Agpaytech's Research
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Modernizing Finance

Nigeria's Transition to Open Banking

Agpaytech

Executive Summary

Nigeria remains the first African country to issue regulatory guidelines to operate a healthy open banking platform on February 17th, 2021. The regulatory framework sets rules for data sharing between banks and third-party providers with customer consent. This framework emphasizes customer ownership and control over their data. In March 2023, the Central Bank of Nigeria (CBN) issued operational guidelines with specific instructions on how the framework functions in practice. They cover aspects like API standards and participation tiers for institutions. This report rationalizes open banking in Nigerian payment landscape and examines the market and customer data sharing techniques in the open banking platform. Moreover, the study highlights the potential risks associated with API, banks and Fintech collaboration in provide seamless services to the bank customers.

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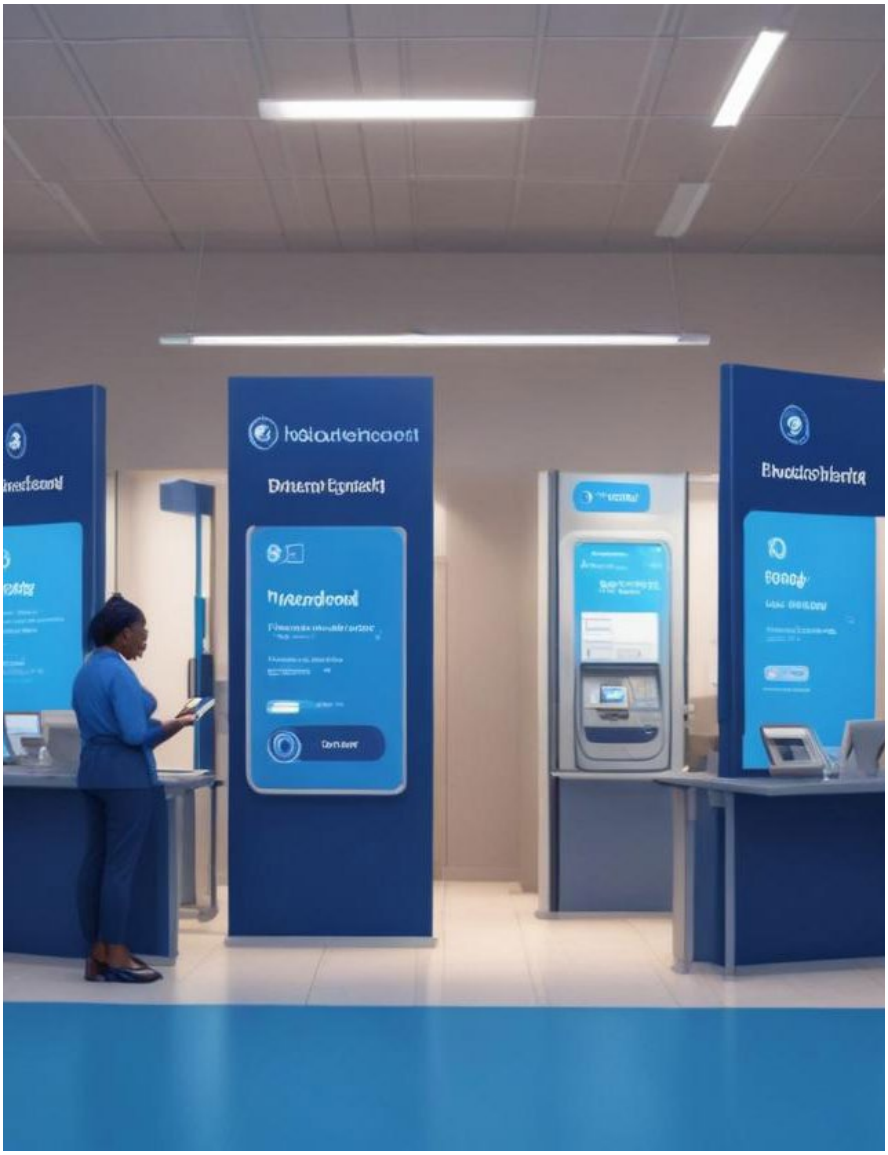
Banking with APIs and Consumers Permission

Financial technology gurus are spearheading unthinkable business models all in the interest of the consumers. From mobile banking, internet banking, transactional banking, correspondent banking, and WhatsApp banking, we are now in the new era of open banking.

Open Banking is creating value outside traditional banking and it is disrupting the old-school banking style with consent from the users. Is all about big data, API and central bank regulations to provide heavenly commercial services. Open banking is changing the way we bank and use financial services in the modern world. The open banking market is growing steadily. A report by Allied Market Research announced a 24.4% growth and predicted the market value will reach over $43 billion by 2026.



The Canadian Advisory Committee on OB (2021) asserted open banking allows consumers and small businesses to securely and efficiently transfer their financial data among financial institutions and accredited third-party service providers.

Open banking allows third-party payment service providers and other financial service providers to access the personal and financial information of their customers' banks.

Before this can happen, the customer must grant access for the sharing of information, usually via an online consent form following a terms and conditions agreement. The third-party providers then access the relevant shared data via exposed APIs.

Figure 1: Open banking development

2009
- India UIDAI

2011
- MidataInitiative (UK)

2013
- Framework introduced • Hong Kong

2014
- Fingleton Report • UK

2015
- Open Banking WG (UK)

2016
- PSD2 (EU
- API Protocol (Singapore
- UPI (India)

2017
- RBI WG report (India)
- FarrelReport (Australia)
- NACHA API (US)
- Payments (NZ)
- AFIN (ASEAN)
- Amendment to Banking Act (Japan)

Retail banking market investigation order UK

2018
- First Open API Launched UK
- GDPR (EU)
- PSD2 applies (EU)
- Open Banking Review (Canada)
- Open Banking Review-CDR (Australia)
- Fintech Law (Mexico)

2019
- Communique (Brazil)
- EBA WG on APIs (EU)
- PSD2 RTS deadline extended (EU)

2020
- Secondary Regulation (Mexico)

2022
- Regulatory framework Nigeria

2021
- Philippines
- Indonesia
- Colombia

2023
- CBN OB operational guidelines

Source: Agpaytech

Nigeria is Making Progress in Open Banking

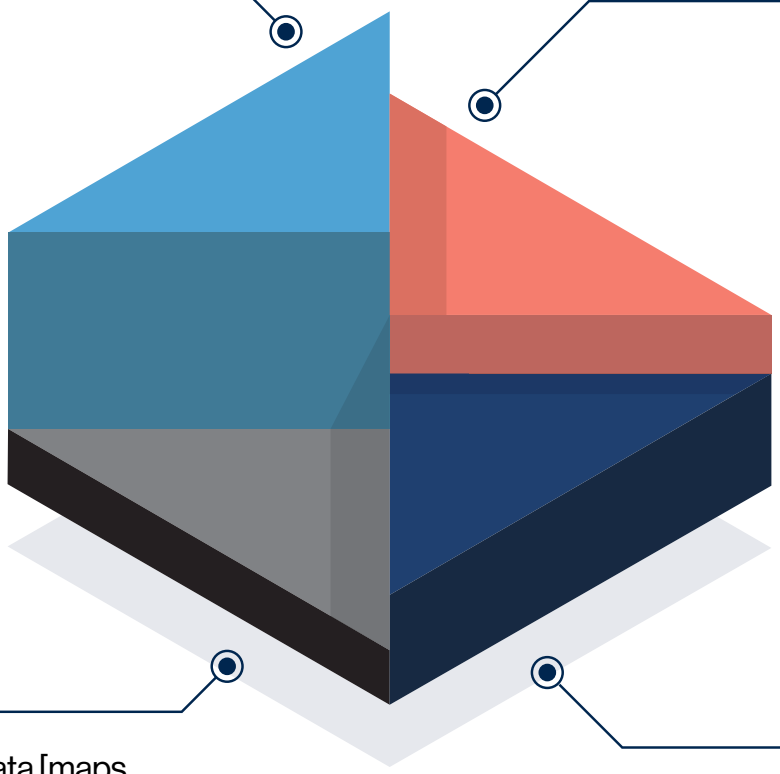
- A customer finds a Fintech app that can manage his/her finances on the mobile device
- The customer willingly links the Fintech app to his/her bank accounts to access financial data
- A customer authorizes his or her bank to share financial data with the app via open banking (account user name and password are not included)
- The customer financial data is shared using a secured online channel (e.g API).
- The app analyzes the customer data and recommends personalized financial products and services, which include product comparison tools, budgetary tools, and users can view all accounts in one place.

Open banking development has already kicked off in India, the UK, Canada, etc. In Africa, Nigeria is among the pioneer countries to embrace open banking. On February 17th, 2021, the CBN issued a regulatory framework for open banking to foster the sharing and leveraging of customer-permission data by banks with third-party firms to build solutions and services that provide efficiency, greater financial transparency, and options for account holders and to enhance access to financial services in Nigeria. In March, 2023, CBN provided operational guidelines for the practice of open banking. The CBN maintains an Open Banking Registry (OBR) of all participants to provide regulatory oversight. The OBR is a public repository for details of registered participants in the OB ecosystem. In these scenarios, the OB approach uses APIs to enable third-party payment services and financial service providers to access consumer banking information such as transactions and payment history. In the traditional banking approach where the data is kept by the customers' bank only, with open banking approach the customer will allow third-party providers to access the relevant data from the banks through API which the consumer can use in many ways.

Figure 2: Open banking ecosystem

- Customer greater controldata privacy and security
- Enjoy OB services

- API standardization [TPP, PISPs, AISPs]



- Market data [maps, location, banks, etc.] FMI regulations, Chareges

- Financial institution
- Transactional data
- Technical standards

Source: Agpaytech

Developing Open Banking Ecosystem Together

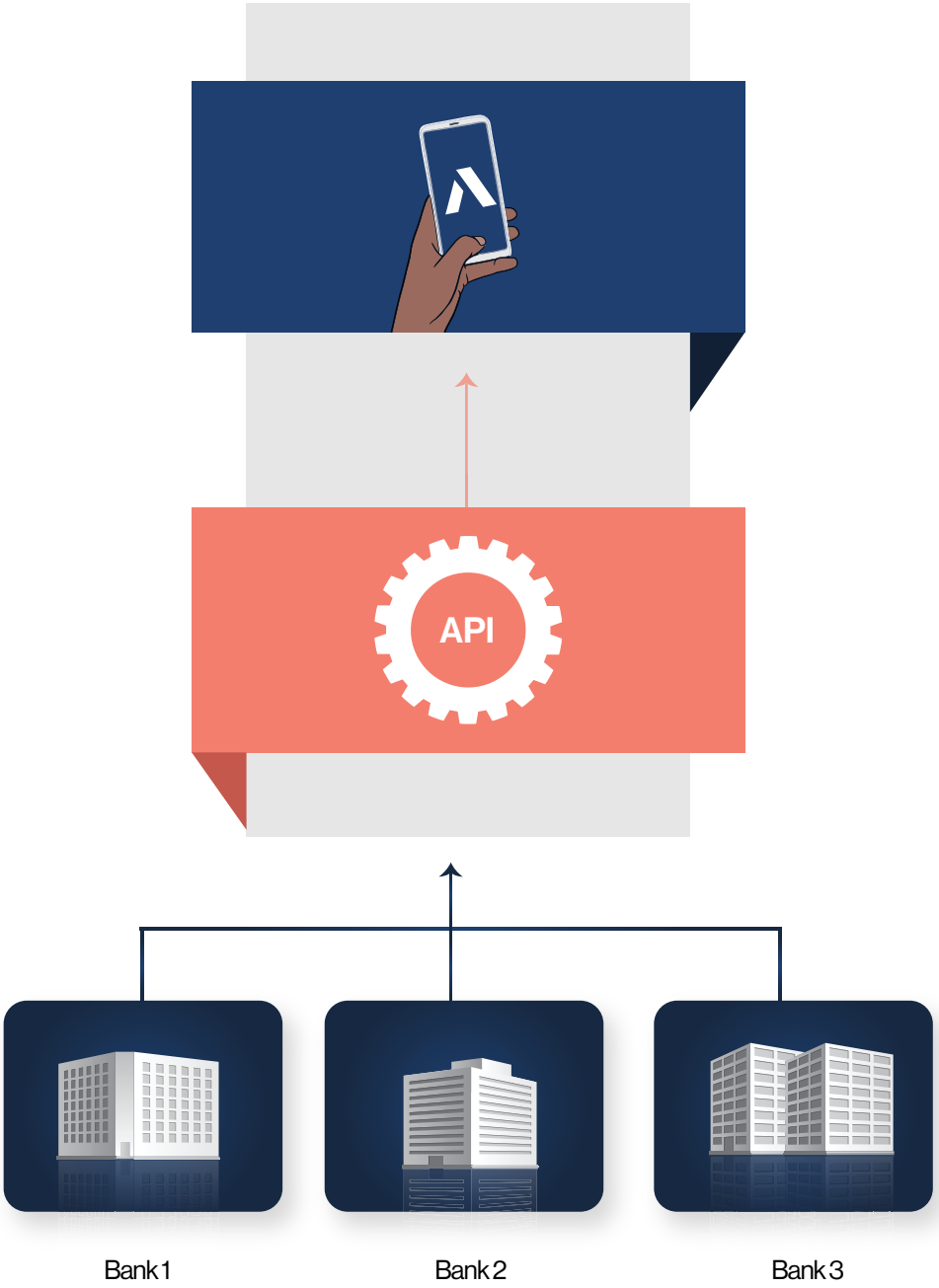
The OB dream depends on four key forces in their open banking ecosystem; the approved regulations from CBN, third-party providers and financial institutions (banks) and customer-permissioned data, and the API technology providers. Each has a unique and sometimes overlapping role to promote financial inclusion in the open banking financial solution.

Table 1: Open banking environment

CBN regulations	The issuance and approval of CBN regulatory framework and operational guidelines are key to the successful implementation of open banking. Similarly, countries such as the UK, India, and Canada have developed their financial conduct regulation to govern OB. For example, the Payment Services Directive Two (PSD2) mandates that banks share data, if the customer gives permission, with trusted third parties through APIs.
Financial institutions	These are the commercial banks or other non-bank financial institutions that possess customers' data and with customers' permission can share it with third parties. It includes Fintech companies that provide innovative financial solutions, products and services.
Third-party providers	A provider is a participant that uses API to avail data or services to another participant. Third-Party Providers comprise payment initiative service providers (PISPs) and account information service providers (AISPs).
API Developers	API is a software intermediary that allows applications to communicate with one another. The developer community involves individuals and entities that develop APIs for participants based on requirements. It includes Fintechs that provide both API and financial innovation solutions.
Consumer consent	Customers to the financial institution are the users of services or products. Customers should be able to grant, revoke, and manage this authorization transparently. The consumer is a participant that uses API released by the providers to access data or services.

Source: Agpaytech

Figure 3: Open banking model



Source: Agpaytech

What category of data and service can API access?

API architecture is usually explained in terms of client and server. The application sending the request is the client and the application granting the data response is the server. Thus the API provides a mechanism for two software components to communicate with each other. While there are different types of API, it has common benefits such as integration, innovation, expansion, and ease of maintenance. In the Nigerian open banking system, the CBN outlines four major data and services that open banking providers can access depending on their maturity level as described by the CBN-OB guideline.

Table 2: Data and service types available

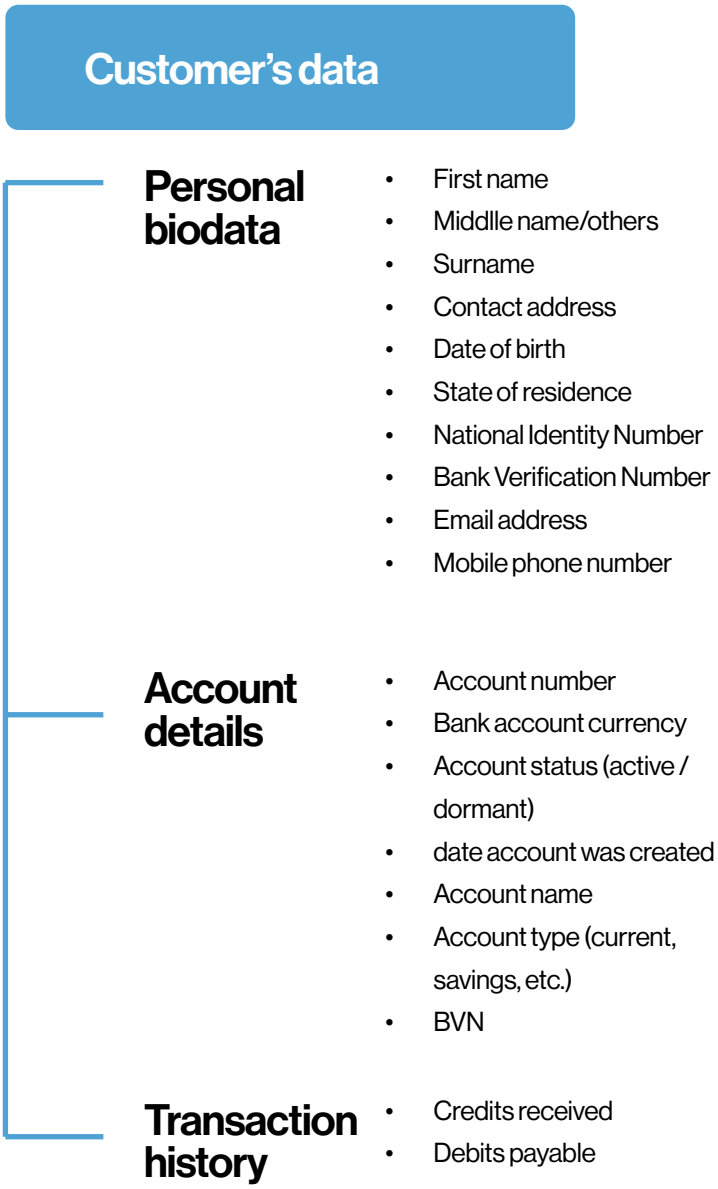
Data type	Description	Example	Risk level
Product Information and Service Touchpoints (PIST)	OB entity information to customers	ATM/POS/Agents locations, channels (website/app) addresses, institution identifiers, service codes, fees, charges and quotes, rates, tenors, etc.	Low
Market Insight Transactions (MIT)	This shall include statistical data aggregated on basis of products, services, segments, etc. It shall not be associated with any individual customer or account	Growth data, market share, transactional volume and value	Moderate
Personal Information and Financial Transaction (PIFT)	data at individual customer level either on general information on the customer or data transaction history	KYC data, types of account held, balances, bill payments, loans, repayments, recurring transactions, etc.	High
Profile, Analytics, and Scoring Transaction (PAST)	This shall include information on a customer which analyses, scores, or give an opinion on a customer.	e.g. credit score, income ratings, etc.	High and sensitive

Source: Central Bank of Nigeria

Customer data for open banking

Although consumers provide information to their banks, security and privacy concerns are of high priority. However, open banking requires users to permit third-party providers (TPP) to use API to access the information held with their banks. Three categories of data are required by the TPP; customers' personal biodata, bank or financial account details, and account transaction history. Examples of the actual data description that consumers need to allow TPPs to access are illustrated in Figure 4.

Figure 4: Customer data type



Source: Central Bank of Nigeria

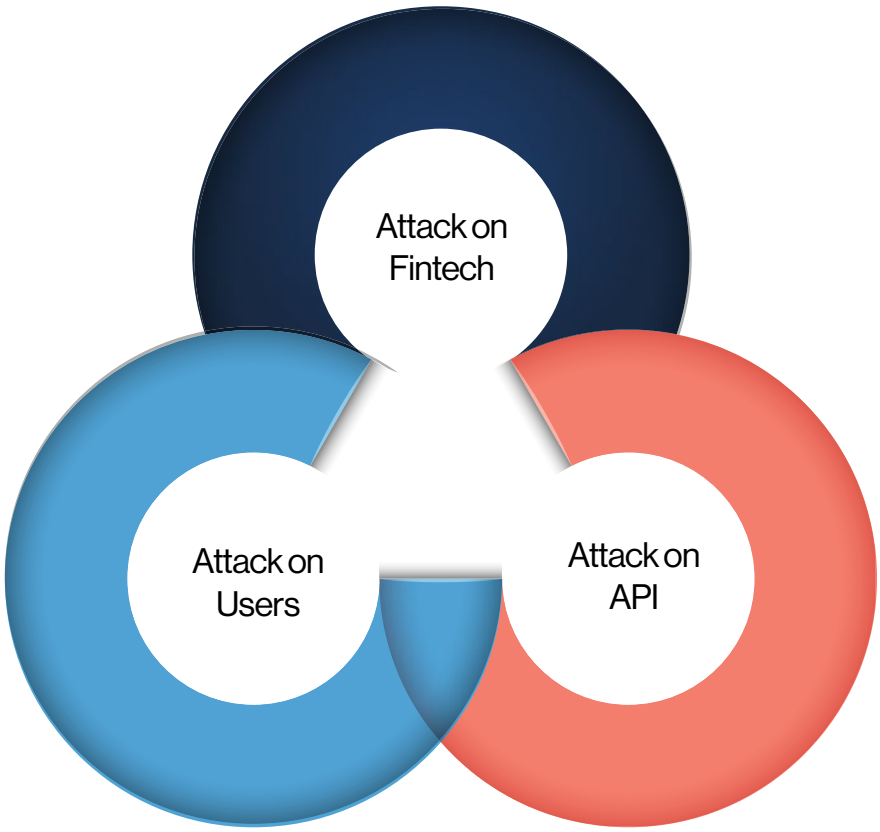
Risks Associated with Open Banking

Like every payment system, there is the possibility of risk occurrences if weak structures are put in place. Open banking requires strong API and Fintech security with consumers being careful with their secret keys.

Attacks on the APIs can result in distributed denial of service (DDoS), resulting in downtime for banking operations and transactions. A hacker can study how the API system works once it goes public and find unexpected responses and security flaws in the back end.

Moreover, not all Fintech companies will have the same security level and experience that banks do and this can be a target to steal customers' banking data. Besides, attacks against the user, thus old social engineering and phishing techniques will likely find traction against end users.

Figure 5: Attack on participants



Source: Agpaytech

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Table 3: Risk and security of open banking

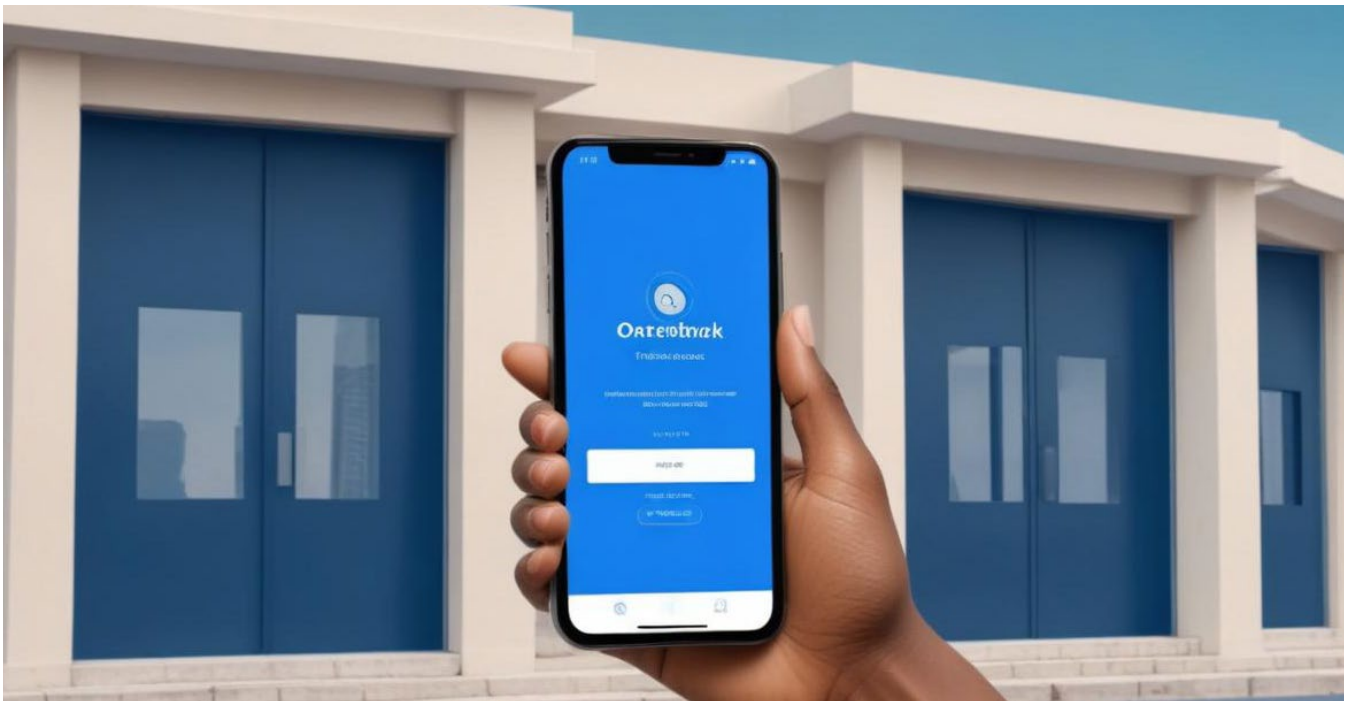
Cyber-Security Risk	Cybersecurity risk arises, as a result of the use of APIs for inter-connectivity between participants. APIs potentially expose the financial system to more vulnerabilities due to sharing of data.
Contract management	Contract management risk is associated with possible losses arising from the non-fulfillment of the terms of the contract or the contract performing poorly
Money laundering	Open APIs create new areas of vulnerability for participants as a result of interconnectivity, giving rise to a large number of financial players and easing cross-border transactions, which makes the monitoring of transactions more complex
Regulatory and Compli-ance Risk	This risk exists when the products or services of a third party are inconsistent with governing laws, rules, regulations, policies, or ethical standards.
Data Integrity Risk	This is the risk that data stored and processed by information technology systems are incomplete, inaccurate, or inconsistent across different IT systems
Data Privacy Risk	This is the risk of unauthorized access, use, disclosure, disruption, modification, or destruction of information and/or information systems.
Product Management Risk	Open Banking creates the potential for the proliferation of inno-vative products and services which may increase the complexity of financial services delivery, thus, making it difficult to control operational risk, information security, money laundering, etc.

Source: Central Bank of Nigeria

Establishing a Standard API for Open Banking in Nigeria

The open banking concept is new in the Nigerian payment sector and the need for a standardized API is paramount. And therefore the CBN has issued a standard feature of API to be used in the open banking operations.

In view of this, Nigeria Open Technology Foundation, a not-for-profit organization, launched Open Banking Nigeria (OBN) in 2018 in a bid to drive innovation and choice in the Nigerian banking sector. Its objective is to roll out open APIs and encourage banks and FinTechs to adopt open standards for API implementation. Unlike many other Open Banking regimes, OBN considers the UK standard over-engineered for Nigeria's purposes.



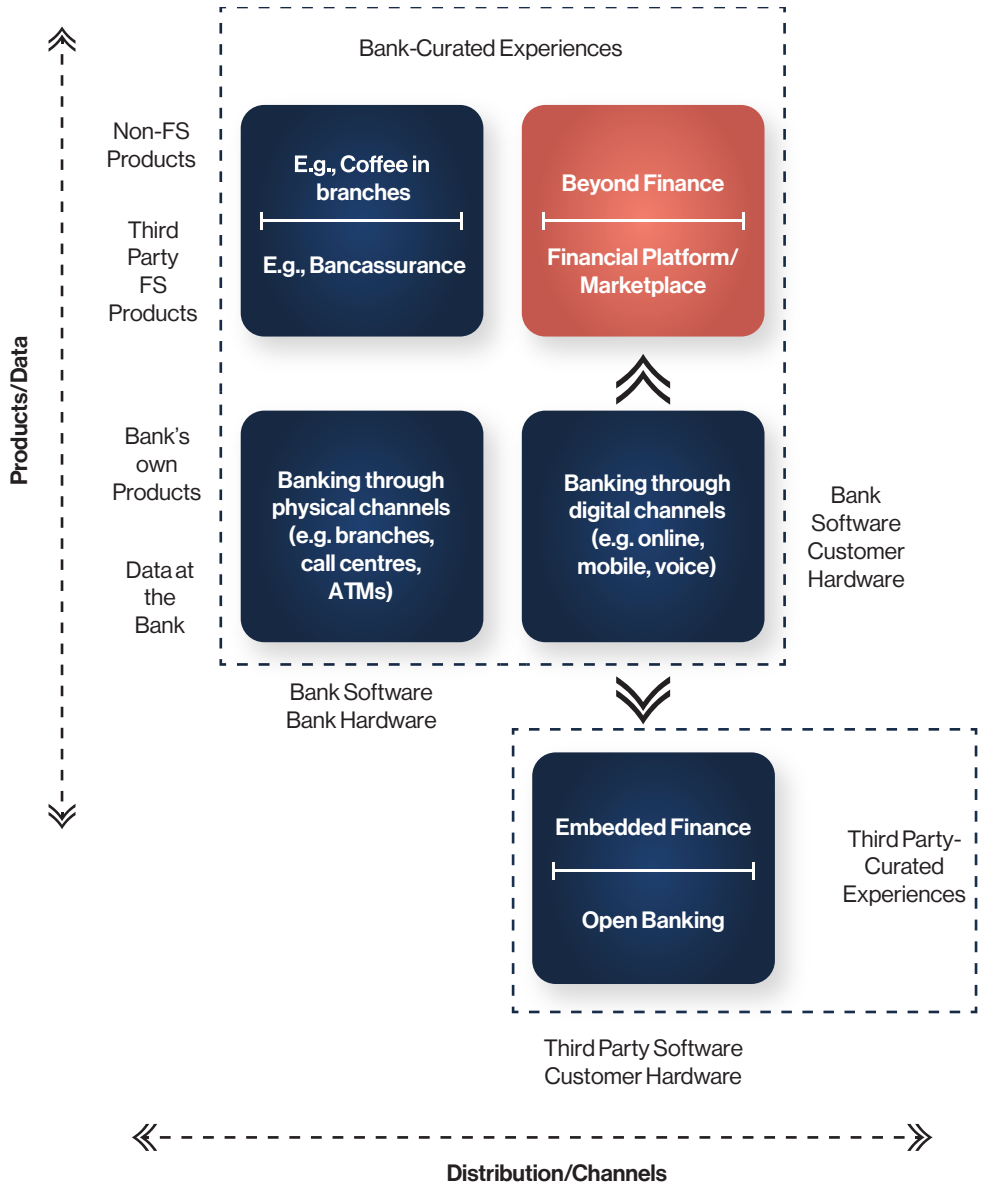
They hope to draft their own standard that will be more appropriate for Nigeria and other countries in West Africa. OBN hopes that an API framework will reduce the cost of innovation to service providers and provide a good customer experience.

The Foundation believes Open Banking to revolutionize the Nigerian banking sector and be a "huge boost" to the economy as a whole.More importantly, API Providers shall comply with the provisions of CNB guidelines and regulations on access rules, service level management, incident management, performance monitoring, continuity and change management as well as reporting and communication management.

The Future of Open Banking in Nigeria

The Nigerian Payments System witnessed remarkable achievements in the recent past, introducing several initiatives under the Payments System Vision 2020. The CBN has implemented over 25 payment structures and regulations to stabilize and make payment more convenient.
The payment facilities are; card payment schemes, mobile money operators, switching & processing companies, payment solution service, payment terminals, etc. Nigeria Inter-Bank Clearing and Settlement System. The current implementation of the CBN digital version of Naira (eNaira) also provides a great avenue to achieve a cash-lite economy.
Open banking is a new business model integrated into the financial system through third-party providers to provide essential convenience and choice to bank customers.
This creates another opportunity and competition for PSPs and traditional banks to innovate and re-align to today's digitalization possibilities in Nigeria.

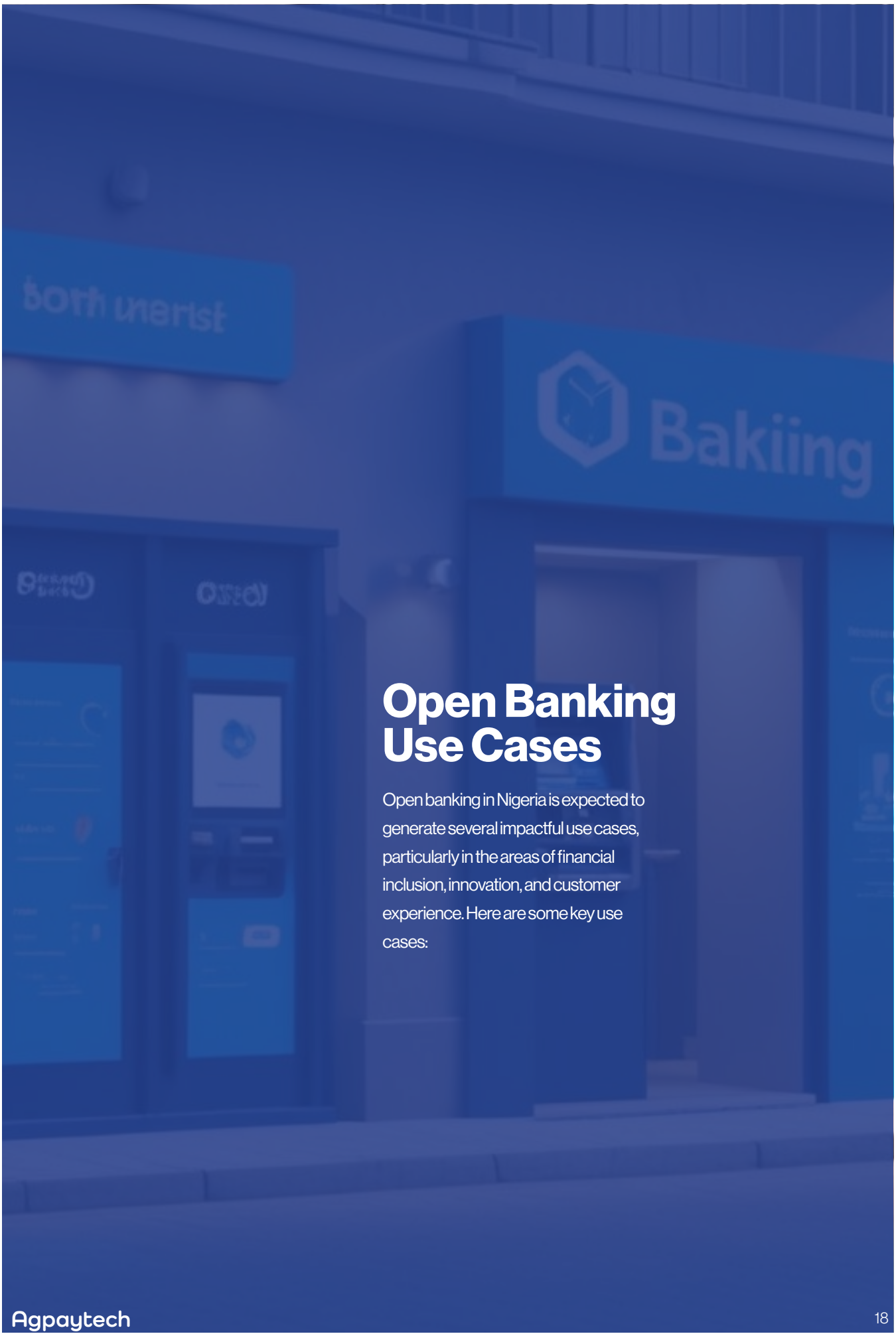
Figure 6: How business models are changing financial services



Source: Celent

Overall, the future of open banking in Nigeria is poised for growth, with the potential to transform the financial services landscape, enhance financial inclusion, and spur economic development. The Central Bank of Nigeria (CBN) has been proactive in establishing guidelines for open banking, aiming to create a secure and standardized environment.

The CBN's Open Banking Framework and Operational Guidelines are significant step towards encouraging data sharing between financial institutions, FinTech, and other third parties. Continued regulatory support will be crucial for the adoption and growth of open banking in the country. Open banking has the potential to drive financial inclusion by making financial services more accessible to underserved populations. With a large unbanked and underbanked population, Nigeria stands to benefit from open banking initiatives that can provide affordable and tailored financial products to these groups.



Open Banking Use Cases

Open banking in Nigeria is expected to generate several impactful use cases, particularly in the areas of financial inclusion, innovation, and customer experience. Here are some key use cases:

	1. Personalized Financial Services
	• Tailored Financial Products: By analyzing customers' transaction data, banks and fintech companies can offer personalized financial products such as loans, savings accounts, and investment options tailored to individual needs and financial behavior. • Customized Financial Advice: Fintechs can provide personalized financial planning tools, helping users manage budgets, track spending, and plan for future financial goals based on real-time data
	2. Financial Inclusion
	• Microloans and Credit Scoring: Open banking can enable the creation of alternative credit scoring models using non-traditional data sources, such as mobile money transactions and utility bill payments. This can help unbanked and underbanked individuals access microloans and other financial services. Open banking can streamline the loan application and approval process by providing lenders with immediate access to applicants' financial data, enabling quicker credit decisions. • Affordable Financial Products: By leveraging data sharing, financial institutions can develop low-cost financial products aimed at underserved populations, including low-income individuals and small businesses.
	3. Aggregated Financial Data
	• Account Aggregation: Customers can view and manage multiple bank accounts from different financial institutions in a single app or platform. This allows for easier management of finances and better visibility over personal or business financial health. • Consolidated Reporting: Small businesses can benefit from aggregated financial data that provides comprehensive reporting and analysis, helping them make informed business decisions.
	4. Payment Innovations
	• Seamless Payments: Open banking can facilitate seamless and faster payments by enabling third-party providers to initiate payments directly from customers' bank accounts, improving the efficiency of e-commerce and digital transactions. • Payment Initiation Services (PIS): Fintech companies can offer new payment methods that reduce reliance on traditional card networks, potentially lowering transaction fees and providing more options for consumers and businesses.
	5. Fraud Detection and Security
	• Improved Fraud Detection: By analyzing real-time transaction data and patterns, financial institutions can detect and prevent fraudulent activities more effectively, protecting customers and reducing financial crime. • Identity Verification: Open banking can enhance identity verification processes by cross-referencing data from multiple sources, ensuring a higher level of security for digital transactions.

Conclusion

The development of faster payment solutions has not come to an end. Financial technocrats are exploring more ways to make money usage safe, convenient, and secure at anytime and anywhere. With the country's digitalization and financial inclusion agenda, open banking will offer customers with "all-bank at the go" service where users can reuse their financial data purposefully.

Besides, open banking can offer many benefits to consumers, but it is important that it is introduced in a way that protects consumers, bank data and promote trust and a secure payment system. With this, the CBN should standardize all APIs and provide strict regulatory oversight to avoid illicit monetary activities. Also, persistent technology and business engagement forums are recommended to provide smooth operationalization of Nigeria's open banking.

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About Agpaytech Ltd.

Agpaytech Ltd. is a company pioneering in the Fintech space with a focused approach to building robust technologies for e-commerce Card Processing Solutions for Payment Service Providers (PSPs). Additionally, we provide Compliance and Regulatory Umbrella, Remittance-as-a-Service (RaaS), Banking-as-a-Service (BaaS), Foreign Exchange, Cross Border Payments, and digital currency technology.

We also provide practical white paper research support to central banks, government and private institutions, economic organizations, and NGOs in Africa. Our services expand from research projects, state-of-industry reports, project assessment, data collection, and consulting services in the fintech space.

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