LEVERAGING LEGAL TECHNOLOGY AND LEGAL ARTIFICIAL INTELLIGENCE
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When you hear the term "artificial intelligence," what comes to mind? Perhaps you imagine something you've seen in a Sci-Fi movie or something you've read about. Maybe you're already familiar with the technologies now performing tasks that were once the exclusive domain of humans.

As we examine the concept, we will define it this way: Artificial Intelligence (AI) is a computer that learns to perform intelligent tasks. That is, AI allows more "human-like" thinking where the computer is able to "learn" as it goes.

AI intelligence is encroaching ever more rapidly into the legal sphere. Most commonly, it is used to assist in conducting large discovery projects cheaper and faster. But it can also be used to predict the outcome of Supreme Court decisions with startling accuracy[1] and mine "Big data" to perform analytics that can inform legal strategy.[2]

With its myriad of possible impacts, it is no wonder that many in the legal industry are sometimes concerned about the impact of AI on their profession. However, in a world where AI is ubiquitous and developing quickly, it is necessary to understand what AI is, and why lawyers should stop fearing it and consider embracing it.

More Than One Kind of Smart

We break AI into four categories: Machine learning, natural language processing, vision and speech.

- *Machine learning* describes a system that can take data points, process them to improve performance of a specific task, and then loop that process to continue doing the task while continuously improving.

- *Natural language processing* is when a computer can understand human language. The computer can interpret what a human actually means — deciphering intent and therefore providing more accurate and relevant answers and search results.

- *Vision* is the computer having the ability to interpret images, identify them and describe them, which is a task humans perform automatically.

- *Speech* is a system like Siri that can speak and interpret oral language, so you can have a back-and-forth interaction.

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[1] *See* Matthew Hutson, *Artificial intelligence prevails at predicting Supreme Court decisions*, Science (May 2, 2017), http://www.sciencemag.org/news/2017/05/artificial-intelligence-prevails-predicting-supreme-court-decisions
[2] *See* Jeff Pfeifer, *How Analytics Is Shaping the Current and Future Practice of Law*, Law Journal Newsletters (June, 2017), http://www.lawjournalnewsletters.com/sites/lawjournalnewsletters/2017/06/01/how-analytics-is-shaping-the-current-and-future-practice-of-law/?slreturn=20180128225115

AI and the Legal Sphere

There's much on the AI horizon for the legal profession, and there is much already in play. For example, ROSS Intelligence has used recent breakthroughs in AI, specifically in machine learning and natural language processing, to create an artificially intelligent attorney designed to help with legal research.

ROSS allows you to pose research questions like you're talking to another lawyer. You simply enter your query in plain language (rather than a complex search string) and it uses machine learning and natural language processing to understand the intent of the questions that were asked, identify the legal authorities relevant to the question and provide answers in context. It is intended to be a supplement to more traditional electronic legal research tools and assist its users in providing better legal research output more efficiently.

Natural language processing and machine learning can also assist with contract drafting and review; and there are inroads with the use of imaging to analyze legal documents and decipher different factors, which allows lawyers to do their jobs more efficiently.

What's exciting is that we're already seeing the ability of AI to help lawyers do more. That's the real promise of AI - it's about scaling human lawyer capability and capacity and allowing them to perform better than ever before.

How Does it Compare?

Although in its early stages of development and use, there is already research suggesting that the adoption of AI in the law – at least in relation to legal research – provides significant advantages.

In January 2017, Blue Hill Research prepared a Benchmark Report considering ROSS Intelligence and AI in legal research.[3] The study was conducted with a research panel of 16 legal researchers and compared the impact of traditional legal research tools, such as Boolean search[4] and Natural Language search[5], with use of the ROSS Intelligence AI-supported legal research platform to supplement these traditional tools.[6] There were three primary categories of comparison: (1) the quality of information retrieval in the search results produced by the observed use of Boolean search, Natural Language search, and the ROSS tool; (2) user feedback with respect to ease of use and confidence in the results retrieved among the use cases studied; and (3) the impact on the time required for users to complete research activities.[7]

The results strongly suggest a positive impact on users when incorporating ROSS in their legal research. There was a significant reduction in research time – a 30.3% reduction over Boolean

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[3] Blue Hill Research, *Benchmark Report: Ross Intelligence and Artificial Intelligence in Legal Research – Report Number: A0280* (January 2017 ("Blue Hill Report").

[4] This is a method of searching using keywords to identify documents containing particular words and Boolean connectors or operators that narrow results based on the relationships between the terms: *see* Blue Hill Report at p. 2.

[5] This is a method of searching where a query is entered in plain language and is parsed by the search algorithm to identify content addressing the same topic: *see* Blue Hill Report at p. 2.

[6] Blue Hill Report at 1. For the purposes of this comparison, the analysis is in the context of United States Bankruptcy law research, although ROSS Intelligence uses the same underlying technology for all research products.

[7] Blue Hill Report at p. 1.

searching alone and 22.3% reduction over natural language alone.[8] Perhaps more surprisingly, there was a significant increase in the quality of the information – when using ROSS there were 42.9% more relevant authorities retrieved, 30.3% more results constituted relevant authorities and there was an 86.9% Normalized Discounted Cumulative Gain.[9] Users of the tools also reported higher levels of satisfaction when performing their legal research using the ROSS tool, finding that the tool was easily usable and returned results that were concise and contained cases that were relevant to the legal question asked.[10] Users also reported feeling more confident in the end result when using ROSS to assist in their research, finding that it was easier to find all the cases required to give complete answers to the question posed, and that they were more confident that the tool returned all of the cases required to give a complete answer to the legal question.[11]

In circumstances where the average associate performs 743.6 hours of legal research, 26% of which is written off or unpaid by clients, the value of a tool that reduces these factors provides an opportunity to convert unbilled (or unbillable) time to billable time, generating the possibility of a potentially significant increase in revenue.[12] As part of its report, Blue Hill Research also studied the ultimate business value and return on investment (ROI) gained by using ROSS.[13] That report found an annual revenue increase of $8,466 to $13,067 per attorney.[14] This equated to a return on investment of 176.4% to 544.5%.[15]

Current Use of AI in the Legal Sphere – ROSS in Practice

ROSS has been adopted by a number of law firms in the US – from small firms to BigLaw heavyweights.

In bankruptcy cases, legal fees are frequently fixed fees and are based on contingency. This means not only that firms must win in order to be paid, but that client matters must be handled as

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[8] Blue Hill Report at p. 1.

[9] Blue Hill Report at p. 1. Normalized discounted cumulative gain is a standardized measure of the ranking of search results compared to an idealized ranking according to the relative value each result has to a user – that is, it is measure of the quality of search results, with a higher NDCG indicating that results returned were more relevant than a lower NDCG. *See* Blue Hill Report at p. 4.

[10] Blue Hill Report at p. 6.

[11] Blue Hill Report at p. 6.

[12] Blue Hill Report at p. 8.

[13] The Report acknowledged that "[t]*here are a number of ways in which research effectiveness can relate to firm profitability and revenue generation, depending on the business model of the firm and how the organization makes use of the time saved. Reduced research time can affect the number of billed hours that go unpaid by clients. It can also impact the firm's ability to effectively take on additional clients and matters or to ensure that contingency or other flat fee matters are accomplished at optimal costs to the firm. Organizations thus need to consider their own circumstances and business objectives when assessing the potential impact of an investment in a tool similar to the ROSS AI platform.*" However, as a general principle, the potential value of an investment can be determined by comparing the net gain that it provides with the cost of acquiring the investment. In this case, Blue Hill Research performed its analysis based on the assumption that a reduction in "written off time" – either time that is unbilled or not paid by the client – creates the opportunity to create new, billable time. *See* Blue Hill Report at p. 8.

[14] Based on a 25% conversion of unbillable time to billable time: *see* Blue Hill Report at p. 1. These figures were calculated using an hourly billing rate of $320, which is a conservative skew of billing rates for attorneys with one to three years of experience. *See* Blue Hill Report at p. 8.

[15] Blue Hill Report at p. 1.

efficiently as possible in order to maximize revenue. In particular, firms operating under this model cannot afford to spend excess time on legal research.

Adopters of ROSS have used the platform to research case law, find examples of damages received in similar cases and what judges are doing in particular jurisdictions, which they use not only in preparing for court, but in reaching settlement agreements. These firms not only report an increase in productivity and efficiency, but also an increase in client satisfaction with reports of a correlation between increased use of ROSS and increased recovery rates.

The Future of AI and Legal

While AI might seem an option in the distant future, we're already working with this technology daily. There are many areas of the law where AI can already be applied: contract review, legal research, drafting of legal documents, e-discovery and more.

We'll likely see more tasks where lawyers can be assisted by AI systems. Imagine having an AI assistant that allows you to become better at drafting and acts as a coach and guide enabling you to do more with legal research. It might also help with crafting and practicing oral arguments.

These systems can be developed and brought to market remarkably quickly. With ROSS, it was about 11 months from day one of development until it was commercially released. AI's ability to continue to learn from its users was a driving factor in the rapid development cycle.

There are many in the legal industry who may feel threatened by the advent of AI in their field – new associates may wonder whether there will be a place for them in the future, while traditional online legal database providers may be concerned about the impact of AI on their business models. Such concerns are understandable, but largely misplaced.

Associates should be encouraged by the fact that systems like ROSS can reduce the time that they spend conducting research, allowing them to focus their time on new cases and clients, and unravel more complex and novel issues. Law firms should be encouraged by their ability to increase efficiency, maximizing the capacity of their employees and providing more certainty around cost to their clients. At the same time, traditional legal database providers should be encouraged to rise to the challenge and innovate on their existing products.

Beyond the Machine

While the interest in AI focuses so much on what the machines can do, it's important to remember that it's what they can do for people that's exciting. It can improve efficiencies and drive down the high costs of legal services, which are now suffering from outdated processes, tools and fee models. The resulting efficiencies and costs can close the gap in access to justice; 80 percent of Americans who need a lawyer currently can't afford one.

AI also encourages innovation that makes legal materials more accessible to the public. For example, EVA (an AI platform recently launched by ROSS Intelligence) provides users with a variety of free services, from reviewing a brief before it's filed to check citations and assessing briefs received from opposing counsel to preparing context-specific case summaries. Providing those who cannot otherwise afford to pay for such legal assistance – from not-for-profits and

small corporations to students and professors – with cutting edge legal tools, helps bridge the gaps in access to justice.

Conclusion

A lot has transpired in the AI world in a short amount of time – cars drive themselves, you can have a conversation with your phone and voice and facial recognition capabilities of machines are staggering and ubiquitous. In an age of such rapid evolution, the future impact of these developments on the world generally – let alone the legal profession particularly – is impossible to predict.

However, one future prediction carries much certainty: Artificial intelligence will continue to learn and develop and become a commonly used tool in our efforts to improve legal services. This news has not been historically well received by the legal industry for a variety of reasons. But in circumstances where the current use of AI in law has proven to have direct benefits for both lawyers and their clients, it may be time to embrace the tools that AI has to offer.