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ABOUT US

INTERNATIONAL JOURNAL FOR LEGAL RESEARCH & ANLAYSIS ISSN

2582-6433 is an Online Journal is Monthly, Peer Review, Academic Journal, Published online, that seeks to provide an interactive platform for the publication of Short Articles, Long Articles, Book Review, Case Comments, Research Papers, Essay in the field of Law & Multidisciplinary issue. Our aim is to upgrade the level of interaction and discourse about contemporary issues of law. We are eager to become a highly cited academic publication, through quality contributions from students, academics, professionals from the industry, the bar and the bench. INTERNATIONAL JOURNAL FOR LEGAL RESEARCH & ANALYSIS ISSN 2582-6433 welcomes contributions from all legal branches, as long as the work is original, unpublished and is in consonance with the submission guidelines.

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Smart Contracts: Making Indemnity and Guarantee Trustless.

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2nd November 2021

1. INTRODUCTION: -

It is a popular opinion amongst many that Smart Contracts is in its nascent stages, but many commercial companies, financial giants and governmental organizations including the Indian government have already started experimenting and auditing the blockchain technology to leverage its applications, like Smart contracts into building a sound digital infrastructure, capable of revolutionizing mortgages, loans, insurance, and global trade.

a) What is Blockchain?

The blockchain, simply put is a shared database, which stores its information in sets, called blocks. These blocks once formed, are then chained onto an existing 'set of information' thus,

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making a chain of data called the blockchain. Unlike tables in traditional databases, the blockchain stores data in blocks, this way of storing data makes this database **immutable** i.e., once a block is formed, it is set in stone and can never be changed. The key elements of a blockchain are immutability and **decentralization**.

b) **What are Smart Contracts?**

A Smart Contract is a computer program which exists within a blockchain. Put simply, a Smart Contracts are just like contracts in the real world, only they are completely digital and since Smart Contracts exist on the blockchain, they inherit some interesting properties i.e., they are immutable and distributed. A very successful and primitive example of a smart contract functioning in real life is a vending machine which releases Pepsi. The machine has been programed to search for $1 eternally. When the machine recognizes a $1 bill, it self-executes to dispense a can of Pepsi. This machine functions on a very simple If/Then program i.e., if recognize $1 then release one can.

It is important to note that even though a smart contract works on the fundamentals of an If/Then protocol, a Smart Contract is also capable of running multiple and highly complex protocols depending on the needs of the contract, however for simplicity's sake, we will restrict our discussion and examples to the If/Then protocol. The Pepsi transaction essentially got rid of, 'cashier the middleman', where earlier there was a contract between the cashier and the customer, wherein the customer **trusted** the cashier to keep his end of the bargain in the transaction, now due to the introduction of the vending machine this process was essentially made, **trustless.**

c) **Legal enforceability of Smart Contracts in India.**

According to S. 2(h) of the Indian Contract Act, 1872, "an agreement enforceable by law is a contract.". Thus, Smart Contracts are legal contracts in the sovereignty of India only if: -

i. The agreement between two parties is the consequence of the proposal of an offer by the offeror and the acceptance by the offeree, the specifics of which we will discuss subsequently.
ii. All parties entering a Smart Contract must be competent to contract.
iii. The consideration and object of contract must be lawful.
iv. The consent of all involved parties must be free.
v. The agreement should not be expressly void.

In case of acceptance, the submission of cryptographic keys by the parties while entering a Smart Contract can be viewed as acceptance or the offeree can express acceptance by their conduct, like handing over control of a digital asset like NFT's, or cryptocurrency or even fiat currencies (if RBI recognizes INR as a digital asset under S. 26 of the Reserve Bank Of India Act, 1934). This agreement will be legally enforceable if the agreement has lawful object and consideration, the consent of the parties was free, and the parties are at the age of majority. Hence, a smart contract is easily enforceable under the ambit of the Indian Contract Act, 1872 if it follows

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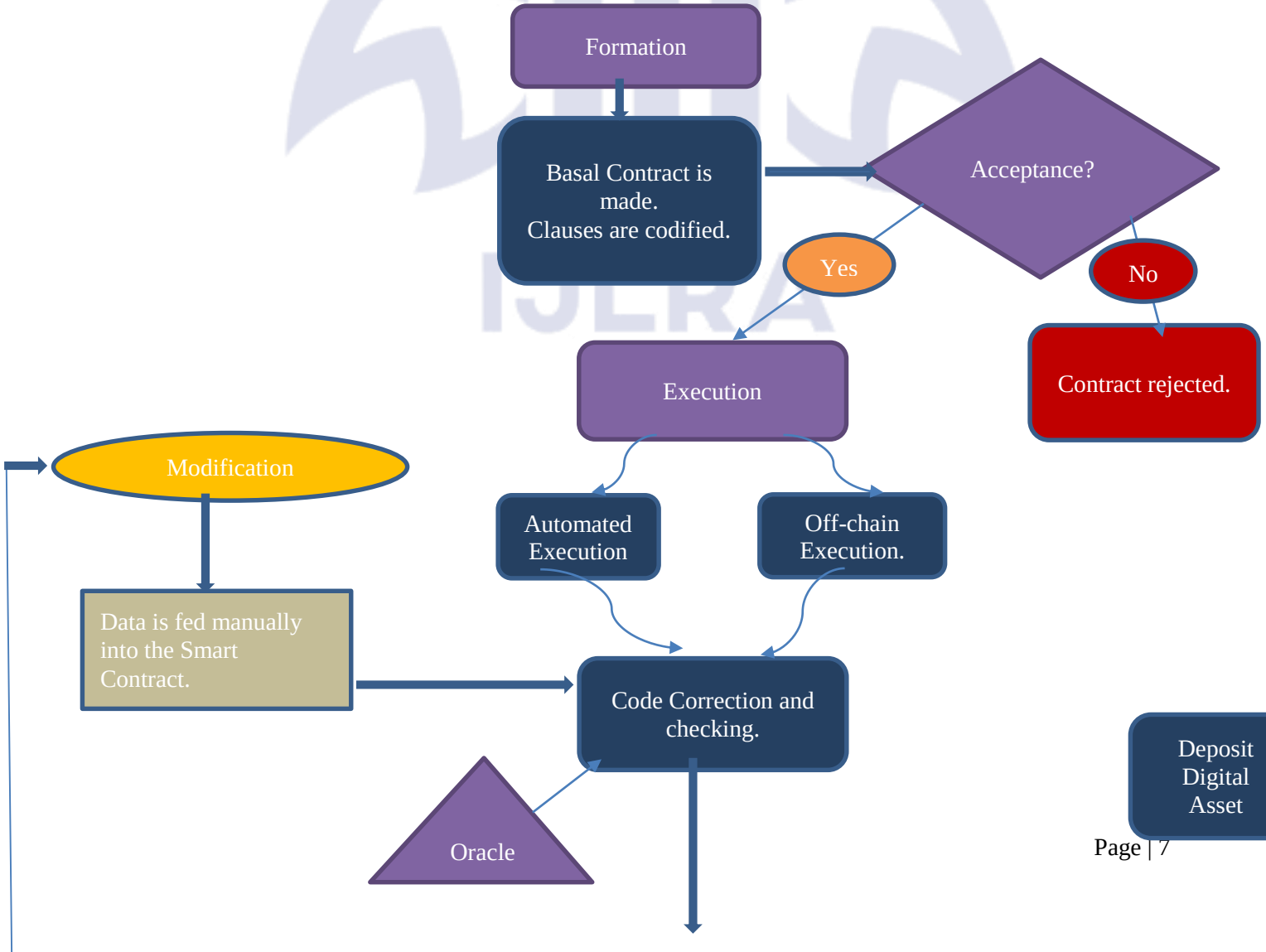
the core principals of the act. In fact, Smart Contracts can be deployed through the existing digital infrastructure in India, the Courts can already start exploring the nuances of smart contract and interpret their validity in line with the Indian Contract Act, 1872. It is imperative to understand that commercial transactions done via email, software, click-wrap contracts are already legally enforceable because the Indian Contract Act is supported by the Information Technology Act, 2000, and Smart Contracts can easily be regulated under the same. However, the Indian legal system is slow to adapt by design, and there are a lot of kinks to sort out while regulating Smart Contracts.

PHASES OF THE CREATION OF A SMART CONTRACT. (Flowchart 1)



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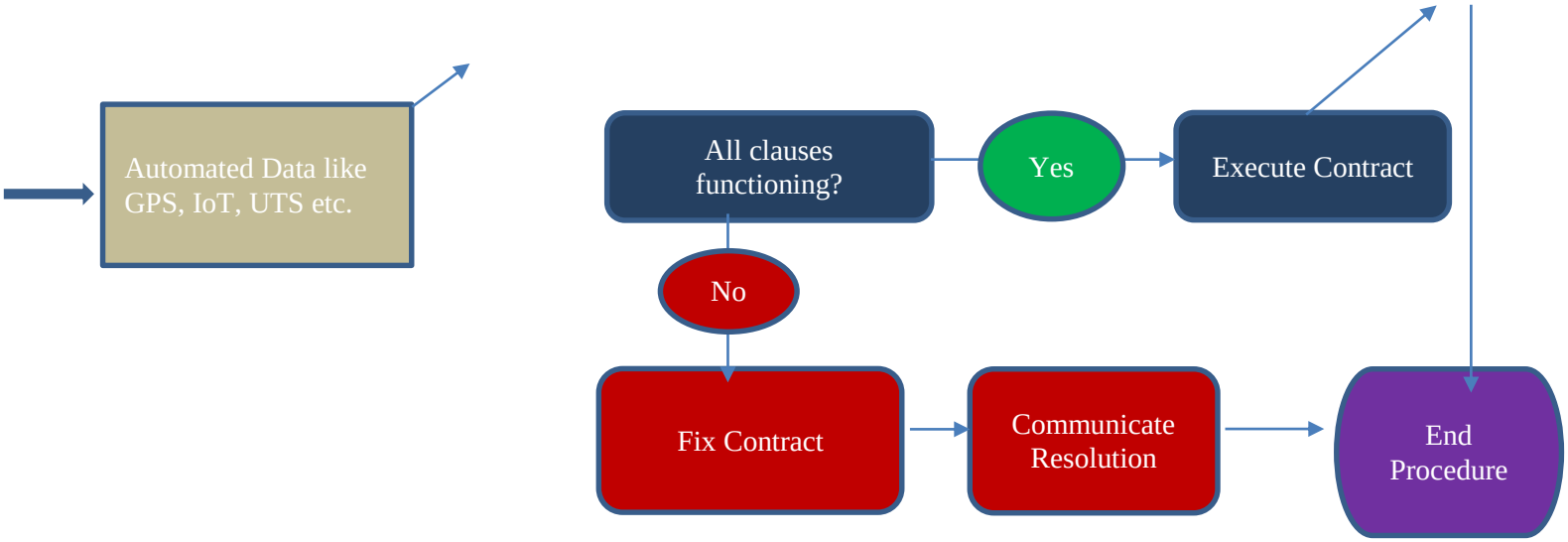


2. SMART CONTRACT OF INDEMNITY & GUARANTEE

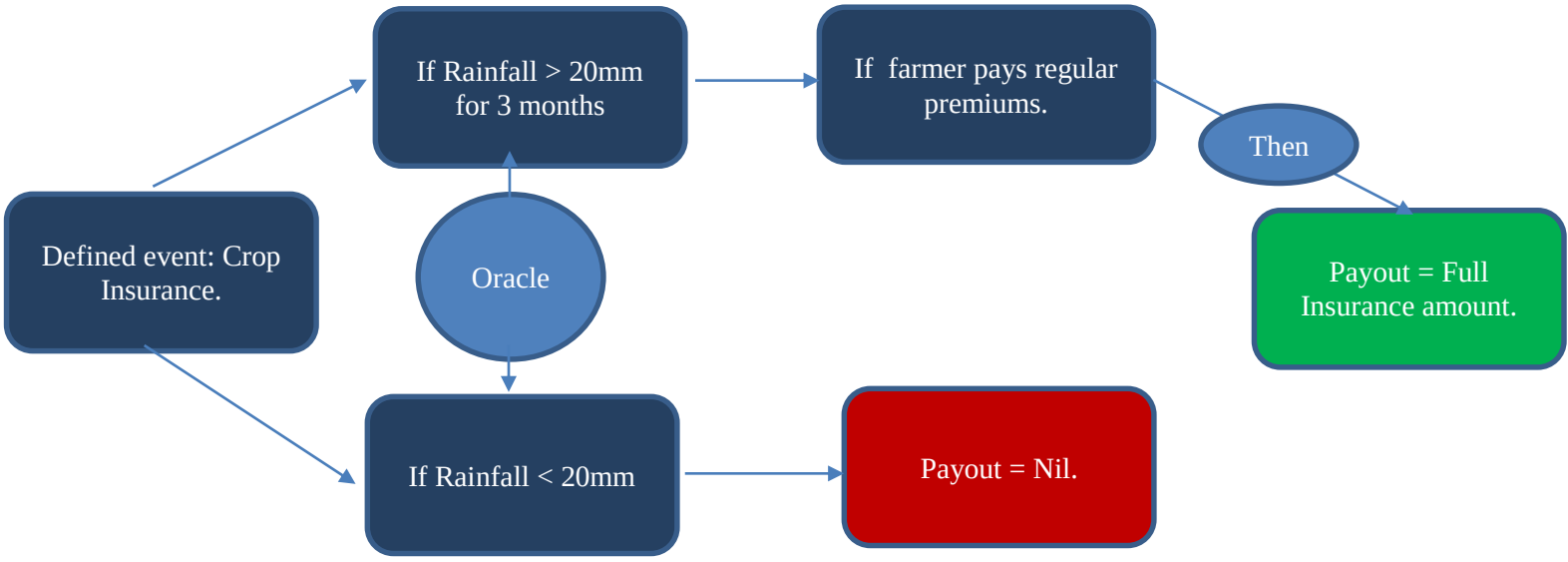
a) **Applications in a Contract of Indemnity**.

i. ***Regular Crop Insurance***: -

In the land of a 100 million farmers, the best example to put Smart Contracts to the test is crop insurance. Let's say a farmer wanted crop insurance against the possibility of drought. This contract would come under S. 124 of The Indian Contract Act, 1872, where an insurance firm promises to indemnify the farmer against the possibility of a drought. In the event of a drought the farmer would have to go to the insurance company to claim his insurance citing the reason of no rainfall, and the insurance company will do their own due diligence to verify the claim before processing it.

ii. ***Smart Crop Insurance***: -

In this case the farmer would enter a contract of indemnity with an insurance company, wherein the insurance company will indemnify the farmer against the possibility of no rainfall. Here, the smart contract will be coded into a blockchain, it will be something like.



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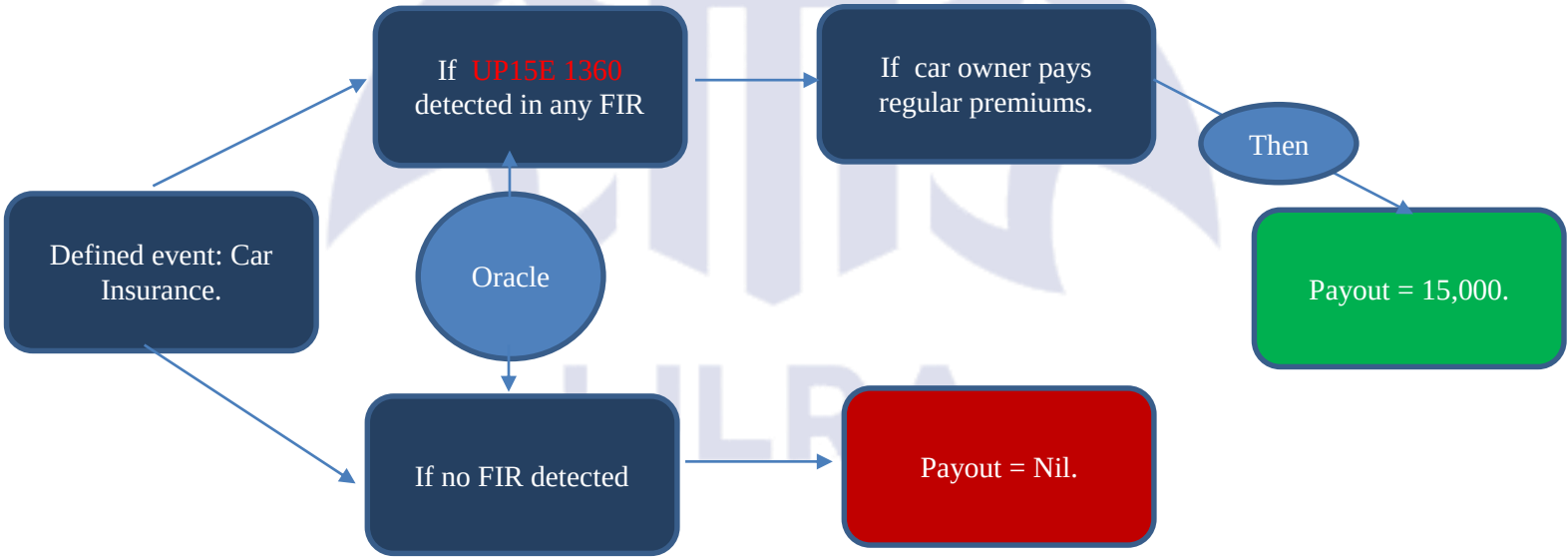
But how does a computer program in the blockchain know if it rained or not? That's where Oracles come in, both parties will mutually decide on a trusted oracle which provides accurate weather data on the farmer's land. As and when all the 'If' conditions are met, the smart contract will automatically self-execute the 'Then' conditions i.e., paying the farmer the insured amount instantaneously.

iii. ***Car insurance:*** -

The same way we can revolutionize car insurance. However, as you can imagine with damage to a car being subjective, it is a far more complicated to code a Smart Contract, in such cases one can enter a Hybrid Smart Contract, where the insurance company can payout insurance instantaneously for a certain cap under clearly defined terms like "IF car license plate reported to be in a police oracle, THEN payout a predetermined lumpsum.", the insurance company could codify all their terms into a smart contract and deploy it onto a blockchain, drastically reducing their companies workforce. While the other half of the contract with a client can be a traditional contract, where an agent assesses the damage and releases the requisite fund.



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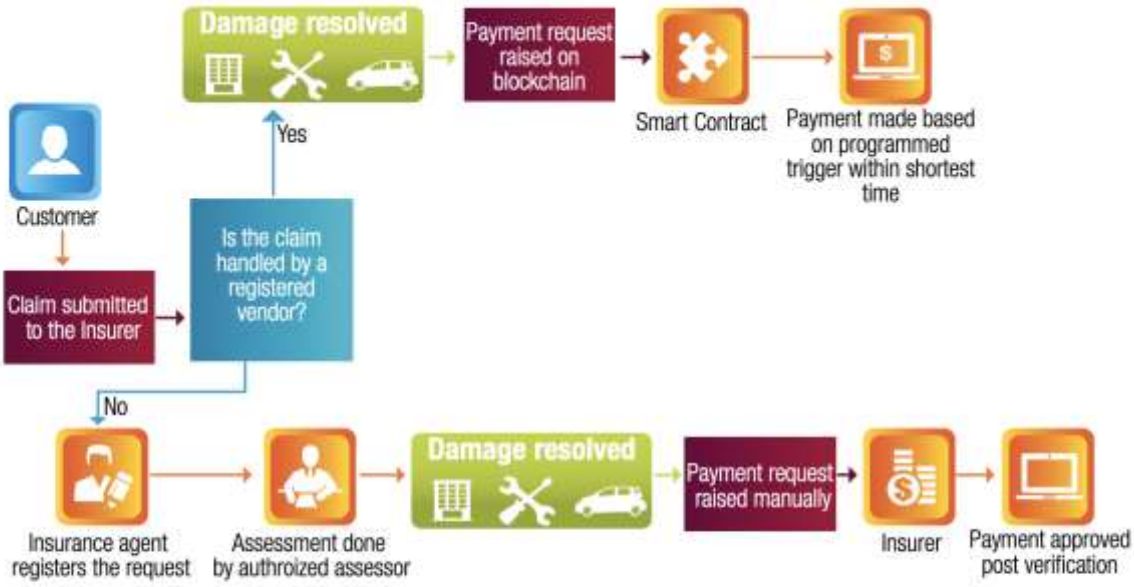

Calculation of the cost savings potential from the use of smart contracts in the UK motor insurance industry

Year-2015	Number of Motor Insurance Claims in the UK (A)	Claims cost and Expenses in $ million (B)	Total Expected Savings in Claims Costs and Expenses $ million (C)	% Savings (C/B)
Total	3,733,000	13, 320	1,665	12.5%

Source

b) Applications in a Contract of Guarantee

i ***Bank guarantee***: -

A bank guarantee is considered as the "life-blood" for the purpose of trade, and thus it is imperative to have a frictionless bank guarantee system. Today's bank guarantee has an applicant rely on long paper workflows, which makes issuing guarantee a tedious back and forth process between the creditor and the bank, these paper contracts are also prone to forgery and destruction by the elements. Also, paper contracts are extremely cumbersome to manage and store and takes weeks to process, time which the debtor could have used to open their business or time the creditor is on standby for providing lease etc. Furthermore, anytime interest rates change, or a lease has to be extended, the bank must issue a new guarantee, negotiating each change which is a time-consuming and unpleasant procedure. All parties i.e., banks, landlords (creditors), and renters (debtors) are at a disadvantage with the current system of contracts.

Within the ambit of Smart Contracts all parties can come on a single blockchain platform, and the debtor can request a guarantee online, where the creditor can join in and set their specific terms of the contract, and subsequently the bank can go over the credit worthiness of the applicant as well as the terms of the creditor and get back to both parties simultaneously saving a lot of time. This is when a Smart Contract will start being coded (refer to flowchart 1), and here a Smart Contract also satisfies the need for a multilateral solution with data

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sharing, reconciliation, and synchronization among all parties. This tripartite conversation can now happen digitally with no paperwork, this conversation significantly reduces the time it takes for the contract to be enforced, as it cuts down the process from around 30 days to 1 day.

Now, let's take the example of a principal debtor who is looking to lease a commercial property but instead of cash deposits or rental bonds, chooses a bank guarantee to indemnify the creditor, all parties proceed to the bank, where the bank provides a service for the creditor to put forth his/her terms, and then the bank may proceed to ask for collateral from the debtor, this collateral will be codified into the contract as a NFT, as a matter of fact, an NFT can represent any particular asset in the real world, a diamond, a plot of land etc. An NFT can represent the title of an immovable property off the blockchain. And if the bank agrees to being the surety, then the terms of the agreement will be codified into the smart contract following the procedure of flowchart 1.

3. THE BOON AND BANE OF SMART CONTRACTS

a) Boon of Smart Contract

i. ***Self-enforceable*** – the SC executes the moment the parties fulfill their conditions. Does not require any trust to execute a contract, thus does not need court of law for it to be enforced. For example The self-execution of the Smart contract works in everyone's favor when it comes to a Bank Guarantee, as Indian courts don't interfere unless there is a fraud of a 'shocking' nature.

ii. ***Low Cost*** – Smart Contracts cut out on all intermediaries and leave only the contracting parties, this includes charges like, drafting, due diligence, contract management etc. this also saves on the fee charges by various govt. offices and especially gets rid of the corrupt 'babu' system.

iii. ***Time saving*** – the time it takes to draft a Smart contract which uses digital records already stored on the blockchain is far less than the time it takes to draft a conventional contract with annexures etc.

iv. ***Certainty*** – due to the simplicity of smart contract and no scope for ambiguity, or ambiguous terms. It will simply function on the action/omission which either fulfills the pre-specified conditions or not. This simple If/Then formulation reduces human error significantly.

v. ***Security*** – A Smart Contract can't be hacked because of blockchain technology.

vi. ***Guaranteed outcome*** – all codes are run on a test net before launching into the real world, thus both parties can run through all possible permutations of the outcome given the terms of the contract. Thus, all parties know what the end goal through their acts/omissions will be and once the Smart Contract is deployed there is no recourse to alter it.

b) Bane of Smart Contract

i. ***Middlemen*** – The need for lawyers and coders will only increase, and the availability of lawyers with knowledge in coding are scarce, making the initial adoption cumbersome.

ii. ***Certainty*** – Smart Contracts remain unregulated for now, and due to their international nature; it is hard to determine jurisdiction in case of a conflict.

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iii. ***Rigid*** – Once deployed the contract and its terms ergo its outcome is irreversible and inevitable. The fundamental legal concepts of 'good faith', 'negligence' and 'reasonableness' are also very difficult to encode. These concepts are employed for the very reason that they give contracting parties flexibility in respect of certain obligations by not specifically determining in advance exactly what those obligations entail.

iv. ***Non-disclosure*** – Since the smart contracts resides on the block chain, it inherits all the properties of the blockchain, resulting in fact that the contents and progress of the Smart Contract can be viewed by anyone on the network, but can't be altered. Thus, Contracts with sensitive contents can't be deployed.

v. ***Popularity*** – The authorities of India are surprisingly very well educated and the Indian government is already looking into the potential use cases of smart contracts, with academic papers released by NITI Aayog we can expect a well-regulated space in the future, however public knowledge still remains low.

c) **Ways to ease the transition to Smart Contracts**.

i. A solution to ease the resistance the Indian Legal system may face during the adoption of Smart Contracts is to draft a traditional legal contract and 'translate' it to code, so that the traditional legal contract acts as a 'wrapper' to the automatic performance of the legal obligations executed by the smart contract. Thus, till the courts learn to interpret the code of Smart Contracts, the traditional contract can be used to resolve disputes among parties by interpreting the disparity between the word of the law and the execution of the code.

4. CONCLUSION

Smart Contracts has its fair share of challenges; however, it will save a considerable amount of time, cost, and effort for all players. The legality of Smart Contract has not been confirmed by any legal or governing body so far, but the architecture of the Indian Contract Act, 1872 and Information Technology Act, 2000 allows Smart Contracts to function within their ambit. Smart Contracts have made vital trade transactions trustless and have the potential to redefine the applications of the contract of Indemnity and Guarantee by streamlining the contract from its inception to its execution.

Even though India's legal space is slow to adapt, the legal and digital Infrastructure is 'modern enough' to cope up with the bleeding edge the blockchain has to offer.