

Unlocking opportunities in the API economy

How corporates, financial institutions and
fintechs may prosper on the journey from
PSD2 to Open Banking



The API economy:

we are only just getting started

Few technologies have garnered as much attention over the past few years as Application Programming Interfaces (APIs), which promise to transform customer experience and business processes in equal measure. In a world where success depends on connecting swiftly and effectively online with customers, other businesses, distant geographies, or just a different part of your own organisation, APIs have come to be seen as the ultimate silver bullet. They offer fast, easy access, low-overhead and high-octane connection. Not to stop there, APIs – with the appropriate security standards around data transfers in place – have the ability to connect to and extract relevant value from all-important data and deliver it instantly to wherever it is needed most

... APIs have come to be seen as the ultimate silver bullet



We can now say that we live in an “API economy” and, yet, we are only just getting started.

While API technology itself is not new, market disruption, client evolution and regulatory change mean that the banking world is also busy talking about and preparing for an API and Open Banking revolution. In Europe, in addition to the general drivers prompting API development among businesses – extending business reach, improving time to market, developing new partnerships, nurturing new business models and fostering agility and innovation – APIs have become particularly relevant to banks by reason of a revolutionary EU directive, PSD2. This will, for the first time, mandate them to provide access at scale to bank accounts in Europe to third party payment service providers (TPPs).

We have summarised elsewhere¹ the impact of PSD2 as a whole. While it came into force on 13 January 2018, the regulation’s most transformational provisions have yet to come into full effect. From September 2019, they will oblige banks to give TPPs access to their customer accounts, with customers’ explicit consent, through a new interface. There seems to be industry consensus that APIs will provide the most secure and effective way to provide this access.

¹ http://www.cib.db.com/insights-and-initiatives/flow/Payment_Services_Directive_2.htm
http://www.cib.db.com/insights-and-initiatives/white-papers/are_you_PSD2_Ready_a_guide_to_the_latest_information_and_sources_of_support.htm
http://www.cib.db.com/docs_new/PSD2_Open_Banking_Ecosystems_Innopay_DB_Article_June2017.pdf

Many corporates are only just beginning to wake up to the opportunities that access to accounts will open up to them, both in a business-to-business (B2B) and a business-to-business-to-consumer (B2B2C) context. Indeed, not only are TPP services likely to streamline and reduce the cost of their payments, while at the same time improving risk controls, but corporates will also be offered many other new services – either by their banks or by TPPs – that may improve their operations and make them more agile, enabling them in turn to offer new and more convenient services to their own customers. Of course, there are significant rewards on offer for the banks and TPPs that best provide this enhanced customer payments service, using compliance with PSD2 as a stepping stone towards Open Banking.

That said, EU lawmakers have set the industry a significant challenge by requiring it to make access to accounts work in practice. In so doing, they have created a need for industry collaboration, with some standardisation initiatives emerging in Europe in response. If all or most banks do not have standardised API connectivity in place in time for September 2019, corporates, their customers, as well as banks, other payment service providers and fintechs all stand to lose out on the opportunities in the API economy.

In this white paper, Deutsche Bank and Innopay join forces once more to share their view of existing industry collaboration on PSD2 so far, challenges to address, as well as their vision on achieving a harmonised landscape as a precondition to unlocking business opportunities in the API economy. This paper addresses a dynamic and evolving landscape and hopes to help market players understand the emerging opportunities for different market actors, the current state of play in PSD2 standardisation initiatives, and API standardisation in particular.

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1. The benefits and opportunities of “access to accounts” under PSD2 for different market actors

1.1 Opportunities for corporates

For corporate customers, PSD2 – and specifically the opening up of their data to TPPs through access to accounts – will mean more choice as to how they make payments, creating clear opportunities for cost reductions, better information flows and more user-friendly experiences. But this is only stage one. Ultimately, it will be the corporates that benefit the most from the wider innovation ecosystem emerging as a consequence of access to accounts. And, unlike during the lead-up to the introduction of SEPA for example, corporates do not have to make any strong mandatory changes in order to enjoy these benefits.

Corporates, in particular those involved in e-commerce or the internet of things, may consider introducing a payment initiation service enabled by PSD2 offering push payments into their business model. This could reduce the cost of payment instruments such as cards or e-money, reduce default risk for direct debits, and where instant payments are being offered online via SEPA Instant Credit Transfer (SCT Inst), probably also speed up the finality of payment settlement times. Because it is mandatory for TPP payment initiation services to use strong (two factor) customer authentication, these payments are also expected to bring lower levels of fraud and unauthorised payments. The flowchart in Figure 1 shows the steps that go to make up such a payment.

How a push payment works for a retail customer

A retail customer (the Payment Service User/PSU) selects a push payment as method of payment, for example on the website of an online merchant, and accepts his prepopulated account details there. Upon receiving the customer's IBAN number, Deutsche Bank, in its capacity as a TPP, then sends a payment initiation request, including the customer's account details, to the customer's bank (the Account Servicing Payment Service Provider/ASPSP). The ASPSP receives this payment initiation request and asks the retail customer for secure customer authentication. This may be provided in one of three different ways (as outlined later in this paper). Once the customer has duly authorised the payment, the ASPSP validates the authentication and initiates the payment to credit the merchant's bank account. Thereafter, the ASPSP sends a status update to Deutsche Bank confirming the payment initiation, which is then forwarded by Deutsche Bank as an update to the merchant. If it is an instant payment, Deutsche Bank even provides a “payment received” message to the merchant. Based on Deutsche Bank's update, the merchant confirms to the customer that the payment has taken place and releases the goods or order to the customer.

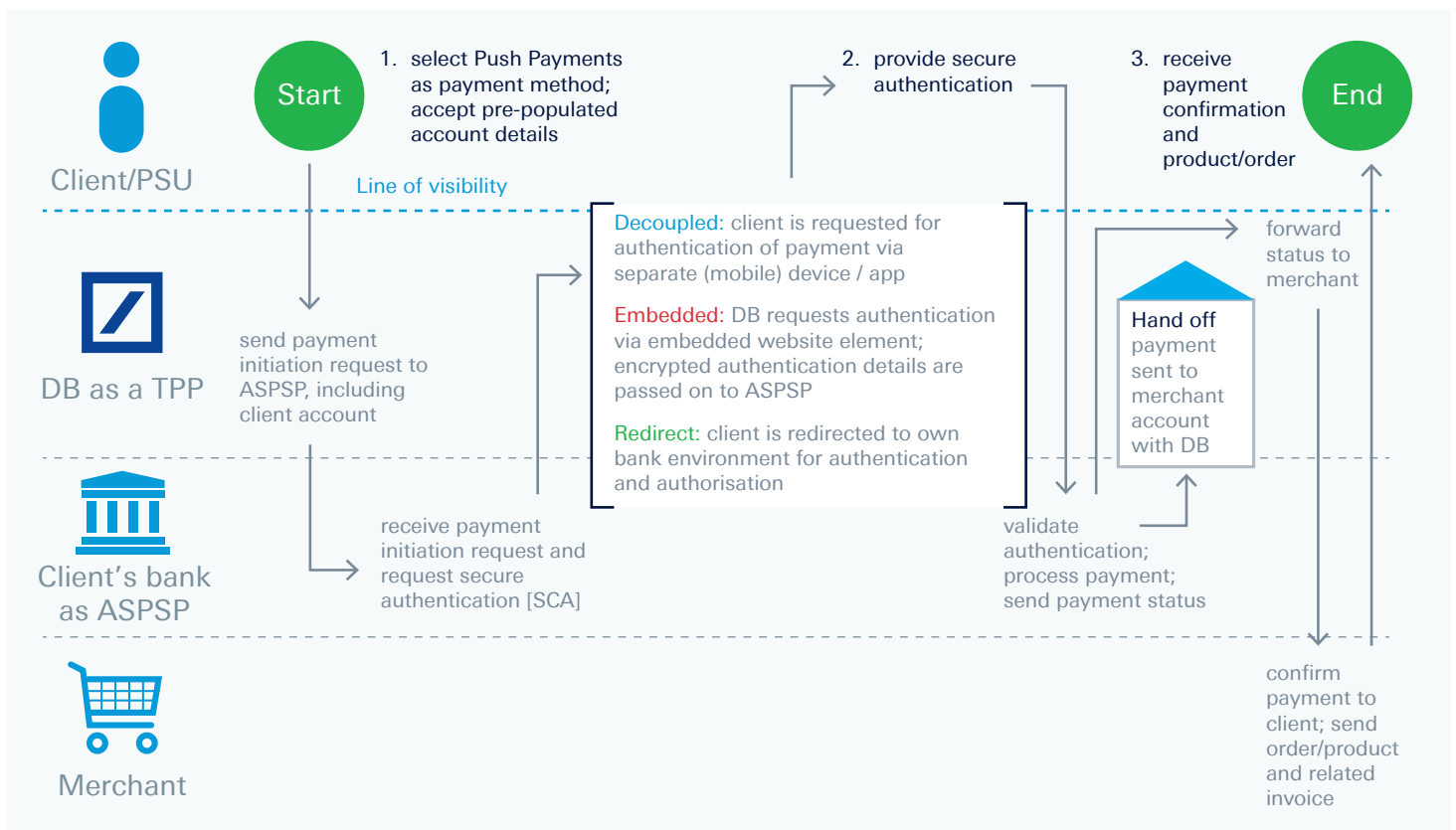


Figure 1: Example of a push payment facilitated by a TPP using an API

By opting to receive TPP account information services, corporates may also be able to work with better and more actionable information; for example, real-time balances on their various accounts with different banks. This opens up the possibility of more proactive management of liquidity, possibly using a convenient payment initiation service to move funds flexibly to fund major outgoings or earn higher interest.

The newly introduced Account Information Service provides the option to gain online access to payment service users' account information, with their consent, providing a host of new service features. Such services could be utilised, for example, to conduct online credit assessments of retail customers at the point of sale, or benchmarking services and advice for recurring payments.

Finally, these new services may be used to provide corporates' customers – both consumers and businesses – a new, more accessible and potentially convenient way to pay, and useful and accessible information on their payments and account balances.

Deutsche Bank's push payments pilot solution, to go live with the International Air Transport Association (IATA) (see Box below), shows the extent to which corporates can adapt their payment models and immediately start benefitting from new TPP services unlocked by the API opportunities introduced by PSD2.

Push payments in action: Deutsche Bank and IATA

Deutsche Bank's payments pilot with IATA² – the trade association for the world's airlines – will implement a new and much improved solution for internet-based ticket sales, and is a perfect example of the opportunities that the new API-enabled landscape brings. Via this solution, enabled by PSD2, Deutsche Bank will collect customer payments for tickets directly from individual customer accounts, removing the need for them to make credit and debit transactions to the airlines.

Using instant payments supported by SCT Inst, these direct payments can be processed and received in near-real time and airlines can receive funds faster, generating significant working capital and liquidity benefits. Crucially, by removing costly interchange and credit card fees and enhancing fraud protection (via two-factor authentication), they can also significantly reduce their costs. For IATA's members, this cost-reduction could amount to billions of dollars. The pilot is initially due to be rolled out in Germany in Q4 2018/Q1 2019, and thereafter goes Europe-wide in Q2 2019.

Such solutions may be replicated in a variety of contexts: in a business-to-consumer (B2C) context, for example for e-commerce providers who pay high interchange fees yet have slow collections; for corporates with high volumes of B2C sales; corporates with complex refund and reconciliation processes for B2C sales; and business-to-business (B2B) corporates with the potential for going B2C in future. Hence, the new payment services offered through APIs can benefit banks' and TPPs' corporate clients in a variety of contexts, and across many industry sectors.

In that respect, push payments have distinct advantages over existing collection instruments (see Figure 2). When assessing the relevance of this payment method, corporates may also consider that the surcharges to specific payment methods are no longer permitted under PSD2.

However, initial corporate interest in exposing their accounts to TPPs is rather low, particularly with large corporates and multinationals that operate payment or collection factories. There are several reasons for this including:

- distinct vendor management policies, which limit the ability to use TPP services on an ad-hoc basis,
- a disconnect between corporate ownership of accounts and dedicated user rights assigned to employees in treasury or treasury operations, and
- the practice for large corporates to access accounts primarily via host-to-host connections rather than online, making it unlikely that many accounts of a given corporate are online and available via PSD2 interfaces.

2 https://www.db.com/newsroom_news/2018/deutsche-bank-pilots-game-changing-payments-solution-with-iata-en-11574.htm

Nonetheless, APIs do become particularly relevant in the context of instant payments under SCT Inst (both for initiation as well as notification on instant credits) as well as push notifications for real time payment status changes in the PSD2 context. Whether APIs are an appropriate technology for bulk payments remains to be seen over time.

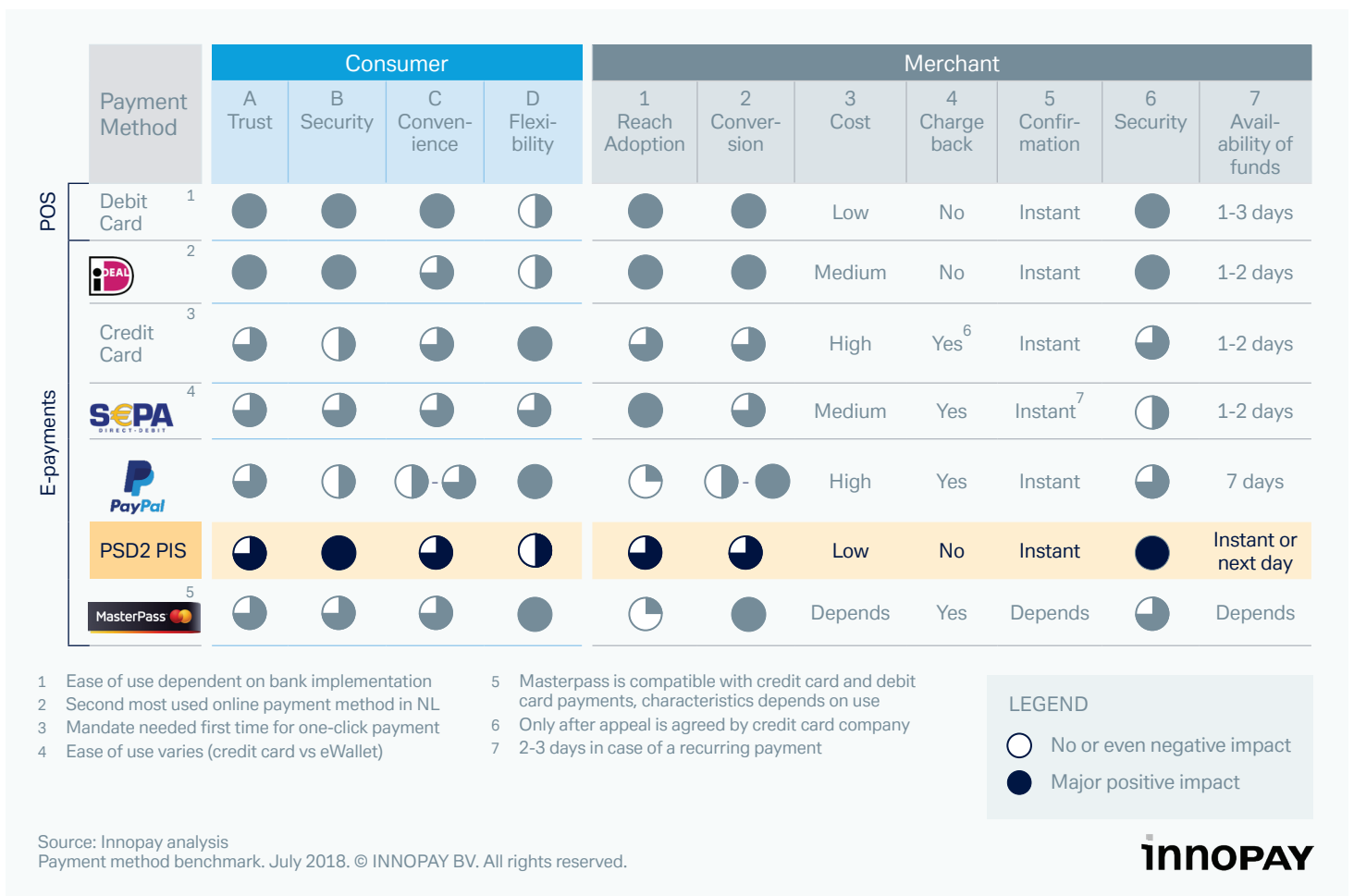


Figure 2: Comparison of push payments with other payment methods

In summary, access to accounts through PSD2 promises lower costs and greater operational efficiencies for corporates. Apart from the obvious improvements to liquidity and working capital, this may give them an agility advantage over their competitors in bringing their own products and services to market. Where they in turn decide to offer TPP services to their customers, they may enjoy further potential benefits by accessing more customer data.

Yet all of this is only the first stage in a broader development towards Open Banking, currently being encouraged by regulators and prepared for by forward-looking market participants.

1.2 Opportunities for financial institutions

Financial institutions face the task of developing the infrastructure for access to accounts by building, testing and implementing the new TPP interfaces. A major change effort is therefore currently required of all retail and corporate banking departments in order to gear up for compliance with the new regulatory requirements of PSD2, impacting their technical, operational and commercial models at various points in their value chains.

However, the time and resources invested could pay off as banks take advantage of the opportunities offered by the new innovation ecosystem triggered by access to accounts – and by the introduction and standardisation of APIs – to develop new business models and enter into cooperation with other innovative providers of payment services. They may collaborate with, among others, fintechs, merchants, market-places and other technology providers.

Initially, a key challenge for banks was that the regulatory requirements relating to the new interface were far from clear. However, the long-awaited Regulatory Technical Standards (RTS) for Strong Customer Authentication (SCA) and Common and Secure Communication (CSC)³, which set out its legal framework and aim to clarify requirements, were finally published on 27 November 2017. The industry is currently addressing these requirements, and the issues they raise, before they come into force on 14 September 2019.

While APIs will likely provide the most secure and effective solution for access to accounts, both PSD2 and the RTS leave open the functional and technical details of the APIs that TPPs should use to connect with banks. Consequently, standardising and harmonising access to accounts, as part of PSD2, is now the foremost challenge facing the European payments market. While much industry collaboration towards this goal is already underway, further work is needed.

Pending the availability of standardised APIs, which will commoditise the service and provide open and equal access for all licensed TPPs, there may be an initial period during which TPPs may either use an API-based solution to connect to a bank, or “screen-scraping”, also referred to as “direct access”. This involves customers authorising TPPs to use their own bank security credentials to access their accounts on their behalf. There are possible concerns about this method of access, on grounds of data privacy and security, and most banks would on the whole prefer additional effort being poured into getting a standardised and fully-tested API route up and running as soon as possible.

1.3 Opportunities for fintech companies and payment service providers

PSD2’s opening up of the payment services market is likely to have most impact on the business models of fintechs, as they are potential future licensed TPPs that will provide either account information or payment initiation services to customers. To enable them to do this, PSD2 obliges banks to give them access to accounts on a non-discriminatory basis, and to provide payment account services, and access to clearing systems. TPPs may be able to read additional data from users’ accounts and enrich their service offerings in response.

³ http://ec.europa.eu/finance/docs/level-2-measures/psd2-rt-2017-7782_en.pdf

However, the situation differs considerably for incumbent fintechs compared to new start-ups. Incumbent fintechs may leverage their existing connectivity and their status as supervised businesses to gain them further trust in the market – where successful, this may translate directly into growth opportunities. On the other hand, they will have to manage their transition into a very different kind of market, which may initially be fragmented and bring considerable technical challenges. In addition, they face increased competition from other fintechs, e-merchants, payment service providers, as well as from banks.

For new fintechs, the key to the success of their offerings will be time to market, as they are competing with established fintechs, banks and payment service providers. As such, they stand to gain significantly from the availability of standardised APIs through which to connect to banks.

For payment service providers, the advent of push payments could either spell opportunity or threat. For some, push payments could be complimentary to the bulk of their service offering and add value, while for others which derive much of their business from card schemes or acquirers, it could be considered a substantial threat, mainly in e-commerce.

There are a host of potential benefits associated with push payments. They can shorten payment value chains, enabling providers to safeguard already thin margins on the processing of payment transactions. Additionally, push payments can provide for a viable alternative to credit cards, e-money and direct debit payments, resulting in cost reductions, as well as balance sheet advantages for customers (that are able to dispense with the credit lines needed to support them). Replacing direct debits with push payments offers notable opportunities for those payment service providers – generally the smaller ones with lower profitability – that may struggle to obtain the large credit lines required to offer direct debits.

Overall, it is likely that push payments will be offered as an additional funding or payment method. Adoption, therefore, will rely on incentivising payment service users to switch, either through reduced fees or bonus schemes. Payment service providers should also seek to offer push payments in all PSD2 countries in which they operate; not only does this help scalability, it provides a consistent experience for merchants that may operate in many markets. It is also possible, of course, that the advent of instant payments in Europe, bringing the immediate availability of funds, could at a stroke make the push payment solution more attractive than both credit card payments and direct debits.

Those fintechs that do become TPPs may benefit from reading and aggregating additional data from customers' accounts and tailoring further offerings accordingly. That said, other TPPs will of course also be exploiting this opportunity, resulting in considerable competitive pressure to differentiate. Finally, PSD2 also has the potential to influence their position adversely by allowing merchants to trigger payments directly themselves, as well as by allowing potentially competing TPPs into the market with innovative business models, offering new services to customers.

2. The current state of play: working to implement PSD2 and towards Open Banking

All of the developments outlined in the previous section depend on (a minimum level of) harmonisation and agreement of common standards to allow incumbent and new players to compete and collaborate on a level playing field, bringing their customers the very best in innovative and convenient products and services. A half-hearted, hesitant and fragmented introduction of access to accounts will jeopardise these opportunities for all

Therefore, both traditional and new market players should be taking part in the standardisation initiatives underway as well as exploring potential collaborations, be it co-developing API standards or working to provide other essential services such as API testing. There is ample scope for organisations of all types to realise synergies at the same time as positioning themselves favourably in the new innovation ecosystem that wide-spread use of APIs will usher in.

We shall now set out the current state of play in PSD2 standardisation initiatives, and API standardisation in particular, in the following sections, covering:

- Market scenarios: addressing why it is crucially important how we implement access to accounts. A brief summary of potential market scenarios resulting from PSD2 and the direction in which the market is heading;
- The challenge for banks: a complex environment of PSD2 standardisation, with EU law makers closely involved. An overview and categorisation of the complex structure of different levels of European standardisation initiatives, including the latest insights on market-driven API standardisation initiatives and other standardisation initiatives focused on governance and operational matters resulting from PSD2;
- Unlocking opportunities of scale for customers, banks and TPPs by aligning and converging API standards for PSD2: An outline of how European law makers are seeking to harmonise market-driven PSD2 API standardisation initiatives to realise the benefits of a more standardised and harmonised approach to TPP access to accounts;
- Conclusion: Outlook for API standardisation and what is needed to realise PSD2's potential to kickstart the API revolution in payments and banking. A vision of PSD2, and API standardisation in particular, providing the spark to set off the effective realisation of both PSD2 compliance and Open Banking ecosystems – with industry collaboration on interfaces and other operational and governance related matters playing a pivotal role.

2.1 Why it is crucial to get the implementation of “access to accounts” right

Clearly, access to payment accounts for authorised TPPs will happen under PSD2; the real question is what shape or form it will take. The various market scenarios that could emerge as a result of these provisions of PSD2 are depicted in Figure 3.

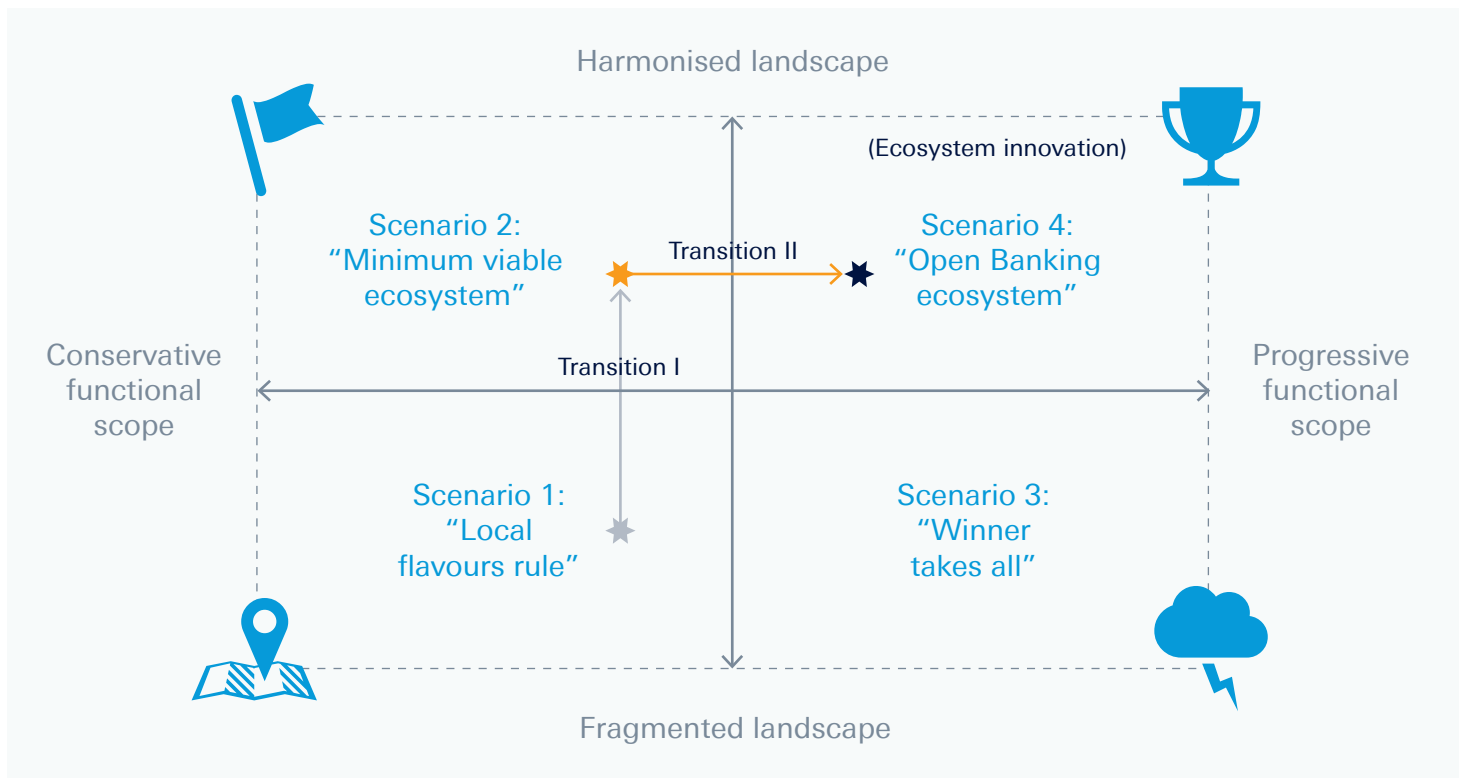


Figure 3: Market scenarios for TPP access to account and Open Banking

The horizontal axis refers to the level of openness by banks across Europe, which can be conservative (focus on PSD2 and RTS compliance) or progressive (opening up account access services beyond what is mandatory under PSD2, contingent on individual business cases). The vertical axis indicates the level of harmonisation of the communication interfaces and operational connectivity measures provided by banks. In a fragmented landscape, each bank with a compliance obligation under PSD2 defines its own interface and connectivity requirements; while in a harmonised landscape, banking communities mobilise and collaborate to facilitate cost-effective pan-European reach, connectivity and interoperability.

2.1.1 Where we are now, and where we are heading

At present, the European payments and banking market most closely resembles Scenario 1. The industry's major task, therefore, is to progress – by collaboration – to Scenario 2, which represents the minimum level of harmonisation and standardisation for industry players to operate cost-effectively in the new PSD2-compliant payments landscape, ensuring they, customers and TPPs may start enjoying the benefits offered by access to accounts through APIs.

Looking ahead beyond mere PSD2 compliance, Scenario 2 has the potential to evolve into Scenario 4, a fully developed Open Banking ecosystem, in which market players make extensive use of the underlying innovation potential. Banks will be able to bundle services around client information assets – beyond just those relating to payment accounts – creating incremental value for clients. This era of Open Banking is already unfolding, driven by regulators in some countries and regions, and emerging by market appetite in others (see Figure 4).

This will drive new financial products and services on the one hand, and enable new business models, partnerships, and revenue models to emerge on the other. To achieve this, further collaboration will be required of the industry. Alternatively, the regulator may in due course decide to require the industry to take this next step.

2.1.2 Hurdles in the way of achieving viable conditions for access to accounts

The first objective of all market players should be to move to Scenario 2, where access to accounts is offered via APIs at a reasonable level of standardisation. This would represent a great leap forward for the payments market, and there will be many hurdles that need to be overcome – regulatory, security and technical – on the way to realising it.

As a starting point, current API models will need to be refined or adapted to accommodate particular market player interests, or specific use cases. It is also not yet clear whether certain types of payment and payment-related transactions can be offered over APIs. These include future-dated payments or standing orders where the settlement amount at maturity might be less than the nominal amount.

Terms of credit for API-mediated payments will also need to be considered, alongside benefits and protections for payments customers to incentivise them to choose these over credit or debit card payments. The circumstances and terms under which (commercially valuable) information about customers' available credit lines may be disclosed is another area for discussion. The PayLater Initiative being launched by the Berlin Group, SWIFT and some banks, allowing push payment customers credit to make their payments, shows this is an area in which work is currently being carried out.⁴

In view of these current developments, corporates, particularly e-merchants, should be co-operating closely with banks and fintechs – if needed through trade associations, user groups or conferences – to communicate their use cases, related requirements and desired user experience.

⁴ <https://www.w3.org/blog/wpgwg/>

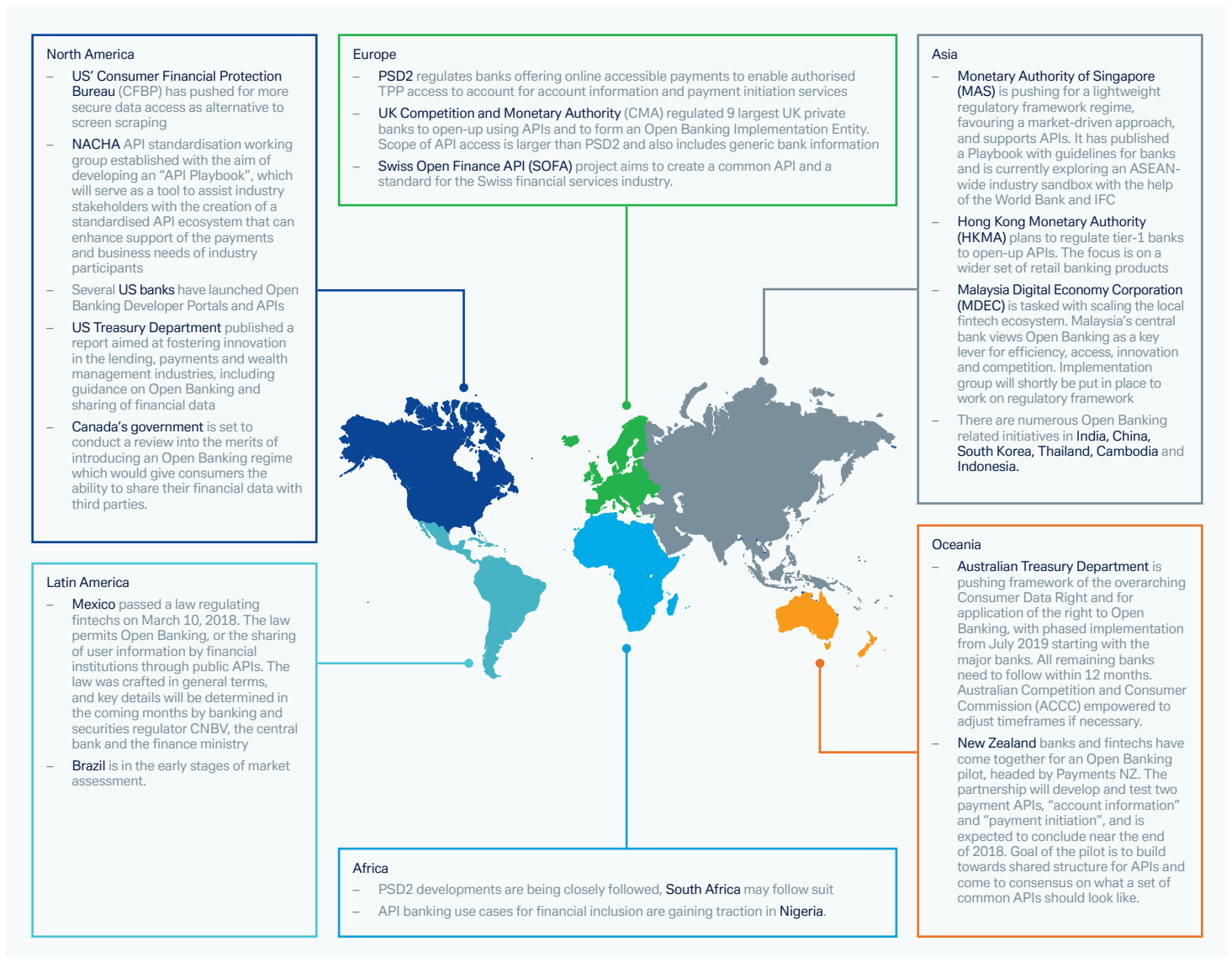


Figure 4: Important global Open Banking developments

Fintechs should also engage closely with the various current API standardisation initiatives, both to voice their own requirements and to build their technological know-how and customer experience into the foundations of API development.

Regulators and governments can contribute by driving open standards, and – in order to minimise the friction of two-factor authentication that could potentially jeopardise push payment uptake – by allowing a risk-based approach to customer authentication. Two-factor authentication must be applied equally to push payments and credit card payments alike, and exemptions established in cases where the merchant is applying a risk-based approach and taking related commercial risks. Governments and regulators should also encourage central and local government departments themselves to use API services, and allow local API services to be accessed globally.

Finally, banks should be at the heart of API standardisation initiatives (see Box opposite); building their API strategies on multiple levels and collaborating with other organisations to create API-enabled services for corporates, and also for retail customers, as well as exploring the many possible uses of APIs within their own organisations. Ideally, in an open payments market, there would be a single message- and communication interface-standard for innovative and trusted transaction services enabled by TPP access to accounts.

The steps banks take should go beyond mere regulatory compliance, as they are the first steps into an entirely new world of financial services. While good progress has already been made in terms of cooperation and alignment, further collaboration is still required in order to reach Scenario 2. The alternative would be undesirable for all, and the real possibility of alternatives Scenario 1 and Scenario 3 underscores how imperative it is for the industry to achieve, at the very least, Scenario 2.

To achieve said scenario, a relatively complex landscape of standardisation initiatives, with different origins and aims, has sprung up in Europe.

Current landscape of standardisation initiatives

Most PSD2 API standardisation initiatives were initially local in nature. This was largely driven by the tight deadlines for local banking communities to comply with PSD2 and the RTS. The Berlin Group's NextGenPSD2 initiative is the only API standard that has been cross-border from its very inception. Indeed, the Berlin Group and STET are now in advanced convergence discussions and have agreed to full alignment on any future developments. This means that harmonisation of the API landscape for PSD2 – that seemed until recently a far-off goal – is now at last clearly in view.

It is interesting to note that the various PSD2 standardisation initiatives in Europe, mostly local in origin and focus, are nevertheless having a wider geographical influence on the global move towards Open Banking, setting clear precedents for international standardisation organisations to follow, in other regions across the world that are closely following the progress made.

Standardisation organisations such as BIAN, NACHA, IFX, ISO and W3C⁵ are organising themselves to collaborate on Open Banking APIs that go beyond the mere functionality foreseen for PSD2 services.

Figure 5 below shows the complex landscape of local and cross-border standardisation initiatives that have sprung up, by the focus of their work.

| | Focus on creating specifications for PSD2 APIs | Focus on API specifications beyond PSD2 | Focus on creating specifications for operational access to accounts matters | Focus on knowledge sharing and legal interpretation/clarification |
|------------------------------------|--|--|---|---|
| Local (national) initiative | | Existing API initiatives could move into this space to extend API specifications | Scattered landscape with many commercial offerings, no common approach identified yet | Various national banking and payment associations |
| Cross border (European) initiative | | | | |

Figure 5: Categorisation of standardisation initiatives related to PSD2 and beyond

⁵ <https://bian.org/>
<https://www.nacha.org/>
<http://www.ifxforum.org/>
<https://www.iso.org/>
<https://www.w3.org/standards/>

2.2 The challenge for banks: a complex environment of PSD2 standardisation, with EU law makers closely involved

As said, PSD2 standardisation is a complex environment, with seven interconnected stages (see Figure 6). To help signpost our readers, in the following we provide a short summary of the relevant developments, origins and aims of each of these stages of PSD2 standardisation.

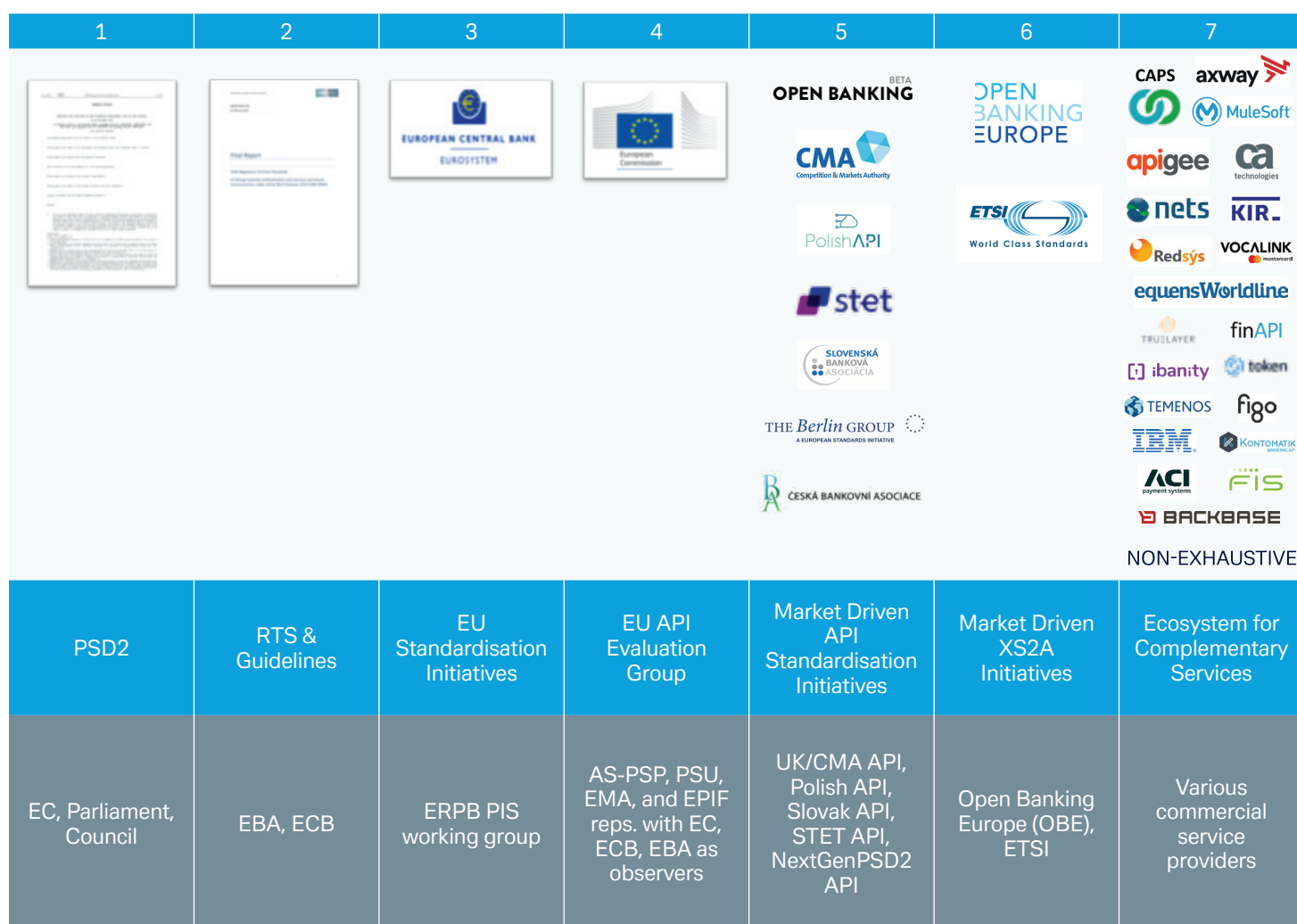


Figure 6: Seven stages of PSD2 standardisation

Stage 1: The European Commission's vision rolls out slowly across member states

EU member states' transposition of PSD2 into national law is progressing, albeit at an unequal pace. While a number of member states – including Austria, Belgium, the Czech Republic, France, Germany, Italy and the United Kingdom – have all transposed PSD2 into their national law, others – including Poland, Portugal, Spain and the Netherlands – remain in the process of doing so.

The majority of members will have completed transposition by the end of 2018, although some will only be ready to do so in 2019. In the meantime, the market is sensibly proceeding with preparations for a future in which all member states will have transposed and implemented PSD2.

Stage 2: The European Banking Authority fleshes out the legislators' intentions

The EBA was mandated to issue six Guidelines under PSD2 addressed to market actors, to local competent authorities of member states or to the EBA directly, and to develop and submit four sets of RTS and one set of Implementing Technical Standards for adoption by the European Commission⁶. All have now been finalised, although application by the competent authorities in the member states has not been completed yet.

The most impactful of all is the RTS on SCA and CSC⁷, which was adopted by the EU Commission on 27 November 2017 and published in the official Journal of the EU on 13 March 2018. The RTS will apply as of 14 September 2019, allowing banks and TPPs an 18-month implementation period.

The version of the RTS adopted by the EU Commission contained significant changes to the final version proposed by the EBA which was overruled in this process. In particular, they provide that banks that implement dedicated interfaces will have to comply with a number of additional requirements.

The EBA released a Consultation Paper on Draft Guidelines on 13 June 2018 (subject to consultation) as well as an Opinion Paper on the implementation of the RTS on SCA and CSC⁸. The former clarifies a number of issues relating to the criteria for banks being granted an exemption from the requirement to have a fall-back option for dedicated interfaces. The EBA suggested the following conditions must be met to benefit from an exemption:

1. the dedicated interface should comply with all the obligations for dedicated interfaces as set out in the RTS;
2. it should have been designed and tested in accordance with the RTS to the satisfaction of TPPs;
3. it should have been widely used for at least three months by TPPs to offer account information services and payment initiation services, and to provide confirmation on the availability of funds for card-based payments; and
4. any problem related to the dedicated interface should have been resolved without undue delay.

⁶ http://www.cib.db.com/insights-and-initiatives/flow/Payment_Services_Directive_2.htm
http://www.cib.db.com/insights-and-initiatives/white-papers/are_you_PSD2_Ready_a_guide_to_the_latest_information_and_sources_of_support.htm
http://cib.db.com/docs_new/PSD2_Open_Banking_Ecosystems_Innopay_DB_Article_June2017.pdf

⁷ http://ec.europa.eu/finance/docs/level-2-measures/psd2-rts-2017-7782_en.pdf

⁸ <http://www.eba.europa.eu/documents/10180/2250578/CP+on+draft+Guidelines+on+the+conditions+to+be+met+to+benefit+from+an+exemption+from+contingency+measures+under+Article+33%286%29%20of+Regulation+%28EU%29%2018389+%28RTS+on+SCA+%26+CSC%29%20%28EBA-CP-2018-09%29.pdf>
<https://www.eba.europa.eu/documents/10180/2137845/Opinion+on+the+implementation+of+the+RTS+on+SCA+and+CSC+%28EBA-2018-Op-04%29.pdf>

A suitably designed standard API should ensure that all four of these essential conditions are met, allowing an institution that has adopted it to gain an exemption from having to offer a fall-back option in addition to its dedicated interface (involving significant additional cost and change work).

The EBA's Opinion Paper, on the other hand, defines the scope that APIs delivering access to accounts will have including standing orders, future-dated payments and cancellations, and thereby addresses some of the concerns previously voiced. Following this Opinion, a more flexible approach may also be taken on the redirect model of API interaction. The Opinion says this should not in itself be regarded as an obstacle to TPPs providing services to customers, and will only be considered one where a bank implements it in a manner which is restrictive or obstructive to TPPs. While the embedded model of API interaction certainly provides a more streamlined and convenient customer experience, the redirect model may be said to afford customers the higher level of trust as they need only provide their credentials when being present in the digital environment of their own bank.

API interaction models: embedded, redirect, and decoupled

There are three interaction models to provide access to accounts for TPPs, reflecting different approaches to how a customer can identify, authenticate, authorise and use a particular service via a TPP. The models are: the embedded model, the model using redirection, and the decoupled model.

The last is more a variation of the embedded and redirect models. Decoupled means that the customer authorisation or authentication happens through a different channel and session. This is necessary where a credential cannot be transmitted (when it is based on biometrics, for example) and for many new payment devices (such as wearables⁹).

The embedded model allows the TPP the same access to the account as the customer (via the sharing of personalised security credentials). While this is straightforward, concerns have been raised by some market participants about the security risks of this approach.

In the redirect model, the TPP opens the session, giving information about the payment instruction, and then hands it over to the customer which authorises the payment as usual with its bank. The bank verifies and accepts the customer's payment authorisation, executes the payment and hands the session back to the initiating TPP.

Views appear to differ between different member states as to whether the redirect model may be used as the sole means of complying with the RTS, or may only be offered as one of the options.

⁹ <https://www.thepayers.com/interviews/api-authentication-during-psd2-towards-an-inclusive-approach/773432-38>

Stage 3: The European Central Bank lays the foundations for an integrated push payment market under PSD2

In November 2016, the Euro Retail Payments Board (set up by the European Central Bank) established a working group with the aim of defining a common set of technical, operational and business requirements for developing an integrated market for payment initiation services (the technical term for that group of new services that will include push payments). The working group completed detailed work on standardisation of PSD2 certificates for TPP identification based on eIDAS, harmonisation of registers and establishment of directory services, and event management and dispute resolution between banks and TPPs.¹⁰

Stage 4: The European Commission invites a broad spectrum of market players to choose criteria and evaluate standards for APIs used for PSD2

While the Euro Retail Payments Board's working group clarified many aspects of PSD2, the European Commission subsequently invited market players to establish a European group with the express purpose of evaluating API specifications, and identifying those features and functionalities that an API must provide to satisfy the needs of all market players.

In response to this, the API Evaluation Group was formed, aimed at API specification convergence at a European level and to help harmonise market practices, as well as acting as a source of guidance to market participants and competent authorities (for more information on its deliverables and time horizon, please refer to its Terms of Reference¹¹). It also intends to publish a list of recommended API functionalities which it believes API initiatives should support to ensure that the dedicated interfaces banks provide adhere to regulatory compliance requirements and that these will be widely used by TPPs.

Stage 5: Some market-driven API standardisation initiatives clarify technical requirements

Neither PSD2 itself, nor the RTS, cover the functional and technical details of the dedicated interface that TPPs will use to connect with banks. As a result, market initiatives have emerged to fill in these gaps. We note that current API standardisation initiatives for PSD2 in Europe quite understandably tend to focus on 'getting the basics right' for PSD2. That is, they focus on creating API specifications for the services required under PSD2 and setting up specifications for operational aspects of access to accounts (e.g. sandbox/testing, directory, event/dispute management). In addition, commercial solution providers are complementing this by offering banks and TPPs the required capabilities for compliance 'as a service'.

¹⁰ See the following two reports:

https://www.ecb.europa.eu/paym/retpaym/shared/pdf/8th-ERPB-meeting/PIS_working_group_report.pdf?483e4d28242cd84322850a01e549d116

https://www.ecb.europa.eu/paym/retpaym/shared/pdf/9th-ERPB-meeting/Additional_Report_ERPB_WG_on_Payment_Initiation_Services.pdf?1cc98208f4cbd4b1e3dfdaf80c30387e

¹¹ https://www.europeanpaymentscouncil.eu/sites/default/files/kb/file/2018-03/API%20EG%20002-18%20v1.2%20Terms%20of%20Reference%20API%20Evaluation%20Group_0.pdf

Noteworthy from the point of view of local collaboration are the CMA Open Banking API (UK), STET API (FR), and the API specifications published by the Slovak, Czech and Polish banking associations respectively. There is also the Swiss Corporate API (albeit that Switzerland is not an EU member state and need not comply with PSD2) that aims to build a central, secure API banking platform accessible to customers, banks and TPPs, saving banks the cost of building their own API infrastructures.¹²

In addition to local collaborations, the Berlin Group – which brings together over 45 major players in the payments industry – has also published its “NextGenPSD2” API standard. This initiative has participating organisations in Austria, Belgium, Bulgaria, Croatia, Denmark, Finland, France, Germany, Ireland, Italy, Latvia, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Sweden and other parts of Scandinavia, Spain, Switzerland and the United Kingdom.¹³ The API standards of the Berlin Group and STET are now closely aligned, to the extent that they are practically converging.

To allow this to progress and roll out further, market players are urged to continue to work together to ensure specifications are ready ahead of the projected RTS implementation date of September 2019. To this end, the Berlin Group will publish its updated standards at the end of July 2018, taking into account the latest opinion published by the EBA of what it believes is required by the RTS for access to accounts.

Stage 6: Other market-driven initiatives work on other aspects of standardisation

For access to account to work at scale, the market also needs a centralised PSD2 directory, as recognised by PRETA’s Open Banking Europe (OBE)¹⁴ initiative, and also by ETSI.

Under PSD2, each local competent authority will publish data using its own formats, terminology and timetable. The PRETA OBE directory will harmonise these into a central, standardised, trusted, machine-readable repository where all TPPs across Europe may list their contact information, enabling banks to notify them of changes and contact them in case of incidents. Similarly, it will also list operational information from banks for TPPs, allowing them to find the correct location of documentation and end points for each bank, bank brand and service. Thirty financial institutions and industry service providers have already joined the directory which is available to participants for testing.

Until recently, it appeared that PRETA would be the only operational central directory service available. However, in June 2018, Mastercard announced it is also developing a pan-EU directory service which will include fraud monitoring, dispute resolution services and a connectivity hub.¹⁵

¹² <https://www.six-interbank-clearing.com/dam/downloads/en/clearit/75/edition.pdf>

¹³ <https://www.berlin-group.org/psd2-access-to-bank-accounts>
https://docs.wixstatic.com/ugd/c2914b_ab53c91a35d84875865a9d8fdd9597b0.pdf

¹⁴ <https://www.openbankingeurope.eu/>

¹⁵ <https://newsroom.mastercard.com/eu/press-releases/mastercard-unveils-solutions-to-underpin-open-banking-transformation/>

Meanwhile, in May 2018¹⁶, ETSI had completed a standard for EU qualified certificates as defined in the eIDAS regulation¹⁷ that meets secure communication requirements under PSD2 and standardises the required data attributes including the payment service provider's authorisation number, its PSD2 role(s) and its local competent authority.

Stage 7: An ecosystem of complementary services is emerging

However, while the interface is essential to enable TPP services to emerge at scale and at relatively low cost, there are many more business opportunities in the technical, functional, operational and governance domains, both for PSD2-compliant services and services enabling Open Banking ecosystems (see Figure 7).

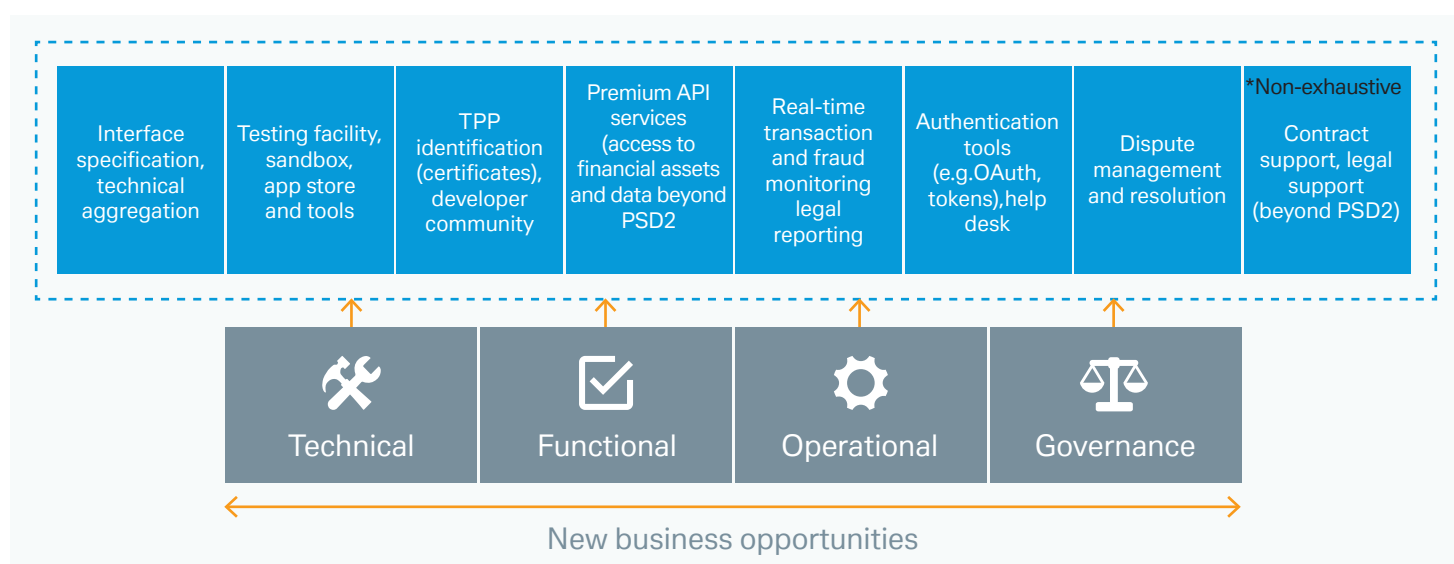


Figure 7: New business opportunities for market players beyond PSD2 compliance

These include services facilitating operational compliance such as registry services (see above), and those providing testing facilities, a support desk, transaction/fraud monitoring, interface specification documentation and change management. We can therefore expect market players to position themselves as service providers for PSD2 compliance, as well as potential enablers of innovation in an Open Banking ecosystem. While these competitive dynamics will drive innovation in the emerging open payments market, both PSD2 access to account services and Open Banking services require interoperability and reach to gain traction at scale¹⁸.

¹⁶ <https://www.etsi.org/news-events/news/1111-2016-07-etsi-publishes-european-standards-to-support-eidas-regulation>

¹⁷ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2014.257.01.0073.01.ENG

¹⁸ http://cib.db.com/docs_new/PSD2_Open_Banking_Ecosystems_Innopay_DB_Article_June2017.pdf

2.3 Unlocking opportunities of scale for customers, banks and TPPs by aligning and converging API standards for PSD2

Defining an interface standard for PSD2 will enable industry actors to socialise associated costs by sharing effort and insights during the development phase. Such a standardised interface is in turn important to enable TPP services for payment initiation and account information to emerge at scale and at relatively low cost. Furthermore, if industry players collaborate on PSD2 standardisation, the need for further regulatory intervention – similar to the SEPA end-date regulation – could be avoided.

The API standards so far put forward by the various initiatives differ most significantly in the data structure they each support (including the exact fields they include), and in the interaction models enabling payment service users to authenticate and authorise TPP access, and/or payment transactions initiated by a TPP.

The Slovak API standard and the Berlin Group's NextGenPSD2 standard support both JSON and XML data structures (albeit only as options). The other initiatives mentioned in this paper support JSON only. In terms of interaction models, STET's and the Berlin Group's NextGenPSD2 standards both support multiple models in addition to the redirect model, i.e. also an embedded model and a decoupled model. The other initiatives only support a redirect model.

As explained earlier, STET and the Berlin Group are in talks about converging their respective API standards, while alignment has also recently commenced with the Polish API. This gives hope to the industry and market that API standardisation for PSD2 is close to complete, ensuring Scenario 2 can be realised, and a minimum supportable ecosystem established for access to accounts to commence and be deployed at scale by banks and TPPs and taken up by customers.

3. Conclusion and outlook on API standardisation

If access to accounts is not implemented properly and rolled out at scale, there is a serious risk of market fragmentation for innovative payment and account information services, which would endanger PSD2's objectives regarding TPP access to accounts and its anticipated innovation potential. This goes well beyond 'basic' PSD2 payment initiation services and account information services, encompassing the enablement of an Open Banking ecosystem in which customers are in control of sharing their financial assets and personal data with their TPPs of choice

There are, however, little or no precedents in the relatively young digital payments industry of how something like "third party access to payment accounts" could and should be made to work in a practical way, neither in regulatory practice, national law nor – most importantly of all – in day-to-day operations.

As we argue throughout this paper, this makes industry collaboration imperative, both to make access to accounts under PSD2 work in practice at scale, and to make sure that the implemented interfaces are interoperable. Such collaboration starts with a common understanding of the technical interface, but should extend far further, to considering the required operational and governance procedures that need to be put in place to ensure the entire new ecosystem can thrive. These deliberations lead us to the recommendations set out in the Box below.

Recommendations to drive further convergence among API standards

- Once a common API standard has been defined, its large-scale adoption is essential to create scale. Therefore we believe it is important that all industry players become actively involved in the working groups on harmonisation and implementation of standards.
- Banks, payment service providers and fintechs should all join a central directory such as PRETA¹⁹ – already active and being tested – or the one recently announced by Mastercard²⁰. Certainly, accessing a central directory will be essential for the success of any API standardisation initiative.
- Getting involved in working groups, and joining a central directory, are both steps smaller market players can suitably take through their local banking associations.
- Wide adoption of agreed API standards will create scale and enable the market to transition from Scenario 1 to Scenario 2 (as we outline earlier in this paper). This makes it interesting to develop scheme rules around standards for proper governance, and crucially creates the conditions required for value-added services to emerge.

¹⁹ <https://www.preta.eu/>

²⁰ <https://newsroom.mastercard.com/eu/press-releases/mastercard-unveils-solutions-to-underpin-open-banking-transformation/>

What more is needed to realise PSD2's potential to kickstart the API revolution in payments and banking

So far, the movement in all the areas outlined in the recommendations has been positive, although further work is still required to ensure further convergence of API standards. However, an API standard enabling compliance with PSD2 is really only the start. Once this has been adopted and is widely used, the industry can then leverage the infrastructure's potential to expand the interface beyond PSD2 compliance into Open Banking, offering a multitude of benefits for both customers and market players alike. For this to truly materialise, banks, TPPs, solution providers, regulators, competent authorities and central banks need to continue to closely collaborate over the coming months.

Ideally, there will be pan-European standardisation throughout an emerging open payments market. This will result in cost-effective, scalable and innovative transaction services, enabled by TPPs having access to accounts, in turn maximising the benefits for end-users (both payees and payers).

An important period lies ahead for the payments industry. Banks and other payment service providers need to carefully consider their individual positioning in an increasingly open payments market from both cost- and revenue-potential perspectives, while also considering potential synergies resulting from a range of possible collaborations on access to accounts including API standardisation, market harmonisation and all the accompanying services. PSD2 is here already – the next frontier is Open Banking, and all those actively collaborating on API standardisation now stand to gain in the fundamentally transformed financial market of the future.

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