



Annual Report to the Central Bank of Nigeria on the Progress of Open Banking in Nigeria in 2018

January 4, 2019
Open Banking Nigeria
<https://openbanking.ng>

Table of Content

1.	Executive Summary	2
2.	Background	3
2.1.	<i>About This Report</i>	3
3.	Unboxing Open Banking	4
3.1.	<i>What Is Open Banking?</i>	4
3.2.	<i>What Open Banking Is Not?</i>	5
3.3.	<i>Benefits of Open Banking to End-Users</i>	5
4.	Global Developments in Open Banking	7
4.1.	<i>Open Banking in the United Kingdom</i>	7
4.2.	<i>Open Banking in Singapore</i>	9
4.3.	<i>Open Banking in Australia</i>	10
4.4.	<i>Open Banking in Hong Kong</i>	11
4.5.	<i>Open Banking in Canada</i>	12
4.6.	<i>Open Banking in the European Union</i>	12
4.7.	<i>Open Banking in Rwanda</i>	12
5.	Open Banking in Nigeria	14
5.1.	<i>The Open Banking Nigeria Value Proposition</i>	14
5.2.	<i>Potential Opportunities for Open Banking in Nigeria</i>	15
5.3.	<i>Open Banking Nigeria's Proposition for Risk Management</i>	17
6.	Open Technology Foundation	20
6.1.	<i>Objectives of Open Banking Nigeria</i>	20
6.2.	<i>Formulation of the Open Banking Nigeria</i>	20
6.3.	<i>Open Banking Activities and Milestones for 2018</i>	22
6.4.	<i>Feedback from Discussions with Local Banks</i>	22
7.	The Role of CBN in the Open Banking Journey	23
7.1.	<i>Prayers to the Central Bank</i>	24

1. Executive Summary

Open Banking holds the keys to the next level of service delivery in the financial sector, and this has been recognized by different stakeholders within the global banking ecosystem. With the clear realization that there will be winners and losers from the disruption Open Banking holds, both fintech companies and traditional banks are positioning themselves to maximize its benefits.

Amongst others, Open Banking offers potential benefits to end-users, banks, fintechs and the economy in general. Some being: improved service delivery, enhanced customer experience, increase in financial inclusion, economic growth, increase in retail spend, shorter turnaround time for the delivery of digital financial services, and improved security in platform integration.

The United Kingdom, Australia, European Union, Singapore, Rwanda, and Hong Kong are some of the global leaders within the space, having established regulatory frameworks and policies to shape their Open Banking ecosystem. The United Kingdom, in particular, offers a best-in-class example for implementing an Open Banking ecosystem.

Nigeria is not being left behind in the Open Banking journey. The Open Technology Foundation, usually styled as Open Banking Nigeria, a not-for-profit organisation comprising banking and fintech industries veterans, is championing the Open Banking cause in Nigeria. Leveraging leading practices, the Foundation has customized open API standards for the Nigerian financial space.

Since its establishment in 2017, Open Banking Nigeria has organized meetings and advocacy sessions to engender the adoption of Open Banking in the country. The advocacy efforts have been well received by various industry players with many issuing outright commitment to the cause (PwC Nigeria, IBM, TeamApt, Heritage Bank, and Flutterwave amongst others).

Open Banking Nigeria is optimistic that a fully established Open Banking ecosystem will spur competitiveness and innovation within the Nigeria FI space, and potentially reduce the country's financial exclusion to about 20%, while also driving economic growth.

As the principal authority within the banking space, the Central Bank of Nigeria's support and involvement is very critical for the growth and ignition of Open Banking in Nigeria. Open Banking Nigeria expects to further strengthen its existing relationship with the CBN as it seeks to drive Open Banking growth within the country.

2. Background

Digitization and technology have brought significant changes to service delivery in financial sectors across the world. Through innovations such as contactless payment, mobile banking, and mobile money, an upward climb has been made on the customer experience journey.

The Nigerian financial space has not been left behind on this digital evolution. The CBN's cashless policy is one of many examples on the local scene, deliberately driving customer service excellence across the industry¹.

It is globally agreed that Open Banking is the next step in the evolution of digital and customer satisfaction in the financial space. By the effective mining of customer data, there is a lot that can be done regarding improved delivery to customers.

Open Banking Nigeria is at the fore of Open Banking in Nigeria. The not-for-profit organization was set up by veterans of the Nigerian banking and fintech industries in 2017 with the overarching objective of boosting the nation's economy through the reduction of barriers to innovation and financial inclusion.

2.1. About This Report

This report is considered a part of Open Banking Nigeria's advocacy efforts to the Central Bank of Nigeria (CBN), towards the full-scale adoption and support of Open Banking principles within the Nigerian financial sector.

Amongst others this report is intended to:

- Call out key developments within the Open Banking space at a global level, drawing critical learning points. Seven established global players – the United Kingdom, Canada, Australia, the European Union, Singapore, Rwanda, and Hong Kong have been considered for this benchmark analysis.
- Highlight key developments within the Open Banking space at the local level. It captures the measurable enthusiasm of Nigerian banks and fintechs towards the initiative.
- Highlight all major events conducted by the Open Banking Nigeria in 2018 to drive Open Banking adoption, including challenges being faced by the Group.

The report wraps up by sharing our thoughts on the critical role of CBN as the regulatory body in the evolution of Open Banking in Nigeria.

¹ National Directive on Cashless Spend – Central Bank of Nigeria

3. Unboxing Open Banking

3.1. What Is Open Banking?

The advent of technology within the financial space is disrupting the traditional financial services value chain. With technology-based companies offering essential commodities and financial services to customers, the lines are blurring as to where the banking services come in and where the Fintech companies come in.

China's WeChat and Alipay offer classic examples of this global transition. Through their universal platforms, these companies have achieved significant success in creating ecosystems in which users can reach all essential services including financial services (e.g., money transfer, utility payment, taxi services, etc.) through a single user interface.

In Europe and America, companies such as Amazon, Facebook, and Apple are also integrating value chains in the same manner to offer a full scope of services.

This expansion is only a natural evolution considering the broad measure of consumer data these companies possess. With the right level of analysis, these service providers are able to provide service offerings to customers, not just at a generalized level, but in a personalized manner. This is where Open Banking comes in.

Open Banking proposes an ecosystem in which innovation and competitiveness are utilized to drive service delivery and customer experience within the Banking space, through the controlled and secure transfer/ analysis of customer financial data.

Through the integration of APIs, banks who are the chief custodians of financial data can allow authorized 3rd parties (with the consent of the customer) to customize services and solutions based on the customer's financial data. ²A wealth manager, for instance, will be able to make decisions on the most appropriate investment vehicle for a school teacher based on his knowledge of the teacher's full financial position.

There is a general consensus that Open Banking is the future of financial services, and several geographies are at different points on this journey towards improving the customer banking experience.

Accenture in a recent publication expressed the position that "*Open Banking is an inevitable and accelerating structural trend which will have clear winners and losers down the line.*" ³ Clear winners will be banks who align their business models to the changing trend, positioning themselves for opportunities that will open up due to the disruption.

² What is Open Banking – OBIE

³ The Brave New World of Open Banking – Accenture

3.2. What Open Banking Is Not?

There are quite some misconceptions about what Open Banking is and what it is not. Some of the easily confused positions concerning Open Banking include:

- It is not a product but a set of API standards that banks and fintechs would willingly comply with to achieve industry interoperability and skills saturation.
- It is not a funds transfer product.
- It does not remove the need for fintechs and banks to be licensed for their specific roles. The interface only makes the job of integration between banks and fintechs easier.

3.3. Benefits of Open Banking to End-Users

By engendering innovation, transparency, and competitiveness, Open Banking offers an improved customer experience as well as a number of direct and indirect benefits to consumers (who could be individuals, SMEs or scaling corporate organizations):

3.3.1. *Aggregation*

Open Banking introduces the possibility of banks sharing their application interface with other banks and fintech companies. This allows ‘fluid’ transfer of defined customer information (*caveat: upon the approval of the customer*) to a platform where it is aggregated into a single point of view.⁴

For an average user with accounts across banks, this feature saves the time of logging on to a price comparison website or application and manually having to load details of all owned accounts. Instead, the user, through a single click gets to view its aggregated financial position through one of its existing bank applications.

The aggregated view also offers the end-user a strong bargain position in the acquisition of financial services such as loans, insurance, payments, etc. By providing a consolidated view of one’s financial history, it’s easier for the provider of financial service to make a more informed decision or provide customized service to the end-user.

3.3.2. *Monitoring*

As a natural consequence of a simplified and aggregated view of one’s financial position, the end-user able to effectively monitor the overall spend and inflow of money.

With this, the user has significant opportunity to improve his short- and long-term budgeting and budget management.

⁴ Open Banking, A Consumer Perspective – Faith Reynolds

3.3.3. *Analysis and Recommendation*

The user's Bank or fintech provider is also provided with the opportunity of offering a customized analysis of the user's financial patterns.

This provides a unique opportunity for either the Bank or a fintech service provider to become a trusted adviser to the end user, offering investment or credit solutions as a part of a customized service that is supported by precise knowledge of the user's financial position.

4. Global Developments in Open Banking

Conversations around Open Banking have increased globally with many bookmakers recognizing open sharing of customer information as a driver of competition and innovation in the retail and SME banking space. The rationale for adopting Open Banking standards is seen to vary from country to country, but it is generally hinged on a business case for improved customer service.

Below we see different countries are at varying levels of maturity, some regulatory driven, some growing organically. At the moment the global Open Banking space can be grouped to three points on the maturity curve: the emerging regions, the following regions, and the matured regions.⁵

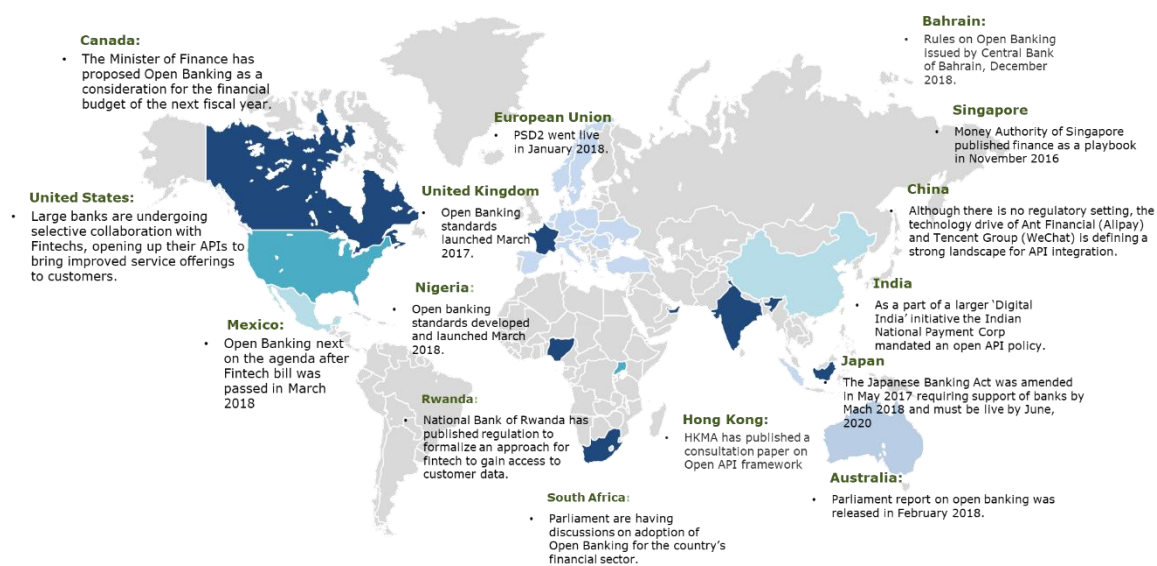


Figure 1: Summary of Open Banking Activities around the World

4.1. Open Banking in the United Kingdom

The United Kingdom is one of the global leaders on the Open Banking front. Uniquely implementing the European Union's second payment systems directive (PSD2).

Its Open Banking framework was put in place to even the competition amongst players in the retail banking space. The top nine commercial banks of the territory were compelled to follow the designed framework while it remained open to other organizations.

⁵ Open Banking Regimes Across the Globe – Gilbert Tobin

4.1.1. *Learnings from the United Kingdom's Open Banking Journey*⁶

Customization

- UK's Open Banking drive feeds from the EU's PSD2, the nation, however, made deliberate efforts to adapt it to the local market.
- Through the Regulatory Technical Standards (RTS), the UK Government adapted the PSD2 to the local economy setting out detailed rules for adoption as best fit for the UK economy.
- An Open Banking implementation entity was founded to lead the design and delivery of the standards locally.

Clarity in Definition

- The UK's Competition and Markets Authority (CMA), ensured there was little ambiguity in the interpretation of the regional PSD2 law to the local economy.
- To reduce ambiguity, the CMA defined:
 - A single API standard for adoption by all top banks allowing for scalability.
 - Open data requirements.
 - Customer use cases to ensure alignment of interpretation by all users.
- Support services are offered by CMA in the form of training, sand-boxes, and testing tools.

Continuous Review and Iteration for Improvement

- Onward progress on the UK Open Banking journey is recorded and used for iterations to the set future regulations.
- In August 2017, version 1 of the API standards was published; a second (re-viewed) version was released in February 2018, and the third version in August 2018.

Strong Enforcement

- The CMA is responsible for driving enforcement.
- The UK Government realized standards alone might not be enough to drive the adoption required, consequently empowering the CMA to drive national implementation with milestones and set punishments where necessary.

⁶ Open Banking Lessons Learnt – OBIE (openbanking.org.uk)

Customer Enlightenment

- Initial reluctance was observed by customers to embrace the Open Banking initiative. This was traced to the lack of adequate information on what the program entails.
- Awareness team and programs were later commissioned to address this, educating the general public on what Open Banking is, and is not.

Transparency and Collaboration

- The UK Government set up a trustee group made-up of representatives from the industry to oversee the Open Banking program. This was an effort towards building trust, transparency, collaboration, and ownership within the program.
- This steering group has equal representation from banks, fintech companies, and critical public sector offices; and holds regular meetings to review progress and milestones by the program.

Trust Framework

- All users of the open API standards are required to undergo registration, after which they are given an Open Banking Certificate which confirms their regulated status.
- Entities can lose their status if they fail to keep up with the requirements of membership.
- Entities who lose their regulatory status are revoked of their certificates.
- Liability cover is given by the Government for situations where un-regulated entities gain access to the platform.

4.2. Open Banking in Singapore

The Singaporean Government is adopting a somewhat organic approach to ensuring consumer data sharing. There is no Open Banking regulation in place, but Government is openly supporting many voluntary initiatives towards the Open Banking objective.

4.2.1. *Learnings from Singapore's Open Banking Journey*⁷

API Playbook

- A non-binding API guideline was published by the Monetary Authority of Singapore (MAS) and the Association of banks in Singapore to guide the process of financial institutions, fintechs and third parties developing and adopting API-based system architecture.

⁷ Open Banking and API Adoption – The Asian Banker

- Although not compelling the adoption of Open Banking architecture, the MAS has put a framework in place to guide activities within the space.

API Register

- A register is kept of all open financial industry APIs in the country. The register categorizes the APIs based on their use, e.g. transactional, product, etc.
- With this, the regulators are able to keep tabs on developments within the space, giving consideration to the security risk of open APIs.

Regulatory Sandbox

- The MAS' sandbox allows financial institutions and fintech players experiment with innovative financial products and services.

Grant to Promote Data Analytics and AI in the Finance Sector

- The Singaporean Government through the MAS launched a 27 million Singaporean Dollar grant for the support of innovations towards integration, data analytics and artificial intelligence in the financial sector. Emphasizing its commitment towards innovation, openness, and development within the finance space.

4.3. Open Banking in Australia

After much deliberations and conversation at the parliament, the Australian Government has approved the implementation of Open Banking policies within its financial space. To a great extent, their framework and standards were modeled after that of the United Kingdom.

Australia's Open Banking regime is, however, part of a larger Consumer Data Right (CDR) campaign, which seeks to improve consumer data availability and use across industries (i.e. retail, financial services, real estate, etc). Leading to a drive for enhanced data analytics and customer experience.

4.3.1. *Learnings from Australia's Open Banking Journey*⁵

Phased Implementation

- To ease the adoption process of the new Open Banking directives, the Australian Government staggered the implementation timetable for the program.
- Phase 1 - major banks will make data available on credit and debit card, deposit and transaction accounts by 1 July 2019;
- Phase 2 – major banks will make data on mortgages available by 1 February 2020;
- Phase 3 – major banks will make data on products available by 1 July 2020; and

- Phase 4 – all remaining banks must implement Open Banking within 12 months of the major banks' timeline.

Support of Complementary Initiatives

- The Australian Government has introduced some complementary initiatives to drive adoption of the Open Banking program and the growth of the ecosystem:
 - Lowering of regulatory barriers to entry for new and innovative entrants to banking space.
 - Establishment and enhancement of regulatory sandboxes to facilitate innovation and promote competition.

4.4. Open Banking in Hong Kong

The Hong Kong financial regulating body put forward the Open Banking policy to ensure the competitiveness and relevance of its banking sector. And also, to keep up with international developments in the delivery of banking services.

4.4.1. *Learnings from Hong Kong's Open Banking Journey*⁵

Phased Approach

- In July 2018, the Hong Kong Monetary Authority (HKMA) published its open API framework, together with a timetable for deploying the open APIs. This allowed all concerned stakeholders to plan efficiently for the migration.
- A four phased-implementation approach was adopted:
 - Phase 1 – accessibility of product and service information by third-party providers.
 - Phase 2 – deployment of core banking open API function to accept new account/ product applications.
 - Phase 3 – accessibility of account information by third-party providers.
 - Phase 4 – accessibility to process customer transactions by third-party providers.
- Timelines of between 6 and 12 months were defined for the various phases of the open API program.

Selective Collaboration

- In contrast to the Open Banking program in the UK and EU, HKMA allows banks to retain control of customer relationship and select which third-party providers to partner with.
- HKMA is yet to define rules for the third-party registration process.

4.5. Open Banking in Canada

Canada presently has no Open Banking regulation but is in advanced stage in its national discussion. A representative policy was first proposed by the country's Minister of Finance for the 2018 budget, leading to the setting up of a policy lab⁸.

41 stakeholders comprising experts from government, academia and the industry were invited for the policy lab session. And it involved the design of a set of resolutions agreed to be best fit for economic growth. Broad areas of consensus were agreed on through a voting process.

4.6. Open Banking in the European Union

The EU was one of the first jurisdictions to introduce a regulatory framework for the adoption of Open Banking within its territory. The EU introduced the PSD2 building on its first payment systems directive which was adopted in 2007. Through the new directive the EU regulates the sharing of consumers' banking account data with third-party payment service providers (PISPs and AISPs).

The European Union is of the opinion that the PSD2 can help improve the playing field for retail banking service providers. PSD2 came into force on 12 January 2018 (EU members had to adopt into their national laws by 13 January 2018).

The European Banking Authority is responsible for issuing guidelines and recommendations to authorities and financial institutions on PSD2. It is currently drafting regulatory technical standards (RTS) for PSD2 which will take effect in mid-2019.

4.7. Open Banking in Rwanda

Rwanda leads the way in Open Banking implementation across Africa. The country's apex financial institution – the National Bank of Rwanda (BNR) is in full support of the need for digital customer data to be made available to fintech players.⁹

The growing fintech market in Rwanda already supports the availability of digital customer data that can be mined and analyzed to gain a better understanding of customer needs, but the BNR has now also published a regulation to formalize the approach, and the publication of standards is imminent.

BNR is patterning its Open Banking initiative similar to the European Union's PSD2. BNR's Open Banking regulation is targeted at individual consumers and small businesses financial data. It addresses data sharing, data transfer with the goal of driving

⁸ Open Banking Fintech Policy Lab – Canada 2020

⁹ Open Banking in Africa, The Power of Data – Lexology

innovation, efficiency, development of new products and support for new fintech players.

Rwanda is positioned to benefit immensely from the Open Banking regulation as between 90 – 95% of the population already access financial services through mobile money offerings of telecommunications providers. Thus, providing adequate data for mining and analysis.

The standards being designed by the cardinal bank – BNR, is expected to require adoptions by the traditional banks, the telecommunications companies, the mobile banking providers, and other fintech players.

5. Open Banking in Nigeria

The need for Open Banking in Nigeria is quite apparent. A number of Nigerian banks have recognized this need and the potential opportunity the initiative has for them, consequently opening their API gateways for integration with Fintech companies.

The Central Bank of Nigeria (CBN) also appreciates the potential of Open Banking for the Nigerian banking space and has held several conversations with the Open Banking Nigeria. At the moment, the apex Bank, however, holds the position that an organic growth might be more beneficial to the sector as against one driven by regulations. The CBN has indicated willingness to provide any necessary support to Open Banking Nigeria to achieve milestones needed for the growth of Open Banking in Nigeria.

5.1. The Open Banking Nigeria Value Proposition

Open Banking Nigeria is aimed at unlocking innovation potentials of banks, Fintechs and all players in the financial services industry.

Open Banking Nigeria proposes a non-proprietary, non-partisan API standard with which any registered fintech or partner organization can connect simply and securely to banks that implement them. The standard will be free for all, establish a framework for easy monetization, set limits and enforce transaction integrity.

The Standard will define a framework for API integration, data accessibility, and security while ensuring compliance with regulation with an overall aim of easing implementation, improving scalability, time to market and business continuity. Open Banking Nigeria believes this will inadvertently level the playing field in the industry and encourage healthy competition.

The API standard will create a single doorway that provides a consistent interface and means for managing external integrators, thereby reducing risks and threats with ease of visibility and control. While the interface will be standard driven, it will also be technologically agnostic, and implementations will be unique to organizations in line with their current or planned offerings. Simplicity will be a very core for the interface.

An open API for the Nigerian banking industry does not mean that any Fintech can freely access a bank's system without restriction. Banks would be required to impose controls to ensure security, privacy, and contractual assurance.

Security will be inbuilt from grounds up to engender confidence by companies, regulators, and other stakeholders using internationally accepted security frameworks.

5.2. Potential Opportunities for Open Banking in Nigeria

Amongst others, Open Banking offers the following opportunities to stakeholders within the Nigerian financial space:

5.2.1. *Financial Inclusion*

Open APIs are considered one of the most efficient and cost-effective ways of connecting financially excluded citizens to digital financial services in emerging economies. They offer a win-win situation for the large traditional banks, the fintech players and the unbanked citizens in need of formalized financial services.

Large banks in most cases are not operationally structured to yield significant returns focusing on the unbanked and underbanked geographies of emerging markets. Their business and operating models are instead optimally leveraged by serving corporate institutions and professional individuals.

Fintech companies on the other hand, with their small-scale workforce and significant technology leverage typically have the right configuration to drive financial inclusion by designing products that allow them to serve as middle players between the unbanked citizens and the large traditional banks.

By opening up their APIs, fintech companies are able to utilize the large Banks' APIs as 'digital rails' or financial infrastructure for servicing the unbanked population. Offerings of services such as mobile wallet services, peer-to-peer micro-lending, and digital savings will be achievable on a large scale by fintech companies if the right level of collaboration is achieved between the banks and fintech companies.

Open Banking Nigeria estimates that successfully putting up an Open Banking ecosystem in the Nigerian financial space can reduce financial exclusion from its present figure to about 20% in five years.

5.2.2. *Increased Retail Spend*

There is a two-way dimension to banks opening-up their APIs. While smaller fintechs can potentially leverage their financial infrastructures as digital rails for offering their services, the banks can also by partnership incorporate offerings of fintechs as a part of their fuller suite of services.

Overall, the Open Banking system holds potential of an ecosystem in which end-users can be offered the best possible combinations of financial and non-financial commodities (such travel services, consumer goods, home items, merchant-funded rewards, etc.). A good example here is the Commonwealth Bank in Australia which through partnerships offers digital real estate search in addition to its mortgage business.

Improved customer experience for end-users typically improves the potential to spend. Over the last decade the proportion of middle-class citizens in Nigeria has grown, and so have their disposable income. By offering a wide range of product and service bouquet, Open Banking can drive increased retail spend, which will potentially aid liquidity circulation within the economy, also spurring economic growth.

5.2.3. *Reduced Cost and Time to Innovation*

Data is the most critical component of any technology solution, and it is shared through an application programming interface (API). APIs, as they are simply called are intelligent conduits that allow handshakes between different technology and programming silos, aiding their inter-dependent work in providing desired end products.

APIs can be customized through several models¹⁰:

1. As internal APIs that allow internal developers within the organization build products and enterprise solutions. These are typically closed, assessable to just in-house staff.
2. As a partner or B2B interface that allows selected partners and suppliers' access technology tools. These interfaces are typically monetized based on time and product agreements.
3. And as a public or open APIs that allow any external partner or developer to build innovative applications and products.

For any of these three API models to be effectively maximized in a technology architecture, the technology product must be built compatible with the configuration of the Bank's API. An inherent challenge exists here for most Banks.

Most banks have API configurations not compatible with those of generic product offerings designed by Fintech companies. This introduces the challenge of integration.

The Nigerian banking landscape has this challenge as all the large commercial banks have different interfaces, making integrations complex, expensive and time-consuming. Fintechs thus have to spend long periods in developing products customized for the API, as against having a turn-key solution that can be integrated into a standard API.

Several fintech solutions have collapsed due to the lengthy time and massive cost of design/ integration. This challenge can however be virtually eliminated by the introduction of API standards in the industry. Having a standard for APIs will bring clarity, stability and establish a body of knowledge for future references.

¹⁰ Data Sharing and Open Banking – Mckinsey and Company

Open Banking Nigeria proposes the adoption of standardized application interfaces by all commercial Banks. This will potentially drive down the time to innovate and develop products from months to weeks. Also resulting in measurable financial savings for both banks and the fintech companies.

Based on precedents, Open Banking Nigeria has enough reasons to believe Nigerian banks will be willing to open their APIs and adopt an industry-wide standard. Nigerian banks have historically implemented APIs integration with fintechs in the past. The likes of UBA, Access Bank, Diamond Bank, and GT Bank all have formal API gateways.

5.3. Open Banking Nigeria's Proposition for Risk Management

Trust, accountability, and transparency are required for the successful management of any Open Banking ecosystem. Security and risk management are being factored into the Open Banking Nigeria design from grounds up and not just an afterthought.

5.3.1. *Openness and Accountability for Open Banking Members*¹¹

Open Banking Nigeria will maintain an open register for all entities (banks, fintechs, and third-party companies) registered to the program.

Before onboarding, all prospect users of the open API standard will be required to undergo registration, after which they are given an Open Banking Certificate which confirms their regulated status. A monitoring team will be established by the Open Banking Nigeria team to monitor compliance of registered entities to the operational and security requirements of the program.

Entities can lose their status if they default on standards and requirements of membership. Entities who lose their regulatory status are revoked of their certificates.

By standardizing APIs and creating a single point of entry, Open Banking Nigeria will reduce the risk of banks opening multiple API fronts for integration with fintechs. This will provide an opportunity for increased monitoring.

5.3.2. *Strong Authentication*¹²

To protect customers from fraudsters gaining access to their sensitive information, Open Banking Nigeria will enforce the usage of strong authentication procedures. The authentication requirements will be tailor-matched to the level of sensitivity of data being requested for. A risk exposure framework will be defined to guide the level of authentication to be required by users of the open API.

¹¹ Risk Management – OBIE

¹² Open Banking: US is Next – PwC

For payment to be processed from a consolidated account view, a multi-factor authentication will be required. For information request involving even higher risk exposures, out-of-band authentication methods utilizing auxiliary channels will be required.

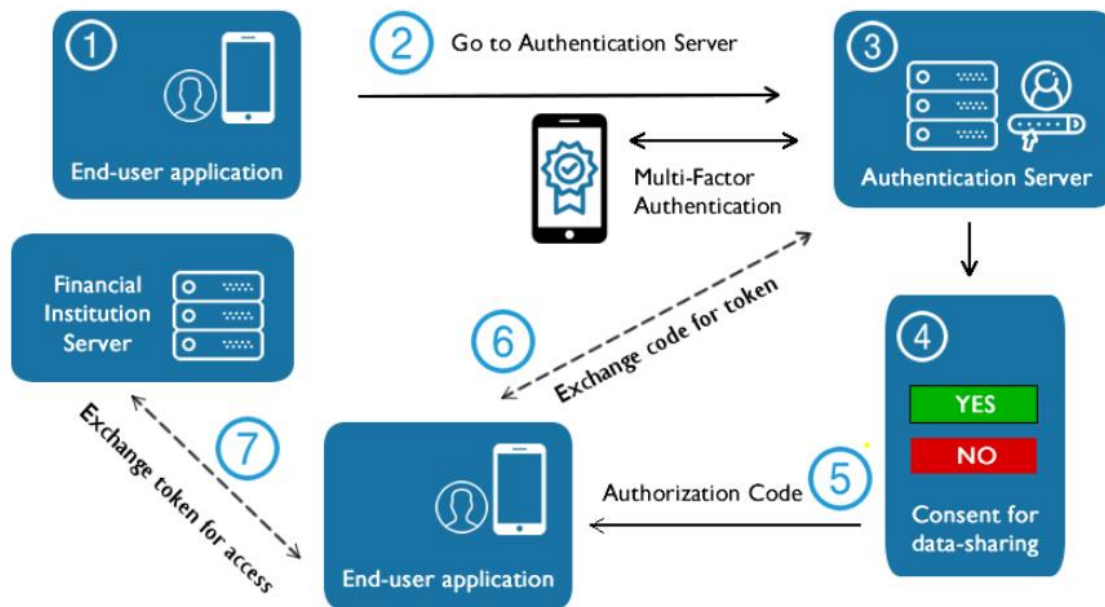


Figure 2: Open Banking Authorization Flow (source: GlobalSign)¹³

Open Banking will leverage improved authentication procedures from benchmark countries who have made advancements in the field.

Open Banking Nigeria will Implement Ouath2 with a combination of other 2FA variants.

5.3.3. Data Ownership and Encryption¹²

Open Banking Nigeria will set the framework and policies for the ownership, storage, transfer, retention, and deletion of customer data. Ideally, customer banks will remain the chief custodians of customer data and will have the responsibility of defining contractual agreements with third-party platforms on how collected data will be retained or deleted.

During transfer and storage, customer data will be encrypted to provide an additional level of security.

¹³ How to Implement Secure APIs in an Open Banking Partnership Part 1 – GlobalSign

5.3.4. *Security Measures*

The following security and encryption measures amongst others have been defined for the Open Banking standards:

1. API connections and data in transit should be encrypted using TLS 1.2 at the minimum.
2. Configure your SSL provider to only support strong (FIPS 140-2 compliant) algorithms.
3. Use Cipher Suites w/ Perfect Forward Secrecy! e.g. CDHE_RSA_WITH_AES_256_GCM_SHA256.
4. Use Extended Validation (EV) Certificates.
5. Use HMAC signature-based authentication model for API key exchange.
6. Use RESTful APIs instead of SOAP APIs.
7. Use of JSON Web Tokens (JWT) as the format for security tokens.
8. Whitelist and allow only valid entities.
9. Use Security headers.
10. Avoid Sensitive information in HTTP requests.
11. Develop using secure coding principles.
12. Validate content types.
13. Validate lengths, structures, and schemas.
14. Perform input validation to sanitize all inputs.
15. Use ALL the HTTP Return Codes.
16. Apply threat detection using WAF.

6. Open Technology Foundation

Open Technology Foundation, usually styled as Open Banking Nigeria, is a legal entity propelling the Open Banking journey in Nigeria. Set-up as a not-for-profit organization, the company, 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 have been 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 the consumer's access to essential financial products and services.

6.1. Objectives of Open Banking Nigeria

Amongst others Open Banking Nigeria was constituted to achieve the following objectives:

1. To drive advocacy with Nigerian banks, Fintechs, regulators, to understand and embrace the concept of Open Banking to boost financial inclusion and improve customer experience.
2. To work with Nigerian banks to implement and adopt a single Open Banking API standard while implementing their ESBs and other API integration projects.
3. To define and open and non-partisan set of Application Programming Interfaces (APIs) to design the API standards.
4. To provide a sandbox and other testing tools for certification.
5. To promote adoption of Open Banking standards with stakeholders across Nigeria to enable further innovation in the financial industry.

6.2. Formulation of the Open Banking Nigeria

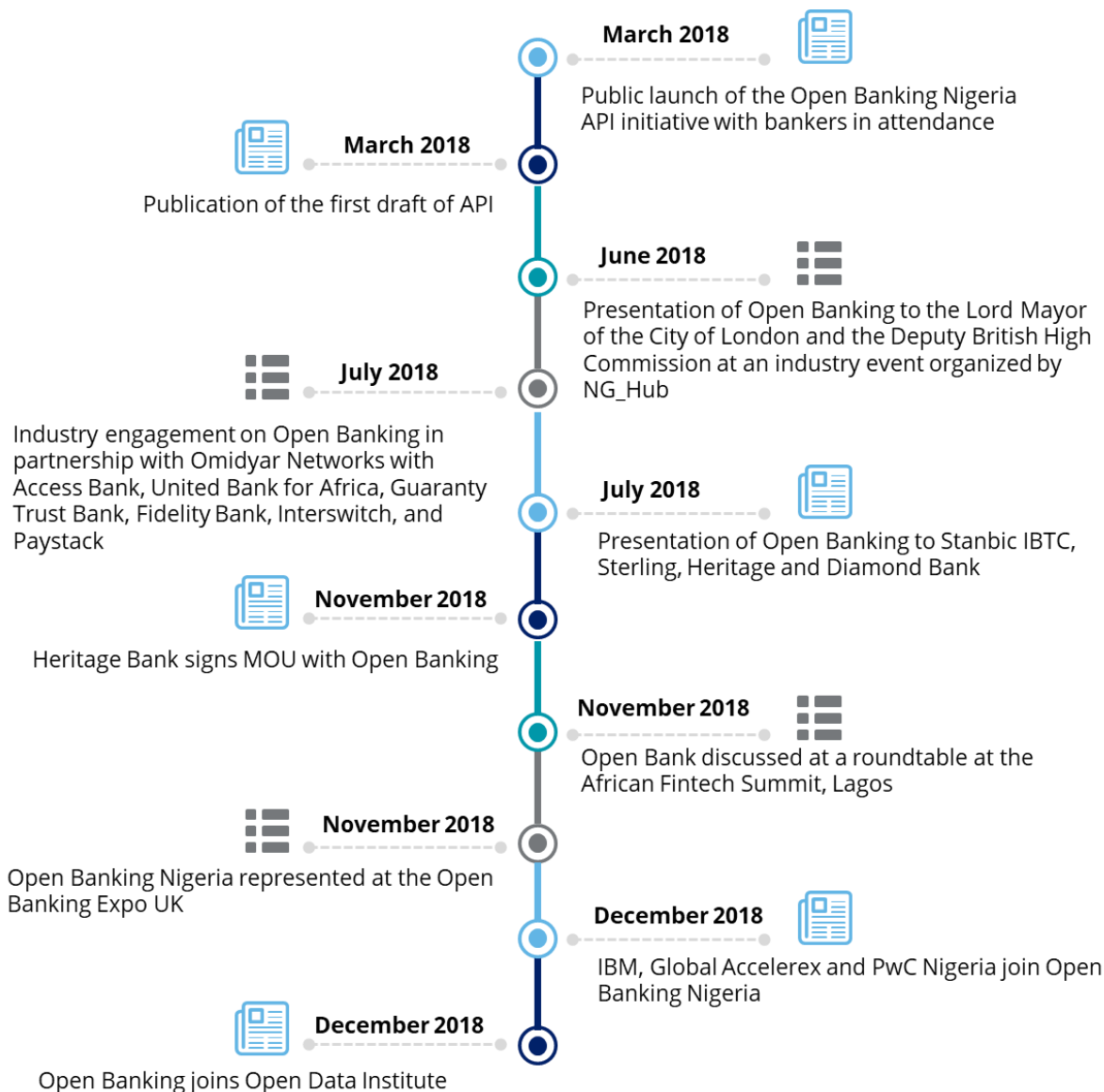
Open Banking Nigeria comprises seasoned individuals with the length of years' experience in the Nigerian financial space. The list of members, which is rapidly growing, can be found at <https://openbanking.ng/about/>.

6.2.1. Corporate Members and Affiliates of Open Banking Nigeria

Corporate	Involvement
2iLabs	Member
Africa's Talking	Member
Flutterwave	Member
forloop	Developer Network
Global Accelerex	Member
Heritage Bank	Commercial Bank
Innovectives	Member
Kinexus	Member
Paystack	Member
PwC Nigeria	Observing Partner
TeamApt	Member
Wallet.ng	Member

6.3. Open Banking Activities and Milestones for 2018

Open Banking Nigeria through its Group of Trustees made significant efforts in 2018 towards projecting Open Banking Nigeria in the local and international space. Below is a summary of the key initiatives carried out:



6.4. Feedback from Discussions with Local Banks

Open Banking Nigeria has organized forums with some Nigeria’s leading commercial banks to discuss joining the Open Banking Nigeria initiative. Most banks have given generally positive feedback, showing the willingness to explore the benefits of the initiative.

A number of the banks are however also waiting for the Central Bank’s directive on the initiative.

7. The Role of CBN in the Open Banking Journey

Regulatory involvement has been identified as a necessary condition for the growth and adoption of any Open Banking ecosystem. Feeding on benchmark analysis of other economies, regulatory involvement could range from regulations to policies, financial aids or even support of complementary initiatives.

Country	Involvement by Regulator
United Kingdom	<ul style="list-style-type: none"> • Issued Open Banking standards and policies. • Set-up CMA as the enforcement body for the national Open Banking program. • Set-up Open Banking Implementation Entity (OBIE) to manage the technical and operational running of the open API. • Set-up trustee group made of industry representatives (banks, fintech, and public sector) to steer activities of the OBIE. • Conducts frequent awareness programs to drive the right perception for Open Banking.
India	<ul style="list-style-type: none"> • As a part of a larger 'Digital India' initiative, the National Payment Corp of India mandated an open API policy. • Introduced IndiaStack in 2016. A set of APIs for driving collaborative innovation.
Malaysia	<ul style="list-style-type: none"> • Established Open API implementation group to encourage the use of open APIs.
Bahrain	<ul style="list-style-type: none"> • Central Bank issued national rules on Open Banking
European Union	<ul style="list-style-type: none"> • Issued directive for the PSD2.
Australia	<ul style="list-style-type: none"> • Issued directive on a four-phased implementation of Open Banking standards within the country. • Introduced complimentary initiatives to drive adoption, e.g. establishment and enhancement of regulatory sandboxes.
Singapore	<ul style="list-style-type: none"> • Published non-binding API guidelines. • Developed regulatory sand-box for fintech players. • Launched 27 million Singaporean Dollar grant for the support of innovations towards integration.

Open Banking Nigeria is of the opinion that significant support will be required from the Central Bank of Nigeria if Open Banking is to yield the required benefits of economic growth, financial inclusion and improved banking customer experience in Nigeria.

As seen from the benchmark countries above, CBN's involvement is critical to the adoption of Open Banking by the industry players. For the Nigerian economy to reap returns from an Open Banking ecosystem in the next five years, CBN needs to begin active conversations on the subject imminently.

Open Banking Nigeria hopes to deepen its existing relationship with the Central Bank, to facilitate the maturity of the Nigerian Open Banking ecosystem.

7.1. Prayers to the Central Bank

We desire the Central Bank of Nigeria drives the following:

- Call for an industry forum or ideation session through which the Central Bank can communicate its support and vision for Open Banking.
- Provide a slot for Open Banking Nigeria during the forum/ ideation session for educating stakeholders on the benefits of Open Banking as well as its strategy for driving adoption.
- Issue support to Open Banking Nigeria API standards and help drive adoption with Nigerian banks through the industry forum.
- Issue public communication through media platforms on the benefits and potential opportunities for the Nigerian economy in Open Banking.
- Set-up an in-house CBN committee for the implementation of Open Banking in Nigeria. The committee will oversee compliance and will serve as a counterpart team to Open Banking Nigeria.

Open Banking Nigeria

contact@openbanking.ng

<https://openbanking.ng>