



EMERGING PAYMENTS
ASSOCIATION



Unleashing the Potential of Open Banking

**An analysis of opportunities for
payments in open banking and
strategies for realising them**

In association with Mastercard, Refinitiv, Token and Chargebacks 911

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Editor's introduction

There has been much hype and many headlines on the subject of open banking over the last 3 years, but it is hard to argue with the view that it has the potential to dramatically transform financial services in years to come. In fact, I would go further and say that it is the most transformative change to the industry, certainly in my 24 years in payments and banking.

We just need to look at the impact that ‘opening up’ has had on other industries. In 2002 Jeff Bezos issued the famous API mandate e-mail, requiring every part of Amazon to build services and databases so that they could be externalised to the world. This triggered the development of Amazon as we know it today. It enabled huge amounts of innovation, creativity and value creation to be built, internally and by others, on top of Amazon's platform.

Or let's look at Google Maps. It is the foundation-stone of many of the apps and services we use day-in and day-out, generating billions of dollars in revenue and helping us get around, exercise, order take-away food and find Pokémon (OK, perhaps a dated reference) amongst a myriad of other things. Open banking, open finance and even open life / everything will create a significant transformation, which gives forward-looking banks the opportunity to extend and refresh their business models and a whole world of opportunities for other players to build new value propositions building on top of access to banks.

But that said (and to use another cliché), it is a marathon and not a sprint. And to mix running metaphors, there will be many hurdles along the way too. So, this white paper has been produced by the Emerging Payments Association (EPA) in order to:

- Review the current status of open banking and similar initiatives around the world
- Explore the significant opportunities that open banking presents for the payments industry
- Consider some of the possible outcomes
- And, most importantly, highlight some of the potential barriers and identity actions and recommendations for the EPA and its members that could help unleash its potential.

Sponsored by a syndicate of EPA members led by MasterCard, Refinitiv, Token and Chargebacks 911, this white paper aims to be a ‘rallying cry’ for the payments industry to help unlock the significant opportunity of open banking.

As we manage the impact of the COVID-19 health crisis and our recovery from it, there has never been a more important time for economies to have strong digital economies with data and payments available via secure APIs. So, this report sets out to clarify the potential of the open banking opportunity, identify what might hamper its realisation and recommend what the community can do to unleash it. I encourage everyone involved in the payments industry, from issuers and regulators, retailers and acquirers, regulators and TPPs, to take the time to read the white paper, engage with us and share your views about it, and support us in making the recommendations a reality. Implemented effectively, they will pave the way for payments to play a central role in enabling a transformative change in financial services in the UK and around the world.

Huw Davies

Chief Commercial Officer and Co-founder
Ozone Financial Technology

OZONEAPI.COM



EPA Recommendations

The Emerging Payments Association passionately believes that open banking will be a force for good and a driver of innovation, value and positive change in the payments industry. Through a series of discussions and expert interviews, we have identified the key barriers and have formulated a number of recommendations to support the development of a thriving open banking ecosystem.

These recommendations, in three key areas, outline the EPA's proposed focus, set out policy positions and create a platform for concrete action to be taken.

Help create the market conditions for success

Open banking will ultimately thrive and scale more quickly and effectively through fostering the right market conditions. This

will mean seeking the right balance between regulatory catalysts and allowing market forces to take shape. The EPA will support the industry in looking to achieve this balance and will provide industry leadership on behalf of its broad membership base at critical moments. Specifically, the EPA will:

1. Open banking futures

– act as a voice for the industry to shape the future model for open banking in the UK

ACTION: be an active and forceful member of the open banking futures steering committee on behalf of the payment industry

2. Open finance –

be a champion for the payments industry and help define the framework for open finance

ACTION: respond to the Open Finance call for input on behalf of the EPA community and offer to support and advise the FCA as the initiative progresses

ACTION: invite EPA members and industry participants to join a new EPA Project Open Banking to manage the implementation of the recommendations in this report, and obtain funding for it from our members

3. Commercial frameworks

– support the development of commercial market frameworks so that premium API propositions are scalable and accessible to the industry

ACTION: include as a core activity within the EPA's new Project Open Banking

Be a champion for standards and user experience

A successful open banking ecosystem must be built upon the two pillars of standards and user experience. The use of standards that are implemented well is the only route to achieve interoperability and will drive lower costs, for the industry, better use of scarce developer resource and will allow banks and third parties to focus on delivering great end user propositions. Equally without great customer experience adoption will not scale. Great user experience means applying good practice around consent management and supporting secure but flexible authentication options to work across multiple channels and use cases. The EPA will become a champion for standards and user experience by:

1. Harmonisation – acting as a champion for standards and work with the key standards bodies to support an agenda of harmonisation

ACTION: Develop stronger relationship with key standards bodies such as OI DF, OBIE and Berlin Group to support their efforts and help build their understanding of the needs of the payments industry

2. Consumer Experience – supporting industry efforts to drive secure, effective user experiences and consent best practice

ACTION: include as a core activity within the EPA’s new Project Open Banking

Unlock the potential
A vibrant open banking ecosystem is already generating significant levels of innovation across a broad range of use cases. The Nesta challenge and the ecosystem response to the recent COVID-19 crisis are great examples of the potential that open banking can unlock.

There remain, however, ongoing societal challenges that the payment industry is well placed to help tackle and is already tackling. The EPA will extend its existing initiatives in key areas to encompass an open banking focus, for the good of the industry and society:

1. Financial Inclusion – by extending existing financial inclusion initiatives to incorporate open banking driven opportunities and to

identify new financial inclusion opportunities made possible by open banking

ACTION: extend the scope of the EPA’s existing Project Financial Inclusion, supported by EPA Benefactor, Mastercard

ACTION: identify open banking participants doing great things around financial inclusion and invite them to extend the thinking of the project

2. Unlocking Cashflow and lending for SMEs – by working with members to accelerate the opportunities for how open banking payments can help unlock cashflow and increase lending options for SMEs

ACTION: extend the scope of the existing Project SME

ACTION: identify open banking participants doing great things

around SME cashflow and lending and invite them to extend the thinking of the project

3. Establishing user trust – by supporting the industry as it explores models for establishing increased user trust and confidence. The EPA will work to influence either policy or market-driven activity to help ensure the views of end customers and the industry are represented (actions to be determined once an industry effort is established)

ACTION: include as a core activity within the EPA’s new Project Open Banking

We will work with members and the EPA Advisory Board to continue to review our focus and shape future actions in line with market developments. Ultimately, we are here to serve the industry and we encourage ongoing engagement and dialogue on our focus.



“A vibrant open banking ecosystem is already generating significant levels of innovation across a broad range of use cases. The Nesta challenge and the ecosystem response to the recent COVID-19 crisis are great examples of the potential that open banking can unlock.”



About the EPA

The Emerging Payments Association (EPA), established in 2008, sets out to make payments work for everyone.

It achieves this by delivering a comprehensive programme of activities for members with guidance from an independent Advisory Board of 15 senior executives that addresses the main problems facing the industry. These activities include a programme of digital and face-to-face events including an annual conference and awards dinner, numerous briefings and webinars, and networking and training activities. It also produces research papers and reports to shed light on the big issues of the day. The EPA has over 130 members and is growing at 20% annually. Its members come from across the payments value chain including payments schemes, banks and issuers, merchant acquirers, PSPs, retailers, and more. These companies have come together to join our community, collaborate, and speak with a unified voice. EPA Asia has been an active participant in the research process for this report and EPA EU is a valued partner in the ongoing development of policies regarding open banking.

| Mission | Making payments work for all | | |
|-----------------------|--|---|---|
| The Big Issues | Society Could be better served by payments | Payments Industry Could better balance interests | Regulators Could stay closer to the market and develop a holistic view |
| Policy Goals | The EPA is promoting an inclusive and diverse society where trusted, secure and accessible payments benefit everyone and a payments industry where all opportunities are equal, and all voices are heard | The EPA encourages a harmonious and competitive ecosystem where new technologies, regulations and user behaviours influence the industry's structure, culture, participants and direction | The EPA is resetting the nature of the payments industry's relationship with regulators to achieve the right balance between policing and partnering, competition and innovation, and resilience and growth |
| Projects | 1. Project Recovery Mitigating the damage of COVID-19 and stimulating a rapid recovery 2. Project Inclusion and Diversity Enabling access to financial services everywhere | 1. Project International Trade Delivering Trade Missions 2. Project Open Banking* Unleashing the potential for payments | 1. Project Financial Crime Tackling the root causes of fraud and money laundering 2. Project Regulator Helping the regulator to help us |
| Foundations | Talent and people - Technology - Sustainable business models | | |



White Paper Syndicate Members

Mastercard Syndicate Lead



It's remarkable, on reflection, that the deadline for European banks to comply with the EU's PSD2 regulation, which mandates permissioned sharing of customer's bank account information with approved third parties, passed so recently.

Now, open banking is spreading around the world with regulatory-driven and industry-led initiatives which, by various means, are giving control back to people and businesses.

Solutions that have come early to market are making digital payment experiences more intuitive; enabling access to credit for those with thin files, and otherwise helping to improve financial wellness and widen access to money and services for excluded groups across society.

Already, industry commentators are considering what's next.

Mastercard is pleased to sponsor this paper from the Emerging Payments Association (EPA), which offers keen insights on how open banking is shaping up. We, like the EPA, believe open banking will bring positive and sustainable change to the payments industry — stimulating innovation and competition in financial services and more broadly across the digital ecosystem.

As with any new initiative, there are technical and educational challenges, but with the right solutions and frameworks in place these can be — are already being — overcome. We're making it our mission to enable the ecosystem and help both financial institutions and third-party providers make the best of the opportunity.

We share EPA's commitment to be a champion for standards and user experience — over fifty years, Mastercard has grown and governed a global network for card-based payments; we're excited to play a part in bringing those same standards of governance for bank account-based payments too. This is an essential requirement to secure user trust.

Together with the EPA and other syndicate members, we encourage the industry to take heed of these recommendations to unleash the potential of open banking around the world.

Jim Wadsworth

Senior Vice President for Open Banking
Mastercard

Mastercard Open Banking Solutions™ are a suite of market-leading applications and services to enable and safeguard the global open banking ecosystem. Visit mastercard.com/openbanking to learn more.

Refinitiv

Syndicate Lead



In this whitepaper, the Emerging Payments Association (EPA) draws attention to the tremendous progress the open banking initiative has achieved in the UK and elsewhere around the world. Clearly this is a trend which is gaining momentum and has the opportunity to create great consumer experiences, but it has to be balanced with risk mitigation for the banks in their deployment of open banking solutions.

New participants have entered the market, including data and technology vendors and this has stimulated innovation in the provision of financial services and empowered consumers. It has also presented an opportunity for collaboration and partnership among stakeholders, making for a more vibrant and robust ecosystem.

Among the areas identified by the EPA for greater value creation are those of customer onboarding and the opening up of digital identity solutions. Opportunities have arisen for new fintech players as well as established companies, such as Refinitiv, to deliver solutions that transform the onboarding experience, help prevent fraud and create trust in

digital payments. Combining these new solutions with other data such as risk intelligence allows players across the financial services ecosystem to confidently deliver powerful customer centric products, services and experiences.

We support the EPA's efforts to be a champion for standards and user experience and this aligns to our own priorities. Through our interactions with global financial institutions we know the value they place on a seamless customer experience, open technology and data that adheres to consistent standards across multiple jurisdictions. The EPA is right to champion standards and user experience and these principles are incorporated into the design and development of our own solutions.

As a sponsor and benefactor to the Emerging Payments Association (EPA), Refinitiv welcomes this whitepaper which provides a timely review of the differing approaches as well as further opportunities for open banking and collaboration across the ecosystem.

For more information visit: www.refinitiv.com

Token

Syndicate Associate



Token is the industry's leading open banking infrastructure provider. By putting a bank in every app, Token is creating the digital connectivity shaping the future of banking-enabled commerce.

Token's open banking market platform enables banks and developers to set the pace of innovation in digital financial services, unrestrained by technical complexity.

By offering value-added payments functionality together with standardised, API-based access to thousands of European banks, Token helps banks and businesses drive new revenues through the creation and delivery of market-leading open banking payment and data experiences.

For further information, visit www.token.io or follow the team on Twitter and LinkedIn.

Chargebacks911

Syndicate Member



The Chargeback Company, known as Chargebacks911 in the US, safeguards over 2.4 billion online transactions every year, representing clients in 87 different countries. As industry-leading innovators, The Chargeback Company is credited with developing the most effective strategies for helping businesses maximise revenue and reduce loss in a variety of industries and sectors within the payments space.

For more information visit www.chargebacks911.com



Introduction

The Emerging Payments Association (EPA) has produced this white paper to highlight the wealth of opportunities for the payments industry arising from the development of new and innovative solutions from open banking. Open banking is now a global phenomenon, with initiatives underway all around the world. The report looks at the global context for open banking, exploring different approaches, from the regulatory-driven model seen in the UK and Europe to the market-driven approaches seen in markets like China and Singapore.

Open banking has been live in the UK since 2018, but many markets are still in the early stages of their implementation journey. So, this research comes at an interesting time where the opportunity exists to help shape the future model in more mature markets and bring learnings to those earlier on the journey. In the UK, we are reaching the 'end of the beginning' of

the implementation phase and a number of initiatives are underway to shape the future direction of the industry. The Open Banking Futures Steering Group, run by UK Finance, is looking at ways to support the future growth of open banking in the UK. The FCA is in the midst of consulting the industry about Open Finance (extending the concept to cover a broader range of financial services products and providers, such as mortgages, investments, pensions and insurance). Australia is also well on the path to driving an open data society also through the Consumer Data Right. And many other markets around the world are looking to the early movers to gain learnings in order to deliver open banking in the most effective way.

Beyond the global context, the report draws on the expertise of a wide range of industry experts to explore the opportunity for the payments industry and to identify the potential barriers. From

there, it offers some recommendations to improve the market for the benefit of all participants, including consumers, small businesses and the wide variety of service providers involved in this ecosystem.

The EPA, with its presence across Europe and Asia, is well placed to draw together these initiatives for the benefit of its own members and the wider payments industry. Through the OBIE, the UK is in a strong position to demonstrate the benefits that a thriving open banking environment can bring to individuals, as well as industry, and the competitive advantage this represents for the UK.

What is open banking?

There are many descriptions and definitions of open banking, from the very technical to the very conceptual. At a high level though, it is about putting customers in more control of their money and their data. It is also about

allowing them to share it with other companies or service providers in order to help them with their day to day life and money management.

Historically, banking has been a vertical supply chain with banks developing products and services and making them available through their own channels, whether that is the branch, their website or the mobile app.

In the world of open banking, products and services may be built 'on top' of banks, so a customer could manage their finances, make payments or access credit through other third parties building new propositions and services.

This is enabled (mostly) by banks publishing APIs to allow third parties to access data and services that banks would previously have kept to themselves and to use these to create new services for their customers. As outlined in the Editor's introduction,



“In the world of open banking, products and services may be built ‘on top’ of banks, so a customer could manage their finances, make payments or access credit through other third parties building new propositions and services.”



parallels can be drawn with other industries: Google Maps is a great example of a platform that is made available via APIs which third parties can then build upon to develop new and innovative services for their users.

Within the UK we have already seen a myriad of propositions and use cases built on top of the open banking foundations, for example:

- 1. Personal financial management** - the ability to see and manage all of your accounts in one app / platform to help with budgeting, avoid overdraft fees and penalties or get more from savings.
- 2. Accounting platform integrations** - the ability for cloud accounting platforms to use open banking APIs to access account and transaction information and help businesses save time and improve accuracy.

- 3. Customer onboarding and access to credit provision** - the ability to simplify the application process for new account products (removing the need for copies of statements) and to improve access to credit products, leveraging the rich account data to empower lenders to make better credit decisions and allow the financially excluded (with little credit bureau history) to access credit.

- 4. New payment methods** - the ability for open banking to allow third parties to initiate a payment on a customer's behalf. We are seeing many early use cases emerge from simple wallet load from the bank account to e-commerce payments and B2B invoice payments and use cases spanning across P2P, C2B and B2B payments.

When you get into the different regulatory or market-focused definitions of open banking then things

start to get much more technical. Open banking in the European Union is driven through the PSD2 regulation which imposes API implementation on all payment account providers across the EEA - approximately 6,000 organisations. These payment account providers are not just banks but any regulated institution that offers payment services via an account. Under PSD2 these institutions are called **Account Servicing Payment Service Providers (ASPSPs)**.

PSD2 dictates that not just anyone can access the open banking APIs. The directive establishes two new types of regulated Third Party Provider (TPP) who must be authorised by one of the regulatory bodies in an EU country. A Payment Initiation Service Provider (PISP) has the right to initiate a payment on the PSD2 Payment Initiation API - in effect instructing the accountholder's ASPSP to move money from their account to someone

else's – a merchant, a friend or some other entity. An **Account Information Service Provider** (AISP) has the right to request account data from the ASPSP.

Third parties can be both PISPs and AISPs and banks are automatically regulated as both, as well as being ASPSPs. Under PSD2 all banks must provide a technical interface to access the open banking services – usually in the form of an API – which can only be used following explicit consent from the account holder using the PSD2 specific form of two-factor authentication, known as **Strong Customer Authentication** (SCA). SCA requires the use of two factors out of possession, knowledge and inherence (e.g. a biometric).

PSD2 seems to be acting as a template and a catalyst for many open banking initiatives around the world but it is not the only model. In countries where there is no regulated requirement for open banking, many banks are considering opening up APIs as a route to build new partnerships and to generate new revenue streams. In these models there are no regulated third parties. This is a commercial arrangement between the bank and the entities connecting to the APIs.

Where open banking is driven by regulation, the scope and breadth may also differ by market. At the moment PSD2 is relatively limited in its scope, addressing only payment accounts, although the UK is already consulting on a potential extension to all

financial services products through Open Finance and the energy sector is also watching with interest. Other countries, such as Australia, are starting with an expansive objective from the outset with the Consumer Data Right, looking to allow customers more access to, and control over, their data across a range of sectors; banking merely being the first phase of a bigger vision.



Even where markets are driven by regulation, market forces will in time inevitably overtake to be the longer-term driver of innovation and value creation. In the UK we can see early signs of a more commercial open banking ecosystem being built on top of the regulatory foundations. Market participants are looking to unlock more potential from bank APIs and are:

- Exploring areas such as enhanced payment functionality, e.g. variable recurring payments
- Unlocking the verified identity information and attributes held by banks

So, whilst the simple definition of open banking may remain the same, the scope and context of open banking is fluid and continues to expand as it is implemented around the world.

Methodology

The methodology used in preparing this report includes the following activities:

- Initial desk research to map the landscape
- Identifying key players to interview (with an emphasis on the UK and Europe but also a wider global view)
- Structured interviews with industry experts based on an agreed set of survey questions
- Playing back detailed interview notes to interviewees for confirmation, requesting clarification on minor details if necessary, at this point
- Preparing the report based on the information gathered in the interviews
- Validating the findings and conclusions with market authorities

During the preparation of this report, we interviewed experts from across the open banking business spectrum and the views expressed in this report are a summary of their opinions, filtered to extract the major conclusions and enhanced with Consult Hyperion's expert knowledge. Please see Appendix C for a list of the interviewees and Appendix D for details of the interview questions.



Competition/anti-trust



Data democratisation



Differentiation



Financial inclusion



The catalysts for open banking

Open banking - an overview of activities across the world

Open banking is now becoming global. It's a fact that open banking initiatives are now underway across all continents (with the obvious exception of Antarctica).

As we look around the world though there is no single, uniform approach to open banking. In fact, open banking (or open finance) is being driven in different ways and often with different initial motivations, although one may assume that (eventually) the end point is a common, open, interoperable and global financial services ecosystem. There have been many attempts at categorising the different approaches to open banking. One way of considering the global

landscape is to think about initial motivations and market approaches. As we look at the initiatives around the world there are a number of different motivations that are acting as the catalysts for open banking initiatives. These include:

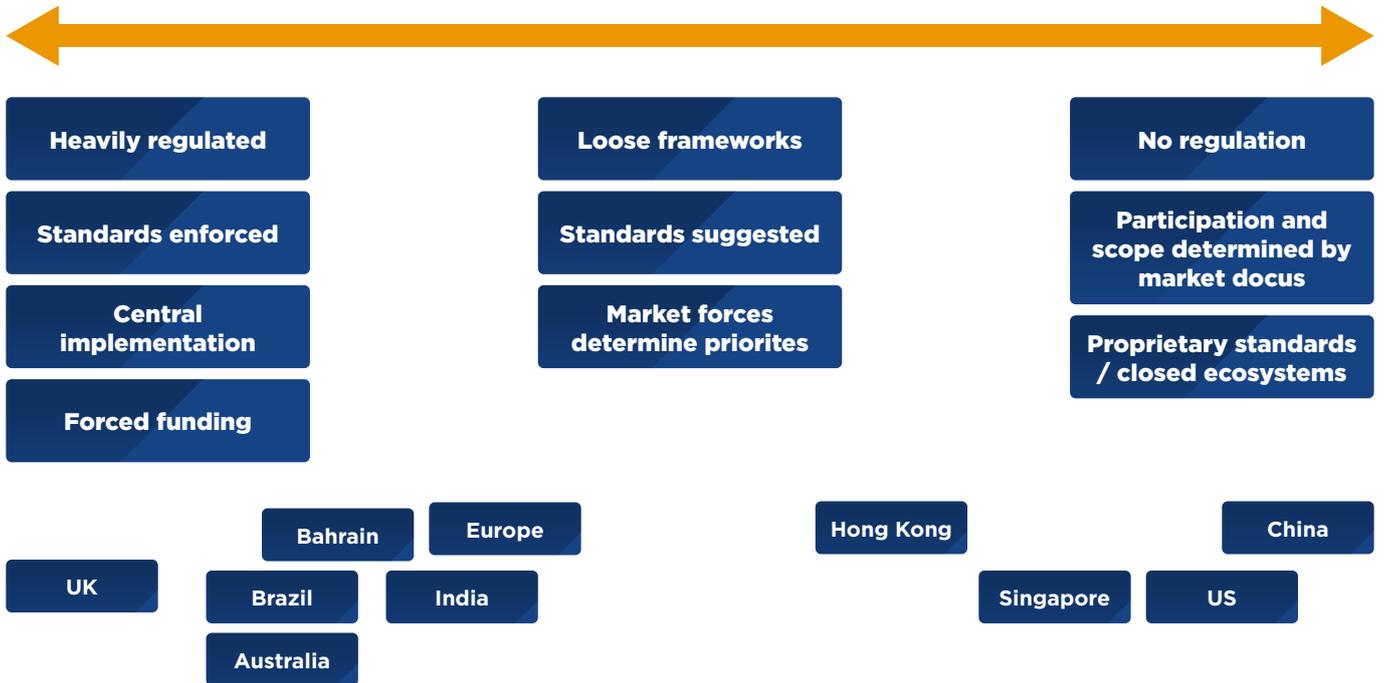
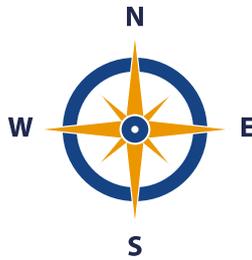
1. Competition and anti-trust concerns – in some of markets, for example the UK and Europe, the primary initial motivation for driving open banking was concerns about competition, or more accurately, a lack of competition and innovation in the banking sector. The Competition and Markets Authority Review into the UK's retail and SME banking

sector highlighted specific concerns and identified specific remedies to address these concerns. The remediations in the form of the CMA Order was the beginning of the open banking journey in the UK.

2. Data democratisation – in other markets open banking has been triggered by data privacy initiatives as a means of empowering citizens through them having greater access to and ability to use and control their own data. The Consumer Data Right in Australia is one such example.

3. Market (or player) differentiation – markets like Bahrain are viewing

open banking and an open data economy as a route to market differentiation, in order to create value in their economy and attract foreign investment. A well-structured open data economy will certainly attract investment and drive innovation. The level of fintech investment and the thriving ecosystem in the UK that has developed as a result of open banking suggests that this is likely elsewhere too. In many regions the market has also formed ahead of any formal market intervention, through banks looking to build partnership ecosystems around their APIs. DBS in Singapore is a great example of this.



4. Financial inclusion

– markets such as Brazil and Mexico are viewing open banking as a tremendous opportunity to tackle societal challenges. This assumes that access to data via open APIs will lower the cost of serving customers and result in greater levels of innovation at the margins of the market. Early indications from markets like the UK suggest that it can have a meaningful impact on financial inclusion, particularly in simplifying customer onboarding and opening access to credit.

This list is not intended to be comprehensive, nor mutually exclusive. It is a reasonable assumption that, done well, open banking may help achieve all of these objectives,

irrespective of the initial motivation.

The next consideration is the approach to driving open banking within a market. Again, this is not intended to be a perfect framework, but these different approaches can be mapped on a spectrum (above).

The danger in regulated markets is that banks initially implement only the minimum required to be compliant, resulting in limited functionality and poor performing APIs. This limits their own ability to compete and develop new business models and acts as a handbrake on innovation for the ecosystem as a whole. On the other hand, where market forces lead, the same limitations on the ecosystem are visible,

but more due to lack of interoperability and lack of ‘whole of market’ access (i.e. only some banks offer APIs and often to different proprietary standards).

Interestingly, the above spectrum also only represents the starting point for a market. The end point will look very different. In the UK where the market has been formed around strong standards and a central implementation, early growth has significantly outstripped the rest of Europe and the market is now starting to move towards more commercial API propositions built on top of the regulatory foundations. Conversely in some of the Asian markets, it is likely that the demand for interoperability by major global ‘demand side’ players will mean the

adoption of open standards is inevitable.

Within the remainder of this section we will explore some of the different market approaches in more detail.

China

The Chinese¹ economy, with its huge demand for payments and relatively limited card infrastructure, offers an interesting example. In contrast to the highly regulated European approach to open APIs, an advanced ecosystem is developing in China based around APIs provided by the Internet giants Tencent (owners of Wechat Pay) and Alibaba (owners of Alipay). Between them, these vast corporations have over a billion users and have come to dominate the payments market,

displacing cards with their mobile offerings. They are now so ubiquitous that they offer overseas visitors to China access to both Wechat Pay and Alipay.² They publish detailed API documentation, to enable a wide range of services.³ With their existing scale and technical⁴ capabilities, they are able to support rapid developments in the types of services supported. At present these ambitions are permitted to thrive unchecked in a market which is largely unregulated in relation to APIs. The scale of the organisations involved and their close relationship with the state promotes a high level of innovation and interoperability.

Hong Kong

Neighbouring Hong Kong⁵ has taken a more formal approach to the challenges of open banking. It is implementing a four-phase open banking regulation known as 'Open API'. Developments in this area are proving comparatively slow and many of the aspects of the initiative covering payments relate to the later phases. It is to be hoped that, once these phases are complete, Hong Kong will be in a stronger place to support innovative payment use cases. Although more highly regulated than API activities in China, Hong Kong aims to maintain a light touch in order to encourage innovation.

Singapore

Like Hong Kong, Singapore has taken steps to encourage the adoption of open banking APIs. The Monetary Authority of Singapore (MAS)

has promoted its 'API Playbook'.⁶ This aims to support use cases such as Bank Account Enquiries, Real Time Payments and Seamless KYC. So far, adoption has been relatively limited but given the importance of financial services in the Singapore economy, this is not an area in which they have felt the need to introduce strong regulation.

Switzerland

Switzerland appears to be following a similar path to Hong Kong and Singapore: there are no formal government regulations governing open APIs. Switzerland is not



subject to PSD2 and does not have its own open banking regulation. There are, however, numerous individual initiatives for API standardisation. Given the role of financial services in the Swiss economy, it may become necessary to have a more centralised approach to supporting the fintechs,⁷ which now make up an important part of the national financial ecosystem.

USA

Although there is no sign of regulatory intervention around open banking in the USA, there does appear to be recognition that screen-scraping is not ideal as a business practice.

The Financial Data Exchange (FDX⁸) initiative is building considerable strength. Another positive step is the publishing by the banks' membership organisation The Clearing House of a 'model agreement' for sharing of bank-held consumer data with other parties such as fintechs.⁹

Africa

There are increasingly promising signs of adoption in Africa. There are indicators of progress in South Africa, with the regulator engaging in discussions with the banks. This has not yet reached a level of regulation or standardisation but is bearing fruit: Nedbank¹⁰ in South Africa has introduced an API platform with a range of open banking features. Elsewhere in Africa, countries such as Nigeria and Rwanda¹¹ have introduced standards and regulations.

India

India provides an interesting example of initiatives implemented at significant scale. The India Stack¹² consists of a collection of open APIs with the goal of promoting financial inclusion and e-commerce. The Unified Payment Interface (UPI) supports interoperability for payments at a national level. The Aadhaar national biometric ID system is also associated with the India Stack. Although very successful in enrolling large numbers of citizens, there have been security and privacy issues associated with Aadhaar.¹³ For a while these issues limited its commercial use, although financial¹⁴ services using it are now opening up again. Due to the size of its user base, transactions run into many billions annually.

- 1 <https://www.ft.com/content/00585722-ef42-11e6-930f-061b01e23655>
- 2 <https://edition.cnn.com/2019/11/05/tech/alipay-alibaba-china/index.html>
- 3 https://pay.weixin.qq.com/index.php/public/wechatpay_en/developers
- 4 <https://intl.alipay.com/doc/gr/hx6vzr>
- 5 <https://www.finextra.com/blogposting/17396/the-asia-pacific-way-of-open-banking-regulation>
- 6 <https://www.mas.gov.sg/development/fintech/technologies---apis>
- 7 <https://fintechnews.ch/top-30-fintech-startups-in-switzerland-2/>
- 8 <https://financialdataexchange.org/>
- 9 <https://paymentexpert.com/2019/11/14/the-clearing-house-unveils-new-data-api-model-agreement/>
- 10 <https://www.programmableweb.com/news/south-africas-nedbank-launches-open-banking-api-platform/brief/2019/04/02>
- 11 <https://www.hoganlovells.com/en/publications/open-banking-in-africa>
- 12 <https://www.frbsf.org/banking/asia-program/pacific-exchange-blog/asias-open-banking-push/>
- 13 <https://isis.washington.edu/news/the-aadhaar-card-cybersecurity-issues-with-indias-biometric-experiment/>
- 14 <https://www.livemint.com/money/personal-finance/is-rbi-nod-for-ekyc-a-step-towards-its-total-revival-1559470306761.html>

Australia and Asia Pacific

The Australian Computer and Consumer Commission (ACCC) has recently published the Consumer Data Right (CDR), which gives consumers control over their own data. This is widely regarded as a step forward in the context of Open Finance. A key element of this is the CDR-Register API, which enables consumers to see details of data holders and data recipients. It is expected that a number of different services, including financial services, could arise from this consumer-centric approach. Japan is taking a measured approach to open banking, with a regulation introduced but with chargeable APIs and no enforced timetables. Some banks are taking the initiative and introducing a range of new services. South Korea has also recently gone live with its own regulations and is experiencing growth beyond the levels seen in Europe. More limited developments are taking place in Thailand,¹⁵ with the Siam Commercial Bank being the first Thai bank to have launched their own API.¹⁶

EU

Discussions about open banking in Europe are largely dominated by PSD2, with many viewing the UK's open banking initiative as a leader. Mainland Europe has seen a more fragmented approach than the UK, largely due to the lack of a coordinated central implementation.

There are a number of standards groups that have emerged across Europe such as The Berlin Group,¹⁷

STET and The Polish API standard amongst others. With over 2,000 local banks, Germany has had a commitment to open banking at a national level for decades, embodied in its FinTS¹⁸ specification. It also has a strong tradition of payments from bank accounts in the form of SOFORT. In the Netherlands the iDEAL¹⁹ payments scheme takes a different approach to online payments, based on push payments. The Dutch authorities claim that as a result, there may be fewer benefits for them from PSD2 than in other payments regimes.

Nordics

Meanwhile, the Nordics²⁰ is probably the most innovative region in Europe for payments. In addition to a healthy fintech ecosystem, they have a range of interesting initiatives such as MobilePay, Swish (payment using a third party mobile app) and Klarna (payment by instalments). Other significant features are the very low levels of cash in this region and the popularity of government-sponsored but bank-managed schemes such as Sweden's BankID as an identity solution.

More than one way to skin a cat

Having reviewed different models for achieving open banking around the world, we conclude that there is no single model for open banking, yet open banking is becoming increasingly global. The open banking journey ranges from early to embryonic across different markets and we have only seen the tip of the iceberg.



15 <https://www.finextra.com/blogposting/17396/the-asia-pacific-way-of-open-banking-regulation>

16 <https://www.bangkokpost.com/business/1684372/scb-launches-open-api>

17 <https://www.berlin-group.org/nextgenpsd2-downloads>

18 <https://www.finextra.com/newsarticle/33173/truelayer-celebrates-open-banking-anniversary-with-api-expansion-to-germany>

19 <https://www.computerweekly.com/news/252466212/Why-PSD2-adoption-in-the-Netherlands-is-lagging-behind>

20 https://www2.deloitte.com/content/dam/Deloitte/dk/Documents/financial-services/Downloads/Chasing_Cashless-The_rise_of_Mobile_Wallets_in_the_Nordics.pdf

The potential impact of open banking on payments

Having considered the different open banking approaches around the world, we will now move on to consider some potential scenarios for how open banking may impact the payments industry. These scenarios emerged from our discussions with the range of experts engaged in our research. They are not intended to be stand-alone predictions, rather they are common themes that emerged, providing some interesting areas for debate and speculation. The emerging themes are:

1. A vibrant new value chain emerges
2. It's a boon for B2B payments
3. Banks become the Masters of the API Universe
4. Big tech wins
5. It's a "meh?" moment

1. A vibrant new value chain emerges

The theory is that open banking creates an incredibly simple value chain with third parties connecting directly to banks to power their end propositions.

The reality, however, is that we are seeing a vibrant and sometimes complex value chain emerging with a number of specialist, value-adding roles emerging (below).

The UK is perhaps the most mature full open banking ecosystem and we see a range of different players and value-added services emerging within the new value chain there.

Aggregators

An obvious role that has emerged is that of the aggregator, helping simplify access to bank APIs by creating a single point of integration for those third parties who want to

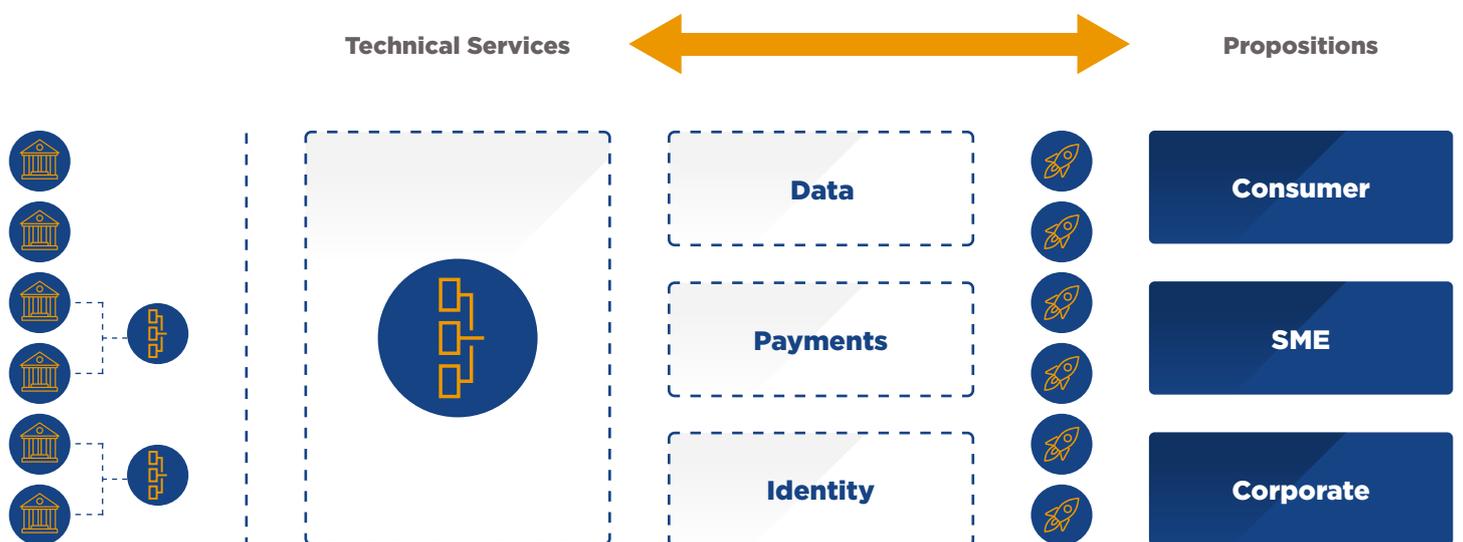
focus more on the end proposition and less of the plumbing of open banking connectivity. The greater the fragmentation of API standards, the more value-adding this role can be. But even in markets such as the UK, where a single standard has been broadly adopted by almost every bank, there is still a very clear role for the aggregator. With over 6,000 banks across Europe, the effort to connect to banks and maintain the connections can be significant.

A competitive market of aggregators has emerged with players such as EPA Members Mastercard and Token, Truelayer, Plaid, Yapily and Nuapay all powering access for third party proposition providers, ranging from small new fintechs through to the largest platforms, acquirers and networks. One only needs to look at the recent acquisition of Plaid by Visa

for \$5.3bn to see that value (or possibly potential value) is being created.

Data enrichment

In addition to enabling access to banks, there are many players (including the aggregation platforms) building value-added capabilities on top of this access. One area where significant value can and is being added is around the enrichment of bank data. This may be from simple categorisation through to enriching with data from other sources and with a view to creating richer insights and analysis, better credit decisioning or more automation of processes such as accounting. The COVID-19 outbreak led to many examples of players identifying innovative ways to leverage open banking data to help tackle some of the many challenges, for example helping businesses validate their eligibility for tax breaks and grants.



Payments initiation

Payments is another area where we are seeing players add value over and above the basic access to banks and payment initiation service. In the UK and Europe, however, the regulatory minimums only go some way towards creating the right conditions for open banking payments to thrive. Players like Sentenial are taking the opportunity to fill gaps and add value as a competitive differentiator. This may include providing virtual settlement accounts to improve the visibility of collections and simplify reconciliation or provide solutions to support the refund process.

The uptake in payments has been slow. Payments accounts for a very small proportion of API calls made. But the signs are that things are starting to change. Recently, far

more use cases and new entrants into the space are visible. Use cases like 'wallet load', 'first rental payment', 'charity donations' and 'payment into investment platforms' are starting to ramp up. The big players are starting to arrive in the market; Amex, Worldpay, Elavon, Bottomline and others all starting to show their hands, often powered by those specialists who have developed the connectivity and built value-adding solutions around it.

Existing players in the traditional card payments value chain need to take note and act. Many of them are doing so, as outlined in the preceding paragraph, but those who keep their heads in the sand may become less relevant in a world of open banking APIs and real-time account-to-account payments.

Opening up identity

Finally, we are starting to see a series of players specialising in, and adding value around, identity. In some instances, this is leveraging the existing open banking data and supplementing with data from other sources to help establish customer identity and eligibility for products and services or just to simplify customer onboarding processes. In other examples we're seeing the beginnings of a commercial market around identity services,

with banks starting to explore how they can expose identity attributes, that they have spent time and money validating, as a commercial platform. Sweden has had a successful bank ID scheme for many years and open banking is potentially creating the foundations for a similar model in other markets too.

What does this mean for payment schemes?

The traditional card payments market has always had intermediaries at its core. Payment networks simplify the connectivity between the payer and the payee side of the ecosystem, provide rules and standards, create trust and frameworks to handle disputes, and add value around the core service. So what does the rise of open banking, open finance and open everything mean for the traditional networks? On the one hand there is of course a potential threat, as a new value chain emerges around a 'many to many' open API ecosystem, there is less need for a big switch in the middle. That said the networks also have real strengths, assets and capabilities in the areas required to make open banking work and the development of



“We are seeing the biggest shift in the payments landscape for a generation.”

Token



Mastercard's open banking platform, Amex's pay with Bank Transfer launch and Visa's acquisition of Plaid show just how seriously the networks are taking the opportunity.

2. A boon for B2B payments

Much of the press and the hype around open banking focuses on consumer propositions, but many in the industry see the foundations of open banking as a major opportunity for B2B payments. While there has been much innovation in the B2B payments space over the years, there are some fundamental challenges with the existing solutions, notably:

- Card payment acceptance is low within the B2B landscape
- The economics of card payments tend to struggle for anything of

significant value

- Account-to-account payments can be manually intensive at both the payables and receivables side
- International bank transfer payments can be slow, costly and lack transparency

Therefore, the promise of digitally-initiated (including machine-to-machine) real-time payments, via bank rails with intelligence and conditionality built into the payment initiation request, gets many excited.

With £24bn of money owed to small- and medium-sized businesses locked up in late payments in the UK alone, the potential exists for open banking to have a significant economic impact (<https://www.thisismoney.co.uk/money/smallbusiness/article-7707599/Small-firms-owed-24bn-late->

[payments-10bn-year.html](#))

The major cloud accounting platforms are already some of the largest users of open banking, with platforms like Xero, Sage and Quickbooks leveraging open banking APIs to integrate account and transaction data on behalf of their customers. Building open banking payments into the invoicing solutions is the next logical step.

SME lending has also been a beneficiary of open banking with platforms such as fractal labs, Credit Kudos and Iwoca all leveraging banks APIs to help unlock more credit for businesses.

The biggest handbrake on the open banking B2B payment opportunity is the limitation to single payments with redirection to the bank each time. Once the banks start enabling rules-based payment consents or the ability for third party platforms to handle the SCA, then the shackles will really come off. We will then see intelligent digital payment initiation, settled real time and with intelligent controls built in at the core.

The question then is which platforms succeed in capturing the B2B opportunity? Do the banks evolve their platforms to compete with the accounting and ERP platforms, do the major accounting, ERP and treasury platforms capture the market or is it the new specialists who win the day?

Arguably the most likely outcome is a combination of the above, delivered

through better partnering and API based integrations between the different platforms serving businesses.

3. Banks become the Masters of the API Universe

Whilst many banks were initially dragged kicking and screaming into the open banking world by regulation, this could be the equivalent of the Jeff Bezos API mandate e-mail for the banks who really grasp the opportunity. But becoming Masters of the API Universe requires banks to adapt to two new business models:

1. The 'API platform'
2. The 'marketplace'

Banks have some tremendous assets hidden behind their branches, websites and apps. These are assets that could become the foundations for other innovators to build on, just as Google Maps has become a foundation stone for many third-party apps and propositions. They bring strong balance sheets to help fund borrowing and cashflow needs and investment products and advice to help manage and grow wealth. They have oodles of data and the expertise to enrich it for greater utility. And they sit on lots of verified identity information.

Packaged well as APIs, these assets can form the foundations on which others can innovate. This would allow banks to reach more and different customers and in more interesting ways than if they tried to do it all themselves.



Secondly, banks often have apps and digital channels second only to social media apps in the frequency of usage. And banks are secure and trusted.

In a world where banks can connect to a myriad of other banks and service providers, they can finally support more of their customers' needs without needing to build everything themselves. Amazon has mastered this model and celebrate the fact that now more than 50% of what they sell is for other merchants. In doing so they generate revenue on every sale, provide other value-adding services such as warehousing, delivery and even lending and also significantly simplify their own inventory.

Through delivering great standards-based APIs and partnering with others in the value chain, banks could significantly extend their distribution and build new revenue streams, whilst also meeting more of their own customers' needs within their channels. But for this scenario to be realised, banks must rapidly move beyond the compliance stage and genuinely see open APIs as a core business model enabler.

Getting this right could also position banks to be the guardians of trust in an open data economy. As outlined earlier in the report, open banking is the first step towards an open data society, where customers can securely grant consent for their data to be shared between service providers via secure, interoperable and standards-based APIs.

Banks are one of the few players in the economy that have regular digital interaction with customers and strong authentication as a learnt behaviour. Through open banking, banks also now have dashboards where customers can see what access they have consented to third parties. These foundations combined with a Bank ID model could genuinely position banks at the centre of an open data ecosystem. This would be a big prize, but one that requires the major banks to rapidly move beyond their wobbly first steps into this open banking world.

4. Big Tech wins

It wouldn't be a white paper on open banking if we didn't explore the scenario of financial services domination by GAFAM. And it is true that the other players who have pervasive customer relationships and in-built authentication at the heart of the user experience are the Big Tech companies such as Google, Apple, Facebook and Amazon. Globally there are 3.5bn active social media users and, as outlined earlier, in markets like China, Wechat and Alipay have become the universal platforms that have subsumed online financial services access.

Big techs have the reach, consumer-facing brands and purchasing power to be able to make a major impression. Indeed, Google is already the dominant payment player in the UPI payments ecosystem in India. Their entry to the market there paralleled the demonetization drive in India, resulting in a huge

uptick in volume.

At one level this may simply be to take advantage of the lower costs of payments in the open banking world. But data-driven organisations such as these will be very interested in the data that can be extracted from the open banking APIs. And in new opportunities that they can generate by merging this data with their own, extensive, data sets.

The prospect of the Internet Giants using this data to intercept customers before they talk to their banks – to offer them financial services such as loans and mortgages – is one that the European regulators presumably were not seeking. If this happens, it is not hard to imagine regulators looking hard at the need for reciprocity in terms of opening up access to data.

It remains to be seen, however, how these organisations might choose to position themselves within the open banking ecosystem.

5. It's a "Meh!" moment

For every open banking evangelist there are several sceptics who see it as hype and bluster and predict that there will be no significant impact or change beyond some shiny new fintech toys at the margins of financial services.

Given the sheer scale of the change it is hard to rationalise this view, but there are some fundamental challenges that, if not addressed, could make the scenario a more realistic prospect.

A key challenge often cited is around how to establish user understanding and trust, particularly in a world where privacy abuses such as the Cambridge Analytica scandal rightly receive so much focus.

Banks have spent many years warning their customers of the dangers of sharing their account details, so the concept of 'open' banking may seem alien to some. Consumer education has an important role to play in promoting consumer confidence and trust, as does a secure but user-friendly authentication experience.

In theory open banking is laying the foundations for customers to have much greater control and ownership over their data and a digital consent approach that is both easy to switch on and off. But for this to be realised, banks need to continue to focus on the authentication user experience, so it works in all channels. For example, it must work within third party platforms and in the physical environment such as POS and transit terminals. Without these elements, as well as consumer education, establishing user trust at scale may be a tricky hurdle to clear – particularly in an environment where bank account push payment fraud is continuing to increase.

Another challenge that could suppress the potential for open banking is an absence of redress mechanisms should something go wrong. Existing payment methods, such as cards and direct debit, are supported by a

very mature ecosystem, with robust processes in place to handle any issues which may arise. Without similar consumer protection models and in an environment where push payment fraud is on the rise and in the news, some argue that open banking payments may not scale.

Examples such as iDeal in the Netherlands and UPI in India show that account-to-account payment models can thrive and achieve mass adoption without the kind of consumer protection and dispute models that are familiar with credit cards. But in markets where card payments are dominant, it may certainly be a barrier for higher value and higher risk spend categories such as travel.

At the same time, there are arguments that for many daily payments or B2B payments, that level of protection is an unnecessary luxury. Perhaps the market will determine where additional protection is required versus where it is not. But

the risk remains that lack of protection or unsatisfactory redress mechanisms when something goes wrong could reduce the potential.

With the above in mind, the other challenge for participants is creating services and propositions for users that are sufficiently interesting and compelling that they will adopt new behaviours and engage with them. If that does not happen, open banking will not realise its potential.

Banks have a key role to play in protecting against this happening. The way they approach open banking significantly impacts both the quality of services that can be built around their APIs as well as, arguably, their own fate. Delivering only the regulatory minimums may create foundations with the following characteristics:

- Inadequate performance and availability of APIs, meaning services built on top are only as strong as the weakest link

- Poor user experiences, increasing the adoption barrier for first time users
- Fragmentation through delivering proprietary APIs or implementing standards poorly, increasing the cost and complexity of connection

We have arguably seen all of these characteristics in some of the early implementations. In fact, in the UK the development of strong customer experience guidelines as part of the standards suite and the enforcement of 'app-to-app' to provide more frictionless, biometric-based authentication came as a direct measure to tackle initially poor user experiences. The resulting impact has been a huge improvement in user experiences, enabling far more propositions to succeed.

In summary

Open banking will likely remain a hotbed of speculation about who the winners and losers will be for years to come and,

if nothing else, will help fuel a vibrant consulting ecosystem. But this should be seen as a multi-year journey and what has been delivered so far are merely the beginnings.

The global momentum of open banking and the natural extension to open finance and a broader open API economy mean it is here to stay. Early indications also suggest that it is resulting in significant levels of innovation, investment and new opportunity for both new and existing participants in the ecosystem and its new value chain.

Arguably there is space for many winners and undoubtedly there will also be losers, those who don't see it for what it is, an opportunity.

What is clear from our discussions and interviews is that there are some clear barriers that we do need to clear to unlock the potential. We will explore these further in the next section.



Barriers to adoption of payments in an open banking context

During our interviews and discussions with industry experts, several potential barriers to open banking were identified. In the following section we describe them and some possible approaches to



Protection and trust



Customer experience



API performance



Fragmentation of API access



Market incentives



Protection and trust

Many interviewees raised concerns that PSD2-based payment solutions provide limited protection and dispute mechanisms for certain scenarios, e.g. merchant disputes. As it stands, consumer protection is unclear and payments using existing banking rails such as Faster Payments or ACH schemes offer less surety of refunds as compared to payment cards. Correspondents feared that this made open banking payments less attractive compared to other payment methods. Specifically, the lack of an inherent chargeback capability was mentioned as a significant shortcoming. According to Sentinal, “Some retailers are very educated on this. Many other retailers have heard of the cost benefits but are yet to understand the product limitations.” The market may self-solve this through individual players providing additional

levels of support and protection, or players may work together to agree some form of scheme. Or alternatively the market may just settle on which payment types work best, by comparing one payment type with another.

Either way, consumer messaging and education may be needed to establish user trust and confidence.

While high value consumer-facing services may need additional layers of protection, other areas such as low value day-to-day payments, gaming or B2B services may not require the same approach. Several interviewees highlighted the way in which consumers in the Netherlands use iDEAL for regular online purchases but would normally use payment cards for higher value purchases, such as airline tickets, because iDEAL does not offer the chargeback protection that comes with cards.



Customer experience (particularly around authentication) and functionality:

The advent of open banking payments also provides the opportunity to reinvent the customer experience around payments.

In the early days of open banking, concerns were expressed that some banks were merely viewing it as a compliance exercise, rather than focusing on market solutions. In particular, poor experience around the SCA process led to customer drop-off: many of the issues stemmed from the ‘redirect’ consent model where consumers were sent to a bank’s consent and SCA process, causing a disconnect with the customer experience. This was particularly acute when the authentication journey at the bank side was clunky with too many steps (even involving phone calls, card devices or additional passwords and PIN codes).

In the UK the development of customer experience guidelines has gone a long way to improving these initial user experiences, along with the requirement to deliver a more frictionless App2App journey. Several interviewees also noted that the open banking App2App process has significantly alleviated some of these issues. As Fire commented during our interview, “The UK has done an incredible job with the App2App specification.” There is considerable appreciation for the OBIE, both from those closely involved in delivering services in the UK and from overseas commentators who regard it as something of a beacon in the landscape.

But to really unlock the potential it will be important to move beyond the redirect model only. We now live in a world of the platform, both as consumers and as businesses, whether that is a social media platform,

a commerce platform or an accounting platform. Increasingly the expectation is that user experiences can be started and completed without leaving the platform and therefore a model based upon redirecting to another site or app has clear limitations.

The likely outcome if this model does not evolve is that the platforms will fill the vacuum, and step directly into the financial services space. We only need to look at how successfully Amazon have stepped into the space of providing lending and payment services to the SMEs within the marketplace to see that this outcome is not just feasible but likely.

Open banking APIs must also deliver a model that works in the physical world of point of sale terminals, transit terminals, IoT and wearable devices. The ability to initiate a transaction via one means and to authenticate it via biometrics on another device will be key to unlocking many large-scale payments use cases. This 'decoupled' method is built into the standards, but not yet supported by banks.

As such the banks will need to support alternative consent models to redirect. For example:

- Decoupled authentication - to enable payment initiation from POS / transit terminals / QR codes
- Embedded or delegated authentication - to enable payment approval to be embedded within platforms e.g.

marketplaces, accounting platforms or uber-like payment journeys

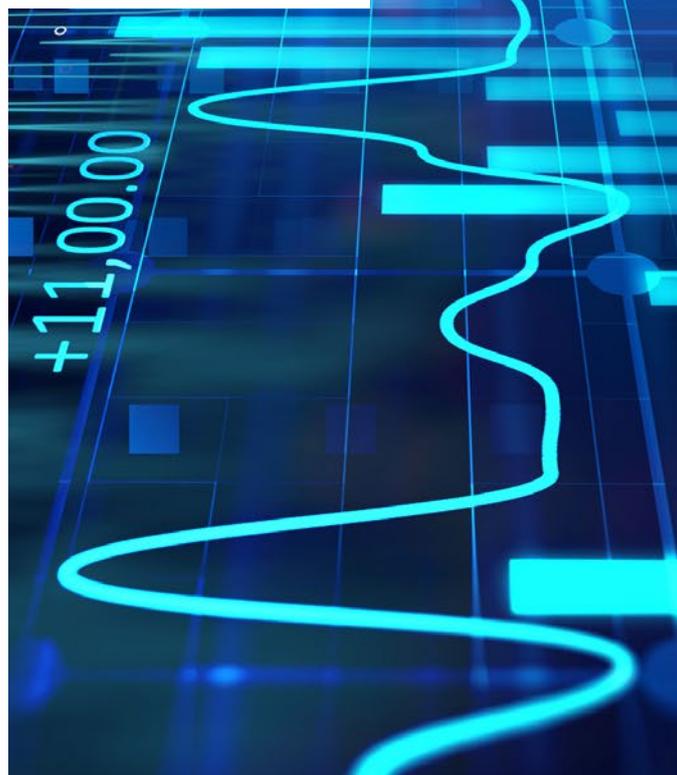
If the open data future that we have outlined does happen, then enhancing open banking APIs to support secure yet great authentication experiences could be the key that unlocks the opportunity for banks to genuinely be the guardians of trust in the new economy.

The other big step could be to add richer functionality to the payment API. In particular, rules-based payment consent was highlighted as a priority. This would enable rule sets to support propositions such as variable recurring payments (VRP) and supplier-initiated payments, where the payer is able to provide a rules based consent so the payment takes place, even if they are not 'in session'. The existing Single Immediate Payment (SIP) functionality is viewed as useful but not sufficient to achieve the greater potential of open banking.



“The UK has done an incredible job with the App2App specification.”

Fire





API performance and availability

A broad consensus exists that the banks' APIs currently show inconsistent availability and performance, with inadequate response times and substantial downtime. Some part of this is due to immaturity of the market – it was noted that the UK's banks have better performance compared to other European countries due to the infrastructure in the UK being more advanced.

It could also be considered the result of a mismatch of requirements where the PSD2 requirements set a regulatory hurdle equivalent to bank website availability, while payment solutions need significantly higher levels. The lower regulatory requirement is not sufficient to support increasingly sophisticated open banking solutions.

API performance in this area is very varied, with Starling Bank regularly posting 100%²¹ availability figures, while overall figures across the industry are

nearer 96%.²² In a real-time customer-facing payment environment, it is usual to require availability well above 99%. Anything below this level causes real customer impact.

The Downtdetector website gives a fair view of the availability of large-scale customer-facing organisations and the customer impact when their services are unavailable (whether the outage is planned or unplanned). Given the patterns of availability, many institutions still schedule significant periods of downtime for maintenance purposes.



Fragmentation of API access

In these early stages of open banking, several different standards have emerged. To complicate things further, some banks have developed their own proprietary APIs. In addition, the quality of implementations also means that not all APIs have been built to the standards in a standardised way.



“Fragmentation is bad – for banks, for third parties and, ultimately, for users. “



Whilst this has created opportunity for those who have mastered connectivity, it is ultimately a handbrake on the pace of growth and a significant increase in the cost to the industry of achieving connectivity. Moreover, it reduces the global interoperability as open banking continues its march across the globe.

It is worth exploring the elements of standards though to determine the key priorities and areas of focus. The open banking standards can be broken into three macro components:

1. The security standards

– the protocols for establishing a secure connection and the identity of the different parties within the transaction, and for managing the capture of consent (which may be very fine-grained). This arguably should be the same, irrespective of whether the underlying product is a current account, an investment product or even health

data. Security and interoperable protocols are key, and through the Open ID Foundation there is arguably already a single global standard that works for open banking and beyond (the FAPI and CIBA protocols which are part of the Open ID Connect standard).

2. The functional standards

- defining the read and write functionality and data models. There are different data sets, fee structures and characteristics for different financial services products. For example, a simple current account has different characteristics from a pension. So, as the scope of open banking and open finance initiatives grows across the world, the library of functional specifications will inevitably expand. However, developing these in an interoperable and standardised way will be critical for interoperability and scalability.

3. The customer experience standards

- the third main component of the standards suite are the customer experience guidelines, designed to put user experience and design at the centre of the process and minimise unnecessary steps. Again, these will need to extend over time and adapt to local privacy frameworks and customs, but some core principles should remain common.

The UK has taken the lead in this area by developing a full suite of standards

(also including operational guidelines) in collaboration with the industry and the Open ID Foundation. It has supported this with conformance, testing and accreditation tools. Newer open banking markets seem to be grasping the opportunity to build on existing open source standards rather than starting from scratch. But whilst different standards exist, or where implementations of standards are poor, fragmentation and the complexity of access will hamper the opportunity.



Market incentives

The open banking environment is still relatively immature and has yet to be proven at scale over extended periods of time. As Mastercard commented during our interview, "Open banking should be regarded as a 10-year journey, not a 10-month journey." It is, however, growing significantly by all measures in the UK. At the outset of open banking the number of participants (ASPSPs and TPPs) could be counted on one hand, whereas now there are well over 200 live participants with many more businesses built on top of and in partnership with these participants. Usage has also grown exponentially, with the number of successful monthly API calls growing rapidly from 17.5m in November 2018 to 215.3m one year on.

Despite this growth, a theme that emerged from the interviews was a concern that open banking lacked sufficient market incentives to make key

players - especially the banks - engage with the ecosystem. While some banks have recognised the opportunities, many others still view this as a compliance issue and this, indirectly, leads to some of the issues previously discussed in this section.

In the UK and Europe, the fact that many open banking payments, for example single immediate payments via Faster Payments, will generate zero direct revenue from banks, whilst triggering actual cost, is a disincentive for banks to really push open banking payments - particularly when organisational structures and immediate P&L pressures tend to encourage short-term protectionism.

For banks to really care about the quality of their payment APIs, some argue that there needs to be a clear value exchange.

The demand-side players will, and are, starting to demand better payment experiences and richer



“Open banking should be regarded as a 10-year journey, not a 10-month journey.”

payment functionality. In return, banks will likely look for a commercial model to compensate for the cost of processing account-to-account payments alongside other considerations such as liability and dispute management. The move to charging for premium/commercial APIs over and above the regulatory minimums is likely to happen within the next two years. The challenge for the industry will be to do this in a simple, scalable way that doesn't result in a complex web of differing bilateral agreements. That is probably how the market will begin to form, but common framework agreements will be inevitable.



21 <https://www.starlingbank.com/current-account/service-information/api-performance/>

22 <https://www.openbanking.org.uk/providers/account-providers/api-performance/>

Recommendations for promoting a high-quality payments ecosystem

Building on the research and analysis in Sections 5 and 6, this section sets out the key priority areas that we believe should be the focus for the EPA, its members and the industry at large. These recommendations, in three key areas, outline the EPA's proposed focus, set out policy positions and create a platform for concrete action to be taken.

Help create the market conditions for success

Open banking will ultimately thrive and scale more quickly and effectively through fostering the right market conditions. This will mean seeking the right balance between regulatory catalysts and allowing market forces to take shape. The EPA will support the industry in looking to achieve this correct balance and will provide industry leadership on behalf of its broad membership base at critical moments in the market. Specifically, the EPA will:

- 1. Open Banking Futures**
 - act as a voice for the industry to shape the future model for open banking in the UK

ACTION: be an active and forceful member of the open banking futures steering committee on behalf of the payment industry

- 2. Open Finance** - be

a champion for the payments industry and help define the framework for open finance

ACTION: respond to the Open Finance call for input on behalf of the EPA community and offer to support and advise the FCA as the initiative progresses

ACTION: invite EPA members and industry participants to join a new EPA Project Open Banking to manage the implementation of the recommendations in this report, and obtain funding for it from our members

- 3. Commercial frameworks** - support the development of commercial market frameworks so that premium API propositions are scalable and accessible to the industry

ACTION: include as a core activity within the EPA's new Project Open Banking

Be a champion for standards and user experience

A successful open banking ecosystem must be built upon the two pillars of standards and user experience. The use of standards that are implemented well is the only route to achieve interoperability and will drive lower costs for the industry, better use of

scarce developer resource and will allow banks and third parties to focus on delivering great end user propositions.

Equally, without great customer experience, adoption will not scale. Great user experience means applying good practice around consent management and supporting secure but flexible authentication options to work across multiple channels and use cases. The EPA will become a champion for standards and user experience by:

- 1. Harmonisation** - acting as a champion for standards and work with the key standards bodies to support an agenda of harmonisation

ACTION: Develop stronger relationship with key standards bodies such as ODF, OBIE and Berlin Group to support their efforts and help build their understanding of the needs of the payments industry

- b. Consumer experience**

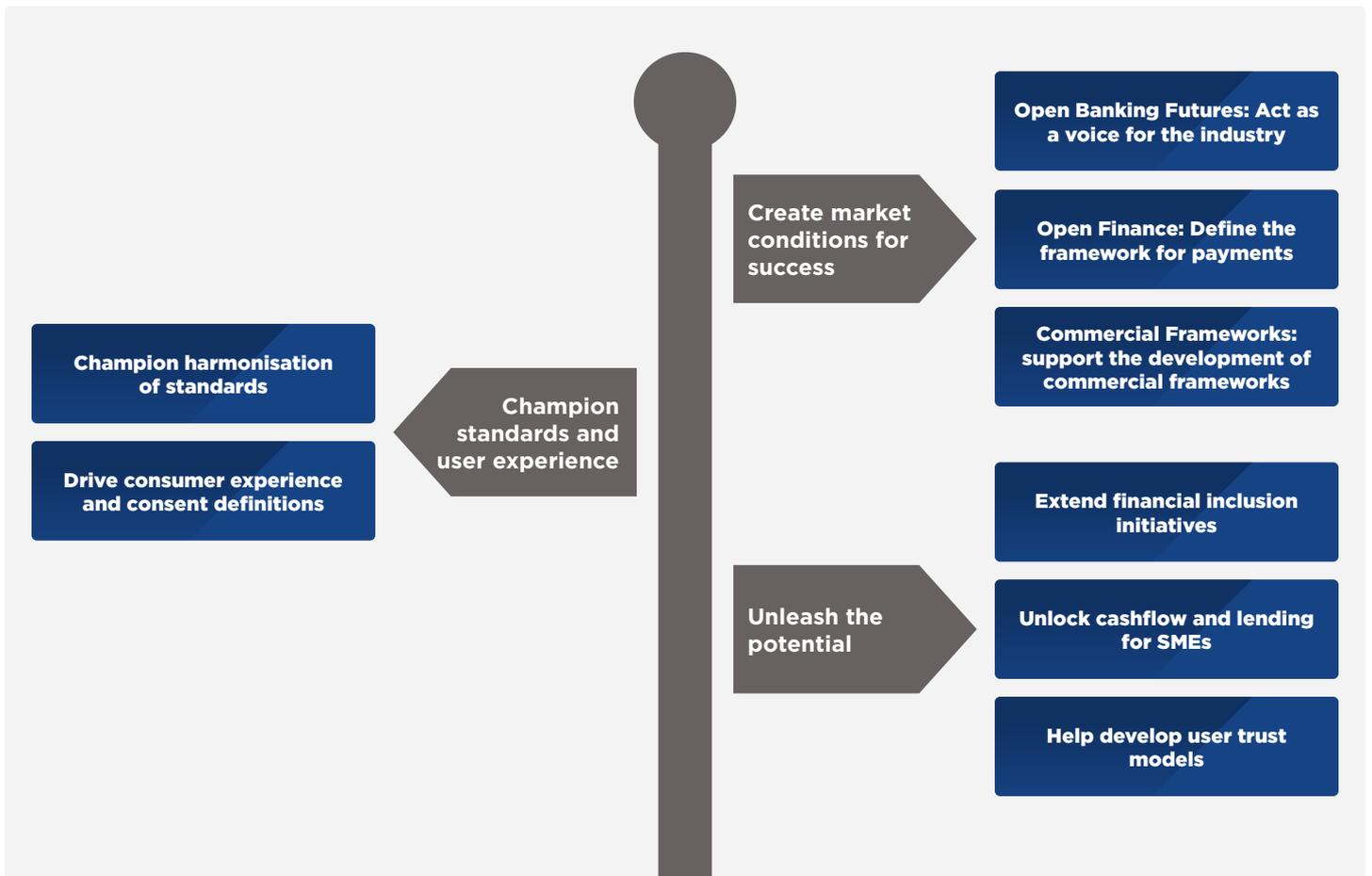
- supporting industry efforts to drive secure, effective user experiences and consent best practice

ACTION: include as a core activity within the EPA's new Project Open Banking



“A vibrant open banking ecosystem is already generating significant levels of innovation across a broad range of use cases. The NESTA challenge and the ecosystem response to the recent COVID-19 crisis are great examples of the potential that open banking can unlock.”





Unleash the potential

A vibrant open banking ecosystem is already generating significant levels of innovation across a broad range of use cases. The Nesta challenge and the ecosystem response to the recent COVID-19 crisis are great examples of the potential that open banking can unlock.

There remain, however, ongoing societal challenges that the payment industry is well-placed to help tackle and is already tackling. The EPA will extend its existing initiatives in key areas to also encompass an open banking focus, for the good of the industry and society:

- 1. Financial Inclusion**
 - extending existing

financial inclusion initiatives to incorporate open banking driven opportunities and to identify new financial inclusion opportunities made possible by open banking

ACTION: extend the scope of the EPA's existing Project Financial Inclusion, supported by EPA Benefactor, Mastercard

ACTION: identify open banking participants doing great things around financial inclusion and invite them to extend the thinking of the project

- 2. Unlocking Cashflow and lending for SMEs** - by

working with members to accelerate the opportunities for how open banking payments can help unlock cashflow and increase lending options for SMEs

ACTION: extend the scope of the existing Project SME

ACTION: identify open banking participants doing great things around SME cashflow and lending and invite them to extend the thinking of the project

- 3. Establishing user trust**
 - by supporting the industry as it explores models for establishing increased user trust and confidence. The EPA

will work to influence either policy or market driven activity to help ensure the views of end customers and the industry are represented (actions to be determined once an industry effort is established)

ACTION: include as a core activity within the EPA's new Project Open Banking

We will work with members and the advisory board to continue to review our focus and shape future actions in line with market developments. Ultimately, we are here to serve the industry and we encourage ongoing engagement and dialogue on our focus.

Conclusions



Open banking is here, it is increasingly global, and it is already extending beyond banking to become 'open finance' and potentially 'open everything'. As we look around the globe, we also see that there is not one single model. Different markets are taking different approaches and each new arrival is looking to learn from the others.

Ultimately, we may see global harmonisation but, for now, the differences make for interesting industry debate and are the foundations for many different academic case studies.

What we are seeing though is that in more advanced open banking ecosystems such as the UK the foundations are taking hold and the growth is really starting to show. The number of participants continues to increase, the range of participants from the smallest challengers to the biggest beasts is astonishingly diverse and usage is starting to become more material.

It is still only the end of the beginning and much needs

to stabilise, but the signs are positive.

The diversity of participants and the breadth of use cases that open banking is enabling, or could enable, makes for interesting speculation about how the market will play out. We are seeing a diverse value chain emerge and significant investments are being made by the VC market and major corporates as bets are placed on the winners and losers. The Visa acquisition of Plaid for \$5.3bn caused many to pause and take note.

Any change of this magnitude will always create both existential risk and massive opportunity for the big established players and this is no exception. If banks react well, this could be the moment where they transcend to become platform players with more diverse business models and routes to market. They could be positioned as the guardians of trust in an open data economy.

It is equally an opportunity for big tech and the existing platform players to take a more influential role in our

day to day management of money, movement of money and ways of sharing our data.

But for the real potential to be realised there are still some real barriers to overcome. The open banking start point in many markets has created a foundation, but there is still more to do. The early implementations reveal a fragmentation of standards. Interoperability will be key for long-term scale and fragmentation will increase the cost of participation for both banks and third parties. In addition, the API performance of banks needs to continue to mature and stabilise to support a vibrant payments market.

Beyond the APIs, the user experience will need to continue to improve and for true scale to be achieved more flexible authentication models will be required to allow open banking functionality to work in different environments. Whether that is within platforms (without needing to be redirected to a bank apps), at physical points of sale or transit ticket

turnstiles or Internet of Things devices. In addition to the user experience, the industry may need to go further to establish trust and confidence amongst users.

All of this will probably be solved more easily once the industry inevitably moves beyond a regulatory only mode and there is a value exchange between API providers (the banks) and API users (the TPPs) through the delivery of premium APIs, built on top of the initial regulatory implementation.

The EPA believes that this is a pivotal moment for the payment industry, with the foundations being laid for secure, digital, immediate and intelligent payments. We commissioned this paper for that reason and are passionate about developing and delivering on the recommendations and actions outlined in this white paper.

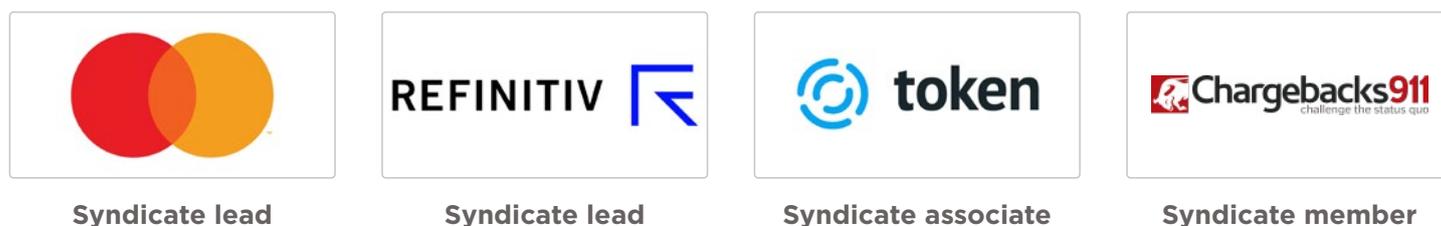
We would like to thank the syndicate members, all of the members of the EPA and the experts who contributed to the development of this white paper.

Appendices

Appendix A - Glossary

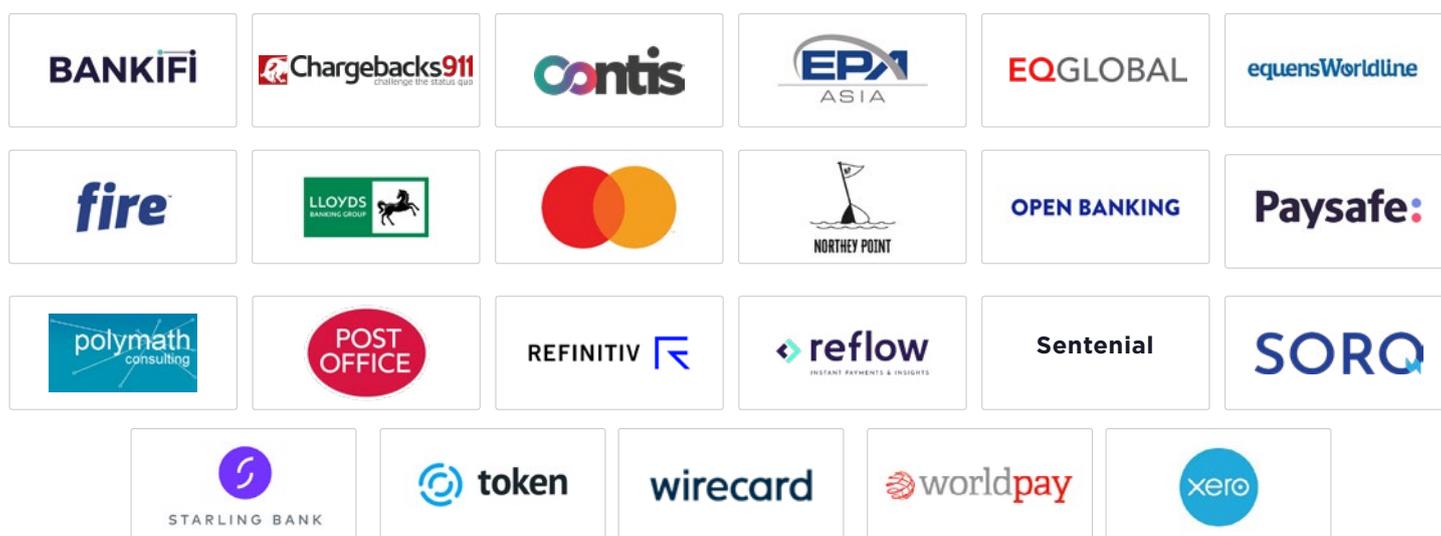
| Area | Key Questions |
|-------------------|---|
| AISP | Account Information Service Provider |
| API | Application Programming Interface – specifies how software components should interact |
| ASPSP | Account Servicing Payment Service Provider |
| CMA | Competition and Markets Authority |
| CMA Order | Order made by the CMA in 2017, with the intention of opening up the payments space |
| CMA9 | Nine largest banks in the UK, as determined by the Competition and Markets Authority |
| EBA | European Banking Authority |
| EBA RTS | European Banking Authority Regulatory Technical Standards |
| EEA | European Economic Area |
| FCA | Financial Conduct Authority |
| FDATA | Financial Data and Technology Association |
| GDPR | General Data Protection Regulation |
| OBIE | Open Banking Implementation Entity |
| OIDF | Open ID Foundation |
| PISP | Payment Initiation Service Provider |
| PSD2 | Second Payment Services Directive |
| SCA | Strong Customer Authentication |
| SME | Small or Medium-sized Enterprise |
| TPP | Third Party Provider |
| UK Finance | Trade association for the UK banking and financial services sector |

Appendix B – Syndicate Credits



Appendix C – Contributors

With grateful thanks to the following industry experts, who generously gave their time, knowledge and experience during the preparation of this report: Any views expressed in this paper are those of the EPA and should not be attributed to any individual interviewee.



Appendix D – Interview Questions

The following set of questions was used in the course of the interviews:

| Market Overview | Barriers |
|---|---|
| 1. How is your organisation positioned in relation to payments in open banking? Who would you see as the major players? | 10. What barriers do you see to large scale adoption of open banking? |
| 2. What do you see as the major current trends in relation to payments in open banking? | 11. How can they be tackled most effectively and practically? |
| 3. What do you see as the drivers for future change in this area? | a. Policy |
| 4. What sort of opportunities does it present? | b. Functionality |
| 5. How do you view potential issues relating to SCA? | c. API standards and interoperability |
| 6. Do you have any particular concerns regarding rule-based consent? | d. Other options |
| 7. How would you describe the challenge of delivering consumer support in this context? | 12. How can the EPA and its members help to support the development of open banking? |
| 8. Are there other issues of particular concern? | 13. Which other organisations could help to promote adoption of open banking? |
| 9. To what extent can large-scale adoption be seen as positive for all participants? | 14. What actions would you recommend the EPA community to take to promote open banking? |



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