

Objections overruled

The case for disruptive technology
in the legal profession

Preface



They say tech changes everything. The digital revolution and the internet which is its medium has already turned almost every business on its head. Is the law an exception in this era of transformation and innovation? Some practitioners seem to think so. We disagree.

Technology has one thing in common with the law itself: it is impartial. For every opportunity it offers, there is a parallel threat. In this paper we outline some of the most important ways in which technology has already challenged the practice of law, and how it is likely to continue doing so in the foreseeable future.

For law professionals – and that includes not just the law firms themselves, but also the legal departments of banks, corporates and advisors – the convergence of information, communication and artificial intelligence technologies is arguably the biggest opportunity for renewal and modernisation in generations. But this technology wave also throws into question the practices and business models that have shaped the industry.

The story is one of disruption, and only those businesses that understand and harness the new technologies will survive to tell the tale. Big data and artificial

intelligence are already realities, but there are also new data-based technologies with deep legal implications that today are at the tipping point between proof of concept and real world application. Soon they will change not only the practice and the scope of the law but also the shape of law firms themselves. And when it comes to survival readiness in the law, there is still much work to do.



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Cloud computing provides **critical advantages** to lawyers but only **38%** currently use it.



Lawyers that specialise early in Blockchain will **capitalise** on the new areas of legal practice this will create.

Big data is making the process of discovery **more complex**, lawyers need to know what to ask for.



Artificial intelligence can highlight **pattern recognition** from big data and hence can offer **predictions of future behaviour**.

Changes in the business model as **114,000 legal jobs** likely to be **automated** in the next 20 years.



A changing profession



Technology has already changed the face of legal practice in ways that are obvious and visible.

The smartphone and the tablet are now ubiquitous. The use of legal library applications like iLegal, LawSauce and the US law Fastcase app has become commonplace, and evidence presentation tools like TrialPad and iAnnotate are beginning to appear in courtrooms. Many law firms have in-house digital strategists and are taking digital knowledge management more seriously. Conferences and online publications on legal technology have proliferated.

But visible changes can be deceptive. The adoption of mobile technology is only what the rest of the world has already done; putting your business online is no more than a default position for most industries. So far the law has tended to follow where others have led.

The real challenges for law practitioners lie in the way that the set of relevant data about the world has expanded exponentially – it has been calculated by IBM that 90% of all the world's stored data has been created in the last two years – creating new challenges and opportunities for analysis.¹ Data relevant to legal work is no longer the sole preserve of accredited professionals: the world's data is becoming increasingly accessible, searchable and analysable by anyone, anywhere in the world. And that means competition.

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1. IBM. Bringing Big Data to the Enterprise. Available at: <https://www-01.ibm.com/software/data/bigdata/what-is-big-data.html> 2

Behind the curve?



The law is a conservative profession. But is there hard evidence that lawyers are falling behind comparable professions in their absorption of new technologies?

In fact there is: take cloud computing, the use of remote storage, software and infrastructure to build better, faster and cheaper information management systems. As

long ago as 2014 the UK Law Society pointed out that cloud computing – where data, communication and artificial intelligence meet – offered extensive advantages for lawyers. This includes: reduced infrastructure and internal IT staff costs, greater data handling capacity, better disaster recovery and above all more flexibility. Yet recent data shows that lawyers are less likely to use cloud computing than other professions.

In the EU, 51% of all businesses rely on **cloud computing** applications for their higher level functions. For professional companies this rises to 60%.² The best recent data on the law profession's adoption of cloud computing comes from the US: the American Bar Association reported last year that only 38% of lawyers use cloud computing for law-related tasks, and that while uptake of the technology had grown over the previous three years, it had grown only slowly.³

Cloud computing is already ubiquitous in everyday life, through the use of file storage and sharing applications like Dropbox and Google Docs. But the technology goes much further than simple storage – it also allows collaborative data sharing between lawyers and other professionals, and perhaps most importantly a high level of communication with clients. These are critical advantages to lawyers.

Above all there is one application dependent on remote and distributed storage capabilities that has the potential to revolutionise many aspects of the law. This is **blockchain**, a data innovation that amounts to a self-verifying record of transactions between parties that requires no intermediaries and no institutional record keeper. Blockchain is best known as the technology underlying crypto-currencies like Bitcoin, but is also relevant to any industry that relies on verified transactions between parties such as financial services, real estate, pharmaceuticals and food production. The adoption of blockchain is likely to create a vast new area of legal practice, including data protection, dispute resolution, jurisdictional issues, and the regulatory implications of an intrinsically unregulated technology. Some lawyers are building a blockchain specialism, but they remain the exceptions. Before long an understanding of this technology will be the price of admission to the legal practice.

In our view these technologies require rapid changes in all industries. If the law as a profession has been slower than other industries to embrace technological change, that is likely to be because of the perception of risk attached to the data sharing that is an essential part of the big data world.

The law is not alone in seeing risk in shared, remote data. Risk of a security breach is the most important inhibitor for European professional companies that do not use cloud computing, according to the EU's Eurostat.⁴ But are these fears really justified when online risks are compared to the risks of conventional communication and data storage? Paper records are not encrypted, and are vulnerable to theft and loss. Virtually every significant case of corporate data loss on record has been either due to loss or theft of physical storage media (inadvertent compromise of passwords through phishing attacks is much rarer, and can be traced to inadequate awareness and training). Cloud based computing is arguably now the best protected data storage and sharing solution available.

The real risk that law professionals face is failure to recognise that their future will be increasingly technology-based. Just as in other industries, value increasingly resides in 'Big Data', and the ability to capture and analyse that data.

The adoption of blockchain is likely to create a vast new area of legal practice, including data protection, dispute resolution, jurisdictional issues, and the regulatory implications of an intrinsically unregulated technology.

2. Eurostat, 2016. V2 Degree of dependence on cloud computing, by economic activity, EU-28, (% of enterprises using the cloud)
3. <https://www.lawsitesblog.com/2016/11/fewer-four-10-lawyers-use-cloud-says-new-aba-tech-survey.html>
4. Eurostat, 2014. Factors preventing enterprises from using cloud services, highest factor by economic activity, EU-28, (% enterprises not using the cloud)

Big data is legal data



Consider how the field of data that lawyers must capture, understand and analyse has expanded.

This is visible in the way that the process of e-discovery of relevant data in disputes and litigation now extends far beyond the traditional set of paper records and electronic documents that mimic traditional records.

Lawyers may now have to find, search and analyse **multimedia data**, such as audio and visual records from trading floors, video from Skype and Facetime communications, and messages from any number of social media based messaging tools. Professional regulators are continually expanding the categories of such data that companies are required to capture and save – but interrogating these vast databases requires sophisticated search and analytical capabilities which are not part of the traditional legal skill set.

Data discovery can also cover **bespoke** forms of data. Many corporations maintain bespoke databases that could include anything from transaction data that do not appear in conventional banking records, to swipe codes and terminal log-ins that can be relevant to tracking individuals and actions. Knowing what these databases may contain and how that data may be case-relevant is not automatic; you have to know what to ask for.

These are all areas where we see indicators of technological change running ahead of legal practice. But the data set alone is merely a challenge of scale. The deeper challenge lies in the world of artificial intelligence, where value is extracted from big data.

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The rise of analytics



Most people and most professions tend to over-estimate the impact of technology on jobs – Deloitte research has shown that in the UK, automation has already created many more jobs than it has replaced.⁵

But at the same time the pace and scope of automation is often underestimated. Nowhere is this more true than in the increasing capability and sophistication of artificial intelligence applications in knowledge industries such as the law.

Big data is not an impersonal construct; it is the record of many acts of human behaviour, and lawyers need to understand the potential of **pattern recognition** within these records. The databases held by many corporations contain not only a record of past actions, but also patterns of activity that are predictive of future behaviour. Lawyers need to understand the ability of software analytics to cross-reference and flag up these indicators.

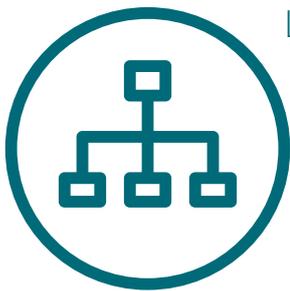
The **records of judicial proceedings** are also records of human decisions capable of objective analysis. The idea that artificial intelligence can outperform human intelligence in predicting legal outcomes still meets resistance, but the fundamental concept has already been established beyond doubt. When academics at Michigan State University and the South Texas College of Law recently created an algorithm to predict historical Supreme Court verdicts using only data available before the decisions, the programme predicted over 69% of decisions correctly (higher than expert panel prediction rates).⁶

The field of predictive legal technology is often called 'computational law'. The **success potential** of individual participants in large scale cases such as a class action is also easier to predict using computational technologies than by legal intuition and guesswork: scoring potential class action litigants and matching those scores against case law is already possible. Artificial intelligence can also be used to estimate the success potential of cases as well as individuals. A parallel large-scale application of data analytics is in screening populations or businesses who may be affected by policy-driven infrastructure projects, or commercial developments.

5. Deloitte, 2015. From brawn to brains

6. Katz, DM et al, 2014. Predicting the Behavior of the Supreme Court of the United States: A General Approach

The business model also changes

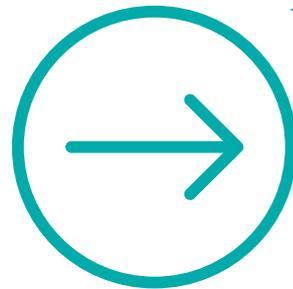


Lawyers can learn from the way that information, communication technology and artificial intelligence have changed other businesses.

In many cases the effect has been to re-shape the business model by changing where in the business value lies. Activities that may have routinely be carried out in-house are frequently outsourced: this is already happening in legal research, and e-discovery. Knowledge silos within firms tend to be broken down, as information technology improves access to knowledge: what is in a database tends to circulate much better than what is in a filing cabinet.

The result is that the law firm of the future will have a different shape. The legal 'pyramid' that has a handful of senior partners at the top and an army of junior lawyers doing repetitive search and verification work at the bottom will be replaced by a leaner workforce. Recent Deloitte research on the impact of technology on all industries forecast that around 114,000 legal jobs are likely to be automated in the next 20 years, most of them junior jobs, with many more at high risk of elimination through technology.⁷ One effect is that the firm of the future will be searching a smaller talent pool to find their most senior staff, and will have to draw talent from a wider range of disciplines including technology development and data analysis.

Way to go



The potential for technology to up-end the established legal order is clear. Technology reduces cost, and human-centred legal costs have spiralled upwards in recent years.

A recent report from the Centre for Policy Studies⁸ shows that hourly rates at leading law firms in the UK have risen by a factor of almost ten over the last two decades – eye-watering fees that machines do not charge. If software can read contract terms and discover anomalies at a better rate of accuracy than trained lawyers, if blockchain technology can authenticate contract compliance and trigger payments without human intervention, then eventually clients will no longer pay human rates for better quality machine outcomes. The evidence is already in: large corporations have already moved to fixed fee legal contracts while drastically reducing the number of legal firms they employ. The demise of the 'billable hour' is in sight.



7. Deloitte. 2016. Developing legal talent, Stepping into the future law firm

8. Centre for Policy Studies, 2016. The Price of Law

And in the end

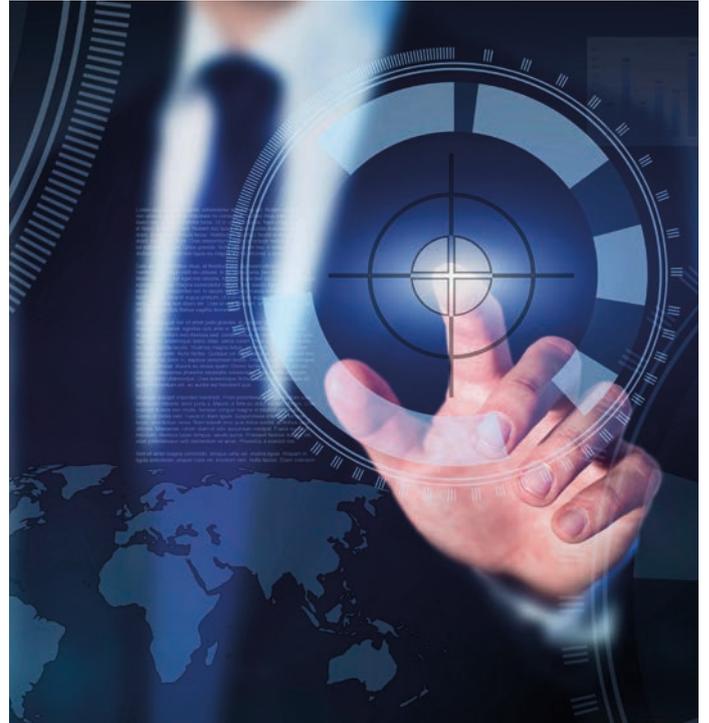


In our view many legal firms do not yet grasp the full implications of this technology revolution.

One reason for that may be that these implications have been over-sold in the past: the promise of convergence of technologies has often disappointed. But just as the long-heralded convergence of computing and communication did finally deliver, the convergence of data and artificial intelligence is also past the tipping point.

Another reason for complacency is that since the financial crisis of the previous decade we have passed through a period of increasing regulation and cross-border complexity. Cash-rich companies have played it safe when it comes to managing this burden of rules. High cost legal services have been the least of their worries. But every era ends; eroding margins together with increasingly credible and potent legal technologies may combine to push legal costs back up the agenda. Corporate legal teams that buy legal services are increasingly mature, and increasingly sensitive to costs.

Technologies that can and will reshape the law are here, now. They offer huge opportunities for efficiencies and for insight, as well as generating new areas of legal activity and expertise. It will also create new competitors, alternatives to old established modes of operation, and create new risks to security and reputation. The second phase of change will run much deeper than the first, and it has already begun.



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