

How Blockchain will redefine the Legal Services sector...



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In the same way a new legal system was needed in the 1400's to support new forms of banking and trade in Italy; new legal services are required to support New Commerce based on an entirely new system – the Blockchain.

About the Author: Nick Ayton a Global Fintech 100 Influencer and 21st on the Rise Top100 Blockchain people explores the implications of Blockchain technologies on Law Firms and the broader Legal Services market...

There maybe trouble ahead...

Many believe Blockchain will replace lawyers and law firms, while others see this new technology lowering the barriers to entry increasing the threat of competition from new services providers who can automate 80% of legal services offered today while creating an entirely different customer experience model at much lower cost...

Declining margins and over capacity, pay for performance replacing fees by the hour and now Blockchain is placing new pressures of the legal profession...

Is the legal profession about to get a wake up call as Blockchain delivers **a fundamental structural shift in commerce, social interaction and politics** that changes the emphasis of how legal services will be delivered or is the sector simply oblivious and running out of runway..?

What is Commerce?

Commerce has not changed for 100+ years. Hierarchical organisational structures, the nature of work, management behaviours and how capitalism reaches agreement and rewards success is mirrored by law firms who's focus has been to maintain the status quo, delivering safe services mostly untouched by any forms of change or innovation for decades...

The legal profession has had a good run. However against a backdrop of falling margins and over capacity Blockchain has arrived that changes the structure of how people and entities trade and exchange value...

As the Medici family in the 1400's created the first modern banking system to raise capital to finance wars, at the time a structural change (new commerce) it was also the birth of a legal framework we can associate with today. Governments understood the importance of having a formal legal structure

that would encourage and underpin trade; something the city of London has enjoyed for more than 700 years contributing to its success as a trading and financial centre.



During this time other than the introduction of word processing technology, email and the arrival of Internet nothing structurally has changed for the profession. Until now... Legal Services along with other industries are about to be caught with their trousers down, unknowing, unaware and unprepared believing the services they offer are valuable and necessary. Is the legal profession too safe, complacent, even arrogant, and quick to dismiss, believing they are an essential, a much-needed institution. A *slippery slope* indeed...

"Blockchain is the biggest advance in computer science ever"
Marc Andreessen, Andreessen Horowitz

Legal Services without lawyers...

Trade requires a structure for putting in place agreements between parties to formalise the exchange value and identify ownership of things. But do we need lawyers to do this... The simply answer is no.

Agreements provide the cornerstone for the exchange of value, the protection of rights and entitlements, of ownership, of identity, linked to the provenance of things, and digital assets. All of which can be automated by technology and delivered by new service providers.

A traditional contractual agreement between parties is in fact a nothing more than a ***Time Machine*** that tries to look into the future, to second guess ***State*** without the means to measure it... In other words an agreement reflects what you knew at the time. It delivers known state at T+0. Agreements are then filed away and come to life when disagreements and disputes arise often triggered by the client when one of the parties doesn't like something there normally because there is a change of state.

A good example of why this matters was the 9/11 aircraft dispute that raged for more than 5 years. The re-insurance agreements across several insurers carrying the commercial risk were not synchronised, made more complex as the towers were also a separate insured risk that was not part of the aircraft risk. There was not only no provision for this the contracts the agreements were not aligned to new events where the risk exposure for each party and the payouts could be settled easily.

Will Legal Services be confined to the resolution of disputes and where fees are outcomes based...

For me the primary reason for law firms to exist is *uncertainty*, a lack of trust unlike a time when disputes could be settled with a duel - sword or pistol. In today's business environment where agreements can be changed after the event; where identity can be tampered with, terms not honored or ownership faked trust has been destroyed, and the role of lawyers has adapted to fill this void. As the validator because there is no or low trust and where legal agreements are far more complex than ever before as lawyers strive to cover every scenario and possible future – event, as new State.

As technology emerged as the champion of standard cost accounting as industrial complexity increased, organisations evolved to managed complexity, to be able to measure and control

activities and tasks. At the time organisations were not design for the customer or employees benefit but for the owner to manage wealth for shareholders. I am not a libertarian or anarchist per say like many in the Blockchain movement, I think of myself as a capitalist, although the version of capitalism we have today is not one I recognise.

As Thomas Friedman put it *"Ill be gone, you'll be gone"* mentality lies at the centre of commerce today, and where the primary values of the west are *greed* and *fear*.

Current computers are inefficient, making things worse

As new machines called computers emerged from the National Physical Laboratory during days of Alan Turing and into the 1950 as telecoms made a jump forward computing was about to break our of academia and sciences into the commercial world. By the 1960/70-mainframe computers mirrors the standard cost accounting behaviours that controlled large manufacturing complexity and hard wired it into the computer architect, creating what we have today is the System of Record. They had hard-wired warts and everything that although at the time was seen as a jump forward, was inefficient, archaic and is not holding back commerce.

This is because the *system of record* underpinning commerce creates different versions of events as truths and lawyers (courts) are required to play the role of a trusted validator. Each organisation holds information on a database at each layer in each industry. As information passes it has to be checked, re-checked, reconciled, and you have this theatre called KYC and AML. All because the data passing back and forth isn't not trusted!

Is the purpose of the legal profession as *arbiter of fair play*, a validating party necessary to deliver trust and be the enforcer of old commerce?

As Blockchain creates new commerce, trading relationships, behaviours, new processes and records human interaction without the need for any third party validator what is the role of lawyers? In a Blockchain world transactions between parties are guaranteed, they are predictable, identity and provenance are know, data and information is trusted, transparent, open and securely encrypted as *Certainty* and confidence as Trust returns.

Blockchain works delivering **trust because there is no *Trust***. Hold that thought.

Complication:

The 'Law' creates artificial constraints on human interactions, imposing a set of rules forbidding and enforcing certain behaviours and actions. It creates a time bound concept of future-state. As lawyers try to make provisions for changes in state as hard terms and conditions to second-guess a range of possible outcomes, a speculative static enforcement terms.

Because Blockchain is a structural adjustment to commerce where transaction flows are between people and entities, software code co-exist in devices and machines and replace human interactions, what role should lawyers play?

The system of record doesn't allow for *state* to known or synchronised, as each database holding information (contractual terms & condition) is based on different computer systems delivering a different state, even though they may be processing the same information, hence the 9/11 aircraft situation. This is made more complex as information that passes between parties and entities across market layers have no single reference data format and the primary reason why everything is verified - checked, rechecked, reconciled, matched often relying on human intervention who create errors and mistakes and can tamper with and change the information during and after the event, creating the perfect storm for lawyers to unpick. In Blockchain these issues don't exist.

Zero Trust

The technology that underpins commerce today enforces *zero trust* and rather than improve efficiency and productivity adds at least 30% to operating costs, requiring large back offices and handing the control baton to compliance who control the nonsense *theatre* that is KYC and AML. Everyone is scared the party they are dealing with as the Internet has propagated anonymity where everything can be stolen, copied and sold. The primary purpose of KYC/AML as *Proofs* is to protect the organisation, just in case lawyers are needed to defend the mistake, the error or slip up. The behavior is defensive and non-value add serves to increase low trust.

The fundamental weakness of today's legal services proposition is *the professions* inability to manage and monitor the *state* of things, events, activities, actions, people that pertain to the contract terms in agreements on which clients are economically tied to.

"If law firms could manage state in real time this would create a significant competitive advantage". Nick Ayton Blockchain Evangelist

Are lawyers trusted to do the right thing for clients, albeit their world is also closed and hidden because of alleged confidentiality and disclosure? And where in a Blockchain world accountability and trust comes from transparency of actions and behaviours whilst identity is known and protected...

Strom Approaching

Commercial Realities – the law profession is in decline anyway

The number of law firms is declining year on year but most notable is the decline in margins, an average 1% to 1.5% across the sector with mid range firms seeing the largest margin decline of an average 6.9% (Source: Legal Services Report 2016 PwC).

Margins are predicted to continue to fall as there remains over supply of legal services where firms have an average of 19% spare capacity. The *fees per hour* model is under pressure where bidding for work as projects and the concept of '*Pay for Performance*' will place further downward pressure on margins and the need for great efficiencies. Where the soft option is further market consolidation based on a mistaken belief this delivers cost optimisation but does not address the underlying industry problem. A lack of innovation, ***safety as part of the herd***, while the nature of commerce is changing, and leaves less time for the legal profession to respond.

Partner led management teams play it safe, believing their services are valuable, necessary and a legal requirement. They see mergers as acquiring income streams but fail to optimise the opportunity to reduce costs or innovate. Stuck with conventional thinking, enforced by poorly written time recording software, enforcing the belief that size matters and market conditions do not change that quickly.

Typically each firm has an administrative cost base of 17% to 20% a figure that does not include procuring third party services from the likes of Thomson Reuters. A typical ratio of support staff to fee earner has fallen from 4:1 and still remains too high today.

Barriers to market entry are lower as the legal services market remains increasingly vulnerable for disruption, struggling with market development, leveraging technology and developing closer relationships with clients.

Is the partnership 'consensus' model engineered to avoid internal conflicts right for our times...?

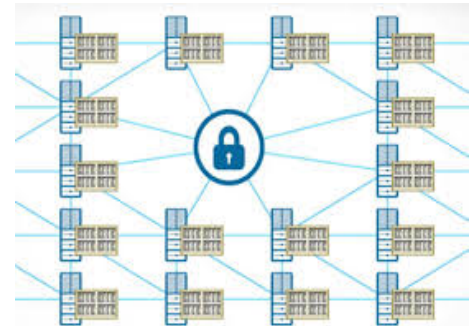
Blockchain Community

The Blockchain community comprising ex-lawyers, entrepreneurs and some of the smartest people on the planet are looking to decimate the legal services sector by introducing new low friction, low cost services; that not only change the relationship with clients will automate the contracting process between parties, entities and machines. We are entering a world where clients will *self serve* much of what they need from open source (free) Smart Contract libraries, where the business logic has been verified in advance and where the Blockchain is the central validator of truth and trust.

State is known at all times.

Do law firms feel too safe, are partners' complacent and happy to keep the status quo; do firms follow a herd mentality, do some feel they are too important to fail...?

Is the partnership consensus model from a different era, engineered to avoid internal conflicts right for our times and what additional value do customers receive from current structures...?



Living Contracts

The main threat to legal services that leaves the door wide open, is lawyers cannot monitor contracts once they are signed and live – to check *state* in real time. Blockchain can.

The concept of *living contracts* where the synchronisation of *state* ensures contracts remain relevant, thresholds tested, impending breach visible, prompting the need for adjustment and dialogue is a reality few law firms have recognised.

Or are lawyers themselves *conflicted*, attracted to the potential to earn more fees from '*after the event*' services as agreements are breached and disputes (litigation) becomes inevitable... Is this the artificial barrier that is holding back progress as firms management teams refused to contemplate placing any fees income at risk by doing things differently, innovating and trying new things...

Do not play nicely in the playground...

Lets face it, law firms have singled handedly failed to work together to solve industry issues and have missed opportunities to improve margins, deliver better services to customers and improve operating cycle times.

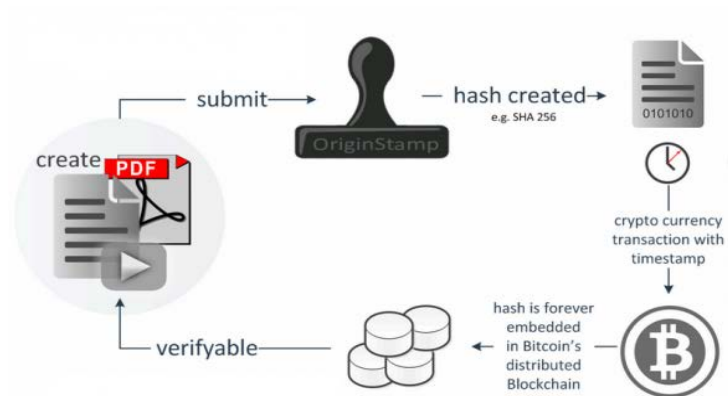
- The arrival of the UK Legal Services Act was an ideal time for collaboration and innovation, but no. The impact on client accounting rules and the opportunity to create a net settlement solution was missed.
- Opportunities to share information to assist with conflict and money laundering checks, inter firm accounting, data standards and messaging, will now be forced by Blockchain, with or without law firms involvement in their current form.
- The customer no longer wants to pay for the embedded inefficiencies of the legal services sector; they want to pay for outcomes...

What is Blockchain?

Blockchain is an open distributed non-repudiated ledger that eliminates the system of record and uncertainty, where transactions are predictable, guaranteed and written to the Blockchain as an

immutable (digital) record of human exchange that cannot be tampered with, changed or censored. It is the State Machine¹ commerce has been waiting for.

State is Known at All Times



Blockchain is a technology (in fact a packet switched protocol)², a financial system for tokenising assets, a digital ledger and a Peer 2 Peer network where:

- Transactions are immediate – time and date stamped
- The exchange of value is guaranteed and certain
- Proof of Ownership, Identity, Security are known
- Eliminates the need for Bookkeeping and Audit
- Delivers real time view of capital positions, cash value
- Smart Contracts enforce terms, entitlement and rights as autonomous self executing agents
- Reduces fraud, improves data accuracy
- No third party validator required
- Removes human error, need for reconciliation, matching and settlement.

Blockchain is a structural shift that moves commerce from a **central validation system** reliant on third parties to validate, to an open distributed world where Blockchain delivers a live indelible record of all financial and value based interactions.

Blockchain is both an Opportunity and Threat

¹ Ethereum is a branch of Blockchain where the nodes process transactions and hold a copy of everything. Smart Contracts with the Consensus model are able to detect changes in state – a State Machine

² Gordon Davies invented the first Packet Switched Data Network at the NPL in 1955 on which modern computing and the Internet are built.

Blockchain has the potential to create competitive advantage or erode shareholder (partner) value quickly. Ignoring it is technically a breach of responsibilities. Blockchain should be on everyone's risk register along with other technologies.

Use Case Example: Property & Land

Most notable Blockchain Use Case is Property and Land Registry it is a great fit.

Scenario: A buyer in one country purchases a property across the world using a Blockchain Smart Contract - sends the contractually obligated payment as a digital transaction using Bitcoin or another cryptocurrency, that triggers the Smart Contract to transfer the property deeds and ownership rights to the buyers possession.

Without any need for human interaction other than confirming the business logic that goes into the coding of the smart contract. Something we will touch on exploring lawyers as software coders.

Sweden have been early adopters where banks, government (land registry), brokers, buyers and sellers have access to an open shared ledger that makes all the key information available, which accelerates the house purchase process, reduces conveyance time from months to hours...

Spearheaded by the Swedish National Land Survey the system will be live in March 2017.

With Honduras, Haiti, Estonia, Georgia, Ghana launching projects the Isle of Man is also integrating land title with the right to vote.

The ability to record things as an open, secure, immutable digital record (shared ledger) that everyone can trust gives Blockchain entrepreneurs the opportunity to collapse and reinvent markets and legal services is a big target as law firms remain passive and are normally slow to respond...

Directors of organisations have a fiduciary responsibility to pay attention to things that are capable of eroding and destroying shareholder value. But storms come and go where some don't touch down and others blow themselves out. How do you spot the magnitude of the storm approaching and when a storm is about to hit...?

Blockchain is a category 10 event and its already here!

There are 10,000 Blockchain Use Cases being worked on by the world's cleverest people. Large corporations IBM, Microsoft, Intel, GE are all in betting the 'house' on Blockchain. Governments and Central Banks, the World Economic Forum and Regulators are embracing Blockchain, Cryptocurrencies and its libertarian potential and dangers.

Smart Contracts

The debate over Smart Contracts is often where individual lawyers join in the Blockchain debate as they argue their position and try to convince everyone the legal profession is both necessary and will not be replaced by software code. Without really grasping the concept a Smart Contract is an autonomous agent that controls the business logic as an If, Then logic statement.

'If' this happens (conditions are met or not) 'Then' do that. 'If' this date is met, or conditional event happens 'Then' make the payment, issue the document and so on...

Smart Contracts can be linked to a wide range of data sources and live feeds called Oracles delivering real time processing and decision making potential.

As Vitalik Buterin founder of Ethereum said, *"Smart Contracts is an unfortunate misleading name, they should be called Autonomous Agents deployed as Objects"*.

The argument with software code being law is a separate issue and will not be settled quickly. Smart Contracts are very good for automating basic business logic, as terms and condition for the exchange of value, rights and assets, for *proofs*, that support provenance and identity, to support transactions between parties without a third party *validator*, without a law firm.

The genius of Blockchain is trust is delivered because there is no trust...

Lawyers as Coders

Will lawyers of the future also be software coders - transposing legal rules as terms, into code requiring the delicate interpretation of law, maybe?

Will their role evolve to becoming the legal architects of new commerce...

In the near term Blockchain will deliver a trustless, self enforcing support infrastructure to support the preparation and performance of agreements between parties, entities and machines.



In Blockchain things happen differently:

- Transactions are guaranteed and validated by the *network*, no delays waiting for third parties
- Transactions are written to an shared immutable ledger speeding up legal transaction time
- Balances the need for transparency and privacy
- Introduces *Pay for Performance* legal services
- Supports Digital Rights Management making it more difficult for parties to breach, copy and steal IP
- Removes fraud, delivering trust and predictability, where illegal players are squeezed from markets
- Triple Entry Bookkeeping system where all transactions are instantly auditable
- Removes the need for the expensive time consuming Audit process
- Transactions work on an Open Balance basis there is no notion of debt or credit
- Blockchain works to 8 decimal places that allows the exchange and syndication of small amounts of value
- Automates processes that are error prone ensuring they are accurate, complete and unaltered
- The option to Stream Money as value flow in *real time*
- Common Ledger cryptographically provable
- *Real Time* Legal services giving a premium over the competition...

The attributes of the Blockchain technology deliver a different starting point, with embedded automation and efficiencies where the process for agreeing transactions and outcomes are trusted. The removal of friction time cost from any central actor, intermediaries and third parties enables parties to reach agreement, exchange information and financial payments much quicker.

The development of Real Time Legal Services will give a premium over the competition...

Signatures

The time where legal agreements are signed and authorised by (digital) signatures is coming to an end. Think Amazon Go for legal services where BIO recognition and 3 line voice identification is used as automatic verification of signing to confirm acceptance of the terms of an agreement.

As customers enter the GO store they collect what they need and leave where the shop senses the client, what they have taken and the terms of the purchase are agreed as they leave. The transaction is opened on entry and closed on departure and the broader rules of engagement are set, and the transactions are agreed in real time.

A car negotiates to cross a bridge and pay a differing fee based on size of the vehicle, time of day and frequency. The agreement is sealed automatically.

Legal Services will be consumed in real time to support current and future state of things.

Revenue at Risk

Lawyers have a lot of catching up to do to stay relevant. New entrants will deliver real time services that support a high frequency transaction world where buyers and seller exchange all types of value every second or every day. Organisations will require self-adjusting commercial arrangements that can combine agreements between people, entities and machines; where self serve verified templates can be deployed and events monitored that identify changes of state.



New commerce has no time for disputes, for arguments or for litigation, as the benefits from automation and transaction frequency will be interrupted and the business case for a dispute harder to justify.

"Imagine a legal services provider comes into the market at a 50% lower fee structure"... Nick Ayton Blockchain Evangelist

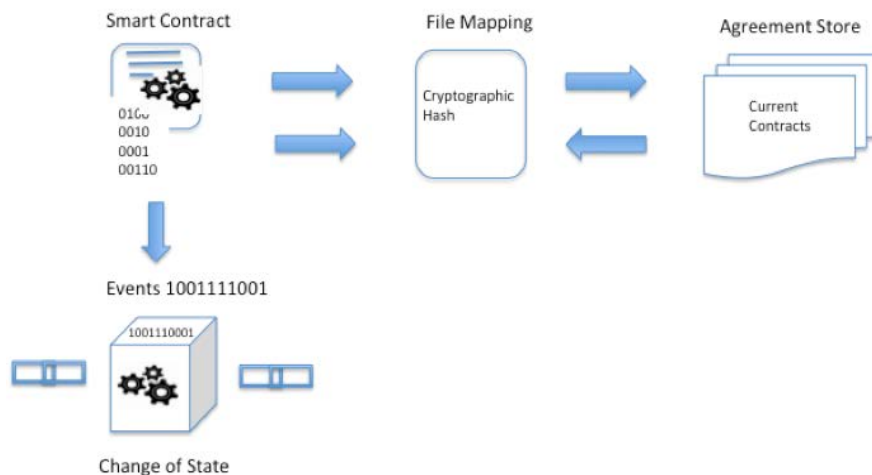
Legal Services will need to adjust to a real time environment. Blockchain eliminates the non value-add administrative tasks, data gathering and verification, record keeping, payments and drafting, speeding up transaction and negotiation times to make law firms more efficient, improve cash conversion and increase profit per partner.

Blockchain architecture is perfect for law firms to forge closer relationships with clients for better retention and growth. It is the start of commerce being able to scale, the foundation to support a future where machines negotiate and agree transactions automatically, generating new kinds of value between billions of things in a world where Smart Contracts will be coded as firmware into physical objects, assets, devices and machines...

How should the legal profession respond...

For any organisation to ignore Blockchain is corporate suicide as the underlying technology has the potential to destroy shareholder value very quickly. Nobody knows how much time they have 12, 24 or 36 months but someone is reinventing legal services and will disrupt the market at 50% lower price, offering better customer experiences, leaving the incumbents no time to react.

Ensuring consistency between Smart Contracts and Real World Contracts



*Nokia
went
from
market
leader to
gone in 8
years,*

Blockbuster in 2...

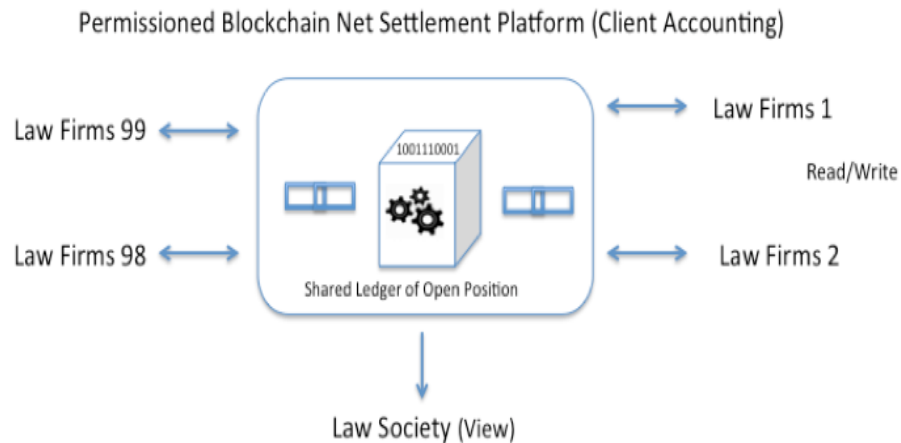
For those firms that embrace Blockchain they will benefit from improve margins, faster operations cycle time and be able to aggregate demand in new ways. Able to create new relationships with clients where activities and events are viewed and known in real time – supporting new **Legal as a Service models**. Thomson Reuters understand the trend and the value of repeatable low value legal administrative processes as self-service options and have embraced Blockchain. As provider to law firms, they can replace them.

Whilst partners may convince themselves their services are essential (relevant), a legal requirement and thus necessary, believing their services will always be required. Maybe so...but the services delivered to clients in new commerce will not be the same delivered today and new services may not be delivered by law firms. The legal profession is simply not equipped to respond and must create a plan to handle Blockchain and help clients respond to Blockchain.

The Future of Legal Services

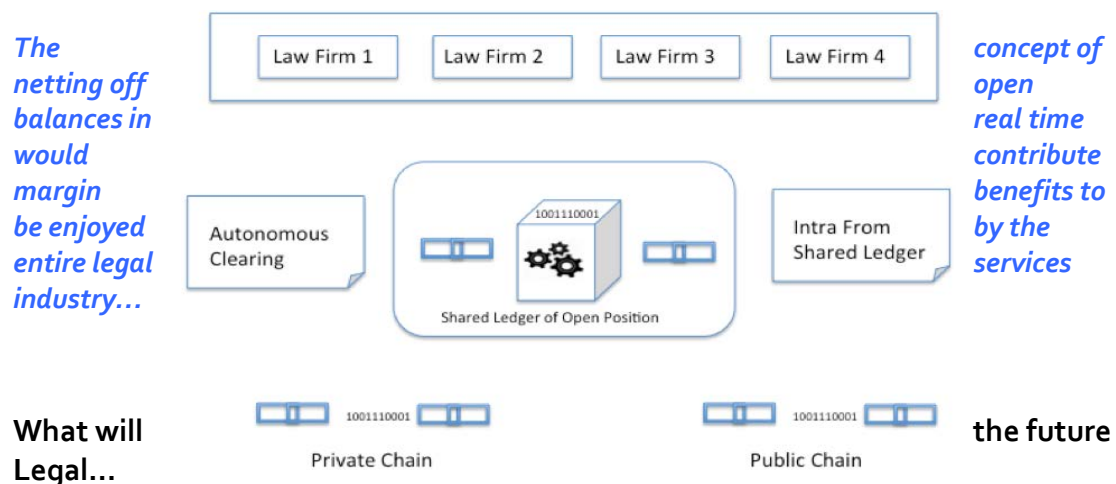
1.0 Diagram Synchronising Smart Contracts with Real World Contracts

The immediate opportunities to *Hash* (cryptographically record as a time and date stamp with signatures) the location of the agreement between parties that relate to an off chain location that holds the master agreement. Using Smart Contracts to enforce and synchronise terms and conditions to sense a changes in *State*.



2.0 Diagram Net Settlement

The creation of legal service permission Blockchain will provide the net settlement opportunity the industry has been looking for. Where Law Society members appear as nodes that write to a common ledger delivering a State of Payments and Receipts and the opportunity to hold client monies in a neutral environment with oversight from the Law Society. Smart Contracts can be used to help synchronise the relationships and monitor real time events as they impact state.



3.0 Diagram: Autonomous Clearing improves Liquidity

As law firms struggle to maintain and protect margins, cash as capital remains tied up in back office systems awaiting reconciliation and settlement will be freed up. The altcoin as a token, or colored coin as Token will deliver the financial rail to manage and autonomous exchange of value between all member firms where Payments and Receipts are automatically netted off using a **net open balance process**. Settlement is immediate, all ledgers are instantly auditable and the movement of money between law firms, client accounts and third parties can be viewed by the parties and is instantly verified and validated. The **Crypto-Net Settlement Platform** becomes a new Service Layer that can offer other industry wide services that could house the formal libraries of UK Law approved Smart Contracts as a repository for coded business logic that could standardise the way in which new commerce is contracted and become a central party on a Machine 2 Machine IoT world rather than sitting on the substitutes bench waiting for the call that never comes.

What role should lawyers perform?

Lawyers should take a leading role to ensure not only their longevity but as *the trusted advisor* to clients or lose them to another firm or provider.

With the majority of law firms feeling comfortable, happy with the status quo, there are opportunities for firms to take a proactive role to forge a new future and grab market share. Blockchain will drive more consolidation and continue to erode margins as *real time legal services platforms* start to emerge that have the potential to deliver services at much lower fifth costs. It is clear Thomson Reuters see this potential and why they are embracing Blockchain.

Clients are embracing Blockchain and other technologies and need to transact with their clients and markets in new ways and expect their lawyers to keep pace with change and be able to offer the right services.

Within 5 years many of today's legal services may not be delivered by law firms but by service providers that can deliver legal and contractual support for a Blockchain world. New service models will offer business logic as commercial conditions (terms) as part into new Blockchain Applications (Dapps) that not only automate many business functions will have the commercial contracts embedded that interact with other Smart Contracts, devices and machines.

Smart Contracts libraries exist as part of the Open Source community where Blockchain businesses, Academia and other organisations share their code, smart contract libraries comprising sets of industry focused standard terms and conditions as *code libraries* (many verified), as components to plug and play and assemble Blockchain based agreements.

The legal expertise as creative law, human judgment, interpretation and experience-based services (e.g. litigation, negotiation) is likely to be disintermediated from a platform based Legal Services as a Service model. Resulting in firms becoming much smaller and specialised.

Law firms have the opportunity to create their own Blockchain platforms that deliver tightly coupled services to clients in new ways. Comprising new service models where the client can engage in new ways, drawing content from self service libraries of Smart Contracts where the client has permissioned access, and where the law firms delivers active monitoring and synchronisation of agreements as Living Contracts, that monitor and loom for changes in state.

The questions remain:

- How will a law firm handle clients who's business involves millions of streaming transactions where the conditions of an agreement are tested many times a second...

- Where does the law stand on people-to-machine and machine-to-machine interactions...
- How will they decide a Smart Contract is working, has been executed properly or failed...
- Who decides if the business logic was flawed...
- Will lawyers be coders themselves create new types of agreements...
- When things go wrong who gets sued...?

Will the winners be the new Blockchain platforms comprising layers of Smart Contracts that will deliver a new generation of '*real time*' legal services that automatically track and monitor changes in *state* triggering a human or artificial response (ChatBot).

Will a set of new legal services based on *prevention* be required, the purpose to keep the transaction flow in steady state, without the need to break for disputes and disagreements (because there is not time) and the value of doing so in prohibitive given 8 decimal places will trade 100millionth of value between parties is uneconomic...

Will the vital verification of business logic residing in smart contracts as autonomous agents sitting in the Blockchain waiting their turn to execute are verified by academia or by legal services platforms being built by Thomson Reuters...

Will clients will be *nodes* on the firms Blockchain be able to monitor and view the state of their agreements using new tools and adjust their risk, exposure and commercial thinking as the state changes...

Will law firms become a *validating node* on the clients Blockchain where lawyers use tools that tap into the flow as a viewing node to monitor and check for changes in state, (as data is evidence), as events and thresholds are tested, conditions not met, or changes in ownership and economic rights impact what has already been agreed, triggering amendments and new smart contracts to ensure the transaction flow is maintained.

Conclusion

There is no doubt Blockchain will disrupt legal services sector and it is happening now. The legal services business model will struggle to make the shift to an IoT World of Smart Cities where software negotiates agreements and manages infrastructure and controls the fundamental services to support people's lives, in Healthcare, Supply Chain, Transportation and Emerging Services...

The implications for an unprepared legal system are fundamental, as doing nothing will mean the profession is unable to make up ground, a void that will be filled by new players delivering relevant services of the day. Those firms that embrace the technology will gain a competitive advantage and insulate the firm for many years to come.

Will Smart Contracts replace lawyers...? Not any time soon.

However Blockchain will disintermediate core services and make the profession take notice as it places further pressure on fees and margins.

In a Blockchain world the current legal services are unlikely to be relevant, work or excite clients who are engineering their business models for automation and autonomous decision-making. In an attempt to remove the human inefficiencies, errors and mistakes, share information in secure open ledgers without the need for a central validator that removes friction time cost and increases

transaction throughput. Clients prefer to pay for outcomes and high margin fee areas on which partners rely will be challenged.

Blockchain creates a more efficient foundation for supporting new types of commerce where all devices communicate to trade and exchange their value for their owners and for and with others. Volumes will be huge as quadrillion transactions per second flows between parties and different Blockchain ledgers, and where lawyers will be expected to deliver legal insight and actionable decision-making.

It is the Internet of Things supporting smart cities, global supply chains linking goods and services, delivering provenance, eliminating fraud and counterfeiting from the system. Involving secure global Identity and Proofs of Things replacing conventional means of identifying Who, What and Where with BIO recognition and digital sensors constantly monitoring state.

Issue: Today's legal services software as Time Recording and Client Accounting hard wires conventional legal services thinking, hierarchy and operating models. It is an old tired model of central validation, both inflexible and is now holding the sector back. Value and outcomes replacing *time bound* delivery of expertise with a large insurance policy just in case.

The software houses are slow to adopt Blockchain and their software cannot be re-engineered. Law firms will need to forge their own path and attract new skills and develop new capabilities to create the tools, new services and the means to measure value. Law firms will hire cryptographers, software engineers, identity experts and deploy Artificial Intelligence tools to find the opportunities, time bombs that sit in the current ledgers, archives and files handling larger data sets that deliver new insights.

New software tools will be essential that will be able to detect changes that tell the story of ownership, infringement, of breach, failure to perform or meet agreed terms and obligations. Law firms will need to plug into and become part of the technology community as legal services becomes smart contract and autonomous services mingled together.

Transnational transactions performed by smart contracts as autonomous entities will pose new challenges across jurisdictional boundaries although in the early days will be restricted to simple tasks and activities – payments, movement of title, provenance information and *Proofs*, that will no doubt be a cause for concern to the legal profession, but will happen anyway.

Parts of the world where the rule of law is more flexible are adopting Blockchain as China, Singapore, Malaysia, Indonesia, Africa and LATAM embrace crypto currencies and trade Bitcoin, that deliver free remittance, low cost payments and predictable outcomes for 3 billion new people with an internet connection; who now have the means to trade what value they have using all of the 8 decimals places.

Commerce is changing and the legal profession will need to align to and understand these new business models or fall away as not relevant. The smart firms will see the opportunity others will ignore Blockchain and end up like Nokia, Blockbuster and others who ignored the storm approaching.

What to do next...

Law firms need to learn and understand Blockchain and create a plan answering:

- What is the strategic impact of Blockchain...?
- How can Blockchain technologies be applied...?
- What are the immediate threats and opportunities...?
- What are the immediate competitive advantages...?

Welcome to a world of Blockchains and Cryptocurrencies and new commerce.

It is imperative law firms spend the time to understand Blockchain and have a plan...

Biography of the Author: Nick Ayton has spent 35 years in technology and has a background in Computer Science, Sales & Product Design. With 8 tech start-ups behind him he has senior roles in IT Services businesses - CSC, Cap Gemini, Siemens. In 2013 he built the first Self Service Pension Platform for the UK market, in 2005 launched the first Insurance Claims hub and in 1985 designed an Inflight Cabin Management System for commercial airlines.

An author, writer and speaker he helps to decipher complex technologies that can be used to solve real business problems. He is visiting professor at International Business Schools working with Business Executives and has been involved in designing Blockchain solutions for Insurance, Capital Markets, Asset & Wealth Management, Supply Chain and Healthcare, Professional Services and other sectors.

Nick writes and is the London correspondent for CoinTelegraph and he is due to complete his new book on Blockchain Design and Implementation Strategies during 2017.

Author Nick Ayton Blockchain Evangelist

Twitter @NickAyton
E: aytonnick@gmail.com
Mob: +44 7717 493125

