WHITE PAPER

# PAYMENTS ORGANIZATIONS CAN LEVERAGE APIS TO MONETIZE THEIR DATA AND SERVICES

## Abstract

Open banking initiatives such as the revised directive on payment services (PSD2), emergence of fintechs, and increased competition for winning the mindshare of digitally conscious customers have made application programming interfaces (APIs) not a choice but a mandate for the banks and payments companies. This paper delves into the business case for APIs, types of APIs based on maturity and target customer base, and best practices and other design considerations for managing the API life cycle.

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## Business case for APIs in payments industry

Application programming interfaces (APIs) are a set of functions or procedures that allow consumers to access features, data, or other services from a bank or payments organization in a secure, scalable, and accelerated manner. An API receives a service request and responds with an instant confirmation of service execution, attached with relevant associated information. For example, a payment initiation API offers a natural interface for real-time payments, where the API call is the payment initiation request and the API response indicates the end-to-end execution of the payment.

APIs help banks in:

- Enabling omnichannel service delivery with digital connectivity
- Improving product and service innovation through co-creation with external partners and developers
- Reducing cost and increasing speed of app development by supporting rapid prototyping and delivery
- Enabling the monetization of data and content by increasing the number of service channels, including partners and third-party developers
- Enhancing risk mitigation – the upgraded information sharing between banks improve decision-making and mitigation measures regarding fraud prevention, know your customer (KYC), and anti-money laundering (AML)

## API types based on adoption maturity and target customers

APIs should generate new value by either creating new revenue streams through innovative products or services (through aggregation of data from internal and external sources) or by improving the existing customer experience. Hence, while defining the API strategy, banks need to answer what they are opening up through APIs, with whom, and why. At the same time, proper risk management strategies should be in place to handle operational and reputational risks.

Based on the adoption maturity and target customers, payment APIs can broadly be considered as follows:

| API type | Private | Partner | Public / Open |
|---|---|---|---|
| Maturity | Low | Medium | High |
| Client | Internal | Corporate | Consumer |
| Risk | Low | Medium | High |
| Example | Enterprise apps | Software-as-a-service (SaaS) and B2B | Third-party apps |

Moving from a private to a public API ecosystem requires increased maturity in order to ensure risk is managed at an operational level and also at a reputational level.

- Banks and payment organizations start their API journey with private APIs. These APIs are for internal consumption and it can be assumed that they are at low risk. With these, the enterprise has the most control and understanding of its user base, and has the maximum flexibility to make changes. Internal services are a special case when APIs are used for internal messaging.
- Once they get comfortable with private APIs, they venture into the partner API model where enterprises use API gateways to extend their business capabilities to partner with fintechs, banks, or other partner organizations in a controlled fashion. Partner APIs create an extra layer of complexity. In some ways, partners are like customers or workers; the enterprise has a relationship with them, and knows something about them, but they are still an external party. Any change needs to take into consideration impacts upon the partner systems, and may have contractual implications.
- The open or public API model is targeted toward consumers for improving customers' digital experience through mobile or other channels. These B2C initiatives get significantly more traffic as millions of end customers use these services. Public APIs are those either exposed for third-party apps to use via an enrollment process, or fully open access for anyone to call. These APIs allow organizations the least level of control, and the highest level of consideration for change, as reputational damage is possible with minimal recourse.

## Partnering with APIs in the B2B space

APIs enable business customers to drive efficiency, agility, and realize new and innovative business capabilities by integrating with the bank's capabilities in a simple, cost-effective way while maintaining exemplary standards of control and security.

Big corporates have world-class ERP products, but they will not be able to unlock their full potential unless their partnering bank responds effectively and efficiently for faster payments and to manage exceptions in other banking transactions. Hence, it is critical for banks to invest in such API capabilities. The broad scope of exposing client-facing APIs is to enable integration between the clients' internal systems with the banks' back-end systems. This will create a new channel for corporate clients to submit a large volume of transactions such as payment instructions in different but pre-agreed formats which facilitate straight-through processing, bypassing the user involvement toward both the client and the bank. This will also be used for other information exchanges from simple to complex scenarios, such as account balance enquiry to reconciliation information.

The basic capabilities of APIs include:

- Support multiple formats as payment instructions can be generated from various internal applications of the client
- Support both single instruction and batch files containing multiple instructions having various transaction types, currencies, and geographies
- Offer various configurations and checks such as volume limit, velocity limit, and duplicate check, supporting varied client needs

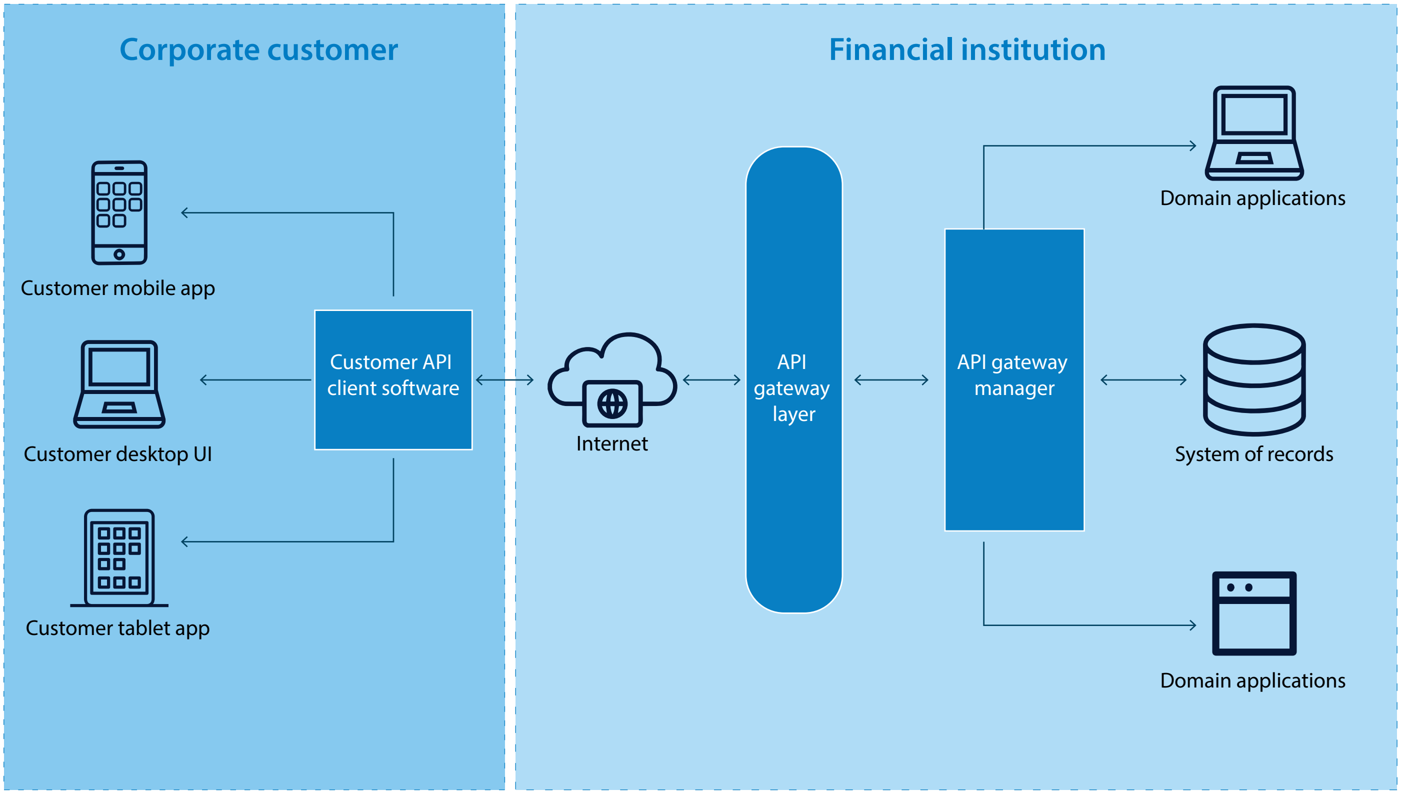


Figure 1 – Partnering with API in the B2B space

## Public / Open APIs in the consumer space

**Changes driven by regulations** – Open APIs are getting a lot of traction in payments because of regulations such as PSD2 mandating open access for new types of payment providers such as money remitters, retailers, and phone companies who want to get into the payment services game. PSD2 mandates that financial service firms make it possible for customer data to be shared easily with third parties through APIs and to allow third parties to initiate payments directly from an account. Account servicing payment service providers (AS PSPs) also have to grant third-party providers (TPPs) access to their online account and payment services in a regulated way. 'Access to accounts' rule (XS2A) will mandate that banks / PSPs facilitate secure access via API to the customer accounts and provide account details to third-party apps if the account holder wishes to do so. PSD2 XS2A will drive open banking, offering great potential for banks and financial institutions to innovate and create new revenue opportunities.

**Changes driven by partnership between innovative fintechs and legacy banks creating a win-win situation** – Banks and card networks are partnering with fintechs by opening up public APIs and developer portals. This way, they are able to monetize their data and services with support from the developer community. Consumers are also benefiting from this secured sharing of data (with consent) to receive customized offers from their transactions.

## Design considerations

When looking at the APIs, there are many important aspects which banks have to consider, namely:

- Role of API in the overall digital future
- API architecture and management platform
- Security standards and policies
- API life cycle management

## Role of API in the overall digital future

APIs play an increasingly critical role in connecting evolving application architectures with organizations adopting modern software development practices like microservices, multiple clouds, and platform-as-a-service (PaaS). Companies who are winning the API adoption race are following a comprehensive, methodical approach to their digital strategy.

Role of APIs in the mobility, digital, and cloud space

Mobility
Digital
Cloud

- Lightweight and mobile-data-friendly
- Support JavaScript object notation (JSON) easily; a data representation that aligns to mobile technologies
- Support rapid change which allows regular service improvements to be delivered

- Provide a simple mechanism for third parties to access banking business data and functionality
- The preferred engagement mechanism for the third-party development community, generating new monetization opportunities

- Pre-eminent interface for SaaS providers
- Pre-eminent management mechanism for cloud infrastructure
- Can simplify hybrid platform integration

# API architecture

APIs, being consumer use case-focused, can be developed and evolved more rapidly than traditional enterprise services tied to complex data models and extended change and release cycles. The following are a few best practices while designing and building APIs:

- APIs should be stable, reliable, and not confusing – If users are confused, they may end up charging their customers the wrong amount, or not charging when needed. When working with payments, obviousness is especially valuable. Easy-to-understand documentation and stable interface design are key to API adoption
- Availability and scalability of APIs are very important – Choosing the right technologies, having good test coverage, and responsive monitoring helps to ensure consumers rarely get frustrated using your APIs
- APIs are building blocks – Keep them simple. APIs should be designed to do one thing efficiently. If developers need to create more complex things, they can always combine APIs / microservices
- Follow standards – In payments, open standards like ISO20022 are very flexible and used extensively
- RESTful API design – Representational state transfer (RESTful) architecture is preferred for API design as it is simple and very effective for scale and performance

# API management platform (APIM)

The cost of agility is increasing complexity as the number of APIs grow. In order to counter this, the API life cycle must be managed in a lightweight manner with significant business ownership and involvement. Specific technologies have been created (API management platforms – APIM) to ensure that APIs are managed effectively. These provide low latency, and minimal coding approaches to API delivery. Opportunities for reuse and dependencies on enterprise services and data sources must be governed to ensure that complexity does not lead to increasing costs to deliver. API portals, an additional component of an effective APIM, provide the necessary systems of engagement for internal, partner, and third-party developers to support rapid agile delivery of APIs – a capability not supported by traditional enterprise integration approaches. An API management platform provides additional capabilities above and beyond simple access control which supports improved business agility and reduced time to market, whilst controlling complexity. API management sits well on top of service-oriented architecture and provides services which are more aligned to specific use cases and therefore can be more rapidly developed than enterprise services. API management platforms provide the analytics and reporting capabilities that enable enterprises to measure usage, adoption, developer and partner engagement, traffic, throughput, latency, errors, and anomalies.

### An API management platform

- Provides a system of engagement for designers and developers (internal and external). Developer mindshare and net promoter score are key to API strategy and hence, banks are launching initiatives like hackathons, offering a range of easy-to-integrate APIs, and developing products with API accessibility in mind
- Provides a single (scalable) point of control for secured service access and enables enterprises to implement security and governance policies across all of their APIs
- Uses policy-driven implementation rather than bespoke coding, thus avoiding costly maintenance
- Decouples internal data structures and services from external consumers' view
- Aligns interfaces to the consumer use case (smaller and more focused), allowing more rapid delivery than full service modeling and providing business agility
- Improves reuse of internal services via service façade
- Manages the API life cycle as a product, providing a lightweight governance model and ensuring that potential complexity from API proliferation is managed
- Extracts operational and business insights from the API and app ecosystem
- Provides the ability to monetize APIs using different rate plans
- Ensures effective data caching and policy enforcement to improve the customer experience and deload backend systems

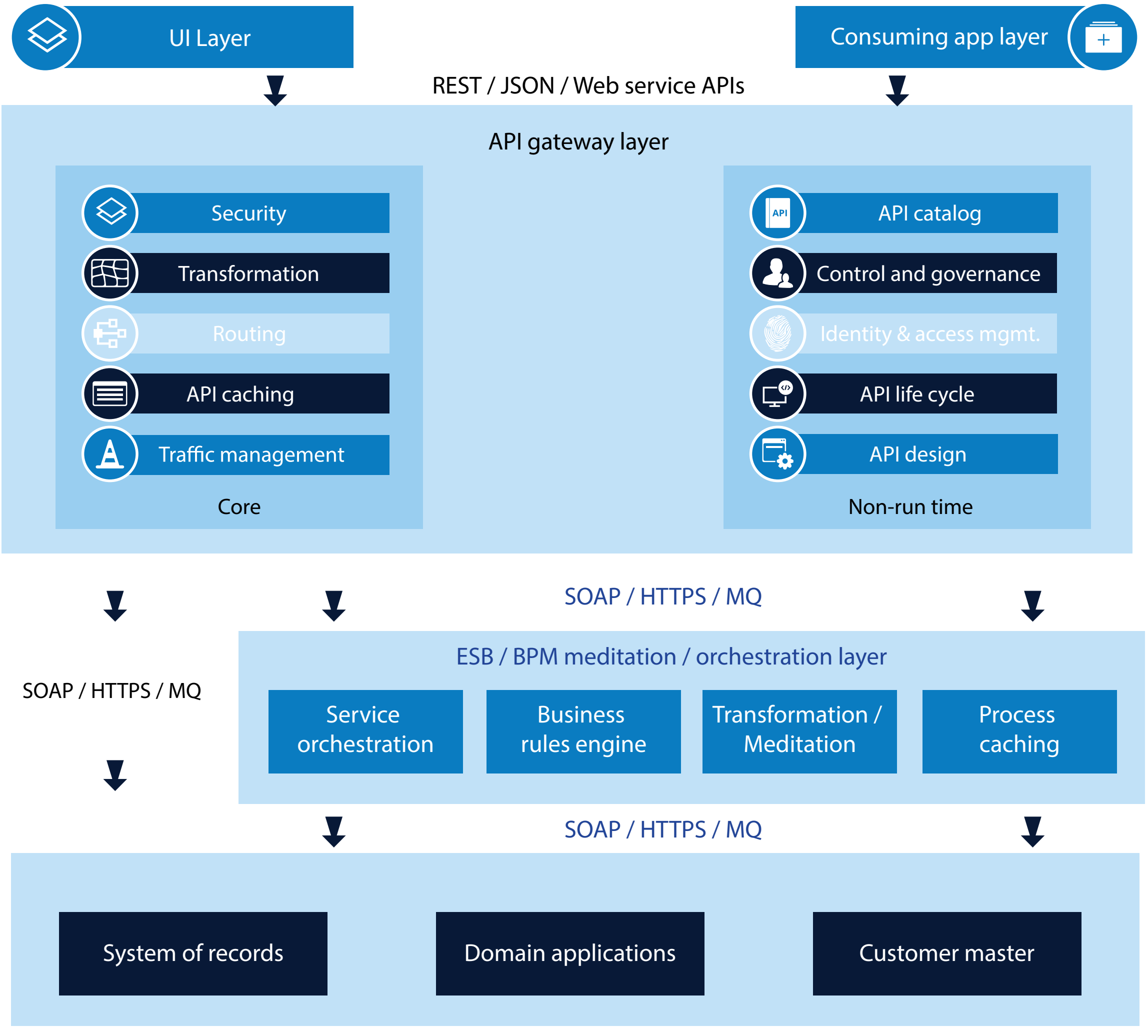
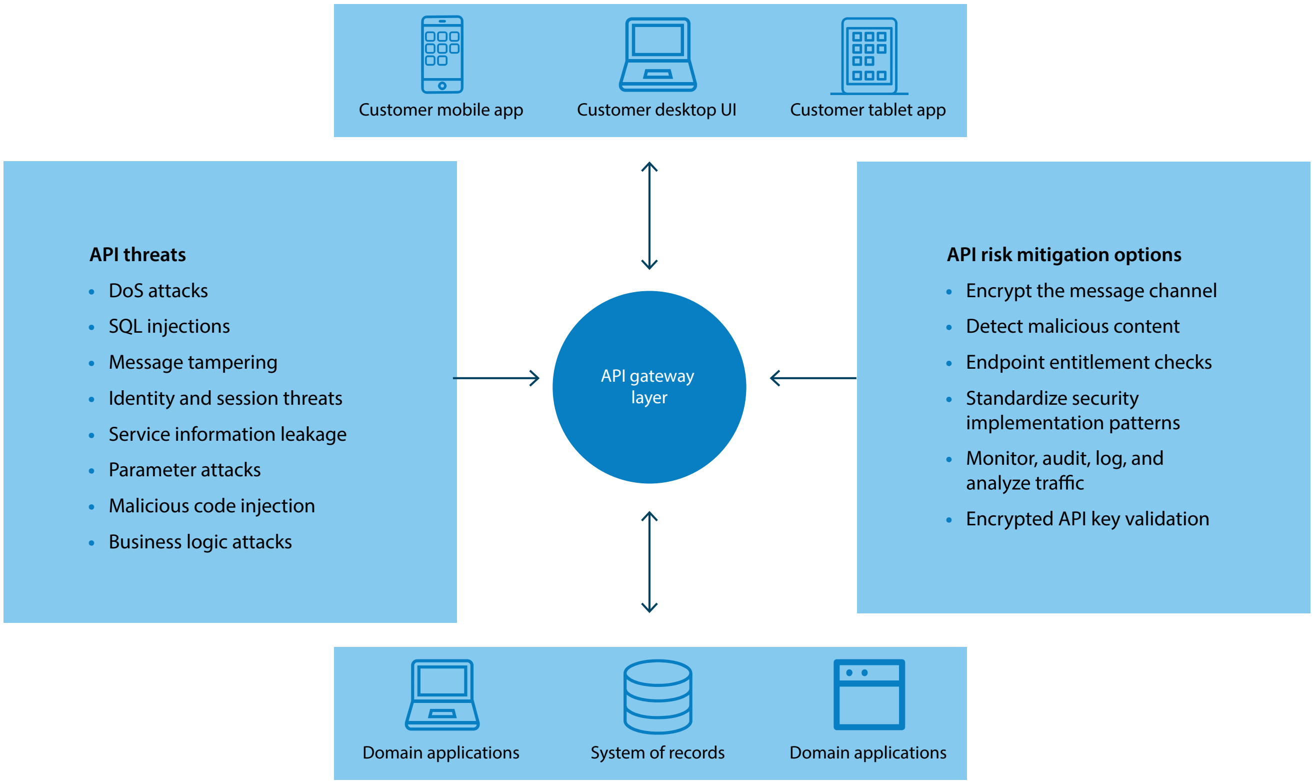


Figure 2 - API management architecture

## API security considerations

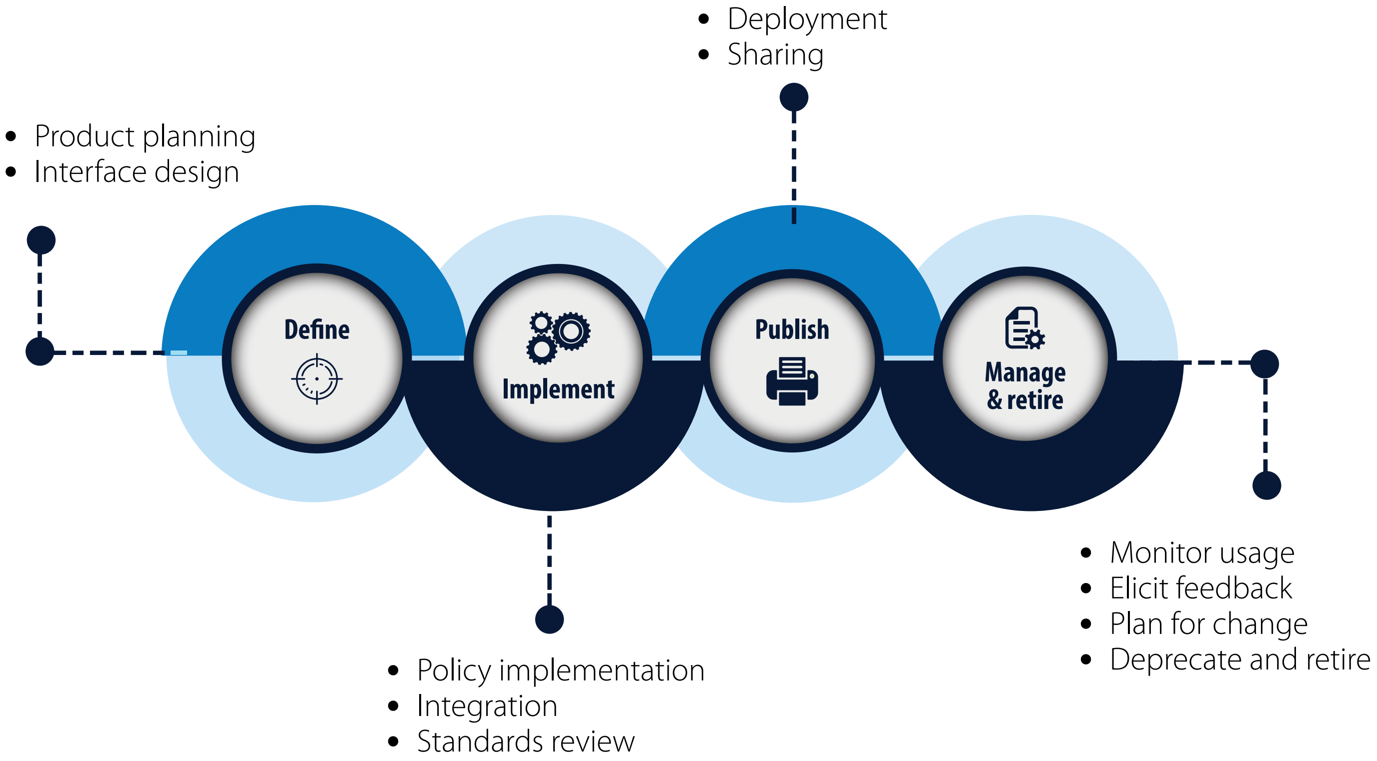
In today's extended enterprises, there is no longer a well-defined boundary to an organization's infrastructure due to dependencies on partners and third parties, as well as migration to hybrid and cloud infrastructures. APIs are dependent on the open Internet fabric and expose a broader range of more flexible access points to data and process. We have to approach security in new ways. The level of risk and how it is managed depends on the types of API being consumed, and the underlying business value and data sensitivity being exposed.



It is very important to have a comprehensive security strategy (zero-trust environment), comprising multiple security layers, and it should be designed based on considering possible security breaches in API technology.

## API life cycle

In general, APIs should all be treated as products. They have a limited shelf life and a distinct life cycle. The API life cycle must be managed in a lightweight manner with significant business ownership and involvement. Managing APIs in a DevOps model through increased automation and app provisioning improves responsiveness and alignment between IT and business.



## Conclusion

In today's social and sharing economy, APIs play a key role. Digital banks are increasingly adopting an API-first mentality to ensure they can meet ever-changing customer needs and regulatory directives. Effective use of APIs is helping banks to leverage their strength of huge legacy data with the power of accelerated digital changes driven by fintechs, developers, and other non-financial service communities, creating a win-win scenario for everyone.

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