juss.ai

Whitepaper

Juss.ai

What is the biggest time sink for legal practitioners today, and the biggest cost for their clients? It's the research phase. It is tedious, time consuming and very expensive work to sift through huge amounts of e.g. case law. This is a big cost for individuals seeking advice, and a big cost for society. We have a preconceived notion that everyone is equal in the eyes of the law. But that's not the case today. Law is most accessible for the most resourceful people.

Clients can spend several years in uncertainty, caught up in a lengthy, expensive and personally taxing process. Some clients may be unable to move on with their work life, others may default on their mortgages, or have their families split apart.

LawTech Adoption Research show that lawyers are overworked, especially as an associate. On top of that you don't have time to learn a new set of tools. We want to take that stress off their back and make a solution that integrates nicely with tools they already are familiar with. Don't waste time on 100 platforms, even two platforms is one too many.

Lengthy processes and inaccesible, expensive advice reduce the trust in the legal system. When an employer want to fire an employee, resolving that case can take 2-3 years. Cutting this time shorter is a big advantage to all parties involved, no matter the result. Then everybody can move on with their lives.

Cutting down time on legal process means upgrading exisiting platforms, not making new ones. Thus enabling legal practitioners to spend less time finding sources, and more time evaluating them.

Juss.ai methods are based on:

- Cosine similarity analysis between all paragraphs in all high court decisions
- Topic modelling of all paragraphs in all decisions
- Open source deep learning tools developed by Facebook running on a Nvidia Tesla V100 mapping the semantic structures of paragraphs.
- Integrating the results into a plug in that works on top of rettsdata.no

Existing tools like rettsdata.no in Norway are invaluable for every legal practitioner. All those users are our potential customers. We want to pilot this solution in Oslo, and can have a live solution running within a couple of months.

We chose law as an area because helping people resolve their conflicts is the cornerstone of a civilized society. With juss.ai we can be more confident in making the right decision. We'll spend time on what matters the most – giving excellent legal advice.

PROBLEM	SOLUTION	THE BIG IDEA	CUSTOMER SEGMENTS
Finding relevant sources is a process that many legal practitioners describe as tedious and time consuming, making the legal process unnecessarily lengthy and expensive for all parties involved **EXISTING ALTERNATIVES** Kira Systems iManage RAVN Luminance	A recommendation engine that delivers insights and relevant paragraphs, documents and topics in context inside the tools legal practitioners know and love, allowing them to make finding a needle in a haystack easy and straight forward.	Empowering legal practitioners to help more people, work more efficiently and be more effective by reducing time spent on the most expensive and frustrating part of the legal practice.	Associate lawyers • Reclaim time to analyse research instead of looking for a needle in a haystack Judges • Be more informed in and reduce time spent in coming to a verdict Prosecuters • Be better prepared and more effective in bringing a case to justice

Artificial Intelligence and Adoption of Legal Technology

Responsibility, Increasing Pressure and Quantitative Lawyers

We can talk as much as we want about ethics, but at some point, right and wrong debated at length in politics will turn into law. Large technology companies such as Microsoft and its president argue that: “tech firms must stop ‘if it’s legal, it’s acceptable’ approach.” according to the Guardian (Hern, 2019). Microsoft is now a one trillion dollar company. However, it is not only technology companies that must think twice before they act and be lawful before new regulation hits. Is adapting faster better or worse, and how will the legal profession look like within technology?

Legal technology, also known as Legal Tech or LawTech, refers to the use of technology and software to provide legal services.

LawTech Adoption

The Law Society in the United Kingdom released a report in February 2019 named LawTech Adoption Research. The report was written by the tech analysts TechMarketView (TMV). The Law Society represents over 190,000 solicitors in England and Wales.

According to the report: “Recent years have seen a rise in the number of lawtech companies, but not an acceleration in the rate of lawtech adoption among legal practitioners.” (TechMarketView, 2019) As such, technological innovation does not seem immediately to be a problem, however, the way that companies are choosing to adapt to this change may be, and is, connected. It may be too quick of a conclusion to draw.

TechMarketView identified and looked at more than 100 LawTech companies operating in the UK. Many were ‘single point solutions’ of an application by a lawyer or an ex-lawyer. Other LawTech vendors are tech providers that began by serving other sectors such as financial services and are now pivoting towards the legal market. “I find the start-ups hard to engage with. Some that I have had dealings with seem to be set up by a disgruntled lawyer who happened to go to uni with an IT guy. I just feel that very few of them are actually doing anything new and tend to fall into three main types: they’re generating documents, reviewing and analysing documents or

analysing Management Information such as legal spend or workflow. They are not necessarily reinventing the wheel but looking to provide a shinier newer wheel". However, as much as traditional lawyers may disagree or relate to existing solutions there is pressure from different actors to adopt new technology, which was outlined in this very same report.

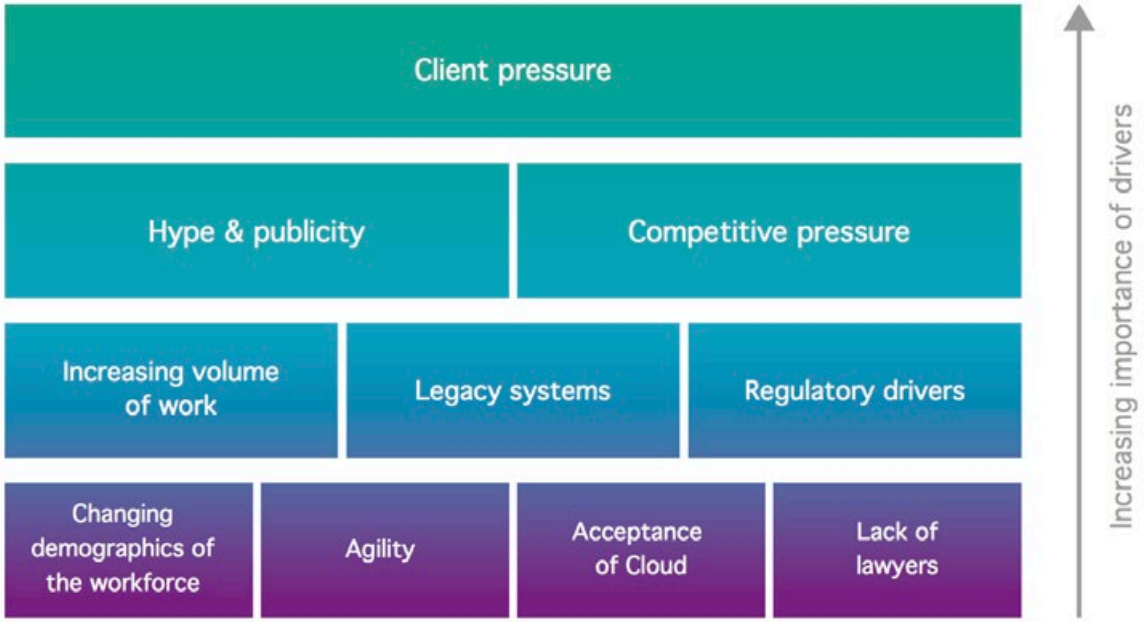

Image by techMarketView in the report LawTech Adoption Research retrieved the 21st of September 2019.

I will list a few of the key points within these different that are raised in the report:

- **Clients**: efficiency and productivity in responding to client pressure on fees, as well as the need for lawyers to show how they are innovating in the clients' interests. General Councils expect to see more due diligence or e-discovery within the same budget.
- **Demand for transparency**. One area where client pressure is directly translating into lawtech adoption is in the space of legal cost transparency. Billing has at times been abstract and difficult, and this could change.
- **Demand for new ways of working**. Clients are putting increasing pressure on law firms to do things more cheaply and, in some cases, have progressed to requesting that law firms incorporate particular technology solutions within their services.
- **Competition from accountancy providers that have adapted quicker**. "All of the 'Big Four' accountancy providers in the UK now have a legal arm. PwC's legal operation was granted ABS status in early 2014, with KPMG and EY receiving their SRA approval later in the same year. In June 2018 Deloitte UK was awarded ABS status.

- **Hype**. The hype and publicity associated with lawtech (particularly with AI and Machine Learning technologies) have had the positive effect of raising awareness throughout the legal sector.
- **Regulatory drivers**. So-called 'regtech' companies that have already been providing solutions to financial services and banking have started to pivot into the legal space
- **Legacy IT-systems**. Through maintaining existing with robotic process automation, and in some cases the need to finally move onto new systems.
- **'Opening up of the law firm'** is placing greater demands on technology and IT to deliver a mobile working environment.
- **Changing demographics**. You may find people who have taken computer science modules and law from universities more often. There are increasingly modules focused on legal tech or law-tech.
- **A lack of lawyers**. In some cases, there is a lack of lawyers or for some, the lacking access to a lawyer. This can somewhat be changed in areas such as family law (where there has been a lack of lawyers).
- Cloud applications. Cloud computing has driven down the cost and commercial barriers to entry of a wide range of applications that can be brought into a business as legacy case management systems or practice management systems come to the end of their life.
- Robotic process automation (RPA) is the term used for software tools that partially or fully automate human activities that are manual, rule-based, and repetitive.

A general counsel, *chief counsel, or chief legal officer (CLO) is the chief lawyer of a legal department, usually in a company or a governmental department*.

Quantitative Lawyers

The financial services industry saw the creation of a new direction within their field not long ago. They were called 'quants' or quantitative statisticians specialising in the application of mathematical and statistical methods to financial and risk management problems.

In a paper by Khandani, it has been argued that through indirect means that the events of August 6–10, 2007 may have been the result of a rapid unwinding of one or more large long/short equity portfolios, most likely initially a quantitative equity market-neutral portfolio. As such one factor that may have partly contributed to the massive financial crash in 2007–2008 (Khandani, 2007).

If quantitative statistics, sentiment analysis, and such are now entering the legal field, this is a call for caution. If lawyers or others in the legal industry believe themselves to be better at managing risk than the financial industry this can be a slippery

slope — a relatively small first step leads to a chain of related events culminating in some significant (usually negative) effect. Perhaps we can hope it is with this in mind the legal profession has had such a hard time adapting technology, yet I doubt that to be the case.

Regardless it is important as the legal profession is likely to become more integrated with technology that the legal practitioners get used to going beyond the immediate gain to see the potential risk. Let me take a few hypotheticals.

- Imagine a contract adapting to local regulations serving 100'000 people with an easy insurance claim you can photograph and send in yourself.
- Maintaining the terms and conditions for more billions of users on a social media platform. Adapting to local regulations in most countries of the world through constant monitoring of reform by 'scraping' texts online from government postings in law and running predictions based on analysis from local actors.

Sorting through 40'000 documents in a large international corporation to find historical data to support a lawsuit while running sentiment analysis online to find affected victims.

In all these cases: what could go horribly wrong? In the worst case scenario of law gone wild — what could we expect to see? Then again in the best case scenario, what would great legal practice with technology look like?

Artificial Intelligence in Law

It has been said that law has language at its heart, so it's not surprising that software that operates on natural language has played a role in some areas of the legal profession for a long time.

Natural Language Processing: usually shortened as NLP, is a branch of artificial intelligence that deals with the interaction between computers and humans using the natural language.

A lot of focus of debate and publicity concerning lawtech has been on artificial intelligence. It may be due to pressure from clients in demonstrating innovation (often shared through press releases). Many may have overestimated the potential of artificial intelligence to enhance operations. It seems first these technologies were adopted by the large companies in the UK and later by the smaller ones. As such, you end up with competing on price.

Technology does not solve everything. It's pretty easy to ingest a document and extract the standard things but what is not easy is the understanding of contractual

language. Therefore, in a legal context, it's not so easy to be confident that you have extracted all the key data points. There is little standard contract language or labelled examples for which information is confidential so this provides for some difficulty.

Artificial intelligence can help reduce risk, often by assisting lawyers in a process. It is also extremely important because what is the risk profile of reviewing only one in 10 documents? The report asks: "Is one in 10 reviewed by a human less risky than an infant AI system looking at every document?" I am very sure the answer to this question is not straightforward.

Three Areas of LawTech

The LawTech Adoption Research report presents a segmentation into three areas of legal services with different needs.

- Business-to-business (B2B) law firms
- Business-to-consumer (B2C) law firms
- In-house legal departments (mostly found in larger commercial or public sector organisations).

The LawTech Landscape

There are more actors in the LawTech landscape in the UK and they were summed up relatively neatly in the aforementioned report.

Figure 1: UK lawtech landscape by major applications

A small group of firms have become established in the legal market over the last four years. Providers like Kira, Luminance and RAVN (now iManage) have gained traction in the B2B space.

Apperio is helping companies analyse their legal spend and had in mid 2018 raised $10 million (£7.5 million) in a Series A round. There have been fundraising in the £2- 10m space this year such as Clarilis, Lexoo and Juro, a situation that was unheard of just a couple of years ago.

In addition to this specific applications were also listed accompanying this to give a stronger understanding of where technologies and applications could be integrated or included. These also made up the focus of the research.

Figure 2: Hypothesis of technologies and applications for inclusion in the research

Technologies	Applications
• Robotic Process Automation (RPA) – automation of structured data • Machine learning/AI – cognitive automation of semi-structured or unstructured data • Natural language processing • Blockchain • Predictive analytics/data analytics • Cloud based infrastructure and on-demand type services – for example, platform-as-service, software-as-service	• Contract management tools • Document automation • eBilling • eDiscovery • IP protection • 'Law for good' • Legal docs as a service • Legal services marketplaces • Practice management tools • Risk and compliance tools

Conclusion

In addressing new issues we must sure not to create too many new ones. It is to some degree inevitable that the legal industry is so slow in changing its practices and maybe that has been for the better. This remains to be seen as legal companies may attempt to a larger degree to quantify information with math and statistics alongside computer science. There are plenty of solutions specifically on the UK market and there are likely to be a swathe of new contenders in this important space. Juss.ai is not creating a new solution it is building on the strength of another.

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