

# Open finance

Prerequisites and considerations  
for fit-for-context implementation  
in Africa

April 2022





### **Author(s)**

**Jeremy Gray**

**Kate Rinehart-Smit**

**Victor Pérez-Bobadilla**

**Kgotso Mofulatsi**

**Christine Hougaard**

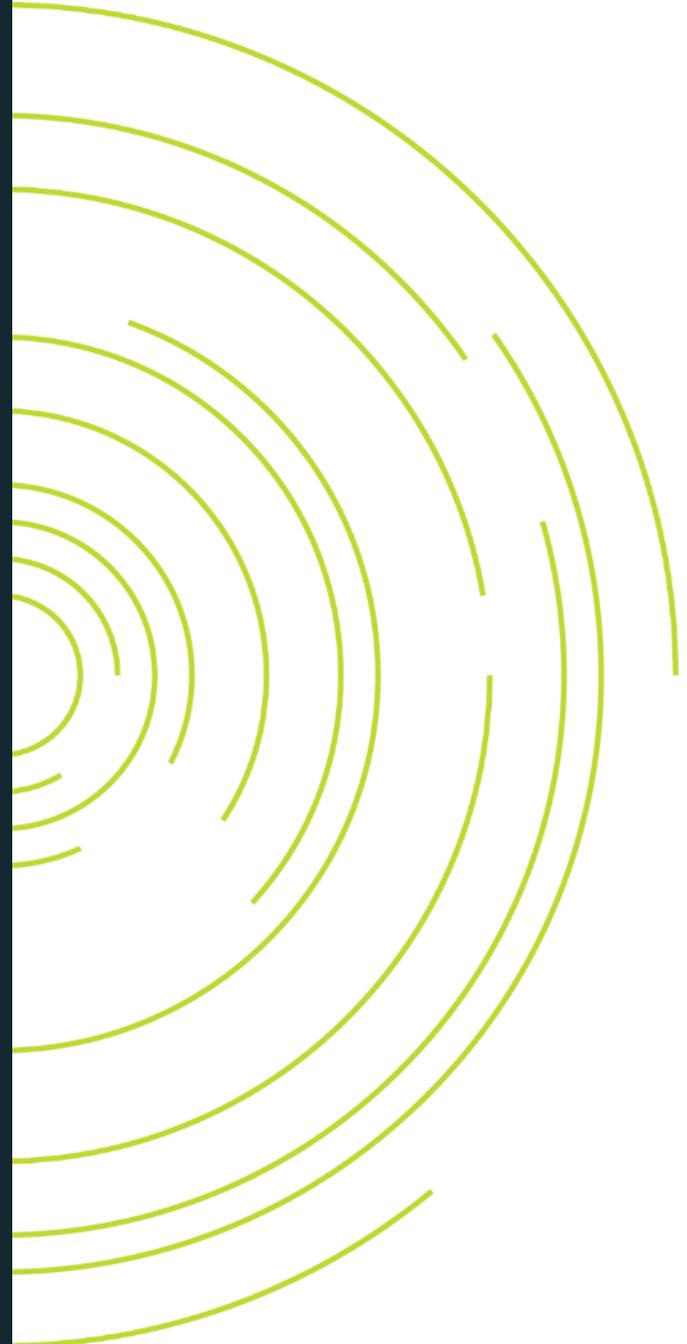
The authors of this report would like to extend their gratitude and thanks for all of those that assisted in the compiling of this report. We would like to particularly thank our peer reviewers: Ariadne Plaitakis and Stefan Staschen (CGAP) and Nydia Remolina (Singapore Management University).

### **Cenfri**

Tel. +27 21 913 9510  
Email: [info@cenfri.org](mailto:info@cenfri.org)  
The Vineyards Office Estate  
Farm 1, Block A  
99 Jip de Jager Drive  
Bellville, 7530  
South Africa

PO Box 5966  
Tygervalley, 7535  
South Africa

[www.cenfri.org](http://www.cenfri.org)



# Table of contents

Executive summary.....	iv
1. Introduction.....	1
2. Why open finance? .....	3
3. The nuts and bolts – what is open finance? .....	6
4. What are the options? .....	10
4.1. Voluntary .....	10
4.2. Mandatory .....	12
5. Decision framework .....	16
5.1. Could an open finance regime be feasible?.....	18
5.2. Key design and implementation considerations.....	22
5.2.1. Which type of regime and implementation process to adopt? .....	23
5.2.2. How should the regime be regulated and governed? .....	23
5.2.3. Which entities will be required and allowed to participate?.....	25
5.2.4. How should data sharing be approached?.....	26
5.2.5. Which entities should bear the implementation costs? .....	27
6. Conclusion .....	29
Bibliography.....	30
Appendix A: Case studies of open banking and open finance models.....	34

## List of figures

Figure 1. Consolidated open finance decision tree .....	vi
Figure 2. Summary of benefits of open finance for various parties.....	4
Figure 3. Open finance in context of open banking and open data.....	6
Figure 4. Open finance ecosystem.....	8
Figure 5. Types of approaches to open finance .....	10
Figure 6. Decision tree for open finance feasibility in local context .....	18
Figure 7: Granular decision tree for open finance feasibility in local context.....	18
Figure 8. Key design and implementation considerations .....	22
Figure 9. Consolidated open finance decision tree – revisited .....	29
Figure 10. Singapore open finance case study .....	34
Figure 11. Brazil open finance case study .....	35
Figure 12. UK open banking case study.....	36
Figure 13. EU open banking case study:.....	37
Figure 14: Nigeria open banking model .....	38

## List of boxes

Box 1. The centrality of reciprocity.....	7
Box 2. The interplay between systems, cost and the incentive for open finance adoption.....	9
Box 3. Hands-off approach – the case of open banking in the United States.....	11
Box 4. Hands-on approach – the case of open finance in Singapore and Nigeria.....	12
Box 5. Consultative approach – the case of Brazil.....	13
Box 6. Mandatory, and only consulted on the details – the case of the United Kingdom.....	14
Box 7. Mandatory but with an open implementation framework – the case of the European Union.....	15
Box 8. How prepared is Africa for Open Banking? .....	16

# Executive summary

***A double-edged sword.*** Data is a powerful enabler of innovation: It helps financial service providers (FSPs) to better understand and serve consumers, as well as to improve how they manage their own risks and business models. This means that data can also bestow market power. Key market players, such as mobile network operators or large banks, can wield the extensive client data that they hold to their competitive advantage, making it difficult for start-up innovators to get a foothold in the market.

***The open movement.*** In response to these power imbalances, more and more countries have started to implement, or to consider implementing, an open finance regime. Open finance can be defined as the sharing of consumer data between FSPs and/or third-party providers on the basis of consumer consent. It evolved out of the narrower concept of open banking, first adopted in the UK and EU, whereby banks in the UK and payment institutions in the EU, were mandated to share their data, which mainly happens via standardised or open APIs (application programming interfaces) with third-party providers. Open finance is underpinned by the human rights principle that consumers, rather than FSPs, are the true managers of their data. There are, however, multiple ways to approach the implementation of open finance.

***Various options.*** The exact approach to open finance that is followed differs across different contexts: from a laissez-faire approach based only on industry initiatives (USA) to a regime where participation is voluntary, but the authorities nevertheless play a key orchestrating role (Singapore), to a regime where participation is mandated for certain players, but they are actively consulted in the process (Brazil) or a mandatory framework implemented independently by each country (the EU), to a system where players are only consulted on the details of the framework once they have been mandated to participate (the UK).

***Substantial potential benefits.*** Setting up the regulatory framework and tech structures for FSPs to share data with third-party providers, notably fintechs, promotes competition by making data a generally accessible good, rather than a competitive asset. Established FSPs, likewise, can benefit from the improved access to customers, improved risk modelling and improved product design that access to more data enables. Ultimately, the end-consumer benefits through more seamless access to better designed products that are more effectively tailored to their individual realities and needs. This, in turn, can support financial inclusion (Plaitakis & Staschen, 2020).

***But also challenges to overcome.*** Though the in-principle benefits are clear, open finance is not a panacea: it heightens data privacy and cybersecurity risks and, contrary to its intention, could exacerbate financial exclusion for offline population segments or those who are deemed to be high risk on the basis of the data analysis. Common challenges include reluctance on the part of consumers to share their data, low buy-in from incumbent FSPs, associated with the high cost of implementation that they need to bear, as well as the need to iron out jurisdiction overlaps between regulatory authorities, and the mode of engagement between market participants and regulators in designing and implementing the regime. These challenges are particularly pronounced in the African context, where resource constraints and

limited data capabilities among market players and regulatory authorities alike, coupled with often-nascent data protection frameworks and low consumer financial literacy, may challenge the implementation of open finance.

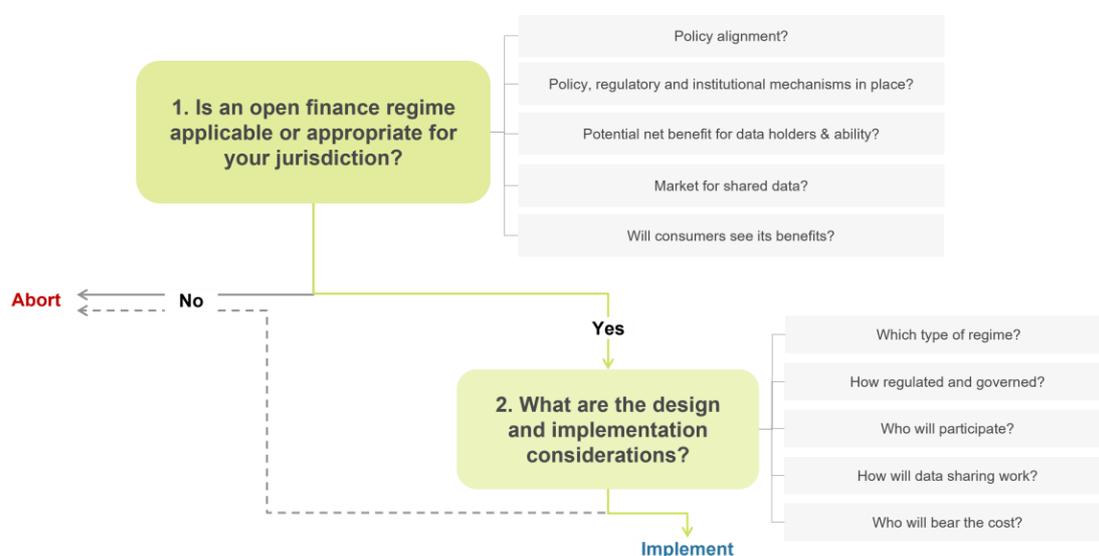
***Weighing up the options in the local context.*** These challenges mean that the benefits of open finance may not be apparent in the short-term and underline the importance of making the decision to adopt open finance in a cautious way, with careful consideration of the local context and the corresponding implementation implications.

***A two-step decision framework.*** Ultimately, to yield the best outcome in different contexts, a context-specific decision of whether and how to implement open finance is called for. This document proposes a framework for navigating the decision process to get to a fit-for-purpose framework in the local context. Countries interested in the potential benefits of open finance face two sequential decisions:

- **Will it make sense?** Firstly, they need to assess whether open finance is at all an option in the local context. This requires them to answer “yes”, “potentially, yes” or “maybe” to all of the following five questions:
  1. Are the benefits of open finance aligned to the **policy and regulatory imperatives** of the country?
  2. Are there sufficient **policy, regulatory and institutional mechanisms** to implement an open finance regime or are there sufficient tools to implement the necessary mechanisms if they are not yet in place?
  3. Could there be a **perceived net benefit for data holders** to participate in open finance?
  4. Is there a **market for the effective use of shared data** by innovators?
  5. Are **consumers likely to see benefits and participate** in open data markets?
- **What should it look like?** If the answer is that open finance *could* be an option, then the next question is what model of open finance would best serve the specific country’s purposes and, out of that, what is needed to design and implement the system for maximum success. Here, again, five key considerations come into play:
  1. **Which type of regime and implementation process to adopt?** This is the first, and arguably most important decision, as it can make or break the success of the model. There are two sub-considerations: which type of approach to follow – mandatory versus voluntary – and, within the two options, to what extent the regulator will be in the driving seat or industry will be consulted. It is also important to map out the steps of the implementation and take stock of the institutional and regulatory prerequisites or building blocks that need to be put in place.
  2. **How should the regime be regulated and governed?** This decision spans three-sub-considerations: who should be the lead regulator, what additional legislation or regulation needs to be introduced and should a separate implementation entity be established? These are the institutional mechanisms to put in place as foundation for the regime, so careful upfront consideration of the options is needed.

3. **Which entities will be required and allowed to participate?** The next consideration is who the regime will apply to: who should be required to share data, who will be able to access data, what are the licensing and regulatory requirements for the data accessors, and how can the data holders be encouraged to proactively participate in the open finance regime, rather than just do the bare minimum?
4. **How should data sharing be approached?** Getting further into the details of the regime requires consideration of what the rules of engagement for data sharing will be: what data will be shared, who should set the technical specifications and standards of the APIs, and how should data reciprocity be tackled?
5. **Which entities should bear the implementation costs?** Finally, given the substantial cost of implementing open finance, careful deliberation is needed regarding who will bear which costs, to ensure that the system is perceived as equitable. This decision considers who carries the infrastructure costs, and the associated cost for setting up and running the implementation agency, as well as what the fees for data access would be to compensate data holders for the cost that they incur in sharing the data.

These considerations come together in the decision tree illustrated in Figure 1.



**Figure 1. Consolidated open finance decision tree**

*Source: Authors' own*

After further interrogating the design and implementation considerations, it may very well be that the policymaker and regulator determine that open finance is not the right tool to achieve their policy and regulatory imperatives and decide not to implement the regime. If the answer remains yes, the framework then forms the parameters for the design and implementation process to follow. As different countries embark on the implementation journey, it will be important to generate learning through peer exchange<sup>1</sup> and revisit and evolve the framework accordingly.

<sup>1</sup> Notably from first movers in Africa such as Nigeria, or in Latin America such as Brazil and Mexico.

# 1. Introduction

**Data powers innovation but can constrain competition.** Increasingly, proactive market development is an explicit financial regulatory mandate alongside stability and consumer protection. Making good on this mandate requires financial sector regulators to create an enabling environment for innovation, as innovation is essential to create opportunities, enhance efficiencies, increase competition and improve the reach and value of financial products and services to consumers. In the digital era, innovation is powered by data. Data enables financial service providers (FSPs) to better understand and serve consumers, as well as to improve how they manage their own risks and business models. This makes data a powerful enabler of innovation. However, it also makes data an important competitive asset; key market players, such as mobile network operators or large banks, hold rich data on their existing customer base which they can wield to their competitive advantage, making it difficult for start-up innovators to find a foothold in the market.

**Opening up the playing field.** To promote innovation and enable innovators such as fintechs to compete on an equal footing with large data holders, a number of countries have implemented open finance and data portability<sup>2</sup> rules that, under specified conditions, require consumer data to be shared with accredited or licenced market players, provided they have approval from consumers to share their personal data. Thus, open finance often rests on the principle enshrined in many countries' constitutions that the consumer – rather than the entity holding the data – is the owner of their own personal data<sup>3</sup>. Open finance has evolved out of the narrower concept of open banking to cover all financial data, including on mortgages, pensions, savings, insurance, credit, transaction banking and mobile money accounts.

## Open finance

*“The exchange of consumer data between financial service providers and third-party providers on the basis of consumer consent.”*

**Gaining traction globally.** Open finance was first implemented in the UK, with the design of its open banking framework dating back to 2015/16. During the same period, the EU implemented similar principles through the Second Payment Services Directive (PSD2). The Monetary Authority of Singapore started putting in place the building blocks for an open finance model from 2014 with the release of an API (application programming interface) Playbook<sup>4</sup> (Monetary Authority of Singapore, 2021). Since then, open finance has been implemented across a number of markets, including developing markets in both Asia and Latin America, and is in the process of being implemented in Africa (Nigeria).

---

2 Data portability is the ability of an individual to request their own personal data from current data holders and it not necessarily a precondition for open banking or open finance.

3 As such, open finance, and the broader move towards open data of which it forms part, is not only implemented as an inclusion or competition-enhancing tool, but is a manifestation of a core constitutional right.

4 The “API playbook identifies common and useful APIs for the industry and cross-sectoral stakeholders and guidance on information security standards and governance models for financial institutions and FinTech players” (Monetary Authority of Singapore, 2021).

***Need to align approach to local realities.*** The rising prominence of open finance, globally, makes it likely that more and more developing countries will go the same route. Many countries are modelling their approaches on that of the UK and EU, as seminal examples<sup>5</sup>. However, this may not always be appropriate in the developing country context, including in Africa, where the level of data collected by FSPs is often limited, the systems they have in place are not well designed to securely and efficiently share data, the necessary skills are not available, and many regulators lack the capacity and systems to provide effective oversight. Implementing a hasty cut and paste approach for the sake of “jumping on the bandwagon” – while well intended – may generate an open finance regime that, at worst, opens up consumers’ personal data to cyberattacks and undermines trust in the sector or, at best, does not serve the intended purpose. Therefore, it is critical for developing country regulators and market players to deliberately consider what is feasible and appropriate within their context. This asks for a nuanced understanding of (a) what needs to be in place for open finance to be a viable option, (b) what model would be most appropriate in the local context and (c) what further considerations will shape how, and at what pace, open finance will be feasible to implement.

***A framework to understand the options and map the considerations.*** This note proposes a framework for identifying the key considerations that come into play when considering the introduction of open finance<sup>6</sup>. It is intended as a guide or tool for policymakers, regulators, market players and development partners investigating the scope for open finance in developing countries, to help them assess the options and guide them through the key decisions to be made. It is a starting point only – as various countries embark on the open finance journey, they will need to do much more groundwork to fully scope out the use cases, parameters and feasibility of open finance in their specific context.

***Structure.*** The next section considers the rationale and use cases for open finance in more detail. From there, we delve deeper into what open finance is, who is involved and how it works (Section 3). Section 4 then sets out the different models of open finance. On this basis, Section 5 presents an open finance decision framework for developing countries – with specific reference to the African context – and Section 6 concludes.

---

5 Analogous to the rapid spread of regulatory sandboxes in recent years.

6 Drawing on a combination of desktop review of open banking and open finance approaches, globally, as well as a set of key informant interviews to unearth the underlying considerations, drivers of success and challenges.

## 2. Why open finance?

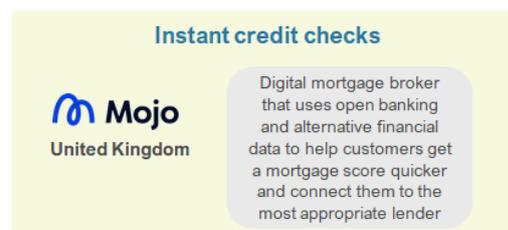
**Start with why.** The starting point of any open finance journey is to determine what purpose it will serve: how it speaks to the public policy and market objectives in the local context.

**A strong innovation, competition and financial inclusion rationale.** Open finance promises to promote innovation and enhance efficiency and competition by offering improved efficiencies and a reduction in costs for both established FSPs and fintechs, which in turn benefits consumers and fosters financial inclusion. It serves three main use cases<sup>7</sup>:

1. **Improved access to customers.** If existing customer data is utilised, consumers can be onboarded to new products and services without redoing know-your-customer (KYC) procedures. This can lead to a reduction in cost and friction for FSPs. It also makes it easier for customers to sign up for new products and services. In this way, it can boost customer numbers.



2. **Improved risk modelling.** Access to more data on consumers can lead to improved and more accurate risk scoring (for insurance) or credit scoring (for credit), which reduces risk. Reduced risk, in turn, leads to reduced cost. Improved risk modelling also means that a wider range of customers can be reached.

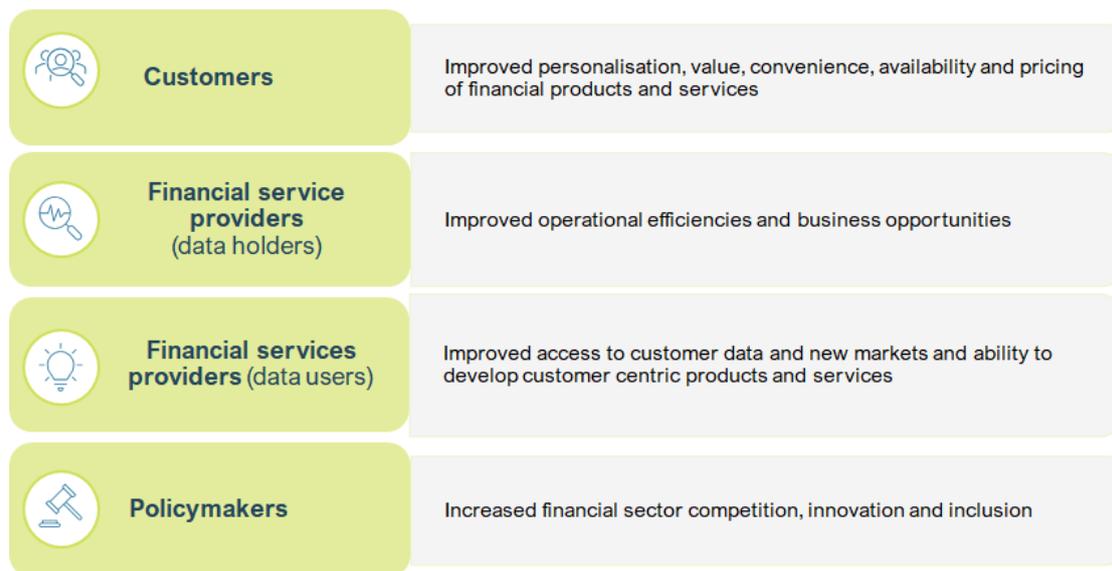


3. **Improved product design.** Finally, more consumer information means that a more holistic understanding of client realities and needs can be formed. This can be used to create better-tailored products and services for a wider range of customers. From the customer's perspective, open finance also enables the aggregation of different accounts in one place, which enhances convenience. Thus, open finance can help to improve the functional value that customers derive from financial services, thereby boosting uptake and usage. Furthermore, a more granular understanding of customer needs and realities can allow FSPs to eliminate underperforming products more quickly, leading to improved market outcomes.



<sup>7</sup> Examples drawn from Mothibi et al., 2020; White et al., 2021; McGrane, 2021; Akoni, nd; Open Money, nd

**Win-win potential.** The benefits for different parties are summarised in Figure 2.



**Figure 2. Summary of benefits of open finance for various parties**

*Source: White et al., 2021; Chuard, 2021; Plaitakis & Staschen, 2020*

**But not without risks or challenges.** Despite the clear benefits, open finance is not a panacea. It risks heightening data privacy and cybersecurity concerns<sup>8</sup>, increasing data asymmetries in favour of big tech (should such players gain access to FSP data without reciprocity), and exacerbating financial exclusion for offline population segments, those who opt not to share their data, or those who are deemed to be high risk on the basis of the data analysis. Key challenges that have been noted include<sup>9</sup>:

- **Limited customer adoption:** Mistrust, concerns on data privacy or lack of awareness can reduce consumer consent and willingness to adopt new products, which is integral to the success of any open finance regime. Consumer reluctance may be heightened in individualistic and risk-averse cultural environments.
- **Low consumer financial literacy:** Consumer reluctance or mistrust may also be fuelled by low financial literacy, which may mean that consumers' perceptions of risks are not aligned to actual risks.
- **Low buy-in from incumbent FSPs (data holders):** Incumbent market players, as existing data holders, may be reluctant to proactively and constructively participate in an open finance regime if they consider it to erode their competitive advantage.
- **High cost of implementation for FSPs:** To mitigate cybersecurity risks and ensure data protection, open finance requires FSPs to implement costly systems and standards.

<sup>8</sup> In that the transition to API usage creates opportunity for data loss, identity theft, data protection violations, money laundering and financing of terrorism. FSPs could face reputational risks if any of these may occur. Consumers are also susceptible to fraud or scams if more of their data is available to TPPs.

<sup>9</sup> Drawing on (Nicholls & Clarke, 2021; Williams, 2021; Plaitakis & Staschen, 2020; Zopa, 2021; Anand, 2018; FCA, 2021)

- **Lack of technological know-how and skilled resources:** FSPs may lack the necessary skills and human capital to develop the appropriate technology to implement open finance or implement API standards. They may also struggle with fulfilling the licencing or accreditation requirements.
- **Mandate overlap:** As various entities need to be involved in the supervision of an open finance regime (notably the central bank, non-bank financial institutions, cybersecurity, competition, and data privacy regulators) effective implementation of an open finance regime will require proactive coordination between authorities, which may be challenging in limited-capacity environments.
- **Benefits not necessarily visible in the short term:** The timeline for implementation of the regime and for the first use cases to start appearing in the market is relatively long. Not all use cases are immediately apparent for all parties.

These risks and challenges underline the importance of considering the scope for open finance – and the modality thereof – within the local context. It also shows the importance of holding a long-term vision, with sufficient investment and drive to sustain efforts over time. Section 5 sets out the steps and considerations in this regard. But first, the next two sections take a closer look at how open finance works and who is involved.

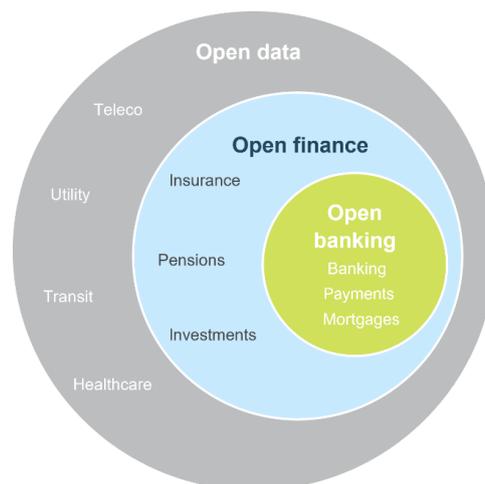
### 3. The nuts and bolts – what is open finance?

**One of three layers.** As noted, open finance evolved out of a narrower focus on open banking. Open banking is defined as the exchange of consumer data between banks and other FSPs and/or regulated third party services providers on the basis of consumer consent. Open banking typically only allows for the exchange of or access to transactional and bank payment data. Open finance extends the data sharing realm to all FSPs, such as insurance providers or investment advisors and includes other financial products such as pensions, investments and insurance. The next round of evolution would be a full-on open data approach where all types of consumer data can be used, re-used or re-distributed freely between financial and non-financial institutions on the basis of consumer consent<sup>10</sup>.

#### What data is typically shared?

- **Generic services data:** publicly available information on financial services like product details, branch or ATM location
- **Customer data:** personally identifiable data required for account opening and administration purposes
- **Transaction data:** data on customers' financial transactions

Figure 3 shows how the data ambit broadens from open banking, to open finance, to open data.



**Figure 3. Open finance in context of open banking and open data**

*Source: Authors' own*

<sup>10</sup> Estonia has an Open Government Data Portal, which provides access to public sector data that can be freely reused or shared. The X-Road governmental system leverages shared infrastructure by providing access to standardised databases accessible by other parts of the government, citizen and private entities. "If an agency or private company wants to create a new service, it must comply with some basic data standards to build on top of the X-Road stack. In practice this means that, instead of creating a database and application layer, they need only create the "last mile" to the user. This allows new services to be created more quickly and efficiently, and with more citizen input." (Eaves, et al., 2020)

**Three core parties.** Open finance entails a relationship between three core parties:

- **Customer data:** Financial service customers, as ultimate managers of their personal, financial and behavioural data, who need to give consent to FSPs to share their data<sup>11</sup>.
- **Data holders**<sup>12</sup>: FSPs, as the holders of customers' data, who share customer data with third-party data users. They are either mandated to share, or voluntarily opt into sharing data, depending on the nature of the open finance regime, and may only share consenting customers' data. Note that government may also be a relevant data holder, for example when it collects data on mobile money transactions, or as holder of a country's central identify information repository. As such, government may also be a direct participant in an open finance regime.
- **Data users:** Third-party data users (e.g. incumbent FSPs, new entrants, brokers and fintechs) who request access to customer data held by (other) FSPs. They then use the data to develop new products and services.

#### **Box 1. The centrality of reciprocity**

The concept of reciprocity in open finance refers to the right of data holders, who share data, to also access data. Without built-in reciprocity, the danger is that an unlevel playing field may create a competitive disadvantage for certain players and reduce the incentives of established FSPs to participate in a proactive and constructive manner.

A practical example of data asymmetries would be if a large Mobile Network Operator (MNO) in a particular country were able to acquire a third-party provider (TTP) license and access the data of banks who were mandated to participate in the regime and share their data yet would not need to share the substantial data that it holds in turn. This would give the MNO a competitive advantage. Thus, it would be important for the regulator to design the regime in a way that ensures that potential data asymmetries are addressed through data reciprocity.

*Source: (Carr, et al., 2018)*

**APIs as tech backbone.** APIs underpin the exchange between the three core parties. Standardised APIs and/or Open APIs are developed by data holders and used to enable third-party providers (TPPs) to access data in a secure manner. Third-party data users then connect to the APIs to request the data from the data holders. Thus, APIs form the technology backbone of the ecosystem. APIs are not a new phenomenon: they are already extensively in many markets and used by many players to share key information securely and in real time. However, this is usually done in a closed manner, between partners with a bilateral agreement. An open API uses the same technology, but opens the sharing of data up to all accredited open

---

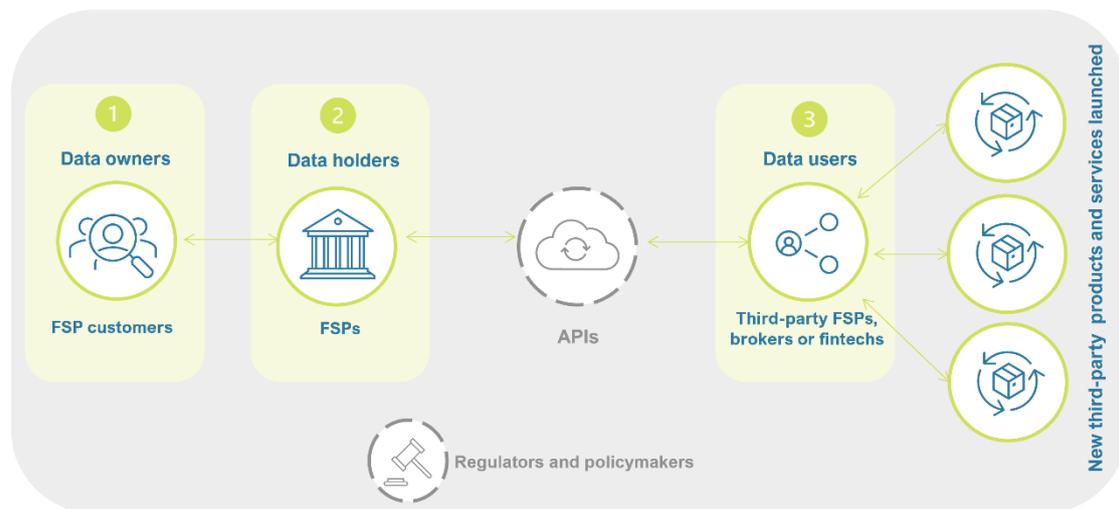
11 This decision can be on an opt-in or opt-out basis. Often, consumers would be required to give consent, should they want to access a certain service. While they are free to opt out, that would mean that the service would not be available to them, the same way that accepting cookies on a website is a required step in accessing that website.

12 The legal term used for this is different among different jurisdictions. For example, in Rwanda and in the UK, those that hold the data are called data controllers. In Australia, the legal term is data holders.

finance participants. With such opening up comes a heightened need for cybersecurity measures.

**Architects.** Regulators and policymakers are involved in the design of the regime and in many instances play an enabling role by determining the type of regime, scope of financial services included, participants allowed, types of data and data sharing standards, payment initiation, lead regulator and cost determination.

**Interrelated ecosystem.** Figure 4 outlines how the three core parties, the technology backbone and the regulator come together to form the open finance ecosystem.



**Figure 4. Open finance ecosystem**

Source: Adapted from (Plaitakis & Staschen, 2020)

**Integrating payment initiation.** A final notable feature of open finance is the integration of payment initiation. Payment initiation, which may or may not be included depending on the open finance regime, means that third parties are able to initiate transactions on a customer’s behalf from an account the customer holds with another institution, normally a bank – not unlike the traditional debit order instruction<sup>13</sup>. For some jurisdictions, such as the EU, payment initiation is one of the main pillars of the open finance regime, as it promotes competition by allowing third parties to offer customers a more seamless service offering and safe payment options at lower costs. From the consumer’s perspective, in-built payment initiation is convenient and hassle-free. However, it can lead to heightened privacy and cybersecurity concerns (EC, 2018; EC, 2021).

**Substantial costs.** Open finance has large cost implications, as significant investment and resources are required to develop and maintain open APIs – upwards of GBP 80 million in upfront investment was required in the case of open banking in the UK. Our review of five open banking and open finance case studies shows that the data holders typically incur the costs of developing the open APIs, while regulators invest significant time and resources in building an enabling regulatory framework and

<sup>13</sup> The TPP would “push” the payment initiation, but it may still require a single code/One Time Pin confirmation by the consumer. In this way, payment initiation is designed to retain consumer power/authorisation over payments, even if the payment is initiated and facilitated by the interplay between the TPP and FSP.

supervising and enforcing the relevant regulation. The intent is that data holders can eventually recoup some of the costs by charging TPPs to access the data, but they would still be out of pocket for the upfront investment.

**Box 2. The interplay between systems, cost and the incentive for open finance adoption**

The exact cost incurred will depend on the nature and sophistication of players' existing data systems. Some, typically newer, players already run their internal systems based on separate modules, with internal APIs as linkages between modules. This makes it easier to innovate and build new elements, plus makes the system more resilient against "contagion", should there be a fault or cyberattack in one module, as APIs can be rerouted until the problem is resolved. For companies with such systems, the move to open finance is not without cost, but the fact that it is aligned to their existing model substantially brings down cost.

In contrast, big, traditional FSPs often rely on legacy systems where all the functions are collated in one system. That means that any adaptation and troubleshooting effort requires working with the entire system. It also means that their systems may be more vulnerable against cyberattack under an open finance model, meaning that the move to open finance would entail an entire rebuild of their security systems. Thus, such FSPs face substantial costs in adopting open finance and may have less incentive to do so than more nimble or new players. On the plus side, if the introduction of open finance serves as a prompt or trigger for such players to update their systems, it could also promote their ability to innovate internally.

## 4. What are the options?

How the players relate to one another within the open finance ecosystem and how the infrastructure is set up and financed depends on what model of open finance is adopted. A scan of approaches, globally, reveals two types of open finance, each in turn with two sub-categories:

- A **voluntary approach** where participation in the regime is on an opt-in basis. The regulator either plays a completely hands-off approach or can act as an orchestrator of the system.
- A **mandatory approach** where participation in the regime is compulsory; the regulator's stance can either be consultative, involving industry in the design, or non-consultative.



**Figure 5. Types of approaches to open finance**

*Source: Authors' own*

### 4.1. Voluntary

In the voluntary model, FSPs and TPPs enter into an open finance arrangement of their own volition, without being mandated to do so by regulation.

**Option 1: Fully market led.** In the one extreme, as in the United States, the regulator takes no role in enabling or governing the system. Instead, the market itself determines the rules of participation and operation within the open finance regime, as well as the financing of the infrastructure.

### **Box 3. Hands-off approach – the case of open banking in the United States**

In the USA, there are no regulatory standards around APIs and financial data sharing.<sup>14</sup> The term “open banking” is used by the US media and financial services industry to designate a range of data-sharing practices, from bilateral data-sharing contracts and individual FSPs opening APIs for use by TPPs, to voluntary private sector initiatives for collective data sharing.<sup>15</sup>

Various private sector initiatives are driving the adoption of open banking and APIs<sup>16</sup>:

- The Clearing House Payments Company created a Model Agreement that banks and TPPs (fintechs) can use as a guide in developing API-related data-sharing agreements.
- The Financial Data Exchange (FDX) has aligned its member institutions<sup>17</sup> in adopting a standard open banking regime.
- The National Automated Clearing House Association (NACHA) and the Financial Services Information Sharing and Analysis Center (FS-ISAC) have also developed APIs to enable the safe transfer of data between parties.

***Only feasible in very mature markets.*** The benefit of a voluntary and market-led approach is that, if the market is mature enough, it could lead to increased competition, improved products and increased inclusion, without any costs having to be incurred by the regulator. On the downside, however, it may lead to an overly complicated and non-standardised environment, which may undermine the benefits of open finance. There is also a real risk that, if the market is not mature enough, there will be limited buy-in from established FSPs, meaning that the system develops limited traction.

***Option 2: Active government involvement.*** In the second model, government plays an orchestrating role and develops standards, rules or frameworks to govern the open finance regime, even if participation remains voluntary. Once an FSP opts into the regime, the standards, rules and frameworks are mandatory. Here, Singapore is the most notable example.

---

14 See “[Articulating the policy rationale and policy imperatives for Open Finance in South Africa](#)” (Intergovernmental Fintech Working Group, 2021)

15 See “Open Banking: How to design for financial inclusion”, (Plaitakis & Staschen, 2020).

16 See “[Policymakers must enable consumers data rights and protection in financial services](#)” (Murphy & Tescher, 2021)

17 The FDX members include financial institutions, financial data aggregators, fintechs, payment networks, consumer groups, financial industry groups and utilities and other stakeholders.

#### **Box 4. Hands-on approach – the case of open finance in Singapore and Nigeria<sup>18</sup>**

##### **Singapore**

Singapore follows a voluntary approach to open finance, but the Monetary Authority of Singapore (MAS) plays an active enabling role.

The regime covers the banking, insurance and payments industries and was initiated to provide a market environment that would reduce barriers of entry for innovators such as fintechs. Licensed TPPs can access the data according to private agreements entered into with FSPs. APIs are standardised by MAS and the cost is borne by the regulator and all parties (TPPs and FSPs), who pay fees to utilize the APIX sandbox set up for this purpose. At the time of writing, there were close to 1,700 APIs available.

MAS fulfils the role of implementing agency. It has created [Finance-as-a-Service: API Playbook](#) to set out the rules for participation, as well as a Finance Industry API Registry. The Personal Data Protection Commission is also an active participant, given the role of the Personal Data Protection Act in the enabling environment for open finance.

##### **Nigeria**

The Central Bank of Nigeria published a [regulatory framework](#) for Open Banking in 2021, which aims to facilitate open banking. Banks are not mandated to participate in the open banking regime, but once they opt to participate, they will need to comply with the data sharing and API standards being developed by [Open Banking Nigeria](#).

The regulatory framework provides a risk management maturity level and data services access levels which determines who can access certain types of data. The participants need to comply with different requirements depending on which type of data they want to access.

*Source: (Montes, 2021; Giya et al., 2021; Ang & Yap, 2021; ABS-MAS, 2013; MAS, 2021) (Central Bank of Nigeria, 2021)*

***Set up for true buy-in – but at a cost.*** The benefit of a voluntary model facilitated by a proactive regulator is that the regulator’s involvement can help to establish an enabling environment and generate trust, without forcing market players to participate. Again, however, there is a danger of limited buy-in from established FSPs if the market is not mature enough. It also requires substantial time and monetary investment from the regulator.

## **4.2. Mandatory**

Most open banking and open finance models, globally, are mandatory. That means that government mandates FSPs, through legislation, regulation or court rulings, to participate and to abide by the rules of the open banking or finance regime. The regime can be designed to mandate individual FSPs or specific categories of

---

<sup>18</sup> See Appendix A for a more in-depth overview of the case studies.

institutions (e.g. the credit sector), or to apply broadly to a range of financial sector players. Once again, there are two sub-types.

**Option 1: Consultative approach.** Under this type of mandatory model, industry is actively consulted on the design of the system, including the rules of participation and who bears the cost, to ensure that the parameters are in line with market realities and needs.

#### **Box 5. Consultative approach – the case of Brazil**

Brazil has followed a phased approach to the introduction of open finance, with industry actively consulted in each step. Industry is also represented in the central bank's governing structure for the implementation of the open finance regime.

The regime was introduced in May 2020 to foster competition in the financial sector and ensure a level playing field between companies. It is mandatory for segment 1 and 2 banks and authorised payment institutions, but voluntary for all other financial institutions.

The implementation of the regime required new licensing categories to be established and standardised APIs to be created. The cost is borne by the participants of the scheme based on their market share. The Central Bank created a tiered pricing system that allows for: all payment initiation calls to be free; two free calls per month for each participating institution per customer for registration data; and free 120 calls per month for each participating institution and each customer for customer transaction data. However, for cost sharing, data recipients may be required to reimburse data holders for all other API calls. To date, the system has rendered 12 open banking APIs and 12 API aggregators.

*Source: Plaitakis & Staschen, 2020; BCB, nd; Open Banking Tracker, nd; Open Banking Brasil, nd; Stakeholder Interviews, 2022*

**Option 2: non-consultative.** On the other extreme, a full-on mandatory approach is followed, where participation requirements and standards are set by the regulatory authorities with little inputs from industry. Here the UK is the main example with open banking announced and forced on major banks without their inputs. However, participating FSPs were subsequently involved in setting the rules of operation within the regime.

### **Box 6. Mandatory, and only consulted on the details – the case of the United Kingdom<sup>19</sup>**

In 2017 the Competition and Markets Authority ordered the nine largest banks to share their customer data with licensed TPPs. The main driving force was the need to mitigate anti-competitive behaviour among those large banks. The Financial Conduct Authority (FCA) plays a lead role alongside the Competition and Markets Authority.

The banks were sanctioned for anticompetitive behaviour and were required to participate in the open banking regime as a penalty. The open banking framework and participation in it aimed to prevent and rectify the adverse effects on competition in the banking industry. After the banks were ordered to share their data, they were consulted in the setting of the rules of the regime.

An Open Banking Implementation Entity (OBIE) was set up to create software standards and industry guidelines for open banking. The regime was modelled on the three core EU regulatory frameworks: the PSD2 was transposed into the Payment Services Regulations 2017, the RTS-SCA became the UK Regulatory Technical Standards (UK-RTS), and the GDPR. APIs are also standardised by the OBIE.

The substantial cost, estimated at GBP 81.1m in 2019, was borne by the nine mandated participants. Participants also co-funded the OBIE. By October 2021, there were 2.5 million UK customers using open banking-enabled products, initiating 2.84 million payments in that month.

*Source: OBIE, nd; 2018; 2021; Giddy et al., 2019; Rolfe et al., 2021; Weeks, 2019*

***Finding the balance.*** In practice, the split between option 1 and option 2 is not always clear-cut and, depending on the context, there could be a continuum of industry involvement. The EU is a prime example: though the regime is mandatory, the EU left the legal and practical implementation of the framework in the hands of each nation and its financial sector.

---

<sup>19</sup> See Appendix A for more detail.

### **Box 7. Mandatory but with an open implementation framework – the case of the European Union**

The European Union implemented a mandatory version of open banking in September 2019 with the aim to increase pan-European competition and level the playing field. It covers the whole banking and payments industry across the European Union.

The regime was implemented under the auspices of the European Commission and the European Banking Authority, with the latter established as the implementation agency. It is established across three regulatory frameworks: Payment Services Directive 2 (PSD2), the Regulatory Technical Standards on Strong Customer Authentication (RTS-SCA) and the General Data Protection Regulation.

Three types of data are shared: customer financial data, public or product services data, as well as transaction data. The data can be accessed by payment initiation service providers (PISPs) and account information service providers (AISPs) from account servicing payment service providers (ASPSPs) – PISPs and AISPs are new licensing categories that were created under the regime.

APIs are not standardised and banks as mandated financial institutions bear the cost for the implementation of the regime in each country, as well as for creating their own APIs.

At the time of writing, over 12 million EU consumers use open banking products and services. This figure is expected to reach 63.8 million by 2024.

*Sources: Mothibi et al., 2021; Jansen, 2021; European Commission, 2017; Rolfe et al., 2021; Mastercard, 2021; Statista, 2021*

**Risk of subversion.** The main advantage of a mandatory model is that it ensures a standardised and consistent approach to open finance, designed in line with the public policy objectives for open finance. It is also potentially the only way to incentivise data holders to share their data. However, it requires large investments from the regulatory authority to ensure that an enabling regulatory framework is in place and enforced. Moreover, if a consultative approach is not taken, the risk is that established FSPs may undermine the regime through tardy or lip-service compliance, or by setting exorbitantly high data access fees to disincentivise TPPs for accessing their data (as was the case in Japan).

## 5. Decision framework

The design and implementation of open finance is a lengthy and costly process. If it is not set up within the right institutional parameters and through a process that creates strong enough incentives for constructive participation, there is a real risk of creating an expensive and time-consuming white elephant. Whether to pursue open finance and in what guise is therefore a decision that requires careful weighing up of the risks and benefits of the different options within the realities of the local context.

Countries interested in the potential benefits of open finance face two sequential decisions, each of which is unpacked in turn in the sub-sections to follow:

- Firstly, they need to assess whether open finance is at all an option in the local context.
- If the answer is that open finance *could* be an option, then they need to consider what model of open finance would best serve their purposes and, out of that, what is needed to design and implement the system for maximum success.

### Box 8. How prepared is Africa for Open Banking?

A number of countries in Africa are considering open finance or open banking. Nigeria is launching open banking, South Africa and Kenya have published consultation papers on the topic, and others, like Rwanda, have expressed policy interest in open banking or open finance. The decision framework as set out in this section is intended as a practical tool for such countries to help them navigate the process.

While the specific local context realities will shape the answer that each country arrives at across the decision framework, it is also useful to consider the broader regional context within which individual countries' decisions play off. The following contextual factors can influence the viability of implementing open finance in Africa, as well as the design thereof:

- **Proliferation of mobile money.** There are more than half a billion registered mobile money accounts in Africa, surpassing the number of African adults with a bank account. This means that the inclusion of mobile money account data will be an important consideration for open finance frameworks in Africa that seek to enhance financial inclusion.

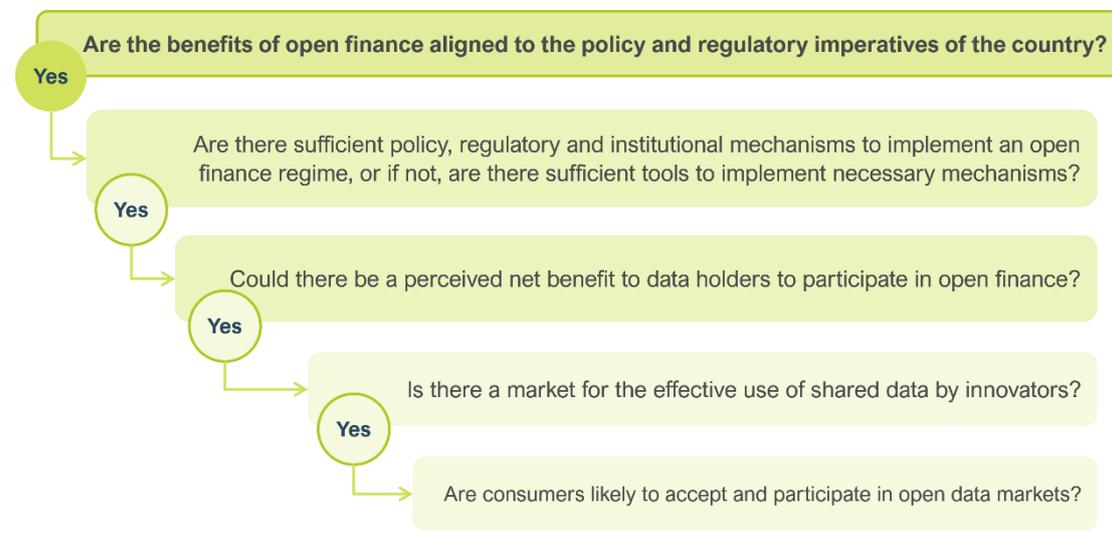
- **Resource constraints.** Open finance entails extensive supervision and enforcement, as well as coordination of multiple regulators. This will require additional resources which will be difficult to attain in the African context, where most financial regulatory authorities face resource constraints. Many financial services providers in Africa are also resource constrained and may hence not have sufficient technical and financial capacity to implement open finance. The World Bank's Country Policy and Institutional Assessment (2021) reported that "Weak public administration systems and deficient technological capabilities, constrained by inadequate financial management systems and shortage of skilled staff" diminish service delivery capabilities of public institutions in the region.
- **Consumer capability to engage with digital financial services.** Financial literacy has been defined as a "combination of awareness, knowledge, skill, attitude, and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well-being". The need for consumer consent in open finance requires a basic level of financial and digital literacy, as well as awareness of consumer rights and responsibilities and to what extent such rights are protected in the context of an open finance offering. Digital and financial literacy are still limited in the continent. A global financial literacy survey found that only 32% of people in Sub-Saharan Africa are financially literate, compared to 52% in high-income OECD economies.
- **General low smartphone and mobile internet access.** Products and services that benefit from open finance tend to be app-based and fintech-driven. That means that the success of open finance to enhance meaningful financial inclusion also to some extent depends on the connectivity as well as smartphone access of the population. Africa still has the lowest internet penetration rate, globally, with only 43% of people using the internet. Moreover, much of mobile money in Africa is still USSD based. It is estimated that only 50% of all the mobile connections in Sub-Saharan Africa are done through smartphones. In contrast, countries that have implemented open finance frameworks typically have high smartphone penetration, such as the UK with 92% or 75% in Brazil. However, smartphone penetration is on the rise in Sub-Saharan Africa, and is expected to increase to 65% by 2025.

The illustrative example boxes used throughout the decision framework in the next sub-sections will again pick up on African context-relevant considerations.

*Source: (Plaitakis & Staschen, 2020) (Andersson-Manjang & Naghavi, 2021) (Statista, 2022) (Internet World Stats, 2022) (Statista, 2022) (GSMA, 2020) (Fanta & Mutsonziwa, 2021) (World Bank Group, 2021) (Grauvogel & Heyl, 2021)*

## 5.1. Could an open finance regime be feasible?

Whether an open finance regime could be viable to pursue will depend on a series of five sequential questions. Only if a country reasonably answers yes to **all** the questions in Figure 6, can it move onto further considering the design and implementation considerations of the regime.



**Figure 6. Decision tree for open finance feasibility in local context**

*Source: authors' own, drawing on key informant interviews*

The figure below unpacks the high-level decision tree questions for open finance into more granular sub-questions.



**Figure 7: Granular decision tree for open finance feasibility in local context**

Below, each question is considered in more detail, adding illustrative examples of what the assessment may be for a hypothetical country in the African context.

**1. Would it serve the country's policy objectives given the current market state?**

The first, and most important question, is to ask whether the benefits of open finance align with the country's policy and regulatory imperatives. This speaks to the rationale and use cases for open finance: if it will not serve a specific purpose, there is no reason to pursue it. Answering this question requires an assessment of any national development strategies, financial sector development plans, data or innovation strategies, as well as the mandate of the financial sector regulatory authorities. It will also be important at this stage to consider whether the broader set of market conditions such as digital infrastructure and the size of the market would enable an open finance regime to function and achieve the country's policy imperatives.

**Illustrative key take away: policy purpose**

The assessment finds that **increasing competition** in the financial sector, **improving financial inclusion**, allowing **new innovative entrants** and **establishing the country as a hub for financial investments while considering cybersecurity** are key policy imperatives, all of which align with the benefits and use cases of open finance.

“Yes”

**2. Are the regulatory and institutional parameters in place – or could it be created?** If the answer to the first question is yes, then the next consideration is whether the policy, regulatory and institutional mechanisms are in place or could be put in place to implement an open finance regime. Relevant sub-questions to consider here can be classified into three categories:

- *Foundational elements:* Does the financial sector legislation empower the regulators to regulate and supervise all FSPs? Is there a strong and enabling personal data and privacy law in place? Is there a cybersecurity framework? Where an instant payments scheme is available, are payment initiation activities provided for in regulation? If not – what would be the process for developing these frameworks and would it be feasible in the envisaged timeframe for open finance introduction?
- *Specific building blocks:* What legislative or regulatory changes would be needed, through which process, to allow for mandating of data sharing, to set API standards (if such regulations are not already in place) and to license fintechs or TPPs? Is there a regulatory framework already in place for fintechs such as PISPs and AISPs?
- *Coordination structures:* Are there effective mechanisms and structures for coordination among relevant regulators to create and implement the frameworks noted above? If not, would it be feasible to create a new, dedicated structure for open finance coordination?

#### Illustrative key takeaways: regulatory and institutional mechanisms

“Yes”

- There are sufficiently robust regulatory and institutional frameworks for open finance, however, there are gaps that would need to be addressed around licensing categories for data accessors and API standards/regulations and regulations or guidelines around which entities were required to share which data.
- Any change should be made through issuing regulations, as passing laws is lengthy and cumbersome.
- There is no existing forum among regulators that is appropriate for open finance, so further consideration is needed of how to design effective coordination structures.

3. **Would open finance be compelling for data holders, and would they be able to pull it off?** If open finance makes sense from a public policy point of view and the regulatory and institutional mechanisms could feasibly be established, then the next consideration is the incentives for data holders to participate, which ride on the (perceived) net benefits that participation would hold for them. As noted, the success of an open finance regime depends to a large extent on whether there is buy-in from data holders, even if they are mandated to participate. Equally important is whether FSPs will be able to implement the regime, even if willing. Thus, it is important to consider three questions:

- *Would it be possible to convince incumbent FSPs of the benefits of cooperating in an open finance regime?* This depends on the current competitive structure of the market – for instance if the market is dominated by a handful of big players, they may see little benefit of sharing their data to benefit start-ups, meaning that more effort would need to be invested to highlight the use cases for them in terms of better risk modelling or product design, or create a “fear of missing out” culture.
- *Do FSPs have the technical capacity and capability to implement open finance?* Here, it is important to take stock of whether FSPs are fully digitised, their existing data sharing practices and systems, notably APIs, and the skills and capacity of FSPs to develop and maintain APIs. This will inform what the capacity building or technical assistance ask will be for the implementation of a viable open finance regime.
- *Would FSPs be able to implement sufficient cybersecurity measures?* Equally important to understand is the capacity in the market for dealing with cybersecurity threats, the priority it enjoys among market players and what existing mechanisms and teams are in place – and how that differs between large and small FSPs.

#### Illustrative key takeaways: data holder incentives and ability

“Maybe”

- Convincing dominant players to participate in an open finance regime will depend on how well the **use cases and business opportunities are illustrated for data holders**, but established banks have **generally been open** to the concept.
- Convincing MNOs will require special considerations (they have hindered interoperability)
- Banks are currently unlikely to have **capacity** to implement open finance and smaller banks may struggle to **maintain sufficient cybersecurity measures**.

#### 4. Is there a market for the effective use of shared data by innovators?

The previous question considered whether the supply of open financial data would be feasible; this question considers whether there will be sufficient and viable demand for such shared data. This requires an understanding of the TPP landscape, their incentives and capacity to participate:

- *Would TPPs such as fintechs naturally enter the market if there was an open finance regime? Is an open finance regime seen as a game changer for fintechs, or are the potential benefits less well established?*
- *Would TPPs have the capability and capacity to appropriately utilise the data? How many fintechs operate in the market and what is the range of sophistication in data and analytics across the fintech landscape? What capacity building would be required to ensure meaningful utilisation of the data?*
- *Would TPPs have the capacity to implement sufficient cybersecurity measures as required in the financial sector? How advanced are current fintechs' cybersecurity capacities and what are the cybersecurity capacity building needs for existing fintechs and start-ups?*

#### Illustrative key takeaways: demand for shared data

“Maybe”

- Fintechs **will participate in an open finance regime** and utilize data made available should there be appropriate licensing for TPPs to access data.
- Fintechs may need **capacity building on cybersecurity**, data management and analytics, and API usage.

#### 5. Are consumers likely to see benefits and participate in open data markets?

The final question considers the perspectives of the ultimate end-beneficiaries of the regime, namely financial service consumers. As a starting point, consumers would need to see the benefits of open finance products and services and be willing to use them. As the whole concept of open finance rests on consumer consent, it is important to understand to what extent consumers are likely to provide such consent and what would be needed to facilitate informed consent. Key questions to consider are:

- *How can use cases be made easily visible to consumers? Consumers would need to understand the use cases related to open finance and see benefits in using the products and services that stem from open finance. Ultimately, does open finance create use cases that solve pain points for customers?*
- *How do individuals within the jurisdiction think about their data? Are consumers interested in data portability (i.e. sharing customer's data between different financial institutions and/or third parties)? Are they likely to be at ease to share their data? If not, what would be needed to raise awareness of the benefits?*
- *Do consumers trust FSPs? If not, why not?*

“Maybe”

### Illustrative key takeaways: consumer consent

- The use cases of open finance would need to be tested with consumers to know whether they resonated with them. Individuals are quite **private, protective of their data** and hesitant to trust FSPs unless they have past positive interactions with them. Therefore, for consumers to willingly opt into sharing their data, it will be necessary for the **right safeguards** to be put in place and the **key benefits** to be highlighted to them.

**Could, not should.** When all the questions outlined above have been assessed, an in-principle decision can be made on whether to continue to explore open finance, or whether it would not be wise at the current point in time. It should be noted again that the decision framework will not necessarily lead to an unequivocal decision in favour of open finance but is merely the first-round assessment based on which to continue further scoping work. For example, in the hypothetical example country illustrated, the answer is “yes, but”, as the assessment points out various factors that would need to be investigated further, planned for, or mitigated against as part of the open finance journey.

## 5.2. Key design and implementation considerations

If the answer is “yes” or “potentially” in the first-round assessment, then the next, equally important round is to consider how the open finance regime should be designed and implemented to maximise its chances of success. This requires detailed scoping of five questions as summarized in Figure 8.

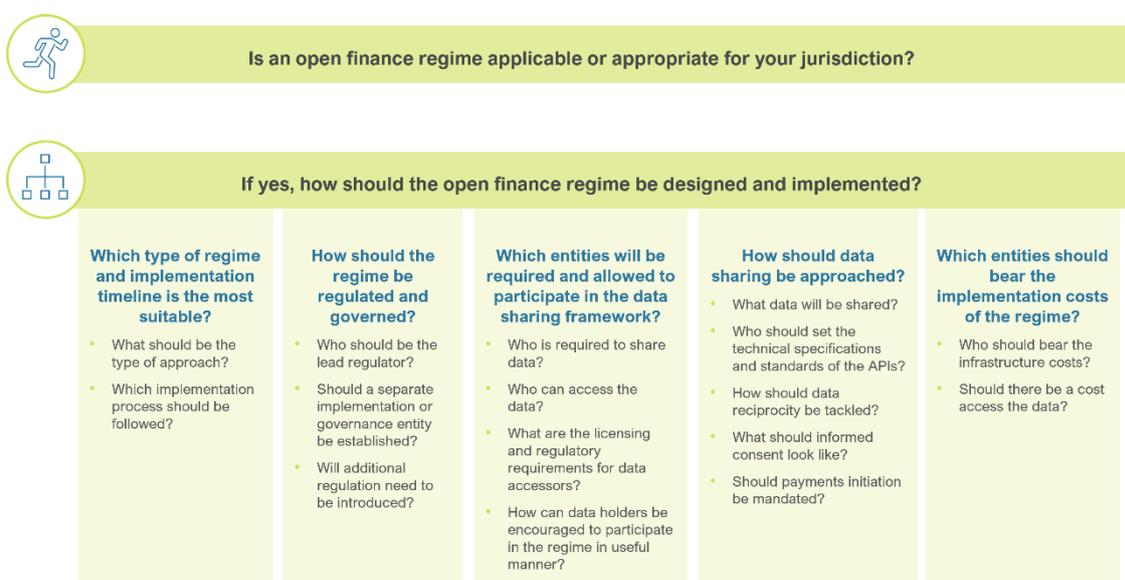


Figure 8. Key design and implementation considerations

Source: authors' own, drawing on case studies and key informant interviews

In the following sections, each key question is unpacked and illustrated with an example of what the preliminary assessment could look like in a hypothetical country context.

### 5.2.1. Which type of regime and implementation process to adopt?

**Make or break.** The choice of the type of regime is crucially important. A hasty decision that is not well thought through risks creating path dependency that may be difficult to change down the line. There are two main sub-questions to consider:

- **Type of approach.** The most fundamental question relates to what the role of the regulator versus the market should be: will the regime be mandatory or voluntary? If voluntary, will the regulator still play an active orchestrating role? If mandatory, to what extent will the market be consulted in setting the parameters of the regime and in its oversight? The answer to these questions will to a large extent depend on the capacity and maturity of the market, as well as the capacity of the regulator and existing coordination structures across financial sector regulators and applicable competition and data regulatory authorities.
- **Which implementation process to follow.** The type of approach chosen will have implications for the timeframe adopted. A consultative or voluntary approach may take longer, as it requires consensus-building on the use cases for open finance and the parameters of the regime. Thus, it is important to map out the steps in the design and implementation approach, take stock of the institutional and regulatory prerequisites or building blocks to be put in place along the way and to manage expectations accordingly.

#### Indicative example assessment: Type of regime

As it may be challenging to get established FSPs to willingly participate in an open finance regime given the fact that the market is quite concentrated, a **mandatory approach** would be most suitable to the local context.



The **design and implementation process** should consider the dominant position of MNOs/MMOs in the mobile money sector and actively work to address data asymmetries. The scheme should be designed and implemented in **consultation** with the various existing actors in the market, considering their concerns and requirements.

### 5.2.2. How should the regime be regulated and governed?

Once the type of regime is chosen, a decision is needed on regulatory and governance parameters to adopt. Three questions need to be assessed:

- **Who should be the lead regulator?** In existing open banking and open finance regimes, the lead regulator is typically the central bank, the financial sector conduct authority, or the competition authority. Which authority should take the lead is a foundational decision that should be driven by a granular understanding of the mandates, drive for innovation, internal structures and capacity of the various regulatory authorities. Equally important is to consider which regulators the lead regulator would need to collaborate with and how such coordination

should happen – via an existing platform or through the creation of a dedicated coordination mechanism.

- **Should a separate implementation entity be established?** A workable open finance regime requires the licensing and/or accreditation of participants and the development of API standards, data structures and security architectures that enable developers to harness open data and ensure that adequate security measures are in place. This can either be coordinated by the lead regulator (as in the case of the Monetary Authority of Singapore), or through the establishment, staffing and funding of a dedicated implementation entity, such as the OBIE in the UK. The assessment of the implementation options goes hand in hand with the capacity assessment as part of the decision on the lead regulator, as well as the considerations on budget and who should bear the cost. The lead regulator or the implementation entity would take responsibility for the accreditation of participants and the management of the registry – and this process and management is typically resource intensive.
- **What additional legislation or regulation needs to be introduced?** The feasibility assessment of an open finance regime would already have identified the key pieces of foundational legislation or regulation needed for open finance in the particular country. Here, the emphasis shifts to considering what would be needed to fill the regulatory gaps and which instruments would be most suitable for which elements of the framework. This requires an understanding of the legislative process, the authority carried by various regulatory instruments (such as regulations, standards and guidelines) and the powers of the respective regulatory authorities.

### Indicative example assessment: Regulation and governance structure

The **central bank**, as payments and banking regulator, is best placed to take the lead, but would need to proactively **collaborate** with the telecommunications regulator (as primary regulator of MNOs and MMOs), the capital markets authority and the ministry of finance. As current coordination structures have a strong prudential focus, it would be best to establish a **separate intergovernmental coordination committee** on open finance.



To ensure that capacity is dedicated to licencing and/or accreditation, the development of the necessary API standards, data structures and security architecture, it is recommended that the central bank establishes a **separate implementation unit** as a department within the central bank. Either the lead regulator or the implementation entity would take responsibility for the participant accreditation registry.

Regulation does not yet contain sufficient **licensing categories** for data accessors (TPPs). Regulation would also need to be developed to specify **which entities are required to share** what types of data, and the corresponding **API and data standards** would need to be created. Adding licensing categories will require an amendment to the financial institutions act, which could be a lengthy process, but the rest of the instruments can be developed and issued by the central bank.

### 5.2.3. Which entities will be required and allowed to participate?

Along with the decision on what regulatory instruments to put in place, one needs to consider the appropriate provisions to entrench in the framework. The first provision to bed down is which entities will be required and/or allowed to participate in the data sharing framework. Three sub-considerations apply:

- **Who should be required to share data?** The different models follow different approaches: in some instances, only FSPs in certain sectors, such as banking, are required to share data, in others a broad range of FSPs and even non-FSPs participate. In some instances, it's specific institutions (e.g. the five largest banks) and in other instances, it's entire sectors (e.g. all banks). Who is required to share data will depend on the policy objectives and use cases to be achieved, as well as the market maturity and capacity. Consideration is also needed of whether and how a phased approach may add value, for instance by covering the banking sector first, before branching out to other entities.
- **Who can access data and what are the licensing and/or accreditation and regulatory requirements for the data accessors?** It is important to clarify the rules of the game for data access upfront. Who may access data, under what conditions, and in what way? Does this require the establishment of a new licensing category (which would feed back to the regulatory requirements in step 2)?
- **How can the data holders be encouraged to willingly participate in the open finance regime as opposed to do the bare minimum?** This final question is a foundational component of a voluntary regime but remains relevant even in a mandatory regime. Establishing true buy-in is likely to require extensive and ongoing consultation with the market to showcase the use cases, as well as support and guidance on how to unlock such use cases. Proactive engagement and moral suasion can also be used to instil a "fear of missing out" among market players. In the final instance, tax incentives can be considered.

### Indicative example assessment: Participation

As the financial sector is less developed outside of the banking industry, it is recommended that a **phased approach** is adopted that starts by mandating data sharing by the **largest banks**. Once smaller banks see the value of open finance, they would be encouraged to participate. Only after the banking sector is effectively participating in the regime, would it be recommended that other financial institutions such as insurers be mandated to participate. Given that various regulatory departments hold large central datasets, it is recommended that **government itself participates** as data sharer.



As a start, **all licensed financial institutions** will be allowed to access data. Once a new licence category for TPPs/fintechs has been created, this would be extended to them. Further consideration is needed of the cost and infrastructure implications for FSPs to build the necessary APIs for data sharing.

To encourage a spirit of participation, a phased approach with **extensive consultations** with stakeholders is recommended, where the benefits of open finance are clearly demonstrated, and international case studies are analysed.

#### 5.2.4. How should data sharing be approached?

The second key content consideration is what the rules of engagement for data sharing should be. Again, three sub-considerations apply:

- **What data will be shared?** As noted, open finance typically covers three types of data: generic services data, customer data and transactional data. Which data to include in the regime will depend on the range of data holders included (e.g. only banks, FSPs more broadly, or government as data holder) as well as the nature of the data held by participating institutions, and what financial products are covered under the open finance regime. The products covered by the regime will be heavily influenced by what use cases the policymaker and regulatory want to facilitate through open data. A related, critical consideration is how data sharing will be phased: which types of data will be made available first, by whom, and how will that evolve over time? For example, it may be that government is the holder of generic services data which, if shared first, could pave the way for greater buy-in by market players.
- **Who should set the technical specifications and standards of the APIs?** This will depend on the nature of the model – whether it's regulator-led, consultative or fully voluntary. It will also depend on the level of technical expertise housed in different entities.
- **How should data reciprocity be tackled?** The purpose of open data is to level the playing field, not create new competitive advantages through asymmetric data access. Hence, reciprocity is an important consideration – would all sharing FSPs also be able to access data, including from MNOs who have mobile money or MMOs? Would incumbent FSPs also be able to tap into fintech data?

### Indicative example assessment: Data sharing

Adopt a phased approach whereby **generic services data** is shared first. Such data is not commercially sensitive, so starting on this basis will allow the data systems to be tested and generate trust in the system.



The **implementation entity** will set the API specifications in consultation with participating FSPs, fintechs and relevant regulatory stakeholders.

Given the capacity requirements for data sharing, **data reciprocity** should initially be limited to **specific categories** determined by the regulator. **Competition issues** should be proactively assessed and discussed as part of the ongoing consultative process.

#### 5.2.5. Which entities should bear the implementation costs?

***The buck stops here.*** As noted, the substantial cost of implementing open finance needs to be taken into account in the decision whether to pursue open finance in the first instance. Once the decision has been made, cost remains a thorny issue and careful consideration is needed of who will bear which costs to make sure that the system is perceived as equitable. Two main considerations apply:

- **Who should bear the infrastructure costs?** Typically, data holders (notably established FSPs) would bear the costs for the development and maintenance of the standardised and/or open APIs, while the regulator carries the costs of developing the enabling regulatory framework and the market bears the costs for establishing the implementation entity. A key consideration is whether incumbent FSPs have funding to develop their own APIs and how this differs between larger and smaller institutions. Another costly aspect to consider is the accreditation registry of participants in the open finance regime – which is typically borne by the regulator but in some instances, taken on by the implementation entity.
- **Should there be a cost to access the data?** If so, how should the fee be determined? The data holders will have invested significantly in the development of the standardised and/or open APIs and will need to recover the costs somehow. This could be done by charging fees for data access: set either based on the volume and nature of data accessed, or as a percentage of the revenue that the data accessor generates based on the shared data. Without proper oversight, however, the risk arises that access fees will be set at exorbitant levels to discourage data sharing. Tiered pricing should also be considered, with some data calls being free and others paid. Therefore, paid APIs subsidise free ones which are normally the ones which have more impact in implementing policy objectives such as financial inclusion.

### Indicative example assessment: Data sharing

The first tier of **participating data holders** will be required to carry the associated **API cost**. If not carefully managed, this may be perceived as a substantial tax on incumbent market players, so **extensive engagement** on the topic of cost is needed as part of the consultation process.



Consideration is also needed of where **shared infrastructure** could be leveraged to reap efficiency gains<sup>20</sup>. This will require the participation of the banking association in the consultation process. Given the limited resource envelope of the central bank, it is recommended that **donor funding** be sought to ensure that the **implementation entity** is properly staffed and resourced.

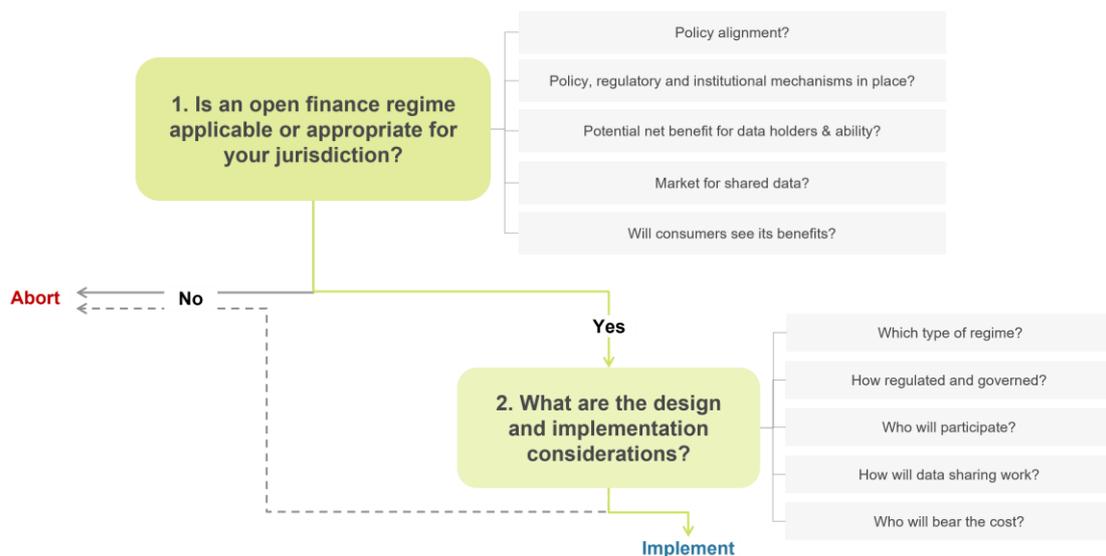
**Data access fees** should be determined considering the cost of development and maintenance of the open APIs, but should not be set too high as to deter data accessors from requesting data. **Further technical work** is needed to determine the exact fee structure.

---

<sup>20</sup> As is the case in Estonia's X-Road system.

## 6. Conclusion

**Investing in getting it right.** This note developed a decision-tree framework for open finance in the African and broader developing country context. It identified the key considerations to inform the initial decision of whether an open finance regime could be viable, as well as what it would take to successfully design and implement it. In so doing, it has shown the importance of detailed upfront scoping work to understand how the particular local context shapes the parameters for open finance. Being considerate in how you go about the decision may require a substantial investment of time and effort, but that is an investment well made.



**Figure 9. Consolidated open finance decision tree – revisited**

*Source: Authors' own*

**Time will tell.** The decision framework in this note takes countries up to the key design decisions to be made, but not yet into implementation, which is where the true test of the design will lie. As different countries embark on the implementation journey, it will be important to generate learning through peer exchange<sup>21</sup> and revisit and evolve the framework accordingly.

<sup>21</sup> Notably from first movers in Africa such as Nigeria

# Bibliography

Akoni, nd. *Akoni*. [Online]

Available at: <https://www.akonihub.com/home>

[Accessed 25 February 2022].

Anand, A., 2018. *Open Banking's Five Key Challenges to Financial Institutions (Part One of a Two-Part Series)*. [Online]

Available at: <https://www.cognizant.com/us/en/latest-thinking/perspectives/open-bankings-five-key-challenges-to-financial-institutions-part-one-of-a-two-part-series>

[Accessed 27 February 2022].

Andersson-Manjang, S. & Naghavi, N., 2021. *State of the Industry Report on Mobile Money 2021*, London: GSMA.

Ang, A. & Yap, A., 2021. *Fintech in Singapore: overview*. [Online]

Available at: [https://uk.practicallaw.thomsonreuters.com/w-018-6832?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://uk.practicallaw.thomsonreuters.com/w-018-6832?transitionType=Default&contextData=(sc.Default)&firstPage=true)

[Accessed 27 February 2022].

Association of Banks in Singapore; Monetary Authority of Singapore, 2013. *Finance-as-a-Service: API Playbook*, Singapore: The Association of Banks in Singapore.

Banco Central Do Brasil, nd. *Open Banking*. [Online]

Available at: [https://www.bcb.gov.br/en/financialstability/open\\_banking](https://www.bcb.gov.br/en/financialstability/open_banking)

[Accessed 27 February 2022].

Banfico, 2021. *Brazilians Welcome Open Banking*. [Online]

Available at: <https://www.banfico.com/brazilians-welcome-open-banking/>

[Accessed 27 February 2022].

Belvo, 2021. *Open Finance Trends in 2021: Shaping a new ecosystem in Latin America*, s.l.: Belvo.

Carr, B., Pujazon, D. & Urbiola, P., 2018. *Reciprocity in Customer Data Sharing Frameworks*, s.l.: Institute of International Finance.

Central Bank of Nigeria, 2021. *Regulatory Framework for Open Banking in Nigeria*, Abuja: Central Bank of Nigeria.

Chuard, M., 2021. *What's next for Open Banking*. [Online]

Available at: <https://www.weforum.org/agenda/2021/04/open-banking-future-of-finance/>

[Accessed 27 February 2022].

Eaves, D., Pope, R. & McGuire, B., 2020. *Kennedy School Review - Government as a Platform: How Policy Makers Should Think about the Foundations of Digital Public Infrastructure*. [Online]

Available at: <https://ksr.hkspublications.org/2020/01/14/government-as-a-platform-how-policy-makers-should-think-about-the-foundations-of-digital-public-infrastructure/>

[Accessed 23 February 2022].

- E-estonia, 2021. *X-road*. [Online]  
Available at: <https://e-estonia.com/solutions/interoperability-services/x-road/>  
[Accessed 25 February 2022].
- European Commission, 2017. *Payment Services Directive (PSD2): Regulatory Technical Standards (RTS) enabling consumers to benefit from safer and more innovative electronic payments*. [Online]  
Available at: [https://ec.europa.eu/commission/presscorner/detail/en/MEMO\\_17\\_4961](https://ec.europa.eu/commission/presscorner/detail/en/MEMO_17_4961)  
[Accessed 01 March 2022].
- Fanta, A. & Mutsonziwa, K., 2021. Financial Literacy as a Driver of Financial Inclusion in Kenya and Tanzania. *Journal of Risk and Financial Management - MDPI*, 14(561).
- Financial Conduct Authority, 2021. *Open Finance Feedback Statement*, London: Financial Conduct Authority.
- Giddy, D. et al., 2019. *Open Banking Payment Initiation - Completing the Vision*, s.l.: Deloitte Australia.
- Giya, G., Kagee, S. & Thibane, T., 2021. *Regulating Data Markets through Open Banking: Lessons*. [Online]  
Available at: <https://www.compcom.co.za/wp-content/uploads/2021/10/CC202101-Giya-G.-Kagee-S.-and-Thibane.-T.-Regulating-Data-Markets-through-Open-Banking-Lessons-for-South-Africa.pdf>  
[Accessed 27 February 2022].
- Grauvogel, J. & Heyl, C., 2021. The Study of Term Limits in Sub-Saharan Africa: Lessons on Democratisation and Autocratisation. *SAGE*, 55(3), pp. 215-227.
- GSMA, 2020. *The Mobile Economy Sub-Saharan Africa 2020*, London: GSMA.
- Intergovernmental Fintech Working Group, 2021. *Articulating the policy rationale and policy imperatives for Open Finance in South Africa*, s.l.: Open Finance Integration Working Group .
- Internet World Stats, 2022. *INTERNET USAGE STATISTICS*. [Online]  
Available at: <https://www.internetworldstats.com/stats.htm>  
[Accessed 29 March 2022].
- Jansen, S., 2020. *Intro to open banking and data sharing*. [Online]  
Available at: <https://eudatasharing.eu/news/intro-open-banking-and-data-sharing>  
[Accessed 01 March 2022].
- Mastercard, 2021. *Q3 2021 Open Banking Tracker*. [Online]  
Available at: <https://b2b.mastercard.com/news-and-insights/open-banking-tracker/q3-2021/>  
[Accessed 01 March 2022].
- McGrane, L., 2021. *22seven Insights - Overview & FAQ's*. [Online]  
Available at: <https://conversations.22seven.com/hc/en-us/articles/360019580779-22seven-Insights-Overview-FAQ-s>  
[Accessed 22 February 2022].
- Monetary Authority of Singapore, 2021. *Financial Industry API Register*. [Online]  
Available at: <https://www.mas.gov.sg/development/fintech/financial-industry-api-register>  
[Accessed 26 November 2021].

- Montes, F., 2021. *Policy Aspects of Open Banking Schemes*. [Online]  
Available at: [https://figi.itu.int/wp-content/uploads/2021/06/FIGI\\_Open\\_BankingSession\\_June\\_10.pdf](https://figi.itu.int/wp-content/uploads/2021/06/FIGI_Open_BankingSession_June_10.pdf)  
[Accessed 27 February 2022].
- Mothibi, K., Lazaridis, D. & Rahulani, A., 2020. *Regulating Open Finance: Consultation and Research Paper*, Pretoria: Financial Sector Conduct Authority.
- Murphy, D. & Tescher, J., 2021. *Policymakers must enable consumer data rights and protections in financial services*. [Online]  
Available at: <https://www.brookings.edu/research/policymakers-must-enable-consumer-data-rights-and-protections-in-financial-services/#:~:text=Under%20Section%201033%20of%20the,data%20portability%20in%20financial%20services.&text=Instead%2C%20the%20CFPB%20issued%20non,m>  
[Accessed 24 February 2022].
- NIBSS, 2020. *NIBSS Position paper on Open Banking*. [Online]  
Available at: <https://nibss-plc.com.ng/news/451vbnbr6ghad5vwap5n38ccma>  
[Accessed 25 March 2022].
- Nicholls, M. & Clarke, D., 2021. *Open Finance and Vulnerability*, London: The Finance Innovation Lab .
- Open Banking Brasil, nd. *Open Banking Performance and availability statistics*. [Online]  
Available at: <https://dashboard.openbankingbrasil.org.br/>
- Open Banking Implementation Entity , nd. *Regulatory*. [Online]  
Available at: <https://www.openbanking.org.uk/regulatory/>  
[Accessed 27 February 2022].
- Open Banking Implementation Entity, 2018. *Open Banking Guidelines for Read/Write Participants* , London: Open Banking Implementation Entity.
- Open Banking Implementation Entity, 2021. *Three years since PSD2 marked the start of Open Banking, the UK has built a world-leading ecosystem*. [Online]  
Available at: <https://www.openbanking.org.uk/news/three-years-since-psd2-marked-the-start-of-open-banking-the-uk-has-built-a-world-leading-ecosystem/>  
[Accessed 27 February 2022].
- Open Banking Tracker, nd. *Open Banking in Brazil*. [Online]  
Available at: <https://www.openbankingtracker.com/country/brazil>  
[Accessed 27 February 2022].
- Open Money, nd. *Open Money*. [Online]  
Available at: <https://www.open-money.co.uk/>  
[Accessed 22 February 2022].
- Plaitakis, A. & Staschen, S., 2020. *Open Banking: How to Design For Financial Inclusion*, Washington, D.C.: Consultative Group to Assist the Poor.
- Rolfe, A., Forster, H. & Wood, J., 2021. *Open Banking Readiness Index: The Future of Open Banking in Europe*, s.l.: Mastercard International .
- Statista , 2022. *Brazil: smartphone penetration rate 2015-2026*. [Online]  
Available at: <https://www.statista.com/forecasts/625406/smartphone-user-penetration-in-brazil#:~:text=Smartphone%20users%20as%20share%20of%20population%20in%2>

0Brazil%202015%2D2026&text=In%202021%2C%2075.6%20percent%20of,to%2084.2%20percent%20by%202026.  
[Accessed 29 March 2022].

Statista, 2021. *Number of open banking users worldwide in 2020 with forecasts from 2021 to 2024, by region.* [Online]  
Available at:  
<https://www.statista.com/statistics/1228771https://www.statista.com/statistics/1228771/open-banking-users-worldwide/#:~:text=As%20the%20graph%20shows%2C%20in,reach%20132.2%20million%20by%202024.>  
[Accessed 01 March 2022].

Statista, 2022. *Number of adults with a bank account in Africa from 2012 to 2022.* [Online]  
Available at: <https://www.statista.com/statistics/915625/number-adults-with-bank-account-africa/>  
[Accessed 29 March 2022].

Weeks, R., 2019. *The cost of open banking: £81m and counting.* [Online]  
Available at: <https://www.fn london.com/articles/the-cost-of-open-banking-81m-and-counting-20190530>  
[Accessed 25 February 2022].

White, O. et al., 2021. *Financial data unbound: The value of open data for individuals and institutions.* [Online]  
Available at: <https://www.mckinsey.com/industries/financial-services/our-insights/financial-data-unbound-the-value-of-open-data-for-individuals-and-institutions>  
[Accessed 27 February 2022].

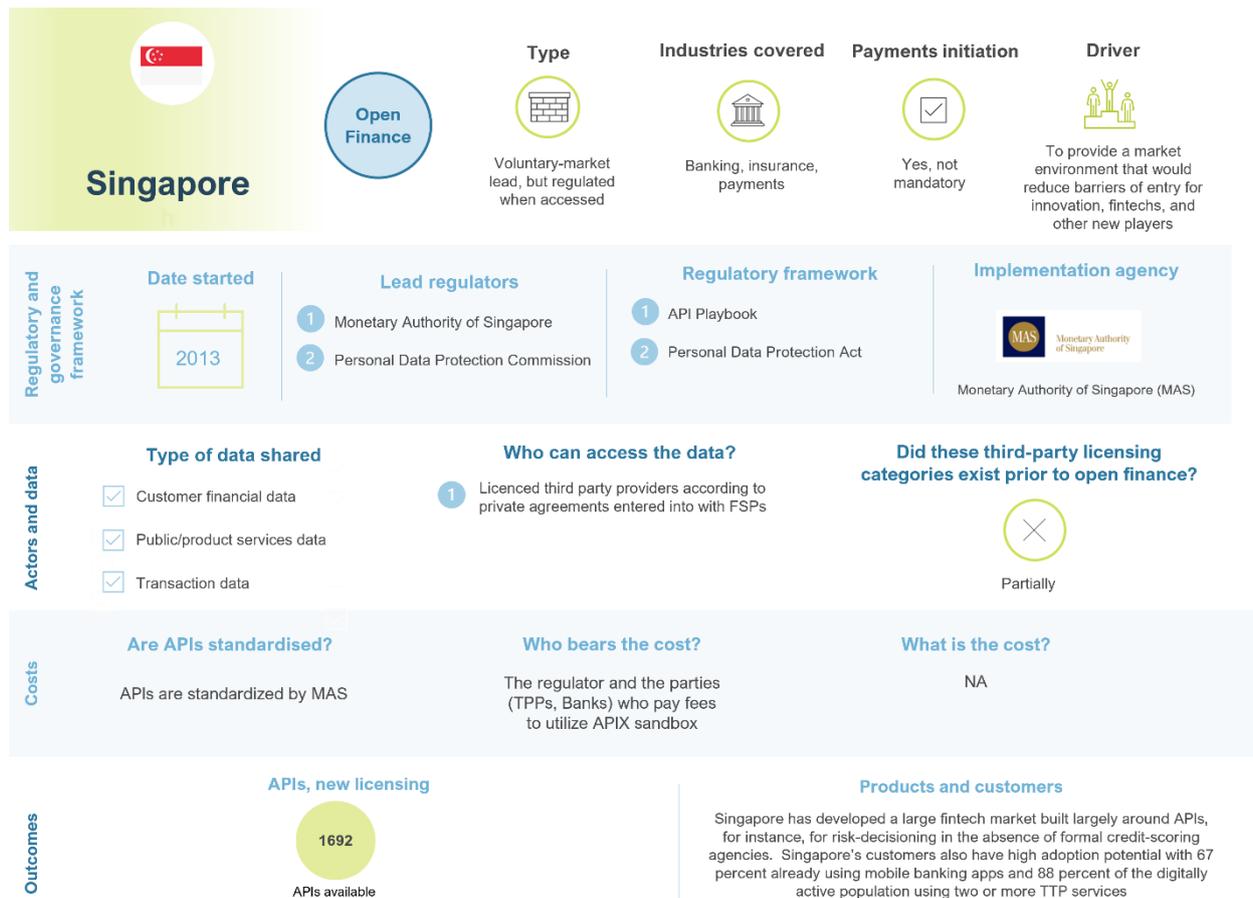
Williams, B., 2021. *From open banking to open finance: Much ado about nothing, for now.....* [Online]  
Available at: <https://www.ashurst.com/en/news-and-insights/legal-updates/from-open-banking-to-open-finance-much-ado-about-nothing-for-now/>  
[Accessed 25 February 2022].

World Bank Group, 2021. *CPIA Africa - Assessing Africa's Policies and Institutions,* Washington D.C.: Office of the Chief Economist for the Africa Region.

Zopa, 2021. *Open Banking to Open Finance: Bringing consumers along on banking's next innovation,* s.l.: Zopa.

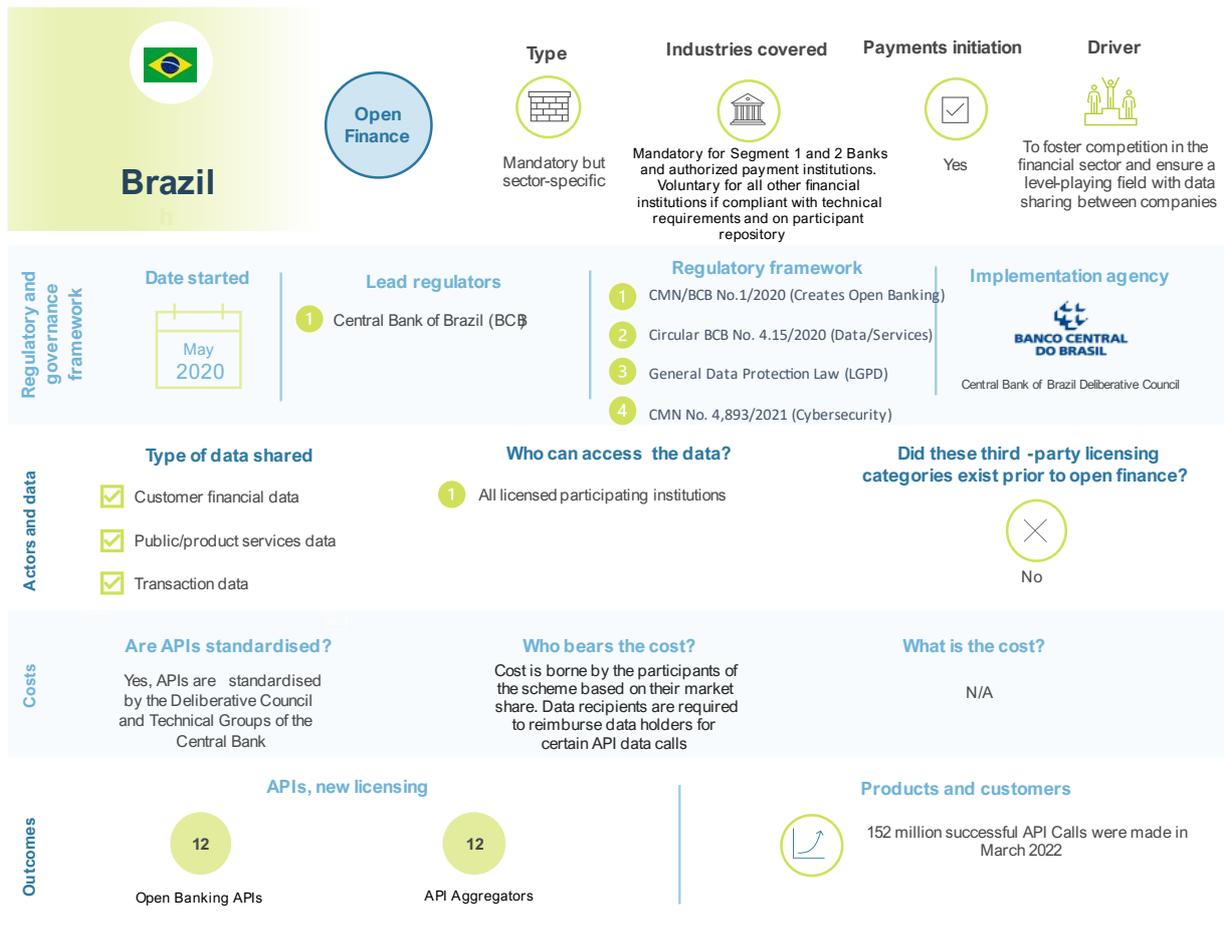
# Appendix A: Case studies of open banking and open finance models

This appendix provides more detail on the three international case studies highlighted in Section 4 as well as few additional case studies.



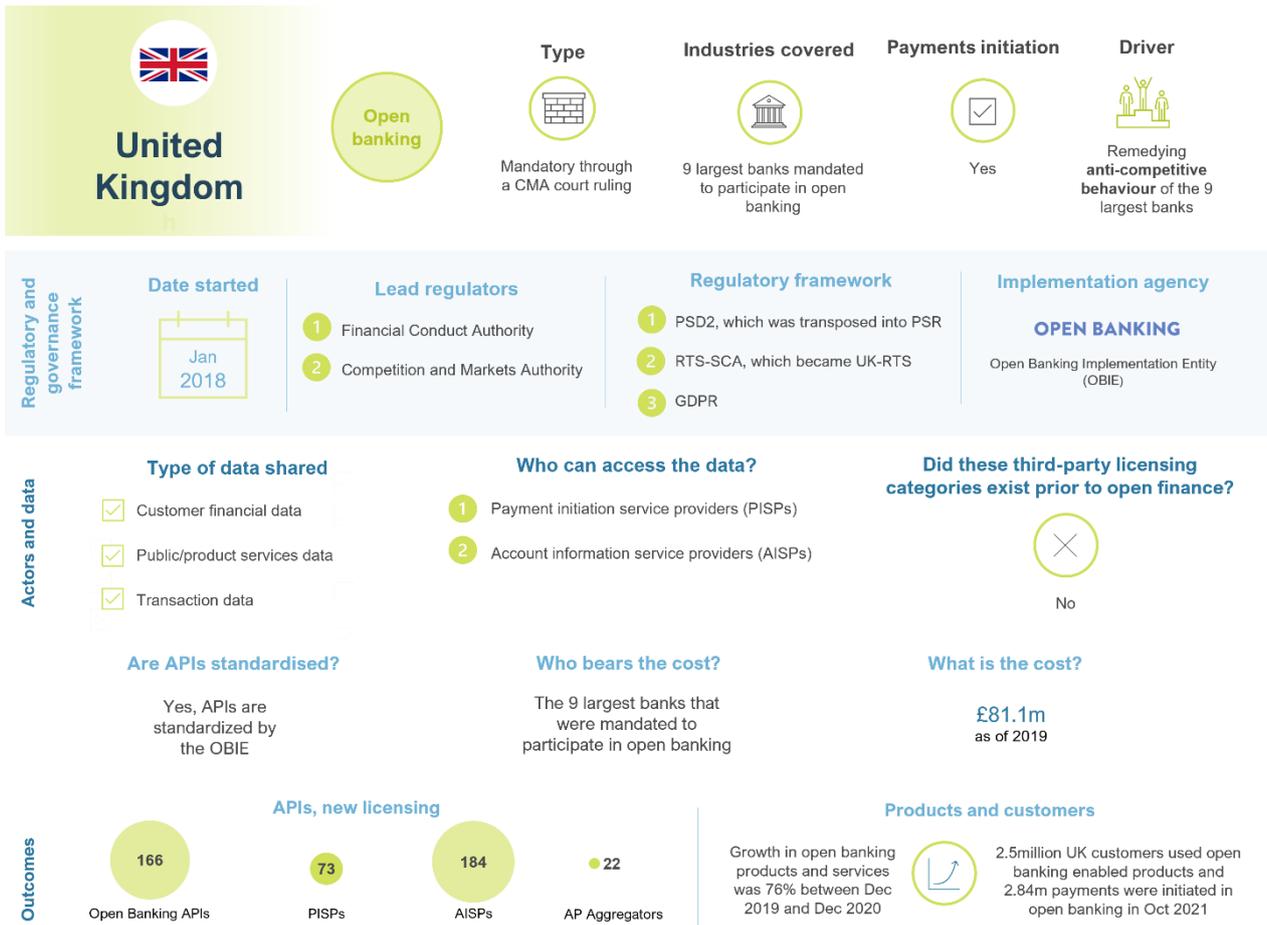
**Figure 10. Singapore open finance case study**

Source: (Montes, 2021; Giya, et al., 2021; Ang & Yap, 2021; ABS-MAS, 2013; MAS, 2021)



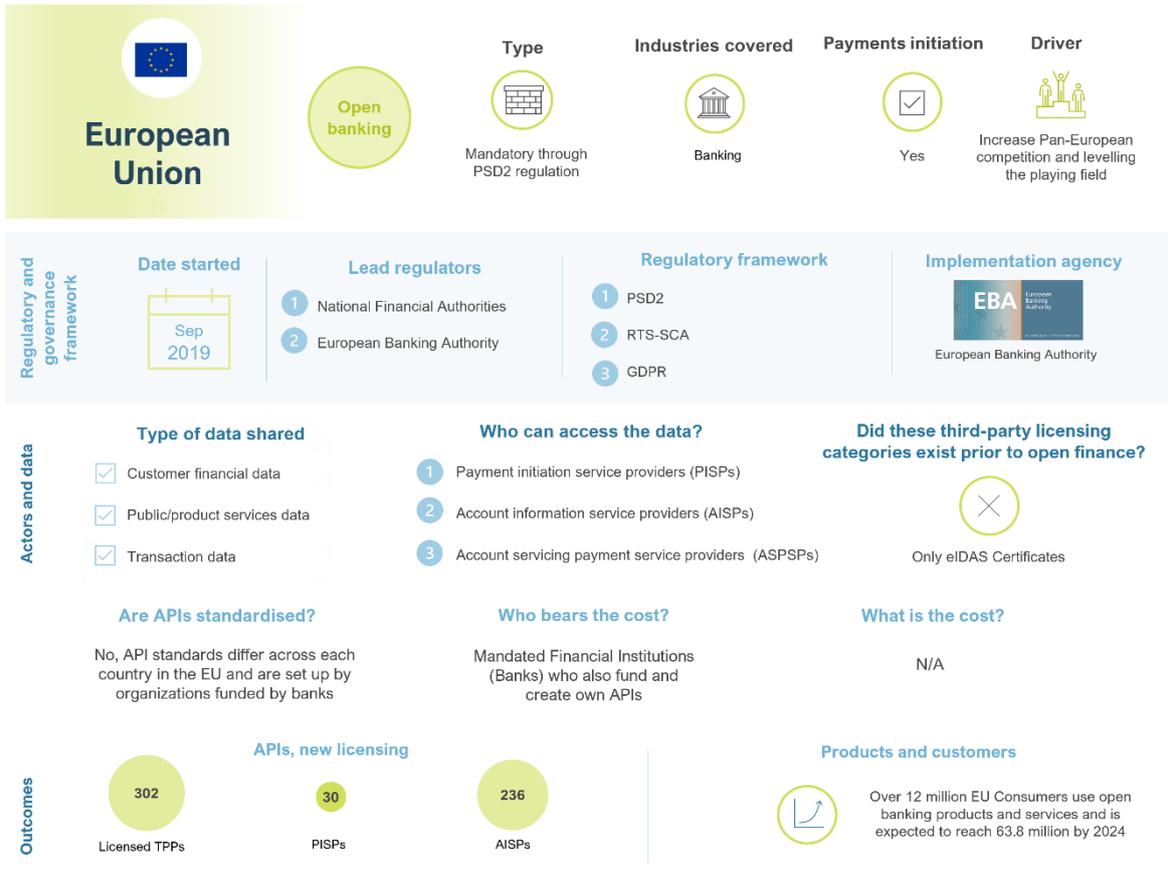
**Figure 11. Brazil open finance case study**

Source: (Platakis & Staschen, 2020; BCB, nd; Open Banking Tracker, nd; Open Banking Brasil, nd; Stakeholder Interviews, 2022)



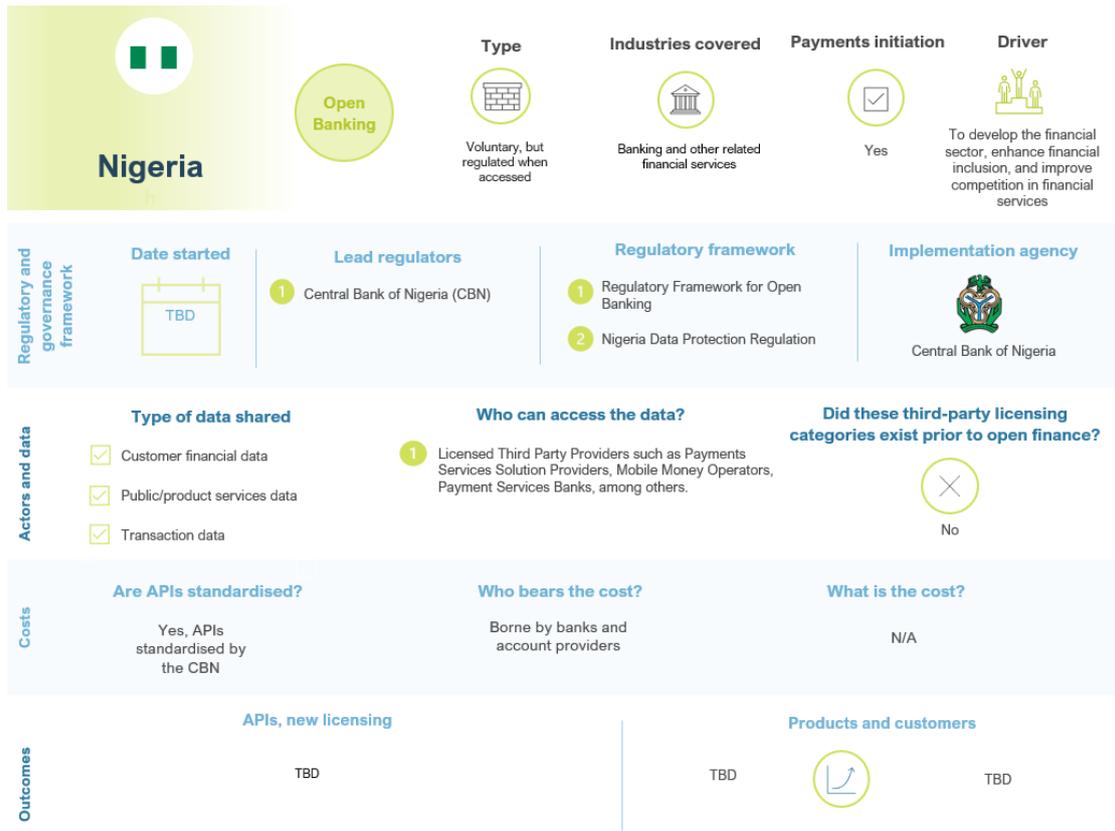
**Figure 12. UK open banking case study**

Source: (OBIE, nd; 2018; 2021; Giddy, et al., 2019; Rolfe, et al., 2021; Weeks, 2019)



**Figure 13. EU open banking case study:**

*Sources: (Mothibi, et al., 2021; Jansen, 2021; European Commission, 2017; Rolfe, et al., 2021; Mastercard, 2021; Statista, 2021)*



**Figure 14: Nigeria open banking model**

Sources: (Central Bank of Nigeria, 2021; NIBSS, 2020; Stakeholder Interviews, 2022)