

SPECIAL

Effective Use of Blockchain in the Legal Sector – A near future or a distant possibility?

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Representational Image

The recent decision of the Hon'ble **Supreme Court** of India in *Internet and Mobile Association of India v. Reserve Bank of India*^[1] has brought the legal sector's attention back to the distributed ledger technology that formed the very basis of bitcoin and other cryptocurrencies. Even though the law to regulate cryptocurrencies is still in its nascent stage, the underlying blockchain technology has taken the front with its widespread application in almost all sectors, including the legal sphere.

The year 2010 experienced a wave created by the blockchain technology that gradually found its way in the corporate world where it has been successfully used for various payments and transactions and also for raising and investing money. The decade old blockchain has spread like wildfire in the last 2-3

years and is being explored by Major Fortune 500 companies for its practical benefits in business operations and security.[2]

Blockchain technology

Blockchain is basically a repository of digital records which are cryptically stored using a cryptographic hash. In simple words, blockchain is a method of securely storing data into *blocks* which eventually form a *chain*.

For each data stored in the block, a hash is generated. Hash is a process algorithm which turns large amount of data into a fixed length. For example, the word “*Mouse*”, using hash function, can be cryptographically reduced to “*1f43156ytgh12*”. Simply put, “hash” is like a fingerprint and just as fingerprints contrasts from one person to another, so does the hash (depending upon the data input). Once a particular amount of data is added to the chain and a hash is generated-that information becomes final and irreversible. This feature provides extra security to the data and makes it less prone to be hacked. Therefore, if any information stored in the blocks is tampered then, consequently, all blocks in the chain will automatically change and so will the hash value. However, that does not mean that the information/data stored in blocks cannot be altered. The *consensus algorithm* provides the participants with an option of changing or modifying the data in the blockchain. Although in order to alter/add or modify the data in the blockchain, the consensus of at least 51% of the participants in the blockchain is required, hence the term “*consensus algorithm*”.

Blockchain has already found its way into the banking and financial services sector[3], capital markets for trade settlement, insurance industry for the purposes of underwriting, supply chain management, healthcare and life

sciences (Patient record management) and many more. With such wide applicability of this decentralized distributed ledger technology, it is imperative to put blockchain into better usage in our legal and judicial framework as well.

TECHNOLOGY IN THE LEGAL SECTOR

Perhaps the earliest recorded use of technology in the legal sector is the use of the *Kleroterion* device^[4]. This device, that dates back to over 2500 years, was used by the ancient Athenians to choose jurors for the purpose of conducting trials. Juxtaposing it with the modern-day computer, the *Kleroterion* would seem like an ordinary slab of stone, however, the *Kleroterion* was a highly sophisticated instrument capable of performing complex and accurate calculations within minutes.

Times changed and so did the use of technology in the legal sector. Although, there is no doubt that technology in the legal sector has improved efficiency, reduced errors and has further demystified the operations of the court system, but the growth has been slow. Perhaps, because the traditional legal system is a relic of the past, which while adjusting itself to the modern world technology is still, metaphysically, attached to its ancient and archaic roots.

The present-day legal system, which has been slow in keeping up with the changes in technology, has for the very first time attempted to digitise itself overnight during these unprecedented pandemic times. Virtual court hearings and paperless filings, even with certain limitations, has been welcomed by the legal sector. The credit for the digitisation of courts should be given to the Supreme Court's e-committee headed by Hon'ble Justice DY Chandrachud.^[5] The e-committee by swiftly implementing a contingency plan has enabled our courts to continue operating even during this pandemic thus helping thousands to get justice.^[6]

However, the growth should not stop here and this opportunity should also be fully utilised to explore other technological innovations which can be

imbibed and integrated into the prevalent legal tech. One such innovation is blockchain which has tremendous capacity to add enormous value to the existing legal system.

India's global counterparts such as Estonia, China, UK, Ghana, Ukraine, Canada and Sweden have already integrated blockchain in their legal system. Synthesising the use of blockchain in the legal sector will provide greater boost to the prevailing “*e-justice*” model which will not only reduce cost, time and carbon footprints but will also ensure greater security, establish more transparency and authenticity, thereby, increasing faith of public in the legal system.

The idea of integrating the use of blockchain in the legal sector has also been reverberated by the NITI Aayog in its report titled “Blockchain: The India Strategy Part I”,^[7] wherein it puts forth the effective need of putting this unprecedented technology to good use in the existing legal setup.^[8] The Aayog report while explaining the use of blockchain technology in different sectors also discusses the challenges which have to be surpassed to make the technology available to the common man.

It is true that modernising any system using technology always carries new and unique challenges. To begin with, internet penetration in our country may be high but in terms of access to smartphones, coupled with technological and basic legal know-how will make it challenging for blockchain to be an active mainstream participant. Further, the traditional old school style of work will also emerge as a natural challenge. Therefore, a major paradigm attitudinal shift will be required to enable the blockchain environment to thrive and grow in the existing legal sector. It will be important to synthesise the traditional wisdom with modern tech to enable the blockchain environment to flourish.

Possible application of Blockchain in the legal sector

Smart Contracts: The much-hyped smart contracts are basically user defined and tailor-made computer codes or software programmes which work independently. Simply put, each *smart contract* can be programmed in such a way that execution of every action will depend upon completion of certain parameters. These parameters are pre-coded into the smart contract and will get triggered once the corresponding action defined under the said parameter is fulfilled. For example, the transfer of payment from A to B will happen only upon fulfilling certain parameters such as delivery of goods in proper manner. If the action defined in the pre coded parameter is not executed in the exact manner as defined, the said parameter will not get triggered. A doorbell for example will only alert you once the bell switch is pressed and not otherwise. Similar application happens in smart contracts. Although it may seem that the actual functions performed by smart contracts are rudimentary in nature, however in reality, the entire process is highly complex and capable of handling sophisticated transactions.

It will further be wrong to assume that smart contracts will not give rise to litigation or will soon replace lawyers. Although, a smart contract has high accuracy than traditional contracts, but it does not think independently. A smart contract will only do what it is specifically told and, therefore, suffers from what is known as “oracle problem” which means that at some point someone will have to step in to ascertain whether the terms of the contract were fulfilled or not. Simply put, during such breach, an impartial person will have to step in to take a call which will be fair to both parties. This is where online dispute resolution mechanisms will find its practical implementation.

At present, smart contracts are best suited to execute transactions involving payment of funds upon completion of an event and imposing monetary penalties if the events are not completed. The key challenge for adoption of a smart contract is that the parties to an agreement will have to rely on technical experts (coders) who can capture the contents of an agreement in a computer code. Whereas, non-lawyers may typically understand the contents of simple agreements but non-programmers might not be able to comprehend

a software code which forms a basic smart contract. Additionally, the legality of smart contracts will also emerge as a challenge. Although the definition contained in Section 10 of the Indian Contract Act, 1872, would hint that smart contracts are legally acceptable instruments, however, more clarity can be obtained once the legislature takes suitable action defining codifying the same.

BLOCKCHAIN BASED ONLINE DISPUTE RESOLUTION (ODR): COURTS OF THE FUTURE

Commercial arbitration is the preferred choice of major economic players because of being time-effective, neutral and having high level of confidentiality. However, with the emergence of several blockchain based ODR platforms providing low cost resolution facilities to parties to solve many cross border international disputes, blockchain technology is slowly creeping into traditional space of dispute resolution. Blockchain ODR has the potential to help small and medium scale players settle disputes at comparatively lower cost. With recent examples of many jurisdictions adopting the model of blockchain ODR it will not be out of place to assume that the courts of the future may carry a better chance of providing cost effective resolution to commercial disputes. Aragon Court recently adopted the said model where users can file issues or act as jurors.[9] Initially, the Aragon Court is dealing with Proposal Agreements but the underlying technology can theoretically adjudicate any issue with two possible outcomes[10]. Other platforms such as Jur, Kleros, Doges and Oath are similar systems working under this model.

Blockchain ODR has its fair share of challenges such as low awareness of the technology amongst others. Speaking to the authors, Chris Connelly, *Community Manager at Jur* says that he hopes that India can emerge as a major hub for blockchain based ODR. Chris says that “the idea (behind Jur) is to reinvigorate a sclerotic industry and make it flexible to adapt to niche purposes i.e. hubs for every type and scale of transaction with appropriately streamlined procedures to reduce time and cost.”According to Chris even

though many in India cannot afford cell phones and afford the initial cost to set up the blockchain process but the real game changers are – *over a quarter Indian entrepreneur shaving cell phones*. Jur's open justice platform offers arbitration groups to set up online courthouses and run UNCITRAL compliant worldwide enforceable dispute resolution on the blockchain.

Blockchain in the Indian judiciary

General Application: By uniting and synthesising all parties in litigation i.e. lawyers, experts, investigating agencies etc. on a single blockchain platform, it will be possible to provide a secure and safe digital space for consistent, timely and economically feasible exchange of documents between these agencies. This shall, further, ensure that the information that is accessed on the blockchain network is guaranteed safe and cannot be changed as the burden of assessing the reliability of these blocks of information is on the miners (i.e. participants who validate the authenticity of new blocks). This shall drastically save the court's time which will enable them to achieve unparalleled focus on the adjudication of case rather than focussing on other trivial issues which at present consumes a lot of time. Blockchain, if incorporated in the legal system, has tremendous potential both in terms of operations as well as security. Further, in the judicial sector it might also work well to prevent instances where the order(s) of the courts are damaged or tampered with such as the one witnessed in a case concerning Mr. Anil Ambani.^[11]

Blockchains can be used to store tremendous amount of information thus enabling it to create multiple nodes. Nodes are basically participants of a blockchain network who are connected to it via different computer/electronic software. Nodes can thereafter be used to perform specific functions using self-executing smart contracts. Every node can be tailor made using smart contracts for certain specific function. For example, a node for filing, a node for marking defects and a few more. Using the blockchain certain tasks, which as on date usually take around a month, can be done in within a few days thereby reducing judicial as well as the administrative time.

Trial: During the stage of trial, Blockchain can be used by the judiciary to assess and authenticate the evidence stored in electronic form. The cryptographically secured electronic evidence will be easier to authenticate and will reduce the workload on the judicial framework. With the use of blockchains, this evidence recorded in electronic format can not only be verified as authentic but this will also enable judges to easily adjudicate between false and genuine evidence. The fact that the participants (via nodes) shall be equally responsible to formulate majority votes so as to facilitate successful addition of a document into the longest chain, rest assured, this particular chain shall have all the approved documents by the parties on record i.e. the bench, registry, litigants, agencies etc.

However, the acceptability of evidence stored in the blockchain database in judicial proceedings needs to be backed by either an appropriate legislative action or via a judicial pronouncement which will pave way for acceptability of blockchain evidence in court proceedings. In 2018, China's Supreme People's Court ruled blockchain evidence to be accepted as digital evidence in the newly established Internet courts[12]. More recently, the French too are gradually proceeding towards accepting blockchain evidence as a form of electronic evidence in its court proceedings.[13]

CONCLUSION

The draft discussion paper by NITI Ayog[14] is a beneficial initiative by the legislature as it marks the first intensive effort over the last 2-3 years to implement blockchain systems in variety of contexts. More recently, in July 2020, the Hon'ble Prime Minister, Shri Narendra Modi too has recognized blockchain to be '*an opportunity in frontier technology*' due to its worldwide impact and effective use.[15]

In conclusion, absolute, safe, secure and time-stamped blockchain records can prove useful in judicial proceedings. The technology is still at a nascent stage and a number of legal barriers and practical difficulties such as faults in

coding and knowledge of cryptography etc. will have to be considered by the legislature. Via policies and regulations, a functional application of blockchain along with other implementation prerequisites should be devised by the legislature to allow the blockchain environment to sustain itself.

The task at hand is mammoth, but concerted efforts on expanding the technological know-how can help eradicate initial jitters and revolutionize the legal sector. Careful and detailed legislative framework for implementation of this technology shall, in due course, improve efficiency by reducing errors and further broaden the accessibility to legal course in this age driven by digital technology.

Also Read: [Plea in Supreme Court against Quranic verses](#)

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