ÆLEX

ARTICLE SERIES

BLOCKCHAIN AND THE LAW OF CONTRACT: DETERMINING THE ROLE OF LAW IN AUTOMATED TRANSACTIONS

OCTOBER 2022

www.aelex.com

The Blockchain has proven to be a game-changing technology with world-reaching effects. In addition to use-cases such as cryptocurrencies and nonfungible tokens (NFTs), Blockchain has introduced a world where contracts can be embedded in digital code and stored in transparent shared databases, where the terms of the contract are protected from deletion, tampering and revision and their performance is fully automated without any need for human intervention. These contracts are called “Smart Contracts.”

First proposed in 1994 by Nick Szabo, Smart Contract is a term used to describe computer code that automatically executes all or parts of an agreement and is stored on a Blockchain-based platform. Smart Contracts represent the most recent instance of digital technology remaking contract law and are intended to circumvent—or at least be independent of— contract law machinery.

As such, it is not surprising that there have been various assertions on how the law (law of contract in particular) has no role to play in Smart Contracts. In addition, the role of lawyers have been reduced to, at best, drawing up the standard terms of contract which will be reproduced in the Smart Contract.

In this essay, we will examine the correctness or otherwise of this assertion and consider the impact that the law plays in Blockchain-based transactions that run on Smart Contracts.

The Blockchain has proven to be a game-changing technology with world-reaching effects. In addition to use-cases such as cryptocurrencies and nonfungible tokens (NFTs),

Blockchain has introduced a world where contracts can be embedded in digital code and stored in transparent shared databases, where the terms of the contract are protected from deletion, tampering and revision and their performance is fully automated without any need for human intervention. These contracts are called “Smart Contracts.”

First proposed in 1994 by Nick Szabo, Smart Contract is a term used to describe computer code that automatically executes all or parts of an agreement and is stored on a Blockchain-based platform. Smart Contracts represent the most recent instance of digital technology remaking contract law and are intended to circumvent—or at least be independent of— contract law machinery.

As such, it is not surprising that there have been various assertions on how the law (law of contract in particular) has no role to play in Smart Contracts. In addition, the role of lawyers have been reduced to, at best, drawing up the standard terms of contract which will be reproduced in the Smart Contract.

In this essay, we will examine the correctness or otherwise of this assertion and consider the impact that the law plays in Blockchain-based transactions that run on Smart Contracts.

NATURE OF SMART CONTRACT

Smart Contracts solve an age-long challenge most parties to agreements have contended with. In most cases, parties cannot perform at the same time, so one party runs the risk of its performance not being reciprocated. Thus, the party who has performed has to trust/hope that the counterparty will perform its obligations under the agreement. In the event of non-performance or other forms of default, the party who has performed is forced to rely on the reliefs that are available from the State institutions such as the court, or other alternative dispute resolution mechanisms.

This framework has three challenges;

1. the State does not enforce all agreements[1];
2. parties often have to deal with extraneous but unavoidable issues/risks in approaching the State/Court for enforcement[2]; and
3. parties may, notwithstanding the best efforts of the State/Court, not get the same result they would have gotten if the counterparty had performed its obligation.[3]

Smart Contracts solve the above issues by automating and guaranteeing performance immediately the set parameters are met. This is done by setting the terms of the contract in code replicated across multiple nodes of a Blockchain. Setting the code on the Blockchain ensures that the code/terms benefits from the security, permanence, and immutability that a Blockchain offers. That replication also means that as each new block is added to the Blockchain, the code is, in effect, executed. If the parties have indicated, by initiating a transaction, that certain parameters have been met, the code will execute the step triggered by those parameters.[4] If no such transaction has been initiated, the code will not take any steps.

To this extent, questions regarding whether Smart Contracts are valid contracts are moot. The very nature of Smart Contracts ensures that they are always performed once the parameters are met and therefore issues concerning whether such contracts are legally enforceable are irrelevant.

To be clear, Smart Contracts, by their nature, do not need the State or Court System to enforce their terms. However, this is not to suggest that the considerations for a valid contract are wholly irrelevant to a Smart Contract.

[1]Only agreements which meet the elements of a valid contract are enforceable i.e. there must be an offer, acceptance, consideration and intention to create legal obligation. In addition, there must be no vitiating elements such as mistake, absence of capacity, illegality etc.
[2] These issues include retention and disclosure to legal representatives, inefficiency and/or corruption of the judiciary, the risk of being outmanoeuvred by legal representative to the counterparty, legal technicalities, and challenges with enforcement of judgement/award.
[3] For example, Specific Performance, the remedy of requiring exact performance (or as nearly as practicable) of a contract in the specific form in which it was made or according to the precise terms agreed upon, is discretionary (the dominant principle has always been that equity will only grant specific performance if, under the circumstances, it is just and equitable to do so) and only available where monetary damages would be an inadequate compensation for the breach of an agreement. There are many instances where the court will not grant an order of specific performance and, even in cases where the court grants an order of Specific Performance, it may be too late a comfort. See generally BOBAI v. ACHI & ANOR (2015) LPELR-25901(CA); Ohiwerei Vs Okosun (2003)11 NWLR (Pt.832) 463, Help (Nig) Ltd Vs. Silver Anchor (Nig) Ltd (2006) 5 NWLR (Pt.972) 196, Mustapha vs Abubakar (2011) 3 NWLR (Pt.1233) 123. For explanation on the term "just and equitable", see General & Aviation Services Ltd vs Thahal (2000) 14 NWLR (Pt. 686) 108.

[4] Said parameters may be on-chain or off-chain. On-chain parameters are essentially parameters that are wholly based on the Blockchain such as the volume of transactions on a Blockchain, listing of a particular asset on the Blockchain, a specific transaction on the Blockchain. Off-chain parameters are parameters that involve happenings outside the Blockchain. These could be something like the winner of the champions league, a specific day in the month etc. Off-chain parameters create a conundrum because it is unlikely for all the nodes in the Blockchain will receive the parameter at the exact same time and therefore, because all the nodes do not receive it at the same time, the presence of the Parameter cannot be confirmed because there has to be consensus among the nodes. Parties often solve this conundrum by using an "Oracle." Oracles are trusted third parties that retrieve off-chain information and then push that information to the Blockchain at predetermined time thereby ensuring all the nodes on the Blockchain receive the information at the exact same time.

Types of Smart Contracts

Smart Contracts can be *Code-OnlySmart Contracts or Ancillary Smart Contracts*. Code-only Smart Contracts are Smart Contracts that are created and deployed without any enforceable text-based contract behind them. For example, two parties reach an oral understanding as to the business relationship they want to capture and then directly reduce that understanding into executable code. Conversely, Ancillary Smart Contracts involve the use of Smart Contracts as vehicles to effectuate certain provisions of a traditional text-based contract, in which the text itself references the use of the Smart Contract to effectuate certain provisions.

While legal enforceability might not be a consideration for code-only Smart Contracts, such enforceability may be pivotal to the execution of Ancillary Smart Contracts.

USE CASES OF SMART CONTRACTS

The fact that Smart Contracts offer guaranteed enforcement independent of the whims of States/Court systems; efficient formation and interpretation of terms; immunity from external interference; and complete deference to the parties' wishes have led to their adoption for various commercial transactions and account for the potentials Smart Contracts possess for even further adoption as time progresses.

At present, Smart Contracts are best suited to execute two types of "transactions" found in many contracts: (5) ensuring the payment of funds upon certain triggering events and (6) imposing financial penalties if certain objective conditions are not satisfied.

Nevertheless, Smart Contracts are also used and may be used for the following:

·Dynamic NFTS;[5]
·Betting/Gambling transactions;[6] and
·Royalties from the sale of NFTs.[7]

However, the three major restrictions on the adoption of Smart Contracts are the conditional nature of Smart Contracts,[8] the slowness in processing transactions, and the Gas Fees required.

The conditional nature of Smart Contracts prevents Smart Contracts from being used/adopted for complex commercial transactions particularly concerning transactions that require subjective judgment calls. Although a major issue with Blockchain adoption has been the slowness of transactions, recent Blockchain solutions are scaling for speed.[9]

[5] A Dynamic NFT or dNFT, is a type of NFT that can change some of its inherent properties based on external conditions. These changes are recorded and added to the metadata of the NFT. Smart contracts, triggered by data from oracles and other on-chain and off-chain events, cause the changes to occur in Dynamic NFTs.
[6] Online gambling solutions like Trust Roll, SocialBets and Bettingwin are using Smart Contracts to offer gambling opportunities to users.
[7] Harvesto Orlando, "NFT Royalties: What Are They and How Do They Work?" available at https://medium.com/coinmonks/nft-royalties-what-are-they-and-how-do-they-work-73722467c58d#:~:text=The%20royalties%20of%20each%20NFT,royalties%20paid%20to%20the%20creator.
[8] Smart Contracts are currently mainly structured as conditional terms such as "If X occurs then do Y" or "if X occurs then do not do Y."
[9] For example, Fantom, Stellar and Avalanche are reputed for their transaction speed.

With respect to Gas Fees, before a compiled Smart Contract can be executed on certain blockchains, an additional step is required, namely, the payment of a transaction fee for the contract to be added to the chain and executed. This fee is known as "Gas" and the more complex a transaction is, the more gas must be paid to execute the Smart Contract.[10]

Notwithstanding these restrictions, it is expected that Smart Contracts would see an increasingly high adoption rate.

THE ROLE OF LAW

Perhaps it will be helpful to delve into a scenario to illustrate the role of law in a Smart Contract. A Smart Contract can be likened to an automated vending machine ("AVM") which also automates performance of the terms of contract. Specifically, the AVM automatically releases the selected items once payment is made (parameters are met).

However, this does not mean the law has no role to play in the transaction between the Buyer and Seller who interact through the AVM. For example, the Buyer may nevertheless sue for recovery of sums paid where the items released are expired.

Similarly, the Buyer/Seller may use the instrumentality of the law to recover compensation where excess or insufficient items were released to the buyer due to an error from the AVM. In addition, the law may direct the Seller to desist from providing certain items in the AVM at the risk of prosecution. In essence, although the law does not play a role in the performance of the terms, the law plays a supervisory role in the overall transaction.

The same logic can be applied to Smart Contracts. Specifically, the law may order the reversal of Smart Contract transactions in certain circumstances or order the performance of certain obligations notwithstanding the absence of the agreed-upon objective parameters. Some of these circumstances are examined below.

1) Presence of vitiating elements

The court may order the reversal of a Smart Contract transaction where there is a vitiating element in the agreement. For example, the law of contract mandates that a valid contract must not have a vitiating element. Vitiating elements include absence of capacity, absence of illiterate jurat, illegality, etc. For instance, a contract for loans, contracts for goods (except contracts for necessaries i.e. goods that are suitable to the condition of life of the infant at the time of sale and delivery of such goods) and account stated are void against an infant.[11] Thus, where an infant enters a contract for loans using a Smart Contract, the court may order a reversal of the transaction.

[10] For example, in the case of the Ethereum Blockchain, Smart Contracts are executed on the Ethereum Virtual Machine (EVM), and Gas is paid using the ether cryptocurrency.
[11] Infant Relief Act 1874 available at https://www.legislation.gov.uk/ukpga/Vict/37-38/62

2) Error in the transaction

The court may order a reversal where an error has occurred in the course of the transaction. This may be due to an error in the code of the Smart Contract, a hack of the Blockchain on which the Smart Contract is written, or even an error from the oracle from which off-chain information is sourced. The Smart Contract, because of its automated nature, will enforce the terms of the contract as inputted but the law may subsequently reverse said transaction.

3) Doctrine of quantum meruit

the law may order the performance of the terms encoded in a Smart Contract even where the objective terms of the contract have not been wholly met. An instance where this will play out is where a party has substantially performed his obligations under the Smart Contract but still does not meet the agreed-upon parameters that will trigger enforcement under the Smart Contract due to the actions/inactions of the Counterparty; such party may have recourse to approach the court and receive some level of compensation under the doctrine of quantum meruit.[12]

CONCLUSION

Smart Contracts are a fascinating development in the commercial transaction sphere. However, an examination of the realities of Smart Contracts reveals that they are a mere improvement on already existing structures and will, like their predecessors, require a level of oversight from the law.

The idea that Smart Contracts are independent of the legal system might seem accurate at the first glance; however, a deeper analysis shows that contracts do not end at the point of performance. The performance done pursuant to a Smart Contract can be readily undone by the instrumentality of the law.

As such, the law in general, and lawyers in particular, still have a pivotal role to play in the enforcement of Smart Contracts.

[12] The term "quantum meruit" means any of the following: (1) a claim by one party to a contract, for example on breach of the contract by the other party, for reasonable remuneration for what he has done; (2) a mode of redress on a new contract which has replaced a previous one; (3) a reasonable price or remuneration which will be implied in a contract where no price or remuneration has been fixed for goods sold or work done. Item (1) is relevant to this discourse. See OLAOPA v. OAU, ILE-IFE (1997) LPELR-2571(SC). Payment on quantum meruit' will arise, among other instances, if a person by the terms of a contract is to do a certain piece of work for a lump sum, and he does only a part of the work, he may be able to claim on a quantum meruit if, completion of the works has been prevented by the act of the other contract.

ÆLEX

AUTHORS

Davidson Oturu
doturu@aelex.com

Agboola Dosunmu
adosunmu @aelex.com

CONTACTS

Davidson Oturu
doturu@aelex.com

Ifeoluwa Ebiseni
lebiseni@aelex.com

Florence Bola Balogun
fbola-balogun@aelex.com

Peretimi Pere
ppere@aelex.com

ÆLEX is a full-service commercial and dispute resolution firm. It is one of the largest law firms in West Africa with offices in Lagos, Port Harcourt and Abuja in Nigeria and Accra, Ghana. A profile of our firm can be viewed here. You can also visit our website at www.aelex.com to learn more about our firm and its services.'

CONTACT DETAILS

LAGOS, NIGERIA

4th Floor, Marble House
1, Kingsway Road, Falomo
Ikoyi, Lagos

Telephone: (+ 234 1) 2793367; 2793368
4736296, 4617321-3;
Facsimile: (+ 234 1) 2692072; 4617092
E-mail: lagos@aelex.com

PORT HARCOURT, NIGERIA

2nd Floor,
Right Wing UPDC Building
26, Aba Road
P.O. Box 12636, Port Harcourt
Rivers State, Nigeria

Telephone: (+234 84) 464514, 464515
574628, 574636
Facsimile: (+234 84) 464516, 574628
E-mail: portharcourt@aelex.com

ABUJA, NIGERIA

4th Floor,
Adamawa Plaza
1st Avenue, Off Shehu Shagari Way
Central Business Area
FCT Abuja, Nigeria

Telephone: (+234 9) 8704187, 6723568,
07098808416
Facsimile: (+234 9) 5230276
E-mail: abuja@aelex.com

ACCRA, GHANA

Suite CCasa Maria
28 Angola Road
Kuku Hill, Osu
Accra

Telephone: (+233-302) 224828, 224845-6
Facsimile: (+233-302) 224824
E-mail: accra@aelex.com