OPEN BANKING EXCELLENCE

The Global

Open Finance Index

The most in-depth exploration to date of the state of play in Open Finance across the world.

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IN ASSOCIATION WITH

INNOVATE FINANCE

Department for International Trade

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Foreword

Andrew Bowie MP

Minister for Exports

Open Finance Exports

UK

Andrew Bowie MP

Minister for Exports

I am delighted that DIT has supported Open Banking Excellence in the creation of this report with input from our global network of Embassies, High Commissions and Consulates.

The UK is a global FinTech powerhouse, with established financial services and technology sectors, an enabling business environment, and supportive policy and regulatory frameworks. Not only are we in the world's top five financial centres, we are also in the top five most innovative nations. It is no surprise therefore that the UK is at the forefront of global financial innovation.

In 2017, the UK created the blueprint for Open Banking. In the 5 years since the first UK customer used an Open Banking enabled service in January 2018, the sector has grown to over 6 million users and 600,000 SMEs using products and services which utilise our world-leading standards.

With over 70 account providers and 200 companies providing products and services operating in the UK, our open banking ecosystem is robust, mature, and thriving. By contrast, this is almost 7 times the amount in Sweden, our closest European peer.

The Global Open Banking Index confirms that the UK maintains its position as the global leader in Open Banking, with the strongest user adoption rate of all the countries covered and comprising of almost half of all connected consumers in Europe.

This global leadership position represents a huge export opportunity for the UK in a sector where, according to Allied Market research, the global market will be worth more than $120bn by the end of the decade.

Markets across the world are seeing the benefits to implementing their own open banking standards. In the UK, our companies have the skills, experience and technology to support both the creation and implementation of these standards. Our companies providing innovative products and services are ready to establish themselves in new markets, and I am keen to ensure we take a leadership position as the global market matures.

The Index highlights the pace of development in markets around the world. India's open banking regime will soon cover more than a billion accounts, Brazil has pushed straight for a full Open Finance roll out, and banks in the US are coalescing around a voluntary standard that already represents the third largest grouping in the world.

The UK is perfectly positioned to take advantage of the opportunities this presents to our thriving FinTech sector, and to ensure our companies continue to win business around the world.

The capacity of this report to bring into focus the pace of change across the world is why it should be considered required reading for anyone with an interest in this space. I look forward to DIT continuing to champion open banking and helping to ensure the UK has a critical role in its exciting global future.

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Introduction

Helen Child

Founder & CEO, Open Banking Excellence

Open Finance

UK

Helen Child

Founder & CEO, Open Banking Excellence

When I founded Open Banking Excellence it was with a stack of Pizzas and 38 fintechs buzzing with the excitement of what an Open Banking ecosystem could deliver for people in the UK. Five years, and hundreds of millions in investment later, those fintechs are established technology businesses driving systemic change and helping millions of people to have better relationships with money.

Our transformation at OBE has been no less profound. Those 38 founding members are now part of a community of more than 20,000 experts and enthusiasts around the world. We're delivering content on three continents and advising governments and regulators from across the world on how to create successful Open Banking ecosystems.

This report is a direct function of that transformation. As our community grew and our engagement with institutions and policy makers became more frequent and substantive, we found ourselves reaching more and more for information that didn't exist - or at least not in a single place, and definitely not delivered in a way that could allow us to explore the intricacies of ecosystem development.

We needed to help people benchmark progress, understand the impact of Open Banking on their economy, their society and their environment, to find and deliver best practice and to design thriving ecosystems. The publicly accessible knowledge-base for this simply didn't exist.

The Index is our contribution to that body of knowledge. Free to access and continually improving, the Global Open Finance Index is designed to act as a focal point for fintechs, financial institutions and policy makers as they build understanding of their local delivery in a global context.

This document is our opening salvo in that process. It is the baseline from which we'll be building The Index over the course of 2023 and is designed to add overall context to the community's perception of the global picture. Later in the year, we'll be adding more detailed research into thematic and geographic segments within the report before we add the first major update in Q4.

None of this would be possible without our partners at Accenture and NatWest nor without those who have supported us in other ways, in particular, our friends at the World Bank, The University of Oxford, Innovate Finance and the Department for International Trade. I want to offer our heartfelt thanks to all of them at the outset.

The next few years will be the defining time for the UK's future role in this global phenomenon. We will be there at the heart of the community as together we set out on what I'm sure will be a truly epic journey together.

> **"Those 38 founding members are now part of a community of more than 20,000 experts and enthusiasts around the world"**

Chapter 1

The Index Findings

“ Open Banking comes into its own when it helps people do what they already wanted to in a more personal and frictionless way. I’ve seen little evidence that, on its own, it’s a catalyst for creating new categories or popularising what wasn’t previously popular. It takes markets time to work this out. Some are cottoning on faster than others. ”

Sam Oakley, Strategy Director, OBE

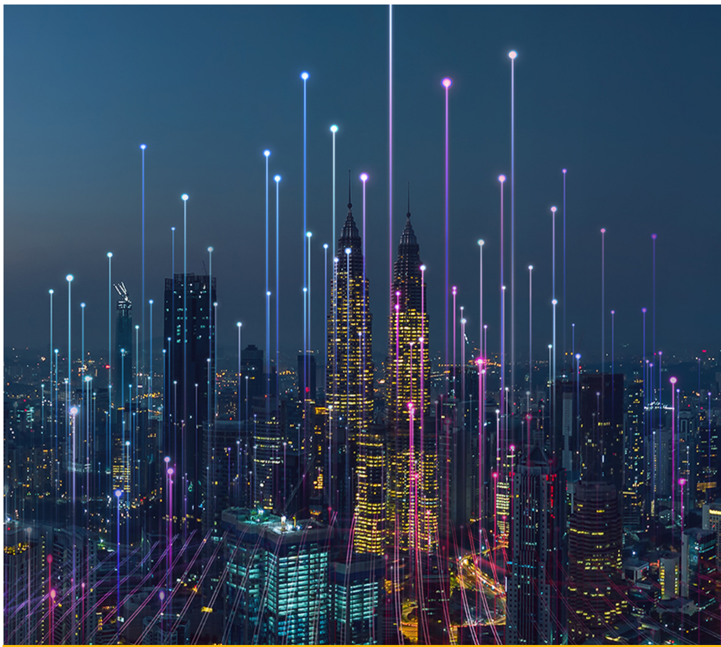
INTRODUCTION

Open Banking is a global phenomenon. It has the potential to fundamentally reshape the interplay between social and financial systems and to change the way we all relate to our money.

There have been many studies that have attempted to analyse the speed of adoption and from it, infer the pace and extent of the change that is coming, however none have succeeded. Directly comparable data points across countries and regions are non-existent and for inferred data to be valuable, the background work to establish context has to be second-to-none.

This index makes use of more than 150 data points per country, gathered through our own survey and from partner sources like the World Bank, the IMF, Dealroom.com and more. This is contextualised through more than 50 in-depth interviews with international experts to provide what we think is the most definitive source of insight into the progress of Open Banking across the world.

In this report we looked at more than 50 markets around the world where Open Banking has begun its journey to adoption and narrowed the scope to the 23 markets where these first steps are producing the beginnings of an ecosystem.



50+ markets analysed

400+ expert respondents

150+ secondary data points

> **"Our aim is simple, create the most in-depth review to date of the state of Open Banking and Open Finance across the world."**

Helen Child

Founder & CEO, OBE

The four pillars of ecosystem development

Data gathered from the 23 markets was used to assess them across four macro-categories.

1 Regulatory Environment

The scoring across the regulatory environment category combines a scoring system based on the make-up of regulatory factors that promote ecosystem development with answers from our survey that speak to the industry perception of those regulatory factors. These include (but are not limited to) factors such as the state of Open Banking regulation, the existence, and nature of unified standards for Open Banking data, the existence of supporting regulation for areas such as Digital ID etc… Markets that scored highly in this sector were judged to have regulatory environments that were highly conducive to the development of a thriving Open Banking ecosystem.

2 Entrepreneurial Environment

Scoring against the entrepreneurial category was designed to describe the attractiveness of the market to new entrants, again using a combination of secondary and primary data points to assess areas like access to talent and capital, the potential for ROI and relative returns per customer. Markets that scored highly in this category are seeing rapid growth across the fintech sector, provide excellent access to talent, capital and have a significant addressable market.

3 Consumer Environment

The Consumer Environment category scores describe the current and likely future adoption of open banking by looking both at existing adoption and indicators of a consumer base that is likely to be receptive. Factors like the extent to which a population is digitally banked and makes use of digital payments already are overlaid onto primary data around the adoption of Open Banking use-cases based on our survey and interviews. Markets that scored highly in this category had good early adoption and sound indicators of future adoption.

4 Fintech Ecosystem

The ecosystem score is designed to describe how easy it is for new entrants to access the services and tools they need to bring propositions to market successfully. This looked at factors such as the presence of third parties and support services as well as collaborative factors such as Bank/TPP collaborations and other institutional engagement with the ecosystem.

Key Findings

Regulation vs Market-driven dynamics

It has been commented on before, but the data re-affirms the axiom that differing driving forces produce differing market characteristics. Market-driven ecosystems take longer to develop technologically but have tighter value propositions. Ecosystems driven by regulation take a tech-first approach and have more freedom to experiment, this results in a higher failure rate tied to faster overall progress.

This effect is visible in the data through analysing the use-cases that take hold within market-driven ecosystems. In market driven environments, these are more likely to be what the report refers to as phase 1 or early stage use cases where niche value propositions are able to achieve viability through leveraging larger addressable markets in countries that score well on the entrepreneurial axis.

The converse is true in smaller, regulatory driven markets where phase 1 use cases struggle to gain traction and where the first use cases to gain widespread adoption have needed a broader application and a clearer value proposition.

Time to Value

Open Banking takes time to establish itself in a new market. There is a strong correlation in the data between overall consumer adoption scores and the type of use cases judged to be prevailing amongst the survey respondents.

As ecosystems mature, players develop more nuanced value propositions. Broadly these fall into three phases of development:

Early Stage	Developing Stage	Developed Stage
Low consumer scores 45 - 55	Mid consumer score 56 - 65	High consumer score 65+
Account aggregation	Early affordability checks (income variation)	Developed affordability checks (Risk decisioning)
Single PFM (insight only)	Action-oriented PFM (switching etc)	Ecommerce payments
Account top-up payments	SME finance tools	Product distribution
		Invoice settlement and accounting for SMEs

Use case diversity matters

Respondents to the survey were invited to submit up to 5 use-cases that were achieving or were likely to achieve in the near future, widespread public adoption. More than 500 such use cases were submitted which, after further analysis, were broken down into 12 categories.

29%

Personal Finance Management (PFM)
This incorporated account aggregation, basic spending insights and budgeting tools. We excluded those use cases which incorporated extra third party services such as switching tools. These were often framed separately and require a level of connectivity beyond Open Banking.

9%

Account top-up payments
This incorporated all use cases referring to payments where the user is moving money between account that they Already own (including digital wallets, investment accounts etc...)

2%

Tax payments
This was a niche use case but was called out by a significant minority in both the UK and India and as such given its own classification as distinct from other, more general payment use cases.

8%

Ecommerce / A2A payments
This comprised of all use cases where the user is paying a third party with the exception of Tax.

1%

Loyalty programs
Focused on all use cases covering loyalty and rewards.

6%

Business Finance Management (BFM)
This included all use cases referring business account aggregation and information gathering but excluded use-cases that explicitly mentioned automated accountancy.

2%

Product innovation
This comprised all use cases referring to the creation of tailored or individualised financial products.

6%

Account verification
This included all references to customer onboarding unless other checks were specifically mentioned.

2%

Credit risk scoring
This was created as a distinct category from affordability checks to highlight the increased cultural acceptance of Open Banking implicit in its use for creating more fundamental models.

17%

Income & Affordability assessment
This included all credit checking use-cases unless risk modelling / decision making was specifically mentioned.

1%

Digital ID services
This was created as a category to cover use cases that went beyond account verification.

4%

Automated accounting
This was restricted to use-cases where accountancy services were specifically mentioned in order to differentiate it from BFM use cases. The differentiation was made to highlight the increased complexity

“

A perception of Open Banking as suitable for a diverse set of use-cases correlated with stronger adoption.

”

Helen Child

Founder, OBE

PFM is not the answer

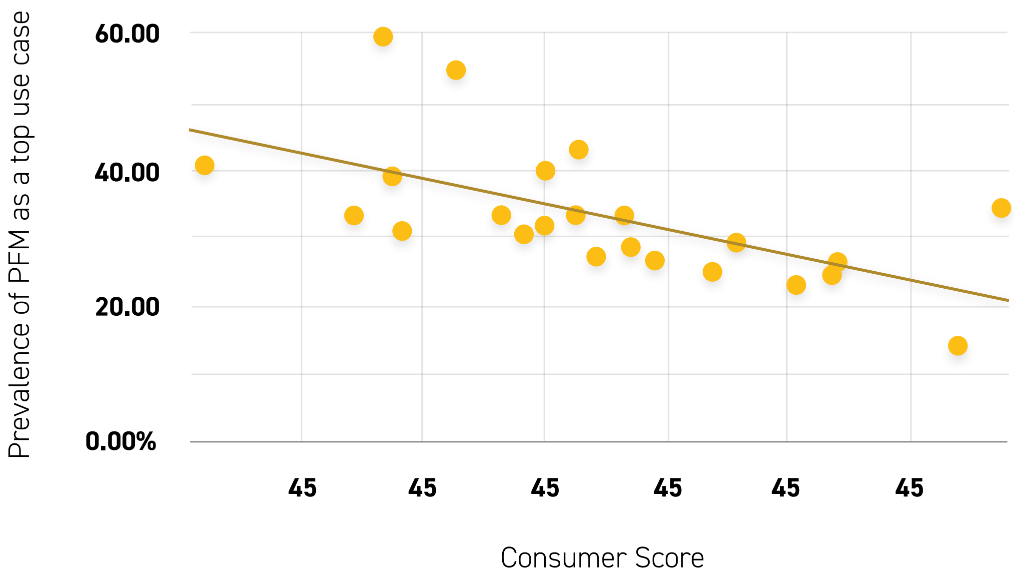
The complexity of these use cases varies and it is not surprising, in that context, to see markets at the beginning of their open banking journeys gravitating towards more simplistic implementations, (particularly in early stage regulation-driven ecosystems where there is a significant perception of Open Banking as being a “solution without a problem”).

It is clear though, that adoption is highly dependent on delivering value propositions with market fit. Countries with high prevalence of simplistic use cases scored much lower on our “Consumer” axis than those with higher prevalence of second-phase use cases.

For the 8 countries that score less than 55 on our consumer axis, phase 1, simplistic use cases accounted for, on average, 73% of respondents. Conversely, the 7 countries with scores of 60 or above averaged 58% on the same measure. The prevalence of PFM in particular seems to code for lower consumer scores with 36 % of respondents from bottom 8 countries citing it as one of their top use cases vs only 25% of respondents from the top 7.

Note: This effect is counterbalanced by the prevalence of PFM use cases in the US it stands to reason that whilst the value prop of PFM use cases is niche, the US market is of sufficient size that there are enough people with complex financial lives to support businesses of significant size in this space. Without the US in the calculation, the effect is more pronounced with only 23% of respondents calling out PFM as a top use case.

“Consumer” score vs prevalence of PFM as a top use case



Government Supported vs Mandated

Government approaches are materially impactful. Across the markets we looked at, approaches broke down into one of three categories:

Neutral
In markets where government has taken no major steps towards delivering and open banking ecosystem - example: US.

Government supported
In markets where government has taken steps to support the development of Open Banking in the form of public investment in infrastructure (e.g. India / Singapore) and / or in creating non-mandatory Open Banking architecture - (e.g. Nigeria).

Government mandated
In markets where Government has acted to compel large institutions to offer API access to customer data with or without mandatory standards (e.g. UK, Australia).

Delivering value propositions with market fit

Irrespective of regulatory scores, there is a strong correlation between high “Consumer” scores and the “government mandated” approach. Despite strong consumer scores in the US, low scores in other neutral markets resulted in an average of 51.2 for markets where government maintained a neutral approach.

Government support of Open Banking only marginally improved scores despite factoring in markets like India where public investment has been significant. Conversely, mandated markets tended to score highly across the consumer category, even when both entrepreneurial and other elements of the regulatory score were lower.

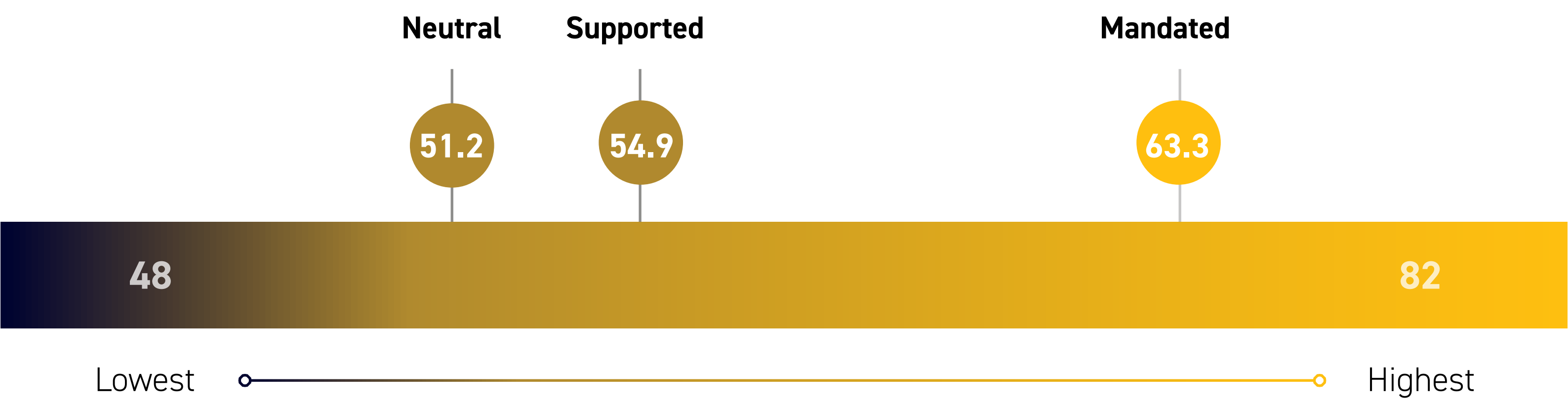


Image shows avg Consumer score of markets by Government Open Banking approach.

Summary

Aside from driving adoption, the data shows how important progressive regulation is to the establishment of flourishing ecosystems. When ranked from 1st to last by regulatory scores, countries move, on average, less than two places up or down when the ranking factor is switched to Ecosystem scores. The correlation between Regulatory and Ecosytem scores (+- 1.8 places) is almost half as strong again as the correlation between Entrepreneurial and Ecosystem scores (+- 2.6 places).

Mandates drive adoption

Over and above any other facet of the regulatory scores, mandated standards were the most impactful factor on driving customer adoption.

Mandates also create problems

Mandated ecosystems were more likely to fall victim to the “solution without a problem” effect in their early stages, seeing increased prevalence of lower-value propositions.

Low-value doesn’t mean no-value

Over and above any other facet of the regulatory scores, mandated standards were the most impactful factor on driving customer adoption.

But in most cases complexity and adoption are linked

Markets with higher prevalence of second order, more complex use cases delivered stronger consumer adoption.

Spotlight on markets going beyond Open Banking...

Given the strong link between use cases that require next level connectivity to become viable and user adoption it will be important to watch developments closely as

- Australia rolls out the CDR to Open Energy
- The UK takes steps towards regulating Open Finance
- Brazil’s acceleration within Open Finance continues

...and on those achieving scale through interoperability

Where markets are smaller or where standards are patchy, the alternative growth vector is through increasing the size of the addressable markets interoperable, transnational standards as is evident within

- Sections of the middle east as the standards in Saudi Arabia and Bahrain create local benchmarks
- Areas of the ASEAN grouping with particular reference to the standards set out by MAS in Singapore

Chapter 2

The Evolution of Fintech and Open Banking in the UK

An interview with Sir Ron Kalifa OBE

INTERVIEW

Open Finance Evolution

UK

Sir Ron Kalifa OBE

Chairman, Network International

Any exploration of open finance has to start with the country where Open Banking in its modern, connected ecosystem guise began. The UK's early mover advantage, the prescriptive and mandated API standards, it's pre existing fintech ecosystem and it's status as a global leader in financial services provided the perfect melting pot within which to create a global prototype for Open Banking.

In 2021, The Kalifa Review of UK Fintech set out a series of recommendations designed to catalyse the growth of fintech in the UK, highlight the opportunity to create highly skilled jobs and extend the nation's competitive edge over other international fintech hubs. The Review said the UK "pioneered Open Banking, which has now taken the world by storm"[1].

Will the UK remain a leader in Open Finance and beyond? Ron Kalifa OBE, author and convenor of the Review, shares his analysis of the progress made in implementing his recommendations, discusses the road forward for Open Finance in and discusses how the UK can remain a global leader.

The Kalifa Review was designed to strengthen national coordination across the fintech ecosystem to boost growth - What progress has been made in implementing the recommendations of the Review?

Our mission was to offer an actionable guide to keeping the UK at the forefront of global innovation in financial services. There has been significant progress made against

> "Today, more than 70% of digitally active adults in the UK use a fintech service - which is well above the global average. We should be proud of that."
>
> **Sir Ron Kalifa OBE**

the majority of the recommendations. The FCA has now announced that it concluded a successful pilot for early and high growth oversight. This is essentially the Scale Box that we recommended, which provides close supervision and help to newly authorised firms and those in their growth phase. The FCA has now grown that function to 300 firms.

As the discussion around digital money continues, it is also important that the Bank of England and the Treasury have established a task force to scope out the viability of a UK Central Bank Digital Currency. In order to keep our competitive edge and attract fintech listings, it was essential that we reduce the free float requirements from 25% to 10%. We have also enhanced the governance rights, and dual cross share structures are now permitted.

There are further areas of progress. The R&D tax credit expansion is set to include cloud and data costs, providing a welcome modernisation of the scheme. The consultation that has proposed removing performance fees from the charges cap for defined contribution pension funds is also a step in the right direction.

Relating to the international chapter of the Review, I think it is excellent that Innovate Finance and the DIT are co-chairing the newly launched international fintech group to promote the UK in international markets. We have also seen progress on the scale-up visa, which I am pleased with. The government has introduced a new Fast Track visa system for tech scale-ups that are growing at about 20% a year in headcount or revenue.

On national connectivity, which was another chapter in the report, we have established the Centre for Finance

> “The UK has set the benchmark for policy-led innovation. Across the world, 50 countries have now replicated the FCA’s regulatory sandbox, and there has been a very strong commitment from the government and regulators to support innovation and competition in financial services.”
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> **Sir Ron Kalifa OBE**

Innovation (CFIT). As planned, we have focused on getting the foundations right.

The UK has been an Open Banking leader for five years. Which UK fintech initiatives have been most successful and which of these initiatives are most important going forward as we move from Open Banking to Open Finance?

The UK pioneered Open Banking, and we launched the Global Innovation Network to bring the international regulatory community together to test innovative fintech solutions. As the sector has gone from strength to strength, leading fintech firms have become household names. Today, more than 70% of digitally active adults in the UK use a fintech service - which is well above the global average. We should be proud of that.

The move to Open Banking was sometimes seen as a zero-sum game in which incumbent banks would lose out to challenger banks and fintech companies. The reality, however, has been quite a bit more nuanced. The same will apply to Open Finance, which could create substantial opportunities for better advice, better financial outcomes and the ability for individuals to access and share a full set of their provider-held financial data beyond the bank transaction account data made available under the Open Banking scheme. It will allow third-party firms to offer advice and optimisation solutions that will save people money and help manage their savings, investment, pensions, and insurance mechanisms for much better overall financial health.

The UK received the highest score in the Open Finance Index - with Australia five points behind and most major competitors more than nine points lower. What has made the UK a leader? Will the UK leadership position be maintained going forward?

The UK represents 10% of the global market share, and fintech contributes more than £11 billion annually to the economy. The UK has established itself on the global stage as a dominant force in fintech. That strong brand has created a thriving startup ecosystem, and because of the strength of our incumbent financial services sector, fintech has found extremely fertile ground. It has also created opportunities to cross-pollinate into much broader technology solutions leveraging cross-cutting applications like big data, AI, and quantum computing.

The UK has set the benchmark for policy-led innovation. Across the world, 50 countries have now replicated the FCA’s regulatory sandbox, and there has been a very strong commitment from the government and regulators to

> Businesses inside clusters employ an average of 25% more people than comparable businesses outside of clusters. They also pay more, with an average of 11% higher salaries.

Sir Ron Kalifa OBE

support innovation and competition in financial services. Appropriate policy and regulation, accompanied by a clear allocation of supervisory responsibilities, can promote innovation.

Whilst we are starting from a strong base, we cannot rest on our laurels. Now is the time to build on our success and shift our approach to reflect the needs of a maturing and increasingly competitive industry. Brexit, Covid, global competition, and now the effects of the war in Ukraine are all creating challenges. So if we continue to act with the important buy-in from the government, as we've had, we can continue to take a lead and convert these threats in a much more significant way.

The Kalifa Review called for the creation of "highly skilled jobs across the UK". To what extent has fintech been a centralised industry, is this changing, and what effect will Open Finance have on this centralisation going forward?

Fintech is embedded across the UK and is not just a Shoreditch and a London phenomenon. It has the potential to create high-income tech-based employment, becoming an engine of the levelling up agenda, as well as playing a part in upskilling and retraining the existing workforce. This means scaling regional clusters to create high-paying jobs outside London.

Businesses inside clusters employ an average of 25% more people than comparable businesses outside of clusters. They also pay more, with an average of 11% higher salaries. A key example for the UK include the Pennines cluster, which is home to about 13% of high-growth fintechs. Scotland is home to the Edinburgh-Glasgow corridor, which alongside fintechs, is also home to NatWest, as well as Aberdeen Standard.

The key is to build the pipeline of fintech talent. In addition to these clusters, we have the Centre for Finance Innovation and Technology (CFIT), which was included as a core recommendation of the review. Its mission is to accelerate opportunities, unblock barriers to growth for fintech and bring together the best minds from the ecosystem to drive better outcomes for consumers and SMEs across the UK. We are making good progress.

In our survey, the UK ranked second, behind only the US when it comes to access to capital. Do UK fintechs have adequate and appropriate access to the capital they need to grow and develop? And how can the government make it easier for fintechs to access this capital?

Capital is a key ingredient for success. I am pleased that the chancellor has announced that the Enterprise Investment Scheme (EIS) and Venture Capital Trust schemes will be extended beyond their original 2025 sunset clause, and the EIS caps will be increased. This goes some way towards keeping a lively early-stage startup ecosystem in place. To keep our competitive edge and to attract fintech listings, it is essential that we reduce free float requirements from 25% to 10%.

The UK is the leading fintech hub in Europe. Last year, more than 3,000 fintechs were headquartered in the UK. We are seeing consistent growth in the number of fintechs based here since 2017, demonstrating the attractiveness of the UK environment to these innovative firms. The number of UK fintechs is second to the US but about four times more than Germany and France and about four and a half times more than Singapore. So when you look back over the last year, fintech, private investment, private equity and VC investment in the UK grew faster than in the US, Germany or France, exceeding about £16 billion. So while the US leads in absolute terms, this highlights the attractiveness of the UK as a location to set up innovative firms in financial services, especially given the UK's status as an international fintech market compared with other major economies.

The World Bank has argued that the "ongoing digitisation of financial services and money creates opportunities to build more inclusive and efficient financial services and promote economic development". What effect do you think Open Finance, as well as the ongoing digitisation of financial services, will have on financial inclusion?

Open Finance is the next step in the evolution of Open Banking. By bringing its benefits to a much broader array of financial products. Open Finance will give consumers and businesses greater control and visibility of their economic lives. I align closely with the Open Finance Association's three headline objectives, which, if successful, will have a positive impact on financial inclusion. The first focuses on enabling consumers and businesses to access their data across their financial accounts or their financial accounts and make use of it via trusted third parties.

The second is to develop and drive the adoption of a competitive and convenient instant payment method based on open payments. Thirdly, the objectives call for the promotion of a sustainable, well-functioning Open Finance system by creating the right balance of requirements and incentives for all participants.

If we look at the record of achievement, it helps to paint the true picture. Go back ten years, and it took several days to open a current account. Now, you can be onboarded in minutes and safely and securely leverage regtech solutions or challenger bank innovations. Similarly, one decade ago, a business seeking SME financing had limited choices in terms of providers on the high street, with slow decision-making processes. Now, there is digital access to a wide array of lenders looking to leverage machine learning and artificial intelligence tools to provide immediate decisions on a new loan or refinancing opportunity. As Open Finance solutions scale and we experience those network effects, we will see significant benefits and a much more inclusive financial system.

> More than 150 organisations have been engaged so far, and there have been over 50 expert interviews and workshops, including sessions held right across the country.
>
> **Sir Ron Kalifa OBE**

The UK achieved the highest regulatory score in the Index yet finished in the middle of the pack (11th) when it came to scores around access to talent. We know countries like the US are a very attractive destination for global talent whilst places like India and the Nordics are good at retaining homegrown talent. Is the UK succeeding in attracting talent from overseas?

Access to qualified and suitable talent remains one of the biggest challenges for the UK and the world's fintech sector. The tech sector is second in importance in the UK labour market only to healthcare. Currently, the demand for tech roles and digital skills outweighs the supply.

The challenges span both domestic skills shortages and the need to access foreign talent seamlessly. Therefore, in the Kalifa Review, I proposed the creation of a new Fast Track system for fintech scaling up. I am pleased that has been taken forward by the Home Office. The Government has also established the Financial Services Skills Commission, which uses a dedicated training framework to better identify and address skills gaps in the sector. Some good work is happening, but continued activities should focus on introducing improvements to the apprenticeship system to make it much more employer-led and easier for businesses of all sizes and sectors to access high-quality training for their employees that meets their business needs.

There are a lot of other positive initiatives that are also in place. We have introduced the global business mobility visa and the high potential individual visa route for those who have recently graduated from a non-UK university if it's ranked in the global top 50, which provides a fast and flexible visa to work in the UK. The objective of these initiatives is to ensure that we are doing enough to build our own talent pool and drive success in creating jobs.

What can be done to encourage cooperation and collaboration between regulators and the industry to ensure the UK continues to lead the world and take pole position in the Open Finance Index Regulatory category?

Collaboration between regulators and industry is a vital ingredient for success. As the UK fintech sector continues to mature, it is vital that we all continue to influence the policy environment. We need to combine the best of government and policymaking with the innovative flair of the people who have built and led UK fintech. This means building public-private coordination to ensure a strategic focus and an official government mandate to pursue it. One of the hallmark recommendations we made was the creation of the Centre for Finance, Innovation and Technology (CFIT), which works to ensure that the UK is a global leader in financial innovation and seeks to solve the industry's most complex and challenging knotty problems.

The core focus of CFIT is its work on coalitions, and it has already benefited from deep engagement involving all levels of stakeholders right across the UK. I think this will be a key tenet of that organisation going forward. More than 150 organisations have been engaged so far, and there have been over 50 expert interviews and workshops, including sessions held right across the country in locations including Manchester, Cardiff, and Edinburgh. There are going to be many opportunities, big and small, over the coming months and years to support CFIT.

> "The UK is the leading fintech hub in Europe. Last year, more than 3,000 fintechs were headquartered in the UK. We are seeing consistent growth in the number of fintechs based here since 2017, demonstrating the attractiveness of the UK environment to these innovative firms."
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When the Kalifa Review was published, there was no war in Ukraine, inflation crisis and spiralling cost of living. How do we, as an industry, respond to these crises? Will they slow down innovation, and how do we ensure continued progress in troubled times?

It is key that we redouble and focus our efforts. There are still many opportunities for us, and the financial services sector sees strengths and further opportunities in ensuring momentum in fintech is maintained and the recommendations of the Review are implemented at pace.

Adopting innovative solutions such as software as a service (SaaS), artificial intelligence, cloud, blockchain in public and private markets, payments, regtech, cyber and technology solutions to ESG data, and analytics across the industry are all opportunities. Implementing a data strategy that achieves the right balance between data protection and enabling firms to use data to maintain and build their competitive offering is key.

Also, safeguarding the future cross-border data flows to ensure that the UK becomes a much more competitive and stronger data hub is a vital aspect of the future. Continuing to ensure that we have access to data and analytical expertise will enable businesses to develop innovative products and services. There have been successes, but it is now essential that the financial and professional services sectors, the authorities, and the regulators continue to build on this momentum. The UK's fintech star must continue to rise. I think that's where the opportunity is.

Chapter 3

Region Focus - Europe

The UK has enjoyed a historic lead amongst the European markets.

The UK has enjoyed a historic lead amongst the European markets. The prescriptive API standard, consistent implementation between banks, strong implementation guidance for fintechs and regulatory oversight of API performance have come together to significantly lower the barriers to entry for new players. There has been some uncertainty during 2022 as to the future shape of the regulatory environment and this has slowed the pace of progress however it is likely to be resolved early in 2023.

Outside of the UK, the larger markets are being held-back by variances in the implementation of PSD2 which create significantly higher overheads for those companies looking to integrate at a pan-european level.

TPPs are reporting that Open banking payments are becoming an increasingly important focus area, with recent developments around the mandating of SEPA instant payments seen by fintech respondents as a significant positive step.

In this context, it is worth noting that the Netherlands is forging a strong reputation as a payments hub having issued around 10% more authorisations for EMI, PIS and AIS (84 at the time of writing) licences than its neighbour Germany (76) and almost 70% more than France (49) since 2017.

> "PSD2 was implemented across Europe but, at first, the regulator did not mandate how to implement it. This created several different tiers of access across Europe, which in turn made it very hard for Pan European players. As an industry, we are still coming to terms with that."

Brian Hanrahan

CEO, EML Nuapay

UK > 200

The UK has more than 200 home registered TPPs

Europe < 50

No European country has more than 50

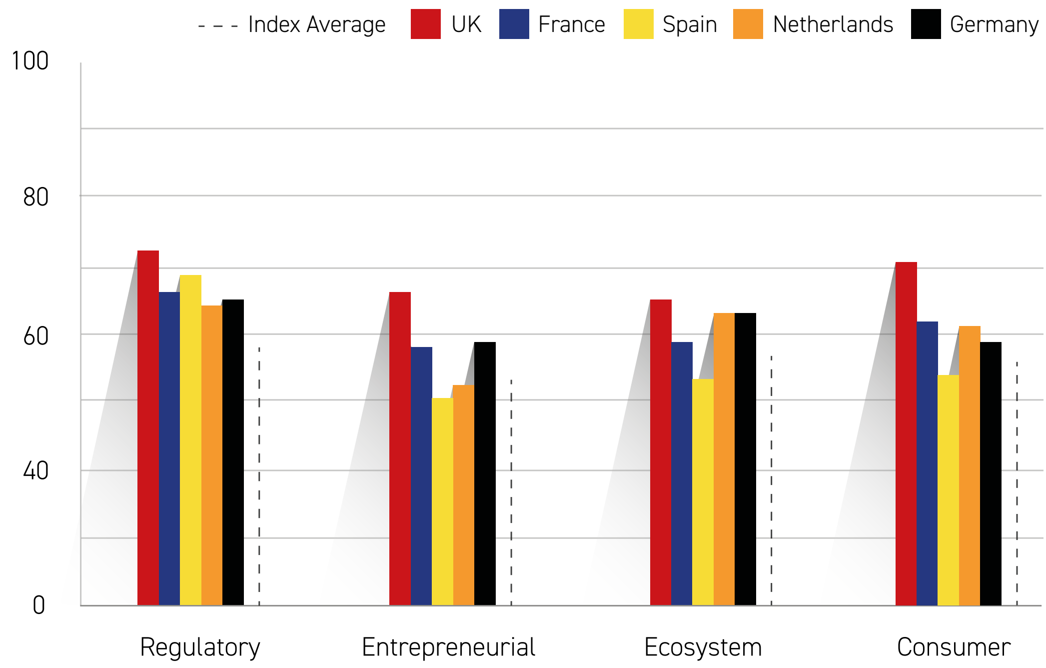
> "Open Finance in Europe is slowly picking up, but there is still a lot to be done. Interoperability was the key success factor of this story. The next set of problems though, will be resolved through leadership instead of technology. It will be about willingness from the incumbents to embrace the opportunities ahead and provide their customers with a bullet-proof journey that interacts well with their needs."

Kevin Grant

CRO, Corporate Solutions, Bottomline

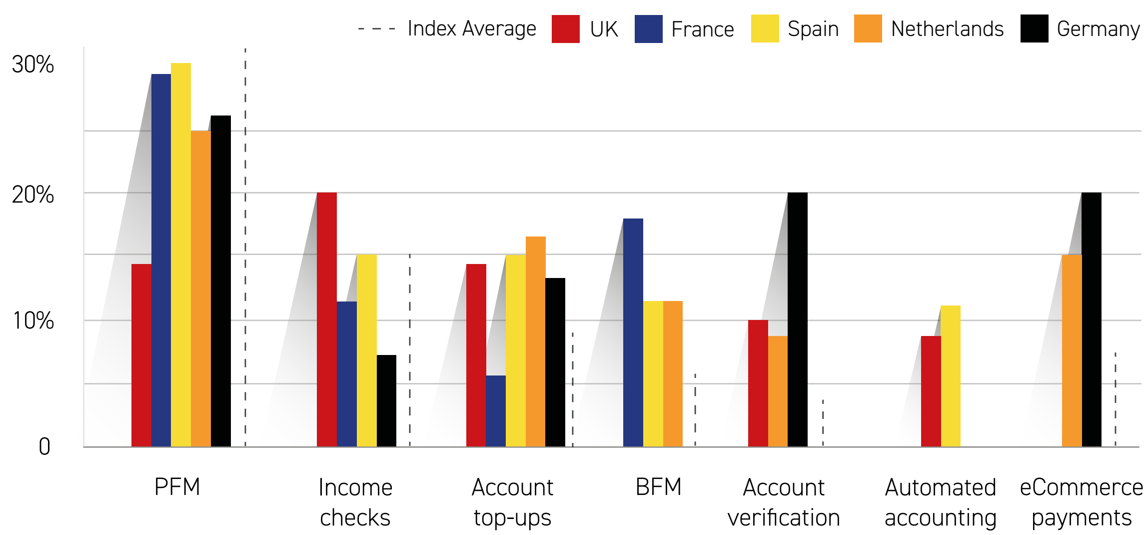
Key Markets

The UK's regulatory score underpins its position as a leader with respondents to the survey noting the extent to which the prescriptive API standards facilitate collaboration between participants in the ecosystem.



A Key finding in the report has been the correlation between the improvement of existing UX paradigms and user adoption with an inverse being the correlation between markets reliant on category-creating UX e.g PFM based on aggregation.

Key Use Cases



Timeline

2022

MARCH 2022

Tech giant Apple buys UK alternative credit bureau Credit Kudos for a reported $150m.

MARCH 2022

UK CMA announces plans to transition governance of Open Banking to a Joint Regulatory Oversight Committee (JROC) essentially agreeing that the scope of its initial order has been fulfilled.

MAY 2022

The European Commission announces its first major consultation on a review of PSD2 specifically focussed on establishing an Open Finance framework and better regulating data sharing in the financial sector.

JULY 2022

Deadline passes for the CMA 9 banks to implement VRP for sweeping

JULY 2022

GoCardless acquires the latvian aggregator Nordigen for an undisclosed amount.

OCTOBER 2022

The EU announces plans to mandate the provision of instant payments via Sepa Instant.

2021

JUNE 2021

Visa agrees a deal to acquire the European aggregator and payments firm Tink for $2bn.

JULY 2021

UK CMA votes in favour of the proposal by the Open Banking Implementation Entity to mandate the provision of variable recurring payments by the CMA 9 banks. Sets July 2022 as the deadline for compliance.

SEPTEMBER 2021

Truelayer raises $130M becoming a unicorn in the process and signals a shift in focus from providing account information as an aggregator to providing account-to-account payments.

SEPTEMBER 2021

UK Open Banking users pass the 4,000,000 mark.

2020

SEPTEMBER 2020

More than 2,000,000 people are now reported to be using Open Banking in the UK.

NOVEMBER 2020

Tink acquires Eurobits, an aggregator providing specialist coverage of the Spanish market.

DECEMBER 2020

The final deadline for PSD2 compliance passes across the EU.

2019

JULY 2019

Fingleton report recommendations on strengthening Open Banking in the UK.

DECEMBER 2019

The UK Open Banking Implementation Entity announces that there are now more than 1,000,000 people using Open Banking in the country.

> One of the key issues the market is currently facing is IBAN discrimination. This means some transactions that could take place within the European Union do not because local banks illegally block euro payments from SEPA IBANs from outside of their country. Although many individuals and businesses are unaware that IBAN discrimination is illegal, it impacts the number of successful transactions that take place. Even though IBAN discrimination prohibited under the Single Euro Payments Area Regulation, unfortunately, this is still not fully enforced in Member States.

Todd Clyde, CEO, Token

2018

JANUARY 2018

PSD2 comes into force across the EU and UK. At the same time the UK Open Banking standard is mandated for the CMA 9 in the UK.

2017

JUNE 2017

The Berlin Group announces that it has devised “an open, common and harmonised European API (Application Programming Interface) standard to enable Third Party Providers (TPPs) to access bank accounts under the revised Payment Services Directive (PSD2).”

NOVEMBER 2017

The EU (and UK) adopt regulatory technical standards around secure customer authentication.

2016

JULY 2016

Founders Francesco Simoneschi and Luca Martinetti incorporate TrueLayer in the UK.

AUGUST 2016

The UK Competition and Markets Authority (CMA) issued a ruling that compelled the 9 biggest banks to make transaction data available to third parties via API at the request of the customer.

2015

NOVEMBER 2015

The Council of Europe passes the Second Payment Services Directive (PSD2) which mandates the sharing of transaction data at the customer’s request. It also mandates the use of APIs though allows for screen scraping via “modified customer interfaces” in the short term.

UK

Felipe Peñacoba Martinez

Chief Information Officer, Revolut

In the UK, the regulatory push was just the beginning of Open Banking. This is just the first stage of a much broader process that opens up the entire customer experience to the potential of being genuinely personalised. Take mortgages for example, people don't buy a mortgage, they want to buy a home for their family. That journey often starts years before the mortgage offer, when they start saving and planning - and ends years later, with home extensions, remortgage. Having a data-led insight into customers will allow financial institutions to support that whole journey end to end in a way that wasn't possible before.

The potential is huge, but we're still held back in this country by the scope of the data that's available. Banks need to have the right incentives in place to open up to data beyond just the transaction history - when that happens we'll unlock the next wave of innovation and opportunity.

France

Mehdi Madjaoui

Founder of apidays

French banks learned the hard way that you have to embrace the ecosystem rather than work against it. Even though some players have been EU first movers in terms of opening public APIs, they did not turn into first settlers in the open banking core value proposition. The rest of the ecosystem can be defined by slow to move but fast to follow.

Indeed, The technical readiness of open banking public APIs has existed for a long time in pockets. The first bank to launch an public open API portal was Axa bank in 2012, with a 50k€ prize for developers to build the best application (won by a startup called Bankin with their aggregator application). But the first bank to really embrace a strong public API strategy for open banking as we know it today was Calyon Bank - Credit Agricole, who did the same in 2014 opening their API and allowed 3rd parties to publish apps on their CA Store of applications, long before the regulatory deadline.

It has taken a while for systemic engagement with the ecosystem to take hold. New players like Bankin app began to build API aggregators to connect to multiple banks, (and demonstrating the value of account aggregation on the french market) a while before PSD2 regulation. Then when the regulation entered the market, some incumbents tried to embrace the developer ecosystem, like BPCE bank which branded their developer portal 89C3 BPCE in Leet language. This started to develop an embedded finance mindset in the market. It is important to note that one of the major EU open banking actors is the french scaleup Qonto ($5,6Bn valuation), a neobank working hard on UX and its APIs to create a large business ecosystem around its banking hyper-app.

France

Alexandra Chiaramonti

General Manager, EMEA,

GoCardless (France)

There are several similarities between France and Germany. Both countries have many small, local banks with independent branches, for instance.

In order to be impactful, Fintechs need to build connections with every bank and local branch to offer open banking features, or they will miss out on many payers. This was a major factor in our acquisition of Nordigen - to gain access to their network of local French banks."

Germany

Joris Hensen

Founder and Co-Lead of

Deutsche Bank API Program

Germany was in a different position to the rest of Europe from the outset: We had a public standard in place called FintTS. It wasn't as comfortable to use as the new APIs though. But it had the effect of ensuring that there were established organisations that were used to dealing with this kind of data and had brought products to market - so there was a degree of consumer familiarity.

Consumer perception of Open Banking in Germany is quite positive. At Deutsche we see it as an opportunity - we've worked with fintechs from the start (for example our partnership with FinanzGuru). The challenge in Germany is for banks to take a strategic decision on what to open up next - do they stick to the regulated minimum or open up more broadly. Opening up other sectors would be beneficial both for the banks (as the cost has been asymmetrical for now) and for consumers. This would allow banks to build the next generation of open services.

"In Germany, we had a market for open banking and TPPs even before the PSD2. However, there is still strong potential to scale. The vision of banks is still lagging behind. The technology is evolving at such a fast pace, and I feel in the future, 20-30% of the business will be API related. I wish the banks could see how digital businesses in the future work and how their products would work in e-commerce and IoT."

Oliver Dlugosch

CEO & Founder, Ndgit (Germany)

Spotlight On: Europe's Fintech Aggregators

Tink - Founded back in 2012, Tink began life as both an aggregator and a direct to consumer money management app. Initially focusing its B2B efforts around account aggregation, it diversified into Open Banking payments before closing down its consumer app at the end of 2022. After 10 years of trading and several funding rounds, it was eventually acquired by Visa for $2bn, the largest Open Banking exit to date.

Truelayer - Truelayer is a relative newcomer to the space, having been set up by founders Francesco Simoneschi and Luca Martinetti in 2016. Truelayer was an early leader in providing account aggregation to fintechs when the Open Banking APIs launched in the UK. In 2021 it made waves raising $130m at a $1bn valuation and has since moved to focus more on its Open Banking payments offering.

Nordigen - Founded in Latvia in 2011, Nordigen has consistently differentiated itself from other European aggregators by offering Open Banking connections for free and building premium data enrichment / insight services to drive monetisation.
It's growth went somewhat under the radar with Tech.eu reporting that it had raised just $4.2 million between 2016 and 2022 when it raised a huge $312million series G in Febuary. In July it was aquired by GoCardless in a move to strengthen access to European banks.

> "The UK is a global leader in this space but we need a long-term vision to enable a smoother path towards open finance."

Steven Bisoffi

Technical Specialist at the UK's Payment Service Regulator

Chapter 4

Financial insights delivered beyond financial services

Vodafone and Moneyhub take on the cost of living crisis.

Sam Seaton
CEO, Moneyhub

Moneyhub x Vodafone

As we head into what looks set to be a hard time for many in 2023, we're seeing more and more customers looking at financial data in a new light. The kind of transparency that financially derived insights can offer creates a raft of possibilities for organisations looking to find innovative ways to help their customers. Voxi, a Vodafone brand, provided a perfect example of this in 2022.

As part of its response to the dramatic increases in the cost of living, Voxi introduced its "Voxi for Now" tariff that enables customers in financial hardship to stay connected with unlimited 5G-ready data, texts and calls for a flat monthly fee of £10 instead of £35. To be eligible for the tariff all customers need to do is prove that they have received a Government benefit payment in the last 8 weeks.

During the tariff's exploration phase it was initially envisaged that customers would share a bank statement with Voxi to prove their eligibility however this created three challenges.

- It would involve significant manual overhead on vodafone's side to check these bank statements.
- The time delay in doing so would disrupt the onboarding flow and result in drop-outs.
- The bank statements themselves would create regulatory and data-management overheads due to all the sensitive information contained within them.

Using Open Banking offered an elegant solution to all three challenges. Voxi worked with Moneyhub to understand and get comfortable with its eligibility checking capabilities. They then built an Open Banking connection into their onboarding flow that would enable users to give Moneyhub permission to view the last 8 weeks of their banking transactions. Moneyhub's system could then analyse those transactions and return a simple "yes / no" answer to Voxi if it detected a benefits payment.

This addressed the three challenges directly by eliminating the need for manual oversight, creating a simple, fast onboarding experience and minimising the amount of customer data that Vodafone had to manage.

> **"It's not a silver bullet, but it offers an unprecedented level of transparency and a base from which to build a fairer system."**
>
> **Sam Seaton**
> CEO, Moneyhub

This has been a particularly exciting project to work on as, in my mind at least, it's one of the clearest demonstrations to date of the tremendous potential that Open Banking has to address burning issues like financial inclusion. It is not a silver bullet but it offers an unprecedented level of transparency and a base from which we can build a fairer system.

Chapter 5

The Future Evolution of Payments

An interview with Sulabh Agarwal, Managing Director, Global Payments Lead, Accenture.

accenture

Open Finance

Payments

Sulabh Agarwal

Managing Director, Global Payments, Accenture

accenture

The Global Open Finance Index found a strong correlation between higher consumer adoption scores and nations in which experts predicted that the most traction in 2023 would be delivered by use cases that skewed towards the "embedded finance" end of the complexity spectrum. This throws organisations' capacity to deliver end-to-end connected experiences into the spotlight and highlights the importance of consumer trust, according to Sulabh Agarwal, Managing Director and Global Payments Lead at Accenture.

The payments market is evolving quickly. Accenture has predicted that "boundaries will blur between banks, fintech players and big tech as payments become more embedded in marketplaces and across industry use cases". It also stated that "almost anything a customer wears" could become a payment device, from smartwatches to digitally connected rings. This will create new markets and opportunities for incumbents and agile new competitors alike.

Additionally, disruption is expected from biometrics payments, which is the authentication of physical characteristics such as retinas, palms, fingerprints and faces. More than four in 10 respondents (42%) in Accenture's recent Global Consumer Payments survey[1] believe that biometrics are likely to be widely used by 2025, and 9% said they would be willing to use them as their in-person primary method of payment by 2025, if available.

According to Agarwal, banks will be in a strong position going forward. "Our survey found that 84% of consumers trust their banks to handle their money and transactions. The card networks scored not far below the large banks. They were followed by account-to-account payment initiators and then big tech. Consumers still want the 'stamp' of the bank in terms of security and the reassurance it gives them.

"Consumers' trust depends on their own personal experiences over a lifetime. In some cases it takes face-to-face engagement. For younger customers who seldom visit a bank branch and are more reliant on e-commerce, social media platforms, fintechs and big tech, it has to be nurtured in other ways. Their generation has more experience of, and trust in, e-commerce and social media platforms as well as big tech and fintechs than people who grew up with the payment instruments of the past.

"Payment methods also changed dramatically during the Covid pandemic, which saw a steep decline in the use of cash. Many payments have moved from point of sale to online, a shift from physical to digital. Within both spaces there have been a number of changes, and new payment instruments have come into play. Consumers who participated in our survey are already making more use of digital wallets than credit cards. More than half (56%) of respondents use digital wallets more than five times a month to transact, compared to 48% who use their credit cards that often."

Consumers are now accustomed to the fast, frictionless experiences offered by big tech players such as Amazon and Uber. They are demanding similar speed, convenience, and low cost from payments, placing the onus on merchants to offer experiences which suit them.

> "84% of consumers trust their banks to handle their money and transactions."

[1] www.accenture.com/us-en/insights/banking/payments-gets-personal-strategies-stay-relevant

Agarwal added: “Most merchants see payments as a facilitator, and they want to give choice to the consumer. This has resulted in a proliferation of methods of payment. Each method is quite expensive to maintain end-to-end because it requires its own infrastructure for merchants (for convenience), for banks (for interbank settlement) and for the market as a whole. It all adds up in terms of costs.

“The question is, how many of these new payment types are sustainable as we move into the future? I believe that payments is essentially a fixed-cost business: the enabling infrastructure is expensive whether you have one or one billion transactions, while the variable cost per transaction is very small. I would expect to see some of these new payment methods start to converge within shared infrastructures.

“Technological change has been exponential over the last few years. Quantum computing will challenge most of the security we have today, and is not that far away. In the nearer term we are likely to see increased adoption of blockchain, AI and machine learning technology, as well as the emergence of new e-commerce platforms, technologies and marketplaces.

“Uber and other platforms were introduced just a few years ago and are now part of many people’s lives. They have caused significant changes in the payments ecosystem, and we’re seeing a lot of new entrants using them as their differentiator. A number of new merchant services players are utilising AI and machine learning, technologies that are also being used to create anti-fraud algorithms. I can see no reason why technological change will not continue to accelerate.”

> “I believe that payments is a fixed-cost business. The variable cost per transaction is very small, but whether you have one transaction or one billion transactions, the fixed cost of the infrastructure to actually enable those transactions is significant.”
>
> **Sulabh Agarwal**

Variable Recurring Payments

The most significant recent payments upgrade powered by Open Banking has been variable recurring payments (VRP) in the UK. In July 2022 the CMA9 – Britain’s nine biggest banks – were mandated to introduce VRP for sweeping, the automated movement of money between accounts. This use case – transferring spare cash between two accounts owned by a single customer – entails a basic implementation of VRP; with its strict parameters it is likely to be used to automate payments for many other purposes ranging from investment to subscriptions.

NatWest was the first bank in the UK to go beyond the regulatory mandate by pioneering a premium version of its sweeping API to allow commercial access to VRP for purposes other than sweeping. It is a move which, when followed by other CMA9 banks, is likely to provide a significant new opportunity for those driving the adoption of Open Banking.

“If we look at the statistics since 2018, we have seen a recent acceleration in the adoption of Open Banking,” Agarwal said. “In the short to intermediate term we expect to see further spikes related to payments, particularly in cases where Open Banking data can be used to bring VRP to life and demonstrate its potential as an alternative to debit card or direct debit usage. VRP has the power to offer consumers as well as small businesses more control of their finances and to help businesses lower the costs of accepting payments.”

> Sweeping, as defined by the OBIE, is the establishment of a variable recurring payment between two accounts owned by the user-e.g. transferring spare cash on pay-day to a savings account.

Beyond Open Finance

The road from Open Banking to Open Finance and Open Data is clear. What is less obvious is which companies or financial institutions will dominate the payment segments in these emerging spaces. In 2021, Accenture analysis[2] found that digital players, including PayPal and Square, "outperformed UK banks in terms of total return to shareholders (TRS) by an impressive 12 times since 2016".

Payment processors such as Visa and Mastercard achieved 2.6 times the TRS of UK banks over the same period. The rise of embedded finance is already prompting players from outside financial services to join the payments market – a trend which is likely to continue as Open Banking payments offer those seeking to build embedded experiences a broader toolkit to work with.

The Global Open Finance Index showed a stark contrast between the outcomes of ecosystems whose respondents viewed Open Banking as potentially impactful across a broad range of services and those still focused on aggregation and personal finance management. Those banks that grasp the opportunity and are able to leverage their trusted status stand to benefit the most and have arguably the strongest proposition in terms of their capacity to provide contextual experiences using both data and payments.

It is yet to be seen how important consumer trust is in deciding the winners in this emerging battleground, but if it turns out to be an important factor in adoption, traditional banks and established institutions will have a powerful head start.

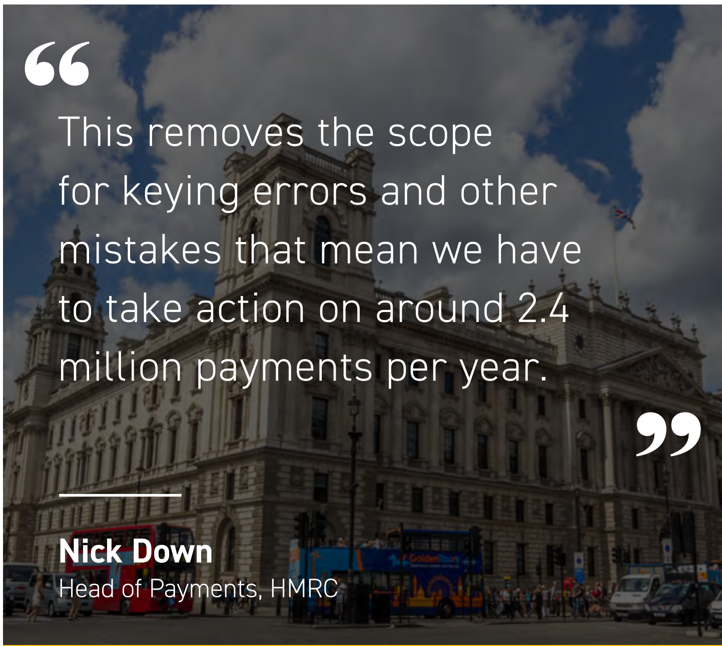
2 https://bankingblog.accenture.com/key-trends-shaping-future-payments

Chapter 6

Case Study: Tax & Payment

Nick Down, Head of Payments, HMRC

CASE STUDY



Received 3.5m open banking payments worth £9.3 billion

HMRC was initially attracted to open banking payment for the same reason as much of the UK payment community. It promised to be convenient for customers and cost effective for us, which was important because the fees HMRC pays to receive payments cost public money. Quite soon, we came to realise there was a greater prize in the form of the handshake of trusted data that is the heart of open banking: our pre-populated information about the payment and the payment details applied with the customer’s consent. This removes the scope for keying errors and other mistakes that mean we have to take action on around 2.4 million payments per year in order to be able to correctly allocate them for our customers.

After awarding the contract to Ecospend, we worked with them to launch HMRC’s open banking payment service in March 2021, initially for Self Assessment tax payments.

Since then we have:

- Rolled it out to 43 types of tax in a series of rapid implementations, making it available to over 99% of HMRC customers.
- Made the service available through the HMRC app, attracting over 71,000 payments worth £71 million in ten months.
- Added an option to use a QR code once a customer is logged into their HMRC account, enabling our customers to begin their payment on their desktop computer and complete it on a mobile device, securely and seamlessly. This has been scanned over 520,000 times by customers and given a hugely positive reception.
- Introduced the ability for customers to be able to see their open banking payments to HMRC in real time via their digital tax account.
- Received 3.5 million open banking payments worth £9.3 billion.

We’ve done this because we consider open banking to be genuinely transformative if it evolves as it has the potential to do. It will increasingly enable people and businesses to choose how they want to make open banking payments, see payment data, connect up aspects of their financial lives and exert greater or lesser control over their transactions. Some people will want to approve every payment, however small; others will prefer to free up their time by authorising recurring payments to trusted suppliers or institutions.

I think this means that HMRC – or any organisation handling large amounts of transactions – will increasingly need to go beyond providing its own payment options by creating payment data connections to other compatible organisations and to providers of financial software, hubs and dashboard Customers will be able, if they wish, to make use of those connections to bring together and control their financial data in a way that is right for them. This is a future that, if thoughtfully developed with customers in mind and sensitively regulated, offers economic and customer benefits by removing much of the friction that is currently part and parcel of managing finances and carrying out transactions. And it is a future that we look forward to exploring with others who share this view of what is possible.

Chapter 7

The Journey to Open Finance

An interview with Amit Malick, Managing Director and Global Open Banking and APIs Lead at Accenture

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INTERVIEW

Open Finance

The Open API model

Amit Mallick

Managing Director, Global Open Banking
and APIs Lead, Accenture

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The Global Open Finance Index tracks the current state of global implementation and evolution, providing an important benchmark. But a benchmark is just that, and Open Banking is only the beginning.

In the future, the Open API model will expand into more industries, leading to the development of Open Data and, ultimately, Open X. So what's next? Amit Mallick, Managing Director and Global Open Banking and APIs Lead at Accenture, discusses the road to Open Finance and beyond.

Q: The Open Finance Index highlighted key differences in the structure of markets in which governments have taken different approaches. This is something Accenture has previously observed, identifying what you describe as three distinct types of Open Banking and Open Finance markets: consumer-enabled, market-led, and regulator-directed. How do the differences between these markets affect ecosystem development?

A consumer-led market is a non-regulated ecosystem driven by the economics of a specific market that evolves without intervention by regulators or industry bodies. A great example of this is China. The best examples of regulator-led markets are the UK and Europe, where regulators intervened to catalyse Open Banking.

Finally, market-led ecosystems are characterised by banks and third parties agreeing on a common standard and format for the exchange of data. Good examples are the USA and Canada, where there is no regulation yet – although we may see some in the future. India is also an interesting example of a market-led Open Finance initiative. It is not centrally directed or regulated. The part of the initiative that is managed is payments, which is popularly known as UPI (Unified Payments Interface). So India is a market to watch.

Q: Why do you think the Global Open Finance Index is important and what value will it bring to stakeholders?

Open Finance is a shiny new concept at the moment, and there is no universal definition of what is meant by this term. At Accenture, *we* define Open Finance as the use of diverse and rich datasets by an emerging ecosystem of financial players to launch the next wave of financial services propositions for consumers, businesses and other organisations. Open Finance extends the scope of Open Banking and uses additional datasets such as credit, mortgages, savings, pensions and investments. With the consent of the customer, financial data could be accessed by trusted third parties to provide tailored services.

Innovation powered by Open Finance will help evolve the industry towards hyper-relevant, platform-based distribution models and give participants a greater opportunity to extend their reach and expand their ecosystems. We believe that this trend - consumers and businesses sharing financial data in exchange for services provided by third parties - is a continuum of the Open Banking journey, with the ultimate destination being Open Data where customers share select

> "I'm hopeful that this Open Finance Index will provide us with a scientific basis for measuring success and assessing the KPIs of Open Finance progress in a given region."

> Two years ago I'd have said the UK would definitely emerge as the global leader in this space. Now I'm looking closely at Australia, Brazil and Singapore.

Amit Mallick

data - potentially relating to the full spectrum of their financial lives - to get better products and services across daily life moments.

I'm hopeful that this Open Finance Index will provide us with a scientific basis for measuring success and assessing the KPIs of Open Finance progress in a given region.

Q: The UK and EU remain at the forefront of Open Banking. However, the data suggests that this may not be the case forever. Brazil, for example, achieved five million connected accounts approximately five times faster than the UK did. Over the next three years, which regions do you think will emerge as global leaders of Open Finance?

Today, I think there are three regions which are making interesting progress. One is Australia. The regulation goes beyond Open Finance and is truly cross-industry in nature. Australia started with Open Finance, which is already evolving into Open Utilities and Open Telecom.

The second market that is likely to emerge as a leader is Brazil, which jumped straight into Open Finance with regulation that is truly cross-financial-services in nature. The last country I would point to is Singapore, which was one of the first markets to start with an Open Banking initiative back in 2016. However, this did not go very well. It has now formed the SGFinDex, which brings together all of the banks and stock exchanges along with insurance companies on a common data platform through which they can exchange data. They are making brilliant progress on that front.

Q: Are fintechs, neobanks, big tech and other non-traditional players likely to dominate Open Finance or will incumbents hold their market share?

Clearly, fintechs have been the winners in phase one of Open Finance and have initiated most of the successful use cases. Banks are now reacting. Large institutions, including DBS in Asia, BBVA in Europe, and Citigroup in North America, have made significant progress and continue to invest further within this space. Big tech has taken some initial steps into the world of Open Finance, with key players like Apple and Amazon launching BNPL and similar solutions. These are very early initiatives so we advise a wait-and-watch policy at this stage.

Q: When Open Finance becomes mainstream, how will the role of banks change?

Banks are going to take two distinct roles. Firstly, they will start to become what I call access facilitators, embedding their services in a range of different ecosystems and enabling third parties to initiate banking services outside the banking channel. For example, this could include a bank payment API being embedded into an app from Apple, Amazon, or any other company.

The other role for banks will be as value aggregators. Leading banks will be in an influential position, using internal data and data provided by rival banks within the Open Finance ecosystem or by organisations in other industries, bringing it all together to provide customers with meaningful solutions at the point of need.

Q: What progress have banks made toward mastering core data capabilities, and what needs to change in order to enhance these capabilities?

Data management capabilities will be crucial for banks that want to become big players in Open Finance and Open Data. The first wave of Open Banking focused on APIs, which the ecosystem has more or less understood and mastered. Now banks must master data management, machine learning, and artificial intelligence. All of these capabilities will help them to realise the potential of Open Finance.

Q: Third Party Providers (TPPs) play a fundamental role in helping ecosystems drive adoption. How can TPPs give themselves an edge over competitors?

We have seen phenomenal growth in TPP numbers, whether it is within the world of Open Finance or outside it. This growth will continue. TPPs provide value, speed, and innovation. They also drive a new level of beneficial competition within the ecosystem.

TPPs must continue to focus on being agile, nimble and innovative. They should also focus on partnerships, work with larger players and understand how incumbents and big organisations work. I think there is a slight knowledge gap within TPPs, many of which could benefit from a deeper understanding of the governance processes and complexities of larger organisations. TPPs that overcome this gap will have an advantage.

Q: We often talk about industry boundaries blurring. What does this mean and how will they continue to blur in the future?

This is a very important question. Today, many organisations are cross-industry in nature. In the future, financial and non-financial data will be available abundantly through open APIs, enabling players in different industries to provide propositions which are outside their core industry scope. Boundaries will blur. Telcos that are launching financial services offerings provide a contemporary example of blurring. Big techs also have huge investments in financial services, which is another type of blurring. Open Finance will improve these propositions.

There is a major unanswered question: will banks do the same and move into retail, telecom or other non-financial services? Banks have slowly started to offer non-financial services. An example of this is JPMorgan Chase's acquisition of the travel management company Frosch. I am hopeful that Open Finance and Open Data will make this prospect a reality.

Q: Accenture has noted that "sceptics may be left behind" when the Open Finance wave breaks. Are there signs of this happening already?

The Open Finance wave has already arrived. It is just not widely apparent. We are seeing a lot of use cases which have Open Finance written all over them. Buy now, pay later is one of the most popular and growing trends in the UK, and it's clearly classified as an Open Finance proposition. There are similar propositions like digital wallets, super-apps and variable recurring payments which will all be a part of the Open Finance wave. Players who adapt to this earliest are more likely to succeed in the market. Conversely, players who don't adapt to this changing landscape will risk being left behind.

Q: India achieved the highest score for collaboration in our survey, followed by Sweden, the UK the Netherlands and Germany. Do you foresee more collaberation between larger banks in the future?

Just three or four years ago, banks as well as fintechs did their own thing. We then saw the evolution of a new class of banks which we call digital banks. Most of the big success stories for these new banks have involved collaboration with fintechs. So clearly, the bank / fintech nexus is working. Recently all of the appealing propositions I have seen were launched by incumbent banks. It seems that banks recognise the value of fintechs and are willing to partner to launch propositions rapidly.

> "Just three or four years ago, both banks and fintechs did their own thing. We then saw the evolution of a new class of banks, which we call digital banks. Most of the big success stories for these new banks have involved collaboration with fintech."

Amit Mallick

[1] Dealroom.co "Global fintech investment"

> Businesses inside clusters employ an average of 25% more people than comparable businesses outside of clusters. They also pay more, with an average of 11% higher salaries.

Amit Mallick

Q: Will the largest economies dominate Open Finance, or can developing nations leapfrog their competitors?

Open Finance gives all players an equal opportunity to differentiate themselves in the market. We are seeing evidence of smaller nations and smaller economies being truly innovative within the space and helping their economies and industries to leapfrog the competition and jump ahead of those in other geographies. Singapore is an example of a small economy that punches above its weight, with $2.4bn[1] invested in fintech and 151 new fintechs launched in 2022 – the fourth-highest level of investment after the US, UK, and India.

Q: The average consumer score of mature markets with diverse use cases was 64.5. In new markets where adoption was concentrated in only a few use cases, the score was 53.1. Which use cases for Open Finance will be transformative and encourage adoption?

This doesn't surprise me, the use cases which will be successful are those which are already prevalent in the market. For example, wider access to customers' financial data would enable personal financia managers to offer a significantly more holistic and relevant service. The same goes for business finance managment,

It is all about the experience, so new, richer lending and payments propositions powered by Open Finance will enable new experiences. Yes, there could be entirely new use cases that emerge, but there is enough opportunity to take existing use cases to the next level.

Q: Of regulation, entrepreneurial activity, ecosystem collaboration and consumer adoption, which will be most important for the development of Open Finance?

Consumer adoption is key. However, the important thing to understand is that the consumer doesn't care about Open Finance. Instead, it has to be embedded into all use cases which a consumer faces on a daily basis. I don't see Open Finance use cases in isolation. I look at an existing use case and ask myself how Open Finance could improve it.

Chapter 8

Region Focus: Middle East & Africa

The pace of development in the Middle East and Africa has accelerated dramatically since 2021.

The pace of development in the Middle East and Africa has accelerated dramatically since 2021. Regional economic powerhouses have baked open banking into economic development plans (e.g. the Vision 2030 plan for KSA) and a new set of standards give new entrants from the region a real prospect of being interoperable from day 1.

This is reflected in the growth both in the number of fintechs launching in the region and the valuations / funding they are receiving. Lean technologies, for example, a Saudi aggregator and payments fintech founded in 2019 recently closed a $33m investment from Sequoia capital.

Whilst we have focussed on Bahrain, Saudi Arabia, the UAE and Nigeria for the purposes of this report, it is worth noting that Oman, Jordan & Morocco are also in the early stages of preparing regulatory frameworks and we expect to see movement here in 2023.

> “The Israel Securities Authority put out its call for TPPs to begin the process of gaining licenses in June 2022 and by end of September, four licences were granted to Israeli Fintechs. The future seems bright. We are a small economy but have access to a world-leading talent base. Thanks to regulatory interventions by the Central Bank our open banking system is aligned with the PSD2 nextgen standard and we see this as a strong opportunity for tech innovation export.”

Limor Shmerling Magazanik

Managing Director, Israel Tech Policy Institute

Live

Bahrain, Saudi Arabia, UAE, Nigeria

Coming soon

Oman, Jordan & Morocco

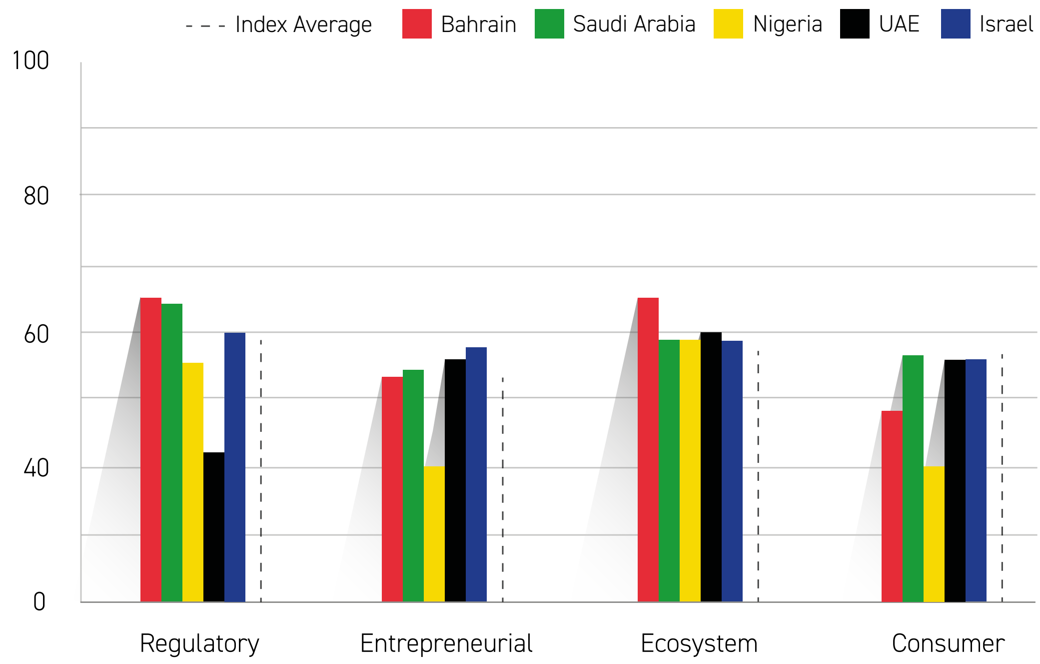
> “Banks today are still learning the ecosystem. Some of them understand that collaboration with Fintechs leads to better business. A side benefit from the mandatory aspect of Open Banking is that forcing banks to use APIs has taught them how to talk to each other and others in the ecosystem, which creates more opportunities for collaboration beyond mandates. The Bank of Israel encourages cooperation across the ecosystem as long as it is managed and risks are assessed accordingly.”

Daniel Hahiashvili

Head of Technology & Innovation, Bank of Israel

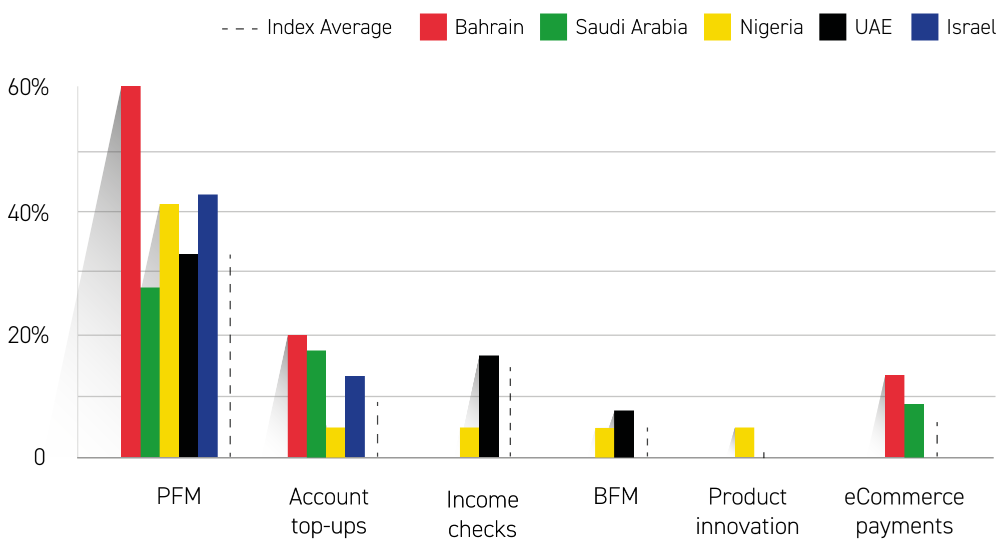
Key Markets

Whilst markets across the middle east are converging on a "government mandated" approach, Nigeria as the sole central or southern african market is following a route closer to that of India and Singapore with enabling (but not mandated) regulation and supportive digital infrastructure.



Experts at Open Banking Nigeria, a non-profit organisation focussing on the adoption of a consistent standard predict a slow burn adoption curve with around 30% of the country's banks currently either pledged or delivering APIs within the standard.

Key Use Cases



Timeline

2022

APRIL 2022

Dubai announces a licencing framework for TPPs and provides the first licence in-country to Tarabut gateway.

JUNE 2022

Financial data services act comes into force in Israel mandating the sharing of data with authorised TPPs.

NOVEMBER 2022

SAMA issues the Saudi Open Banking Framework. It is notable in that it is the first standard globally to be created specifically to serve as a set of use-cases identified from other more established ecosystems.

2021

JANUARY 2021

The Saudi Arabia Monetary Authority (SAMA) issues a roadmap for the roll out of Open Banking within the Kingdom.

FEBRUARY 2021

The central bank of Nigeria issues its regulatory framework for Open Banking. It is notable as the first standard to include a dedicated category of regulated data around credit scoring and derived analysis.

SEPTEMBER 2021

The CBB announces the second phase of Open Banking in Bahrain, expanding the scope to cover more data sharing capabilities and payment types.

NOVEMBER 2021

Bahrain phase 1 deadline passes with 17 local and regional banks now in compliance.

NOVEMBER 2021

Israel passes the financial data services act which mandates the sharing of financial data with authorised TPPs. Banks have until June 2022 to comply.

2020

MAY 2020

The Central Bank of Bahrain launches phase one of its Open Banking framework program targeting 17 banks in the region.

2018

JANUARY 2018

The Open Technology Foundation in Nigeria releases an alpha version of an Open Banking standard designed to promote the uptake of Open Banking in the country.

AUGUST 2018

The Bank of Israel launches a project to regulate an API standard for banks.

DECEMBER 2018

Tarabut Gateway becomes the first company in Bahrain to receive an in-principle authorisation under the newly announced Open Banking rules.

INTERVIEW

The Expert View

Israel

Shmuel Ben-Tovim

President, Israel Fintech Centre

Ofer Fohrer

Minister for Economic Affairs at Economic & Trade Mission, Embassy of Israel, London

From a technological point of view, Israel is one of the most advanced nations in the world, but the Israeli consumer is amongst the last to enjoy the benefits of that from a fintech perspective. This is driven by a uniquely complex regulatory system with three main regulators: the Bank of Israel, the Israeli Securities Authority and the Capital Market Authority, Insurance and Savings Authority, all having slightly overlapping remits.

From a positive perspective, the government has acknowledged that the current structure is confusing and the Minister of Finance launched a commission in 2021 to re-organize the structure of financial regulation in Israel, but this still leaves many fintechs frustrated. There are alot of international fintechs with their talent-base in Israel but who, because of the regulatory system, aren't able to serve israel customers.

Open Banking is in a similar position. Most banks were ready to start sharing data with each other, and fintechs by the end of June 2022 but there are very few fintechs that have received licences yet. There's a lot of pressure to keep moving forward on this and we expect the pace of progress to pick up in 2023.

In November 2021, a law was passed in Israel that regulates the provision of financial information services based on the European directive PSD2, and API interfaces according to the technological standard of Berlin Group. The law instructs banks, credit card companies, and later also non-bank credit providers, to transfer information to licenced companies about customers and with their consent. The types of information that can be obtained are more diverse than ever before, and include information on loans, savings and activity in the securities sphere.

The main regulator of this activity in Israel will be the Securities Authority, and as of June 2022, the Authority is already on the verge of granting the first licenses to fintech companies that wish to provide financial information services to customers in Israel within this legal framework.

In Israel, the legislation regulating financial information services is separate from the legislation regulating the activities of non-bank payment service providers. The second field is also promoted and is expected to be supervised by the Securities Authority. A memorandum of law on this subject has already been published for public comments and is awaiting the completion of the necessary legislative procedures.

Chapter 9

Case Study: Beyond the Mandate

How banks are looking beyond transaction and balance data to drive new experiences in the UK.

Stacey Wilkinson
Product Owner for Customer Attribute Sharing
NatWest Bank of APIs

NatWest

CASE STUDY

At NatWest, we've championed the potential of Open Banking from its earliest days, as we've always seen it as being far more than a response to new banking regulations. For us, it's been an exciting opportunity to create the 'Bank of APIs' – an API ecosystem that goes beyond the Open Banking mandate and is bringing an increasingly wide variety of our services to customers and partners in new and convenient ways.

Open Banking APIs have made it much easier for customers to access their account and transaction data through their channel of choice – for example, small business customers have benefitted greatly from the ability to access their banking data through cloud accounting.

However, we recognise that, as a bank and an institution of trust, there is far more data we hold – beyond account and transaction data – with which we can empower our customers. Our Customer Attribute Sharing APIs offer a great example of how we're leveraging the foundations of Open Banking and externalising a far wider range of bank-held data to drive the digital economy.

These APIs can help address significant challenges for businesses – such as onboarding and ID verification – where bank data can make a huge difference to the customer experience.

There are three main areas where the Customer Attribute Sharing APIs can help businesses:

- **Provision:** With the customer's permission, NatWest can provide fast, secure access to customer data (e.g. name, age and address) to help speed up online experiences, such as onboarding to digital platforms. This can be particularly useful as a replacement for lengthy form filling and manual document uploads.
- **Verification:** NatWest can reliably verify customer details such as a customer's age or citizenship where required by government regulations (e.g. for age-restricted services such as hiring a car).
- **Notification:** NatWest can instantly notify businesses when a customer updates their details, such as their address – helping to provide peace of mind that information held is up to date.

E-document signing shortened from around five minutes to 45 seconds

Together, these solutions can provide consumers with speedier user journeys, which involve less paperwork and reduced risk of error. For businesses, these solutions can help reduce onboarding dropouts and the risk of fraud, as well as the costs associated with verifying customer information.

Recently, the Customer Attribute Sharing APIs have proved to be a game-changer for a provider of e-document signing. By integrating with the APIs, the company has been able to remove the need for customers to upload scanned or photographed documents to verify their information, and have consequently reduced their e-signing process from around 5 minutes to just 45 seconds.

At NatWest, we know how important it is for businesses to improve their online experiences and offer more seamless digital journeys for their customers. That's why we're excited to roll out Customer Attribute Sharing across a wide range of use cases, and to see the many benefits it will bring to businesses and consumers.

Chapter 10

Region Focus: LatAm

Despite being relative newcomers to the Open Banking scene, the LatAm region is moving fast.

Despite being relative newcomers to the Open Banking scene, the LatAm region is moving fast. Brazil has reached the 5 million connected accounts mark less than a year after the 1st implementation deadline passed, a feat which took between four and five years in the UK. Whilst there are far fewer service providers than there are in UK and European markets, the principles of reciprocity that are baked into the regulatory context seem to be creating a flourishing ecosystem.

With Brazil leading the way, Mexico is building on its longer established fintech law and we expect to see acceleration over the course of 2023. Colombia, Chile and Argentina are still at early stages in the journey but with local templates laid out as well as the European, UK and Australian systems to observe, these are exciting prospects for the mid-term future.

Of particular note within the Brazilian ecosystem is its reliance on the concept of reciprocity and its ability to underpin a broader Open Finance agenda. This ensures that participants engage in a more equitable structure surrounding cost sharing but leaves unresolved questions around the roles of TPPs and big tech.

UK
0 - 5 million connections
5 years

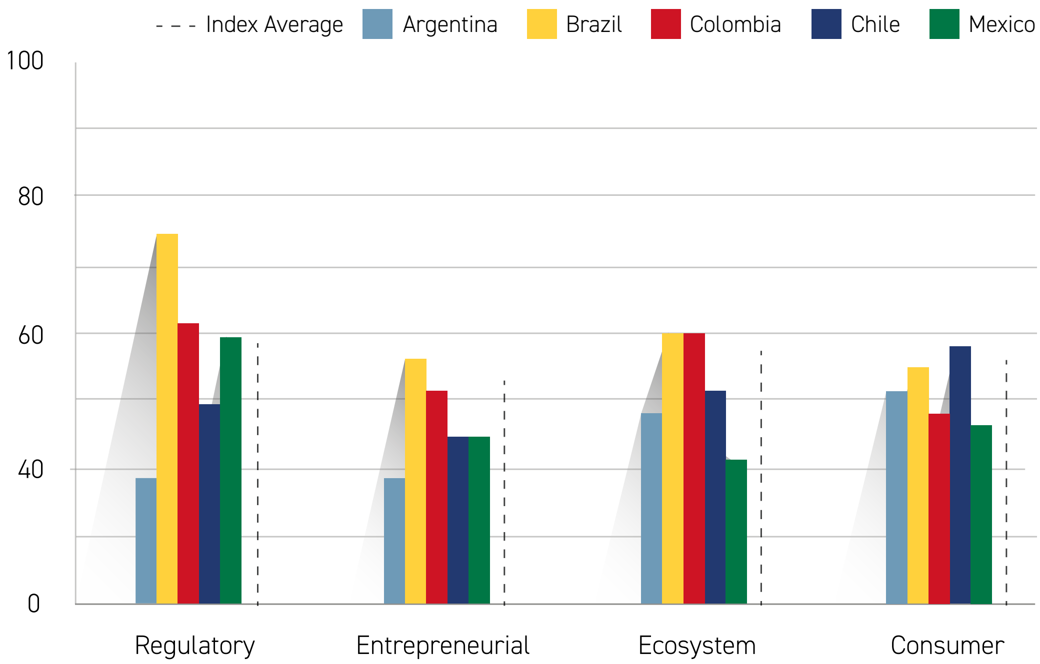
Brazil
0 - 5 million connections
1 year

> **“Open Finance will be successful in Brazil, due to three factors: a very broad scope for data sharing, a local willingness to share data and high-quality of the regulation provided by the Central Bank. Standardisation was also key for success in both user experience and APIs.”**

Carlos Carneiro
Head of Open Finance Strategy, Itau

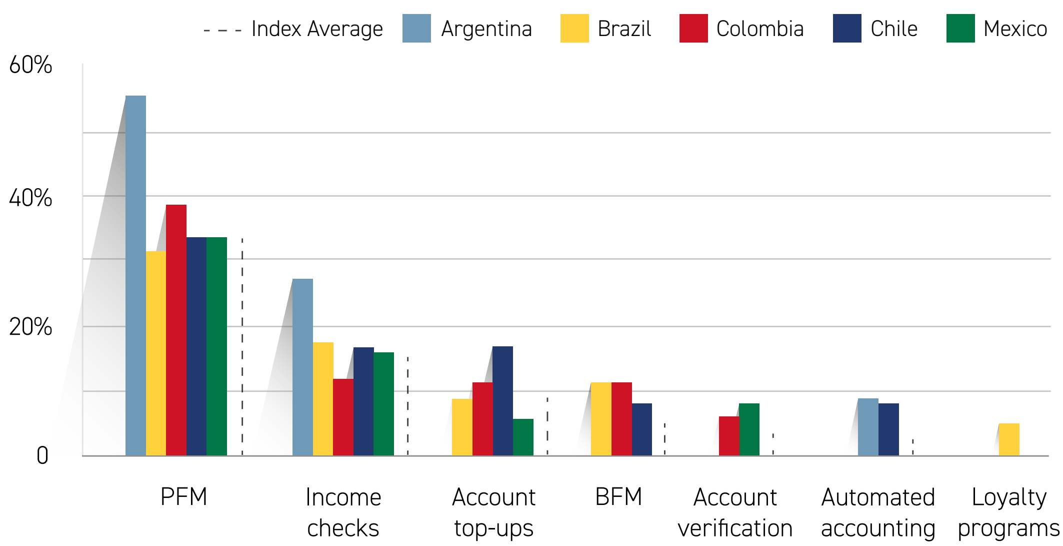
Key Markets

The majority of primary research in this piece was carried out prior to the passing of Chile's fintech law which established the framework for Open Banking in the country. In this context, we expect Chile to switch to the "movers" cluster in the near future as the pace of implementation becomes apparent.



It is worth noting that Brazil is one of only three countries where experts cited loyalty programs as being one of the use cases most likely to achieve widespread adoption over the next 12 months. The other two countries were the UK and France, both markets where Open Banking has been long-established.

Key Use Cases



Timeline

2022

MARCH 2022

Brazil launches its final implementation phase bringing Investments, Insurance and Pensions into the scheme.

MAY 2022

Argentina's BCRA publishes the requirements for its Open Banking scheme covering Banks, Fintechs and Payment service Providers. Participants are given until September 30th to comply.

OCTOBER 2022

Chile passes its Fintech bill which establishes the framework for an Open Banking scheme. The country's regulator, the Financial Market Commission will be responsible for the regulatory parameters.

2021

JUNE 2021

Belvo, a fintech company offering Open Banking connectivity across key LatAm markets raises $43 million in the largest Latam fintech deal to date.

JULY 2021

Colombia's government issues its Open Banking decree which covers all institutions supervised by the Superintendencia Financiera de Colombia. The watchdog is given 12 months to establish the technical spec of the systems.

OCTOBER 2021

Brazil's first implementation deadline passes for organisations to make APIs ready for use.

OCTOBER 2021

The Chilean Congress approves the Fintech Bill (Fintech Law), which proposes the creation of Open Banking infrastructure to enable the exchange of customer information between financial entities.

2020

MARCH 2020

Mexico passes secondary regulation outlining the scope of its Open Banking regime. All financial institutions regulated by CNBV are covered (Open Finance level of scope) though data roll out is phased. Phase 1 only includes public data like product sets and service locations etc.

JUNE 2020

Open Banking regime detailed in Brazil. All organisations regulated by the Central Bank are covered for both data and payments access. Investments, Insurance and Pensions are in-scope but subject to separate arrangements. All segment 1&2 institutions are mandated to comply.

NOVEMBER 2020

Open Banking implementation phase 1 starts in Brazil.

2019

APRIL 2019

Central Bank of Brazil issues a communique outlining its approach to Open finance.

2018

MARCH 2018

Mexico passes fintech regulation law with high level OB provisions outlined that oblige more than 2,000 financial entities to share their data.

Brazil's Open Banking Aggregators

Belvo is a regionally focussed Open Banking provider operating across Mexico, Brazil and Colombia. Founded in 2019, it has already raised in excess of $50m. It has historically focused on account aggregation and data enrichment but announced in September 2022 that it would act as a Payment Transaction Initiator in Brazil.

Finerio Connect, based in Mexico, has followed a model offered by a number of European TPPs initially launching as a D2C fintech app before pivoting to offer a B2B platform in 2019. It now offers account aggregation, data enrichment and PFM tools through its API platform.

Quanto is a Brazil-based Open Banking provider that positions itself as the enterprise grade solution for institutional players. It has raised around $20m since its inception in 2015 and counts BMG in its client list and two of the country's largest banks in Bradesco and Itau Unibanco amongst its investors. In September of 2022 it announced that it was the first Brazilian firm to be able offer both Pix and Open Banking payments through the same platform.

$1.7bn raised by Brazilian fintechs in 2022

> "Brazil learned a lot from other countries when defining not only its API standards but also the required steps in the customers journey (UX/UI). Also, global open protocols were used for security issues – FAPI, DCR, DCM standards were followed, with some adjustments to the local reality. The trust framework was also brought from the UK."

Carlos Jorge

CEO, Chicago Partners

The Expert View

Brazil

Aristides Cavalcante

Head of Technology, Brazil Central Bank

How would you describe the journey of open banking and open finance in your country in terms of a) overall achievements, b) past and current challenges and c) the future roadmap? How far is your country regarding the implementation of open banking/finance in your opinion?

It has been two years since the initiative started in Brazil – in the middle of the pandemic.

We chose to kickstart the process with a governance mechanism that was not final – and we are not yet fixing what the long-term structure is going to look like. Like any innovation process, we have needed and will need to make adjustment along the way. The existing, non-final governance structure has 6 members – representing all different institutions in the financial services industry locally.

The Central Bank participates in the governance as a mediator to help the dialogue between the institutions – but it regulated based on how the discussions advance.

The principle of reciprocity has been the main driver of the Open Finance initiative in Brazil – that means that if you access data, you need to share your data too. Also, the principle of interoperability – plug to one, plug to all. We don't want APIs to only connect to the larger players, which will not address the issue of competition. Otherwise, if you are already connected to 80% of the market, it might make more sense to develop more products with these entities than to extend services to the full range of the market, limiting the social benefits that can come from Open Finance. This principle has allowed the ecosystem to flourish quickly. There are currently more than 5.2m people with active consents for data sharing. The number of API consumption is also growing quickly: more than a 1 billion per month.

Open Finance is not a product, but an infrastructure. The participants in the market are the ones who will develop solutions that will add value to people. The process of aggregating financial data, improving credit models etc… is already having an impact. For example, one bank has already given 10% more credit when people that fall under a "grey zone" in their credit model, share additional information through Open Finance.

For the near future, we will focus on dealing with some of the shortcomings on the initial implementation. There were a lot of bilateral adjustments to make the initial implementation, and we need to avoid that. That is why the 2nd generation of APIs is being launched now. We want to "organize the house" before we add even more additional financial information, such as insurance and investments. This will require that all organizations that are already certified to operate under the Open Finance licence be recertified.

What are some lessons you learned from other countries?

We made benchmarks with several other jurisdictions (UK, Mexico, India) before we launched the initiative in Brazil – we made sure that we needed to adjust everything to the Brazilian context.

By choosing full interoperability we also opted out of a model in which all institutions plug into a single, intermediary institution – we favoured connections being made directly between the organizations. To make sure that works though, we have created both validation and conformity processes: the conformity process is delivered through a sandbox in which every organization makes their APIs available; the validation process allows us to continuously monitor the quality of the data issued so that errors can be monitored and reported in real time.

Chapter 11

How To Build A Flourishing Ecosystem

An interview with Janine Hirt, CEO, Innovate Finance..

Open Finance

Fintech

Janine Hirt
CEO, Innovate Finance

The Open Finance Index Ecosystem category measures the extent to which elements of the fintech and financial sectors are able to collaborate. The top five countries achieved very similar Ecosystem scores, with India in first place, leading the UK by just .47 points.

Innovate Finance is an industry body responsible for representing the "world-leading UK fintech sector". We asked Janine Hirt, CEO, to discuss how the UK achieved its leadership position and set out what regulators, industry and government can do to ensure future growth.

How would you assess the success of the UK Open Banking ecosystem?

The UK Open Banking ecosystem leads the world. As we move toward Open Finance, it is absolutely critical that we continue with the positive momentum that has driven us forward. We were very much a trailblazer in Open Banking both on the regulatory front and on the innovation and industry side, putting in place the programmes and infrastructure that allowed the ecosystem to flourish. What is absolutely fundamental to our development is ensuring that the UK does not rest on its laurels. This issue goes beyond Open Banking to broader fintech and innovation. Government, industry and regulators must continue to collaborate and ensure we realise the benefits of Open Banking and then Open Finance.

What has driven the success of the UK ecosystem?

According to our 2022 FinTech Investment Report, UK FinTech attracted $12.5bn of investment in 2022, second in the world only to the US and ahead of all of Europe. These are impressive numbers and are clear evidence that the UK remains a global leader in fintech and financial innovation, despite the current global slow down.

The continuted success is a testament to the amazing entrepreneurs and founders that make up our UK fintech ecosystem. It is also a reflection of the comitment of the UK government to support the sector and to the proactiveness of our regulators. We now need to ensure this momentum of government support, and proactive regulation continues at pace. An additional component is the excellent talent available to fintechs here in the UK. We have a fantastic talent pool that fintechs can pull from as they grow and scale their business. This involves both a domestic pipeline and access to great international talent as well.

It is important to mention that the UK has one of the strongest fintech adoption rates in the world. Before the Covid-19 pandemic, we stood at around 70% adoption. Now that has increased to nearly 80% - which means eight out of every 10 adults are using a fintech tool. That, in and of itself, is able to support a very strong Open Banking ecosystem. We want to make sure that we continue to drive further adoption and don't leave anyone behind. So it's critical that we also look at both financial inclusion, financial wellness and digital inclusion within this framework.

> "Before the Covid-19 pandemic, we stood at around 70% adoption. Now that has increased to nearly 80%."

> According to our most recent FinTech Investment Report, UK FinTech attracted $12.5bn of investment in 2022, second in the world only to the US and ahead of all of Europe.

Janine Hirt

What levers can be pulled to ensure the growth and success of Open Finance?

There are several key components that we must focus on to make sure the Open Finance ecosystem expands and flourishes. Firstly, we must look at the future role of the OBIE. We need to develop a regime that oversees commercial applications of Open Banking beyond the immediate remit of the CMA mandate. Secondly, we must ensure that we continue to foster a legislative and regulatory environment that allows fintech to thrive more broadly.

We also need to look at the use cases and positive impacts tha Open Banking and Open Finance have on consumers. At the core of the fintech sector lies the drive to create a more inclusive, a more democratic and a fairer financial system that works better for all. Open Banking an Open Finance are key to this.

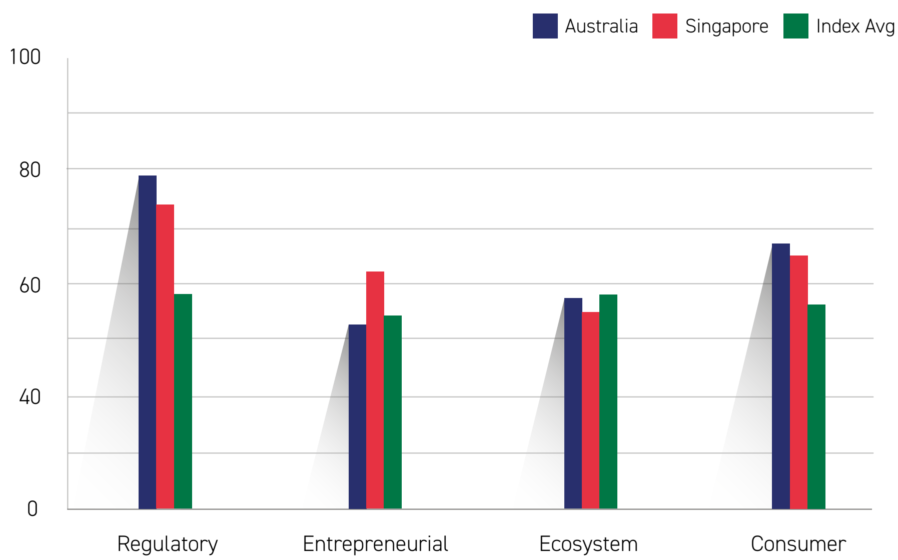
Education here is key. We need to educate consumers about the benefits of Open Finance, as they will be much more likely to utilise these tools when they see the positive impact they can have. Educating government, regulators and policy makers on the positive use cases is also critically important if we are to drive momentum and progress.

What nations or regions are leading the way with forward-thinking regulation?

Beyond the UK, I would point to Australia and Singapore as good examples. The Australian government has already started to forge a path toward Open Finance and beyond through the Consumer Data Rights legislation. The Singapore government has also invested in the world's first public digital infrastructure, which will be using a national digital identity that enables secure data portability between government agencies and financial institutions. The digital ID or financial passporting area is a really important piece and it is something that we would love to explore further here in the UK.

Effective and proactive regulation is necessary to ensure

Relative category scores for Australia and Singapore vs the index avg



that we can move forward quickly in a way that is facilitating innovation while still protecting consumers. Regulations should support commercial activity but also ensure there is fair access to the data. There are many different opportunities and spaces for open finance. Whether that is in insurance or other areas, we must look at how we can regulate these in a way that doesn't necessarily require as much institutional capacity as we've seen, for example, with current accounts or similar areas.

What can be done to create a diverse ecosystem?

While the UK fintech ecosystem has made positive progress on diversity, we still have a long way to go. The current ratio of male to female workers in UK fintech stands at 2:1. We know from our latest research that, in 2022, investment into female-driven fintechs dropped to $616 million accross 39 deals, representing just 4.9% of total investment in UK fintech. That number is particularly disappointing and frustrating when you look at the strong track record that

> Of the $12.5 billion being invested into the UK fintech ecosystem in 2022, less than 5% went to female founders or female CEOs.
>
> **Janine Hirt**

female-founded companies or female-led companies have in terms of creating resilient businesses: during the COVID pandemic, for example, research revealed that 78% of female-founded fintechs had more than 18 months of runway, compared to only 50% of their male counterparts.

Inclusion is broader than just gender, and we must all work towards creating stronger racial diversity, socio-economic diversity, LGBTQI+ diversity and neuro-diversity as well.

In our survey there was a clear correlation between markets that scored highly on financial inclusion metrics and markets that were leading the Open Finance charge, is this coincidence or does Open Finance drive financial inclusion?

When you look at the fintech ecosystem, many of the founders that created organisations did so because they wanted to create a more democratic, inclusive and effective financial services system. During the 2007 and 2008 crisis, which many observers point to as the birth of today's fintech ecosystem, we saw fintechs step in to build trust and renewed resilience back into the financial services sector. By 2020, almost 65% of SME lending in the UK was carried out by alternative lenders - a huge shift in the market.

During the pandemic, fintechs once again stepped in to save the day in terms of providing digital access to individuals and to SMEs when many of the incumbents struggled to do so. And today, so many fintechs are focused on offering greater competition, greater choice, better speed and flexibility when it comes to financial services. At the end of the day, much of fintech is about putting the customer back at the centre of the proposition, and open finance exemplifies this. This also translates into being better able to reach the under-served and excluded through, for example, better access to credit and savings.

Fintech Open Banking solutions can provide tools directly to the end consumer and enable other financial institutions to support their own customers. For example, Minna Technologies has implemented innovative solutions for consumers to monitor their subscription spend, while others such as Snoop and Moneyhub provide free money-management and budgeting apps. Many diverse providers have come up with valuable use-cases, including managing credit scores and taking steps to improve overall financial health.

> 78% of female-founded fintechs had more than 18 months of runway, compared with only 50% of their male counterparts

Janine Hirt

How are banks and fintechs partnering? What can be done to foster collaboration?

When we talk about creating a more democratic future for financial services, the challenge needs to be looked at through two lenses. The idea of disruption and competition is absolutely core to creating choice and a better experience for the consumer. But the partnerships and collaboration angle is also critically important.

We have come to see more startups and incumbents collaberating and partnering accross all areas of the business over the years. There are also a number of areas where government regulators and policy-makers can play an important role in terms of fostering greater collaboration across the ecosystem, such as encouraging regulated firms to look at whether they are effectively supporting their operational resilience with regtech tools or other technology as part of their operational risk assessment. Another opportunity could be to offer non-regulatory financial incentives such as tax relief.

It is important that there is aditional support provided for fintechs and regtechs to inform and standardise the onboarding process because that, we know, is one of the core areas of difficulty in terms of seeing greater collaberation happen.

How will Open Finance enable financial services to move towards Net Zero?

Fintech has a critical role to play in terms of helping us reach a more sustainable future in the financial services space and as an economy overall. So much of reaching our global sustainability goals lies in measuring data - which is exactly what fintechs do best - and driving capital towards activities aligned with net zero. We have seen fintechs already play key role in helping individuals, SMEs and larger incumbents reach those goals through helping them measure their carbon footprint or climate impact.

Collaboration is key to driving sustainability and working towards net zero. The partnership between Cogo, Tink and NatWest is a good example of positive work in this area. Cogo is an Open Banking platform that enables consumers to see the carbon impact of their purchases. It connects to consumers' bank accounts and calculates a personalised carbon footprint in real-time. First, it partnered with Tink to help deliver that. They both partnered in turn with NatWest, which integrated Cogo into its core proposition as well. All of this was facilitated by Open Banking and shows how Open Finance can help us move towards a greener future.

Chapter 12

Region Focus: North America

North America is one of the most exciting areas of the world when it comes to Open Banking.

With both the US and Canada on the cusp of regulatory intervention and economies that are well structured for interoperability, this is one of the most exciting areas of the world when it comes to Open Banking.

Here, more than anywhere else, the concept of financial data sharing has been normalised in the consumer mindset through 25+ years of widespread screen scraping and even in the absence of regulation, significant segments of the industry have already made the transition to APIs.

Forums like the Financial Data Exchange are driving cross-industry collaboration at a pace that is only likely to be accelerated by moves both within the federal government in the US and the Canadian regulators. Meanwhile strong entrepreneurial environments and access to capital for startups are providing a significant boost to fintechs in the space.

42 million accounts available through APIs in the FDX standard

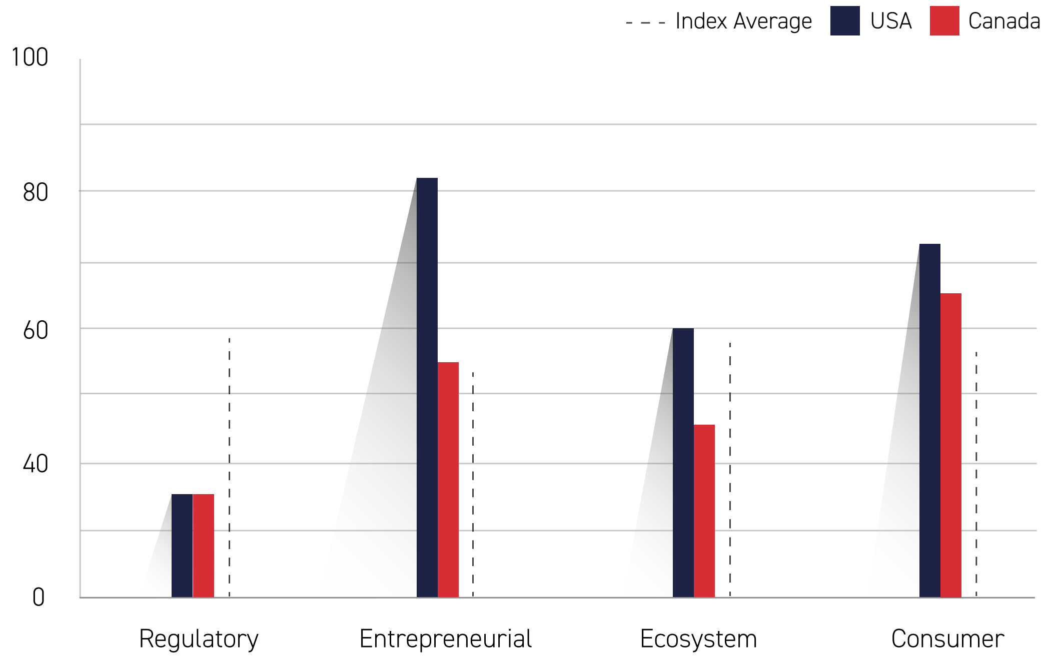
> **"In the US, ⅓ of financial institutions' customers share data with third parties (~100 million consumers.)"**

Don Cardinal

Managing Director, FDX

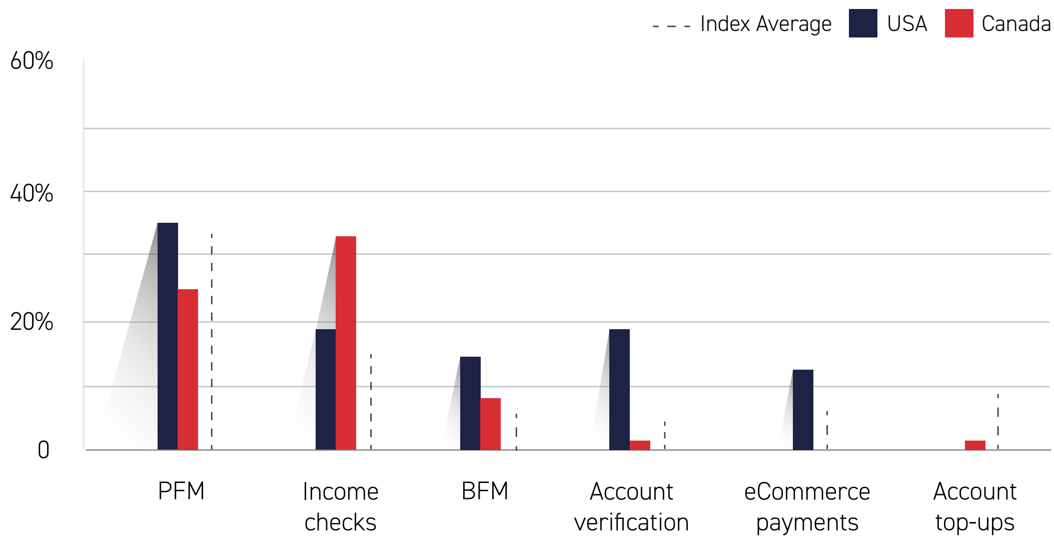
Key Markets

Of particular note in the US is progress around FDX, which now claims more than 42 million accounts that are accessible through its API standard. This, after India and the UK, makes it the third largest grouping of bank accounts in the world.



Key Use Cases

In most markets, a high concentration of respondents citing PFM as one of the use cases most likely to gain widespread traction correlated closely with very early stage ecosystems. The US offers a notable exception to this correlation due several well-established PFM propositions that gained significant adoption using screen scraping.



Timeline

2022

MARCH 2022

Canada appoints Abraham Tachjian as its Open Banking lead and gives him the mandate to develop an accreditation framework as well as a common set of rules and technical standards for canadian Open Banking.

OCTOBER 2022

FDX announces that it now has 42 million customer accounts running on its standard across north America, this makes it the third largest (behind India C1bn accounts and the UK, C80m accounts) standard in the world in terms of the number of consumer accounts whose data is made available in single format.

2021

JULY 2021

President Biden issues an executive order on promoting competition in the US economy he references the promotion of rules to facilitate financial data portability.

JULY 2021

12 days later, the Dodd-Frank Wall Street Reform and Consumer Protection Act essentially begins the process of mandating Open Banking by requiring the Consumer Financial Protection Bureau to develop rules around the sharing of consumer financial data.

AUGUST 2021

Canada's advisory committee on Open Banking submits its final report which contains a recommendation for the release of a made-in-canada Open Banking regime, the government pledges to launch the system no later than early 2023.

2020

OCTOBER 2020

FDX reaches its second anniversary having grown from 21 member organisations to 153 and established itself as the largest standard in the US.

2019

JANUARY 2019

Canada launches its first consultation on the merits of Open Banking.

JUNE 2019

Canadian senate committee on Banking, Trade and commerce provides its recommendations on a review of privacy laws and that such a review should include a "data portability right".

Timeline

2018

JUNE 2018

California Consumer Privacy act passes onto the state statute books for California. This plays a similar enabling role to that played by GDPR in the EU. 4 other states have passed similar laws with many more in the works.

OCTOBER 2018

Financial Data Exchange (FDX) launches in the US with 21 founding members and the express aim of uniting the sector around a common standard for permissioned access to consumer and business financial data.

2013

2013

Plaid is founded by co-founders Zach Perett and William Hockey. It initially focuses on consumer financial tools but pivots to to be the first company offering what it describes at the time as being a “Unified Bank API”.

2006

2006

Mint, an early PFM play, is founded. In 2009 it is acquired by Intuit for $170m and by 2016 it will claim to have 20 million users and connect to more than 16,000 financial institutions across the US and Canada.

2000

PRE-2000

The concept of data portability has been long established in the US. Yodlee, a data aggregator, was founded in 1999 and provided services to early PFM plays.

The Expert View

US

John Pitts

Global Head of Policy, Plaid

We know API connectivity is the future for Open Finance in the US. At Plaid we have paved the way in moving industry away from screen-scraping with the majority of our traffic now via APIs. Although banks are transitioning to APIs at pace, from a consumer perspective, it shouldn't matter, the size or readiness of your bank. Every person should have safe, reliable access to Open Finance throughout this shift. We're expecting regulations to be brought forward in the US that mandates consumer data access but are not technically prescriptive on the means of access.

We expect rules that aim to accomplish five objectives:

1. To establish a consumer data right
2. To establish what consumer financial data will be covered under that right
3. To define which financial institutions data should be available from (for example US consumers are increasingly viewing fintechs as the data source rather than exclusively as the data recipient)
4. To establish a supervisory structure for aggregators that brings us under formal oversight by the CFPB
5. To establish reliability standards for data availability.

Raul Aldrey

Head of Digital Channels and Ecosystem, Citigroup

The U.S. is slightly behind other countries in Europe in terms of open finance. However,there has been enormous momentum in the last two or three years from the leading institutions. Even in the absence of regulation, financial institutions have come together and are driving forward a common agenda that prioritizes customers.

The community has welcomed more recent engagement from government stakeholders, but the financial institutions have been leading the way and are the current experts when it comes to creating standards. In particular, organizations such as the Financial Data Exchange (FDX) and Clearinghouse are doing great work fostering collaboration between stakeholders in the financial market.

This kind of collaboration is crucial. It's encouraging to see larger, more established fintechs participating in forums like FDX as it shows leadership in transitioning the data consumption side of the industry to APIs and starts to lay the groundwork for reciprocal systems.

Fintech Aggregators

Plaid is a data network that powers the tools hundreds of millions of people rely on to live a healthier financial life. Plaid works with thousands of fintech companies, several of the fortune 500 and many of the largest banks to make it easy for people to connect their financial accounts to more than 7000 apps and services they want to use. Plaid's network covers more than 12,000 financial institutions across the US, Canada and Europe.

MX provides connections into around 16,000 financial institutes and claims to power 85% of all the digital banks in the US. Founded in 2010, it has, to date, raised $450m including its recent series C and it has been reported that firm is preparing for a $5bn sale or IPO in the near future.

Finicity began life as a B2C app based on its founder's family budgeting approach. As the app grew, it extended its coverage until by 2015 it had connected to more than 10,000 financial institutions. It pivoted to a B2B model and by 2018 had raised almost $80m in funding. Based in Utah, it was acquired by MasterCard in 2020 for $825m and now forms a key part of the card giant's Open Banking strategy.

PLAID

MX

Finicity

> "Some banks have a fear of being disintermediated, where banks aren't the first source that customers will want to go to. We've seen consumers prove that this won't be the case."

Don Cardinal

Managing Director, FDX

Chapter 13

Open Finance and Financial Inclusion

An interview with Harish Natarajan, Lead Financial Sector Specialist, Finance, Competitiveness & innovation at the World Bank.

Open Finance will be an enabler of financial inclusion and has the potential to contribute toward ESG goals such as net zero. The Open Finance Index found that countries with the lowest levels of financial inclusion all reported adoption of lending use cases in the account verification and income & affordability assessment categories. In the 23 countries we looked at, the unbanked population is nearly 400,000,000 people.

Throughout the 21st century, tremendous progress has been made in helping unbanked people to access accounts and other financial services. In 2021, The World Bank's Global Findex Database[1] reported that roughly 1.4 billion adults - almost one quarter - are still unbanked, which the authors defined as not having an account at a financial institution or through a mobile money provider. This number has declined dramatically from 2.5 billion in 2011 and 1.7 billion in 2017.

In emerging markets and developing economies, the growth of banking services has been particularly positive, with the percentage of people that hold a bank account soaring from 42% in 2011 to 71% in 2021.

Open Finance has the potential to continue this momentum or even accelerate inclusion. By reducing the cost of delivering services, Open Finance makes it more profitable to serve groups which have traditionally been excluded from the financial system. However, there is still work to be done to enable unbanked people to open accounts in the first place.

Unbanked population nearly 400,000,000

In the 23 countries we looked at

2011
42% held a bank account

2021
71% held a bank account

> Financial inclusion is not just about bank accounts. It is essentially about a person or small business having access to a transaction account through which they can make or receive payments and carry out day-to-day economic and social interactions. In that sense, I think non-banks have a big role to play globally.

Harish Natarajan

Harish Natarajan, Lead Financial Sector Specialist, Finance, Competitiveness & Innovation at the World Bank, described Open Finance as a "second-order issue" for inclusion because individuals or businesses must first obtain access to a transaction account before its benefits "kick in".

He said: "Access to a transaction accounts is not just about bank accounts, it includes access to accounts offered by other regulated financial institutions like mobile money providers. Further, it is essentially about a person or small business having access to a transaction account through which they can make or receive payments and carry out day-to-day economic and social interactions. In that sense, I think non-banks have a big role to play globally.

"Taking a closer look at the underlying technology that enables third parties to access accounts is crucial to understanding how Open Banking and Open Finance could transform the way services are delivered and distributed. That is where the real power of Open Banking lies."

Open Finance enables better product comparison and price comparison services in industries ranging from insurance to mortgages. It reduces the complexity of application processes, making them easier and less time-consuming to complete because consumers will opt to share their data rather than manually enter it into a form. Crucially, API-enabled data-sharing makes it simpler and fairer to access appropriate, affordable credit. Yapily, an Open Banking infrastructure provider, has said that Open Finance "could increase efficiency as opposed to the traditional methods used when assessing a loan or credit application" by enabling faster eligibility checks, instant affordability and creditworthiness assessments and "immediate access" to historical transaction data.[2]

Natarajan added: "The role of Open Banking is to improve the utility of the account, in terms of building more compelling use cases or improving the customer experience. It also allows institutions to aggregate and bring together a range of different services from various providers.

"If we frame Open Finance more generally as the extensive utilisation of APIs to provide an easy way of interfacing with banks and other financial institutions, then one can even argue that Open Banking and Open Finance could help in the whole process of customers getting access to such accounts. Financial inclusion doesn't stop with the opening of an account for making payments, but goes beyond to enable access to means to save, responsibly access credit and participate in investment or building wealth."

Natarajan also linked Open Finance to the wider digitisation of financial services and its "attendant benefits" of reducing the need for paper-based records and removing the requirement to travel to branches or other locations to conduct transactions. This not only improves financial inclusion but could also help make the industry more sustainable.

He said: "The key to looking at the ESG angle of Open Banking and Open Finance is through the lens of digitalisation. Digitisation can support the adaptation to climate change and improve resiliency by enabling individuals and small businesses to access financial products which help them respond to climate impacts."

Open API technology can serve as a "nudge" by embedding emissions and sustainability data within transactions so that consumers and businesses can see the exact carbon footprint of each financial decision. For example, the fintech Lune is one of the companies providing software and APIs which "integrate emissions calculations and quality carbon removal into every customer experience"[3].

We will see more fintechs offering similar services in the future due to rising demand. Mastercard research found that 81% of Australian consumers were "actively" seeking to reduce their carbon footprint, whilst almost half (48%) said they would "avoid shopping at a business that did not source its products sustainably"[4]. Consumers and businesses are looking for green options - representing a clear opportunity for Open Finance pioneers that can meet this need.

> "The role of Open Banking is to improve the utility of the account, in terms of building more compelling use cases or improving the customer experience."
>
> **Harish Natarajan**

[1] https://www.worldbank.org/en/publication/globalfindex

[2] https://www.yapily.com/blog/3-examples-of-what-open-finance-can-do-right-now

[3] https://lune.co

[4] https://www.mastercard.com/news/ap/en/newsroom/press-releases/en/2022/going-green-sustainability-key-to-future-success-as-consumers-and-employees-look-to-businesses-to-act/

Chapter 14

Region Focus: APAC

Australia's hugely ambitious legislative approach stands in stark contrast to the approach of other key markets in the region.

Australia’s hugely ambitious legislative approach via the CDR stands in stark contrast to the “government supported” approach of other key markets in the region. Whilst the difference in approach may be clear, its impact is less so given the equally ambitious support, primarily through the creation of digital public infrastructure in Singapore and India.

Australia stands at an inflection point with 2023 likely to see not just the first use cases of the action initiation (for now read “open banking payments”) facet of the CDR but also the early emergence of cross-sector data portability as the CDR rolls out into both energy and telephony.

India’s successful roll-out of the account aggregator platform has created what is arguably the world’s largest Open Banking ecosystem with more than 1bn accounts now accessible, we expect to see further significant adoption over the course of 2023 as timelines around its much-awaited public credit registry firm-up.

Singapore may be a small market but its pan-ASEAN approach is clearly positioning it well as a fintech hub for the region with fintech investment running at around 0.6% of GDP (vs 0.2% for India and 0.05% for Australia).

Singapore

$2.4bn fintech investment, 0.6% of GDP

India

£6.1bn fintech investment, 0.2% of GDP

Australia

£0.8bn fintech investment, 0.05% of GDP

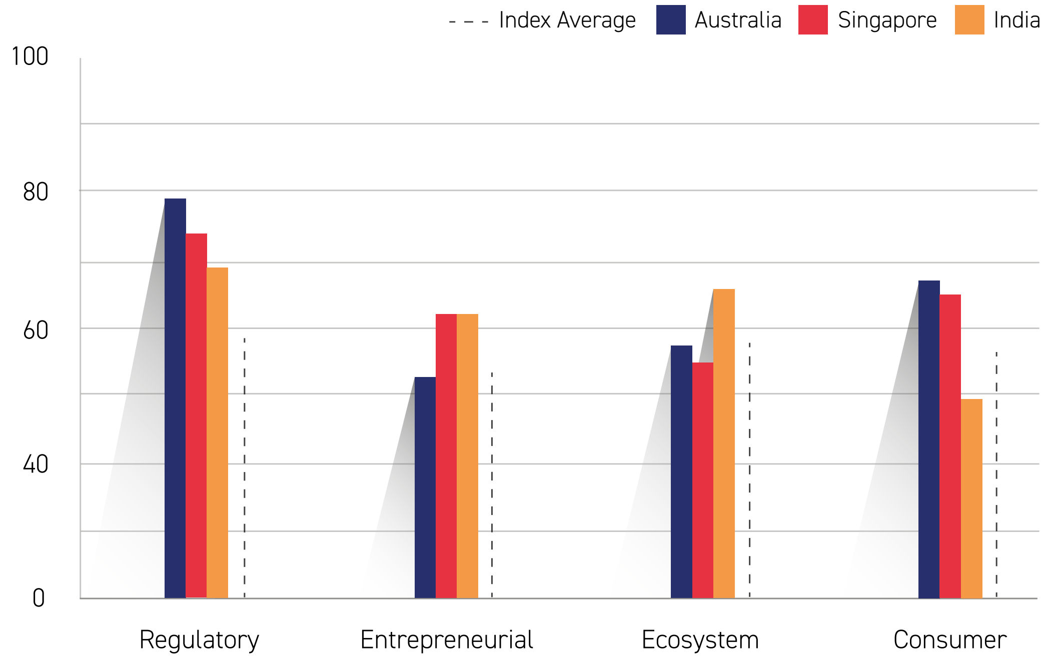
> “Of particular note is the innovation taking place in India. This has been enabled by a ‘whole tech stack’ approach, built up from the foundation of India’s digital identification framework. Importantly, this has enabled innovation to deal with a key objective of open finance in India, financial inclusion.”

Scott Farrell

Partner, King & Wood Mallesons

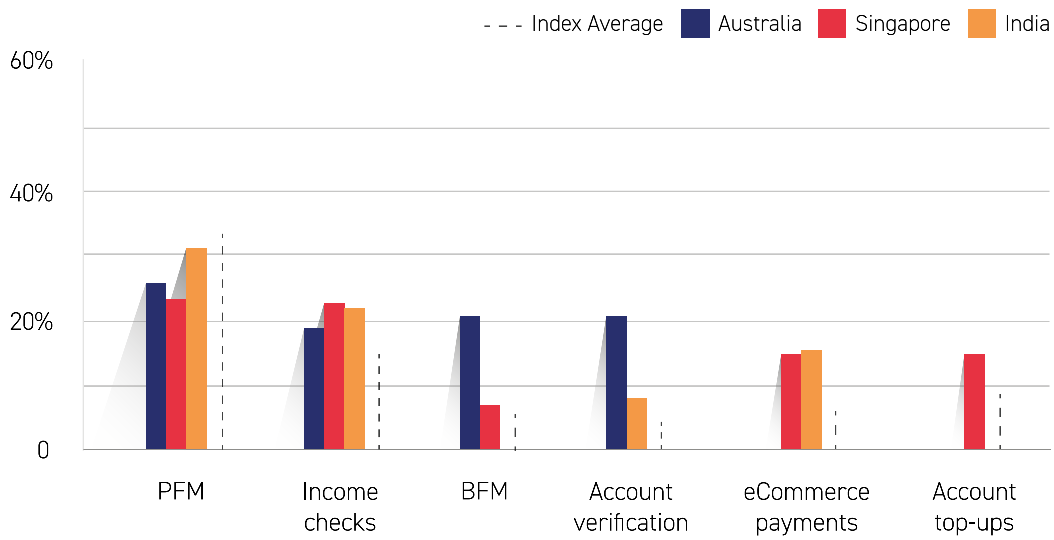
Key Markets

Whilst Australia scores highly, primarily due to its uniquely ambitious cross-sector approach to consumer data ownership, India and Singapore both represent significant growth opportunities. India's account aggregator platform has created the largest single grouping of accounts in the world and the Aardhar tech stack that underpins issues around digital ID will enable significant innovation. Singapore's position at the heart of a pan-ASEAN standard sets it apart as the first regional hub in the area and represents an opportunity to open up large markets.



Both Australia and Singapore are already exhibiting the signs of use-case maturity that is associated with more developed Open Banking ecosystems. Australia in particular will be one to watch in 2023 as both payment initiation and "Open Energy" come online.

Key Use Cases



Timeline

2022

FEBRUARY 2022

Deadline passes for all Banks in Australia to make phase 3 product data available (including overdrafts and certain types of loans not covered in phases 1 and 2).

SEPTEMBER 2022

Australian government announces plans to amend the CDR to include “action initiation”, a move that paves the way for Open Banking payments.

2021

MAY 2021

India’s RBI issues an important update to KYC policy to better enable digital onboarding of customers.

JULY 2021

Australia expands the scope of Open Banking to cover all regulated banks (outside of the original big 4) for phase 1 products.

SEPTEMBER 2021

India launches its account aggregator platform for the accreditation of TPPs. Most of the key banks participate.

NOVEMBER 2021

Further expansion of the scope in Australia to cover phase 2 products for all banks.

2020

JULY 2020

Third parties in Australia are able to begin accreditation with the big banks.

SEPTEMBER 2020

India’s national innovation body publishes its DEPA framework for personal data sharing, designed to underpin the way TPPs are integrated into the financial system.

NOVEMBER 2020

Deadline for the big 4 Australian banks to start transaction and account data for the next phase of products passes. (bringing mortgages into the mix for the first time globally).

DECEMBER 2020

MAS and the Government of Singapore launch SGFindex - an integration with the national digital ID designed to help organisations manage consent easily.

2019

AUGUST 2019

The deadline for 4 largest banks in Australia to start providing phase 1 data (predominantly savings, current accounts and credit / charge cards) passes ahead of the CDR becoming federal law.

Timeline

2018

MAY 2018

Australia agrees to implement the CDR. Open Banking is announced as the first sector to fall under the new law. It is to be rolled out in three phases initially covering 4 major banks.

JUNE 2018

India announced plans to create a Public Credit Registry designed to revolutionise how its citizens access credit.

SEPTEMBER 2018

In Singapore, MAS (and co) launches the API exchange (APIX) described as the world's first cross-border open architecture API marketplace and sandbox. This brings together APIs from many of the regions banks to facilitate FI-fintech collaboration.

2017

MAY 2017

Australian Government announces the Consumer Data Right (CDR) commission with a remit to draft legislation promoting data availability.

MAY 2017

MAS, The International Finance Corporation and the ASEAN Bankers association launch the ASEAN Fintech Innovation Network.

2016

APRIL 2016

India launches its Universal Payments Interface (UPI) running as an open source API and enabling account to account transfers.

NOVEMBER 2016

Monetary Authority of Singapore (MAS) announces guidelines on API standards for Open Banking in Singapore.

2010

FEBRUARY 2010

India launches the first version of its Aardhar ID stack, effectively underpinning its approach to data empowerment

INTERVIEW

The Expert View

Australia

Luke Fossett

Director, GoCardless ANZ

How would you describe the journey of open banking and open finance in Australia in terms of a) overall achievements, b) past and current challenges and c) the future roadmap?

“We’ve seen some really exciting progress within the world of payments across the UK and Europe, mainly thanks to continued investment in open banking rails. We’ve been able to take inspiration from seeing what’s working and which areas are driving adoption amongst both consumer and business payers, and use it to design and create other greater innovations in Australia’s payment space such as Pay To.

Pay To is an innovation that addresses customer and payer pain points whilst offering an alternative to credit cards, and in time, a modern replacement for traditional Direct Debit. thanks to communications from participating financial institutions - as well as media coverage, we’ve found a large volume of customers have a relatively good understanding of Pay To’s principal functions.

There are always the expected growing pains that come with new APIs and capabilities, but we hope to see a successful industry-wide adoption of platforms such as Pay To, resulting in greater control for both payer and payee. This process, once completed will effectively act as a key success case, similar to what we’ve seen for open banking benefits in other countries, and usher Australia into a new era of payments in which we see legacy systems being left in the past in order to embrace the advantages of emergent fintech solutions.

> “Australia’s CDR framework (of which open banking and open finance form part) encourages banks to participate as data recipients as well as data holders. It does this through the streamlined accreditation offered to banks, through reciprocity of data sharing for data recipients who also hold the relevant customer data, and the economy-wide scope which means that banks will be able to receive data from the energy and telecommunications sectors at their customers’ request.”

Scott Farrell

Partner, King Mallesons

Australia's aggregators

Frollo is an Accredited Data Recipient, the first to achieve the status under the CDR. Founded in 2015 it grew rapidly in the run up to the CDR deadlines and was acquired by NextGen.Net in July 2020. NextGen.Net's focus on the lending industry positions Frollo well to to specialise in the burgeoning affordability and onboarding sectors.

Adatree has made a name for itself as a leading "data out" supplier. Taking advantage of regulatory status then enables TPPs in Australia to act on behalf of a bank in providing "data out" services (e.g. managed APIs). It signed what it claimed at the time was the largest fintech / FI partnership in the market in a deal that saw Adatree work with a consortium of 20 banks credit unions to enable them to meet CDR commitments.

> "Australia learned from PSD2 in the UK and improved it. The Consumer Data Right - set down in the law notion that the user owns all of their data, not just their financial data. The 4 big banks dominate 80% of the market in Australia and it's the same thing with energy (the big 3). These kind if market dynamics aid adoption as large segments of the market are available with comparatively few integrations."

Jacob Parker

CEO, Fiskil

The Expert View

Singapore

How would you describe the journey of open banking and open finance in Singapore in terms of a) overall achievements, b) past and current challenges and c) the future roadmap?

Sopnendu Mohanty

Chief Fintech Officer, MAS

The first step was to encourage banks to start thinking about the technical infrastructure which is a pre-requisite for any bank to participate in such data exchange systems. That's why, in 2016, we released API guidelines that banks can use to look at their own tech stack and start publishing their APIs to collaborate with TPPs in areas where banks are not traditionally good. To support the APIs connected to TPPs, we looked at associated outsourcing guidelines to facilitate their ability to collaborate and integrate their systems.

We also looked at industries that banks might be hesitant to collaborate with - sometimes the startups are not mature. To facilitate this, we came up with the public platform APIX (API Exchange), which gives them a platform to experiment. This pushes banks' interest in the direction of collaboration with TPP.

These are some of the internal systems and guidelines developed to facilitate the internal systems and design for open banking architecture. This led to SGFinDex where the idea is to build a public infrastructure where different banks can participate and provide data through API to the gateway. Right now the phase we are in, we are focused on only regulated banks to participate and are also adding insurance to the platform. At some time, non-banks will also start participating. Here we have deviated from the principle of open banking in the way that every participating organization is expected to share data instead of consuming data. The participation is equal and there is no disproportionate advantage to one party. This is unique to Singapore.

Hari Sivan

Founder, SOCASH

Singapore is a dichotomy - on one side there is a regulator, MAS, which is very vocal, tech-friendly, and really wants to implement progressive policies. On the other hand, it is a very small country and has 3 large banks, which is like 3 big fish in a small pond, and there is little incentive for banks to innovate. All banks have APIs, and there is a national API register, but it all is being driven by the regulator. And if anything tries to scale, banks themselves are able to adopt it and keep it in a closed circle. This inhibits innovation in a competitive market.

Otherwise, from an infrastructure perspective, Singapore has been an early adopter, there is APIX, which is a MAS-led framework for all the APIs to be published. However, there are practical challenges in using these APIs as the onboarding process is controlled by the bank. So, as a Fintech, you can be in the sandbox forever but not go live unless the banks see a direct benefit. The main challenge is that the incentives are not clear.

The Expert View

India

Sumit Gwalani
Co-Founder, Fi-Money

How would you describe the journey of open banking and open finance in India in terms of a) overall achievements, b) past and current challenges and c) the future roadmap?

I view India as a global leader in Open Banking. Globally there is PSD2 in Europe which with user consent allows access to financial and banking information. In the US, there is a leader in Plaid which is a private player that has integrated with everyone. India did 2 different things that have exploded open banking, the more recent being the establishment of the "account aggregator" class of organisations, which, with explicit user consent, allow any user to access their information and share it with a regulated entity as needed. The great thing about the "account aggregators" is that they are centrally regulated which allows a lot more flexibility.

Open Banking in India started way before the account aggregator, it actually started with UPI. Now, the account aggregator ecosystem, when is combined with UPI, enables a system that, through using the third-party apps, lets customers view all their transactions and even make transactions and this suddenly opens up a new set of opportunities. This, then combined with certain banks who, by virtue of being more open and giving their APIs out allows doing even more things than just seeing and making transactions. For example, today Fi Money allows you to create fixed deposit accounts with one of our partner banks.

Another interesting thing to note is that now with UPI allowing you to do credit card transactions through RuPay, it means that you can even include credit-card transactions in the third-party app (which supports UPI). Kudos to the regulators in the country who have made this possible.

> "Account aggregator organisations allow any user to access their information and share it with a regulated entity as needed. The great thing about the "account aggregators" is that they are centrally regulated which allows a lot more flexibility."

Sumit Gwalani

Chapter 15

Beyond Open Finance

Lending is just one of the many sectors which will be transformed by the adoption of open API infrastructure.

Almost one-third of survey respondents globally (28%) said they expected Open Banking to change creditworthiness assessment processes in their country within the next year. Lending is just one of the many sectors which will be transformed by the adoption of open API infrastructure.

Soon, Open Data will empower many other industries by allowing consumers and businesses to simply and securely share information relating to everything from healthcare to transport. Embedded finance will place financial services in contexts which were once unimaginable, providing banks with the opportunity to embed their capabilities at the heart of products from other companies.

Michael Abbott, Senior Managing Director and Global Banking Lead at Accenture, said: “As we move from Open Banking to Open Finance and Open Data, we are seeing a movement from a regulatory-driven environment to a commercially-driven and opportunity-driven environment with a strong privacy-centric approach. Open Data raises questions about how banks are going to partner with consumers and businesses to allow them to share data to create new opportunities.”

The metaverse economy could be worth $8 trillion

Goldman Sachs & Morgan Stanley estimates

> **“Almost one-third of survey respondents globally (28%) said they expected Open Banking to change creditworthiness assessment processes in their country within the next year.”**

Beyond Open Finance:

The metaverse

Open Finance enables banks to make better decisions about customers because they are able to get a holistic picture of their finances. This capability will be extended into many other industries and into the metaverse. Goldman Sachs and Morgan Stanley[1] have estimated that the metaverse economy could be worth as much as $8 trillion in the next eight years, showing the scale of the opportunity.

The 2022 Accenture Technology Vision survey[2] found that 67% of global banking executives agreed that the metaverse would have a positive impact on their organisations, with 38% saying it will be transformational.

Banks will play a key role in the metaverse. Among other things they could enable and finance the purchase of virtual real estate, build payment rails and facilitate the exchange of digital currencies (such as cryptocurrencies), and fiat money.

"With the metaverse, banks are motivated by two things: competition and opportunity," Abbot continued. "This could be a potential land grab similar to the one we saw on the internet and in mobile banking. Banks do not want to miss out.

"Right now, the metaverse feels a bit like the Wild West to banks. It's a tremendous opportunity, but we have to figure out where the gold is located and where you want to stake your claim. We're seeing banks all over the world opening virtual branches, signing up partnerships, and looking to embed their financial capabilities within third-party applications such as gaming.

"It also presents a lot of challenges. In the metaverse, how can customers prove their identity? If a bank creates a branch in the metaverse and something bad happens in that branch, is it liable? All these questions have to be figured out."

Abbott compared the development of the metaverse to the time before the launch of the iPhone, when Apple had released a handheld device called the Newton. It pointed to the way ahead, but wasn't yet able to push the industry and society into that future.

> "I would argue that we're in the Apple Newton phase of the metaverse - meaning that we can see the future, but we don't really have an iPhone just yet."

Michael Abbott

[1] https://news.bitcoin.com/goldman-sachs-metaverse-8-trillion-opportnity

[2] https://www.accenture.com/us-en/insights/technology/technology-trends-2022

> Open Banking is an interregnum between today's payments system and a future dominated by central bank digital currencies (CBDCs) and the metaverse.

Robert Courtniedge

"I would argue that we're in the Apple Newton phase of the metaverse," he added. "While the Newton never really became ubiquitous, it eventually led to the creation of the iPhone, which did. It feels like that's where we are at right now for banks and the metaverse. When we get to that iPhone, the opportunities for banks are tremendous."

Abbott also argued that the metaverse will "fundamentally alter the equation" on financial inclusion, particularly when combined with Open Finance which will "provide institutions with the ability to embed their banking services into other organisations' capabilities.

"One of the biggest barriers to financial inclusion was not having a branch in your neighbourhood," he said. "But in the metaverse, a branch can be anywhere, and the geographic barriers to financial inclusion can be broken down."

The payments experience of the metaverse is also likely to "blend" with reality, Sulabh Agarwal, Managing Director and Global Payments Lead at Accenture, predicted.

"If I go to a cafe, I can put on smart glasses which allow me to access the metaverse and to drink coffee whilst talking to my wife, who is on the other side of the world," he said. "Let's say I've forgotten my wallet. She will be able to pay for my coffee through the metaverse in the metaverse, whilst I'm sitting in a different location. Once these types of experiences come into play, you will see a blend of the physical world and the virtual world."

The Metaverse and Central Bank Digital Currencies

Robert Courtniedge, an independent payments industry Advisor, predicted that the upheaval caused by Open Finance is only the beginning of a wider shake-up of finance.

"Open Banking is an interregnum between today's payments system and a future dominated by Central Bank Digital Currencies (CBDCs) and the Metaverse," he said. "The biggest failure of Open Banking is it does not have the bells and whistles that a credit card scheme system has today, which have been built up since the late 1950s and early 1960s when credit cards first came in. In my view, that was the last real change in our payment system. Programmable money based on stablecoin CBDCs is the next one. It is Open Banking on steroids.

"This new reality will build upon Open Banking through smart contracts and programmable money, offering new solutions which seem mind-blowing when viewed from 2022-but will become commonplace when the new era of money begins 10 or 15 years from now. We are going to be a society where stablecoin CBDCs are just a normal part of life, just like a pound coin or a 50 euro note is today.

"Stablecoins and CBDCs will change the nature of global real-time transfers of value between different countries. That is where the real excitement lies because you can program the money to see where it is going, how it is received, and when it is received. You can also program it to do things when it is received, which is a fantastic advantage.

"No one actually knows how it will play out. We know the outcome will be a world in which we are our own statement of value. We are our own wallets. Biometrics defines who we are and when we are identified, then identifies our system of value. Our value will go up and down depending on the income we are earning and how much are spending.

"Before Apple created the iPhone and the App Store, people did not know what an app was. Now most of us have dozens, if not hundreds, of apps on our iPhones. The same will apply in the future. Just like the millions of apps we now see in the App Store, there may be many different types of programmable money."

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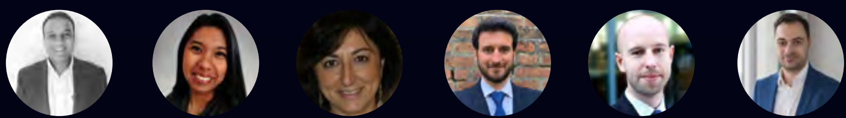

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