



Open Banking

Annual Report

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Abbreviations

AA	Account Aggregator
ACCC	Australian Competition and Consumer Commission
AISP	Account Information Service Provider
AP	Account Provider
API	Application Programming Interface
ASIG	API Standardization Industry Group
Auth	Authorization
BNR	Banque Nationale du Rwanda
B2B	Business-to-Business
CBN	Central Bank of Nigeria
CDR	Consumer Data Right
CMA	Competition and Markets Authority
CNBV	Comisión Nacional Bancaria y de Valores
CRUD	Create, Read, Update, Delete
EBA	European Banking Authority
EPIS	Electronic Payment Intermediate Service
FCA	Financial Conduct Authority
FPSP	Financial and Payment Services Provider
IP	Internet Protocol
MAS	Monetary Authority of Singapore
NBFC	Non-Bank Financial Company
NACHA	National Automated Clearing House Association
NDPR	Nigeria Data Protection Regulation
NIBSS	Nigeria Interbank Settlement System
NPI	Non Public Information
NPIC	National Payments Corporation of India
NRIC	National Registration Identity Card
OBIE	Open Banking Implementation Entity
OIDC	OpenID Connect
OTF	Open Technology Foundation
PSD2	Second Payment Services Directive
PII	Personally Identifiable Information
PISP	Payment Initiation Service Provider
PSV	Payment Vision Statement
RTS	Regulatory Technical Standards
SGD	Singapore Dollar
SME	Small and Medium Enterprise
TPP	Thirdparty Provider
UPI	Unified Payment Interface

Executive Summary

Executive Summary



Open banking signals a remarkable shift in the business of banking. It embodies a creative disruption of the banking business, leading to a rearrangement of priorities and focus on consumer needs and changing expectations, leveraging data in a system built on open APIs.

At its core, open banking aims to simplify the way customers interact with banking services, encourage seamless collaboration among key participants in the emerging banking ecosystem, and define new value-levers for all stakeholders. In the wider society, open banking stands to play a socio-economic role of addressing the needs of the underserved and unbanked segments of the society.

Driven by several factors, the open banking phenomenon is reshaping the banking landscape on a global scale. Some of the key driving forces are changing customer needs and expectations, rise of ecosystem models, innovation in the industry, competition, regulation, etc.

While there has been considerable milestones achieved in the journey towards open banking globally, there is still a long way to go. Open banking is

interpreted in diverse ways by different stakeholders, resulting in varying perspectives on its nature, functional attributes, requirements and solutions. To some, open banking holds enormous potential to transform the banking sector while to others; open banking is a mere catchphrase, which will fizzle out eventually.

Open Technology Foundation recognises the need for all stakeholders to appreciate the developments in open banking, especially from a Nigerian perspective. Therefore, this report was put together to inform stakeholder perspectives about open banking in the right direction, provoke the right questions among key ecosystem players while addressing the needs of those who are still trying to figure out the open banking phenomenon

The report provides an overview of open banking, key open banking developments around the world so far, the extent of progress achieved in Nigeria towards an open banking regime, the technology and guiding principles behind open banking in Nigeria and what the industry says about open banking developments.

Overview of open banking

In this section, we explore the history of APIs in banking and the evolution to open banking. In addition, we highlight the common misconceptions about open banking, solutions provided by open banking adoption and possible issues that may arise following open banking adoption

Open banking developments across the world in 2019

This section captures open banking developments across the globe (Europe, The Americas, Asia, Africa, Australia, New Zealand), highlighting two major approaches adopted by different jurisdictions: market-driven approach (Nigeria, New Zealand, etc.) and regulatory-driven approach (UK, Australia, etc.).

The Nigerian Context

Open banking in Nigeria – Here, we consider open banking from a Nigerian perspective to demonstrate the milestone

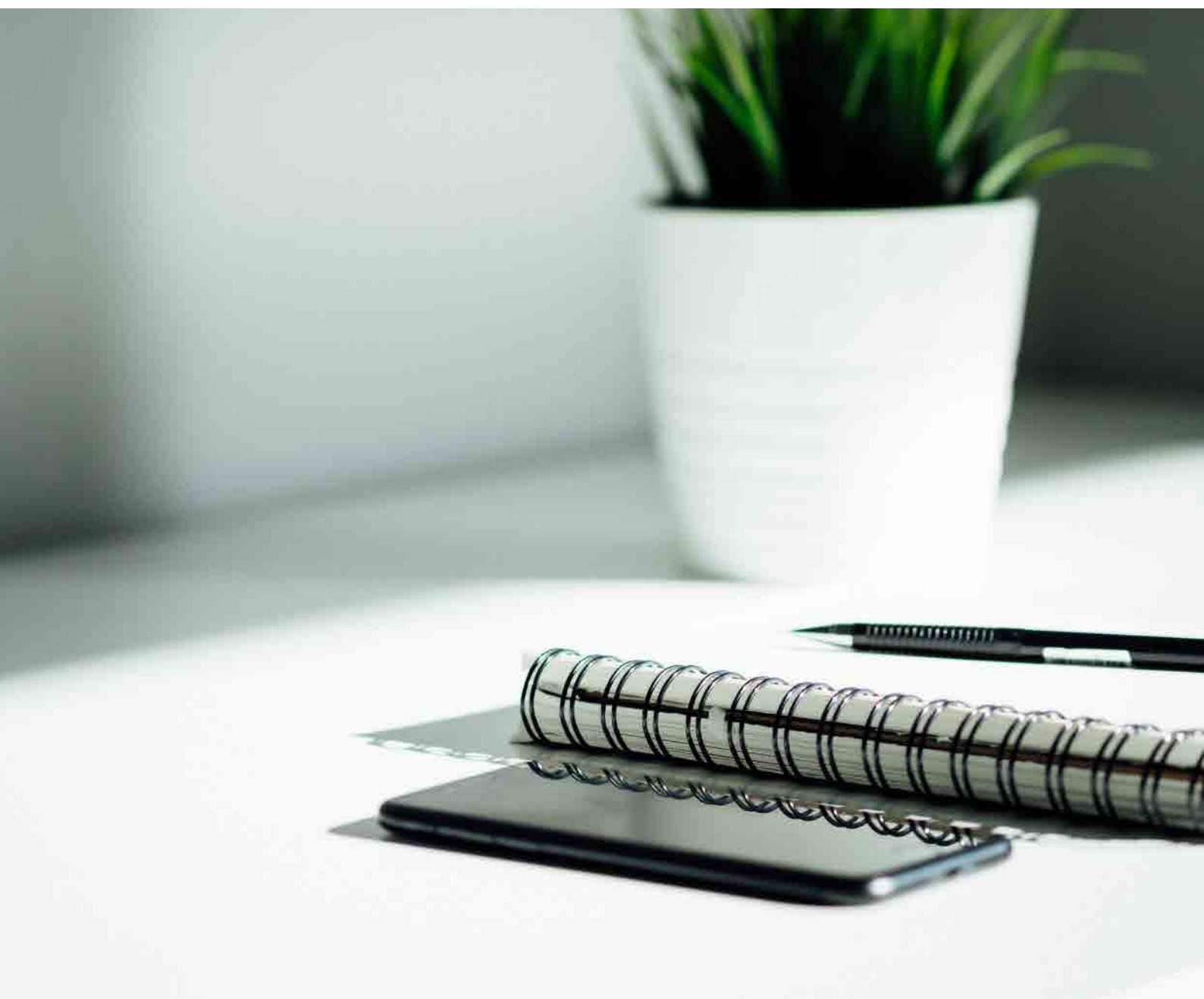
achievements during the year 2019. This section also captures the open banking roadmap for Nigeria as championed by Open Banking Nigeria.

The Technologies behind Open banking Nigeria

Here, we highlight the key design principles for the open banking system. These design principles are the keystone for the development of an open banking system that is transparent, secure, operationally efficient, focused on customer needs, standardised, accommodates privacy needs, and is value-driven. This section also provides a high-level information on the API standards developed by open banking Nigeria

What the industry says about open banking

We conclude by capturing the views of key stakeholders in the wider financial services ecosystem in Nigeria. This section sheds light on the industry's perception of open banking and its potential in Nigeria.



Overview of Open Banking

Overview of Open Banking

API in banking: the history of Open Banking



An Application Programming Interface (API) refers to a set of commands that enable seamless interaction between software applications. APIs are protocols for building software applications. They allow the flow of data between systems in a controlled manner. According to McKinsey's payments practice¹, there are three major categories of APIs

- **Public APIs:** External partners and developers who build innovative apps and products use these. They are the most relevant for open banking, allowing third-party providers to access consumer data from a bank
- **Partner APIs:** Also referred to as B2B APIs, they are designed to allow the exchange of enterprise data between two or more specific businesses or partners
- **Internal APIs:** These are proprietary APIs, used by developers within a single organization

Historically, APIs and/or API integration have been foundational in re-shaping industries, creating new avenues for collaboration and innovation between industry players. As of today, API-enabled connectivity cuts across every industry in differing capacities.

There are practical applications of API integration in retail & ecommerce, healthcare, education, manufacturing, finance etc². There are several success cases of API adoption that have led to the emergence of new consumer models such as in the transportation sector (ride-sharing & ride-hailing), food delivery, etc.

The utilization of APIs in banking is not new. However, what has changed is how they are being embraced as a key component for facilitating open banking. Until recently, the application of APIs in the banking industry has been more internally focused – leveraged to improve information flow between legacy systems. In addition, they were used mainly to establish one-to-one alliances between banks and their partners.³

There was reluctance from industry stakeholders about engaging in discussions that explore the possibilities of leveraging open APIs to incorporate functionalities from third-party companies. However, looking to a future where digital technology is the epicenter of banking, it is clear that APIs have become a key component for extracting business value.

1. McKinsey&Company – Data and open banking

2. Open Legacy – The history of APIs and how they impact your future

3. Euromoney – APIs shaping the future of banking

The concept of open banking was shot to limelight after 2015 when the EU adopted the second payment services directive (PSD2), obligating EU banks to provide third-party developers with access to customer data via open APIs⁴. The PSD2 is a legal framework for payment services, designed to encourage innovation and an integrated payment ecosystem across Europe. Along these lines, following an investigation by the UK's Competition and Markets Authority (CMA) into the supply of retail banking services to current account customers and small and medium-sized enterprises (SMEs), it was concluded that there was a need to improve competition in banking services. Hence, the CMA issued a regulation that required the nine (9) largest banks in the UK to allow third parties like Fintech startups access to customer data. The developments in open banking across Europe and the UK have triggered adoption of open banking initiatives around the world.

What is Open Banking?

The adoption of open APIs in banking ushers in a shift from traditional banking models to open banking. Open banking is a technology driven evolution of banking, making it possible for customers to use banking services

in the context of other services (e.g. services provided by Fintechs), thereby combining innovative functionalities from banks and non-banks, leveraging open APIs. In a report titled "demystifying open banking", PwC captures open banking as "...the opening of internal bank data and processes to external parties via digital channels. These might be customers, trusted partners or authorized third parties acting on behalf of customers"⁵.

According to Chakray Consulting, "Open banking APIs provide an ideal financial ecosystem for conducting business, as everything remains interconnected: both needs and solutions."⁶ Open banking provides an opportunity for enriched engagement between banks and third-party providers such as Fintechs – ultimately resulting in integrated customer-centric service delivery and value creation for all parties involved.

The open banking initiative removes previously existing boundaries in the banking industry, by reshaping the relationships between key stakeholder groups in the industry. In addition to the establishment of new patterns of collaboration, enrichment of customer experiences sits at the nucleus of the open banking initiative.

What makes Open Banking open?

The concept of open banking allows secure data sharing between banks and third-party companies such as Fintechs through open APIs on a real time basis.

However, the open banking initiative transcends the understanding of an ecosystem where access to data is boundless, howbeit controlled. An open banking framework has the potential to unleash new pathways of collaboration within the financial services industry, serving as the surfboard for a new wave of digital innovation in the industry. In an open banking ecosystem, there is a considerable reduction in the time and cost requirements to connect with third parties.

Therefore, the framework optimizes third-party integration, redefining the rules of partnership and collaboration in delivering banking services. Hence, within the framework, banking service providers are able to exercise the freedom of whom they collaborate with and what features they bring onboard.

Furthermore, the concept of openness in the banking context is accentuated by the ease and affordability of open banking technology compared to legacy banking technology. Running on open APIs allows banking service providers to use only features needed for a given product or project without incurring irrelevant costs as is the case when purchasing a full-service legacy platform. According to The Financial Brand, "open banking represents the emergence of new technologies that can provide modular functionality with a la carte pricing".

Another angle to the concept of openness in banking is that it triggers new discussions on the ownership and custodianship of customer data, which traditionally are warehoused by banks. Open banking will create an environment that diminishes the banks' ownership of customer data, hence re-positioning customers to be in charge as to how their data is used to provide financial services for them.

4. Hydrogen Platform – What is Open Banking

5. PwC – Demystifying open banking

6. Chakray Consulting – APIs in the banking sector: what are they and what use they have?

Common misconceptions about Open Banking

Open banking will introduce fundamental changes to the banking industry, transforming not only the way banks operate but also impacting how customers access banking services going forward. Like all monumental changes that are disruptive, there are understandable fears about the impact open banking would have in the financial ecosystem. However, some of these fears have resulted in myths and misconceptions about open banking

Here are some prevalent misconceptions about open banking:

- Open access means uncontrolled access to data:**
 Openness in the context of banking and financial services does not translate to the removal of guardrails as it relates to customer data and/or relinquishment of access control. Instead, the idea of openness in banking relates to the evolution of an ecosystem driven by agreed standards that results in interfaces being publicly facing. According to a Forrester report, this does not include non-public information (NPI) or personally identifiable information (PII); rather, it is likely to include reference information, such as product information or anonymized data⁷. In the open banking ecosystem, only “trusted third parties” that are authorized by relevant authorities can access customer data. In addition to this, customers are required to provide consent as to who can access their data.
- Open banking is just another name for open APIs:**
 While open APIs form the bedrock for open banking to thrive, they do not convey the length and breadth of the meaning of open banking⁸. As stated earlier, open banking is a monumental shift from the current configuration of the banking industry, ushering in new business models and partnerships, driven by digital innovation to create value for customers, banks and third-party players in the financial ecosystem.
- Open banking opens up our customer data to our competitors:** Contrary to beliefs centered on how open banking would disintermediate the traditional banking model – eliminating the roles banks play in the financial ecosystem, open banking is an opportunity for banks to re-imagine their place in customers' journeys. Considering open banking from the perspective of only providing valuable customer data to third-party providers only gives a one-sided view of the dynamics of the emerging ecosystem.
- For banks, open banking holds an opportunity to access deeper insights about customers to enrich value delivery to their customers. By playing this pivotal role in the emerging industry, banks are able to secure their place in the future of the financial ecosystem.
- Open banking would make banks non-existent:**
 Allowing third-party companies to access financial data (with customer's consent) positions them to provide value-added services to customers in collaboration with the banks. However, these third-party providers would not convert to banks or take on the roles played by banks. The nature of the open banking ecosystem is such that all participants (banks and third-party players such as Fintechs) play niche roles –focusing on their core strengths to deliver customer-centric offerings. Therefore, as an integral part of the evolving business model, open banking will improve the way banks provide services.
- Open banking affects banks only and not customers:**
 The concept of open banking came into play because of efforts to re-focus banking services to provide innovative and customer-centric services while driving new revenue models for banks. The emerging open banking system places customer needs at the center of banking services – redefining the concepts of “choice and control” in the context of banking.
- Open banking is not worth the investment:** Open banking holds significant benefits for banks in terms of reductions in IT/Innovation budgets and overall agility in a rapidly changing market. According to Financial News London, experts claim that over 80% of bank IT budgets are channeled towards the maintenance of legacy technology infrastructure⁹. Besides the challenges of adopting a new system, open banking will potentially turn around the IT budgets of banks, allowing them to respond better to changes in consumer preferences from a technology requirements standpoint.
- Open banking is not secure:** Steered by advanced data security protocols, data shared in an open banking environment are encrypted to protect customer data. For example, open banking will provide better security for customers when their data is shared by eliminating the need to share usernames and passwords.

7. Forrester – The open banking revolution is imminent

8. ABA banking journal – Open banking myths debunked

9. ABA banking journal – Open banking myths debunked

What problems do Open Banking solve?

Open Banking holds the potential to drive positive outcomes in the banking space, disrupting the inward-looking nature of many banks in the financial services ecosystem.

- **Open banking places the customers at the heart of the banking value chain:** Promoting innovation, flexibility and transparency, open banking places customers at the nucleus of banking propositions. The open banking ecosystem provides the right match of flexibility and innovation for banks to respond to changing customer expectations or developments in competitor business models.
- **Open banking will unleash new ecosystem-based business models:** Driven by a collaborative approach, Open Banking will redefine partnership in the financial services ecosystem, leaving banks and other key players to explore the benefits of marketplace models. Establishing partnerships with third-party providers such as Fintechs will enable banks to expand their bouquet of offerings, leveraging the cost-efficient technology offered by Fintechs.
- **Open banking will lead to giant strides in product and service innovation:** Open banking will drive significant innovation in banking services and products as the ecosystem participants – banks and Fintechs – will create new offerings to distinguish themselves from the competition by mining customer data. In addition to this, the open banking framework holds the promise of transformation for the digital journeys of traditional players in the banking industry.
- **Open banking solves the problem of risk within technical integrations:** Prior to the emergence of open banking, technical integration activities between banks and third-party or vendor platforms were replete with challenges and risks resulting to issues such as data breaches or hacks. Open banking tackles the challenges experienced by players as far as integration is concerned by deploying a reliable common API standard that enables seamless connections with third-parties. The single API interface provides a simple and reliable arrangement for managing third-parties, thereby eliminating the need for multiple API gateways, builds in required security features and tackles the issue of “vendor lock-in”.

What problems could Open Banking create?

While open banking brings new opportunities and changes to banking business models, its implementation may pose some concerns

- **Possible increase in security issues:** With the technical complexities required to support open banking and complex chains of data access created, the banking ecosystem may be more susceptible to fraudulent activities. Open banking developments could increase the chances of risks associated with data loss, identity theft, data protection violations, etc. Considering the nature of data sharing traditionally in the banking industry, open banking will lead to a significant shift in the security landscape of the banking ecosystem. Cyber threats and attacks in the new era of banking may take different forms such as;
 - **Attacks on APIs:** Cyber attackers can study how APIs in the open ecosystem work with the intent to capitalize on security loopholes to disrupt banking operations and transactions.
 - **Attacks on third-party platforms:** The idea of aggregating customer data on third-party providers' servers poses new threats to data and cyber security as the third-party providers most likely do not possess the right security infrastructure or level of experience accumulated by incumbents over the years of handling security issues. Hence, they may be ideal targets for attackers.
 - **Attacks on Users:** As the ecosystem evolves rapidly, security threats such as social engineering, phishing etc. targeted at unsuspecting end-users will possibly become more complicated than ever.
- **However, establishing clearly defined technical standards and security protocols will go a long way in managing security risks that may arise because of open banking adoption.** In addition, applications should be designed, bearing in mind the possible security challenges that may arise in a rapidly changing digital environment.
- **Responsibility for liability:** Integrating third-party providers into the banking value chain increases the possibility of scammers gaining access to customer information and possibly their finances. Under traditional banking, there is a clear definition of how customer losses are replenished unless there is a reason to suspect negligence or fraud. However, open banking puts a twist to the situation, as it becomes less clear who bears the liability for customer losses, owing to the complex play of interactions in the ecosystem. Therefore, open banking will usher in a new level of ambiguity around how banks and third-party providers will deal with fraud claims going forward. To manage this, stakeholders in the ecosystem must re-imagine new and dynamic approaches to balance accountability and responsibility for liability in the industry as the market evolves.



Open Banking across the world in 2019

Open Banking across the world in 2019



Within the past few years, Open Banking developments around the world have taken several dimensions – in terms of products and services that have come onboard, the extent of collaboration between banks and third-party providers, implementation requirements, stage of development, scope, etc. However, from a universal perspective, trends have shown that these developments are either market-driven or regulatory-driven¹⁰.

- **Market-driven developments:**

In jurisdictions where Open banking emerged organically, developments have been accelerated by non-formal or non-compulsory measures introduced to encourage collaboration between large financial institutions and non-bank third-party providers, leveraging API standards to drive new data sharing frameworks. Essentially, there are no explicit rules that guide the sharing of customer-permissioned data by banks with third parties. Some examples of jurisdictions that

have taken a market-driven approach are Nigeria, South Korea, New Zealand, etc.

- **Regulatory-driven developments:**

In jurisdictions where Open Banking developments are regulator driven, the authorities have either taken a prescriptive approach or a facilitative approach. The prescriptive approach requires banks to share customer data and against this background, third parties are required to register with particular regulatory or supervisory authorities to have access to the data. The UK represents a classic example of a jurisdiction that has opted for the prescriptive approach. Other examples are Australia, Hong Kong, etc. On the other hand, the setting of the facilitative scenario is one where the authorities release Open API standards, technical specifications and related guidance for implementation. Examples of jurisdictions where the authorities have played a facilitative role are Singapore and Japan.

10. Deloitte FSI – Open banking around the world

In the year 2019, there were notable developments globally that demonstrated new frontiers that have been marked in the journey towards open banking across several geographies¹¹.

- There were over 40 open banking events or conferences worldwide where open banking was a topic
- Canada launched the open banking whitepaper
- Brazil launched an open banking model
- Colombia held first open banking roundtable
- Mexico continued to be the open banking business hot spot for Latin America
- The US began conversations on open banking and developing open banking 'like' APIs

- Central Bank of Nigeria placed open banking within its considerations for the Payment System Vision (PSV) 2030
- Australia launched open banking
- Bahrain made claims to implement open banking
- Additional API offerings were launched in Malaysia to further enrich the open banking market
- Argentina held open banking roundtable
- Payments NZ in New Zealand launched open banking APIs
- Open Banking Implementation Entity (OBIE) UK by October 2019, registered 180 million API calls, compared to 13.9 million API calls registered in October 2018

Open Banking APIs – A comparison of markets and countries across the globe

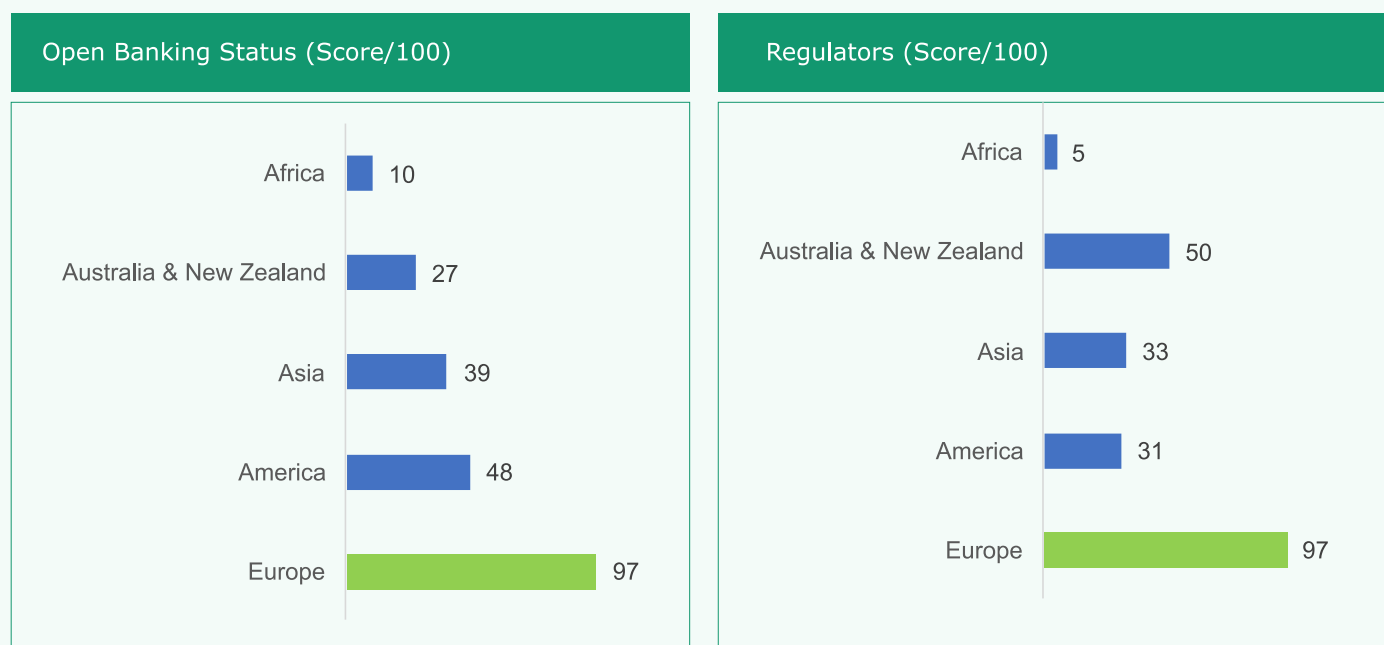
According to a global market research conducted by Ndgit to highlight the status of open banking across the world, the following are the key observations¹²:

- In terms of regulations, the UK and Australia have the most developed content
- Asides markets with existing regulations such as the European Union, the United Kingdom, Australia,

Bahrain and Hong Kong, regulations were at least announced in another half-dozen countries

- Most widely used Open APIs are in the European Union, UK, Singapore, Australia, Hong Kong, Japan and Malaysia
- There are currently just four countries with central regulatory bodies for third-party providers (TPPs)

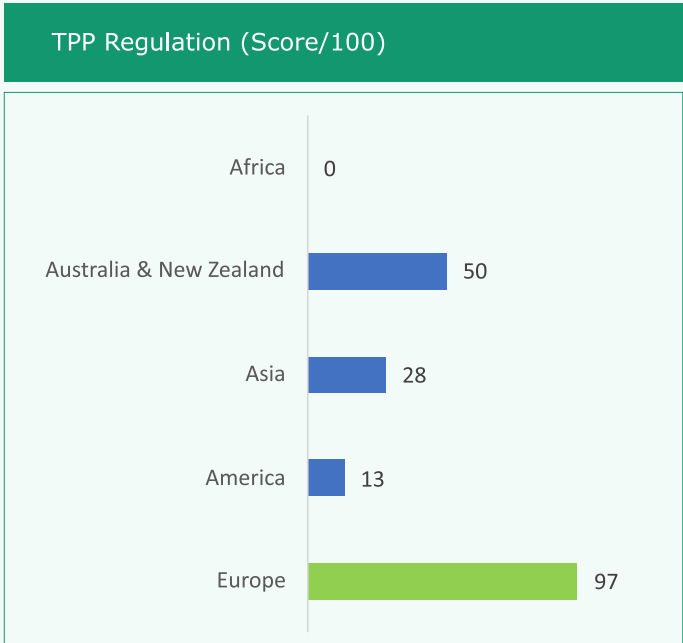
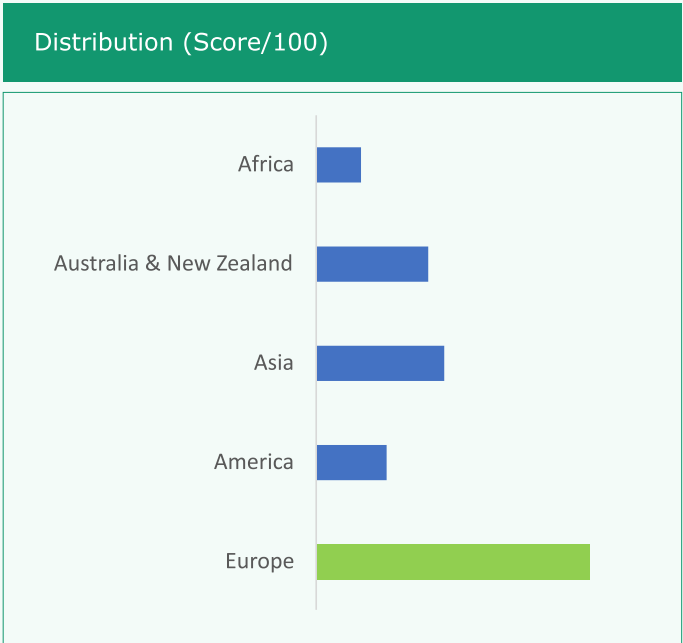
Open Banking around the world: Snapshots



Source: ndgit (Next Digital Finance) – Open Banking APIs Worldwide

11. Finextra – Open banking: A 2019 summary

12. Next Digital Finance (ndgit) – Open banking APIs worldwide

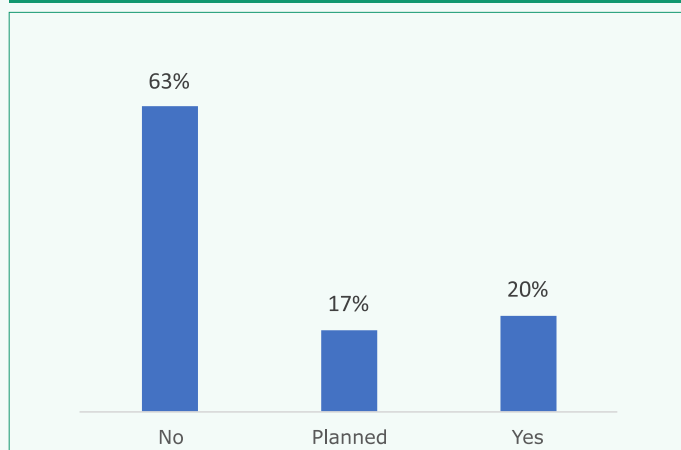


Source: ndgit (Next Digital Finance) – Open Banking APIs Worldwide

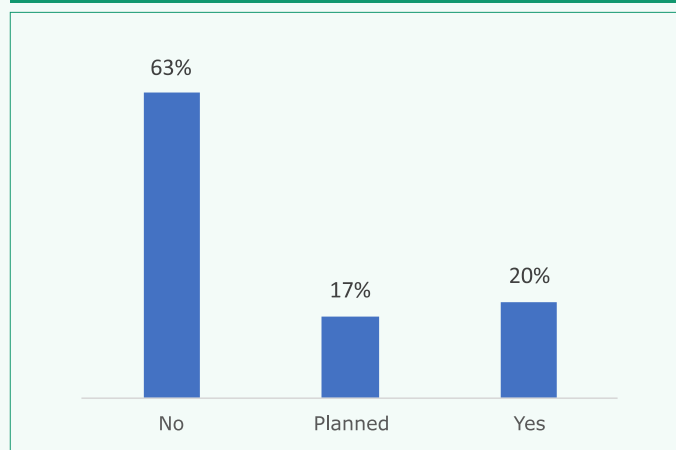


Global status of Open APIs

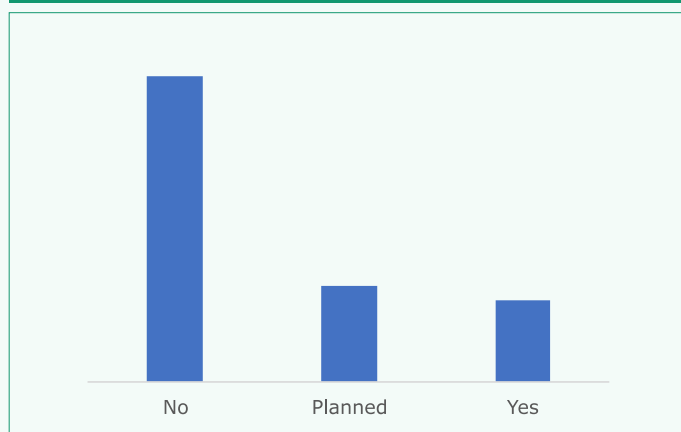
API prescribed by regulators



Standardisation initiatives present

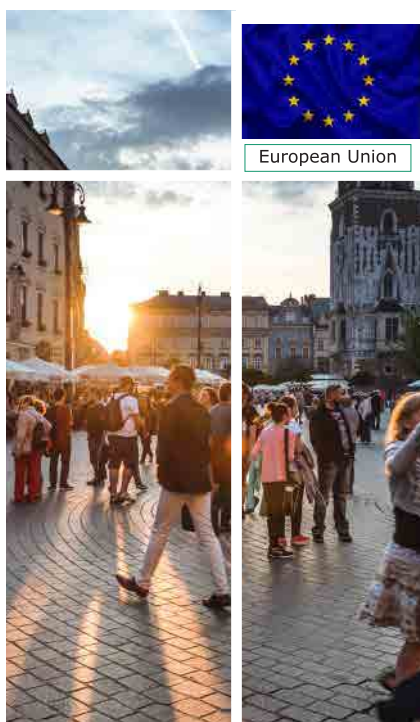


TPPs regulated



Source: ndgit (Next Digital Finance) – Open Banking APIs Worldwide

European Union



The drafting of the second payments services directive (PSD2) in 2015 initiated the open banking wave in Europe. PSD2 stipulates the guidelines for sharing banking data of consumers with third-party providers (PISPs and AISPs). The directive was targeted at improving the state of competition for payment service providers in the market, making payments more safe and secure – ultimately protecting consumers.

PSD2 provides the guidelines for banks, account-holding payment service providers to grant authorized PISPs, and AISPs secure read and write access to customers account data through Open APIs, following request and due consent from customers.

The European Banking Authority (EBA) plays a lead role in the implementation of PSD2 across Europe, issuing guidelines and recommendations to stakeholders through its Regulatory Technical Standards (RTS). Within the EU, different markets are allowed to voluntarily design their own open interfaces. Therefore, several European working groups have been developing API standards. The most successful is the Berlin group – covering 78% of all European banks, its framework provides the mostly widely used standard, followed by the UK open banking. The standards developed across Europe have been characterized by greater flexibility in technical implementation.

The UK



In terms of Open Banking implementation globally, the UK is considered ahead of the curve, being the first country to develop open banking standards. The implementation of the Open Banking Standard by the UK in January 2018 was a response to a report by the Competition and Markets Authority (CMA), highlighting the lack of competition that would stimulate growth amongst the big banks and emerging players in the financial services ecosystem.

The CMA report required the big banks to provide upon request, access to customer's data via a secure and standardized form. The Open Banking Standard accelerated the EU payment services directive (PSD2) by specifically requiring banks to provide the access to third parties via APIs. In the UK, third parties (AISPs or PISPs) are authorized and regulated by the Financial Conduct

Authority (FCA). They are also enrolled in the open banking directory. The CMA set up the Open Banking Implementation Entity (OBIE) to drive the delivery of open banking in the UK. As part of its responsibilities, the OBIE;

- Creates messaging standards for open banking
- Determines the specifications for open banking APIs
- Maintains and manages the open banking directory
- Produces the guidelines for the emerging open banking ecosystem
- Manages complaints and disputes
- Develops the security architecture for open banking

OBIE is funded by the nine largest banks in the UK and governed by the CMA, the Financial Conduct Authority (FCA) and Treasury.

Asia



Singapore

Singapore is one of the jurisdictions that has taken the market-driven approach to developing Open Banking. Some of the key developments promoting Open Banking in Singapore within the past few years are outlined thus:

- In 2016, the Monetary Authority of Singapore (MAS) in collaboration with the association of banks in Singapore released an API playbook, however taking a voluntary approach to its adoption. The standard, which benefits from the national registration identity card (NRIC) system, is based on OAuth 2.0 and OIDC.
- All open APIs available in the financial services industry in Singapore are catalogued in an API register. Some of these APIs include transactional APIs which facilitate transactional services for payments, funds transfer, etc. and product APIs which provide

information such as financial product details, interest rates, branch/ATM locations, etc.

- A Fintech regulatory sandbox supported by the MAS allows Fintech innovators and financial institutions to conduct experiments on new product/service offerings
- There are open data initiatives by financial institutions, which enable third-party providers to access APIs, thereby facilitating integration. For example, DBS established the world's largest API developer platform in 2017 with 155 APIs at launch across several functionalities such as real time payments, funds transfers, etc.
- As part of its commitment towards encouraging innovation and adoption of artificial intelligence and data analytics within the financial services space, the MAS launched an SGD 27 million grant.

Hong Kong

In Hong Kong, the Open API Framework as introduced by the Hong Kong Monetary Authority in July 2018 cuts across 4 phases, laying out the process and timelines for deploying open APIs. The first phase touches on banks publishing Open APIs for third-party providers to access 'read-only' information on products and services. Phase 2 covers processing applications for financial products while Phases 3 & 4 touch on individual account information and transactions respectively.

Japan

Unlike other jurisdictions where regulations drive the Open Banking evolution, the approach in Japan has been collaborative with the government showing commitment towards supporting innovation by Fintechs and promoting adoption of open APIs by banks and credit card companies. In 2017, the Japanese Banking Act introduced a framework for electronic payments intermediate service providers – forecasting that at least 80 banks will open their APIs by 2020. By 2018, the Japanese Banking Act was amended to establish open API architecture between Fintechs and financial institutions. The amendments are:

- Introduction of a system that mandates Electronic Payment Intermediate Service (EPIS) providers to register before carrying out an EPIS
- EPIS providers are mandated to have an executed contract with financial institutions before providing EPIS to customers
- Financial institutions are expected to publish the standard requirements which EPIS providers must satisfy before contracting with them
- Financial institutions seeking to contract with EPIS providers shall develop a system for the introduction of open APIs by June 2020

India

In India, the government has introduced several measures to encourage competition and growth across industries including the banking sector. For example, the government introduced an API framework known as "IndiaStack" which enables governments, businesses and developers to access a technology platform via the Aadhaar national identity system. In addition, the Reserve Bank of India through the National Payments Corporation of India (NPCI), established an instant real-time payment system known as the "Unified Payment Interface" (UPI) in 2016. UPI facilitates inter-bank transactions through a robust API framework. Integration of the API framework with the Aadhaar national identity system in India's case provides a digital identity solution which is absent in most European and North American jurisdictions. As of March 2019, UPI was already in use by 142 banks, accounting for just under 800 million transactions a month with combined value of US\$19 billion.

In November 2019, the open banking journey in India recorded a watershed moment with the announcement of the roll out of the first set of technical specifications for the "Account Aggregator" (AA) system by the Reserve Bank of India. The Account Aggregator system is an unprecedented collaboration between India's top banks and the Reserve Bank of India targeted at redefining customer access to data with the aim of improving financial inclusion and access especially amongst India's poorest population who are mostly excluded from the financial mainstream. According to Economic Times India, "the AA ecosystem would be a platform for financial services companies to reach out to the end consumer to seek consent before using their personal data to optimize their product offerings"¹³. The consent generation and data flow between information providers (banks, insurance companies, etc.) and information seekers (Fintech lenders, etc.) would be mandated by entities called "Non-Banking Financial Companies" Account Aggregators (NBFC-AA) through a network of APIs.

13. Economic Times India – Tech norms for account aggregator system out



The Americas



US



Canada



Brazil



US

The US's bank payments and interoperability association, National Automated Clearing House Association (NACHA), have championed the move towards an open banking-style system in the US. In 2017, NACHA in collaboration with the API standardization Industry Group (ASIG), announced the development of several API use cases, focused on three areas;

- Fraud and risk reduction
- Data sharing
- Payments access

Additionally, in 2017, the Consumer Financial Protection Bureau released data sharing principles, encouraging banks to introduce APIs for data sharing. This was a rather facilitative than a mandatory approach. In 2018, NACHA joined forces with the IFX forum (now Afinis) to publish an implementation concept for RESTful APIs. According to Afinis, the standardized APIs should cover the following functionalities:¹⁴

- Transaction status retrieval
- B2B billing interoperability
- Payment initiation

They have also deployed a sandbox including a developer portal.

Overall, the US does not have a legally prescribed approach to open banking yet. Instead, the market is driving efforts to roll out open banking across the banking industry. Individual banks now provide APIs on their developer portals. The development of open banking in the US is hinged on the readiness of banks to open their data to third-party providers.

Canada

Although Canada does not have an open banking standard in place yet, there are banking and regulatory efforts towards designing an API standard. In 2018, the government of Canada announced its plan to commence a consultation to review the merits of Open Banking for the banking sector. Following this announcement, the Minister of Finance appointed an advisory committee on Open Banking to facilitate the consultation. By June 2019, the standing senate committee on Banking, Trade, and Commerce released its report entitled "Open Banking: What It Means for You."¹⁵

The report included several recommendations articulated to lay the groundwork for unpacking Open Banking in Canada. The expectation is that Canada's open banking strategy will explore ways to strengthen user rights through a customer-consent model for data transfer, risk management through common security standards and the relevance of data-sharing policies in the context of Open Banking.

Mexico

Mexico adopted the regulatory-driven approach to unveiling Open Banking. In March 2018, the law regulating Financial Technology Institutions (The Fintech Law) came into effect – providing stronger regulatory guardrails for Fintechs and mandating Open Banking.

Unlike the UK, where the need for increased competition is a significant driver for Open Banking, increased innovation and financial inclusion are the major drivers of Open Banking developments in Mexico. As the government finalizes the overall approach for Open Banking implementation, it is most likely that the initiative will be managed and regulated by the National Banking and Securities Commission (Comision Nacional Bancaria y de Valores or CNBV)

14. Next Digital Finance – Open banking APIs worldwide

15. Senate of Canada – Open banking: what it means for you

Brazil

In Brazil, some banks already provide open APIs covering a range of services. For example, Banco Brasil – the bank already provides a third-party developer portal with sandboxes. Functions included are account information, credit card, investment, and payments.

From an industry wide perspective, deliberations are still ongoing on the exact model to be pursued. In April, the central bank announced the main guidelines for open banking. By 2020, all banks would be obliged to open up

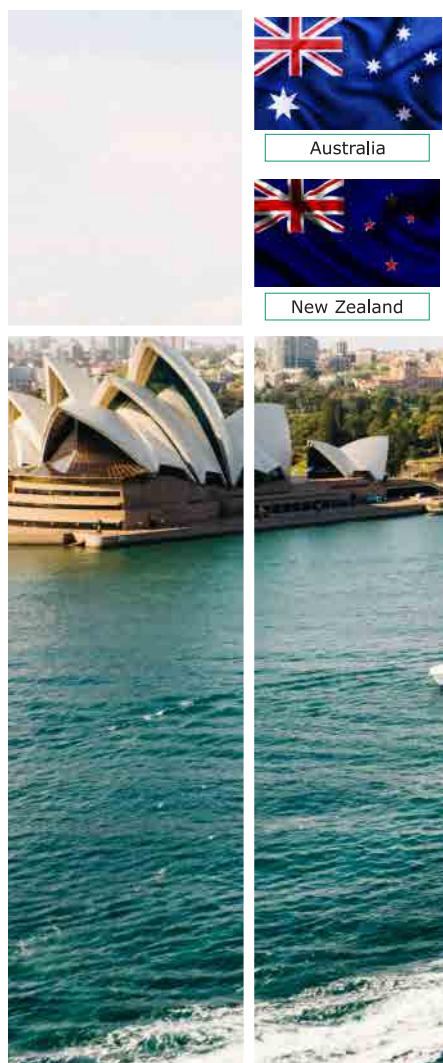
to third-party providers in a multi-stage process. The guidelines cover the following;¹⁶

- Account access functions
- Payment triggers
- Locations of service points
- Loan and customer data

The regulation aims beyond the demands of Europe's PSD2.



Australia and New Zealand



Australia

Open Banking in Australia is driven by the Consumer Data Right (CDR) regulation, which has a broader focus than a similar jurisdiction like the UK – covering other industries such as energy and telecoms. The focus of the Australian Open Banking implementation is on data and not payments. Compared to the PSD2, the requirements for Australia's open API based services cover a wider scope. The regulation recognizes consumers' authority over their data as sovereign – they decide which of their accumulated data to share and with which outside party.

The Australian Competition and Consumer Commission (ACCC) plays a supervisory role in the implementation while collaborating with other stakeholders such as the Australian Payments Network. The ACCC had initially planned the launch of the Consumer Data Right (CDR) for early 2020. However, due to the need to ensure robust privacy protection and information security, the ACCC made updates to the implementation timeline for the Consumer Data Right (CDR), moving

the deadline from February to July 2020¹⁷.

Therefore, by July 1, 2020, the four largest banks in Australia will be required to provide open APIs on credit and debit cards, prepayment, and transaction data to authorized and accredited service providers.

New Zealand

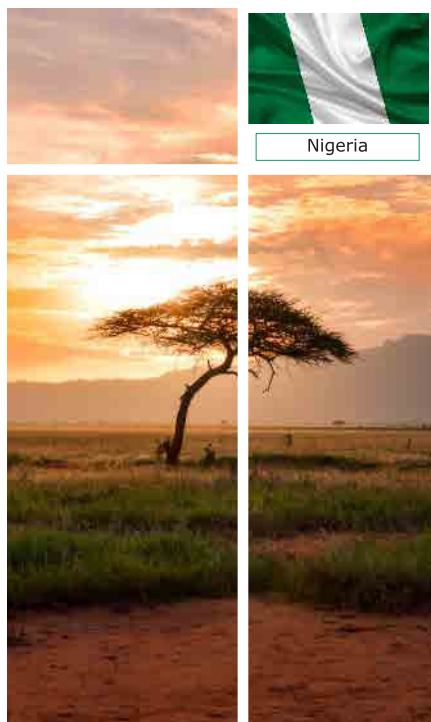
Open Banking efforts in New Zealand have been the market or industry-driven with the government providing a nudge in the right direction. Hence, there is an environment of collaboration between major players in the market, facilitated by Payments NZ. The pilot phase of the open banking implementation in New Zealand, launched in March 2018, is focused on account information and payments, executed under the guidance of an Open Banking working group.

A key driver of the move towards Open Banking is the need for greater innovation in the banking sector – leading to the emergence of new solutions and alternatives, more peer-to-peer activity etc.

16. Next Digital Finance – Open banking APIs worldwide

17. ACCC – CDR timeline update

Africa



Nigeria

Nigeria

Nigeria stands as the front liner in the open banking revolution in Africa. Championed by the Open Technology Foundation (OTF), a not-for-profit organization established in 2017, open banking has taken off, driven by the need to reduce time to market for financial products, reduce barriers to innovation in the financial ecosystem and reduce the level of financial exclusion.

The organization is poised to galvanize banks, Fintechs and other relevant stakeholders in the Nigerian banking ecosystem to adopt open standards for API implementation. The identification of open banking as one of the focal global trends to be

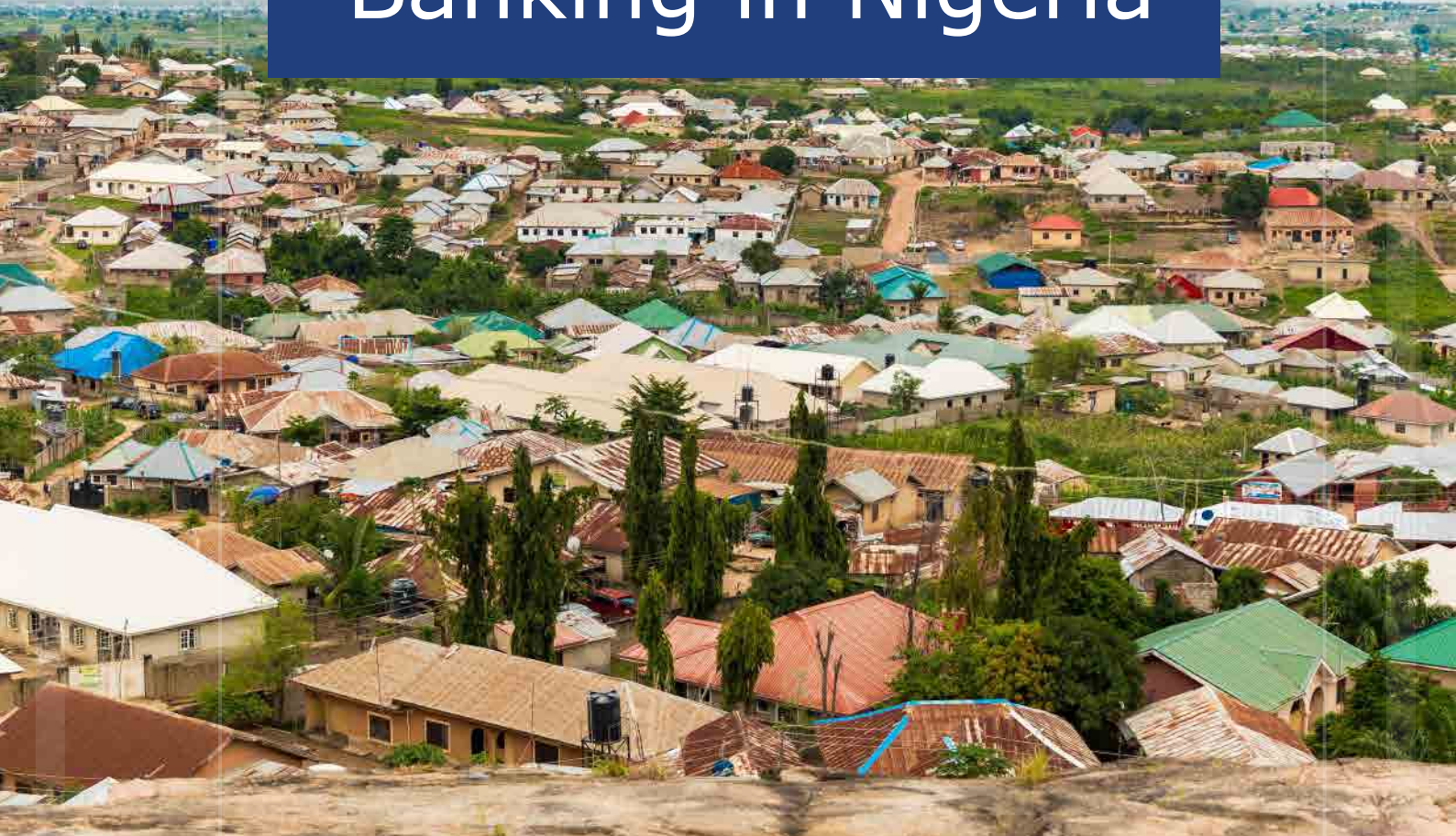
considered for the Payment Services Vision 2030 by the Central Bank of Nigeria is a testament to the efforts of OTF as an advocacy organization, driving innovation in the banking sector. As part of the journey towards open banking in Nigeria, key assets to be delivered are;

- Technical standards
- Security guidelines
- Customer experience guidelines
- Operations guidelines

Notable amongst the milestones achieved by OTF in 2019 is the documentation of open banking standards and deployment of API sandbox.



The Nigeria Context - Open Banking in Nigeria



The Nigeria Context - Open Banking in Nigeria

Developments in open banking in Nigeria have been private sector-led – championed by the Open Technology Foundation, otherwise known as Open Banking Nigeria. Established in 2017 as a non-profit organization, Open Banking Nigeria is a collaborative effort by key players in the financial services space comprising banks, Fintechs, professional services partners, etc. aimed at unlocking untapped potential in the market by fostering new forms of partnership in an open ecosystem.

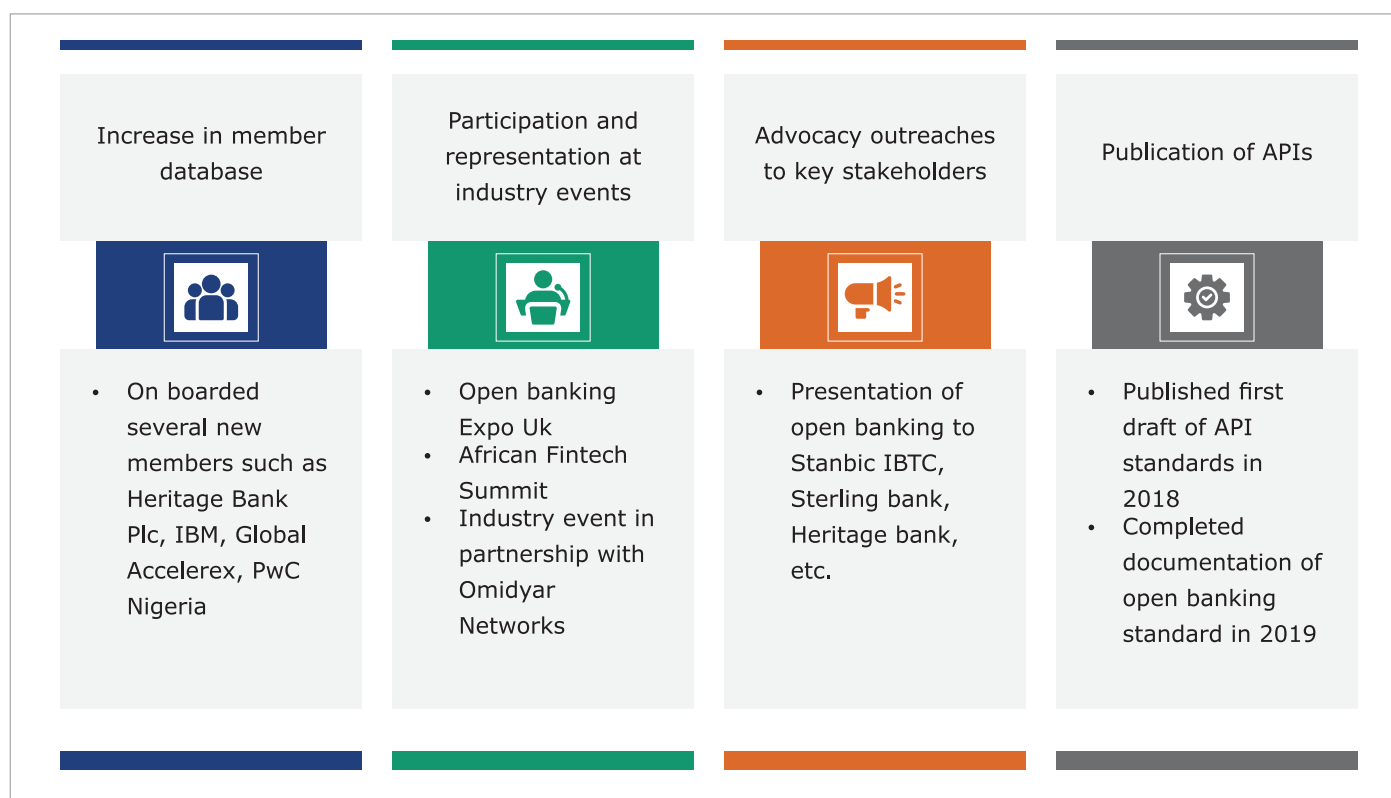
Open banking Nigeria was established to:

- Promote the adoption of open banking standards by industry stakeholders and foster innovation in the financial services industry
- Work collaboratively with banks, Fintechs and other stakeholders to develop open banking API standards

- Define an open set of APIs in designing the API standards
- Provide a sandbox and other testing tools for certification

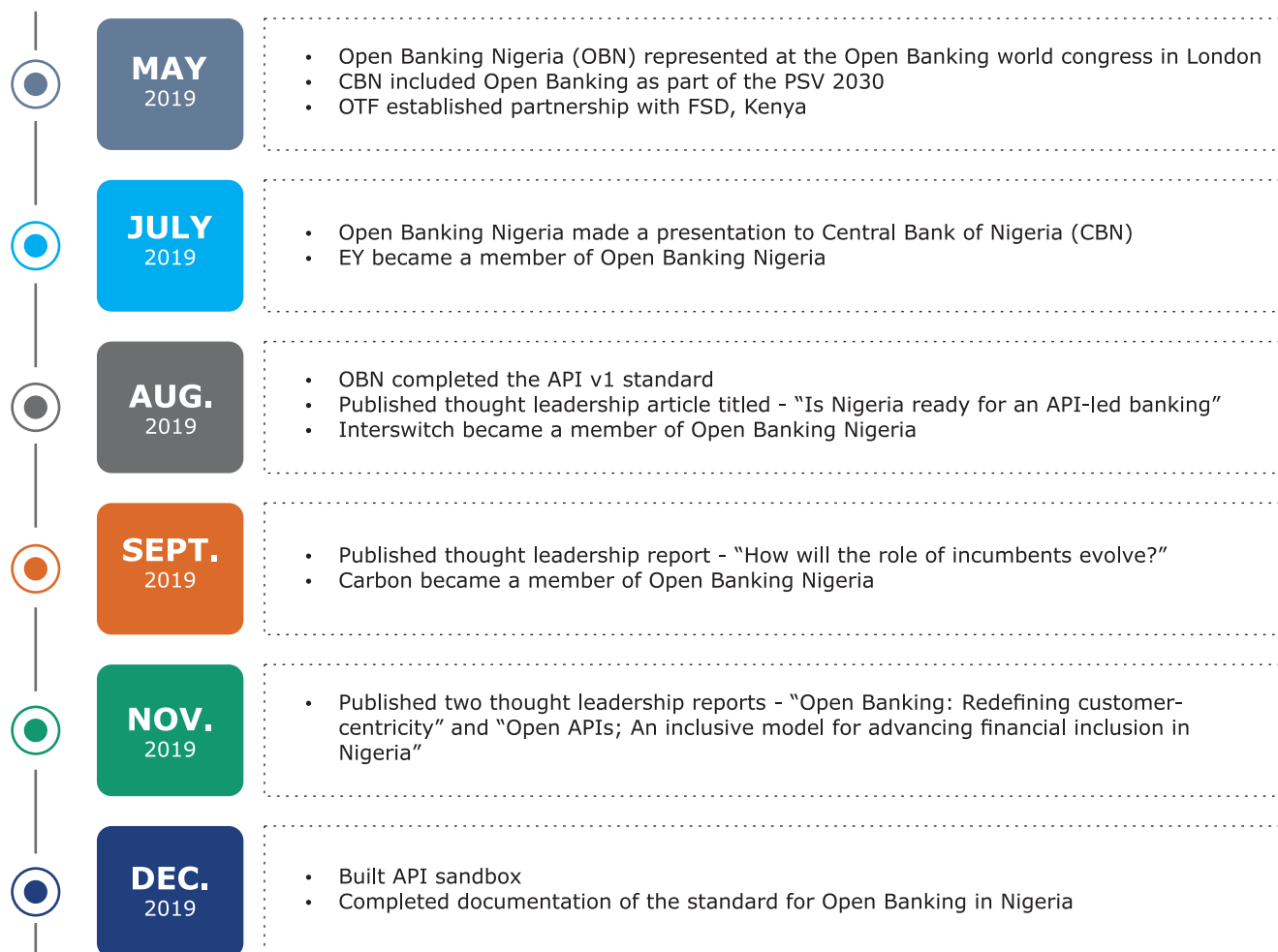
Open Banking Nigeria proposes a non-proprietary, non-partisan API standard, which will define a framework for API integration, data accessibility, and security.

Since its establishment, Open Banking Nigeria has recorded significant milestones that have positioned Nigeria as one of the frontier markets in open banking across Africa. The efforts by the foundation to advance the case for open banking are demonstrated by:



Open Banking Nigeria Milestones in 2019

Open Technology Foundation made significant progress towards advancing open banking in Nigeria. Some key milestones recorded in 2019 are:



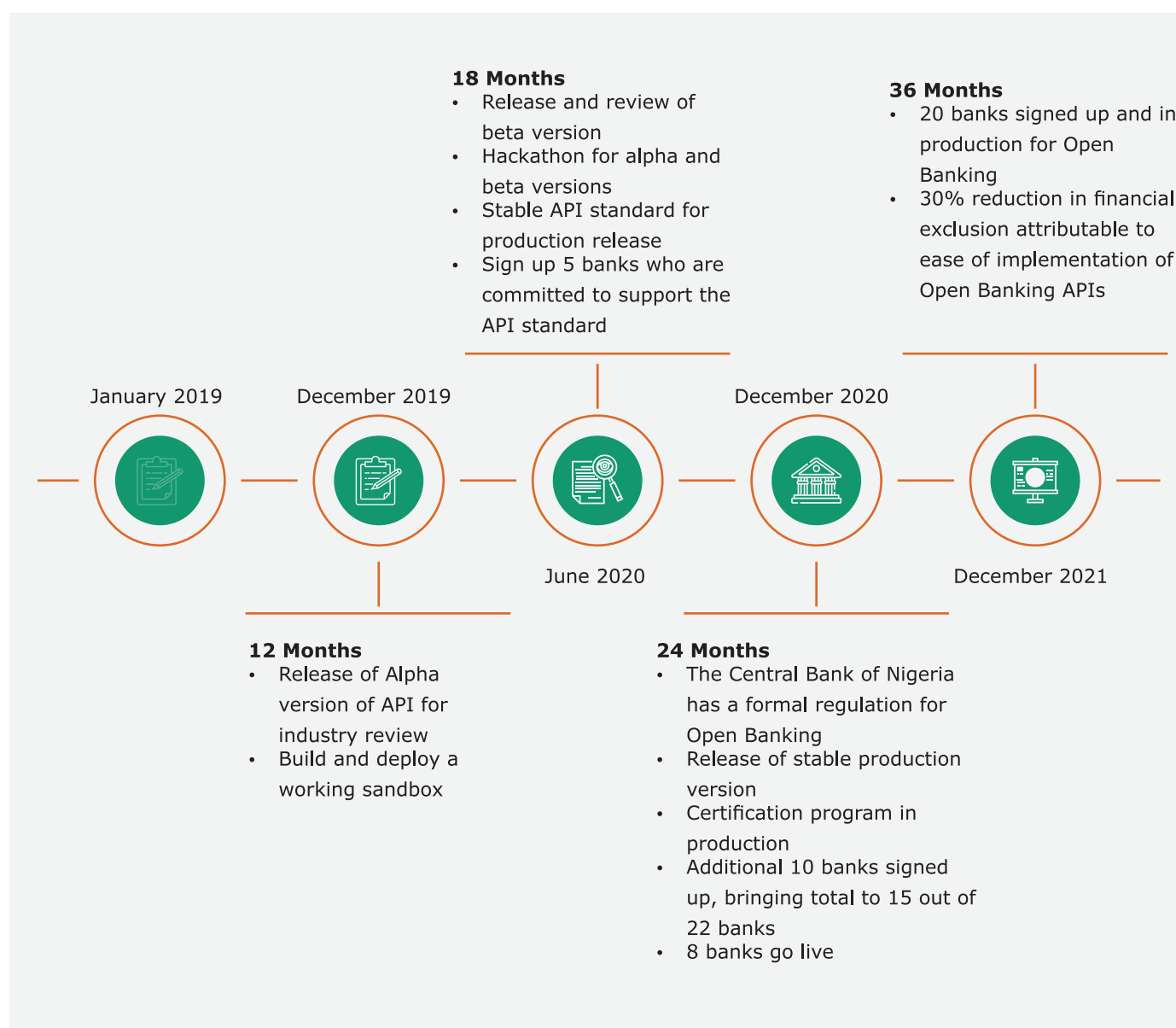
The Future of Open Banking in Nigeria – 2020 and beyond



With open banking advancing steadily around the world, Open Banking Nigeria is poised to achieve set objectives in the near term including:

- Signing up more banks and Fintechs
- Collaborating with the Central Bank to produce formal open banking regulation for Nigeria
- Releasing stable production version of APIs

The schematic below provides a high-level view of the Open Banking Nigeria roadmap.



Since inception, the activities of Open Technology Foundation (OTF) have laid the groundwork for a wide adoption and implementation of open banking in Nigeria. To achieve full potential, there is need for intentional efforts by all stakeholders especially from a regulatory perspective to get the basic plumbing of the open banking system working in Nigeria.

Given the pace of developments in open banking, it is clear that open banking is an inevitable phenomenon. Hence, the big question all stakeholders face is: what are the critical steps must be taken to make the most of open banking in Nigeria? The answer lies in an industry wide collaborative approach towards shaping the strategy and direction of travel for open banking in Nigeria.



The technologies behind Open Banking Nigeria

The technologies behind Open Banking Nigeria

Guiding principles



The guiding principles for the design of the open banking framework are informed by the core objectives of open banking in Nigeria – tackle the barriers to innovation, reduce time to market and improve financial inclusion. Configured to cater to the peculiarities of the Nigerian operating environment, the APIs are designed to simplify and structure access to financial services for both supply and demand sides of the ecosystem while ensuring the highest standards of consumer data protection and systems security.

To deliver on its purpose, the open banking system design shall focus on the following guiding principles as the cornerstone of the emerging ecosystem

- **Non-regulatory:** The framework is not designed as a regulation; rather it is a common standard for ecosystem participants to adopt. Built on transparency, each entity would have to engage the CBN directly, if needed.
- **API Standard:** The standard is open and non-proprietary, specifying the essential requirements that will drive interoperability within the ecosystem. The standards are driven by specific needs of the industry stakeholders. To promote adoption across all levels, the APIs are simple and useful.
- **Security:** The open banking system should be designed to provide a

single framework built from the ground up, comprising standard security features and processes, which are simple and adaptable, fit for financial-grade services. This makes for uniform implementation, thereby reducing the risks to account providers and third-party providers.

- **Risk Based:** Apart from a minimal set of required functionalities that are crucial and compulsory, participants in the ecosystem should be allowed to implement the API functions in line with their varying appetites for risk.
- **Customer Experience:** Customer/end-user needs and concerns shall take a central position in the emerging ecosystem. This highlights the need for the open banking framework to promote transparency, privacy, security, choice and control for customers. In addition, the design should be simple and efficient to promote seamless user-experience and provide lasting value to customers
- **Operational Guidelines:** As a guiding principle, the operational guidelines will inform the service level agreements across the network that will drive consistency in processes. It determines the considerations for stakeholders in establishing metrics, connections, fees and charges, etc. across the ecosystem.

APIs and Documentation

API Architecture

All APIs within the open banking framework consist of RESTFUL micro-services that support JSON payload formats. The APIs are grouped into four (4) categories based on their functions:

- Registration APIs
- Meta Directory APIs
- Open Data APIs
- Payment APIs

Registration APIs

This group lists APIs that manage access and permissions within each AP domain. The registration framework requires TPPs and individual consumers to be registered and subsequently access just the services that have been permitted with accompanying proof of consent. TPPs may apply this set of APIs to onboard with APs or get setup by the APs manually. APs are to perform due diligence after which they can approve TPP registrations, allowing access to groups or specific APIs that the TPP is permitted on behalf of customers. Registration of TPPs provides system-level credentials to the TPP application necessary to access other API categories in the framework.

Customers accessing their accounts through registered TPPs must be registered with their APs by creating TPP specific registration records. Registration for consumers provides tokens that permit only that TPP to access the user-specified Account Number within the AP's domain. Also at the user level, each registration record should specify the APIs and functions the user has provided consent to the TPP to access. APs are at liberty to permit,

deny or revoke access as deemed necessary. This is further elaborated in the Security guidelines and API specifications.

Meta Directory APIs

This group contains APIs that provide cacheable listings including but not limited to financial institution names and assigned codes, product and service identifiers, response code directory and performance information. Data provided by these APIs change less frequently and can be polled on a scheduled basis. Some of these are also static and provided within this documentation.

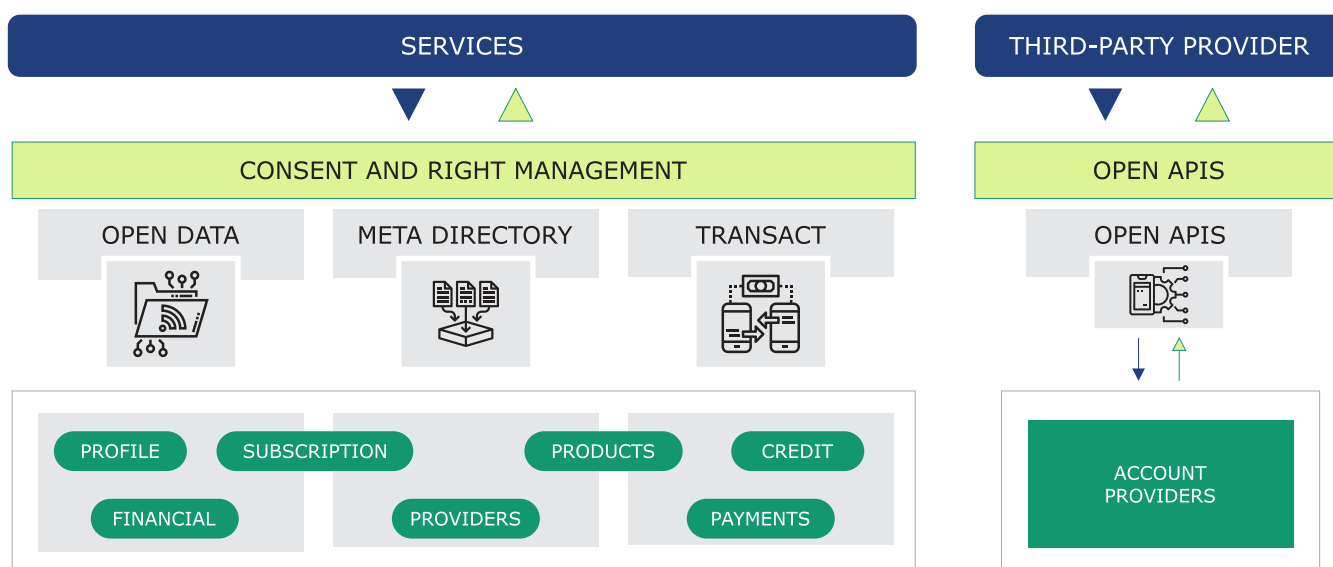
Open Data APIs

Open Data APIs is a collection of APIs that provide access to financial institution data such as Channel Information (i.e. ATMs, POS, Bank Branches), Consumer information e.g. Accounts balances, BVN, Transaction History, Indebtedness and debt profile/history, standing instructions etc. TPPs should be granted access to their required financial data object APIs by APs at the institution level and also per-consumer.

Payment APIs

This collection of APIs result in the movement of financial value either per transaction (as in the case of individual payments) or in-bulk (e.g. inter-member settlements, disbursements, single debit-multiple credit etc.)

The Open Banking network is expected to complement other payment networks. Participants connections to NIBSS Instant Pay, switching networks, service and utility provider payment aggregators serve to enrich the Open Banking offering, creating an ecosystem of boundless connectivity and robust possibilities.



API Directory

Registration	Meta Directory	Open Data	Transact
<ol style="list-style-type: none"> 1. Get Information About Authorization 2. Authorize 3. Obtain Token 4. Introspect Token 5. Revoke Token 6. Logout 7. Get Signing Keys 8. Get User Information 	<ol style="list-style-type: none"> 1. General Information About Bank 2. Version Information 3. Get Products 4. Get Performance 	<ol style="list-style-type: none"> 1. Branch 2. ATM 3. POS 4. Billers 5. Consumer 6. Accounts 7. Transactions 	<ol style="list-style-type: none"> 1. Direct Debit 2. Bill Payment 3. Transfer (intra) single 4. Transfer (inter) single 5. Transfer (intra) multiple 6. Transfer (inter) multiple 7. Hold Funds 8. Release funds 9. Name Validation
<p>What may be missing:</p> <ol style="list-style-type: none"> 1. Register/Provider 2. Register/Consumer 3. Permissions/Consumer 4. Permissions/Provider 5. Strong Auth 	<p>What may be missing:</p> <ol style="list-style-type: none"> 1. Fraud Categories 2. Bill Payments Categories 3. Generichashmaps 4. Institution specific Hashmaps 	<p>What may be missing:</p> <ol style="list-style-type: none"> 1. Performance 	

Use-cases and Value Proposition

The open ecosystem creates new patterns of collaboration in the industry that will inherently drive innovation. As a result, we expect to see propositions along these lines:

1. Financial Inclusion: Open APIs will allow FPSPs build inclusive products, typically over digital channels, for the financially excluded and most vulnerable members of the society. Thinning out the financial exclusion indices within any economy is expected to have multi-faceted effects to improve the socio-economic wellbeing of its citizens.

2. Data: Seamless access to financial data across the entire banking ecosystem means primary data such as average income and consumption expenditure over a period can be applied to estimate creditworthiness of non-salary earners for non-collateral loans. Secondary data such as user spend analysis opens a new horizon of data services to deduce consumer choices and provide offerings that are more streamlined. Artificial Intelligence and Big data management opportunities are likely to emerge from these new horizons.

3. Access: Consumers are expected to experience broader means and channels of access to finances which would vary in degree of ease and sophistication. We expect to see emerging products and technologies in communication, identity verification and authentication, access and consent management take center stage in expanding the net of inclusion. While closed financial

payments systems provide little incentives for participants to undertake these investments independently, Open Banking players can bring this to fruition by leveraging services (in whole or part) provided by other participants within an open ecosystem.

4. Provider Selection: Customers will have access to a network of providers to select the best fit for their needs with little to no barriers to mobility. This increased competition should drive prices of primary financial services downwards and ultimately, secondary and more sophisticated financial services such as data-based offerings, asset refinancing, cross-selling etc. will serve as differentiating factors.

5. Transacting: The above scenarios are further entrenched by the innate mobility of funds within an open system where customers can allocate or move funds easily to their preferred providers. Payments or the activity of making a payment is expected to devolve into less of an activity and more contextualized to the particulars of a transaction.

6. Security: Open Banking simplifies integrating to legacy financial institutions by providing a single framework with standard security features and processes, apt for financial-grade services. This ensures a uniform implementation by APs, reducing the risks to both APs and TPPs if each party alternatively had to develop their own standards.



Open Banking Security Framework

The security framework within this standard cover:

1. Entity and User Identification and Verification
2. Permission Management
3. Data Ownership
4. Data Storage and Retention
5. Consumer Consent
6. Network or IP Transport Layer Security
7. Endpoint Security
8. Message Level Security

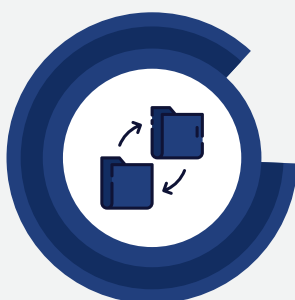
These elements are grouped into sections covering:

- Consumer Security,
- Data Exchange Security
- Data Management Security



Consumer Security

- Consent Framework
- Data Ownership



Data Exchange

- Network Security
- Endpoint Security
- Identity & Permission Management
- Message Security



Data Management

- Data storage
- Data retention

Some Open Banking User Experience Illustrations

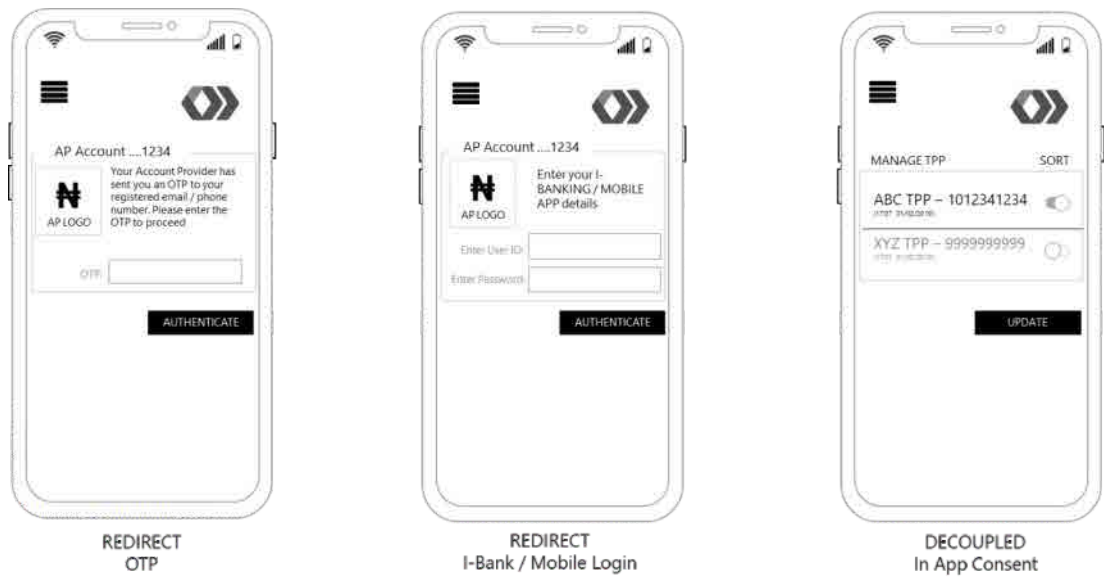
Mobile App Interface

Adding an AP account on the TPP Interface



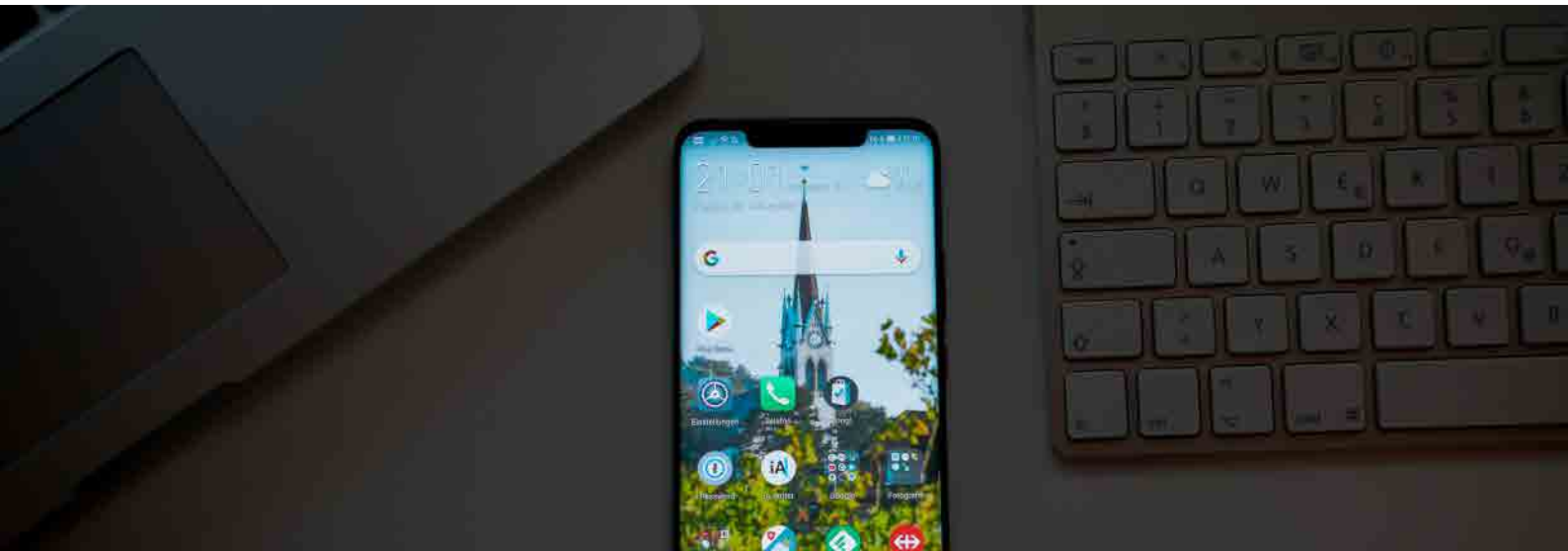
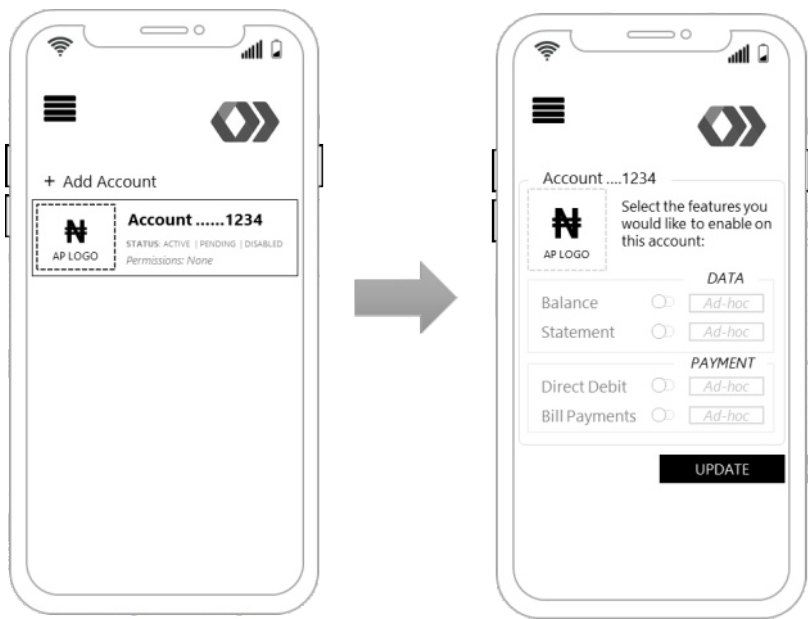
Authentication

Account holder authentication **options** on AP channel



Authorization

Account holder authorizing scope requests on AP channel



What the industry thinks about Open Banking

What the industry thinks about Open Banking

Fintechs

SystemSpecs



John Obaro
Founder and CEO
SystemSpecs Limited

Brief Profile

John is a die-hard advocate and promoter of indigenous software development initiative and a role model for promising and success-desiring young entrepreneurs.

Do you believe Nigeria is ready for Open Banking?

The significant growth, depth and level of reliability recorded in banking and e-payment ecosystem in Nigeria over the years are clear testament to the readiness of the country to embrace Open Banking.

How do you think Open Banking will transform the banking value chain?

Open Banking will undoubtedly re-define banking and indeed financial service delivery in general, by providing customers with more choices. It will also promote innovation and competition amongst Third-party Providers in the financial services sector. All of this culminates in an improved overall operational efficiency in the banking value chain.

Are Banking customers in Nigeria prepared to embrace Open Banking?

If the experience on the adoption of diverse e-payment products is anything to go by, banking customers in Nigeria are expected to embrace an Open Banking model that makes banking simple, convenient, affordable and reliable.

How do you think Open Banking will affect competition in the Nigerian Banking industry?

Some of the expected benefits of Open Banking include promotion of

innovation and intense competition among the Banks looking for customer patronage. These in turn will deepen the level of collaboration with innovative FinTech companies. Open Banking will create a more open playing field for all stakeholders. At the moment, customer's financial data are utilized only by financial institutions and a few others. With open banking, more Third-party Providers (TPPs) and even other financial institutions will be able to create value for consumers

What role does regulation play in Open Banking implementation in Nigeria?

Relevant and critical regulations aimed at maintaining orderliness and addressing the intended and unintended negative consequences of Open Banking are expected to be put in place by the regulatory agencies.

Opportunities

What are the opportunities that Open Banking will unlock in the Nigerian Banking industry?

Access to customer data will enable the creation of more competitive products and services. More players will also be able to enter the industry since the barrier is lowered. Cost savings for TPPs and new revenues for financial institutions.

What are the critical success factors for effective adoption and implementation of Open Banking in Nigeria?

Development and adoption of open APIs standards for all stakeholders is very vital. A regulatory framework to guide actions for players is equally necessary. The model to be adopted must also be simple, affordable, convenient, reliable, secured and capable of delivering quality value to relevant stakeholders.

Over 36% of Nigeria adults are financially excluded, what impact do you think adoption of Open Banking will have on the level of financial inclusion in Nigeria?

Open banking could engender the development of product and services that are targeted to customer in remote regions of the nation where banks are not available. For instance, most of the unbanked have access to mobile telephone lines. Therefore, financial services products that leverages Open Banking over this channel, will contribute towards improving the level of financial inclusion in the country.

What are the ways to build customer trust in an Open banking era?

The initiative have to be fully backed and championed as a CBN initiative. Past initiatives such as cashless policy, BVN registration that were backed by CBN gained traction among Nigerians. Adoption of high security standards, effective regulatory oversight, effective consumer protection mechanism and other measures aimed at managing risk exposures will promote customers' trust and confidence in an Open Banking era.

Who do you think will be the top winner in the Open banking ecosystem?

Customers will win as they will have more choices and improved customer experience. All stakeholders that deliver value and benefits to customers will be winners

alike. Whilst there is a tendency for some Banks to perceive open banking as a threat and wish to solely retain control of customer data, it is indeed a great opportunity to foster healthy partnerships with FinTechs and create innovative solutions that will enhance overall customer engagement.

Issues/Challenges

What are the potential issues that may arise following the adoption of open standards?

Cybersecurity threats, antitrust practices as some players may want to usurp the role of other players, direct access by TPP to customer data may mean that financial institutions that are not creating innovative products and services may lose certain customers. Financial institutions with legacy systems may require more time and agility to align to open banking APIs. Also, inadequate consumer education prior to adoption, may result in consumers not willing to give consent for their data to be shared.

What are some of the roadblocks you envisage with respect to open banking implementation in Nigeria?

Defining data ownership and scope of data usage by TPP. Defining liabilities/indemnities in the case of a breach.

Recommendations

What are the necessary steps to fast track stakeholder buy-in the movement for the adoption of Open Banking in Nigeria?

Regulating agencies to act as the anchor stakeholders and facilitate development of APIs standard. Regulating agencies to release a draft framework on open banking and obtain feedback from financial institutions, FinTechs and other industry players. Consumer education and awareness around open banking capabilities will make it more likely for them to consent for their data to be shared.



Professional Services Firms

Ernst and Young



Dapo Adewole
Partner & Technology
Consulting Leader
EY West Africa

Brief Profile

Dapo is responsible for leading the Technology & Digital Practice across Ernst and Young (EY) West Africa. Prior to joining EY, he was a Technology Executive at Accenture, with a focus on Financial Services. Dapo has spent over 20 years at Large System Integrators and had a 2 year stint in Banking

About Open Banking

We have seen recent developments in Open Banking around the world; do you believe Nigeria is ready for Open Banking?

Yes, Nigeria is ready for open banking but APIs (Application Programme Interface) for making payments and access to information will need to be standardized. In addition, all entities in Nigeria that subscribe to open banking would be required to comply with data regulations (mainly NDPR and GDPR)

Nigerian Banking has been ready for open banking because the benefits it provides is significantly more than the inherent risks. A few banks have already opened-up banking services that are used by third parties and FinTechs to create products. In addition, the regulators are fully aligned with this initiative, which supports the Payment Systems Vision (PSV) 2030.

How do you think Open Banking will transform the banking value chain?

Open Banking will create an API ecosystem where banks and other service providers (e.g. e-commerce, healthcare, transport etc.) are interconnected through open APIs to offer excellent customer experience by combining the digital services offered by multiple organisations. This will address the increasing and changing needs of customers by providing a multi- and cross-channel experience.

Banks will leverage open banking to generate new customer insights as well as providing an abundance of services in an agile manner. New revenue streams will also be generated from the new business model through monetization of APIs consumed by FinTechs, external partners, vendors, etc. in a more secure and less costly manner.

For banking customers, open banking through APIs will revolutionize the efficiency and speed at which payments are made by providing FinTechs easier and secure access to real-time data and

the ability to process transactions outside banking infrastructure.

Are banking customers in Nigeria prepared to embrace Open Banking?

To some extent Nigeria banking customers who are largely millennials have somewhat embraced "open banking" in its basic form. However, open banking will only succeed if it wins the trust of customers and makes them feel comfortable about sharing their data with third parties.

How do you think Open Banking will affect competition in the Nigerian banking industry?

Open banking will essentially bring about healthy competition in the Nigerian banking industry because banks that utilize API services will deliver excellent and innovative user experience that ultimately helps them grow and stay relevant in an era of digital transformation leading to increasing competition.

Banks that leverage open banking APIs will increase customer satisfaction, expand their product lines and distribution channels, provide better services and customer support, and continue to stay ahead of the curve.

What role does regulation play in Open Banking implementation in Nigeria?

Regulators and regulations protect customers (and financial institutions) from risks of losses or financial fraud. In matured markets like the UK, Open banking is getting a boost from regulators and industry groups. The Competition and Markets Authority (CMA), responsible for strengthening business competition and preventing and reducing anti-competitive activities, rolled out mandatory API specifications for payment initiation and customer account information. It also mandated standardized formats and coding languages for APIs and is supervising third-party providers (TPPs) via a TPP register.

This regulatory activity has spurred a thriving FinTech industry, a wave of bank and FinTech partnerships and investments, and the introduction of a first generation of open banking products and services.

Regulatory involvement and consumer protections helps put customers at ease and allow open banking adoption to take off, potentially creating an adoption spike in the not-too-distant future.

Opportunities

In your opinion, what are the opportunities that Open Banking will unlock in the Nigerian banking industry?

Open Banking will provide a platform that will not only drive collaboration but also competition amongst financial services. This will inspire increased innovation and better products and services for customers at even competitive rates.

Some opportunities where Open Banking can be leveraged include Digital identity verification, or comparison sites providing information to customers across different Third-Party Service Providers. Other opportunities include; personal finance management, debt management, single account view etc. New revenue streams would also emerge for banks by charging Third-Party providers for customer data access.

What are the critical success factors for effective adoption and implementation of Open Banking in Nigeria?

We currently have supporting capabilities and tools within the sector to build and implement Open APIs which would ease the adoption of Open Banking in Nigeria. There would however be a need in the industry to clearly define security measures and integration standards that Open Banking services must adhere to for Open Banking adoption.

At present, common standards that govern the exchange of information across financial institutions within Nigeria have not been defined. Banks are developing their own view and strategy on exposing data in line with other under-pinning regulatory requirements for data protection. To succeed, players within the Financial services eco-system must also adopt openness and transparency in accessing the provided services. A bank for instance must ensure that a customer has consented to having their data shared with a third-party provider.

Another critical success factor will revolve around the right technology infrastructure - Are they secure? Do they have the right amount of support?

In the end, true success in open banking will be achieved if (and when) providers can ensure customers satisfaction through continuous innovation and requisite trust and security around the services they provide.

Over 36% of Nigerian adults are financially excluded, what impacts do you think adoption of an Open Banking system will have on the level of financial inclusion in Nigeria?

Open Banking will drive competition within financial services. This means reduced banking rates and reduced banking rates means more inclusiveness. This will further spur financial service providers to be creative in reaching customers with little or no access to the financial services.

Leveraging services developed by Fintechs and other financial service providers for example mobile money and via Open banking by extension, unbanked Nigerian adults can become financially included.

What are the ways to build customer trust in an Open Banking era?

Realizing the true potential of open banking – both for customers and financial institutions – hinges on gaining customer trust. Regulators can play their part by building environments that support innovation and reassure customers, but it is ultimately the ability to engage customers that will determine whether open banking succeeds.

Customer education about risks and benefits can help accelerate adoption – but perhaps the greatest lever to shift consumer sentiment will be showing customers the payoffs that open banking can bring. As seen with the adoption of popular social media platforms, people will willingly share information if they perceive benefit and if they can do it via easy-to-use, fun apps. Innovation by financial institutions, particularly in market-driven environments such as Nigeria, will convince customers of the value of open banking and accelerate its adoption.

Also, transparency, which is one of the foundations of traditional banking, would play a key role in building customer trust. Financial institutions adopting Open Banking should ensure adequate end-to-end verification mechanisms and stringent identity management procedures are put in place to build trust.

With the implementation and use of BVN for digital identification within Nigerian banks, we have a springboard for achieving transparency and digital identity management in open banking era.

Who do you think would be the top winner in the Open Banking ecosystem?

In theory, with customers becoming able to share their data with trusted third-party providers, fintechs and other financial service providers become the obvious winners using this opportunity to sell its products and services to Bank customers. This will lead to an increase in new innovative entrants and intermediaries. However, incumbents and Banks can also leverage said trend to strengthen their position by offering these services themselves.

Ultimately, customer is king, and customers will remain the biggest winners with each new digital and technology trend within the industry and beyond. Customers will have access to their various bank accounts and financial accounts in just a single app. This will enable easy manipulation and transaction across different interfaces.

Issues/Challenges

What are the potential issues that may arise following the adoption of open standards?

The major issues that could impede open standards is largely cybersecurity and fraud due to connections and access point established with third parties that could lead to potential loss of data or unauthorized access to data.

Another pitfall for open standard is data protection where banks need to be proactive in handling data privacy related issues and be discrete in providing access to customer's sensitive data such as account balance, account history, bio data, etc.)

Finally, a lack of education and awareness around open standard's capabilities could make customer less likely to consent to their data being shared, limiting banks and FinTechs ability to innovate.

What are some of the roadblocks you envisage with respect to Open Banking implementation in Nigeria?

Some Banks are likely to be apprehensive to open up their data and being cautious of inability to control their data and subsequently their customers. They want to have some comfort before embracing the open banking concept.

Another hurdle is probably consumer sentiment. There is still a reluctance among many consumers to share their data, which is partly a cultural mindset, but also a reaction to several massive data breaches. Regulatory involvement and consumer protections may help put consumers at ease and allow open banking adoption to take off, potentially creating a hockey stick effect in the not-too-distant future.

What are the necessary steps to fast-track stakeholder buy-in into the movement for adoption of Open Banking in Nigeria?

To fast-track stakeholder buy-in, requisite disclosure, privacy and data protection regulations / policies would need to be put in place and made binding to mitigate inherent risks and concerns with open banking adoption.

These regulations should define industry standards that MUST be adhere to by financial institutions coming into the Open API ecosystem.



Professional Services Firms



Oluwole Oyeniran
Technology Strategy &
Transformation Leader
Deloitte West Africa

Brief Profile

Wole is the Technology Strategy & Transformation Leader for Deloitte in West Africa. He is responsible for enterprise solutions with focus on system implementation.

With over 20 years professional consulting experience, Wole assists clients understand and use technology solutions to solve business problems, and transform ways of working.

He has gained and imparted significant knowledge from developing strategy to complex technology implementation across multiple countries in Africa.

He is a member of the Governing Council of the FinTech Association of Nigeria.

About Open Banking

We have seen recent developments in Open Banking around the world; do you believe Nigeria is ready for Open Banking?

No, Transparency and openness is not part of our psyche as a nation. We still mistakenly believe that there is value in secrecy, and what we each do is so unique and special that any hint of a revelation will compromise our competitive advantage.

How do you think Open Banking will transform the banking value chain?

It will convert banks to be more akin to Infrastructure providers. Consumer choice will increase and the overall sector will grow.

Are banking customers in Nigeria are prepared to embrace Open Banking?

They do not care, as long as there needs are met.

How do you think Open Banking will affect competition in the Nigerian banking industry?

Hard to say.

What role does regulation play in Open Banking implementation in Nigeria?

That is the only way it can move forward. The Bank's will not of their own accord volunteer to open up.

Opportunities

In your opinion, what are the opportunities that Open Banking will unlock in the Nigerian banking industry?

It will enable accelerated Fintech innovation. Cobbling together APIs is much faster, cheaper and more efficient than building all the services from scratch. That frees of capacity to create something truly distinct on top of that.

What are the critical success factors for effective adoption and implementation of Open Banking in Nigeria?

- Regulation
- Enterprise Architecture

- Compliance
- Enforcement

Over 36% of Nigerian adults are financially excluded, what impacts do you think adoption of an Open Banking system will have on the level of financial inclusion in Nigeria?

Zero. What is needed in Nigeria is not Financial Inclusion – rather it is financial empowerment. Inclusion will follow naturally.

What are the ways to build customer trust in an Open Banking era?

Once the regulator signs off, and the banks visibly support it, that is all.

Who do you think would be the top winner in the Open Banking ecosystem?

The customer and the unknown start-up that creates the killer up with a use case to "rule them all"

Issues/Challenges

What are the potential issues that may arise following the adoption of open standards?

- Security
- Privacy
- Scalability

What are some of the roadblocks you envisage with respect to Open Banking implementation in Nigeria?

Slow adoption even with a regulatory push. A lot of architectures are monolithic, and not open to the micro services model that must by nature underlie open banking APIs.

What are the necessary steps to fast-track stakeholder buy-in into the movement for adoption of Open Banking in Nigeria?

Regulation with clear incentives and penalties.

Professional Services Firms



Andrew S. Nevin
Financial Services Advisory
Leader and Chief Economist
PwC Nigeria

Brief Profile

With over 25 years of professional experience as a Strategy Consultant, Andrew is the FS Advisory Leader and Chief Economist for PwC Nigeria and has been involved in the provision of various FS Advisory and Technology services globally. Andrew is one of the Firm's leaders in developing intellectual capital for the financial services sector and is the lead author of Project Blue (future of Banking).



Damola Yusuf
Technology Advisory Leader
PwC West Africa

Brief Profile

Damola is PwC's Technology Advisory leader in West Africa and has over 21 years experience in the development of IT infrastructure architecture and business systems. He has provided assistance to financial institutions in Nigeria in the areas of Digital Transformation, Enterprise Architecture, Project and Programme Management, System selection and Implementation and IT strategy development.

About Open Banking

We have seen recent developments in Open Banking around the world; do you believe Nigeria is ready for Open Banking?

Yes, with the right regulatory framework and defined API standards. The Nigerian financial services space has evolved in recent years, with a proliferation of innovative financial products and services offered by banks and FinTechs. Nigeria in recent times has experienced changing consumer patterns, with consumers having rising expectations for convenience, greater price transparency, personalised support, and real-time response to service requests. There has also been an advent of technologies like blockchain, predictive analytics and cloud computing.

All of these have created a foundation that Open Banking can be built on. Open banking refers to how financial institutions and third party providers (FinTechs, InsurTechs, Retail companies, Telcos, Energy companies etc.) can share data in a standard format to drive open, transparent, innovative and competitive banking services. I believe that Nigerian banks and third party providers have what it takes for open banking to be the new way consumers bank in Nigeria. Some financial entities in Nigeria have already started this open banking journey in varying capacities; Ecobank has launched a Pan African banking sandbox that will allow partners and FinTechs across 33 African countries gain access to its Application Programming Interface (API) to develop innovative financial solutions; Financial Services Initiative (FSI) have also launched a FinTech industry innovation sandbox in Nigeria to drive innovation.

How do you think Open Banking will transform the banking value chain?

Open banking will definitely transform the way consumers access financial products and services from banks. It will also transform the banking value chain, especially across strategy, product/service development, channel management, transaction management and customer service. Open banking will enhance competition and innovation in the financial services space, thus requiring banks to effectively conceptualize and provide innovative products and services to win customers in this digital age. Open banking will also make banks explore ecosystem partnerships and collaborations that will benefit the bank and consumers.

Are banking customers in Nigeria prepared to embrace Open Banking?

There definitely is a segment of progressive Nigerians (digital natives) that are ready to embrace open banking due to their exposure and understanding of digital technologies (mobile, analytics, social media etc.). However, a lot more Nigerians are financially excluded without access to bank accounts and with limited exposure to digital technologies. Also with the recent roll out of the Nigeria Data Protection Regulation (NDPR) customers are more concerned about data privacy and not the immediate benefits of sharing personal data. To prepare Nigerians to embrace open banking, there needs to be continuous awareness and education on its benefits and how data privacy concerns can be addressed. Banks and third party providers will also have to think about innovative products and services to promote financial inclusion.

How do you think Open Banking will affect competition in the Nigerian banking industry?

As mentioned earlier, open banking will definitely help improve healthy competition between Nigerian banks. Banks will be focused on creating strategies and developing innovative products and services that will benefit customers. Banks will also focus on how they can leverage data and ecosystem collaborations to reduce cost thus increasing the cost savings that can be passed on to consumers.

What role does regulation play in Open Banking implementation in Nigeria?

Regulation will definitely play a huge role in the implementation of open banking in Nigeria. Open banking requires all parties to adopt an open standard for APIs and sharing of data. Regulation will ensure that there is compliance on the adoption of secure and these open standards.

The Central Bank of Nigeria can be at the forefront of defining a vision and framework for how Nigerian banks adopt open standards. The apex bank can then

collaborate with banks and relevant stakeholders in the industry on different elements of open banking implementation in order to ensure smooth change management and adoption.

Opportunities

In your opinion, what are the opportunities that Open Banking will unlock in the Nigerian banking industry?

There are a myriad of opportunities that can be unlocked with Open Banking, from lowering barriers to entry for new participants to introducing new and competitive products for customers. Open Banking will present interesting opportunities for non-traditional players such as retailers and technology companies to play active roles in the Financial Services Ecosystem.

Without the regulatory burden of launching a bank and providing traditional banking services, new entrants can easily participate in the banking value chain and introduce innovative products to customers. For example, a retail chain, with information about consumer buying trends can combine that with customer financial insights from banks to offer their customers tailored product offerings and deals.

Traditional banks need to become nimble and agile to be able to compete in the new space and not lose their customer base to non-traditional players.

What are the critical success factors for the effective adoption and implementation of Open Banking in Nigeria?

Implementation of regulatory framework for API standards and NDPR policies for Bank's sharing customer data are two big factors that will accelerate the adoption of Open Banking in Nigeria. Other factors are the widely available digital channels currently used by customers to manage their financial lives daily. The existing BVN infrastructure provides a strong identity base for consolidating user accounts and to enable a consistent user experience.

Underpinning this, is the fact that Nigeria has a young population skewed towards digital natives, which predisposes them to embracing digital technologies faster than other groups.

Over 36% of Nigerian adults are financially excluded, what impacts do you think the adoption of an Open Banking system will have on the level of financial inclusion in Nigeria?

Open Banking can have transformative impacts on financial inclusion in the country. According to the World Bank, the number of Sub-Saharan Africans with mobile money accounts doubled between 2014 and 2018. Many of them use these accounts to transfer cash or make small payments, so, they are already comfortable using digital financial services.

With Open Banking, banks and other financial players can introduce low-cost and innovative services to their customers. For instance, in East Africa, data sharing and collaboration is driving the introduction of creative credit underwriting models such as M-Shwari and Tala. These kinds of initiatives can only improve the flow of funds within the economy and bring more unbanked citizens into the formal financial sector.

What are the ways to build customer trust in an Open Banking era?

Building and enforcing strict regulations around data privacy and protection is imperative to building and retaining trust in the Open Banking ecosystem. There should be clear guidelines on the role of regulators and the protection that exists for customers with regards to safeguards, liabilities and compensation.

Who do you think would be the top winner in the Open Banking ecosystem?

The power has shifted dramatically in the financial sector from the banks to the consumers. The disruption by FinTech players in the last decade has reduced customer reliance on services by banks. It is not inconceivable that, in the near future, a sizable number of Nigerians will receive their transactional services from digital-only banks and FinTech providers.

With the introduction of Open Banking, banks will be more incentivized to provide innovative services to their customers and compete with more agile non-traditional players. Banks will have to compete in a space that is more natural to technology companies and create personalised products and services to users.

All this means that customers will have the pick of the litter with significant choice and power in the new ecosystem.

Issues and Challenges

What are the potential issues that may arise following the adoption of open standards?

The biggest issue could be monitoring compliance with API standards, NDPR regulations and 3rd party risk. Traditional banks have a significant role to play in the implementation of Open Banking.

If banks lean in to the “fear” element rather than talking about the opportunities, it could negatively impact the adoption of Open Banking in the market.

While it might sound counterintuitive for banks to be involved in educating their customers about Open Banking, it will only help position them as innovators in the Open Banking ecosystem, offer competitive products and ultimately attract a new customer base.

What are some of the roadblocks you envisage with respect to Open Banking implementation in Nigeria?

The biggest roadblocks we envisage are related to the lack of framework guiding legal liability and practical rectification, need for stronger due diligence and risk assessment of new vendors and the strengthened cybersecurity posture of all players in the Open Banking ecosystem. Without these, customers and other players in the ecosystem will not have the trust required to participate fully.

Customers trust their banks to secure their financial data and the fact that banks have bought into the Open Banking idea and are actively exploring ways to participate in the new marketplace will go a long way in alleviating customer fears and concerns.

Recommendations

What are the necessary steps to fast-track stakeholder buy-in into the movement for the adoption of Open Banking in Nigeria?

Firstly, there has to be increased awareness on open banking to all stakeholders.

CBN included Open Banking as part of its Payment System Vision 2030 but must accelerate the development of an enabling framework to set the standards for compliance.

Nigerian banks, FinTechs, third party providers and regulators also have to understand the concept of open banking and the benefits of adoption.

Understand the risks of adopting open banking and how these can be mitigated. For example, Non for profit groups such as Open Banking Nigeria are driving advocacy for the standard.

Customers on the other hand need to have a clear understanding of the value and benefits, as well as how to ensure the privacy of their data.

Nigerian banks and third party providers have to create consumer co-creation programs, where they collaborate with consumers to identify innovative ways of using their data to provide products and services.

Professional Services Firms

**Ladi Asuni**

Partner, Digital Transformation and Technology Advisory Services
KPMG

Brief Profile

Ladi is a Partner in KPMG's Technology Advisory and Digital Transformation Service. He has over 15 years of consulting experience delivering digital and technology-enabled business transformation and performance improvement solutions for top and mid-tier financial services institutions. He has successfully managed large and complex enterprise technology and digital transformation programs implementation impacting cross functional stakeholders and end customers. Ladi is an active contributor to digital thought leadership and has presented views on emerging digital trends at various industry sessions.

About Open Banking

We have seen recent developments in Open Banking around the world; do you believe Nigeria is ready for Open Banking?

As an industry, the financial services space in Nigeria is ready for the opportunities Open Banking present. However, the journey to full adoption and realization of benefits for players, customers and regulators alike will take some time. For instance, banks will need to have a clear Open Banking strategy. Technology investments will need to be made to acquire solutions that will enable safe and secure Open Banking via APIs. Also, putting in place the operational structures and processes to support this phase of development. Regulator will need to put in place adequate policies and guidelines to ensure standardization, protection of the consumer as well as the overall financial ecosystem from some of the emerging risks. There will be a need for customer education and awareness programs as this is still considerably low in Nigeria. It is important to note that PSD2 and CMA Open Banking journeys started around 2015 and 2016 respectively and were developed over about three years with adoption still considered to be in the nascent stage.

How do you think Open Banking will transform the banking value chain?

The term "open banking" has been trending in the global financial services over the past few years. While some players see it as a risk to the banking sector, others see it as an opportunity for the banking sector and its customers. However, the general opinion is that it is definitely one of the key areas of innovation in the financial services. We have seen some early adoption of Open Banking catalyzed by regulation to encourage competition and innovation as in the cases of PSD2 and CMA in Europe and UK respectively. While in other cases, some banks around the world are also adopting Open Banking as a means of driving innovation, collaboration and enhanced customer experience.

There are numerous aspects of today's banking value chain that can be potentially transformed by Open Banking. Some examples of this include:

- **Customer Acquisition and Onboarding:** Regulated 3rd party providers can leverage bank APIs to acquire and onboard customers. This can help banks rapidly expand their footprint beyond the reach of their existing branches and channels.
- **Credit Processing:** As part of the credit application process, customers need to provide account and transaction related information for credit risk evaluation. With open banking, the lending party can securely (with the customer's permission) access relevant records from defined bank accounts to retrieve required data to perform automated analysis and expedite the credit approval process thereby enhancing the efficiency of the process.
- **Corporate Treasury Management:** Businesses currently deal with the challenges of managing aggregated visibility of all their bank accounts thereby resorting to manual intervention to consolidate account statements and balances from different banks. With Open Banking, clients can now have the opportunity to leverage Bank APIs to pool different account information to a single window
- **Personal Finance Management:** Similar to corporates clients, retail banking customers also have challenges of managing their finances across different banks. Open Banking will give opportunities for banks and other 3rd party providers to develop compelling personal finance solutions that not only helps customers to aggregate their accounts but also provides better product recommendations to suit the needs of the customers.

- **Merchant Billing and Payments:** With Open Banking, we expect to see transformation of merchant payments. One of the most transformational opportunities will be the disintermediation of debit/credit cards for merchant payments by adopting solutions for account to account payment which provide near instant settlement and value realization.
- **Emergence of New Banking Business Models:** There will be an opportunity for incumbent banks to review their business models. For instance, a bank can decide to limit their play to providing Banking-as-a-Service (BaaS) to other 3rd parties to build last mile customer facing services. In this case, the incumbent becomes abstracted from the end customer interactions Etc.

Are banking customers in Nigeria prepared to embrace Open Banking?

Open Banking empowers customers by creating opportunities for them to take charge and better leverage their data for their own benefits and value. However, readiness of the average banking customer in Nigeria will be a function of their level of awareness and education on Open Banking. A few knowledgeable customers will no doubt see the opportunities and benefits of being given control over their data. However, the largest proportion of the customer population will need many awareness programs to ensure that they are well guided on the implications of providing consented access to information. Banks and regulators will also have a lot of role to play in ensuring that 3rd parties are well regulated and vetted before coming into the ecosystem.

How do you think Open Banking will affect competition in the Nigerian banking industry?

Open Banking will enhance competition as customers take advantage of the transparency and other opportunities that will be created. In a world where customers are empowered with their data, Banks will face a new breed of competition from peers and challengers alike that are looking to leverage the customers data to provide enhanced experiences and product propositions that better fit their needs. With this in mind the battle for market share will spur all players to be more proactive about driving innovation.

What role does regulation play in Open Banking implementation in Nigeria?

Regulation has critical role to play across some specific areas including:

- Defining the operational guidelines and policies for the Open Banking participants
- Defining and enforcing the minimum acceptable technical standards for data privacy and security

- Developing the framework for monitoring control and compliance by the different parties
- Establishing industry wide safeguards to enhance confidence by all parties – screening and accreditation of participants
- Extension of consumer protection guidelines to cover the emerging risks especially for the more vulnerable customer segments that can be exploited.
- Define the liability framework in the event of any breaches – i.e. security, data, financial etc.

Opportunities

In your opinion, what are the opportunities that Open Banking will unlock in the Nigerian banking industry?

Open Banking has the potential to unlock opportunities around deepening of financial services, industry growth through development of innovative financial products and services as well as enhanced customer experience and value.

What are the critical success factors for the effective adoption and implementation of Open Banking in Nigeria?

- Customer education is paramount. All the efforts and investment may be wasted if the customer adoption is not optimal so this requires significant attention.
- Endorsement by the financial service industry leaders - As in other markets, big players have come forward to show their support for Open Banking through proactive implementation and sensitization. For Open Banking to be successful in Nigeria, the incumbents have to demonstrate their support and openly embrace the opportunities
- Enabling regulation need to be established to ensure that all risk dimensions are adequately addressed.
- Consumer Protection Laws need to be strengthened
- Adoption of common API Standards aligned to global and local best practices, guide minimum technical requirements for interoperability, security and data protection as well as promote overall efficiency in the ecosystem.

Over 36% of Nigerian adults are financially excluded, what impacts do you think the adoption of an Open Banking system will have on the level of financial inclusion in Nigeria?

Open Banking may potentially have a positive impact on enhancing financial inclusion in Nigeria as players with capabilities to operate areas with high levels of financial exclusion can now leverage bank APIs for acquisition and onboarding of customers, development of innovative propositions etc. This is essentially helping to extend the reach and distribution of financial services.

What are the ways to build customer trust in an Open Banking era?

In order to build customer trust, regulation has to proactively address issues of consumer protection, data privacy and security. Customers need to know that regulatory safeguards exist to enforce compliance with minimum standards while also ensuring that there are remedies for any potential breaches. Customer education and awareness programs will play a vital role.

Who do you think would be the top winner in the Open Banking ecosystem?

The customer is at the heart of most Open Banking initiatives. Giving them control of their data, choice of banking relationships and access to innovation.

Issues/Challenges

What are the potential issues that may arise following the adoption of open standards?

While adoption of standards is expected to provide overall benefit to the ecosystem in terms of interoperability, enhancing efficiency and lowering the cost of innovation, there may be potential issues around differentiation and lowering of competitive barriers especially for established incumbent players

What are some of the roadblocks you envisage with respect to Open Banking implementation in Nigeria?

- Absence of enabling regulation
- Resistance/ lack of co-operation of participants driven by fear of loss of control and competitive advantage from customer ownership.
- Limitations of legacy technologies

Recommendations

What are the necessary steps to fast-track stakeholder buy-in into the movement for the adoption of Open Banking in Nigeria?

- Demonstrate visible regulatory support for Open Banking
- Develop comprehensive regulatory framework to address identified risk concerns – data privacy, consumer protection, security, fraud, liability, remediation
- Robust enlightenment and change management program for all participants
- Define open banking standards
- Establish framework for vetting and accreditation of 3rd party providers to ensure safety of the overall financial system
- Consumer education



Appendix

Appendix

Corporate members of Open Banking Nigeria



The Open Banking Nigeria community includes banks, Fintechs, professional services firms and other partners. The community members include

Banks



Fidelity Bank is a full-fledged commercial bank operating in Nigeria, with over 4.2 million customers who are serviced across its 231 business offices and various other digital banking channels.



Heritage Bank Plc is a large financial services provider in Nigeria. Currently licensed as a National Bank, it offers banking and financial services in the country.



Sterling Bank Plc "Your one-customer bank" is a full service national commercial bank in Nigeria.

Fintechs



Appzone is Africa's leading provider of software solutions to financial institutions.



Flutterwaves provides the easiest way to make and accept payments from customers anywhere in the world.



Global Accelerex is the leading provider of electronic payment and financial technology solutions in Nigeria



Interswitch is an Africa-focused integrated digital payments and commerce company that facilitates the electronic circulation of money as well as the exchange of value between individuals and organisations on a timely and consistent basis.



Lendsqr is an advanced loan management platform for individuals, microfinance banks and cooperatives to easily manage loans without writing a single line of code.



Paystack is a technology company solving payments problems for ambitious businesses. Our mission is to help businesses in Africa become profitable, envied, and loved.



TeamApt is a financial technology company focused developing Digital Banking, Business Solutions and Payments Infrastructure.



Wallet.ng makes accessible payments by enabling users to send, receive money, and make payments through a phone.



One pipe helps integrate the services of various banks, incumbents and fintechs into one unified API.

Professional Services Partners



EY provides advisory, assurance, tax and transaction services that help solve challenges and build a better working world for all.



KPMG provides audit, tax and advisory services. They work closely with clients, helping them to mitigate risks and grasp opportunities.



PwC Nigeria, helps you achieve your goals. Their purpose is to build trust in society and solve important problems.



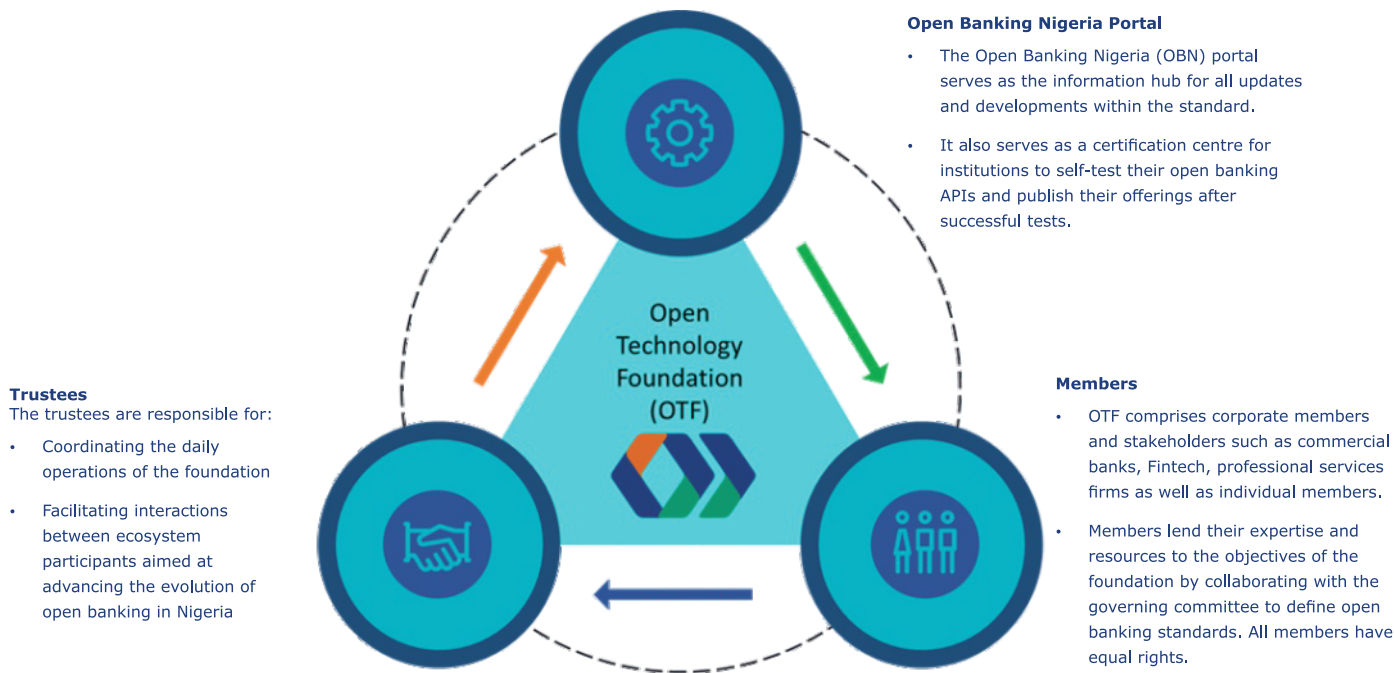
Duale, Ovia & Alex-Adedipe ("the Firm") is a bespoke full-service commercial law firm in Nigeria.

Other collaborators



Open Banking Nigeria Governance Structure

The schematic below provides a high-level view of the governance model of Open Technology Foundation (OTF)



Open Technology Foundation (OTF) represents corporate and individual efforts to promote an open banking system in Nigeria. OTF defines, maintains and promotes Open Banking standard consisting API specifications and accompanying security and process guidelines.

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About Open Banking Nigeria

Open Banking Nigeria, is a legal entity propelling the Open Banking journey in Nigeria. Set up in June 2017 as a non-profit organization, the foundation comprises of industry leaders who recognize the importance of Open Banking in driving the next level of growth in Nigeria's financial sector. The activities of the foundation are targeted at unlocking growth potentials through the improved collaboration of players within the financial space. A set of standards are being defined as a guidance framework for API integration, data accessibility, and security. An overarching objective of the open banking team is boosting the country's economy through the reduction of barriers to innovation and consumer's access to essential financial products and services.

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