Summary

The time has come to shift our perception of digital technology and what it means for law firms and in-house departments in the legal sector. Technology is no longer just an enabler, a means of getting things done faster, recording and accessing information in the business and contacting clients out-of-hours or across the globe. The way firms choose to work with digital technology will be a major source of competitive advantage.

As recent events have shown, technology can simply be about continuing to do business at all. Changed circumstances in 2020 have meant many lawyers and judges had to learn to adapt within hours to messaging services like Signal, Zoom, Slack and Google Hangouts just to keep in touch. This cultural shift creates an unknown future where it’s highly likely that the way firms deliver their services will be determined by clients, their needs and demands rather than existing, historic practices.

The Covid-19 lockdown has changed business as we know it and created conditions unprecedented for many as we navigate how to work remotely while retaining the data security measures and meeting clients’ changing and immediate needs. These times are unfamiliar and unsettling, but this will not always be the case. Lockdown will end – though social distancing measures may linger longer-term. The legal profession has faced challenges to change – largely involving technology and new ways of working – for well over a decade now. The current pandemic has accelerated decisions for many executives and seen teams forced to work in new and agile ways. The pandemic will pass but the imperative towards being tech-skilled and ready for the next global crisis will remain. Never has there been a more urgent time to embrace what technology and digital futures might mean – for good or ill – for the legal sector.

‘Most corporate technology tends to disappoint the user’ say industry experts, (PWC/issues/megatrends/technological breakthroughs 2020), so what should firms consider when discussing planning, training, capital and revenue investment, design and development to meet the needs of clients?

At present technology is still enhancing processes rather than proving ‘disruptive’. How will the legal sector look, feel and function when a start-up enters the market that does what Uber has done for taxis; what Airbnb has done for hotel bookings; what Apple Pay has done for banks, and what Amazon has done to nearly everyone?

Inextricably linked with the discussions over which technologies to use in the next 30 years is the identification of what data those technologies will provide and how firms should use it. Better understanding of data will lead to better business practice as well as better client service.

So, the question arises, how might firms choose to harness technology to ensure clients see them as credible, competent and at the very least in line with what they will expect from the legal sector in the next 30 years?
To date, a number of factors have been cited as barriers to the successful adoption of technology in the environment within which we collectively operate. Those factors include:

- Existing culture – both within firms and, wider, within their relationships with clients
- Hierarchical structures of decision-making and deciding what is ‘right’ are often based on old thinking
- Fear of failure – driven by lack of understanding and concern over what could prove to be expensive mistakes (see [https://www.tsb.co.uk/news-releases/slaughter-and-may/](https://www.tsb.co.uk/news-releases/slaughter-and-may/))
- Fear of lack of security
- Business as usual models, valuing hours worked rather than outcomes achieved
- Human characteristics including pride, lack of willingness to learn and resistance to change
- Lack of resonance with the ‘Millennial Mindset’ of those whose digital native values will drive client needs in the future

**So what might happen when technology, and the way it generates and uses data, takes over from humans as the drivers of business evolution?**

This one simple question generates thousands of others. If we have to work hard to visualise how data and digital technologies will change in terms of design and effect in the next 30 years, it’s almost impossible to anticipate their impact on our sector.

**What will evidence look like?**

**Who will prevent, govern and regulate ethical, moral and personal bias in the design of these systems and the data they collect?**

**What happens when regulation and legislation is retrospective, playing catch-up with technological advances, rather than based on precedent?**

**With changes in global power structures, with the US increasingly self-isolating from the rest of the world, what do legal systems look like if based on broader principles than historic Western ideologies?**

There is currently wide variation in firms’ adoption and harnessing of digital technologies, usually dependent on and illustrative of senior management’s ability to embrace change and forward focus.

At this time of immense change many are already creating new visions of their businesses once law, finance, procurement and technology become bedfellows as the multi-disciplinary drivers. The ability to integrate systems and design thinking to generate meaningful cross-functional data that delivers returns across the business will be vital.

**The progress of technology is challenging the status quo: what should you do to be ready for the challenge?**
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Digital in 2050

It's easy to overestimate the short-term effect of any new technology while underestimating its impact in the long run. It is likely, even with the raft of technologies we already use, never mind emerging ones, that the changes we have witnessed in our lifespans will be dwarfed by those to come and the speed with which they will emerge and change the way we work. One need only look at the events of 2020 thus far to begin to picture how quickly things can change and how wide the ripples of uncertainty and impact can travel.

Our adoption of technology is also blurring a number of lines: when are we at work and when can we 'switch off'? How should we sound when every word we write or everything we say can be amplified across geographic boundaries and read or heard in perpetuity?

As a consequence, by 2050, the UN suggests that many ‘fundamental assumptions’ about the business world will change.¹ We are inexorably working towards that fundamental change today.

The impact of those new technologies will be to produce more data than we can possibly process in the human brain alone. We will need artificial help to make sense of what we’re seeing. But the artificial help will need us to ask the right questions and input meaningful parameters.

The technology we already use generates 44 times the amount of data that we produced in 2009. In 1964, one terabyte of storage cost $3.5 billion: today that same cost is $27 (PWC analysis: Michael Driscoll/Metamarket).

As a planet, we have already experienced two major revolutions, agricultural and industrial. The technological revolution is happening quickly and often quietly. Experts cite two key incidents as vectors for change: the introduction of the Apple iPhone in 2007 and the Apple iPad in 2010.

Writing for Analytics Week in 2017, Vishal Kumar, CEO and Founder of photogram.ai predicted accurately that there would be 6.1 billion smartphone users across the world by 2020, and that by the year 2020, about 1.7 megabytes of new information will be created every second for every human being on the planet.

The exciting opportunity, he stated then, is that less than 0.5% of that data is ever analysed.

It is reasonable to expect that the way we address those technologies will differ between various sectors of the legal profession. In-house lawyers are likely to be caught up in broader changes across their organisations. For law practices, there is the opportunity to design, develop and refine specific technology-based systems to produce bespoke data and to help clients with the legal processes around their own legislation and regulation.

Such data abundance, and its continuing role as the new oil of the digital economy, could see gross data product emerge as a measure of the wealth and power of nations.² Managing this, organisationally and legally, will likely become a major industry.
Such data will also deepen both customer insight and indeed, personalisation could even become mandated in law, with Johnson (2010) suggesting that ‘many of the financial products being sold today, like over-the-counter derivatives, will be illegal – judged, accurately, by regulators to not be in the best interests of consumers and failing to meet their basic needs.’ Personalised, real-time and contextual services – with permission – will predominate and be almost universally platformised, from legal services to health to education and beyond. Ineffective one-size health solutions, for instance, will likely be replaced by customised, precise health and wellness prescriptions based on personal genome and biochemical assays. Concurrently, the scope of what can be done with general data may decrease if regulations increasingly demand explicit consumer consent; either way data volumes are likely to necessitate closer collaboration with the emerging data industry.

In France, recent legislation sets out measures which, among other things, aim to deter some analytical processes. The ruling has, as expected, excited much commentary. Several other countries have deemed the ruling ‘unconstitutional’, aligning data with free speech, but much remains to be decided in this new environment.

Meanwhile our digital assistants could match our skills and interests with income opportunities worldwide and then draft smart contracts to support self-employment or further professional development.

The Internet of Everything (IoT) is set to charge this data boom thanks to the development of electronics or sensors, that can be attached to the outer surface of almost any object, adding an internet connection to almost any product, even without manufacturing changes. Thanks to synergies with other technologies, such as blockchain, around one third of potential deployments are applicable across multiple industries. This brings a new disruptive wrinkle to the technology. Voice-recognising contact lenses and ear implanted nanospeakers, for example, will reshape engagement and allow customers to access the immersive web from anywhere.

Professor Daniel Martin Katz of Chicago Kent College of Law summarises:

The new Article 33 of the Justice Reform Act reads: “No personally identifiable data concerning judges or court clerks may be subject to any reuse with the purpose or result of evaluating, analyzing or predicting their actual or supposed professional practices. The violation of this law shall be punished by the measures outlined in articles 226-18, 226-24, and 226-31 of the penal code, without prejudice of the measures and sanctions provided for under the law 78-17 of 6 January 1978 concerning data processing, files and freedoms,” as translated by Rebecca Loescher, a professor of French at St. Edward’s University at the Angers, France campus.
This could also have unintended consequences for existing notions of privacy in both public and private domains. What we find on the net is likely to be increasingly personalised and filtered by our own Artificial Intelligence (AI) driven personal digital assistants. Search results will not just be geolocated and contextual but tailored to your digital profile and will include the ability to search and interrogate physical objects that have been linked to the internet and increasingly to the Internet of Nano Things (IoNT) – granularity at an even finer level.

The lawful use of these sensors and devices and the information they generate will be of enormous value well before 2050 and inevitably require protection, while access and control will be hard fought over. At present, regulation in place might suggest that data protection imperatives plus sheer data volume will likely lead some organisations to rarely act on (or keep) information more than a week old, instead relying on new external data services for accessing individual consumer profiles. But what will it mean to a company if their external data holder understands more about their customers and clients than they do? This conundrum currently faces marketing teams across the globe, who have to extrapolate data gathered by third parties like Google or Amazon to tell them about their own customer base.

This rate of data growth is both driven by and reflected in the need to embed AI everywhere and in everything, in order to process the data at its source and in real-time. Artificially time-sliced data, like financial year reports or quarterly updates are being replaced by more meaningful data comparisons. Again the questions remain: why are we receiving this data? Why are we receiving it now? What will we do with it?

The impacts will be myriad; some commentators see robots either as the exponent or the medium outnumbering humans in the number of crimes committed by 2040\(^9\) while others envisage a combination of AI, blockchain and crypto as empowering around one billion entrepreneurs by the same date.\(^{10}\) With biological augmentation and enhancements undoubtedly coming in one form or another it is possible, says Moshakis (2018), that ‘by 2050 we’ll be able to send memories, emotions and feelings across the internet.’\(^11\) The mismanagement and illegal use of all this technology and information will demand new regulation and legal frameworks and practices, not to mention new approaches to cybersecurity. Indeed, insufficient evolution of cybersecurity paradigms could lead to some technologies which are deemed too risky being regulated beyond the point of utility for many companies. With our broader set of regulations trailing tech developments, new spaces of preventative law will likely emerge, driven by real-time autonomous analytics.

In some spaces, tech savvy legal services will remain a key bulwark against potential tech-overreach, bias and vulnerabilities.

Augmentation or not, we are likely, before 2050, according to Leonhard (2019) to reach the point at which machines will easily exceed us in the ‘mechanical and routine performance metrics that we currently uphold for ourselves (since) machines are exponential (while) humans are not.’\(^12\) Perhaps humans will finally stop working, or trying to work, like robots since everything that can be codified and automated will be. In turn, the skills for the future will look very human; the ability to reason, intuit, lead, and deal with ambiguity will all become key. This new world is much closer than many accept, with emotional intelligence already rivalling IQ in many leadership and corporate roles.

Finally, human genetic engineering need not even feature ‘augmentation’ to thrive. The 3D printing of organs, body parts and even blood vessels could radically redraw our notions of health and the value of wellness itself. As we incorporate more technology into ourselves, the human body could well become the ultimate computing platform, requiring a new set of regulations and laws that seek to minimise genetic discrimination. With the prospect of genetic engineering likewise enhancing lifespans for those that can afford it, key assumptions about humanity itself could shift. AI and biotech could, Smith (2020) argues, additionally ‘help us master the art and science...
of translating complex relationships – the cultural and operational DNA of organisations – into dynamic, data-driven connections with the built environment.¹³

How we organise for success will likely shift as a result, with mixed reality featuring prominently as an interface.

Virtual reality may become the home of billions of pounds of intellectual property owned by machines, people and corporations across state boundaries, as Digital Autonomous Corporations form and operate organisations, without the control of any human beings, that affect millions of lives every second of every day. Thus, it is entirely plausible that AI could own any IP it generates. The UK Intellectual Property Office produced a report on the issue and its ramifications in June 2019. https://www.gov.uk/government/publications/artificial-intelligence-a-worldwide-overview-of-ai-patents

Mass adoption of mixed reality, meanwhile, will change how we live in significant ways – from where we do things once spatially bound, to how we retrieve, use and act upon real-time information.¹⁴ A key issue we could face in 2050, suggests futurist Anne Lise Kjaer, is in acknowledging that what is technologically possible is not necessarily morally acceptable, legally advisable or indeed, economically viable.¹⁵

How we will regulate for this future is highly uncertain but could feature elements of adaptive regulation, collaborative approaches, risk-weighted and/or outcome based regulation, with more use of regulatory sandboxes.¹⁶ The potential of a data rich environment with mass evidence of emotion, action and planning for any event could be knowable and judged within nano-seconds and even intercepted as being inappropriate before it even happens. What could the world look like in 2050? What new areas of the law will they likely create?

And that’s the point, as we create new capabilities we will need new rules, processes, policies and practices and it’s happening in nearly every field of human endeavour at an ever-increasing speed. We are living into a perpetually discontinuous future. Whilst automation is likely to replace the repetitive and structured work of a lawyer it will be a long time until machines are smart enough to be the intuitive, articulate and creative lawyers we will still need.
Future challenges and opportunities: what does a digital world mean for me?

Blurring boundaries

Ambient connectivity broadly redraws the where, why, how and what of business in fundamental ways. Four out of five UK executives believe that in the future, industry boundaries will dramatically blur as platforms reshape industries into interconnected ecosystems. Such blurring will necessitate the design of truly customer-centric products and services which often, in turn, require a new organisational approach and provide huge opportunities to not just do things differently but do different things. By 2050 we will have learned to operate in this environment and the blend of services that we offer our clients, often from sectors we would think out of our legitimacy or reach, will be unrecognisable from today.

Increasingly, how a given organisation does things is as important as what it does, allowing data rich companies to launch unique propositions in new markets accompanied by new ways of interacting. Every transaction provides the opportunity to learn more about the client and their needs, and agile companies will need to draw up protocols, agreements and service level agreements to monitor progress and set expectations. Digital giants exemplify this trend well. Facebook, for example, has made headlines for wanting access to customers’ financial information as well as for its Libra currency. Legal services are not exempt from this change, with each of the Big Four having stated plans publicly to corner large swathes of the market with an enterprise legal services strategy. Piet Hein Meeter of Deloitte (2019) believes ‘we are building capabilities to deliver seamlessly across borders as a truly global legal service provider (covering day-to-day activities as well as corporate life events). The innovative, technology-enabled and integrated nature of our services will disrupt the legal market as a whole.’ Like many big tech companies exploiting new markets, the strength of the Big Four comes not from legal pedigree or sheer number of trained professionals but rather their ability to integrate their Digital Transformation (DT) knowledge and experience with an agile tech platform, existing project management capacity and legal domain expertise. As with many FinTech offerings where the goal is not to replace the bank per se, but offer adjunct services with superior terms and value, such offerings needn’t compete head-on to be a challenge to incumbents.

KPMG’s 30% growth of its legal services arm in 2018 stands testament to this. An interesting wrinkle to this is that part of this growth is due to the positioning of Big Law as consultant to existing legal departments in helping deliver digital transformation advice. With delivery capacity assuming an outsized role in the digital economy, boundaries fall more easily, especially so when digital capabilities such as analytics and AI generated systems further commoditise legal tasks and services considered core to many lawyers.

For example, several Chinese insurers, responding to the insurtech challenge, are actively building new revenue streams on their expanding tech capability. Hu (2019) reports that ‘Ping An is selling its facial-recognition technology to the travel industry while Zhong An, a new insurance player, sold tens of different technology products to 200 clients in 2017, generating sales of $6.4 million.’ Ant Financial, which counts insurance amongst its broad product and service range, has agreements to provide biometric identification and AI-enabled risk management systems to several Chinese banks, as well as launching AI-managed services for asset management firms. Those that refuse, or are unable, to change their legacy systems (whether cultural, organisational or technological) will at best lose ground to start-ups and a new range of competitors. Conversely, new aptitudes and capabilities can readily find new markets in a digital world.
Organisations wishing to keep or even set the pace for DT, must address multiple issues. Digital transformation has implications for data protection and security, contract design and regulation in addition to well-covered issues such as intellectual property and compliance. New business models and data architectures will create new legal challenges, which will likely require increasing interdisciplinary solutions. Liability and regulatory issues relating to data protection and IT security will broaden and deepen the required knowledge base for servicing digital businesses. Associated skillsets such as employee cybersecurity education, data analysis and presentation of data also demand attention, changing the nature of the domain-specific knowledge that will come to define swathes of legal service advice. That is not to suggest, even with ever improving technology, that human expertise and the ability to handle nuance and ambiguities will be replaced, but rather that new areas of business that could form the future core of legal services offerings will demand new expertise, competencies and skills. Such education is increasingly delivered through engagement technologies such as virtual reality and augmented reality. These same technologies give rise to immersive experiences that will help create new and increasingly personalised customer, and perhaps workplace, experiences.

After the events of this year, it is not hard to imagine how we will soon find extended reality meetings and engagements commonplace. The realism they offer will have been sharpened to the point that even courts may routinely prefer these to face-to-face or video connections, with distributed or virtual settings perhaps replacing the court as the venue of choice for hearings. Richard Susskind, author of Online Courts and the Future of Justice (2019) reports his more recent thoughts in an article in the UK edition of the Times newspaper. https://www.thetimes.co.uk/edition/law/technology-is-key-to-stopping-coronavirus-wiping-out-law-firms-5kd307zlk

The ‘edge’, which Gartner (2019) describes as being where ‘information processing and content collection and delivery are placed closer to the sources, repositories and consumers of this information,’ could also reshape what it is that industries do. Take insurance, for example; at present the industry adheres to its higher purpose of ‘protection,’ by compensating after loss and allowing people to take on risk that is otherwise too large. Edge-powered IoT devices will likely consolidate the shifting nature of the insurance industry away from compensation and towards prevention. This new market will create new core competencies and business models, attracting a number of unrelated and even new players into the data-heavy space. If insurers do not capitalise on their existing strengths of rigour and distribution to help inform their strategies, the emerging insurance market could be explored and even captured by a range of new competitors, from utilities to construction tech companies or even big tech with existing presence in the smart home market.

How this could interplay with other vested interests will likely spread the opportunities and challenges of such changes way beyond the confines of traditional industry barriers. Likewise, technologies are likely to spread outwards from their incipient industries. The first augmented reality technology was developed in the 1960s, with early simulations largely confined to aviation and the military. Over forty years later, the first commercial application appeared, in advertising, shortly followed by the Pokémon Go game that saw a peak of 45 million users in 2016. In the four years since, 82% of businesses from financial services to the retail industry and real estate sector expect substantial AR-driven (Augmented Reality) redesign of business processes. But with this massive increase in use of this technology, it is vital to ask ‘who holds the data’? Could your physical performance on your fitness tracking device, recording leisure-time, family activities, be handed without your knowledge to your future health insurer for key decision-making on your risk profile?

Perhaps one overlooked process in this regard, is cybersecurity. Within the next two or three decades the visual representation of data, information flows and their use and security are likely commonplace and these in turn will be recorded in a chain of evidence unknown today.
Liability shifts at the blurring boundaries

These blurring boundaries have real implications for liability. IT ecosystems, for example, will increasingly need to exist ‘out there’ at the edge rather than within the organisational walls. With most of the organisations using IoT having limited visibility of their network, let alone their exposure to IoT cyber risk, new standards will be needed. Many new IoT projects are technologically in advance of regulation and will require a host of legal issues that could well be retroactively imposed if consumer harm is found to have occurred. Security and privacy controls will need to be built at the edge, not transmitted into the cloud, and intrinsically part of every device and network. Staff will need to be trained in the skill sets that help them first identify and then mitigate these risks.

While today only about 20% of enterprise data is being produced and processed outside of centralised data-centres, by 2025, that is expected to rise to 75% and could even reach 90% around 2030 or later.28

Such stats buttress the extent of the global economic impact that 5G could have for new goods and services. Indeed, the impact is forecast to reach $12 trillion by 2035 as the technology allows us to move from simply connecting people to information towards connecting people to everything.29 With ‘everything now sending data signals, companies need to have a way to future-proof their ability to manipulate this data.’30 What data we hold and how we use it will be the life and death of our companies; the very data we use to inform strategy could prove a liability if such contextual data reveals privacy invasion or poor data management practices. Beyond GDPR, there is a common vulnerability in many data models. Many lack explicit customer consent – especially via apps, and few have an equivalence to ‘key facts’ in financial services. GDPR may help with data stewardship but organisations will need to move beyond it. As customers realise the value inherent in their data, the legality of current data models will one day successfully be challenged in court. By 2050 it is likely that the visibility of organisations’ competence in using data and the myriad legalities of its ownership will form a major plank of legal work.

The Open Data Institute is currently researching this area of work: https://theodi.org/project/rd-increasing-data-access-for-new-technologies/

IoT penetration and the centrality of it to a range of emerging models will see it become increasingly prominent as a threat. Issues of liability abound, and cybersecurity should be a key component of any assembled ecosystem that organisations participate in. The coming volume of data will also have a range of impacts. It will challenge current tech models and architectures since by 2025, nearly 30% of data generated will be real-time31 and more than 50% of data is forecast to be managed autonomously.32 This will require data to be immediately actionable if it is to be considered of value, potentially making swathes of firms not just digital but IoT organisations. It will also force an even greater range of previously unaligned industries to collide, whether through new data models, third party data arbitrage or even more direct partnerships and collaborations.

More than two thirds of CEOs already state that they see information security as a strategic function and a source of competitive advantage.33 However, data breaches could potentially reach $5tn yearly by 2024,34 complicated by edge technology and tech-dependent business models that continue to outpace our ability to protect core assets in a digital environment.35 Partnerships and collaborations with data security firms – many of whom do not yet exist – will likely be critical for a range of businesses including the law. Our role will be to help set standards in this space and to help others to enforce their rights. Lawyers’ critical thinking and ability to analyse should prove valuable in this space but will need to shift from an historical, precedent-based perspective to a ‘what could be’ domain.

At some stage, and without sufficient progress in areas such as quantum computing and AI, it is plausible that the risk of cybercrime causes
swathes of core digital processes to become too risky to pursue. The point at which such risks are defensible may become increasingly tough to define. In fact, as Beardsley (2018) acknowledges, ‘data breaches and cyber-attacks are two of the biggest concerns for law firms when it comes to digitalising their communications in line with customer demand. 27% worry about contravening GDPR, and 40% fear disclosure failings and regulations around custodian-driven data collection.’

If information security strategies are to thrive in an edge era, new security, data and perhaps legal architectures that span multiple organisations and even industries will need to emerge. There is room to advise and offer consultancy around these issues, but one would presume only if such organisations are able to demonstrate competence and internal examples first. As digital and data become increasingly central to organisations’ operations, service providers’ competence in this area will become greatly sharpened and it is almost certain that by 2050 it will become a pre-requisite to even being considered.

Regulation follows rather than leads

In spaces that lack an effective form of regulation, organisations of all types would do well to police themselves. A Stanford study, for example, found that companies that try to fix problems on their own may sidestep more onerous regulations in the future, not to mention avoid damaging trust and ceding brand value. If the future of business is trust, self-regulation is a must in developing a future-proof product and service. This requires an awareness of best practice, risks and a business culture that is ultimately customer-centric.

Malan (2018) notes that in our current period of “fast technological and social change, relying only on government legislation and incentives to ensure the right outcomes is ill-advised. These measures are likely to be out-of-date or redundant by the time they are implemented.” Likewise, entities that develop rules in areas where there are few existing ones, stand to benefit, as exemplars in their field or trusted bastions of good practice. In many areas inherent within digital, such as privacy, or stemming from associated technologies such as AI, rising global powers may not conform to Western models of the rule of law so readily. Adopted laws tend to flow from those countries with the wealthiest markets to those with the poorest markets.

Any further internationalisation of the legal system, no matter how complicated that is by 3D printing and the reshoring of manufacturing jobs or a U.S. retrenchment changing the nature of globalisation, is likely to develop increasingly Chinese characteristics. The outlook for the rule of law under such a scenario is highly uncertain, especially since there remains a belief that at some point in the future, legal services will be regulated by the state, not by the legal profession. But which state?

What legal issues could digital lead to?

Futurist Gerd Leonhard (2019) surmises that ‘the more we robotize our world, the less we govern ourselves.’ With concerns over AI biases paramount, nowhere is this more important than with regards to automated decision-making. How can we be certain that such systems are not unfairly biased against either individuals or certain groups?

The ability to contest decisions, a key dimension of the rule of law, is also potentially problematic given the lack of clarity in decision-making (especially if it is blockchain embedded) and the asymmetry in information. Three impacts of data driven AI regulation could include:

• the collapse of the normative enterprise (perhaps already foreshadowed with Covid-19)
• the replacing of a causative basis with correlative calculations
• the erosion of moral enterprise.

Concerns are that the rule of law might be exchanged for the rule of technology. Beyond the meta-level implications for lawyers, such a
move or just a more general influx of AI into law would see questions over the skills needed to continue to defend the law. What exactly would lawyers need in order to assess the quality of the justice flowing from data-driven decisions? Lawyers will require skills, or access to skills, that enable them to approach and interrogate these technology structures to determine whether such decisioning, or even systems, are legally sound or not.44

Other key facets of the rule of law will likely be challenged by the emerging trend of AI policing. What happens to the presumption of innocence in a world where AI driven ‘pre-crime’ detection is viable to some degree? AI policing is cited as able to reduce crimes in the United States alone by some 81.7 million by 2040.45

**Global business and national law**

In the broader scheme, multinational digital business poses a trickier set of issues to unpack. As Victor Mallet, the FT’s Asia news editor until late 2018, noted, ‘law firms and their clients should be wary of the erosion of freedoms that underpin the conduct of business.’ A close monitoring of geopolitical trends, especially with regards to international business, should be a core competency of a wider range of legal services as the global certainties of the early 21st century look to crumble. The withdrawal of the United States from much of the international scene, the political battles for Europe and the ascendancy of Asia will ultimately impact the international system, with all these battles reflected in (Huawei) and in some ways accentuated by, the spread of global digital business. More than ever, legal service providers working across boundaries need some form of foreign policy and agreement on routes of enforcement.

On October 3rd, 2019, Reuters reported that ‘European courts can now force Facebook to scrub illegal content worldwide.’ Reuters also noted that Facebook and other platforms can also be made to comply with requests to take down content globally, even in countries where it is not illegal. How the governments of the United States and other powers react to a foreign law that could easily be seen as subverting freedom of speech in their own countries will likely add to what is already, technologically speaking, a patchwork of privacy laws, lack of transparency and general incoherence that neither protect competition nor customers. Either way, Europe’s gambit could have lasting geopolitical clout. Quest & Charrie (2019) believes that ‘the first country to figure out the best way to regulate the broader tech industry could become the focal point for the next chapter of the world’s digital revolution.’ OECD plans for a 2020 tech tax could help establish some norms, but issues will remain with respect to how we tax global entities. By 2050 it is not inconceivable that it is in the interest of all stakeholders to create and operate a global set of standards for digital activities. This would possibly create supranational governance of citizens’ daily lives and even the ability of states to raise tax revenues.

**Access to law**

There are concerns that access to digital is becoming synonymous with access to the law. While forms of digital technology not only broadly lower the cost of accessing legal services and democratise access, the UK’s digital divide may require an ongoing omnichannel presence, depending on the target market. In the UK, fewer than half of over 65s are online, while the Centre for Economic and Business Research forecasts 7.9 million people will still lack digital skills in 2025. Whereas 6% of those without a disability are currently offline, over 23% of those with a disability are offline. Accessibility, design of legal services and omnichannel access will need to be considered in the age of Digital Transformation (DT) and beyond.
Beyond tech: what is digital business and how will it evolve?

In terms of how legal services operate, McKenna (2019) suggests that DT will require them to ‘examine all areas of their business, including supply chains and workflow, employee skill sets, board-level discussions, and customer interactions.’ As such, DT is a catalyst for much more than just tech change.

Digital transformation stands as perhaps one of the most commonplace yet misunderstood terms in business. For some it means a periodic tech upgrade, but is more accurately thought of, asserts Polemiitis (2019), as marking ‘a radical rethinking of how an organisation uses technology, people and processes to fundamentally change business performance.’

Despite technology being the vehicle for change rather than the objective, nearly 40% of C-suite executives mistakenly presume DT to be a ‘tech-fenced’ operation.

DT is already a proven business strategy, with data-driven organisations cited as 23 times more likely to acquire customers; six times as likely to retain customers; and 19 times as likely to be profitable as a result. Digital disruption, and companies’ inability to navigate increasingly agile markets, is the principal reason for just over half the companies among the Fortune 500 having disappeared since 2000.

It is undeniably risky to shift, let alone redesign, the core of a hitherto successful business. Yet many have been provoked into action during the 2020 pandemic lockdown – assessing not only how they work and maintain operations remotely, but how their offer might need to change in the future – there should be no assumptions that ‘normal’ will return once lockdown is lifted. The rapid convergence of industries, technologies and organisations demands a new way of thinking for many legal services organisations. Agility, engagement, collaboration and tech rich digital models are, first and foremost, an attempt to handle the degree of change coming. There is little doubt that this could be significant, with the overall economic value of digital transformation to business and society set to top $100tn by 2025. Innovation, agility and constant reinvention will become standard.
Where are we?

$1.25tn was estimated to be spent on DT initiatives globally, however broadly defined, in 2019, and that number is forecast to climb to $1.97tn in 2022. Although its importance should not be downplayed, digital technology is no longer a decisive investment for most businesses, rather it is a core element of remaining viable. While a heterogeneous future – comprising the intelligent era and incipient others such as biotech is already here, it is unevenly distributed. For legal services and other thus far protected sectors, the full impact of digital is yet to be felt. That is not to say that legal services providers have not ventured into using various new and emerging technologies. Allen & Overy launched their Fuse initiative in 2017 and are now advertising for participants in their fourth cohort of development activities. Fuse comprises four strands: a Tech Radar to bring early insight into client tech developments; Global Impact, giving companies the chance to experience the effects of tech introduction at first hand; client-centric development, giving various stakeholders the chance to talk, suggest solutions and problem-solve throughout a process; and Accelerated Development, using insights from other projects to inform the development of legaltech.

Adopting digital tech internally, including the Cloud, collaboration tools and web conferencing has numerous benefits, all of which have been well documented. 15% of UK law firms claim that a digital communications backbone within the organisation improves talent retention, more than a third have increased their billable time, while 73% claim improvements in people efficiency, productivity and business agility. This has led to nearly half of firms experiencing a boost in their bottom line of anywhere between £20,000 and £200,000 a year. Jean O’Grady of DLA Piper (2019) notes that ‘the use of corporate review products like Luminance and Kira has certainly spread.’ Luminance and Kira are among the first wave of artificial intelligence based data analysis tools for lawyers. However, the use of stand-alone tools will fast become table stakes and, on their own, increasingly unable to provide competitive advantage. Alone, they do not confer the status of a digitally enabled law firm. The need to address culture, talent and process remain key, all in ways that deliver bottom line value for clients. Yet only one in five of in-house legal teams – and a lower percentage of law firms – are deemed to be in a position capable of supporting enterprise DT efforts. Others are ready. The Big Four and a handful of other law firms have successfully pushed into the DT consultancy space. But, as Mark Cohen (2018) asks: ‘what about the vast majority of legal providers for whom digital transformation is not even on the radar screen? How will they competently engage with and
compete for digital clients/customers?' In short, they won’t.

Current legal services are generally behind the curve, technologically speaking, in terms of the wider issues of digital transformation. In the UK, some 34% of all clients would like the fairly prosaic option of video conferencing, chat and Instant Messaging. Two thirds of clients note that such services have never been made available, despite such tools routinely being used within law firms. No wonder two-thirds of law firms are cited by Beardsley (2018) as ‘express(ing) specific concern over how lagging behind the technology curve will affect productivity, billable time and client response rates’. Although these concerns are valid, they ignore the possibility for more fundamental change in how legal services operate.

March 2020 saw the first ever case-by-videoconference for the UK Supreme Court driven by isolation policies in place across the country. A tax dispute between a Mr Fowler and HM Revenue and Customs made history as the first Supreme Court case to be held entirely virtually, with the judge hearing the case and representatives of both sides connecting to one another via video link. Five justices in different locations, appearing on video, listened to evidence from lawyers each broadcasting from their own location. The hearing was also screened online for the public. Political necessity has driven a process that will certainly not stop with that particular case. The first judgement handed down via videoconference occurred on March 25, 2020 as Lord Kerr used a video stream to uphold an appeal and Coleman (2020) suggests that jury trials face ‘the biggest change since WW2’. Pilots are underway to test whether virtual jury trials are possible using a video platform already utilised in the courts and which can be accessed from home computers. Justice, in collaboration with Corker Binning solicitors and AVMI, the audio visual solutions company, have enlisted the help of barristers, a retired judge and volunteers in the role of jurors, witnesses and the defendant.

Erik Brynjolfsson, an MIT based DT expert, concluded as early as 2014 that digital means that we now operate in ‘a time when what’s come before is no longer a particularly reliable guide to what will happen next.’ Law, by its very nature, is rooted in precedent – of which digital business provides comparatively little. The danger is that legal services culture and organisation models have become overly rooted in precedent too. As a result, suggests Cohen (2019), it is ‘slow to embrace data, technology, new delivery models, multidisciplinary practice, regulatory reform, collaboration, diversity, gender pay equality, the distinction between the practice of law and the delivery of legal services, client-centricity, and DT’. A reactive as opposed to proactive stance accounts for some of the Wolters Kluwer (2019) statistics that indicate the prospect for significant disruption within the industry.

- ‘Lack of Technology Knowledge, Understanding or Skills’ comprise the top category of reasons for legal services organisations resisting new technology (36%) followed by organisational issues (34%).
- Coping with increased volume and complexity of information is a concern for two thirds of lawyers, yet only one third indicate their organisation is very prepared to address it.
- (Only) 68% foresee changing client expectations as impacting them. Just 32% suggest they are ready to respond.
- 66% see the growth of alternative legal providers as a challenge. Only 28% are very prepared to address this.
- 63% of the Top 100 firms are concerned about the speed of technological changes in the legal industry.

Yet Covid-19 has cast a bright light on how things can be done differently. Rather than bounce back to expected practices, Cohen (2020) contends the future will be a reimagination of our present. Providers need to be ‘more data-driven, more customer-centric and more differentiated’.
Customer centrism

In an Economist Intelligence Unit study of 1,811 business leaders and consumers worldwide, three quarters of respondents predicted that the various tenets of digital transformation, including Cloud computing, the IoT and several linked AI technologies would improve their quality of life and boost the economy over the next five years. In short, people increasingly expect tech-driven solutions. Tech adoption alone will not confer any degree of customer-centrism, but using tech to enhance the customer experience will be increasingly expected. In fact, some 76% of consumers now expect organisations to understand, and presumably act upon, their individual needs.

Consider what can be done with a solid core of analytical processes aligned to a skilled workforce. Predictive and prescriptive analytics, when integrated around deals concerning litigation, could be a key form of comparative advantage. For example, Sonderegger (2019) believes ‘there could be solutions that examine what deal clauses tend to result in litigation. The next generation of solutions could go further than just identifying trends in data and move into examining long-term outcomes and consequences, with results more cognisant of changeable human behaviour. Scenario planning could be better utilised as a result, enabling a more efficient series of processes, including assigning talent to various workloads and planning for contingent workforces where necessary. There is no reason that such a system cannot be functioning by 2025 and perhaps even be widespread by 2030.

Financial services could, by this time, become highly woven or integrated into their customers’ personal ecosystems, whether first via apps or later through a combination of augmented reality, virtual reality and the IoT. Banking and insurance could become truly ambient by this time, available without a traditional interface and part of our everyday ‘operating system’ in much the way a phone and the Internet are today. If financial services, then why not legal services? What might an on-demand and even pre-emptive, contextual and real-time legal service look like?

What changes would be required in customer interface design and employee skillsets to make this happen? Incumbents had better examine this issue and decide on a course of action promptly, for someone, if not them, will be looking to play in this new space. LexisNexis director Dani McCormick (2019), for example, is excited about the future for legal services, citing its potential to be radically different to now.

With law increasingly being commoditised, law firms and those adjacent to the industry are moving into additional value-adding skills and services. The tools for legal services organisations to become more customer-centric are emerging, as indicated by the rising profile of groups and events such as ILTACON, LegalWeek, Legal Geek and Litig – a platform for members to meet, collaborate, network and discuss ideas in relation to the legal IT market. For an industry that has done so well through the billable hour and the partnership model, some may question the need to change. Even more may find that preferencing a client-centric experience over these tenets is somewhat counter intuitive.

Currently, an increasing body of legal services providers and legal departments are utilising output, or results-oriented models as opposed to hours-based input models as exemplified by the Big Four ‘accountancy’ firms. Alternative structures are also being explored, with platforms such as Keystone Law acting as an umbrella type organisation for self-employed solicitors, and ultimately unbundled legal services. Previous success and process could prove deadly for those who remain overly devoted to it. The evidence is mounting, with Wolters Kluwer (2019) citing those organisations ‘already investing in technology significantly (as) more likely to report higher firm profitability than those organisations that are not adopting technology as quickly.’

Tech use, implemented wisely, is therefore a critical lever in boosting customer engagement.

Yet customer centrism, asserts Lo (2019), implies not just the use of ‘data, artificial intelligence and other technologies to predict outcomes, reduce costs, improve transparency and ultimately add value.’ Of equal importance
to Lo is the need to develop closer ties to the clients, in terms of ‘understanding their business more deeply and delivering solutions to problems that clients may not even know they have yet.’ All of which needs to be delivered in ways cognisant of existing changes to legal services delivery, utilising appropriate technology and mindful of what could come next.

Combining design thinking, user experience design, visual thinking and legal thinking, legal design thinking (LDT) could be used to better understand clients’ needs from the start and keep them in mind throughout the search/access/delivery process. Pivovarov (2019) cites DWF Ventures as having already implemented LDT to engage lawyers with document automation software and create an industry standard that shows how to benchmark contract management. This approach connects technology and service with their people. Given the speed in which technology is disrupting the legal space, the need for this human-centric approach will increase.82 With these criteria in mind, there is little preventing a tech giant from creating a platform or hub that will severely impact not just the delivery but the accessibility of legal services, not to mention the composition and nature of such services.

In assessing their own capacity for transitioning into a client-centric outfit, providers of legal services would do well to ask themselves:

- What business goals are we trying to achieve and what new competencies do we need to get there?
- Do our legal teams possess the ability to work with a rapidly evolving range of technologies and within the context of an ever-changing business environment? How can we make them ready?
- What process and cultural changes are required to meet our goals, and could we compete with a big tech legal services offering? Or are we perhaps ready to partner with them?
- How are we using innovative technologies as a medium for value creation? How are we creating value for our customers beyond the strictly legal service?
- What does the technology stack – and the IT architecture behind it – need to look like to achieve our goals?83
- Do we have the skills, experience and relationships needed to shift our model to include a role as trusted business advisors?84

A key reason, should ALSPs (Alternative Legal Services Providers) become significant industry players, is that customers first and foremost want problems solved. The tools to address this will evolve since ‘the future will bring more openness, so that businesses can utilise real-time, multi-directional data sharing to deliver contextual experiences beyond specific apps.’85 There is no one technology that is singularly driving this trend; rather the realisation that B2B2C markets are reconfiguring into delivering desired customer outcomes. The way that the legal sector organises for this, and how organisations work to determine current and possible future scenarios will be key in providing customer-centrism.

Platforms and ecosystems

Digital platforms, like today’s LinkLaw and Zegal, are becoming the tools of choice for building next-generation products and services around customer experience. They are also key in scaling entire ecosystems in the digital and physical worlds. As traditional industry barriers become increasingly fluid and technology becomes ubiquitous and affordable, it is likely that the medium of a given brand will matter less than the service provided through it.

Such ecosystems are forecast to replace numerous value chains in the coming decade, which account for $60 trillion (or more than 30%) in global GDP. Across many industries, the ecosystem model is now standard.86 While China
has different market dynamics and is by no means a portent of what could or will happen in the UK, there are now around 100 platforms operating in that country from which legal services professionals can offer their services.\textsuperscript{87} Rethinking and reworking relationships with external partners could see the emergence of powerful legal services platforms.

Another form of ‘platform’ set to impact legal services is the emergence of digital twins. A digital twin can be defined ‘as an evolving digital profile of the historical and current behaviour of a physical object or process that helps optimise business performance.’\textsuperscript{88} Such platforms may be of use to legal services and even insurers to provide on-going monitoring of potential issues. Using digital twin capabilities may expose enterprise and customer data to privacy, usage model and data ownership questions that may create significant reputation, compliance or legal vulnerabilities and issues for CIOs, business executives and even the board of directors.\textsuperscript{89}

\section*{LegalTech}

For white collar professionals generally and legal professionals specifically, working without the aid of digital technologies is becoming an increasingly difficult proposition. As with fintech, proptech, insurtech and a range of other digitally driven tech changes in other industries, legalttech has quickly expanded having proven its ability in speeding processes, driving efficiencies, lowering costs and democratising access.\textsuperscript{90} Legalttech can do this both as a standalone solution that satisfies consumer demand in a specific area, or else be used by incumbents to improve internal processes.

Profiled by Alison Coleman (2019),\textsuperscript{91} the firms to the right point to examples of how the broad umbrella of legalttech is both disrupting the status quo and offering ways for legal services to cross the digital innovation chasm (through M&A or collaboration).

- Lexoo began as an online marketplace for lawyers and is evolving into a ‘new law’ company, providing bespoke and tech-enabled teams of former big law lawyers typically on a fixed-fee basis. Lexoo now has a network of more than 1,000 lawyers covering 65 countries delivering work at around half the cost of a traditional law firm.

- The CrowdJustice startup selects public interest cases and invites the public to fund them. Through the CrowdJustice platform people can raise funds for their legal matters, and build a community of support as they move through the legal system.

- InCloudCounsel is a U.S. lawtech startup that provides remote, flexible work opportunities for freelance lawyers and manages routine legal work. InCloudCounsel has created hundreds of work opportunities for corporate attorneys wanting a flexible yet steady remote work arrangement; a concept that’s nearly unheard of in corporate law.

- Farillio’s solution for democratising legal and business services for SMEs, empowering them to solve everyday business problems. Users can access ‘how-to’ video tutorials, checklists, infographics, and curated templates, plus experts on a pay-as-you-go basis via the platform’s user-friendly technology.

Although it is tough to predict the evolution of any single one of these ventures, the broader market for alternative legal service providers (ALSPs) is seeing rapid growth, partly driven by large law firms and corporate legal departments expanding their use of these tools. Indeed, in the United States ALSPs, both as alternatives and augmentory tools for legal services, comprise $10.7 billion of the market for legal services,\textsuperscript{92} and are predicted to grow to $55 billion by 2025.\textsuperscript{93} Such growth suggests a further evolution in what services are provided by ALSPs, perhaps meaning today’s tools become tomorrow’s competitors. One in five law firms admit that they are threatened by clients developing technological solutions which will replace previously chargeable legal advice.\textsuperscript{94}
How can we catch up and prepare for the future?

Tabrizi et al (2019) conclude that, in general, where digital transformation has met or exceeded expectations, it has done so because ‘their leaders went back to the fundamentals: they focused on changing the mindset of its members as well as the organisational culture and processes before they decided what digital tools to use and how to use them. The envisaged future of the organisation drove the technology, not the other way around.’

One doesn’t so much need a digital strategy as much as a better strategy enabled by digital.

To date however, only 44% of executives cite accomplishing such an alignment.

It is likely that the very sudden and critical need to enable a mass of employees to work remotely and effectively during lockdown will have put more weight back on technology and digital tools over a wider business strategy.

Collaboration is a core facet of DT, with more than half of executives acknowledging that they could dramatically boost innovation by collaborating with outsiders or competitors, which in turn could fundamentally redraw organisation models and legal structures. Indeed, collaboration is perhaps the most feasible way for non-digital native companies of shifting their models towards the customer and away from tradition. A focus on new skills, work structures and cultures as well as a consideration of how and where work happens is also required.

Skills

Even just five years from now, more than one-third of the skills deemed essential for working in our digital world are forecast to have changed. The good news for lawyers is that critical elements of traditional legal pedagogy will assume greater importance in the general world such as critical thinking and judgement/decision making. However, the rising prominence of other skills, more recently recognised as valuable in this sector, ranging from creativity and emotional intelligence through to data analytics and design, have largely been ignored by both the legal academy and many industry training organisations. A shift away from practice-centric careers needs to be reflected in leadership by extending legal operations’ role in management decisions, for example.

If DT is to be successful, leadership skills and capacities must change too, not least the ability to manage and inspire virtual and dispersed teams.

Critical to the success of future lawyers and leaders is the progression of their ‘T-shaped’ skills that span hard and professional skills. In this concept, the vertical bar of the T refers to expert knowledge and experience within the legal industry (including new areas impacted by digital). The horizontal bar of the T, meanwhile, denotes the ability to collaborate beyond the traditional confines of the legal field, network deeply with professionals from these areas and use the knowledge and contacts gained to better develop your own offerings.

The importance of T-shaped skills cannot be underestimated, especially since legal knowledge is fast receding as a solo skillset sufficient to forge a career from. As it becomes increasingly
commoditised, law will become more of a skill than a practice, necessitating skill augmentation and migration into adjacent and new revenue streams.

T-shaped skills are somewhat implicit in the list of skills that legal professionals should look to develop in the 2020s in response to, and anticipation of, further transformation.

Key skills include:

1. Digital training for all legal services personnel.

2. Analytics, although Sonderegger (2019) believes ‘it may be another five years before we have a generation of lawyers who have a strong analytics background to interpret the data and leverage the technology fully.’

3. Education, training and ideally placements in specific market segments will be required to develop insights and industry expertise.


5. ‘Lawyers, of course, have always been entrepreneurial, at least at the partner level, but commercial skills need to be developed,’ says Tim de Boer, head of marketing at Dutch law firm Houthoff, in Amsterdam. PR, marketing, finance and some degree of horizon scanning will all be necessary for lawyers who plan to work alone or in small units.

Such skills are essential for operation in cross-functional teams that will see lawyers work with technologists, paraprofessionals, project managers, technology itself and other professionals. Such collaboration will likely take place across geographies, cultures, and even in different political and regulatory environments. Not every lawyer needs to be a technologist, but the ability to closely collaborate with them means the future lawyer needs to establish broader skills and expertise than previously traditionally defined.

Larger entities are already addressing this need. HSBC set out to redesign and revamp its legal departments’ pathways for talent development. This included a new training portal offering digital skills training for lawyers, the ability for lawyers to apply for digital specialisms that included a digital degree created in partnership with Pinsent Masons to tackle emerging legal risks emanating from crowdfunding, cryptocurrencies and digital payments.

Likewise, Freshfields Bruckhaus Deringer founded a programme that seconded associates on six-month stints to clients, where they were charged with coming up with better ways to deliver services. The subsequently evolved process (and role) at Freshfields is for a technologist to work alongside the lawyer associate within an agile development team on clients’ initiatives. The purported benefits are of shorter development cycles and increased cross function work. Responsibility is shared, which has helped speed the development of new tools, with an Antitrust 101 app made ready for a client within weeks.

Indeed, Swansea University now offers a postgraduate LLM in LegalTech specifically to help train those interested in a career in the law in these new disciplines.

It could even be argued that there is a need for a new pedagogy for both approaching some of these skills and deciding what is taught. For example, Spencer (2019) asks ‘will there be a need for as much expertise in the early phase of a legal career as there was previously, given that clients can now access knowledge more readily, and often without charge, at the touch of a button?’ This changes what it is that lawyers should offer and what skills they will need to provide it.

Since flexibility, adaptability, innovation and other soft skills are notoriously difficult to capture using traditional educational attainment standards, micro-learning frameworks are likely to be established in the late 2020s to capture skills and competences not necessarily implicit in traditional qualifications. Skills mapping is likely to appear as a formalised system shortly before a true micro-learning framework appears. In the shorter term, and before a standardised method of assessment emerges, competency-based training and education will likely be employed in efforts to craft more client-centric services.
Emotional intelligence and tech knowledge are complementary but do not have to exist within a single person as long as collaboration is a default option for practitioners. Ultimately, thinking about who you need to collaborate with, in terms of rounding the overall skills profile, will help lawyers to do new things and think divergently about new opportunities.

Some multinationals are addressing the concurrent need for both more client-centrism and a more agile workforce, head on. Accenture, for example, developed a ‘Job Buddy’ programme that has helped to retrain almost 300,000 employees over the four years to January 2019. The programme assesses which roles are most likely to be automated, offers advice on which adjacent roles can be learned within the company and provided relevant training. Within 18 months of launching the pilot, 85% of employees for whom it was made available had used the system to assess their current job and enroll in further training. With 76% of executives believing internal talent mobility is important, but only 6% of companies believing they are excellent at moving people from role to role, such programmes are likely to become more popular.

Legal services are also exploring advanced training options. Hogan Lovells, for example, created a programme for lawyers at French bank BNP Paribas, that saw more than 50 intellectual property and IT practitioners become digital experts. The programme, reports the FT (2019), ‘focused on regulatory challenges, cyber security and the implications of new technologies such as artificial intelligence and blockchain for the bank’s business. It was both theoretical and practical. This initial cohort is now key to the bank’s own digital transformation.’ However, unlike Apple, IBM, Google and others that are placing the importance of skills over degree titles, law firms are yet to materially change hiring criteria, routes into the profession or develop new career pathways within the industry.

Given the very real need for continuous learning and new skill acquisition, law firms will have to assess their provision options. One could be to partner with higher education institutions or professional bodies, the output of which could look like an open-ended membership across a career, granting access to a pool of interdisciplinary learning resources (the ‘personal learning cloud’) with another option seeing learning and development internally focused and generated.

**Jobs and training**

The necessary influx of data conversant talent and changes to what it is legal services provide will likely create new roles. There is no playbook for how legal services should manage the talent transformation that digital and then its logical conclusion of AI will precipitate, yet if the half-life of a job skill is now about five years as research claims, continuous disruption is baked into legal services whether we tacitly accept it or not.

Even without the prospect of substitution automation, the efficiencies that could be gained by aligning DT with workflows more closely are compelling. For example, 50% of organisations’ in-house lawyers spend up to 20% of their time on tasks that do not require a lawyer, indicating ample room to boost efficiency, orient more time at work towards value-adding actions, and shift what it is that legal services professionals do. In any event, the demand on professionals’ time, space and attention could change radically as we approach the 2030s.

A European survey of General Counsel reveals areas of expertise that lawyers feel will most likely be needed in their jobs over the coming years. At 55%, international trade and laws is top, reflecting not just the digital nature of our current phase of globalization but also perhaps geopolitical concerns. Policy and regulations rank at 46%, as does cybersecurity. Competition and antitrust together with data protection round out the top five issues at 45% and 41% respectively. Of the five, two are directly tied to digitalism – cybersecurity and data protection while international trade and competition both have strong digital components.
The rise of such specialisms could bifurcate the jobs market into sought after specialists and left behind generalists, with the latter at generally greater risk of future automation. Dani McCormick of LexisNexis (2019), suggests that as digital transformation and automation account for a wide range of general tasks ‘lawyers will become more and more niche and specialist, creating their own more individual brand.’ This should enable those with the experience, skillset and professional skills to better position themselves as adjuncts to clients’ goals, developing the very skills that DT enhances the value of – emotional intelligence, creativity, and the way in which technology is used.

New forms of training, whether formal or informal, will be needed as Rebecca Sandefur (2019), a sociologist contends ‘that lawyers must collaborate with other disciplines, use new tools - notably technology, and create new paradigms focused on achieving better client/societal results.’ This also suggests the need to establish analytics at the core of the service and relationship, and even incorporating more non-lawyers into legal teams.

For the majority of legal services professionals working within larger organisations, there is an added degree of complexity. The nature and composition of their jobs can only change as quickly as the host organisation. Since only 34% of lawyers believe their organisation to be very prepared to keep pace with changes in the legal market, there could be significant friction between what the client wants and what the market can provide. Such a scenario can exacerbate market changes when they do happen, while increasing the likelihood of the entry of a platformed big tech offering. A scaled legal platform could quickly reorganise legal services jobs; on the one hand value-adding consultancy type jobs – dubbed ‘the new lawyer,’ by Alessandra Almeida Jones, head of marketing and communications at Baker McKenzie (2018), and on the other, a broader lower caste of workers for hire that ‘plug’ into fully digital systems as needed.

An Uber of legal services may or may not be on the horizon, but platforms could still radically disrupt the job market. The concept of a small core team surrounded by agile on-demand teams is more than a possibility as we enter the mid 2020s (for example, Lawyers On Demand and Allen & Overy’s Peerpoint have already proven the concept). Indeed, more than one-half of lawyers expect to see some impact from transformational technologies already here today and the organisational response they compel, yet fewer than 24% say they understand them. Understanding what these digital technologies offer in terms of both process and strategy, for themselves and the client, is a key and urgent undertaking if legal services professionals are to build the complementary (or perhaps dominant) skillsets and aptitudes necessary to develop a lasting career. Seen one way, legal professionals will have more career paths and options to choose from in a digitally transformed industry, and perhaps even more say on work-life balance and where they do the actual work. On the flip-side, relatively few in the industry have the skillsets and support structures (such as managers, business models or organisations structure) able to fulfill these new roles.

How and where we work
With augmented reality, 5G and the IoT all combining, consumers will increasingly be inhabiting an ‘intelligent, virtually overlaid world,’ that shifts the how, where and what of our everyday lives. Where we work, play, shop and communicate are all liable to change – and in fact in the early stages of 2020 already have changed dramatically under lockdown conditions. A virtual workforce is cited by Accenture (2018) as able to ‘complete customer-facing and operational tasks to provide increased enterprise scalability and agility.’ Adding aspects of the on-demand economy to this, and including specialists on an as-needed basis could see 24% of organisations take on more business. One direct impact of this could be the blurring difference between private practice and in-house counsel, as improved technology leads to closer
integration of teams around the world. Future expertise, especially for smaller legal services firms, need not be internally housed.

These pop-up teams will increasingly collaborate in virtual space, allowing regional, national and even global input. Virtual and decentralised workplaces are also likely to hasten the demise of hierarchal management, potentially rewrite geographical footprints and benefit those already conversant in collaboration. Such a tech environment will also prove propitious for the ongoing fusion of learning and work.

As we approach 2040, technology will become more ambient, virtually invisible and an inseparable part of our work lives. Today’s smartphone could well become an implantable, any surface able to become a touchscreen and brain machine interfaces offering a different way of interacting with data, technology and the offices we work in. Offices could even become strategic drivers of business, with 43% of business leaders suggesting they are looking to move offices to cities with a compelling smart city vision.

Virtual forms of collaboration, the rise of co-working spaces and how we access scarce talent will all impact how much office space we need, how we use it from day-to-day and in what capacity we use it. For one, Noronha (2018) states that ‘changing patterns of work are prompting companies to see workplace design as a way to attract talent. Office design must be responsive to the speed of change.’ It must also remain cognisant of the potential limits to technology. Dr Fiona Kerr (2019), founder of The NeuroTech Institute concludes that ‘there are a lot of aspects around creativity, adaptivity and complex thinking that get minimised when you interact too much with the technology and are hugely maximised when you create those chemical changes in the brain that come from face-to-face interactions.’ Until we reach that point, we will have the ability to reimagine what we do, how we do it and with whom we do it.

If the incipient trend of workforce analytics expands, our ability to match teams’ talent, workstyles and personalities could enable optimisation to levels that today we simply do not have any quantifiable metrics for. It could also conceivably introduce unrelated but impactful shifts; could ambient data shift the responsibility for employees’ wellness towards the employer? Would, for example, accrual of data indicating stress make it actionable? More to the point will we even have employees, as traditionally defined, as we progress towards 2040 and beyond? The balance between ever closer relationships and much more distant gig-type workers, albeit perhaps within a more formal structure than we have today, is yet to be decided.

The contours of the future are visible however. Eight in ten digital leaders highlight new ways of working as the key to their success. Among all businesses, seven in ten business leaders identify new ways of working as an important factor to enable their digital transformation, yet for many ‘new ways of working’ has (until recently) still equated to allowing remote work once or twice a week. There is an acknowledgment that this needs to change: 84% of executives say they need to rethink their workforce experience to improve productivity, although only 41% of executives consider the alternative workforce trend important – and fewer still, 28%, feel ready to address it. It is worth remembering that you cannot just graft a digital layer onto a 20-year-old legacy system or firm and expect frictionless progress. Only 7% to 18% of all organisations are estimated to possess the digital capacity and agility to adopt to new ways of working, such as virtual collaboration or mobile work. One example of the evolving new ways of working can be found at Ryan, the global tax services firm. Their MyRyan programme allows employees to work anywhere, any time as long as the work gets done, with hourly requirements, location requirements and schedules all discarded. Their success in transforming the workplace has been widely recognised, as over one hundred workplace excellence awards acknowledge. Other examples of workplace distribution abound, with companies like GE and IBM already shifting...
their ‘footprint,’ and posting leaders in regional centers of excellence, dispensing with the notion that leaders only operate out of corporate headquarters.138

Structures and cultures

80% of business leaders suggest their organisation culture must change significantly for their company to meet its goals.139 In fact, 27% of executives suggest their organisational culture is completely out of sync with their strategy.140 If anything, these issues seem to suggest that the long tail of digital disruption could account for an increase in the rate of Fortune 500 failure, as well as among smaller businesses. New approaches to organisation and culture are needed.

The concept of ‘product owners’ is well established within software and tech companies, and has now been introduced at Kennedys in what is somewhat an uncommon move for the legal services industry. Noted by the FT in 2019, ‘the firm instituted an internal incubator that allows employees to become the chief executives of their own client-oriented product ideas. Employees are responsible for taking the products to market, and if they are successful, the promotions they earn allow for another route into the partnership.’141 Cross-pollination of ideas will likely feature heavily in the future of legal services.

Business models from adjacent or even unrelated industries should also not be discounted as ways to satisfy customer demand in a new way. By 2030, for example, up to 80% of new wealth management clients are expected to demand access to advice in a data-driven, hyper-personalised and continuous context, potentially via subscription.142 Legal services should consider carefully how other industries craft customer-centric propositions.

To yield digital technologies to their fullest while staying lean, major companies are being compelled to re-examine and rethink their functions as part of transforming their core.143 Since digitalism now permeates nearly all aspects of most organisations, the role of IT is one of several being reworked. 3M & Nestlé are decentralised and use shared service centres and information centres to help teams maintain productivity and alignment with overall business strategy. It is likely that within a decade or so, no single organisations will be able to house all the tech skill and know-how necessary to run business operations under one roof. In-house capabilities will likely be augmented with a collaboration model144 that features third parties, ad-hoc teams, outsourcing and/or even on-demand workers, in part because digital compresses the half-life of skills – especially tech ones.

Deeper and more granular business insight will be needed to make more fluid business arrangements work. The move towards distributed and temporary work teams has significant implications for data governance for example. Already, close to half of executives admit to not capturing the full value of their data,145 with business silos, lack of cohesive data structures and inadequate analytical talent all hampering efficacy. The result of a lack of a unified system and structure aligned with a poorly thought out strategy for collection is often bad data, which has both a direct and indirect cost. The cost of bad data is estimated at 15% to 25% of revenue for most companies, with rising data volume obviously enhancing this impact.146 This is a problem when some 79% of executives continue to base decisions, processes and strategies on data, yet large swathes of data remain unverified as factually correct.147 Scaling new data architectures and practices across a range of ecosystem partners will carry not just organisational importance, but privacy and legal ones too.

The challenges and opportunities inherent in data are compelling, to the point that data is now the core asset for many organisations. This will intensify, since by 2030, global dataflows are expected to total more than 20 times those of 2018.148 This will place greater emphasis not just on basic practice such as data hygiene, but the actual sourcing of such data, which in turn further drives ecosystems’ value. Back end processes, business strategy and even organisational structures all need to adapt to new data-heavy
technologies such as the IoT. The distinction between traditional and tech company will likely disappear in the coming decade, often while involving contradictory goals as noted by Miller (2019), ‘such as cutting costs while investing in future tech, or defending existing business while entering new ones.’ This will ring as true for legal service organisations themselves as for their clients.

Shifting the underlying culture to a point where such challenges are not only dealt with but seen as opportunities can be a long and difficult process. As they embark on change management, leadership within legal services ‘must be proactive in shaping and measuring culture, approaching it with the same rigor and discipline with which they tackle operational transformations.’ This must feed into a more holistic interpretation of DT for the legal services industry.

The launch of new ancillary business streams will almost always need new tech platforms and tools backed by newly skilled legal workforces, new talent pathways and reward systems, as well as non-traditional organisational structures and capabilities. It also requires an intense focus on client-centricity and a greater alignment with wider business trends and insights that are generally lacking among law firms.

Long term, these drivers will ensure that an almost contradictory balance of innovation and cost reduction will drive the capture of market share for many law firms. This thinking, of both innovating and lowering costs, needs to be instilled among remaining proponents of traditional working processes such as the billable hour.

Whether the change in underlying business environment occurs organically or comes through an Amazon or Google initiative, Cohen (2019) asserts that ‘the hegemony of the traditional law firms is over, and the partnership model will experience further consolidation and a thinning of the herd. This process is well underway and will accelerate.’ Although the same structural pressure may not be brought upon in-house lawyers, some 81% of corporate legal departments are said to be unprepared for digitisation, revealing their own organisational issues.

It has been noted by Mukharjee (2017) that ‘history warns us that mastering digital technology won’t determine which companies become corporate winners. Instead, making the necessary organisational and leadership changes will.’ Seen through this lens, what is needed is not just a revolution in the skills of legal professionals, but the skills, culture and practices within legal organisations’ leadership.
From now to 2050: understanding technology

Technology may be the vehicle rather than objective of DT, yet its role in changing what we do is undeniable. Our existing assumptions underpinning work, jobs, training and education are being challenged, as Leonhard & Gannon (2019) note, by ‘technological advancements stacking atop one another, eclipsing decades of breakthroughs in scale and impact.’ It is plausible that the rate of change could see more discontinuities in the next 20 years than the previous two hundred. Perhaps the only thing we can be certain of is that in the decades to 2050, the way we work, live and conduct business will not be like the past. What we do, how we do it, where we do it and with whom we do it will all change beyond recognition.

Whereas single technologies have, in the past, helped define an era, we are no longer in a place where it is possible to identify the most important technology. The simultaneous evolution of technologies and their interplay with each other presents a different way of thinking for legal services. Although a wide range of technologies will impact legal services, some of the key ones are presented below:

**Internet of Things (IoT)**

**What is it?**

- An architecture connecting people, data, devices and sensors that promises to both increase data volumes and change the nature of data towards real-time. By 2021, one million IoT devices will be purchased around the world every hour of every day. By 2025, up to 152,000 devices a minute could be connected to the network. By 2027 there could be 150 billion networked ‘sensors’, globally.

**Examples:**

- The IoT encourages BYOD (Bring Your Own Device) policies. Seattle-based law firm Perkins Coie ‘has a 100% BYOD policy, but uses software that only lets employees access data through trusted devices, apps, and cloud services, with the access levels selected by the firm’s IT administrators.’

- 4,756 IoT connections are made every minute. By 2025, we are forecast to interact with connected devices 4,800 times per day.
Future implications: [162, 163, 164, 165, 166]

- IoT law could easily form its own new area of practice. Talwar and Whittington note that ‘opportunities might emerge from pre-emptive legal insurance and retainers to protect against future accusations’.

- An IoT data marketplace, potentially worth some $3.6 trillion could emerge, as could customer data accounts that see micropayments made for the authorised use of data.

- IoT could deliver real transformation through the concept of ‘embedded law.’ Since IoT have technology embedded in them, there is no reason not to be able to embed legal information.

- Devices themselves ‘could form contracts (e.g., for repair services), signal potential problems, or perform different functions depending on whether the IoT owner is in good standing or default’.

- The IoT flips the model of discovery on its head. IoT data could theoretically find cases that people are unaware of.

- Legal services have the opportunity to expand their value offerings by becoming an additional information vendor – business models will shift.

- Fundamentally, ubiquitous IoT data changes the nature of how we use it; to derive competitive advantage it will need to be instantly actionable, both from a consumer and employee perspective.
Technology

Distributed ledgers

What is it?

- Blockchain broadly refers to any distributed electronic ledger that uses software algorithms to record transactions with reliability and anonymity. The technology chronologically records and links every piece of ‘information’ created across the network, where the ‘information’ could represent transactions, contracts, assets, identities, or anything else that could be scribed in digital form.

Examples:

- Australian firm Herbert Smith Freehills joined with Melbourne’s RMIT University with the goal of crafting an intensive three-week coding, blockchain and smart contracts course. A reported first for the market, the course is cited by the FT (2019) as ‘designed to increase digital literacy, cyber security awareness, coding skills and understanding of foundational blockchain topics among lawyers, who are then more able to author and interpret smart contracts.’ If training provision does indeed become a key point of differentiation for talent looking to enter the profession, the middle could be squeezed by the bigger firms able to offer such career enhancing education.

- US based FisherBroyles LLP has created what has been dubbed as the first distributed law firm in the world. Their platform is based on compensation, people, location, and technology, using smart contracts on a distributed network where all partners can see how everyone is billing.

- DeMuro (2018) states that ‘Blocknotary is a company that seeks to apply blockchain technology to legal documents, and offers “timestamps and fingerprints for media files”, thereby eliminating the need for the rubber stamp of today’s notary public.’

Future implications: [171,172,173]
Technology

Artificial Intelligence

What is it?

- The broad umbrella of software development for task assemblage, task augmentation and task substitution, including chatbots, machine learning, natural language processing and other cognisant systems. It is forecast by PwC (2019) that AI’s job displacement effect will occur in three broad waves: ‘algorithmic (until early 2020s), augmentation (to late 2020s), and autonomy (to mid-2030s). The first wave will impact relatively few jobs in terms of direct substitution – perhaps 3%. By the mid-2030s, however, up to 30% of all jobs (or the tasks therein) could be automated – mostly those involving clerical and manual tasks. Worries about imminent replacement are probably overhyped.

Examples:

- Cognisant systems: A 2018 study pitted the LawGeex AI solution against 20 US-trained top corporate lawyers and found that AI had 94% accuracy vs. 85% for the humans.

- Machine learning: Kira is not tilted towards job replacement but rather enabling lawyers to do different things.

- Chatbots: DoNotPay is a free service that helped appeal over $4m in parking fines in just 21 months by successfully contesting 160,000 of 250,000 parking tickets (64% success) in London and New York.

- Gilbert + Tobin developed a process management and review tool dubbed ‘dd’ that enables deal teams to complete due diligence on a platform linked to documents held in an external data space. The tool also provides concurrent training and back-up by both, including legal tags to help with best practice, and a customised checklist of questions and auto-corrects for the type of document being reviewed.

- Organisations such as Australia’s Commonwealth Bank have already started looking into the implications of AI-held bank accounts.
Future implications: [179, 180, 181, 182, 183]

- McKinsey estimates that 22 percent of a lawyer’s job and 35 percent of a law clerk’s job can be automated
- The rise of some applications of AI, such as robot doctors and AI medical diagnoses or even autonomous cars, may call into question longstanding legal principles, such as liability
- The need to educate professionals ‘so they can be effective complements to machines, through both skill and attitude. Those who are best at working within hybrid systems will have the most opportunities’
- Entry level jobs and paralegals may be heavily reduced, requiring prospective lawyers to develop expertise in new fields such as cybersecurity as a way into the profession
- By 2026, futurist Thomas Frey suggests we will see legal documents written by AI
- New tech will enable lawyers to reorient energies – i.e. the estimated 80 percent of legal cases (at least in the US) that go unmet due to a lack of resources

The Law Society of England and Wales
Technology

Digital assistants

What is it?

• Computer software that acts as a different interface (i.e. voice), that will increasingly act as our gateway to broader forms of technology such as AI or the IoT.

Examples:

• Many legal research assistants are available, such as IBM’s Ross and Eve. Most legal publishers also provide digital assistants to help with legal research.

• In the UK, RentersUnion is a chatbot that provides legal advice on housing issues for residents of London. The bot analyses a user’s tenancy agreement and then helps generate letters or recommends appropriate action.184

Future implications: [185, 186, 187, 188, 189]
Technology

Quantum computing

What is it?

- A new method of computing potentially 100 million times faster than conventional computing and able to simulate complex scenarios, analyse patterns, solve compound problems and accelerate machine learning.

Examples:

- None yet in the legal profession. Quantum computers will probably not replace today’s traditional computers en masse, but IBM sees them becoming mainstream within five years.190

Future implications:

- The speed enabled by quantum superposition will drastically change cryptography, machine learning and info security. The entire concept of computing may change radically by 2050.

- Whole new cybersecurity paradigms will be required – quantum computing could decipher current encryption rapidly, meaning for example any smart contract in blockchain may no longer be secure.

- A whole new concept of the law could emerge, with the identification of small discrepancies or variations sold as a real-time service to companies in a way that positions law as an innovation engine.

- What does it mean to have quantum derived interpretations of documents, or a real-time analysis of public records? Or of emerging law or precedent?
Conclusion

Challenges:

1. Identifying and articulating a place within an ecosystem, including areas that need to be augmented by third parties’ skills.
2. Identifying the key skills for the future and elevating digital skills across the workforce.
3. Ensuring that digital transformation does not stop at the tech interface and encompasses the entire organisation, including its leadership.
4. Cutting costs while investing in future-focused innovation.
5. Developing agile ways of working that better serve clients, tap new sources of expertise and skills while maintaining the strengths existent in current corporate culture.
6. Being able to respond to the tech driven challenges to the rule of law and ensuring access to justice remains.
7. Developing unique selling points in an era of increasing commoditisation.
8. Developing services and products that are increasingly personalised, contextual and even real-time.
9. Changing from a position of relative strength is in some ways harder than from a position of weakness.
10. Developing data proficiency that uses the correct data, at the right time, to inform decision making and services.

Opportunities:

1. Shift what it is legal services provide and pioneer new offerings underpinned by new skills.
2. Build new revenue streams – such as advanced consulting – off the back of digital.
3. Build agile structures and systems that not only attract the best talent, but set them free to do their jobs as best they can.
4. Create or participate in ecosystems that allow for better reach, new services and access to data.
5. The nature of the digital world and what follows will create a lot of legal services work.
6. Drive change across a range of industries by positioning legal services as an innovation engine.
7. Compete for the best digital talent through workplace perks and design.
8. Lower one of the major barriers to access for customers by investing in measures that ultimately lower costs.
9. Define the future parameters of what legal services do, how they do it and with whom they do it.
10. Design the agile law firm capable of rapidly prototyping new methods and processes securely.
Questions for members to consider

Do we have the capacity to identify the critical skills for the future and provide suitable training and new talent pathways to satisfy this demand?

How could we reimagine the access, delivery and personalisation of legal services?

Are we ready to align silos, departments and organisations more generally with digital transformation?

Do we follow other digital templates or forge our own?

Have our leaders identified where and when new opportunities and challenges will arise as a result of shifting markets and competitors?

Is our IT architecture aligned with our overall goals?

Do we have a culture of collaboration? If not, how do we build one?

Do we have the personal and organisational agility to fail fast, partner widely and adapt to a quickening pace of customer, market and potentially regulatory change?

What is our proposition as potential partners in an ecosystem?

Are we, or our managers, capable of delivering the range of change required?

Do current change management paradigms suffice for the digital age?
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