



THE PLACE OF INDUSTRIAL POLICY IN THE ADOPTION OF BLOCKCHAIN TECHNOLOGY IN NIGERIA

¹Edime YUNUSA

²Danjuma Eyibo OCHENI

¹Department of Sociology, Faculty of Social Sciences, Prince Abubakar Audu University, Anyigba, Kogi State - Nigeria

²Icewalletx Limited, Kubwa FCT, Abuja

Email: ¹yunusaedime@gmail.com ²Ochenidanjuma@gmail.com

Corresponding author email: yunusaedime@gmail.com

ABSTRACT

The world has metamorphosed to a higher realm due to current technological innovations and advancements in computer science by introducing blockchain technology. Hence, this paper reviews the place of industrial policy in the adoption of blockchain technology in the modern Nigerian society. The objectives of the paper included highlighting the application, the benefits as well as the challenges in the adoption of blockchain technology in Nigeria. By utilizing the Theory of Planned Behaviour, the paper revealed energy sector, fintech, trading business and media etc as areas where blockchain technology is applicable in Nigeria. It also revealed security problem, lack of data protection, technological know-how and lack of constant power supply among others as the challenges facing the adoption of blockchain technology in Nigeria. The paper equally highlighted job creation, increased efficiency, improved transparency and accountability and decentralised mode of transactions among others as the benefits. These benefits and challenges suggest the need for government and industries to regulate blockchain technology by drafting an adoption framework and policies that is consumer based and providing guidelines for service providers. The paper concluded that blockchain technology has come to stay with us and therefore recommended capacity building, public-private partnerships, incentives for blockchain businesses, monitoring and evaluation be put in place to enhance the adoption of blockchain technology amidst industrial policies in Nigeria.

KEYWORDS

Industrial Policy, Blockchain Technology, Adoption, Cryptocurrency, Nigeria



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Introduction

Blockchain is a shared, immutable ledger that makes it easier to track assets and record transactions among a network of businesses. An asset might be intangible (intellectual property, patents, copyrights and branding) or tangible (a house, car, money, or land). On a blockchain network, almost anything of value may be recorded while lowering the costs and risk for all parties. Blockchain is a distributed database that records digital transactions. It does away with the requirement for a central authority by allowing participants to share data that is subject to verification by other network users (Onyekwere, 2023).

Blockchain technology is emerging as a game-changing invention that might completely change a lot of different businesses. Blockchain technology has demonstrated potential in a number of industries, including voting systems, real estate, healthcare, and supply chain management among others, in addition to its most well-known application in cryptocurrencies. Blockchain technology offers the ability to eradicate fraud, corruption, and other inefficiencies that have long beset traditional systems by enabling safe and transparent record-keeping (Uju & Edoziem, 2023).

Meanwhile, it is ironic that despite blockchain technology's immense promise, governments and regulators have had difficulty adopting it, mainly because they are still debating how best to control this emerging technology. Notwithstanding, the adoption of this technology continues to gain traction in Nigeria, with report by Enhancing Financial Innovation & Access (EFInA) which predicts that blockchain technology can potentially add Twenty-Nine Billion United States Dollars (\$29,000,000,000) to Nigeria's gross domestic product (GDP) within a decade (Uju & Edoziem, 2023).

It however appears that the regulatory landscape in Nigeria is evolving as regulatory agencies are increasingly embracing the adoption and deployment of blockchain technology. This shift is evident in the recent approval of the National Blockchain Adoption Strategy by the Federal Government of Nigeria in May 2023, which indicates a willingness to explore the potential benefits of blockchain technology across various sectors of the Nigerian economy (Afolabi, 2023).

Apparently, traditional database technologies present several challenges for recording financial transactions across the globe. For instance, consider the sale of a property. Once the money is exchanged, ownership of the property is transferred to the buyer. Individually, both the buyer and the seller can record the monetary transactions, but neither source can be trusted. The seller can easily claim they have not received the money even though they have, and the buyer can equally argue that they have paid the money even if they haven't.

To avoid potential legal issues, a trusted third party has to supervise and validate transactions. The presence of this central authority not only complicates the transaction but also creates a single point of vulnerability. If the central database was compromised, both parties could suffer.

But blockchain technology mitigates such issues by creating a decentralized, tamperproof system to record transactions. In the property transaction scenario, blockchain creates one ledger each for the buyer and the seller. All transactions must be approved by both parties and are automatically updated in both of their ledgers in real time. Any corruption in historical transactions will corrupt the entire ledger. These properties of blockchain technology have led to its use in various sectors, including the creation of digital currency like Bitcoin and other altcoins.

In view of these foregoing developments, this paper aims to examine the place of industrial policy in the adoption of blockchain technology in Nigeria while highlighting the benefits as well as challenges hindering its full adoption in the modern day Nigeria.

Aim and Objectives

The general aim of this paper is to review the place of industrial policy in the adoption of blockchain technology in Nigeria. The specific objectives include:

1. To Highlight the areas of applications of blockchain technology
2. To examine the potential benefits of blockchain technology
3. To explore the challenges bedeviling the adoption of blockchain technology in Nigeria

Materials and Method

This paper employed content analysis by utilizing secondary sources of data including journals, reports, books, documentaries and internet documented materials among others.

Literature Review

The review of relevant materials for this paper, was done in tandem with the aim and objectives of the paper under the following subheadings:

Conceptual Reviews

The major concepts as used in this paper are clarified as follows:

Industrial Policy

Industrial policy is the deliberate efforts made by the government to promote economic transformation, that is, the transition from lower to higher productive activities between or within sectors of the economy. It is a selective government intervention or policy that attempts to alter the structure of production in favour of sectors (or activities) that are expected to offer better prospects for economic growth in a way that would not occur in the absence of such intervention in the market equilibrium (Pack & Saggi, 2006).

Blockchain

Blockchain is a "shared" immutable ledger that facilitates the process of recording transactions and tracking assets in a business network (IBM, 2023). It is a distributed database or ledger shared across a computer's network nodes (Gabriel, 2020).

Technology

According to American English Dictionary, the term technology refers to methods, systems, and devices which are the result of scientific knowledge being used for practical purposes. In this paper, technology is seen as the branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied and pure science.

Blockchain Technology

Blockchain technology is an advanced database mechanism that allows transparent information sharing within a business network. A blockchain database stores data in blocks that are linked together in a chain. The data is chronologically consistent because you cannot delete or modify the chain without consensus from the network.

Brief History of Blockchain Technology

Blockchain technology has its roots in the late 1970s when a computer scientist named Ralph Merkle patented Hash trees or Merkle trees. These trees are a computer science structure for storing data by linking blocks using cryptography. In the late 1990s, Stuart Haber and W. Scott Stornetta used Merkle trees to implement a system in which document timestamps could not be tampered with. This was the first instance in the history of blockchain. However, most people know blockchain as the technology behind Bitcoin, and this was indeed its first application, but since then, several innovations in the system have allowed blockchain to spread far and wide and is now democratizing and transforming all kinds of industries, from healthcare to trade and finance (Benard, 2018).

Although, the new generation cryptocurrency users often believe that blockchain began with a man named Satoshi Nakamoto, who invented Bitcoin and brought blockchain technology to the world back in 2009. Bitcoin aimed to be a viable alternative to fiat currency. A secure, decentralised, global currency that could be used as a medium of exchange. In the first year, the currency was worth \$0. Now, it has a total market capitalization of \$126 million (Trade Finance Global, 2023).

Meanwhile, Nakamoto built on the foundations laid by those who came before him in the pre-bitcoin years as mentioned above such as Stuart Haber and W. Scott Stornetta who had already begun work on a cryptographically secured chain of blocks but the first blockchain wouldn't be truly conceptualised until Nakamoto's invention in 2008 (Trade Finance Global, 2023).

The blockchain technology has continued to evolve over these three generations as mentioned and explained by Benard (2018) as follows:

First generation (Bitcoin and other virtual currencies): In 2008, an anonymous individual or group of individuals known only by the name Satoshi Nakamoto outlined blockchain technology in its modern form. Satoshi's idea of the Bitcoin blockchain used 1 MB blocks of information for Bitcoin transactions. Many of the features of Bitcoin blockchain systems remain central to blockchain technology even today.

Second generation (Smart contracts): A few years after first-generation currencies emerged, developers began to consider blockchain applications beyond cryptocurrency. For instance, the inventors of Ethereum decided to use blockchain technology in asset transfer transactions. Their significant contribution was the smart contracts feature.

Third generation (The future): As companies discover and implement new applications, blockchain technology continues to evolve and grow. Companies are solving limitations of scale and computation, and potential opportunities are limitless in the ongoing blockchain revolution.

Major Features of Blockchain Technology

Blockchain technology has the following main features:

Decentralization: Decentralization in blockchain refers to transferring control and decision making from a centralized entity (individual, organization, or group) to a distributed network. Decentralized blockchain networks use transparency to reduce the need for trust among participants. These networks also deter participants from exerting authority or control over one another in ways that degrade the functionality of the network (AWS, 2023).

Immutability: Immutability means something cannot be changed or altered. No participant can tamper with a transaction once someone has recorded it to the shared ledger. If a transaction record includes an error, you must add a new transaction to reverse the mistake, and both transactions are visible to the network.

Consensus: A blockchain system establishes rules about participant consent for recording transactions. You can record new transactions only when the majority of participants in the network give their consent.

Application of Blockchain Technology

Blockchain is an emerging technology that is being adopted in innovative manner by various industries. Application of blockchain in various aspect of economy has yielded good results which tries to turn around negative perception of blockchain into positive recognition in Nigeria. Sequel to this, both government and regulators have come to appreciate good features of blockchain, hence calls for better ways of embarking on blockchain business processes. AWS (2023) describe some use cases in different industries in the following subsections:

Energy

Energy companies use blockchain technology to create peer-to-peer energy trading platforms and streamline access to renewable energy. For example, consider these uses: Blockchain-based energy companies have created a trading platform for the sale of electricity between individuals. Home owners with solar panels use this platform to sell their excess solar energy to neighbors. The process is largely automated: smart meters create transactions, and blockchain records them. With blockchain-based crowd funding initiatives, users can sponsor and own solar panels in communities that lack energy access. Sponsors might also receive rent for these communities once the solar panels are constructed (AWS, 2023).

Fintech

Traditional financial systems, like banks and stock exchanges, use blockchain services to manage online payments, accounts, and market trading. For example, Singapore Exchange Limited, an investment holding company that provides financial trading services throughout Asia, uses blockchain technology to build a more efficient interbank payment account. By adopting blockchain, they solved several challenges, including batch processing and manual reconciliation of several thousand financial transactions (AWS, 2023).

Media and entertainment

Companies in media and entertainment use blockchain systems to manage copyright data. Copyright verification is critical for the fair compensation of artists. It takes multiple transactions to record the sale or transfer of copyright content. Sony Music Entertainment Japan uses blockchain services to make digital rights management more efficient. They have successfully used blockchain strategy to improve productivity and reduce costs in copyright processing (AWS, 2023).

Trading Business

Trading companies use blockchain to track the movement of goods between suppliers and buyers. For example, Amazon retail has filed a patent for a distributed ledger technology system that will use blockchain technology to verify that all goods sold on the platform are authentic. Amazon sellers can map their global supply chains by allowing participants such as manufacturers, couriers, distributors, end users, and secondary users to add events to the ledger after registering with a certificate authority (AWS, 2023).

Theoretical Framework: The Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (TPB) started as the Theory of Reasoned Action by Icek Ajzen in 1980 in his article "From Intentions to Actions" to predict an individual's intention to engage in a behavior at a specific time and place. The theory was intended to explain all behaviours over which people have the ability to exert self-control. The key component to this model is behavioural intent; behavioural intentions are influenced by the attitude about the likelihood that the behaviour will have the expected outcome and the subjective evaluation of the risks and benefits of that outcome.

The TPB has been used successfully to predict and explain a wide range of health behaviours and intentions including smoking, drinking, health services utilization, breastfeeding, and substance use, among others. The TPB states that behavioural achievement depends on both motivation (intention) and ability (behavioural control). It distinguishes between three types of beliefs - behavioural, normative, and control. The TPB is comprised of six constructs that collectively represent a person's actual control over the behaviour.

Attitudes - This refers to the degree to which a person has a favorable or unfavorable evaluation of the behavior of interest. It entails a consideration of the outcomes of performing the behaviour.

Behavioural intention - This refers to the motivational factors that influence a given behaviour where the stronger the intention to perform the behaviour, the more likely the behaviour will be performed.

Subjective norms - This refers to the belief about whether most people approve or disapprove of the behaviour. It relates to a person's beliefs about whether peers and people of importance to the person think he or she should engage in the behaviour.

Social norms - This refers to the customary codes of behavior in a group or people or larger cultural context. Social norms are considered normative, or standard, in a group of people.

Perceived power - This refers to the perceived presence of factors that may facilitate or impede performance of a behaviour. Perceived power contributes to a person's perceived behavioral control over each of those factors.

Perceived behavioural control - This refers to a person's perception of the ease or difficulty of performing the behavior of interest. Perceived behavioral control varies across situations and actions, which results in a person having varying perceptions of behavioral control depending on the situation. This construct of the theory was added later, and created the shift from the Theory of Reasoned Action to the Theory of Planned Behaviour.

Though the theory has been criticized for not taking into account other variables that factor into behavioural intention and motivation, such as fear, threat, mood, or past experience, the theory has been able to explain why it took the government a logjam of deliberations and consultations to ban,

unban, restrict and then finally regulate the activities of blockchain technology in Nigeria. The recent lift of restrictions on the involvement of Nigerian commercial banks in cryptocurrency transactions is as a result of planned and deliberate actions of the government as it clearly spelt out the social and subjective norms guiding how blockchain technology should operate within the industrial setting of Nigeria.

Empirical Review

Onyekwere et al., (2023) investigated adoption and sustainability of bitcoin and the blockchain technology in Nigeria. The authors of the study adopted survey method with a non-probability purposive sampling technique and a homogeneous approach which was employed to collect 320 responses via an online survey. Descriptive and correlational analysis in IBM SPSS version 25 was used to analyse the collected data. According to the findings, bitcoin is the most popular cryptocurrency, with 97.5% acceptance, and is expected to be the leading virtual currency in the next five years. The research findings will help researchers and authorities comprehend the need for cryptocurrency adoption, leading to its sustainability. The study also portrays that the possibility of bitcoin adoption and sustainability lies in the perceived advantages of cryptocurrencies. One of the major setbacks hindering its adoption is the lack of regulation, as banks and other financial institutions were banned from facilitating payments for bitcoin trading.

Aside the failure of the study to foresee the lifting of ban on cryptocurrency transactions by Central Bank of Nigeria which took place on 23rd December, 2023, the study didn't look at how industrial policy could affect the adoption of blockchain technology in Nigeria. Hence, this current paper bridged the gap in the body of literature.

The Place of Industrial Policy in the Adoption of Blockchain Technology in Nigeria

For years, Nigeria's stance on cryptocurrency was marked by caution and restriction. The CBN's 2021 directive against financial institutions facilitating cryptocurrency transactions was primarily driven by concerns over money laundering and terrorism financing. Consequently, there was a restriction on commercial banks by the Central Bank of Nigeria from engaging and facilitating cryptocurrency transactions. This had a huge negative effect on anything that had to do with blockchain, when in the actual sense, crypto is just one subset of blockchain (Onyemachi, 2023).

However, the recent lifting of this ban, as per CBN circular reference FPR/DIR/PUB/CIR/002/003, reflects a growing global trend towards regulating rather than outright banning cryptocurrencies. This policy reversal not only heralds a new era for the fintech industry but also opens a gateway for innovative digital banking services. As one of the world's fastest adopters of digital assets, Nigeria's decision to embrace cryptocurrency trading can have profound implications, not just for local investors and businesses, but also for global fintech players (Shah, 2023).

On 3rd May, 2023, the federal government of Nigeria approved the national blockchain policy for Nigeria. The policy recognizes the potentials of block chain to revolutionize many industries from finance, healthcare, to transportation, governance and supply chain management. The policy also acknowledges that block chain adoption to catalyse innovations, create jobs, enhance governance, and improve the quality of services delivered by both the public and private sectors as it lays the roadmap to guide Nigeria's adoption of blockchain technology.

According to the National Blockchain Policy for Nigeria (2023), the potential of blockchain technology is far-reaching. The blockchain policy document states that the technology holds the

potential to drive economic growth, foster job creation and tackle the long-standing issue of financial inclusion.

Benefits of Adopting Blockchain Technology in Nigeria

The implementation of blockchain Technology can contribute to strengthening Nigeria's digital economy by expanding financial inclusion and enhancing openness and accountability. The inherent characteristics of blockchain, such as its immutability and decentralisation enable secure and transparent transactions and activities through some of its applications, like smart contracts, which have the potential to bring several benefits to the economy (National Blockchain Policy for Nigeria, 2023).

Below are some of the benefits of adopting Blockchain as highlighted in the National Blockchain Policy for Nigeria (2023):

Improved Transparency and Accountability

Blockchain Technology can help to increase transparency and accountability in various sectors in Nigeria. By using a distributed ledger system, all transactions are recorded and can be accessed by anyone on the network. This can help to reduce corruption, fraud, and other illegal activities.

Increased Efficiency

Blockchain Technology can also help to improve the efficiency of various processes, such as payment processing, supply chain management, and identity verification. By leveraging blockchain features like smart contracts, transactions can be executed automatically, reducing the need for intermediaries and streamlining the process.

Enhanced Security

Blockchain Technology is highly secure due to its decentralised nature. Transactions are recorded on multiple nodes, making it nearly impossible to tamper with the data. This can help to protect sensitive data and prevent cyber-attacks across multiple sectors of the economy.

Financial Inclusion

Blockchain Technology can help to increase financial inclusion in Nigeria by providing access to financial services to those who may not have had access before. By using blockchain-based payment systems, individuals can send and receive money easily and securely.

Job Creation

Blockchain adoption in Nigeria has the potential to create significant job opportunities across a range of sectors. With a young and tech-savvy population, Nigeria is well-positioned to become a blockchain hub in Africa. The adoption of blockchain technology creates new job roles, such as blockchain developers, cyber-security experts, and smart contract engineers.

Furthermore, blockchain technology enables the creation of new industries, such as cryptocurrency exchanges and blockchain based payment systems, which could create jobs across various sectors, including finance, technology, and manufacturing. The implementation of blockchain Technology in Nigeria shall also improve transparency and reduce corruption, which boosts investor confidence and create additional job opportunities. Overall, the job creation benefits of blockchain adoption in

Nigeria have the potential to play a significant role in the country's economic growth and development.

Challenges Facing Adoption of Blockchain Technology in Nigeria and the Way Out

As highlighted above, blockchain technology use cases include though not limited to cryptocurrencies, industrial tracking and security, digital identity, e-voting, healthcare records, notary, food safety (traceability), smart contract, copyright and intellectual property, real estate and Energy Market. Even though this technology has good future prospects, there are challenges that if not tackled, are likely to hamper positive progress for the technology. Thus, blockchain adoption in Nigeria has faced several challenges that have impeded its growth and potential impact on various sectors of the economy. Some of the key challenges as highlighted by Uju and Edoziem (2023) include the following:

(a) Lack of awareness and technological know-how:

One of the main challenges associated with blockchain technology in Nigeria is a lack of awareness of the technology and a widespread lack of understanding of how it works. Many companies and individuals alike do not understand what blockchain is or what it can do, and this lack of understanding is hampering investment in and adoption of the technology. Additionally, blockchain is often associated with cryptocurrency in the mind of many and the negative press that has shrouded the use of cryptocurrency has been extended to blockchain technology generally. It is important to educate people on the versatility of blockchain technology and how it can be deployed to solve a variety of problems in Nigeria (Uju & Edoziem, 2023).

(b) Regulations and Regulators

The lack of legislative clarity is a significant obstacle to the widespread use of blockchain technology in Nigeria. Although the Security and Exchange Commission (SEC) introduced Digital Assets Rules in 2022, they remain non-operational due to challenges in implementation and conflicts with the CBN's stance on virtual currencies. The absence of clear guidelines and licenses has created uncertainty, slowing down innovation and investment in blockchain-based startups. To address this issue, the Nigerian government must develop clear and comprehensive regulatory frameworks for the blockchain industry. The government should also collaborate with relevant stakeholders in the blockchain industry, including startups, investors, and industry associations, to ensure that the regulatory frameworks are practical and effective (Uju & Edoziem, 2023).

(c) Electricity

The epileptic state of the Nigerian power sector is another significant clog in the wheel of blockchain adoption in Nigeria. A recent report by the Electricity Think Tank Group indicates that about 75 per cent (75%) of electricity consumed in Nigeria, comes from diesel and petrol-powered generators¹³ which account for about 25,000MW, while the national grid provides about 4,000MW. This poses a significant challenge to the implementation and adoption of blockchain technology in Nigeria, as many blockchain-based solutions require a stable and reliable source of electricity to function effectively (Uju & Edoziem, 2023). To overcome these challenges, the Nigerian government and relevant stakeholders in the power sector need to invest in improving the country's power infrastructure as well as the adoption of renewable energy sources such as solar, hydro, and wind power. Another potential solution is to explore the use of energy storage technologies, such as

batteries and fuel cells, to store excess power generated during times of high demand. This excess power can then be used to supplement the grid during periods of low supply or power outages.

(d) Security Breaches

Another key issue with blockchain technology is security which is one of the significant ethical concern especially the use of cryptocurrency for criminal activity (Benjamin et al., 2022). This was one of the underlying reasons given by the CBN for its prior stance against the use of cryptocurrencies in the Nigerian financial sector. Despite being more secure than traditional computer systems, blockchain-based applications, networks, and organizations are not immune to vulnerabilities (Uju & Edoziem, 2023). In addition, due to its largely untraceable nature, criminal elements have adopted cryptocurrencies for their criminal activities including money laundering, cybercrimes (such as 419, “yahoo yahoo” as is fondly tagged) drug trafficking, human trafficking, and financing terrorism. To address these security challenges, organizations that use blockchain technology need to implement robust security measures, such as two-factor authentication, encryption, and regular security audits. Additionally, collaboration between blockchain experts, law enforcement agencies, and regulatory bodies can also play a significant role in combating criminal activities related to blockchain technology.

(e) Data Protection

According to Uju and Edoziem (2023), some important tensions between blockchain technology and data protection include:

(i) The distributed peer-to-peer network architecture of blockchain technology often makes it difficult to determine the data controller, especially with respect to public block; (Mueller, 2019). (ii) Applying jurisdictional data protection regulations to decentralized blockchain which is often multi-jurisdictional may prove difficult; (iii) The decentralized nature of the blockchain poses a challenge to the enforcement of these cross-border restrictions; and (iv) The immutability of blockchain which underpins the technology itself makes it difficult to enforce the data subject’s right to rectification and the right to erasure (right to be forgotten) under the Nigeria Data Protection Act (the “DPA”) without compromising the structure and integrity of the blockchain.

In the absence of regulatory guidance from relevant authorities to reconcile these issues, organisations should consider the following to mitigate possible areas of conflict:

(i) Analysing carefully whether implementing blockchain technology is a good fit for existing business and operational goals; (ii) Deploying private or “permissioned” blockchains to enforce stricter usage rules; (iii) Combining on-chain and off-chain data storage mechanisms and using on-chain transactions as mere pointers or access controls to manage storage solutions off-chain; (iv) Limiting the volume of personal data that is stored on the blockchain by design; (v) Adopting alternative data encryption and destruction techniques e.g. revocation of access rights, irreversible data transformations etc., to protect personal data (Uju & Edoziem, 2023).

(f) Environmental Cost

Recent reports have shown that cryptocurrency mining and transaction processes have resulted in significant climate damages, with the average cost ranging from 35% between 2016 to 2021 and increasing to 58% from 2020 to 2021 (Benjamin et al., 2022). This places cryptocurrencies in the same category as other energy intensive or highly polluting goods like meat, and electricity produced

from gasoline. The authors further asserted that the growing concerns about climate change in Nigeria may create challenges with the adoption of blockchain technology. However, the use of renewable energy sources for the deployment of blockchain technology could alleviate these environmental fears and concerns. Additionally, the use of energy efficient hardware and mining techniques could further minimize the energy consumption and environmental impact of blockchain technology.

Conclusion and Recommendations

Sequel to the thorough reviews of the literatures above and looking at the stance of the western countries in the adoption of blockchain, this paper concluded that blockchain technology has come to stay with us and therefore, the following recommendations are made for effective adoption of blockchain technology amidst the industrial policy in Nigeria:

1. A more comprehensive plan to develop local talent and expertise in blockchain technology, including specialized training programs, academic courses, and research centres, is necessary for an overhauled adoption of the technology.
2. A robust monitoring and evaluation framework to assess the progress and impact of various initiatives will help policymakers identify areas of adjustments and ensure the strategy achieves its intended goals.
3. Collaboration between government agencies, industry experts, private sectors, and international organizations will facilitate the effective adoption of blockchain technology in Nigeria.

Prioritizing digital entrepreneurship by giving preference to digitally skilled Nigerians for government-funded projects will encourage the development of innovative blockchain solutions, thereby fostering a thriving ecosystem of blockchain technology in Nigeria.

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