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API Deployments in Inclusive Finance

RECOMMENDATIONS TO OPTIMIZE
API DEPLOYMENTS BETWEEN BANKS AND
FINTECHS FOR FINANCIAL INCLUSION

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Executive Summary

Application programming interfaces (APIs) allow the digital systems of separate organizations to communicate with each other. APIs are common, enabling many of the capabilities people rely on today, including cloud computing and digital payments. In financial services, APIs are viewed as a potential means by which traditional financial institutions, especially small and midsize banks, could partner with upstart financial technology companies (fintechs) to offer innovative products, especially to low-income customers. These partnerships can create a symbiotic relationship: financial institutions have the regulatory approvals, infrastructure, and customer base that fintechs lack, while nimble, iterative, and product-oriented fintechs can develop products quickly, which has been a historical struggle for banks.

This report examines the extent to which APIs are meeting their potential to facilitate bank and fintech partnerships that advance financial inclusion. By understanding whether financial institutions utilize APIs to partner effectively with fintechs, what types of APIs are being deployed, and if these partnerships help underserved customers access financial services, we can help the industry refine its approach to delivering digital services to underserved communities. This report focuses on small and midsize financial institutions as they are on the frontlines serving low-income households, but often have relatively fewer resources to devote to digital partnerships.

This research is based on nearly two dozen interviews with leaders at financial institutions, fintechs, API aggregators and platforms, and industry experts across the globe, as well as a literature review of API deployments in financial services. The findings from this research are most relevant to non-technical leaders at small and midsize financial institutions who would like a deeper understanding of how they might deploy APIs within their organizations. However, these findings are also relevant for fintechs looking to develop partnerships with financial institutions, as well as the broader financial inclusion community. The report also includes a primer on APIs for less technical audiences.

The major finding of this analysis is that the ecosystem of API deployments is not yet mature—there are far more failures than successes. This is especially true of attempts to create API integrations to reach low-income customers. The most successful API partnerships identified during this project enabled improved offerings to customers that were already middle-income or better. Banks know these customers well and successful API partnerships helped banks expand service to this segment.

However, there is still a path forward for financial institutions considering an API integration and this report includes four recommendations with related guiding questions that may help them along their journey:

1. Build User-Centered APIs: Financial institutions offering APIs are fundamentally offering a product to a customer. Fintechs have specific use cases that financial institutions can enable via APIs, such as a digital credit origination platform. Financial institutions should focus on understanding customer needs and use cases and creating APIs and products tailored to both.

2. Integrate APIs Into a Broader Technology Strategy: Getting the “right” technology in place to offer an API is not enough. APIs need to be considered within the financial institution’s broader technology strategy. For example, some banks choose to invest first in middleware layers—system-to-system connections within the bank as opposed to APIs that connect external systems to the bank. By strengthening their internal systems over time, these financial institutions use middleware as an on-ramp to APIs. This iterative process builds internal capacity and digital infrastructure, and prepares financial institutions to fully leverage APIs.

3. Assemble the Right People and Processes: An API is a fundamentally different product than what banks are used to offering, and the teams that build, launch and manage APIs need to look different too. Financial institutions must hire technical product development teams and provide an agile environment where teams can iterate until the product is ready to scale. Having non-technical people at the helm and deploying APIs prematurely have killed or stalled numerous API-enabled partnerships.

By understanding whether financial institutions utilize APIs to partner effectively with fintechs, what types of APIs are being deployed, and if these partnerships help underserved customers access financial services, we can help the industry refine its approach to delivering digital services to underserved communities.

4. Evaluate Compliance and Regulatory Risks Early: Regulators are rightly concerned with systemic risks in the market resulting from new products, including those enabled by APIs. While not every risk can be anticipated, both banks and fintechs involved in API deployments must stay abreast of real and perceived regulatory risks to avoid spending significant resources on projects that ultimately may not pan out. Unforeseen compliance and regulatory issues have derailed numerous API-enabled partnerships.

1

A Digital Cambrian Moment

In 2014, The Economist published a special report comparing the proliferation of digital start-ups to the Cambrian Period, a time 500 million years ago when life on earth exploded thanks to a perfect storm of microbial enablers and geologic conditions. The report argued that in this current Cambrian Moment, “the basic building blocks for digital services and products... have become so evolved, cheap and ubiquitous that they can be easily combined and recombined.”¹ On these building blocks, entrepreneurs and established businesses are driving dramatic trends: entrenched business models are being upended, new industries are being created, tech giants are growing, and digital interactions are now the norm for billions of people.

In emerging markets, the mobile phone has been the primary instrument of change, allowing individuals across income brackets and geographies to access digital technology. The diffusion of mobile phones throughout the developing world has been rapid. For instance, in Sub-Saharan Africa, mobile penetration increased from just one percent of the adult population in 2000 to 44 percent by the end of 2018.² This growth is expected to continue, with an additional 710 million new mobile subscribers coming online by the year 2026—50 percent of which is expected to be in the Asia-Pacific region and 25 percent in Sub-Saharan Africa.³

In the financial services industry, the impact of this evolution is becoming apparent. Since 2011, almost one billion people have accessed at least rudimentary financial accounts for the first time through their mobile phones.⁴ Meanwhile, financial technology companies (fintechs) and banks are trying to figure out how to leverage these newly laid mobile rails to deliver innovative financial tools to unserved and underserved consumers. For instance, fintechs like Tala and Branch have built consumer lending products that utilize the data available for capture on smartphones to automatically score and offer loans via M-Pesa, Safaricom’s mobile payment network. Safaricom itself developed its own consumer lending product, M-Shwari, in partnership with the Commercial Bank of Africa. Similar models are being cloned all over Sub-Saharan Africa.⁵

The prevailing narrative is that fintechs have driven the expansion of digital finance while traditional financial institutions have been slow to bring innovative new products to market.⁶ Amongst other obstacles, financial institutions often must deal with legacy infrastructure, regulatory scrutiny, and misalignment between their core business activities and the need to create new digital products.⁷ While fintechs are proving effective business and operating models for digital finance, they too face regulatory challenges. Making the leap from

lending to deposit-taking is difficult, which often limits the scope of products fintechs can offer. Together these challenges make it difficult for mainstream financial institutions to be as nimble as upstart fintechs with a narrower product offering, but they do nothing to mitigate the strategic importance of finding ways to better serve customers.

The relative advantages and disadvantages of these two actors have the makings of a symbiotic relationship: banks can provide a means to offer a full suite of financial products to consumers and fintechs can provide the innovative technological or digital solution to reach many customers quickly. But to do that, the right framework for a partnership between the two parties must be developed and the technological bedrock of that framework is an application programming interface, or an API, which digitally links the fintech and the bank.

METHODOLOGY

The insights and recommendations in this report are based on a review of the literature on APIs and bank and fintech partnerships, as well as nearly two dozen interviews with leaders at financial institutions, fintechs, API aggregators and platforms, and industry experts across the globe. A full list of interviewees can be found in the annex, along with selected references.

The Opportunity in Getting APIs Right

The potential symbiotic relationship between banks and fintechs has led market observers to comment on API-driven models in financial services.⁸ There are already numerous successful models deployed in the market. For example, the Kenyan mobile network operator (MNO) Safaricom built an API with Commercial Bank of Africa (CBA), which allowed Safaricom to offer M-Shwari, a savings and loan product, to its M-Pesa customers. Developers in the finance sector are utilizing APIs to offer chatbots to customers, the most advanced of which can retrieve customer and transaction data. Meanwhile, historically analog processes, like credit underwriting, are increasingly being digitized. The fintech First Access offers streamlined loan origination by accessing alternative data sources through APIs.

For financial institutions, the chief opportunity is to be able to *provide* APIs to fintechs that are building new and scaling existing financial products and services. The healthiest partnerships are realized when a bank that has chosen not to serve a customer segment—like a corporate bank that does not serve retail customers or a small and medium enterprise (SME)-focused bank that has no risk appetite to serve the informal sector—uses APIs to work with the fintechs that can serve that segment. There is an adage that says, “When there is a gold rush, you can mine for gold or you can sell pickaxes.” For financial institutions, there can still be a good deal of money in selling pickaxes.

2

An Introduction to APIs

APIs allow one computer program to communicate with another computer program to consume data, perform actions, or both. APIs generally reduce the complexity of accessing technology systems and automate the interaction between systems in ways that are seamless for companies and for individual end users.ⁱ

Several well-known companies serve as excellent cases of how APIs function and promote innovation. Amazon Web Services (AWS) offers developers a set of APIs to host applications in the cloud, which has enabled companies to scale their products quickly and cheaply. Amazon's cloud-based hosting business has proven successful—since its launch in 2006, revenues had grown to US \$9 billion by the third quarter of 2019.⁹ Incidentally, cloud-based hosting

has been a significant factor in the rise of the global tech industry, driving down the costs of launching and delivering products by several orders of magnitude.¹⁰ Twilio is a cloud-based communication platform that offers APIs to developers to integrate short message service (SMS), voice and email communications into other applications. Perhaps most relevant to emerging market financial institutions is Stripe, a payment services company that has taken the complex process of credit card integration and enabled developers to accept credit card payments using seven lines of code (see Figure 1). APIs are also the mechanism by which customers use applications to check their account balance, make payments from one provider to another, and perform know-your-customer (KYC) checks (see Figure 2).

FIGURE 1

Stripe's Initial Product Offering

With seven lines of code, app developers could efficiently incorporate Stripe to process in-app credit card payments. The simplicity of this integration helped to facilitate word-of-mouth marketing for Stripe, as seen below on HackerNews, an online gathering place for developers.

```
<form action="/your-server-side-code" method="POST">
  <script>
    src="https://checkout.stripe.com/checkout.js" class="stripe-button"
    data-key="pk_test_fYHk3ic60stkh0g460ch"
    data-amount="999"
    data-currency="USD"
    data-description="Widgets"
    data-image="https://stripe.com/img/documentation/checkout/marketplace.png"
    data-label="BUY"
    data-stripe-codes="true"
  </script>
</form>
```

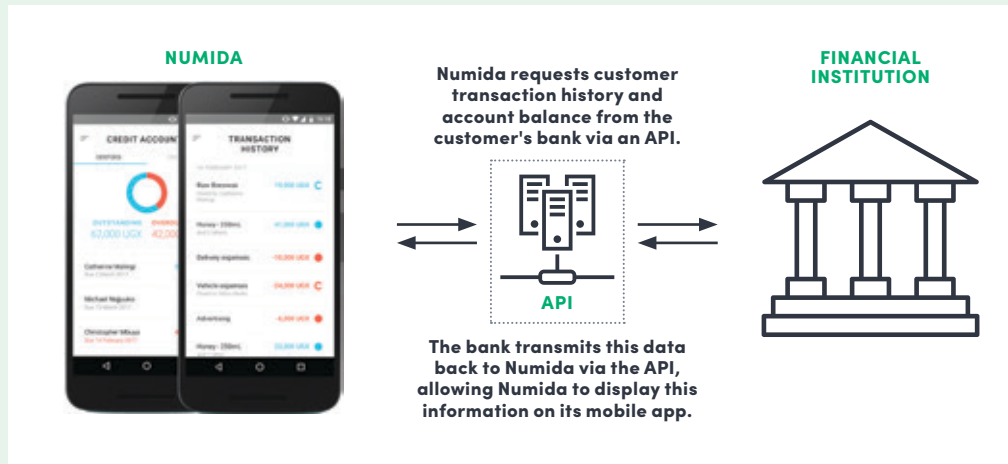
SOURCE Hacker News.¹¹

ⁱ For a comprehensive primer on APIs, both Programmable Web (<https://www.programmableweb.com/api-university/what-are-apis-and-how-do-they-work>) and 18F (<https://18f.gsa.gov/2016/04/22/what-is-an-api/>) are good places to start.

FIGURE 2

API Balance Check on the Numida App

Numida is a fintech that offers credit and other services to small and medium-sized enterprises (SMEs) in Uganda. An API allows Numida to relay transaction history and balance information from the customer's bank account onto Numida's app.



SOURCE Numida; Various artists, The Noun Project.¹²

The best API implementations have features that facilitate quick adoption, such as clear documentation, sandbox environments to test the product, and clear launch requirements. In reality, most financial institutions face numerous challenges implementing APIs. A basic API integration may take many months for a bank to develop and, without a standardized on-boarding process for fintechs, partnerships may take even longer to negotiate and longer still to implement. APIs with the level of integration fintechs need either do not exist or are not easily accessible, therefore it can take months or even years to gain access to suitable APIs. Additionally, banks are generally rigid about their workflow requirements, which can be one of the biggest operational hurdles for a fintech that is accustomed to operating in an agile manner. Strategic concerns can also slow implementation of APIs. Banks struggle with letting go of their direct customer relationship and with allowing fintechs to offer potentially competing products on their platforms. All of these issues make it

difficult for fintechs to navigate the process of using bank APIs and has resulted in very few financial institutions achieving success in productizing APIs to date.

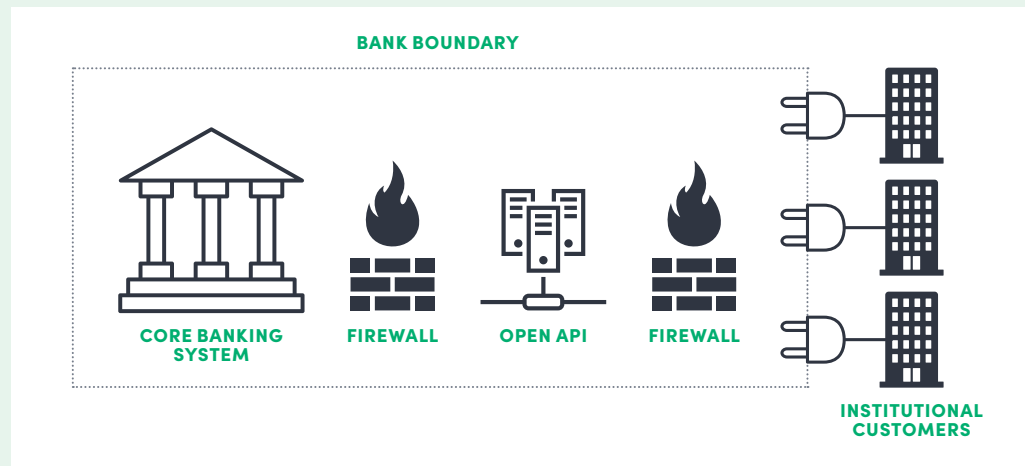
A Typology of APIs

It is useful for leaders at financial institutions to understand the types of APIs common in financial services. Open APIs, which offer easily accessible digital infrastructure to anyone, are often seen as the ideal, but they may not be appropriate or realistic for many financial institutions, especially small and medium sized banks. The development costs can be significant and open APIs do not suit every customer segment.¹³ Two other models, private APIs and API aggregators and platforms, are being implemented between banks and fintechs with varying success. Understanding these models can help financial institutions and other stakeholders understand where they currently stand relative to peers and decide what next steps to take on a journey toward API partnerships.

FIGURE 3

Open API Model

In the open API model, a single bank provides an API that multiple institutional customers can access.



SOURCE Various artists, The Noun Project.¹⁴

OPEN APIS

Open APIs are offered by a single party and are designed for general, replicable use by third parties.

To encourage uptake of open APIs, providers often offer a sandbox testing option that allows developers to get a sense of how the APIs function and whether they work well with the developers' products. These sandboxes are accompanied by readily available documentation and standardized onboarding and KYC processes,ⁱⁱ all of which are designed for easy replicability by API developers. AWS, Twilio, and Stripe are examples of open APIs.

A financial institution interested in offering an open API should be aware that it can require significant upfront investment of company resources. Additionally, opening access to parts of the bank's systems may be perceived as risky by internal compliance and security teams. This is especially true for banks converting from complex legacy IT and core banking systems

that were not designed to be accessed via an API. IT security teams are explicitly mandated to prevent access to unknown external parties, which is what an open API is meant to do. Assuming an institution has the technical infrastructure to support an open API, careful design work is a must.

Even with IT security satisfied, regulatory hurdles must be considered when implementing open APIs. Open APIs usually require unique KYC and onboarding processes that may alarm a financial institution's compliance and legal teams. Consequently, the bank may perform lengthy reviews of open API deployments, which can delay or stall implementation.

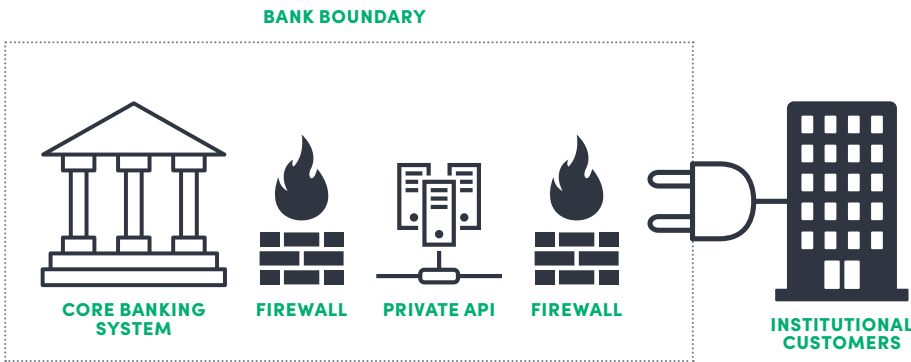
Despite these barriers, many financial service providers, typically at larger institutions, are opening APIs with the hope of earning long-run financial returns resulting from an ecosystem of partners who also benefit from lower costs of integration and better service delivery through open infrastructure. For instance, mobile network

ⁱⁱ Here and much of the rest of this report, the reference to the customer in KYC refers to businesses or institutional customers that are consuming a financial institution's API—including fintechs, banks, technology companies, etc.—as opposed to individual end users.

FIGURE 4

Private API Model

In the private API model, a single bank provides an API that select institutional customers can access.



SOURCE Various artists, The Noun Project.¹⁵

operator MTN Uganda invested US \$400,000 to open their mobile money API. Equity Bank in Kenya has invested upwards of US \$10 million in Finserve—a wholly-owned subsidiary—to offer a suite of open transactional, KYC and account APIs. NedBank in South Africa is investing over US \$138 million in a massive technology overhaul across the bank and is setting aside a portion of that towards creating open APIs.

PRIVATE APIS

Private APIs are created by a single party to grant access to a specific party or set of parties.

Private APIs are designed to enable financial institutions to allow specific, external, pre-authorized parties to access certain functionality or data within the bank. A discrete business or use case often dictates the development of a private API and, consequently, the major distinguishing feature of a private API is its lack of replicability.

API AGGREGATORS AND PLATFORMS

The distinguishing feature of API aggregators and platforms is that they are third parties (i.e., not a bank or a fintech) that offer APIs on behalf of a financial institution.ⁱⁱⁱ The main difference is who owns the client relationship.

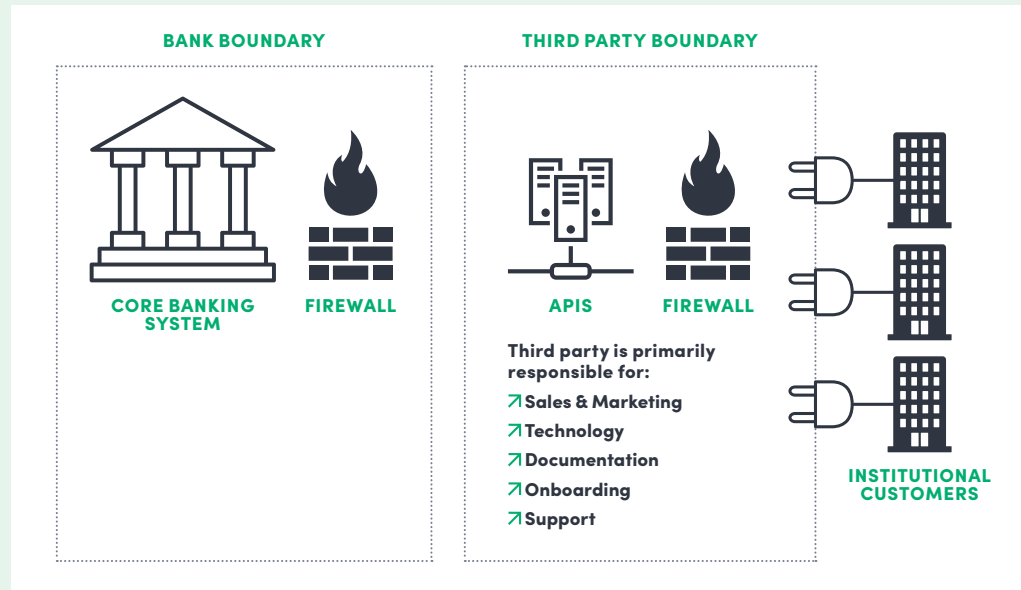
API aggregators are operated by third parties and offer APIs on behalf of any number of financial institutions. These third parties have direct ownership of the relationship with customers. Aggregators provide documentation, ensure KYC and onboarding processes are followed, and are often incentivized to sell to and onboard fintechs actively looking to develop solutions with participating financial institutions. Aggregators have dedicated teams and expertise providing APIs for multiple financial institutions. By spreading the costs of constructing APIs across a larger number of participants, API aggregators lower the costs for each participant.

ⁱⁱⁱ I adopt Ben Thompson's definition of aggregators and platforms as it is perhaps the most useful way to think about the differences between platforms, which facilitate a relationship between a bank a third-party, and aggregators, which mediate the relationship between a bank and a third-party. Ben Thompson, "A Framework for Regulating Competition on the Internet," Stratechery, December 9, 2019, <https://stratechery.com/2019/a-framework-for-regulating-competition-on-the-internet/>.

FIGURE 5

API Aggregator and Platform Models

In the API aggregator and platform models, a third-party provides APIs on behalf of financial institutions to institutional customers (e.g., fintechs) in its network. The aggregator or platform may also provide sales, marketing, onboarding and other services.



SOURCE Various artists, The Noun Project.¹⁶

API platforms, often called “marketplaces,” tend to look like API aggregators in that a third-party is building and offering APIs to customers on behalf of a bank, but they also facilitate relationships by assisting banks and fintechs with the sales and marketing components of the bank-fintech partnership. The primary functionality of marketplaces is that participation means banks are seeing vetted solutions and fintechs are seeing qualified buyers. Examples of API marketplaces include FinConecta, a global API marketplace, and the APIX exchange launched in Southeast Asia.

Marketplace operators generally integrate with a bank partner to conduct proofs of concept with fintechs. These marketplaces tend to be useful in getting proofs of concept

off the ground and can have positive effects on the ecosystem. However, this research found that marketplaces are not yet effective at catalyzing new innovative financial services in emerging markets. For the fintechs and financial institutions participating in this study and engaged with these types of marketplaces, the main driver for their lack of effectiveness is twofold. First, marketplace operators rarely know how to effectively sell fintech solutions that are not sufficiently scaled. Second, marketplaces are an intermediary. The result is a system which devolves communication in such a way that the financial institutions lack control over the onboarding process of potential fintech partners and fintechs do not have a clear line of communication to the financial institution.

The Extent to Which API Deployments Facilitate Financial Inclusion — Findings and Insights

3

Overall, this research shows few instances of small and mid-sized banks and fintechs successfully introducing products to underserved markets via API deployments. In general, banks are not providing sufficient documentation, accessibility, or strategic and legal consideration when launching their APIs. Meanwhile, fintechs are struggling to access and test bank-provided APIs, consider regulatory and compliance issues, and integrate with internal bank teams. As a result, the landscape of API-fueled partnerships is not yet mature.

There are two hypotheses for the maturity level of the API landscape in inclusive finance. One is the possibility that the fintech market is not mature enough to justify major investments by Tier 2 and Tier 3 banks in the technology needed to achieve robust APIs. Another is that banks perceive APIs as enabling potential competitors. Financial institutions are keen observers of threats to their market position. For example, a Pakistani fintech that started to get traction lending to SMEs was approached by a bank about an API integration. After a demo, the bank asked the fintech for details about their

credit scoring model and go-to-market plan, and then promptly disappeared once they got a look under the hood. The head of digital channels at this bank admitted that after seeing the fintech solution up close, the bank figured it could develop its own solution. The product the bank ultimately launched faced major challenges and continues to struggle in the market.

Historically, low-income customers have been difficult to serve and the findings from expert interviews and a review of the literature suggest that there are few conclusive examples of financial institutions using APIs to enable partnerships that extend access to underserved populations. Instead, it appears that API partnerships are enabling financial institutions and fintechs to increase the efficiency with which they serve middle- or upper-income customers. For instance, Direct Payments Online (DPO), a Kenyan fintech, processes payments for the likes of Uber, Air France, DHL and Expedia, and MTN Uganda's top API partner is SafeBoda — an app-based ride-sharing application with intentions to become a so-called “super app.”

4

Recommendations for API Deployments in Inclusive Finance

Through nearly two dozen interviews with leaders at fintech companies, small and midsize banks, and managers at large financial institutions, it is clear that selecting the “right” type of API was often the least challenging part of the API journey. Rather, both financial institutions and fintechs faced significant hurdles when it came to successfully implementing the selected API. For some organizations, the business model or use cases underpinning the API deployment wasn’t sufficiently tested. For others, regulatory barriers (real or perceived) killed projects quickly and without warning. More trite issues such as the organization’s technology strategy or leadership and technical skill gaps ultimately doomed API deployments.

How can API managers avoid these common implementation pitfalls? The research offers a set of core lessons to help financial institutions, fintechs and other ecosystem actors navigate the complexity of APIs. I have distilled these lessons into four recommendations and guiding questions that API managers should ask themselves to plan their API strategy.

Recommendation 1: Build User-Centered APIs

Financial institutions that successfully offer APIs take a user-centered approach to API development and delivery. They pay careful attention to the use cases for which APIs are being developed and specify the intended users. In other words, they articulate a clear business case for the API. For API delivery, asking what else needs to be in place to facilitate customer onboarding and support is crucial.

GUIDING QUESTIONS

- What are the key use cases that our clients are likely to have and how can we support them?
- What does the end-to-end customer journey (e.g., discovery, trial, onboarding and technical integration, continued use, and support) look like?
- How can we maintain, enhance and continue to add new features and functionality to the product over time?

EXAMPLES

Commercial Bank of Africa Solves Common Operational Gap in Mobile Network Operations

Commercial Bank of Africa (CBA) and Safaricom, a Kenyan MNO, provide a good example of a user-centered API deployment. CBA partnered with Safaricom to help support M-Shwari, a savings and lending product, built on M-Pesa. The partnership has increased CBA's assets under management and moved the bank from a Tier 2 to a Tier 1 bank in Kenya. Building off this success, CBA sought to replicate a similar model with MNOs in other markets. Thinking critically about the customer journey of Safaricom, CBA identified where APIs were necessary to replicate this model for other MNO customers. Every partner operated differently, and all had strict security and access requirements, so open APIs were not necessarily the best solution for providing a scalable platform. However, portions of the API development process were replicable regardless of the partner, so CBA focused on identifying efficiencies to build private APIs more quickly.

Equity Bank Responds to Market Demand to Provide Easy Access to Core Banking Services

Equity Bank recognized the disadvantage of building one-off integrations for different institutional customers and responded by creating a replicable, streamlined process for accessing their internal systems. This was the first step on a path towards developing an open API and launching Finserve. While Finserve later experienced other challenges, the fact that the development of the initial API was driven by demonstrated need and built iteratively is a good example of a user-centered approach to developing an API product.

Recommendation 2: Integrate APIs Into a Broader Technology Strategy

While never enough on its own, the right technology is essential to building and delivering successful APIs. Technology does not exist in a vacuum, however. Just as an API needs a user-centered use case to exist, so does a firm's technology strategy. In other words, financial institutions need to have a clear business case for how investments in the “right” technology will help them serve their customers. For banks moving from mostly analog or archaic technical systems, their investment in a “digital transformation” is especially important as it will form the foundation of their offerings in the near term.

For most Tier 2 and Tier 3 banks, digital transformation is focused on building middleware layers to enable the development of internally owned and operated digital solutions like mobile, agent, or onboarding applications. Middleware layers are system-to-system connections within the bank, as opposed to APIs which connect external systems to the bank. For instance, a bank may need to build one middleware layer to manage the interface between its core banking system and its ATM network, and yet another middleware layer to connect its mobile banking application. Middleware solutions are popular with banks in part because they remain in-house, whereas an API is typically used to link a core banking system to applications developed by third parties. System integrators like The Software Group originally developed a middleware layer for Tier 2 and 3 banks to integrate with electronic funds transfer switches, and they have seen an uptick in customers looking at developing middleware for additional product offerings. Consequently, The Software Group designed their middleware offering to be more flexible, which enables their customers to develop mobile applications, online banking services or other applications they wish to integrate into their core banking system.¹⁷ The choice between middleware and APIs is not necessarily mutually exclusive, as middleware development can sometimes be an on-ramp to API development.

GUIDING QUESTIONS

- Where are existing customers or internal products using existing middleware layers and systems?
- Can middleware layers be turned into APIs utilized by fintechs or other third parties?
- Are middleware layers accessed by third parties? Do they do so on a repeated basis? If so, how can we design these connection points for repeatable access?
- How will a typical fintech customer want to consume our APIs? What functionality and documentation will they expect? How will they discover and access this functionality?
- What is the most valuable minimum viable API product we can launch? How can we as the bank work with fintechs and developers to iterate and build out more use cases?

EXAMPLE

I&M Bank Makes Modest Investments to Build Capacity

I&M Bank in Tanzania built a middleware layer to integrate internally developed solutions into its core banking system. This included Spenn, its mobile banking app, which was a white-labeled solution that required an extensive integration into its core system. Working with in-house developers, I&M was able to repurpose this middleware layer as an API. This allowed I&M to experiment with API-enabled partnerships in a lightweight way that built institutional capacity. Often, financial institutions, particularly smaller ones, do not have the time or resources to devote to developing fully open APIs. I&M shows that there is an alternative path to developing APIs, one using incremental and smaller investments.

Recommendation 3: Assemble the Right People and Processes

Ultimately, people are at the core of an effective technology strategy. People help to ensure implementation of a user-centered approach to developing and delivering APIs. It is uncommon to find financial institutions that have experience with the world of fintechs, developers, and integrators. This misalignment of skills makes executing an API difficult. Consequently, many financial institutions with an API (or ambitions for one) aspire to create a more agile, innovative culture to help execute these solutions more efficiently.

Creating this culture is not as simple as staffing the right people, although that is important. It must be accompanied by the right management structure and lines of responsibility. A cultural shift to a more open, adaptive approach is also needed. APIs often cut across traditional business lines and internal departments within a bank and removing overly cumbersome processes and decision-making barriers is critical.

GUIDING QUESTIONS

- What skills do we have/need to build, sell and support APIs?
- Should we outsource API development and, if so, which parts?
- How do we find good tech talent and create an agile technology culture?
- Who has final responsibility for driving the success of the product? What are their success metrics and incentives? What are the constraints on their ability to make key decisions and determine their own destiny?

EXAMPLES

BTPN Goes Agile to Build an API

In Indonesia, BTPN rolled out a rural agent network of more than 300,000 agents and onboarded over 5 million customers. To further capitalize on this major investment, BTPN built an API for the rapidly expanding e-commerce players to sell goods and perform offline-to-online transactions via its agent network. As part of this transition, BTPN's product development group lead retooled the entire team by bringing in technical and operational expertise in rural agent networks and switched to an agile methodology for product development. In his words, "going agile was necessary before opening APIs."

Hire People Who Speak "Tech" and Can Translate "Bank"

One banker in charge of digital channels complained that "fintechs don't speak bank"—a valid concern, but one that puts the onus on the API institutional customer to learn how to "speak bank." This becomes a significant issue when the person in charge of fintech engagement is not capable of building a bridge into the complex internal workings of the bank for the fintech customer. If fintechs are the target customers, API managers should be able to effectively sell to this target customer while also navigating the internal stakeholders within the bank.

GHL Opts for an API Platform

The CEO of GHL in Ghana said that "bankers will digitize existing analogue processes," but building effective digital products requires a different mindset. Being a smaller bank with limited resources, GHL did not have product managers in-house to develop and sell APIs. One way to avoid increasing employee headcount and managerial oversight was to outsource these functions to an API aggregator or platform. GHL chose to participate in a marketplace, which exposed it to new fintech partners. However, implementation was ultimately halted by regulatory hurdles.

Recommendation 4: Evaluate Compliance and Regulatory Risks Early

Regulators are rightly concerned with systemic risks in the market and are thus cautious with innovative products, like those enabled by APIs. Many banks and fintechs start on the path to develop partnerships and launch products without sufficiently bringing the regulator on board. This often leads to sudden stoppage in product launches. Engaging with regulators early and staying on top of the evolving fintech regulatory framework in the country is a critical missing link in many of the partnerships studied for this report.

Developing a regulatory strategy and building checkpoints into the product roadmap early on is strongly recommended. A key issue is timing. Some managers wished they had done this earlier in the product development process, before investing in something that needed to be rethought later. In other cases, going to a regulator too soon was seen to cause problems, particularly if the regulator is forced to react to an undefined solution or wants excessive input into the design and launch of the product.

GUIDING QUESTIONS

- How do we typically engage with the regulators around any new product or service?
- When should we look at the regulatory implications of the API product?
- How do we ensure compliance by API customers when their systems are at arm's length from ours?

EXAMPLE

GHL Kills an API-Enabled Chatbot to Pursue Other Priorities

GHL Bank in Ghana was looking for external innovations and product solutions in FMO's FinForward program, an API marketplace which was designed to help smaller financial institutions identify and evaluate new innovations to offer their customers. FinForward presented a variety of solutions to the bank around two of their core needs: loan origination and customer support. The CEO of the bank was keen to implement one of the solutions. Thinking that the regulatory barriers would be significantly easier to overcome, the CEO purposely chose a chatbot-powered customer support tool that could supplement their existing support channels. The logic was clear: the regulator does not care if the bank hires 10 customer support people, so a chatbot should be fine. However, the use of technology in a customer support function was not given an immediate green light. The regulator wanted to take a closer look at the technology, how it was being implemented, and the effect it would have on consumers.

Ultimately, this extra scrutiny led GHL to shut down the chatbot project. They were simultaneously bringing other initiatives to the regulator which were higher priorities than the chatbot and chose to drop the chatbot until these other initiatives were completed. If they had engaged regulators earlier in the processes, they may have been able to more efficiently use their resources to address their customer support need.

Case Study: An Unfulfilled API Partnership

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The failed partnership between Finserve, the open API platform developed by Equity Bank in Kenya, and a fintech that tried to use it, exemplifies many of the challenges that API partnerships face as well as the importance of building user-centered APIs and engaging regulators early. The fintech, whose owners were interviewed while researching this report, asked to remain anonymous because they were afraid of retribution from the bank.

The journey that eventually led Equity to launch Finserve began several years ago. As remittance transfers increased globally, Equity saw growing demand from remittance companies that wanted to allow individual customers to deposit remittances into their bank accounts. Equity found a niche serving international remittance companies that wanted to deposit transfers into Kenyan bank accounts specifically. The compliance and regulatory requirements to disburse into Kenyan accounts were complex, but Equity had the in-house regulatory expertise and the remittance companies had the global customer base. Given these symbiotic dynamics, partnerships between Equity and fintech remittance companies were ripe with potential.

To enable these partnerships, Equity built an API that would allow remittance companies to connect to its core banking system. Building multiple private APIs did not make sense given the market Equity was trying to serve, so the bank sought a more replicable solution. Ultimately, Equity created the Jenga Payment Gateway, an open API that can interface with multiple payment and money transfer services. The initial use case of enabling remittance companies to disburse funds into customer bank

accounts and mobile wallets is a good example of how a clear business case can drive the development of a user-centered API. Interviews and publicly available data suggest this initial play was successful. The amount of inbound remittances through Jenga increased from US \$130 million in 2016 to US \$300 million in 2017.^{18,19}

The API was so successful that Equity eventually spun off Jenga and created Finserve in August 2018 as a wholly-owned subsidiary of Equity Bank Kenya to serve as its “digital arm.”²⁰ Equity Bank invested US \$10 million into the subsidiary as a part of the spin-off. The new structure put the “digital branch” of the bank at a distance and gave Finserve a degree of autonomy from the priorities and structure of Equity. This distance was intended to allow FinServe to pursue new ways of thinking and functioning as an organization.

Meanwhile, a start-up fintech in Kenya needed the APIs that Finserve offered. The fintech sought to help mobile operators manage agent networks better by providing a chatbot that agents could interact with on Android phones. The chatbot could communicate results from analytical models the company had built to track and predict customer traffic and liquidity needs. The initial product showed promising results, and the fintech identified additional business opportunities. Specifically, as Safaricom’s M-Pesa started to see more competition from Equitel, agents needed to have float (i.e., liquidity) on both M-Pesa and Equitel to adequately serve customers. This increased working capital requirements and made predicting customer demand more complicated. The fintech recognized that the ability to move float between networks would help alleviate these problems.

Although Finserve may be the most advanced API deployment in East Africa, unclear documentation and expensive, belated compliance demands derailed a promising bank-fintech API partnership to help agents manage liquidity challenges.

Executing instant transfers between M-Pesa and Equitel's escrow accounts required access to the Jenga Payment Gateway, now under Finserve. While the developers at the fintech were able to evaluate Jenga, they could not test it without having access to an actual account. And here, many of the lessons about product design, technology strategy, and compliance come into play.

Getting access to a "live" account in which the fintech could test funds transfers necessitated a secure connection between the fintech's and Finserve's systems. However, the API documentation did not clearly specify what type of connection was necessary. The fintech worked with a Finserve team to clarify security requirements in the API documentation, spending more than 30 hours troubleshooting what should have been a simple connection with Finserve. Finserve dedicated a similar amount of time to the task from an account manager, an engineer and a data specialist. Over a three-week back-and-forth process and numerous phone calls, the teams were able to set up an account for testing transactions on a limited basis. Concurrently, the fintech integrated with the necessary APIs to test an end-to-end float transfer. The fintech saw that the product worked and was excited to begin developing a go-to-market version.

After all of the investment of time and resources that comes with building the business case, developing and testing a solution, and preparing to go to market, the last major hurdle for the fintech was getting Finserve to sign-off on the deployment of the float product. At this point, the fintech was blindsided by a message from Finserve asking them to pursue a letter of no objection from the Central Bank of Kenya for their interoperable float product. Finserve communicated this to the fintech verbally but refused to provide the rationale in writing. The fact that this push came from Finserve and not the central bank itself suggests that any real compliance or regulatory challenges could have been spotted and addressed earlier in the partnership, before the two parties invested nearly a month of staff time providing access to a bank account. As of this writing, the future of this product is uncertain as the fintech had not yet decided to dedicate the resources to obtain a letter of no objection.

The experience of this fintech highlights many of the potential challenges facing API consumers: unclear API documentation can make testing arduous and expensive and belated compliance demands can wreak havoc on product development. And while Finserve may be the most advanced deployment of banking APIs in East Africa, public reports suggest that the company is not performing well. By mid-2019, almost all the senior leadership had turned over—signaling instability in the organization. Equity is considering bringing Finserve back under the umbrella of the bank and pivoting it towards microlending, suggesting it has not achieved the right market fit, as this fintech experienced.²¹

Conclusion



The expansion of digital rails that can directly reach high-, middle- and low-income customers is causing major shifts in the financial services landscape. A plethora of nimble fintech players with narrow, user-centered products are attempting to capitalize on this new environment, bringing innovative solutions to market. However, they often lack the customer reach and regulatory approvals to achieve scale. Traditional financial institutions that still command market share have both the reach and regulatory approvals to promote products to large numbers of customers, but they frequently do not have the innovative, agile product approaches that can capture underserved market segments quickly. These complementary strengths are the basis for a symbiotic relationship between financial institutions and fintechs and the technological foundation for that relationship is an API.

For financial institutions interested in offering an API, there are three main types that they should consider: open, private and aggregated (or platform-based). The selection of the API type should follow identifying a business case for the API offering. Once identified, API managers at financial institutions should make sure to develop a user-centered API product; embed the development of the API into a broader technology strategy; enlist the right technical people and build an operational setting to support its deployment; and evaluate and mitigate compliance and regulatory risks early.

This research suggests that an API's success will be affected by how well API managers can execute the four recommendations. As

described in the Finserve/fintech case study, a failure in one of these areas—compliance and regulation—doomed an innovative fintech product while strategic and operational hurdles may push Finserve back under the Equity Bank umbrella. On the other hand, the Commercial Bank of Africa MNO solution in Kenya shows the potential of API partnerships that have addressed these considerations effectively.

Overall, this research shows few instances in which banks and fintechs were able to execute on these four recommendations to bring products to market. The experiences of fintechs that used bank APIs have not been ideal, with significant upfront costs to complete basic tasks like understand API documentation or establish secure connections necessary for robust API deployments. And banks have been both the deliverer and recipient of unwelcomed regulatory news.

This research suggests two hypotheses for why the market for API partnerships is not yet mature. First, it is possible that the fintech market has not grown large or mature enough to justify major investments by banks in the technology needed to achieve robust APIs. Consider that effective partnerships often involve scaled organizations that have offered additional, third-party services to existing customers using private APIs, like the CBA/Safaricom example. Second, banks see APIs as enabling potential *competitors*, not *collaborators*. The idea of a fintech as a partner to help reach untapped market segments is almost always appealing, but ultimately financial institutions are keen observers of threats to their market position.



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- 16** Bank and Brick Wall by Graphic Tigers; Building by Alice Design; Fire by Aisyah; Network by I Putu Kharismayadi; Plug by vigorn. All from the Noun Project.
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Interview List



Role and company were current as of date of interview.

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Head, Multi-Channels, Société Générale Ghana

➤ **Agree Ahmed**

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➤ **Paul Damalie**

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➤ **Diego Gaviria**

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➤ **Michel Hanouch**

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➤ **Mir Haque**

CEO, Fairbanc

➤ **Amaar Ikhlas**

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