

# CREATING AGILITY IN OPEN BANKING

WHITEPAPER

**The new banking platform business model means creating enterprise agility with open banking, both in principle and as a catalyst for change.**

## EXECUTIVE SUMMARY

Banks are confronted with an increasingly dynamic market, with new competition in the form of startups that are largely unburdened by years of technical debt. Disrupting business models led by fintechs, tech giants like Amazon, Facebook, and Google now offer banking services, innovating at fast pace and scale. This change in the market is encouraged by regulations explicitly designed to generate competition by driving banks to open their data and services to third parties, including consumers.

Banks that embrace the regulations and adapt their banking platform business model can expand their products and services to take an active role in the disruption and unlock new revenue streams. It is not enough to simply comply with the regulations—leaders are putting in place the means to succeed beyond the regulations.

To become ready to embrace a state of constant change requires a shift in approach from the traditional way of building, integrating, and deploying software systems. The new banking platform business model means creating enterprise agility with open banking, both in principle and as a catalyst for change. In the past, such systems were typically built as centralized, monolithic applications hosted in an on-premise datacenter. They suffered from inflexibility, inefficiency, and high costs. An agile and modern approach should use containerized cloud-native applications deployed in hybrid cloud infrastructures that span on-premise datacenters as well as private or public clouds, with on-demand scaling.

This paper presents the journey to agile open banking, proposing core architectural principles, technologies, and capabilities that can help banks continue to innovate to meet market demands.

## INTRODUCTION

Since 2011, the number of regulations for access to bank data and services has increased globally.<sup>1</sup> The goal of these regulations is to enforce more openness in a secure manner and facilitate more competition, ultimately leading to improved customer service and innovation. This approach is also referred to as open banking. While countries define the regulations' scope differently, it is clear that open banking regulations enabled by application programming interfaces (APIs) are spreading, as can be seen in Figure 1.



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<sup>1</sup> Grasshoff et al. *Global Risk 2017: Staying the Course in Banking*. March 2017.

<http://www.bcg.com/publications/2017/financial-institutions-growth-global-risk-2017-staying-course-banking.aspx>

... revenue impact can go from 30% revenue loss for “comply only” approaches to a 20% revenue uplift when implementing an “expand ecosystem and aggregate value” strategy.

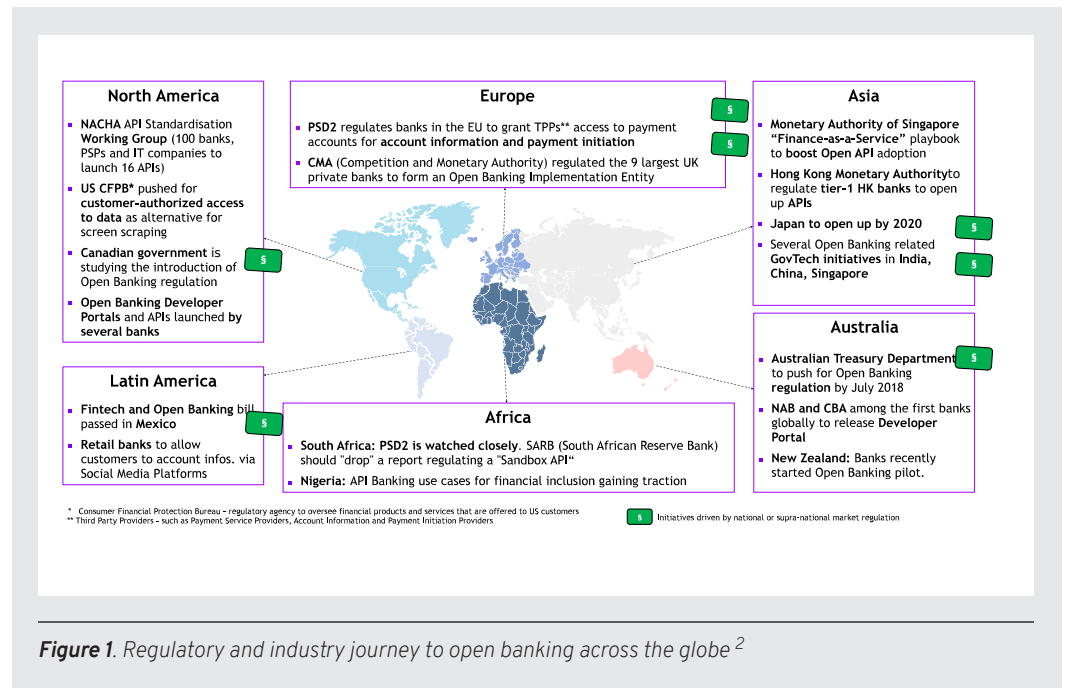


Figure 1. Regulatory and industry journey to open banking across the globe<sup>2</sup>

Banks can choose how to comply with open banking regulations, such as the second Payment Service Directive (PSD2) in Europe. They can do the bare minimum, which on first sight might appear to be cheaper. But this approach could set up banks for irrelevance and revenue loss by turning them into service providers that must compete on price with little or no extensible customer engagement.

Another option is for banks to embrace the regulations and approach them directly with the strategic objective to become central to everyday life, based on a future-focused banking platform business model that will increase revenue. These banks would use APIs to help banking become part of other activities rather than being a unique event. For example, customers could open a bank account from a third-party site or pay their credit card bills via social media. Accenture estimates that revenue impact can go from 30% revenue loss for “comply only” approaches to a 20% revenue uplift when implementing an “expand ecosystem and aggregate value” strategy.<sup>3</sup>

<sup>2</sup> Eroglu, Hakan. “Open banking paves the way to a wave of innovation.” July 2018. Available: Accenture KX.

<sup>3</sup> Accenture. “The brave new world of open banking.” 2018.

<https://www.accenture.com/gb-en/insight-open-banking-brave-new-world>

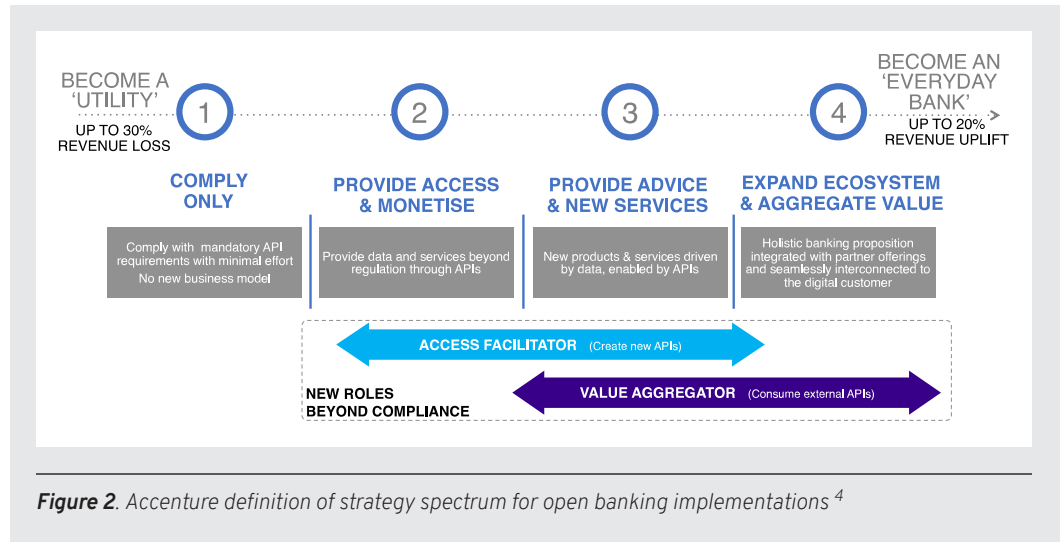


Figure 2. Accenture definition of strategy spectrum for open banking implementations<sup>4</sup>

APIs and API management technology enable the power of open banking data and services. Regulators are enforcing the use of APIs and establishing managed API technology, thus creating a level playing field by enforcing compliance. When expanding the level of open banking and API adoption, creating new APIs, and consuming external APIs, a bank can position itself to become central to everyday life.

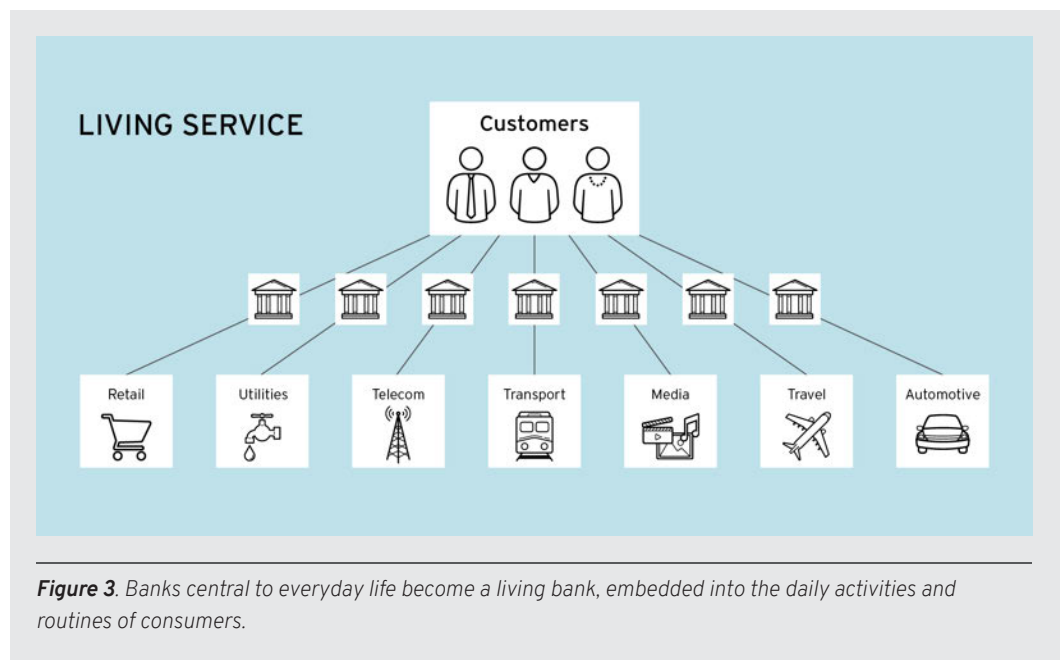


Figure 3. Banks central to everyday life become a living bank, embedded into the daily activities and routines of consumers.

<sup>4</sup> McFarlane, Andrew, and Mallick, Amit. "Open banking - Journey to the North Star." September 2018. Available: Accenture KX

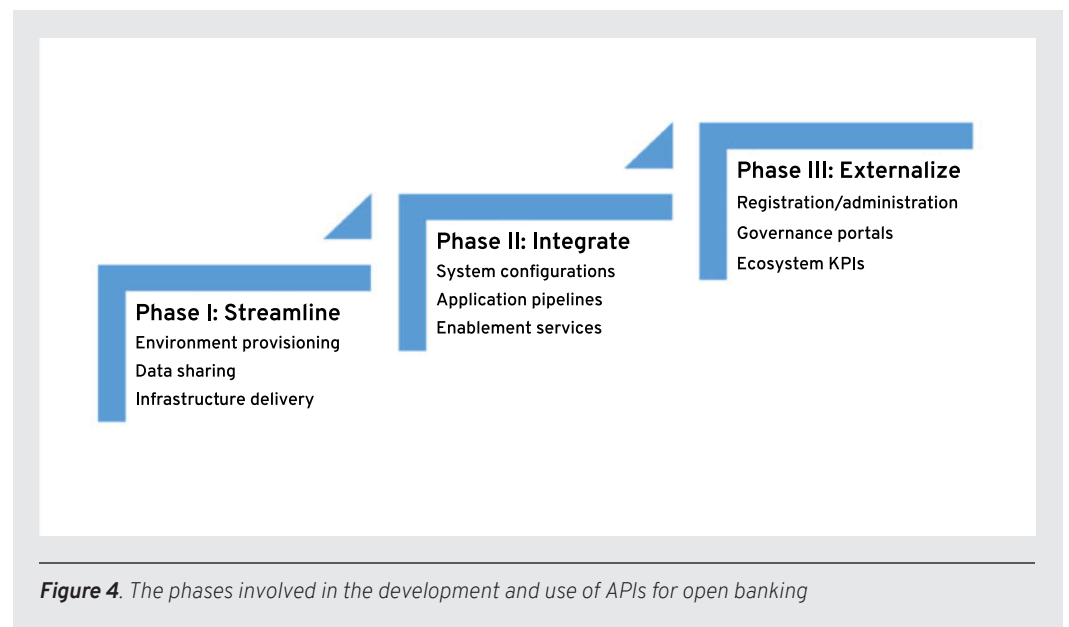
Banks that do the minimum to comply often meet foundational requirements that they can expand upon as they pursue a larger role in the everyday lives of customers. Benefits for banks that implement an open banking platform centered on API management include:

- Increased agility to adapt to changing market and regulatory needs.
- Faster rate of innovation for new products and services.
- Quicker ability to provide financial capabilities to partners and customers.
- More effective use of existing data or services across banking product lines.
- Better integration with a diverse set of apps (mobile, Internet of Things [IoT], bots).
- New business models and revenue opportunities that can be generated directly or indirectly via access to APIs.

In the next sections, we will look further into the journey to open banking and technologies that help make it possible.

## THE JOURNEY TOWARD OPEN BANKING

With the ultimate goal of generating new revenue from products and services in ecosystems that are not yet formed, technology adoption guideposts in the journey (Figure 4) help mark the path to open banking. Many organizations have incrementally gone through each of these phases for banking services, some with greater success than others. However, moving from a traditional bank to an open bank means going beyond one service, like payments, and extending open banking across products and lines of business.



**Figure 4.** The phases involved in the development and use of APIs for open banking

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Banking-as-a-Service, the complete processing of a financial service strictly over the web, can be a stretch for banks that are mired in legacy systems. Some banks instead have chosen to rebrand, creating an entirely new banking entity. Others have focused on updating customer experiences by introducing new mobile applications, which are successful when those applications scale in conjunction with back-end transaction systems that improve the overall customer experience. No matter which way banks approach adoption, they will go through all three phases.

#### **Phase I: Streamline**

Bringing together diverse applications or using existing data services more effectively requires a degree of responsiveness that mirrors the digital interaction timeline consumers expect. As a result, the first phase is to streamline existing processes, bringing efficiency to the reimagined customer digital journey.

#### **Phase II: Integrate**

Integrating internal transaction systems, existing applications, and data to operate faster is a required step to having a responsive open banking platform that is preferred by consumers and partners alike. Built as part of an open banking platform, managed APIs can provide the distributed reuse necessary to relate pre-existing systems without maintaining custom integrations.

#### **Phase III: Externalize**

With the ultimate goal of new revenue streams, bringing a subset of services to partners and the general public is part of monetizing open banking services. Going beyond banking, data exchanged between partners providing services via APIs forms a new type of transaction that can include corresponding fees.

This is the vision. But achieving this vision is not always a straightforward task because it requires some fundamental changes to internal processes, culture, and technological and architectural approaches to build out the required capabilities.

### **TECHNOLOGY CAPABILITIES FOR SUCCESSFUL AGILE OPEN BANKING**

Starting with the most critical technology design capabilities can help assess where to prioritize focus. Critical capabilities include:

- Controlled openness so that the bank and clients know and control who accesses what data and when.
- The ability to create new services quickly based on market demand.
- Consolidated, consistent, and controlled security and access, including identity management.
- A flexible approach to integration that supports all modern integration patterns and protocols while allowing effective integration with legacy systems, without becoming a central bottleneck.
- On-demand scalability to cover application request peaks.
- Continuous integration and continuous delivery (CI/CD) and automatable life-cycle management.
- System-wide business monitoring, reporting, and alerting.

To assess how existing technology capabilities relate to those needed for agile integration, we should revisit how the underlying capabilities map across the phases of the open banking journey (illustrated in Figure 4).

### **Phase I: Streamline**

The technology environment supporting streamlined processes needs to scale up, scale out, and spin down (dictated by the type and volume of transactions), requiring fast and seamless system provisioning that removes manual effort. APIs connect the steps of the customer journey and are interwoven in different combinations to address changing customer needs and markets. As such, APIs need to be well-defined, managed, and granular—relying on data-sharing definitions that are common so as to retain the necessary modularity. Data and tools also are separated from operating system dependencies for agile, containerized environments that can be made available on demand, and with all the necessary authorizations and governance predefined.

### **Phase II: Integrate**

Designing and developing application functionality as independent services means that system configurations become adaptive, available for use at any time for a variety of applications. An open API platform provides the flexibility to bring together different systems, analytics methods, tools, and data—all the elements for application pipeline development, whether the sources live behind the firewall or in the cloud. For a seamless service experience that includes connectivity, credentials, and configuration across applications, enablement services broker the communication across multiple platforms.

### **Phase III: Externalize**

Ecosystems of services are designed with speed and scalability from an open API architecture, operating through gateways that separate traffic control from service registration, administration, and management. Portals governing segments of ecosystem participants allow customization of direct and indirect rates, enforcement of specialized security and regulatory policies, and use of analytics that measure performance.

Managed by portals that govern segments of ecosystem participants, both direct and indirect rates can be customized. Specialized security and regulatory policies can be enforced, along with the analytics that measure use and performance.

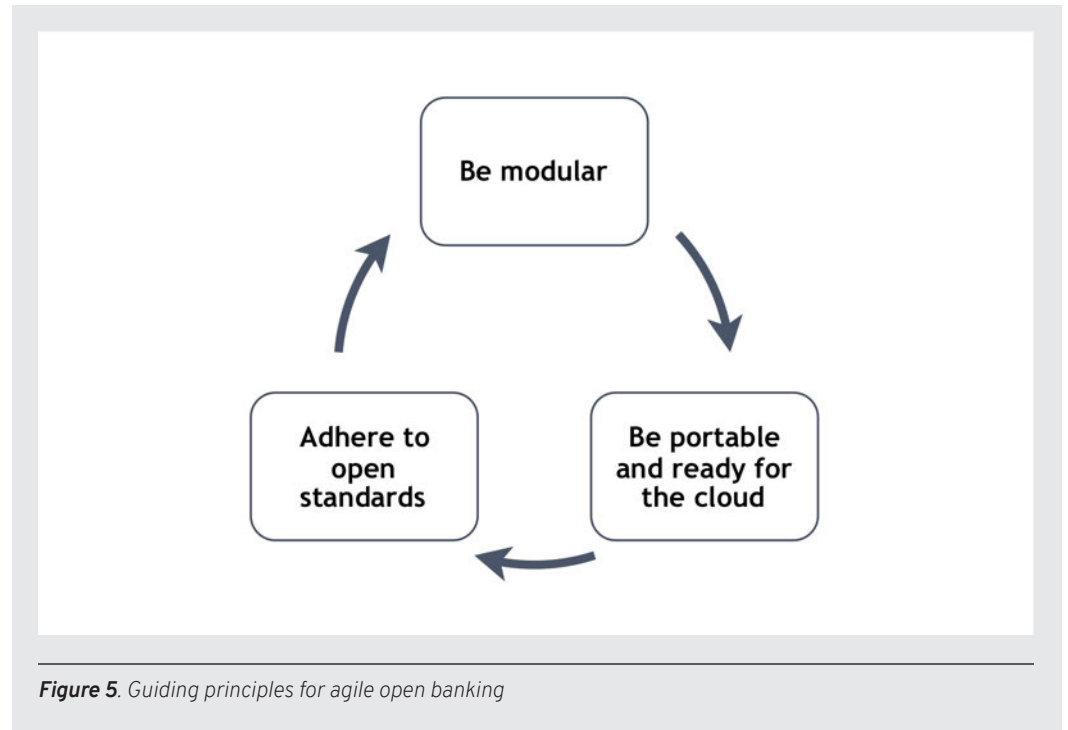
For organization-wide agile integration, typical integration challenges for agility are defined by an architectural approach centered around APIs and the concept of API management-as-code where everything is defined an API and, as a result, can be fully automated. Furthermore, this integration logic is designed to be distributed and containerized as described in more depth in the Red Hat® agile integration e-book.<sup>5</sup>

## **DEFINING AN OPEN ARCHITECTURE**

Now that we have established the reasons for implementing an open banking platform, how to assess the capabilities already in place, and the point in the journey, we can examine the architecture needed to support it. An API-driven ecosystem of continuous change and innovation should follow three principles (Figure 5): It should be modular, it should be portable, and it should adhere to open standards.

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<sup>5</sup> The API owner's manual e-book is available from <http://redhat.com/openbanking>.



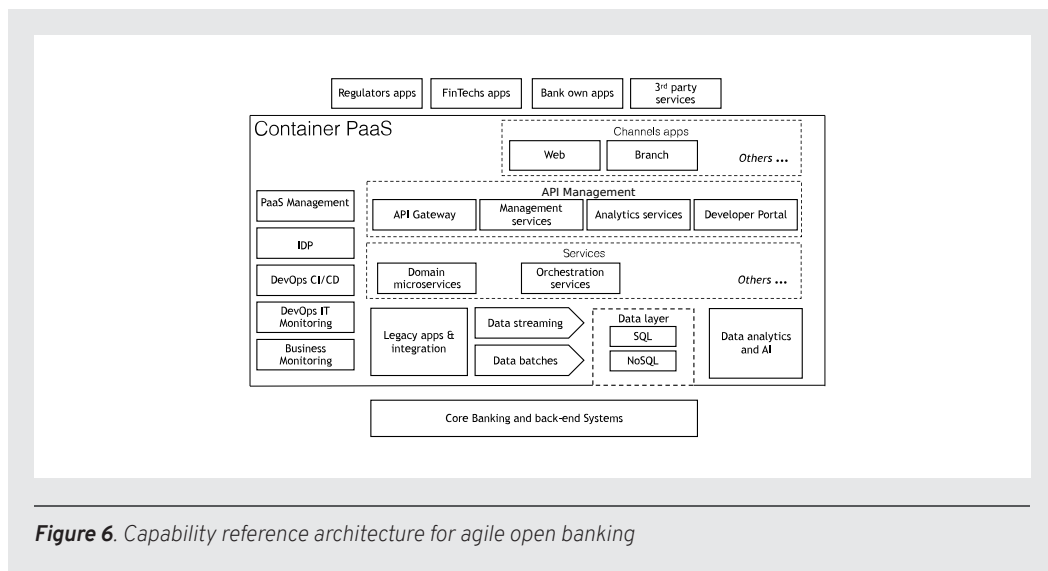
First, an agile open banking architecture needs to be modular. It should be decomposable in a set of modules (software apps or services) that are container-ready so that they can be highly reusable. This structure provides the ability to start small and grow the catalog of services with consumption and new use cases, which helps minimize upfront cost.

Cloud-first mandates have become a reality for many organizations, whether for nonproduction or production workloads. The second key principle addresses the guidance to support hybrid cloud and multicloud as part of the target architecture to minimize vendor lock-in and reduce exposure to a cloud vendor outage.

Third, the architecture should embrace open source platforms that have the right level of enterprise support. The right level is one that maximizes innovation as well as stability and reliability benefits. It also is important that the proposed architecture addresses the integration of legacy systems that are typically costly to replace. Containerization helps solve those challenges by enabling a polyglot approach—mixing older and modern languages and frameworks or products, allowing a gradual transition that is focused on first modernizing the modules with higher business return.

To achieve the principles, a modern, container-ready reference architecture for an agile open banking solution is needed. This architecture should adopt a distributed model, as a containerized Platform-as-a-Service (PaaS), that encompasses capabilities as illustrated in Figure 6.

Together, Red Hat and Accenture can fulfill the extension and transformation of an existing architecture to an agile open banking platform.



**Figure 6.** Capability reference architecture for agile open banking

Together, Red Hat and Accenture can fulfill the extension and transformation of an existing architecture to an agile open banking platform. The following describes the most fundamental components of Figure 6 in more detail.

1. Red Hat OpenShift® Container Platform (**container PaaS**) provides a modular, scalable, cloud-ready, enterprise open source platform. It includes a rich set of features to build and deploy containerized solutions and a comprehensive **PaaS management** portal that together extend the underlying Kubernetes platform.
2. The bank **channel apps** are usually custom-built or packaged solutions deployed to consume internal or external APIs and services. Most of these usually can be containerized, which helps minimize operational and maintenance costs.
3. Red Hat 3scale API Management is an enterprise **API management** platform that is fully supported in a containerized environment with all of the associated benefits of containerization. It provides a rich feature set to mediate access to orchestration services, domain microservices, or event services.
4. Following the polyglot principle, clients have the flexibility to build one or multiple **services** layers. They can mix custom developed services with services deployed on top of integration and process orchestration platforms from Red Hat (like Red Hat Fuse or Red Hat Middleware) or even other vendors.
5. Red Hat Single Sign-On (SSO) offers simplified management of **identity and SSO** tokens throughout the different layers of services, both for front-end and back-end clients.
6. Bringing data closer to the API services through **data streamings** or **data batches** reduces pressure on back-end legacy systems and mainframes, which leads to cost savings. Some SQL and NoSQL platform vendors even support container deployments. Accenture has a strong pool of architecture and people who work with all leading technologies in this area.



**Being an open bank means operating like a Software-as-a-Service (SaaS) company ...**

7. Pre-existing apps along with **data analytics and artificial intelligence (AI)** services can, in most cases, be deployed into a container platform like OpenShift Container Platform, further reducing the maintenance costs of legacy IT landscape. Accenture has strong experience working with clients to analyze and define the most appropriate solution.
8. The **DevOps CI/CD** and **DevOps IT** monitoring capabilities are provided by Accenture DevOps Platform<sup>6</sup> (ADOP), a prepackaged, customized, and ready-to-use suite of open source tools. Accenture also includes in this distribution a set of preconfigured build, deploy, and test pipelines for a wide range of languages and platforms. The tools can be further extended to deliver customized business monitoring insights.

## CONCLUSION

Being an open bank means operating like a Software-as-a-Service (SaaS) company, with a business model that connects people and processes with assets and a technology infrastructure to manage internal and external users' interactions. By adopting the right strategy and open banking platform, banks can create new business value and revenue streams.

Banks can build a strong foundation for this journey by implementing open banking through technologies like cloud, containerization, microservices, and AI; supporting a strong DevOps culture; and following principles of agile integration.

This journey should be complemented with fundamental changes to internal processes, culture, architecture, and technologies. In fact, addressing changes in these areas is often even more important than the technology solution, given that modern technologies alone often result in underwhelming value delivered to the business and underutilization of the technology. Red Hat and Accenture work with stakeholders worldwide to help enable skills building processes, change management, and process redefinition, helping organizations maximize value from new, modern, and agile open platforms. Red Hat excels at delivering enterprise open source platforms and solutions. Accenture brings breadth and depth of experience to implementing and delivering complex technology projects.

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<sup>6</sup> <https://www.accenture.com/us-en/blogs/blogs-open-sourcing-accenture-devops-platform>

## CONTACT US

Red Hat and Accenture have proven experience in supporting financial services clients, helping them define their API strategy, architecture, security impact, ecosystem activation, API monetization, and operating model for open banking. Every organization is at its own stage of the journey—with individualized goals, systems, and processes. Working together with your bank’s business and IT teams, Red Hat and Accenture can help guide, define, and deploy the best option tailored to your specific journey. Contact us to discuss the best services to help you accelerate your open banking strategy.

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### ABOUT ACCENTURE

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### ABOUT RED HAT

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