

ARTICLE

FINANCIAL TECHNOLOGY CONTRACTS AND TRANSACTIONS: ENFORCEABILITY OF SMART CONTRACT IN NIGERIA

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Abstract

Technology is influencing every facet of modern society at an unprecedented pace. In particular, electronic legal tools are replacing conventional methods of resolving practical issues in commerce and law. The emergence of blockchain technology and smart contracts is an example of such innovation. Smart contracts are coded agreements that frequently use blockchain technology and automatically enforce and carry out the provisions of a contract when predetermined conditions are satisfied. This article uses the doctrinal methodology to analyse the enforceability of smart contracts in Nigeria by consulting primary sources of law such as the Central Bank of Nigeria Act 2007, Nigerian Data Protection Act 2023, Evidence Act 2011 (as amended 2023) and secondary sources of law that were subject to content analysis. This article reveals that although, smart contracts and blockchain technology are novel in Nigerian jurisprudence, and as such, there is no legislation specifically provided to cover both subject matters, smart contracts are enforceable once it satisfies the fundamental principles of offer, acceptance, consideration, intention to create legal relations, and capacity to contract which are governed by traditional contract law. It recommends that the government and regulatory bodies establish clear regulations for the enforcement of smart contracts. In conclusion, the commercial sector is revolutionised by blockchain technology and smart contracts, parties who implement smart contracts derive substantial advantages over conventional contracts. Although parties are eager to capitalise on these benefits, they must exercise caution regarding the intricacies of smart contracts.

Keywords:Blockchain Technology, Contracts, Enforceability, Financial Technology, Financial Technology Contract, Smart Contract.

1.0 Introduction

The emergence of a new technology called Blockchain, which is closely linked to the well-known cryptocurrency, Bitcoin, has had a big effect on how the Nigerian financial system works. The rising popularity of Bitcoin has led to heightened public interest in Blockchain technology. This breakthrough is deemed significant, particularly when extensive public and private sectors progressively integrate Blockchain technology into their systems.¹ According to the Statista Report 2025, there is a steady expansion of the global Blockchain technology market. The market value is projected to reach 6.6 billion U.S. dollars with an anticipated growth to 19 billion U.S. dollars by 2024, and is forecast to increase to nearly 1,000 trillion U.S. dollars by 2032.² The global marketplace's transition towards more innovative Fintech transactions and the increasing demand for Blockchain technology are illustrated by this statistic. With this rise, smart contracts become more pertinent in daily digital transactions.³

While smart contracts possess numerous applications, they are the foundation of Bitcoin transactions. Nigeria has had a significant number of Bitcoin trading transactions.⁴ The Chainalysis Global Adoption Index indicates that the West African nation secured the second position overall, transacting approximately \$59 billion in cryptocurrencies from July 2023 to June 2024.⁵ Approximately 85% of transfers received in Nigeria are under \$1 million, with smaller denomination retail and professional transactions constituting the primary catalysts of the nation's Bitcoin activity. Powered by blockchain technology, thousands of smart contract

¹ N Razinah and others, 'Smart Contract in Blockchain: An Exploration of Legal Framework in Malaysia' (2019) 27(2) *Intellectual Discourse* 595 <<http://journals.iium.edu.my/indiscourse/index.php/islam>> assessed 15 January 2025.

² DB Raynor, 'Global blockchain technology cloud market size 2021, with a 2032 forecast' (2025) <<https://www.statista.com/statistics/1319369/global-blockchain-technology-market-size/>> accessed 15 January 2025.

³ Ibid.

⁴ O Adeshina, 'Nigeria's Bitcoin P2P Trading surge by 16% since CBN enforced Crypto Ban' (2022) <[Nigeria's Bitcoin P2P trading surge by 16% since CBN enforced crypto ban - Nairametrics](#)> accessed 15 January 2025.

⁵ Chainalysis Team, 'Sub-Saharan Africa: Nigeria Takes #2 Spot in Global Adoption, South Africa Grows Crypto-TradFiNexus' (2024) <<https://www.chainalysis.com/blog/subsaharan-africa-crypto-adoption.2024/#:~:text=In%20recent%20years%2C%20Nigeria%20has,July%202023%20and%20June%202024>> accessed 17 January 2025.

codes are being executed daily.⁶

In Nigeria, there is an increasing interest in the utilisation of Blockchain technology and smart contracts. Following the CBN publications of February 5, 2021, and February 7, 2021, stating that the use of cryptocurrencies in Nigeria is a direct contravention of existing laws and goes against the key mandates of the CBN as the issuer of legal tender in Nigeria,⁷ that all banks should desist from transacting in and with entities dealing in cryptocurrency, and banks should close accounts of persons or entities involved in cryptocurrency transactions within their systems. In line with this, entities engaging in cryptocurrencies could not explore Nigeria's banking system.⁸

However, in a circular issued on 22 December 2023, the CBN permitted certain Virtual Asset Service Providers (VASP) activities and activities relating to cryptocurrencies and crypto assets, subject to new guidelines. These enable financial institutions to provide banking services to VASPs, set out how financial institutions should open accounts for VASPs, provide designated settlement accounts and services, and serve as channels for foreign exchange inflows and trade for companies transacting in crypto assets.⁹ Against this background, this paper seeks to explore the enforceability of smart contracts in Nigeria, to identify the Nigerian laws in dealing with smart contracts, to analyse the international experiences in practicing smart contracts, to identify the challenges in enforcing smart contracts, as well as to recommend solutions to navigate dealings in smart contracts.

Conceptual Framework

2.1 Contracts

Examining the significance of contracts is essential to any discourse on smart contracts. A contract is an agreement that the law will enforce or acknowledge as influencing the legal rights

⁶ O Adeshina, Nigeria's crypto dealings hit \$59 Billion between July 2023 and June 2024 (2024) <<https://nairametrics.com/2024/10/03/nigerias-crypto-dealings-hit-59-billion-between-july-2023-and-june-2024/>> accessed 17 January 2025.

⁷ Central Bank of Nigeria, 'Response to regulatory Directive on Cryptocurrencies (CBN Press Release February 7, 2021). <<https://www.cbn.gov.ng/out/2021/ccd/volume%203%20number%202%20cbn%20update%20february%202021.pdf>> accessed 17 January 2025.

⁸ D Otoru LL.M MBA, *Fintech Law and Practice in Nigeria* (The Radah Media Company 2024) 163.

⁹ HKTDC Research, Nigeria: Ban on Digital Currency Transactions Lifted (2024) <<https://research.hktdc.com/en/article/MTYwMjE3OTI1MA#:~:text=In%20February%202021%20the%20CBN,assets%2C%20subject%20to%20new%20guidelines.>> accessed 17 January 2025.

and obligations of the persons involved.¹⁰ It constitutes a contract encompassing commitments, responsibilities, liabilities, and remedies in the event of a violation or failure to fulfill an anticipated term. The domain of contract law regulates enquiries regarding which agreements are enforceable by law, the responsibilities imposed by the respective agreement, and the remedies accessible in the event of non-performance of these obligations. Consequently, contract law pertains to the legal obligations arising from the violation of a commitment.¹¹

2.2 Financial Technology

As the term implies, fintech mainly refers to the integration of finance and technology.¹² It can be defined as any innovative idea that improves financial service processes by proposing technology solutions according to different business situations, while the ideas could also lead to new business models or even new businesses.¹³ The Central Bank of Nigeria has defined fintech as technologically enabled financial innovations that extend the reach, usage, and governance of financial services.¹⁴

2.3 Financial Technology Contract

In Fintech, contracts constitute the fundamental pillars of the contemporary financial landscape. These contracts serve as the frameworks regulating financial innovation. In the fintech domain, contracts may manifest as lines of code that regulate the pertinent relationship.¹⁵ Fintech contracts guarantee predictability, security, and clarity within the ecosystem. They facilitate the seamless operation of payment processors, digital applications, and financial platforms by expanding the scope of conventional and digital financial instruments. Numerous contract forms are common in the fintech business, providing the legal framework for operations while ensuring clarity, protection, and compliance with relevant legislation. Some of them include: smart contracts, software licenses, service agreements, payment processing agreements, Data Sharing

¹⁰ E Sagay, *Nigerian Law of Contract* (3rd ed, Sweet & Maxwell, 2018) 1.

¹¹ H Beagle and others, *Contract Cases and Materials* (3rd ed, Butterworths, 1995).

¹² SD Chinwendu, 'Appraisal of Digital Disruption in the Banking Sector in Nigeria: Creating a Sustainable Legal Framework' (2024) 7(2) *African Journal of Law, Ethics and Education [AJLEE]* <<https://ajleejournal.com>> accessed 17 January 2025.

¹³ D Oturu (n 8) 4.

¹⁴ Central Bank of Nigeria, 'National Fintech Strategy' (2022) <<https://www.cbn.gov.ng/out/2022/CCD/NFS%20final%20CORRECTION.pdf>> accessed 17 January 2025.

¹⁵ Oturu (n 8) 422.

Agreements, API Integration Agreements, User Agreements and Terms of Services, and Partnership and Collaboration Agreements.¹⁶

2.4 Smart Contracts

Smart contracts and other digital contracts are a paradigm change in the fintech industry. A smart contract is formulated as computer code to be executed on an IF-THEN principle. Smart contracts are computer codes that encapsulate the agreements between parties.¹⁷ A smart contract is an electronic algorithm used for automatic transaction registration and execution.¹⁸ Smart contracts are automated and enforceable agreements. Smart contracts are capable of being automated by a computer; however, certain components may necessitate human input and oversight. It is enforceable by legal enforcement of rights and responsibilities or by using tamper-proof execution of computer code.¹⁹

Smart contracts are coded agreements that frequently use blockchain technology and automatically enforce and carry out the provisions of a contract when predetermined conditions are satisfied.²⁰ They are utilised in fintech and several sectors to create transparent, decentralised, and immutable contracts. These agreements operate on a blockchain network, which disseminates data throughout a computer network to ensure immutability and security. Tokenization of assets, supply chain monitoring, and digital identity are but a few applications of blockchain-based contracts. By reducing the potential for fraud and eliminating the necessity for intermediaries via escrow payments, they enhance trust and reliability in fintech transactions.²¹

2.4.0 The Operation of Smart Contract

The initial implementation of smart contracts can be linked to the functioning of digital vending machines. Nick Szabo, the inventor of smart contracts and a computer scientist and cryptographer, elucidated that the fundamental concept of smart contracts is the integration of

¹⁶ Ibid

¹⁷ T Edema, 'Contract Law in an Era of Technology: Examining Liability in Smart Contract Transactions' (2020) 8(1) *ABUAD Law Journal* 76.

¹⁸ C Ene, 'Smart contracts-the new form of the legal agreements' (2020) <[Smart contracts - the new form of the legal agreements](#)> accessed 17 January 2025.

¹⁹ C Clark and L Braine, 'Smart Contract Templates: foundations, design landscape and research directions' (2017) <<file:///C:/Users/hp/Downloads/1608.007711.pdf>> accessed 17 January 2025.

²⁰ Uturu (n 8) 425.

²¹ Ibid.

various contractual provisions (such as liens, bonding, and delineation of property rights) into the hardware and software we utilise, thereby rendering breach of contract costly (and, if desired, potentially prohibitively so) for the violator.²²

Smart contracts often function on decentralised and distributed ledger technology (DLTs). Decentralised computing is emblematic of the twenty-first century. They offer a decentralised, distributed, and interconnected system devoid of centralised authority. Consequently, each level possesses a specific degree of autonomy and is responsible for the system's impeccable functioning. An illustration of such decentralised networks is Blockchain technology.²³ The National Institute of Standards and Technology, US Department of Commerce, defined a smart contract as "... a collection of code and data (sometimes referred to as functions and state) that is deployed to a Blockchain (e.g. Ethereum)."²⁴

The procedure entails two parties, namely a buyer and a seller, engaged in a transaction involving an asset. They participate in a smart contract, which is a self-enforcing and entirely digital agreement. The stipulations and provisions of the contract are encoded on a decentralised blockchain network. The provisions of the agreement are defined by these codes, and both parties must agree to them for the contract to be automatically enforced. The transaction takes place when the stipulated conditions in the terms are fulfilled by the parties.²⁵

For example, suppose Royal, an investor, intends to finance a company proposal conceived by Divine. Royal and Divine establish a smart contract that formalises the agreed-upon conditions, regulations, and penalties between the parties. Should the project concept satisfy the criteria outlined in the regulations, the blockchain will disburse the funds to Divine. If the project idea fails to meet the contract criteria, the blockchain will refund the money to Royal. This contract saves and validates transaction information, executing autonomously only when the stipulated conditions are satisfied.

²² N Szabo, 'Smart Contracts: Building Blocks for Digital Free Markets.' (1995) <https://www.google.com/search?q=http%3A%2F%2Fwww.+alamut.com%2Fsubj%2Feconomics%2Fnick_szabo%2FsmartContracts.html&oq=http%3A%2F%2Fwww.+alamut.com%2Fsubj%2Feconomics%2Fnick_szabo%2FsmartContracts.html&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIGCAEQRRg60gEJMTIwMzBqMGo3qAIIIsAIB&sourceid=chrome&ie=UTF-8> accessed 19 January 2025.

²³ A Ijaoba, 'How Smart Contracts can Promote E-Commerce in Nigeria' (2021) <<https://thecondia.com/smart-contracts-e-commerce-nigeria/>> accessed 19 January 2025.

²⁴ D Yaga and others, 'Blockchain Technology Overview (National Institute of Standards and Technology, US Department of Commerce)' (2018) <<https://arxiv.org/ftp/arxiv/papers/1906/1906.11078.pdf>> accessed 19 January 2025.

²⁵ Y Edu and Others, 'Smart Contracts: Assessing Some Legal Implications of its use in the Nigerian Capital Market' (2024) <<https://www.mondaq.com/nigeria/fin-tech/1508146/smart-contracts-assessing-some-legal-implications-of-its-use-in-the-nigerian-capital-market>> accessed 19 January 2025.

The blockchain network is sustained by a consortium of participants known as nodes. Modifications to the contract's status or implementation necessitate agreement among these nodes. Before execution, the smart contract's code and stipulations are validated by the network nodes. These conditions may encompass transferring digital assets across addresses under particular circumstances, as well as more intricate tasks such as executing multi-signature authentication for a transaction. Each transaction or event conducted within the smart contract is documented on the blockchain and is immutable by the involved parties. Smart contracts can be composed solely in code, have a natural language variant, or use a hybrid approach in which specific responsibilities are articulated in natural language while others are encoded.²⁶

2.5 Blockchain Technology

Blockchain technology is defined as a decentralized and distributed ledger that records and validates the authenticity of digital assets. Its technology allows individuals and organisations to record information that cannot be altered without the authorisation of the persons or organisations who share the network. In essence, a blockchain is a public ledger or distributed database that contains all of the completed and shared digital transactions and events amongst participating parties. Most users of the system typically confirm every transaction in the ledger with unanimity. Once data is recorded in the ledger, it cannot be removed. Blockchain technology has the potential to revolutionise the world due to two key features: the distributed consensus feature, which allows any transaction involving digital assets to be verified at any time, and the anonymity feature, which allows transaction verification to be completed without jeopardizing the privacy of the involved parties or the digital assets themselves.²⁷

Predrag provides a vivid explanation of how blockchain works, viz;²⁸

Blockchain is a compound of the words “block” and “chain.” It is a concept based on the use of a cryptographically protected chain of transaction blocks. Transactions are packed into blocks, and blocks are tied into a chain. Blocks are bound cryptographically, through a hash function: the contents of a block cannot be changed without changing the contents of all other blocks preceding it. Namely, each block is bound to the next block using a

²⁶ Ibid.

²⁷ S Roy ‘The Impact of Blockchain Technology on Financial Regulations and Legal Frameworks’ (2023) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4521762> accessed 29 January 2026.

²⁸ T Edema (n 17) 78.

cryptographic signature. This allows the Blockchains to be used as a digital ledger, which can be shared and verified by anyone with the appropriate permission to do so. A block consists of a title and transaction data. A title contains references to the previous block in the chain, i.e., a short combination of letters related to a certain set of data (hash). A time stamp indicating the time the block was entered into the “chain” of blocks, and a hash tree or “Merkle tree” which lays out all transactions included in the block.

2.6 Blockchain Technology and Smart Contracts

The initial emergence of Blockchain technology can be attributed to Satoshi Nakamoto in 2008 via a white paper entitled Bitcoin: A Peer-to-Peer Electronic Cash System. Nakamoto proposed "a system for electronic transactions that does not depend on trust, utilising a conventional framework of coins derived from digital signatures, which ensures robust ownership control."²⁹At the early stage, Blockchain technology is used as the underlying technology for the operation of digital money or cryptocurrency, which is called Bitcoin. Later, the technology continues to be developed, which enables new usage and spreads to other industrial systems as the underlying platform for the creation of smart contracts.³⁰Blockchain technology stands with significant advantages to smart contracts. According to Williams,³¹these advantages can be traced to: transparency, lower costs of the transaction, speedy settlement of transactions, user-controlled networks, and decentralisation.

- 1) Transparency: Transparency is crucial, particularly in finance, commerce, and trade. Investors commend blockchain technology for its transparency characteristic. Blockchain technology guarantees perpetual open-source accessibility to the public. Blockchain operates without confidentiality. Any user has the opportunity to alter it to suit their commercial or transactional needs. Although blockchain technology is open source, it does not imply that it is easily modifiable. Furthermore, anybody within the network can access the altered logged data for verification. Any unauthorised alteration of logged data inside the Blockchain will

²⁹ S Nakamoto, ‘Bitcoin: A Peer-to-Peer Electronic Cash System’ (2018) <<https://bitcoin.org/bitcoin.pdf>> accessed 19 January 2025.

³⁰ Ibid.

³¹ S Williams, ‘5 Big Advantages of Blockchain, and 1 Reason to be very Worried’ (2017) <<https://www.fool.com/%20investing/2017/12/11/5-big-advantages-of-blockchain-and-1-reason-to%02be.aspx>> accessed 19 January 2025.

- alert all network participants, and the individual responsible for the modification can be readily identified. This form of open-access security enhances the usefulness of Blockchain technology.³²
- 2) Lower Cost of the Transactions: Blockchain technology has the potential to reduce transaction costs. Blockchain technology prioritizes peer-to-peer transactions. This peer-to-peer transaction facilitates business-to-business transactions without the involvement of intermediaries or third parties. The transaction can be executed directly, devoid of any middleman or third party, without incurring additional charges or associated fees. This ultimately results in a decrease in costs for each transaction.
 - 3) User Control Network: Blockchain technology values user-governed networks. This signifies that, rather than relying on a single entity to govern the networks, Blockchain users possess the authority to manage it. Any alterations in the network can be identified and communicated to the network users.
 - 4) Decentralisation: Blockchain technology also promotes the decentralisation of central data hubs, enabling the execution of individual transactions. The legitimacy and authorisation of individual transactions can be conducted without the necessity of approval from a specific data center. The decentralisation may be viewed negatively since it “was conceived by many as disruptive, as it challenges not only the current operating model and protocol, but it also tries to disconnect human conduct from a centralised power hierarchy.”³³
 - 5) Speedy Settlement of Transactions: The prompt resolution of transactions can be guaranteed through peer-to-peer transactions utilising Blockchain technology. Blockchain technology can facilitate transaction settlements within 24 hours, eliminating time-consuming, lengthy, and complex processes. Due to varying time zones worldwide, Blockchain technology facilitates continuous corporate operations. This advantage can enhance transaction settlements and expedite the profit-generation process. It is also advantageous for investors, irrespective of their varying locations and time zones.

³² Nor Razinah and others (n 1).

³³ Ibid.

- 6) Reducing Risk: Smart contracts cannot be indiscriminately modified after they are issued as a result of the immutability of blockchains. Additionally, the entire distributed blockchain system is traceable and auditable, as all transactions are stored and duplicated. Consequently, malevolent behaviours such as financial fraud can be significantly reduced.³⁴
- 7)

3.0 Legal Framework on Smart Contracts in Nigeria

Smart Contracts and blockchain technology are novel in Nigerian jurisprudence, and as such, there is no legislation specifically provided to cover both subject matters. However, a combined effect of various laws may be applicable for such use. They include:

3.1 Central Bank of Nigeria Act 2007: The CBN has the power to make rules and regulations for the good management of the bank.³⁵ Sequel to this power, in December 2023, the Central Bank of Nigeria relaxed its restriction regarding its regulated financial institutions engaging in cryptocurrency transactions and settlement of transactions in cryptocurrencies. In this regard, the CBN has made a plethora of regulatory guidelines to guide the crypto space in the country, and also, entrepreneurs/startups using blockchain in their business processes may do well to consider, even though they are not specifically applicable to blockchain. Some of these guidelines include:

- a) The Guidelines on Operation of Bank Accounts for Virtual Asset Service Providers (VASPs): the objective of the guideline is to provide minimum standards and requirements for banking business relationships and account opening for Virtual Assets Service Providers in Nigeria; provide for effective monitoring of the activities of Banks and Other Financial Institutions in providing service for Securities and Exchange Commission (SEC) licensed VASP and Digital Assets (DA) entities in Nigeria. The Guidelines allow VASPs incorporated in Nigeria and licensed by the SEC (such as Digital Asset Custodian, Digital Asset Offering Platforms, and Digital Asset Exchange operators) to open and operate bank accounts in Nigeria. The Guidelines permit financial

³⁴ Z Zehing and others, 'An Overview on Smart Contracts: Challenges, Advances and Platforms' (2019) <<https://www.researchgate.net/publication/337915375>> accessed 19 January 2025.

³⁵ Section 51 CBN Act 2007.

institutions to open bank accounts for eligible institutions and to allow such eligible institutions to operate such accounts for their transactions.³⁶

- b) CBN Consumer Protection Regulations, 2019: The objectives of the Regulations are to protect consumers from unfair and exploitative practices by Institutions in their dealings with the consumers, to protect consumers against the provision of inadequate and misleading information and/or failure to disclose material information, and to encourage transparency of Institutions in their dealings with consumers. The regulation provides that Contracts between Institutions and consumers shall not contain unfair terms. Contract terms shall be considered unfair where there is an imbalance in rights and obligations that are detrimental to the consumer. It shall protect the privacy and confidentiality of consumer information and assets against unauthorized access, and be accountable for acts or omissions in respect thereof.³⁷

Other regulations include: CBN Anti-Money laundering/Combating the Financing of Terrorism (Administrative Sanctions) Regulations, 2019, and CBN Three-Tier KYC Requirements, 2013, etc.

3.2 Evidence Act 2011 (as amended 2023): The Act recognises the use of electronic signatures or digital signatures on documents. *Section 93(2) and (3)* stipulate that where a rule of evidence requires a signature or provides for certain consequences if a document is not signed, an electronic signature or digital signature satisfies that rule of law or avoids those consequences. All electronic signatures and digital signatures may be proved in any manner, including by showing that a procedure existed by which a person must proceed further with a transaction to have executed a symbol or security procedure to verify that an electronic record is that of the person. Thus, in this context, smart contracts are executed using digital signatures, which are generated by private keys on the blockchain.

3.4 Nigeria Data Protection Act 2023: The Nigeria Data Protection Act 2023 governs data controllers and processors within Nigeria, as well as those handling personal data of Nigerian

³⁶ Central Bank of Nigeria, Guidelines on Operations of Bank Accounts for Virtual Assets Service Providers (2023) <<https://www.cbn.gov.ng/out/2024/fprd/guidelines%20on%20operations%20of%20bank%20accounts%20for%20virtual%20asset%20providers.pdf>> accessed 20 January 2025.

³⁷ Central Bank of Nigeria, Consumer Protection Regulations (2019) <<https://www.cbn.gov.ng/out/2019/ccd/cbn%20consumer%20protection%20regulations.pdf>> accessed 20 January 2025

citizens or residents.³⁸ The NDPA requires legal data acquisition, restricted data utilisation, and defined retention durations.³⁹The Nigeria Data Protection Regulation Implementation Framework 2019, established under the NDPA, delineates mandatory retention durations for the storage of personal data. Personal information gathered during the KYC process in smart contracts can be encrypted and maintained in decentralised identity systems, facilitating selective publication, updates, and deletion as required, thereby safeguarding against unauthorised access. Digital consent from customers must be acquired for the processing of their data as a prerequisite for proceeding with the pertinent transaction.

3.5 Cybercrimes (Prohibition, Prevention, etc.) Act 2015 amended 2024: the Act also gives recognition to electronic signature under *section 17*, which provides that an electronic signature in respect of purchases of goods, and any other transactions shall be binding. Whenever the genuineness or otherwise of such signatures is in question, the burden of proof that the signature does not belong to the purported originator of such electronic signatures shall be on the contender. Also, this Act applies to all companies providing services online, including those using blockchain technology. Technology firms and entities using blockchain technology should not engage in the trafficking of passwords and similar information.⁴⁰ Measures should also be put in place to ensure that their technology is not used to commit any cybercrime.

3.6 Securities and Exchange Commission (Capital Market Operators Anti-Money Laundering and Combating the Financing of Terrorism) Regulations 2022: In 2022, the SEC issued this regulation to prevent money laundering, terrorism financing, and proliferation of criminal activities in the Nigerian capital market. The regulations establish Know Your Customer (KYC) and Customer Due Diligence (CDD) requirements, including the disclosure of beneficial owners and intermediaries. Capital market operators using smart contracts can automate AML/CFT measures by mandating KYC and CDD verifications and using transaction monitoring algorithms to detect suspicious activities.⁴¹

³⁸ Section 1 Nigerian Data Protection Act, 2023.

³⁹ Section 24 Nigerian Data Protection Act, 2023.

⁴⁰ Sections 16 and 18 Cybercrimes (Prohibition, Prevention, etc) Act 2015 amended 2024

⁴¹ Edu (n 25).

4.0 Enforceability of Smart Contracts in Nigeria

4.1 Validity of Smart Contract

Fintech contracts necessitate comprehensive legal analysis to navigate the intricacies of financial technology transactions. Addressing these legal factors enables fintech contracts to limit risk, establish a clear framework for collaboration, and ensure legal compliance within the fintech sector. A contract must typically have certain characteristics for it to be legally binding. It must include a valid offer, acceptance, consideration, intention to enter legal relations, and legal capacity.⁴²

4.1.1 Offer and Acceptance: offer and acceptance hold substantial significance in fintech contracts, bridging both the traditional and digital domains. An offer denotes a definitive manifestation of intent to establish a contract. Acceptance necessitates both the counterparty's concurrence with the essential provisions of the contract and an action by the counterparty to acknowledge these terms within the stipulated timeframe and according to the prescribed method of the offer.

Offer and acceptance are integrated into the code itself in the digital realm, specifically in the context of smart contracts. The smart contract autonomously generates an offer upon the fulfillment of predetermined requirements, with acceptance occurring seamlessly after the specified criteria are reached. Likewise, when a smart contract code is employed on a distributed ledger, it will probably be regarded as an offer if other participants in the ledger can engage with and execute the code.⁴³ This automated procedure enhances efficiency, reducing the necessity for manual involvement and enabling prompt contract execution.⁴⁴

Recognising that offer and acceptance cannot occur under duress is essential. The contract will be rendered null if any party engages in an offer and acceptance under coercion or duress. In conventional contracts, evidence of the absence of a contract nullifies the transaction. However, in smart contracts, the parties cannot annul the transaction based on lack of permission once the action has been executed due to immutability. In these circumstances, would the contract be enforceable for the parties involved? This is an unresolved issue in the development of smart

⁴²*Orient Bank (Nig) Ltd. v. Bilante International Ltd* (1997) NWLR (Pt.515) 37.

⁴³ T Edema (n 17) 81.

⁴⁴Oturu (n 8) 426.

contracts.⁴⁵

4.1.2 Consideration: Consideration which is essential to all general contracts, also regulates fintech contracts, regardless of whether they are digital or traditional. In a conventional contractual framework, consideration appears as advantages to one party and forbearance to another, which may include cash, goods, or services. It denotes the *quid pro quo*⁴⁶ of the contract and the mutual obligation to fulfill its commitments. Consideration need not be sufficient, provided it holds significance in the legal context.

The consideration of the smart contract can be conducted by two primary methods: (i) digital assets or on-chain assets, and (ii) physical assets or off-chain assets. Digital assets exist as cryptocurrency. When the party possesses cryptocurrencies in their wallets or accounts, the consideration or payment for transactions can be executed automatically without delay. This can be regarded as analogous to the practice of immediate payment in the real world. If the consideration or payment is executed using physical assets, the smart contract is contingent upon the exchange of stocks or payment with tangible fiat currency or other precious commodities such as gold.⁴⁷ All of these transactions are recorded in the Blockchain distributed ledger.

4.1.3 Intention to Create Legal Relations: In contract law, the parties' intentions are typically ascertainable from the written contract or their verbal and behavioral expressions. The parties' intentions are evaluated using objective criteria: their communication is analysed based on the words or conduct exchanged, determining whether it objectively indicates an intention to establish legal relations.⁴⁸

4.1.4 Legal Capacity: The concept of legal capacity is crucial in fintech contracts, encompassing both traditional and digital domains. It encapsulates the notion that all parties involved in a contract must have the legal capacity and competence to engage in such an agreement. In conventional contractual situations, this principle requires confirming that individuals possess mental competence, are of legal age, and are free from any legal impediments that could hinder

⁴⁵ GA Atiyah and others, 'Enforcement of smart contracts in cross-jurisdictional transactions' (2024) *International Journal of Law and Management* < <https://www.researchgate.net/publication/387176520> > accessed 25 January 2025.

⁴⁶ A favour or advantage granted in return for something

⁴⁷ N Razinah and others (n 1) 606.

⁴⁸ T Edema (n 17) 82.

their ability to contract.

The principle of legal capability pertains to the individuals involved in the smart contract. Smart contracts typically depend on digital identities and cryptographic signatures to verify the legal competence of participants. Digital identities, sometimes housed in digital wallets, provide substantial proof of authorisation to engage with the contract, guaranteeing that all parties hold the necessary legal power in the digital realm.⁴⁹

The Ethereum blockchain serves as an example to demonstrate the application of the aforementioned features to smart contracts, with participants and the core group of developers regarded as the parties to the distributed ledger contract. The elements of offer, acceptance, and meeting of minds (*ad idem*) are fulfilled when persons wishing to join the blockchain network download the Ethereum software and configure their machines to operate Ethereum's decentralised ledgers. Consideration can take several forms, such as the payment of transaction fees, e.g. extra virtual assets.⁵⁰

5.0 International Experiences in Practicing Smart Contracts

This article selects several nations in various regions based on their progress in advancing Blockchain technology when examining the international experiences of applying smart contracts.

5.1 United States of America: The legal progression of cryptocurrency laws in the United States can be perceived as aggressive in response to the competition among states to establish themselves as the first crypto capital. Tennessee and Arizona are the origins of pioneer regulations. Assembly Bill 2658 was introduced in California to revise the statutes regarding electronic records on Blockchain signatures and smart contracts. Ian Calderon, an Assembly member, submitted the Bill, broadening the definition of electronic documents and signatures outlined in the Uniform Electronic Transactions Act. The bill's language is as follows: "An electronic record is a record that is secured through blockchain technology." The current law stipulates that "a record or signature may not be denied legal effect or enforceability solely

⁴⁹Oturu (n 8) 427.

⁵⁰ DA Zetzsche and others, 'The Distributed Liability of Distributed Ledgers: Legal Risks of Blockchain' (2018) (4) *University of Illinois Law Review* <<https://www.illinoislawreview.org/wp-content/uploads/2018/10/BuckleyEtAl.pdf>> accessed 25 January 2025.

because it is in electronic form, and a contract may not be denied legal effect or enforceability solely because an electronic record was used in its formation." The Governor of California approved the mentioned Bill on September 28, 2018, and it was subsequently lodged with the Secretary of State on the same day. The Bill that has been adopted (and is now an Act) is intended to amend and repeal Sections 11546.8 and 11546.9 of the Government Code, which pertain to the utilisation of blockchain technology.⁵¹

On July 11, 2023, the United States Attorney for the Southern District of New York, the Special Agent in Charge of the San Diego Field Office of Homeland Security Investigations ("HSI"), and the Special Agent in Charge of the Los Angeles Field Office of the Internal Revenue Service - Criminal Investigation ("IRS-CI"), announced the unsealing of an Indictment charging Shakeeb Ahmed (the defendant) with wire fraud and money laundering in connection with his attack on a decentralized cryptocurrency exchange (the "Crypto Exchange"). Ahmed was also arrested on that same morning in New York City. This is the first criminal case involving an attack on a smart contract operated by a decentralized exchange. TRM Labs⁵² is proud to have supported law enforcement throughout this investigation and the victim during the incident response.⁵³

5.2 England: John Thomas (Baron Thomas of Cwmgiedd) is a distinguished and long-serving judge in England and Wales, who recently started blockchain technology and smart contracts. As the most senior judge and Lord Chief Justice of England and Wales, Baron Thomas suggested that the UK law may necessitate specific revisions in the areas of blockchain technology, digital currencies, and smart contracts. He suggested that an independent authority be established to monitor and suggest reform actions to the government regarding the legal development in the UK. Baron Thomas stated, "Certainly, the European Commission believes that legislative reform will be necessary to address emerging contract types, including blockchain and smart contracts. I

⁵¹California Legislative Information, Assembly Bill 2658 (2019) <https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB2658> accessed 31 January 2025.

⁵² TRM Labs is a leading blockchain intelligence company that provides forensics, risk management, and compliance solutions to detect and investigate cryptocurrency-related financial crime

⁵³ TRM, 'U.S. authorities make arrest in the first criminal case involving an attack on a smart contract operated by a decentralized exchange' (2023) <<https://www.trmlabs.com/post/u-s-authorities-make-arrest-in-the-first-criminal-case-involving-an-attack-on-a-smart-contract-operated-by-a-decentralized-exchange>> accessed 31 January 2025.

am certain that we must evaluate whether our law necessitates analogous legislative updates.”⁵⁴

5.3 Australia: Australian legal firms were among the first to initiate a process of learning and training regarding blockchain technology and smart contracts. A comprehensive report titled "Blockchain Reaction" was published by Allens, a legal firm in Australia. The report examines the regulatory and legal challenges that Australia may encounter as a result of the adoption of blockchain technology and smart contracts.⁵⁵ King Wood and Mallesons, another legal firm, published an open source report titled "Digital and Analogue (or DnA) smart contract architecture" to address the disparity in the development of smart contracts.⁵⁶ Mr. Michael Bacina of Piper Alderman noted the current legal challenges associated with smart contracts in Australia, stating that "A legally enforceable smart contract must still meet all the traditional elements of a binding contract." A smart contract may be rendered void at law if it is subjected to duress, undue influence, or unconscionable dealings, despite its potential to be unassailable in the digital realm.

The purest "the code is the contract" smart contracts are of particular concern, as they lack any notification of their terms, as the terms exist exclusively in machine-readable code. The identity of the other party to the contract, or whether that party can engage in the contract, is typically unknown. Reducing the smart contract to a printable format, as opposed to leaving it virtually on the Blockchain distributed ledger, is regarded as a good practice in Australia, as per research.⁵⁷

Although there is a substantial lack of cases directly involving the enforcement of smart contracts in Australian courts, there are a few notable examples that underscore the legal implications of these technologies.⁵⁸ In 2020, the collapse of the Australian cryptocurrency exchange ACX raised important questions about blockchain-based transactions. Investors claimed losses after the exchange collapsed, and disputes arose over whether the smart contract governing the exchange was legally enforceable. Although the case did not directly resolve the

⁵⁴ S Higgins 'UK Judge: 'No Doubt' Smart Contract Law Update Should be Considered' (2017) <<https://www.coindesk.com/uk-judge-no-doubt-smart-contract-law-update-considered/>> accessed 31 January 2025.

⁵⁵ Allens, Allens releases a landmark report on blockchain (2016) <<https://www.allens.com.au/data/blockchain/index.htm>> accessed 31 January 2025.

⁵⁶ Ibid.

⁵⁷ M Bacina, 'Smart Contracts in Australia: Just How Smart They are?' (2017) <<https://www.piperalderman.com.au/publications/corporate-commercial/article/28836>> accessed 1 February 2025.

⁵⁸ Digital Age Lawyer, 'Blockchain and Smart Contracts: Revolutionising Australian Commercial Transactions in 2024' (2024) <<https://digitalagelawyers.com/blockchain-and-smart-contracts-revolutionising-australian-commercial-transactions-in-2024/>> accessed 1 February 2025.

question of smart contract validity, it underscored the need for clear legal frameworks and better regulatory oversight of blockchain transactions in Australia.⁵⁹

5.4 Europe: Malta is the first country in this region to establish a robust legal framework that includes its variation of crypto-friendly laws. The Maltese Parliament officially passed three proposed Bills into Acts on July 4, 2018, which has resulted in the acceptance of blockchain, cryptocurrency, and distributed ledger technology in a positive atmosphere.⁶⁰ These Acts are as follows: (i) Malta Digital Innovation Authority Act, which established the Malta Digital Innovation Authority, which is responsible for the certification of any distributed ledger technology platform. (ii) The Innovative Technology Arrangement and Services Act regulates the establishment of companies that participate in the cryptocurrency market, while (iii) the Virtual Financial Assets Act encompasses provisions regarding ICOs, cryptocurrency exchanges, wallet providers, and other related matters. These Acts are important to protect the market integrity, the industry, and stakeholders' legal protections, especially for the consumers.⁶¹

5.5 United Arab Emirates: According to Article 125 of the United Arab Emirates Civil Code, a contract is valid and enforceable in the UAE if both parties have consented to be bound by the terms of the subject matter. This implies that there is privity of contract concerning third parties. The UAE Civil Code stipulates that a legitimate contract must consist of an offer, acceptance, and a special condition that pertains to the subject matter.⁶² Similar to the United States, there must be a "meeting of the minds" or agreement, a subject of the agreement, and an obligation that arises from the contract. Contracts may be established orally or in writing, provided that the provisions meet the criteria for contract formation outlined in Article 129 of the Civil Code and satisfy the elements of an enforceable contract. The UAE Civil Law acknowledges contracts that are executed through electronic means, such as smart contracts that utilise the blockchain and e-mails. Smart contracts and electronic contracts are valid and enforceable when all the elements

⁵⁹ Ibid.

⁶⁰ Forbes, 'Maltese Parliament Passes Laws that Set Regulatory Framework for Blockchain, Cryptocurrency and DLT' (2018) <<https://www.forbes.com/sites/rachelwolfson/2018/07/05/maltese-parliament-passes-laws-that-set-regulatory-framework-for-blockchain-cryptocurrency-and-dlt>> accessed 1 February 2025.

⁶¹ N Razinah and others (n 1) 609.

⁶² Article 131 UAE Civil Code.

of a valid contract under UAE law are met, satisfied, or fulfilled.⁶³

6.0 Challenges in Enforcing Smart Contracts in Nigeria

Although smart contract is a promising technology, there are still some challenges to be tackled. Some of these challenges include:

6.1 Lack of Clear Regulatory Framework: The absence of a defined legal framework in Nigeria regarding the utilisation of smart contracts constitutes a significant challenge. This gap compels enterprises and individuals to depend on ordinary contract law and rules about electronic transactions.

The lack of explicit norms engenders ambiguity in the application of smart contracts, especially with consumer protection, data privacy, and dispute resolution. For example, contemplate a situation in which a consumer engages in a smart contract for an online service. Should the service provider neglect to fulfill their obligations, the consumer may encounter difficulties in obtaining legal remedies owing to the lack of explicit legislation governing the resolution of issues related to smart contracts.⁶⁴

6.2 Jurisdictional Issues: Smart contract transactions are not confined to a specific geographical area, making cross-border disputes unavoidable. Consequently, when a disagreement occurs, the matters of jurisdiction, appropriate law for compliance, and enforcement present challenges.⁶⁵ Furthermore, courts may have challenges in deciphering the code constituting smart contracts; however, this issue could be alleviated by the inclusion of expert witnesses, such as programmers. Similarly, parties may encounter difficulties in pursuing legal remedies or enforcing court judgments during disputes, particularly when the relevant parties are situated across many jurisdictions. These challenges remain unresolved due to the lack of a coherent and

⁶³ Article 10 of the UAE Electronic Transactions and Trust Services Decree-Law No. 46 of 2021.

⁶⁴ GS Ayegba, 'Legal Enforceability and Jurisdictional Challenges of Smart Contracts in Nigeria' (2024) <<https://www.lawyard.org/news/legal-enforceability-and-jurisdictional-challenges-of-smart-contracts-in-nigeria-by-grace-sunday/>> accessed 2 February 2025.

⁶⁵ GA Atiyah and others, 'Enforcement of smart contracts in cross-jurisdictional transactions' (2024) *International Journal of Law and Management* <<https://www.researchgate.net/publication/387176520>> accessed 2 February 2025.

uniform legal framework for smart contract implementation.⁶⁶

6.3 Immutability of Smart Contracts: Smart contracts are designed to be immutable, signifying that once put on a blockchain, they cannot be readily altered. This immutability provides security but also poses issues during legal disputes. Unlike traditional contracts, which permit changes or renegotiations in response to changing circumstances, smart contracts are inflexible and do not readily adapt to unforeseen challenges or new legal requirements that may emerge post-finalization.⁶⁷

6.4 Regulatory Strategies: Countries exhibit diverse policies concerning blockchain technology and smart contracts. Some may offer greater help, whilst others may impose restrictive or ambiguous regulations. Consequently, enterprises engaged in worldwide operations may have compliance issues, as actions permissible in one nation may be prohibited or unlawful in another. This inconsistency may result in legal ambiguity and hazards.⁶⁸

6.5 Dispute Resolution: The decentralised nature of blockchain can complicate disputes in smart contracts. To be enforced, smart contracts must be legally legitimate. Within the contract, the parties should specify the methods of dispute resolution, including the allocation of liability and recourse. It is crucial to select a dispute resolution mechanism that is enforceable by the courts, particularly when attempting to access off-chain assets.⁶⁹

6.6 Security and Privacy: Security is of the utmost importance in the development and deployment of smart contracts, particularly in the legal sector, where the integrity of agreements

⁶⁶ Y Edu & I Etim, 'Smart Contracts: Assessing Some Legal Implications of Its Use in the Nigerian Capital Market' (2024) <<https://www.mondaq.com/nigeria/fin-tech/1508146/smart-contracts-assessing-some-legal-implications-of-its-use-in-the-nigerian-capital-market>> accessed 26 January 2026.

⁶⁷ OM Atoyebi SAN 'Understanding Smart Contracts: Legal Implications, Benefits, And Challenges in Nigeria' (2025) <<https://omaplex.com.ng/understanding-smart-contracts-legal-implications-benefits-and-challenges-in-nigeria/>> accessed 27 January 2026.

⁶⁸ Edison Hatoguan Manurung, 'Blockchain Technology And Smart Contracts: Legal Implications and Future Regulations' (2025) 2(1) *Law Studies and Justice Journal* <file:///C:/Users/hp/Downloads/Edison+Hatoguan+Manurung+++BLOCKCHAIN+TECHNOLOGY+AND+SMART+CONTRACTS+_LEGAL+IMPLICATIONS+AND+FUTURE+REGULATIONS.docx.pdf> accessed 27 January 2026

⁶⁹ D Budhijanto & P Amalia, 'Blockchain arbitration: roadmap to recognition and enforcement of arbitral award' (2025) 11(1) *Cogent Social Sciences* <https://www.researchgate.net/publication/394258833_Blockchain_arbitration_roadmap_to_recognition_and_enforcement_of_arbitral_award> accessed 27 January 2026.

is at stake. The infamous 2016 breach of The DAO, which resulted in the loss of Ether valued at approximately \$60 million due to a vulnerability in the code, serves as a stark reminder of the risks involved. Due to their dependence on distributed ledger technology, they are vulnerable to a variety of security threats, including reentrancy attacks and event-ordering flaws. Exploiting these vulnerabilities could potentially compromise sensitive legal agreements, as malicious actors could exploit them. The law must reconcile the necessity for improved security with the constraints of cost-effectiveness, although innovations in software and technology are constantly evolving to mitigate these risks.⁷⁰

7.0 Conclusion

The commercial sector is revolutionised by blockchain technology and smart contracts. Parties that implement smart contracts derive substantial advantages over conventional contracts. Although parties are eager to capitalise on these benefits, they must exercise caution regarding the intricacies of smart contracts. The legal recognition of smart contracts in Nigeria is still in the process of developing. For a smart contract to be enforceable, it must satisfy the fundamental principles of offer, acceptance, consideration, intention to create legal relations, and capacity to contract, which are governed by traditional contract law. Nevertheless, the absence of specific legislation regarding smart contracts poses obstacles. Nigerian courts have not yet rendered definitive decisions regarding the enforceability of smart contracts, which has resulted in uncertainty.

8.0 Recommendations

This paper recommends the following;

1. Government and regulatory bodies need to establish clear regulations for the enforcement of smart contracts.
2. Parties should agree to resort to alternative dispute resolution (ADR) methods like arbitration or mediation, which are often preferred. For example, if a smart contract fails to execute correctly, the involved parties might agree to resolve the issue through

⁷⁰ B Henson, 'Smart Contract Opportunities and Challenges' (2024) <<https://www.legalsupportworld.com/blog/smart-contracts-opportunities-and-challenges/>> accessed 2 February 2025.

arbitration, where an arbitrator with expertise in blockchain technology can provide a fair resolution.

3. Blockchain smart contract-licensed programmers should be responsible for drafting smart contract codes and be responsible for verifying the codes that have been translated into readable language.
4. Nigeria should work with international bodies to establish frameworks for cross-border enforceability, ensuring that contracts are recognized and enforced in multiple jurisdictions.
5. Nigeria should align its regulatory framework for smart contracts with international best practices, such as those established by the International Chamber of Commerce (ICC), and other regional or global organizations.
6. Address the risks of smart contract vulnerabilities and cyber security threats by establishing standards for secure coding practices and ensuring smart contracts are audited for security before deployment.