

# Accelerating Compliance and the API Economy with Open Banking and PSD2

# Banking Is Undergoing Digital Disruption...and It's About to Get Worse

**Banks and financial services providers are facing the widely-publicized challenge of needing to deliver innovative digital offerings to their customers.**

To achieve this, they are increasingly embarking on digital transformation journeys to enable them to build better online experiences, whilst becoming more agile, responsive and customer centric.

The challenge for banks is that they are hamstrung by legacy technology, legacy ways of working, and a complex and heavyweight regulatory landscape. This prevents them from innovating with the speed and agility of the FinTech start ups that are currently circulating the banks with the aim of the eating their lunch.

Two critical regulations are coming into force that have the potential to exacerbate this even further. Open Banking and PSD2 are British and European legal regulations that are all about

ensuring that data is opened up to the customers over internet accessible APIs and then made shareable with other parties, such as FinTech startups or other new market entrants.

This is a huge change in the regulatory landscape, which potentially places banks at risk of serious or even existential disruption. Once data is opened up in this way, these new providers or market entrants can build better digital experiences in front of the banks' platform, reducing the bank to a mere utility or commodity provider that loses the front-end relationship with the customer, and therefore the ability to cross-sell or upsell. It also makes innovations such as comparison shopping for financial products more viable, which have already been hugely disruptive to the insurance industry.

At this point, there is little that banks can do to prevent this from happening. The Competition and Markets Authority have ordered the nine biggest banks in the UK to frame an Open Banking standard by January 2018. As these nine banks have a dominant aggregated market share, this will create a de facto mandatory standard for the UK marketplace.



PSD2 will also be the law in EU Member States by January 2018. Regulated Technical Standards that produce a high degree of standardization on banks' PSD2 machine readable interfaces will follow by early 2019.

The challenge today is that banks need to turn this potentially seriously regulatory change from a threat into an opportunity.

There are two ways to do this.

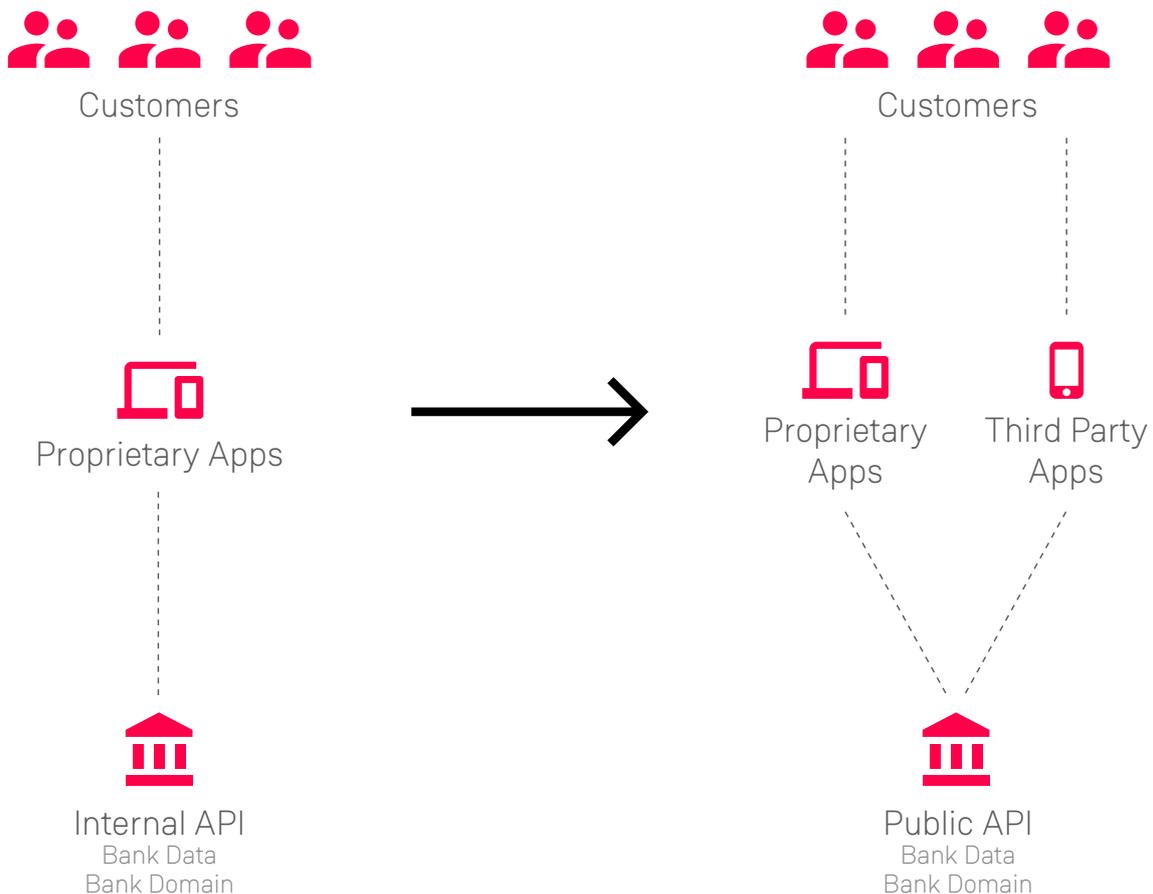
Firstly, banks need to get to market fastest with the best API capabilities so that people build digital experiences on top of their platform and not on a competitors. This turns banks into "platform companies" that will attract innovation on top of their offerings. This involves a fundamental change to banks' business model, but represents a compelling opportunity.

Secondly, banks will need to fight back by building better digital customer experiences of their own - better mobile applications, internet banking front-ends, omnichannel customer experiences - so people do not need to go outside of the API channel. They will also need to get better at delivering more frequent and agile change to these interfaces as they are pulled into the digital age.

When the two are combined, Open Banking can actually be turned into an opportunity: bringing new customers to the bank through API-enabled offerings, and then retaining them on private digital channels to own and build on the customer relationship.

To get to this level of capability however, banks need to make big changes to how they currently operate. Even becoming compliant in basic ways within the short timeframes is challenging, considering banks' slow technology cycles and complex platforms. But to turn this from a threat into an opportunity requires bigger changes, both in terms of how the business operates and the strategy it follows, as well as how the technology works to deliver and then iterate on these APIs.

Many banks have already begun large-scale technical transformation, but we believe that Open Banking is the opportunity that will add real impetus and drive much of this transformation going forward. Open APIs are an incredibly disruptive change and it's going to be fascinating to see how it plays out over the coming years.



# Introduction to Open Banking and PSD2

## Open Banking

Consumer and Small Business advocacy groups have been lobbying regulators and public policy makers for a change in industry structures.

In response, the Open Banking Working Group (OBWG) was set up in September 2015 at the request of HM Treasury to explore how data could be used to help people transact, save, borrow, lend and invest their money.

Open Banking is expected to bring benefits to consumers and small businesses, helping them to aggregate their financial products in one place, providing them with insights into cash flows and making bespoke recommendations. It can also spur more personalized services and widen access to credit and financial products. There are also market indicators of demand for Open APIs in financial services. Online Banking services provided by banks are methodically screen-scraped by non-bank services on the customer's behalf to help provide services. This willingness to allow screen-scraping, despite the security risks involved, can be considered to be passive-aggressive customer-led demand for Open Banking. The formal market research carried out by banks may not capture this type of signal.

The UK's Competition and Markets Authority (CMA) is the driving force behind UK Public Policy on Open Banking. The CMA conducts market studies and market investigations to assess particular markets in which there are suspected competition problems and to order leading banks to take specific remedial actions.

## PSD2

The EU has also identified Open Banking concepts as one potential remedy to the slow innovation and market development that seems to be holding back the competitiveness of its trading bloc.

For instance, one thing the EU would like to see is more cross-border takeup of financial products, and it no doubt feels that the tight hold that banks have over their customer and transactional data is one reason why this doesn't happen.

In response to this, in October 2015, the European Parliament adopted the European Commission proposal to create safer and more innovative European payments under an initiative called PSD2. PSD2 will compel providers such as banks to connect their digital assets to entities outside their organizations through a standard API interface.



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Soon after the referendum, the UK's Competition and Markets Authority formally intervened to direct leading UK banks to carry out a prompt implementation of open banking in the UK.”

## How Are Open Banking and PSD2 Related?

Open Banking is public policy in the UK (enforced by a legally binding order for the biggest banks) and PSD2 is a European Directive, transposed into national law in all Member States. Both changes have similar motivations and intend to reform market structures, though they do differ in some minor aspects of regulatory construction, governance, product scope and intended timetables.

The CMA's policy statements are in a very similar vein to those that preface the legal articles in PSD2. The CMA believes that Open APIs can transform the financial services sector. It is ordering the largest UK banks to adopt and maintain a common standard that will accelerate the pace of this change.

The CMA sees the same role for Open APIs in banking industry reform as for PSD2 played across the EU.

## What Impact Will Brexit Have?

In the UK, the public policy makers were quickly active to ensure that any uncertainty from the Brexit Referendum would not cause the UK to fall behind in the Open Banking area.

The vast majority of EU banks are not globally scaled organizations. They have their roots and customer footprint in specific regions, cultures and languages. In the immediate aftermath of PSD2, it may be more likely that each EU country or region may have their own emerging Open Banking platforms.

In the early phases of a platform market, a variety of firms experiment with different types of features, capabilities, and designs to assess the market's response. As these competing designs for Open Banking continue to improve, at some point one design will eventually become widely accepted - implicitly or explicitly - as the winning standard. This then becomes the industry's dominant design and is usually associated with a shakeout, with the market switching over to the dominant design. Significant business flows from app developers are likely to accrue to the market actor, country or region that produces the dominant design.



# Aggressive Timelines for Compliance

## Key Dates for Open Banking and PSD2

### Open Banking

#### August 2016

Final report published of the CMA's Retail Banking Market Investigation – Remedies Proposed.

#### November 2016

Drafting of orders/undertakings. Informal consultation on draft orders/undertakings with key parties.

#### December 2016

Publication of draft order/undertakings for formal public consultation.

#### January 2017

Finalize and make order/accept undertakings.

#### January 2017

The CMA issued its Final Order outlining how Open Banking should be implemented. Two new Open Banking standards will have to be developed under the CMA's order.

#### February 2017

RBS, Lloyds, Barclays, HSBC, Santander, Nationwide, Danske, Bank of Ireland and Allied Irish Bank must set up an 'implementation entity' by 16 February to "implement, maintain and make widely available" the new standards.

The Implementation Entity will not only comprise members from the nine banks but also feature representation from financial technology companies, smaller 'challenger' banks and businesses active in the payments market.

#### January 2018

A new 'read-only data standard' and a 'read/write data standard' must be developed by the UK's nine largest banks – the same date that PSD2 is due to be implemented in the UK.

### PSD2 Timetable

#### January 2016

PSD2 enters into force at EU level. Two year deadline imposed for Member States to transpose.

#### August 2016

Consultation begins on key "Regulated Technical Standards for Strong Customer Authentication and Secure Communications" (i.e. for AS PSPs, PISPs and AISPs).

#### March 2017

Likely publication of final draft of "Regulated Technical Standards for Strong Customer Authentication and Secure Communications."

#### May 2017

EU Parliament sign off on final draft; +18 month deadline for industry to implement triggered.

#### January 2018

PSD2 in force at Member State level, including UK.

#### January 2019

+18 months after forecast EU Parliament sign-off, pan-EU Strong Customer Authentication and Secure Communications in place.

The CMA has given written guidance to the UK Open Banking standard setting process that sets a clear direction for very tight alignment with PSD2, stating "to ensure an efficient outcome, the Open Banking APIs developed will allow adopters to comply with the PSD2 requirements". This makes the PSD2 process and timetable the key driver in UK standard setting.

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# Open APIs and Open Data

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Fortunately, we aren't starting from scratch in our thinking about how to develop these capabilities. Open APIs and Open Data have had history and advocates long before Open Banking and PSD2 are hitting the financial services industries.

Leading digital companies, for instance, have known for some time that APIs are a key part of their digital transformation journey and a key opportunity to monetize and increase their reach.

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These companies have, for instance, been building APIs to support mobile applications or social applications on platforms such as Facebook. These forward-looking companies also wanted to empower third party developers to build applications that integrate with their environments, turning them into platform companies.

In doing this, we have learnt a lot about the technology and governance required to successfully deliver these capabilities. For instance, there are larger bodies of knowledge on how to do the following:

## Technically

- How to expose data and design APIs for retrieval
- How to connect externally facing APIs to internal databases
- How to maintain security, identity, access control and authorization
- Developer education and community building

## Commercially

- Decision rights in platform vs applications
- Platform controls - access gatekeeping, process controls, metrics
- Pricing - symmetric vs asymmetric, access vs usage, fixed vs variable

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## Open APIs in the Financial Services Industry

For some time, consumers and regulators have been interested in Open Banking and the potential of Open APIs within the banking and finance industry as a means of reforming market structures. However, as with many innovations, the industry has been relatively slow and risk averse in the adoption of these capabilities which other industries have been moving forward with at scale.

The broad idea is that individuals could expose data about their accounts, and selectively and in a controlled way share that information with other parties such as specialist financial firms, retailers, high-tech companies, social media platforms, crowd sourcing platforms and accountancy software. In general, any service that involves using financial information or data on payments could use Open APIs provided by banks.

Open Banking and PSD2 will be the first large-scale regulatory changes that will compel banks to move in this direction. As hinted above, we believe there is huge latent demand in the market and in the emerging FinTech domain to take advantage of these capabilities.

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# Accelerating Transformation Towards Open Banking and PSD2 Compliance

When a retail bank ceases to own the data and the digital channel there is a risk of existential business model disruption. The relationship with the customer is interrupted by third parties, impacting the banks' ability to cross sell and compressing margins.

To combat this, banks need to undertake a significant transformation both on the commercial side of the house and in terms of technical platform and practices. The challenge is that they need to perform and accelerate this transformation whilst managing all of the risks outlined in the previous section.

In this section, we will describe the transformation that companies need to go on to de-risk and accelerate their compliance. We split these considerations into business and technology, though of course we expect to see even closer alignment between business and technology as part of this digital transformation.



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# Transforming Your Business

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The move to Open APIs involves quite fundamental changes to banks' business models and approaches.

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## Open APIs in the Financial Services Industry

Organizations develop plans for the future, and they also evolve patterns along the way. We can call one 'intended strategy' and the other 'realized strategy'. Realized strategies are not always intended. Fully realized intentions could be called 'deliberate strategies'. Other intentions are unrealized. There is a third case, called 'emergent strategy'. An emergent strategy is a realized pattern that was not expressly intended.

Open Banking could have a strong influence on emergent strategy in banks. Open Banking will cause banks to share Reference Data about clients and products with third parties. Reference Data is internally- and externally-sourced information obtained and used by different parts of a bank. The sharing of Reference Data with independent third parties is an entirely new discipline for banks. It will have a big ripple effect on how banks manage sales and customer service. A wave of business volume coming through new independent third party channels will also put a strain on operations and execution processes. Risk and compliance teams will be hit by this wave as they have to study unproven business processes and design new risk models for Open Banking. Finally, the broad range of general management and enabling activities common to banks, such as corporate strategy, finance, HR and IT, will have to incorporate the ripple effect of Open Banking on organizational governance.

## Banks as Platforms

The business models of banks will move closer to software platforms because of an Open Banking Ecosystem. Banks will offer services for API developers who wish to use the Open Banking APIs, extracting data or instructing payments from payment accounts. These services will help developers to design new applications.

A user can run these applications only if he or she has a payment account in an account servicing bank used by the developers. Developers can sell these new services only to users that have the underlying payment account.

## Architecturally Similar to Software Platforms

Banks will become architecturally similar to the software businesses that act as platform businesses. Open Banking will cause banks to accelerate investment in their Service Oriented Architecture, to act more effectively as a physical platform. They will devise new Premium APIs to build new revenues. As they add more developers, the utility of those payment accounts will grow and attract more account holders to the bank and more account usage at that bank. An early move on Open Banking could have an indirect network effect for a bank, just as we see with successful software platforms.

## Incentives to Become Platforms

Some banks have the very large scale to make a platform business a reasonable idea. Banks serve many millions of customers and customers make hundreds of millions of payments. Big banks can add more customers with only a small increase in costs. Banks will not incur the very large initial fixed cost of building the capability to serve millions of customers. With the increased competition from Open Banking, banks will have a competitive incentive to consider themselves as a platform business.

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## Shifting Patterns in the Financial Lifecycles

After Open Banking, banks will still differ from software platforms in crucial ways. Platform businesses serve distinct groups of customers who need each other in some way. The needs of the Uber driver and the Uber user are distinctively different. The interests and motivation of the Uber driver to use the platform are consistent in the longer term, as are the interests of the passenger. Uber (or Facebook or Amazon) can achieve real clarity of focus on their core business of providing a common meeting place and to facilitate interactions between members of the two distinct customer groups.

After Open Banking, banks will not just be balancing the consistent interests of a distinctive group of bank account users versus the developers using the Open Banking APIs. Payment account users can be valuable borrowers (or not) and valuable depositors (or not) at the same time. Payment account users can be regular payers and/or regular payees.

Mainstream banks are a combination of Credit Institution and Payment Institution. Some customers are frequent users of the Payment Institution and infrequent users of the Credit Institution (or vice versa). These usage patterns can vary hugely over the customer lifecycle. Banks can have multi-sided platforms, but many end users can be on more than one side simultaneously or switch sides during the lifecycle. This can blur a bank's design focus and inhibit the specialization of bank staff. The usage of bank processes can also be highly changeable.

## Pricing Strategies

The most crucial and impactful difference between banks and software platforms is pricing strategy. This is unlikely to change after Open Banking. Asymmetric pricing is common on software platforms. Many two-sided software platforms seem to obtain most of their profits from one side. Some software platforms can charge prices on one side that are below marginal cost or below zero.

Banks are often required by regulators to follow conduct rules when considering their pricing strategies. Banks have to identify the relevant target market for each one of their many products.

Given the target market, they have to ensure that the product is appropriate for the interests, objectives and characteristics of the identified target market. This product-by-product pricing strategy for a bank's own-brand products seems likely to inhibit any effort to devise sharply different pricing structures for services offered through developers.

## Change to Business Development

Banks have a long tradition of having a private sales force selling their Service Domains but will now have to reconcile and manage any conflict with an independent distribution channel of API developers that are trying to leverage many of the same Service Domains. Banks aiming to thrive in an Open Banking Ecosystem require a fundamental change in their approach to business development.

## Change to Revenue Models

Open Banking will reduce the earning power of banks acting as account servicing banks in certain scenarios. Banks need new revenue streams to offset this change. The Open Banking ecosystem is a logical place to look for new revenue streams.

## Transform Your Technology

To achieve the challenging timelines associated with Open Banking and PSD2, banks need to make big changes to their technical platforms and the way in which deliver their software solutions.

Trying to deliver Open Banking using the traditional methods and tools will result in slow compliance and regulatory risk. More importantly, it also leads to commercial risk as banks lose out on the opportunity to turn Open Banking from risk to opportunity in the API economy.

In this section, we describe some of the key technical initiatives and change programs that banks need to deliver on to successfully combat this risk.

### Development of New High Quality APIs

The very act of developing and managing APIs is not an easy task, and many enterprises will struggle to develop and then iterate on high-quality APIs effectively.

For instance, API development brings with it some of the following challenges:

- APIs will need to incorporate some kind of backwards compatibility and versioning so that we don't break clients as changes are released.
- APIs need to be secured both in terms of vulnerabilities, and business level access control and authorization. They will also require full audit and logging over what is going on at the API layer.
- APIs need to be scalable and robust enough to handle changing workloads. If you have peaky demand on certain days of the month for instance, your API system needs to be able respond to this.
- Onboarding new people to the API layer needs to be easy. Your new APIs will potentially have thousands of users, but you still want to control who those people are, be able to monitor them, and maybe restrict the data they can see at short notice.
- These APIs will become a critical part of their infrastructure and the infrastructure of the consumers, so will need to be high-quality, bug-free and robust.

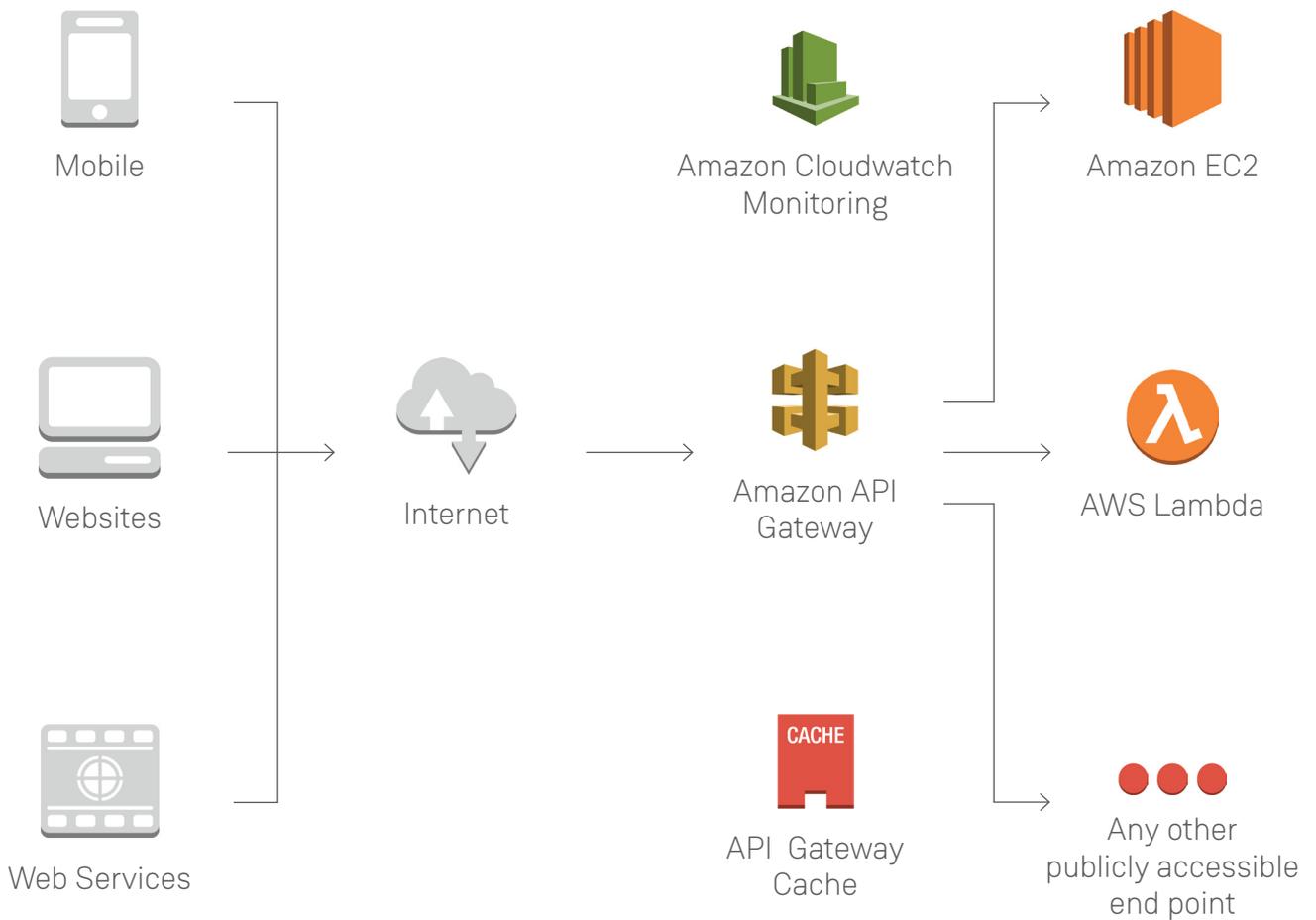
## Adoption of API Management Tooling

Many software tooling vendors such as Apigee and Akana have brought API management software to the market. The proposition of these tools is to accelerate the time to deliver API solutions in a standards-compliant way and iterate on them safely and securely. These tools overcome many of the challenges described in the list on the previous page.

Cloud providers such as Amazon Web Service have also brought API management tool offerings to the table. The advantages of these platforms is that they integrate more tightly with the infrastructure platform, for instance sharing identity and access management, logging, and being able to autoscale infrastructure resources in response to API load.

Considering the tight timelines for Open Banking and PSD2, leveraging third party tooling provided by a vendor or cloud platform is a wise decision. This will allow banks to focus on the layers more bespoke to their own internal platforms and capabilities that they want to offer as part of their API propositions.

## API Management Tooling



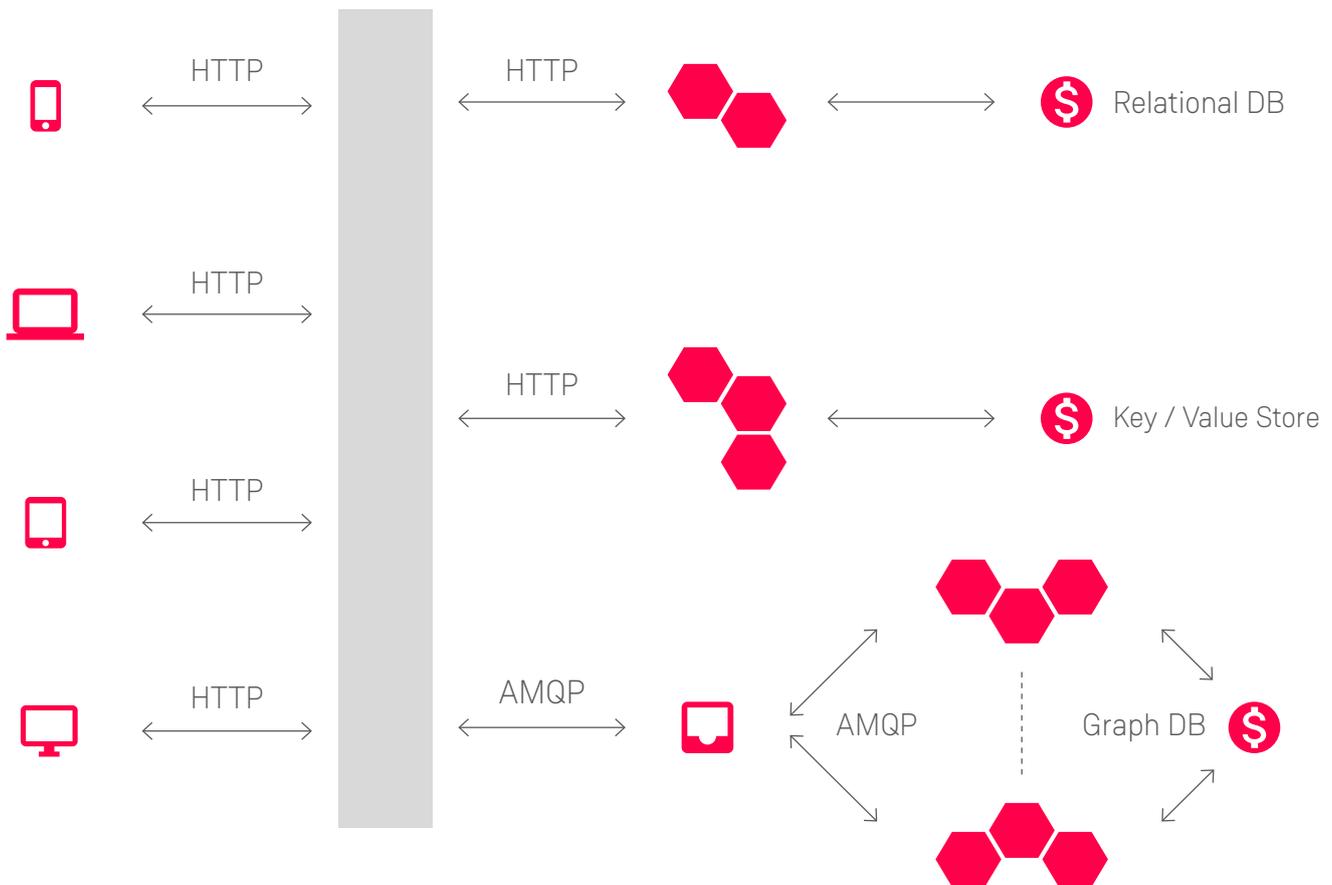
## Adopting a Microservice Architecture

Banks have evolved their technology stacks over many years, leaving them with a complex, interconnected landscape of legacy systems. Individually, these are big monolithic platforms, sometimes running on heavy application servers or platforms that are no longer supported. Mainframe systems are still commonplace in the large banks and card providers.

All of this technology is still critical to the functioning of the banks, and indeed is still undergoing lots of change. Many banking organizations wouldn't even claim to have a viable strategy for getting off of these mainframes.

To achieve rapid compliance and then competitive advantage with Open Banking, banks will need to develop a new architecture that is more amenable to change. This changeable architectural style is referred to as 'microservices' within the IT industry. Microservices are small, independent services that can be developed, tested and deployed and scaled independently. Microservices are a great fit for organizations that have applications that require very frequent change, such as the APIs we will find in Open Banking solutions. This is because independent elements of the platform can be changed independently of one another and outside traditional release cycles.

## Microservices Architecture



## Implementing Service Domain Aligned Microservices

Say we have different channels for bank information, product information, and different slices of customer or transactional data. The idea is that each of these can be developed as an individual or set of services which are developed, tested and deployed independently of each other:

- Build > Test > Deploy > Bank Information
- Build > Test > Deploy > Product Information Service
- Build > Test > Deploy > Customer Service
- Build > Test > Deploy > Customer Account Service
- Build > Test > Deploy > Customer Transaction Service

This separation of delivery processes allows organizations to focus on changes in specific areas of the system independently of others. It also allows them to break away from the long release cycles often found in enterprise IT and move to a more agile, iterative and innovative delivery model that, ultimately, results in better software and enhanced competitiveness.

## Adopting DevOps and Continuous Delivery

DevOps and Continuous Delivery is the way that modern digital companies are operating today to develop software. It includes the practices, processes, culture and tools around which the organization comes together to deliver value to their customers through software.

DevOps moves away from traditional siloed development, test and IT operations functions and towards a more collaborative operating model. Small cross-functional teams incorporating business and technology, work together to deliver on product-aligned business capabilities. DevOps also brings greater alignment with business goals, incorporating business representation into the delivery team. This is perfect for Open Banking channels.

From a technology perspective, these APIs will be digital front ends for the business. We will need to iterate on them quickly, but also in a controlled way. If complex sign-off and approval processes are needed, we will not be able to iterate on these digital front ends in a sufficiently rapid and safe way. DevOps brings an automated path to production to bear, which accelerates time from development to production while also maintaining governance and controls.

## Adopting Continuous Testing

The APIs supporting Open Banking could quickly become part of the banks' critical infrastructure. If a bug is released, the bank is exposed to legal risk by the FinTechs and others who come into contact with it. This in turn brings regulatory and reputational risk.

Banks will need to test their APIs under real-world conditions, with real data, real-world characteristics, real performance requirements. If we are going to iterate on the APIs frequently, this testing will need to happen in a Continuous Delivery model, where the developers changes are tested against every developer check-in.

This kind of automated testing is challenging for banks who have been working towards this test automation nirvana for many years. However, to be part of this new digital channel and API economy, high-quality test automation is a must.

## Modernizing Infrastructure

To achieve Open Banking on time, banks will need to create new API endpoints over publicly-accessible channels such as the internet.

Often, this will require new infrastructure in terms of servers, network connections, load balancers or even data migrations to move data into the correct formats.

Creating these new environments is typically a long-winded and protracted process within banks, that might need to provision physical hardware using relatively traditional solution design processes. This is exacerbated when working on internet-facing environments.

Cloud computing can help us quickly procure this infrastructure and stand it up in a controlled and secure way. Cloud also brings additional benefits, for example, as usage of the APIs increase, we can add more capacity in an automated way using auto-scaling.

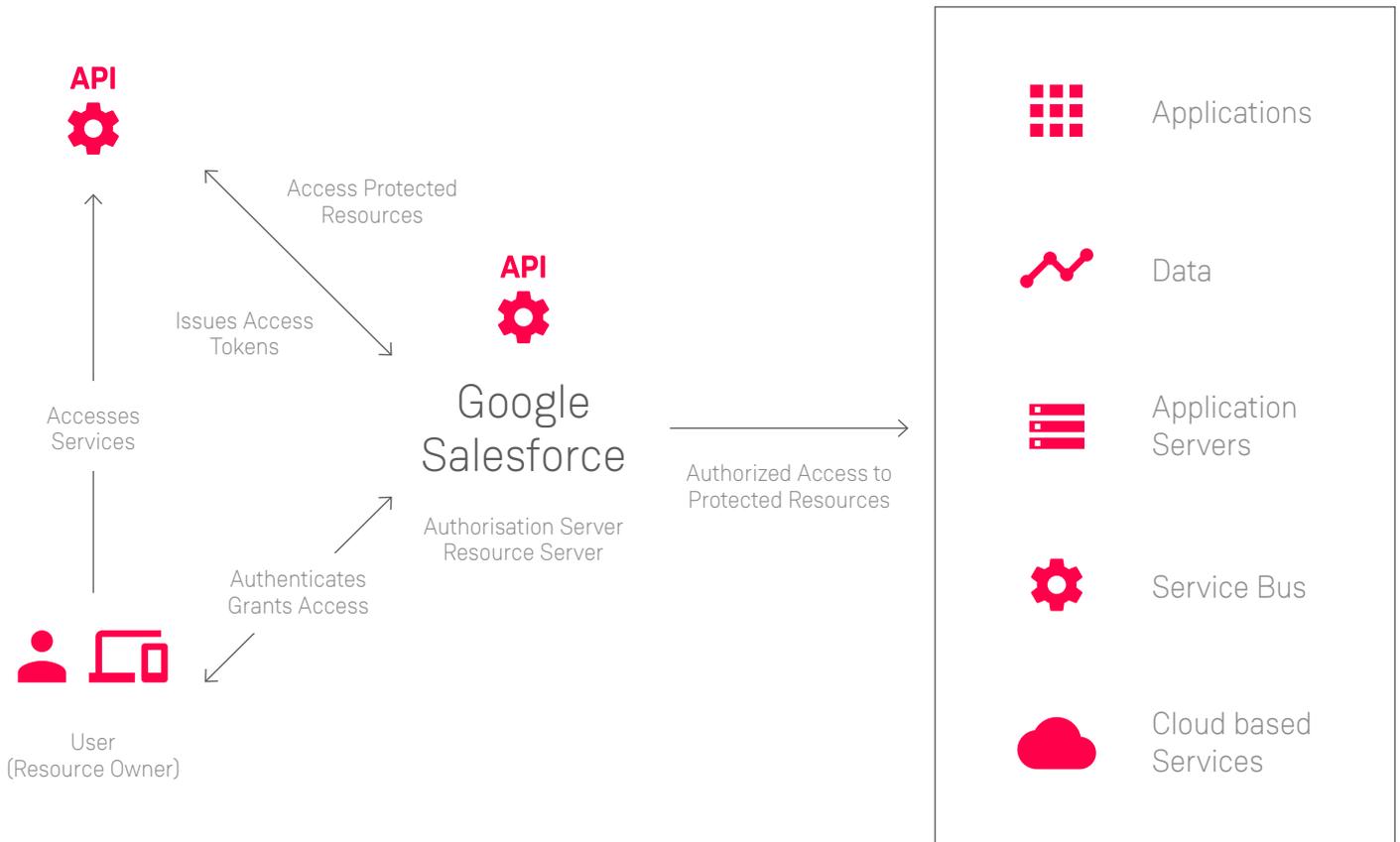
## Leveraging Trusted Security Models

As part of Open Banking, teams will be offering deep customer transactional data over the internet. The security implications of this are huge and it would typically take a bank a lot longer to adapt to than the time available.

Banks will need to build in deep security at all layers of the stack (infrastructure, applications, software and databases) and then at vertical layers as processes get closer to core transactional databases. There is not really any shortcut around this, as banks will face huge amounts of regulatory, reputational and operational risk if these security protections are not in place.

There also needs to be tight control around access management. Luckily, we have a successful model of federated identity proved in the market with OAuth. This is the mechanism by which we can log in to sites using our Google or Facebook login, limiting the data that those sites can see about us, whilst selectively exposing subsets of the data.

## Trusted Security Model



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# Managing Risk in the Move to Open Banking

Banks will have to adapt their risk management framework and culture to deal effectively with Open Banking. This journey is clearly not just about implementing the technology, there are whole swathes of governance to decide on and implement as part of this transformation. Some of these risks and considerations are highlighted below:

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## Operational Risks

The management of operations and execution will be a key inhibitor or accelerator for the adoption of Open Banking. Banks are likely to be very concerned about the resilience of their account servicing systems in an Open Banking Ecosystem. Operational problems with Open Banking APIs could cause a significant problem for banks because they can be used by third parties that do not necessarily have a wider business relationship with the bank.

Allowing for the likely caution of banks, the API Economy is rapidly creating powerful new business models across many industry sectors. Open Data is now coming to banking, driven by customer demand and regulatory intervention. The arrival of Open APIs to banking is somewhat late and there could be pent up demand from API developers to access the rich customer data sets held by banks. If there is a surge in demand, it could put a strain on operational stability in banks.

## Business Continuity Risks

Companies that use APIs need to think about them like any other input in their supply chain. Losing ongoing access to an API is like a business losing a key raw material. In general, businesses that require access to third party Open APIs in their workflows need to identify alternatives, regularly review their access rights and be prepared for mission-critical changes.

## Information Security Risks

Open APIs in banks open new attack vectors for thieves and fraudsters and the counteracting security effort has to respond. For the sake of their continued growth and profitability, banks like to be liked but they absolutely need to be trusted. Banks will have to be very thorough in this arena.

## Conduct and Reputational Risks

The consequences of misselling financial services can be very severe, both for the impacted customers and in terms of the regulatory response. New distributors in the shape of API developers introduce new conduct risks and banks will have to be cautious.

For the Open Banking ecosystem to flourish, account servicing banks must treat third parties using their Open APIs in a fair way. Account servicing banks cannot put payments from bank accounts initiated by third parties at the end of the queue. If there is evidence of fraud or unauthorized access to an account, account servicing banks can refuse to take instructions from a third party. However, it will harm the development of the ecosystem if this is a trigger-happy process.

Money is a very emotive topic. The Open Banking APIs that will report on or people's money are more emotive than any use of a published mapping API or translation API. Unlike those APIs, the Open Banking APIs are crucial to the financial value chain.

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## Business Risks

If an Open Banking ecosystem is to emerge, a central question must revolve around the capability of existing banks to adapt and evolve into this new environment. Banking is a mature industry with many monolithic systems and divisional organizational structures.

All mature industries, not just banking, will have to modify performance management and measurement systems to capture the threats and opportunities of the API Economy. All structured and formalized strategic planning systems in mature industries struggle to plan for the adaptive nature of the networked economy.

The monetization goals for Open APIs will have to reconcile with the goals of own-brand products. Mature industries with very established patterns of pursuing profits at divisional level could struggle to see where they will capture value from Open APIs. All mature firms that have considered investments as make-or-buy must learn new techniques to examine options to sell the use of Service Domains through Open APIs.

To be successful in the technical challenge, mature firms need to look at the sociological factors in organizational design. Employees in all mature businesses will need role clarity to act and thrive within new organizational directions. Understanding and managing the relationship with a community of external API developers is an entirely new discipline for a mature business.

Older businesses that were not born in the networked economy can be excessively focused on the downside risk of data travelling out to third parties. If they try to repel substitute products from their ecosystem, they will inhibit the development of complementary products.

The speed of adoption of Open Banking could be heavily influenced by two different adoption speeds. Young people and young businesses adopt more modern technology. As they begin a purchasing pattern for the first time, they buy the latest technology. Mature people and mature businesses may be slow to update to the latest technology but they buy more high-value financial products. Banks have to consider both the diffusion of new technology and the enduring patterns of a customer's financial lifecycle.

## Liquidity Risks

Deposits are the lifeblood of banks, as they provide inexpensive and durable funds for longer-term lending.

Bank liquidity could be reduced in the long term if bank customers start to place some of their funds in payment accounts offered by API developers.

Banks will want to understand how an Open Banking ecosystem impacts their liquidity position.

## Technical Risks

In addition to business risks, there are of course a number of technical risks in successfully delivering Open Banking and PSD2. For the first time, the banks will be exposing customer and transactional data over the internet, connecting modern externally facing APIs into core back end mainframe systems.

Any large-scale IT project is full of technical risk, but it is very high on this initiative.

## Reconciling Process Innovation and Product Oversight

Banks will achieve process innovations as they build out and build on top of their Open API capabilities. However, if these process innovations reach the marketplace through a third party developer, they are subject to these product oversight requirements. The bank as API Provider is a product 'manufacturer' and the API developer is a 'distributor'. If the 'deploy' activity of a bank's DevOps process does not reconcile with this process or runs at an entirely different pace, many engineered APIs could be delayed for long periods before they are delivered to market.

### Product oversight and governance arrangements for banks acting as "manufacturers":

- Establishment, proportionality, review and documentation
- Manufacturer's internal control functions
- Target market
- Product testing
- Product monitoring
- Remedial action
- Distribution channels
- Information for distributors

### Whereas there also needs to be product oversight and governance arrangements for "distributors":

- Establishment, proportionality, review and documentation
- Distributor's governance
- Knowledge of the target market
- Information and support for the manufacturer's arrangements

# How We Can Help with Open Banking and PSD2 Compliance

In the sections above, we have described how Open APIs will impact a bank's strategy, risk management, organizational design. We have also outlined the implications for technology strategy and platforms in order to achieve compliance in a risk-managed but accelerated timeframe.

## Strategic Guidance and Accelerated Compliance

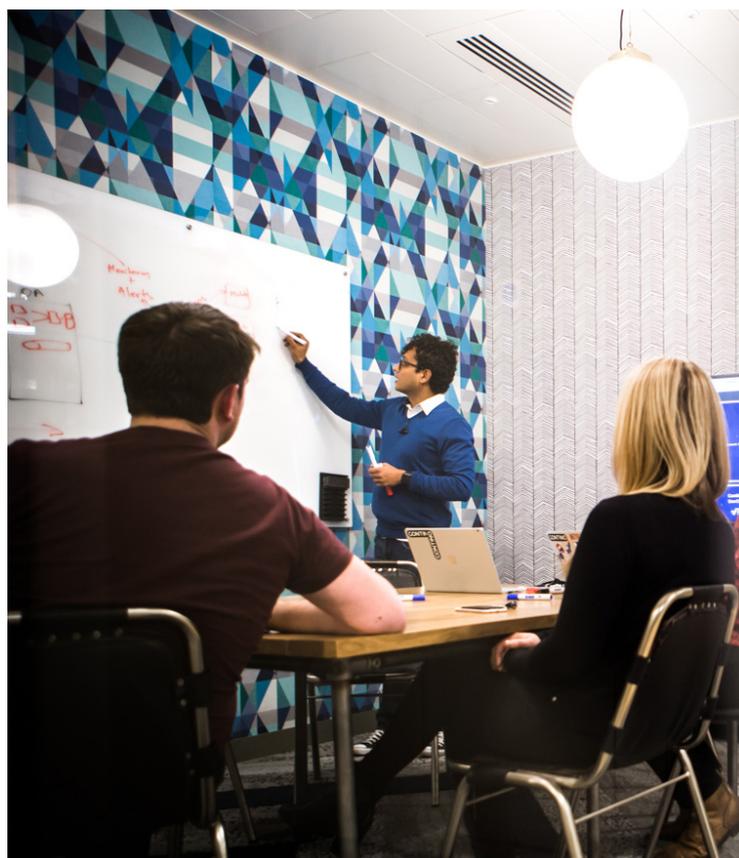
We can help you set your Open Banking and PSD2 strategy and then accelerate towards risk-managed compliance. Some of the questions we are helping our clients with include:

### Business

- Impact on market positions from Open Banking
- Impact of Open Banking across the banking service landscape
- Developing an Open Banking strategic plan
- Transitioning from Product Management to Platform Management

### Technology

- Strategy for leveraging cloud infrastructure
- Strategy for leveraging API management tooling
- Strategy for maturing DevOps and CI/CD model with rapid innovation
- Strategy for moving to a microservices architecture



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We can then help you achieve rapid and accelerated compliance with Open Banking and PSD2 with both delivery and upskilling initiatives, turning open APIs from an existential threat to a real opportunity.”

Contino is a global consultancy that enables enterprise organizations to accelerate innovation through the adoption of Enterprise DevOps and cloud-native computing.

Our dual delivery and upskilling approach supports organizations to modernize their IT processes and technologies whilst helping them develop their own innovation engine. From strategy and operations, to culture and technology, we support business leaders on their digital transformation journey, helping them maximize opportunities for growth and profitability .

Backed by Columbia Capital and with a global presence, Contino is ideally positioned to scale to meet the demands of the world's largest enterprises.

We are a global Amazon Web Services APN Premier Consulting Partner, a Docker Premier Consulting and Training Partner, and a HashiCorp System Integration Partner.

Learn more at [contino.io](https://contino.io)