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Blockchain N. 5

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BLOCKCHAIN: LEGAL IMPLICATIONS, QUESTIONS, OPPORTUNITIES AND RISKS

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WHAT IS BLOCKCHAIN?

- At its simplest, blockchain involves recording information in a way that creates trust in the information recorded.
- This provides value to users because it creates a transparent chain of data, eliminating the need for intermediaries and other third parties, while being both safe and cost efficient.

PRACTICALITIES

- Since blockchain records are immutable, it is essential that the technical requirements are established up front.
- Legal input is essential to understand what requirements must be fulfilled or avoided and any regulatory frameworks must be complied with.

SMART CONTRACTS

- As such the name smart contracts is a misnomer: they are neither smart (there is no cognitive component), nor a contract in a legal sense.
- Why then are they a useful element in blockchain?

LEGAL MANIFESTATIONS

There are many possible legal applications for blockchain. While legal uses of blockchain are still being explored, a number of practical functions are being utilized.

LEGAL ISSUES

Blockchain participants need to be aware of the legal ramifications of the solution they are using including public law, private law, criminal law and financial and regulatory law.

SOLUTIONS

A number of solutions are being explored as lawyers wrestle with the legal implications of blockchain.

GLOBAL TRADE ASPECTS

Parties trading globally need higher supply chain visibility and security, data that is both high quality and secure, and trade compliance systems that can cope with electronic exchange of data. Technologies such as blockchain allow businesses to cope with these challenges.

WHAT IS NEXT?

Deloitte Legal is involved in the Deloitte Blockchain Institute which offers an end-to-end portfolio of services from ideation to implementation to make your blockchain vision work. We already have over 20 prototypes in development and combine our legal, technological, talent, strategy and operations expertise to provide fully integrated blockchain capabilities.

WHAT ARE THE BENEFITS OF BLOCKCHAIN IN THE LEGAL INDUSTRY?

- **Transparency**
 - **Accessibility**
 - **Automation**
 - **Cost savings**
- **Data Integrity**

Lawyers can leverage blockchain technology to streamline and simplify their transactional work, digitally sign and immutably store legal agreements. Using scripted text, smart contracts, and automated contract management reduces excessive time spent preparing, personalizing and maintaining standard law documents. These cost savings are passed on to the customer. Additionally, blockchain democratizes access to the justice system by cutting down on consumer complexity and lowering hefty legal fees.

Distributed ledger technology creates a shared ledger accessible by all parties to an agreement. Blockchain-based contracts have baked-in compliance, no surprises, and no room for misinterpretation. Additionally, non-technologists can better understand the transactions they enter into and what the smart contract represents.

HOW WILL BLOCKCHAIN TECHNOLOGY REDUCE COSTS IN THE LEGAL INDUSTRY?

Many of the manual tasks can be carried out automatically, which significantly decreases the hours allocated to drafting and amending legal documents. This cost is generally passed down to clients, which pushes hourly lawyer fees to astronomical rates. The introduction of smart contracts will accelerate and lower the cost of transactions between parties. A cost-efficient algorithm can automatically and transparently manage escrow accounts at a fraction of the cost of manual labor. Lower costs will increase the overall demand and accessibility for legal services.

HOW WILL BLOCKCHAIN TECHNOLOGY BRING AUTOMATION TO THE LEGAL INDUSTRY?

Lawyers spend up to 48% of their time on administrative tasks, including transferring information between software and updating client trust ledgers.

Utilizing a legal agreement repository and pre-fabricated smart contracts, lawyers can automate non-billable administrative tasks and transactional work. Cutting down on excessive manual labor will also accelerate legal proceedings, which decreases costs to customers.

HOW WILL BLOCKCHAIN TECHNOLOGY MAKE THE LEGAL INDUSTRY MORE EFFICIENT?

Blockchain technology can streamline, re-engineer, automate, disintermediate, and secure many processes in the legal industry without losing any of the judicial authority. Optimizing various industry features will make the legal and financial sectors more efficient and productive while lowering friction and costs.

Legal documents act as a honeypot for ill-intentioned hackers who seek to profit from the valuable confidential information created and maintained by lawyers. Instead of emailing sensitive data back and forth, lawyers can choose to store legal information on a decentralized, distributed ledger for append-only feeds, which increases data integrity.

If evidence is tampered with or changed, the associated hash value will not match, making it clear that a change has occurred.

CASES IN THE LEGAL INDUSTRY?

There are several possible Enterprise Ethereum blockchain applications across the legal industry. Here are some of the top use cases that ConsenSys has identified:

- ✓ Electronic Signatures
- ✓ Intellectual Property
- ✓ Property Rights
- ✓ Chain of Custody
- ✓ Tokenization
- ✓ Decentralized Autonomous Organizations (DAO)
- ✓ Limited Liability Autonomous Organizations (LAO)
- ✓ Automated Regulatory Compliance
- ✓ Machine to Machine Payments
- ✓ Blockchain-Based Arbitration System

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT ELECTRONIC SIGNATURES?

Electronic signatures bring speed, efficiency, and cost savings to the authentication process. Signing on blockchain costs the signer a fraction of the cost compared to e-signature platforms like DocuSign. Currently, it costs an average of 7-8 cents to sign a smart contract on Ethereum electronically. Moving signatures to Ethereum also cuts down on manual tasks and the high costs associated with coordinating and facilitating signature authentication.

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT ELECTRONIC SIGNATURES?

Electronic signatures stored on the Ethereum blockchain live independently of the object being signed, which allows for parallel signing and independent verification without granting full read access to the content. When two parties digitally sign a smart contract, they simultaneously agree to the terms and conditions associated with the agreement.

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT INTELLECTUAL PROPERTY?

A critical blockchain-based innovation impacting intellectual property is non-fungible-tokens or NFTs. NFTs are cryptographic tokens that can be used to represent unique property on a blockchain. NFT standards allow for robust property rights schemes in the digital realm. With blockchain, creators of a product or piece of content can upload, register, and time-stamp their original work on a public ledger to create an undeniable proof of ownership. From there, a blockchain-based IP enforcement system could help creators monitor exactly how and by whom their creations are being used.

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT PROPERTY RIGHTS?



The distribution of property rights and the existence of transaction costs impacts a society's economic activities, yet property rights and transaction cost structures are primarily based on the pre-digital era. Utilizing blockchain architecture, property owners can subvert costly central intermediaries, and elect to register and sell their properties on the blockchain in a transparent and immutable way. Blockchain-based public ledgers offer a new form of property rights management, which allows for a measurable reduction in transaction costs.

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT CHAIN OF CUSTODY?

Chain of custody is the process of handling evidence from the time it is collected until the time it is presented as evidence in a court of law. Evidence exchanges hands numerous times; interested parties log evidence in and out of storage, physically sign forms that create a paper trail to record its movements.

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT CHAIN OF CUSTODY?

Unfortunately, this process creates several opportunities for nefarious actors to taint the evidence. It also opens the door for defense attorneys to claim the evidence has been tampered with. Utilizing blockchain technology, one could generate and track a unique evidence token for every item of data collected and received – stored and auditable in a public/private blockchain.

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT TOKENIZATION?

- Tokenization is a method that converts rights to an asset into a digital token. Interested parties can issue tokens on a platform that supports smart contracts which will enable the purchase and vending of this token on exchanges. Coupled with IP rights and microtransactions, this opens up a world where creators can tokenize and legally sell fractions of their assets.



For example, artists could tokenize and log a piece of work onto the public Ethereum blockchain, create a license around it, and program real-time royalty payments. This structure opens the door for widespread fractionalization of art ownership.

OTHER EXAMPLES

- ✓ Mata Capital: Catalyzing real estate investments with blockchain technology.
- ✓ Real estate investment product and process digitization with Codefi Assets. This initiative enabled Mata Capital to directly distribute funds units, facilitate asset tracking, eliminate account reconciliations, and improve secondary market liquidity for investors.

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT DECENTRALIZED AUTONOMOUS ORGANIZATIONS (DAOS)?

A DAO is a decentralized autonomous organization whose decisions are made electronically through code or the vote of the supporting members. DAOs create scalable, borderless online cooperation and have been used to coordinate grants and to fund public goods. Having the proper legal wrapping for DAOs is critical.

WHAT IS A LIMITED LIABILITY AUTONOMOUS ORGANIZATIONS (LAO)?

LAOs are for-profit limited liability decentralized organizations. It enables its members to invest in early-stage Ethereum ventures and share in the profits.

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT AUTOMATED REGULATORY COMPLIANCE?

Blockchain technology gives us the framework to create a shared ledger system where various parties can report their compliance data/documentation to the appropriate authorities in an automatic manner. Additionally, a blockchain-based framework can automate various functions of the law, such as tax compliance.

HOW WILL BLOCKCHAIN TECHNOLOGY IMPACT MACHINE TO MACHINE (IOT) PAYMENTS?

IoT applications rely on machine-to-machine communication.

Smart contracts present a unique interface for machine-to-machine communication that provides a secure, append-only record that can be shared without a central administrator.

Using smart contracts addresses the challenges of transparency, longevity, and trust in IoT applications.

HOW WILL BLOCKCHAIN TECHNOLOGY CREATE A BLOCKCHAIN-BASED ARBITRATION SYSTEM?

In a blockchain-based arbitration system, users program their agreements into a smart contract that manages the arbitration procedure. These agreements seamlessly interact with smart contract code to ensure the enforceability of any arbitral awards. An integrated reputation system could help the community select arbitrators to resolve disputes. Blockchain-based arbitration systems will create a global, universally available judicial system that delivers low cost and high-quality dispute resolutions online.

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