DISRUPTIVE INNOVATIONS AND THE FUTURE OF THE NIGERIA BANKING INDUSTRY

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Abstract

The rapid evolution of digital banking technology has significantly reshaped the financial landscape, with fintech firms and mobile banking operators emerging as formidable competitors to traditional banks. These digital players offer seamless, affordable, and more convenient financial services, leading to a shift in customer loyalty and redefining banking operations. In Nigeria, the Central Bank of Nigeria's (CBN) financial inclusion initiatives have further intensified the transformation of the financial ecosystem. This study analyzes the trend of technological disruptions and their implications for the future of the Nigerian banking industry. Digital innovations are penetrating core areas traditionally dominated by banks, raising concerns that financial institutions may become mere custodians of funds if they fail to adapt. To remain competitive, banks must proactively engage with technological advancements, adopting both offensive and defensive strategies against fintech disruptions. The study explores critical questions: What is the future of traditional banking? Will fintech ultimately replace banks? How can banks remain relevant in an increasingly digitalized financial environment? Using a qualitative explanatory approach, this research examines the trends, consequences, and strategic responses necessary for bank operators and regulators. The study advocates for banks and regulatory bodies to assume proactive roles as drivers of digital transformation rather than mere spectators. It recommends substantial investment in digital infrastructure, collaboration with fintech firms, and regulatory frameworks that foster innovation while ensuring financial stability.

Keywords: Disruptive innovations, digital financial services, fintech, banking industry, financial inclusion.

Introduction

In the 21st century, the financial services industry is increasingly driven by technology. In Nigeria and beyond, technology plays a major role in accelerating financial development, improving efficiency, and expanding financial services through electronic banking channels, switching connectivity, and core banking systems powered by Enterprise Resource Planning (ERP) solutions (Iwedi, Wachuku, & Amadi, 2024). Technological innovations have enabled banks to offer seamless services to customers while enhancing internal operational efficiency (Ogbe, 2022). However, despite the global advancement in financial technology, developing economies like Nigeria continue to face challenges in fully appreciating and effectively applying internet-based financial services (Adamgbo et al., 2016).

As internet usage expands and digital technology becomes more sophisticated, industries, particularly the financial services sector, are leveraging technological advancements (Nwinyokpugi, 2024). Banking, as a dominant player in the financial sector, has undergone significant disruptions due to the rising influence of Fintech. Fintech has revolutionized Digital Financial Services (DFS) by fostering innovation, reshaping business models, and unlocking new opportunities (Kong, 2023). Its contributions are evident in financial inclusion, digital payments, online lending, and wealth management. However, disruptive innovation has also introduced new challenges, including increased competition, cybersecurity risks, and regulatory concerns. The financial ecosystem is evolving rapidly, with payment facilitators, Payment Service Banks (PSBs), and Fintech startups like Flutterwave challenging traditional banking institutions. These digital players provide financial

management solutions and shared services in areas where traditional banks have lagged. According to Emefiele in Onwuliri (2022), technological disruptions occur when new digital technologies and business models reshape the value chain of existing goods and services.

Zeb-Obipi (2022) observed that industries and businesses are undergoing continuous changes driven by technological advancements, shifts in consumer preferences, regulatory changes, and digital innovations. The banking sector is no exception. The emergence of Fintech, financial innovation, and financial engineering reflects the growing digitalization of financial services. Oliva (1996), in his work on the Dynamic Service Delivery Theory (DSDT), argued that the difficulty in measuring service quality in financial services has compelled banks to either collaborate with or acquire Fintech firms to develop sophisticated products, services, and business models. However, the rapid adoption of digital financial services has increased cybersecurity risks and fraud-related concerns (Iwedi, 2024). On the other hand, technological advancements such as internet banking, mobile banking, and artificial intelligence (AI) have transformed consumer behavior, making digital banking a preferred choice for many customers. Onwuliri (2022) emphasized that while technological advancements in banking offer immense benefits, they also present significant challenges. Given the current trajectory of digital disruptions in the Nigerian banking sector, several critical questions arise: What is the future of traditional banks given the rise of Fintech? How can banks maintain a competitive edge over digital disruptors? Will Fintech eventually replace banks? and what strategies should banks adopt to reinforce their core functions and regain public trust?

Despite the growing dominance of Fintech, banks still hold a competitive advantage over alternative financial service providers, mainly due to their long-established credibility and regulatory oversight. The rise of fintech firms and payment service banks (PSBs) has disrupted traditional banking models, intensifying competitive pressure on banks' margins and market share. Fintechs are aggressively targeting high-margin financial services like lending, a space previously dominated by banks, with 51% of bank customers now comfortable using fintech solutions (Ekong, 2023). The rapid growth of mobile and internet penetration, projected to reach 65% by 2025, is further enabling fintech adoption (Statista, McKinsey Fintech Report, Efin A, 2022). Leveraging digital platforms, fintech players are capturing significant market share, as seen in the 3.61 billion electronic transactions worth N238.7 trillion recorded between January and August 2022 alone (Ekong, 2022).

In response, banks are transitioning to holding company structures, acquiring fintech startups, and investing in digital banking solutions to remain competitive. However, the fintech revolution presents critical challenges, including operational complexity, heightened cybersecurity risks, and the potential relegation of banks to mere back-end processors while fintechs dominate high-value services. The 2017 WannaCry ransomware attack underscored the persistent threat of cyber risks, even in advanced economies. While existing finance literature extensively examines fintech innovations, little attention has been given to the future of banks amid mounting digital disruptions. This study, therefore, explores the technological trajectory in banking, assessing both offensive and defensive strategies that can help banks maintain a competitive edge.

The financial industry has witnessed several technological advancements over the decades. The introduction of credit cards in 1950 by Diners Club marked the first significant innovation in banking (Max.com, 2024). This was followed by the invention of the Automated Teller Machine (ATM) in the 1960s by John Shepherd-Barron. The adoption of computers in banking during the 1960s laid the foundation for digital banking by replacing manual operations with automated systems.

In the 1970s, electronic payment systems emerged, with the establishment of the Society for Worldwide Interbank Financial Telecommunication (SWIFT) in 1973, facilitating international transactions. The 1980s saw the rise of online banking, keypads, and smartphones, enhancing transaction speed and efficiency. By the 1990s, Samsung’s commercial computers enabled convenient

retail banking, and services such as PayPal revolutionized peer-to-peer (P2P) money transfers. The early 2000s ushered in mobile banking, wireless technology, and smartphone applications, signifying a shift from traditional armchair banking to a more dynamic, digital financial ecosystem. As Fintech continued to evolve, the emergence of agent banking, PSBs, and digital wallets accelerated the digital transformation of the banking sector. In 2011, Google Wallet was introduced, followed by Apple Pay in 2014, further expanding digital payment options.

In Nigeria, the adoption of electronic banking gained momentum in the 1980s with the emergence of "new generation banks." Diamond Bank pioneered real-time online banking, while ATMs became the first widely adopted electronic banking terminal. The Central Bank of Nigeria (CBN) has since introduced several policy measures to enhance digital financial services. In 2022, the CBN implemented regulatory frameworks for Quick Response (QR) code payments, contactless payments, and open banking (Iwedi, Owakah, & Wofuru-Nyenke, 2023). These initiatives aimed to drive financial inclusion, promote innovative business models, and create an enabling environment for technological advancements in banking.

To further enhance financial inclusion, the CBN licensed additional PSBs in 2022, bringing the total to 132. This included 12 Payment Service Providers (PSPs), 12 Payment Solution Providers, 10 agent networks, four switching and terminal service providers, and one Mobile Money Operator (CBN, 2022). These measures contributed to a significant increase in digital transactions. Between 2021 and 2022, e-payment transactions surged by 35.2%, while POS, web, and mobile payments accounted for 32.3% of total transactions. Interbank transfers via the CBN's Real-Time Gross Settlement (RTGS) system saw a marginal increase of 0.3%. However, cheque transactions declined by 7.3%, reflecting a shift towards digital payments.

Mobile money operations experienced substantial growth, with transaction volumes and values increasing by 60.3% and 111.8%, respectively. The number of ATMs rose by 3.3%, while POS terminals expanded by 81.9%. Additionally, the CBN licensed two new PSBs one for MMO payments and another for Smart Cash PSB bringing the total number of PSBs to five by the end of 2022 (Marshal, Ihenacho, & Chizuru, 2023).

The rapid growth of Fintech has led to increased adoption of digital banking solutions (Iwedi, 2023). Fintech firms have leveraged simple, user-friendly applications to attract more customers, particularly during the cash scarcity caused by the CBN's Naira redesign policy. For example, ALAT, a digital banking platform, recorded 250,000 account openings and N1.6 billion in deposits within a year of its launch (TechPent Africa, 2021). Popular Fintech applications continue to gain traction. As of 2023, PalmPay recorded over 500,000 downloads on the Google Play Store, while PiggyVest, Carbon, and Okash each surpassed one million downloads. PalmCredit, JumiaPay, Kuda, FairMoney, and OPay have all exceeded five million downloads, with some reaching 10 million (NairaMetrics.com, 2023). Notably, no commercial bank app in Nigeria has achieved 10 million downloads, highlighting the growing preference for Fintech services over traditional banking applications (Akantaro, 2023).

As Fintech firms expand their capabilities, the number of registered banks and financial institutions in Nigeria continues to decline. The total number of active institutions has reduced from 744 to 142, comprising 20 commercial and non-interest banks, two development finance institutions (DFIs), 14 finance companies, two merchant banks, 82 microfinance banks (MFBs), 18 non-bank financial institutions (NBFIs), and one primary mortgage bank (CBN, 2022). This trend suggests that Fintech is gradually positioning itself as a viable alternative to traditional banks (Iwedi, 2024). The rise of Fintech is reshaping Nigeria's banking landscape. Traditional banks must embrace digital transformation, innovate, and develop customer-centric solutions to remain competitive. While banks still hold regulatory advantages, they must leverage technology to enhance service delivery, improve efficiency, and build consumer trust. If banks fail to adapt, Fintech firms may continue to dominate the financial ecosystem, potentially reshaping the future of banking in Nigeria.

This study aims to examine the growing adoption of innovative technology in financial service delivery and the increasing encroachment of fintech firms and payment service banks (PSBs) into the financial ecosystem. As digital disruption reshapes the banking landscape, the continuous rise of internet and mobile penetration raises concerns about the potential marginalization of traditional banks. This study explores the implications of these disruptions and the strategic responses banks must adopt to remain relevant in the evolving financial sector.

Given the indispensable role of banking services, disruption in the industry is inevitable, making it crucial for banks to leverage innovative technologies as a defensive strategy for the future. By analyzing the challenges posed by digitalization, this study provides insights for bank operators, regulators, and policymakers on effective strategies for technology adoption while mitigating risks associated with fintech disruption. Additionally, this research will serve as a valuable reference for further studies in innovative finance, contributing to the ongoing discourse on the future of banking in a digital era.

Literature Review

Theoretical Perspective

Technology Innovation System Theory

The Technology Innovation System (TIS) theory provides a framework for understanding the processes and dynamics of innovation within an economy. It highlights the interconnectedness of various actors, institutions, and mechanisms involved in the creation, diffusion, and transformation of knowledge and technology. Unlike the traditional linear model of innovation, the TIS approach recognizes that innovation is complex, interactive, and driven by feedback loops between science, technology, learning processes, production, demand, organizations, institutions, and policies. This theory is particularly relevant to the banking industry, as it provides a systematic lens through which policymakers and researchers can analyze financial innovations and their impact on the broader economic landscape.

Clayton Christensen's Disruptive Innovation Theory

Introduced by Clayton Christensen in The Innovator's Dilemma (1997), Disruptive Innovation Theory explains how simpler, more affordable, and accessible innovations can transform industries by appealing to overlooked or underserved market segments. Established firms often fail to respond effectively to disruptive innovations because they focus on serving their most profitable customers, thereby underestimating the potential of new technologies or business models. The theory is based on five key pillars: Targeting non-consumption or underserved market segments using simpler, more affordable, and accessible technologies, creating new value networks by connecting previously unlinked stakeholders such as customers, suppliers, and partners, developing new business models, such as subscription-based or on-demand models, to capture value, recognizing that incumbents often resist disruptive innovations due to their reliance on traditional business models and understanding that disruptive innovations follow different trajectories than sustaining innovations, which focus on incremental improvements.

This theory is particularly relevant to Nigerian banks, as the rapid rise of fintech and payment service banks (PSBs) threatens their traditional dominance. Banks must proactively develop defensive strategies to stay ahead of digital financial service providers, ensuring operational efficiency and sustained profitability in a rapidly evolving financial landscape.

Diffusion of Innovation Theory (DIT)

Developed by Everett Rogers in 1962, the Diffusion of Innovation Theory explains how new ideas, behaviors, or technologies spread through a population over time. Adoption occurs through a process where individuals or organizations perceive an innovation as new and integrate it into their practices. The theory categorizes adopters into five groups: Innovators – The first to embrace new technologies, early Adopters – Influential individuals who drive broader acceptance, early Majority – Those who adopt once they see proven benefits, late Majority – Skeptics who adopt due to peer pressure or necessity and laggards – The last to adopt, often resistant to change.

The theory also identifies five key factors influencing adoption: relative advantage, compatibility, complexity, trialability, and observability. In the banking sector, understanding these categories is crucial for promoting digital transformation, as banks must tailor strategies to encourage widespread adoption of disruptive technologies among different customer segments.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) explains how users accept and use technology, focusing on two main constructs: Perceived usefulness – the degree to which users believe a technology enhances job performance and perceived ease of use – the extent to which users believe the technology requires minimal effort.

TAM suggests that behavioral intention to use technology is influenced by user attitudes, which are shaped by these two constructs. In the context of banking, TAM underscores the importance of designing digital financial services that are both useful and user-friendly. Nigerian banks must prioritize customer experience to drive adoption and stay competitive against fintech challengers.

Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) refines TAM by incorporating additional factors that influence technology adoption: Performance expectancy – the belief that a technology will improve performance, effort Expectancy – The ease of use of the technology, social Influence – The extent to which others influence an individual's decision to adopt the technology, facilitating Conditions – The availability of infrastructure and support for technology use, In the era of digital banking, UTAUT highlights the need for banks to invest in emerging technologies such as artificial intelligence, big data, cloud computing, and robotic process automation. These technologies enhance efficiency and customer experience, positioning banks for long-term success.

Theory of Technological Change and Innovation (TCI)

The Theory of Technological Change and Innovation explores the forces driving technological advancements and their societal impact. It emphasizes that technological innovations often lead to new scientific disciplines and industries, while social networks and cultural values play a crucial role in shaping technological artifacts. This theory is relevant to the banking industry, where fintech disruptions are creating new financial products and service delivery models, forcing traditional banks to adapt or risk obsolescence.

Special Agent Theory of Financial Inclusion (SATFI)

The Special Agent Theory of Financial Inclusion posits that highly skilled agents should be responsible for delivering formal financial services to excluded populations. These agents must possess expertise in identifying barriers to financial inclusion and developing innovative strategies to integrate marginalized communities into the formal financial system. However, the theory warns against excessive government intervention, which could undermine the role of special agents and stifle financial inclusion initiatives. This theory aligns with the growing presence of fintech and PSBs in Nigeria, as they play a pivotal role in bridging the financial exclusion gap targeted by the Central Bank of Nigeria's 2022 policy measures.

Dynamic Service Delivery Theory (DSDT)

The Dynamic Service Delivery Theory asserts that service quality is inseparable from service delivery, as production and consumption occur simultaneously through interactions between service providers and consumers. The theory highlights the impact of customer expectations, service variability, and technological advancements on service quality. It underscores the importance of investing in service capacity and intangible factors that enhance customer satisfaction. In the banking sector, this theory reinforces the necessity for banks to continuously improve digital service delivery to compete effectively against fintech disruptors.

Public Theory of Financial Inclusion (PTFI)

The Public Theory of Financial Inclusion views financial services as public goods that should be universally accessible. It advocates for policies that remove barriers to financial access, such as free debit cards, zero-fee ATM transactions, and simplified account opening procedures. This perspective is increasingly relevant as fintech and PSBs introduce low-cost digital financial services, challenging traditional banks to adopt more inclusive strategies to remain competitive. The theories discussed provide a robust analytical framework for understanding the impact of financial technology disruptions on the banking sector. Disruptive Innovation Theory highlights the threats posed by fintech, while Diffusion of Innovation Theory and TAM explain the adoption dynamics of new banking technologies. UTAUT and SATFI emphasize the role of digital transformation in financial inclusion, whereas DSDT and PTFI address the service delivery and accessibility aspects of banking innovation. For Nigerian banks, leveraging insights from these theories is crucial in developing proactive strategies to navigate digital disruptions, enhance operational efficiency, and maintain a competitive edge in the evolving financial ecosystem.

Methodology

This study deals with disruptive innovations (technology) and the future of the banking industry in Nigeria. The study adopts the qualitative explanatory research approach to delves into the ongoing technological disruptions that has altered the orthodox banking practices. Consequently, the bottom-up method that allow for explanations and analysis based on observed innovative technological waves or trend in the sector is relied on-vis vis its consequences, and that banks can leverage or adapt to innovative trend and still remain dominant without being edged out by the non-traditional financial services providers. The explanatory analysis technique helps to predict future outcomes as well prescribed actions/strategies considered desirable for banks to affect the outcomes digitally. The data explored in the study was obtained from CBN website, Annual economic Reports, Nairametrics.com, nbss.plc.com.ng. statista.com; Mckinsey Fintech report, EfinA etc.

Conclusion and Recommendations

As technological disruption keeps advancing like storm wave in the banking industry so do competitors providing seamless similar or same financial services that are simpler, affordable and effortless in a more convenient manner. Disruptive innovations have become inevitable across industries and much more in the financial sector. E-banking in modern banking should be seen as both offensive and defensive tool useful in the delivery of financial services for improving functionalities and efficiency. Disruptive technologies in the banking industry is inevitable and has come to stay. The need for banks to align and take radical approach, create awareness for the change is of essence, hence we proposed thus;

i. There is urgent need for banks to contend with and react to Fintech disruptions by investing heavily in technology, partnering or acquiring Fintech and create startup programs etc, as innovative disruption is found to be useful for deepening their value propositions.
ii. Technology adoption is an essential tool for defending banks from aggressive intruders and addressing security risks posed by disruptive technology as well as engaging customers through digital channels/terminals.

iii. Banks need to drive their business models and revenue mix by entering into new segments of the financial services in order to still gain advantage.
iv. Operators, regulators and the government need collective collaborative effort in ensuring that there is a balance between optimizing the benefits and mitigating the risks associated with digitalization in the industry.
v. Bank operators and regulators should be "Drivers and Changers" respectively. As drivers of disruptive technologies in the industry is to determine support elements, adopt and ready to be part of the change moments by investing in technology, taking the risk and appreciate the change as a necessity. As changers, regulators to identify the need for disruptions and introduce it for adoption as the task of initiating and enforcing changes in the industry or sector behooves on the regulator.

Implications

Notwithstanding the challenges posed by innovative technology, banks need to leverage on the possibilities offered by disruptive technologies and adapt to new solutions and activities. The financial ecosystem keeps flourishing with multiple player focusing on digital mobile banking customer-experience. The contribution of Fintech has been the promotion of creative innovative thinking that has led to redefining the traditional banking models. Giving the above situation therefore, the need for banks to rediscover, assert and have edge over new entrants or intruders cannot be over emphasized thus;

- Changing customers' demographics, meaning bank customers are now more informed than before, hence their expectation for high degree of personalized, simpler, affordable and convenience banking experience.
- Customers' loyalty is increasing in dimensions and the propensity to switch for appealing banking services is high.
- Sustainable success in businesses today requires innovative insights, rich customer's relationship and continuous innovations couple with its attendant low costs remain the solution.
- Digital players flooding the financial market space offering seamless solutions to retail Nigerian bank customers is on the increase via internet and mobile banking experience hence, banks need to sustain and attract retail banking clients and meeting their dynamics expectations is significant and sensitive for a profitable banking business.

Therefore, it is imperative that this study will be useful for operators and regulators to have a rethink in their policy making by incorporating adaptive strategies for driving e-banking. Digital banking practices is proven to be a useful tool in meeting customer's changing needs and expectations in line with global best practices (digital revolution).

From the theoretical perspectives, this study is significant because is driven on the theories of innovative technology; the Technology Acceptance Model (TAM) advocates that technologies in the banking practices is perceived useful and effortless in the delivering of financial services. The Christensen's Disruptive Innovation theory, holds that disruptive innovations are often simpler and affordable than the orthodox banking practices. The Technology Innovation System Theory; holds that innovation provides a conceptual basis for analyzing and studying innovation in its systemic context, and that it is relevant for policy makers. The Diffusion of Innovation Theory posits with its adaptive concept that banks need to accept to use new products or services or conduct banking business differently from what they had previously been doing. This study will particularly be useful and significant as a reference material for subsequent researchers in the field of banking innovation and even in economic development. Futuristically technological advances keep growing dramatically and aggressively in leaps and bounds, the apprehension that Agents or Payment Service banks (PSBs) may replace or supersede orthodox banks is eminent, hence the need for operators and regulators to explore technological advantage over digital players.

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