



PSD2 & Open Banking

The Future of Payments

A White Paper (abridged) by Brendan Jones

Bryan Cave, a global firm, is uniquely well-positioned to serve fintech companies. We work closely with several fintech industry trade groups and write and speak extensively on topics affecting fintech. Our lawyers regularly partner with clients in developing new financial products and services. And we do our best to make introductions and to connect clients to a variety of resources. PSD2 creates new opportunities not only for our UK and EU clients, but for US clients interested in taking advantage of the favorable regulatory climate in Europe. We look forward to helping our banking, fintech, and financial service clients navigate future marketplace and legal changes.

Polymath Consulting and its senior consultant Brendan Jones along with Bryan Cave, have spent a considerable amount of time understanding the implications, obligations and opportunities the new directives will offer. The following abridged White Paper provides an initial view that we hope you will find useful as you start to plan your strategy. Whilst the new regulations are likely not be full enacted for a couple of years we believe the time is right now to start understanding how organisation can properly maximise the opportunities that will be created for regulated institutions.

Founded in 2005, head office in the UK Polymath Consulting are a provider of niche consulting services to the financial services industry and brands looking at becoming involved in financial services.

Polymath Consulting are particularly well known for their work on E-money & Emerging Payments. They have worked across the complete value chain helping banks with their overall E-Money/Prepaid and Emerging Payments strategy right through to market entry analysis; as well as working with telcos, processors and programme managers on segment analysis, certification and membership applications.

Other areas of support have included outsource partner review, RFP and partner selection right through to proposition development. For brands they have assisted in product proposition development as well as managing RFP processes/reviewing existing contract relationships for both open and closed loop schemes. Geographically their client assignments have covered Russia, South Africa, Middle East, Europe and Asia.

Key to our approach is belief that if we cannot add value we will not accept the work. We strongly believe that in delivering consultancy we need to be adding real value to a project enabling a client to achieve their objectives more quickly and ideally cost effectively than just relying on in-house resources.

PSD2 & Open Banking – The Future of Payments

A White Paper (abridged) by Brendan Jones

**FOR A FULL VERSION OF THE WHITE PAPER AT £750 + VAT,
please contact davidparker@polymathconsulting.com**

Executive Summary

The world of retail banking, emerging payments and prepaid cards has become a very exciting and dynamic environment. We have seen new products and services emerging over the past few years aimed at disrupting the status quo.

For a market that has remained relatively stable over the decades, we are on the verge of witnessing great change. To facilitate, manage and regulate the changes underway the European Parliament has created the Payment Services Directive 2 (PSD2). This can be viewed both as a challenge to existing companies as it imposes a raft of new requirements and obligations but also potentially an opportunity to drive innovation and provide new access to legacy infrastructure.

Europe's PSD2 and the UK Open Banking Standard are going to have a big impact on existing core and legacy systems for all payments actors. Regulated organisations, be it incumbent organisations or new market entrants, will have the ability to access customer account data from account servicing providers (i.e. banks), with the customer's consent, allowing for the development of new innovative products and services.

New processes need to be adopted to ensure that only qualified and approved organisations can access data where customers have given explicit consent. Robust auditing systems and processes are paramount to ensure that customers remain confident that their data is being used and shared in an agreed, appropriate and proportionate manner.

Forward-looking organisations will be rethinking banking customer relationships and revenue models to deliver compelling propositions that attract and retain profitable customers. There are both challenges and opportunities for all participants in the payment value chain.

PSD2 will be transposed into EU Member State law in 2018. Payment system participants will have to comply with the new legislation. The major question is will companies fund this change merely to remain compliant with legislation, or embrace the vision of an open banking API economy, rethinking their banking customer relationships and revenue models.

We are witnessing a digital revolution. The current banking landscape will completely alter over the coming years. Financial institutions will have to adapt their business and operating models. Failure to keep pace with change will result in a negative impact on existing revenues, as innovative new players enter the market.

Credit & Payment Institutions

Challenges

Additional regulation centered around:

- Liability for payments.
- Transparency of Payments & Charges.
- Greater Regulatory Oversight.
- Strong Customer Authentication.
- Access to Accounts.

Opportunities

Development and support of new emerging electronic payment methods, thereby providing greater customer choice.

Payment System Processors (PSPs)

Challenges

Additional regulation centered around:

- Liability for payments.
- Transparency of Payments & Charges.
- Greater Regulatory Oversight.
- Strong Customer Authentication.

Opportunities

Development and support of new emerging electronic payment methods, thereby providing greater customer choice.

Programme Managers

Challenges

PSD2 Access to Accounts for accounts managed by Programme Manager.

Opportunities

Access to cardholder account information from Account Providers, with the customers consent, to deliver new innovative services.

Provision of account aggregation services.

Provision of innovative new services, either directly or through collaboration, that utilise cardholder account information.

Brands

Challenges

New Scheme card based payment methods (i.e. payment initiation services) that consolidate customers cards onto one payment vehicle.

New non- card based payment methods (i.e. payment initiation services).

Opportunities

Access to all cardholder data giving a rich view of cardholder purchasing characteristics and preferences.

Emerging Payments

Challenges

Maybe required, dependent on business model, to be Regulated under PSD2.

Opportunities

Development of new innovative payment methods to compete with existing payment vehicles.

New products and services that utilize cardholder account information.

Collaboration with incumbent financial services providers to deliver value added services, over and above, basic account offering.

The Future of Payments

The world of retail banking, prepaid and emerging/alternative payments has become a very exciting and dynamic environment. From being a market that has seen the status quo maintained for many years, there is now greater competition, more market entrants, exciting new products and services, increased financial inclusion and greater transparency. Crucially there is also a far stronger desire by many, but at least recognition by most, that co-operation and a buy it in/rent it model rather than build everything in-house is the future.

We have seen new products and services emerging over the past few years aimed at disrupting the status quo. Examples include bank lite, new non bank foreign exchange models, blockchain and crypto currencies, brand lead e-wallets e.g. Apple Pay, Android Pay and Samsung....the list goes on.

The past 24 months have also seen nascent FinTech organisations developing products and services that will not only complement incumbent providers but in some cases are also designed to compete and be disruptive. So vibrant is this space that we have seen governments actively encourage FinTech acceleration, FinTech incubators launched around the world and a number of international banks (e.g. Citi Bank, Santander, UBS and Barclays to name but a few) starting their own incubators to foster innovation, gain early insights and aid development.

For a market that has remained relatively stable over the decades, we are on the verge of witnessing great change. However, in order to facilitate this change, current payment regulation needs to be amended to give financial service providers, new and old, the opportunity to access systems and data so that they can participate in the market and offer innovative products and services.

There is a wide variety of products and services on offer in the market today, which provides greater consumer choice, reduces the overall costs of payments processing and fuels economic development. No doubt there will be many more exciting developments as companies continue to innovate.

Two New Types of Organisations

From a payments perspective, we are seeing two new types of organisation come out of the PSD2 regulation being proposed:

1. Payment Initiation Services

Payment Initiation Service Providers (PISPs) initiate internet payments on behalf of a customer via a software bridge between a merchant's website and the customer's online bank. The funds to cover the purchase of goods are paid directly from the customer's bank account to the merchant's in real time. This payment option directly competes with card-based payment methods, and from a bank's perspective it dilutes its reliance on the card schemes; for merchants it provides another means of payment and so offers customer choice. It also allows a consumer to shop online even if they don't have a bank payment card, and provides access to an alternative means of online payment that is safe, convenient and cheap.

2. Account Information Services

Account Information Service Providers (AISPs) provide data aggregation services to customers. AISPs aggregate customers' financial transactions into one place in real time, from multiple accounts held at various financial institutions, and then use that data to provide services. Examples include next generation comparison services (i.e. bank accounts, loans, mortgages etc.), real-time advisory tools providing push notifications, personal financial planning and management tools, advanced loan application processes etc.

Where do traditional companies align to these new types of organisation:

They Were	As PISP	As AISP
Credit & Payment Institutions	Develop direct debit payment services directly connected to customer bank account, thereby delivering cheaper transaction processing charges (i.e. no card based interchange).	<p>Develop data aggregation services.</p> <p>Launch new products & services based on a full understanding of the customer financial profile (i.e. XS2A).</p> <p>Through collaboration with partners, offer new financial products & services.</p> <p>Though the use of APIs automate and streamline credit loan applications etc.</p>
Payment Service Providers (PSP)	Develop direct debit payment services directly connected to customer bank account.	
Programme Managers	Develop new cardholder programmes that sit “top of wallet” by aggregating other customer branded cards.	Through collaboration with partners, offer new non card based financial products & services.
Emerging Payments	Develop direct debit payment services directly connected to customer bank account	Launch new products & services based on a full understanding of the customer financial profile via XS2A.

These services provide greater customer choice, and no doubt as new ideas and innovations develop, there will be even more choice. However, for these products and services to become mainstream and widely adopted by consumers, the service providers require access to the customer’s online bank accounts to access data in real time. These accounts are typically run by authorised Credit Institutions or Payment Institutions^[1], referred to as Account Servicing Payment Service Providers (ASPSP), with which the service providers have no direct relationship.

Overall Aim of PSD2

The aim of PSD2, and the original Payment Services Directive 2007/64/EC (PSD), is to harmonise the European payments landscape from a regulatory perspective, ensuring that all relevant organisations and activities are adequately covered. This marks a shift towards an integrated single market for safe electronic payments that aims to support the growth of the European Union (EU) economy and to ensure that consumers, merchants and companies enjoy choice and transparent secure payment services so they fully benefit from the internal market.

The first PSD, which targeted and regulated a range of traditional payment organisations, soon became out dated by rapid technology development, delivering new products and services in the payments industry. PSD2 extends this scope to include regulation of new market participants such as Third Party Providers (TPPs), FinTech companies and new service providers, the so called PISPs and AISPs.

The European Parliament has recognised, in the world of payments, that technological developments have led to a range of complementary services emerging in recent years, and these need to be covered by the same regulation. Therefore enactment of PSD2 will repeal the original PSD 2007/64/EC.

PSD2's vision is to 'ensure continuity in the market, enabling existing and new service providers, to offer their services under a clear and harmonised regulatory framework'^[2].

One of its principles is to foster an environment, whereby customers wanting to use value added services, can do so safely in the knowledge that their personal security credentials have not been shared with a third party, and that the service provider can access only the information for which the customer has given explicit consent, and only for an agreed period of time.

PSD2 is driving innovation and opening up the payments market to value-added service providers, collectively defined as TPPs. The European Parliament, via PSD2, is encouraging TPPs into the European market, not only in their domestic market but also across other EU member states through the mechanism of Passporting, the exercise by a company registered in the European Economic Area (EEA) of a right to carry on business in another EEA state.

Sharing Customer Data: A Major Change Underway

This is a major and complex change to the world of payments. In order to provide an environment in which participants can share customer data, when explicit consent has been granted, with each other in a secure, automated fashion requires industry standards to be developed and mandated within the EU.

As part of the PSD2, the European Parliament has directed the European Banking Authority (EBA) to develop draft Regulatory Technical Standards (RTS) for common and secure open standards of communication for the purpose of identification, authentication, notification and information, as well as for the implementation of security measures between all payment actors (i.e. Credit Institutions, PSPs, PISPs etc.).

The EBA has been given 12 months to develop the draft RTS and present back to the European Commission (EC), for consideration and ultimately adoption.

In December 2015 the EBA published a Discussion Paper on strong customer authentication and secure communication. Prior to starting the development of these requirements, the EBA issued the Discussion Paper, with a view to obtaining early input into the development process. The EBA will assess the responses received, and use them as input for the development of the draft RTS, which it will publish in summer 2016, for a consultation period of three months.

What does this mean in reality?

The mechanism by which this will be achieved is through Access to Accounts, more commonly referred to as XS2A, which is set out in PSD2. It is anticipated that the EBA's draft RTS will recommend the use of Application Programming Interfaces (APIs) to enable access to payment system users' accounts, thus providing an automated and secure mechanism for authorised payment actors to access customer information, where the customer has given their explicit consent.

APIs have been used for some time. Many companies use them to securely pass data between organisations, and open APIs have been developed for specific industries^[3] such as social media and search engines e.g. Twitter, Facebook and Google. There has been a proliferation of organisations publishing APIs so third parties can access their data and services^[4], to help drive new and innovative services, such as MasterCard with its Open API programme^[5] and Visa Developers^[6].

Does PSD2 Apply to You

Under PSD2 and individual Member States' transposition of the Directive, all payments participants (i.e. Credit Institutions, Payment Institutions, PSPs etc.) will have to comply with XS2A. PSD2 was published in the Open Journal of the European Union in January 2016, Member States then have 2 years to transpose the Directive into National Laws. However, XS2A will not be transposed into National law until October 2018 at the earliest, as the RTS will not be approved by the European Parliament until the end of 2016, and thereafter there is an 18-month period before transposition is required under EU law.

Type of Organisation	Does it Affect You
Card Manufacturer	No.
Programme Manager	Yes.
Financial Processor	No if only engaged as a service provider.
Credit Institution	Yes.
EMI Licence Holder	Yes.
Payment Institution	Yes.
E Wallet Brand	Yes.
Crypto Currency	Yes if being used by consumers for the purchase of products and services via digital channels.

The Opportunity

It is how an organisation embraces the concept of XS2A that will define its business strategy moving forward. There will be costs associated with implementing the regulatory standards API, ranging from the technical implementation, setting of new policies and procedures, and supporting the day-to-day management and operation of the data flows, through to the ongoing security requirements necessary to ensure that only authorised parties access the data with the appropriate approvals.

Organisations need to decide whether they simply fund the cost of regulatory change, or they invest in future business strategy, delivering data-rich services that will drive acquisition and retention and gain a strategic business advantage.

UK Strategy on Open Banking

In addition to the regulatory requirements for XS2A as outlined in PSD2, the UK government made clear its intention for the UK to be the global centre for financial technology and to lead the world in open source data in banking in its 2014 Autumn Statement^[9].

Unlike PSD2, the report also draws a distinction between customer data and open data (i.e. non-personal data such as interest, savings and exchange rates etc.), and the use of open data to develop a richer environment for new products and services. PSD2 is also prescriptive in which accounts can be accessed via XS2A, however, the report looks at accessing all relevant consumer data, no matter which type of account(s) they made hold.

The payments industry is now facing not only legislative change at a European level (i.e. PSD2), but also domestically, with UK Open Banking Standard going significantly further than its European counterpart.

The impact on core and legacy systems

Europe's PSD2 XS2A and the UK Open Banking Standard are going to have a big impact on existing core and legacy systems for all payments actors.

Organisations are going have to identify the appropriate channel(s) for creating the third party interfaces to allow for data access via APIs. They will have to build, implement and test the APIs to ensure that they are fit for purpose and meet technical, security and regulatory requirements.

Organisations need to decide whether they simply fund the cost of regulatory change, or they invest in future business strategy. Banks that want to become TPPs in their own right will also have to define their data requirements for the collection of third party data.

Forward-looking organisations will be rethinking banking customer relationships and revenue models.

Conditions for a perfect storm?

On the one hand we have banks having to provide access to accounts through PSD2 Regulation. Some Banks will become PISPs and/or AISPs to protect their existing business and revenues and attract new customers. On the other we have the challengers, a mix of established organisations looking to grow their business through extension and diversification of their core competencies, through to FinTech's and start-ups looking to carve a niche into the market with focused products and services.

The current status quo will be challenged. Established technology giants (e.g. Google, Apple, Samsung etc.), with their financial muscle, large customer base across the majority of European countries, significant brand reputation, and importantly a strong understanding of what drives consumers, could potentially look to position themselves as digital financial services providers.

Nimble, agile FinTech's that don't have the legacy IT environments developed over many years, are in a prime position to deliver and launch new services.

These organisations will look to realize a vision of a digital financial services provider, without the legacy banking infrastructure and complexity associated with it, that can offer the consumer one place where they can consolidate all their financial services data, into an easily understandable format, with tools to help manage their money. A place where the customer can look, apply and be granted services (i.e. secure/unsecure loans, payday advances, credit card application, foreign exchange services etc.) in a quick, easy and frictionless manner from a variety of service providers. Automation and great UX being the name of the game.

Potential Business models

Credit & Payment Institutions

Challenges	Opportunities
<p>Additional regulation centered around:</p> <ul style="list-style-type: none"> - Liability for payments. - Transparency of Payments & Charges. - Greater Regulatory Oversight. - Strong Customer Authentication. - Access to Accounts. 	<p>Development and support of new emerging electronic payment methods, thereby providing greater customer choice.</p>

Payment System Processors (PSPs)

Challenges	Opportunities
<p>Additional regulation centered around:</p> <ul style="list-style-type: none"> - Liability for payments. - Transparency of Payments & Charges. - Greater Regulatory Oversight. - Strong Customer Authentication. 	<p>Development and support of new emerging electronic payment methods, thereby providing greater customer choice.</p>

Programme Managers

Challenges	Opportunities
<p>PSD2 Access to Accounts for accounts managed by Programme Manager.</p>	<p>Access to cardholder account information from Account Providers, with the customers consent, to deliver new innovative services.</p>
	<p>Provision of account aggregation services.</p>
	<p>Provision of innovative new services, either directly or through collaboration, that utilise cardholder account information.</p>

Brands

Challenges

New Scheme card based payment methods (i.e. payment initiation services) that consolidate customers cards onto one payment vehicle.

New non- card based payment methods (i.e. payment initiation services).

Opportunities

Access to all cardholder data giving a rich view of cardholder purchasing characteristics and preferences.

Emerging Payments

Challenges

Maybe required, dependent on business model, to be Regulated under PSD2.

Opportunities

Development of new innovative payment methods to compete with existing payment vehicles.

New products and services that utilize cardholder account information.

Collaboration with incumbent financial services providers to deliver value added services, over and above, basic account offering.

Conclusions

New payment regulation is coming in Europe in the form of PSD2, and being further extended in the UK with the Open Banking Standard. The effects are already being felt, as organisations assess the consequences of the pending legislation and attempt to understand the business, technical and operational implications.

When XS2A will become a regulatory requirement is still a matter of debate. Until the EBA submits its draft regulatory technical standards to the EC in late 2016, and the EC approves and issues the RTS, Member State regulators and payment system actors will not be in a position to assess the full complexity and effects of implementing PSD2 XS2A. At present it is anticipated that XS2A will not be transposed into Member State National law until October 2018 at the earliest.

Notwithstanding this, XS2A is going to radically shake up the payments marketplace. There will be new market entrants offering new products and services that use customer data to facilitate the delivery of innovative consumer products and services. These can, and no doubt will, be far reaching in terms of application and usage.

Forward-looking organisations will be rethinking banking customer relationships and revenue models. As customers demand more from their financial service providers, organisations are going to have to review their current product offerings, implement new product development plans and re-purpose existing services and products. They will need to (re)define their core proposition and deliver products and services that meet or exceed the ever increasing level of customer expectation.

Revenues generated in the payments market are not infinite; therefore, if new market entrants arrive and start to win business from the incumbent players, existing revenues will be challenged.

New market entrants have a distinct advantage over traditional payment actors, in that they are not constrained by legacy infrastructure. This makes them much more agile in developing and launching new services and solutions to meet market demand. However, they lack the brand reputation and customer trust that many established players enjoy today, and are entering into a highly regulated market in which they must remain familiar.

Organisations need to decide whether they simply fund change to meet the regulatory requirements of XS2A, or they view it as a strategic opportunity to develop and broaden their businesses to drive customer acquisition and engagement and develop profitable opportunities with new products and services. Importantly, PSD2 does not preclude any regulated organisation from becoming a PSP, PISP, AISP or ASPSP.

There is a strong argument that organisations that provide value-added services create more loyal customers, drive greater engagement and generate new revenue opportunities through better understanding of their customers.

Ignoring the opportunities that XS2A offers could push a payments company into simply becoming an ASPSP, comparable to Mobile Network Operators becoming mere dumb pipe providers.

The world of 'Open Banking' has arrived!

About Polymath Consulting

Founded in 2005, head office in the UK Polymath Consulting are a provider of niche consulting services to the financial services industry and brands looking at becoming involved in financial services.

Polymath Consulting are particularly well known for their work on E-money & Emerging Payments. They have worked across the complete value chain helping banks with their overall E-Money/Prepaid and Emerging Payments strategy right through to market entry analysis; as well as working with telcos, processors and programme managers on segment analysis, certification and membership applications.

Other areas of support have included outsource partner review, RFP and partner selection right through to proposition development. For brands they have assisted in product proposition development as well as managing RFP processes/reviewing existing contract relationships for both open and closed loop schemes. Geographically their client assignments have covered Russia, South Africa, Middle East, Europe and Asia.

Key to our approach is belief that if we cannot add value we will not accept the work. We strongly believe that in delivering consultancy we need to be adding real value to a project enabling a client to achieve their objectives more quickly and ideally cost effectively than just relying on in-house resources.



Brendan Jones

Brendan Jones is a senior consultant. His focus is on strategy, development and delivery of digitised services within the financial services environment. He has more than 27 years' experience in the payments and cards industry ranging from executive/senior management, business development, strategy development and execution, M&A, business process re-engineering, product management and marketing through to operational management working for FinTech providers and technology companies as well as financial service providers.

Contacts:

David Parker, CEO

Polymath Consulting

e: davidparker@polymathconsulting.com

m: +44 (0) 7712079307

Brendan Jones, Senior Consultant PSD2

e: brendanjones@polymathconsulting.com

m: +44 (0)7785 388 867

References

- [1] <https://www.handbook.fca.org.uk>
- [2] European Parliament Revised Directive on Payment Services (PSD2), Text of Revised Directive, Clause 33
- [3] <http://www.programmableweb.com/apis/directory>
- [4] <http://letstalkpayments.com/41-apis-making-waves-in-fintech/>
- [5] <https://developer.mastercard.com/portal/display/api/API>
- [6] <https://developer.visa.com>
- [7] <http://oauth.net>
- [8] The OAuth 2.0 Authorization Framework
- [9] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/382327/44695_Accessible.pdf (page 47, Section 1.171)
- [10] Data Sharing and Open Data for Banks, A report for HM Treasury and Cabinet Office, published by the Open Data Institute and Fingleton Associates 2014
- [11] <https://openbankproject.com>
- [12] <http://theodi.org>
- [13] Open Banking Working Group OBWG Terms of Reference
- [14] <https://www.scribd.com/doc/298569302/The-Open-Banking-Standard>

Glossary

AISP Account Information Service Provider.

ASPSP Account Servicing Payment Service Provider.

Credit Institution An organisation which receives deposits or other repayable funds from the public and grants credits for its own account.

Payment Actor A regulated participant organisation in the payments ecosystem.

Payment Institution A regulated organisation that can offer customers the following services:

- Executing payment transactions (including credit transfers, direct debits, through payment cards or a similar device)
- Issuing and/or acquiring of payment instruments
- Money remittance
- FX services
- Ancillary services

Granting of credit for a maximum of 12 months if this credit is closely linked to a payment service provided.

PISP Payment Initiation Service Provider.

PSP Payment Service Provider.

Table 1: Apps developed for the Open Bank Project

App	Description
Paygel	Provides an easier, faster and safer eCommerce checkout experience. It enables users to shop on TV, a laptop or tablet, and then links the purchase to a smartphone payment application using, for example, a QR code.
Kids View	A PFM for children that provides them with a categorised money trail of their transaction history.
Selfie Bank	Secure payments using your face without exchanging bank information, just using a selfie.
Mortgage Masher	A dashboard showing you how to pay off your mortgage faster and smarter.
Jamjars	Banking for the unbanked that manages income allocation and budgeting for people with low incomes.
Bank data aggregator	Share aggregates of transaction data with firms and friends.
Spendapenny	A digital way of donating odd pennies to charity.
TimeBalance	Enables you to see your account balance next to your MacOS clock.
DonationBundle	Lets users decide how much they want to donate every month and to which causes.
Fritz	An app that lets family members approve online purchases or payments on behalf of other members, for example parents approving their children's expenses.
Goal	Analyses spending habits, to help you reach your goals in life.
CrowdFundMatcher	CrowdFunding comparison site with bank co-funding options.
Perfect Shopper	Helps small shops send targeted personal offers to consumers, based upon their previous purchases, personal preferences, location and their latest social media posts.
Money Score	Manage expenses related to other people and split bills.
PayDutch	Debt overview amongst friends.
AlamPay	A micro-financing service that provides online payment and POS transactions, focusing on developing countries.
Denary	Allows anyone to receive money through multiple payment methods in a matter of seconds.
Regulation Detective	Identifies suspicious transactions.