LEX FORTI

DISCLAIMER

EDITORIAL BOARD

ABOUT US

LexForti is a free open access peer-reviewed journal, which gives insight upon broad and dynamic legal issues. The very objective of the LexForti is to provide open and free access to knowledge to everyone. LexForti is highly committed to helping law students to get their research articles published and an avenue to the aspiring students, teachers and scholars to make a contribution in the legal sphere. LexForti revolves around the firmament of legal issues; consisting of corporate law, family law, contract law, taxation, alternative dispute resolution, IP Laws, Criminal Laws and various other Civil issues.

Blockchain Arbitration: A Primer

Asmita Kaur & Irith Kapur

ABSTRACT

Blockchain arbitration is an up and coming field. Blockchain technology can be defined as an open, distributed ledger that records transactions between parties efficiently in a verifiable and permanent manner. It can be defined in terms of blocks and chains, each block containing the information, and each block is added to the chain, thereby creating a blockchain. In this article we aim to explain what blockchain technology is, how can blockchain be used in arbitration, it's scope, and the advantages and disadvantages. We also analyse whether blockchain arbitration is feasible in the current legislative framework of India.

INTRODUCTION

The blockchain is an emerging technology in the context of cybersecurity and digitization. Most people understand blockchain in terms of bitcoin and other cryptocurrencies. While it is true that cryptocurrencies are built using the blockchain technology, this is hardly the tip of the iceberg. The technology has numerous applications, including digitization of the legal industry in the form of smart contracts. The starting point in understanding the blockchain technology and its applicability in the legal industry is to define and understand the meaning of the term "Blockchain Technology" itself.

WHAT IS BLOCKCHAIN?

Fundamentally, blockchain can be described as a chain of blocks. Blockchain[1] can be defined as an open, distributed ledger that records transactions between the parties efficiently and in a verifiable and permanent manner. It is, essentially, a decentralized database system.

The name "blockchain" comes from the way in which it functions. The "blocks" of information are added to the "chain" of transactions. Each block is chained to the previous block and is entered into the network using a cryptographic mechanism. Each block consists of digital data that is stored in a database accessible to the public. The basic purpose of the technology is to store and distribute digital data across a decentralized network in a secure manner, this means that no third party can access it.

BLOCKCHAIN AND ARBITRATION

Now that the definition of blockchain is clear, let's move on to arbitration. Arbitration[2] is a procedure in which when a dispute arises between two parties they give the power of deciding the dispute to one or more arbitrators and their decision is final and binding. The major reason why parties prefer arbitration over court litigation is that arbitration is a confidential process, it does not take as much time as litigation does to resolve the dispute. However, many sensitive documents are exchanged during the arbitration proceedings, some might be exchanged in person, while some are exchanged online through emails or Online Dispute Resolution portals. There is a fear of those documents getting in the hands of the wrong

---

[1] The Truth About Blockchain <https://hbr.org/2017/01/the-truth-about-blockchain> last accessed July 18, 2020
[2] What is Arbitration? <https://www.mediate.com/articles/grant.cfm> last accessed July 18, 2020

people at all times or being used in an unethical manner. In 2015, the Permanent Court of Arbitration's website was hacked during the hearing of a very sensitive Maritime Border arbitration.

The use of blockchain enables the secure transfer of data and there is no third party involved at any point. The contract, negotiation, and execution are all between the parties to the contract through the blockchain technology. Not only this, but blockchain also addresses the problems which may arise if the parties belong to different jurisdictions and have different data protection regulations. Contracts between parties of different jurisdictions are on the rise and it cannot be expected that if one party is in India and the other in the USA that either of the parties would move the court in the other party's jurisdiction for a legal battle.

When we talk about blockchain, the name of an eminent computer scientist, legal scholar and cryptographer comes in our minds – Nick Szabo. He, in 1994, said that technologies such as blockchain can be used to create and execute smart contracts or e-contracts. Blockchain can be used for automatized dispute resolution in small, standardized contracts based on smart contracts.

WHAT ARE SMART CONTRACTS?

Smart Contracts are one of the three pillars of Blockchain. Smart contracts can be termed as one of the most promising features of blockchain. Smart contracts[3] are essentially computer programs that intend to digitally facilitate, verify, and enforce the negotiation and performance of contracts.

Smart contracts work on an "if-then" principle which means "if" a condition is fulfilled "then" the amount will be released, else it will be returned. Smart contracts allow the performance of credible transactions without the intervention of a third party since they are conditional in nature, i.e., based on the "if-then" principle. Blockchain creates the perfect environment for smart contracts since their execution does not require any human involvement. Mostly digital assets like bitcoins are used in smart contracts.

The easiest example in order to understand smart contracts is to compare them with a vending machine. Usually, in the case of traditional contracts, a person goes to an advocate and pays them to get the document. But, in case of smart contracts, the person simply drops the digital asset into the vending machine (i.e. ledger) and the product/service drops into his account. Instead of just defining the rules and penalties, like a traditional contract, smart contracts also automatically enforce the obligations.

---

[3] Smart Contracts on the Blockchain: A Deep dive into Smart Contracts <https://medium.com/@abhibvp003/smart-contracts-on-the-blockchain-a-deep-dive-in-to-smart-contracts-9616ad26428c> last accessed July 18, 2020

THE SMART CONTRACT PROCESS

The process of concluding a smart contract[4] begins with pre-defining the contract. Here, the parties pre-define the contract, establishing the terms and conditions and all other required information. For example- the currency in which the transaction is to take place or the currency rates, etc.

The next step is the determination of the triggering events. The triggering events, i.e. the events which will lead to the enforcement or cancellation of the contract are specified. This is where the "if-then" principle is used.

After the contract is pre-defined and the triggering events are determined, the information is fed into the blockchain by a specialized coder. The information and provisions regarding the contract are now stored on the blockchain in a digitized form. This step is what makes the smart contract different from a traditional contract.

Then comes the stage of execution wherein the contract will be executed if the conditions set out in the contract are fulfilled. The transaction amount is transferred to the party upon execution of the contract.

The final stage is the settlement of the contract. The settlement of a contract can take place in two modes- off-chain assets (physical assets like stocks), or on-chain assets (digital assets like cryptocurrency).

BENEFITS OF ADOPTING SMART CONTRACTS

There are numerous benefits of smart contracts[5], some of which are mentioned below-

i. **Autonomy-**

Smart contracts do not require any middleman to be formed as they run on blockchain technology and the parties can easily create a smart contract on their own.

ii. **Secure**

---

[4] Smart Contracts: Characteristics, Benefits, and Types <https://hackernoon.com/a-brief-introduction-to-smart-contracts-53173x9g> last accessed July 18, 2020

[5] 10 Use Cases of Smart Contracts <https://www.devteam.space/blog/10-uses-for-smart-contracts/> last accessed July 19, 2020

Smart contracts are considered to be more secure in nature than traditional contracts. The blockchain technology creates an unalterable ledger that provides definitive proof of the transactions and it is extremely difficult to hack into the blockchain.

iii. Faster

Since the creation of a smart contract does not require any middleman and they run on software codes, it can be entered into at a much faster speed.

iv. Transparency

All the terms and conditions of the smart contract are accessible to every relevant party and since there are no between the line clauses, the chances of undesirable disputes are also eliminated.

v. Data Storage

Smart contracts record all vital details of each and every transaction and they are permanently stored in a digitized manner.

CHALLENGES IN ADOPTING SMART CONTRACTS

The concept of smart contracts is still in its nascent stage and, thus, faces numerous legal challenges. Some of these challenges are discussed as under-

i. Legality of the Contract

The first and foremost question that comes to our mind is whether smart contracts are legally binding or not. The legality of the smart contract depends upon its specific use and the law applicable to the contract. Thus, the answer to the question of the legality of the contract varies significantly depending upon the jurisdiction in which it is to be enforced. To counter the uncertainty surrounding the legal effects of a smart contract, some countries have passed legislation to recognize the legal effects of smart contracts. Adopting such steps means that the state recognizes the legally binding effects of a smart contract, which are executed on a blockchain.

ii. Limitation in Drafting and Negotiating Contracts

Another challenge is that the parties to the contract will have to rely on a technical expert to transform the agreement into a code. This poses yet another threat that if the code contains a bug, which is exploited by a hacker, who would be liable for this error. In the case of a traditional contract, the parties can simply sue the drafting individual for malpractice, but in the case of a smart contract, there is still prevailing uncertainty about this question.

iii. Amendment and Termination of the Contract

With traditional contracts, the parties have the option to mutually amend the provisions to address their needs. However, such flexibility is not offered by smart contracts. The basic nature of a blockchain makes the contract unchangeable, thus, modifying the contract would be a complicated, time consuming, and expensive task. Similarly, smart contracts are, as of yet, not easily terminable.

iv. Automated Nature of the Contract

Smart contracts automatically execute transactions, without the need for human intervention. The automated nature of the contract can sometimes lead to unwanted transactions between the parties, in case of a defect in the coding. There is simply no option to not enforce the provision. This would, eventually, lead to increasing conflicts between the parties and the multiplicity of court proceedings.

The only way to counter these challenges is to develop adequate laws specific to the concept of smart contracts. Although antithetical to the nature of blockchain, projects are underway to make smart contracts easily amendable and terminable. Even though the chances of disputes are minimised in smart contracts but as in cases of traditional contracts there are chances of disputes, disputes might also arise in smart contracts.

EFFICIENCY OF ARBITRATION AS A DISPUTE SETTLEMENT MECHANISM IN SMART CONTRACTS

As mentioned above, even though the chances of disputes arising out of a smart contract are minimal none the less disputes might arise between parties due to various conditions.

The dispute might arise between parties with regard to the sale of defective goods or because of technical difficulties, or due to the performance of oracles[6] or in case improper or wrong information has been fed into the code of the contract, etc. Another major problem that may arise in determining the jurisdiction where the dispute must be resolved.

---

[6] Blockchain Oracles Explained < https://academy.binance.com/blockchain/blockchain-oracles-explained > last accessed July 19, 2020

This is where Arbitration, as a dispute settlement mechanism, comes into play. Arbitration provides a speedier redressal of disputes and it is confidential. Smart contracts are based on blockchain technology and in order to resolve a dispute related to a contract based on blockchain, it is imperative that the person resolving the dispute has knowledge of the technology which might not be possible in traditional courts, but in case of arbitration, a special tribunal can be set up in order to resolve disputes arising out of smart contracts. The inclusion of an arbitration clause in the smart contract will reduce the number of issues arising out of the contract and help in the settlement of disputes in an effortless manner.

Since smart contracts are distributed through various computer networks which may be based in different parts of the world, if a clause regarding the jurisdiction and the governing law is added to the smart contract it will wipe out any uncertainty regarding the jurisdiction and the applicable law.

In cases where a smart contract is entered into by parties with regard to certain highly sensitive matters, moving traditional courts in case of a dispute might not be their best bet since court proceedings are not confidential. Certainly, in such cases having an arbitration clause in their contract would be of benefit since arbitration proceedings are confidential in nature.

BLOCKCHAIN ARBITRATION AND INDIA: THE CURRENT LEGAL FRAMEWORK

The major problem with the arbitration of smart contracts is the lack of enforceability under International Law since the New York Convention[7] does not recognize electronically exchanged agreements as arbitration agreements. However, when we take a look at the laws regarding the same in India, we find that Section 7 of the Arbitration and Conciliation Act, 1996 says that a valid arbitration agreement should be in "writing", but further clarifies that an agreement would be considered as having been in writing if it has been communicated through "electronic means". This was introduced through the Amendment Act of 2015. This means that a smart contract, containing an arbitration clause, can be enforced in India by consent of both parties.

A plain reading of the Indian Contract Act, 1872 tells us that Section 10 of the Act establishes certain essentials of a valid contract. Any contract in India, to be a valid contract, must fulfill all the essentials.

---

[7] Convention on the Recognition and Enforcement of Foreign Arbitral Awards
<https://www.uncitral.org/pdf/english/texts/arbitration/NY-conv/New-York-Convention-E.pdf > last accessed July 19, 2020

Analysing this in reference to smart contracts, a conclusion is drawn that smart contracts fulfill the criteria under Section 10 of the Act.

Also, the Information Technology Act, 2000, through Sections 5 and 10A, makes digital signatures legal in India and gives validity to contracts formed through electronic means. Consequently, this enhances the enforceability of a smart contract in the Indian legal regime.

It is important to mention that most smart contracts deal with the digital currency which is not yet allowed to be used in India, however, physical assets can also be dealt with under smart contracts.

However, there is still a need for a regulatory framework to govern the disputes arising out of smart contracts, which would provide for the definition and essentials of a smart contract, the procedural aspect in case of a dispute, the liability incurred, and the punishment for breach of contract.

CONCLUSION

Blockchain technology and smart contracts have a lot offer but there is also a need for a legislative framework which would allow proper enforcement of such contracts. The easiest and most effective way to resolve dispute arising out of such smart contracts is arbitration since a special tribunal consisting of individuals who have adequate knowledge can be formed in order to resolve such disputes. Once a legislative framework is created, all the potential challenges which the parties can face while forming a smart contract can be dealt with easily. However, since blockchain and smart contracts are a fairly new area for arbitration, we'll have to wait and see how its future unfolds.