A.I. Is Doing Legal Work. But It Won't Replace Lawyers, Yet.

By Steve Lohr

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Impressive advances in artificial intelligence technology tailored for legal work have led some lawyers to worry that their profession may be Silicon Valley's next victim.

But recent research and even the people working on the software meant to automate legal work say the adoption of A.I. in law firms will be a slow, task-by-task process. In other words, like it or not, a robot is not about to replace your lawyer. At least, not anytime soon.

"There is this popular view that if you can automate one piece of the work, the rest of the job is toast," said Frank Levy, a labor economist at the Massachusetts Institute of Technology. "That's just not true, or only rarely the case."

An artificial intelligence technique called natural language processing has proved useful in scanning and predicting what documents will be relevant to a case, for example. Yet other lawyers' tasks, like advising clients, writing legal briefs, negotiating and appearing in court, seem beyond the reach of computerization, for a while.

"Where the technology is going to be in three to five years is the really interesting question," said Ben Allgrove, a partner at Baker McKenzie, a firm with 4,600 lawyers. "And the honest answer is we don't know."

Dana Remus, a professor at the University of North Carolina School of Law, and Mr. Levy studied the automation threat to the work of lawyers at large law firms. [Their paper](#) concluded that putting all new legal technology in place immediately would result in an estimated 13 percent decline in lawyers' hours.

A more realistic adoption rate would cut hours worked by lawyers by 2.5 percent annually over five years, the paper said. The research also suggests that basic document review has already been outsourced or automated at large law firms, with only 4 percent of lawyers' time now spent on that task.

Their gradualist conclusion is echoed in broader research on jobs and technology. In January, the [McKinsey Global Institute found](#) that while nearly half of all tasks could be automated with current technology, only 5 percent of jobs could be entirely automated. Applying its definition of current technology — widely available or at least being tested in a lab — McKinsey estimates that 23 percent of a lawyer's job can be automated.

Technology will unbundle aspects of legal work over the next decade or two rather than the next year or two, legal experts say. Highly paid lawyers will spend their time on work on the upper rungs of the legal task ladder. Other legal services will be performed by nonlawyers — the legal equivalent of nurse practitioners — or by technology.

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Corporate clients often are no longer willing to pay high hourly rates to law firms for junior lawyers to do routine work. Those tasks are already being automated and outsourced, both by the firms themselves and by outside suppliers like Axiom, Thomson Reuters, Elevate and the Big Four accounting firms.

So the law firm partner of the future will be the leader of a team, "and more than one of the players will be a machine," said Michael Mills, a lawyer and chief strategy officer of a legal technology start-up called Neota Logic.

Surprising Spread

The pace of technology improvement is notoriously unpredictable. For years, labor economists said routine work like a factory job could be reduced to a set of rules that could be computerized. They assumed that professionals, like lawyers, were safe because their work was wrapped in language.

But advances in artificial intelligence overturned that assumption. Technology unlocked the routine task of sifting through documents, looking for relevant passages.

So major law firms, sensing the long-term risk, are undertaking initiatives to understand the emerging technology and adapt and exploit it.

Dentons, a global law firm with more than 7,000 lawyers, established an innovation and venture arm, Nextlaw Labs, in 2015. Besides monitoring the latest technology, the unit has invested in seven legal technology start-ups.

"Our industry is being disrupted, and we should do some of that ourselves, not just be a victim of it," John Fernandez, chief innovation officer of Dentons, said.

Last month, Baker McKenzie set up an innovation committee of senior partners to track emerging legal technology and set strategy. Artificial intelligence has stirred great interest, but law firms today are using it mainly in "search-and-find type tasks" in electronic discovery, due diligence and contract review, Mr. Allgrove said.

More than 280 legal technology start-ups have raised $757 million since 2012, according to the research firm CB Insights.

At many of these start-ups, the progress is encouraging but measured, and each has typically focused on a specific area of law, like bankruptcy or patents, or on a certain legal task, like contract review. Their software learns over time, but only after it has been painstakingly trained by human experts.

Image

Mr. Yoon demonstrating software that aggregates data to help prepare court cases.Credit...Jason Henry for The New York Times

When Alexander Hudek, a computer scientist whose résumé includes heavyweight research like working on the human genome project, turned to automating the review of legal contracts in 2011, he figured that he would tweak standard algorithms and that it would be a four-month job.

Instead, it took two and a half years to refine the software so it could readily identify concepts such as noncompete contract clauses and change-of-control, said Mr. Hudek, chief technology officer of Kira Systems.

The Kira program sharply winnows the number of documents read by people, but human scrutiny is still required.

Yet the efficiency gains can be striking. Kira's clients report reducing the lawyer time required for contract review by 20 percent to 60 percent, said Noah Waisberg, chief executive of Kira.

In Miami, Luis Salazar, a partner in a five-lawyer firm, began using software from the start-up Ross Intelligence in November in his bankruptcy practice. Ask for the case most similar to the one you have and the Ross program, which taps some of IBM's Watson artificial intelligence technology, reads through thousands of cases and delivers a ranked list of the most relevant ones, Mr. Salazar said.

Skeptical at first, he tested Ross against himself. After 10 hours of searching online legal databases, he found a case whose facts nearly mirrored the one he was working on. Ross found that case almost instantly.

Mr. Salazar has been particularly impressed by a legal memo service that Ross is developing. Type in a legal question and Ross replies a day later with a few paragraphs summarizing the answer and a two-page explanatory memo.

The results, he said, are indistinguishable from a memo written by a lawyer. "That blew me away," Mr. Salazar said. "It's kind of scary. If it gets better, a lot of people could lose their jobs."

Not yet. The system is pretty good at identifying the gist of questions and cases, but Ross is not much of a writer, said Jimoh Ovbiagele, the chief technology officer of Ross. Humans take the rough draft that Ross produces and create the final memos, which is why it takes a day.

The start-up's engineers are trying to fully automate the memo-writing process, but Mr. Ovbiagele said, "We are a long way from there at this point."

The Good Old Days

James Yoon, a lawyer in Palo Alto, Calif., recalls 1999 as the peak of the old way of lawyering. A big patent case then, he said, might have needed the labor of three partners, five associates and four paralegals.

Today, a comparable case would take one partner, two associates and one paralegal.

Two obvious factors have led to that downsizing: tightened legal spending and digital technologies that automated some tasks, like document searches, said Mr. Yoon, a partner at Wilson Sonsini Goodrich & Rosati.

Mr. Yoon uses software tools like Lex Machina and Ravel Law to guide litigation strategy in his patent cases. These programs pore through court decisions and filing data to make profiles and predictions about judges and lawyers.

What are the chances a certain motion will be approved by a particular judge, based on all his or her past rulings? Does the opposing counsel go to trial often or usually settle cases?

Mr. Yoon compares what he does to the way baseball and football analysts assess the tendencies of players and coaches on other teams.

The clever software, he said, is "changing how decisions are made, and it's changing the profession."

But its impact on employment would seem to be far less than, say, electronic discovery. The data-driven analysis technology is assisting human work rather than replacing it. Indeed, the

work that consumes most of Mr. Yoon's time involves strategy, creativity, judgment and empathy — and those efforts cannot yet be automated.

Mr. Yoon, who is 49, stands as proof. In 1999, his billing rate was $400 an hour. Today, he bills at $1,100 an hour.

"For the time being, experience like mine is something people are willing to pay for," Mr. Yoon said. "What clients don't want to pay for is any routine work."

But, he added, "the trouble is that technology makes more and more work routine."

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