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CHAPTER 01

What is PSD2?

Financial institutions across Europe will soon be introduced to new banking industry regulations – a proposal for a revised directive on payment services in the internal market, better known as Payment Services Directive (PSD2).

PSD2 was proposed by the European Commission in 2013 to be active and implemented in 2018, and its primary goals are:
• to increase, improve and integrate payment efficiency across the EU
• to offer better consumer protection
• to offer a seat at the table to new and emerging payment service providers
• to promote innovation in the payments space, and reduce transaction costs
• to provide clarity on the use of emerging payment methods such as mobile and online payments
• to harmonize pricing and improve security of payment processing across the European Union.

At the core of the new payment regulations is the need for banks to allow a secure way for customers to authorize their preferred third-party providers to have direct access to two aspects of their bank account:
• their account and transactional data
• the ability to authorize payments directly from their account.

The idea behind PSD2 is to improve the customer experience, as well as increase marketing competition and innovation. It’s about aggregating account data from multiple institutions into a single view.

The PSD2 regulation is regarded by many as the single biggest change in the banking industry, as it will force banks to open their infrastructure to third parties. Many banks are concerned about this legislation, feeling exposed and under attack from new entrants, as well as by the position of customers in the driving seat. But does PSD2 need to be seen as a threat to banks?

Fintech providers now have a chance to become an Account Information Service Provider (AISP) themselves. PSD2 isn’t simply a compliance project – it can be used to your own benefit.
PSD2 will impact how we access our finances

Before PSD2

- You have multiple debit and credit accounts with various banks.
- You have to log in separately for each of them, but have no single view.
- It is very hard to have a real overview of your net worth.

After PSD2 adoption

- Now it’s possible for third-party, new fintech players, and existing banks to build a tool that aggregates the data from all the banks in one single view.
- Your account information, all your financial products and all your transactions can now be consumed in one single dashboard.
- The term Account Information Service Provider (AISP) could be applied to third parties like mint.com that can aggregate all the account information, but banks can become AISPs themselves and provide this single view of the data.

PSD2 will impact the flow of payments

Before PSD2

- PSD2 calls on banks to give third-party providers (TPPs) such as fintech companies, other emerging banks, retailers and telcos secure access to customer accounts (with customer consent). The opening of the payments market to new providers will widen consumer choice, lower transaction fees and improve convenience.

After PSD2 adoption

- Other organizations, such as retailers, telcos or utility companies, could also offer their own payment platforms (becoming Payment Initiation Service Providers, or PISPs), reducing commission fees, strengthening customer relationships and positioning themselves as identity providers. This is actually already taking place.
- Some technology brands focused on gaming are taking an interest in the financial services industry. These brands, for example Microsoft Xbox, are already taking some margin from traditional banks in the form of cash float. Many of these gaming platforms have a ‘wallet’ feature, where value transfers can be accepted from mainstream payment platforms. Would these also be new entrants in the market?
A major concern for banks is being prepared for PSD2 from a technological point of view. Banks are being asked to allow access to customer accounts by third-party providers (with the customer’s permission). To do this, banks could create their own APIs to enable connection with third-party providers.

Alternatively, banks could “take a step back from the customer and allow their infrastructures to facilitate transactions, while consumer brands (such as Apple, PayPal or new players) engage with customers directly”.

For a long time, many financial institutions fought to avoid legislative and technological evolution by arguing that such changes would cost too much money, and would increase security risks. It’s difficult for traditional banks to come to terms with the idea of opening up to third parties. Yet, for those who want to survive and continue to prosper in this digital age, the need to restructure their organizations is imperative.

Banks will need to reorganize their IT infrastructure and refocus part of their business model. They will be required to open up their IT systems to third parties who are instructed to make payments for account holders, and/or they must ensure a consolidated real-time view of account statements.

This is an opportunity for forward-thinking banks to embrace next-generation digital technology, increasing innovation efforts and maximizing value for customers. The new regulation represents an opportunity for adaptable banks to partner with fintech companies and third-party providers, to create a strategy that welcomes change and innovation.
The aim of PSD2 is for all banks to comply to this new regulation during 2017. This regulation will then be turned into national law and be adopted by the 28 European member states, where all banks will need to have opened their API before Q4 2018.

So what needs to happen? Banks will need to comply before October 2018. This entails:

- Third-party authentication
- Third-party access to account information
- Fee transparency
- Fine grained entitlements: different levels of transaction on a certain area.

The main question we need to ask is: ‘To whom will this apply?’

‘PSD2 as a regulation will only be applicable to payment accounts and transactional data. We believe that PSD2 enabling open APIs, thus enabling third parties to have access to this data, will be the future for all banks. However, an open API strategy shouldn’t be solely confined to payment accounts.’

How will this change the landscape?

**Before PSD2:**
Before the implementation of PSD2, banks have access to large quantities of data, payment engines, international payment networks; they are connected and they can provide services directly to their customers. In the digital world banks do this typically through their own APIs, referred to as an Enterprise Service Bus, or an API gateway. This internal data, functionality, and payment capability is used by traditional online and mobile banking applications. The only way for the customer to have access to this data is through a branch, call center or online/mobile app, from which they can access this data and these functions.

**After PSD2:**
Once PSD2 has been implemented, the bank will need to provide the data and functionality to their own apps via an internal API or Internal Service Bus, but they will need to expose payment capabilities and aggregated information in a so-called public API.

API stands for Application Programming Interface, a technology that allows developers to access functions of different computer programs and make them work together. With PSD2, you will not only need to have an internal API, you will also need to have a public API.

The bank’s public API will be utilized by its own online banking applications but also in the post-PSD2 world,
The shift in control
However, with PSD2, this has shifted. The banks are no longer fully in control, and open APIs means that innovation will be possible for third parties. Up to now, fintech startups have struggled to win customers, as they did not own the banking back-ends. However, with PSD2, third-party suppliers will have access to these customers to be able to build new relationships. It will also shift control back to the customer, while up to now banks have had control over data and information.

Strategy: Proactive vs Reactive

Reactive / Disrupted Bank
- Meet the essential criteria
- Rest is business as usual
- Have defensive and delay strategy to third parties

Proactive / Disrupter Bank
- First to adopt open APIs
- First to welcome third-party developers/ecosystem
- Accept commoditization and find new differentiators

Following PSD2 (and the standards that will need to be agreed on by the European Banking Authority), banks’ obligations may lead to one of two fundamental strategic choices:

The Reactive Strategy
This option could be defined as doing the minimum required to satisfy PSD2 compliance and, through opening up APIs to a limited extent, enabling TPPs to execute payment initiations and account information services.

Banks may feel as if they have done all of the hard work over the years in collecting customer data, and now they are being forced to share it with others. This is a valid opinion, but not a customer-centric one. It won’t benefit anybody to implement PSD2 compliance slowly. This is a fantastic opportunity to adopt open APIs and welcome third-party developers and ecosystems.

The Proactive (Innovative) Strategy – moving to public APIs
Banks could go further by offering innovative (basic) payment initiation and information services, essentially competing with TPPs, by moving to public APIs. Furthermore, banks could collaborate with fintech companies to accelerate adoption and market growth of transaction services. Banks could provide the flexibility, customer loyalty and scalability, while fintech players could build customer-centric user experiences that drive conversion.

What strategic option suits the bank best?
The strategic option the bank chooses will have significant consequences for its future business and relevance. Making the right strategic decision will require banking executives to consider their ambitions, their desired position in the value chain, and their accompanying transaction portfolio.

Fintech companies move at a rapid pace. Incumbent banks need to think and act quickly to retain their market power through a resilient, digital, API-driven business strategy. Defining the business case for each strategic option and determining a strategy moving forward requires a solid understanding of regulatory, technological and business considerations.

Without a clear strategy, banks are going to be hit hard by competitors who already have the user experience nailed,” says Daryl Wilkinson.

“Only those with a clear vision of who they will be in this new landscape, and a strategy to get them there, stands a chance of holding their ground while the industry finds its new plateau. It’s a time of shifting perceptions, monumental changes and experimentation. For some banks, this is where heads of innovation are now proving their value, slowly but steadily influencing the cultural and leadership changes needed in a post-PSD2 world while creating the new partnerships and platforms necessary for innovation to grow and thrive.”

“PSD2 – banking without walls”
by Daryl Wilkinson for BankNXT
CHAPTER 03

APIs as the answer to PSD2

Open APIs

Providing consumers with unprecedented choice, flexibility and ultimate control changes the playing field, and provides banks with an incredible opportunity to define and distinguish themselves on the strength of their customer experience in a way that wasn’t previously possible. The ability to be able to view accounts from multiple banks in a single customer experience shouldn’t be underestimated.

If banks want to pursue this option, the time is now. The strategic choice would be to build a new, PSD2 global strategy, where banks focus on pursuing a ‘bank-as-
Creating connected experiences

Exposing the data and functionality of legacy systems is the foundation of future digital growth.

APIs will also bring with them the opportunity to build more connected experiences for customers, as well as the possibility to connect with new, innovative applications and third-party APIs. The opening of APIs will change the current fractured, siloed landscape and enable banks to create connected experiences on existing applications. Information already present such as deposit, investment or payment data can be used to enrich next-generation consumer experiences.

The option to use third-party APIs will help banks with various functions, such as personal finance management (PFM) and enriching existing transactions with, for example, offers linked to transactional information. Banks will be able to work with other fintech vendors by enabling P2P lending, digital wallets or insurance products connected to an Internet of Things (IoT). These are just a few examples of the opportunities that APIs will offer.

In this API economy, banks will be able to mix-and-match as well as combine different applications from various sources. APIs will give access not only to the bank’s own internal system but also provide access to new innovative products external to the bank. Banks that have a strong platform that can consume these APIs will be able to further innovate by blending these with their own applications, creating really unique experiences.

The retail banking sector will be hugely impacted by this API economy, with the emergence of account aggregators that may enable the end-customer to visualize multiple accounts and details through one touchpoint. However, the business banking sector will also change, because they will have access to third-party systems. For example, next to a business’s transactions they could be able to visualize and hook up their accounting system to view invoices.

Account aggregators will provide benefits for online and mobile banking, but on the payment side they may create more pressure because there is less need for a banking app to process a payment. We may see more situations emerge where end-users are able to make a payment within the context of an application. The payment initiation providers will probably enable in-context payments, and the banks will be invisible there.

There will be players that will have a complete overview of all the data you get from the banks and from third-party fintech apps, and that player could actually be anybody.

Anyone that provides a full view of a customer’s finances in a dashboard that can be accessed 24/7, and shows this data in real-time will be in a good position to win customers and promote their brand.
Banks also have the option to integrate third-party APIs to enrich their omni-channel banking experience. Banks will not have to own everything themselves – they will be able to rely on the fintech capabilities of partners.

Fintech players will not only be competing with the banks but will also be partnering with the banks. This will enable banks to enrich their product portfolio. End-users will not only be able to buy products that banks already have from their core systems but also products provided by third-party players banks have partnered with. This creates a shared business model as well as a shared revenue stream.

Integrating fintech capabilities

Revenue-based models
This refers to banks opening their APIs up to third-party providers based on their business model and the applications they develop on top of the bank’s API. This will result in a sharing model: revenue, margin or selling. This can be fixed, flexible or hybrid but the principle is that the bank and third party share revenues.

Fee-based models
This model is very common within the payments industry, for example with PayPal or credit card payments. Exposing an API is one thing, but executing a transaction via that API will certainly come at a cost. This is typically transaction-based, and depending on the type of transaction and the volume, the cost structure will vary, and could present itself as a one-time fee or a subscription fee.

Freemium models
This model is a bit more experimental. The freemium model is based on offering the capabilities for free for a fixed term or, for example, a limited set of data points. Once the customer becomes dependent on the capabilities, the bank tries to move them towards a more fee-based structure. It’s like implementing the seed with a free app, creating dependency and then introducing the fee structure to upgrade to the service.
The next step

PSD2-ready shopping list

If banks want to comply to PSD2 regulations, they must consider either acquiring or building a solution. This will enable banks to integrate certain things in order to be compliant. Solutions that can be built to enable this include:

- **Third-party authentication**: for example, putting in place oAuth (Open Authorization) and 2FA (Two-Factor Authorization), which should be secure enough in those areas where the regulation will be implemented. It should be emphasised that this should be strong enough and allow for multi-factor authorization.

- **Entitlements**: this is an important element in defining who has access to what, when and how, as well as setting other limitations. This should support the end-customer and enable them to set entitlements as well as permission access. This should allow the end-customer to authorise a third party to act on their behalf within certain limits.

- If banks are leaning towards an API strategy to be PSD2-compliant, it’s very important and useful to adopt API versioning and management. APIs will continue to increase and banks will see more of these applied. However over time some go out of date, underlying systems will need to be changed and APIs will need to be updated. In order to achieve this, banks will need to have a governance and management model, usually referred to as API versioning and management capabilities, and is an essential part of any API strategy.

- **PSD2 means that banks will become more vulnerable, and consequently they must consider implementing solutions that enable them to monitor fraud and penetration.** Authentication and fraud detection are two major elements that banks will need to address. The same security methods currently implemented by banks to protect their online and mobile banking platforms can also be applicable on top of these APIs.

- **Developer tools (SDKs, sandboxes, documentation)** are mainly used for banks adopting an experimental or reactive strategy. If banks open their APIs to provide access to the data, the hope is that people will build on top of these and utilize these APIs to create new business models and develop new app
As PSD2 is a regulation, it’s clear that it will not define the API for the banks. To comply with this new regulation, banks will need to take responsibility in defining a clear API strategy and standard. The best approach would be for the banks to collaborate and define a standard on how they will open up their APIs in order to set healthy foundations for this new development.

Communities. However, we may also see some banks who will either be offensive or defensive and make it harder for people to access their APIs, and we may see some of these linger before they actually make these available. Overall, if banks are looking for volume and to experiment, then making developer tools available to build on top of their APIs is the most appropriate strategy for them to adopt.

Recommendations

There is no need to wait for the regulations to be final. PSD2 is going to happen and the technology selection processes and implementation can begin today.

The scope doesn’t have to be limited to just PSD2. An open and creative approach in which APIs and services that can be enabled for third-party developers and partners will help create new business models and mutual benefits.

Experiment. A ‘lean startup’ approach can be beneficial, with a willingness to experiment and be open to new ideas. If ideas don’t work, move on to the next thing. If they do, keep developing and improving.
Backbase, an omni-channel banking software company, helps and enables banks to create a better online customer experience. All banks will need to comply to the new regulation PSD2, and Backbase will help them to become PSD2-ready by providing:

- Third-party authentication
- Entitlements
- API versioning and management
- Fraud and penetration monitoring
- Developer tools.

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How the Backbase platform operates
(see diagram 'Backbase platform'):

The first top layer of the platform (OLB, mobile, open APIs) shows where the end-user applications sit, and can run on any device from desktop to smartphone banking. With the implementation of PSD2, or in the context of the API global ecosystem, the Backbase platform can expose its capabilities via online and mobile, but can also enable banks to address this new API economy. The Backbase platform can help banks expose and manage their APIs so that the bank's own application can effectively run on top, or that of third-party applications and create shared business models.

The Customer Experience Platform (and digital capabilities) is an all-encompassing platform to connect, integrate, and create superior web and mobile applications, all in one place.

Backbase CXP comes with a complete set of integrated customer experience management functions, including: integrated content management, what-you-see-is-what-you-get editing, intelligent forms-based dialogs, secure application integration, cross device delivery, smart targeting, digital marketing tools, and integrated analytics.

At the same time, Backbase CXP offers robust enterprise security and application integration technology that helps you integrate your existing systems and applications with ease, enabling you to leverage your previous IT investments.

The Digital API banking layer, the ability to ‘integrate’ and ‘expose’:

In terms of integration, Backbase – with its digital platform and digital service capabilities – can provide banks with a digital banking API layer. This API layer can provide banks with three main aspects of integration:

- It can integrate into the bank’s existing and core systems.
- When PSD2-enabled banks and APIs become available, it will enable banks to integrate into any PSD2-enabled bank or payment initiation provider if needed, as well as any account aggregation provider, and can be further used by the banks.
- Additionally, it can integrate into any fintech provider, enabling implementation of any fintech capability the bank needs.

With these types of digital API banking layers, banks are able to mix-and-match between their ‘traditional’, ‘PSD2’ and ‘fintech’ capabilities in order to create new, innovative customer applications that present the end-customer with real added value.

In terms of ‘expose’, this refers to banks having the capability to expose their API layer directly in their own application. This is achieved by providing a physical app that's visible to the end-user. Banks can also expose through an API, providing a faceless solution at the API level and enabling third parties to have access and leverage the underlying core systems.

Both options provide added value: the visual app by strengthening loyalty, retention and upsell products directly at end-customers, and the API, which is faceless, can drive traffic to the bank's underlying capabilities.

How can Backbase help banks build a connected experience?
The Backbase platform provides banks with a flexible solution of being able to mix-and-match appropriate solutions, with the possibility to combine their own vision with that of PSD2, API, data capabilities and fintech players.

What can banks expect?
The future for banks revolves around being able to create a seamless customer experience, with access to more data and functionality from multiple sources.
The following scenarios provide an overview of different approaches banks could adopt:

**Scenario (1), Digital Customer Experience**: This scenario concerns most banks who are addressing the issues and challenges of becoming more digital; it’s all about digital transformation and how to achieve it, finding solutions to how they can expose their core systems in this digital layer and how to make it appealing and consistent.

**Scenario (2), New Digital**: For a bank to become a digital-only bank, they must first take into consideration which solutions can be applied to help them reduce their back-end systems and move towards a lean core.

**Scenario (3), Aggregator**: This refers to how banks can transform into a new aggregator banking model, where they can enable data and functionality. In terms of PSD2-enabled banks, how banks should consider piggybacking their capabilities by running on top of their core systems and open their APIs. Banks in this particular scenario will be able to mix-and-match solutions with fintech capabilities in order to be able to create this new aggregator application.

**Scenario (4), Omni-Channel**: Banks can opt to undertake a combination of approaches by leveraging from their core systems, with PSD2-enabled banks and integrating fintech providers. This scenario would probably be the most suitable end play for most banks. This kind of transformation would take an average of five years to achieve.

Regardless of which scenario a bank chooses, it’s all about being able to adopt a business model agility and the future applications within an API economy. Banks will need to consider how they can leverage their existing core systems and how they will control and optimize the customer experience. This outcome is essential as it directly impacts the level of loyalty as well as any cross-selling and upselling opportunities. Furthermore, banks will also need to consider in which ways they will integrate third-party capabilities either via PSD2, or via fintech partnerships and how will they mix-and-match those capabilities to create a more compelling holistic customer experience.
Backbase was among a group of select vendors that Forrester invited to participate in the report. The Backbase Digital Banking Platform is listed as leader and received the highest score in the Current Offering category. Being named a leader in the Forrester Wave gives the market yet another validation of Backbase being at the forefront of digital innovation. We are very happy with this recognition and are energized to help our customers accelerate their digital transformation. Our software is used by leading banks around the world and we are 100% committed to enabling them to create superior digital customer experiences, anytime, anyplace, any device.

"Backbase offers broad business capabilities, rich support of customer experience, and very solid technology and architecture. With Backbase being a pure-play vendor, it is not a surprise that its commitment to its omnichannel banking solution is high."

Forrester Wave™, Omni-Channel Digital Banking Solutions, September 2015.

Why is Backbase a leader in omni-channel digital banking?

1. Omni-channel: putting your end-customers first
   Today’s customers expect seamless customer journeys – any time, any place, and on any device. The Backbase Digital Banking Platform (DBP) helps you to modernize and orchestrate all of your customer touchpoints, transforming multiple siloed banking channels and legacy applications into a consistent brand experience that’s easy to use and always available.

2. Cost-efficient: reuse your core banking systems
   With Backbase, there’s no need to replace or rebuild your core systems from scratch. Backbase enables you to repurpose them by incorporating their content, data, and functionality into a new digital customer experience layer. This layer is optimized for easy integration with your existing business applications, and the delivery of a unified and seamless customer experience across any device.

3. Ready to go: jumpstart your digital transformation
   Backbase has developed out-of-the-box digital banking solutions optimized for retail banking, commercial banking, wealth management and insurance-specific scenarios. Kickstart your project and dramatically decrease your time-to-market by leveraging industry best practices and ready-to-go implementation accelerators.

4. Growth: control your digital strategy
   Backbase puts you in control of your digital strategy, enabling you to create, manage, and optimize the end-to-end customer experience across every device. We have invested in many years of R&D to give you exactly the right editing and digital marketing tools you need to take full control of optimizing the customer experience, resulting in more sales conversions, and greater customer satisfaction.
About Backbase

Backbase is a fast growing fintech software provider that empowers financial institutions to accelerate their digital transformation and effectively compete in a digital-first world.

We are proud to be the creators of the Backbase Omni-Channel Banking Platform, a state-of-the-art digital banking software solution that unifies data and functionality from traditional core systems and new fintech players into a seamless digital customer experience. We give financials the speed and flexibility to create and manage seamless customer experiences across any device, and deliver measurable business results.

We believe that superior digital experiences are essential to stay relevant, and our software enables financials to rapidly grow their digital business. More than 80 large financials around the world have standardized on the Backbase platform to streamline their digital self-service and online sales operations across all digital touchpoints. Our customer base includes ABN AMRO, Barclays, CheBanca!, Credit Suisse, Fidelity, Hapoalim, HDFC, Hiscox, ING, KeyBank, Legal & General, Al Rajhi Bank, NBAD, OTP, PZU, PostFinance, Societe Generale de Banque au Liban and Westpac.

Industry analysts Gartner, Forrester and Ovum recognize Backbase as an industry leader in terms of omni-channel banking platform capabilities, and award the company high marks for its deep focus on customer experience management and unparalleled speed of implementation. Forrester named us a leader in the Forrester Wave for Omni-Channel Banking.

Backbase was founded in 2003, is privately funded, with headquarters in Amsterdam (HQ Global) and Atlanta (HQ Americas) and regional operations in London and Singapore.

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