. This paper first will address how emerging technologies are creating new sources of electronically stored information and how that impacts e-discovery. Second, this paper will address the impact that emerging technologies, in particular machine learning and artificial intelligence, are expected to have on the role of attorneys and other legal professionals.

I. INCREASED SOURCES OF ELECTRONICALLY STORED INFORMATION

As businesses continue to drive the adoption of instant messaging and internal social media tools to increase collaboration and knowledge sharing, the amount of data responsive to discovery requests will also increase. However, while chat and other forms of messaging tools (such as Slack and Microsoft Teams) are gaining popularity inside the corporate enterprise, the vast majority of corporate litigation is still dominated by the review and production of e-mails, presentations, spreadsheets, and other traditional document types. Though current e-discovery software is capable of preserving, sorting and, to an extent, analyzing communications such as e-mails, text messages and even social media websites, the review and production of emerging data types still is a largely unsolved problem with the exception of one-off solutions that often are created on a case-by-case basis.

While the review problems of the early 2000s were defined by the shift to “native” review of traditional file types (e.g., e-mail messages, word processing documents, spreadsheets, etc.), the next several years will be defined by the review problems posed by these new forms of communication. The shift from “paper” discovery to “native” discovery was largely a replacement of one format for another; however, this new problem will be cumulative, as these new data types are in addition to the traditional file types. These emerging data formats also create an ongoing challenge as the different applications continue to proliferate (including, for example, Slack, Microsoft Teams, Bloomberg Chat, Google Hangouts, HipChat, Trello, and others), requiring parties and e-discovery companies to commit greater resources to analyze each new application and data type and determine how best to locate/extract relevant data.

Also, as the level of automation and mobile communications increases, standard devices such as a car, desk lamp or even a coffee maker will become interconnected and be able to “communicate” through the Internet – a phenomenon known as the “Internet of things” (IoT). As a result of this interconnectivity, these devices may possess important discoverable information. For example, a lamp at an employee’s work station may be interconnected to his mobile phone, and programmed to automatically turn on when he is at his workstation and turn off when he leaves. The log of the communications between two devices may be relevant evidence in a wage-hour litigation (where, for example, there are allegations of off-the-clock work) or discrimination lawsuits (where, for example, the employer’s legitimate reason for terminating the employee is that the employee spent substantial

time away from his work station during business hours to take personal calls on his cell phone). Attorneys and the specialized legal service providers they partner with will need to become better equipped in extracting, preserving and searching these new types of data.

As artificial intelligence and machine learning continues to evolve at a frenetic pace, technology will also continue to offer new opportunities for parties to reduce the cost of e-discovery and make better predictions about the speed, cost and scope of e-discovery on future matters.

II. IMPACT OF ARTIFICIAL INTELLIGENCE ON THE PRACTICE OF LAW

In addition to the impact that emerging technologies are having on the discovery process in litigation matters, a potentially larger issue is the impact that emerging technologies are having on the legal profession as a whole. Given the recent advancements in computer technology and artificial intelligence, and the extent to which computers and automation are replacing jobs typically performed by humans, a recurring question is whether computers one day will replace lawyers. While no one can predict the future, it appears that certain legal professionals are more at risk than others. Below we will explore the categories of attorneys which may be at risk of being replaced by a computer and those which may be less likely to be replaced by a computer.

Attorney Tasks at Risk of Being Replaced or Impacted by Technology

Attorneys and paralegals that perform labor intensive and repetitive tasks – the so-called “drudge” work – arguably are the most at risk for their work to be replaced to some extent by technology. These tasks include low-level document review as well as certain types of due diligence and the drafting of formulaic legal documents. Similarly, albeit to a lesser extent, attorneys responsible for performing legal research will see an impact on their roles as legal technologies continue to advance.

Document Review

One area where we already have seen a tremendous impact is in the area of document review and the use of “predictive coding” software to find relevant documents for production in discovery. While robots have not yet supplanted legal minds, algorithms have entered the legal landscape and are utilized by attorneys to navigate voluminous document reviews to reduce costs and drive efficiency.

Predictive coding is a form of artificial intelligence that uses algorithms (*i.e.*, machine learning), as opposed to key word searches alone, to cull through mountains of data and identify documents that are likely to be relevant in a given matter. This technology has been shown to lower the cost of document reviews, while at the same time achieving better results than traditional search methods.¹ Predictive coding, however, cannot work in a vacuum. Rather, the success of the predictive coding process is dependent on how well the attorney “trains” the program to identify relevant documents. Without consistent training by attorneys well-versed in the factual and legal issues in the case, the technology will not “learn” how to properly make coding assessments or suggestions.

¹ See, e.g., Maura R. Grossman & Gordon V. Cormack, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review*, RICH. J.L. & TECH., Spring 2011, at 48, available at <http://jolt.richmond.edu/v17i3/article11.pdf>.

Although the specific process for using predictive coding can vary from vendor to vendor, most predictive coding workflows start with counsel identifying an initial set of relevant documents known as the “seed set.” The program applies its algorithms to the “seed set” to then rank all of the documents in the data set based on each document’s predicted relevancy score (*i.e.*, a numerical rating between 0% and 99.9%). Counsel will then review a certain number of documents and either agree or disagree with the computer’s ranking of the document. Once this review is completed by counsel, another training session will be initiated and the computer will analyze the feedback provided by the attorney and learn where it correctly predicted the relevancy of a document and where it did not. The computer will then re-score and re-rank all of the documents in the database based on its updated understanding of the case. This review and re-learning process will continue until the system has sufficiently “learned” the issues in the case and all relevant documents (or a reasonable and proportionate number of relevant documents) have been identified.

In a typical case, during the first few rounds of training, counsel may only review those documents with a relevancy score of 99% and above, or 95% and above. The purpose is to focus on those documents the computer predicts are the most relevant. In later rounds, the computer will stop finding new documents with high relevancy scores and, at that point, counsel will start reviewing documents with lower relevancy scores (*e.g.*, 80% and higher, then 70% and higher, etc.). Sometimes, a discrete category of relevant documents will be found at these lower thresholds and then, following the next round of training, several new documents will appear with scores of 90% or higher. This is an example of how the computer learns about the case and elevates documents it previously did not consider relevant.

While different software vendors have different workflows for the predictive coding process, there are several benefits to the workflow described above. One benefit is that by reviewing the most relevant documents first, it will reveal material information about a case much earlier in the review process, and thus, enable the legal team to spend more time with relevant information and make key strategic decisions concerning the litigation. Another benefit of utilizing the prioritization method is that it is much easier to halt the review process “mid-stream” if the cost of the review exceeds expectations. Because the software is designed to continuously identify and elevate the most relevant documents, in the event a party wishes to halt the review process before the training has been fully completed, there is a greater likelihood that the most relevant documents were already identified and moved to the top of the list for review. The same is not true for the results of a key word search where the results are not sorted based on likely relevance.

Due Diligence and Legal Drafting

Attorneys who participate in portions of due diligence projects or draft legal documents may also see some of their work replaced by technology. For example, due diligence may involve investigating a particular client or entity to learn all of the factual or legal issues which may be relevant to a transaction. The work involves locating a wide range of data (*e.g.*, vendor contracts, software licenses, leases, etc.) as well as analyzing that data for unanticipated information. To assist attorneys, Apogee Legal has developed software that “crawls” a company’s network to identify these types of documents, or specific clauses within the documents, which are necessary for a due

diligence review.² Historically, these types of tasks were performed by junior associates and paralegals.

Similarly, the drafting of common legal documents, such as wills, trusts, deeds, etc., is well-suited for automation through the use of computer software. While the role of the attorney is not likely to be completely replaced, the time it takes to prepare these types of documents should significantly be reduced. Kira Systems, KM Standards, RAVN Systems and Seal Software all offer software products designed to facilitate the contracting and legal drafting process.³ For example, Kira Systems offers software that pulls analogous provisions from different contracts and then compares the competing provisions as well as highlights differing contract strategies.⁴ RAVN Systems offers a similar product which can analyze large amounts of data from legal contracts and then extract specific data points from those contracts for analysis.⁵

Legal Research and Data Analysis

In recent years, software companies such as Ravel Law and Lex Machina have collected and analyzed massive amounts of data on judges and their decisions to predict the outcomes on future decisions.⁶ This software is not expected to replace attorneys, but it will assist attorneys in evaluating the risks and costs associated with litigation matters and preparing the overall litigation strategy.

Similarly, as it relates to legal research, Ross Intelligence created a platform using IBM's Watson technology to respond to legal questions posed in plain English.⁷ In response to the question, ROSS will scour legislation, case law, and secondary sources to identify relevant legal authority. ROSS also is developing a feature of the software which will prepare a two-page legal memoranda in response to questions posed by users.

In one novel use of data analysis to fit a particular legal need, a 19-year old software coder developed a parking ticket application that advises individuals on whether or not to challenge a parking ticket. The automated "chatbot" program asks users a series of questions to determine if a ticket can be appealed, including whether there were clearly visible parking signs, to then give the user advice on whether or not to contest the ticket.⁸ The application, which is available for free online, is estimated to have successfully appealed between \$3 million and \$4 million worth of tickets.⁹

² See Dana Remus & Frank Levy, *Can Robots Be Lawyers? Computers, Lawyers, and the Practice of Law* (Nov. 27, 2011), at 21, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2701092.

³ See *id.* at 16-18; <https://www.seal-software.com/>.

⁴ Remus & Levy, *supra* note 2 at 17.

⁵ *Id.*

⁶ *Id.* at 30.

⁷ Julie Sobowale, *How Artificial Intelligence is Transforming the Legal Profession*, ABA Journal (April 1, 2016), available at http://www.abajournal.com/magazine/article/how_artificial_intelligence_is_transforming_the_legal_profession?utm_source=internal&utm_medium=navigation&utm_campaign=most_read.

⁸ Karen Turner, *Meet 'Ross,' the Newly Hired Legal Robot*, THE WASHINGTON POST (May 16, 2016), available at https://www.washingtonpost.com/news/innovations/wp/2016/05/16/meet-ross-the-newly-hired-legal-robot/?utm_term=.2b1329134370.

⁹ See *id.*; Eric Kroh, *Legal Technology: Robots The Latest Threat To Associates and the Billable Hour via Law 360*, LexisNexis, posted July 25, 2016, available at https://www.lextalk.com/b/lextalk_blog/archive/2016/07/25/legal-technology-robots-the-latest-threat-to-associates-and-the-billable-hour-via-law360.aspx.

Attorney Tasks Not Likely to be Replaced or Highly Impacted by Anticipated Advances in Technology

On the other end of the spectrum, there are certain tasks performed by attorneys which likely will see little impact from the development of artificial intelligence. In broad strokes, these activities center around advising clients and communicating/interacting with others.

With respect to advising clients, although computers have made great progress in identifying relevant legal authorities and predicting outcomes in certain situations, the providing of legal advice to a client still requires an analysis of many other complex and nuanced variables. These variables may include the client's short-term and long-term interests, risk tolerance, public relations implications, etc. Similarly, witness interviews, court appearances, depositions and negotiations are not likely to be relegated to computers in the foreseeable future.

Finally, some theorize that advances in computer technology and artificial intelligence will lower the cost of legal services and, as a result, make legal representation possible for individuals who previously could not afford the services of an attorney. If correct, this may cause the demand for attorneys to increase, and not decrease.

III. CONCLUSION

Emerging technologies certainly will have an impact on the legal profession as the amount of data responsive to discovery requests will continue to increase while more and more legal tasks become automated. However, many of these technologies are unlikely to result in the wholesale replacement of attorneys by computers, at least not in the foreseeable future. While it seems true that the demand for certain types of attorneys likely will decrease, many of these technologies are only able to complete a discrete task or a discrete portion of a legal project. Attorneys still will be required to deliver the final product. In addition, as the efficiencies created by these technologies are likely to reduce the cost of some legal services, there is the potential for an increase in the demand for legal services as more people are able to afford legal representation.