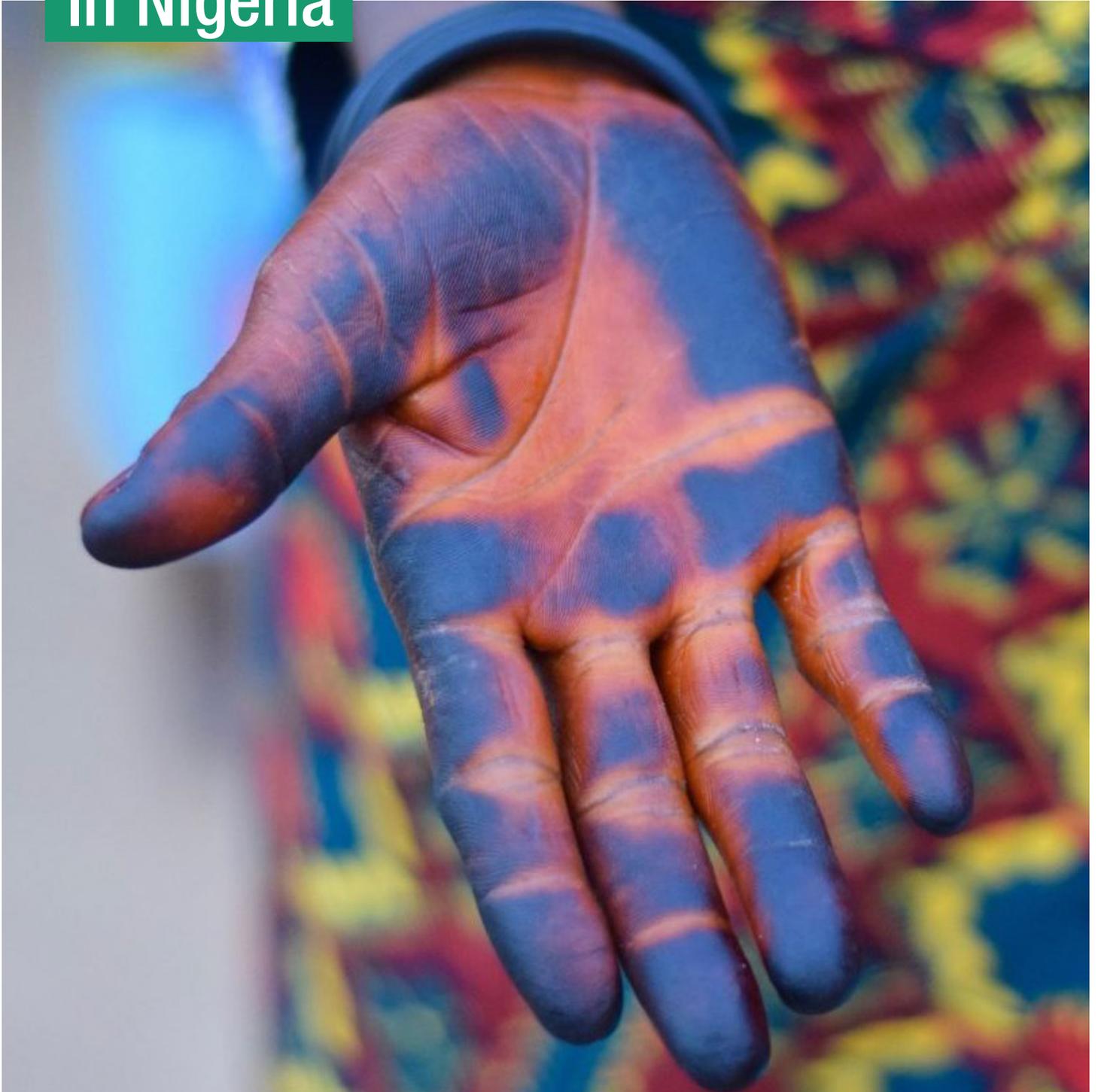


The Case for

Open Banking

In Nigeria



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# Foreword



Nigerian financial service providers have made huge strides in digital transformation in recent years. They have invested heavily in new technologies that help them serve their customers better while making sure they have the risk management, cybersecurity and governance practices in place so they can successfully execute on their innovation plans.

Amidst all of that progress, several forces are combining to take the innovation push to the next level. Competition is increasing as technology players of all sizes seek to make their mark in the financial services industry. Consumers who have come to appreciate the added convenience of digital services in many aspects of their lives, are now expecting similar experiences from their banks. Also, with concerns about privacy breaches on the rise, consumers are now looking for more control over their own data.

Open Banking lets customers have increased control over their data while supporting the innovation everyone yearns to see more of.

This publication explores open banking in detail, including what it is, what it means for the various players in the financial services ecosystem and what the opportunities and path forward could look like. PwC has taken the lead globally in conversations around Open Banking and has now partnered with Open Banking Foundation Nigeria to take this forward in Nigeria and across West Africa.

We hope you enjoy the report and look forward to discussing the important issues affecting Nigeria's financial services industry in 2019 and beyond.

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Without a thought, I often use my debit card on any ATM, anywhere in the world. Sometimes, I don't even bother to read the name of the bank on the machine. This incredible magic, which we have all taken for granted, is only possible because, at one time in the past, global networks and banks decided to adopt some set of standards for card payments. Those standards powered 69.5 billion debit card transactions in 2016.

As the world continues to evolve and payments become increasingly digital and mobile, consumer yearns for the flexibility, convenience, and simplicity that they have come to see as usual, for their banking services. While a number of fintechs continue to innovate, it is apparent that without a common API standard, the barrier to innovation, especially in developing regions of the world like Nigeria, would continue to hinder the expansion of digital payments and by extension, financial inclusion.

As countries latch on to this need to develop and advocate for open API standards, usually by regulators, some of us in Nigeria have come together to work with stakeholders to do the same. The need for Open Banking in Nigeria is even more critical than just convenience; it is the only hope for over 40 million Nigerians who are financially excluded but who can be included within the formal financial ecosystem by services that are developed by fintechs and powered by Open Banking.

A simple API standard may not wear a cape like Superman, but looking around, standards are the unsung heroes of progress. Open Banking would be no different.

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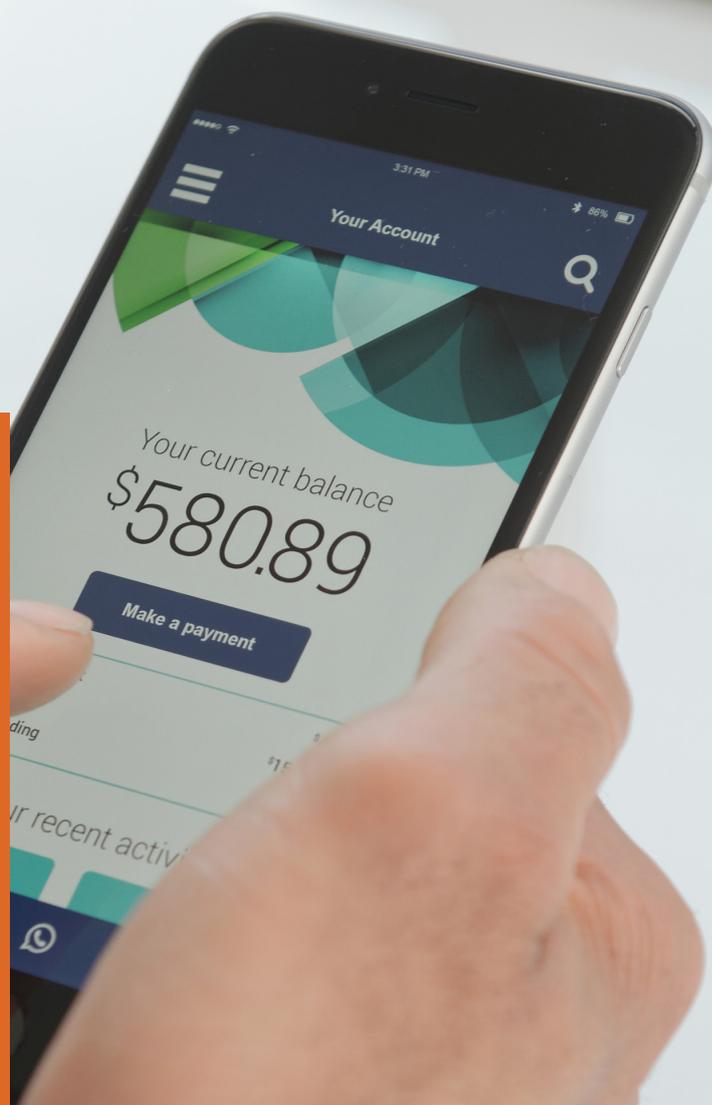
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# Open Banking 101

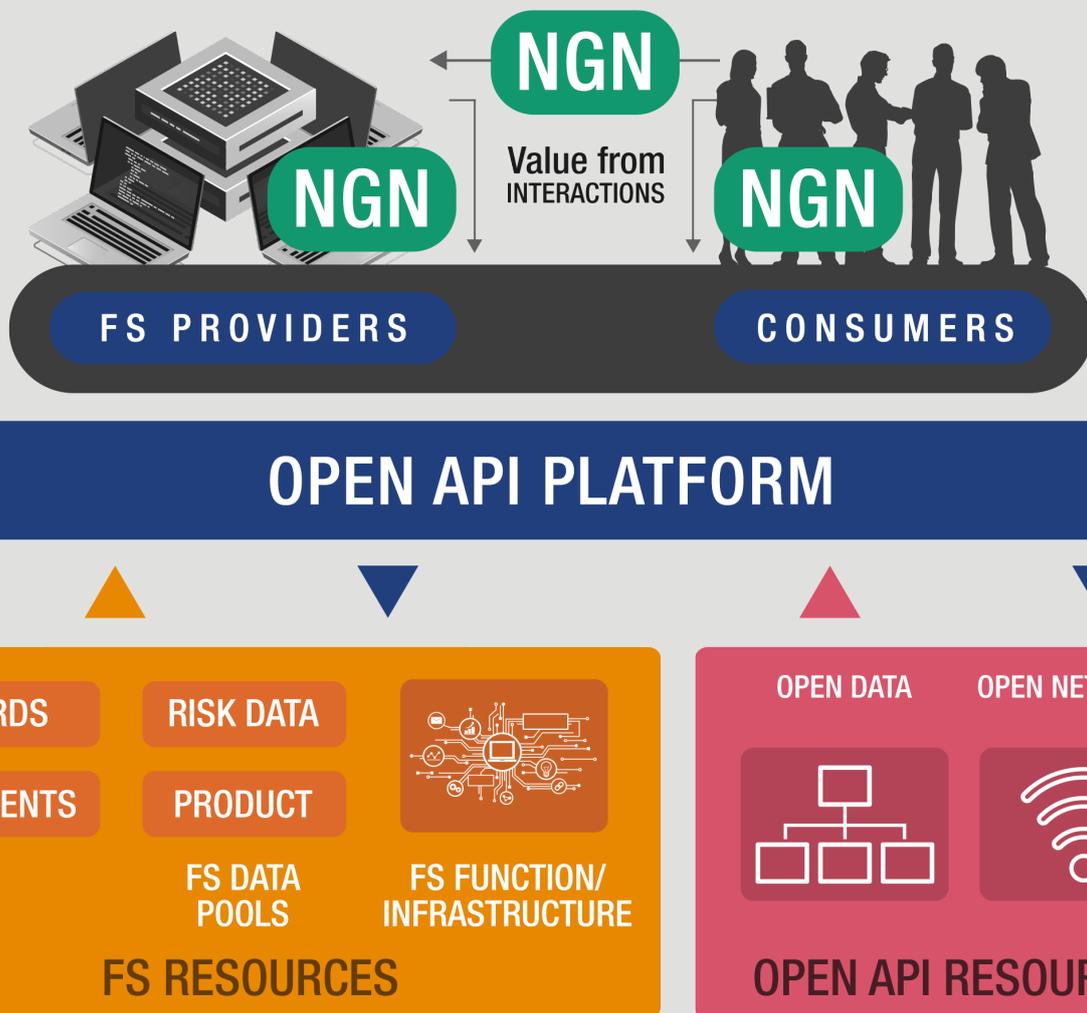
Open Banking is a blanket financial services (FS) term used to describe the use of open technologies by third party providers (TPPs) to build services and applications around financial institutions. It provides guidance on how TPPs can access and utilise customer bank data in a standard format to provide more open, transparent and competitive banking services.

To put it in straightforward terms, open banking means that no matter how many accounts and financial products a customer has, he/she can view and manage them from a centralised location.

Data is power, and open banking has the potential to revolutionize the FS landscape for all stakeholders from customers to traditional banks and even the regulators. It is a fundamental shift from a closed model to one in which data is shared between different members of the banking ecosystem with authorization from the customer.



# An Open Banking Model



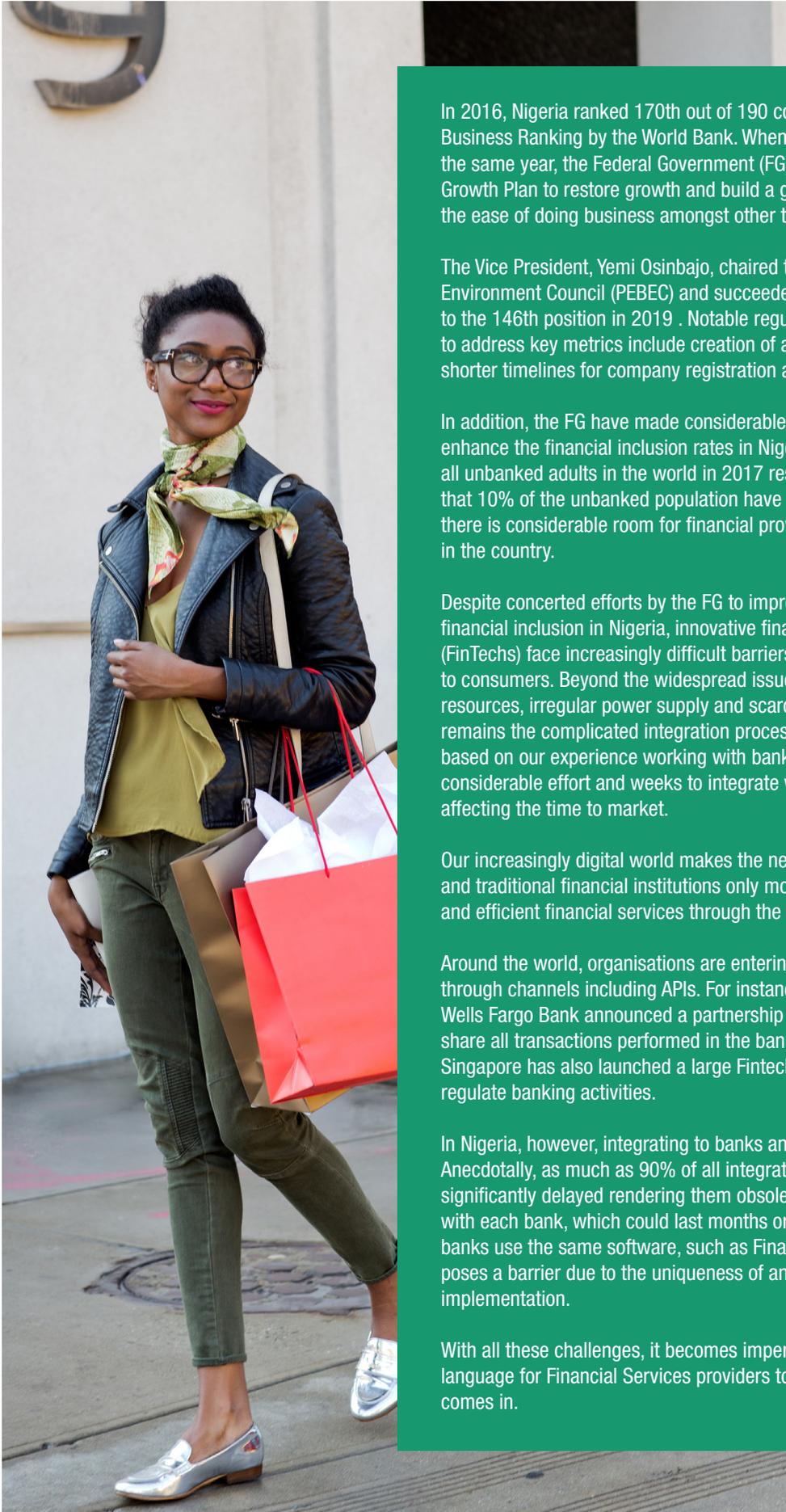
A key enabler for an efficient Open Banking landscape is the Application Programming Interface (API). An API is a simple and standardized means by which technology platforms from different vendors or locations communicate with each other. It allows for the controlled yet seamless flow of data between systems.

APIs have become the world's most popular means of integrating software systems. However, the beauty of APIs is only appreciated when companies agree on common standards. Standards, such as the SMTP that drives emails, has made life easy for all. Irrespective of the phone or email platform used, emails will deliver rapidly to the recipient anywhere in the world.

Another critical example, especially within the financial industry, is the debit card. Though the card may be issued by a Nigerian bank, it is universally accepted at ATM/POS terminals around the world. It is evident that standards ensure that localized initiatives work seamlessly across the globe.

These examples explain the concept of open banking which is a collaborative effort to share banking data via APIs between key players to create a better banking experience that meets the unique needs of every customer.

# Why Open Banking?



In 2016, Nigeria ranked 170th out of 190 countries in the annual Ease of Doing Business Ranking by the World Bank. When the country plunged into a recession in the same year, the Federal Government (FG) launched the Economic Recovery and Growth Plan to restore growth and build a globally competitive company by improving the ease of doing business amongst other things.

The Vice President, Yemi Osinbajo, chaired the Presidential Enabling Business Environment Council (PEBEC) and succeeded in moving the country up by 24 places to the 146th position in 2019. Notable regulation reforms that were implemented to address key metrics include creation of an online company registrations portal, shorter timelines for company registration and simpler visa-on-arrival process.

In addition, the FG have made considerable efforts and introduced reforms to enhance the financial inclusion rates in Nigeria. According to the World Bank, 4% of all unbanked adults in the world in 2017 resided in Nigeria. With statistics that show that 10% of the unbanked population have access to a mobile phone and internet, there is considerable room for financial providers to reduce the unbanked population in the country.

Despite concerted efforts by the FG to improve the ease of doing business and financial inclusion in Nigeria, innovative financial services technology firms (FinTechs) face increasingly difficult barriers to providing services and applications to consumers. Beyond the widespread issues such as shortage of qualified human resources, irregular power supply and scarcity of affordable loans, a major challenge remains the complicated integration process with traditional banks. For instance, based on our experience working with banks and anecdotal evidence, it takes considerable effort and weeks to integrate with a third party service, negatively affecting the time to market.

Our increasingly digital world makes the need for cooperation between the FinTechs and traditional financial institutions only more important to provide more effective and efficient financial services through the linkage of the various financial networks.

Around the world, organisations are entering into agreements to share financial data through channels including APIs. For instance, in the United States of America (USA), Wells Fargo Bank announced a partnership with Xero (Financial Software Provider) to share all transactions performed in the bank account with the accounting software. Singapore has also launched a large Fintech market built largely around APIs to regulate banking activities.

In Nigeria, however, integrating to banks and the financial network has been difficult. Anecdotally, as much as 90% of all integration projects with banks either fail or are significantly delayed rendering them obsolete. Currently, startups have to integrate with each bank, which could last months or even years. Even in the case where two banks use the same software, such as Finacle or Flexcube, the technical approach poses a barrier due to the uniqueness of and customized elements within each implementation.

With all these challenges, it becomes imperative for a common standard and language for Financial Services providers to converse. This is where Open Banking comes in.

# PwC's Perspective on Open Banking



Many ideas behind open banking have been around for a long time and FS players have clamoured for a simpler means of connecting to and transmitting data within the ecosystem. In addition, the successful implementation of the Central Bank of Nigeria's financial inclusion goal and the recently released guidelines for the creation of Payment Service Banks (PSB) relies heavily on the smooth connectivity between the PSB and third party providers.

There are three schools of thought regarding implementation of open banking:

- The threat school sees open banking as a new cost expense and not revenue driven. Moreover, the new level of competition stimulated by open banking is expected to mainly require a tactical response, perhaps in the form of lower prices, to defend the customer interface.
- The wait-and-see school views open banking as a not-yet-ripe chance to better serve customers and extend market reach. In this school, it is too early to tell how open banking can be used to create value. Most players in Nigeria currently subscribe to this school of thought.
- The catalyst school sees open banking in the broader context of the fundamental disruption that is under way across the global financial sector. This school believes that the time for responding is at hand — indeed, some say it is already passing.

At PwC, we see that Open Banking can take many forms depending on several factors such as risk appetite for FS players including

consumers, regulatory input, applicable products (e.g. loans vs. transactional accounts) and existing technology capabilities.

Three of the leading open banking instances are:

- Open Data: Involves the use of APIs to allow verified third parties to access customer data
- Open Process: Involves leveraging open APIs to access bank systems and initiate transactions for customers
- Open Products: Refers to the ability of third parties to create financial products or for customers to move accounts between financial providers.

API connectivity is not new and many organisations today integrate and share data with Software as a Service (SaaS) providers using APIs. Using APIs can specifically reduce the cost, time, and complexity for banks to connect third-party solutions with their core systems. However, that connection is usually bi-directional and not published publicly meaning it is not truly "open."

The next phase will likely be a broader open architecture that provides more consumer choice in financial solutions and encourages third parties to develop new services on top of bank platforms and data.

Some of the architectural decisions we envisage organisations will need to make in the new open banking world include:

### 1. Overall channel approach?

Should open banking be another 'digital channel bolt-on', or is it time to re-think the entire digital architecture?

### 2. Open banking API infrastructure - buy versus build?

To what extent can my existing API capabilities and technology stacks support the needs of open banking. Would a new product offer a better architectural fit over a bespoke build, or incumbent platform?

### 3. Mastering and managing consent?

How and where should open banking consent be mastered, and to what extent should it be integrated with the API, customer, core system or digital and assisted channel?

### 4. Future Proofing – what to consider?

One of the key questions around future proofing is 'to what level will it be adopted by consumers and service providers'? Would your architecture readily scale and be able to support a scenario where open banking drove 1000x the digital load you have today?



## Open Banking Risk Mitigation:

Open Banking comes with risks. An instinctual reaction most people display when discussing the possibility of open banking is to ask, "What happens if the authorised third party experiences a breach?" Some of the biggest concerns around open banking include privacy breaches, data security, cybercrime and fraud.

Open banking does have the potential to magnify the breach and cybersecurity risks when they happen, which could mean financial and reputational exposure for the affected organisations. However, the financial services sector is one of the most secure sectors in Nigeria and we envisage players will be able to improve their existing security posture to cater to specific open banking threats.

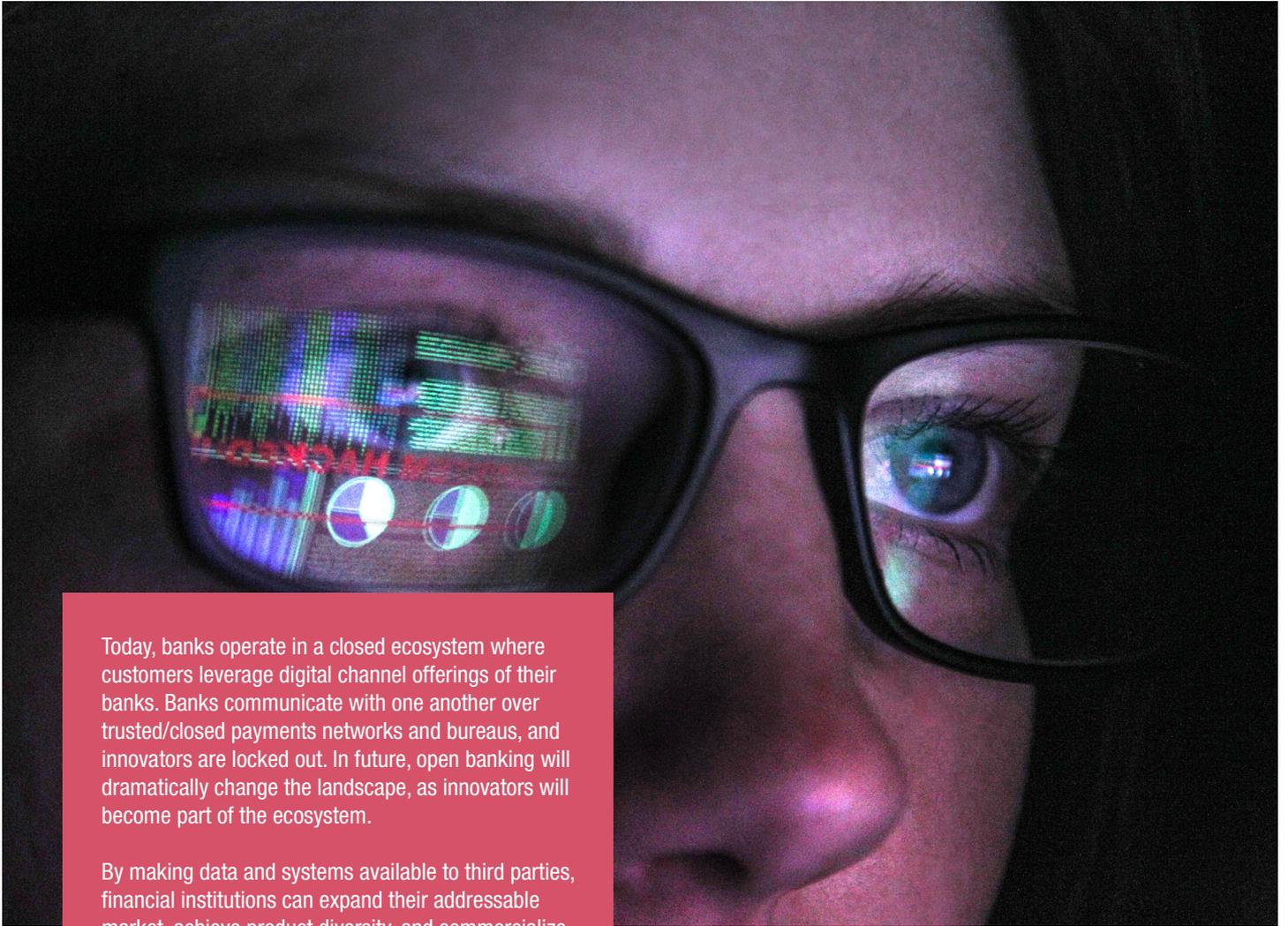
A key question banks and other FS players need to ask is "Do I have an **inventory framework** to know what data has been shared and received and how am I using it?" All parties need to be clear on who sent the data, why and what the data is going to be used for.

This type of framework will help provide audit trails for data lineage and mitigate data privacy and security concerns. Also, using a centralised API standard and gateway means that requests for data access can be managed effectively and could potentially reduce the impact of external threats.

### Additional security considerations organisations need to consider include

1. **Data Security and Protection:** Use Data Masking policies for hiding sensitive data when logged. Data ownership needs to be agreed and defined across the entire life cycle of the data.
2. **Authentication & Authorization:** Use security certificates / Keys for app authentication and restrict access for apps to their allowed resources. By default, authorization process should not allow access to more information than necessary or than the user has consented to.
3. **Security & Compliance Ownership:** Overall RACI of compliance & security environment must be well defined by regulators.

# The case for open Banking in Nigeria



Today, banks operate in a closed ecosystem where customers leverage digital channel offerings of their banks. Banks communicate with one another over trusted/closed payments networks and bureaus, and innovators are locked out. In future, open banking will dramatically change the landscape, as innovators will become part of the ecosystem.

By making data and systems available to third parties, financial institutions can expand their addressable market, achieve product diversity, and commercialize core systems.

For FS players, there is reason to be uncertain of any strategy that involves the sharing of data, which is a valuable organizational asset. It is hard to imagine an organization sharing confidential sales activity or personal individual transaction data—and harder yet to imagine exposing this data to potential competitors. Nevertheless, this is the premise of open banking, which means financial services companies need to consider whether and how to share consumer data with commercial parties and distribute third-party products with bank customers.

With the UK and EU releasing regulations requiring banks share data and Australia passing open banking measures, there is increased awareness of the potential benefits and challenges of open banking in the global Financial Services sector.

Open Banking has the potential to provide considerable benefits to all players in the financial services sector including:

- Using data, organisations are better placed to understand consumer financial behavior and trends. Businesses, including banks and other financial services firms, can use data to assess a borrower's likelihood of repaying loans, financial position and goals and purchasing preferences.
- Consumers can also use data to understand their own behavior and interests. Empowering consumers to make better decisions is appealing both to help protect consumers' interests and to drive more robust competition.
- Greater bank data availability could also help drive innovation. Service providers may develop innovative ways of understanding and improving financial behavior and outcomes

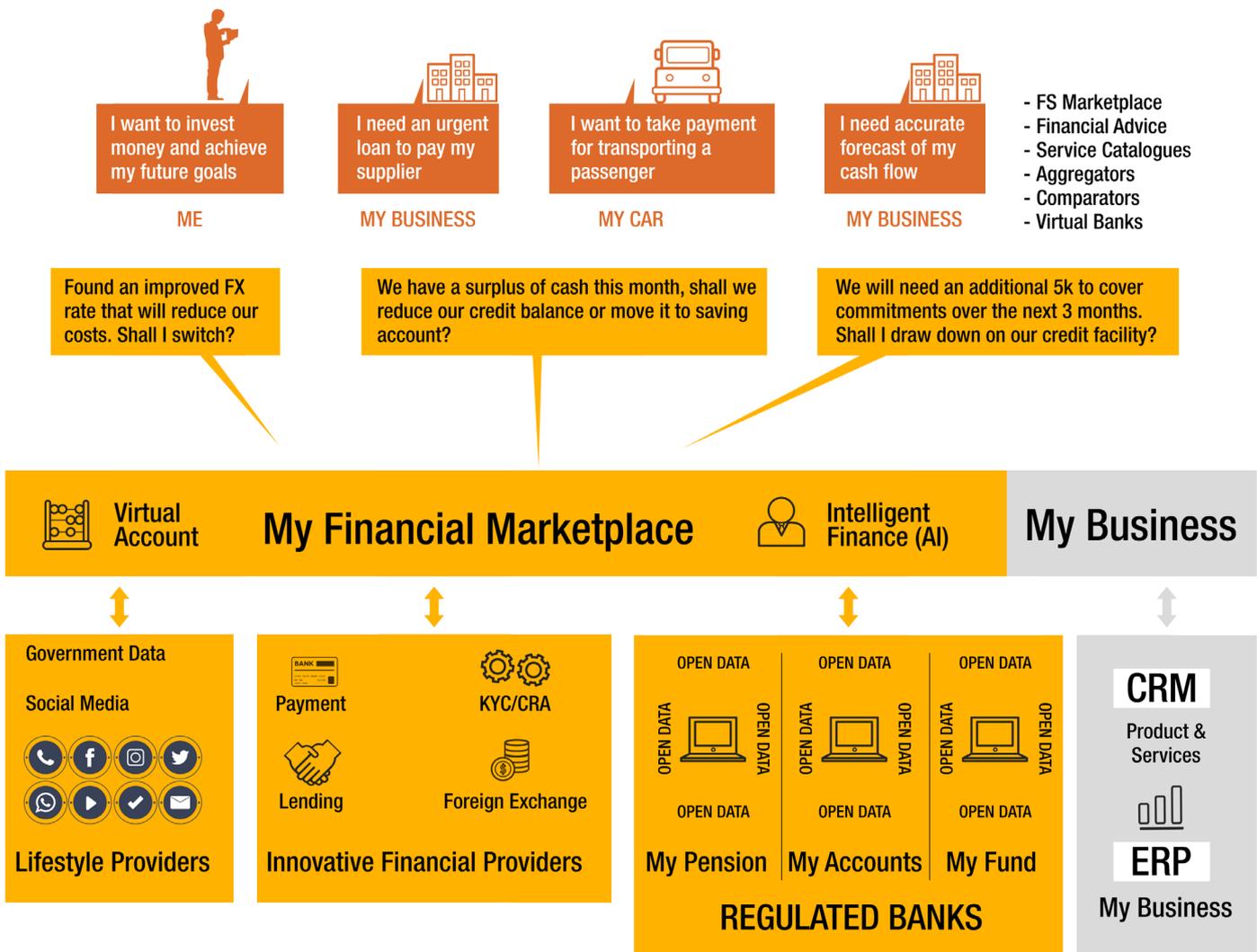
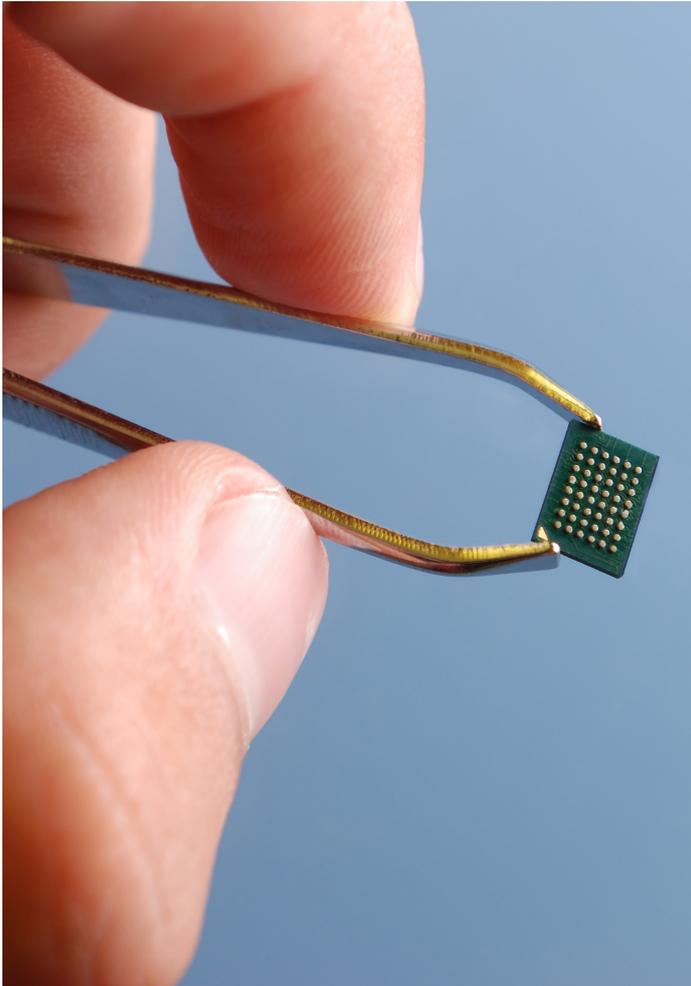


Figure 1 An Opening Banking Future

These benefits could lead to unintended consequences with potentially harmful implications (see Table 1), as such, it is imperative that customer protection is a key component of open banking.

	Potential Benefits	Unintended Consequences
Data Sharing	Removal of manual data entry with data sharing only undertaken with regulator approved 3rd parties	Increased number of data breaches, fraud and phishing
Financial Accessibility	Wider choice of providers with improved financial planning and insight tools	Increased exclusion as low credit quality customers are more easily identified and some customers are technically excluded
Pricing	Competitive pricing and value for money given a larger number of providers	Reduced ability to price for bundle products and price wars due to commoditized products and providers
Product innovation	Development of new propositions given the availability of customer data to approved FinTechs	Increased capital/funding issues due to deposits moving rapidly between different banks

# What next for Nigeria?



## What happens if the Nigerian financial sector adopts the same API standard for integration?

The Nigerian banking industry, under the regulation of the Central Bank of Nigeria, has a history of collaboration to create impactful standards across several banking activities. Examples include the Nigeria Uniform Bank Account Number (NUBAN), Bank Verification Number (BVN) and NIBSS Instant Payment (NIP). These standards have driven the expansion and security of the payment ecosystem, landing Nigeria a position in the top five attractive countries for foreign direct investment in Africa.

As noble as these efforts have been, the integration standard between banks has not been addressed leading to a complex integration landscape across the industry. If banks adopt a uniform API standard, there would be more seamless integration with the Fintechs leading to cheaper operating costs and enhanced customer experience.

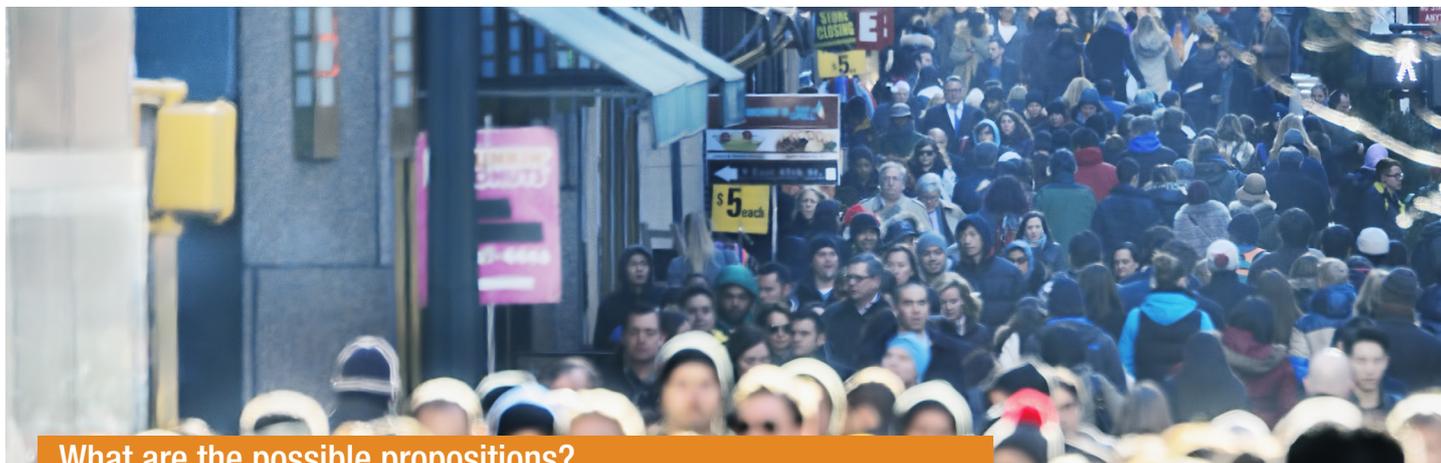
## What are the possible propositions?

The different use cases depend on the risk appetite and business model selected by the FS players. The creative nature of solution development means it is impossible to determine the full range of use cases and propositions to be provided by all players.

In this paper, we put forward five broad categories of propositions (see Table 2): aggregation platforms, process improvement, advice and analytics tools, enhanced banking product offerings and enhanced non-banking product offerings.

Proposition	Description	Example use case
Aggregation platforms	Provide a single view of customer financials across multiple providers, as well as recommendations on product choices	Managing bank account, investments, loans and savings products from different providers in a single application
Process improvement	Integration and automation of administrative activities	Using account APIs to automatically verify identity, salary and income as part of loan approval process
Advice and analytics tools	Insight and recommendations based on open data	Using data analytics on account transaction data to identify spending patterns to help people budget and manage their savings
Enhanced banking and non-banking product offerings	Tailored products based on customer data & improved functionality from automation	Creating customised holiday loan products based on flight and hotel bookings and anticipated spend

For instance, Moneyhub ([www.moneyhub.com](http://www.moneyhub.com)) is an example of a FinTech providing financial aggregation and analytics services. It consolidates all the user's financial data such as transactional accounts, credit cards, investments and loans into a single platform to provide a single view of the user's financial position at a given point in time. It also performs spending analytics to help the understand where and when they spend their money to identify trends and plan for the future.



## What are the possible propositions?

Open banking has the potential to lead to wide disruption in the FS landscape and all players need to be aware of the potential changes to their business models and revenue streams.

### Traditional Banks

Banks have strong brands and are trusted to look after customers' money, identities and data. They already have large established customer bases, and Open Banking provides a way of enriching the functionality and experiences that they can offer. This would typically be through better use of analytics and personalization, combining data already held by the bank with data gathered from other institutions and sources.

However, open banking could lead to weakening of customer relationships as customers could decide to deal directly with FinTechs/TPPs. There is also the reputational risk associated with data breaches, even if the breach did not directly occur on their platform.

The key differentiator for banks will be their ability to understand the data they currently have and utilize it in a customer-centric approach.

### Digital Banks

Open Banking is a core concept for many digital banks, who have built their systems with customer centricity, partnerships and continuous innovation in mind, and whose platforms have modern, modular architectures that lend themselves to API-based sharing. In Africa, we are seeing an uptick in Banks either launching digital only banks (e.g. Tyme Bank in South Africa and Kudi Bank in Nigeria) or creating a separate digital unit within their existing structure (e.g. Alat by Wema Bank in Nigeria).

While digital banks do not need open banking to succeed, their business model means that they are natural champions of an API

sharing world and it provides an even bigger pool of services and opportunities to their customers.

### FinTechs and Payment Providers

As FinTechs are fundamentally focused on providing financial solutions, access to financial data is critical for them to create new solutions and to prove their value to prospective users. Open Banking, therefore, provides a big opportunity to scale up their customer base and products. They can expect to face increased competition from incumbent banks scaling up their digital offerings and new entrants to the FS landscape.

Payment providers in Nigeria currently provide innovative products to their customers such as payment through USSD, phone number and social media. They can nonetheless realise significant opportunities through open banking by enhancing the services they provide to customers and speeding their time to market for new products.

### New Business Channels:

Open Banking provides opportunities for new and diverse business offerings such as comparison sites and centralized KYC management. For instance, comparison sites such as MoneySupermarket and CompareGuru play a big role in the customer decision-making journey.

While they are not prevalent in Nigeria due to the lack of public information such as loan rates, current account returns and fixed deposit rates, open banking provides the opportunity for this type of business to kick off strongly in the country.

# So, what next?



The global momentum towards open banking is clear and Nigeria needs to take the lead in its implementation in Africa. Cooperation between FS stakeholders including regulators, advocacy groups and independent bodies is important and required to make open banking a reality.

For regulators and the government, the importance of open banking in improving the ease of operating businesses in Nigeria and attracting foreign investments cannot be over-emphasized.

Nigeria will need to develop standards to suit our local financial system while leveraging on the methodologies, successes and failures of implementing open banking in the West. The government should provide funding and appropriate regulations to ensure production and adoption of APIs. By collaborating with the FinTechs to export our homegrown solutions to international markets, a new revenue stream will be created, increasing economic growth.

Advocacy groups such as Open Banking Nigeria will also play an important role in obtaining buy-in from all critical stakeholders in the banking industry and creation of regulations to support this initiative. These stakeholders include the government, Central Bank of Nigeria, Bankers' Committee and the FinTechs. They will also collaborate with other interested partners to create a stronger voice and commitment to the cause. In addition, they can support the open banking growth by building demo sandboxes for FinTechs and independent developers to enable them to test their software.

Certifications are an integral part of standards. As such, it is imperative that certification programs are developed to ensure that any application or service is built according to published API specification.

With the rapidly evolving banking sector, open banking is set to transform the previous ways of working. Nigeria needs to be adequately prepared to pioneer this promising initiative in Africa, with support from the government and other stakeholders.

# Contacts

If you wish to discuss any of the ideas in this paper in more detail, please contact one of the following or your usual PwC contact.



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## About 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 in June 2017 as a nonprofit 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.

## About PwC's Financial Services practice

PwC's people come together with one purpose: to build trust in society and solve important problems. PwC serves multinational financial institutions across banking and capital markets, insurance, asset management, payments, and financial technology.

As a result, PwC has the extensive experience needed to advise on the portfolio of business issues that affect the industry, and we apply that knowledge to our clients' individual circumstances. We help address business issues from client impact to product design, and from go-to-market strategy to human capital, across all dimensions of the organisation.

PwC Nigeria helps organisations and individuals create the value they're looking for. We're a member of the PwC network of firms in 157 countries with more than 195,000 people. We're committed to delivering quality in assurance, tax, and advisory services.

Gain customized access to our insights by downloading our thought leadership app: PwC's 365™ Advancing business thinking every day.

