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Smart Contracts: Are They Legally Backed And Applicable In India

Authored By- Sv Karthik

Abstract:

The idea of using Blockchain technology for the purpose of regulating the contractual transactions is possible. The use of blockchain technology where codes can be used to create agreements and ensure that there is automatic execution of the contracts. Smart contracts use the blockchain technology for the purpose of enforcing the contractual obligations and they way in which the contracts are enforced is through the tamper free execution and by legal system. In a world where each and every thing is regulated by the blockchain technology it will be a innovative to step to adopt smart contracts. India has already adopted the use of the Electronic contracts, provisions contained in the Information Technology Act, 2000 validates the electronic contracts. The problem arises is with the smart contracts as there are no clear legislations or regulatory framework which guides the way in which these contracts will be governed. It's a complete grey area concerning the validity of the smart contract, due to lack of the legal infrastructure. The smart contracts can be understood in the present context of the Indian contract Act, 1872 regarding the validity and essentials of the contract as Smart contracts have almost the same criteria as the traditional contracts with regard to the essentials of a valid contract. Smart contracts do fulfill the required conditions in the Section 10 of the contract Act.

Keywords: Blockchain, Indian Contract Act, Legal Framework, Smart Contract and Validity

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Introduction:

Smart contract is a blockchain based computer input code, the terms of the contract are already coded and these contracts analyze and verify the transaction against the terms and it executes them. Smart contracts are automatic computer program and once the code in installed it cannot be altered to make any further changes new contract has to be made. These contracts are free from any human intervention and they are complex as they are based on the ledger-based technology. The computer programmer behind the smart contract is Nick Szabo who defined smart contracts as the main objective of the smart contract is to satisfy the common contractual condition, minimize exceptions both malicious and accidental and minimize the need for trusted intermediaries. In Indian contract Act, 1872 there is no provision which talks about the concept of the smart contract. There are E-contracts which exists, are known as electronic contracts exists in India and they are recognized by multiple provisions of the Information Technology Act, 2000. Section 10A of Information Technology Act, 2000 provides for the validity of the contracts which are formed through electronic means. Smart contract are the part of the electronic contracts, the validity of it is recognized in India. Section 10 of the Indian Contract Act, 1872 is important because in order for an agreement to become contract it must fulfill the conditions which have been laid down in this section. Indian Contract Act, 1872 expressly does not talk about the smart contracts nor are there any other Statutory Acts which talk about the smart contracts like the Electronic contracts. It is important to understand that smart contracts usesblockchain technology but they are not equal to the blockchain technology and smart contract add to the ledger functionality of blockchain technology and many kinds of self-executing instructions.

Blockchain Technology:

The advent of Blockchain was done by Satoshi Nakamoto in the year 2008 when it was implemented and became the technology behind the famous cryptocurrency Bitcoin. The idea of this technology is not something which is new it existed as early as 1991 but only in 2008 it became reality and was given a real life workable touch using it in form of cryptocurrency. Earliest uses of this technology included storing information in form of a register and enable online payments. This technology has diverse applications not only in for regulating payment without

involving any intermediaries but it can also be used to create Smart Contracts. Indian company Tech Mahindra is already establishing its market by taking first mover's advantage of implementing blockchain technology in sectors from diverse fields ranging from updating banks to financial sectors to upstaging technology in the telecom sector.

In order to understand what smart contracts are we need to understand the technology which is behind it. The technology which is behind the smart contract is Blockchain, in simple words it can be defined as a process in which the information is stored blocks and these blocks subsequently lead to creation of chains. It is a data structure which uses some ledgers where it stores and transmits the data in packages which are cleared blocks and these blocks are connected to each other through the chains. This technology works on the basis of distributed ledger technology. Distributed ledger technology uses nodes which are independent computers for the purpose of sharing and synchronize the transactions in their respective electronic ledgers. It is a building block of internet of value, it allows for recording of the interactions and transfer value peer to peer without a need for centrally coordinating entity. Value implies record of ownership of an asset such as securities, money, land titles and information like identity, health, personal information etc.

Transactions which are conducted using the distributed ledger technology ensures transparency and decentralization as the transaction isn't managed by a single computer, whenever a transaction is conducted it will be added to the blockchain and it is validated by the multiple computers on the network. The system configured for specific blockchain transactions forms a peer-to-peer network which ensures that each transaction is valid before it is added to the blockchain. When a new block is added to the blockchain it is linked to previous block by using a hash which has a unique identity. This procedure ensures that the block has been permanently added to the chain and the chain is solidified. There are two types of blockchain public blockchain and private blockchain. A Public blockchain is the type of blockchain where the information is available to public domain and accessible by any party who can read, write data on the blockchain. No person can exercise control over it and this ensures decentralization. Once an entry is made on the blockchain it cannot be modified or deleted after it has been validated and all nodes in the blockchain participate in the validation of the transactions. All users can read the transactions but the transactions can only be validated by predefined users this is known as permissioned blockchain. Private blockchain can only be exercised by those individuals who have consent to access the network. It's an invitation

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only blockchain which is under the control and authorization of a single entity. A party requires consent, permission to read, write or audit the blockchain. This system ensures secrecy and confidentiality which is essential in transactions which are concerned with finances or government transactions.

Blockchain is a data structure which uses some ledgers where it stores and transmits the data in packages which is called as blocks and these blocks are connected to each other through chains. This technology uses the algorithms and cryptographic methods for the purpose of recording data in a synchronized and immutable manner, it is something which can be updateable only with the consensus among the peers. It is something which records all the transactions which have taken place between the parties, those transactions are permanent in nature the copies of it are distributed to all relevant parties without the need of the third party to authorize the transaction. Whenever a new transaction takes place, it records that transaction into a block and that block is built upon the previous block and it is in this manner that all the data is stored. It is virtually impossible to hack or modify as the blocks are interlinked and stored on the multitude of the nodes. The information is this technology is shared across a network of users who hold a full and updated copy of the records, the advantage of this technology is that it replicates, stores and updates information on a distributed ledger which makes it transparent.

There are application of this technology in national Interest which was mentioned in the report of Ministry of Electronics and Information Technology, this technology is equipped with features of safety and security it can facilitate functioning of business. The protection which Blockchain provides is visible in the use of Crypto currencies and this can be used in the functioning of B2b, G2C, G2G, B2G services. It has applications in the areas of healthcare, legal energy, smart cities, trade finance, insurance, etc.it can be used in the national interest as well Transfer of Land Records, Digital Certificates management, e-notary service, farm insurance, Duty payments, Microfinance for self-help groups. ICICI, Axis bank, Yes bank have adopted blockchain in their business.

Smart Contracts:

Smart Contracts are the luminary functionalities of blockchain technology, Christopher D Clark defines it as an agreement whose execution is both automated and enforceable. It is automated by the computer and some parts of it require human control and human input. It is enforceable by either legal enforcement of rights and obligations or tamper proof execution. Nick Sabzo who was the pioneer in the introduction of the concept of the smart contract has defined the vending machine as simple form of smart contract which happens in real life. When a person makes payment to the vending machine an irrevocable action sets forth and the machine enforces the terms of the deal by computing and dispensing customer's choice of product. For complex transaction advanced programming can be used, for contractual obligations where payment and delivery has to be made, such can be done by setting up an algorithm-based calculation. The advantage of using smart contract is that it removes the need for verification based on the trust for the execution of contractual obligations. It can used in the supply chain and trade finance documentation by automating process.

In Smart contracts the code constitutes the necessary part of the agreement and the contracts are executed by the codes are just tool to execute human made contract and the parties sign the agreement via a digital signature. Blockchain helps in the creation of the smart contracts which are self-executing contracts where the terms and conditions of the agreement are drawn up into the codes, the code and agreement exist along a distributed, decentralized network which controls the execution and transaction are trackable and irreversible. Under the tradition system of contract that under the Indian Contract Act, 1872 a contract is said to be executed when there is meeting of the minds of the parties and there is consideration. The contract can be oral as well as written, written contracts includes digital contracts as well which are written by humans and they are signed through digital means by the parties to the contract. With the help of blockchain technology it is possible to create smart contracts. Smart contracts are just the manifestation of the tradition contracts but the only difference is that it is in form of codes. The transactions which are recorded in ledger can trigger clauses in smart contract which can control the real-life assets like real estate, insurance claims, etc.

Internet of things are those devices which are installed in the sensors, software, and other

technologies whose main objective is to connect and exchange data over the internet and these devices can range from ordinary household tools to complex industrial devices and they have low memory power and low processing power. There smart homes and smart environmental applications which are being built around the blockchain technologies and when the smart contract integrates with the blockchain then IOT can be more autonomous. Smart contracts can be used in the financial services such as trade clearing and settlement as it managed approval workflows between counterparties, calculates trade settlement amounts and transfers funds automatically, insurance claims as it automatically indemnifies the party who suffers the damage as its contingent to happening of the damage. It can be used in life sciences and health care as well especially the electronic medical records whose access can be provided and maintained between parties. It can be used in technology, media and telecom for Royalty distribution as it calculates and distributes royalty payments on the basis of contract among the parties.

Smart Contracts In Other Jurisdictions:

Italy was the first country to legally implement smart contract in its jurisdiction, it came into force in February 2019. Italian parliament introduced the concept of the distributed ledger technologies (DLTs) in their law. It defines DLT as technologies and IT protocols using a shared, distributed, replicable and simultaneously accessible ledger, decentralized and encrypted which enables the registration, validation, updating and storage of data regardless of its encryption. Law degree No.135/2018 defines smart contract as "It is a DLT based computer program where both the parties to a contract are bound to execute the contract. The legislation in Italy will allows the smart contract to fulfill the conditions that it has to be in writing upon electronic identification of relevant parties.

In United states Arizona was the first state to introduce smart contracts which was followed by the other states like Delaware, Nevada and Vermont. The state of Arizona signed the Smart Contracts Bill in 2017, it allows the blockchain contracts and states that the contracts which are entered on the basis of blockchain will not be void. It amended the Arizona Electronic Transactions Act and gave recognition to the smart contracts. In the state of Nevada it made a legislation which traced the usage if blockchain technology and give legal effect to the smart contracts in 2017. This legislation made amendments to the Nevada's Uniform Electronic Transaction Act and it included the definition of blockchain and electronic signature under NRS 710.100

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Whether There Is Scope Of Smart Contract In India:

Section 10 defines that all agreements are contracts which are made by free consent of the parties for a lawful object with lawful consideration and are not expressly declared void by the law. If we look at this definition then the smart contracts can be allowed as they fulfill the requirements mentioned in section 10. Section 2(h) states that agreement which is enforceable by the law is contract.India has its information Technology Act, 200 which talks about the electronic contracts. Electronic contracts are recognized in India under multiple provisions of the information technology Act. Section 10A of Information Technology Act, 2000 states that where in a contract formation, the communication of proposals, the acceptance of proposals, the revocation of proposals and acceptances as the case may be are expressed in electronic form or by means of an electronic record, such contract shall not be deemed to be unenforceable solely on the ground that such electronic form or means was used for that purpose. Smart contracts can be considered as subsets within the Electronic contracts and their validity should be recognized. The way in which the smart contracts are signed are different from the traditional contracts. In traditional contracts the parties sign it physically whereas in the smart contracts the signature is done via electronic and cryptic means. The electronic and cryptographic signatures are recognized in India., Section2(ta) of Information Technology Act, 2000 states that Authentication of any electronic record by a subscriber by means of electronic technique specified in the second schedule and includes digital signature. Digital signatures takes into consideration cryptographic signatures and these type of signatures are used in smart contracts.

If we look at the provisions of the Indian Contract Act we can establish that a smart contract can be entered into by fulfilling all the valid essentials which are required for a contract. Information Technology Act also allows e contracts to exist, Section 10A and Section 2(ta) does provide enough basis to establish the validity of the e contracts. But there are no clear legislative frameworks or any provisions which substantially deals with the Smart contracts which uses blockchain technology. The paper published by NitiAyog 'Blockchain: The India Strategy it talks about the use of the blockchain technology but provides no clear map for the use of Smart contracts. It questions whether in smart contracts can legal protection be afforded or can they be used in the same manner as the traditional contracts or in case of breach or hack who can be held liable. The legal regimes is yet to evolve regarding the area of smart contracts. Smart contracts still

remain a grey area and there is no clear regulated guidelines or framework which provides a legal point of view for smart contracts.

If we are to contemplate concerning the scope of smart contracts in India, surely there is an immense scope. Various types of contracts can be regulated by smart contracts. Lets take an example of an insurance contract which can be regulated through a smart contract. Axa Fizzy is a type of smart contract of insurance. In this if a flight gets delayed it automatically compensates the policyholders. If a flight gets delayed for 2 hours it will reimburse the money automatically. Adoption of smart contracts can be revolutionary and help in facilitating the transactions with ease as its automated, safe and efficient.

Smart contracts in order to be of any worth must be legally enforceable and they way in which they can be enforced is through a legislation that is drafted and adopted by the state with reference to it. The way in which smart contracts can be enforced is through the legal enforcement or tamper-proof execution. A smart contract should have binding in the court of law, it should be something which is recognized by the state for enforcement of legal rights. Example lender can approach the court for performance of the contract and the court can order the borrower to fulfill his obligations, this will only be possible when it is recognized by the state and courts have competent jurisdiction over it. another way in which smart contracts are enforced is through the tamper-proof code but this is quite complex when it comes to dealing with the real-life complex situations where the delivery of the physical asset is required.

The use of Blockchain technology is prevalent in India as NitiAyog has executed various use cases in Blockchain technology and piloted them with various Government departments and Private agencies. This shows the willingness of the Government to adopt this technology and it's a healthy indication towards the growth of smart contracts in the country. The adoption of smart contract for functioning in Governance has been mentioned in the Ministry of electronics and Information Technology, where it has been mentioned that Inter-departmental processes can be tracked using Smart Contract enabled workflows and shared ledgers which will increase the transparency and accountability in the system. Blockchain technology can be used for the purpose of making smart

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contracts, supply chains for various government processes, trusted inter-departmental communication and tamper evident storage.

Recommendation has been made for the need of National Level of Blockchain framework for the building infrastructure which is spread across multiple zones to meet the requirements of different application domains of the country, the proposed infrastructure can help in hosting multiple blockchain platforms. Domain specific chains can be used in health sector, Property chain and education as these chains would be a shared ledger and can be controlled using smart contracts.

Conclusion:

India is a developing country which has tremendous potential to grow especially in the field of the technology, as we have witnessed, in the field of the technology we should be able to adopt blockchain technology. This technology is beneficial in several areas and we can also see that this can be used in the legal world in relation to the contracts. Contracts can be completed through the blockchain technology. while there are provisions which allow for the execution of the contracts which are made electronically but there is no clarity on the contracts which are made through blockchain technology. Smart contracts are something which we are not aware of and we exactly don't know how it will function and how to settle disputes related to it or what to do when it is hacked. In smart contracts the parties have no role to play after their agreements has been codified then the codes will regulate the execution of the contract. India can adopt these smart contracts for this it needs clarify its stance in a coherent manner and determine what impediments it will face, it is necessary to develop guidelines related to it. Several jurisdictions around the world have adopted the smart contracts which uses the distributed ledger technology and regulates the transaction. Italy was the first country to adopt and recognize these types of contracts into its legal system and seven states in the United States of America have adopted the approach of smart contracts.

The use of smart contracts will align with the policies which are being pursued by the government which is aimed at making India a digitally advanced country. There is a need for executive and legislative steps for recognize the importance of the smart contract and to formulate the environment which will allow it to exist and conduct its transactions. The benefits of the small contracts in the fields of insurance, healthcare sector, supply chain, real estate, education, automobile, etc. will allow them to work more efficiently by reducing the transaction costs. Government should research on the legislations, in Italy and those in seven USA states who have adopted these contracts. Understand its advantages and disadvantages and find out solutions to issues which it would face and then implement smart contracts in India as it will be a great step for the citizens who can regulate their contractual transactions with ease as they are automatically regulated via codes and also help in attracting foreign investments. India is a country which is aligning itself with digitalization, various programs and schemes have been launched by the Government to make India a digital economy and the future of technology is Blockchain. If we want to adopt to changing technologies, we must develop legislations which are able to cater to the

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blockchain technology. There is no clear indication made in any legislations regarding the legitimacy of smart contracts nor are there any other sources which points out its legality or usage or illegality it's a grey area. Research in this area has to be done and Government can look into places where it is being applied and look at the literature of smart contracts and frame rules and regulations to implement in India. Although suggestions have been made for the creation of National Level Blockchain framework for regulating various uses of Blockchain including the use of Smart Contracts. It has to conduct research and identify the issues which it will face in the performance, applicability, usage, privacy and management of Smart Contracts. As Smart Contract is able to fulfill the essentials which are required under the Indian Contract Act, it can be treated as a contract and its in accordance with the Section10. Hence there is need for more clarity on smart contract from the Government.