The Law Society

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CAPTURING TECHNOLOGICAL INNOVATION IN LEGAL SERVICES

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THE LAW SOCIETY OF ENGLAND AND WALES

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FOREWORD

Solicitors are at the heart of every community, working tirelessly to help and support our clients, be it to facilitate business or provide valuable personal advice - solicitors are here to help. The essential role of a solicitor, to assist our clients to the best of our abilities and uphold the rule of law, has not changed, but the way we do our jobs has evolved as the world we live and work in has.

Across our society we are currently experiencing unprecedented rates of economic and technological change. As our clients work hard to respond to these changes we as a profession will rise to the challenge, and technology offers huge opportunities for solicitors to innovate in ways that benefit them, their clients as well as the technology innovators that assist them.

Now a new report, *Capturing Technological Innovation in Legal Services*, brings together examples of that innovation, and insights from those on the front line of change.

It paints a picture of a legal sector engaging with new technology - advanced automation, machine learning and artificial intelligence (AI) which will allow machines to augment the skills of human solicitors in ways that were unimaginable even a decade ago. It introduces us to some of the pioneers of this legal innovation, firms which are pushing the boundaries of how technology can engage with complex legal concepts.

It also lays bare the quintessential challenge of innovating in the legal sector. While three quarters of firms surveyed agreed that "innovation is critical to exploit opportunities and differentiate my firm", more than half said they were more likely to wait for others to pioneer new technologies.

The legal sector is brimming with innovators looking for the next opportunity, or going out and creating that next opportunity for themselves.

The report details areas of innovation - in the products, the processes, and the strategies we use - where technology and new ways of thinking and working are making big changes. From Bitcoin to machine learning to "lawyers on demand", we see solicitors taking advantage of new opportunities to reshape the legal services sector.

For the Law Society, this report highlights the huge role we have to play in supporting solicitors through these changes.

With our unique perspective across the entire solicitor profession, we can act as an innovation nexus - connecting innovators and their ideas with firms looking for a solution or an edge.

We can maintain the whole of sector view to spot emerging concerns, bring together resources to tackle problems, and advocate for policy change when it inhibits innovation, or simply is no longer fit-for-purpose.

By connecting those with the will to innovate and those with the skills to make it happen, we can help the solicitor profession tap into the huge potential these changes offer.

The legal profession is sometimes characterised as resistant to change. This is unfair. We change to provide value to clients, but preserve essential elements of professional behaviour.

This report shows us a very different profession, one with energy and ideas, ready to promote a revolution in how we deliver legal services. It is an exciting time to be a solicitor.

Robert Bourns
President of the Law Society of England and Wales

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EXECUTIVE SUMMARY

The Law Society's latest report discusses changes that will have a profound effect on every firm's decisions about staffing, pricing and location.

These changes herald the next steps in an information revolution as technology becomes an ever more central part of our social and commercial interactions.

These systems are adopted by firms, embraced by new entrants to the market and driven by clients.

The speed of change is accelerating as new and disruptive technologies serve to increase transparency, reduce price and increase value of services across the sector.

No-one can be sure what this change heralds for the legal sector; this research discusses current and future practice, using voices from across the profession to explore what lies ahead.

The interviewees in this research can be described as the pioneers and early adopters of new ways of working and, as such, offer insight to those watching from the sidelines.

Every one of their experiences should make us reflect on the way we are now and the way we will be. No two stories are the same

'our ability as an industry to innovate, deploy technological solutions and operate globally is absolutely key to maintaining our position as a leading global centre in my view'
(CEO, Top 200 firm, B2B).

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BACKGROUND

In February 2016, a survey with the Law Society's Insights community found that nearly three-quarters of respondents 'strongly agreed' (24%) or 'agreed' (47%) that *'innovation is critical to exploit opportunities and differentiate my firm'* and it is largely accepted that firms recognise an imperative to change amidst shifting market conditions.

Yet for many firms there remains a gap between the recognised need to change and taking the first steps towards innovation – for any number of reasons which could include lack of confidence, lack of funding, lack of awareness of how to begin, or a disconnect with senior decision makers. Despite 50% of survey participants reporting that they were *'good at generating new ideas and approaches'*, over half of all respondents said their firm was more likely to wait and see what happens in respect of new technology – leaving it to pioneers and second adopters to lead the way. Only 57% had a clear strategy for addressing change in the market.

The Law Society's *Future of Legal Services* stated that 'innovation in services and service delivery will become a key differentiating factor' (Law Society 2016: 4). In *Capturing Technological Innovation*, we explore how some law firms have taken up this mantle for innovation to (re)conceive the processes of performing and delivering legal services. The research reported here brings together examples of innovation from law firms discussing and adopting technologies to greater and lesser extents.

We have paid particular attention to the three areas where technology will be affecting competitive advantage, (i) product innovation, (i) process innovation and (iii) strategy innovation covering:

- services offered (type fit to client needs and whether unified, distributed or disaggregated components) [product innovation]
- how services are resourced (to include human, robot and physical resources) [process innovation]
- how services are priced (and to reflect gains made from technology and the sophisticated configuration of resources) [strategy innovation]

The overarching aims of this research were:

- to capture technological innovation in action in the context of legal services, with a particular emphasis on highlighting practical examples and perceptions from law firms, start-ups and technology suppliers
- using interviewees' views and examples, to model patterns and steps towards innovation that might be useful to members when thinking about their own businesses and possibilities for change.

Analysis draws from a multi-strand data approach that includes: desk research; online survey and discussion with the Law Society's Insights community; qualitative depth interviews with legal technology solution suppliers, legaltech and fintech start-ups; and individuals in law firms in roles such as Head/Director of Innovation, Chief Technology Officer, Senior Partner and CEO.

Innovation consultant, Jeffrey Baumgartner advises 'define your strategic vision and innovation comes naturally'. He notes:

'companies like Apple, Tesla and Amazon do not use the word 'innovation' much, if at all, in corporate literature. To the best of my knowledge, they do not employ people with the official title of "innovation manager"... These companies are not concerned about innovation. They are focused on the strategic visions – often as laid down by visionary founders – and see innovation as a mere tool that helps them move towards that vision'.
(Baumgartner, no date).

Participants in this research were chosen for being particularly innovative in areas of their business, for being in an 'Innovation' role and/or as noted start-ups and new players. As such it is no particular surprise that innovation was firmly on their corporate agendas, but following Baumgartner, being innovative was, for all interviewees, secondary to fulfilling a strategic vision.

'it's just kind of embedded in the firm that we're constantly looking at the quality of our work and how to improve it. And if you don't have that ethos you just rapidly fall behind because of the competition'
(Senior Partner, large firm; B2C, legal aid).

'it is about enhancement of value to our clients and also freeing up our lawyers to do the things they do really, really well and for which we can recover and which our clients really value... so nothing about innovation changes our strategy. Innovation, we are going to use to enhance what we currently offer and enhance our client proposition. That's a very important part of it'
(Director of Legal Services Innovation, Top 50 firm, B2B).

The process of developing an innovation strategy should start with a clear understanding and articulation of the specific objectives of the business and how it can achieve a sustainable competitive advantage. In so doing a robust innovation strategy answers questions around how innovation will create value for clients, how the firm will capture a share of the value its innovations generate and the types of innovations that will best allow the firm to create and capture value in different operational parts of the business. The innovation strategy for interviewees largely focused around their client proposition and the ability to differentiate their firm from others in the same space:

'we're looking to create an amazing user experience online and via mobile including smooth, quick customer on-boarding and intuitive account functionality. However, I view that, especially from an innovation standpoint, as table stakes. Customer facing propositions today, banking or otherwise, need to be online and easy to use in the vast majority of cases'
(Head of Innovation, Challenger Bank).

In respect of their online presence, the latter interviewee talked about 'table stakes' and an understanding that to even be considered credible in the (digital) market an organisation had to have a certain level of sophistication in design and user experience that was at least comparable to leading consumer brands.

The report discusses a range of strategies to address legal problems in non-traditional ways, to inspire others to revisit their own business models and strategies in light of other opportunities (technology; partnerships; changed offerings; resourcing models) and to prepare for change.

For corporate law firms, technologies such as machine learning and Artificial Intelligence (AI) function behind the curtain to bring greater efficiency, simplification and speed to the heart of the process in volume and transactional work; other tools offer sophisticated ways to manage risk and to address the emerging legal needs of corporate clients' businesses.

In access to justice and consumer-driven innovations, technology brings efficiency and simplification to a surface level by offering consumers explanations and guidance into legal advice. For legal aid and small consumer firms, technological innovation brings new ways to interact with clients, but also predictive analytics to weigh the merits or financial viability of a case to the firm.

The speed and efficiencies, economies of scale, of accuracy and remote connectivity enabled by various technologies are arguably essential components of the way in which firms reconceptualise what is possible and, more importantly, bring a newfound agility to product, process and business model innovations.

Strategies for innovation were not always driven by the positive aspects of what technology made possible.

One interviewee suggested that due to legal aid cuts and restrictions, they were being paid less per hour now than in 1993 and this meant the firm had to be innovative in looking ahead and changing their areas of work, finding new sources of funding or ceasing to offer certain kinds of work.

Another interviewee was very aware of the impact of regulation on his firm's strategy *'we have a significant amount of regulation which means we can't just get up in the morning and do what we think the market wants. We have to construct our solutions in a way that complies with our regulatory commitment'* (CEO, Top 200 firm, B2B). The impact of regulation on innovation was something raised by Roper et al. (2015: 52ff) and, at least for this interviewee, was a trigger (along with funding for innovation) for thinking about how different business models might work better to achieve his firm's goals.

One Global Head of Innovation at a Top 50 firm felt that *'a lot of innovation needs to be "hidden"'* and that individuals need space to experiment and to protect an idea in its early stages: *'lawyers are typically a sceptical bunch and big partnerships often have flat senior structures so it can be easy to kill off an idea. Lawyers are trained to find holes in an idea'*. For this interviewee it is better to innovate under a different brand if the firm wants to expand to a new market or to different clients. The unmet needs or broader client base could be of lower value work and thus risk diluting the main brand.

Looking forward, the leading legal service providers across all sectors will likely embrace innovation as part of their corporate DNA, inspiring people with a vision for how processes can be redesigned and where the business could follow a completely new direction. One interviewee stressed how important it was to keep asking 'why?' Not just to innovate for the sake of it, but to ask 'why' things had to be done a certain way and 'why can't I do it?' in respect of an innovation: *'keep asking "why?" until someone gives you a "because…" with a defendable reason'* (CEO, Top 100 firm, B2B/B2C). For another interviewee, his firm had a global strategy which *'features the word "innovation" a lot'*. While this did not automatically create a culture of innovation at the firm, for this Global Head of Innovation, *'it helps. The strategy provides a platform to talk from for the people initiating innovation'*.

What the world looks like now
Technological innovation in practice

Working smart

Legal technologies – from document assembly and automation to Natural Language Processing (NLP), Artificial Intelligence (AI) and Virtual Assistants – offer exciting possibilities for the way legal processes might evolve or be reinvented for the future. But such technologies are still a relatively unknown and unexplored landscape for the majority of the profession; neither are these systems a fix for struggling business models or outdated processes.

Firm-wide process improvement and process re-engineering are the most important steps that many firms still have to take in any innovation journey.

For interviewees serving corporate clients, innovation and improvement is built on good collaboration between firm and client, about getting service right for clients. Interviewees are aware of changes within client behaviours that affect how the firm serves them, and the different ways in which clients expect to interact.

Interviewees told us about new services prompted by clients who need increasingly sophisticated international solutions. One firm now advises on drones, which it sees as a natural extension of its right of way and public access work; another advises on Bitcoin and cryptocurrencies. As the use of innovative

technologies grows across all sectors of society firms will increasingly find there are opportunities to serve clients with unforeseen legal needs.

Innovation hubs

This research throws light on a number of centres, labs and hubs set up to incubate and accelerate innovation. Big Law might set up a dedicated Innovation Centre to explore innovation in the context of the firm's business; other firms invested in subsidiaries that act as spaces for any start-up to propose ideas. Elsewhere networks of different stakeholders come together to create environments to foster innovation while hackathons create hubs of intense creativity often directed at specific legal problems or questions.

The ethos of these hubs is one of co-innovation and collaboration – a theme many interviewees predicted as a key component of business models and technological innovation in law firms going forwards. The hubs feature showcase opportunities for firms to incubate their own innovations or to participate in events and centres that help to shape the future practices and processes of legal services.

Robotic Process Automation (RPA)

Gartner forecasts that, by 2025, around one third of current jobs will be automated. As more technology vendors and start-ups release solutions to automate standard and repetitive processes, firms should ask what transactions they perform regularly and look to automate those. This process cuts costs and frees up staff to perform technical and advisory roles, adding value to the client.

Robotic Process Automation (RPA) can bring 20 to 40% cost savings to a company. RPA removes the risk of human error, improves compliance and can bring a business' Service Level Agreement close to 100% (Burgess 2016). RPA has become a high investment priority for larger law firms (KPMG 2015) and is having the biggest impact on the off-shore model, as work once outsourced to humans in India or the Philippines can now be completed inside the firm, using robots.

A typical robot is 33% cheaper than the cost of an offshore BPO and only 10% of the cost of an onshore FTE (Burgess 2016).

Most value can be gained from RPA if firms ensure their processes are streamlined and efficient first. RPA can then be used to automate burdensome, high volume, and time-consuming back office activities. By completing tasks in the same manner as a human employee would, RPA is able to work with legacy systems without the need to restructure or re-engineer existing platforms. This means it can be a quick and affordable step towards digitisation for firms.

Machine learning and Artificial Intelligence

Machine learning is another technological trend that commentators expect will change the supply chain in legal services. Ovum predicts that 'machine learning will be a necessary element for data preparation and predictive analysis in businesses moving forward' (Marr 2016).

Machine learning algorithms are designed to detect patterns in data and then apply them to new data in order to automate particular tasks. This function is based on algorithms that can learn from data without relying on rules-based programming.

Many law firms have had document automation for a long time, but these tools have evolved considerably in the last few years. Using automation, logic and decision trees to create document templates that define all of the relevant search terms upfront, non-lawyers and businesses are able to use the technology to produce initial draft documents and contracts that used to require input from legal teams.

One interviewee recounted that Kira needs as few as 30 training examples, after which the programme's accuracy becomes very good. This is in contrast to other products he had tested, which claimed to need 1,000 examples before becoming accurate. As senior lawyers are the most appropriate trainers of the software, a fast-learning, accurate system is ideal.

One comparison test between human and machine learning systems, at first without doing any training on the machine at all, provided a 40-50% efficiency saving on human time for equivalent work, even accounting for the human review time. For a second test, the firm taught the machine provisions from scratch, and that *'had a really phenomenal, like, 79% efficiency saving'* (Director of Legal Services Innovation, Top 50 firm, B2B).

Machine learning works best when there is a large amount of meaningful data available and to date has been most successful in large B2B firms. Machine learning might not apply to many tasks done by solicitors and there are limitations around how it deals with legal abstraction (eg reasonableness, justice). Most value lies where (i) there is a mass amount of data to be analysed; (ii) it is possible to find proxies and patterns in the law; and (iii) where past data is generalisable to new data.

Predictive Analytics

Predictive analytics is the practice of extracting information from existing data sets to determine patterns and predict future outcomes and trends. Predictive analytic programmes are already being applied to massive datasets to spot trends and generate insight around case behaviours. These tools add to a stable of technological innovation aimed at helping law firms and General Counsel (GCs) manage risk in their decision-making.

Platforms

Many law firms are spending a disproportionate amount of their IT budget on simply making sure all their legal business software applications continue to work together. The benefit of adopting a platform approach means main IT components are resolved by a major IT player (eg Microsoft), ensuring a more likely compatibility across systems. This lowers the cost for firms to gain access to the latest software and upgrades, ensures different systems speak fluently to each other and brings an ability to bolt on future new legaltech start-up solutions developed on (or with compatibility with) the same platform.

Agile resourcing

The growing use of advanced document tools and machine learning, coupled with a generational push toward freelance and portfolio careers, is changing the legal services workforce – including how, when and where lawyers of the future choose to work.

Fluid resourcing models such as BLP's *Lawyers on Demand* (LOD) allow firms and in-house departments to flex the size and capability of their legal team when they need it, offering expertise without the overhead.

The on-demand economy is the result of pairing a flexible workforce with the smartphone, which now usually provides far more computing power than most desktops. Innovation to facilitate on-demand resourcing, made familiar by companies such as Uber, has already taken hold in consumer servicing. For example, TaskRabbit's same-day service platform instantly connects users with skilled Taskers to help with odd-jobs, DIY and errands.

Conversation as a platform: virtual assistants, livechat and chatbots

Along with advancements in natural language processing and deep learning, technology companies are embracing artificial intelligence-powered software to create innovative user engagement and interaction tools.

The chatbots envisioned by the technology industry combine artificial intelligence with voice recognition that relies on the way humans naturally speak. The goal is to create a situation where users feel they are communicating with another human, rather than a piece of highly intelligent software. This model reduces costs for companies and increases efficiency for clients in the manning of areas such as customer service.

Chatbots can add most value in B2C firms. The chatbot can help to steer website browsers to the firm, presents a friendly approachable interface and, via machine learning, answers basic types of FAQ (or

signposts people to more information). The chatbot can also triage areas of enquiry and send them to the appropriate person in the firm, saving staff and client time.

Virtual assistants can onboard new clients and, for the firm, help to manage work allocation, work flow and project status. Virtual assistants can provide a dashboard showing how many live cases there are and which lawyers are dealing with them, the average length of particular case types and different outcomes, enabling the firm to deploy resources to optimum value for both the firm and its clients.

Pricing models

While we are seeing more and more legal services switch to fixed fees, even this pricing model does not ensure firms are themselves getting the most value out of their resources.

Beyond cost, lawyers are realising that to maintain and strengthen their relationships with corporate clients they have to find innovative ways of providing value after a deal is done.

Where firms have found notable time and cost savings through the use of technology and process automation there now arise concerns that clients who are aware of these systems will expect a drop in fees.

A 2015 survey by ALM Legal Intelligence, found that 76% of large US law firms now employ someone with pricing responsibilities within the firm, and of those, 38% had someone dedicated to the role.

Technological innovations that provide B2B firms and corporate clients with real-time transparency on legal fees and areas for improved efficiency, can help with client relationships and the firm's own resourcing model. Offered on a Software-as-a-Service (SaaS) or pay as you use model, these are affordable tools to help firms add value to client offerings and, by allowing clients to have full visibility on budgets, gain some credibility on negotiations over price.

Innovating for access to justice

A growing number of technology tools can facilitate access to justice. Many are in use or in test phase by law firms and advice agencies, but new tools appear frequently, bolstered by events such as legal hackathons, law school competitions, innovation hubs and access to seed funding, yet adoption of the best tools is sporadic, and their use is far from widespread.

Use of intelligent technologies and user-friendly question interfaces prompts a shift away from confusing information or explanations of legal forms and procedures, towards a dynamic functionality driven by underlying expert knowledge. Online tools can include: problem diagnosis, delivery of customised information, self-help support, triage and streaming into subsequent routes to resolution.

For B2C firms, Q&A interface systems (such as Rechtwijzer and Solution Explorer) offer ways to interact with potential clients in useful and time-efficient ways. Clients can be walked through different factors to consider in respect of their situation, while, at the same time, the system triages cases and directs information to the right person in the firm or to other sources of help. This saves the firm time and collects important information prior to any initial interview.

Smart forms and assisted complete forms

Many of these technologies are designed primarily as document assembly tools. These systems are designed to collect facts from users and produce answers based on a decision-tree analysis.

Technological innovations that draw on document assembly systems to create smart or assisted complete forms offer a way for firms confidently to share more routine tasks with clients (to hand back basic matters to the business for in-house lawyers). Guided by a bot or by a Q&A tree, users encounter a basic interface (rather than forms filled with legal jargon), which can later be checked by a lawyer or technological verification system – leaving lawyers more time to deal with complex matters.

Mobile

The consumer market has seen a seismic shift because of mobile and now smart phones. Individuals expect to be served 'by the world to your phone'. Intelligent programmes predict what our actions will be and offer and deliver us services and products accordingly. Nearly half the planet's population uses mobile technology with the chance to access services, information, and support wirelessly.

Devices such as smartphones and tablets allow lawyers to access law firm data remotely. Lawyers can conduct work on the move with easy access to firms' data and legal research platforms from any location and cloud storage increasing access to data in amounts far beyond the capacity of a given storage device.

Technological innovations can help firms be more transparent with clients. Using technology/apps to give clients access to case updates and clear information about the process and progress of their case – available when and where the client finds most useful – means those clients will not need to call the firm for reassurance and general 'what's happening?' updates.

Advice Apps

The scope for specially-tailored apps in the legal industry is immense, from child support apps that estimate maintenance costs, to apps for users to access information about their rights. Other examples include personal injury apps that store accident information, witness statements and doctor visits, and debt and income apps to help organise debt information and advise on next steps. Apps can also provide legal fee calculators or audio instructions to help fill out legal forms.

Key advantages of a law firm app include: increased practice visibility; closer working relationships between lawyers and between lawyers and clients; new client communication channels; enhanced levels of customer service.

Asking people and things

Instead of finding information via a search tab or drop down menu, a chatbot may open the door for conversation-based interfaces. This is a good tool for novices to the legal system, especially if the bot has the ability to navigate an awkwardly phrased enquiry using natural language processing (NLP) analysis to identify the underlying legal need.

A number of Q&A websites purport to offer legal advice online. This type of service is already huge in the US and we are starting to see signs of US providers setting up in the UK. Virtually none of the sites is owned or managed by solicitors: some charge consumers for answers and many attempt to use legal advice as the 'sell' in a multi-level marketing scheme - which raises questions around whether these sites have consumers' interests at heart.

Advances in sophisticated systems for Virtual Assistants and, in particular, those developing capacity for natural language interaction, suggest that fewer of these Ask A Lawyer/Q&A sites will be manned by legal personnel in the future and more by robots with the ability to test queries against a vast database of past information in seconds – as IBM Watson demonstrates for medicine.

The innovation process in law firms

An innovation strategy should align innovation efforts with the overall business strategy. An innovation strategy sets the innovation direction for the firm, giving employees an idea of what new achievements and directions will best benefit the firm in its future and should address how innovation will create value for clients and for the firm. Without such a strategy, firms will struggle to get buy in and to weigh the trade-offs of competing business activities.

Initiating innovation

While interviewees alluded to 'systems' that worked in their contexts, these were typically not formal processes. Instead, interviewees described an agile and creative tapping into wider opportunities that could help serve clients better and in so doing

enhance their firm's market value and commercial advantage. What interviewees from all but the largest firms had in common was speed to decision on investment in innovation – made in the course of one phone call or one meeting in contrast to large firms that could take months to make a decision on innovation activity.

Heads and Global Heads of Innovation at Top 200 firms noted a tension between the need to identify and incubate innovation projects and the need to integrate them with the rest of the firm's activities across teams, offices and countries.

CEO and Head of Innovation interviewees saw their role as advocates of innovation, to build confidence with senior teams by successfully introducing and delivering innovative change across the business. For each idea that worked, the senior team became that little bit easier to win over with the next idea.

Interviewees cautioned against the blinkers that can come from practising law in the same way and same sort of organisation for many years. Other professions and industries may offer new ways of approaching service process and delivery that might be transferable to legal practice. Introducing tried and tested innovations from other industries into the legal sector can help firms to differentiate their organisation.

Who drives innovation?

Innovation was driven largely by one or more of four instigators: (i) firm owners/senior management; (ii) individuals in dedicated innovation roles; (iii) lawyers at any level; and (iv) clients. Larger firms, especially those in the Top 200, typically had at least one role dedicated to addressing innovation.

At large corporate firms, an emphasis on billable hours targets means that mid-tier and junior lawyers have less time or opportunity to explore innovation; yet individuals are happy to spend their own time working up ideas in a firm that is genuine in its commitment to innovation.

Clients of B2B firms offer rich insight into innovative processes and practices of other industries, as well as emerging legal needs that the firm can step in to serve. Clients are often key drivers of change in firms and may be the ones to introduce innovative technology that the firm can adopt across all departments. For B2C firms the retail market is awash with companies adopting technological innovations to attract, keep and serve individuals – there may be quick wins from the retail sector which can work in a firm's context.

Innovating within legacy systems

For those interviewees who had previously worked at Big Law or in more traditional partnership firms, the common pitfalls when considering innovation clustered around delayed participation, a fear of failure leading to a tendency to stay with the familiar and to view any new technologies or innovation through the lens of what worked in the past.

The Law Society's Firm Survey (2015-2016) found that one in four small firms (1-4 partners) spend more than 90% of their annual IT budget on the maintenance of existing technology systems, while 19% of small firms were spending their entire annual IT budget on existing technology. For large firms (26+ partners), one in four spend more than 75% of their annual IT budget on existing systems. This raises questions around the point at which firms will draw a line under past investments and begin migrating to a new system; also putting a spotlight on the transitional appetite and abilities of the firm.

Funding innovation and ROI

There were clear advantages for new entrants with access to capital setting up as ABS and forming partnerships with non-lawyers, including technology companies (existing firms adopting ABS status have so far struggled to attract capital by virtue of just being an ABS). Magic Circle or Top 200 firms can to an extent fund innovation internally, but other firms were notably at a disadvantage when trying to finance innovation activity or invest in technology.

Interviewees advocated investing time in mapping processes and working out where process stages can be improved before any attempt to automate or introduce technology. Clean, efficient transferable manual processes will bring the best return on any technological investment

An ROI calculator or technology diagnostic can help firms to evaluate whether a technology is a good fit for the firms' business and volume of practice. Interviewees reminded us that firms need to keep sight of the longer term picture when it comes to investment in technological innovation. While some aspects such as robotic process automation can bring relatively swift returns, others take longer; finding ways to shift the partner-profits-per-year mind set is important.

Critical collaborations

Numbers and the capability of tech start-ups and suppliers of legaltech solutions are growing on an almost daily basis. This presents a wealth of opportunity for legal practitioners to form partnerships within a wider business and technological ecosystem; to bring new technologies onboard, and to work with those who have the technology skills to support innovation in business.

In Knowledge Transfer Partnerships, a firm partners with a university or academic institution – the institution gets the advantage of solving a business problem and gets the funding, and the firm gets the advantage of technical expertise applied to their business problems.

Collaborations enable legal practices to achieve more than any individual firm in isolation. By bringing together an atypical mix of resources, firms can better serve clients in a business environment witnessing the blurring of professional boundaries and rise of new skills and technologies. Collaboration can give firms access to particular expertise as needed or to creative discussions to explore new possibilities for business. Such collaborations need not be formal, expensive commercial ventures, firms can get as much value from conference networking, from start-ups, meet-ups and universities.

A practical guide to innovating

Individuals differed in their approach to implementing technological innovation. There were four main strategies: (i) employ coders and build proprietary software in-house; (ii) buy off-the-shelf packages that need a degree of customisation; (iii) partner with a technology company; (iv) invest as shareholder in an independent tech start-up.

Outsourcing technological innovations with high uncertainty to partners that have a better expertise and knowledge base in creating and bringing technologies to market brought benefits to firms. Outsourcing certain components to partners, however, introduces the firm to new risks, and it will be a learning curve for many firms finding ways to navigate a new collaborative ecosystem.

Generating insight from data

Technological innovation is largely driven by harnessing data. Grady (2015) advocates, 'instead of thinking about the law firm as a service provider, let's think about it as a data warehouse'. The examples in this report highlight where innovation brings a newfound insight to the data and metadata of legal relationships.

As firms bring in technological innovations to manage bigger amounts of data and documents in a fraction of the time, these systems can also be used to provide a bigger picture insight on what they encounter (trends, patterns, relationships) – to help firms add value to client services and to the firm's own operations.

Finding spaces to play

Rather than investing mass amounts of time and money into building a revolutionary product only for it to fail at the ta-dah moment, interviewees recommended firms test an initial or incomplete idea, trialling the just 'good enough' to gain a proof of concept and viability, knowing that the experience will improve the product along the way. Innovation hubs, subsidiaries, sandboxes, hackathons and universities all offer potential spaces to play.

Look to other industries/client industries

interviewees recounted the importance of looking outside the legal industry when searching for ideas on how to innovate. One option for firms is to see what has worked well in other sectors that might be applied to a legal business context (especially where there are shared dimensions eg communication; signposting; information delivery; marketing; resourcing). For those working in large B2B firms, clients offer an immediate and (for firms with start-ups and tech clients, in particular) inspiring window into other business processes and operation.

Conclusion

Reflecting on the main body of this report we find a legal services market where interviewees have spoken about innovation in the context of new technologies and process solutions, handling more data than ever before, the need to integrate legacy and new systems, an upsurge in collaboration (inside and outside the firm), and new start-ups that bring their own solutions and agility to play.

Aggregated across all interviewees, approaches to technological innovation addressed:

- changes in client needs
- emerging new markets/client groups
- changing scale of operation
- the application of different pricing models
- the incorporation of new technologies.

The findings in this report raise questions around the ability of technology to improve the efficiency of traditional legal practice and to enable alternative forms of service and delivery, and even to help determine which path is most relevant to an individual facing a particular problem.

The legal innovation landscape is still highly fragmented, and many start-ups offer solutions to very specific, singular problems. This has mostly to do with a general trend among technology developers to focus on creating apps for specific functions, or in response to hackathon challenges.

Over the next ten years, we will likely see business applications that include workflow automation but go well beyond it, to incorporate support for the human cognitive processes as part of the overall business environment. Increasingly firms will be tasked with managing an augmented workforce that includes a new generation of smart technologies, virtual assistants, algorithms, automated processes and distributed devices alongside flesh-and-blood staff.

Beyond a simple transfer of tasks from man to machine, the real power of intelligent automation lies in its ability to fundamentally change traditional ways of operating for businesses and individuals. For all of the technological machine learning, automation and Virtual Assistant possibilities and efficiencies, collectively interviewees were adamant that legal services should not lose the human touch.

Legal businesses which use technology to deliver legal services focusing on smarter, more flexible resourcing, carrying out work in a more project management style and thinking in terms of process management and improvement, will look very different and work very differently to the pyramid law firm of the past. The ability of law firms to plug into these developments through technological innovation and collaboration will be an important factor for their success in future markets.

1. INTRODUCTION

A key strategic aim of the Law Society is to 'support solicitors to develop their expertise and their businesses'. As part this work, we set out a clear undertaking 'to provide effective horizon scanning, market intelligence, insight and news of innovation to solicitors so they can plan for the future'. The Law Society's *Future of Legal Services* report stated that 'innovation in services and service delivery will become a key differentiating factor' going forward (Law Society 2016: 4).

In *Capturing Technological Innovation* we explore how some law firms have taken up this mantle for innovation. The *Futures* report identified the key drivers for change in the current landscape of legal services as:

- global and national economic business environments[1]
- how clients buy legal services (including in-house lawyer buyers as well as small and medium-sized businesses and the public)
- technological and process innovation
- new entrants and types of competition
- wider political agendas around funding, regulation and the principles of access to justice

Although listed as a driver in its own right, technological and process innovation is playing a critical role in how legal service providers (re) conceptualise their business models in response to other drivers and, in particular, how they (re) conceive the processes of performing and delivering legal services. The research reported here brings together examples of innovation among law firms using a range of technologies. Some law firms have even brought in coders to develop their own specific solutions. Legal aid and smaller consumer law firms have turned to innovative uses of technology to expand geographic reach and overcome funding challenges. These approaches have included self-help kiosks, websites that use LiveChat to answer questions, mobile responsive information and tools, and smart forms.

Tangible examples highlight a duality between B2B and B2C firms. For corporate law firms, technologies such as machine learning and Artificial Intelligence (AI) function behind the curtain to bring greater efficiency, simplification and speed to the heart of the process in volume and transactional work; other tools bring sophisticated ways to manage risk and to address the emerging legal needs of corporate clients' businesses. Conversely, in access to justice and consumer-driven innovations, technology brings efficiency and simplification to a surface level by offering consumers explanations of and guidance through legal advice. For legal aid and small consumer firms, technological innovation brings new ways to interact with clients, but also predictive analytics to weigh the merits or financial viability of a case to the firm. We will encounter examples from a number of perspectives through the report.

Technological solutions play a key part in many of the innovations featured in this report, but technology in itself is not the cure-all for firms and few firms will find their problems solved purely by investing in a piece of software. Rather, the need for change and ideas about how to do so come from a firm's strategy and business model; ideas which technology can enable. That said, the speed and efficiencies, economies of scale, of accuracy and remote connectivity enabled by various technologies are arguably essential components of the way in which firms reconceptualise what is possible and, more importantly, bring a newfound agility to product, process and business model innovations.

1. Since publication of the Futures report and during latter stages of the current research, the UK voted to leave the European Union. The Futures report touched on this as a possibility but the reality of reaction to the leave vote has immediately impacted currency, market shares, political and business forecasting, creating an environment of uncertainty in the markets expected to last well beyond 2016. The impact on legal services and firms of different types remains to be seen, save to say this brings both challenges and opportunities for firms, and may shape their innovation activity moving forward.

1.1 Aims and approach

The overarching aims of this research were:

- to capture technological innovation in action in the context of legal services, with a particular emphasis on highlighting practical examples and perceptions from law firms, start-ups and technology suppliers; and
- building on interviewees' views and examples, to model patterns and steps towards innovation that might be useful to members when thinking about their own businesses and possibilities for change.

It is beyond the scope of this report to provide an exhaustive audit of every perceived innovation or disruption in the legal services market. Instead the focus is on the experience and perceptions of particular individuals, and identifying practical examples of technological innovation and practical advice for those looking to bring innovation to their organisation. The report includes some mention of technological innovations affecting legal practices in the US which may offer ideas for firms in the UK. The analysis draws from a multi-strand data approach that includes:

- desk research[2]
- online survey and discussion with the Law Society's Insights community[3]
- 10 qualitative depth interviews with legal technology solution suppliers, legaltech and fintech start-ups, chosen for their innovative uses of technology to create tools for law firms; for fintech, new ideas relating to digital currency, customer service and delivery models may have applications in a legal context.
- 20 qualitative depth interviews with individuals at law firms in roles such as Head/Director of Innovation; Chief Technology Officer; Senior Partner; CEO, chosen to understand their approaches to innovation and examples of notable innovations (in business model, area of practice, use of technology, collaborations). Interviewees were based across a spread of firm types: Big Law, large B2B firms, small boutique B2B firms, small-medium B2C firms (including legal aid firms).

In-depth interviews covered topics such as: how the innovations discussed originated, were implemented and evaluated; strategy and culture; impacts of such provocateurs as artificial intelligence (AI) and Bitcoin/blockchain; and the potential for 'radical' disruption and a reinvention of established legal processes. Throughout the report a series of feature boxes present practical examples of technological innovations in action and key insights for firms looking to innovate in their own practices. Some examples and aspects of innovation have been anonymised and clear identifiers removed from quotes.

Capturing Technological Innovation forms part of an ongoing programme of futures thinking that will enable us to: (i) understand emerging future issues likely to impact the legal profession and increase members' and public understanding of them; (ii) support members by providing awareness of and guidance on technology and process innovation; and (iii) help members to engage with new and evolving business models. The report discusses a range of strategies for addressing legal problems in non-traditional ways in order to inspire others to revisit their own business models and strategies in light of other opportunities (technology; partnerships; changed offerings; resourcing models) and to prepare for change. To help members in this regard, the report closes with a section which translates research insight into actions which will help firms thinking about and through change.

2. Including: academic and commercial articles; conference papers; blogs; research publications; and industry reports.
3. The Law Society Insights community is an online research panel where Law Society members regularly share their views on existing and potential products and services, and provide insight into challenges facing the legal profession. The Tech and Innovation Survey ran with community members from 11-25 February 2016 and provided 223 full responses. Following the survey, community members were invited to participate in a moderated online discussion group about the same topic, this ran from 18-21 April 2016.

1.2 Defining innovation and opportunity

In July 2015, the Legal Services Board (LSB) and Solicitors Regulation Authority (SRA) jointly published a report on *Innovation in Legal Services* (Roper, Love, Rieger and Bourke 2015). The aim was to gain an understanding of the nature of innovation in legal services and the key barriers and enablers of change. The study adopted a broad view of innovation considering as 'innovations' both the development of new or improved services and new or improved ways of delivering legal services - for some firms this was as simple as creating a website or adopting email. Thus, in order to take into account the extent of change across the legal professions, innovation was taken as anything new to the firm.

The seven standard measures of innovation identified in the Roper et al. (2015: 28) research were:

1. Service
2. Radical service
3. Delivery
4. Strategy
5. Management
6. Organisation
7. Marketing

Figures 1 and 2 (pp. 21-22) map these measures to a generic law firm operating model in order to highlight potential areas of opportunity and where firms might target discussions about innovation. Innovation is not always about making massive change, and part of the problem is about making the time. Small targeted changes can make a big difference and, rather than be overwhelmed (thinking about the time and efforts involved), the key is to make the task manageable. The maps in Figures 1 and 2 try to help by including the types of technology that can facilitate innovation in each of the seven areas.

Successful use of technology that brings about improvement and benefits usually involves broader thinking about business models and strategy to match purchasers' needs and wants. Figure 1 (p. 19) focuses on back-office operations with potential to innovate around strategy, organisation/management and marketing or market development; this is innovation in respect of running a business and the overall business model. Figure 2 (p. 20) looks at areas of opportunity in front-facing operations and the potential to innovate around service solutions, process and delivery.

Figure 1: Areas for innovation in a law firm's back-office operations

1. Business model innovation:

How the organisation visualises its identity for the future. Introducing processes and initiatives that can drive efficiency (especially those enabled by technology). The idea of automating workflow as the key to efficiency, consistency and other qualities required for producing, distributing and supporting front-facing parts of the business.

1a. Strategy and organisation innovation:

An understanding of what is needed in terms of culture and organisational readiness to support change. Decisions around which services are offered, how services are resourced and priced, including staff number and type, investment in technology.

1b. Marketing and market development innovation:

Decisions around how the firm displays its presence to the world (inc. advertising, social media); how the firm attracts new clients, and decisions around moving into new services, locations, client-bases, markets.

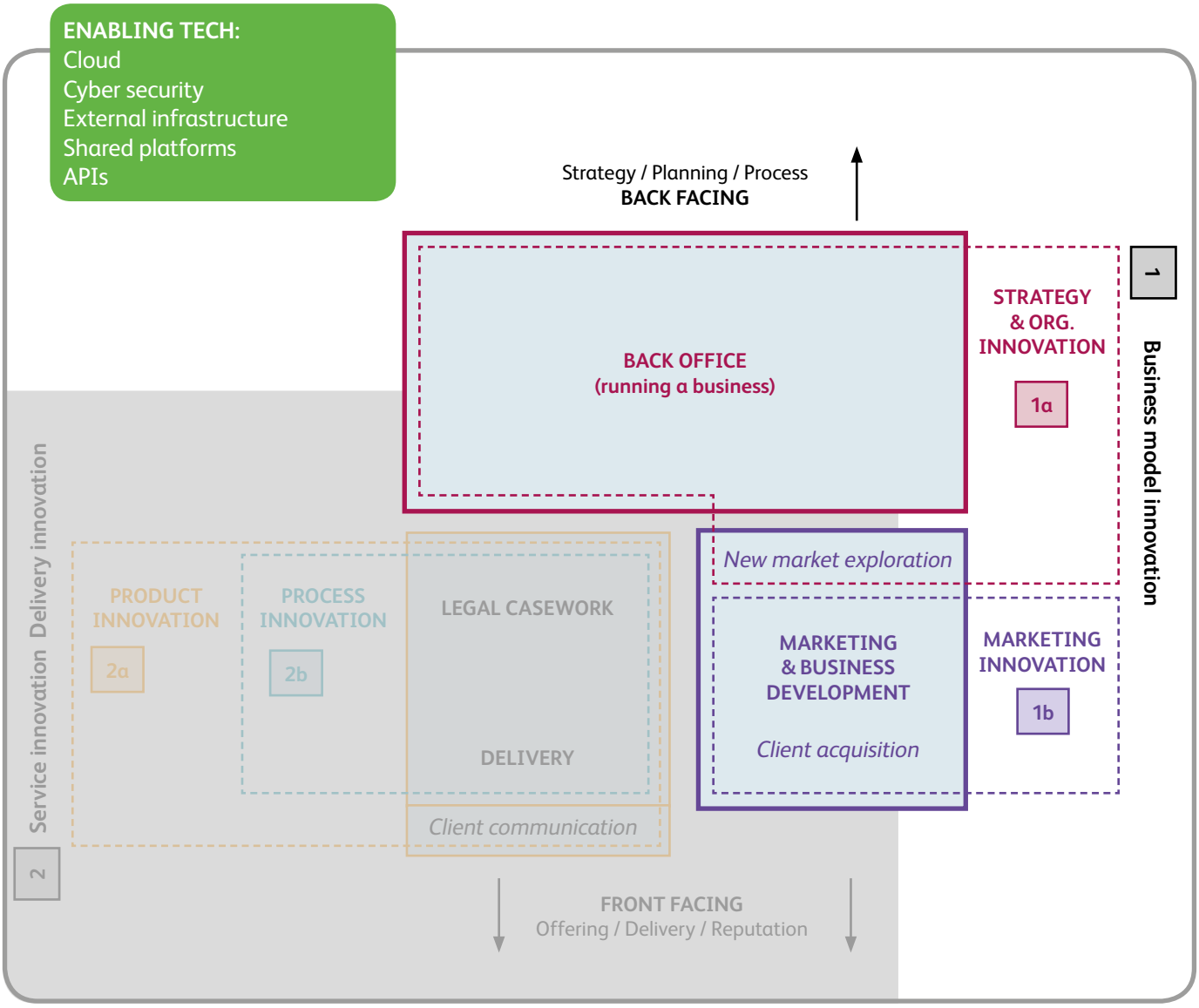


Figure 2: Areas for innovation in a law firm's front-facing operations

2. Service innovation and delivery innovation:

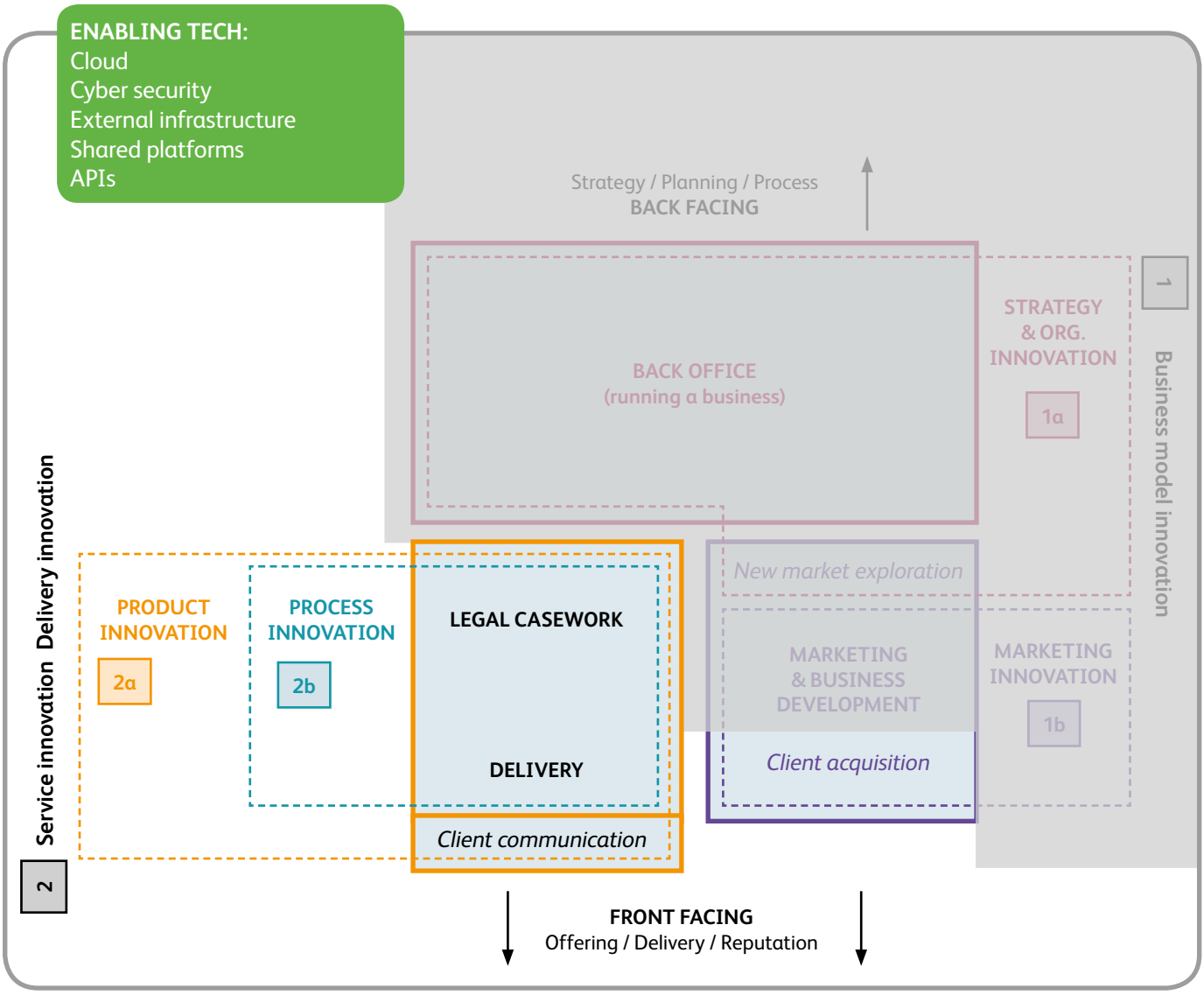
As a package, the solution the firm sells to clients. Innovation here might include what is offered, in what forms (unbundled, packaged, DIY) and how clients receive the service (face-to-face; via an app, portal, extranet).

2a. Product innovation:

New services to meet new needs arising from wider changes to society, markets and client buying behaviours; to include: bundled packages of 'life-stage' services, partial or unbundled services and new areas of practice (such as digital medicine, robotics, genomics, drones).

2b. Process innovation:

Innovations in the processes used to deliver a service (as opposed to generic running a business services in Figure 1). Could include Robotic Process Automation (RPA), document review, machine learning, client self-complete smart forms.



1.3. Competitive advantage: services, resourcing, pricing

As a market where price and the perceived value of legal services are critical dynamics, and given the constant pressure from clients of law firms to reduce price and increase value, there appear to be three key strategic areas where firms can make (and are making as the examples in this report note) a difference to their practice. These are also areas where new entrants are having the greatest impact on market incumbents:

- **services** offered (type, fit to client needs and whether unified, distributed or disaggregated components)[*Product Innovation*].
- how services are **resourced** (to include human, robot and physical resources) [*Process Innovation*].
- how services are **priced** (and to reflect gains made from technology and the sophisticated configuration of resources) [*Strategy Innovation*].

The CEO/founder of one legaltech start-up observed that *'machine AI is a long way off, but issues around pricing certainty and resource mapping and workflow are now'*. Figure 3 illustrates this trio at the heart of legal services reinvention and its relationship to key technological trends affecting legal services.

Technology is becoming an ever more central part of our social and commercial interactions, enabling businesses to study us as much as we engage with them. This greater wealth of data may raise privacy and security concerns for some, but it also brings a newfound utility to the customer experience and a shift towards a frictionless means of transacting that, for many, far overrides any privacy fears. Law firms that invest in technology and other means to better understand their clients and their needs, will be able to design more tailored solutions. Agile resourcing of those solutions will help firms better understand their margins and set pricing strategies accordingly. Those deploying sophisticated pricing engines that make relevant and insightful solutions more affordable to clients are those most likely to retain a competitive edge for their business.

A concern remains around the inefficiency of the billable hour model in legal services and how much longer it can realistically survive amidst robotic process automation, client scrutiny of bills and competition from cheaper providers. The ability of firms to cost services in a way that is fair to clients and retains a decent margin for the firm, amid a complicated mix of human and technological 'staffing', is seeing a rise in roles for technological innovation and for pricing experts and consultants, as discussed in Section 4.

While commentators speculate on the market launch of an Uber for law, White (2015) points out that 'it is a radically different resourcing model completely driven by process, and it is pricing and resource and process innovations which have created Uber and make it what it is'. For White, only a combination of matter planning, process improvement, resource planning and more flexible resourcing models will deliver the profitability that partners want, the cost predictability and quality of delivery that clients want, and the efficiency and process transparency necessary to create more joined-up relationships.

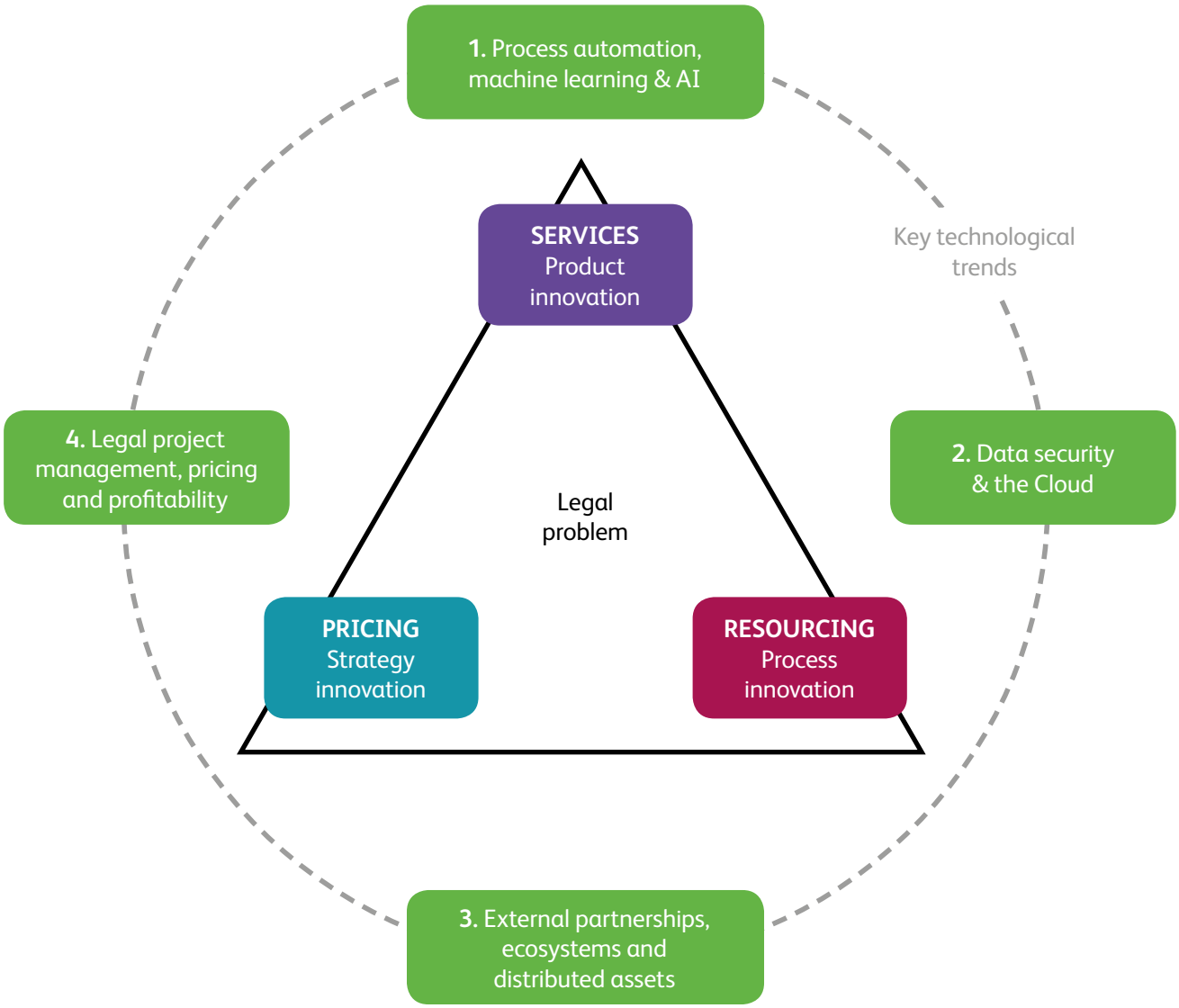
Figure 3: Three key areas for innovation and four associated technological trends

1. Service innovation benefits from advances in process automation, machine learning and AI as means to increase speed and efficiency, and release lawyers to high value activities and specialist offerings.

2. The world is rapidly moving to cloud-based services which, for some, conflicts with perceptions of security as law firms remain under pressure to tighten security and protect data. Distributed resourcing and technological solutions are likely to drive firms further into the cloud.

3. The relationship between service resourcing and pricing is shaped by a range of external partnerships and ecosystems facilitated by tech platforms and new tech/firm collaborations.

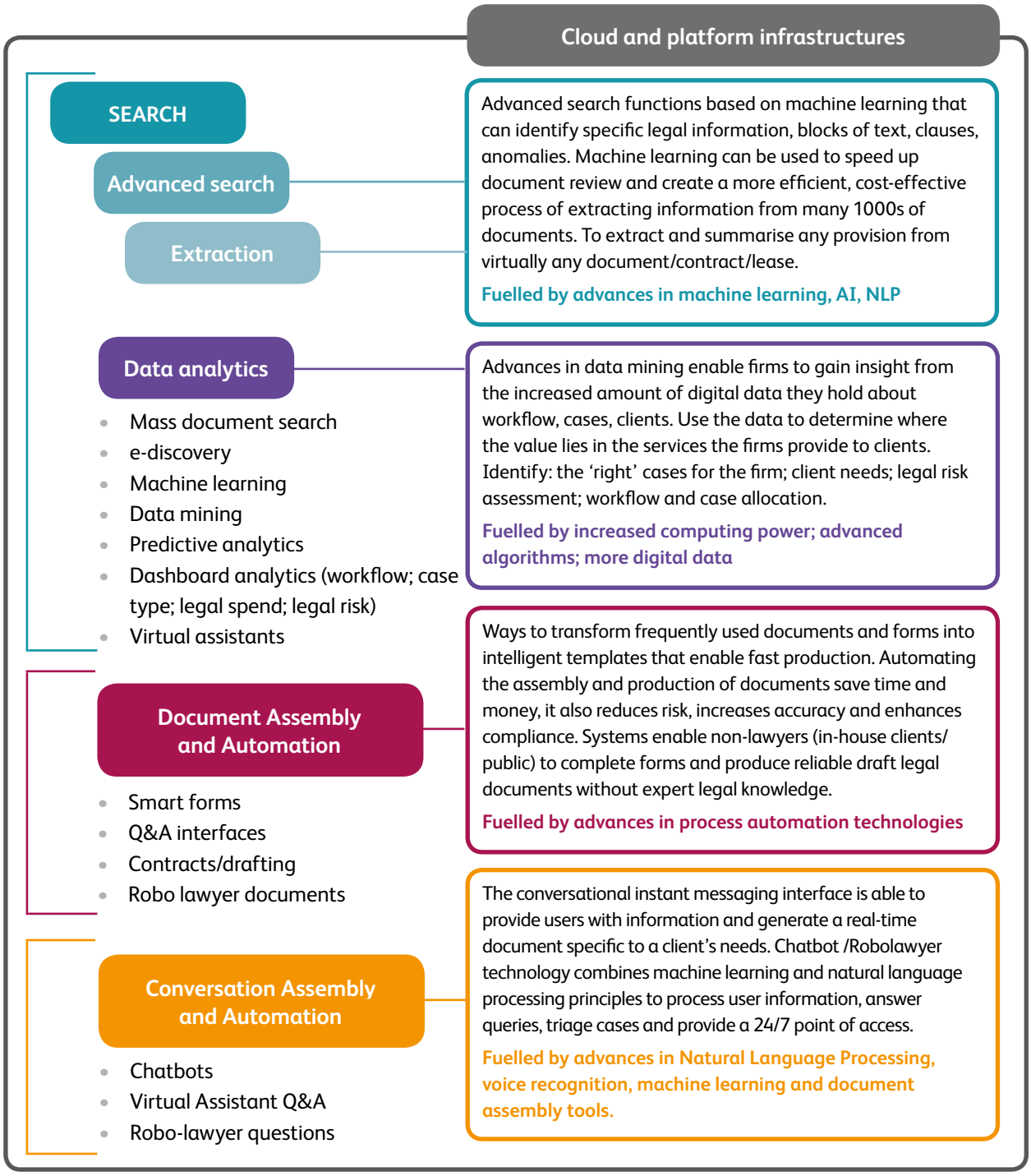
4. Legal project management, pricing and profitability lead to a mix of service designs that see firms alternate between unbundling components of an existing service or integrating a range of legal/business services to provide a client with a unified package of support.



PART 1: TECHNOLOGICAL INNOVATION IN PRACTICE

Figure 4 illustrates the various technological innovations impacting law firms as discussed by interviewees in this research. Each cluster contains its main functions and the advances in technology which have made innovations in the cluster possible. While this is a far from comprehensive picture, it does help to separate thinking around technological and process innovation into different components of change.

Figure 4: The main categories of technological innovation



2. WORKING SMART

There is a question whether, under challenging market conditions, lawyers are simply working harder rather than working smarter. In an environment where the speed at which lawyers work has a direct effect on business outcomes, a growing number of legal functions are turning to automated contract management tools and sophisticated document review technologies. Interviewees (albeit with different levels of technological understanding) were pragmatic in thinking about whether a task could be automated. Firm-wide process improvement and process re-engineering are the most important steps that many firms still have to take in any innovation journey.

'Working smart' for interviewees meant putting the client first in terms of adding value, efficiency and saving on cost. This section of the report explores interviewees' forays into process innovation, deploying Robotic Process Automation (RPA), machine learning and Artificial Intelligence (AI). For some interviewees, predictive analytics were having a profound impact on how they evaluated work and their approach to cases, while for others, platform and cloud-based offerings were changing the ways in which their firm approached service and delivery models.

When asked about a range of emerging technologies in the area of machine learning and artificial intelligence, the Law Society's Insights community showed overall low levels of awareness (Table 1). For each item, at least 25% of respondents claimed to be completely unaware; this proportion rising to 75%, 64% and 38% for 'RAVN', 'IBM Watson' and 'Big Data', respectively. At the other end of the scale very few respondents claimed to be following any of these technologies closely – the highest was the 6% following Natural Language Processing (NLP).

Table 1: Level of awareness of emerging technologies (Law Society Insights community, Feb 2016)

Technology	Level of awareness (%)								
	Unaware ←								→ Following closely
Artificial intelligence	25	15	11	7	11	11	11	4	5
Machine intelligence	32	14	10	8	12	12	7	3	3
Robotic process automation (RPA)	32	17	12	6	9	11	8	2	3
Expert systems	30	19	13	7	10	9	8	2	3
Predictive analytics	36	17	12	6	12	8	4	2	3
Natural language processing (NLP)	37	16	8	9	8	7	4	4	6
Big Data analytics	38	16	10	8	9	6	7	3	4
IBM Watson	64	12	8	4	3	3	3	2	2
RAVN	75	10	8	2	1	2	2	0	1

Legal technologies – from document assembly and automation to Natural Language Processing (NLP), Artificial Intelligence (AI) and Virtual Assistants – offer exciting possibilities for how legal processes might evolve or be reinvented for the future. But such technologies are still a relatively unknown and certainly unexplored landscape for large numbers of the profession; neither are these systems a fix for struggling business models and outdated processes.

'my experience is that some firms focus too much on technology as the silver bullet to their 'more for less' efficiency challenges'
(Law Society Insights community).

Instead, the better approach often comes from a close tracking of client needs and expectations, followed by identification of how technology can help a firm better serve these needs.

2.1 Putting the client first

Interviewees at B2B firms fell almost entirely into the client-driven approach to innovation, with many working closely with clients to co-innovate services and models that addressed an immediate client need:

'it's very easy to be protective and we're trying to preserve the legal profession and individual firms and structures, but if you're a client-facing person and you sit in their offices and hear what they want, our industry owes it to itself to find a way to deliver that because if we don't there are a bunch of other people that will'
(CEO, Top 200 firm, B2B).

'Our business is designed around meeting customer needs and our future development and innovation will be a function of customer needs'
(Head of Innovation, Challenger Bank).

For interviewees serving corporate clients, innovation or any improvement to the way the firm works was built on good collaboration between firm and client, about getting service right for clients. Interviewees were aware of changes within client behaviours that impacted how the firm served them, and the different ways in which clients expect to interact - especially the younger generation who are in their twenties or thirties and who are in many cases business owners themselves. For another interviewee it was about putting himself onto his clients' timeframe:

'any single one of my clients can phone me at 12 o'clock at night and find I'm always available to them because all too often those clients only have time to think about their problems once they've walked away from work at the end of the day. That's when they really started focusing on what's going on with us so we have to be available to them then. They can even come and meet at my house if they want to'.
(Founding partner, small boutique firm, B2B).

At other points, interviewees spoke of new services prompted by client enquiries and that clients with international markets and products need increasingly sophisticated international solutions. One firm now finds itself advising on drones, which it sees as a natural extension of its right of way and public access work. The service was prompted by an enquiry from a HNWI client who wanted advice about the intrusion of drones on private land. This is just one example of where technological use in society is raising new legal questions and potentially new areas of service for lawyers. As the use of innovative technologies grows across all sectors of society, firms will increasingly find there are opportunities to serve clients with new legal needs. One such example involves Bitcoin/blockchain[4] and cryptocurrencies, much discussed in legal conferences, but yet to make an impact on legal businesses, with one clear exception.

Selachii's engagement with Bitcoin/blockchain as an area of legal advice raises questions about what both might mean for legal services and what roles there are for lawyers in this space. For all other interviewees, it was seen as way too soon to be considering this area and they had no plans to do so unless requested by their clients.

4. Bitcoin is a digital currency created in 2009. It offers the promise of lower transaction fees than traditional online payment mechanisms and is operated by a decentralised authority. There are no physical Bitcoins, only balances associated with public and private keys. These balances are kept on a public ledger, along with all Bitcoin transactions, and verified by a massive amount of computing power. In March 2014, the IRS stated that all virtual currencies, including Bitcoin, would be taxed as property rather than currency. See: http://www.investopedia.com/terms/b/bitcoin.asp Blockchain is a public ledger of all Bitcoin transactions that have ever been executed.

BITCOIN LEGAL ADVICE

Selachii LLP www.selachii.co.uk

Selachii LLP is a dynamic boutique law firm that solves a range of legal problems for clients.

One of Selachii's specialisms is advising on the contentious legal aspects surrounding Bitcoin and crypto/digital currency. It may not have been one of their initial strategic objectives but as, founding partner, Richard Howlett describes, it is an area in which the firm has earned international recognition:

'Through our network we were asked if we'd be interested in launching a class action in the UK to try and help those who'd been affected by the Mt Gox[5] situation. We publicised our involvement across a number of media channels and within a week more than 1000 people contacted us saying they'd been affected. The enquiries came from every corner of the world, even from as far as Vietnam. It was immediately clear to us that a totally new world was coming into being; a world that involved a huge number of people internationally but a world built on a currency no one had ever heard of.'

As a result of its very public involvement, the firm's name fast became known within the digital currency community and the partners found themselves being asked by, among others, the Wall Street Journal, the BBC and Financial Times, to comment on all matters connected to digital currency.

The firm saw this as a very credible commercial opportunity. *'Obviously, given the size and profile of the media who'd asked us to comment, we recognised we could use our specialism to create publicity. However we also saw this was a market that would only grow so we took a conscious decision to specialise in digital currency and gain first mover advantage – particularly given that the majority of other law firms seemed to be totally oblivious to what was going on.'* (Richard Howlett, Founding Partner)

Consequently, the firm was able to diversify away from its traditional commercial litigation roots and offer both litigious and some non-contentious advice relating to Bitcoin. This was of benefit both to a new industry that was crying out for some very specific legal advice and to a new law firm who could only benefit from a quick boost to their profile.

The firm continues to offer a range of services, including dispute resolution, litigation, fraud, debt recovery and breach of contract but, more specifically, when it comes to Bitcoin and digital currency, they advise on aspects such as the impact of proposed regulation, the benefits of certain jurisdictions for Bitcoin start-ups, breach of contract in Bitcoin agreements and setting up joint ventures.

As its advice is so specialist, other firms now contact Selachii: *'not necessarily to outsource work to us, but to act on a consultancy basis to give them some very specialist knowledge and strategic understanding information so they don't have to pay someone internally to work it all out.'*

5. Mt.Gox was a bitcoin exchange based in Tokyo, Japan. Launched in July 2010, by 2013 it was handling 70% of all bitcoin transactions. In February 2014, the Mt.Gox company suspended trading, closed its website and exchange service, and filed for a form of bankruptcy protection. At that time it announced that around 850,000 bitcoins belonging to customers and the company were missing and likely stolen, an amount valued at more than $450 million. The reason(s) for the disappearance - theft, fraud, mismanagement, or a combination - were unclear, but triggered a variety of legal action.

Selachii is a prime example of where we will perhaps see more and more opportunities for firms small enough and responsive enough to take a chance on new technologies (not just to enable the practice of law but as an area of advice) and to address how technology is impacting on the needs of clients and their businesses.

INSIGHT: **Start from the position of your clients. Mapping out client needs and expectations may suggest new areas of service and service extensions and where there is a natural fit with technology solutions, rather than being pressured or seduced into buying technological innovations and then trying to make them fit with the firm.**

INSIGHT: **Look for opportunities arising from new technologies in society (including drones, driverless cars, digital medicine, cryptocurrencies). Where do the legal requirements of these technologies offer a natural extension to the firm's skill set? Where might there be opportunities for the firm to be the first to engage with the legal needs of an emerging technology? (as an area of advice and/or to shape debate and build the firm's reputation).**

2.2 Innovation hubs

This research threw light on a number of centres, labs and hubs set up to incubate and accelerate innovation. For example, BigLaw might set up a dedicated Innovation Centre to explore innovation in the context of the firm's business, to then be rolled out across the rest of the offices. Other firms invested in subsidiaries that act as spaces for any start-up to propose ideas which, if chosen, can be put into test with the hope of investment. Elsewhere networks of different stakeholders came together to create environments to foster innovation - uniting coders, users, funders and law schools - while hackathons created hubs of intense creativity often directed at specific legal problems or questions. For Rodriguez (2015), legal hackathons are 'popup innovation labs' that are having a positive impact on the industry. The ethos of these hubs is one of co-innovation and collaboration – a theme many interviewees predicted as a key component of business models and technological innovation in law firms going forwards. The hubs featured in this section showcase opportunities for firms to incubate their own innovations or to participate in events and centres that help to shape the future practices and processes of legal services.

INNOVATION HUB

NextLaw Labs	www.nextlawlabs.com

"Reinvent the business of law with us"

NextLaw Labs is a business accelerator focused on investing in, developing and deploying new technologies to transform the practice of law. It is an autonomous, wholly owned subsidiary of global law firm Dentons, with physical and virtual locations in technology centres worldwide. Through complementary and strategic partnerships with leading technology companies, start-ups, other business accelerators and established legal vendors, NextLaw Labs aims to invest in promising companies and develop a suite of new technologies that fundamentally change the practice of law, improving client service and enhancing client solutions.

While NextLaw Labs has 'built an innovation ecosystem', leveraging the talents of numerous stakeholders to transform the legal market for the benefit of clients, Dentons integrates lawyers into the entire developmental and commercialisation process and serves as the testing ground to vet, pilot and scale-up new products, services and other ideas.

CEO of NextLaw Labs, Dan Jansen, explained *'once we identify a market hook, we look for technology companies currently in the process of developing a solution. If so, we seek to invest or partner with them. If not, we try to develop the product or service ourselves. Our preferred route is to partner and co-develop. When we can share cost and collaboration, in my mind, it always provides a more nuanced perspective that ends up building a better product'* (in Legal IT Insider 2015)

In March 2016, NextLaw Labs announced its investment in Apperio, a legaltech start-up that provides law firms and their clients with real-time transparency on legal fees (see feature box in Section 4). This is the second investment, on the back of ROSS Intelligence Inc. (powered by IBM Watson.)

In June 2016 NextLaw Labs partnered with Seedcamp, the leading pre-seed and seed stage investor in London, to co-sponsor a global callout to early stage legaltech start-ups. Selected start-ups receive training, mentoring and investment from both NextLaw Labs and Seedcamp.

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INNOVATION HUB

Global Legal Technology Laboratory (GLTL)

The Global Legal Technology Laboratory brings together legal education and legal technology communities from around the world to build new technologies and launch projects that make the legal system 'more accessible, efficient, and empowering'.

People at law schools can propose projects, draw upon the GLTL's resources to get more guidance, and potentially also funding. These projects could come from hackathons, classes, research, or elsewhere. GLTL aims to make *'a direct contribution towards promoting social justice and economic development by making access to and interactions with law, regulatory processes, and legal services more efficient and effective'.*

At the beginning of 2016 GLTL entered a scoping or proof-of-concept phase (managed by John Cummins at Queen Mary, University of London). The six-month phase seeks to demonstrate that GLTL can operate successfully and provide real value to its community of collaborators. Once this phase is complete, the GLTL team will seek further funding to take the Lab to full-scale operation.

At the heart of the Global Legal Technology Laboratory is a portfolio of projects that demonstrates ***technological breadth in the legal space*** (covering areas such as automated legal document generation; data analytics; and smart documents) and ***global reach*** with project teams coming together from multiple jurisdictions around the world (GLTL May 2016).

The GLTL aims to cover a broad range of legal technologies within the following areas:

- **Legal document automation**
- **Data analytics**
- **Semantic systems** (to enhance machine understanding and drawing heavily on natural language processing, and deep machine learning)
- **Smart transactions** (with an initial focus on the conversion of 'dumb-contract' to 'smart-contract' systems) and
- **Legal education** (with a strong focus on the development and deployment of tools and approaches to enhance legal education).

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INNOVATION HUB

Legal hackathons

A legal hackathon is an event that usually takes place over a weekend and involves mixed teams of lawyers, tech developers, designers, entrepreneurs and others coming together in a room to build something that will have a positive impact on the legal industry. A hackathon often has a theme, aimed at solving particular problems, but some competition hackathons are open to whatever participants want to build. Outcomes of the event range from business plans or presentations about the devised solution to working software prototypes. Legal hackathons are opportunities for lawyers to shape the future of the industry, drawing on immediate access to tech coding and build skills that the lawyers themselves may not possess, while informing tech ideas with real-life context.

Europe's first ever law tech hackathon, 'Law for Good' was organised by Legal Geek on behalf of Hackney Community Law Centre (HCLC) and saw 'the UK's largest tech community of groups of lawyers, entrepreneurs, techies and industry experts working together to disrupt, improve and innovate the traditional legal industry' (HCLC 2016).

Over the course of 24 hours, more than 50 coders participated in the hackathon at Google Campus in Shoreditch – some flying in from as far as Romania, Gibraltar and the USA. The ten teams were challenged to conceive, build, and pitch technical solutions to help HCLC deal with problems affecting the delivery of and access to the Centre's legal services. Legal Geek founder, Jimmy Vestbirk explained:

'The main problem faced is that 50 percent of clients drop out after one meeting for a variety of cultural, social and language reasons. We thought that more developers and coders need to be involved in LawTech disruption to combat this problem and the hackathon is a creative and effective way to do this'.

The first prize went to 'Fresh Innovate' a team made up of lawyers and tech experts from Freshfields, for their design of an entire new HCLC portal management system. The interactive website 'triaged' in seven languages to help provide a solution to legal problems in housing, welfare and benefits, immigration, and employment. Visitors could contact HCLC after 'opening a case' online from a menu of options relating to their specific problem (HCLC 2016). The solution is now in test with HCLC, and may then be rolled out under a pilot scheme, to other law centres in the UK.

Legal Geek, organiser of the hackathon, brings together investors, techies, entrepreneurs, academics and legal professionals to help LawTech start-ups build connections for investment, access to industry experts and future clients. Legal Geek also promotes giving back through its 'Law for Good' programme, connecting law firms' CSR, pro bono and techies with UK law centres to deliver legal support http://www.legalgeek.co

INNOVATION HUB

Freshfields Centre of Innovation

Freshfields is developing 'a centre of innovation' as part of its Global Centre in Manchester with a focus on delivering innovation through the Centre and in getting that embedded back into the firm itself. Isabel Parker, Freshfields' Director of Legal Services Innovation, explains:

'it's not just about adopting new technology, which is a really, really important part of it, but also about beginning to change the way our lawyers work, the way we think about our client service delivery, and to embed that culture of entrepreneurialism and innovation in the firm.'

The Centre brings a blank sheet of paper for the law firm, a new set of employees and new mind-set to focus on doing things better and in a smarter way. For Milos Kresojevic, the firm's Enterprise Architect, the Centre is not just about technology, but how to do things differently, *'where technology can add the value to do something which Freshfields could not have done before… so it's actually value creation for our clients, besides the efficiency side.'*

As the true global platform for the firm, Freshfields hope that the Centre will become the heart of where innovation starts, serving the whole firm and not just regional offices.

Overall, interviewees felt that a lower investment cost in technology, the increased speed to market, and an ability to win clients *'without having a really strong brand or a long history'* will make an easier operating environment for many new players. Interviewees addressed the trade-off between innovation to increase the value creation capacity in existing markets/services and innovation into new market/service expansion. Individuals felt that success would depend on a firm's competitive strategy to differentiate its business model and offering from competitors, or its operational efficiency to execute services more efficiently. Hubs and 'spaces to play' (see Section 7.3) are becoming increasingly important in the development of innovative legal technologies and will be the likely origins for those innovations that gain traction in the future legal services market.

INSIGHT: **Even if a firm cannot afford its own innovation centre or direct investment in new technology, there is value in forming connections via local meetups, hackathons, accelerators and groups such as startupbootcamp. These hubs offer firms insight into the latest ideas and the firms can contribute legal expertise to ensure ideas are practicable. Opportunities for affordable collaboration and partnerships can arise from these informal gatherings.**

2.3 Robotic Process Automation (RPA)

Any comprehensive review of the processes carried out in a law firm or legal department will identify plenty of candidates for automation. Where an in-house transactional centre already exists this task is made easier as there will be greater economies of scale and the processes will generally have been mapped already. Even if the processes have been offshored, it can make sense to bring them back in-house as automated processes, which could still be cheaper but will also reduce any jurisdictional data risks. Burgess (2016a) notes 'that the legal sector may have a smaller proportion of "transactional" work than, say, financial services, but the costs are generally higher and the impact of inaccuracy and non-compliance greater', which makes RPA something that large law firms and legal departments should be looking at closely.

Leading technology research and advisory company, Gartner[6], forecast that by 2025 around one third of all current jobs will be automated. As more technology vendors and start-ups release solutions aimed to automate standard and repetitive processes, firms should ask what transactions they are doing regularly and look to automate those. For one member of the Law Society's Insights community, who was soon to have process automation introduced at his firm:

'as it is, it is very clear that NOT having a robotic process automation system is NOT cost-effective. The most routine tasks tend to take 2-3 times longer than they should'
(Law Society Insights community).

Robotic Process Automation (RPA) is estimated to bring 20% to 40% cost savings to a company. RPA removes the risk of human error, improves compliance and can bring a business' Service Level Agreement close to 100% (Burgess 2016). RPA has become a high investment priority for larger law firms (KPMG 2015) and is having the biggest impact on the off-shore model as work once outsourced to humans in India or the Philippines can now be completed inside the firm, using robots. A typical robot is 1/3 of the cost of an offshore BPO and 1/10 of the cost of an onshore FTE (Burgess 2016). Returns on investment are quick and can be seen in months rather than years.

PROCESS AUTOMATION

Andrew Burgess/AJBurgess Ltd http://ajburgess.com/ andrew@ajburgess.com

Robotic Process Automation (RPA) describes a new type of software that replicates the transactional, rules-based work that a human being might do. So, to give a simple example, if a law firm is managing a property portfolio on behalf of a client, they would be expected to carry out Land Registry checks at some point. This is commonly a paralegal role that might involve the person getting a request from a lawyer, or from the client directly, probably via a template, an email or a workflow system. The person would read the relevant information from the form, log into the Land Registry site, enter the information into the site and read the results that came back from the search. They would then transpose that information back onto the form and respond to the initial request. All of this process can now be handled by a software 'robot' without the need for any human intervention. Although this is a very simple example, you can hopefully start to appreciate some of the benefits:

- the cost of the software robot is a fraction of the cost of the human (at least a tenth)
- the robot works in exactly the same way as the human would, so no IT or process changes are required
- once trained, the robot will do the process exactly the same way 100% of the time
- every step that the robot takes is logged, providing full auditability
- the robot can carry out the process in the middle of the night or over a weekend, if necessary
- the robot will never be sick, need a holiday, or ask for a pay rise.

This means that wherever there are processes that are rules-based, repeatable and use (or could use) IT systems, the person doing that process can be replaced by a software robot. Here are some other examples of processes that can be automated:

- automatically receive new instructions, access disparate systems and populate them with the necessary data
- auto-populate Ministry of Justice forms
- employment tribunal preparation
- debt recovery processing
- social media investigations
- data room administration
- conveyancing processing
- benefit entitlement checks

So, if RPA sounds like it might be a useful tool in the armoury, where do you start? Most firms usually engage with an RPA specialist, such as Symphony Ventures, to help build the business case, select a software vendor and support implementation. This RPA project lifecycle typically follows these stages:

- initial scoping workshop to get a high level view of areas of opportunity
- process mapping (to key stroke level) of potential candidate processes
- creation of 'benefit cards' to assess, and prioritise, each process for automation suitability
- development of overall Business Case (as a consolidation of the benefit cards)
- identification and implementation of a process to pilot RPA (this is usually done on non-production data)
- selection (or recommendation) of an appropriate software vendor (this can be done before the pilot if necessary)
- configuration of the processes within the chosen software, including testing and release to the live environment
- roll out of RPA to other processes

6. http://www.gartner.com/technology/about.jsp

A few things are worth noting with regard to the implementation of RPA:

- it is certainly worthwhile looking to improve and enhance the processes as they are being automated
- like any project that changes the ways of working, there will be change management activities to consider
- the organisation will need to look to building an internal RPA capability (usually made up of Business Analysts and RPA Developers) to manage the pipeline of processes to automate – this is usually done with the support of a third party in the early stages

Of course, there is still all of the variable, judgment-based work higher up the legal value chain that RPA cannot impact. Although the RPA software is really clever, it is effectively 'dumb'; it will do exactly what it is told to do, with unwavering compliance.

The KPMG 2Q15 *Global Sourcing Advisory Pulse Survey* (2015) measured levels of demand for RPA in different parts of a business. It reported that in IT functions there was currently only 11% of 'high demand' for RPA, but expected that to rise to 47% in three years' time. The survey reported no high demand yet from legal functions (conversely for 94% of respondents there was low or no demand at all); but in three years' time KPMG expected to see 2% of legal functions exhibiting high demand for RPA.

RPA can handle tasks including: customer on-boarding; CHAPS processing; trades; fraud account closure; land registry; conveyancing; MOJ forms; and employment tribunal forms. Every RPA step is logged so it enablesan audit trail and is proven to be more consistent than humans.

INSIGHT: **Most value can be gained from RPA if firms get their processes streamlined and efficient first. Once that is done, RPA can be used to automate burdensome, high volume, and time consuming back office activities. By completing tasks in the same manner that a human employee would, RPA is able to work with legacy systems without the need to restructure or reengineer existing platforms. This means it can be a quick and affordable step towards digitisation for firms.**

2.4 Machine learning and Artificial Intelligence

Machine learning is another technological trend that commentators expect to change the supply chain in legal services. Ovum predicts that 'machine learning will be a necessary element for data preparation and predictive analysis in businesses moving forward' (Marr 2016), and Forrester foresees a market for algorithms as businesses learn that they can purchase algorithms rather than programme them from scratch. This could reduce the number of programming and computer science positions necessary for companies.

Machine learning is a type of artificial intelligence (AI) that provides computers with the ability to learn without being explicitly programmed. Machine learning focuses on the development of computer programmes that can teach themselves to grow and change when exposed to new data (an email spam filter is a basic example as the machine learns from user behaviour which features of an email are likely to constitute it as spam).

In general, machine learning algorithms are designed to detect patterns in data and then apply these patterns to new data in order to automate particular tasks. This function is based on algorithms that can learn from data without relying on rules-based programming. The larger the dataset the machine learning algorithm can review, the more accurate it will become.

For law firms this means machines can be taught to identify the concepts and clauses the firm specifies within vast numbers of documents that may take human teams months to review. Computers can parse 1000s of digitised documents in seconds. Using language-analysis algorithms, the machines not only spot relevant words and phrases, but also discern chains of events, relationships and patterns. When reviewing documents or undertaking due diligence, humans might look at a sample, for example one in ten of all documents, machines can look at every document.

For law firms it is about managing risk – what is the risk profile of only reviewing one in ten documents? Is one in ten reviewed by a human less risky than an infant AI system looking at every document? The firm has to ask if the outputs of the AI platform are within its tolerable risk/accuracy ratio? Potentially there is a bigger risk for commercial firms of not adopting this type of technology in the long term.

Many law firms have had document automation for a long time, but these tools have advanced considerably in the last few years. Using automation, logic and decision trees to create document templates that pull out all of the relevant search terms upfront, non-lawyers and businesses are able to produce initial draft documents and contracts that used to fall to legal teams.

Providers of AI and machine learning, such as Kira and RAVN pre-programme their engines with a number of, for example, clauses or lease provisions. A firm can use the engine's pre-programmed provisions to search for terms or it can add in its own examples and the machine will learn from those.

Adding aspects bespoke to the firm requires a lawyer to train the machine by marking up and tagging terms in a sample set of documents. The machine applies its 'interpretation' to an unmarked set and the lawyer flags where the machine is right and where it has returned a wrong result. The machine learns and does not make those same mistakes next time. For interviewees, machine learning engines were bringing not only speed but accuracy to review work: *'it searches right through the documentation, recall is very high, the chances of missing something are I think almost zero. The risk of misinterpreting something is pretty much zero'* (Director of Legal Services Innovation, Top 50 firm, B2B).

'it's a great big engine, they've pre-programmed it with a load of contract provisions, so partnered with a law firm to say "give us, you know, 5,000 examples of change of control and give us your documentation". So they've pre-programmed a lot of standard search terms into their offering, which is great. But the real seductive side of it is that you can train the machine to look for your own tailored provisions'.
(Director of Legal Services Innovation, Top 50 firm, B2B).

One interviewee observed that machine learning programmes benefit from having the most senior person train the software, so it is as accurate and consistent as it can be from the outset, and that this was the opposite way work was traditionally handled. While machine learning starts with a senior lawyer training the machine, so that the future work could be managed by junior or non-lawyers, in the manual process the work filters up from paralegals to senior individuals. This interviewee also cited a need for control over taxonomy to ensure terms were being used in the same way by lawyers in different departments.

Organisations such as Kira are already working with some of the top global law firms (including Clifford Chance and DLA Piper) to implement machine learning and AI solutions that automatically review thousands of documents and extract the desired output. Potentially such systems free up junior lawyers to focus on more exciting, billable work, and a number of interviewees reported an increase in morale in groups of junior staff who had previously been assigned these routine tasks. Kira needs a bigger initial investment from lawyers than from IT staff. One interviewee recounted that the system needs as few as 30 examples, after which the accuracy becomes very good – this is in contrast to other products he had tested which claimed to need 1,000 examples before becoming accurate. For this interviewee, who needed to get lawyers engaged in training the software, the simplest and fewest demands on their time the better.

MACHINE LEARNING/ AI

Kira	https://kirasystems.com/

'to empower enterprises through intuitive, easy-to-use software tools for uncovering relevant information from their contracts'.

Kira Systems' CEO and Co-Founder, Noah Waisberg, previously worked at the law firm Weil, Gotshal & Manges in New York, where he focused on private equity, M&A, and securities. This was important for one interviewee who noted: *'he speaks the language of lawyers and has thought about how the software can really work for lawyers'* (Global Head of Innovation, Top 50 firm, B2B).

Kira is available with a large number of pre-built machine learning models for common contract review tasks such as due diligence, general commercial compliance, lease abstraction, ISDA schedules, and more. Or, users can create custom provisions using Kira Quick Study. One interviewee explained:

'it's great with Kira that it offers self-service machine learning because lawyer or associate can teach Kira, it doesn't require the machine learning specialist. With [other systems] we experienced a lot, that you had to get the vendor technical team on their end to do the learning which is less good for us due to our operating model'. (Enterprise Architect, Top 50 firm, B2B)

Kira Systems' advanced, machine-learning software searches and analyses text in contracts, giving parties a faster and more complete review and analysis than conventional methods. Kira's contract search capabilities were developed for third-party review in due diligence and can handle standard and non-standard forms and provisions, including documents in more than 60 formats, by automating the extraction and analysis of key contract provisions and creating summaries in seconds and analysis in just a few minutes.

'We believe that this innovative technology will do for corporate transactional work what e-discovery has done for litigation. It will not only make due diligence faster and more efficient, but will mitigate risk throughout the process, all of which are important benefits for our clients and the firm.' (Jonathan Klein, chair of DLA Piper's US Mergers and Acquisitions practice)

Users of Kira consistently report savings of 20–60% or more time on contract review projects, even the first time using the software. In 2015 alone, Kira was trusted on due diligence in over $100 billion of transactions, both small and large, worldwide.

More than one interviewee spoke of running comparison tests between different products and also between a machine and humans. One Director of Innovation described two tests, one with a client matter that had already been completed, so they knew how long it took humans to do it. Running the same number of documents with the machine, without doing any training on the machine at all, provided a 40-50% efficiency saving, even accounting for the human review time. For the second test, the firm taught the machine provisions from scratch, and that *'had a really phenomenal, like, 79% efficiency saving'* (Director of Legal Services Innovation, Top 50 firm, B2B).

One interviewee suggested systems like Kira offer a powerful tool for knowledge management: *'if you can start to put all your documents in through something like Kira and start to tag it, there's quite a lot of power in what you can do with that and overlaying data analytics on top of it, to give proper client insight internally, has a tremendous power'* (Director of Legal Services Innovation, Top 50 firm, B2B). The benefits to firms include the ability to gain immediate insight from information held in a massive amount of legal documents, to spot patterns hidden in the data and to understand relationships between different concepts, terms and clauses. Another example showed where machine learning was being applied to support decisions around risk.

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MACHINE LEARNING/ AI

ThoughtRiver and Taylor Vinters	www.thoughtriver.com; http://www.taylorvinters.com/

ThoughtRiver's Contract Intelligence software uses artificial intelligence to scan and interpret information from written contracts used in commercial risk assessments, and produce visualisations of the potential risks and other issues. By quickly identifying risks from the structured information of a contract and presenting them in a visual format, which are compiled in a central online 'dashboard', corporate in-house Chief Financial Officers, General Counsels and other contracting functions can make better decisions, more quickly.

ThoughtRiver is a joint venture with law firm Taylor Vinters LLP and operates from the law firm's offices in Cambridge, London and Singapore. The Contract Intelligence platform is currently in Beta test across Taylor Vinter's international client base.The system is expected to be out of test at the back end of 2016, but there is already a huge demand for it and because the system is self-learning, the quality is developing quite rapidly.

An entirely separate entity to Taylor Vinters, ThoughtRiver is open to users beyond Taylor Vinter's clients and the law firm is happy for other firms to sell it as well. The software is a volume-based model so users pay an annual licence fee based on their usage.

The CEO of Taylor Vinters, Matt Meyer, explained:*'we are an investor in it, we have a shareholding in it and we're incubating it, it's in our building, but it also has venture capital backing and it's not "ours" in that sense… we can't afford to develop that technology internally on a proprietary basis, we couldn't fund what they're doing entirely. I'd rather have access to it through collaboration and investment than not do it at all'.*

Taylor Vinters has found that being involved with ThoughtRiver has also opened doors for the firm: *'the level of interest there has been in that software from companies and businesses that we would never have been able to have a conversation with because of where we sit in the market, has been amazing. So the tie-up really is a valuable thing.'* (Matt Meyer).

ThoughtRiver is a response to conversations with general counsel about the amount of low complexity work that should not come to the legal department, and finding new ways to allow the business user to manage all of that rather than the in-house legal having to get involved: *'it can take a lot of time out of in-house legal and put a lot of responsibility back into the business'* (Matt Meyer).

ThoughtRiver is a risk assessment tool at core. Someone in the business can upload a document, typically a contract, that the AI will read, compare it against the company protocols and risk positions and identify where it is difficult and then, if it cannot work it out, it will ask the business user some questions and compile it all and provide a risk score to the user: *'And it's effectively a triaging mechanism at that point so the risk score will identify whether that document needs to go back to the business for them to continue dealing with, or if it's got sufficient complexity and problems to go to in-house legal or somewhere else'* (Matt Meyer).

At entry level, ThoughtRiver does what lawyers used to do but in a slightly different and more efficient way. From the data it can then produce reports for the people who are managing risk and legal for the business: *'it can report on a company's approach to risk in any area – by division, geography, sales person - it can map trends and patterns so in-house legal suddenly have a really powerful knowledge tool that allows them to work out what is going on in their business and perhaps address some of these things proactively'* (Matt Meyer).

Beyond the individual client, ThoughtRiver offers access to data across industries, so the user can undertake analytical work to see what an industry's standard position is on a particular risk and then use the software to compare their own company's position against the industry and get a benchmark. Here ThoughtRiver goes from being an efficiency tool to being something brand new in the area of risk management.

INSIGHT: **Machine learning works best when there is a large amount of data available and to date has been most successful in large B2B firms. Machine learning may not apply to many tasks done by solicitors and there are limitations around how it deals with legal abstraction (eg reasonableness, justice). Most value is where (i) there is a mass amount of data to be analysed; (ii) it is possible to find proxies and patterns in the law; and (iii) where past data is generalisable to new data.**

In another example, Wiggin, which has traditionally focused on media law (and has developed non-legal, media-focused businesses such as Cirkus, which is a subscription television service offering British programmes to Scandinavia) has created a technology business, Incopro, to help clients protect trademarks and intellectual property. Chambers UK (2016) described Wiggin: *'they're cutting-edge in terms of new business models, very commercial and their advice is very rounded beyond the purely legal'*. Wiggin won Most Innovative Law Firm in Intellectual Property Law at the 2015 Financial Times Innovative Lawyers Awards. In 2016, Wiggin won the Legal Week Innovation Future of Legal Services Award 2016 for the creation of Incopro, an innovative technology company that enables brand-owning businesses to track misuse of their IP online and to enforce against these infringements using Incopro's technology.

IP PROTECTION TECH SYSTEM

Incopro/ Wiggin LLP | www.incopro.co.uk www.wiggin.co.uk

Wiggin LLP is a UK law firm focusing exclusively on the media, technology and brands/IP sectors. The firm advises clients on the financing, exploitation and protection of their creative and commercial assets in these sectors. It operates from offices in London, Brussels and Cheltenham.

Incopro is a partnership between Wiggin's rights protection practice, led by Simon Baggs, and Bret Boivin, formerly of Warner Bros and NBC Universal. Incopro provides bespoke technology and expert intelligence to protect the value of leading brands and content companies. Its analysis and clustering technology delivers a near real-time view of the infringing environment. The founders recognised that the growth of Internet-based commerce had dramatically challenged businesses that rely on intellectual property for their economic success. Existing brand monitor providers were focused on tracking sales rather than tackling infringement, which left a service gap in the market.

Incopro secures near real-time intelligence from a wide range of sources, including global product market places, domain name registries, app stores, social networks and search engines, as well as individual websites. Clustering technology analyses the wealth of information behind each infringement to identify the major threats. Incopro's search technology tracks the third parties – such as hosts, advertisers and payment providers – that support online infringement.

Systems are designed to allow clients to access and analyse results themselves, using a clear web interface. Incopro's analyst team produces tailored reports for prestigious IP owners.

Incopro is establishing a network of specialist law firms to provide expert advice and enforcement in key regions. Each network member *'has access to Incopro's technology and expertise, and can confidently claim the title of market-leader in online rights protection in their jurisdiction'*.

This is another example where a firm has seen a gap in the market and used technology to design a service to fill it. Incopro draws on the abilities of machine learning to scan a massive amount of data, beyond human capacity, to identify elements from its training and extract relevant data. Technological innovation in this area is progressing along a continuum from rules-based robotic process automation through offerings such as ThoughtRiver and Incopro towards AI and autonomous decision-making systems.

To date there has been some unsupervised use of AI systems where the machine categorises a document based on semantic analysis, but overall, interviewees suggested that lawyers are not ready yet for machines to make absolute decisions, and that legal documents are open to interpretation and tacit assumption which require human input. Artificial Intelligence systems ultimately represent tools that can have a profound impact on our thinking or reasoning processes. The potential for AI-based systems to enhance access to justice has already been recognised in the justice and ODR contexts (Lodder & Zeleznikow 2005) – see Section 5.

In 2015, 5% of global venture capital backing went to AI businesses (90% of that was in the US). Marketwatch (Feb 6, 2016) estimates the AI market will experience a compound annual growth rate (CAGR) of over 50% to 2020 on the back of diversified use cases and application areas. Google has purchased approximately 15 AI-focused businesses in the past three years (2013-2016) pushing towards $1 billion of investment, while Apple has purchased four AI-related businesses in the past six months. Interest in AI, fuelled by individuals such as Elon Musk and Bill Gates, will speed systems development and create access to Open AI, enabling more start-ups to pursue technological innovations that use AI. However, discussions of how AI could be used for good or ill in business have prompted calls to caution and a potential remit for lawyers and legal advice to temper the wilder possibilities.

While almost all interviewees used some form of document automation, only the interviewees at the larger B2B firms and at legaltech start-ups were fully engaged with machine learning, in use or in test. Although interviewees were watching AI, and many talked about IBM Watson and ROSS, individuals felt that such technologies were still a long way off for their own firms: *'we're not ready to know how to use it. Yes, we could use advanced technology to create lots of reports and analytics, but those need to add something meaningful for the firm. It's not for use in the firm currently, but I'm sure opportunities will come'* (CEO, Top 100 firm, B2B/B2C).

MACHINE LEARNING/ AI

IBM Watson – applications in medicine | http://www.ibm.com/watson/

IBM Watson is a technology platform that uses natural language processing and machine learning to reveal insights from large amounts of unstructured data. Watson uses natural language capabilities, hypothesis generation, and evidence-based learning to support medical professionals as they make decisions. IBM describes the process:

- First, the physician might describe symptoms and other related factors to the system. Watson can then identify the key pieces of information and mine the patient's data to find relevant facts about family history, current medications and other existing conditions. It combines this information with current findings from tests, and then forms and tests hypotheses by examining a variety of data sources—treatment guidelines, electronic medical record data and doctors' and nurses' notes, as well as peer-reviewed research and clinical studies. From here, Watson can provide potential treatment options and its confidence rating for each suggestion.

'Watson has analysed 605,000 pieces of medical evidence, 2 million pages of text, 25,000 training cases and had the assist of 14,700 clinician hours fine-tuning its decision accuracy' (Upbin 2013). For Steadman (2013), Watson's ingestion of this detail, and the further ability to search through up to 1.5 million patient records for further information gives it a breadth of knowledge no human doctor can match. The system has the ability to analyse the meaning and context of structured and unstructured data in clinical notes and reports, easily assimilating key patient information written in plain English that may be critical to selecting a treatment pathway.

'People see IBM Watson as a magic box – they do not understand the detail of how it works, which makes it a harder concept to sell'. For this interviewee, Kira was helpful because *'it breaks down the bits of the process, so helps people along the journey. The individual parts are there: document analysis, logic, drafting – pull them all together and it helps people on the journey to what Watson can do'* (Global Head of Client Service Solutions, Top 50 firm, B2B).

This interviewee also felt that IBM Watson was better suited to medicine where there could be structured sets of questions and standard follow-ups, but

'law is difficult to structure in that way, for example M&A has different jurisdictions. The higher the value, the less structured. It's more difficult to see big data analysis as there are random configurations merging with each other. Some of the high value cases are almost impossible to standardise. We can have a standard list of questions, but the answers won't be the same'
(Global Head of Client Service Solutions, Top 50 firm, B2B).

This quote raises questions around the ability of machine learning, AI and systems such as Watson to add value to law in instances where cases have very unique and specific factors (although Section 5 features examples of organisations and legaltech start-ups which have tried to apply this approach to consumer needs) and questions the ability to predict accurately case behaviours or outcomes in law if there is such variety at case level.

2.5 Predictive analytics

Predictive analytics is the practice of extracting information from existing data sets in order to determine patterns and predict future outcomes and trends. Machine-led prediction is commonly seen on websites such as Amazon, where the engine will recommend books based on previous books bought by the user or by other people with similar purchase patterns. Prominent venture capital (VC) firms like Ironstone Group and Google Ventures now use computers to identify patterns in records of entrepreneurial success and invest accordingly (Carr 2015: 116). In the legal space this capability holds a mass of potential for how lawyers view and act on cases. Systems in the US, such as Premonition (see feature box), try to predict the outcome of court cases based on multiple criteria, including the courthouse, the judge and type of case. Such tools can help lawyers decide whether the case is worth taking to court at all and therefore avoiding unnecessary and substantial costs for their client. With a predictive analytic layer, a system such as ROSS[7], might not only find relevant answers, but also chart the best course of action. Technology company, MooD International contends that the next generation of decision systems will be capable of providing a 'suggestion layer' for the business leader.

Companies such as Lex Machina and Ravel Law have taken a big data approach to metrics, trying to predict outcome probabilities using data aggregated from many prior cases. Ravel Law focuses on easier, data-driven legal research, layering analytics on top of archives of case law data. By analysing cases, Ravel can identify the language patterns of judges and leverage those insights to help lawyers anticipate what language and arguments might be most persuasive before particular judges.

PREDICTIVE ANALYTICS

Premonition | http://premonition.ai/

'we're a perception reality arbitrage firm'

Founded in 2014 and headquartered in Miami, Premonition is an artificial intelligence system that mines the information in Big Data to determine the effectiveness of individual lawyers. The company possesses the largest litigation database in the world, exceeding the size of every major legal database combined. The company recently closed a seed funding round at a valuation of $100 million.

The analysis conducted by Premonition provides information relative to litigators' winning percentages before specific judges, including case type, case value and duration. This provides information about which lawyers win in front of which judges on which matter types, but also who is 'running the clock' on cases in terms of duration (and who resolves quickly). Premonition's function is to spot trends and outliers, which it does well as data is 'smoothed out' over 1,000s of cases. The process produces better than a 30% improvement for companies who choose lawyers based on the analysis, which shows that some lower-cost lawyers are much more effective in certain types of cases than the most expensive large firm partners.

'The traditional way individuals and companies select lawyers for litigation is extremely inefficient. Based on advertising or word of mouth, this avoids evaluating the true effectiveness of a lawyer' (Toby Unwin, Co-Founder and Inventor of Premonition)

Premonition takes public court data from different States, analyses, normalises and standardises it into a single database, using machine reading processes. To date the focus has been on the US, but its data for the UK is growing. Premonition currently holds data for the UK high courts and is in the process of adding tribunals. Trends so far suggest that selections made through an established solicitor-barrister hire relationship result in a 38% worse outcome than a random pick.

Premonition is aimed at the GC market. Run on AWS Cloud, Premonition gives access to data in real time. Corporate clients can buy a one-off data report or they can pay a subscription fee for multiple use. Reports help GC procurement decisions, but can also be a valuable tool for law firms pitching to corporate clients to have stats about incumbent counsel.

In another example, the insurance industry uses software such as Colossus to work out the actuarial value of a claim. Premonition can analyse the judicial value of a claim and win rates so lawyers know when to settle for the actuarial amount and when they could aim for more.

Premonition offers a consumer version of this analysis under the name 'Litigas'. Here consumers can receive free referrals to 'winning' lawyers relevant to their location and case.

7. www.rossintelligence.comBuilt on the Watson cognitive computing platform, ROSS is a legal research tool that will enable law firms to cut the time spent on research, while improving results. ROSS can understand questions in natural language, and respond with a hypothesis backed by references and citations. It provides only the most highly relevant answers rather than thousands of results. In May 2016, Baker & Hostetler became the first firm to announce they were employing ROSS – for work in the law firm's bankruptcy practice, which currently employs close to 50 lawyers.

In May 2016, Juristat, a start-up firm focused on patent analytics, launched Etro, a new tool that analyses the language in a patent application and forecasts outcomes. Etro applied machine learning to every patent application in the last 20 years; a neural network read the applications and analysed where the applications were filed in the PTO. The tool uses this learning to predict words that will get the applicant into the best patent centre with the highest chance of allowing the patent - thus enabling a company to protect its inventions.

Predictive analytic programmes are already being applied to massive datasets to spot trends and generate insight around case behaviours. These tools add to a stable of technological innovation aimed at helping law firms and GCs manage risk in their decision-making (to also include ThoughtRiver and Apperio, both featured in this report). In the future we can expect predictive analytics to be built into business analytics software as standard and, according to IDC, one half of all business software will already have this feature by 2020 (Brooks, Claps and Clarke 2016). Predictive analytics can reduce or eliminate the need for human experts in the field. Marr (2016) reports that systems have already proven that they can predict the outcome of the Superbowl and court decisions, which he suggests places human analysts on their way to becoming obsolete. Concerns for firms cluster around how much the technology can be trusted, and whether these predictions can help firms to defensibly quantify risk, or whether, alternatively, knowing such predictions will make them self-fulfilling. For Carr (2015: 123), 'predictive algorithms may be supernaturally skilled at discovering correlations, but they're indifferent to the underlying causes of traits and phenomena' – which limit their use and ability to engage with the human aspect of law and legal reasoning.

Predictive analytics can create a competitive advantage, but is not yet used effectively in the field of law, creating opportunity, as Grady (2015) observes, that 'law firms of the future could track the data streams coming in and going out to build very interesting data warehouses'. This new set of legal predictive analytics tools is on the rise. These tools analyse past legal reference data to provide insights into future outcomes, currently to the benefit of lawyers and corporate clients. But this approach could also use mathematical analysis of aggregated consumer or social welfare datasets to flag individuals who meet demographic or geographic profiles that fit patterns of clustered legal needs.

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PREDICTIVE ANALYTICS

Hodge Jones & Allen | www.hja.net

In 2014, law firm Hodge Jones & Allen partnered with University College London (UCL) to devise a predictive analytics system to assess the merits of personal injury cases based on various inputs. The idea for the model came about from a consultant working with the firm on an innovation agenda to identify things the firm might do to help the business and give the firm a unique edge.

The firm supplied personal injury data and the professor created equations to try to find correlations that link the inputs and outputs. The aim was to create a model where the firm could put in some of the inputs and press a button and it would say *'we think you've got a 75% chance of winning the case. The damages will be X and the costs will be Y'*. The most influential variables appeared to be how quickly the firm was instructed, levels of damages and different case types, also to some extent the age and sex of the claimant.

'It was definitely predictive, the next thing is, you can't just use it, life's much more complicated than that, so it was then to improve the model constantly by adding more data' (Patrick Allen, Senior Partner at Hodge Jones & Allen).

When the firm takes on a case, the initial call handler collects some of the data and puts that into the system. Then when the case is finished, the case handler establishes the final bits of data and puts that into the system and then compares the model's prediction at the beginning to the outcome. Batches of data are then given back to the professor to incrementally improve the model.

Two years on from conception, the firm is still improving the model and using it solely for personal injury work. Senior Partner, Patrick Allen, explained that the firm plans to add another 1-2 years' worth of case data before potentially 'trusting' the model:

'we're not basing our decisions on it, we are trying to improve the model to get to the point where it would be an aid to a decision maker. It would never be the decision maker, I don't think, unless it got so perfect, I'm a bit sceptical… until the model absolutely predicts 90% of the time, you might find you reject a good case'.

Predictive analytics are not affecting Hodge Jones & Allen's bottom-line as yet, which raises questions about the value of the approach and time this firm perceives as necessary to evolve a reliable model.

INSIGHT: **Awareness of all of the data held by a firm's technology systems and a better mining of the insights within that data, can help firms to assess likely outcome based on key indicators. This information can enable firms to take on the 'right' cases.**

INSIGHT: **Taking time to process-map areas of practice will help to identify where the 'pivotal' points in a 'good' or 'bad' case occur and the reasons for them, and can highlight areas on which to focus predictive analytics in forming case assessments.**

INSIGHT: **Before engaging fully with predictive analytics systems, bespoke to a firm's cases, consider broader data mining and machine learning demos. These will help the firm to understand the insights you might get from the types of data you hold and where patterns indicate certain cases have more value for the firm.**

2.6 Platforms for success?

According to Accenture (2016: 14), 'platform-based ecosystems are the new plane of competition'. Microsoft, IBM, Samsung and Oracle are investing billions in core technologies common to all businesses and to the Internet of Things (IoT). Their platforms provide the underlying framework on which software vendors and start-ups with industry specific expertise can build solutions for specific markets. The benefit of large vendor platforms is that the core technology components (device support, browser, databases) and core business applications (CRM, document management) are included and the cost of keeping this in sync and updated is at the behest of the platform owner (eg Microsoft).

For law firms this means a lower cost to engage new technologies and collaborate with different partners and suppliers. Firms might choose to buy platform-as-a-service /or software-as-a-service on a subscription model rather than commit to large IT expenditure – Yet, with a levelled platform of access, will it become harder for firms to distinguish themselves? Firms should consider what is truly unique about their own businesses and how they fit into the broader context. Interviewees noted that, overall, firms already need to become better at distinguishing themselves, and that technology can help:

'I don't think they currently distinguish themselves on how efficient their back-offices are, but their ability to deploy interesting technology will certainly distinguish them going forward'
(CEO, Top 200 firm, B2B).

Rapid advances in cloud facilities and mobility not only are eliminating the technology and cost barriers associated with such platforms, but also are opening up this new playing field to enterprises across industries and geographies. The value of platforms lies in providing layers of capabilities and standards that other players on the market can tap into and use. Platforms, as forms of ecosystems, lead to a competitive marketplace for legaltech start-ups, tools and access to justice innovations. Once the technical interface requirements are published, anyone is free to build an application and could work in tandem with applications built by other groups.

INSIGHT: **Many law firms are spending a disproportionate amount of their IT budget on simply making sure all their legal business software applications continue to work together (see Section 7.4). The benefit of adopting a platform approach means main IT components are resolved by a major IT player (eg Microsoft). This lowers the cost for firms to gain access to the latest software and upgrades, ensures different systems speak fluently to each other and brings an ability to bolt on future new legaltech start-up solutions developed on (or with compatibility with) the same platform.**

Accenture (2016) suggests that 'the next wave of disruptive innovation will arise from the technology-enabled platform driven ecosystems now taking shape across industries' and, for Avanade (2016b: 4), 'borderless platforms continue to be the stance of the future'. For interviewees this is about more than unbundling service elements, it is an ecosystem and externalisation that potentially facilitates unbundling of the whole firm. And if that is the case, and Avanade's 'borderless platforms' lead to borderless firms, what will remain as 'the law firm' of the future? Will we see more defined or distributed models of legal practice and how will resourcing models be innovated to keep up with such change?

3. AGILE RESOURCING

The previous section demonstrated how interviewees are introducing technology to their working processes and, in so doing, raises questions about how resources might be combined or reconfigured in innovative ways. A variety of new resourcing models, including a mix of human and robot staff, suggest firms can be flexible and responsive in the face of unknown high-impact events (Brexit fallout may shed light here in the future).

In Avanade's 2016 survey of 500 C-level executives in businesses located in Europe, the US, Canada and Australia, 91% stated that their organisations' workforce 'will need to change substantially as smart technologies become more widely used' (Avanade 2016a: 3). Business leaders expected 20% of jobs to be repurposed by 2020 and 54% of respondents said that they would be willing to work for a 'robo-boss' (Avanade 2016a: 3).

The Law Society's annual *Firm Survey* (2015) reported that 12% of firms had replaced some work normally done by non-fee earning staff with automated or IT processes, a similar proportion to 2014; over half of firms had replaced more than a third of non-fee earning staff's work with automated systems. Work normally undertaken by qualified solicitors had been replaced by automated systems in 3% of firms, up from 2% in the 2014 survey. These systems were more likely to have been implemented by large firms: 19% of large firms; 5% of medium sized firms; and, 2% of small firms had replaced work undertaken in the past by paralegals with automated or IT processes. Although the overall percentages of work replaced by automation technologies have not increased drastically from 2012, there is evidence that larger firms are increasing their uptake of these technologies.

'leading innovative firms are looking at the benefits of alternative resourcing and using an optimal resource mix to ensure that tasks – where they can't be automated easily – are performed by the most appropriate resource, in the right location, at the right cost, and in a risk-controlled way'
(Law Society Insights community).

To keep pace, firms are discovering a need to harness technology to enable the right people/codes to do the right thing in an adaptable, change-ready and responsive fluid workforce.

3.1 A fluid workforce

The growing use of advanced document tools and machine learning, coupled with a generational push toward freelance and portfolio careers, is changing the legal services workforce – including how, when, and where lawyers of the future choose to work.

Obelisk Legal Support, BLP's *Lawyers on Demand* (LoD), Evershed's *Agile* and Allen & Overy's *Peerpoint* are examples of service providers focusing on delivering resourcing solutions alongside or instead of legal services.

These are labour cost arbitrage solutions delivered through contract lawyers, managed legal services and on the spot teams with a focus on providing value through network power. These dynamic resourcing solutions are largely utilising the same sort of people to do the same sort of thing as traditional firms. This may challenge their 'radical' innovation flag, but these models do push towards the bigger innovation questions around how self-contained, or self-sufficient, a law firm should be, and this is where the Uber analogy comes into its own.

Fluid resourcing models such as BLP's *Lawyers on Demand* (LOD) allow firms and in-house departments to flex the size and capability of their legal team when they need it, offering expertise without the overhead. Vetted, quality, freelance lawyers work with the client on site or remotely, via various flexible models, enabling firms and GCs to respond quickly and cost effectively to unpredictable workloads, urgent transactions or resourcing challenges.

At LOD, all lawyers go through a quality assurance process, which includes technical tests and regular reviews, to make sure that they are of the highest quality and can fit seamlessly into a client team. The lawyers have experience across multiple industries and legal disciplines.

Allen & Overy's Peerpoint provides experienced, top-tier lawyers to work as consultants on contract in high quality legal placements with Allen & Overy teams and for clients directly. Research by A&O's Peerpoint in late 2014 found that 63% of general counsel supplement their legal team with contract lawyers and 74% expected to be doing so within five years (Moore 2015).

This model presents a flexible way for clients to access talented lawyers for projects, but also, as with LOD, offers an attractive and varied career path to young lawyers who want to retain flexibility in how and where they work. One participant observed:

'I am seeing more demand (and supply) for outsourcing 'common to all' back office services such as finance, business development etc to external providers. What I haven't seen yet for front office legal activities – which I guess will only be a matter of time – is for smaller firms to tap into contract lawyer pools, much the same as Big Law are doing'
(Law Society Insights community).

Yet another interviewee asserted that this model does not work well outside the top firms:

'Lawyers on demand style models don't work in the regions. If geography is not a barrier, especially if you're working remotely, why would a lawyer work at a regional firm at a lower price than working for, say, A&O'.
(CEO, Top 100 firm, B2B/B2C).

In the past few years, leading UK firms have begun using contract lawyers, and have opened lower-cost service centres in cities such as Belfast, Manchester, Glasgow and Birmingham, shifting work out of costly London. Lawyers are also collaborating with third-party providers, adding on consulting or other services and using document automation technologies. At the global firm level, Allen & Overy is one example of a firm using its premium brand to resource a suite of delivery models and businesses - from quality legal advice to online legal services through to contract lawyers.

BUSINESS MODEL

Allen & Overy | www.allenovery.com

Allen & Overy is an international legal practice with approximately 5,200 people, including some 530 partners, working in 44 offices worldwide. The business has been investing in new services to evolve its business model and help clients meet the 'more for less' challenge.

Clients have embraced the decision to adapt the business model to meet their changing needs. As of July 2015, A&O's Legal Services Centre in Belfast has now advised on almost 1,000 matters and the panel of Peerpoint lawyers has grown to over 80. Aosphere, A&O's online legal and compliance information business, has expanded with more than 230 institutional clients and around 10,000 individual users, with particularly rapid growth in the US asset and fund management sector.

Allen & Overy recognise 'our clients face constant pressure to strike the optimal balance of cost, quality and risk. We are helping them overcome that challenge by broadening our resourcing and the tools we use'.

Online legal services

Derivative Services, established over a decade ago and serving 185 institutions, provides online subscription products to help clients reduce legal, regulatory and operational risk. The products codify A&O's unique legal expertise and cover all aspects of derivatives trading and key compliance issues, such as shareholding disclosure, marketing restrictions and cross-border data transfers.

Document Review

Our Legal Services Centre (LSC) in Belfast is led by an experienced partner and comprises junior legal professionals handling transaction-related work including document reviews, drafting and research tasks.

Legal consulting/hybrid solutions

A group of A&O partners is developing a consulting style approach to solving clients' legal challenges. We are deploying technology, business process and project management to combine traditional law firm services and new legal services into hybrid legal solutions.

Contract lawyers

Peerpoint, A&O's flexible resourcing business, was launched in late 2013 in London. Peerpoint provides a panel of experienced, high-calibre lawyers available to work flexibly on contracts for Allen & Overy (see also Section 7.1)

Figure adapted from: www.allenovery.com; Advanced Delivery toolkit.

Figure 5: Different options for resourcing – flow of work/resources into and out of firms

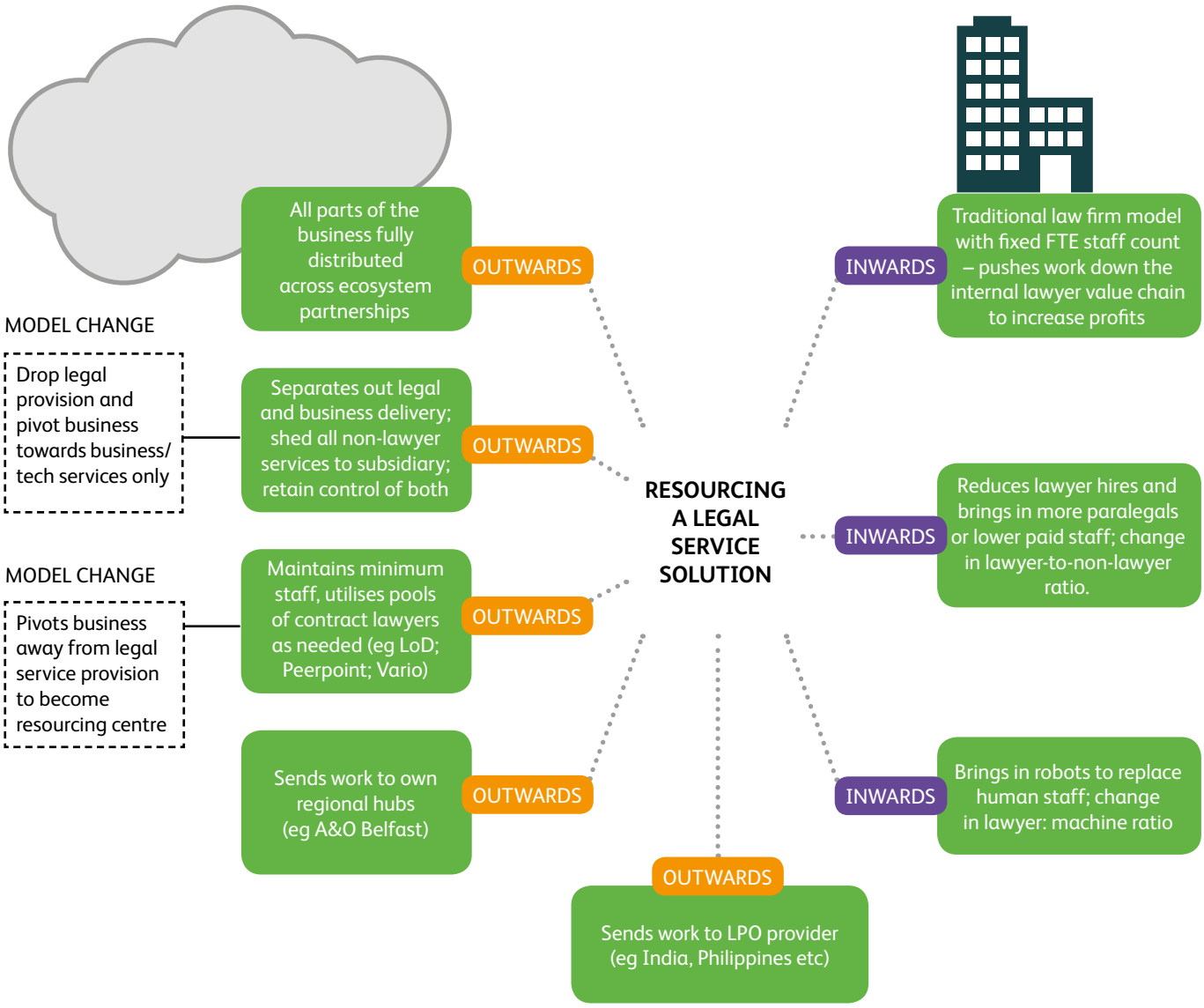

Figure 5 illustrates the multiple approaches to resourcing legal services: from a firm with FTE legal staff to a fully dispersed, borderless 'firm' on cloud platforms. It also notes the dynamic in each, between resourcing to keep the work in-house and resourcing to send work out to external suppliers.

The on-demand economy is the result of pairing a flexible workforce with a smartphone, which now provides far more computing power than most desktops. Innovation to facilitate on-demand resourcing, made familiar by companies such as Uber, has already taken hold in consumer servicing. For example, TaskRabbit's same-day service platform instantly connects users with skilled Taskers to help with odd-jobs, DIY and errands. Similarly Handy, which now has 5,000 workers on its books, is one of a large number of start-ups built around systems which match jobs with independent contractors, and thus supply labour and services on demand. White (2015) suggests that flexible resourcing models and 'bolt-on businesses like A&O's *Peerpoint*, BLP's *Lawyers on Demand* and Pinsent Mason's *Vario* are signposts to an Uber style world where law firms don't necessarily employ lawyers – they merely resource them for you'.

And yet, where larger firms had the ability to win bids because they could flex their staffing through such resourcing models and bring in people ad hoc to tackle bid jobs on demand, technologies such as RAVN and Kira have become levellers that enable smaller firms to compete on volume, speed and accuracy and negate the need to hire in additional human staff (see Section 2.4).

INSIGHT: **Consider how client matters are currently resourced. Based on frequency and expertise of matters, how many FTE/PTE does the firm need? Could the firm automate more administrative and routine tasks? Could the firm service more specialist or niche areas of legal need by calling on contract lawyers only as and when needed? Could the firm be more agile or innovative with more staff located as assets outside the firm?**

3.2 Conversation as a platform: virtual assistants, livechat and chatbots

Along with advancements in natural language processing and deep learning, technology companies are embracing artificial intelligence-powered software to create innovative user engagement and interaction tools. In rapid succession in early 2016, Microsoft, Facebook and Google each unveiled their chatbot strategies, touting the potential for this evolving technology to assist consumers and business users, and to rein ina market already flooded with apps. Google's Allo bot, which also features Google Assistant, helps users find information and complete tasks, such as booking a dinner reservation and requesting real-time sports scores, within the bot rather than having to jump among apps (knowledge@wharton 2016). Microsoft CEO, Satya Nadella, has spoken about a 'Conversation as a Platform' strategy where smart virtual assistants, powered by artificial intelligence and machine learning, can directly interact with users on their device in a rich experience via text, voice or video.

The chatbots envisioned by the technology industry combine artificial intelligence with voice recognition that relies on the way humans naturally speak. The goal is to create a situation where users feel they are communicating with another human, rather than a piece of highly intelligent software. This model reduces costs for companies in the manning of areas such as customer service. Gartner expects 33% of all customer service interactions to still need a human intermediary by 2017, down from nearly 60% in 2014 (knowledge@wharton 2016). The next generation versions of Siri, Cortana and Viv are already pushing what is possible for the frictionless consumer experience, but what might chatbots and virtual assistants mean for legal services?

Garcia (2016) suggests that sophisticated chatbots provide an exciting opportunity for legal departments to continue to re-engineer their legal support responsibilities, whereby lawyers can stop doing some of the more routine or low risk aspects of their work in order to focus on higher value legal support for their business clients. Chatbots may also reinvent how social organisations provide legal resources to the public. Yet, for two interviewees, the software powering chatbots and Virtual Assistants was still too immature to consider for their own businesses:

'I don't necessarily see an advantage of [organisation] being on the cutting edge of experimenting with, investing in or attempting to deploy premature solutions around AI and machine learning as it relates to virtual assistants and that sort of thing. Once those are more fully developed, incorporating that might be great, a value add to customers. What we want now is a platform that is functional from day one, but also easy enough to improve or modify and expand going forward'
(Head of Innovation, Challenger Bank).

'Look at what happened with Microsoft's Taybot[8] on Twitter. Do we feel confident enough to let that sort of technology loose on our potential clients? You're talking about our first line of contact as a business. I don't think so.'
(Senior partner, medium-sized firm, B2C).

Gartner analyst, Brian Blau, cautions firms to put some serious thought into chatbots first: 'one of the big risks right now is that there are not a lot of best practices on how to do this. Businesses have to write the code and put processes in place to manage that customer conversation…We don't know yet how much infrastructure a business has to put around a chatbot to make it work right. How do you speak to a customer? How fast or slow do you answer someone?' (in Gaudin 2016). For chatbots to exploit

8. Tay was an artificial intelligence chatbot, released by Microsoft in March 2016. Tay caused controversy on Twitter by posting inflammatory tweets using language and views it had learned from other Twitter users. The chatbot was taken offline around 16 hours after its launch.

machine learning and become more 'intelligent' they need access to data and the ability to use that data. As a result, the data privacy considerations in connection with bots are paramount, likewise cybersecurity and where liability lies in relation to things said by the bot.

One potential success for chatbots in a legal context is DoNotPay - a 'robo-lawyer' gaining fame for its ability to fight parking tickets (and featured in Section 5.5 of this report). In the financial sector, RBS has launched Luvo to answer customer questions, blending the skills of a chatbot with the efficiency of a Virtual Assistant and highlighting one potential role for such coded employees in law firms.

CHATBOTS

LUVO and Royal Bank of Scotland (RBS)

Luvo, a chatbot programmed to mimic human empathy, could soon be answering customer banking questions at Royal Bank of Scotland. The bank is exploring how to make the artificial intelligence service available directly to customers, in a series of small voluntary pilots, following a series of successful trials with staff (Dunkley 2016).

Piloted among 1,200 staff who manage relationships with small businesses, Luvo is able to understand questions and then filter through huge amounts of information in a split second before responding with the answer. If Luvo is unable to find the answer, it passes the query on to a member of staff who can solve more complex problems. The chatbot supports staff to help them answer customer queries more quickly and easily (RBS 2016). Luvo has been programmed to learn from its mistakes, meaning its answers become more accurate over time, and can respond to a person's mood.

Luvo draws parallels with iPhone's virtual assistant, Siri, as it can predict and answer a number of questions with 'personality'; *'its unique psychological profile means it has a warmth to its personality, is approachable, creative and uses a combination of intuition and reasoning when answering questions'* (RBS in Dunkley 2016). Chris Popple, Head of Digital Banking at RBS said: *'Luvo has text-based conversations, but we could think about using speech in the future'* (in Dunkley 2016).

Livechat and resources such as Luvo can be powerful marketing tools for law firms looking to engage with website visitors and potentially convert them into clients. Livechat can function at three levels: (i) human-operated customer service as a point of engagement and to signpost/answer basic questions; (ii) expert human-operated to answer questions around particular legal needs (often run by a paralegal; junior lawyer); and (iii) a robot-operated Q&A as, for example, IKEA uses on its website. Suppliers such as Client Chat Live offer a service of human operators that are available 24/7, 365 days a year enabling firms to engage with website visitors outside standard office hours.

The chat operator (human or bot) captures contact information, learns more about the individual's legal needs and screens potential clients accordingly. The operator can also answer any questions the individual may have regarding the firm's services. Immediately after the chat, the operator sends the relevant person in the firm a full transcript of the conversation. One interviewee was slightly wary about these systems and raised the question of how much the firm is giving away in chat and how much they need to protect their commercial proposition.

INSIGHT: **Chatbots can add most value in B2C firms. The chatbot can help to steer website browsers to the firm, present a friendly approachable interface and, via machine learning, answer basic types of FAQ (or signpost people to more information). The chatbot can also triage areas of enquiry and send them to the appropriate person in the firm, saving staff time.**

Virtual Assistants carry similar concerns as chatbots when engaged in spontaneous conversational interaction, yet for administrative tasks and helping to organise workflow they can bring value to the business model, as Riverview is keen to demonstrate (see box below). One interviewee saw virtual assistants as just the start of an augmented working reality for lawyers:

'traditionally I had a secretary, but she's now a digital assistant with a voice like Cortana or Siri. We could even imagine a situation where I'm in court listening to a statement while the digital assistant is also listening, cross checking facts and simultaneously spritzing[9] related legislation, information from my law firm and a big data analysis of case law to my Google glass style augmented reality'

(Technical Project Manager and IT strategist).

VIRTUAL ASSISTANTS

KIM / Riverview Law | www.ask.kim www.riverviewlaw.com

KIM stands for **K**nowledge, **I**ntelligence, **M**eaning and combines the CliXLEX platform, which Riverview Law acquired in August 2015, with the output from its R&D unit plus the other technologies that Riverview Law has invested in. Karl Chapman, CEO of Riverview Law, says: *'Because the Kim technology is applicable to all sectors, we are running this subsidiary as if it is a stand-alone business. In this context Riverview Law licenses the KIM technology on an arms-length basis and exploits it in the legal market'* (Riverview Law 2015).

The Riverview Law Virtual Assistants are *'designed to help legal teams make quicker and better decisions. They will be able to take on many tasks for lawyers, combining Riverview Law's legal domain expertise with automation, expert systems, reporting, visualisations and artificial intelligence'* (Riverview Law 2015).

The first Virtual Assistants were launched in April 2016, with more planned throughout 2016, aimed at all businesses that have an in-house function and available globally, including to other law firms.

The Assistants feature comprehensive reporting. At the click of a button, a user can see how many live cases the legal team is working on, of what work types, which business units the matters have come from, the risk profile of all the cases, which legal team members are working on the matters and how long cases are taking by user and work type. It allows legal leaders to ask the right questions and improve operational efficiency.

The **Instruction and Triage Assistant** manages, triages and tracks the progress of instructions. It is pre-configured, cloud-based and, depending upon the number of users, can go live within one day.

The **Foundation Level In-house Assistant** adds case management and more comprehensive reporting to the Instruction and Triage Assistant. It too is pre-configured, cloud-based and, depending upon the number of users, can go live within one day

The **Professional Level In-house Assistant** has six modular options that enable organisations to tailor it to their business. This Assistant is cloud-based and typically goes live in one week.

The **Enterprise Level In-house Assistant** can be a cloud or on-premises deployment and is designed for global organisations which not only wish to tailor the system but also require extended implementation and roll-out support.

9. A speed-reading technology (at one time featured in Honda adverts) http://spritzinc.com/

This section has highlighted the potential for change in how firms resource the legal services they offer and how they communicate with clients. The ability to better manage resources (via the ratio of human-machine staff; or internal vs on demand staff) can help a firm remain agile with fewer permanent overheads and thus become quicker to change.

INSIGHT: **If a firm adopts a staff-on-demand approach it gains the ability to call on a range of different professional skills as needed. Potentially this enables the firm to offer a wider range of services and to better serve existing client relationships by being able to provide quality advice on any aspect troubling a client.**

INSIGHT: **Virtual assistants can onboard new clients and, for the firm, help to manage work allocation, work flow and project status. Virtual assistants can provide a dashboard showing how many live cases there are and which lawyers are dealing with them, the average length of particular case types and different outcomes, enabling the firm to deploy resources to optimum value for both the firm and its clients.**

4. PRICING MODELS

Perceptions of a lack of transparency in pricing has been a recurrent issue across all sectors of the legal profession – from large corporate firms' billable hours to consumers who may avoid seeking legal advice altogether due to fear around the unknown, but presumed escalating cost (GFK 2010). While we are seeing more and more legal services switch to fixed fees, even this pricing model does not ensure firms are themselves getting the most value out of their resources. Many firms need to develop their ability to provide accurate estimates to minimise their financial risk in ways that are fair to both the firm and its clients.

Beyond cost, lawyers are realising that to maintain and strengthen their relationships with corporate clients they have to find innovative ways of providing value after a deal is done. It has been well documented that the billable hour model does not encourage efficiency. Where firms have found notable time and cost savings through the use of technology and process automation there are now concerns that clients who are aware of these systems will expect a drop in fees.

'What does this really mean for our charging model? I mean, can you charge, if people know we have Kira, can you really charge clients for it? How do you charge for a machine?'
(Director of Legal Services Innovation, Top 50 firm, B2B).

Taken together, these factors (technological efficiency, a lack of price transparency, client pressures) mean that many firms could benefit from guidance in designing their pricing options and, perhaps more importantly, reconceptualising the relationship between cost, price and value of a service.

Maximising profitability and perceived client value is more about giving clients what they want at an acceptable profit point from the firm's perspective and at a price that the client considers to be fair value, but few firms are confident in their ability to model pricing activity around a client's willingness to pay. 'Willingness to pay' highlights the pivotal price point that the client is willing to pay and still feels that they have had fair value, while the firm feels that it has been properly compensated for the value delivered.

Grady (2016) observes that with technology and process automation, the value of the service the client received has not changed, the only thing that changed is the input volume to produce that value. The lawyer 'could switch from charging by the hour to charging a fixed fee based on the value. On a fixed fee model, the lawyer can choose one of several paths including charging the original price, reducing the price a little, reducing the price a lot, or keeping the price the same but offering additional services' (Grady 2016).

A quick scan across legal service providers reveals a range of approaches to pricing:

Hourly rates	Fixed fees	Per-event/PAYG fees
Discounted hourly rates	Capped fees	Success fees
Volume purchase discounts	Contingency fees	Hybrid approaches
Monthly/annual retainer	Value fees	

A 2015 survey by ALM Legal Intelligence, found that 76% of large US law firms employ someone with responsibility for pricing within the firm, and of those, 38% had someone dedicated to the role. Under growing cost pressure from clients, the firms cited a need for help with establishing alternative fee arrangements and to better understand their margin possibilities and return on investment. A growing trend to ensure law firms continue to maintain a profit in the face of automation and business model innovation, is for firms to employ a pricing professional, someone designated to understand a firm's internal mechanisms and workflow in relation to actual costs. But Friedman (2016) warns that 'without delivery changes, pricing folks can only move numbers round'. Process improvement supports the lawyer moving from the billable hour to an alternative fee structure which can be more profitable for the law firm while costing the client less.

Osborne Clarke's Total Time Recording programme uses Intapp Time to understand how people are investing their time. IT Director, Nathan Hayes, explains: 'We have time codes for different activities, so that we can see how much time people are spending…We are also combining time capture and analysis tools with pricing tools to identify the resources we allocate to fixed-fee work, as this factors into our profitability. We can look at the resources we allocate to different matter types and different phases of a deal, for example, so that we can anticipate requirements for future matters.' (in Goodman 2016). Apperio extends that notion to break down the barriers between the firm and the client in the dynamic monitoring of legal spend.

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LEGAL SPEND SMART DASHBOARD

Apperio	www.apperio.com

Apperio is a powerful smart-analytics dashboard that transforms the way corporate clients manage their legal relationships by providing timely visibility on spend and project status. Apperio offers a cloud-based software-as-service platform aimed at giving businesses and law firms a better insight into their legal spending. The system tracks legal fees directly from law firms' practice management systems.

Apperio has built a pricing tool that is intuitive, one that focuses on the usability of systems for lawyers and clients, and builds on the user experience of technology made familiar by smartphones. A simple, intuitive dashboard helps to build strong, cost-effective lawyer/client relationships and equip all parties with the tools they need to communicate better in business. Regularly sharing fee information between law firms and their clients has proven to significantly improve working relationships. Apperio enables users to track legal spend at an overall or matter level, in real time.

This insight enables clients to proactively manage any problems as they arise rather than being forced to be reactive at the point of invoice. The budget is planned making use of historic data to build a rigorous fully-scoped plan. Actuals are then tracked against this plan. The partner has real-time updates and alerts enabling them to correct course throughout the matter to ensure optimum efficiency and profitability. Expectations can be managed internally and additional budget can be secured if necessary. Reporting is quick and easy as reports can be downloaded at a click. A GC can also easily benchmark their firms and get quantitative information on ROI to make informed decisions on who to work with in the future.

Clients want certainty around pricing. Apperio helps firms to be better at pricing and to understand where their margins are pushed, and where they can be optimised.

Apperio is backed by leading investors Notion Capital, IQ Capital, Seedcamp as well as a number of other high profile investors and industry players including NextLaw Labs. The platform is being used by more than 20 of the top 100 UK law firms, with more than £60 million in fees being tracked since the launch in 2014.

INSIGHT: **Technological innovations that provide B2B firms and corporate clients with real-time transparency on legal fees and areas for improved efficiency, can help with client relationships and the firm's own resourcing model. Offered on a Software-as-a-Service (SaaS) or pay as you use model, these are affordable tools to help firms add value to client offerings and, by allowing clients full visibility on budgets, gain some credibility on negotiations over price.**

If a firm improves its process efficiency, but retains a billable hour pricing model, it becomes hard to justify the process improvement. Yet, process improvement can have value beyond the obvious, for example, the value to the client of reducing the work time. The client may value getting the work delivered more quickly, which may express itself as client satisfaction and some clients may be willing to pay more for a faster resolution. Law firm pricing consultant, Richard Burcher, contends 'part of the solution to the challenge of giving clients what they want when it comes to pricing is to provide them with choice of pricing methodology' (in Rejeva 2015).

PRICING MENU

Woolley & Co. www.family-lawfirm.co.uk

Woolley & Co is a divorce and family law firm, advising on all legal aspects of family relationships from prenuptial arrangements to separation, annulment, divorce and custody cases. The firm offers a free 30 minute initial telephone appointment so that enquirers can get clear information about their options and how much things will cost. The web site also gives a clear range of pricing options, as well as user-friendly videos explaining processes. The firm offers different pricing options:

Full service

Suitable for help with all aspects of a divorce or family law matter, especially where there are disputes about finances or the future living and care arrangements of children. A senior family lawyer will be allocated to the case, providing advice and support at every stage. The lawyer explains the costs of each stage and where possible agrees a fixed price for specific pieces of work.

Pay-as-you-go

Suitable for individuals who only need advice on a very specific area of law or a particular issue. The individual is responsible for progressing the case, with the option to call upon the advice of a lawyer as and when needed. It is likely the individual will choose to buy blocks of time for advice from the lawyer. This is suitable for anyone applying for a divorce directly or choosing to represent themselves in family court hearings.

Help with the paperwork

The documents required by the courts can be difficult to understand for the uninitiated. Some people choose to seek help to complete these forms, as getting things wrong can result in additional costs. For a fixed price a qualified family lawyer can review the completed forms and advise on any errors or omissions. This is suitable for anyone applying for a divorce directly.

Fixed price services

For many services the firm offers a published fixed price, in other instances a lawyer will be able to explain likely costs having discussed the case and understood the work involved to get the client to a particular stage.

INSIGHT: **For B2C firms, being able to offer consumers a variety of pricing options helps to reassure potential clients via a structured approach to what they get for what amount, and also reflects a growing division in workload between solicitor and client. Offering a variety of pricing options can help firms supplement a full-service model with 'quick wins' like form-checking, or consultancy services.**

So far this report has talked about process efficiency in the act of running a business and in delivering a service, where innovation is integral to the operation of a law firm or legal business. When it comes to access to justice and consumer-oriented innovation, these technological tools and intelligent systems show technology utilised at a surface level to help identify, triage and define paths through information and to draw on modes of interaction already familiar to many individuals to guide them through the ways that legal services can help them. Examples are discussed in Section 5.

5. INNOVATING FOR ACCESS TO JUSTICE

A growing number of technology tools can facilitate access to justice. Many are in use or test by law firms and advice agencies, but new tools appear frequently, bolstered by events such as legal hackathons, law school competitions, innovation hubs and access to seed funding, yet adoption of the best tools is sporadic, and their use is far from widespread. Problem diagnosis is an important first step in access to justice innovation, requiring tools to help the user recognise the nature of their problem or dispute. Only then can the tool begin the appropriate pathway through the expert system. Examples in this section of the report demonstrate that a user-friendly expert system need not be based upon a complex model of legal reasoning. Systems such as Rechtwijzer, The Solution Explorer and Sorting Out Separation (all featured in this section) advocate a pragmatic approach to the design of legal expert systems based on a simple Q&A process that affords greater control over the reasoning process by forcing these elements into a deductive structure (a design thought less practicable by a Top 50 firm interviewee in respect of high value B2B work; see Section 2.4). This section of the report discusses areas where technology is providing ways into information and legal advice, including examples from online decision tools, apps, smart forms and how individuals might ask humans or their coded colleagues for guidance.

All of these examples, while oriented toward A2J, present technologies or processes that might be adopted by firms to enhance their client communications and service.

5.1 Digital guidance

Law firms, advice agencies and social organisations have made great strides in developing and using web-based delivery models, including websites with interactive resources, document assembly and smart forms, and social media. However, even where online information is available, it can be difficult for consumers to find and understand. A recent study in the Canadian context revealed that the ability of people to use Internet-based access to justice tools and information is often impaired by emotional distress (Macfarlane, 2013: 64). A participant in the Law Society *Future of Legal Services* research stated:

'There is an abundance of information to help consumers understand their legal issues and make good choices about legal service providers. Whether all this information makes the slightest difference is not clear, at least to me, because this body of content is packed with duplication, contradiction, complexity, unclear motivation, and jurisdictional uncertainty, all packaged up as "plain English guides to help you'(B2C Futures Panel) (The Law Society 2016: 57-8)

Use of intelligent technologies and user-friendly question interfaces prompts a shift away from confusing information or explanations of legal forms and procedures, towards a dynamic functionality driven by underlying expert knowledge. Online tools can include: problem diagnosis, delivery of customised information, self-help support, triage and streaming into subsequent routes to resolution. These systems do not 'do the thinking for users', but instead provide support and guidance with an expectation that users will exercise their own discretion over how to act on these outputs (Veenen 2008).

Comments from interviewees suggest that there are three clear audiences for digital guidance and online tools:

- younger generations who have grown up in an Internet/mobile saturated society and who naturally gravitate towards the digital/virtual as a way of thinking.
- rural communities who might have limited access to local physical resources.

- potential users of the legal system who perceive they cannot afford a solicitor but want information about what they might do about their problem.

Individuals in rural areas face greater challenges than those in urban areas as there are fewer firms within easy reach, fewer traditional sources of pro bono legal work, fewer funding resources and fewer suppliers overall. Other challenges involve the difficulty of recruiting staff to serve in rural areas and the travel time and costs for the client to reach the nearest law firm offices. These challenges raise questions about the extent to which Internet/mobile technologies can mitigate this gap.

Videoconferencing, Skype, and similar technologies can be used for remote consultation. However, some individuals in rural communities do not have access to high-speed Internet connections, some lack consistent phone reception, and others have little nearby access. Currently, 42% of those living in rural areas are unlikely to receive broadband speeds greater than 2 Mbps - the Government's minimum target for all homes - approximately 30% of rural households have a speed of less than 1 Mbps (Winmark 2016: 3). The North East is the region with the lowest Internet access per household at 59%; the North East is also the region with the highest percentage of deprived rural output areas (OAs) in England at 30.7% (Winmark 2016: 14).

It would be a mistake to assume that technology can fill access to justice gaps without factoring in not only technological signal/access, but also the technological literacy of users. But this is not to detract from tools based around digital guidance. A digital hub for consumer interaction is part of society and, for many, will be a natural point of gravitation for any information or advice.

Online guidance tools, designed to help people understand when they might benefit from access to the legal system and to provide advice regarding steps they might take to obtain this access, come with their own design challenges (allowing for nuances of situations, the emotional state of the user, how users manage trade-offs between options; see Maule 2013, 2014[10]). Typical tools move an individual from a definition of the problem they are facing to a specific range of choices (the full range to include non-pursuit options).

The system must also include information about the consequences of different options so the individual can make a well-informed decision. The design of these tools is usually based on a branching, database-driven system of screens, visible to users as a Q&A interface. Statistical analysis should help provide the choice and outcome predictions users need to help make choices about the type of legal services they require. The system should also be transparent, so that users can trace their answers, to learn why they have been given particular results, especially if they receive different results from those they expected.

10. John Maule (2013) looks at behavioural economics in the context of the legal services sector. The primary aim of the research was to consider how consumers and potential consumers of legal services make decisions, with a view to outline the insights that behavioural economics can provide about the decisions taken by legal services professionals. A follow-up report in 2014 considers how best to support legal services consumers by drawing on research from behavioural economics concerned with the psychological processes that underlie human decision making

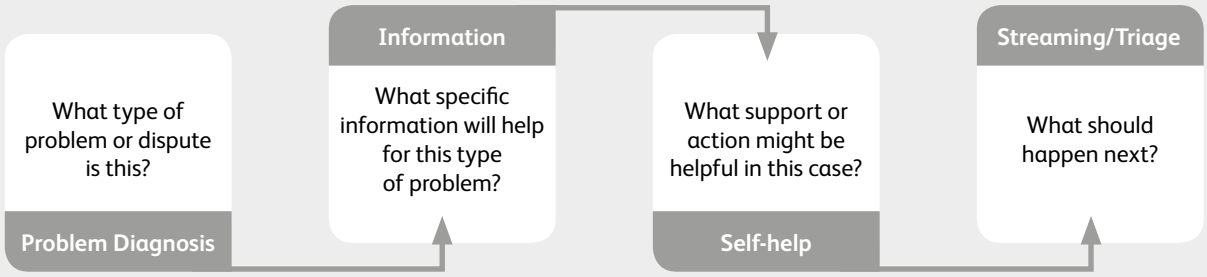
ONLINE GUIDANCE TOOL

The Solution Explorer | https://www.civilresolutionbc.ca/what-is-the-solution-explorer/

The Solution Explorer is the first step in the British Columbia Civil Resolution Tribunal (CRT) process aimed at individuals with small claims or condominium disputes. This interactive tool will be available online, 24 hours a day, 7 days a week.

The tool is in an online Beta test as of June 2016.

The goal of the Solution Explorer is to make expert knowledge available to everyone through the Internet, using a 'smart questionnaire' interface. The interface asks a series of questions that change depending on a person's problem or dispute. By answering the questions, a person 'tells' the system which questions to ask next. The questionnaire interface makes it possible to identify a particular type of problem or dispute. This diagnosis exercise will help the system to recognise the right expert information, self-help tools or other options so they can be delivered directly to the user. The Solution Explorer's help comes in the form of: problem diagnosis, information, self-help and streaming & triage.



[Source: Thompson 2014]

Problem diagnosis: The Solution Explorer will help to sort out the type of problem or dispute a person is having. In some cases, this will be a simple matter of helping to find out whether there is a solvable or resolvable problem, and whether it belongs in the CRT. Diagnosis might go a little deeper into a specific type of problem.

Information: After a problem has been diagnosed, the Solution Explorer can deliver very specific and helpful information relating to it. This approach saves people from having to go off and tackle this challenge on their own. The information could deal with specific rights or obligations or identify what often happens in similar cases. It might also focus on ways to manage or resolve a dispute before it gets any worse.

Self-help: Depending on the type of problem diagnosed, the Solution Explorer might offer action-oriented 'do it yourself' options and actions that empower people to begin working to manage or resolve their dispute as soon as possible. A common self-help tool will be a letter template to help the person get an early start on the resolution process by communicating their concerns about the problem or dispute.

Streaming and Triage: Some problems or disputes will not be solved by the Solution Explorer. In these cases, the system will identify a recommended next stage of the process and 'stream' it in that direction. In the CRT process, this will often mean moving to the negotiation phase to see if the parties can come to an agreement. There may also be some 'triage' for disputes where it is clear that other services or support is needed, or that immediate action is called for. (Thompson 2014)

Expert knowledge for the system is captured through a two-stage 'knowledge engineering process' (Thompson 2015a).' The expert explains the problem or dispute area, about common types of disputes, how often they occur, and what it might look like to the people experiencing them. The system's creators work with the expert to identify important and helpful information, along with steps people can take to help themselves manage or resolve the problem or dispute before it gets worse. All of the information is collected and put into decisions trees using mind mapping software which can be fed into the Solution Explorer system (Thompson 2015b).

The Dutch government's Legal Aid Board has operated a platform called Rechtwijzer (Roadmap to Justice) since 2007 for couples who are separating or divorcing. It handles about 700 divorces yearly and is expanding to cover landlord-tenant and employment disputes (Matlack 2016). At first, Dutch lawyers were wary of the Rechtwijzer system and feared a loss of billable hours, but now many view the online platform as an efficient way to process simpler cases, leaving lawyers to focus their expertise on more complicated matters. For Jin Ho Verdonschot, Dutch lawyer and developer of the Rectwijzer platform, 'it doesn't diminish the market for legal professionals, it just reshuffles it' (in Matlack 2016).

ONLINE GUIDANCE TOOL

Rechtwijzer2.0	www.rechtwijzer.nl/www.hiil.org/project/rechtwijzer

An advanced version of the original platform, Rechtwijzer 2.0 is an online-based dispute resolution platform that supports people throughout their justice journey; the first implementation was launched at end of 2014.

Rechtwijzer 2.0 is the first ODR platform for difficult problems such as divorce and separation, landlord-tenant disputes and employment disputes. The platform allows people to manage the process and desired outcome in their own home, using their own words and at their own pace. This puts the user in control when working towards an effective solution that safeguards their interests.

Through the platform, individuals can learn about their legal options while receiving support for an interest-based dialogue between the people involved. When users need more than this, Rechtwijzer 2.0 provides mediation, adjudication, and a neutral review of all agreements.

Couples pay €100 for access to Rechtwijzer, which starts by asking each partner for their age, income, education, and other information, then guides them through questions about their preferences. Couples with children, for example, are asked whether they are seeking sole or joint custody.

The platform uses algorithms to find points of agreement, then proposes solutions. There's a tool to calculate child support and software for drafting agreements. Couples can request a professional mediator for an additional €360 or, if talks break down, a binding decision by an adjudicator, that happens in about 5% of cases.

INSIGHT: **For B2C firms, Q&A interface systems (such as Rechtwijzer and Solution Explorer) offer ways to interact with potential clients in useful and time-efficient ways. Consumers can be walked through different factors to consider in respect of their situation, whilst at the same time the system triages cases and directs information to the right person in the firm or to other sources of help. This saves the firm time and collects important information prior to any initial interview.**

5.2 Smart forms and assisted complete forms

Those who are unable to obtain a lawyer may still be able to obtain a lawyer's help for crucial parts of the case through unbundling. Instead of online static court forms for individuals to download, print, and complete by hand, users can now use interactive guided interviews which walk the user through the process step-by-step via a user-friendly questionnaire interface. Many of these technologies are designed primarily as document assembly tools. These systems are designed to collect facts from users and produce answers based on a decision-tree analysis (Mountain 2002: 1066). Examples of these services include A2J Author and Legal Genie in the US, while in England, CourtNav offers a guided interface to help individuals complete divorce forms, and Siaro offers an online platform for family lawyers that allows the lawyer to gather all relevant client information prior to initial consultation in divorce and separation cases. These systems are a mix of auto-complete with assistance from software or hybrid packages that also involve lawyer time or lawyer form-checking services. For example, in the US, Legal Genie asks simple questions and inserts responses in the correct places on the legal form. The forms are then reviewed by an attorney from the California State Bar-certified Lawyers Referral Service (LRS). Despite growing online support for DIY, public users (novice buyers of legal services) are still encouraged to get additional help to understand concepts and review their documents prior to submitting them.

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ASSISTED COMPLETE LEGAL FORMS

CourtNav	http://www.courtnav.org.uk/

CourtNav is an online tool developed by Royal Courts of Justice (RCJ) Advice in partnership with Freshfields Bruckhaus Deringer LLP. It is designed to help individuals complete and file a divorce petition. RCJ Advice and Freshfields were joint winners of the access to justice through IT award at the 2015 Legal Aid Lawyer of the Year awards.

Freshfields provided support to CourtNav in the form of finance, pro bono development work, help from the firm's IT department and advice from its IP lawyers. Robins (2013) reported that the divorce module has been funded 'to the tune of £75,000 by the MoJ' and also received funding from the Legal Education Foundation.

The original idea for CourtNav was to replicate the face-to-face advice offered by the RCJ Advice clinic through an online tool. Paul Yates, solicitor and head of London pro bono at Freshfields, explained 'one big decision we faced was whether to make tool publicly available on the Internet or subject to initial triage. By assessing cases on the phone, RCJ Advice can decide if someone is suitable for CourtNav or needs face-to-face advice' (in Hilborne 2015). Individuals can access CourtNav by visiting their local Citizens Advice Service.

CourtNav asks users a series of simple questions, with yes/no or multiple choice answers where possible, and the engine inserts their answers in the appropriate places on the relevant court forms. If the user is unsure of any questions there is help text on each page, but the individual also has online support of a lawyer throughout the process. CourtNav allows users to upload copies of documents such as a marriage certificate which the solicitor can then check. Once the solicitor has checked that all the information is correct, the system is authorised to print and lodge the forms with court.

In addition to the assisted-complete forms, CourtNav has produced a series of 'Going to Court' guides. The first three cover what is involved, the steps needed and to consider if the problem can be solved without going to court. For those who are going to court, CourtNav provide templates and guidance about the documents an individual needs to start a claim and explains hearings, the trial and appeals.

'CourtNav is just the kind of innovative project urgently needed to assist the new post-LASPO generation of self-represented litigants. The idea is to guide users through the legal process under the supervision of advisers; provide advice and warnings to DIY lawyers; assist with completing forms; and allow for those forms to be checked by advisers' (Robins 2013).

CLIENT DATA QUESTIONNAIRE PLATFORM	
Siaro	http://www.siaro.co.uk/

Developed in conjunction with family lawyer and co-founder of Family Law Partners, Alan Larkin, Siaro is an online platform that allows lawyers to gather all relevant client information prior to initial consultation in divorce and separation cases. Siaro can be accessed for free on a desktop, tablet or smartphone and is set to be trialled throughout summer 2016.

The questionnaire captures information about the client, their partner, children, relationship, property and finances and also allows them to upload relevant documents. Users are guided through the process with 'help' pop-ups to ensure they understand what they are being asked and also, importantly, why they are being asked the questions (Legal IT Insider 2016).

The information is supplied to the lawyer in dashboard format. The system will automatically alert the lawyer of key issues from potential conflicts to health issues and possible domestic violence. All assets, liabilities and property information is processed to give a clear understanding of finances. The lawyer is also able to instantly populate court forms with this information and create chronologies at the click of a button.

Siaro captures key facts about a case prior to the initial consultation meaning that the consultation time can be used to give the client informed and useful advice and engage in meaningful discussion about options. Siaro has been designed as a distributed system allowing for multiple users to securely access client information. So if both separating partners are using Siaro, their case information can be viewed simultaneously by a mediator, arbitrator or even a judge (Legal IT Insider 2016).

For law firms, tools such as Siaro save money on the preliminary information gathering exercise, while adding value to the initial consolidation – because the lawyer has the key information captured about the client's situation, they can bring meaningful advice and discussion to the first meeting.

Smart legal forms are becoming more commonplace, especially for individuals following a DIY route or for litigants in person. Smart forms are interactive and use technology to provide data validation, calculations, and checks for completeness. A well-designed smart form provides better accuracy because the entered data is validated and all required fields are completed before acceptance. This can save solicitors time if used in conjunction with professional advice. Smart forms require ongoing maintenance as laws are changed and forms need to be updated.

By extending smart forms into law firm workflows, firms can save themselves time and money, but doing this can require significant technical expertise, staff time, and funding.

Interviewees at Top 50 firms talked about the value of smartforms, smart documents and self-verifying systems, especially when building prospectuses for clients:

'not only creating the drafts, but creating smart documents by pulling information from different data sources to do the "real-time" verification at the time of document creation. So we can eliminate, partially or to a great extent, some of the verification happening downstream. And that's got tremendous value from time and accuracy perspective, internally and externally and, primarily for our clients. We call it self-verification and it is a very compelling proposition'

(Enterprise Architect, Top 50 firm, B2B).

Smart forms overlap with the underlying processes and algorithms used for advanced document assembly and review in large corporate firms. The basic model of using a questionnaire interface to generate a legal document is a feature of both B2B and B2C firms as well as aiding DIY consumers, and, in all cases, means that the person generating the document does not require high levels of legal expertise.

INSIGHT: **Technological innovations that draw on document assembly systems to create smart or assisted complete forms offer a way for firms confidently to share more routine tasks with clients (to hand back basic matters to the business for in-house lawyers). Guided by a bot or by Q&A tree, users encounter a basic interface (rather than legal jargon forms), which can later be checked by a lawyer or technological verification system – meaning lawyers have more time to deal with complex matters.**

5.3 Mobile

Forty-seven per cent of people on the planet use mobile technology; therefore, nearly half of the world's population can potentially access services, information, and support, wirelessly. People in remote locations who lack access to transportation, who are homebound, need or prefer written rather than spoken communication, or who have face-limiting disabilities can now access legal information, advice and services through tech-enabled systems – typically delivered via smartphones or tablets (Barak & Grohol, 2011; Thompson 2015). Digital and technology-based solutions have the power to create massive change and radical transformation in who is served and how. The compelling nature of this challenge stems from not only the magnitude of use, but also the possibility of solutions.

Clients can maintain contact with their lawyer through phone calls, text messages, e-mail and social media platforms or dashboards, together raising lawyer productivity and client satisfaction. Approximately 68% of the 420 law firms surveyed by the International Legal Technology Association (ILTA) (2015) purchased smartphones for their lawyers and 58% purchased tablets. The remaining 32% percent took a 'bring your own device' approach, which allows employees to use the same device for both personal and professional use (ILTA 2015).

IPAD/ APP/ SKYPE/ FACETIME

Hilary Meredith Solicitors Ltd. http://hmsolicitors.co.uk/

Hilary Meredith Solicitors Ltd. was established in October 2003 by Hilary Meredith, an expert in catastrophic injury compensation for over 27 years. The firm was granted an Alternative Business Structure Licence by the SRA in February 2013.

This niche claimant personal injury practice looks after clients whose injuries range from the straightforward to those of maximum severity. The firm employs a number of mobile and outreach options to help clients (many of whom have suffered catastrophic injury and may be homebound or hospitalised) to communicate with the firm. Potential clients are invited to book a free online consultation where they can speak to a solicitor via Facetime or Skype.

The firm provides an iPad as assistive technology to seriously and catastrophically injured clients, where damages have been estimated to be in excess of £20,000. Clients use the iPads to access features such as 'Face to Face' or 'Skype' to keep in contact with the firm, family and with friends. Clients report that:

'the iPad has made a huge difference to their lives and is great value as a rehabilitation tool and when used with the rightapps has many other practical uses. It allows them to perform tasks that they may otherwise be unable to do or increases the ease and safety with which they can perform these tasks' (Hilary Meredith Solicitors Ltd).

The Hilary Meredith **iAccident App** provides individuals with the tools to capture all the right information at the scene of an accident. The free app 'uses the power of your smartphone and gives you direct access to our experienced and helpful claims service'. Clients can submit their report instantly or later when it suits. The firm uses the information captured via smartphone to assist in the validation of the claim.

The technology that can deliver information and online tools remotely can also deliver tech-enabled lawyers to people in rural communities, making the individual as mobile as the information. In some cases, mobile lawyers literally go out to rural areas to support communities bringing laptops, printers, and legal information. In the US, Ventura County's 'Winnebago of Justice' (launched in 1999) turned the model of the mobile library into a self-help centre that travelled to senior centres, homeless shelters, and social welfare organisations to provide computers, video stations, and a small library of legal information and court forms. In 2000, the innovative mobile clinic won awards from both the American Bar Association and the Judicial Council. Other counties in the US have since planned their own mobile clinics.

Led by Lucy Scott-Moncrieff, Managing Director of Scott-Moncrieff and Associates (and past Law Society President), pilots are planned to test Riverlaw's KIM Virtual Assistant in social centres such as food banks to enable volunteers to help individuals address any immediate legal needs and potentially identify further areas of need. KIM is being customised with scenarios that focus on five areas of law (welfare benefit; debt; housing, employment and family). Volunteers at, for example, a food bank, will be able to work through scenarios with their clients to reach options and actions, to gather relevant information that can be passed through KIM to a lawyer.

5.4 Advice Apps

The Google Now app delivers traffic news, sports scores, airline information and more. It has access to the user's email, calendar and search behaviour to work out what information they need before they need it – what if it could also identify, from access to an individual's data, potential legal needs and options?

The scope for specially-tailored apps in the legal industry is immense, from child support apps that estimate maintenance costs, to immigration apps which provide users with information about their rights. Other examples include personal injury apps that store accident information, witness statements and doctor visits, and debt and income apps to help organise debt information and advise next steps. Apps could also provide legal fee calculators or audio instructions for filling out legal forms.

Kim Tasso (2012: 6-7) categorised apps from the UK legal, accountancy and property professions into seven types:

- **Directory** – listing organisations and/or people
- **Information/reference** – glossaries, processes and explanations of situations.
- **Calculator** – entering values and having various tax rates or statutory rules applied to calculate rates, liabilities or due dates.
- **Form filling** – either to automate a process where you usually seek advice from a professional that then does the job, or is sent to a professional for consideration, or to capture information about a particular situation (eg a car accident) where the information is effectively generating a lead or enquiry for a firm.
- **Diagnostic** – some of the form filling apps have progressed into diagnostic aids that then present the information required without too much further effort from the user
- **Database search** – typically for the property where GPS is harnessed
- **Integrated** – few are integrated with an online application to provide, for instance, details of an existing matter or case, the ability to link to the relevant people in your professional team or information on work in progress or billing.

From the law firm side, valued legal apps seem to focus on client communication - allowing lawyers to communicate with clients more efficiently by directly providing them with legal documents on their mobile devices. These apps can also send 'push alerts' to advise companies on legislation changes, to deliver the latest case updates, and ensure that they always have access to relevant legal information. Extra benefits include the ability to offer additional services that enhance customers' experience and encourage advocacy, such as educational resources and FAQs.

APP	
inCase™	https://in-case.co.uk

'Your clients will expect you to offer a mobile app of some form to complement your services. The key need of clients is the ability to find out how things are progressing and being able to get in touch with you, easily and on their terms, not yours' (inCase™).

inCase™ was developed by Sucheet Amin, Managing Director of Aequitas Legal, a personal injury practice based in Manchester. Having realised that his clients wanted to communicate more through the use of technology, he conducted studies and research to develop a solution to this need. The outcome was a bespoke mobile app and the first version of inCase™ was launched in May 2012.

inCase™ allows law firms to send letters, documents and forms of authorities by PUSH messaging for clients to view, approve and sign where necessary. The firm's case management system is programmed to send specific data to a client's app. The client receives the message within a split second of it being sent and will appear as an alert on their smart phone or tablet.

Following the launch of inCase™, fee-earners at Aequitas Legal noticed fewer client calls asking for general updates and the quality of the calls increased, as clients were better educated about the personal injury claims process.

A second version of inCase™ was developed after taking feedback from users. After the launch of the second version, Lavatech Limited was established, launching inCase™ into the market under a new company.

INSIGHT: **Technological innovations can help firms be more transparent with clients. Using technology to give clients access to case updates and clear information about the process and progress of their case – available when and where the client finds most useful.**

Elsewhere, apps are aimed at helping consumers understand legal problems and their rights. The challenge to address access to justice needs via apps has drawn a lot of attention from legaltech start-ups and from academics. Vicky Kemp, Principal Research Fellow at the School of Law, University of Nottingham, and previously a Principal Researcher with the Legal Services Research Centre, is exploring ways in which an app might be used to help inform detained individuals about their rights. At present detainees are given a sheet of paper explaining their rights. An app could offer a 'shop window' virtually staffed by lawyers, instead of a process controlled by the police as at present. Equally, the app could use a series of visual devices or gamification to ensure the individual has understood what is being presented to them, and the reasons why a lawyer could help them.

General consumer apps offer an easy way in to information about common legal problems. Here apps typically cluster around divorce/family and employment offerings.

WEB APP

Sorting out Separation | https://www.sortingoutseparation.org.uk/about-this-website/

Sorting out Separation is a one-stop-shop for any parent going through a separation. It covers everything from how to avoid a separation to coping with the emotional impact of breaking up, accessing legal or housing support and arranging child maintenance. The web app will be hosted by a range of leading family websites, including Relate, National Family Mediation, Mumsnet, Dad.info, Gransnet and Wikivorce.

Launched in 2012, Sorting out Separation is part of the Government's Help and Support for Separated Families initiative, to encourage parents to seek support, and develop and co-ordinate the support that is available. The web app helps parents:

- to find reliable information, easy-to-use tools and specialist services on a range of topics
- to focus on and deal with the most important issues
- to create a personalised list of support services and tools for their circumstances

Once an individual visits the web app homepage, the main aim is to engage them, and through diagnosis and intelligent signposting, driving them to key support services. The information provided by Sorting out Separation is produced in partnership with a range of specialist support organisations, including: Citizens Advice; Department for Work and Pensions (DWP); Family Lives; Ministry of Justice; Parent Connection; Resolution; Relate and Shelter.

Research between February and June 2013 evaluated performance since launch. The research identified a number of areas for improvement in the web app such as the need for more detailed and wide ranging content and problems in accessing the web app (DWP 2014). The DWP have used the findings from this research and the report's recommendations to inform a revised home page which was launched in November 2013. The new design aims 'to enable users to understand what the web app is, and why they should use and trust it' (DWP 2014).

The aims of the web app are to provide an application that:

- can be embedded into any website by the host, so that family support services are accessible from sites users trust
- provides self diagnosis for parents to help identify the type of support they need
- provides highly relevant content and tools to ensure parents have the information they need.
- provides intelligent signposting to the most relevant organisations for parents.

In the two years since the web app's launch it attracted 143,833 visitors of which 91,469 were unique. 10,872 have gone beyond the home page and out of these 9,132 have been signposted to external organisations to get support (702 per month) (DWP 2014). Since April 2013, an optional section in the web app has invited users to answer questions about themselves. Of the 3,228 customers who answered, 49% were mothers, 29% fathers, 8%children, 3% grandparents, and 11% with no children (DWP 2014).

APP

Divorce UK by Mills & Reeve | http://www.mills-reeve.com/

The Divorce UK app offers free guidance and tools to help individuals understand the legal, practical and emotional issues s/he may face when considering divorce or separation. Legal concepts and processes, relevant to England and Wales, are explained concisely by family lawyers from UK law firm, Mills & Reeve.

The content in the Divorce UK app has been written by the national family law team at Mills & Reeve. The Divorce UK app works alongside the www.divorce.co.uk website, which also provides a wealth of free information and has proven to be a popular and helpful resource for anyone considering or going through a divorce.

Key features of the app include:

- an adviser section, which asks a series of simple questions and presents useful notes, links and videos along the way tailored to the user's circumstances
- videos offering advice from experienced senior family lawyers
- a contextual glossary explaining legal terms
- answers to frequently asked questions
- virtual walkthroughs and simple flow charts of the legal and financial processes involved in a divorce
- a list of useful websites for further information

The advice provided is intended to help individuals understand what their choices are and what they will need to consider from a personal point of view, alongside any legal considerations. The app offers a clear reference guide and walkthrough of the legal processes involved and aims to help avoid involving the courts unnecessarily.

In 2016 fewer people are accessing the Internet from their mobile, preferring to interact with organisations via apps (Smart Insight 2016). Many clients will expect their law firm to have an app as standard. Scott Fleszar (vice president of Strategic Marketing, Thomson Reuters) describes the advantages for law firms:

'The mobile app enables practitioners to bring their clients a whole new dimension of functionality while maintaining their own branding and identity. It's a way to collaborate and stay productive without being chained to a PC, to automate the delivery of information and build better relationships, and to provide a level of service and sophistication that wasn't possible for small and mid-sized firms in the past.'

INSIGHT: **Key advantages of a law firm app include: increased practice visibility; closer working relationships between lawyers and between lawyers and clients; new client communication channels; enhanced levels of customer service.**

Successful mobile apps require a strong conceptual foundation, good planning and clear rationale for purpose. The cost and expertise of creating an app can appear prohibitively expensive to some firms, but good ideas for client-serving apps can be created via hackathons or law school competitions. There is also value in firms approaching university computer science departments where students may relish the challenge to solve a business problem at a fraction of commercial technology costs.

5.5 Asking people and things

A number of ventures are exploring the ways in which new communication platforms can be harnessed to improve solicitor-consumer relationships and assist consumers to access information and advice relating to their legal needs. Instead of finding information via a search tab or drop down menu, chatbots may open the door for conversation-based interfaces (see also Section 3.2). This is a good tool for novices to the legal system, especially if the bot has the ability to navigate an awkwardly phrased enquiry using natural language processing (NLP) analysis to identify the underlying legal need (so that the user is not clicking between different areas of law trying to find the applicable page, but rather is guided to the relevant path by the chatbot).

A number of Q&A websites purport to offer legal advice online. This type of service is already huge in the US and we are starting to see signs of US[11] providers setting up in the UK. Virtually none of the sites are owned or managed by solicitors, some charge consumers for answers and many attempt to use legal advice as the 'sell' in a multi-level marketing scheme - which raises questions around whether these sites have consumers' interests at heart.

ONLINE Q&A PLATFORM

Ask a Lawyer	www.askalawyer.co.uk

Ask a Lawyer is a free site where individuals can submit questions to be answered by lawyers. The site is sponsored by Setfords Solicitors and is currently online in Beta test.

The premise behind the site is that some questions can be answered and directions can be given so easily that paying a law firm is simply unnecessary.

'We believe that if more people had a little bit of professional advice earlier on with their legal problem, it could help them make more of an informed decision about the legal help they require and may even reduce their legal costs moving forwards'.

Only experienced qualified UK lawyers answer the questions and users can log on to the website from anywhere in the world to receive their answer.

Ask a Lawyer guarantee: '100% confidentiality; Answers always from experienced UK lawyers; No legal jargon'.

11 Some examples include: Lawyers.com: http://www.lawyers.com/ask-a-lawyer.html; Avvo: http://www.avvo.com/ask-a-lawyer; Just Answer: http://www.justanswer.com/; and Law Guru: https://www.lawguru.com/answers/

Participation in Ask a Lawyer sites can act as a marketing tool for the lawyer and their firm. It also helps with public legal education, potentially with a view to future lead generation. One lawyer said: 'I also realise that it can be helpful to people. I do not have a problem with providing answers. I believe in giving back to the community, and giving back is also good marketing' (Lawyer, medium-sized firm, B2B serving SMEs). Another participant described:

'The majority of the time the people asking questions just need a little education on the law and how it applies to them. They need some understanding. I am shocked at the level of misunderstanding of the law, wrong assumptions, etc. I think lawyers would improve the reputation of the legal profession if we engaged with the public more and provided more education and information about the legal system and the law'.
(Lawyer, medium-sized firm, B2C).

The quality of legal advice generally available on the Internet is a significant issue. Solicitors are able to post answers to legal questions in a variety of fora. However, on such sites, the views of qualified and regulated legal professionals are often thrown in with 'bar room lawyer' advice, much of which is based on opinion rather than expert knowledge and training. The consumer will naturally be drawn to the answer which appeals the most, regardless of its accuracy, and this could have serious consequences later on.

While Q&A platforms do not automatically replace traditional or paid-for models of advice delivery they do, when undertaken robustly, present a valuable opportunity to promote solicitors as an approachable resource and help consumers take that first step to considering the possible options around their legal needs. Such features can foster a space of exchange which (i) helps educate consumers about their needs in relation to the law, (ii) showcases solicitors' expertise and (iii) builds a Q&A bank resource valued by solicitors, consumers and consumer organisations alike.

Research commissioned by the Law Society in 2013 (Adams, Tindle& Skone-James 2014) found that private consumers reacted positively to the Ask a Lawyer concept. They felt that it was in keeping with how consumers approach the search for advice in today's market, with individuals drawing parallels with services such as NHS Direct that allow users to get a very early assessment of whether they have a medical condition for which they need to seek help. When they had faced a legal issue, most consumers had attempted to find some advice online initially before involving a solicitor. The space in the market for this service is defined by the fact that looking for advice online can be complicated – with a range of potential sources available only some of which are reliable.

Small and medium enterprise (SME) users were more divided in their enthusiasm for the feature. Some felt either that they had a sufficiently good grasp of legal matters to make this 'first step' redundant or that the kinds of legal matters encountered by businesses were too complex/contingent on detailed circumstances to make them suitable for this sort of interaction. However start-ups and new businesses did value the ability to ask questions and access free advice around issues such as protecting their intellectual property.

INSIGHT: **Participation in Ask a Lawyer style sites can build the reputation of the firm and its lawyers and act as a relevant marketing tool. There is little evidence to suggest these sites are a steady form of lead generation, but lawyer participants do cite conversions and enjoy the ability to help individuals with basic understandings of the law. In this way, as with pro bono, participation helps to build the reputation of the profession and position solicitors as approachable sources of knowledge.**

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START-UP ADVISORY SERVICES

qLEGAL | www.qlegal.qmul.ac.uk

Established in 2013 by the Centre for Commercial Law Studies (CCLS) at Queen Mary, University of London (QMUL), qLegal provides legal and regulatory advisory services to early-stage, start-up companies, primarily in the Information and Communication Technologies (ICT) sector. The main focus is on helping these companies to address a range of challenging IP management issues.

qLegal is part of iLINC, the European Network of legal incubators at leading European law schools, coordinated by the School of Law at QMUL and funded under the European Commission's FP7 programme. qLegal services are provided by high calibre postgraduate law students under the guidance of legal professionals from collaborating law firms and academic staff in the School of Law at QMUL.

Each free advice session is manned by two qLegal advisers and a qualified lawyer. The aim of the appointment is to understand a company's legal issues and gather information, no legal advice is provided during the appointment. The company will receive written advice within three weeks of the appointment, once the issue has been considered and any legal advice checked by a qualified lawyer.

qLegal also runs free 'small print' workshops aimed at providing an overview of specific areas of law such as confidentiality, intellectual property, business or employment law. In addition the web site hosts tool kit resources on topic such as *3D Printing and Intellectual Property Law,* and *Confidentiality Agreements Unraveled.*

QLegal enables a range of users to ask questions, including start-up companies, postgraduate students, academics and lawyers, and highlights the shared value of having these different institutions in collaboration.

Advances in sophisticated systems for Virtual Assistants and, in particular, those developing capacity for natural language interaction, suggest that fewer of these Ask A Lawyer/Q&A sites will be manned by legal personnel in the future and more by robots (coded employees who will have the ability to test queries against a vast database of past information in seconds – as Watson demonstrates for medicine in Section 2.4). There have already been successful examples along this path, one being the robo-lawyer at DoNotPay. Developed by Joshua Browder, a Stanford University freshman, DoNotPay uses chatbot technology to help people appeal parking tickets.

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ROBO-LAWYER CHATBOT

DoNotPay	www.donotpay.co.uk

DoNotPay uses a simple chat-based interface to guide users through a range of basic questions to establish if an appeal on their parking ticket is possible. These include queries on whether there were any visible parking signs at the location where the ticket was given. The robo-lawyer then guides the user through the lengthy appeals process.

The robot uses a scripting language, AMK, which combines word choices and similarity of phrases to find what users are saying. The conversation algorithm uses keywords, pronouns, and elements like sentence structure and syntax to understand all the issues associated with the parking ticket. So the more users interact with the bot, the more it will learn about these complex issues and how best to serve its users.

'Once it knows what you're saying, it will begin asking questions, pick out the variables and place them in the correct fields' (Browder in Liberatore 2016). If the robot decides the case qualifies for an appeal it will generate the appeal letter for the court. On the occasions that the robot cannot figure out what to do, it directs users to personal contact information for Browder himself.

Browder created the DoNotPay website by scanning thousands of documents released under the Freedom of Information Act, under the guidance of a traffic lawyer. The site has won 160,000 of the 250,000 cases that it has taken on so far and applies strict criteria to which cases should be taken forward.

Browder's big idea is to research a developer platform that will require only legal knowledge and will not need coding prowess. Browder is currently developing technology for driverless cars that will automatically appeal speeding tickets, and exploring uses of the same bot to seek compensation for cancelled and delayed flights.

INSIGHT: **There is a role for lawyers and law firms to contribute to the design of 'robo-lawyer' systems, bringing their own legal expertise to the process. Firms might ask which of their own cases and areas of practice are vulnerable to such technology and either employ a robo-lawyer to act as an employee of their firm, or consider where the firm might ultimately move into lesser exposed areas of advice.**

PART 2: THE INNOVATION PROCESS IN LAW FIRMS

6.1 A strategic vision for innovation

Following on from the practical examples in the report so far, this section unpacks interviewees' thinking and processes behind such innovations. In so doing it explores with interviewees their strategic vision for innovation, the working processes behind their ideas, who drives innovation in their organisation, where they acquire market knowledge and the difficulties of innovating within legacy systems (be those people, culture or technology). It also looks at how innovation is funded and what organisations expect in terms of return on their investment.

INSIGHT: **Individuals harbour high expectations of their technological interactions in terms of screen design, ease of use, functionality. For many firms, potential clients will already have made an assessment about the firm's suitability from the landing page. It is worth firms revisiting the design and information on their website as first points of contact and potential differentiators; any screen information should be responsive to multiple device formats. Key ideas might come from other sectors especially retail and iconic brands.**

Strategies for innovation were not always driven by the positive aspects of what technology made possible. One interviewee suggested that due to legal aid cuts and restrictions, they were being paid less per hour now than in 1993 and this meant the firm had to be innovative in looking ahead and changing their areas of work, finding new sources of funding or ceasing to offer certain kinds of work. Another interviewee was very aware of the impact of regulation on his firm's strategy *'we have a significant amount of regulation which means we can't just get up in the morning and do what we think the market wants. We have to construct our solutions in a way that complies with our regulatory commitment'* (CEO, Top 200 firm, B2B). The impact of regulation on innovation was something raised by Roper et al. (2015: 52ff) and, at least for this interviewee, was a trigger (along with funding for innovation) for thinking about how different business models might work better to achieve his firm's goals.

One Global Head of Innovation at a Top 50 firm felt that *'a lot of innovation needs to be "hidden"'* and that individuals need space to experiment and to protect an idea in its early stages: *'lawyers are typically a sceptical bunch and big partnerships often have flat senior structures so it can be easy to kill off an idea. Lawyers are trained to find holes in an idea'.* For this interviewee it is better to innovate under a different brand if the firm wants to expand to a new market or to different clients. The unmet needs or broader client base could be of lower value work and thus risk diluting the main brand.

Looking forward, the leading legal service providers across all sectors will likely embrace innovation as part of their corporate DNA, inspiring people with a vision for how processes can be redesigned and where the business could follow a completely new direction. One interviewee stressed how important it was to keep asking 'why?' Not just to innovate for the sake of it, but to ask 'why' things had to be done a certain way and 'why can't I do it?' in respect of an innovation: *'keep asking "why?" until someone gives you a "because…" with a defendable reason'* (CEO, Top 100 firm, B2B/B2C). For another interviewee, his firm had a global strategy which *'features the word "innovation" a lot'.* While this did not automatically create a culture of innovation at the firm, for this Global Head of Innovation, *'it helps. The strategy provides a platform to talk from for the people initiating innovation'.*

INSIGHT: **Articulate an innovation strategy that aligns innovation efforts with the overall business strategy. An innovation strategy sets the innovation direction for the firm, giving employees an idea of what new achievements and directions will best benefit the firm in its future and should address how innovation will create value for clients and for the firm. Without such a strategy, firms will struggle to gain buy-in and to weigh the trade-offs of competing business activities.**

6.2 Initiating innovation

Businesses that are repeatedly successful at innovation, whether in services, processes or market, have often already established an effective system for innovation. While interviewees alluded to 'systems' that worked in their own contexts, these were typically not formal processes. Instead, interviewees described flexible and creative tapping into wider opportunities that could help serve clients better and in so doing enhance their firm's market value. What interviewees from all but the largest firms had in common was speed to decision – made in the course of one phone call or one meeting, and in contrast to large firms that could take months to make a decision on innovation activity. Interviewees described protracted innovation processes in traditional firms, calling for papers, partners' meetings, and a period of contemplation that could take many months as potential opportunities are evaluated and moved through a formal decision-making process. Describing experiences at such firms elicited frustration from interviewees and in more than one instance had been a motivating factor behind the individual leaving a large traditional firm to set up a new type of legal practice. Tech start-ups, themselves the product of fast and intuitive processes, struggled to work with large firms:

'A law firm's time to decision can be hard for start-ups who are used to agile and fast iteration'
(Head of Innovation, legaltech start-up).

'I think for customers, the time it takes people to become comfortable with a new way of doing things and to change is a bit longer than most people expected or hoped'
(Head of Innovation, Challenger Bank).

Heads and Global Heads of Innovation at Top 200 firms noted a tension between the need to identify and incubate innovation projects and the need to integrate them with the rest of the firm's activities across teams, offices and countries. At the more responsive organisations (typically smaller in size, but not necessarily in case value), the process is flexible and creative. Although 'whiteboarding' was an often mentioned approach, a variety of non-traditional techniques helped one interviewee speculate and visualise different possibilities: *'I'll read an innovation book and assume either everything in it is wrong or it's all common knowledge. I'll think how can it be different?'* (Head of Innovation, technology solution vendor). While the elements of innovation generally occurred in a particular sequence – idea, proof of concept, pilot, evaluation - there was not one single rigid roadmap, instead the path was fluid, intuitive and responsive to the needs of the firm/business/client.

'You know whatever you do will be wrong, just need to start with flexible plans. You can take the time to get it right and overspend and over think it or you can be quick and wrong, but with fast iterations to better'
(Head of Innovation, technology solution vendor).

This is an advantage of smaller firms and flatter management structures, and arguably why firms newly facilitated by technology and platform-based models, will be the likely slayers of some Goliath firms.

One interviewee discussed the need for a firm-wide effort to make innovation work and the importance of building in time for the rest of the office to stay on the innovation journey. He explained that any innovation has to go to the firm's risk and insurance people and that could bring some challenges. Yet, he also felt that the act of thinking through to explain made the process more robust and the end product better.

'the firm knows how to deal with the risks in its set ways of working, but there are new risks with new ways of working. The sector has particular ways of thinking and some of those need to change. In the end it's likely that technology and process innovation will reduce the risk profile, but it's often not seen that way at the outset'.
(Global Head of Innovation, Top 50 firm, B2B).

Success demands that firms learn and adopt new ways of working and problem solving – ideally it demands flexibility, experimentation and learning on the way: 'the time between you having an idea and it actually being executed - that is the most important cycle. The difference now is that we used to think having the right idea was all that matters – that's probably not true. What people like Steve Jobs did was to bypass the feedback loops, they just carried on with good ideas' (Mando 2016: 20).

Experimentation and learning from failure is a strategy that some interviewees favoured, to increase the opportunity to innovate. One interviewee expressed the view that law is a profession that 'has to be perfect', an argument has to be complete with no loopholes and, as such, firms often struggle to trial new tech builds that are not 'perfect' from the outset. This CEO created a 'sandpit' at his firm where new ideas could be tested and improved through iteration, helping to build confidence around innovation, while also meaning the firm 'does not wait forever to deliver':

'most innovation will not work first time. You can spend loads of time upfront trying to get it completely right on launch and end up having to improve or change things anyway. Or you can be quick to test an incomplete idea knowing that you'll go through iterations and improve along the way'
(CEO, Top 100 firm, B2B/B2C).

Cannon and Edmonson (2005: 309) advise firms to 'recognise failure as a necessary by-product of true experimentation, that is, experiments carried out for the express purpose of learning and innovating'. By devoting some part of their futures planning to testing new ideas, firms certainly run the risk of increasing the frequency of failure, but they also open up the possibility of generating novel solutions to problems and new ideas for services and innovation. This is where smaller firms, and especially those that have broken away from Big Law or traditional firms, have an advantage over Big Law (with its protracted decision processes; hard to steer or turnaround) and small traditional firms (fighting to remain viable amidst fee cuts and more competition). In their speed to try new things, legaltech start-ups and New Law firms (eg Selachii, with its swiftness to embrace digital currency as an area of work) have an agility and sense of adventure that is surely the envy of many Heads of Innovation in larger firms:

'we think fast and we move fast if there's an opportunity for our clients or, to be honest, for us. Mt. Gox is a prime example. We went from working out how best to apply our understanding of litigation strategy and the digital world to the situation at hand to very quickly – and somewhat surreally - being considered the number one law firm in the world for Bitcoin advice'
(Richard Howlett, Founding partner, Selachii).

INSIGHT: **Keep an eye out for new areas where the firm could get in on the ground of offering legal advice. Don't overthink innovation and innovation activity. Quick cheap tests may be enough to assess whether an idea has mileage or client appetite. Many tech vendors offer free demonstrations and trial periods of their systems.**

CEO and Head of Innovation interviewees saw their role as advocates of innovation, to build confidence with senior teams by successfully introducing and delivering innovative change across the business. For each idea that worked, the senior team became that little bit easier to win over the next time. More than one interviewee raised the value of being able to step outside the status quo and bring a fresh perspective to situations. Often these were non-lawyer CEOs and Heads of Innovation who could introduce experience from other industries.

'part of my role is almost internal advocacy for new opportunities, innovative ways to look at problems because I think lots of people would agree once you spend a certain amount of time in a certain area looking at problems in a specific way, it's easy to lose perspective on what other ways might exist to look at those issues'
(Head of Innovation, Challenger Bank).

'It's helpful to have a non-lawyer pair of eyes at the top table. Lawyers can be quite ingrained in the process and traditional ways of doing things and it's hard to change from inside that. Good to have other influences, a freshness and someone who has no preconception of what a law firm should do and in what way'
(CEO, Top 100 firm, B2B/B2C).

INSIGHT: **Be aware of the blinkers that can come from practising law in the same way and same sort of organisation for many years. Look to other professions and industries for new ways of approaching service process and delivery that might be transferable to legal practice. Introducing tried and tested innovations from other industries into the legal sector can help firms to differentiate their organisation.**

Sullivan and Boches (2016: 215) advocate business leaders phrase questions that start 'How might we…': 'How' provides creative confidence by assuming a solution exists; 'Might' gives permission to put ideas out there that may or may not work; and 'We' emphasises collaboration. When thinking about where the drive for innovation comes from and how their organisations might innovate in the future, 'we' and notions of collaboration were critical for interviewees (discussed further in Sections 6.7).

6.3 Who drives innovation?

Innovation was driven largely by one or more of four instigators: (i) firm owners/senior management; (ii) individuals in dedicated innovation roles; (iii) lawyers at any level; and (iv) clients. Larger firms, especially those in the Top 200, typically had at least one role dedicated to addressing innovation. Firms with global branches sometimes had both a Global Head of Innovation as well as Heads of Innovation in different countries. Typically, these individuals were tasked with: scouting the market for novel ideas and insights; analysing trends to identify emerging market opportunities and potential partnerships; supporting business unit initiatives; advocating innovation activity; facilitating idea generation; directing seed funding and investment; and designing processes/resources to take innovations forward.

In smaller traditional B2C firms innovation usually came from the drive and vision of one particular senior partner, while in smaller New Law firms, innovation was an ethos that permeated all levels of the firm. For Heads of Innovation at Big Law firms it was often a case that the individual had become aware of interesting external technologies, but may not have done much to actively explore the possibilities of integrating them with the business or had trouble getting senior partners to engage with the technologies.

Directly or indirectly, the executive management team or senior partners at interviewees' organisations had pervasive influence over innovation - for good or ill. These critical decision makers could be the inspiration that drove innovation throughout the firm, welcoming ideas from anyone at any time; conversely, they could be resistant to change or to the use of technological systems they did not understand: *'the thought of loading up on more technology creates more stress for a group who do not like being involved with anything they do not understand'* (Grady 2016a).

For one interviewee, who described a 'coaching culture' at his firm, lawyers were the source of many keen ideas through their interaction with clients:

'it's the guys at the coalface saying "our clients are saying this" or "I've seen this idea", or typically "I've seen this in another industry, can we apply it to ours?'
(CEO, Top 200 firm, B2B).

Because this CEO supported ideas from anyone at the firm and, with a managing partner, helped coach individuals on how to develop their idea, individuals at the firm felt confident to explore opportunities for innovation:

'because we have a culture of "anyone can have a go", the young guys in particular will happily spend some of their own time coming up with ideas, floating it with people, clients. They can come to their manager or the senior management team without any kind of fear at all'
(CEO, Top 200 firm, B2B).

Others, working in small B2C firms, described lawyers in their firm as being technically brilliant at their area of law, but lacking in entrepreneurial and business development skills. At large corporate firms an emphasis on billable hours targets meant that mid-tier and junior lawyers had less time or opportunity to explore innovation; yet as we have seen with the quotes above, if individuals feel a firm is genuine in its commitment to innovation some are happy to spend their own time working up ideas. Interviewees also felt that the billable hours culture fostered 'knowledge silos that inhibit innovation' as individuals are not encouraged to work collaboratively. It is a challenge whether Big Law make the cultural shifts away from silo or personal billable hour targets to collective thought – these are cultural barriers that stifle innovation internally, despite many of these large firms appointing Heads of Innovation to pursue outward looking opportunities and partnerships.

For one interviewee it was important to have people internally who could be innovative, but he contended that these individuals could often be overlooked because they had been pigeonholed into particular areas of law, and it took an outsider to see potential. This non-lawyer CEO advocated a need for lawyers and executives to look beyond the narrow scope of legal training and pursue wider ideas. In his example the CEO had seen a partner who was out of love with client work, but who was interested in technology and disruptive change. The CEO encouraged him to pursue technology ideas in the context of the firm, resulting in a change of career path for the individual and the firm has won an innovation award on the back of the work produced. It took the CEO as a person outside the industry to know the lawyer could adapt to that role.

In some cases, interviewees spoke of the importance for the firm to build external alignment with, and to gather ideas and insights from, partner organisations by formally making them part of the co-creation process – this could be clients, universities, or technology suppliers.

For Top 200 and B2B firms, where client companies are more advanced in their own technology and business models, these clients were the driver of change at their law firms. Clients are under pressure to reduce spend and to find innovative ways to work in their own businesses as well as with their law firms. For Top 50 firms, in particular, clients were a clear driver of change with partners who might appear less receptive within the firm:

'The clients talk to the partners and are becoming more outspoken about the need for change. Partners are not comfortable saying "no" to clients'
(Global Head of Innovation, Top 50 firm, B2B).

Clients were a clear ally on the innovation journey of the above interviewee and he welcomed the openness of their clients to co-innovate. He stressed the importance of being transparent in conversations with clients and not to oversell what the firm was trying to do; *'it's about joining with the clients to make improvements. We're not Apple or Google with a whole tower of people inventing the next product'.*

INSIGHT: **Clients of B2B firms can offer rich insight into innovative processes and practices of other industries, as well as emerging legal needs that the firm can step in to serve. Clients are often key drivers of change in firms and may be the ones to introduce innovative technology that the firm can adopt across all departments. For B2C firms the retail market is awash with companies adopting technological innovations to attract, keep and serve individuals – there may be quick wins from the retail sector which can work in a firm context.**

Figure 6 highlights the two main directions of innovation influence: foresight-driven and client-driven. The former is more likely to result in the automation of existing processes or slightly different ways to do what lawyers already do, while the latter, starting from the point of client need – and informed by the experiences of external industries – presents scope for firms seriously to consider how the world they serve is changing, and question their place within it.

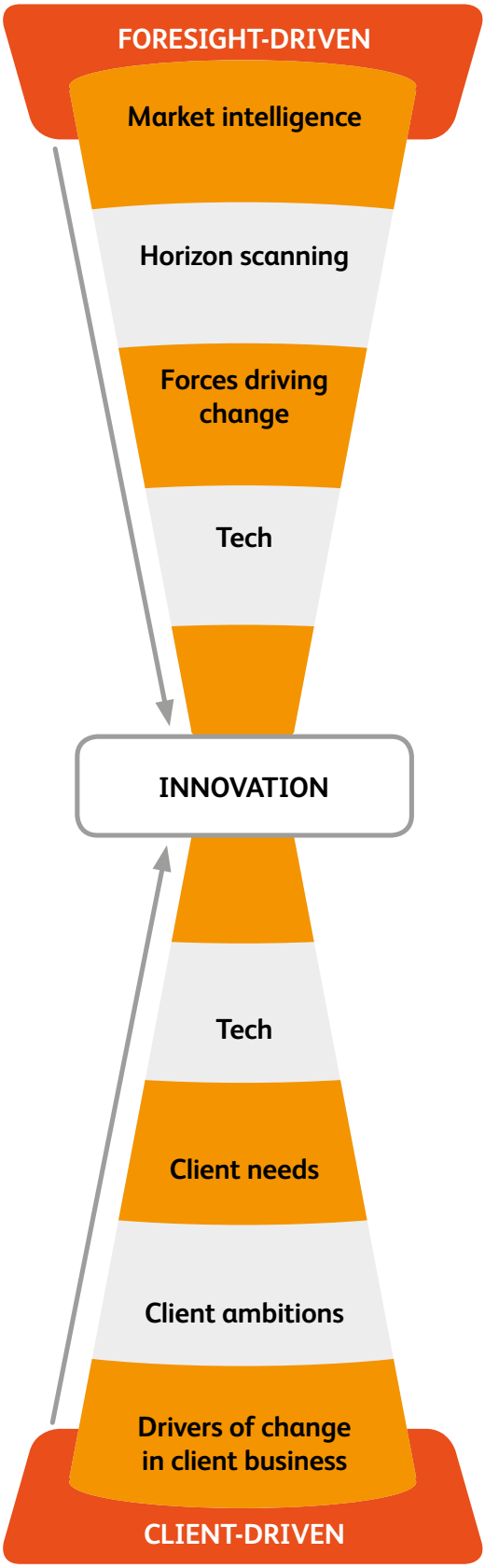
Figure 6: Foresight-driven and Client-driven innovation

Foresight-driven insight is a top-down approach that seeks to understand the complex forces driving change, including emerging and converging trends, new technologies, competitive dynamics, potential dislocations and alternative scenarios. Innovation is driven by senior executives at the firm, based on their reading of these forces. Here firms are designing what they think best fits clients' needs based on the firm's own operating model and on their assessment of market forces and available assets.

A contributing factor to the slow pace of technological change in the legal profession has been a preference for top-down, firm and lawyer-centric approaches to innovation. Changes like e-filing or searchable clause databasesprimarily use technology to automate existing legal processes.

Client-driven insight is a bottom-up approach that leverages insights into the behaviours, perceptions and needs of current and potential clients by involving them as true partners in the innovation process.

Lawyers are increasingly aware of the efficiency gains achieved across other sectors. Clients who have achieved such gains through the use of technology are pressuring law firms to adopt the same approaches. Agile firms work with clients and supply chain partners to identify and implement improvements and innovations.



6.4 Innovating within legacy systems

According to Govindarajan, co-author of *The Other Side of Innovation* (2010), there are three classic traps of corporate success:

- the resources trap, in which companies over-invest in antiquated systems while ignoring new opportunities
- the management psychological trap, in which lengthy planning cycles de-prioritise anything that is not core to past success
- the failure to plan for an evolving future.

For those interviewees who had previously worked at Big Law or in more traditional partnership firms, the common pitfalls when considering innovation clustered around delayed participation, a tendency to stay with the familiar and to view any new technologies or innovation through the lens of what worked in the past. For one Head of Innovation at a fintech start-up, the issue for those firms was not a lack of innovation, but rather: *'a step or even three steps before that. It's having systems and procedures in place that are efficient enough to allow them to pursue new opportunities both in innovation and otherwise'* (Head of Innovation, Challenger Bank).

New entrants and start-ups without the constraints of traditional law firm operations (in terms of time, resources, legacy systems, culture) were starting from a blank sheet. However, many law firms faced the complexity of an array of technologies acquired over years of legacy systems, many of which no longer integrated or spoke to others:

'I think [firm] has had, certainly in a technology sense, a bit of a patchwork approach to pulling solutions that don't necessarily interact together... So what we want to do is make sure that any technology that we implement is part of a wider ecosystem. So everything talks to everything else, everything you buy can be overlaid on something else to give you higher levels of sophistication and nuance'
(Director of Legal Services Innovation, Top 50 firm, B2B).

The Law Society's Firm Survey (2015-2016) found that one quarter of small firms (1-4 partners) spend more than 90% of their annual IT budget on the maintenance of existing technology systems, while 19% of small firms were spending their entire annual IT budget on existing technology. For large firms (26+ partners), one quarter spend more than 75% of their annual IT budget on existing systems. This raises questions around the point at which firms draw a line under past investments and begin migrating to a new system; also putting a spotlight on the transitional abilities of the firm.

One CEO described a zero tolerance policy to legacy systems (*'using management communications and leadership, not a sledgehammer'*). Outdated systems such as matter management were replaced business-wide across one weekend. Fully aware of the repercussions of getting it wrong – in terms of being able to access client files and time recording – he also saw the successful implementation as critical to building management confidence for future innovation projects. This interviewee stressed the importance of a rigorous decommissioning process so that once everything had migrated, old systems were completely removed to avoid individuals across the firm reverting back to using their preferred systems and perpetuating a mix of technologies. Firms left with a patchwork of legacy systems, especially those requiring manual adjustment, raised security concerns for one fintech interviewee:

'I think there tend to be a lot of misconceptions amongst the general public about where IT security vulnerability lies, and I don't think it's necessarily cloud delivery or mobile. I think it is often the unnecessarily complex antiquated systems that don't function well, they're often patched up and often involve human intervention to function'
(Head of Innovation, Challenger Bank).

Those firms with long standing client relationships faced a legacy culture when serving some of their accounts. One interviewee described that his firm was 'still at the "parchment to portal" phase'. The firm has some 'old school clients', who are not unsophisticated in their own businesses, but they are in their expectations of their lawyer. Some expect a 'wet ink signature' on all communications and yet others are happy to be invoiced/pay electronically. The firm expects to have to manage the parchment to portal for some time yet, raising challenges for a firm essentially running a 'two-tone' service.

INSIGHT: **Undertake an audit of all technology systems, their date and ability to interact with new systems. Make a realistic assessment of continued maintenance spend on legacy systems versus a complete overhaul of the firm's technology– remember that any initial large expense to bring in new technology systems firm-wide will be countered relatively quickly by low cost cloud and platforms solutions moving forward.**

INSIGHT: **Be sure to decommission any old systems once all data has been migrated to the new technology and is out of test period. This will stop individuals falling back into their preferred systems and perpetuating a patchwork of different technologies.**

6.5 Horizon scanning, market intelligence and looking outside the legal sector

While all interviewees spoke of the importance of keeping current with market developments, potential competition and opportunities, few had a formal process in place for horizon scanning or capturing information from market sources. Despite keeping an eye on the complex interplay of key trends that may potentially impact their businesses, few interviewees actually used the terms 'horizon scanning', 'market intelligence; or 'innovation pipeline'. Instead it was more likely to be Twitter, LinkedIn and networking events that brought rich sources of information.

'you're expecting me to talk about funnels and pipelines, aren't you? We don't go in for all those corporate buzzwords. Some of our clients are start-ups, tech gurus, entrepreneurs, we learn from them of course, but they don't use that jargon either, and actually that linear process is too restrictive for us'
(Head of Innovation, Top 200 firm, B2B).

'Twitter. Reading interesting articles about developments, what other people are doing, going to events, meeting people, StartupBootcamp has been great for that, not only the companies themselves but the people involved at the accelerator, the other mentors, the investors, just effectively living kind of that passion, that interest in innovation'
(Head of Innovation, Challenger Bank).

The above quotes flag a reciprocal relationship for individuals who advise start-ups about their legal needs or who attend tech start-up mentoring and accelerator events and thus learn about attitudes and approaches to being an innovative business firsthand, and from different industries. Interviewees were curious to engage with fresh perspectives and actively seek out opportunities to stretch their thinking beyond their own understandings of what a law firm does and in what ways. More than one interviewee mentioned that they look beyond the legal professions:

'when we were approaching innovation we were very clear that there was no point in us just talking to everyone in [firm], or indeed everyone in the City or indeed everyone in professional services. We wanted to go beyond that to really understand how other businesses approach innovation, how our clients approach innovation, how academics approach innovation, to use as much learning as we could from other people'
(Director of Legal Services Innovation, Top 50 firm, B2B).

For business process re-engineering in Real Estate Management, Olswang looked to leading automotive and aerospace company, GKN (Olswang 2014). Olswang invited clients to contribute their thinking into the firm's processes and looked to GKN for external input – by choosing an engineering company, Olswang was able to see process improvement on a different scale and understand how it can be applied to law.

Interviewees in B2C firms spoke of peers in small B2C firms who had not developed a future vision for where the profession is headed; those working in legal aid and personal injury, in particular, held a bleak perception of areas of practice out of their control, rarely looking beyond their own boundaries and too busy fighting today's fires to take the time to truly understand what is driving their operating environment and how it might potentially evolve. These types of firm were also the ones who struggled most to fund new technologies or enhancements to their business model. Interviewees had mixed views about funding new technology. Smaller firms assumed that Magic Circle and Top 100 firms could just draw from internal funds, yet interviewees at those firms spoke of some difficulty managing resources around innovations that may not be fully welcomed at senior levels. Elsewhere some interviewees were able to target external investment while others chose a minimum outlay, quick test route, advocating that large capital expenditure was not essential to innovation.

6.6 Funding innovation and assessing return on investment

Law firms 'do not relish taking money from the partners to pay for computer systems that many partners will refuse to use' (Grady 2016a). As traditional law firm models generally operate on a cash accounting basis, which involves counting revenues and expenses one year at a time and distributing profits to partners annually, this can engender a one year at a time mindset that is not conducive to reinvestment or long-term strategies for return. There often exists a substantial delay between a firm's investment in new technologies and the feedback about the effectiveness or impact of these investments.

There were clear advantages for new entrants with access to capital setting up as ABS and forming partnerships with non-lawyers, including technology companies (existing firms adopting ABS status have thus far struggled to attract capital by virtue of just being an ABS). Magic Circle or Top 200 firms can to an extent also fund innovation internally, but other firms were notably at a disadvantage when trying to finance innovation activity or invest in technology.

'we've been relatively progressive for 8-10 years and we're still finding the pace of change difficult. Largely because it's difficult to fund the innovation needed to keep pace. We have challenges around how we can secure external finance for projects'
(CEO, Top 200 firm, B2B).

'from a technology angle, firms rarely have budget, awareness or appetite for new tools, many solutions "out there" are geared up to Big Law and solutions which are suited to smaller firms often require a significant degree of customisation (which takes firms by surprise). All in all small firms risk biting off more than they can chew when looking at technology'
(Law Society Insights community).

Another interviewee agreed. His firm had been looking at HighQ[12], which he found expensive, and the technology could not do all the firm needed it to (as a full service firm with a wide range of areas of practice). While HighQ would add value to some areas of the business, elsewhere it would have needed specific processes to customise and it was difficult to make it all work together. This interviewee's experience led him to speculate that tech platforms such as HighQ would remain largely within the Top 50, with no clear steer on how quickly they might move to the next 50 firms. He felt that, seduced by the technology, a lot of small to medium firms were paying for a lot of features they do not use and getting a poor return on their investment. Automation subscription services such as Thomson Reuter's Practical Law and solutions that plug into Word (eg Contract Express) are a better ROI for these firms. For more complicated or non-Word products the firm may well need a coder or more sophisticated internal IT support, which would tend to rule out smaller to mid-size firms, financially. Investments made in technology that sits within the firm can impact the ability for that firm to change course for years if no budget remains to take advantage of advancement or to change to different technologies entirely. One interviewee advocated that law firms need to take some risks and he had diverted money the firm would otherwise have spent on IT into the form of investment; he claimed *'that's not difficult for firms to do. It's just about being creative and thinking slightly differently'* (CEO, Top 200 firm, B2B).

ROI for firms with automation systems is not straightforward. Grady (2016a) advises that calculating the ROI on technology often is complicated, but not impossible. First, map the current process for doing the work. Then, create the new process if the technology is implemented. Compare the cost of the old process to the new process (plus the implementation cost) using the ROI calculation. If the new process including the implementation cost yields a positive ROI, then you should consider the technology. (See www.seytlines.com/2016/06/the-low-cost-of-lean-part-2/ for Kenneth Grady's ROI equation and explanation). Exari claims 'the industry's first comprehensive assessment for contract management ROI' and offers a questionnaire interface to help firms gauge the value of a particular technology to their business based on current processes (www.exari.com).

There was an overwhelming call to fix broken work processes before going near technology and especially any form of automation, if the firm wants to see a return or acquire value from this investment. If firms use software to replicate existing processes any wasteful process is built into the technology systems in ways that are deeper and more difficult and expensive than before. One interviewee at a Top 50 firm described *'process is at the heart of everything'*. For the past 5-6 years he had been working with process experts and lawyers, and sometimes also clients, to unpick processes and co-create improvements. Yet, this interviewee described a tension between effort and benefit. Process improvement requires investment. It can take two or three solid days to map a process and then a week to month to build the solution. But the solution can

12. HighQ is a provider of secure enterprise collaboration and file sharing software. Its suite of 'cloud-based software products combine cutting-edge technology with enterprise grade security, all wrapped up in a consumer-style interface, to help businesses collaborate, communicate and securely share information'. https://highq.com/

bring 30/40/50% efficiency improvement. So the challenge is getting lawyers to invest that amount of time up front in order to see that later return – and this is a reminder that time is an investment seeking a return, as much as finance. Rather than looking for opportunities to improve the current process, process improvement sessions are also an opportunity for firms to determine which of the steps really add value and search for new ways to achieve the result.

This is all part of an approach to innovation by working smart.

INSIGHT: **Invest time in mapping processes and working out where process stages can be improved before any attempt to automate or introduce technology. Clean, efficient manual processes will bring the best return on any technological investment.**

INSIGHT: **Consider using a ROI calculator or technology diagnostic to evaluate whether a technology is a good fit for the firms' business and volume of practice. There are a number of calculators freely available on the web.**

INSIGHT: **Keep sight of the longer term picture when it comes to investment in technological innovation. Whilst some aspects such as robotic process automation can bring relatively swift returns, others take longer. Find ways to shift the partner-profits-per-year mind set.**

6.7 Critical collaborations

Accenture (2016:6) contend that companies 'need to develop new skills. And they'll have to learn different, more agile ways of working across ecosystems composed of looser, partner-based collaboration. This requires a different way of looking at all the business's moving parts – and particularly its people'. Tech start-ups and suppliers of legaltech solutions are growing on an almost daily basis and this presents a wealth of opportunity for legal practitioners to form partnerships within a wider business and technological ecosystem; to bring new technologies onboard and to work with those who have the technology skills to support innovation in business. For one interviewee, *'Big Law is developing a lot of stuff in-house and I think they have a limited market for that, whereas the firms that innovate and collaborate with people whose day job is to develop technology and take it to market, I think, will do better'* (CEO, Top 200 firm, B2B). Successful businesses evolve rapidly and effectively, but law firms cannot evolve in a vacuum.

Interviewees felt that increasingly we might expect to see law firms revisit how they partner and collaborate, and with whom. Such collaborations - with tech companies or resourcing businesses or platform providers - may make it easier for a firm to adopt a service, process or business model innovation. With collaboration comes the idea of breaking down the borders that contain and define the firm and this is still new for many law firms. Increasingly, firms are also being asked to collaborate with other lawyers so that the client has the benefit of a wider range of expertise. Collaboration enables a firm to capitalise on its own strength while harnessing the capabilities and assets of others. In a survey of over 1,000 global business and IT leaders, Avanade (2014) identifies the emergence of a new 'services broker' model for IT, with consultancy as its core responsibility. The research found that: 37% of technology spending now occurs outside IT; that 79% of C-level executives believe they can make better and faster technology decisions without the involvement of IT; and that 35% of IT departments have already shifted toward a services broker model.

Digital ecosystems and borderless platforms create opportunities for multiple meaningful engagements with clients, and enable businesses to 'take advantage of a mesh of interactions. This mesh is dynamic and pervasive and connects people, things, algorithms, digital personal assistants, automated agents and other entities' (Avanade 2016b: 8). One interviewee, from fintech, explained technological innovation as the ultimate collaboration(of people, ideas, systems):

'there were an average of 20-30 IT system providers required to build the end-to-end processing [the early challengers] were looking to build. There are 9 in ours. They are for the most part off-the-shelf systems. Our job is the integration of these systems. So it's a core banking engine, it's a payments hub, it's a KYC-AML decisioning engine, a CRM system, it's the front end website and mobile that go along with that and a handful of other systems'.
(Head of Innovation, Challenger Bank).

Knowledge Transfer Partnerships enable a collaborative approach to problem solving. The firm partners with a university or academic institution – the institution gets the advantage of solving a business problem and gets the funding, and the firm gets the advantage of technical expertise applied to their business problems. In one example, an interviewee had received funding from the Engineering Council to collaborate with a university to apply semantic web technology to their internal knowledge management systems.

It is vital for firms to have a clear business model in place before they turn to technology. Here, innovation is not about the technology in itself, but what it enables firms to do with their business model; for example mobile technology is about doing things in motion; social technology is about the engagement; and cloud is about doing things centrally. Often the buyers of legal technology in traditional firms are not the ones who use the tools, leading to a decision/user-experience disconnect and calling for more business and IT collaboration. For this collaboration to work requires melding potentially different goals: while the business wants simple solutions that are scalable and sexy, the IT side wants safe, secure and sustainable solutions.

Interviewees foresaw an emphasis on designing business models that take fuller account of the importance of relationships outside the firm, and that rely less on the *'technical, academic superstar lawyer'* than on individuals who are willing to get stuck in to clients' problems in innovative ways:

'typically a law firm turns up and says "this is what we do, do you want to buy any of it?" That's not the future, so the ability to go in with a combination of people, knowledge, process, technology and a consulting mind-set to solve a problem for a client, that is the future'.
(CEO, Top 200 firm, B2B).

The likely legal ecosystems formed by such collaborations (and including legaltech and fintech start-ups), will comprise multiple players of different types and sizes – and highlights that the ability to create, serve and scale markets is increasingly beyond the ability of one single firm or organisation.

INSIGHT: **Collaborations enable legal practices to achieve more than any individual firm in isolation. By bringing together an atypical mix of resources, firms can better serve clients in a business environment witnessing the blurring of professional boundaries and rise of new skills and technologies. Collaboration can give firms access to particular expertise as needed or to creative discussions to explore new possibilities for business. Such collaborations need not be formal, expensive commercial ventures, firms can get as much value from conference networking, from start-ups, meet-ups and universities.**

PART 3: A PRACTICAL GUIDE TO INNOVATING

So, how can firms innovate in their own contexts? Although innovation is unlikely to be a linear process, it is helpful to consider a series of early steps. Table 2 suggests some questions firms can ask to understand their current position and where there is scope to change (ie ways to generate ideas, to tackle barriers, to improve processes).

Table 2: Starter questions and areas for consideration

Assessment of the firm's innovation capacity	• Who drives change at the firm? • Who can suggest ideas for change? • What is the decision process for change? (who decides/how long does it take?) • What sources of funding are available for new ideas? • Does the firm have a clear strategy for innovation? • What is the firm's attitude to risk? • What is the firm's attitude to investment? (in technology or an external company?) • How supportive are clients of change/new ideas?
Barriers to innovation	• Do any of the following impact on the firm's ability to innovate? How can any barriers be addressed? – Time to explore new ideas – Access to funding (actual budget or to sources of investment) – Senior partners/decision-makers – Lack of market awareness – Lack of ideas/knowing what to do – Any other barriers?
Innovation vision/ strategy	• Who are the firm's clients? What are their needs now/in future? • Who are the firm's main competitors? How is their offering the same/different? • Where does the firm want to be in 5/10/20 years' time? (in terms of market/ location/clients/services/model). And, how can it get there? What does the firm need to change? What are the steps? • Does the firm need help to think through change? • Is the vision/strategy shared firm-wide?
Process improvement	• Take time to map current processes across teams/depts./firm-wide • Which steps add value and which could be cut? • Where is there unnecessary duplication? • How could processes be configured differently? • (after improvement) Are there candidates for automation?

Tech diagnostic	• What technology systems are currently in place? • How many systems sit within the firm/cloud? • How many systems are outdated/do not work together? • What access does the firm have to tech expertise? • What is the firm's attitude to working with start-ups/tech companies? • Does the firm have any likely candidates for automation/machine learning? • Would the firm be willing to take part in a tech lab/partnership to co-create or test ideas that could be applied at the firm?
Co-innovate **Co-create** **Co-llaborate**	• Who might the firm work with? • Talk to clients/co-create ideas for client needs • Attend legaltech and accelerator events to network and find out what is in development • Consider expertise available at local universities/colleges • Consider an innovation consultant if the firm cannot afford a permanent innovation role; a 'pair of outside eyes' was important for many interviewees.

All projects have some cost; even internal training or maintaining social media accounts requires staff time. Technology projects have start-up, maintenance and training costs that have to be addressed in order to guarantee that the project is sustainable. Table 3, overpage, highlights different options for spreading technological risk and cost, but having accurate information about the actual costs of developing a project, via conversations with potential suppliers, would help firms plan their innovation budgets with more confidence. Early conversations with universities, tech companies or with tech start-ups could also offer affordable possibilities – especially where there is a shared knowledge exchange, so the tech side benefits from the firm's legal contextual knowledge.

7.1 Approaches to introducing technological innovations

Interviewees suggested there need to be more 'success stories' where innovation has worked well in order to encourage others to take risks and to sustain a continuum of innovation through business model change.

'I think there needs to be some really successful examples of this kind of stuff, we need really successful growth stories and examples of these technologies to get people interested. We need 2-3 to get it right, to be a beacon around which others can be created.'
(CEO, Top 200 firm, B2B).

While all interviewees talked about the value of technology to their business model and to forms of innovation across their practice, individuals differed in their approach to implementing technological innovation. Interviewees had considered a range of options, beyond their ultimate choice, and had views on what worked, and what did not, in all. There were four main strategies, shown in Table 3.

Every provider in the legal services market has to deal with some form of uncertainty; however, they do not necessarily have to take responsibility for that uncertainty. Many successful business models have outsourced the risks of uncertain component development to partners or clients. Firms should consider, for instance, outsourcing technological innovations with high uncertainty to partners that have a better expertise and knowledge base in creating and bringing technologies to market. Outsourcing certain components to partners, however, introduces the firm to new risks, and it will be a learning curve for many firms how to navigate a new collaborative ecosystem for their firm.

Table 3: Interviewee strategies for introducing new technologies

Approach	+	−
To employ coders and tech expertise in-house and then build all systems as proprietary technology in-house	The firm has complete control over a technological infrastructure that fits exactly with the firm's business and needs.	This can be an expensive and lengthy approach – it may mean that the firm lacks IT budget for more change in the near future and risks getting left behind. Puts the firm at risk of having a solution that only work for its clients and, thus, isolates the firm from future tech ecosystems and change.
To buy an off-the-shelf package	Packages were often provided by large tech brands (eg IBM, Microsoft) and these came with good access to external tech support and meant the firm remained open to product upgrades. This was a cheaper option, especially if using Software-as-a-Service (SaaS) or pay-as-you-use options.	The packages have a somewhat limited use (aimed at a generic model) and this means they are likely to be less sophisticated solutions and may need a degree of customisation. If firms buy as a product sitting within the firm rather than cloud, they risk future problems around legacy systems – and the firm becomes responsible for upgrades.
To partner with an external tech company (approach favoured by Top 50-100 firms)	Firm acquires the expert knowledge base to tailor systems to the firm's needs. A successful co-created product could be licensed to other firms, or sold as white label.	Firm becomes reliant on the fate of the partner company. Firms are often over-served ending up with features they do not use. This can be a very expensive option.
To invest in an independent tech start-up	This gives the firm access to tech that it could not afford to develop internally, and shares the risks. Firm gets shareholding. Product can be licensed to others. *'there are real opportunities for these companies to revolutionise what clients get and for them to do that they need to prosper as independent businesses'*	The firm has less control over the technology or what the technology company does moving forward (depending on the investment agreement).

7.2 Generating insight from data

Technological innovation is largely driven by harnessing data. Grady (2015) advocates, 'instead of thinking about the law firm as a service provider, let's think about it as a data warehouse. Within its computers exists a tremendous amount of information about clients, behaviours, and outcomes. Each lawsuit, counselling session, and drafted document contains information about how clients operate, where they have risks, and where they have opportunities'.

A starting point for firms is to assess the type, amount and credibility of the data they currently capture and for data they could capture. Firms can create additional value for clients using data and analytic tools the firm owns or can access. There is prime scope here for collaboration and combining data within and across industries (and proven of particular value to GC clients). The examples in this report highlight where innovation brings a newfound insight to the data and metadata of legal relationships (eg Apperio and legal spend; ThoughtRiver and risk; Premonition and the relationships between lawyers and judges, and between wins and types of case matter). As firms bring in technological innovations to manage bigger amounts of data and documents in a fraction of the time, these systems can also be used to provide a bigger picture insight on what they encounter (trends, patterns,relationships). With this bigger picture comes possibilities to identify new client needs and areas of service and to tailor offerings more uniquely to individual clients and their businesses.

Companies such as Uber and Airbnb are driven by powerful data insights and machine learning to test, adapt and disturb at scale. Law firm and legal case data is likely to become so pervasive and readily available that, with appropriate analysis, it can support insight-driven decision-making throughout the business. Technology provides the ability to gather data quickly and analyse patterns in outcomes to recommend cost-efficient choices (in resources, pricing and case strategy). Accenture (2016: 15) suggests that 'to truly unlock that value, companies must start treating data more as a supply chain, enabling that data to flow easily and usefully through the entire organisation'.

At the moment there appears to be more work around solving automation problems than in generating insight. Technology and process innovation is a launching pad for new growth and ways to practise law. The next wave of innovations will gather unprecedented amounts of data from disparate systems and, weaving them together, create solutions that potentially (and fundamentally) change the firm's business model, its service and delivery. The value of this data as a differentiator for firms is speed and use of the data in as near real-time as possible. There is an imperative to place more value on the information and insight data contains rather than just the amount of data. Only 0.5% of the world's data is being leveraged, analysed or used according to an IDC report (CloudTimes 2015). Thus, for firms, how departments use data to innovate and add value will be more important than how much data the organisation can amass.

INSIGHT: **Firms can collect tremendous data assets, store the data inexpensively, and mine the data with powerful computers running analytical software. Many analytics tool can simplify the data from a mass of information down to visual and simple interactive dashboards.**

Insight from data will enable firms: to spot correlations between client behaviours to trigger alerts for potential legal needs; make more accurate judgements on cases before they start; and increase productivity by understanding workflow and internal expertise/ case fit.

7.3 Finding spaces to play

Interviewees were keen advocates of an agile, fast-test innovation process. Rather than investing mass amounts of time and money into building a revolutionary product only for it to fail at the ta-dah moment, interviewees recommended firms test an initial or incomplete idea, trialling the just 'good enough' to gain a proof of concept and viability, knowing that the experience will improve the product along the way.

Finding spaces[13] to play is becoming evermore important for innovation in law firms and legal services which could be an anathema to the conservative, ordered, traditional law firm. These spaces offer firms a place to protect and trial ideas and help to build confidence in innovation projects firm-wide.

Such spaces might include: a 'sandbox' or lab area within the firm; a subsidiary set up by the firm for that purpose; investment in an independent technology company; or participation in one of the tech laboratory/networks (eg GLTL; NextLaw Labs). Hackathons can be a good place for firms to explore what might be possible in collaboration with coders and technology experts. Often hackathons are based around solving a social justice problem and many big law firms find this a way of giving back (Freshfields' team won the 'Law for Good' hackathon early in 2016). It is important to have that lawyer input if solutions are to have real-world application.

7.4 Looking to other industries/client industries

Ideas for innovation will not necessarily come by looking to the big successful traditional law firms. The culture that has made these firms successful also in many instances finds them with senior partners who make poor innovators. Mountain (2007: 180) notes that:

"Partners who have risen to the top by doing things the conventional way are not the sort of people who are going to think different. Partners compensated on an eat-what-you-kill basis have an incentive to hoard information from other partners."

In Section 6.7 we saw the importance of collaboration, including the opportunity to gain perspectives from other sectors such as design, computer science, econometrics and, from tech gurus, to adopt the 'brain-build-break-better' dynamic. Earlier, in Section 6.5, interviewees recounted the importance of looking outside the legal industry when searching for ideas for how to innovate. One option for firms is to see what has worked well in other sectors that might be applicable to a legal business context (especially where there are shared dimensions eg communication; signposting; information delivery; marketing; resourcing). For those working in large B2B firms, clients offer an immediate (for firms with start-ups and tech clients, in particular) window into other business processes and operation.

13 It can be no coincidence that clichéd inventions come from sheds and garages - spaces surrounded with tools, spare parts and assorted paraphernalia, all at hand to fix an immediate problem – albeit potentially less useful in a software tech context, other than mindset.

8. OPPORTUNITIES FOR THE LAW SOCIETY

So far the report has looked at examples of innovations, experiences and views of interviewees, and some practical ideas for how firms might embark on their own innovation journey. The findings from this research not only highlight the approaches and innovations at particular firms to suggest where members might challenge their own 'business-as-usual' thinking, but also suggest there are opportunities for the Law Society to engage with members on this journey. This final section draws on findings from throughout the report to suggest things the Law Society could do to help members and to promote innovation across the legal landscape.

One interviewee observed that '*there is a lot of awareness of need [to change/innovate], a lot of headscratching of how to. The industry needs some pathfinders*' (CEO, Top 200 firm, B2B). The Law Society could have a unique role in providing a path through the innovation landscape, one dotted with horizon-scanning insights, tools, lab spaces and a place where groups of individuals can help each other solve problems, plan for emerging needs, and nurture innovation.

The starting point perhaps is to help firms conduct focused, innovation assessment and benchmarking activities so that firms understand their own capacity to change and can benchmark their own practice against other firms of a similar type. Here, the Law Society might develop a diagnostic tool that looks at the organisation and assesses the current state of innovation along several dimensions (culture, processes, structure, infrastructure, tech literacy and appetite, risk appetite).

Benchmarking innovation in firms profession-wide and in other professional industries could help firms gauge their place in the market and which industries might offer inspiration. Alongside these tools, outputs from the Law Society's horizon scanning provide a wider context to help firms engage with upcoming changes and events.

Opportunities for the Society cluster around 7 main themes:

Table 4: Opportunities for the Law Society

Diagnostics	To help firms understand their own innovation capacity; their technology needs (based on current systems and types of work); and an industry-wide innovation benchmarking to enable firms to position themselves against wider innovation activity.
Tools	Online guidance tools for consumers to help shape their understanding of the legal system and their rights (eg problem diagnosis, information, expected length of work, costs, processes and options). Work with firms and tech start-ups to design and build a range of document tools; for example MS Word add-ins that help with authoring, formatting and consistency – useful to smaller firms and an example of a mature but under-penetrated class of software.
Partnerships	Invest in commercial opportunities (conferences, events, start-ups, tech companies) to enable innovators to bring positive change to law firms and legal services.
Collaboration	Work with tech companies and start-ups to bring new ideas to fruition that carry an accurate understanding of lawyer needs, the legal context and bring immediately practicable applications.
Laboratory	To facilitate space and events that bring together a group of people with relevant knowledge to test a particular idea or concept. For example: applications for blockchain in a legal context; the legal liabilities of driverless cars; the legal decisioning capacity of AI.
Marketplace	To bring together a variety of tech and innovation resources in one place for the benefit of members; to introduce members to appropriate contacts (as a broker relationship or by running networking events). Organise informal events/expos where tech vendors and start-ups can demonstrate their ideas and technologies to members and where crash groups can whiteboard ideas around solutions and legal applications.
Horizon scanning/ market awareness	Undertake horizon scanning activity to monitor key factors (eg from technology, politics, economics, regulation, social) that drive change in the legal services market and how horizon-spotted happenings might impact on members. Information shared with members via a series of quarterly outputs.

Providers often must make decisions about technology use and acquisition without the benefit of the knowledge and experience of others who have already been down a similar path. Greater centralisation of support for making good technology decisions and for adequate implementation may hold value for members. The Law Society can provide research and horizon scanning information, raise awareness of what others are doing via sustained contacts with legaltech hubs, tech vendors and firms, and broker introductions on a 1-1 basis or via events.

Increasingly firms will need to foster an innovation-biased culture and develop firm-appropriate innovation processes, techniques and supporting technologies if they are to remain competitive and relevant to clients (to include not just the demands of GC and B2B, but also the digital user experience expectations of individuals). The professional body should be a key starting point in this endeavour.

On the back of the *Future of Legal Services* report, *Capturing Technological Innovation* continues a series of publications and events intended to support the sharing of innovation practices and examples amongst members. In so doing it contributes to the Law Society's body of research and promotes potential for the Society to form and engage platforms/hubs to further the theoretical and practical sides of innovation as it relates to legal practice and the law.

9. CONCLUSION

Interviewees have spoken about innovation in the context of:

- new technologies and process solutions;
- handling more data than ever before;
- the need to integrate legacy and new systems;
- an upsurge in collaboration (inside and outside the firm); and
- new start-ups that bring their own solutions and agility to play.

Approaches to technological innovation addressed:

- changes in client needs;
- emerging new markets/client groups;
- changing scale of operation;
- the application of different pricing models; and
- the incorporation of new technologies.

The findings in this report raise questions around the ability of technology to improve the efficiency of traditional legal practice and to enable alternative forms of service and delivery, and even to help determine which path is most relevant to an individual facing a particular problem.

In 2015 there were well over 600 legaltech start-ups that created technologies, business models and platforms aimed to improve law firm operations, client acquisition, legal research, and access to justice (Evolve Law 2016). However, the legal innovation landscape is still highly fragmented, and many of these start-ups offer solutions to very specific, singular problems. This has mostly to do with a general trend among technology developers to focus on creating apps for specific functions, or in response to hackathon challenges.

The provision of more interactive resources and remote assistance capabilities arguably increases access to information for individuals with legal problems, yet concerns remained for interviewees about complex and contradictory information and whether individuals can accurately translate often generic information to the nuances of their own situation. Darin Thompson, a lawyer with the Ministry of Justice in British Columbia contends that 'access to justice can be improved significantly through implementation of simple artificial intelligence (AI) based expert systems deployed within a broader online dispute resolution (ODR) framework' (2015: 4). Thompson's contention and examples in Section 5 perhaps suggest that AI, in its simpler form, may gain traction in wider public advice services before B2B ones.

Mobile devices and networks are already a primary means of accessing information for a large section of the population. Legal service providers and advice agencies are taking advantage of mobile technology to facilitate access to legal services and provide information about different options for those with legal problems. In the B2C market, law firms and legaltech start-ups are finding ways to enable access to justice in areas becoming less financially feasible for many firms. Here we see firms deploying technology and informational design from other sectors where the technology itself or modes of interaction are not 'innovative' per se, but innovative in the legal context of their use, bringing with them a familiarity which aids their use. Having an active presence on social media sites allows law firms, legal service providers and social organisations to provide an alternative way for people to find information and resources, as well as to ask questions.

Over the next ten years, we will likely see business applications that include workflow automation but go well beyond it to incorporate support for the human cognitive processes as part of the overall business environment. Increasingly firms will be tasked with managing an augmented workforce that includes a new generation of smart technologies, virtual assistants, algorithms, automated processes and distributed devices alongside flesh-and-blood staff. Mishra, Nicholson & Wojcikiewicz (2001) found that human–computer interactions follow patterns similar to human–human equivalents. Users may be aware they are interacting with machines, but still tend to follow human–human social rules, and treat computers as if they have feelings.

Interviewees speculated that future lawyers would be called on to combine human skills and computer skills. To do that, the lawyer must understand processes, how to improve them, and when to add technology. That does not mean the lawyer must become a process improvement expert, project manager, or a technologist. It does mean that a lawyer must become conversant in the 'tools of the trade' and perhaps maintain a sense of empathy toward coded colleagues if legal services are not to be fully digitised, but retain a touch of humanity.

On the surface it may appear to be a simple transfer of tasks from man to machine. The real power of intelligent automation lies in its ability to fundamentally change traditional ways of operating for businesses and individuals. These machines offer strengths and capabilities (scale, speed) that are different from – but crucially complementary to – human skills (Accenture 2016: 14). With new resourcing models and technology enabling different levels of access and automation around legal services, the question for buyers of legal services may become: do I need a human lawyer, software, know-how or a tool to find legal service providers?

For all of the technological machine learning, automation and Virtual Assistant possibilities and efficiencies, collectively, interviewees were adamant that legal services not lose the human touch. While interviewees, and especially those from start-ups, were aware of others pursing a purely digital focus – automating transactions and customer services to the point where there is little if any personal interaction - this was not an approach favoured by any interviewee in this research:

'Our model is fundamentally different than that, it's effectively leveraging the automation and cost saving through new technologies to reinvent the traditional personal relationship model'
(Head of Innovation, Challenger Bank).

For one interviewee, a good lawyer adds value through listening skills and empathy. He stated that the days are gone when the client was happy with a legal memorandum, lawyers are now part of the business team. This interviewee noted that, with machines negotiating, both sides are quick to deadlock, whereas humans bring give and take to the process.

'Lawyers train in social skills for good reasons. Computers make us better but there is a lot in the human aspect. Helping clients though processes, the ability to see their face, to see the extent an issue is disturbing them. And negotiation, a computer might just say "no". You need a human to make sure the other side is happy for you to be right'
(Global Head of Innovation, Top 50 firm, B2B).

Interviewees felt it was more important to augment the experts with technological systems, rather than replace them.

'I see [robots] as a massive opportunity for the firm to do what our lawyers really value, which is to think and to have space to think. We don't need third year associates to be doing verification, it shouldn't be happening, and a lot of them are Cambridge double firsts, they don't want to be doing that'
(Director of Legal Services Innovation, Top 50 firm, B2B).

Interviewees spoke about the ways in which technology could augment human thinking and decision-making. This understanding is reflected in events across wider tech communities where a renewed emphasis on the social is shaping virtual reality and glass technologies to combine physical and informational worlds. For example, vTime is the first VR sociable network that allows anyone, anywhere to socialise with family and friends in virtual reality locations. Magic Leap uses a head-worn display to project virtual images onto the real world, making the blend between real and virtual almost undetectable. By creating a headset that projects directly onto the retina, Magic Leap posits that there is no need for screens anymore. We heard from an interviewee who foresaw a role for such technology in courtrooms. For Accenture (2016: 14), 'successful businesses will recognise the benefits of human talent and the intelligent technology working side by side in collaboration – and they will embrace them both as critical members of the reimagined workforce' (Accenture 2016: 14).

Technology by itself will not bring innovation to a firm. What will is a better understanding of business issues and the points where technology and business come together, and how that can be better understood and developed. Or, for consumer pain points and needs, an understanding of the information and guidance consumers value to navigate what they often perceive as an expensive and lengthy process.

Legal businesses which use technology to deliver legal services focusing on smarter, more flexible resourcing, carrying out work in a more project management style and thinking in terms of process management and improvement, will look very different and work very differently to the pyramid law firm of the past. They will depend largely on technology and collaboration to do that. The importance of borderless platforms and digital ecosystems will grow in the coming years as massive movements such as the Internet of Things (IoT), big data and data analytics evolve. The ability of law firms to plug into these developments through technological innovation and collaboration will be an important factor for their success in future markets.

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APPENDIX

Disruptive and sustaining innovation

While the scope of this report is on capturing technological innovation and its practical dimensions, there is value in touching on some of the labels thrown out around innovation such as 'disruptive' and 'radical' and which often accompany sensationalist statements about change. Tempering these terms in a way that addresses the time, resources, energy and, ultimately, the early failures behind any (successful) innovation may help firm owners and decision makers engage with the realities of thinking and doing different, better. Understanding the difference between disruptive and sustaining innovations, and asking how radical firms can actually afford to be in their innovation activities, helps to frame the perceptions and examples from interviewees in this report, as well as helping member firms position their own practices in this space.

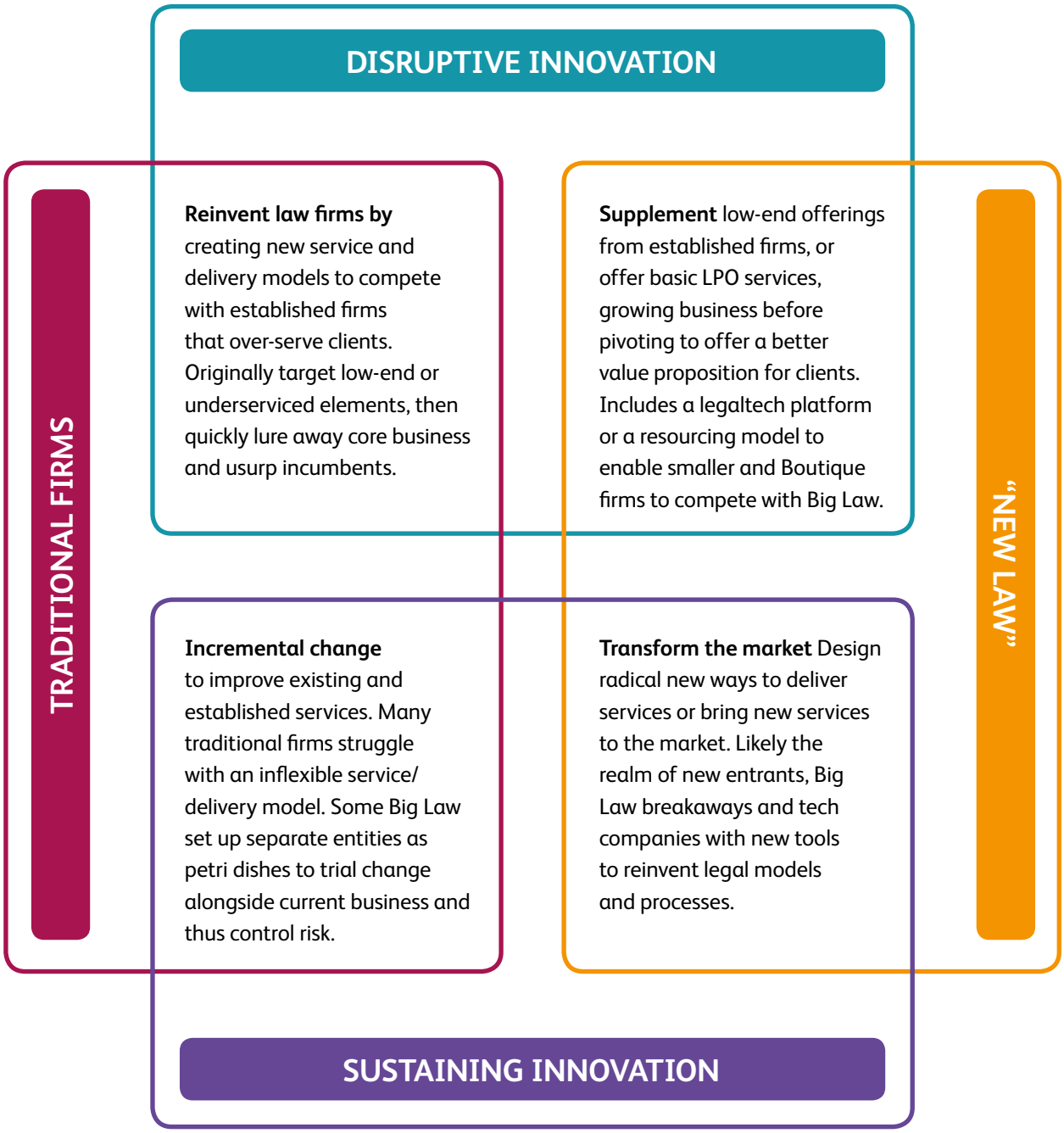
In his book *The Innovator's Dilemma*, Clayton Christensen (2013) presents examples of disruptive technologies that helped to redefine the competitive landscape of their respective markets. Christensen contrasts disruptive innovation with sustaining innovation, which simply improves existing products.

- Disruptive innovation = an innovation that creates a new market and value network and eventually disrupts an existing market; markets that are unknowable at the time of the innovation's conception.
- Sustaining innovation = sustaining innovation comes from listening to the needs of customers in the existing market and creating products that satisfy their predicted needs for the future.

The problem with conflating a disruptive innovation with any breakthrough that changes an industry's competitive patterns is that different types of innovation require different strategic approaches and assume different paths through the supplier landscape. As Christensen made clear, disruptive change usually comes about when market incumbents are overshooting the market (offering too complex a product, over-serving clients), while new entrants provide inferior solutions, often at very low prices and on the principle of 'good enough'. Disruptive innovations result in less desirable products/ services in the near term, but they have features that new or underserved clients value. As the disruptor improves and gains broader market acceptance over-served customers will migrate to the 'inferior' product/service. Initially the disruptive market entrant will not be considered a threat by incumbents who do not feel threatened by the disruptor's offering. As such, low-end and under-served (as well as over-served) markets provide opportunities for new players to grow and develop business models without competition from established players. Over time, this innovation may move from the initial market to a more traditional one and displace the formerly dominant approach in that traditional market. Yet this is not a quick process and interviewees from legaltech and fintech start-ups found that disruption takes time.

Emerging 'disruptive technologies' hold the potential to challenge and replace traditional legal processes rather than simply complement them and thus hold the potential to open up legal services to new players and competitors who do not come from the traditional law firm model (Mountain 2002). While law firms may continue to resist such changes, users who are more concerned with affordability and access to justice will welcome them. Figure A.1 plots what disruptive and sustaining innovation means in the context of traditional law firms and new law entrants/different types of player.

Figure A.1: Disruptive-Sustaining innovation [X] Traditional-New law



How 'Radical' can law firms be in their innovations?

In their *Innovation in Legal Services* report, Roper et al. (2015: 72) found that 'overall, the impression is of a profession in which ideas for new services and new ways of working are internally generated and rarely radical in nature'. This prompts the question whether a lack of radical innovation is due to a profession with an overall conservativism and different attitudes to risk taking, or to more deep-seated practicalities around how 'radical' a firm can be in terms of regulation, access to funding, speed to change and client expectations. Radical innovations have been characterised as representing a significant leap forward in the enabling abilities of technology or as adding significant new value to the marketplace. As such, radical innovation is commonly defined or described in terms of the profound impacts or ruptures it has on firms, industries and markets.

Utterback (1994: 200) defined radical innovation as 'change that sweeps away much of a firm's existing investment in technical skills and knowledge, designs, production technique, plant and equipment', while for Henderson (1993) an innovation is radical when it renders a firm's information filters and organisational procedures partially obsolete. Pulling back to a birds-eye view, it would appear that some legal technology innovations and law firm trials of machine learning and artificial intelligence do indeed fulfil the criteria of 'radical' – invoking changes in investment, skills, service design and execution and rendering some aspects of a law firm and its processes obsolete. Yet, on the ground, the picture is far more nuanced.

Interviewees spoke of ways for firms and their clients to benefit from technological innovations in terms of processes, communication and client service, but firms were subtly interweaving these tools throughout existing business models to augment rather than rupture services. In some cases firms ran parallel tests of robot/human execution to capture accuracy and potential savings on repetitive tasks. Only the largest corporate firms spoke of the ability to set-up separate test-beds or innovation hubs to explore entirely new business models or processes while the main brand continued business as usual.

More than one interviewee challenged the term 'radical' altogether:

'Radical innovation? I don't think it's a realistic label. The real radical is evolution, how we evolve our characteristics, use the skills of others for survival, but on the surface that looks incremental, is that boring?'
(Senior Partner, med-sized firm, B2B).

'It's not a question of "how radical?", it's "how realistic?". It's all about the adoption, the scope of adoption and the use of it. There has to be productivity and adoption gains. You can do something radical but then there's no realistic adoption. You can't get carried away with the hysteria, you're running a business ultimately'
(CEO, Top 100 firm, B2B/B2C).

Radical sounds impulsive but it is the longer game in terms of seeing a return on time, money and effort as a business needs more time to grow the market and appetite for change, to explore and test ideas. Interviewees were realistic about how difficult it would be to implement something radically different in terms of operation: 'it's not like I can come in one day, flick a switch and the firm just be different' (Senior Partner, small firm, B2C). Where interviewees saw the need to change, they also recognised a need to understand their place in the market and not alienate potential clients with too radical a re-vision:

'with an organisation like ours, which is intended to address an existing market which is used to existing ways of operating, we don't view the business opportunity as one in which you step in with a completely different unrecognisable solution'
(Head of Innovation, Challenger Bank, SME clients).

For those interviewees in law firms without dedicated innovation roles, often the day-to-day business dominated operational thinking and raised tensions for senior partners who, despite a personal inclination towards trying something new, felt a responsibility to employees and clients not to break the business on a punt. It was clear that some firms needed assistance in the transitional period between different systems. Technology suppliers that spent time with firms explaining their products and tailoring them to a firm's own familiar context were welcomed by interviewees at smaller traditional firms. But it also meant that radical offerings were a harder sell to established firms. Cautious attitudes from firms were having a wider impact on legaltech start-ups and the extent to which start-ups felt they could radically depart from what firms already knew and did. One interviewee explained in the context of fintech start-ups:

'there's fintech which wants to have something to do with banks, so they're kind of partnership-focused, and fintech that want nothing to do with banks and I think the latter category, those that want nothing to do with banks, can and are exploring more radical departures from traditional banking. And those that want to partner with banks are by definition friendly bank-adjusted offerings'
(Head of Innovation, Challenger Bank).

Thus, with legaltech start-ups there are those looking to partner with law firms and bring newfound efficiencies to how lawyers currently do things and, alternatively, legaltech start-ups taking on a reengineering and redesign of the legal system and access to justice. Commercial-savvy start-ups have scope to bring radical ideas to the market of unreserved activities. However, more often we are seeing these start-ups engage with the currently under-served, unmet need to design radical new ways of helping individuals engage with and access legal advice amidst a complexity of conflicting information and decreasing legal aid. Examples of these are discussed in Section 5. An interviewee at a legal aid firm brought another angle to being radical:

'Are we radical for saying we think everyone should be able to access advice? Okay, we may not be pushing towards AI and robots, the exciting stuff, maybe we put information on a smartphone or an app, the technology isn't radical, but maybe addressing a flawed system should be.'

(Senior Partner, small firm; B2C legal aid).

It appears that systems that require large amounts of upfront organisation have little chance of succeeding in most law firms. Innovations that involve the ability to process existing information as it lies will have the greatest opportunity for success. Above all, challenges call for a change in firm thinking and culture and the inertia that comes from practicing in the same way for sustained periods. For one interviewee, radical innovation was breaking away from business-as-usual thinking to set up a new practice focused around agility and client needs:

'[Traditional law firms] have a traditional way of looking at things, "this is how things work, this is how they've always worked, this is how it's just got to work going forward". We're different, we've really thought about exactly what our clients want from us'
(Founding partner, small boutique firm, B2B).

Putting clients at the heart of decisions around innovation, and starting with what clients need rather than a technological solution or IT directive, was an ethos in common across all interviewees, regardless of size or type of business, and suggests why these organisations have been successful in implementing change (this is discussed in Section 2.1).

For law firms and others entering the legal services market it is about deciding what to offer and how; technology will be a key enabler but the underlying business proposition must be sound (as interviewees discuss in Section 6.1). Further, many firms hampered by legacy systems and the need to keep these systems working together, will struggle with the idea of a radical rupture to infrastructure in order to facilitate innovation. Peppermint technology (2015) suggests that 'firms are reaching a point of complexity where a disproportionate amount of their investment is spent on ensuring all their software applications continue to work together.' This situation can only intensify as new technological solutions are launched and as corporate clients themselves change their internal systems. The danger becomes when a firm reaches the point that it feels so invested in the existing technology that it is easier to keep trying to fix legacy compatibility feeds than to change entirely (see Section 6.4 for interviewees' views on innovating within legacy systems).

The picture is not all bleak though. Any number of firms thrive through their decisions to change - be that sector, service or how they operate. For many of these, legal and business technologies have been key enablers of growing capacity and efficiency, as well as communicating with clients and the wider world. This is not radical, but something firms have been grappling with for decades and comes down to how firms conceive the relationship between the services offered, resourcing and pricing models.

Table A.1 (overpage) plots points where the drivers of change identified in the Future of Legal Services have shaped areas of innovation discussed in this report; the table places emphasis on the role and/or enabling function of technology and process innovation across all cells.

Table A.1: Drivers of change [X] areas of innovation

AREAS OF INNOVATION	DRIVERS OF CHANGE IN FUTURES REPORT				
	Global and national economic environment	Technology and process innovation	How clients buy legal services	New entrants and types of competition	Wider political agendas (funding, regulation, A2J)
Services [solutions to legal needs offered]	Client businesses entering international markets will have changing service needs, including cross-jurisdictional work and potential collaboration with global economic partners. Firms are working with clients to co-innovate services and technologies to meet clients' changing market needs. The opening /closing of international markets, including fallout from Brexit may lead to new types of service. Dentons, NextLaw Labs and RAVN are using AI to develop an innovative suite of technology solutions to help clients plan around the uncertainty of Brexit and affected contracts.	Technology widens reach of services. Efficiencies enable firms to pursue more specialist work and emerging areas of need around tech use in society (eg drones, driverless cars, Bitcoin) The impact of technology is being felt where firms largely service mass/ transactional needs. Capture and analysis of big data enables services to be tailored to clients and brings overarching service insight across the firm. Predictive analytics means firms can assess case performance and take on the 'right cases'.	A number of in-house counsel are disaggregating their legal needs to pay a premium only for those parts which warrant expertise. Routine work or basic advice is being automated or dispersed across the most cost-effective providers. Smaller B2B and boutique firms are utilising technology to compete with Big Law to win GC work (via speed and lower cost). More digital/smartphone offerings for consumers, including lifestyle packages of services.	Tech companies, accountants, start-ups apply solutions from outside the legal sector to a legal context. New entrants are using technology to respond to new client needs not addressed well in the existing market. New entrants are forming to grow services alongside new technology needs (eg drones, genomics, health care robots, digital medicine; automated military weapons).	Service innovation trying to mitigate loss of legal funding, including: partial services, form checking, smart forms, advice apps and digital triage. Government agenda around new technology laws, including cybersecurity, hacking, data protection and privacy provides work for lawyers and some constraints around technology innovation.

Table A.1: Drivers of change [X] areas of innovation

Service process [how the firm enacts the solution]	Technological innovation enables new ways to deliver efficiency and value to GCs and in-house lawyers by helping them to monitor and interrogate legal service processes (eg around risk, legal spend, case status). Technological innovations help consumers who cannot afford legal advice to gain more information about their legal needs, service process and options.	Large firms are drawing process efficiency through automation, machine learning and AI systems. Uses of technology and data analytics to better understand the firm's processes (caseload, workflow, information management dashboards) – enabling firms to streamline and become more efficient.	Consumer habits have changed greatly. Younger generations are far more tech and business savvy and accustomed to researching and interacting online and, increasingly, on mobile. The expectation in how clients communicate and transact with sellers technologically, will drive service process design across B2B and B2C sectors B2B clients aware of automated systems at their law firms will expect to pay less.	New entrants with cheaper more efficient processes. Growth in process reengineering or revolution – fuelled by increase in start-ups, hackathons, law school competitions and non-lawyer executives in law firms.	Innovation and use of technology to make processes for lesser profitable consumer areas more feasible for firms. More DIY and partial services for consumers. Providers are utilising technology to create simple to use Q&A interfaces that populate legal forms in the background
Resourcing [who/what enacts the solution]	Technology and business model innovation enables firms to manage a mix of different human/robot resources to reduce overheads and improve efficiency. Some firms are choosing not to employ FTE lawyers, but to call on contract lawyers as needed or work via agile collaboration with other businesses.	Growth in sophisticated technology resources including: Robots Robo-lawyers Chatbots Virtual assistants	Growth in comparison websites for legal services and online lawyer sourcing sites. Technological innovations enable more GCs to bring robots in-house and automate processes rather than pay law firms or LPOs.	New entrants with a business based around a resourcing model. (eg Lawyers on Demand; Peerpoint; Vario; also Lawyer-referral models and client-lawyer matching algorithms).	Increasing problems for smaller B2C and legal aid firms due to cuts in funding, rise in court fees, change to claim limits, RTA portal. These firms are typically traditional and longer established, with high overheads and without the agility to change or benefit from technological innovations.

Table A.1: Drivers of change [X] areas of innovation

Service delivery [means of communicating with and conveying the solution to the client]	Cloud and platform solutions enable global collaboration and interaction enabling firms/businesses to enter different international markets.	Increasing potential for efficiency gains, especially for large firms that make their margin through volume work (ability to use document automation to speed production and delivery of documents/contracts drafting) Advanced cybersecurity, data protection and encryption technologies to secure existing, emerging and innovative delivery channels	The expectation of buyers in terms of how they communicate and transact with sellers will drive legal service design and delivery Technology is driving expectations about speed, communication and online delivery of legal services, as well as widening access to information (albeit of mixed quality). More delivery of X-as-a-Service rather than distinct 'in the box' offerings.	New entrants bringing experiences of the retail sector to exploit delivery channels already familiar to and trusted by consumers. Tech start-ups with innovative channels of communication and interaction with users. Growing number of mobile and augmented reality solutions.	Drive towards digital service delivery by government. Government interest in virtual courts, digital courts and technological delivery channels in the court system.
Strategic vision [the firm's vision in terms of investment, business model, future directions]	Continued search by law firms and their clients for high growth markets and efficiency by making the best use of a globalised economy, technological interaction, cloud and platform solutions. External investment has enabled ABS to invest in the latest technologies and in hard and cognitive systems to help support ambitions towards innovation. Strategic economic decisions around: Office locations, Innovation centres, Tech investment.	Technological efficiency enables better pricing and resourcing strategies Big data and insights from data analytics help shape the firm's vision (case types; clients; markets; locations; collaborations) Using technology to generate practice management information and better manage workflow processes.	Putting clients first; changing client needs drive business and innovation strategies. Better serving clients by bringing new insight and value based on client needs and client co-innovation or from the firm's own data analytics.	Start-ups and many new entrants come with vision and a blank sheet, unhampered by legacy systems. Start-ups with either a vision to partner with law firms (with firm-friendly offerings close to existing ways of practice) or with a desire to break the current system and bring radical new ideas to processes, services and delivery (and as potential future competition to firms).	Potential impact on a firm's strategy from future government decisions around regulation, funding, compliance.

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