





















# Top 20 Legal IT Innovations 2017

The solutions driving systemic change  
in the legal industry



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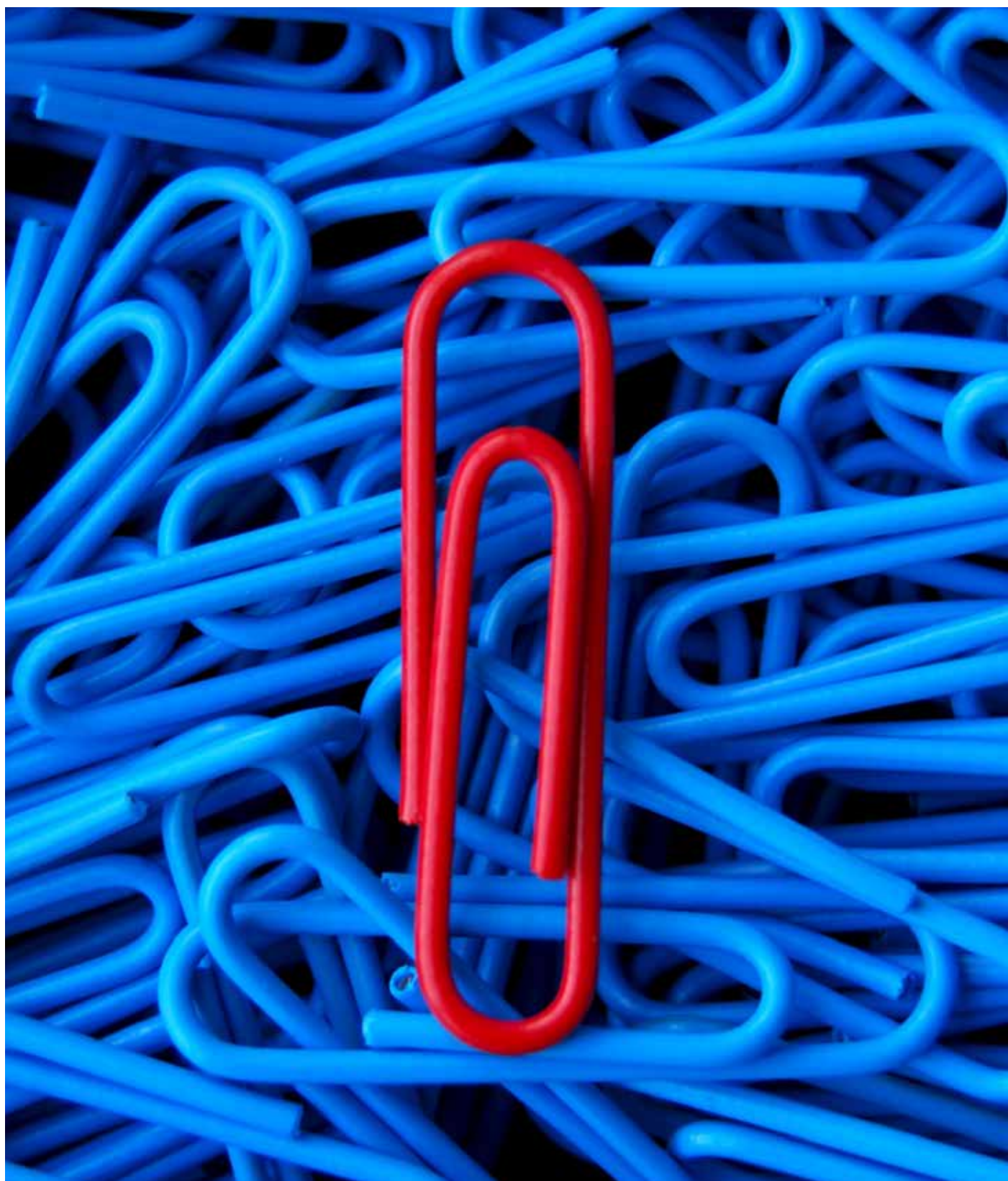
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# Innovation: here and now

## Introduction by James Mayer, director, Legal Week Intelligence, *Top 20 Legal IT Innovations 2017*

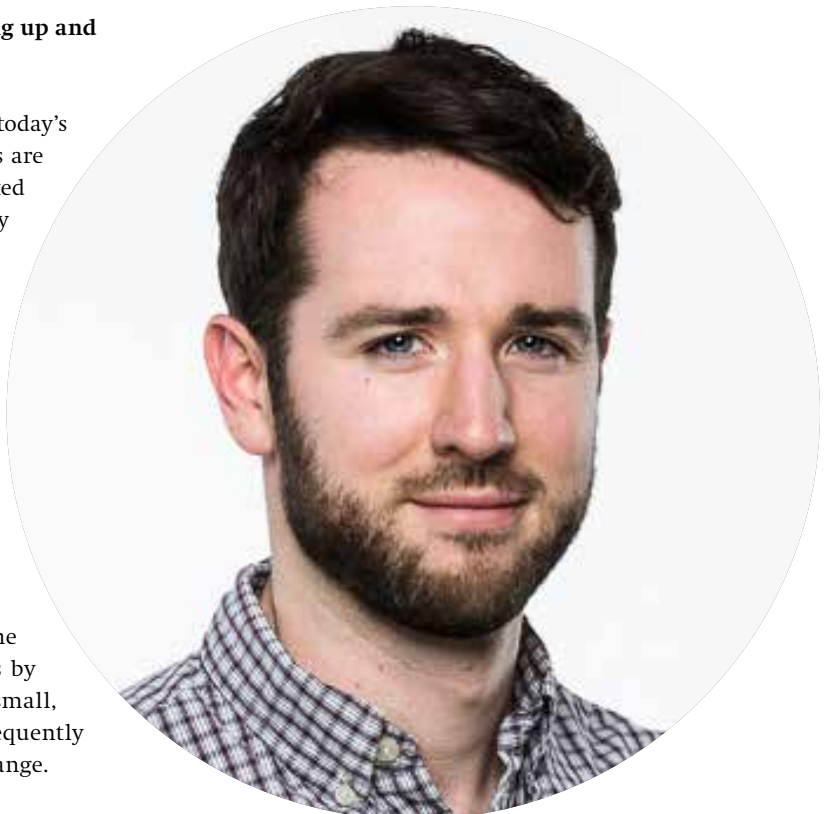
James Mayer surveys a score of IT innovators shaking up and improving the legal sector

If there is one word that sums up a central obsession in today's legal world it is 'innovation'. Law firms and their clients are both continually seeking innovation and being innovated for. It is time to ask, 'what does innovation actually mean?' Fear not, we aren't looking to bore you with the etymology of the word and how it has evolved over time, but rather to examine what it means in practice.

The good news is that 'innovation' is quickly becoming an essential part of the business, strategy and practice of law. The bad news is that it frequently isn't happening quickly or holistically enough.

In 2016, *Legal Week Intelligence* profiled 20 innovators who we believed were driving change in the legal sector. We focused on what inspired these figures to shift their views and how this bred innovation. In 2017, we look towards the innovations themselves.

The *Top 20 Legal IT Innovations* aims to get to the heart of what innovation means for firms and clients by illustrating how new ways of doing things, large or small, local or global, have shaken up a sector that has frequently been characterised as slow moving and resistant to change.



**The good news is that innovation is quickly becoming an essential part of the business, strategy and practice of law. The bad news is that it frequently isn't happening quickly or holistically enough**

These 20 innovations are changing the way legal professionals work, collaborate and purchase legal services in a variety of ways. Their impact will continue to resonate and in turn will generate new ideas.

From deploying AI to avoid paying parking tickets in the UK to using law students as a paralegal resource to the harnessing of natural language processing and statistical probability to recognise textual differences, all the innovations in this report confront and shake up the status quo.

The bottom line is that these innovations are making real differences in the working lives and livelihoods of actors across the legal sector today.

We hope that you enjoy this report and that it sparks discussion, change and even...innovation.

# Appetite for disruption

## Axiom

As a key pioneer in providing alternative legal services, Axiom has become a byword for excellence in the breadth and depth of its capability. Without partners or billing targets, it offers lawyers attractive working conditions instead. The company's annual revenues now surpass \$300m (£231.3m)— a compound annual growth rate of 45% since its launch in 2000 — and it employs over 1,200+ lawyers and 2,000+ staff, labelled 'teammates', serving over half of the Fortune 100 internationally.

Last November, Axiom's co-founder Mark Harris stepped down after 16 years as CEO to become executive chairman, while Elena Donio (pictured) joined as the new CEO. Ambitious growth and amplification of Axiom's mission to modernise the delivery of legal services are the twin targets of her ambition. On joining, she went on an extensive world tour covering multiple markets and clients. "The client base has been phenomenal," says Donio. "Sitting down with a client that wants to throw their arms around you and say: go faster, do more, what else can you take, what else can you do?"

So is it hard to continue to be a successful disruptor as well? "Yes, it can be," she concedes. "But there are so many companies that have got past that \$300m mark to \$1bn, \$2bn and continue to innovate. It's about being dissatisfied with the past, and continuing to make sure that our investment is supporting ideas. You'll continue to see us in high teens to twenties growth over the next few years."

That means investing in new areas, as Donio explains: "Finding a way to leverage our path, and then turn it into solutions at real scale." Work from the traditional alternative model — or talent platform — is still about 70% of their business. Over time, she adds, this has enabled Axiom "to create the organisation, tools, technology, process, playbooks, methodology and a staffing model that allows us to execute on large scale semi-repeatable types of work, via our delivery centres in Chicago, Belfast, and Warsaw."

Growth "has naturally led to the more tech-enabled part of our business," she says. This part of the business lends itself to increased scale and accelerating growth. "Everything we do



has a legal bent, so we call ourselves tech enabled, but services led," she explains. "As technologies get better and better, we no longer have to think about hiring a whole army of data scientists, we get to pull some of that capability off the shelf." The key, she suggests is "adding more and more value."

Donio cites an example: "We're working on solutions for clinical trials in pharma and life sciences. We take the same technology, a lot of the process, and tailor it, creating a fit-for-purpose set of tools capability technology to go after new and unique use cases. In that way, we continue to disrupt. We always have something in the lab that represents a new set of capabilities that we'll launch into the market."

Underpinning the Axiom brand are two distinct qualities, argues Donio: "The first is trust, which comes from quality of service and client care; the second is innovation, which comes from breaking the status quo and taking a fresh approach. We look for innovation to happen inside and outside, and continue to embrace those efforts as we continue to disrupt and delight our clients."

So where next? "We have a strong presence in the US and the UK, we're opening up Germany, we're in Switzerland, we're in Hong Kong. We'll continue to assess global expansion based on size of opportunity and our readiness to scale."

**We look for innovation to happen inside and outside, and continue to embrace those efforts as we continue to disrupt and delight our clients**





There are so many companies that got past that \$300m mark and continue to innovate. It's about being dissatisfied with the past, and continuing to make sure our investment is supporting ideas

# Transforming law for good

**Clio**

"Rian Gauvreau and I were two hammers looking for a nail," says Jack Newton (*pictured*), CEO of Vancouver-based Clio. "We were technologists. The shift to cloud computing as a major transformative force had made its way through several industries. I saw the opportunity to identify an industry that was ripe for disruption, ready to be fundamentally transformed by technology."

Over a lunch with the local Law Society in 2007, the two lifelong friends discovered that most malpractice and compliance-related issues involved sole practitioners and small firms. "They needed to use technology to stay on top of their practice," says Newton "and they didn't." Existing products were too expensive or too hard to implement. "That was the light bulb moment: the genesis of Clio. We conceived an idea for delivering practice management software directly through the cloud. There was nobody doing it."

Newton points out that 80% of lawyers practise in firms of less than ten lawyers, while half practise as solos. His big reservation: will lawyers get comfortable with storing their data in the cloud and using a third-party provider? A key decision was to invest aggressively in getting ahead of that discussion. To overcome "fear, uncertainty and doubt", Newton became a thought leader: publishing white papers, speaking widely, and becoming founding president of the Legal Cloud Computing Association.

In its early days, Clio was "laser focused on solos — because they felt the pain that Clio helps solve most acutely," says Newton. "We were surprised how many forward-looking lawyers were early adopters. We've also been happy to see how quickly the legal industry has embraced cloud computing." Clio went from success with solos, initially in the US, to winning small and medium firms as well.

Today, Clio is used in over 80 countries. "There are tens of thousands of law firms and over 150,000 legal professionals utilising our platform," says Newton. Most are in the US, followed by Canada, the UK and Australia, ranging from solos to some of the world's largest firms. Further growth is planned: Clio has recently doubled its headcount to more than 200, and is backed by venture capital investment from Bessemer, Point Nine, and Acton.



High security is integral — "everything from encryption to firewalls and authentication methods," says Newton. Clio also supports two-factor authentication. "On-premise law firm software rarely has that level of security," he suggests. "We invest in making everything highly secure: every customer benefits."

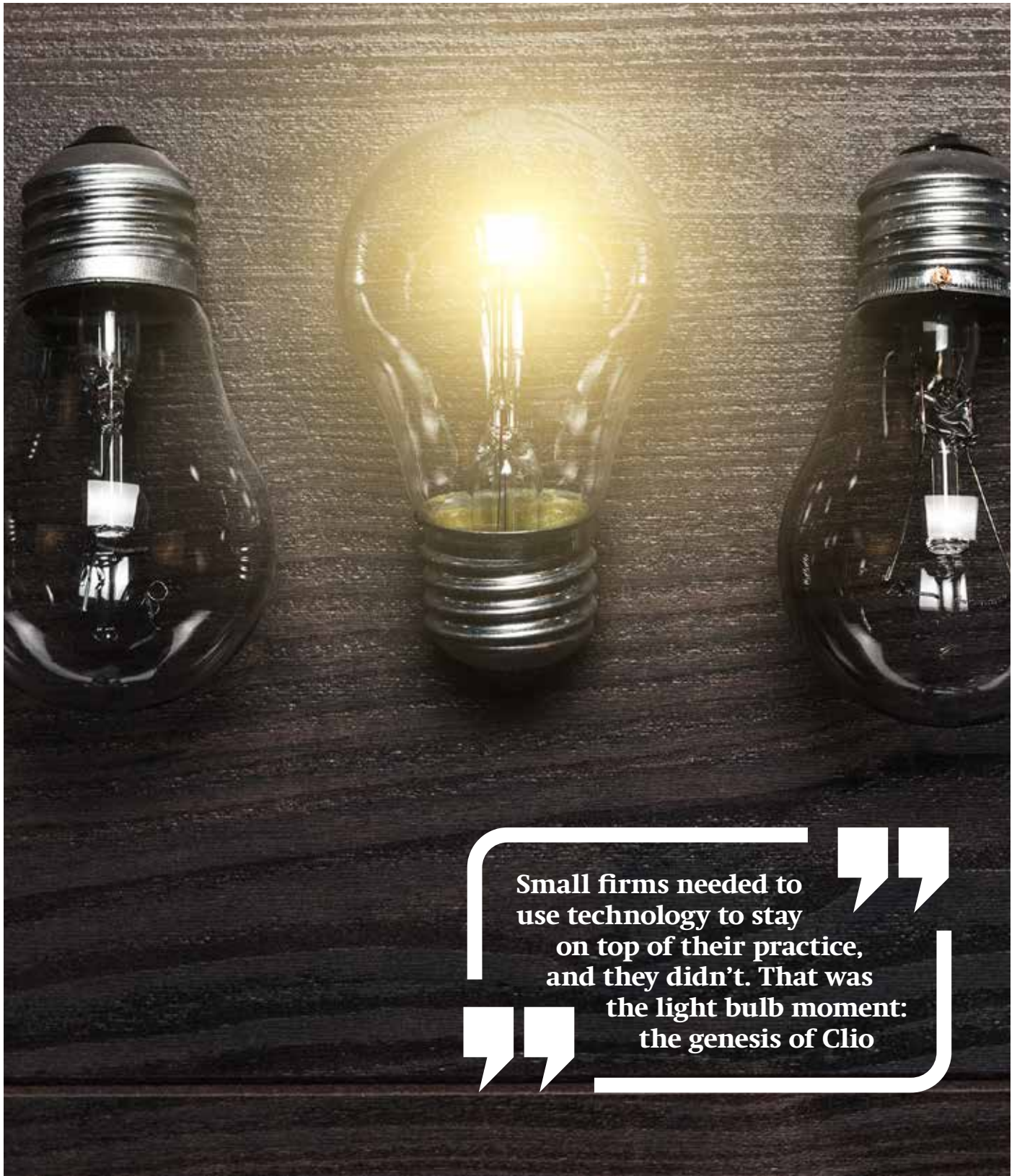
Multiple awards pay tribute to Clio's achievements. And Newton's five-year plan? "We started Clio with fairly humble aspirations: we bulset out to make a useful tool to help lawyers manage their practice. But our vision has grown, and our mission statement is now "to transform the practice of law, for good." We want to make our permanent dent in the universe, transforming how lawyers work and collaborate with their clients. But also for good in that lawyers should be happier than they are. Legal is the last major industry to be fundamentally transformed by technology."

Clio's ambition is "to become the largest legal technology company in the world," says Newton. "But more importantly, we aim to transform the practice of law and to help develop what a technology-enabled law practice can be." Continually educating the market, he adds, is critical.

His biggest internal challenge is scaling the company while maintaining culture. Externally, Newton identifies the biggest challenge as "getting lawyers to understand that there's a different way to do things, to internalise the opportunity that cloud computing presents, to accept that practising the way they do now is not how they'll be practising in five years, and to accelerate that change."

**On-premise law firm software rarely has our level of security. We invest in making everything highly secure: every customer benefits**





Small firms needed to use technology to stay on top of their practice, and they didn't. That was the light bulb moment: the genesis of Clio

# Connecting the AI community

## CodeX – Stanford Law School and Stanford Computer Science

Best described as an incubator of ideas, CodeX, the Center for Legal Informatics is a joint venture between Stanford Law School and Stanford Computer Science department. “We are an inter-disciplinary research centre,” says executive director Roland Vogl (pictured). “Our mission is to bring information technology to the legal system to make it more efficient and to empower every stakeholder. We understand there’s a lot of interest in helping lawyers do their work more efficiently.”

Started in 2005, CodeX organises technologies into legal document management, legal infrastructure and computational law. Vogl defines legal document management as “technologies that are used to get to the legal content more efficiently: legal search technologies or ediscovery technologies.” Legal infrastructure involves systems or platforms that connect different stakeholders.

Computational law is CodeX’s key focus of research interest. “It’s where we automate and mechanise part of the legal analysis – a branch of legal informatics where the computer understands legal concepts and can reason,” says Vogl. “The other aspect is AI, statistical AI and data analytics in legal settings where you crunch the data of judges’ decisions or patent examiners’ decisions and try to help legal professionals make decisions that are more data driven.”

In recent years, CodeX has opened its doors to the growing legal innovation community. “It’s become a place where people meet and present new ideas,” he says. “They find a group of like-minded people who help them elaborate.”

This involves different formats: weekly group meetings open to Stanford people and visitors – broadcast through the web allowing remote participants from different countries, legal tech start-ups and researchers who come in and do their pitch. “It’s a 20-minute presentation with Q&A,” explains Vogl. “That helps this community stay on top of innovations – the discourse, the conversation about what’s going on – it’s pretty lively.”

A monthly speaker series enables thought leaders to address the community, together with the annual Future Law conference. “The profile is changing,” says Vogl. “It was very much the core legal/tech community at the beginning and now we see CIOs and partners of law firms, people from government coming.”



CodeX is neutral and not for-profit. “We like to work with start-ups: they help us understand the space too,” Vogl suggests. “There are people in the AI/Law scholarly community who’ve been working on these deep issues for several decades – but in their own bubble. Simultaneously, we’ve had this explosion of start-up activity: there’s not been very much connection between them.” CodeX sees itself as a forum to connect the two.

Vogl accepts that robo-lawyers create fear. “But the robo-lawyer really has two faces,” he says. “One is mechanising and automating legal services – commoditised legal work and document checking. Legal prediction is the other aspect. That makes lawyers more uncomfortable than legal automation because they have traditionally provided this ability to predict how a judge is going to find in a case before it happens, or how negotiation with another party will turn out. They thought of that as something very much based on experience. It’s what they can charge a premium for.

“Now, with data, even junior lawyers – or potentially even clients – can determine the odds of success in a particular matter. That is threatening to lawyers.”

In response, he suggests, lawyers will have to re-define their role in how they deliver their expertise to clients: “They have to open their minds because if they don’t, there will be others who will materialise that opportunity.” Vogl confesses to being excited. “It’s in the DNA of Stanford to test new ideas. We’ve only started to scratch the surface of innovation in this space.”

**With data, even junior lawyers – or potentially even clients – can determine the odds of success in a particular matter. That is threatening to lawyers**

## DO NOT PAY

# From parking fines to future of law

## DoNotPay

When he was 18, Josh Browder (*pictured*) learned to drive. “I was really terrible and began to receive a lot of parking tickets. After the fourth ticket, my parents told me I had to pay them myself. Since I couldn’t afford to, I had to figure out other ways to get the tickets dismissed.”

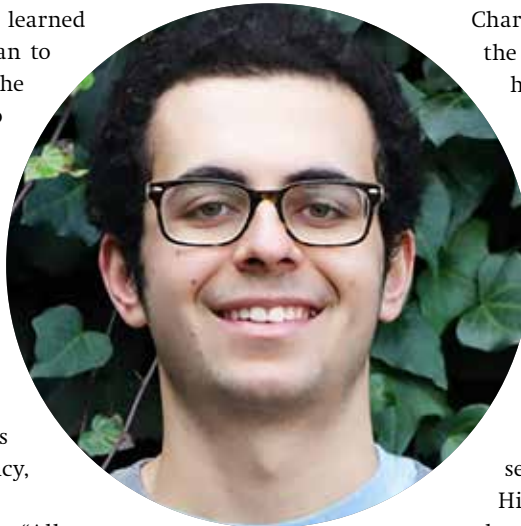
In trawling through government documents, he looked for reasons why UK parking tickets should be cancelled. He identified 12 common reasons — from signage (i.e. a tree covering the No Parking sign) to the ticket being issued before the car was bought or after it was sold, or an emergency, such as visiting a hospital.

“I became a sort of guru,” says Browder. “All my friends and family in north London were asking for help with their parking tickets.” So he decided to start a website to help others. In August 2015, after doing a Freedom of Information request to find out the main reasons, he listed the top 12 on his new website: DoNotPay — The World’s First Robot Lawyer.

There was no marketing or advertising. “More friends started using it — the local community is very tight-knit so their friends started using it too.” Huge word of mouth led to social media growth. Several days later, a Huffington Post blogger used it successfully and wrote a piece about her experience. It went viral. “Every media station and TV network picked up on this new amazing app that gets you out of your parking ticket,” says Browder.

DoNotPay became an overnight success as tens of thousands of users signed up. “It was the most incredible thing: I was just a student, I didn’t intend for it to take off,” he says. But there was a problem: because the site was only basic, demand vastly exceeded available bandwidth. It kept crashing. “The first version of the website made people feel sick, it had a moving background of maps,” says Browder.

Remodeled with a fresh design on a bigger site, Browder had a vision. “Parking tickets were personal,” he explains. “But I wanted to automate other legal services for consumers.” He started with delayed flights — fighting the airlines — before moving on to PPI, which he describes as “an exploitative industry because lawyers are taking huge commissions,” and fighting landlords for not repairing property.



Charities approached him to help address the homelessness and refugee problem that he describes as his “first true social good expansion”. Centrepoin, in the UK, assisted him with a site that allows people to check if they are eligible for government housing and then make an application.

“That’s been really successful too,” says Browder, who is now in his second year studying Computer Science and Economics at Stanford. In between his studies, lawyers informally advise him, pro bono. He has rolled out the parking concept in New York and Seattle, and has several landlord tools operating in California.

His future plans? “I’m designing a universal search engine that will work... I’ve figured out a way to automate the automation. In a few years, I imagine you go to this website, type in your legal issue and it just pulls up the documents to solve it. This will work with every kind of low-level consumer law you could possibly imagine. It’s really exciting.”

Browder has been funded by Highland Capital, and IBM has forged a strategic partnership, allowing him to use Watson — for free. He also has an army of volunteers. “I want to make this into a sustainable organisation with true employees. I have a really exciting roll out across the US, but that’s still under wraps.” Watch this space.

**In a few years, I imagine you go to this website, type in your legal issue and it just pulls up the documents to solve it. This will work with every kind of low-level consumer law you could possibly imagine**





Law students are desperate for legal experience and money: all you want to do is get into the office, learn different areas of law and see how it all works





# Tapping the next generation of lawyers

## F-LEX

"I used to look out of the window, see all these law students and think: this is so stupid, I'm dying for an extra pair of hands, or for a document to be delivered, and you're all there — why aren't we using you?" Gazing from her law firm's London Bridge office set Mary Bonsor (*pictured*) thinking about her own start up business.

Conceptually, it made perfect sense: an on demand legal service for paralegals. Pragmatically, it has worked: after launching in September 2016, F-LEX has London and Manchester offices with hundreds of law students on its books.

"There was such a gap in the market with law firms not using law students enough," says F-LEX's CEO and co-founder. "As a law student, you usually have three free days a week in your timetable doing the Graduate Diploma in Law (GDL) or Legal Practice Course (LPC). You're desperate for legal experience and money: all you want to do is get into the office, learn different areas of law and see how it all works", so Bonsor decided to join forces with James Moore, a technologist, to create a platform that would "connect the law firm to the law student."

In getting students to sign up, "word of mouth has been the biggest way people hear about F-LEX," says Bonsor. "As soon as you get a few on your books, they tell their classmates and then you get all 20. We're also in Chambers & Partners, through which we get a lot of applications." At the undergraduate level, only third year law students are taken on, but the bulk are from law schools doing either the GDL or LPC.

Testing and due diligence are rigorous. Students do two practical tests to test their judgment and organizational skills, and are interviewed at length. F-LEX uses technology to enhance the process for clients. "Once on our books, students have a profile, like LinkedIn: their CV, with a short video clip of them saying what stage they're at and what they're looking for," she explains.

To date, more than 450 have signed up in London and a further 100 in Manchester. "Our biggest challenge," says Bonsor, "is continuing to update our pool because someone who's doing their LPC now might have a training contract starting in September and is therefore off our books." Turnover therefore runs at about 30% a year.



On the demand side, F-LEX has more than 30 key clients, often secured by going directly to partners. "We've got in-house legal teams at FTSE 100 companies, a magic circle firm, several silver circle firms, top 100 firms and boutiques," she says.

So how does it work? "Using our database profiles of pre-vetted students, when a firm asks for two people, a notification is sent via text message to about ten students," explains Bonsor. "Each client is a bespoke project. If it's short notice, it's first come first served; for longer notice, we put together a short list for the firm and then they choose: comparing the profiles and picking who they think is best suited. We then get feedback on every candidate."

F-LEX charges an hourly rate and takes a cut," she says. "For us, it's more of a numbers game because we want to be able to do mass projects and provide lots of people." Her plan is to be in every major city where there is a law school and law firms: Birmingham, Leeds, Bristol, Belfast and Glasgow. "We are trying to go where the demand is. Our biggest problem is that we need to scale up."

**We've got in-house legal teams at FTSE 100 companies, a magic circle firm, several silver circle firms, top 100 firms and boutiques. We are trying to go where the demand is. Our biggest problem is that we need to scale up**

# Untangling the web

## Using the cloud for financial supply chain integration – Fulcrum Global Technologies

"I met an East Coast law firm that had just lost its largest client – a company which provided tens of millions of business moved to another firm overnight," says Ahmed Shaaban (pictured), managing director of Fulcrum Global Technologies. "That doesn't happen without missing the mark and being out of touch."

In this context, being out of touch is characterised by failing to leverage the advances of automation, including the cloud. Legal practice, he argues, "has forever lagged behind the decision cycle of other industries in not having fully mature financial supply chains", which creates "an evolution of opportunity".

Shaaban is an unashamed evangelist for the in-memory/cloud solutions that Fulcrum offers, often using SAP technology. This is not simply because it is Fulcrum's raison d'être, but because he sees the cloud as "part of the advancement of the supply chain", which has proliferated throughout the operation of global businesses and is still long overdue in much of the legal sector.

"Most law firms don't want this to happen; they want to continue to live in the golden years of legal – high hourly rates and less complex fee arrangements. But clients are squeezing and squeezing," he says, suggesting that it is "the way the world wants to work" across multiple sectors, to be more efficient in simplifying and automating tasks. "The art of supply chain automation is the heart and soul of it," he adds.

Founded in Chicago in 2010, Fulcrum's offering has been central to the innovative use of (private) cloud-based solutions by law firms. In a world largely dominated by SAP, "you have about 77 cents of every dollar in the world touching SAP", Shaaban explains. "There's greater than 75% related market penetration in 25 different vertical industries. It's all process-driven software, a process-driven solution."

A host of major corporations are already expressing interest in partnering with Fulcrum, including several of the Fortune 50. "They have analysed their market, they run the show because they are the buyers: they tell the market what they want to do and how they want to do it," he says. This, in addition to the rise of formalised corporate legal organisations – namely CLOC, the Corporate Legal Operations Consortium – and global standards being put in place from the client side, firms simply must be ready to adapt and innovate in how they deliver their services.



Together with tremendous economies of scale, this will produce operational efficiencies, immediate transparency and a greater ability to plan ahead. Meanwhile, data integrity, so much of a concern for lawyers, "is better protected because you are doing most everything in one system", says Shaaban.

The push for innovation has also worked in the legal sector. Among Fulcrum's clients are a slew of AmLaw 100 firms, including some of the biggest. He explains: "Our implementations automate and standardise the entire back-office process into one system – clients having dozens of individual systems, running many offices, across up to 100 countries, in most languages and currencies.

"The incredible spaghetti network firms have run in the past," he adds, "are being replaced by a single system that runs and standardises all processes across global offices: the tax rules, currency conversions, languages, billing – everything is addressed spot on, in one process, seamlessly, and deployed quickly."

Shaaban anticipates much greater consolidation among law firms: "The shift has begun and you are seeing these mega giants emerging. But they can't do that without the right systems, that's why the systems that we have built for law firms are essential." He describes this as an "accelerated maturity of the supply chain: in a growth spurt it's going from a child to a young adult very fast".

To the law firms that resist his message, Shaaban offers the following advice: "The industry is offering you the tools to compete, to re-compete, and you may feel you don't need to. But your clients will tell you that you do. This isn't pie in the sky, it's happening right now."

**The industry is offering you the tools to compete, to re-compete, and you may feel you don't need to. But your clients will tell you that you do**





**VOD is a customised offering for law firms, designed to handle the full spectrum of their technical and functional operations, as well as processes**

# A multi-dimensional perspective on data

## Intelliteach

As CEO of Intelliteach since 2004, Seelin Naidoo's (pictured) passion for his business is beyond question. Providing outsourced solutions to over 300 firms in the legal and accounting markets, its four main operating centres are Atlanta, St. Louis, Toronto and London. "We have operations in 44 countries," he says. "Our strategic objective is to provide world class service while reducing our clients' operating cost and eliminating their CAPEX investment in technology."



Intelliteach is divided between operating and software. "On the operating side," says Naidoo, "we have AR-augmented services on the finance desk, providing outsourced services, primarily in the US." Among its law firm clients are Akin Gump, Baker McKenzie, Dentons, and DLA Piper. Almost equal in size is the service desk, which operates on a global platform.

Security is paramount. "We are ISO27001 certified to every control facility that's managing legal exclusively," says Naidoo. "Our organisation is structured so that we never take possession of a firm's data — all of the work that we typically do is within that firm's environment. We've done a lot to accommodate security concerns, but there's no start and end point to this endeavour."

The operating side has several supporting systems. A service management tool, IQTrack, which has 270 analysts taking 100,000 calls a month, provides access to IT support from anywhere in the world, at any time. Last year, Intelliteach upgraded its Automated Call Distribution (ACD) platform "a state-of-the-art cloud services" to manage all forms of communications — voice, email, chat, multi-media etc.

There is also an e-learning platform. "For every major legal package, regardless of version, we've created an eLearning training curriculum that is customised based on the clients' needs," says Naidoo.

Another tool, Solution Sender, provides users with an electronic animation of the users' request after it is resolved. "We walk you through the resolution steps and then send you an animation — all animations are 'mobile device enabled' — which can go to any device format. It reinforces the process that we walked you through," explains Naidoo, "and provides just in time training as well as reinforcing training." Using a self-help component, clients

can log onto the system and look up issues in six languages, much the same as a Google search.

In software, Intelliteach offers a business intelligence package with an ability to look at data from a multi-dimensional perspective: by location, practice group, and attorney, and then interchange those dimensions. "It provides a level of detail that otherwise would be very difficult to pull out of a standard system," explains Naidoo.

Intelliteach has "a pretty strong presence" with AmLaw 100 to AmLaw 200 clients, he adds. "But the clients we have built our company for are multi-nationals. In addition to providing AR-managed services support to the US market, we also provide managing services support to KPMG and Deloitte."

Since inception, Intelliteach has doubled in size every five years. "We're owned by a private equity fund with managers having a minority stake," says Naidoo. "We've had pretty consistent double-digit growth and that will continue. But we are also looking at a number of acquisitions that would be strategic high value, that compliment or supplement the current service line. We will continue to build out additional services and to leverage the existing relationship pool that we have in place."

As elsewhere, IT recruitment in the US is highly competitive. "I spend a fair amount of time looking at options — near shore, the Caribbean, or offshore," says Naidoo. "This would be for application development, mobile-enabled technology, infrastructure support. India is an obvious spot for us — we have been looking."

**Intelliteach provides a level of detail that otherwise would be very difficult to pull out of a standard system**

# Giving software a lawyer's brain

## LegalSifter

Formally launched in June 2017, LegalSifter will be “a product that puts your lawyer’s brain into our software, combines it with our algorithms and makes it available 24/7 to internal and external customers,” according to CEO Kevin Miller (*pictured*). “We’re fortunate enough to live and work in Pittsburgh, a city leading the charge on AI,” he says. “We were born of Carnegie Mellon” — a private research university in the city with one of the top computer science programs in the United States.

LegalSifter is venture-backed. “Birchmere Ventures was the original shareholder along with Carnegie Mellon and an angel that founded the business in June 2013,” he says. Miller joined in September 2015 after nine years at Industrial Scientific Corporation.

Fighting conventional wisdom that law firms are late, and often reluctant, adopters of new technology, he suggests that technology has never previously been able to get at the core of what lawyers do. “Machine learning, natural language processing and AI in general, changes that. What we’re doing, and probably what one or two others are going to do, will finally allow a lawyer to scale.”

LegalSifter aims to bring “the knowledge required to negotiate or create a contract closer to those responsible for a transaction.” As a result, Miller suggests, transactions will speed up, quality will improve, costs will go down and delays will shrink. “We intend to empower people.” Once a lawyer’s brain is connected to LegalSifter, he says, “our algorithms will read the draft contract and trigger in-context feedback automatically with an upload.”

He envisions replicating the model across non-disclosure agreements, employment, licensing and purchasing agreements, as well as broader legal documents. As a result, argues Miller, “Law firms will put themselves in a position to become software-enabled organisations.”



Law firms will also recognise LegalSifter as an enabling technology, says Miller because it allows them “to develop new products, to make money while they sleep, or combine the software with their services to offer lower price options so they can meet more of their customers’ needs.” If they make enough of a dent in the marketplace, he believes everyone else will follow. “It will be slow at first, but once they see that it works, people are going to jump on this.”

On companies aiming to compete with LegalSifter, he says: “It’s a big market. I don’t worry too much about crashing into another competitor.” Of much greater concern is finding the right people needed for growth: “The talent pool is very, very limited,” he adds.

Inevitably, LegalSifter plans to grow. “Our mission is to bring affordable legal services to the world by empowering people with artificial intelligence,” says Miller. In doing this, his goal is to build products that help the legal community, not compete with them. But, he suggests, AI takes some time. And his biggest challenge? “Finding customers with patience.”

**Our mission is to  
bring affordable  
legal services to the world by  
empowering people with  
artificial intelligence**



# Managing the unmanageable

## Luminance

“The starting point for Luminance is the latest developments in AI technology coming out of PhD research at Cambridge University,” says Luminance CEO Emily Foges (*pictured*), who suggests that the pre-eminence of Cambridge is fundamental.

Foges explains that Luminance “brings together different strands: machine learning, natural language processing, and statistical probability by using inference to develop something completely new, which enables a machine to read vast quantities of documentation, to compare them all simultaneously, and to understand what’s in them and why they are different from each other.”

Development of the technology centres on applying it to legal services. Shortly after Luminance was founded in 2015, conversations began with law firms, particularly Slaughter and May. These focused on “the best way to use the technology to significantly improve the way they work,” says Foges. “The problem of huge quantities of documentation that have become completely unmanageable needs to be solved: this technology can solve it.”

Foges cites an example of junior lawyers analysing 1,000 sales agreements, only to discover that they are all identical. “That’s not a good use of the client’s money or the lawyer’s time,” she argues. But Luminance goes further than highlighting textual differences. “It recognises patterns in language,” she says. “It understands legal language well enough to identify legal concepts and what they are to pinpoint where there are deviations from the standard.”

Keen to emphasise that no set up is required, Foges points out that there is also no need to train the system to understand a law firm’s documentation. “It’s seen enough already to recognise those concepts,” she says. “Simply upload the documentation and start working just like the manual process, but much faster.”

She compares Luminance to an iPhone: a highly sophisticated device with no instruction manual or training required. Because it is browser-based, no special equipment is needed either. In analysing documentation, it can figure out whether there is hidden risk. Foges highlights the 34,000+ pages of standard cross-border M&A documentation. “You load them and Luminance will immediately tell you what they are, where they are from, which countries they are represented in, what languages and what type of documents



they are, what clauses are contained within them, and flag up likely areas of hidden risk.”

Parallel trials of Luminance alongside the manual process show a minimum 50% in time-saving and a 90% verified accuracy rate. “Once you go beyond 90% you get diminishing returns,” suggests Foges, pointing to one law firm that has worked with Luminance where their trainee accuracy was 65%. “Unlike trainees who move up, only for the next batch to arrive, a machine keeps learning and getting better,” she adds.

As a sign it has leapfrogged incumbents in the market, Slaughter and May has taken a 5% stake in Luminance, with Invoke Capital being the principal investor. Slaughters’ Spanish best friend Uría Menéndez has recently signed up, with “hundreds” of other firms set to follow, as the Luminance team spreads from Singapore to Stockholm.

So will AI replace young lawyers? “There’s no reason why it shouldn’t become ubiquitous,” says Foges. “But it’s about making human lawyers more effective rather than replacing them. We’re not seeing firms trust to a system to tell them what the issues are. Luminance tells you where there are standards and deviations; you then have to analyse them to decide whether they are a problem.”

Looking ahead, she foresees Luminance operating in multiple languages; it has only been trained in English thus far. “And it won’t just be law firms who use Luminance,” she suggests, “it will also be in house legal teams.”

**There’s no reason why AI shouldn’t become ubiquitous. But it’s about making human lawyers more effective rather than replacing them**

# A mini-law firm in your computer

## MarginMatrix – Allen & Overy in conjunction with Deloitte

MarginMatrix is a digital derivatives compliance system delivered by Allen & Overy in conjunction with Deloitte's managed services team. Ostensibly, the platform is the product of multiple talents. But as a concept, it was the brainchild of A&O partner David Wakeling (*pictured*).

"After the decision to implement global regulation with a focus on the derivatives market, we knew something big was coming," says Wakeling. "It became clear looking at how regulations were developing that regulators meant business. In all the major global financial institutions, this was going to be a major event that no one had ever seen before."

Together with support from management, Wakeling, who describes himself as "a lawyer and amateur tech developer", went off for three months to deliver a practical solution for clients. "I wanted to come up with something without any client engagement in an incubated environment, as a tech-based solution."

Wakeling had a history of developing tech products: Default Management – a tech tool to manage counterparty default – and Project X, a joint venture with Axiom. But neither was on the scale of MarginMatrix, which he describes as "like a mini law firm in its own right."

He defines the concept: "We codify the laws in lots of regimes in one big system. There is a very extensive auto-document drafting function within the system. The codifying laws concept tells you what law is required, the system then auto-generates the documents. It drafts the first offer by our clients to their counterparties outlining what the margin arrangement and credit support arrangement would look like."

However, Wakeling appreciated that there are tens of thousands of contracts that have to be negotiated. "We don't have enough lawyers to do that with derivatives expertise, or even without derivatives expertise," he says. So A&O turned to Deloitte to develop a joint venture. The ultimate goal was to come up with a fixed unit cost for clients. By ditching the billable hour, he explains: "They would know that we were motivated to be efficient."

Wakeling built the basic systems architecture in Excel, addressing three regimes simultaneously: EU, US and HK. "It then got flipped into our e-business team, who built a prototype



with some of my team of excellent associates, who – impressively – were pretty adept at coding," he says. "So we had something very credible to show clients. In parallel, I was arranging the Deloitte joint venture. We then started a joint marketing campaign in December 2015, going to banks and saying: 'we are going to offer you an end-to-end solution'."

The first client followed in January. MarginMatrix became fully operational last September, when the new regulatory requirements came into force. "It's the closest thing to a standard template, and closely follows the ISDA documents," says Wakeling. Nearly 400 people worked on it over several months. After eight major bank clients had signed up, the marketing stopped. "We filled up all the spots we were comfortable taking," he explains. "Nearly 30,000 negotiations – we thought we should draw a line there. Relative to the total global market of around 150,000, we have quite a lot of them."

So what did Wakeling learn from the experience? "When I first embarked on it, I thought the really clever thing was that we could give the right legal opinion to say this meets requirements in seven jurisdictions, and that we could manage this number of contracts. That's obviously very appealing to clients. But what I hadn't fully recognised is the importance of data flows and the precision that MarginMatrix provides – that's the most valuable thing."

**It became clear looking at how regulations were developing that regulators meant business. In all the major global financial institutions, this was going to be a major event no one had seen before**

# From Little League to the big league

## Narrative Science

Take the scores from college baseball games, then add in a small piece of software, and where do you eventually end up? The result is Narrative Science, a cutting edge tech company employing more than 100 people in Chicago, New York and Seattle. Stuart Frankel (*pictured*), founder and CEO at Narrative Science, takes up the story.

“Narrative Science was founded in 2010. The company was based on research originally conducted at Northwestern University by two professors and students who were trying to solve the problem of having data, but not being able to present it in a form that people understand. They settled on creating a piece of software that wrote stories about baseball games purely from data.

“So they created a software program that would take that game data, and process it to generate a story that sounded like a reporter was at the game who wrote up the story of what happened. It worked really well, but all it did was write baseball stories.”

Frankel, whose business background includes working with early stage tech companies, got to know the two professors. “We decided to turn it into a business,” he says. “We licensed the intellectual property from Northwestern, formed the company, and set about building a commercial enterprise covering a host of sports and financial news.”

Narrative Science got a lot of early press about how it would put journalists out of business. “In reality, we were writing stories that nobody was covering like Little League baseball stories and company earnings stories,” says Frankel. “The press coverage created an opportunity to start engaging with large organisations across multiple industries — financial, manufacturing, retail, government — who wanted to use this technology to solve the problem of data overload. We realised we had a much bigger opportunity by moving into the world of enterprise software.”

In 2014, they stopped doing media content and started working with organisations to help them automate certain aspects of their business operations by creating natural language documents. This led to the launch of Quill, an advanced natural language generation platform. Frankel explains: “It’s an AI system that takes data and figures out what’s interesting and important, based on a few user inputs, and then renders that analysis into natural



language. Quill has been taught to speak the way people do. That’s the powerful aspect because it makes information that is gleaned from data available to anyone.”

Another key to Quill, he suggests, is that it is communication goal driven. “Once you tell Quill what you’re trying to do, it’s smart enough to know that it has to do analytics to support that goal. Quill only looks for the data that’s relevant and important for moving the story forward. That’s what allows it to be effective. It’s the reason that large enterprises have started to adopt Quill: it allows them to automate and augment certain processes within their organisations with what we call Intelligent Narratives.”

These include Mastercard, Deloitte, and some US government agencies. USAA, a financial services firm with 13 million plus customers, is both an investor in Narrative Science and a Quill user “to help communicate information and insights in a more natural way to their customers.”

According to Frankel, Quill’s future will be shaped by three developments: report automation, interactivity, and voice-enabled capabilities, where it becomes the engine through which voice interactions can take place. Narrative Science has partnered with analytics company Sisense to create an interactive voice-enabled experience for Sisense users through Amazon Alexa. Part of Quill’s future target market will be the back office of large law firms. Work on that has already started.

**Quill has been taught to speak the way people do. That’s the powerful aspect because it makes information that is gleaned from data available to anyone**





The press coverage created an opportunity to start engaging with large organisations across multiple industries. We realised we had a much bigger opportunity by moving into the world of enterprise software

# Finger on the pulse, head in the cloud

## NetDocuments

Alvin Tedjamulia (*pictured*) is a restless soul, reputedly sleeping only four hours a night. As CTO and co-founder of NetDocuments, he admits that he spends much of the remaining 20 waking hours thinking about how to improve its cloud-based document management system, perfecting security and reliability for law firm clients. Peppered with acronyms — DDoS, SOC 2, SOC 2+, and SQL vs NoSQL — his conversation is infused with genuine passion for the task.



“We have 20% of the AmLaw 100 as clients,” says Tedjamulia. “They have signed contracts, but if you add those that are in the process of testing or reviewing, it’s probably double that.” In a young industry, NetDocuments is a mature business. Founded in 1999, it has spread far and wide from its Utah base with hundreds of thousands of users across 140 countries. “The US, UK and Australia are the strongest markets, then Singapore, Canada and other English speaking countries,” he adds. “Overall, we have about 2,000 firms using our service.”

Tedjamulia reviews the progress since inception. “We’ve been preaching the gospel of cloud for 20 years. It’s now unstoppable. Looking back, we took a gamble. We said: ok, it’s going to be a matter of time before the cloud is the pervasive technology that will power all the legal vendors. We knew that would happen, but nobody had a crystal ball to see when.”

However, big growth has only been recent. “That’s primarily because the cloud is no longer viewed as the highest risk of security,” he explains. “After people have been exposed to these technologies, they know that the only way they can achieve compliance with ISO 27001, SOC 2 or the new standard risk SOC 2+, is from the cloud.”

Finance has also played a part. Tedjamulia had always hoped that NetDocuments would reach its potential, “but it was not clear that this would happen until we received our first major capital infusion, then we were able to step on the gas,” he says. Frontier Capital acquired an equity stake in NetDocuments in mid-2014. “It was just when security and compliance became a major issue and clients were being more receptive. The combination of stars aligned so that we could really grow.” In March, Clearlake Capital, a Santa Monica-based growth equity firm, acquired NetDocuments from Frontier.

On the technical merits, clients often adopt NetDocuments because of the Microsoft relationship, he suggests. “Microsoft has asked us to be a cloud storage provider for Office 365. Eventually all Office 365 products will be able to recognise the NetDocuments cloud repository without any software being installed on those devices. This is the first time that the integration between Microsoft and a legal centre is being done by Microsoft itself by offering us as the cloud storage provider technology, as opposed to us having to integrate at every single point into the Microsoft products.

“Being a true cloud provider from a multi-tenancy architecture means we only have one document management application that services all our clients,” says Tedjamulia. This offers competitive advantages. “Once we receive an ISO 27001 certification or we are SOC 2+ compliant, everybody gets it because they use the very same application: it’s deployed to every user.”

The same applies with security and “the concept of NAS and SAN storage versus object store, or enterprise-based as opposed to cloud-based searches. It’s the concept of SQL versus NoSQL databases. Backend technologies that take years of perfecting.” Looking ahead, Tedjamulia believes that backend strong cryptography — a key NetDocuments feature — “will require more compliance. People are going to start demanding index encryption and data loss prevention.”

Once we receive an ISO 27001 certification or we are SOC 2+ compliant, everybody gets it because they use the very same application: it’s deployed to every user



# Revealing the art of the possible

## PitchPerfect – Enable Business Solutions

Enable Business Solutions only started four years ago. But the man behind it has been around for a little longer: Liam Flanagan (*pictured*) founded the legal tech firm Tikit in 1994, which floated on the London's AIM in 2001. When the business was sold to British Telecom for \$102m (£78.4m) in 2012, the then 57-year old felt he still had a lot to offer the legal market in providing a different type of software development company that integrated systems.

"I surrounded myself with friends, old colleagues, and family, who invested in the Enable business," says Flanagan. "Several good product ideas emerged, but one stood out immediately: PitchPerfect. There was such a big gap in the market for this type of application." In essence, PitchPerfect is designed to simplify and enhance the process of creating law firm pitch documents. What should be a simple exercise can often become tortuous and protracted for law firm marketers, business development professionals and partners.

Using a ribbon in Microsoft Word or PowerPoint, PitchPerfect delivers innovative software that effectively does the heavy lifting in a fast generation of branded marketing documents, making the process "as easy and as fast as possible." It links "seamlessly into Word or PowerPoint, steering clear of wizards and other applications that obstruct the document creation while minimising corruption, and the duplication of content and effort." Using Microsoft SharePoint as the CMS, PitchPerfect encourages firms to centralise their content and streamline the way in which they store, manage and update their information.

"PitchPerfect can be implemented quickly, usually within three to four months," explains Flanagan, "fulfilling law firms' pitch building and proposal generation requirements in a sensible timescale." To date, it is either used or being implemented by three Am Law 50 firms, two big Australian firms, the world's second biggest offshore law firm, and several top 100 UK firms.

Flanagan is proud to lead what he describes as "a formidable team of experts in their field who are all passionate about what they do: an equal blend of youth and experience – a wonderful combination to see working and developing together. They always listen for and identify opportunities to address problems and pain points that law firms face." Naturally, he encourages



"everyone to provide an excellent client experience and the best service."

His biggest challenge has been to build a completely new enterprise product from the ground up, and then to educate the market as to why they should use it. His bold aim is to make PitchPerfect number one in the world. In terms of competition, he points to web content management companies, which take a different approach: "They use wizards to harness the content and push it into Word, making extensive use of section breaks in a way they were not designed for."

Over recent years, the Enable team has demonstrated PitchPerfect to many law firms in multiple jurisdictions. "We're no longer surprised to hear sharp intakes of breath when we show how easy it is to build extremely sophisticated, visually appealing pitch and marketing documents that they can easily create in Word," he says. "We reveal the art of the possible that they never could have imagined. It is uplifting to see and hear their response."

Beyond PitchPerfect, Enable launched LegalPerfect at the end of 2016, designed to create legal agreements, contracts and other complex legal documents. Its technology is built upon the PitchPerfect platform. Since inception, this has also been "well-received by big law firm clients." Further AI, 100% cloud-based product offerings are in the pipeline. The Perfect pipeline that is.

**We're no longer surprised to hear sharp intakes of breath when we show how easy it is to build extremely sophisticated, visually appealing pitch and marketing documents that they can easily create in Word**



# Software so simple it's smart

## PracticePanther

"My partner and I met up at Starbucks: how all great start-ups start up," says David Bitton (pictured), CEO of PracticePanther. Having sold their previous tech businesses, they decided "let's go big, let's go crazy, let's go worldwide, let's do everything for everyone," he says. "Which is not the best thing to do. So we spent a year or two building this awesome software with time tracking, billing and file management. We launched and not much happened. We got no traction. It was not the exciting launch we'd hoped for."

Back at the drawing board, they realised "randomly and luckily" that a third of their paying customers were attorneys. "So we did a big pivot," says Bitton. "Re-branded, new name, new marketing, focused completely on attorneys."

PracticePanther was launched as "an easy and secure law practice management software for lawyers." He explains: "As soon as we launched, it was an instant success. The last few years, we've just exploded. Every week, we're adding new things and updating. We're moving so fast: we hate being stagnant and comfortable."

From day one, he says, they wanted to make PracticePanther software as "stupid, simple and easy as possible. We had the motto: stupid, stupid, simple. When people ask us: what makes you different? Ease of use is the answer. We want people to self-serve. They come to our website; they sign up for a trial; they know how to use it. They don't need to watch long training videos, webinars or tutorials. They should be able to figure it out on their own like when they turn on their iPhone for the first time. But it is really hard to make things easy."

Bitton did more than 50 usability tests with family members, including his grandparents, who do not know how to use computers. "We call it our grandfather test: if our grandfathers can use it, anyone can use it," he says. In terms of product evolution, step one was catch up to the competitors — "we were a few years behind," he adds. "Then deliver all the biggest features everyone needed. Initially, we were obsessed with competition. But we just don't care anymore, we're ahead of the game, we have the same features."

Step two, he explains, was: add new, innovative features that no one else had, always listening to customer feedback and improving



the software." Translation was added in response to demand from Latin America. "We are one of the few software companies that has built a translation engine," says Bitton. "This means our software can be translated by humans — not robots or machines — to any language worldwide."

Their initial target market was solo lawyers, primarily the 650,000 practising in the US. "We now have thousands of clients in over 35 countries," suggests Bitton. PracticePanther has 35 US-based staff and 60 in total worldwide. Within five years his main goal is to be the market leader, and more importantly, he adds, to go global.

Their hardest challenge has been new markets. "For example," he says, "when you advertise in Colombia — what magazines and what trade shows are there, how do you get the word out there? The answer to everything: it doesn't work that way. Also, the culture is completely different, price ranges are different so you have to adjust the price per country. Every month there's a new competitor in the US. But internationally, competition is still lacking so hopefully we can make a name for ourselves. We're probably going to be opening new offices in Australia, and possibly in England. People are begging us to come in and disrupt the market."

**When people ask us: what makes you different? Ease of use is the answer. We want people to self-serve. They come to our website; they sign up for a trial; they know how to use it**



Every week, we're  
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and comfortable

# Rating the nation's lawyers

## Premonition Analytics

How did two boys who grew up together as north London neighbours end up assembling the largest database of lawsuits on the planet? That is what Toby Unwin and Guy Kurlandski, respectively CIO and CEO of Premonition Analytics, have done over the last three years since they co-founded the business together.

As Brits living in the US, both men were on the receiving end of “frivolous” litigation. “Americans like to sue a lot,” says Kurlandski (*pictured*). “That happens 41,000 times a day in the US — 15 million civil law suits a year.” Among the impressive array of statistics at his fingertips, one in particular stands out: of all the litigation that occurs worldwide, in monetary terms roughly 95% happens in the US. It is therefore one of the biggest expenses for many US corporations.

As a result of his case, Kurlandski started to look for a lawyer in Florida. “Nearly 120,000 attorneys in the state with 17,000 active attorneys in Miami-Dade county alone, how could I possibly navigate that? How do I know which one is any good?” For various reasons, neither he nor Toby had much faith in the legal directories, legal awards or other published information. “We said to each other: there must be a better way.”

The result was Premonition Analytics: a system that identifies which lawyers win before which judges, how often and where. To capture the data was no easy task. “We started with Orange County, working on our machine learning to understand it,” says Kurlandski. They examined the individual court systems throughout the US. “To the best of our knowledge, it’s over 3,000,” he says. “They all run different systems, different URLs, 87% provide online access, but they are completely different, they write their dockets differently.”

To build a system that learns as it goes, Kurlandski explains, “we put our hands deep in our pockets to fund ourselves properly.” After 18 months, they compiled a system that covers the nation, providing win rates of attorneys across all 50 states. He adds: “Our system can go into all court systems. It extracts all the available data, including documents, decisions, motions, etc. so that we can get as full a string of information as is humanly possible.” This includes data by judge, type of case, court, district, and by attorney — and critically, their win rates.



“Generally you get what you pay for,” he says.

“The legal market is the complete opposite. Big white shoe firms often have several thousand attorneys; most of them are not David Boies and never will be. Some are good — we’ve proof of that — and some are not, and there’s everything in between.” Choosing the right lawyer based on past performance can improve your odds of winning by 30%, he suggests.

“We were asked: can we do it by UCIS codes, lines of business codes,” he adds.

“We developed that too. The insurance industry waned us to add in insurance lines of business. So we did. It’s a very positive tool for fine tuning the way claims are handled. Class action

law firms also like the data. There are unlimited uses for it. Clients have more confidence to pay more if they know they’re getting the best.”

Although its principal focus is the US, Premonition has also compiled Canadian and UK data and is gathering information from jurisdictions as diverse as Brazil and India. “I do like telling lawyers about what we do because they think our data is very dangerous for them,” says Kurlandski. “It probably is if they are not very good, but if they are good there’s nothing to fear.”

**It’s a very positive tool for fine tuning the way claims are handled. Class action law firms also like the data. There are unlimited uses for it. Clients have more confidence to pay more if they know they’re getting the best.**





# A tectonic shift in AI capability

## RAVN Systems

RAVN Systems delivers artificial intelligence (AI), search and knowledge management solutions across many sectors, including legal, real estate, finance and general corporates. But the biggest is legal: RAVN serves law firms such as Dentons and Linklaters while other clients range from British Telecom to the UK's Serious Fraud Office.

The RAVN website describes “a tectonic shift in perceptions concerning applied AI systems.” Since the company was founded in 2010 by Peter Wallqvist, Van Hoecke, Sjoerd Smeets and Simon Pecovnik, perceptions about AI have certainly shifted. The quartet, none of whom are lawyers, met while working for Autonomy.

“There are two stories,” says Wallqvist (*pictured*), RAVN's CEO. “One is technical — why these things are now possible — and the other is the credence that people put in the systems' output.” Technically, he concedes that most core AI algorithms are not new — the theory behind them has been around for decades — but it is the real world application that makes the difference.

“The reason it is happening now,” he suggests “and probably even more so in the next few years, is that the sheer computing power to do some of these things wasn't as widespread as it is now.” Wallqvist also points to “the sheer interconnectedness and digitisation of data — especially in the area where we operate with large document volumes and unstructured data.”

The main tectonic shift, he explains, is that the deviation between what a machine can do in the areas that RAVN operates in, and the correlation between the accuracy of the machine and the person, is essentially the same as between two people. When that can be statistically proven, perceptions shift.

Nevertheless, RAVN has a marketing issue. Wallqvist explains: “When people ask me to be concise, it's a genuine problem. We have a core AI platform that is extremely capable of interrogating any sort of data source: document systems inside law firms, or CRM systems in professional services firms, for instance. So we have had to also develop end-to-end applications that exploit the capability of that platform for different, specific business reasons.

“Most of our clients are still law firms — if they have made the choice to become more efficient. It's this inefficiency paradox that



we have to overcome. The UK may be the most modern market in the world for legal services: we have the Law Society and the SRA to thank for that: they have forced law firms to think about being more efficient.”

He says that when RAVN tells some law firms: “This will take about a quarter of the time it took you before, it's going to be more accurate and a lot quicker”, they just want to show you the door because they think that you're making them poorer. They're so wedded to the billable hour. Law firms adopting RAVN are finding ways to exploit that efficiency gain, rather than thinking: “there goes my hourly billing targets.” Market forces, he believes, will change minds.

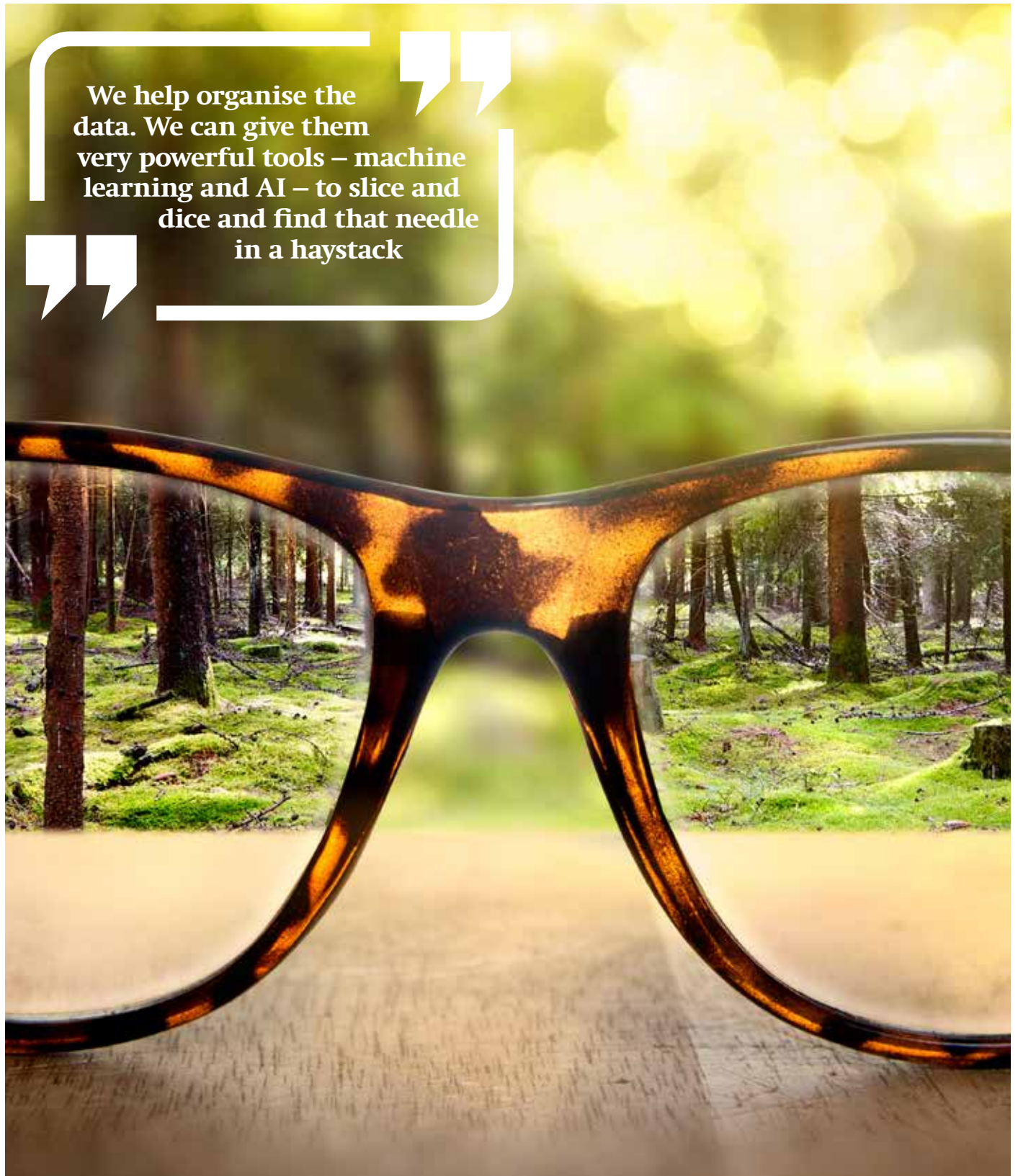
RAVN has just passed the 50 staff headcount. In addition to London, there is a small Amsterdam office. “We're growing quite a lot,” says Wallqvist. “A constant effort is to make our technology more consumable. The platform is now much easier for people that have had a little bit of training to use via an interface.

“When I speak to my counterparts in other tech companies in East London, they focus more on flashy web programming and apps, whereas we are engineers here. Maybe we wish we could be cool web people, but we're grounded in a more mathematical algorithmic approach.”

**The UK may be the most modern market in the world for legal services: we have the Law Society and the SRA to thank for that: they have forced law firms to think about being more efficient**



We help organise the data. We can give them very powerful tools – machine learning and AI – to slice and dice and find that needle in a haystack



# Finding truth through organised data

## Relativity

For a mature tech business, Relativity has been in rapid expansion mode, adding more than 100 staff in 2016 and a further 200 this year. The developers of e-discovery software Relativity, the company has been ranked the 175th fastest-growing technology company in North America on Deloitte's Technology Fast 500.

"We continue to see success in our core market," says Relativity's founder and CEO, Andrew Sieja (pictured). "We have strong ambitions of what we want to do going forward and we've started to build a lot of momentum in 2017. It's a huge investment year to build the operational and technical infrastructure to take our product to the next level."

Relativity started in 2001 building software products, which soon led on to consulting. "We did a project for a large law firm to build a document management system," he explains, "and after 2007, we pivoted the business to focus on selling what is now Relativity."

With more than 400 direct clients, 75% of Relativity's revenues come from the consulting firms that help corporations, law firms and government agencies with litigation. Indirectly, Sieja suggests, over 12,000 organisations use Relativity, mostly through the service provider community.

The Big Four have global deployments of Relativity's software, which can be applied in multiple languages. "They might have 60 deployments of Relativity worldwide, deployed in different jurisdictions with details of their large geographical footprint and their capabilities," says Sieja. "So it's easier for them to comply with all the regulatory rules about keeping data in a country while having the ability to deploy the technology worldwide."

"The mission of our software and of our company is very simple," he says. "We help our customers organise data and discover the truth, and act on it. We do this in the context of litigation, discovery and investigation. We are dealing with large amounts of information for many different individuals and types of organisations."

"We help organise the data. We can give them very powerful tools — machine learning and AI — to slice and dice and find that needle in a haystack. They help amplify the thinking of the lawyer and the investigator to make them more effective in working through data. If you open up the *FT* or *The Wall Street Journal* and



there's something really messed up happening in the world, there's a very good chance that the data is being organised with our software."

As an example, he cites a headline from the *WSJ* — *Software: The Attorney Who Is Always on the Job* about the US Department of Justice and its use of Relativity in reviewing the 2012/13 merger between Anheuser-Busch InBev and Grupo Modelo. Other users include the Federal Trade Commission, the Environmental Protection Agency, and The Hong Kong Security Exchange Commission.

So where does Relativity go from here? "A good proportion of our business is servicing international customers," says Sieja. "We have a physical presence in London, Australia and in Asia, Hong Kong. We're going to continue to expand in our international markets. The big development pull is continuing to invest in analytics and machine learning and taking our product and delivering in the cloud, which we call RelativityOne."

He explains that it is "cumbersome and difficult" continuously to upgrade the environment to take advantage of the latest innovations. The cloud overcomes the necessity for clients constantly to update their systems. "When they don't have to think about infrastructure any more," he says "they can start thinking about much more complicated, more value added things they can do for their clients." Anything else? I ask. "Just say that they are really nice guys," is Sieja's automatic response.

**If you open up the *FT* and there's something really messed up happening in the world, there's a good chance the data is being organised with our software**





# The algorithm that teaches and learns

## SpacedRepetition.com

A professor at Suffolk University Law School, Gabriel Teninbaum (*pictured*) is the founder of SpacedRepetition.com. “My focus is on teaching new approaches to the delivery of legal services, especially those innovative methods and new technologies. This project is an outgrowth of that: I want students to use the best tools to learn.”

Teninbaum’s network runs deep: in addition to directing Suffolk Law’s Institute on Law Practice Technology & Innovation, he also has appointments as a visiting professor at MIT, and as a visiting fellow at Yale Law School.

He started SpacedRepetition.com in 2014. The site uses a unique algorithm to help students learn far more in far less time. “An important focus for SpacedRepetition.com is helping law students succeed on the bar,” he says, adding that thousands of American law school graduates fail the exam every year. “But it can also be used by students and lawyers in other contexts to help them retain other legal knowledge. It has applications beyond law, too, but law is the current focus.”

Combining psychological research and web technology, the system is built on a series of electronic flashcards. The core content, called the Boost Deck, is written by law professors. “A student spends about ten minutes a day studying them, and for each flashcard they see, they rate how well they know each one on a scale of 1 to 5,” explains Teninbaum. “To customise the exact moment when a student should learn, the algorithm learns from their ratings: it knows what they’re struggling with, and what they know well. Users are then prompted to review at the ideal moment to maximise their learning.

“Studies show that by following that process — gathering enough data to predict when someone is going to forget and then reminding them just before — they’ll learn at an exponentially higher rate. The algorithm taps them on the shoulder and says: study this. Every user has a slightly different pattern of recall, so the algorithm customises uniquely to each student.”

Teninbaum confesses that he is more of an academic than a businessman. “There’s no venture capitalist looking over my shoulder saying: get big or die,” he quips. “It’s just me trying to



build something that’s great.” Nevertheless, success has been dramatic. More than 4,000 US students have signed up and the results are promising: at one school that offered access to all of its graduates, Teninbaum says: “The students who used the software passed the bar at a 19.2% higher rate than those who didn’t. At another, it was 21% higher. Students using the platform for their courses during school also significantly outperform their classmates.”

He adheres to the Pareto Principle: “We use this complex algorithm so people can learn 80% as much in 20% the time; and from there, we focus the content on the most-tested concepts, so users realise more dramatic efficiencies.” Users are projected to improve their score by about eight points on the bar. This has dramatic potential, according to Teninbaum, because “between a third and half of people who fail the bar fail by less than that margin”.

His mission is clear: “I hope to grow big enough to unseat bar prep companies that charge students thousands of dollars to watch videos summarising three years of legal education they just spent \$100,000 for. That’s offensive. To do that, the goal is to make this site as inexpensive as possible, and to make it accessible for everyone. I know that SpacedRepetition.com can change the way legal education works. We help people learn more, and we help people pass the bar exam when they would have otherwise failed.”

**We use this complex algorithm so people can learn 80% as much in 20% the time; and from there, we focus the content on the most-tested concepts, so users realise more dramatic efficiencies**

# Appealing to the reluctant innovators

## Tax Foresight – Blue J Legal

In December 2014, Professor Benjamin Alarie (pictured) was invited to sit on a judging panel for the IBM Watson Challenge. Along with the other judges, his role was to evaluate software that University of Toronto students had built for addressing legal issues using Watson, with a view to sending the best students on to compete against similar teams from universities across North America.

“Alongside me were senior IBM people, some venture capitalists and the chair and the associate chair of the department of computer science,” says Alarie. “I became totally fascinated by the idea of using AI and machine learning in law. I began to think about how we might use that in tax law.”

As associate dean of the law school at the University of Toronto, and a tax law professor, he proceeded apace. “I recruited colleagues from the law faculty and the computer science department and we started meeting with students to develop a solution.” Together, they developed “a rudimentary, clunky prototype” and planned to build a business.

Supported by funding from friends, family and other investors, they founded Blue J Legal and Alarie became CEO. “We started talking to our contacts at potential client firms, including large law firms and the Big Four accounting firms,” he says. “We rolled up our sleeves and started building.” The first prototypes correctly predicted 65% of outcomes. “But after more than a year of work, we were able to get the accuracy rates into the 90% plus range, which is really valuable.”

Blue J Legal’s current lead product is Tax Foresight, which predicts the outcome in tax cases. “If a tax professional is confronted with a challenging client situation, the professional can use our software to predict which way the tax court would decide,” explains Alarie. This allows tax accountants and tax lawyers to give “confident and well-calibrated advice of the highest quality,” based on all of the cases that have been decided before.

“When new users come with similar legal issues, we gather the facts from them, and then pose those facts to the algorithm: based on what you’ve seen in many hundreds of cases, how do you think a court would deal with this set of facts? In out-of-sample testing, the algorithms often get 90% or more of the cases right.”



So far, Tax Foresight has been built for Canadian law where it has been tested by leading firms.

“Although almost all lawyers are fascinated by the potential for AI and technology, they are not necessarily early adopters by nature. Lawyers tend to be reluctant innovators,” says Alarie.

But, he suggests: “If lawyers see that adversarial parties are relying on AI and machine learning tools to make better trial advocacy decisions or reach better settlements, it won’t take them long to say: ‘we need access to the same software because we need a level playing field when we’re going to battle for our clients.’”

In addition to analysing Canadian court decisions, “where there are important cases from other jurisdictions, we include them in the data set,” says Alarie. This includes UK and Australian court decisions, and occasionally, US judgments too. “As we grow, we’ll build the same functionality for the UK, US, and Australian markets, and then systematically collect the relevant case law,” he says.

International expansion will be mirrored by expansion into other areas of law. “The same technology can be used throughout the law: contracts, torts, intellectual property, employment, immigration, etc.,” suggests Alarie. Meanwhile the business has grown to 16 employees, Thomson Reuters is marketing its Tax Foresight software throughout Canada, and revenues are being ploughed back into accelerating product development.

**Although almost all lawyers are fascinated by the potential for AI and technology, they are not necessarily early adopters by nature. Lawyers tend to be reluctant innovators**



Our thinking was: if you put together a great product and deliver it in a way that satisfies the customer, then you can challenge or even take down big entities





# A matchmaker for lawyers and clients

## UpCounsel

"In our first month, we had eight lawyers, now we have over 50,000 signed up, about 80% of them in the US" says Matt Faustman (*pictured*), CEO of UpCounsel — and, according to his LinkedIn profile "chief helmsman, cheerleader, and storyteller". Together with his co-founder and CTO, Mason Blake, they were "massive fans" of Amazon — it inspired them to "dream big" and to "rethink the legal experience" for both clients and lawyers.

"We thought: can we see a world where the biggest legal provider is an internet company," says Faustman. "That seemed pretty audacious, especially considering how much these big law firm brands were shrouded in decades of performance. Our thinking was: if you put together a great product and deliver it in a way that satisfies the customer, then you can challenge or even take down big entities. We left our jobs and started UpCounsel based on this thesis."

After "hacking together a little bit of code", they started posting jobs on recruiting websites, seeking part-time lawyers. Faustman explains they wanted to "match clients and lawyers that have trouble finding one another, and make that relationship easy to manage, eliminate the opacity traditionally associated with legal services and find a way to make it easy for small businesses to get great legal services."

UpCounsel grew working with small businesses. But periodically, they saw that bigger companies were using them for more sophisticated routine legal work. "People started to associate us with a higher quality brand," says Faustman. In turn, a higher calibre of lawyer signed up. "When we first launched, the average experience was six years, now it's about 15," he says. "The high quality of the lawyers UpCounsel was attracting enhanced the brand. Lawyers and businesses started to regard us as an alternative to traditional law firms. It was a natural transition to start working with in-house counsel at companies like Airbnb and Stripe."

By early 2016, Faustman saw "a really interesting influx" of general counsel posting jobs in the UpCounsel marketplace. "We'd been working primarily with smaller companies, without in-house counsel. COOs, CEOs, and CFOs were telling their GC friends: 'UpCounsel has massed this really interesting community of the world's best freelancers, it might be something you could use'. Velocity picked up."



They launched an enterprise product specifically for in-house teams. Quality is carefully controlled. Only 5,000 of nearly 20,000 registered lawyers have access to customers through the marketplace or enterprise product. "There's an entire vetting process," says Faustman. This includes proprietary software and machine learning to determine if they have a minimum six years' experience, whether they have worked in-house — a common client demand — and/or at top 200 law firms, as well as relevant expertise.

Reviews from previous customers are encouraged. "We interview them to see how they interact," adds Faustman. "We allow lawyers to set their own prices, giving them guidance on how to maximize their income, taking into account what customers are willing to pay. The arbitrage between what big law charges and the real attorney rate is just unbelievable. Big law firms have significant overhead costs built into their rates. On UpCounsel, you will see a lawyer with the same quality background charging 60% less."

UpCounsel works with "any business in any part of the country." About 15% of its customers are non-US, doing business in the US. "We've started tapping lawyers internationally with our Enterprise product and a select group of Enterprise customers," says Faustman. "We have the supply, but we're very careful about where we spend: we're still a small company. We're part of a movement, a huge cultural shift that's bigger than us."

**Big law firms have significant overhead costs built into their rates. On UpCounsel, you will see a lawyer with the same quality background charging 60% less**



### About Legal Week Intelligence

Legal Week Intelligence is the independent research division of *Legal Week*, part of the ALM Media group of leading business publications.

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Fulcrum GT's commitment to strategic, digital transformation and client success is unparalleled in the legal solutions industry. Its solutions ecosystem, built on the world's largest and most advanced enterprise software platform, SAP HANA, covers the end-to-end business requirements of today's leading law firms.

Combining Fulcrum's legal expertise with SAP's enterprise experience, it delivers best-in-class business processes and industry best practices to your firm. And, with world class support and BPO services, Fulcrum ensures your success in the competitive legal marketplace.

[www.fulcrum-gt.com](http://www.fulcrum-gt.com)

### Methodology

To produce the second *Top 20 Legal IT Innovations* report, we canvassed views across a broad spectrum of those involved in the legal sector.

Research was undertaken between March and May 2017 involving hundreds of hours of interviews and discussion with innovators in multiple jurisdictions.

In deciding who made the list, we used various criteria to identify those innovations that were most groundbreaking in their use of technology, systems and processes, who applied that directly within the field of legal services and who demonstrated a sustained commitment to the use of IT to improve client services.



