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APIs: THE DIGITAL GLUE

HOW BANKS CAN THRIVE IN AN API ECONOMY

Financial Services Technology Advisory: Perspectives on Agile IT

To keep up with the increasing competition from firms inside and outside the industry, banks should provide innovative services at the same rate as other smaller, leaner organizations do.

While there are many technologies available to help banks become more competitive (such as artificial intelligence (AI), biometrics and machine learning), banks should also have built-in accelerants to generate innovation-to-market at high speed. Application Programming Interfaces (APIs), if used correctly, can become those accelerants.

In combination with a clear and concise Open Banking strategy that offers a secure way to share data among registered service providers and third parties, APIs can serve as the building blocks for banks' efforts to connect and re-connect with their customers. By taking advantage of APIs' unique abilities to facilitate communications and transactions, and by embracing an API-driven architecture, banks can transform themselves to unlock new sources of business value.

In response to competitive and/or regulatory pressures over the past decade, many banks have begun using APIs within their information technology systems. But, as recent research indicates, only a few have realized the full potential of an API-driven architecture.

APIs are much more than a technology solution. To take full advantage of APIs, banks have to re-think their approach to API adoption, address technology for API enablement, consider governance for API delivery and measures to activate the API ecosystem—the four pillars of the "API Economy." To do so, it is helpful to take a step back and gain a deeper understanding of what APIs are and the role they play in the banking environment, and the bank's Open Banking ecosystem.

Open APIs and open platform banking are set to change the shape of financial services completely.

APIs: A VERY SHORT HISTORY

The application programming interface is not a new concept, as APIs have been used in corporate IT settings for more than 20 years.

What has changed is the expanded use of APIs. Once limited to specific internal software applications (apps)—primarily to reduce operational overhead—APIs have now entered the mainstream.

Open APIs have allowed companies to create new business models by offering services to their customers based on assimilation and redistribution of data, products and services from other providers—by directly consuming their APIs.

Examples include web search services from a firm like Trivago N.V., retail companies such as eBay Inc. and Amazon.com, Inc. and telecom companies such as Cisco Systems, Inc. Estimates are that "Salesforce.com generates 50% of its revenue through APIs, Expedia.com generates 90% and eBay, 60%."[1]

API use has expanded quickly and according to a 2016 Apigee report (now part of Google LLC) the "media, retail, and information services industries account for 73% of API traffic."[2] We expect usage to continue to grow, yet for a variety of reasons, banking and financial services industries have lagged behind other industries in API adoption, but this is changing, and banks are rapidly increasing their use of APIs.

73%

The API traffic accounted for by the media, retail, and information services industries.

Source: The State of APIs—2016 Report on Impact of APIs on Digital Business, Apigee

THE FORCES BEHIND API ADOPTION

To understand why banks are where they are on their API journeys, it is important to understand the factors that have driven banks toward API adoption.

1. Regulation

In Europe and other geographies, a big push toward API adoption has come from new regulatory initiatives such as Payment Services Directive 2 (PSD2) and Open Banking. These regulations are mainly aimed at making banks "open" to new market entities, both to foster innovation and to benefit end customers. APIs provide a widely agreed upon (and highly secure) method for banks to "open up."

While not all countries and regions have gone down this regulatory route, where there has been regulation, it has been a major factor in API adoption.

2. New Competitors

The financial services industry is seen as ripe for disruption. This has attracted new competitors such as fintech firms, challenger banks and neo-banks that use technology to challenge traditional banking models and practices. Incumbent banks are reacting by trying to change quickly, innovate and participate in ecosystems, all of which is facilitated by APIs.

3. Newly Empowered Customers

Bank customers have become vastly more tech-savvy and sophisticated, in part through their dealings with internet giants such as Google and Amazon. They are open to offerings from new entrants and expect the same level of service and innovation from their traditional banks. With customer attrition rates (to challenger banks) beginning to rise, traditional banks are looking at ways to provide an improved customer experience and better product and service offerings, in part by associating themselves with fintechs. All of this is powered by API-driven architecture.

4. Search for New Revenue Streams

Many banks are facing slow growth in their traditional businesses and have been looking to identify and develop new revenue streams. APIs open possibilities for growth, either by providing traditional services to new customers or by creating and distributing new product offerings.

In addition, banks that are adopting technologies such as AI, machine learning, and cloud are finding that APIs support these implementations. APIs allow easy integration and help internal business units and functions exchange information with each other and with external partners and/or customers in a consistent and secure way.

THE DIGITAL GLUE OF THE MODERN BANK

APIs are a digital glue holding modern banks (and other organizations) together.

APIs allow banks to exchange data within the organization and across its ecosystem, which helps them support existing products more efficiently and become data-driven institutions that provide a broader range of products to their customers.

An API-driven architecture is an agile framework that lets users build, publish and consume APIs at scale and speed. By helping connect existing systems to each other, APIs increase the organization's flexibility and make it easier to bring new products and services to market, thereby generating new revenue streams.

The correct mix of internal, partner and public APIs could increase efficiencies and reduce time to market for introducing new features and products targeted toward an increasingly demanding customer. Progressive banks are adopting the use of specialized internal APIs, which are discrete, autonomous and specifically designed to do a given task. Commonly called "microservices," they allow banks to bring a level of abstraction on top of their legacy platforms, thereby greatly reducing integration costs and effort. These microservices can be coupled together to create new, simplified and commercial external (public) APIs that are designed to solve a business problem or to create new value propositions for customers.

In the new, evolving banking landscape, banks are expected to actively interact with a variety of vendors, alliances and partners to create the most differentiated and simplified offerings for their customers. APIs form the basis of how banks interact with these "ecosystem" vendors, alliances and partners, emulating models that are already proving their effectiveness in other industries such as travel and telecommunications.

The Competitive Advantage of the API-Driven Bank

Banks that create and maintain a true API-driven architecture can realize significant competitive advantages, including the ability to deliver customized services via intuitive, compelling digital interfaces. Our research indicates that banks that embrace the new API-driven Open Banking initiatives can expect a potential revenue uplift of 20 percent, while those falling behind are at risk of losing 30 percent of revenues by 2020 to disruptive industry players.[3]

Banks can connect their core systems to provide integrated customer experiences and, reduce the time it takes to develop and launch new offers, products and services while also reducing the upfront expense required to create a new product or service. In some cases, large banks could also offer API as a Service (APIaaS) to smaller banks, thereby monetizing their new API infrastructure and shortening the ROI cycle. The ultimate objective should be a central place for the bank in a vibrant ecosystem that offers customers not only value and convenience but also a highly enjoyable, personalized experience.

APIs should be at the core of new banking business models. Numerous banks have taken initial steps, but many are struggling to get it right. Instead of being highly agile, with APIs integrated throughout the ecosystem, these banks are still slow to implement changes. There is a lack of clarity as to how to monetize their APIs. These seem to be a long way from realizing the full benefits of API-driven architecture, including providing a better customer experience and faster development and delivery of new products and product enhancements.

CHALLENGES TO API IMPLEMENTATION

Banks face significant challenges on the path to realizing the benefits of API-driven architecture and business models.

While banks are becoming increasingly aware of the benefits of an API-driven architecture and many incumbent banks have started developing APIs in some shape or form, the path to "success" is hampered by factors including:

A Reactive Start

Many banks have taken a reactive approach to API adoption. API programs cobbled together without a strategic vision, including a clearly defined Open Banking strategy, run the risk of turning into capital expenditure-heavy IT programs, with spiralling costs and limited ROI.

Legacy Systems

Many large banks run on legacy systems based on monolithic architecture and bespoke interfaces. These systems are often too critical, too risky and too expensive to replace, limiting banks' ability to bring new products to market.

A Fragmented Approach

Without strategic steering at the senior level, API programs run the risk of fragmented implementation. An API-first approach in one area might not be adopted in another, even though both use the same delivery channel and even the same back-end platform. Multiple and sometimes duplicative development efforts in different lines of business and/or different geographies can increase expenses and reduce ROI.

New Business Models

APIs present a new business opportunity to banks that calls for a model that is very different from the typical own channel/own product model. Business stakeholders may have a limited, technology-only view of APIs, limiting banks' ability to monetize their APIs and generate new revenues.

Other challenges include a strict focus on cost reduction hampering knowledge transfer between teams, development teams working in silos rather than across the organization, the absence of a consistent data architecture, a lack of clarity regarding data ownership, data security and data protection regulations like the General Data Protection Regulation (GDPR).

THE FOUR PILLARS OF EFFECTIVE API MANAGEMENT

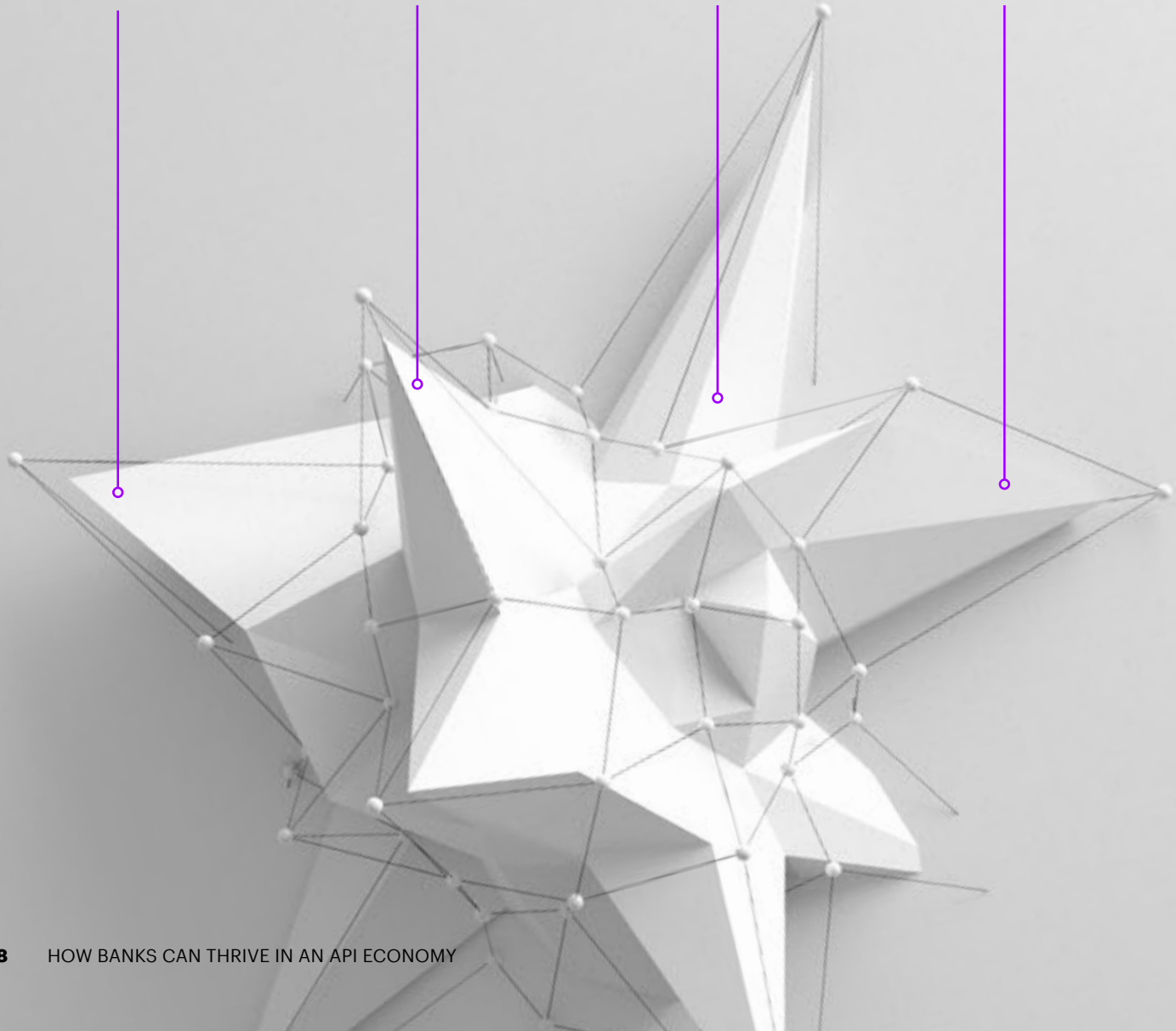
In our view, effective API management for banks rests on four pillars:

1 **Approach**

2 **Technology**

3 **Governance**

4 **Ecosystem Management**



APPROACH

A business-driven approach is the cornerstone of effective API management. As shown in Figure 1 below, transforming an organization to an API-driven architecture requires a significant change in the way products and services are conceptualized and delivered by IT teams.

Factors that can support this shift include:

Mindset – The API-first mindset should be adopted by the bank across all levels of business and IT functions. APIs are not just another IT system; they represent a radically new concept. Business stakeholders should think in terms of building new value propositions that can be offered via APIs to fulfil their customers' needs.

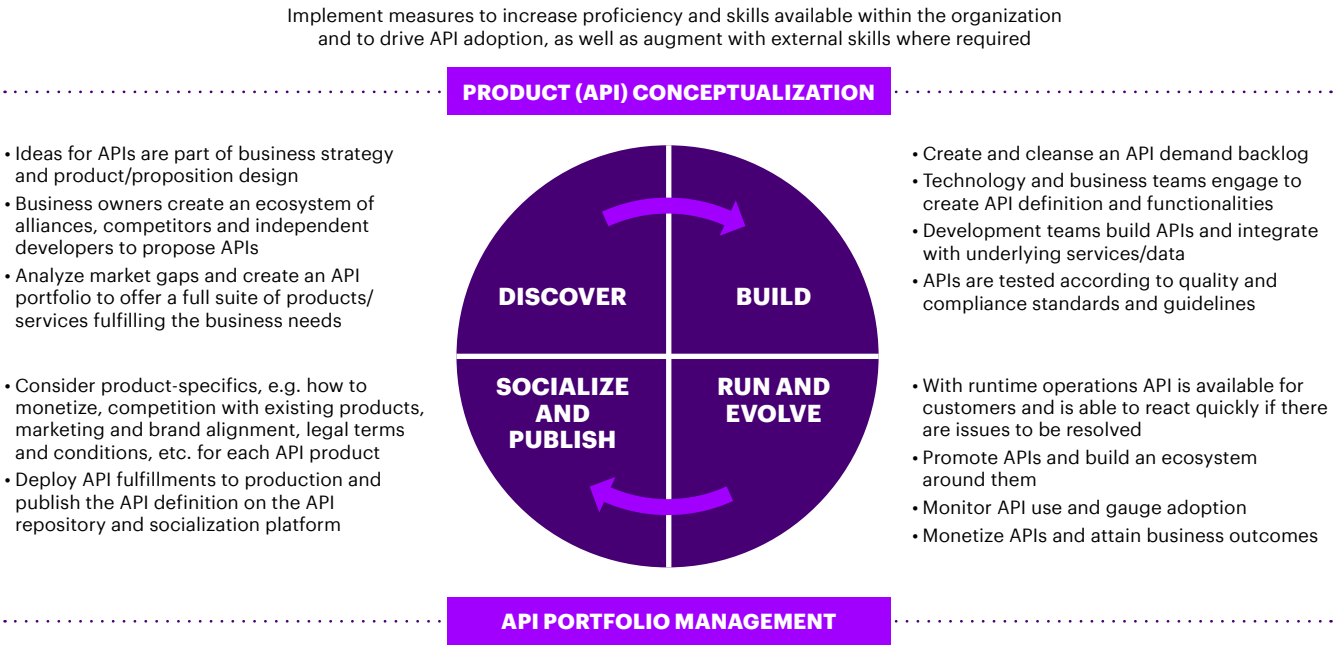
Top-Down Approach – Bank leadership should emphasize an API-first mindset and stress the role of APIs both in building new solutions and in serving as the vehicle through which they are provided to customers.

Jeff Bezos, the founder, chairman, president and CEO of Amazon, famously mandated all internal teams and systems to communicate using APIs. This was a critical element in turning his firm into the platform giant it has become.[4]

Without a mandate from the top and a clear strategic vision, large banks run the risk of a fragmented API implementation, which leads to a duplication of effort and low levels of reusability. This can drive expenses up and reduce the benefits of API-led architectures.

Reusability – The culture of reusability is another key element in building a true API-driven organization. Before building anything new, business and design teams should look at what exists and assess if and how it can be re-used. The concept of "reuse the built and build for reuse" embraced across business and IT teams helps to develop a culture of reuse. This can be further reinforced by establishing key performance indicators (KPIs) for reuse of APIs.

Figure 1. API Adoption Approach



Source: Accenture, April 2019

TECHNOLOGY

The appropriate technology decisions are essential to any effective API transformation program. Banks looking to adopt an API-first approach should consider technological factors including:

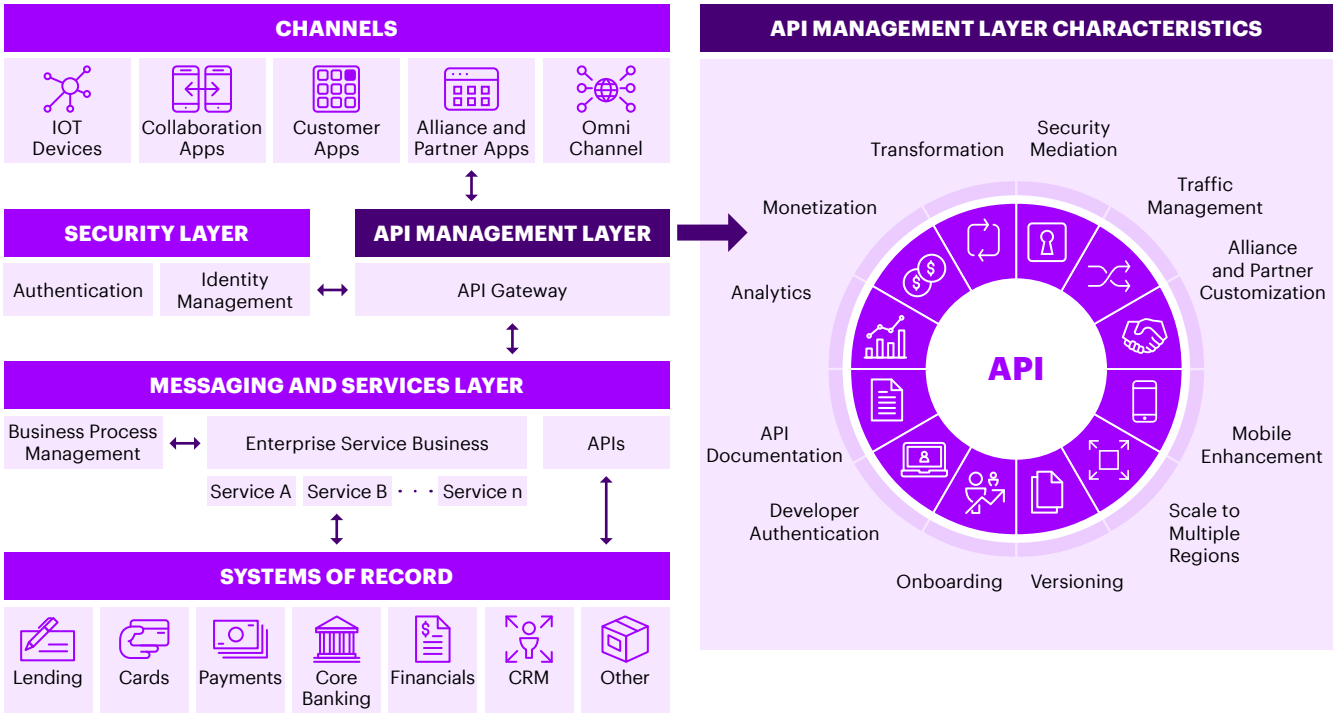
API Management Platforms – These are critical components in the target architecture. They provide key capabilities, ranging from API repositories to security policy enforcements and the management of traffic as needed, to protect back-end systems and prevent denial of service (DDOS) attacks. Modern API management solutions provide additional features such as analytics, enhanced reporting of fraud management, and developer portal integrations (see Figure 2).

Microservices Architecture – Banks should consider options to reduce complexities imposed by legacy technologies. Ideally, every platform within the bank should communicate exclusively via microservices, while any cross-platform apps should be based on microservices built on top of these legacy platforms.

API Catalog Management – Discoverability is a key factor in allowing API reuse. A robust and structured API catalog makes APIs discoverable and supports the culture of reuse. The importance of making APIs discoverable is vastly underestimated in the industry, often leading to multiple redundant APIs serving the same purpose. All APIs, internal or external, should be well documented and published on an intelligent catalog management system.

Monitoring – A variety of monitoring capabilities is required for effective API management that tracks elements such as usage statistics, who consumes APIs and more. These are essential in decommissioning any redundant APIs and in creating a more structured and sustainable approach to how APIs are created and consumed, both internally and externally.

Figure 2. API Management Platform Overview



Source: Accenture, April 2019

GOVERNANCE

Strong governance and efficient processes help create the framework for effective API architecture delivery. As shown in Figure 3, a multi-tiered governance structure can help promote re-use of assets and allow for API delivery at scale and at speed.

Figure 3 also outlines a possible tiered governance structure and key members:

Central Teams – In the top tier would be a central team, responsible for managing/socializing architecture and design standards, preferred practices, patterns, governance frameworks and processes, developer engagement, accelerators, common API platforms and associated tooling. This team acts as a central design authority and crucial quality gate for all APIs developed across business and operating units.

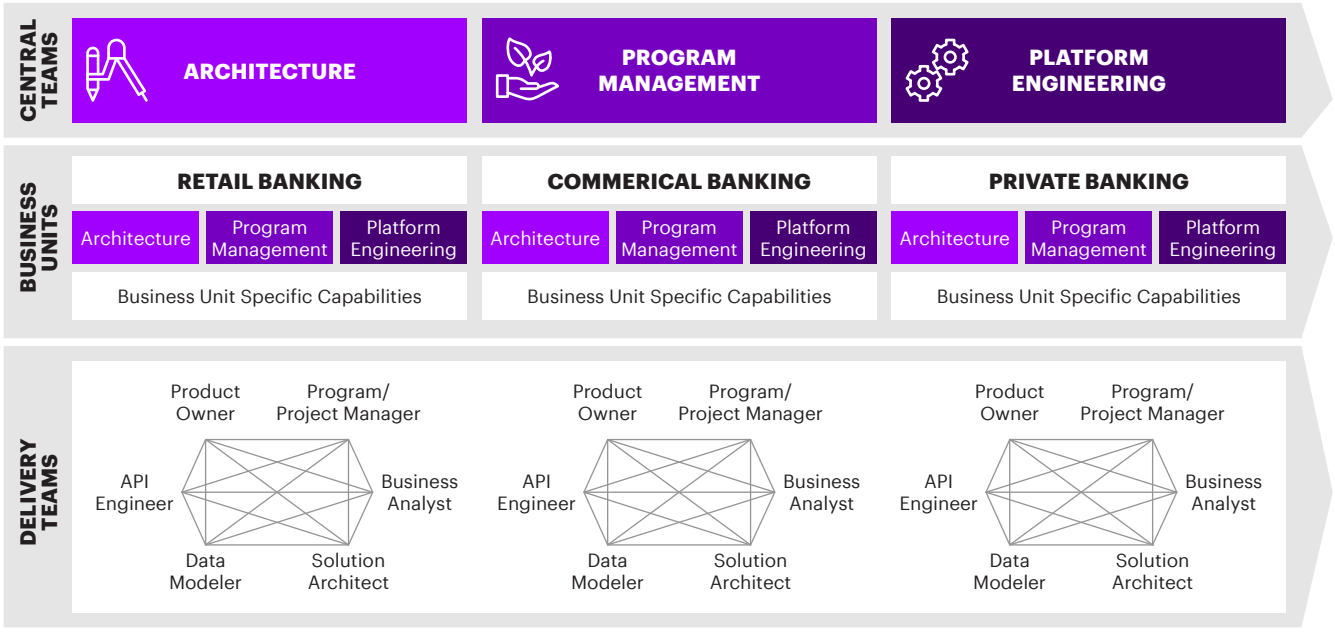
Business Unit Design Teams – In the center tier are the business unit-specific design teams. Business units shall institutionalize their own API Capability Centers with clearly defined leadership roles to establish/run API governance and align to global standards, patterns and preferred practices for federated execution.

Each business and/or operating unit shall have a small to medium-sized API team managing both unit-specific developments (such as new product development) and operational activities. These teams use the guidelines and frameworks established by the central team and submit their designs to central design authority, before commencing delivery.

Delivery Teams – To create a final API product, design teams then engage with the delivery teams. For API delivery, DevOps is a great way to develop new products using agile methods. The delivery is carried out by DevOps pods (small dedicated delivery teams), supported by capability centers in the business units and based on common frameworks and standards defined by central teams.

With these teams up and running, an overarching structure allows all APIs to follow the same standards and reduce duplication of effort.

Figure 3. Federated Structure for API Delivery (for illustrative purposes)



Source: Accenture, April 2019

ECOSYSTEM MANAGEMENT

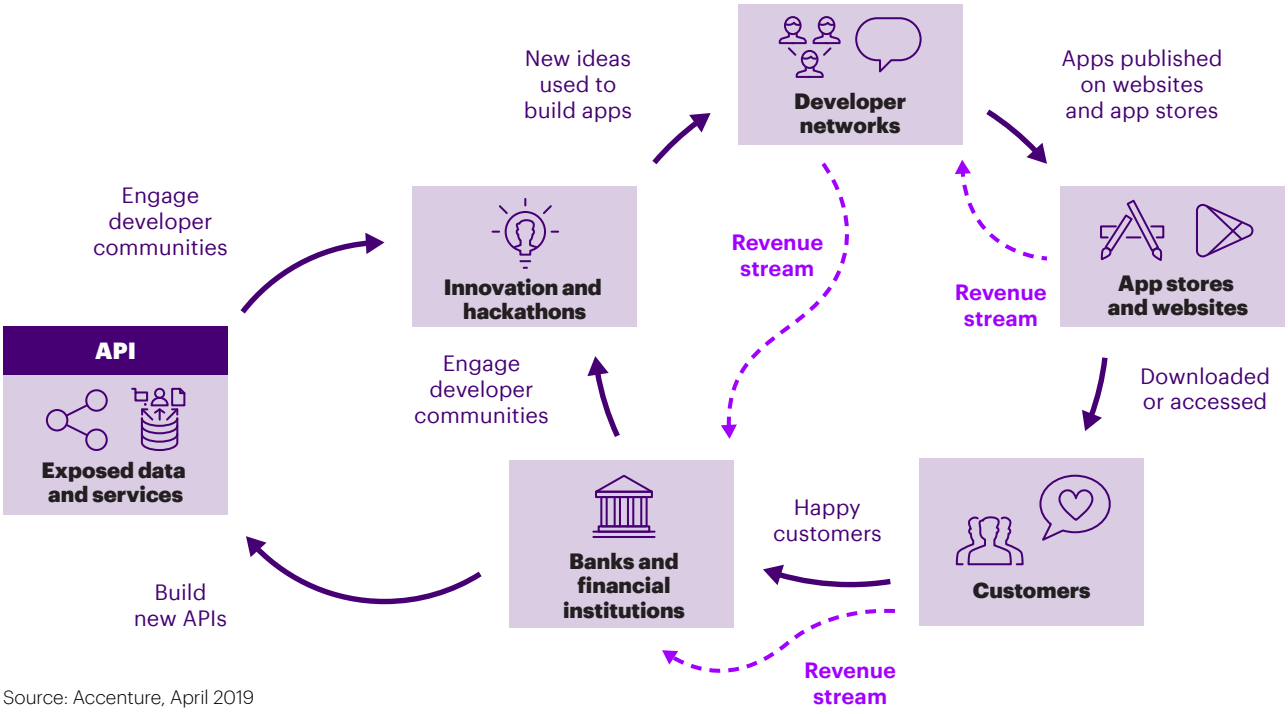
In an interconnected world, good ideas come from many different sources. Banks can no longer rely solely upon their internal resources and capabilities but should collaborate, build networks and welcome new thinking—whether it originates inside or outside the organization. In the API economy, an organization's "success" depends in part on its ability to create and/or participate in an ecosystem and then draw greater value from it.[5] Banks should consider a variety of factors to encourage this engagement with other innovative providers and the developer community (see Figure 4). There is an opportunity for banks to lead innovation, form forward looking alliances and consortiums, and promote new ideas—thereby changing the overall fabric of the industry.

Developer Portal – A Dev portal is the first port of call for developers who are interested in using banks' APIs. Drawing developers in by providing a "best-in-class" capability with clear documentation, easy-to-use registration processes and first-class support helps with effective API deployment.

Facilitate Engagement – Engaging in a "fintechs are welcome" approach boosts innovation and opens new revenue streams. Organizing user and/or designer-led hackathons, "sandboxing" of dummy APIs to test viability and unearthing new use cases are some ways of encouraging this interaction. Easy onboarding, a simple legal framework, clear documentation and flexible pricing models are other features that encourage ecosystem engagements. And, as discussed in Accenture's report "A New Era – Open Platform Banking," banks can take ecosystem engagements further by creating platform-based associations.

Monetization – "Ecosystem play" in banking is relatively new. Banks should work on developing monetization models to create new revenue streams from their API-based offerings. Banks can use a variety of pricing models such as pay as you go, tiered pricing, "freemium" and revenue sharing. To unlock the full potential of their API-based products and services, banks should also look at specialized products with features such as end-to-end tracking, revenue sharing, loyalty, and access to accounts.

Figure 4. API Ecosystem Roadmap



Source: Accenture, April 2019

ADDITIONAL CONSIDERATIONS FOR EFFECTIVE API ADOPTION

While the four pillars are essential to an effective API transformation, there are other factors for banks to consider in moving to API-led technical and business models.

These include:

Data – APIs allow the exchange of data throughout the organization. As a result, data ownership, data storage and security, and compliance with regulations such as GDPR become of prime importance to banks. Any breach of data can cause not only monetary and reputational damage, but could also deter customer trust, a key factor to realizing Open Banking. Firms should also understand the overall corporate responsibilities related to the data they collect and maintain, as is being done in the (AI) space.

Security – While APIs allow banks to easily interact with external parties, they also expose banks to the risk of being attacked by malicious parties. APIs are inherently secure in nature, unlike screen scraping-based methods where customers are required to share credentials with third parties and thus create attack surfaces for man-in-the-middle attacks. However, there is still reason to make the overall infrastructure secure. To protect data and other assets, banks should have a combination of network and infrastructure security capabilities along with measures such as end-to-end data encryption, tokenization of data, and public key infrastructure (PKI) certificates. Visit the Accenture Security site to see the latest findings on enterprise security.

Service Operating Models – Banks are not accustomed to digitally interacting with external parties to sell their products and services. This poses new challenges on how to price their offerings, how to bill their customers and even how to share revenues. Banks should develop new operating models for the "ecosystem play," addressing issues such as pricing, billing, revenue sharing and customer support.

WHERE TO START

A good start is essential to an effective transition to an API-led model. In our experience, this begins with developing an organization-wide API strategy rather than looking at APIs as part of information technology.

As seen in Figure 5 below, there are actionable starting points in each of the four pillars. These can help banks get their API programs established on a strong foundation and lead to effective implementation of an Open Banking strategy, regulatory compliance, operational efficiency and a competitive advantage.

Approach – Take a business-driven approach to pivot the banking organization to an API-ready enterprise.

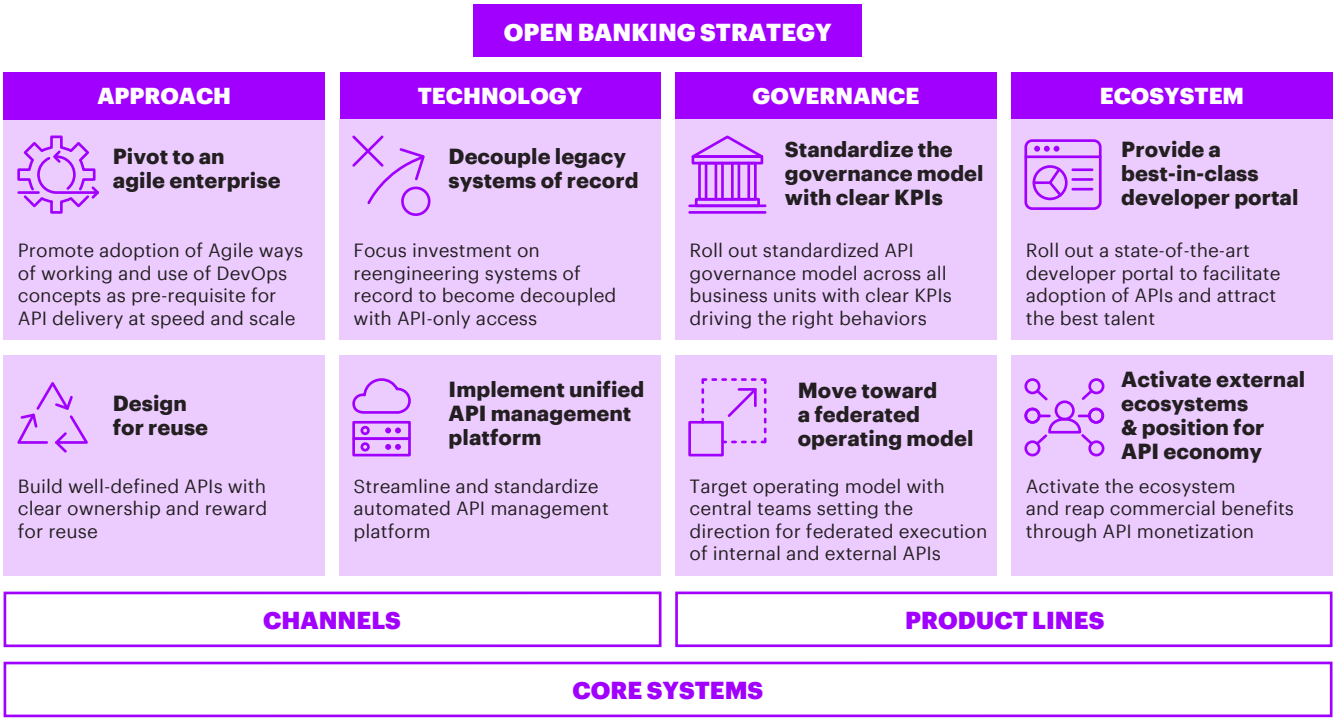
Technology – Use as a facilitator to support an API transition, leveraging relevant tools and technical architecture guidelines.

Governance – Provide the foundation for processes and interactions in a bank engaged in API development.

Ecosystem – Drive innovation through internal and external relationships while providing future-proof opportunities.

An API-driven organization is the organization of the future. Thriving in an API economy is key to unlocking new sources of business value for banks across the globe. From new and profitable business models, to products and services that respond to customer needs and are aligned to their busy lives, banks that take up the API journey in an organized, disciplined manner, and with a clear and overarching strategy are positioned to compete and win in our digital world.

Figure 5. Steps to Effective API Management



Source: Accenture, April 2019

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