

HOW THE 4TH INDUSTRIAL REVOLUTION
IS SHAPING THE PRACTICE OF

LAW

AN ENVIRONMENTAL SCAN

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To understand the affect of the 4th Industrial Revolution on the practice of law, a scan was conducted on the current trends taking shape in the legal ecosystem.

The following guiding questions were used as a departure point to initiate the scan:

- How is the industrial revolution shaping our concept of legal rights?
- Who are the role-players and how are they adopting technology?
- Where has the funding for legal technology coming from?
- Is technology enhancing service or changing service?
- What regulation is in place to enhance or hinder development?
- What do these questions look like through the STEEP lens?

These aspects were considered globally, and then brought back to focus locally in South Africa. This brings an interesting dynamic to the scan; while the world converges as a result of the 4th Industrial Revolution, the legal systems are still territorial, in application and approach. Due to the different trajectories of growth geographically, the future seems to be happening in different time zones, which corresponds to our understanding, adoption and application of legal rights and how the law is practiced.

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1. SOCIAL | The Industrial Revolution

The law has no history, according to Marx and Engels in *Die Deutsche Ideologie*. It is an epiphenomenon, a superstructure determined by socio-economic relationships. In such a way, lawyers are merely the agents and supporters of the rules. Studying their history, and by implication, their future, could bring us nothing new. We have to study the world to understand the sphere of law.

Embarking on an environmental scan of the how the 4th Industrial Revolution will shape the practice of law, we have to therefore initiate with an understanding of the future world, with specific focus on the socio-economic relationship shifts brought about by the 4th IR.

In *Future Politics*, Jamies Susskind describes a world shaped by the 4th IR as one that has become hyper-connected, with a new and different type of collective life emerging. He calls it the *digital lifeworld*, referencing the German *Lebenswelt*, 'meaning all of the immediate experiences, activities, and contacts that make up our individual and collective worlds.' In this world our concept of rights change the further we venture into the future. Possible new governing structure emerge, control shifts and humans change.

Framing the 4th IR becomes problematic time-wise, as the majority of resources focus on manageable timeframes, steering clear of the future beyond the next decade, holding that the technological disruption is too uncertain to conceptualise. Although we are living through the revolution, we cannot anticipate when it will slow, or how long and permanent, the social shifts brought about are. For the most part, we tend to envision a world based on the current one, and imagine futures as hyped-up versions of today. Whether you believe in hype-cycles and tech slowdowns, we drift in uncertainty equal to that of the quantum world, ironically, as we venture into quantum computing. The inability to frame further, makes the question of future rights uncertain, as the concept of law changes in accordance to society. which poses the greatest question of whether the law can ever be pro-active in regulating change.

We therefore start the scan by looking at the 4th IR. We look at far-future aspects by Jamie Susskind in how code can become law, then on to Andrew McAfee and Erik Brynjolfsson who paint the world of the second machine age, then brings it closer in time, and closer to home, with the Department of Trade's responses to the DIR and how companies fare in keeping pace with the digital disruption. Interestingly, emerging markets seem to be more robust.

Those in the legal fraternity should pay close attention to the disruptors, the technological advancements and the shift in society to ensure relevance of practice, but also, fundamentally, aid society in answering new questions on rights, regulations and ethics.

For the generation now approaching political maturity, the debate will be different: to what extent should our lives be directed and controlled by powerful digital systems—and on what terms? This question is at the heart of Future Politics.

Those who control these technologies will increasingly control the rest of us. They'll have power, meaning they'll have a stable and wide-ranging capacity to get us to do things of significance that we wouldn't otherwise do. Increasingly, they'll set the limits of our liberty, decreeing what may be done and what is forbidden. They'll determine the future of democracy, causing it to flourish or decay. And their algorithms will decide vital questions of social justice, allocating social goods and sorting us into hierarchies of status and esteem.

Ray Kurzweil and others predict that within the next decade or so, a normal desktop machine (costing \$ 1,000 or thereabouts) will rival and surpass the processing power of the human brain. By 2050, 'one thousand dollars of computing will exceed the processing power of all human brains on earth'.

If this sounds unlikely, look back to where we have come from. Just thirty years ago, it would have needed 5,000 desktop computers to rival the processing power of today's iPad Air. Sixty years ago, 2010's iPad2 (now hopelessly out of date) would have cost \$ 100 trillion, roughly twenty-five times the United States federal budget for 2015.⁴⁴ The average smartphone has more processing power than the Apollo Guidance Computer that sent Neil Armstrong to the moon.

Code is Power

What's this got to do with power? Well, when we interact with digital technologies we also necessarily submit to the dictates of their code. To take a simple example, you can't access a password-protected document unless you enter the correct password: the machine has no choice or discretion in the matter, and neither do you. It makes no difference that the document contains vital medical information that could save your life. It also doesn't matter that the only reason you don't know the password is because you forgot it. The code won't allow you to do what you would otherwise do.

Because of code's ability to direct our conduct in a finely honed way, many distinguished thinkers, following the pioneering work of Harvard professor Lawrence Lessig, have argued that code is law (or at least that code is like law).

In the digital lifeworld the use of force will be subject to three important changes in years to come. The first is what I call the digitization of force: a shift from written law to digital law. The second is what, borrowing from Lawrence Lessig, we can call the privatization of force, eroding the state's long-held monopoly on its use. The final change is the automation of force, with the emergence of autonomous digital systems that can exert force against humans without immediate human oversight and control.

Now comes the second machine age. Computers and other digital advances are doing for mental power—the ability to use our brains to understand and shape our environments—what the steam engine and its descendants did for muscle power.

This work led us to three broad conclusions. The first is that we're living in a time of astonishing progress with digital technologies—those that have computer hardware, software, and networks at their core.

Our second conclusion is that the transformations brought about by digital technology will be profoundly beneficial ones. We're heading into an era that won't just be different; it will be better, because we'll be able to increase both the variety and the volume of our consumption.

Thirdly, technology can bring us more choice and even freedom.

Rapid and accelerating digitization is likely to bring economic rather than environmental disruption, stemming from the fact that as computers get more powerful, companies have less need for some kinds of workers. Technological progress is going to leave behind some people, perhaps even a lot of people, as it races ahead.

As we'll demonstrate, there's never been a better time to be a worker with special skills or the right education, because these people can use technology to create and capture value. However, there's never been a worse time to be a worker with only 'ordinary' skills and abilities to offer, because computers, robots, and other digital technologies are acquiring these skills and abilities at an extraordinary rate.

As the cognitive scientist Steven Pinker puts it, "The main lesson of thirty-five years of AI research is that the hard problems are easy and the easy problems are hard. . . . As the new generation of intelligent devices appears, it will be the stock analysts and petrochemical engineers and parole board members who are in danger of being replaced by machines. The gardeners, receptionists, and cooks are secure in their jobs for decades to come."

The old business saying is that "time is money," but what's amazing about the modern Internet is how many people are willing to devote their time to producing online content without seeking any money in return.

In addition to powerful and useful AI, the other recent development that promises to further accelerate the second machine age is the digital interconnection of the planet's people. There is no better resource for improving the world and bettering the state of humanity than the world's humans—all 7.1 billion of us. Our good ideas and innovations will address the challenges that arise, improve the quality of our lives, allow us to live more lightly on the planet, and help us take better care of one another. It is a remarkable and

unmistakable fact that, with the exception of climate change, virtually all environmental, social, and individual indicators of health have improved over time, even as human population has increased.

We can't predict exactly what new insights, products, and solutions will arrive in the coming years, but we are fully confident that they'll be impressive. The second machine age will be characterized by countless instances of machine intelligence and billions of interconnected brains working together to better understand and improve our world. It will make mockery out of all that came before.

But the rise in digital business innovation means we need innovation in our economic metrics. If we are looking at the wrong gauges, we will make the wrong decisions and get the wrong outputs. If we measure only tangibles, then we won't catch the intangibles that will make us better off. If we don't measure pollution and innovation, then we will get too much pollution and not enough innovation. Not everything that counts can be counted, and not everything that can be counted, counts. As Nobel Prize winner Joe Stiglitz put it: The fact that GDP may be a poor measure of well-being, or even of market activity, has, of course, long been recognized. But changes in society and the economy may have heightened the problems, at the same time that advances in economics and statistical techniques may have provided opportunities to improve our metrics.

The evolution of photography illustrates the bounty of the second machine age, the first great economic consequence of the exponential, digital, combinatorial progress taking place at present. The second one, spread, means there are large and growing differences among people in income, wealth, and other important circumstances of life. We've created a cornucopia of images, sharing nearly four hundred billion "Kodak moments" each year with a few clicks of a mouse or taps on a screen. But companies like Instagram and Facebook employ a tiny fraction of the people that were needed at Kodak.

Our recommendations about how people can remain valuable knowledge workers in the new machine age are straightforward: work to improve the skills of ideation, large-frame pattern recognition, and complex communication instead of just the three Rs. And whenever possible, take advantage of self-organizing learning environments, which have a track record of developing these skills in people.

Yes, second-machine-age technologies are quickly leaving the lab and entering mainstream business. But as rapid as this progress is, we still have lots of human cashiers, customer service representatives, lawyers, drivers, policemen, home health aides, managers, and other workers.

Even in the face of all these challenges—economic, infrastructural, biological, societal, and existential—we're still optimistic. To paraphrase Martin Luther King, Jr., the arc of history is long but it bends towards justice. We think the data support this. We've seen not just vast increases in wealth but also, on the whole, more freedom, more social justice, less violence, and less harsh conditions for the least fortunate and greater opportunities for more and more people.

We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before.

The First Industrial Revolution used water and steam power to mechanize production. The Second used electric power to create mass production. The Third used electronics and information technology to automate production. Now a Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.

There are three reasons why today's transformations represent not merely a prolongation of the Third Industrial Revolution but rather the arrival of a Fourth and distinct one: velocity, scope, and systems impact.

The possibilities of billions of people connected by mobile devices, with unprecedented processing power, storage capacity, and access to knowledge, are unlimited.

An underlying theme in my conversations with global CEOs and senior business executives is that the acceleration of innovation and the velocity of disruption are hard to comprehend or anticipate and that these drivers constitute a source of constant surprise, even for the best connected and most well informed. Indeed, across all industries, there is clear evidence that the technologies that underpin the Fourth Industrial Revolution are having a major impact on businesses.

Major shifts on the demand side are also occurring, as growing transparency, consumer engagement, and new patterns of consumer behavior (increasingly built upon access to mobile networks and data) force companies to adapt the way they design, market, and deliver products and services.

But such an approach is no longer feasible. Given the Fourth Industrial Revolution's rapid pace of change and broad impacts, legislators and regulators are being challenged to an unprecedented degree and for the most part are proving unable to cope.

Neither technology nor the disruption that comes with it is an exogenous force over which humans have no control. All of us are responsible for guiding its evolution, in the decisions we make on a daily basis as citizens, consumers, and investors. We should thus grasp the opportunity and power we have to shape the Fourth Industrial Revolution and direct it toward a future that reflects our common objectives and values.

In an already uncertain global economy the DIR is expected to have disruptive impacts on all economies, but especially on lower- to middle-income countries that find it difficult to keep abreast of the rapid speed of technological advancement and innovation.

For South Africa, the Digital Industrial Revolution poses substantial challenges and offers perhaps rather fewer immediately clear-cut opportunities for the domestic economy.

Opportunities

A strength of South Africa's position in the context of the DIR is its access to market opportunities across the African continent. Potential advantages include a broad youth base, a fast-growing growing continental middle class, access to global value chains as technology suppliers and the chance for SMEs to capitalise on new technologies.

Threats

Currently, we are not very well placed, ranking between 46th and 75th globally on a variety of metrics termed 'Readiness for the 4th Industrial Revolution'.

The key known components of the DIR - the Internet of things, big data, artificial intelligence, automation, robotics, new processes and materials, additive manufacturing, logistics, marketing techniques and sales channels - will put enormous pressure on areas where South Africa is currently lagging or weak:

- enabling infrastructure (broadband and communications);
- system of education and skills - more skilled jobs, less manual work;
- the traditional separation between primary and tertiary industrial sectors will not be sustainable as the distinctions between different sectors becomes increasingly blurred. (cf. the 'industrialisation of freshness').

In 2016 Cabinet approved the National Integrated ICT Policy White Paper which addresses the development of converged technologies, digitisation, how South Africans use the internet, communication and work.

The White Paper recommends that all South African citizens, irrespective of where they live or their socio-economic status, have a right to access and participation in the digital society. In addition, the department of Telecommunication and Postal Services (DTPS) has developed a National e-Government Strategy aimed at modernising and transforming future public service delivery.

Available from: <https://www.delltechnologies.com/en-za/perspectives/digital-transformation-index.htm>

The fact is, transformation is critical for every kind of business. That's why Dell Technologies, in collaboration with Intel and Vanson Bourne, created the Digital Transformation Index. We surveyed 4,600 business leaders across 40+ countries to analyze their organizations' efforts.

Too many companies are lagging behind the digital transformation curve. Overall, progress has been slow. Once again, just 5% are Digital Leaders.



Emerging markets are faring better.

"We'll disrupt rather than be disrupted within five years"

-53% Emerging

-40% Developed

91% of businesses are facing persistent barriers to digital transformation:

1. Data privacy and security concerns (up from #5 in 2016)
2. Lack of budget and resources
3. Lack of in-house skills and expertise
4. Regulation and legislative changes (up from #9 in 2016)
5. Immature digital culture

Emerging technologies are transforming our world and providing a huge opportunity for organizations to leap ahead of their peers. However, the DT Index reveals the majority of businesses still have a long way to go to realize their future. The risk of falling further behind and finding themselves on the wrong side of the digital economy is real.

THE TIME TO ACT IS NOW WHILE A HUGE OPPORTUNITY REMAINS IN PLAY.

2. TECHNOLOGY | Trends Shaping Practice

In this section we scan the environment for the trends that are currently shaping the practice of law. Most of the dominant technologies in practice today are focussed on enhancing the practice of law as it stands, by enhancing operations, research capabilities and aim at achieving greater accuracy and efficiency in practice.

There are naturally divergent views on how technologies are developing and what they hold for the practice of law. The tech-evangelists preach about AI replacing lawyers altogether, while the more pragmatic hoist the noise as simply *that*; noise. These sober agents believe that the hyped-up trends are mostly elaborate labels for old technologies that strengthen what already exists and that the tech hype is in fact slowing down.

As these arguments of which future is more probable continue, there is a continual, gentle shift in the tectonic plates of our society, and as a result, in the legal fraternity. The world is changing. Rights are shifting, Asia, with its own history of laws and philosophies on human rights, is heading the race in many aspects, emerging technologies like blockchain is maturing, new concepts like quantum computing with truly exponential potential is being tested in the labs of IBM, CERN, NASA and Google.

This scan focuses on a closer future, but it is worthwhile to bear the possibilities of tech and a world in 2050 in mind when looking at the trends posed in the closer future. For now, this section of the scan includes a directory of 2019's tech trends by the Future Institute Today for lawyers to take note of, a pragmatic look at AI for legal practice, the top current trends and then it turns briefly to blockchain that is dubbed the next frontier in legal tech. The scan then delves into tech trends that do not shape practice, but how government could deploy technology to ease the justice system, from enhancing the court system and judgment-bias to allowing for great access to justice, which still remains a tremendous encumbrance globally.

Finally we turn to South Africa to look at what trends are taking shape locally.

This report is intentionally broad and robust. We have included a list of adjacent uncertainties, a detailed analysis of 315 tech trends, a collection of weak signals for 2020, and more than four dozen scenarios describing plausible near futures.

Key Takeaways:

Privacy is dead.

One persistent theme in this year's report is surveillance. Whether it's how hard we press on our mobile phone screens, our faces as we cross an intersection, our genetic matches with distant relatives, our conversations in the kitchen or even the associations we keep, we are now being continually monitored. Just by virtue of being alive in 2019, you are generating data—both intentionally and unwittingly—that is mined, refined, productized and monetized. We no longer have an expectation of total privacy. At least not like we've known it before. Companies that rely on our data have new challenges ahead: how to store the vast quantities of data we're generating, how to safeguard it, how to ensure new datasets aren't encoded with bias and best practices for anonymizing it before sharing with third parties

The Big Nine.

There are nine big tech companies—six American, and three Chinese—that are overwhelmingly responsible for the future of artificial intelligence. They are the G-MAFIA in the US: Google, Amazon, Microsoft, Apple, IBM and Facebook. In China it's the BAT: Baidu, Alibaba and Tencent. Just nine companies are primarily responsible for the overwhelming majority of research, funding, government involvement and consumer-grade applications

China continues to ascend, and not just in artificial intelligence.

China is pushing ahead in many different fields. It has launched a space race with ambitions not just to return humans to the moon, but to build indoor farms and livable spaces on the lunar surface.

Lawmakers around the world are not prepared to deal with new challenges that arise from emerging science and technology.

In 2019, we are sure to see proposals for new regulatory frameworks. However these new rules, regulations and policies won't be modeled to understand their broader, next-order implications. Or whether they can be enforced, as technology and science continue to evolve.

Personal data records are coming.

We will start to see the emergence of "Personal Data Records," or PDRs. This is a single unifying ledger that includes all of the data we create as a result of our digital usage (think internet and mobile phones)

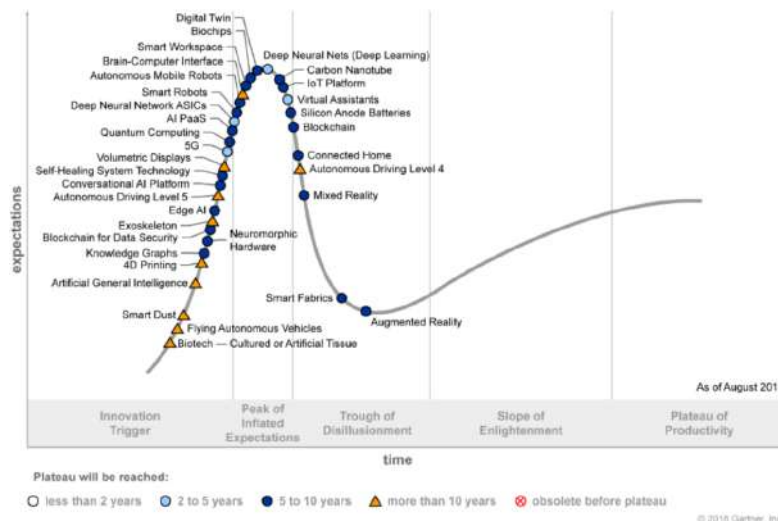
The Most Important Tech Trends For Lawyers, Law Firms and Legal Industry

Consumer-Grade AI Applications	Synthetic Voices	Social Tweaks to Social Network Algorithms
Ubiquitous Digital Assistants	Persistent Recognition	Holograms
Bigger Role For Ambient Interfaces	Bias in Recognition Technologies	360-degree Video
Deployable AI Versions of You	Security	Augmented Reality
Ongoing Bias In AI	Privacy	Virtual Reality
AI Bias Leads To Societal Problems	Data	eSports
Making AI Explain Itself	Drones (all)	Extreme Weather Events
Accountability and Trust	Flying Taxis	Human Migration Patterns Shift
AI Cloud	Autonomous Underwater Vehicles	Cannabis Technologies
New Kinds of Liability Insurance for AI AI Spoofing	Drone Delivery	Genome Editing
Ambient Surveillance	Drone Lanes	Digital Addiction
Marketplaces For AI Algorithms	Follow Me Autonomously	Patient-Generated Health Data
Even More Consolidation in AI	Drone-Enabled Infrastructure	The Big Nine's Health Initiatives
Real-Time Machine Learning	Drone Swarms	Interactive Mirrors
Natural Language Understanding	EV Mechanics and AV Engineers	Vaping and E-cigarettes
Machine Reading Comprehension	Assisted Driving Before Full Automation	Wearables
General Reinforcement Learning Algorithm	Adaptive Driving Systems	GDPR, Privacy Laws, and Hackers
Machine Image Completion	Electric Vehicles Boom, Especially in China	Threaten the Internet of Things
Predictive Machine Vision	Cognitive Active Safety Features	Searching The IoT and the IoPT (Internet of Physical Things)
Much Faster Deep Learning	Demand For Electricity	Blockchain Technologies
Reinforcement Learning and Hierarchical RL Continuous Learning	Transportation as a Service Business Models	Cryptocurrencies Self-Sovereign Identity Immutable Content
Multitask Learning	Mandated Updates	Automated Credit Risk Modeling
Generative Adversarial Networks (GANs) New Generative Modeling Techniques Capsule Networks	Exponential Growth in Autonomous Miles Data	Splinternets
Probabilistic Programming	Autonomous Vehicle Testing Gets Regulated	US and Global Election Security
Languages Automated Machine Learning (AutoML) Customized Machine Learning	Analog Fallbacks	Trying To Regulate Big Tech
Bots	Autonomous Last Mile Logistics	Multilateral Science and Technology Acts Anti-Trust Lawsuits
Biometric Scanning	Car Interfaces Drive the Voice Assistant Wars	Old Laws Clash With New Technology
Voiceprints	China's Foreign Infrastructure	Governments Asking Tech Companies To Help
Gesture Recognition	Investment Human-Machine Interfaces	Overhauling Government Tech Infrastructure
Personality Recognition	Robot Abuse	Space Tourism
Emotional Recognition	I-Teams For Algorithms and Data	Commercial Space Programs
Bone Recognition	Crowdlearning	MicroSats and CubeSats Galactic Ride Sharing
Genetic Recognition	Synthetic Data Sets	Mercury Problems
Universal Genetic Databases	Algorithmic Fact Checking	China's Space Ambitions Asteroid Mining For Resources Space Exploration
Behavioral Biometrics	Optimizing For Voice Search Media Consolidation	
WiFi Recognition	The First Amendment in a Digital Age	
Ambient Tracking		
Computational Photography		

Available from: <https://medium.com/@Grupp/25-facts-about-ai-law-you-always-wanted-to-know-but-were-afraid-to-ask-a43fd9568d6d>

In law, AI is still all the talk. Most of it is slightly or utterly incorrect. Discoveries in recent years have little impact on the automation of legal work and the legal industry. Legal reasoning is different from other fields — technology should reflect this.

We are not really in a “new era”. We are just living another hype. There is a leading market research agency that openly and regularly (some form of machine learning has been peak hype since 2015) debunks feasibility without anyone really caring. According to Gartner, 90% of applications probably don’t work (as advertised) and 90% of talks about AI are bullocks. This also means, that your fears and aspirations regarding implications of that technology are probably unfounded.



The “new” AI-achievements in other industries don’t really help lawyers. In other words: The factors that have fuelled the AI-discussion in the last 7 years are of (almost) no relevance for AI in law.

So you probably know that *syntax* describes the signs and symbols we use to convey information (e.g. the syntax of the word ‘Giant’ is 5 letters, capital G, i, a, n and t.), while *semantics* describe the content, the meaning of words (e.g. the semantics of ‘Giant’ is ‘very tall person’ including mental connections with the meaning, denotations, connotations, feelings, etc.). While the *syntax* is universally constant and generally objective, *semantics* change and always require a certain level of interpretation. For legal content (or any other domain-specific content), there is even an additional level of semantic information necessary to understand the meaning of something.

Summing this up, law is in a unique position—in a good and in a bad way: Most legal reasoning cannot easily be automated through machine learning. There are more and more fields where applications (e.g. for doc analysis) help, but most of the time, it is significantly cheaper and easier to proceed manually. Or

through rule-based automation, which I will discuss some other time. For lawyers—or in fact, most regulatory experts applying rules as a job—this seems to be good news: jobs are safe.



On the other hand, this is rather bad news, really. It is the business dictating innovation. If lawyers are expensive and if the legal profession cannot keep up, tech and innovation will rather circumvent the legal services. We see increasing numbers of intelligent applications cutting legal fees and legal intervention wherever possible, without processing legal data at all. E-commerce has shown that metrics allow businesses to regulate themselves, leaving little to no dispute resolution to the legal system.

We do NOT have the necessary data for training legal machine learning algorithms (Part 1: Formalization). However, that does not mean that this is applicable for all legal questions and tasks. Most legal reasoning will remain mundane, manual work. This is due to the fact that we do not have formalized data. We do not even have data, in that sense.

Taking this to legal data, we need labels. In order to train an algorithm to automatically find “good” NDAs versus “bad” NDAs we need to explain, what good and bad actually mean. Hence, we need to annotate legal texts with the labels we later wish to use as a connection for the determining factors. As for an NDA clause being “good” or “bad” we have a number of legal considerations, the algorithmic model would have to discover these considerations on its own, too. Or at least mimic it.

There are more caveats: We cannot use older versions of contracts. We cannot use documents that are used under different regulations. And of course, we have to re-do this once any provision changes. Why? Because the determining factors linking certain legal question to certain labels may change, once a law changes. So if you were hoping to just cram a decision database of your Higher Courts into an algorithm, this is bad news.

The biggest obstacle in training algorithms with legal data is the ontological structure of the knowledge. Going through law school and legal professional education we acquire an immense amount of legal knowledge structured in a way to resemble a giant tree or cluster.

Finally, we need world knowledge to truly automate legal reasoning. To keep it simple, this means to extend the aforementioned ontologic semantic structure to an even greater extend to anything else in the world. Cars. Companies. Coal. Cocoa. Calcium.

The Most Important Tech Trends For Lawyers, Law Firms and Legal Industry:

We've curated lists to help you quickly identify the most important tech trends that will matter to your team, organization and industry in 2019. As we noted in last year's piece, the legal industry has been fairly slow to catch up with digital transformation. That said, it means there is huge potential in this industry to optimize efficiency, improve processes, and offer new types of legal services altogether.

Cloud and Mobile

This coming year, we'll continue to see an increased focus on Software as a Service and other cloud-based mobile services that allow for improved accessibility of client files, old cases, and other legal resources. This is especially true when it comes to pay-as-go services that allow firms to tighten their overhead while improving service to their clients.

Virtual Law Firms

We'll be seeing entire virtual law firms take flight. Because of the increase in cloud and mobile, legal professionals will have greater flexibility in where and how they work. This allows legal powerhouses on two different coasts to team up in one firm.

Social Media

I anticipate we'll see a growing number of lawyers find their place on social media, connecting with the public and one another—be it YouTube, blogging, or podcasting—in 2019. And when it comes to digital transformation trends in law, this makes me really excited. It makes legal issues of all kinds more accessible to all of us ...

Cybersecurity

Research shows 80 percent of the largest firms in the United States have already experienced a malicious breach. The study also found nearly 60 percent of all emails directed at the firms was classified as phishing.

Customer/Client Relationship Management

This software makes it super easy to consolidate client files—update them with the latest information—and do a quick read-through before the next big meeting. CRMs don't just save face. They save time and improve case management, as well.

Performance Measurement

we'll see a focus on using technology for analyzing data, managing caseloads, forecasting outcomes, and even deciding on whether or not to take on a new client. More than 50% of top global law firms today are using some form of business intelligence to enhance performance management

Electronic Discovery

Today's AI and machine learning are going a long way to make that process much less cumbersome, and I anticipate this becoming a growing niche industry in 2019—with some firms even using AI to assist with decision-making in litigation.

Most practicing attorneys today know very little about blockchains. But over the next decade, many, if not most lawyers, will be dealing with them on a daily basis, including those practicing in mergers and acquisitions, finance, real estate, tax law, employment law, health care, insurance, entertainment law, family law, bankruptcy, criminal law, intellectual property—in fact, almost every legal practice area that exists. Some attorneys are already being exposed to blockchain in their practices, and many others are quickly trying to educate themselves on this important emerging technology.

What Is a Blockchain?

A blockchain, sometimes called a distributed ledger, is an online database that instead of being controlled by a central authority—as is the case with cloud storage—is created, managed, and used in a decentralized way by its users, and hence is known as a peer-to-peer network. Each user in the network (“node”) holds a copy of the blockchain.

The shared and permanent nature of a blockchain creates the perfect environment for the transfer of assets (physical, informational, or financial). A blockchain network eliminates the need for a central record system or intermediary to establish ownership and trust, allowing individuals with no previous relationship to exchange assets in a secure manner.

“Smart” Contracts

The blockchain was built for Bitcoin, but this same underlying technology has potential application in a broad range of transactions that historically required some degree of third-party authentication or a trusted intermediary. The advantage of blockchain is that it provides for a “trustless trust”—it uses technology to create trust through a decentralized system where there is no pre-existing relationship or intermediary needed.

An example of broader applications is “smart” contracts, which are computer programs that run on distributed ledger technology to execute the terms of a contract automatically under conditions and outcomes encoded into the program. The program could even use Google search to monitor real-world events such as commodity prices or the death of the settlor of a trust fund to trigger action on the contract. One could also envision credit agreements that disable the financed product if the borrower defaults on its repayment obligations. A borrower might, for example, purchase a new car on credit. If the car is equipped with the appropriate computer transmission equipment, and the borrower defaults on its repayment obligations by an agreed-on measure (e.g., payments are 90+ days in arrears), the smart contract could send a signal to lock the car doors, disable the ignition, and provide the car’s GPS location to the lender for repossession.

New Blockchain Applications Coming

An asset can be a vote, a photograph, a video, an order. It can be a digital representation of a physical item such as a diamond. Every time an update to an asset occurs, that update is posted as a transaction to a block. Once a certain number of updates or transactions occur, the block is then validated and posted to the blockchain. The decentralized attributes of blockchain technology eliminate data control, censorship, manipulation, or loss.

Real estate is another area that will be rapidly transformed by blockchain. It could be used to identify and track the owners of specific parcels of property, as well as anyone with a mortgage or other interest in that same property, making traditional title searches obsolete.

Legal Implications

Blockchain is a disruptive technology that will displace many legal billable hours in contracts, real estate, finance, and other practice areas. At the same time, blockchains will create their own novel legal issues that will require informed legal advice, and there is already demand starting to build for attorneys who understand this technology.

For example, smart contracts, while likely displacing many lawyers currently involved with drafting and enforcing contracts, will create new legal issues—such as what happens if it is subsequently discovered that fraud was involved in setting the contract terms, or events occur that were unanticipated in the smart contract.

Regulatory issues will be important for blockchain— to provide adequate oversight without stifling or unduly constraining innovative new uses of the technology.

Many other legal issues will need to be addressed. Given that a blockchain has no central server or intermediary, but rather is distributed through nodes that may be scattered all across the nation or world, there will be challenging issues about jurisdiction and choice of law in legal matters involving it. There will be issues about who is liable when something goes wrong with a blockchain. Bankruptcy presents another interesting angle, as how will assets stored on various blockchains be identified and distributed?

Conclusion

Blockchain technology is poised to become a key part of the background architecture of many transactions. Arthur C. Clarke famously observed, "Any sufficiently advanced technology is indistinguishable from magic."

Attorneys will play a central role in understanding, applying, and incorporating this important new technology into our economy, lives, and legal practices. Like all change, blockchain presents an opportunity and a threat to practicing attorneys. Those who get in front of the technology and understand it will be at the forefront of the changing technology-driven legal landscape of the 21st century. Those who delay and ignore will risk being left behind.

50%

China's First Blockchain-Enabled Notary Opens Office in Beijing

Adrian Zmudzinski | CoinTelegraph | 22 April 2019

Available from: <https://cointelegraph.com/news/chinas-first-blockchain-enabled-notary-opens-office-in-beijing>

China's first blockchain-enabled notary has opened offices in Beijing. Per the report, the service opened last Friday at the Beijing CITIC Notary Office. The head of the office reportedly stated that the development marks the beginning of the blockchain notary service era.

The director of the Beijing CITIC Notary Office Wang Mingliang noted that he believes that blockchain-based notarization has both the value of notarization and legal significance of blockchain certification. Hu Jiyu, a professor at the School of Business of China University of Political Science and Law, is also quoted stating that blockchain has the advantages of low cost, high efficiency and stability.

The newly implemented system purportedly allows the certificate holder to verify the contents of the document by scanning a code. Blockchain integration in the notary industry will purportedly prevent the forging of documents, and prevent fraudsters from taking advantage of informational asymmetries

30%

The Age of Trust - The Problem Blockchain Solves That Others Cannot

Leo Jiang | Medium | 12 December 2018

Available from: <https://medium.com/swlh/the-age-of-trust-the-problem-blockchain-solves-that-others-cannot-6024ebf47cad>

In 2007–2008 the world experienced a global financial meltdown which, in hindsight, seemed to be the perfect setup for the introduction of Blockchain to the world. The staggering \$8.3 trillion¹ lost during the global financial crisis made people search deeper for the root cause of all, failure in financial regulation, unethical acts of financial institutions and rating agencies? The answers were way deeper, yet simpler than you would ordinarily expect — ***the root cause of the financial crisis lay in the structure of how trust is built and maintained within the world financial system.***

In the aftermath of the crisis, people were seeking for a more trustworthy system till they discovered what Satoshi Nakamoto brought to the world on the night of Feb 11th 2009.

10 years later...

Arguably, bitcoin has failed in its intent so far—to be used as a mass currency. Instead, it has been used more as a store of value (in the sense of an investment) and a tool of speculation.

10 years from now...

Gartner forecasts that the business value from Blockchain will reach \$360 billion by 2026, surging to \$3.1 trillion by 2030.

The Internet started as early as 1965 in a MIT laboratory with only two computers communicating with each other using packet-switching technology, ARPANET, as the earliest form of Internet released in 1969 and used by the US Department of Defense.

Bear in mind, I am not suggesting Blockchain as an alternative to the Internet with these benchmarks, but rather as a supplement to the Internet.

Do we have an equivalent of TCP/IP in the blockchain world today? The answer is no, but we are getting there. However, there will be two versions of it as there are two worlds of Blockchain namely:

Public Blockchain—A public network that maintains an immutable record of transactions. Anyone can publish a transaction and participate in the network by adhering to a set of published rules. Examples: Bitcoin

Private Blockchain—A private network that maintains a shared record of transactions. The network is accessible only to those who have permission and transactions can be edited by administrators. Examples: Ripple, Hyperledger and R3 Corda. They also tend to refer themselves as Distributed Ledger Technology (DLT) instead of Blockchain.

Personally, I think this million-dollar question will remain open for a few more years. However, similar to how the Internet evolves, it will slowly, but surely reveal itself.

Among all the business potentials above, the ones that address the fundamental problem will prevail over others—where trust is mostly required yet most difficult to obtain and maintain.

25%

Artificial Intelligence to Enhance Australian Judiciary System

Swinburne University of Technology | 29 January 2018

Available from: <http://www.swinburne.edu.au/news/latest-news/2018/01/artificial-intelligence-to-enhance-australian-judiciary-system.php>

Dean of Swinburne Law School, Professor Dan Hunter, and Swinburne researcher Professor Mirko Bagaric say artificial intelligence (AI) could improve sentencing procedures by removing emotional bias and human error.

The pair argue that sentencing decisions are often influenced by more than 200 considerations, many of which are variables which have been established prior to court hearings.

Professor Bagaric says subconscious bias plays a large part in sentencing in which judges or magistrates hand down harder penalties to offenders of a particular race or background.

For their research, Professor Hunter and Professor Bagaric conducted an in-depth analysis on whether AI could improve sentencing procedures by autonomously processing these variables.

While Professor Hunter believes that AI has the potential to radically improve the judicial system, he says it is still far from being publicly accepted.

“People being judged by machines feels very Orwellian, or Terminator-like.”

“We will need to implement AI in a way that assists the judge in sentencing, rather than taking away all agency away from the judge,” he explains.

20%

Can AI Be a Fair Judge in Court? Estonia Thinks So

Eric Niiler | Wired | 25 March 2019

Available from: <https://www.wired.com/story/can-ai-be-fair-judge-court-estonia-thinks-so/>

As Estonia's chief data officer, the 28-year-old graduate student is overseeing the tiny Baltic nation's push to insert artificial intelligence and machine learning into services provided to its 1.3 million citizens.

Velsberg says Estonia has deployed AI or machine learning in 13 places where an algorithm has replaced government workers.

In the most ambitious project to date, the Estonian Ministry of Justice has asked Velsberg and his team to design a “robot judge” that could adjudicate small claims disputes of less than €7,000 (about \$8,000). Officials hope the system can clear a backlog of cases for judges and court clerks.

The project is in its early phases and will likely start later this year with a pilot focusing on contract disputes. In concept, the two parties will upload documents and other relevant information, and the AI will issue a decision that can be appealed to a human judge. Many details are still to be worked out. Velsberg says the system might have to be adjusted after feedback from lawyers and judges.

Estonia's effort isn't the first to mix AI and the law, though it may be the first to give an algorithm decision-making authority. In the US, algorithms help recommend criminal sentences in some states. The UK-based DoNotPay AI-driven chatbot overturned 160,000 parking tickets in London and New York a few years ago. A Tallinn-based law firm, Eesti Oigusbüroo, provides free legal aid through a chatbot and generates simple legal documents to send to collection agencies. It plans to expand its “Hugo-AI” legal aid service matching clients and lawyers to Warsaw and Los Angeles by the end of the year, said CEO Artur Fjodorov.

The idea of a robot judge might work in Estonia partly because its 1.3 million residents already use a national ID card and are used to an online menu of services such as e-voting and digital tax filing.

South Africa, despite its respected Constitution and brilliant legal minds, still remains one of the most legally under-serviced countries in the world. To add to this dismal outlook, a 2016 study conducted by the Department of Justice and Constitutional Development (DOJ&CD) pointed out that only 51% of South Africans are aware of their constitutional rights.

Considering the cost of accessible law via Legal Aid South Africa (LASA), which accounts for roughly 10% of the DOJ&CD's expenditure, it has grown at an average of 4.8% per year, while the annual caseload of the LASA has only increased by an average of 2%.

Are we investing in the right legal future?

Building courts and paying staff remain the most substantial portion of the DOJ&CD's budget. In 2019, another R1.6-billion High Court is set to be completed in Mpumalanga (after missing the earlier completion date), while the budget to justice modernisation falls just under the R1-billion mark, according to National Treasury's budget estimates.

Three things SA can do with technology to transform the Justice System

Court reform

Technological reforms could create online courts for undisputed or less complex matters that currently burden the CCMA, SCC and other civil and family matters in the lower courts and high courts. With the growing backlog experienced in the lower and high courts (an increase of 18,7% in backlog cases during 2016) and the decrease in court hours of 7% which amounts to 32,000 hours, according to the Mail & Guardian. Online courts draw on the objective ability of AI judgments that take all relevant case law and legislation into account. In recent initial studies, the efficiency and accuracy of AI scored far better in comparison to legal practitioners (85% accuracy for human lawyers versus 94% for AI levels).

Online Dispute Resolution (ODR)

Further relief on CCMA, SCC and lower courts would be in the form of Online Dispute Resolution. Many disputes brought to court by South Africans or disputes that are experienced that never enjoy the justice of court or mediation due to access could be solved by a government ODR model. The immense pressure this would alleviate from the CCMA, SCC, Maintenance Court and other adjudication fora is extraordinary. What's more, it could further penetrate a part of the market who feel powerless to even attempt to bring a matter to justice or those who have lost their faith in the justice system.

Legal education and advice

Another major development area within the DOJ&CD should be the implementation of a 24-hour online legal advice and education system. With the vast amount of legal data the court system and DOJ&CD have built up, utilising IE, AI and natural language, a smart government advice department could be designed online.

Traditional law firms, with their hefty partner bonuses and equity splits, prime real estate premises and glamorous art collections, did not bear up well under this scrutiny, and it wasn't long before a new model arose to undercut the old one. It was a model which used the internet to connect clients to freelance lawyers, thereby negating the need to pay salaries, or many other traditional costs.

NewLaw (as opposed to BigLaw). In a short period, NewLaw companies such as US-headquartered Axiom Law, which today employs 1 500 personnel across three continents, and in the UK companies like Riverview Law and Rocket Law, were competing for clients with the biggest traditional law firms on the planet.

The waves of change were slower to reach South African shores.

In 2011, however, a former Bowman Gilfillan Inc lawyer called Yvonne Wakefield founded Caveat Legal, a "virtual" legal services company that was soon poaching both business and lawyers from SA's big firms.

Andrew Taylor and Kyle Torrington founded LexNove in 2015, and have come to feel that the company's value proposition, while "on par with global standards in the area of tech-enabled legal services", is nevertheless "a few years ahead of the South African legal consumer".

... the fact that South Africa has a lower level of internet penetration than some other jurisdictions, has convinced us there's a need for a kind of bridging model," he says.

The bridging solution Taylor and Torrington have hit upon is Legal Legends, which Torrington describes as, "an e-commerce approach to legal services".

It has been suggested by many legal pundits that the new generation of legal services providers, being flexible and already tuned-in to the power of technology, are better placed than big firms, with their big bureaucracies, to embrace new technologies.

Not necessarily.

... law firm Webber Wentzel (one of South Africa's so-called 'Big 5') announced the launch of an app created in conjunction with business technology solutions company LexisNexis.

Called TMT, the app was designed to assist Webber Wentzel clients to stay abreast of developments in the complex and fast-paced technology, media and telecommunications sector. It is highly unlikely that any alternative legal services provider could, at this point, exercise similar relationships towards comparable ends.

The local arm of global law firm Norton Rose Fulbright exercised its internal capacities to create POPI Counsel, an interactive app designed to assist businesses with implementation and compliance in respect of the Protection of Personal Information Act of 2013.

Senior associate and business development manager Nerushka Bowan:

“The secret to entrenching a tech-savvy culture in a large firm, I’ve come to realise, is incremental change. At the moment I have more product ideas than I have capacity for, but the fact is I can’t train 30 lawyers in this stuff at a time. We have another four in training, and if I’m lucky two will emerge with the right expertise,”

“There’s a lot happening, and South Africa is definitely in the mix, but the time for both individuals and firms to open up to the possibilities is now,” she says.

20%

Legal Tech and Innovation in South Africa

Themba Mahleka | Legal Business World Publications | 23 January 2019

Available from: <https://www.legalbusinessworld.com/single-post/2019/01/23/Legal-Tech-and-Innovation-in-South-Africa>

South Africa (and many other parts of the continent) there are positive developments taking place in terms of legal tech and innovation. e-Discovery is one such development locally, as the use and acceptance thereof is on the rise. These developments are also contributing to improved access to justice.

Sustainable Development Goal (SDG) 16 seeks to, “Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels”. Further, according to the Hague Institute for Innovation of Law (HiIL), “...if you ask people about the justice problems that have the most impact on their lives, 82% is not resolved”. Access to justice in Africa and beyond is, therefore, of the paramount importance.

The terrain isn’t exclusive, in many instances the technological and innovative aspects overlap. It is encouraging to note that the space for legal tech and innovation is opening up.

While it is important for the legal industry in South Africa to realise and harness the potential of technology and innovation; it operates within a regulatory framework which may either stymy progress or, serve as a catalyst (depending on the attitude of the regulators). Fortunately, the “licence” to innovate seems to be opening up as well.

The Chief Justice of South Africa, Mogoeng Mogoeng, delivered a speech on the 6th of March 2018 at the University of Cape Town wherein he had the following to say; “Let’s stop this somewhat slavish imitation of

old laws and practices that do not always work for our nations and design an effective and efficient legal system and teaching method that would be easy to understand and apply.”

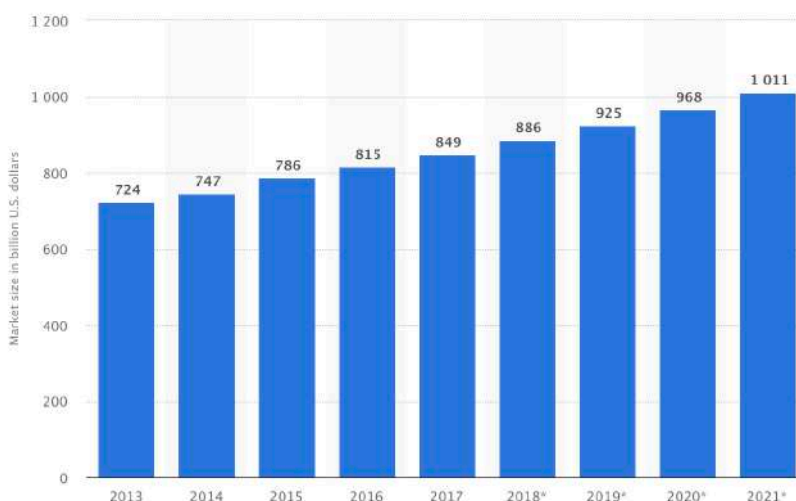
From a legislative perspective, the Legal Practice Act (LPA) 28 of 2014 will have a bearing on the evolution of the provision of legal services in South Africa. For example, it will put in place a mechanism to determine fees chargeable by legal practitioners for legal services rendered by them.

The uptake of legal tech and innovation has traditionally been lethargic in South Africa. However, it is quite clear that many stakeholders in the value chain (such as start-ups, big law, the judiciary and the legislature) are increasingly starting to realise the necessity and benefits of doing things differently. While it has been a long time coming, legal tech and innovation has arrived in South Africa and there is no turning back. The opportunities are vast and the benefits to the ordinary citizen are clear.

3. ECONOMIC | Investment & Industry Growth

The legal industry is growing. This fits with the global population growth and the economic and social improvements of many people around the globe who are more aware of their rights and more enabled to enforce them through the various mechanisms of judicial systems throughout the world.

According to STATISTA, the global legal industry is set to grow to a \$1 011 billion industry by 2021.



As a result of the continual growth, the tech hype and continuous legal demands in a complex world, an investment mania has erupted. The mania is driven by the entry of business into the traditionally closed off legal fraternity. Various countries have limitations on practicing law, in South Africa as an example, only admitted legal practitioners can run, operate and therefore profit from legal practice. Now through new avenues like investing in legal technology, big business gains entry to this billion dollar industry.

This section of the scan looks at the growth in investment, the shifting players in the market and the fierce rise of competition.

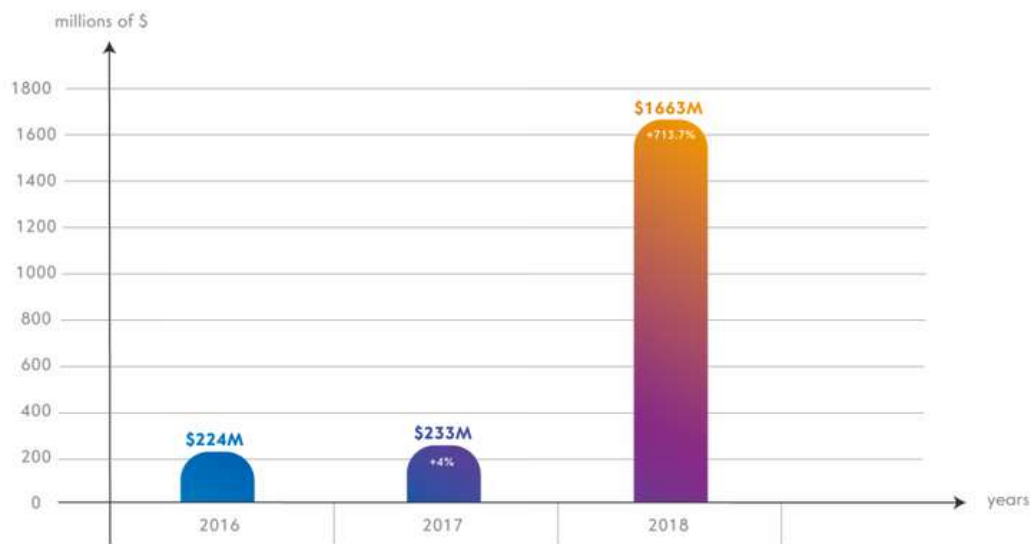
713% Growth: Legal Tech Set An Investment Record In 2018

Valentin Pivovarov & Nick Dolm | Forbes | 15 January 2019

Available from: <https://www.forbes.com/sites/valentinpivovarov/2019/01/15/legaltechinvestment2018/#5d24b0927c2b>

In the last few years, the growth dynamics of investments in legal tech companies were not high. Investors were eyeing a fairly young business area and refrained from large transactions. In 2016, \$224 million was invested in the industry; in 2017, \$233 million was invested. But in 2018, there happened to be explosive growth and the total amount of investment became greater than ever before.

Investments In Legal Tech



Among other things, this is due to the relevance of e-Discovery as one of the most popular destinations in the whole legal tech industry.

Among more than 30 such companies, only two are not based in common law countries (the United States or one of the countries of the Commonwealth of Nations).

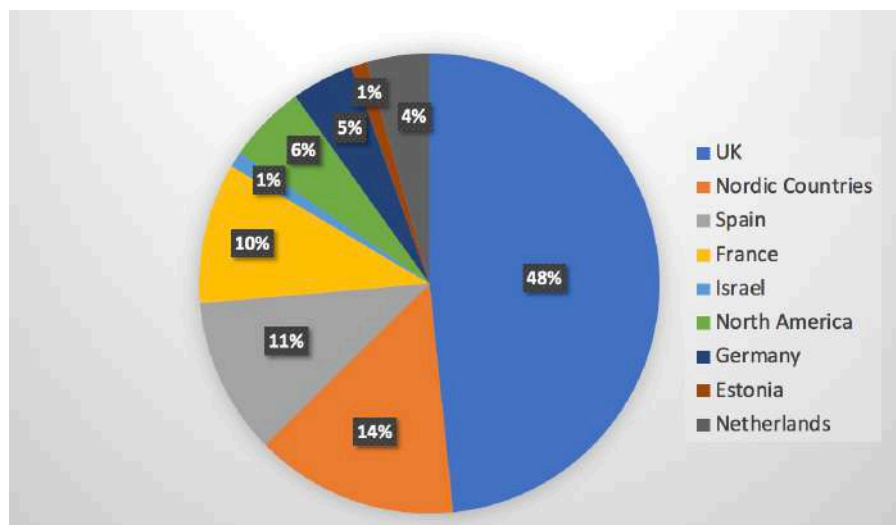
In common law countries, e-Discovery does provide great help to lawyers, saving them time and improving the accuracy of finding suitable court cases. However, in other legal systems, e-Discovery cannot be widely used and develops with difficulty.

The situation is different with another leading branch of legal technology: legal research.

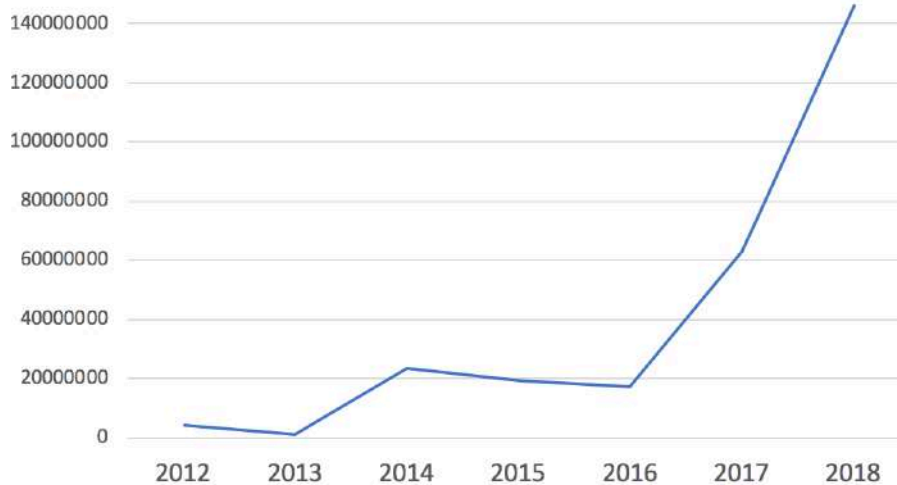
The least popular areas in legal tech in 2018 are e-Billing and intellectual property, where machine learning is widely used.

The Legal Geek Start-Up Map tracks the emergence of 250+ start-ups and scale-ups across Europe. It also tracks how much money has been invested over the past 6 years. In that time 91 start-ups and scale-ups on the start-up map have received investments totalling £306 million. The highest funding figure invested in a single company was £49,100,000 million whilst the smallest was £15,000. It is important to remember that almost half of the companies to receive funding, did so across multiple funding rounds.

Where the money is invested



How investment increased over the period 2012-2019



Are investors really all that interested in law firms?

They're not focused on firms. They're focused on legal tech. While most think "The investors are coming" attorneys ask "What about ABA model rule number 5.4?" As you know rule number 5.4 states (among other things):

"A lawyer shall not form a partnership with a non-lawyer if any of the activities of the partnership consist of the practice of law."

Investors are focused technology that serves two distinct audiences.

1. Consumers who are interested in highly effective, low cost legal technology to solve routine or mundane problems like declaring bankruptcy, drafting a will, etc.
2. Law firms that are in desperate need of sophisticated tools. Resources that enable them to produce the highest quality work faster and in greater volume.

The legal profession has been (erroneously) viewed as one filled with "fat cats." Professionals preying on their client's goodwill and profiting due to some hidden largesse. This is true in the vast minority of cases.

If you're like most attorneys, you work incredibly hard for the business you receive. The competition is cutthroat. It seems there's always downward pressure on your fees – even as demand and performance requirements increase.

Investors are betting big on their ability to fix the problem. Not directly of course but with their money. Investors believe there's an opportunity to invest their way to the solution.

Investors are injecting capital in an effort to solve the problems/meet the needs of two distinct groups.

1. Consumers who are interested in highly effective, low cost legal technology to solve routine or mundane problems like declaring bankruptcy, drafting a will, etc.
2. Law firms that are in desperate need of sophisticated tools. Resources that enable them to produce the highest quality work faster and in greater volume.

The traditional law firm economic model was premised on the assumptions that (i) legal work was labor intensive, (ii) that only lawyers could provide the services required, and (iii) that law firms would control the design and delivery of legal services. It reflected a seller's market in which all key decisions about how legal matters were staffed, scheduled, conducted, and priced were essentially made by law firms.¹³ The model resulted in a highly leveraged, pyramid structure with inverse pricing – i.e., with a pricing strategy that overcharged for associates and undercharged for partners.

The traditional structure worked very well for law firms. In the years prior to 2008, demand grew steadily, fed by firms' near monopoly on legal (and legal related) services. Firms were able to raise their rates substantially and regularly, and they charged freely on the billable hour system with only modest client-imposed controls. Real economic competition in the market (i.e., competition based on price and quality of service delivery) was minimized by a lack of available information about how firms performed and charged for their work. The result, for a dozen years or more, was an environment that supported healthy, stable firms that grew at a fairly steady pace.

Though remarkably resilient for a long time, the traditional model, over the past decade, has largely broken apart, driven by a number of factors. First, the availability of market information about firms and their practices has grown exponentially, fueled by a wide variety of trade publications, rating agencies, and social media sources. This growing body of competitive information has contributed to the relentless growth in competition across the market. Second, the rapid growth of new technologies has made legal work far less labor intensive than it was ten years ago, and that trend will undoubtedly continue. And third, the Great Recession that began in late 2007 triggered a number of significant market shifts that have had seismic repercussions in recent years. Those repercussions are reflected in three new market realities that are described below.

Clients Are in Control. Since 2008, there has been a complete shift from a seller's to a buyer's market for legal services. In stark contrast to the traditional law firm model, clients are now in control of all key decisions impacting legal representation – from staffing and scheduling decisions to outsourcing requirements, from project management to pricing structures – and they are not likely to relinquish that control anytime soon.

Competition Is More Fierce than Ever. In a market characterized by sluggish demand growth, the only way for one firm to improve its market position viz-a-viz another is by taking existing market share. That in turn drives increased competition. It also highlights one of the unique vulnerabilities of law firms: the fact that, unlike other businesses, law firms cannot protect their two most critical assets – their people and their clients. In contrast to other business organizations, law firms are not permitted to impose non-compete agreements on their lawyers or to impede in any other way the freedom of lawyers to leave one firm and join another. Similarly, law firms cannot bind their clients into continuing engagements or impose any

financial penalty on a client that, for any reason or for no reason, decides to switch its business to another firm. These unique restrictions make law firms particularly vulnerable to shifts in market conditions and contribute to the overall fragility of law firms as organizations.

Law Firms Are Losing Market Share. From 2008 through 2010, growth in new demand for law firm services was negative. Since then, demand has been slightly up in some years and slightly down in others, with overall long-term growth being essentially stagnant. During that same period, however, corporate legal spend has been steadily rising. This suggests that law firms have been losing market share.

Moving from a Monolithic to a Dynamic Market Model. There are, of course, many ways to conceive of a more dynamic model for the legal market, and certainly no model can be a perfect representation of the complex factors at work in such a large and changing industry.

20%

African Legal Markets: An Exciting Story in the Making

Leaders League | 27 September 2017

Available from: <https://www.leadersleague.com/en/news/african-legal-markets-an-exciting-story-in-the-making>

With a vast continent comprising 54 countries and 1.1 billion of the world's population, Africa offers a wealth of opportunities for both local and international investors. With numerous financial hubs being built in the Maghreb and Sub-saharan regions, all eyes are on the growing technology, telecoms and agribusiness industries. Indeed, the legal market is no longer solely concentrating its efforts on natural resources such as the oil and gas sectors like they were in the past.

THE NORTH AFRICAN LEGAL MARKET: The Moroccan & Algerian legal markets

Morocco has time and again demonstrated its desire to become an international financial center by passing laws that place international investors in an enviable position at the negotiation table. This has led to numerous law firms wondering if Morocco is a good place to build partnerships or even set up offices. According to a study conducted in 2015, 75% of the firms seeking to open an office in North Africa looked at Morocco as their next destination (Source: Legal Business). Some of the most influential law firms like Baker & McKenzie, DLA Piper, Dentons and Clifford Chance have already selected Casablanca as their new home.

Contrary to Morocco, Algeria has taken a more cautious approach. Few international firms have been able to open an office in the country. For instance, Algiers has been the home of CMS and Gide since the early 2000s and welcomed DS Avocats earlier in 2016. Lawyers wanting to enter the Algerian market usually consider building partnerships which are in fact more frequent. One such example is that of DLA Piper which signed an exclusive partnership deal with Bouchemla Lanouar & Associates.

One of the main challenges that the Algerian legal market is witnessing is the lack of legislation that would allow for an open economy. Prohibiting investors from holding more than 49% ownership of a state-owned company is one of the many restrictive rules in place.

The Tunisian, Libyan & Egyptian legal markets

The Tunisian, Libyan and Egyptian legal markets are not in the same league right now. The recurrent revolutions that struck a part of North Africa are making law firms think twice before setting up offices in the region.

THE SUB-SAHARAN LEGAL MARKET: The Central & West African legal markets

Central Africa, more commonly known for its rich natural resources is currently developing its telecoms and financial sectors. With the growing flow of foreign direct investment, many European, North American and now Asian law firms are in discussions with local professionals.

As most of the member states are French speaking countries, it has naturally attracted many French firms like Lefèvre, Pelletier & Associés which entered Cameroon in 2016. Franck Soutoul and Jérémy Giacopazzi of Inlex Africa saw in the West African legal market a great opportunity to “fill a gap.” Indeed, according to these French men, 90% of African lawyers are generalists. Specialists are thus more and more sought after.

The South African legal market

The South African legal market is regarded as the most mature on the entire continent. With \$350.6 billion dollars in GDP per capita, South Africa is second only to Nigeria when it comes to attracting law firms from the four corners of the world. The country is home to prestigious international firms like DLA Piper, Hogan Lovells, Allen & Overy along with Baker & McKenzie. Upon opening an office in Johannesburg, Mark Rigotti, CEO of Herbert Smith Freehills, stated: “Africa is a core feature of our global strategy. With clients from across our international network looking at the tremendous growth opportunities, the opening of an office in Johannesburg is an important step in how we provide a pan-African offering.” However, the most sought after firms in South Africa, referred to as “The Big Five”, are Bowman Gilfilan, Cliffe Dekker Hofmeyr, ENSafrica, Norton Rose Fulbright and Webber Wentzel. This comes to no surprise since most of the firms listed have a vision to create a pan-African alliance. Bowman Gilfilan, for example, has offices in Kenya, Tanzania and Uganda but also has close ties with Nigerian firm Udo, Udoma & Belo-Osagie.

What makes the South African legal market different from the others is that many corporate legal departments which came to life as rising companies are now becoming international giants. Food distribution companies Shoprite and Massmart have respectively teams of 6 and 15 lawyers working in-house. Today, more countries are installing legal counsel departments outside of South Africa.

Advances in technology, changes in client expectations, and increasing availability of information are leading to changes in demand for traditional legal services within the legal services market globally.

To satisfy these demands, we are experiencing a rise in 'innovative' non-traditional legal service providers who act as substitutes for traditional firms and services within the legal service market.

From a supply perspective, regulation of the legal services market has placed high barriers of entry onto potential service providers, limiting competition and keeping the prices of legal services high.

The soft barriers will be the first to fall as client perceptions change and new ways of accessing legal services are created. Companies such as *Legal Legends* who bring a 'cool factor' to professional legal services, and *DoNotPay* who replace lawyers with chatbots, are already doing a lot of work to change market expectations of the ideal lawyer. The hard barriers are already being disassembled in developed countries with common law systems, and we can expect these trends to follow into the local market too. As these barriers fall and innovations rise, there is increasing competition within the market and from abroad.

Changes in client expectations and demand for legal services

Changes in client expectations and demand for traditional legal services are driving the shifts within the legal service market. Non-traditional legal services have developed in response to these expectations and have adapted to consumer needs and behaviours.

Access to legal resources, knowledge and advice

Lawyers are no longer the arbiters of legal knowledge and know-how. Many clients access the law online without a law degree and are able to develop a complete understanding of basic legal problems.

Expectation of fixed fees, value pricing, and greater transparency

Consumers are growing particularly averse to hourly rates. Clients expect to be charged for the value added to their businesses and want to know how much these services will cost up front. Fixed fee and subscription style pricing models are flourishing.

Demand for non-traditional legal services is increasing

52% of businesses interviewed in a study commissioned by Deloitte are considering buying legal services from non-traditional law firms. A shift of this magnitude will half the demand for traditional legal firm and services.

Future of legal services

The changes which we are witnessing represent long-term, incremental shifts which are predicted to occur globally within the next 15 years.

Deregulation of legal services

In South Africa, legal advisers and consultants may work as 'non-practising attorneys' although the scope of work they may carry out is limited as a result of hard barriers in the market. Globally, there has been a movement toward breaking down these barriers through deregulation of legal practise entirely. Following deregulation of legal services in the UK, over 300 non-legal firms registered to provide legal services within two years.

Retail, digital and online legal services

Expect to see a growing trend of retail legal teams operating online, in call centres, and shopping malls.

Legal outsourcing and offshoring

Legal outsourcing is already occurring in the market today. However, we can expect to see more outsourcing of basic legal services from big law firms in developed nations to firms situated in developing nations (such as India and South Africa).

Conclusion

Many articles and studies on this topic, particularly in South Africa, paint new non-traditional legal services as innovative and impending, warning traditional firms that change is on the way. The reality is that the future is already here; change is incremental and inevitable as it reflects the natural shifts within market forces driven by globalisation and technological improvements.

The future of the legal industry is not one of death or survival but a shift in demand and supply within the market. We are experiencing a natural progression towards efficiency, increased competition, and more affordable services. In the end, everyone wins, with clients being the biggest beneficiary of the gains.

4. ENVIRONMENT | Sustainability Shift

A crucial factor to consider in our environment is that of sustainability. We have entered the realm of maturity, finally understanding our impact on our environment and have accepted that the world is not a source of limitless resource. A greater consciousness of our consumption of resources have led to new operational models and different ideas of consuming, living and serving.

This is a central factor to consider in the 4th IR, as it is also marked by a new geological phase called the anthropocene. Traditionally we left matters of the environment to NPOs and organisations like the UN, while the rest went on with their business as usual. Now however it has been put on the centre stage, and every industry has a role to play in sustainability. Both on the exterior natural environment, but then also on the interior operational philosophies that has flourished as a result.

In this section we look at the intersection of sustainability and the practice of law. We start with the future idea of the rise of the civic lawyer, and then delve into the role lawyers have to play in sustainability through environmental law. As we complete the scan on sustainability in the natural environment, we turn to the business environment and apply similar philosophies of how we do business. The section concludes with the sustainability of law firms and how they operate.

Lawyers are also key participants in constitutional democracies: They guarantee and defend people's rights and obligations towards one another and sketch the breadth and limits of state power. They are empowered to perform functions we deem vital to the proper functioning of society. In return, they are frequently protected from the impact of normal marketplace forces, most visibly through the privilege of self-regulation and the tradition of marketplace exclusivity.

In this respect, lawyers are more comparable to teachers, police officers, and social workers. When you hear people say, "Law is a profession," this is what they mean — that you have responsibilities to society at large, to the justice system, and to the rule of law.

Lawyers' dual nature is unusual. They can participate in the commercial legal market, and generally receive above-average wages; or they can devote themselves to public-interest causes, for which they can expect below-average wages.

Either option, to be clear, is completely legitimate. But it's fair to say that most lawyers in the last 50 to 60 years have chosen the commercial path over the public path

Starting within the next five years or so, we should begin to see more lawyers drawn towards fulfilling the profession's vocational or societal role, rather than choosing to pursue a private-sector commercial path.

This will happen because:

- generational change will bring new attitudes to the profession,
- technological advances will reduce private legal work opportunities, and
- a series of public crises will drive more lawyers by necessity towards societal roles.

Both explicitly and implicitly, the legal profession will increasingly view itself, and will be viewed by society, as a public utility as much as a private concern — possibly, more so.

It seems likely enough, in fact, that we're leaving the era in which law was predominantly viewed as a safe, prestigious, private career, and entering one in which law is just as often considered a challenging, self-sacrificial, public career. More lawyers will find themselves grouped with teachers, police officers, and social workers.

When it comes to sustainable business, one attribute that marks out the leaders from the followers is the courage to push boundaries.

One fundamental facet of sustainable business innovation is the law; yet its complex and ever-changing network of narrow pathways, shortcuts and barriers often does more to stifle than it does support change. For example, the regulatory burden in respect of waste processing is heavy and can prevent, or at least discourage, businesses from finding innovative commercial uses for waste materials.

Getting advice from lawyers who understand sustainability issues will be the key to unlocking these opportunities.

With a genuine understanding of what sustainability means for businesses, lawyers have an opportunity to shake off their sometimes negative image as the 'no-police' and realise a more positive role as 'strategic enablers' of an organisation's growth. For example, we were recently successful in securing changes to the Environment Agency's approach to waste for a client who processes waste into materials capable of competing with synthetic and virgin resources. This meant that our client's customers were not themselves required to have environmental permits or register exemptions in order to use the recycled material – levelling the regulatory playing field for recycled materials and providing the client with a commercial edge. In fact, corporate and commercial law touches business across the triple bottom line, from employment and corporate governance issues, to energy and waste management, to tax and financing models, and has a fundamental influence on the development of key sustainability themes such as collaboration in the supply chain or on intellectual property. Lawyers that do not put sustainability in a box marked 'someone else's problem', but understand how it connects with the bigger picture, have a genuine opportunity to help unlock sustainable business opportunities for organisations with an ambition to lead change and the appetite to see what is possible.

In a fundamental sense, this Article is about the role of law and lawyers in achieving the transition to a sustainable future. The lawyers who do sustainability-related legal work tend to have a solid operational understanding of what sustainable development means and requires. They do a wide variety of legal work in many legal fields for a diverse range of clients. Their clients often come to them precisely because of their sustainability expertise, and they have developed savvy ways of raising sustainability issues and options when their clients come to them for other reasons. They find ways of reducing the adverse environmental and social impacts of their clients' actions, and find ways to create positive impacts. They are also maximizing environmental, social, and economic opportunities for their clients, and identifying better choices (if the client is open to those opportunities and choices). They have come to sustainability by a variety of routes, but they are passionate and knowledgeable in what they do. And they tend to recognize that sustainability can be part of every legal practice.

But it should also be clear from the variety of views expressed in this Article that they do not all think exactly the same way about sustainable development or the role of sustainability in law practice. And readers with experience in the practice of law, particularly environmental law, will have almost certainly recognized that some of what these lawyers describe in sustainability terms is the same kind of work that was described decades ago, in terms of cost savings or protection of the client's legal position by going beyond compliance. A lawyer who works with business start-ups described the role of attorneys in this transition by contrasting attorneys who see sustainability as a form of compliance with existing laws, and those who (like this lawyer) see the need for laws and lawyers that support and encourage sustainable development at the necessary scale.

Some of what these lawyers describe in sustainability terms is almost certainly a relabeling of work that was previously described in other terms. And some of the work described here is more modest—the use of sustainability to achieve compliance with environmental laws by cheaper and more efficient methods. But much of it is more far reaching—helping companies, businesses, and governments to achieve their ambitious sustainability goals, or nudging them to understand how a sustainability perspective can reduce the environmental and social harms they would otherwise create and even create economic, environmental, and social benefits. Given the magnitude of the climate change challenge and other sustainability issues, the aspirational part of sustainability almost certainly represents the future direction of laws and lawyers.

For all of these lawyers, however, sustainable development provides a common perspective and set of principles to guide decision making. All of them see how it leads to better decisions, however much they or others might wish to see even better decisions or see better decision making employed at a vastly greater scale. By understanding what they all do, we better understand how law and lawyers can contribute to a more sustainable society.

Sustainable development is an evolving concept in both international and domestic environmental law. The intellectual foundation thereof was laid in Brundtland's vision of Our Common Future, a report by the World Commission on Environment and Development. The concept was initially constructed in an attempt to resolve the conflicting needs of development and environmental protection. The original definition thereof affirms this as "...development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

While sustainability is a global imperative, it also is an activity governed at a domestic level by the interests and resources of each country. The common law in South Africa traditionally focuses on the private rights of legal persons while environmental law aims at executing the public interest in environmental health.

In order to achieve sustainable development, a balance must be reached between the public interest in the sustainability of the environment for the benefit of present and future generations and conflicting private interests. In fact, in *Biowatch Trust v Registrar Genetic Resources and Others*, the Constitutional Court held that "the protection of environmental rights will not only depend on the diligence of public officials, but on the existence of a lively civil society willing to litigate in the public interest."

To ensure that planning and infrastructure development takes place in an environmentally responsible and sustainable manner, governmental policy aims to ensure that there are adequate instruments to promote sustainable development, such as the National Strategy for Sustainable Development; the National Framework for Sustainable Development and the National Development Plan 2030.

In addition, the development of strategic environmental management tools, such as Environmental Management Frameworks (EMFs), Strategic Environmental Assessments (SEAs) and conservation planning, have become valuable in determining the sustainability of a development. What's more, the environmental impact assessment provisions contained in the NEMA and the regulations thereto provide a valuable tool in assessing the sustainability of potential planned developments.

Despite the aforementioned legal and policy developments of recent years, poverty and inequalities remain widespread in South Africa, while our biodiversity and ecosystems persistently deteriorate at distressing rates.

Accordingly, local authorities are often the most challenged with the reality that South Africa, as a developing country, prioritises development. Resultantly there is a large onus placed on local authorities to strike a delicate balance between development and enforcing policies which deviate therefrom in order to pursue the global good.

Available from: <https://www.forumforthefuture.org/blog/characteristics-of-a-sustainable-business-model>

Over the last year a new term has been rising up – the sustainable business model. So far it has been used to signal the need to go beyond innovating products or services, and change the fundamentals of how a business makes money. So, what is a sustainable business model?

- First, it must be **commercially successful** – why is this proposition valuable to the customer and how can you deliver at a profit from it?
- Second, a sustainable business model is **future ready**. For instance, it will succeed in a world of rising, volatile energy and commodity prices.
- Third, it must be **part of a sustainable society**. It is not possible to be a sustainable business in an unsustainable economy. All business models rely on particular external conditions; to be called sustainable, those conditions must match with a thriving economy that is delivering social progress within environmental limits. For instance, does the business model enable absolute decoupling of economic growth from environmental damage? Does it rely on nature providing materials or services for free? Does it rely on unfair terms of trade?

For these reasons, we believe that companies will need to do two things to become leaders:

- First, **experiment with business models** that can be part of a sustainable society.
- Second, **actively shape external conditions** so the business is successful because the wider world is more sustainable.

Available from: <https://www.linkedin.com/pulse/trends-future-south-african-legal-market-daiyaan-halim/>

Fixed fee, solutions focused, and value-added legal consulting

The traditional billable hour pricing model offered by traditional law firms has a tendency towards rewarding inefficiency. This has driven firms towards fixed, flat, blended or capped fee models. This trend is already becoming the new norm in some markets. In the US, 72.8% of companies paid legal fees to legal counsel outside of the billable hour model in 2015.

Legal consultants such as NovaLegal, Legalese, and Creative Humanity operating in South Africa offer services on a fixed or flat fee basis to SME's, start-ups, freelancers, and creatives. They focus on value added to the client, and make use of cloud computing and video conferencing options to render services with greater efficiency. This model is particularly suited to the target market which has always had high demand for affordable, professional, and efficient legal services.

Many legal practitioners indicate that they face a constant struggle to survive economically in practice. There are a multitude of reasons for the challenges faced by these practitioners and there are a number of risks posed by the challenges associated with the sustainability and viability of the legal practices concerned.

The Law Society of South Africa (LSSA) reports that there are currently 26 701 attorneys and 6 669 candidate attorneys in South Africa. There has been a steady growth in the profession in the past decade and this growth must be considered against the background of the slowing economic growth and other factors that affect the profession.

Is there an appropriate spread of legal skills and instructions to meet the needs of all stakeholders in a sustainable basis?

It is against this background, that the question of the sustainability and viability of individual legal practices must be considered.

The factors posing a risk to the legal profession in general include:

- The generally challenging economic environment across the globe, an economic downturn is often followed closely by an increase in professional indemnity claims against legal practitioners.
- Organisations outside of law firms offering services traditionally carried out by law firms (these include banks, audit and advisory firms, estate agents and legal consultancy organisations, which are not law firms. In some jurisdictions internationally, audit firms have purchased law firms).
- The slowdown in some areas of practice (such as conveyancing as the property market stalls or Road Accident Fund claims as the legislative environment changes).
- The loss of key clients.
- The loss of key staff.
- Certain areas (geographically and/or in terms of area of practice) may have become saturated.
- The negative reputation of the profession in some circles.
- An inability or refusal by some practitioners to adapt to the changing legal, economic and technological environment.

Practitioners must never turn a blind eye to the red flags associated with risks of viability and sustainability. All areas of potential risk must be appropriately addressed. It must be remembered that there will always be potential liability on the part of the practitioner concerned in the event of any of the risks materialising.

5. POLITICAL | Rules & Regulation

All the aspects questioned and raised during this environmental scan conclude with the final question of political will to enable or delay development and the regulatory framework to guide the world through the 4th IR.

In the final section we look at how the changing world questions our current laws. Although this of course is not a new phenomenon and the role of any legal system is to evolve with the changes in society, the velocity of the 4th IR seems to outdo the pace of legislation and lawyers and lawmakers seem to be grappling with understanding technology and changing behaviour of the 4th IR.

The scan commences with examples of law grappling to answer a shift in society. We start with the question of labour in the sharing and peer-economy illustrated by Uber. So too issues of zoning rights in an age of AirBnB. We then look at evolving rights, like privacy. Over the past decade we have slowly offered our privacy for the enjoyment of social media, without anticipating the cost down the line. How should regulation address this? Is the right to privacy still relevant? So we can ask various questions, if longevity increases as it is expected to in the 4th IR, will we still promise marriage 'till death to us part or will we create new social contracts to govern relationships? Many current laws will be under scrutiny in the coming age, slowly changing through court challenges and new precedents.

And then we turn to the most crucial aspect many fear, will we be able to regulate AI and emerging tech?

Finally we conclude locally with Cyril Ramaphosa's SONA promise, which he has delivered on, in setting up a commission to advise on the impact of the 4th IR in SA.

Since Uber's introduction to the world, there has been a heated debate over whether Uber Drivers ("Drivers") constitute employees or independent contractors, not only in South Africa, but around the world.

The question came before the Commission for Conciliation, Mediation and Arbitration ("CCMA") last year in a battle between National Union of Public Service and Allied Workers ("NUPSAW") and Others vs Uber South Africa Technology Services Proprietary Limited ("Uber SA"). The matter arose when the Drivers were "deactivated" by Uber Besloten Vennootschap ("Uber B.V."), the holding company of Uber SA, located in the Netherlands. The applicants in the CCMA were the Drivers along with NUPSAW, who lodged an unfair dismissal.

The Applicants in the CCMA argued that they were employees based on the following factors:

- they are required to personally perform their tasks;
- they are predominantly controlled by Uber;
- Uber regulates their work and performance through software; and
- Uber controls their pricing and the number of drivers active in a certain area.

In contrast, Uber SA argued that they were not the employers of the Drivers based on the following factors:

- the Drivers are not under any obligation to drive an Uber registered vehicle, nor use the Uber App;
- the Drivers can choose where to drive and which passengers to collect;
- the Drivers provide the tools for the work; and
- the Drivers cover the costs of trading, as well as bear the risk of profits.

In the CCMA the commissioner ruled in favour of the applicants.

The matter was taken on review in the Labour Court

It was held on review that the CCMA did not take into consideration that Uber SA and Uber B.V., are separate, independent entities. The recruitment and screening of the drivers were all conducted by Uber B.V. and there was no evidence to support Uber SA's involvement in the recruitment and deactivating of drivers in South Africa.

Therefore, the Labour Court found the commissioner's ruling to be incorrect and reviewable and found in favour of Uber SA, in regard to the jurisdictional point raised in the CCMA. However, the Labour Court noted that the question of whether the drivers are employees or independent contractors has been left unanswered.

A series of almost accidental decisions and circumstances have led to a world where most things on the Internet appear to be “free.” That doesn’t mean they are free, just that we pay for them in other ways. Our data and our attention are the currency we use to pay Google for our searches, and Facebook for keeping us in touch with our friends.

Everyday objects are already becoming smarter and being connected to the network. Our computing is slowly diffusing out into our environment, and whether we know it or not, we leave a trail of data behind us as we move through the world, a data exhaust. Shreds of our digital identity if you will.

Because suddenly, it’s not just your email or the photographs of your cat, but your location, your heart rate, your respiration rate. Not just how you slept last night, but with whom. The privacy and attention we’re trading for our “free” services and content is now much more personal.

Unfortunately it’s not just the data that smart things create that is the problem. Metadata from web traffic generated by things installed in your home can reveal a lot of information about the your habits and lifestyle.

The problem comes down to ownership. As customers we may have purchased a thing, but the software and services that make the thing smart remain in the hands of the manufacturer.

Which makes me wonder when the first death by smart device will happen. Because there are lots of smaller emergencies, with far less news coverage, and much less notice, where an extra thirty miles range could be the difference between life, and death.

Whether that death will end up being be an act of act corporate manslaughter, or of personal malice. The first death by the Internet of Things will probably be prosaic, it’ll be a water heater, a thermostat, or an electrical socket. It might even have already happened.

The rush to connect devices to the Internet has led to poor privacy controls, poor security, and to an economic model that means manufacturers are abandoning devices before we are done with them.

The loss of privacy may seem inevitable, but the only thing that makes it that way is our own apathy. How we all react to the arrival of the new smart devices will determine whether it’s us or the manufacturers that own them, and control the data they generate. About whether we have a choice about what and we tell other people about ourselves, about whether we have any privacy at all.

The right to privacy dates back farther than 1890, when Supreme Court Justice Louis Brandeis penned *The Right to Privacy*: “In the very early times, the law gave remedy only for physical interference with life and property, for trespasses *vi et armis*” [by force and arms] (Brandeis, 1890). However, in today’s society, privacy has become more complex than simply “physical interference.” The birth of the World Wide Web has created a new landscape for which current legal standards are inadequate. “The law’s struggle to conceptualize privacy has often stunted its ability to adapt to rapid technological change. That has been especially true with the Internet’s rapid rise as courts grapple to define the contours of privacy in cyberspace” (Hartzog, 2013, pg. 51).

Presently, the landscape has changed. With the creation of the Internet and social media, the concept of personal privacy is different than it was a century ago, or even forty years ago. The current privacy laws and privacy torts are unfortunately inadequate in addressing digital privacy.

The current legal standards for addressing privacy violations are inadequate for a digital environment. The “right to privacy” in its legal understanding extends to personal effects and property. For example, Antoine Jones was convicted of drug trafficking and sentenced to life in prison after police attached a GPS tracking device to Jones’s car and monitored the vehicle’s movement for a month. Although the Supreme Court ultimately ruled that the GPS tracking device constituted as a “search,” and would thus require a warrant, *Jones v. United States* (2012) reminded: The Fourth Amendment ensures that “[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated. The reasonable expectation of privacy formulation are tied to common-law trespass” (*United States v. Jones*, 2012). How, then, can privacy violations in an Internet-driven world be determined if the right to privacy is tied only to physical property?

Changes in the law, more specifically, new digital privacy laws are absolutely necessary moving forward in our technology-driven world. From protecting an individual’s right to privacy across all digital platforms from misusing consumer information, to protecting an individual’s right to privacy from government intrusion across digital platforms, our current privacy laws and torts have no bearing on this new “location” – or lack thereof. As some states are beginning to enact digital privacy laws, there fails to be a national movement to provide consistency across the United States.

Law professor and privacy law expert, Daniel J. Solove, confirmed that current privacy laws are not sufficient for digital privacy, which he called a “privacy self-management model,” where users are informed of their legal rights and consent to data collection without knowing what it really entails (Weckerle, 2013, pg. 252).

Artificial intelligence regulation isn't just complex terrain, it's uncharted territory for an age that is passing the baton from human leadership to machine learning emergence, automation, robotic manufacturing and deep learning reliance.

What happens when the military and DARPA develop new applications of artificial intelligence that embolden China's own military manifestations of AI? Artificial intelligence is largely seen as a commercial tool, but it's quickly becoming an ethical dilemma for the internet with the rise of AI forgery and a new breed of content in which it's more difficult to detect what is real and what is not real online.

Artificial intelligence is a tool humanity is wielding with increasing recklessness. We say it's for our common good with machine learning hype equal to business profts. But what happens when we don't have the code of ethics, laws, Government accountability, corporate transparency and capability of monitoring the space to be able to achieve AI regulation?

Recent developments in artificial intelligence (AI) point to an age where it's not just humanity that will be upgraded, it's misinformation. Now we know AI contributes to forgery of documents, pictures, audio recordings, videos, and online identities which can and will occur with un- precedented ease. We are unleashing an open- source toolkit of cybersecurity weapons that will complicate our online interactions.

A system that ensures we harness the opportunities that AI is creating — across all and various areas including transportation, safety, medicine, labor, criminal justice, and national security all the while vigorously confronting ethical challenges including the potential for social bias, the need for transparency, and missteps that could stall AI innovation while exacerbating social problems and accelerating social and economic inequality.

When it comes to AI in areas of public trust, the era of moving fast and breaking everything is over, yet global bodies to protect humanity from potential dangers of machine learning are conspicuously absent.

Henry Kissinger, former US secretary of state and a controversial giant of American foreign policy, believes it may be a lot harder to control the development of AI weapons than nuclear ones. Artificial Intelligence regulation may be impossible to achieve without better AI ironically. As humans we have to admit, we no longer have the capability of regulating a world of machines, algorithms and advancements that might lead to surprising technologies with their own economic, social and humanitarian risks beyond the scope of international law, government oversight, corporate responsibility and consumer awareness.

Computers using artificial intelligence (AI) could be given separate legal personalities enabling them to own property, a Supreme Court justice has suggested.

Lord Hodge said although the idea “may sound far-fetched”, there was “no reason in principle why the law cannot create such personality”.

Lord Hodge said the separate legal personality of a ‘one-person’ company had been recognised in English law since 1897, and more recently it had recognised the separate legal personality in Indian law of a “ruined temple which was little more than a pile of stones”.

Delivering the first Edinburgh FinTech Law Lecture, the Supreme Court justice said giving computers a separate legal personality was “one option” for tackling the questions raised by AI in fintech.

He went on: “It would be possible for the machine as a separate legal person to own intellectual property and in turn to be owned by a financial institution.

“That institution’s licence or the general regulatory law could impose on the firm responsibility for any malfunction, if, for example, it had been involved in the design of the algorithm.

“The law could confer separate legal personality on the machine by registration and require it or its owner to have compulsory insurance to cover its liability to third parties in delict (tort) or restitution.

“And as a registered person the machine could own the intellectual property which it created.” Lord Hodge, a Scottish lawyer, said it was “not practicable” for the common law to evolve through case law to create a “suitable legal regime” for fintech, and new legislation would be needed.

Lord Hodge concluded: “Data is power, and AI is power. Can the law cope? My answer is yes, but it will require legislation. There also needs to be innovative regulation.”

Meanwhile, the Information Commissioner’s Office is calling for contributions to its work on creating the first auditing framework for AI.

The commission will be a national overarching advisory mechanism on digital transformation, Cyril Ramaphosa said during his Sona.

Comprising eminent persons drawn from different sectors of society, the commission will serve as a national overarching advisory mechanism on digital transformation.

It will identify and recommend policies, strategies and plans that will position SA as a globally competitive player within the digital revolution space.

Ramaphosa stated that revolutionary advances in technology were reshaping the way people work and live.

“They are transforming the way people relate to each other, the way societies function and the way they are governed. The devastating effects of global warming on our climate are already being felt, with extreme weather conditions damaging livelihoods, communities and economies.

“As a young nation, only 25 years into our democracy, we are faced with a stark choice. It is a choice between being overtaken by technological change or harnessing it to serve our developmental aspirations. It is a choice between entrenching inequality or creating shared prosperity through innovation,” Ramaphosa said.