Smart contracts – A Legal Demystification

Introduction:

Contracts are the Agreements between the parties that are enforced by law, Traditional transaction in the current legal system are usually carried out in a Centralised Form which mandates the involvement of a trusted 3rd party (eg,Bank,Advocate),and this has the threat of security issues, the smart contract technology emerged to tackle these issues by making the parties to get into contract directly without a centralised system, the agreements are computerised and also these smart contracts are self executor, the underlying technology of smart contract is the Blockchain - a decentralised distributed ledger that makes record of all the transactions that have taken place, blockchains were originally invented for the cryptocurrency system and later smart contract technology used its public decentralised distributed ledger system for the transparency and the security between the parties who enter into agreement, This papers Deals with the smart contracts briefly and the features of the smart contract, and also we have discussed about the Indian legal system perspective of the Smart contract, its legality and its admisibility in the Indian Law.

History of Smart Contract

The Smart contract was first created in 1996 by Nick Szaboan American law scholar, cryptographer and programmer, smart contracts were created before the arise of block chain technology .Nick Szabo's concept on smart contracts was that, smart contract are digital protocols for information transfer that use mathematical algorithms to automatically execute a transaction once the established conditions are met and that fully control the process[1]. As the necessary technology wasn't introduced (Public decentralised distributed ledger), nick Szabo's concept wasn't realised at that time

In 2008, the Blockchain system was introduced, which was a distributed public database also it was decentralised. Five years later a blockchain platform naming "Ethereum" created the possibility to use the smart contract, today many platforms have been developed for smart

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[1] https://www.cryptoninjas.net/what-are-smart-contracts/

contracts, some of the platforms are RSK , EOS , Steller, but still Ethereum remains the popular

What is smart contract?

Smart contracts are computer protocols that facilitate, verify, or enforce the negotiation or performance of a contract, or that make a contractual clause unnecessary. They also have a user interface and often emulate the logic of contractual clauses.[2]Smart contract are self-executing contract with terms and conditions of the agreement between the parties are being directly written in the form of computer codes. The agreement is now executed on a distributed decentralized platform called a blockchain network. The code controls the execution and transactions of the agreement and they are tractable and they cannot be reversed.

Smart contracts allow the agreements to be carried out among the parties without the need for a central authority, legal system or any third party whom to be trusted. The attraction of this blockchain technology is that, it is a distributed and a decentralized system that exists among the permitted parties. We are also saved from paying to the middlemen for enforcing the agreement also as the blockchain technology is computerized it saves a lot of time compared to the traditional method of contract.[3] Christopher D. Clack, acclaimed the meaning of smart contract in his draft manuscript titled, "Smart Contract Templates: Foundations, Design Landscape and Research Directions".[4]

Smart contract in simple terms

A smart contract is an agreement made between the parties in the form of computer code. The agreement is deployed on the blockchain, a decentralised platform (public database)

The transaction executed in a smart contract is processed by the blockchain technology, which means they can be sent automatically without the interference of the third party

The transaction will execute successfully only when the conditions in the coded agreement are fulfilled.

Blockchain demystified: (the underlying technology of smart contract)

We can simply derive the meaning of block chain from its name.

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[2]4 Mougayar, William. 2016. The Business Blockchain: Promise, Practice, and Application of the Next Internet Technology. New York: John Wiley & Sons

[3] https://appinventiv.com/blog/smart-contract-guide/

[4]Christopher D. Clack et al., Smart Contract Templates: Foundations, Design Landscape and Research Directions https://arxiv.org/pdf/1608.00771v2.pdf%20

Blockchain (Block + Chain), so blockchain literally means it as a chain of blocks, the digital information is represented as BLOCKS and the Database is referred as CHAIN.[5]

The Blocks here store the digital information, the block has three parts, and they are:

> ➢ Stores information the information such as date, time,
> ➢ Stores information about the Participants of the transaction
> ➢ Stores information that differentiates them from other blocks. It's like having a unique identity, these unique identities are stored in the form of HASHES

Why smart contract?

Smart contacts benefice the parties in various aspects such as cost cutting, reliability, transparency etc.

Before getting into smart contract let's see the work flow of a traditional contract
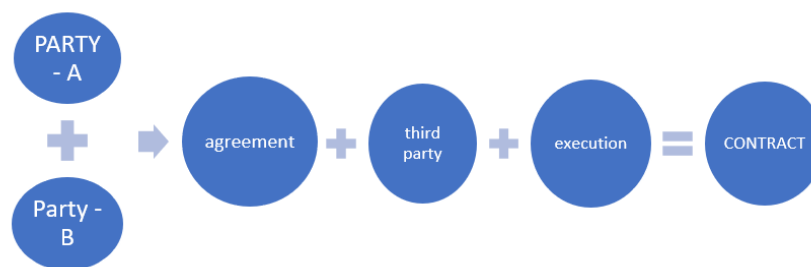
" FIG 1"

In a traditional contract there are basically 3 steps involved (Fig.1)

> ➢ Two parties make an agreement.
> ➢ The need to seek a third-party service to get their contract to be executed, They need to trust the third party.
> ➢ Then the agreement is enforced as contract.
> ➢ Now in the smart contract we will remove the Third party

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[5] https://blog.modex.tech/a-brief-history-of-blockchain-smart-contracts-and-their-implementation-c3ac6f00f014
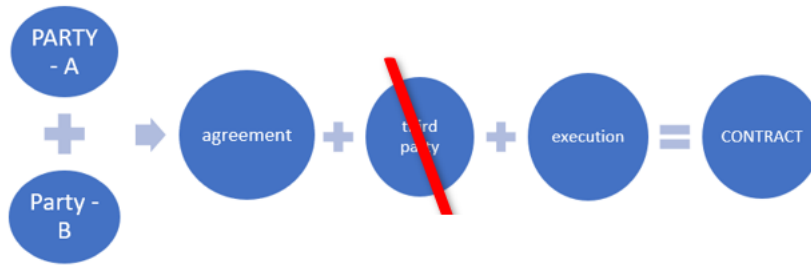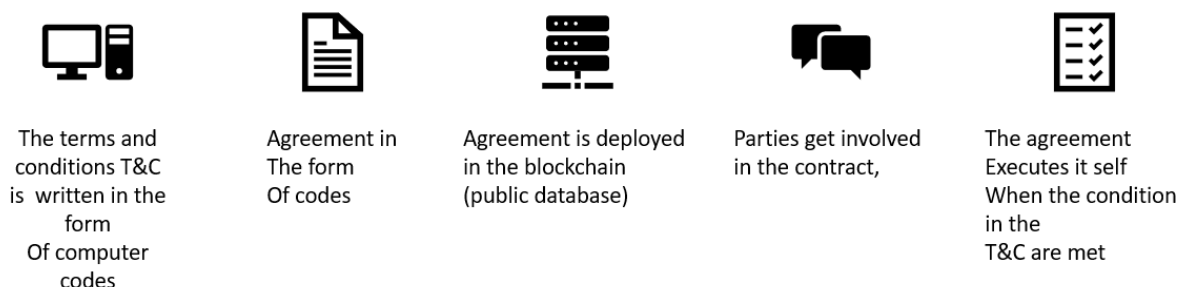
Fig - 2

In smart contract the third party is getting removed and hence the need of trust is removed by the codes that execute automatically. Also, we have a cost cutting factor when we remove the third party, in this workflow. When speaking about the third party then both the parties must trust the third-party for the enforcement of the contract, which in most cases it is not favorable, so smart contracts helps the parties even in the trust issues by removing the third party.

Mechanism of smart contract

Basically Smart contracts are digital and self executable agreement. The agreements contains the Terms and Conditions between the parties , now agreement is written in the form of computer codes, there are special languages to code the smart contracts some of them are Solidity and Vyper, now these codes are deployed in the blockchain system – a decentralised public database, after the deployment, the parties are getting into contract anonymously, once they are okay with the contract, the agreement will execute itself when the conditions stated in the code are met, then the transaction takes place.

| The terms and conditions T&C is written in the form Of computer codes | Agreement in The form Of codes | Agreement is deployed in the blockchain (public database) | Parties get involved in the contract, | The agreement Executes it self When the condition in the T&C are met |

We shall look in a graphical representation of the workflow of smart contract. Fig 3

Understanding of the transaction with an example

Let's assume that A wants to buy B's house

The agreement is made in the form of computer codes and deployed on the blockchain

Let's say the condition in the agreement is that (when A pays B the sum of 5 lakh, A will receive the ownership of the house, he will receive the land deed and also other documents)

Now once the condition is met, the agreement automatically executes itself. The deeds of the B's house will be transferred.

This is not the only scenario how smart contracts can be used. Smart contacts can be used for any type of transaction, it can be a financial or non-financial transaction.The prospects are boundless for the smart contracts. Smart contracts are being used in insurance, credit authorization, legal processes etc

Traditional contracts Vs Smart contracts

To understand the wide aspect of smart contract we must understand the difference between the smart contract and the traditional contract, The term 'traditional contracts', refers to the usual and the basic form contract in which the parties enter into an agreement on the terms and conditions of the contract. Traditional contracts can be in written form and as well as digital form. But in smart contracts certain aspects are varied like the absence of the intermediary and the smart contracts need no one to execute it they are self-executory when the conditions are met.[6]

Regulation of Smart Contracts around the World

- In the United States, The Uniform Electronic Transactions Act (UETA) was brought into force in the year 1999. The UETA made electronic contracts, records and signatures valid by providing contractual consent.

- In the European Union (EU), Rome I Regulation is the one which determines the legality of all EU civil and commercial contracts.

- The United Kingdom is intense on integrating smart contracts into their laws as the UK Law Commission is to review and give a proposal in the field of smart contracts and Wales Law is on a research to make the use of smart contracts legally clear with an aim to make UK legal system cope up to emerging technology.

Legal perspective of smart contract with reference to Indian Laws

- Indian Contract Act, 1872
- Information Technology Act, 2000
- Indian Evidence Act, 1872

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[6] https://www.mondaq.com/india/fin-tech/889458/blockchain-and-smart-contracts-indian-legal-status

Statutory Overview of Contract Law in India

As far as India is concerned, acceptance and implementation of Blockchain technology in various government institutions such as

- ❖ "Ministry of Electronics and Information Technology
- ❖ National Policy on Software Products (2019)[7]
- ❖ Telecom Regulatory Authority of India Act 1997 (powers conferred by section 36 and section 11)[8]
- ❖ Press Information Bureau Government of India
- ❖ Ministry of Commerce and Industry
- ❖ Department of Banking Regulation Banking Policy Division
- ❖ Press Information Bureau Government of India
- ❖ Ministry of Commerce and Industry
- ❖ Coffee Board Activates Blockchain Based Marketplace in India[9]"

Will not imply that Smart Contracts will also be accepted with open arms.

Indian Contract Act Of 1872

Contract in India

Contracts in general are agreements between the parties. To understand the framework of the smart contracts, it is necessary that we must understand the Term "contract" in India's legislative vision. Section 2(h) – Indian Contract act, 1872, defines a contract as "an agreement enforceable by law."

The Indian Contract Act, 1872, is said to be the statuary regulator of contracts. It states a contract as "all agreements are contracts if they hold the free consent of parties willing to contract, for a lawfully accepted consideration and with an object," which are considered as a yardstick for fitting into a valid contract as per section 10 of the aforementioned act.

Comparing these conditions with smart contracts, It seem by definition, smart contracts are allowed under the Indian Contract Act 1872 as it consists of offer, acceptance and consideration in the form of crypto-currency. Cryptocurrency is mentioned under the FEMA,

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[7] https://meity.gov.in/writereaddata/files/national_policy_on_software_products-2019.pdf)

[8] https://main.trai.gov.in/sites/default/files/RegulationUcc19072018.pdf

[9] https://pib.gov.in/newsite/PrintRelease.aspx?relid=189586

RBI Act or Coinage Act. Here is where an issue arises. Whether crypto-currency can be accepted as a consideration? In a case the Supreme Court held that cryptocurrency can be accepted as a valid payment for purchase of goods and services, and payment systems can be synchronized by the Reserve Bank of India. This could indeed be a good precedent for accepting cryptocurrency as consideration.

Information Technology Act 2000

Information Technology Act, 2000 provides various provisions on "Digital Signatures", its usage and authentification.Section 5 and 10 of the IT Act,2000 states that digital signatures are acceptable and enforces a contract to be legitimate by electronic means. It eliminates the need for a document to furnished, authenticated, affixed with signatures and replaces with digital signature. Illustration: consent to an electronic document is recognized if digital signatures of the parties are affixed to it.

  Section 35 of the IT Act, states that a digital signature is obtained only from a government designated certifying authority. To validate a smart contract, this would be the first point of concern.

Indian Evidence Act, 1872

Section 85B of Indian Evidence Act, 1872, states that only an electronic signature makes an electronic agreement valid, with the signature obtained with the provisions of the IT Act. Section 88A of the Act states that the court shall presume the authenticity of an electronic record, but shall make no presumptions about the sender of the record. Thus, if a signature is used via the blockchain technology; it makes the admissibility of the smart contract difficult, since the signature has not been obtained under the IT Act. This not just disturbs the authentication process for smart contracts within the blockchain technology, but also stops such contracts to be submitted as evidence in front of the court.

OVERVIEW:
- Smart contracts has considerable amount of drawbacks to become enforceable under Indian law. As our legal system lacks regulations of smart contracts, there is a prime necessity to carry failed transactions alone, in case of not maintaining the caution of contracting parties. Regulations regarding smart contracts can be put forth.
- Smart Contracts in which consideration is not mutual in case of unilateral contracts also imposes a strong drawback as smart contracts without mutual consideration is enforceable through a code, whereas these kind of contracts would not be accepted as

contracts as per the Indian law in the first place due to a lack of mutual consideration which is an important factor of a contract.

- Issues relating to the taxation of crypto currencies whether a state or central subject must be decided.

- Commercial agreements comprise of clauses that protect parties from various liabilities. They are not always suitable for representation and execution through code. Smart legal contracts will need a blend of code and natural language.

CONCLUSION:

The Advent of the Blockchain technology into the legal domain is a wonder, our study is based on the evolution and the legal aspect of the block chain based Smart contracts, taking the legal domain to the next step., its indeed a matter of fact that even in this technology there exist the uncertainty in certain aspects of the smart contract, however the technological advancements cannot be neglected and cannot be stopped, smart contract brings a new dimension to the legal system of contractual agreements by shifting it to the digital medium, smart contract is an example to the legal revolution in the digital era, The enormous potential of the smart contacts extending from smaller financial transactions to large scale domains such as insurance healthcare etc. As India lacks a proper regulatory framework to govern smart contracts, it cannot provide the protection of law to the parties of smart contracts.