Artificial intelligence
and the
"self-driving" lawyer

Better access to justice and lower claims?

We all look forward to the day when we can jump in a vehicle that will drive itself to our desired destination. And while self-driving vehicles have been in our imaginations for many decades, vehicles from Tesla and others with driving-assistance technology suggest fully autonomous self-driving cars will be a reality in the not too distant future. Machines are starting to talk to humans, just like we've seen in science fiction movies for decades.

The Industrial Revolution occurred when machines started doing the work of humans. We are at the start of a second Industrial Revolution, one that will see machines with artificial intelligence ("AI") start to think like humans. These smart machines will touch, and in some cases profoundly transform, many aspects of our daily lives at work, home, and play.

You are likely already using AI-based technology, and may not even realize you are doing so. AI is often invisible to the end user. Common and widely used devices using AI include Siri on your iPhone, the GPS in your car, your smart home devices and the autopilot on airplanes. The fraud detection on your credit card and online accounts is primarily done by AI, which also sends the email or text warning that your account has been compromised. Online customer support and the writing of news stories is also frequently done by AI.

Over the next two decades, smart machines will also transform the legal profession and the world of legal services. This transformation has already started. AI is helping lawyers do traditional legal tasks like legal research, ediscovery, document drafting and contract review more efficiently. eBay's online dispute resolution service currently settles millions of disputes a year without lawyer involvement. AI will also help with the creation of new ways for lawyers, non-lawyers and machines to provide legal services to clients. These new types of services have the potential to help with the access to justice problem by assisting unrepresented or under-represented people get the legal help they need. And as you will see, smart machines have the potential to help lawyers make fewer errors, and in some cases, they can do the same tasks lawyers would, with fewer errors.

What is artificial intelligence?

Artificial intelligence is a complex topic and there are many definitions of what constitutes AI. To paraphrase them, AI is involved when computers or other machines have the cognitive ability or "intelligence" to think like humans to learn and solve problems and complete tasks.

You will likely recognize that humans think at many different levels. There are also many different levels or types of AI. This likely plays a part in the lack of a consensus on the definition. And just as they do in the human brain, two or more types of AI will frequently work together. Here is a list of the types of AI that will play a part in transforming how legal services are provided in the coming few decades:

- Vision: the ability to interpret and recognize elements in a picture. At a basic level it will be the ability to recognize what is in the picture (e.g., a plane, a tree or a forest) and at a more advanced level it could mean describing what is in the picture or even using facial recognition to identify people in a picture.

- Expert systems: the ability to emulate the decision-making of a human expert. Automated document generation systems are a widely used example of an expert system.

- Speech: the ability to convert text to speech or speech to text. This can be at a very simple level – a text reader that simply reads aloud the text on a webpage – or at a more complex level, for example, Dragon Dictate voice recognition software which looks at the context of the words it is transcribing and will recognize the difference between to, two and too by looking at the rest of the words in the sentence.

- Natural language processing: the ability to actually understand and interpret what a human is saying. Siri® is probably the best known and most widely implemented example of this kind of AI.

- Machine learning: an AI system that can look at data points for a task or process, analyze them to look for how to better do the task or process, then implement the identified improvements, and repeat the process again. This learning can happen with or without the supervision of humans.

How smart machines think and do work

Notwithstanding the current interest in learning to code, most lawyers will not have spent a lot of time thinking about AI and how smart machines think. Many will probably assume that a computer should think like a human when tackling a legal issue or completing a law related task. For some types of AI this is the case, but other types of AI think on their own and in a manner that is nothing like how a human can or would think.

Most current automated document generation systems think like humans would to draft a document. They will ask the same series of questions a human would to gather the information required to create a personalized document with the relevant clauses. But thinking like a human can be much more complicated than it might seem. Depending on the nature of the problem, the thought required can be fairly simple or surprisingly complex. It might take only a dozen questions to get the information necessary to complete a simple nondisclosure agreement. In contrast, you would need a complex decision tree with multiple branches and hundreds of questions to complete a typical will, separation agreement or commercial lease. Someone with the required legal knowledge has to help with the creation of a decision tree that will ask all appropriate questions to properly create a document based on particular circumstances. Some of the AI services use a graphical interface that make it easy for a lawyer to create a decision tree. The system should be able to recognize when a client's circumstances are not addressed.

Document automation usage is widespread and growing. Many firms are using it to streamline their workflows. Millions of unrepresented people in the U.S. have received help drafting court documents through Law Help Interactive, a platform created with HotDocs, and A2J Author from Chicago-Kent Law School.

For other types of AI, the computer will think like a computer, not like a human. This is the world of big data where AI will look to find patterns in a huge collection of data. Technology aided review ("TAR") or predictive coding is already widely used for ediscovery work. ROSS, based on IBM's Watson®, uses natural language processing and machine learning to assist with legal research and regulatory compliance issues. Demonstrations indicate it is fairly rudimentary at this stage (it won't replace your articling student yet), but it will evolve and when it is commercially released it will have the ability to tackle complex legal problems. LexMachina™ uses a large dataset of intellectual property cases to predict IP litigation outcomes. ComplianceHR, a joint venture of Littler Mendelson and Neota Logic, offers a suite of applications that assist human resources professionals to evaluate independent contractor status, overtime exemption and other employment law issues.

And while there are more vendors offering services and products using AI in the U.S., there are some Canadian examples, too. Loom Analytics is an online legal analytics system that uses a combination of machine learning and legal analysis to classify Canadian case law for statistical analysis. It will allow you to see how a particular judge has ruled on specific motions or at trial, the kinds of cases

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that make it to court most frequently, the average decision turnaround time, and the average cost and damage awards broken down by case type. Beagle™, Clausehound® and Diligen are contract review tools. Legalswipe informs people of their rights during interactions with police.

AI benefits and dangers

By improving efficiencies of the daily tasks and processes that occur in law offices, AI can help with access to justice by bringing the cost of traditional legal services down, and by allowing more entrepreneurial firms to offer new types of services. AI will also help with the access to justice problem by enabling new types of legal services not currently provided by lawyers. Several of the new models of legal services predicted by Richard and Daniel Susskind in their book "The Future of the Professions" rely on AI, including online Q&A sites, self-help kiosk services and para-professionals supported by expert systems. See page 30 for a review of this book and more details on these models.

In the same way a checklist can ensure steps are not missed, an automated system that uses a decision tree to ask all the necessary questions will ask those questions every time – unlike a human – who might overlook a question or two on occasion. Studies[1] have shown that TAR is faster, cheaper and more accurate at finding relevant or privileged documents than humans doing the same review work.

But while high-volume automated systems have the benefit of creating far more documents on a cheaper basis for many more clients, they also have the potential to make the same error over and over again for all those clients. This type of scenario could result in a large and costly class action suit.

Hacking the human-technology interface

Failure to know or apply the law is the fourth most common cause of malpractice claims, representing only 13 per cent of LawPRO's claims between 2005 and 2015. With an appropriate level of attention, building legal smarts into an AI app or service should be fairly easy. In contrast, 31 per cent of LawPRO's claims over that same time period involve lawyer/client communication issues, and 17 per cent involve inadequate discovery or investigation (i.e., the lawyer didn't recognize or obtain all the relevant information to handle the client's matter).

These claims statistics suggest that the human/computer interface will be a challenge for AI-based legal services. Will the automated document generation system ask all the necessary questions to generate a document, or recognize it is dealing with a circumstance that is not contemplated? Will a client answering questions for an online Q&A site understand those questions and provide correct and relevant information? Will language, age or culture impact a client's ability to enter information into a self-help kiosk?

That is not to say that using a human/computer interface could not also have positive implications in some circumstances. A smartphone app could provide easier access to legal information or advice for someone that did not otherwise have easy access to a computer.

Some lawyers will be replaced by computers

To some, the notion that a computer program or smart phone app could replace a lawyer will seem far-fetched, or even impossible. But as this article highlights, smart machines are already doing legal tasks that were once the sole domain of lawyers, and they will take an even greater role in the provision of legal services. Lawyers and law firms must adapt and evolve. AI won't cause a sudden mass extinction of legal jobs, rather there will be incremental changes. The timing will vary for different areas of practice, and by the type of work done within those areas of practice. Ultimately, there will probably be fewer traditional legal jobs, but new types of legal jobs will be created. The need for better access to justice by the large proportion of the population that can't afford legal services will help drive wider adoption of AI-based legal services. ■

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[1] For example, Cormack & Grossman, Evaluation of Machine Learning Protocols (wlrk.com/webdocs/wlrknew/AttorneyPubs/WLRK.23339.14.pdf).