
Global state of open finance

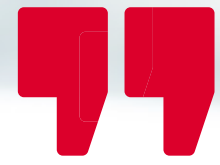
2023

E-BOOK

November, 2022

twimbit





At 2030, I would say that you probably have two billion people that'll be using day to day banking services, independent of banks.

Brett King
Author of Bank 4.0: Banking Everywhere,
Never at a Bank

Executive summary

Open finance is kickstarting an ecosystem of digital innovation. Its true value lies in making the everyday life of the consumer easy and frictionless. Globally, every country is at a different stage of open finance adoption and maturity. But it drives a worldwide sentiment of growth opportunities.

There is an opportunity for open finance to become globally ubiquitous and democratize access to financial services. With the massive growth in e-commerce, smartphone, and digital adoption, customers today need easy to access, fast, and secure services. Breakthrough innovation will happen when we champion customer journeys and embed personalized products and services into these journeys. We have seen phenomenal open finance success stories, whether regulator driven or market led, empowering customers with innovative solutions.

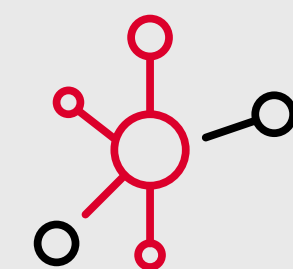
This study on open finance provides a perspective on the total addressable opportunity, potential economic impact, and critical success factors to support its growth leaders from banks, fintechs, and technology platforms help develop market estimates.



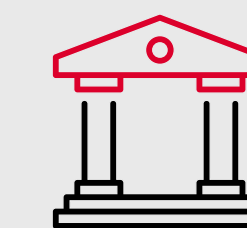
Open finance leads to
~30%
growth in new customer
acquisitions



Global open finance market
attracted VC funding worth
~USD11 billion
in 2022



On average, banks have
300 to 3,000
APIs across product and
service categories



Nearly 40%
of banks embed financial services
in third party marketplaces

Source: twimbit Analysis; Dealroom.co

Demystifying open finance

Evolution of open finance

- ➔ Open finance enables seamless connections between banks and third party service providers through Application Programming Interfaces (APIs) to effectively build, operate, and deliver products and services that serve customer needs.
- ➔ Open finance is a data sharing mechanism between banks and third party service providers that allows secure financial data access from the bank's ecosystem via APIs.
- ➔ For banks, open finance enables white label banking (private label banking) based on the principles of Banking as a Service (BaaS) by converting their products and services into plug and play solutions.
- ➔ Embedded finance is a subset of open finance that enables seamless integration of financial services into other consumer facing digital platforms, allowing banks to cross sell products and services.
- ➔ Banks, fintechs, aggregators, and tech platforms create powerful ecosystems that interlink financial products and services with customers' daily needs and are available anytime and anywhere with just a few clicks.

	2005-2010	2010-2015	2015-2020	2020-2025E
Buy Now Pay Later				
Marketplaces				
BaaS providers				
Neobanks				
Aggregators				
Industry specialists				

Outcomes enabled by open finance

**1**

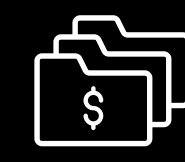
BaaS

- ✓ Opportunity for license holders to become providers of white label and co branded products and services
- ✓ Enables a plug and play approach for banking solutions into third party ecosystems, including non finance digital brands reducing the cost to serve and the cost of customer acquisition

2

Embedded finance

- ✓ A customer facing digital platform carries out distribution of products and services, while the bank or licensed holding partner owns and manages the customer data and compliance management
- ✓ Embedded experience gives rise to journey led transactions that support all aspects of customers' daily lives and their point of need

3

Data monetisation

- ✓ Leverages the treasure trove of information to address customer needs and provides actionable insights to help unlock value
- ✓ Business models include providing raw data as a service, actionable insights generated from data or supporting outcomes, such as KYC, fraud management, and other innovative services

Growth opportunities for open finance



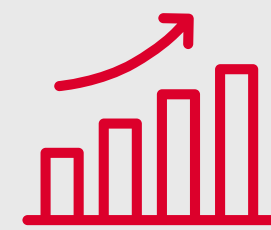
Unbanked customers

1.4 billion
global unbanked population in 2022



Low per capita consumption of services

1-2
the average number of banking products digital customers consume in a year



Rise of integrated experiences

More than 30%
of customer transactions are outside the bank's platform



Emergence of new revenue models

~40% YoY
growth in the number of neobanks

3%
of the average e-commerce spending is done through BNPL



Underserved SME customers

Only 80%
of the credit demand is met



Regulatory support

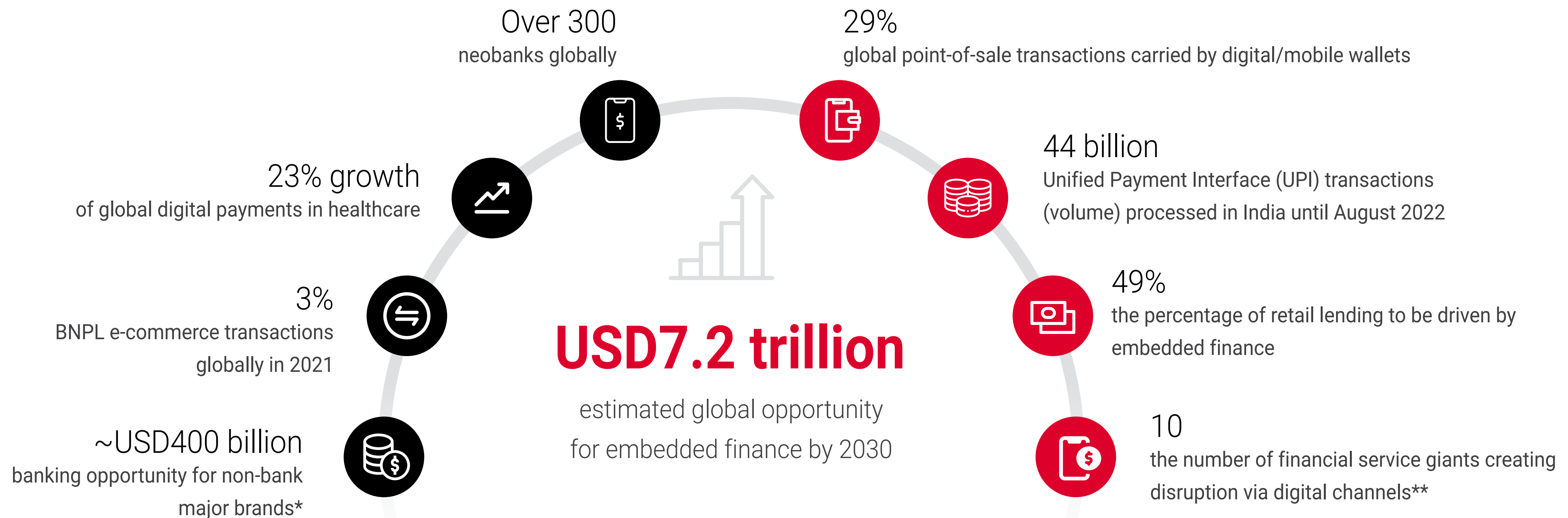
Relaxation in regulatory compliance and the supportive environment for banking partnerships to flourish

Accelerated growth across sectors

Every industry vertical will become an advocator for open finance.

	Lending	Cross-Border Payments	Escrow	Credit Scoring	Payments	Insurance	Wallets	Personal Finance
B2C Marketplaces	✓	✓	✓	✓	✓	✓	✓	✓
B2B Marketplaces	✓	✓	✓	✓	✓	✓	✓	✗
Ed-tech	✓	✗	✗	✓	✓	✗	✗	✓
Prop-tech	✓	✓	✓	✓	✓	✓	✗	✗
Logistics	✓	✓	✓	✓	✓	✓	✗	✗
Construction	✓	✓	✓	✓	✓	✓	✗	✗
Agri-tech	✓	✓	✓	✓	✓	✓	✗	✗
Ad-tech	✓	✓	✗	✓	✓	✗	✗	✗
Sales	✓	✗	✓	✓	✓	✗	✗	✗
Healthtech	✓	✗	✗	✓	✓	✓	✗	✓
Media	✗	✗	✗	✗	✓	✗	✗	✓
E-Sports	✗	✓	✗	✗	✓	✗	✓	✗
Energy	✓	✗	✓	✓	✓	✓	✓	✗
HR-tech	✓	✗	✗	✓	✓	✗	✗	✗
Telecom	✓	✓	✗	✓	✓	✓	✓	✓
Retail	✓	✗	✗	✓	✓	✓	✓	✓

Open finance creates a trillion-dollar growth opportunity

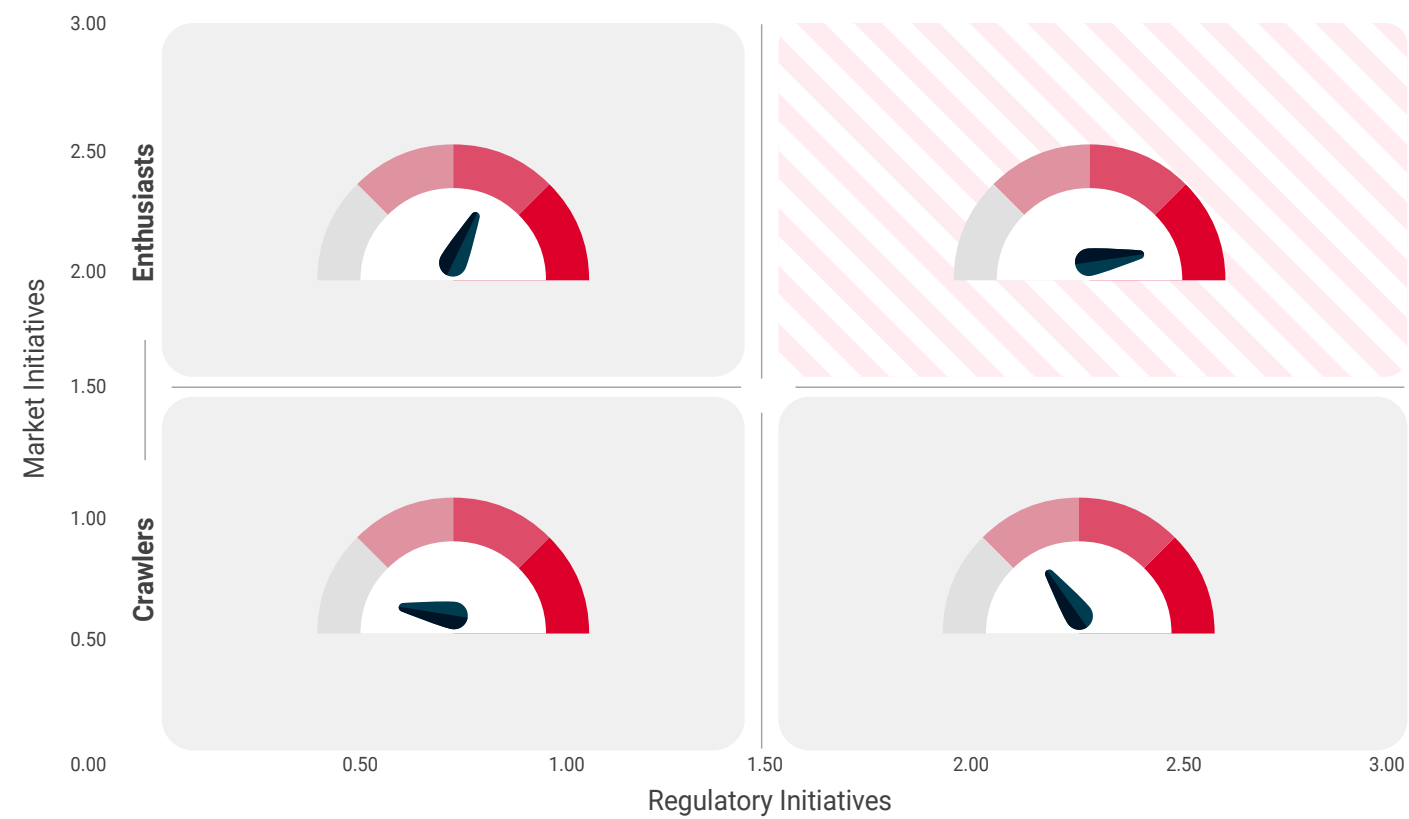


Source: twimbit analysis; Worldpay; The financial Brand; NYU STEM; Simon Torrance Embedded Finance; Mambu embedded finance report ; NPCI

*Oliver Wyman Global Study

**Grab, Gojek, Kakao, Paytm, Wechat, Alipay, Square, UnionPay, PayPal, and PhonePe

twimbit's global open finance maturity index



twimbit evaluated 32 countries that are disrupting the market with open finance systems. These countries are developing customer first solutions and making banking invisible by embedding financial and non financial services from adjacent third party ecosystems.

twimbit's **Global Open Finance Maturity Index** maps the relative position of the leading countries across two main criteria:

Regulatory initiatives



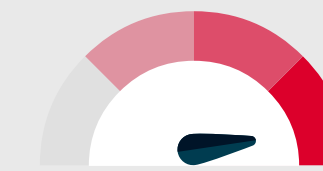
Government and regulatory body led policies, guidelines, and laws that govern and promote open finance activities

Market initiatives



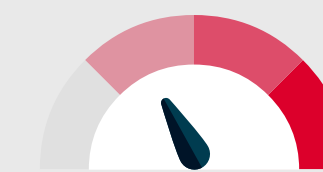
Innovations, integrations, and monetization actions taken by major banks, neobanks, and fintechs in each country

Based on our research, we have placed each country's open finance maturity in four categories:



Champions

Exemplary ratings in regulatory initiatives and market maturity



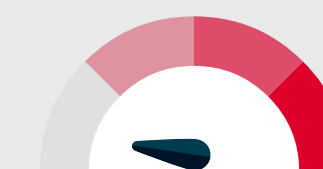
Enthusiasts

Market maturity is high and regulatory initiatives are still at a nascent stage



Intermediaries

Regulatory initiatives and market maturity are mid paced



Crawlers

Entry level regulatory initiatives and market maturity are yet to be achieved

Regulatory initiatives



Open finance regulatory landscape has evolved immensely in the past two years.

Countries demonstrate varying maturity levels depending on their local policies and governing laws. Open banking, the precursor of open finance, first started with the announcement of Second Payment Services Directive (PSD2) and Competition and Markets Authority (CMA) in Europe and the United Kingdom.

In our “Embracing the Global Open Banking Opportunity 2020”, emerging countries, including Brazil, India, South Africa, and Malaysia, strengthened their position, moving from Enthusiasts to Champions. European countries and the United Kingdom also maintained their strong and innovative footing in the market.



We considered the following five parameters in our evaluation:

- # 1 Open finance regulatory policy
- # 2 Governance framework
- # 3 Regulator defined use cases
- # 4 Open finance regulatory sandbox
- # 5 Data sharing compliance framework

Market initiatives



Open finance goes beyond the open banking systems of data sharing and partnership models. twimbit evaluated the market dynamics that have a profound impact on industry participants and consumers under three sub categories:



1 BaaS

- API network (platforms, portals, number of APIs, delivery maturity)
- API products and service portfolios
- Reduced cost to serve

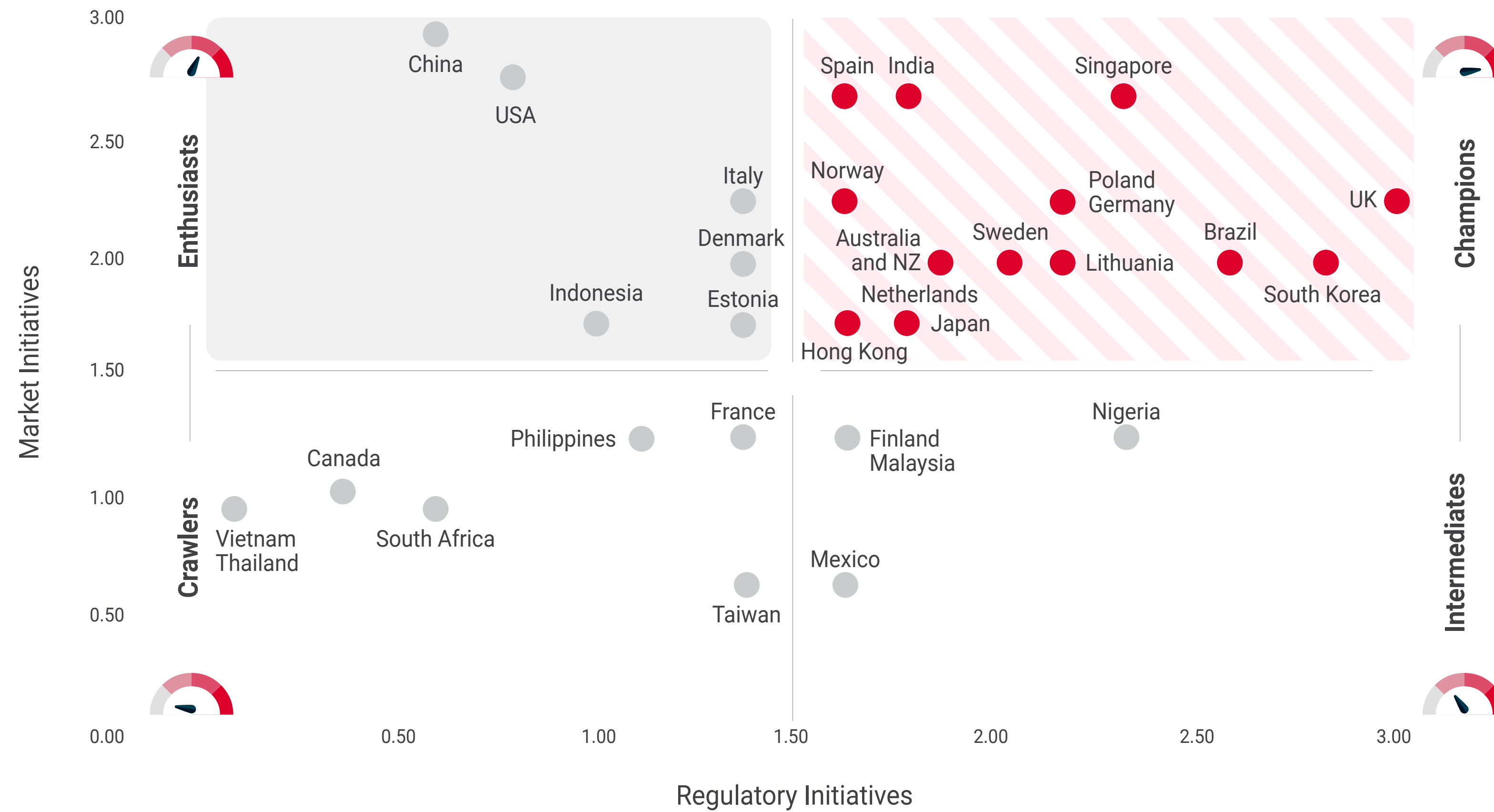
2 Embedded finance

- Portfolio of marketplaces
- Revenue growth through marketplaces
- External partnerships with third parties, fintechs, and technology partners

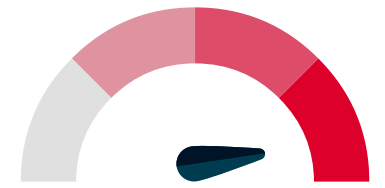
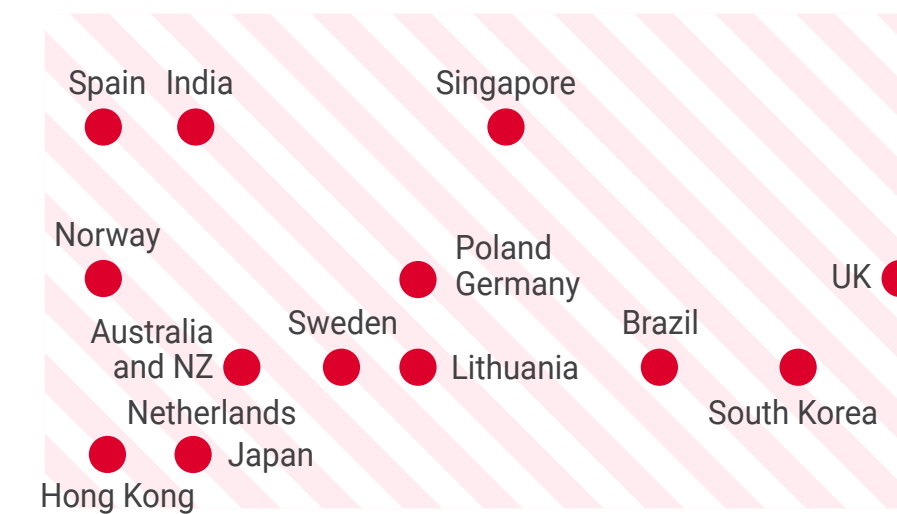
3 Data monetization

- Adopt new revenue models with the provision of data as a service
- Provide insights based on raw data to merchants and other partners
- Deliver improved outcomes by leveraging data

twimbit's global open finance maturity index





The Champions: Regulations





 **United Kingdom** has comprehensive open finance policies and frameworks as part of its Smart Data initiative, along with top notch regulatory sandbox testing mechanisms. UK also implemented amended Electronic Money, Payment Services and Payment Systems (EPPRs) post EU exit to strengthen its data sharing directive.

 **Poland, Germany, Lithuania, and Nordic** countries have established open finance frameworks for localized growth. For example, Project 27 will establish a single pan Nordic payments platform, while the European Payment Council’s SEPA Instant Credit Transfer (SCT Inst) creates a request to pay service, API open gateway, and API focused architecture for e invoicing, supply chain finance, and trade finance.


 **Brazil** crystalizes open banking policies to allow neobanks, fintechs, and foreign players to grow in the country. The central bank has a regulatory sandbox environment and data sharing mechanisms.

 **South Korea’s** MyData initiative outlines standard data sharing mechanisms, which include regulator defined use cases in accounts, payments, and lending.

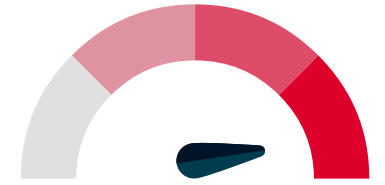
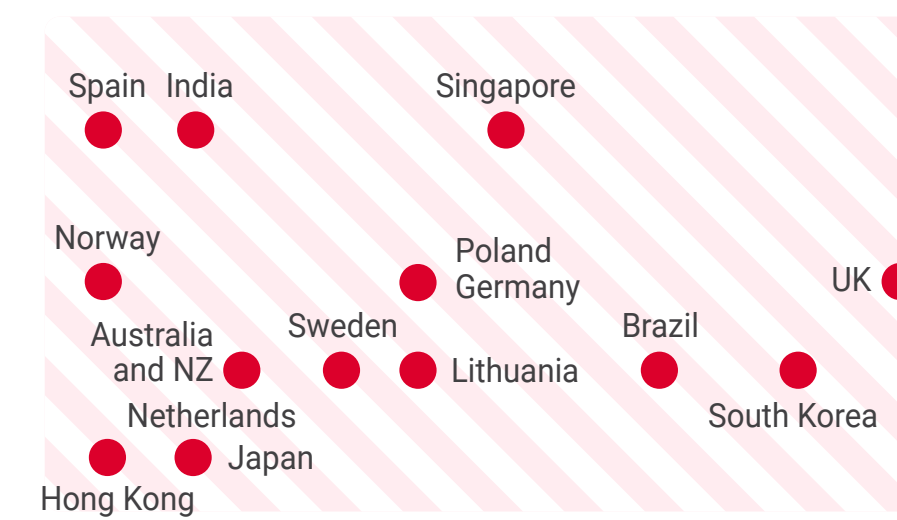
 **Australia** has detailed policies Consumer Data Rights (CDR) and is in Phase 2 of adopting open banking in the region. The government is considering expanding the CDR on creating regulatory testing platforms and governance mechanisms.

 **Japan’s** Banking Act sets out thorough open banking policies. It is modernizing the API architecture by developing a common API gateway.

 Singapore’s open banking policy framework is led by market growth. As a mature testbed for other countries to emulate, its regulatory bodies provide prescriptive frameworks for thriving ecosystems. The country’s top three banks are capitalizing on the open banking policy to introduce new business models for growth.

 **India** is at the forefront of the open banking ecosystem with the implementation of the Aadhar national ID database (which makes authentication easier) and the Reserve Bank of India’s Innovation Hub that actively promotes open banking initiatives. The country has become a benchmark for open banking deployment due to active government and private sector support and the API preparedness of banks.

The Champions: Market initiatives



1 BaaS

- Westpac rolled out 3,200 APIs in Australia
- United Kingdom reports among the highest YoY growth in 2021 for API products annually, at 27%, and the largest number of products by category
- Solaris earned a gross revenue of nearly USD9.9 million through its BaaS product suite in 2021



2 Embedded finance

- Singapore, India, the United Kingdom, and Australia embed finance use cases across payments, lending, insurance, SME finance, e invoicing, and wealth management
- DBS Property Marketplace generated USD700 million generated in Singapore
- India has the largest consumer electronics, digital products, and lifestyle payments and lending marketplaces



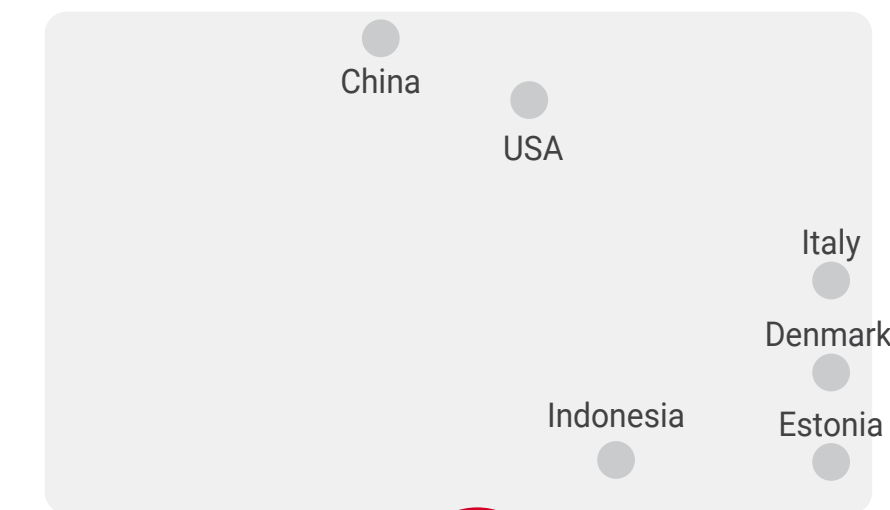
3 Data monetization

- Australia has 10% BNPL e commerce penetration, the highest in the world
- More than 36 neobanks are built on co branded licenses in India
- Banks acquire, on average, 100,000 to 1 million active new customers annually



Source: twimbit analysis, Industry reporting, Platformatable

The enthusiasts: regulations



- The US CFPB (Consumer Financial Protection Bureau) will establish a new legal framework for data transfer and compliance by the end of 2022.
- The Financial Data Exchange (FDX) rolls out the API License agreement to govern access of FDX API for application creation and delivery.
- The country's massive market size, with more than 10,000 Fis, presents a major challenge for the market led development of an open finance framework.
- The Federal Reserve will launch a competitive payment gateway, FedNow, in mid 2023.



- China introduced its second generation Internet Banking Payment System (IBPS) to support P2P, P2B payments; however, it does not have an open API interface.
- China's Central Bank Digital Currency (CBDC), digital yuan, in the pilot testing phase. The central bank has yet to announce the nationwide rollout of the digital currency.
- Open finance initiatives are led by market growth rather than regulatory growth, regulators are now restructuring the fintech industry to establish standard policies

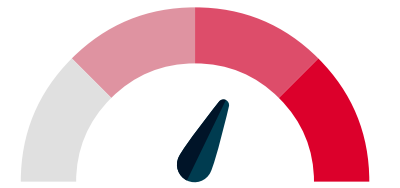
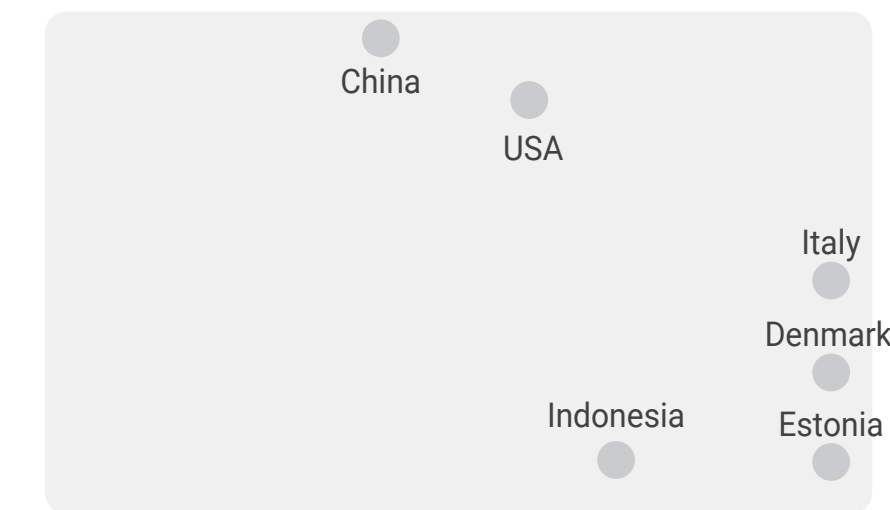


- PSD2 and Open Banking Europe provide Italy's fintech ecosystem the opportunity to penetrate certain areas preserved for the big banks in the country.
- Italy has regulator defined use cases in accounts and payments.
- Italy adopts the SCT Inst real time payment scheme through RT1 and TIPS (Target instant payment settlement).
- Instant payment services will be enabled through API services and facilitated through domestic clearinghouses.



- Indonesia's central bank, Bank Indonesia (BI), has issued the Indonesia Payment Systems Open Banking Blueprint (IPS 2025) to cater to the country's growing digitalization needs.
- BI SNAP (National Open API Payment Standard) provides the open API implementation standards for all financial institutions in the country.
- BI launched the BI FAST (Fast Payment System) for a pan country frictionless payments in December 2021 in accordance with Initiative 2 of the IPS 2025.

The enthusiasts: Market initiatives



1



Italian banks have invested more than USD1.17 million in promoting Europe's development of commercial open banking services, increasing from 22% in 2019 to 27% in 2021.

2



Digital/mobile wallets in the United States account for 30% of e-commerce payments on par with credit cards.

3



Tesla embeds insurance services into the purchase of its cars, generating more revenue through product and insurance sales.

4



PayPal estimates 300 million customers utilize cryptocurrencies and buy from the platform's merchants without exposing sellers to currency risk. Venmo and Square Cash Apps allow users to buy and/or sell crypto.

5



Alibaba's online grocery stores and food delivery units accept digital currency as part of China's expanding digital yuan pilot program.

Champions vs enthusiasts



Champion



Enthusiasts

Regulatory approach

Regulators facilitate the development of centralized API gateways/portals

Use case focused sandbox and testing environment with expert led guidance

Development of upgraded data sharing practices and API focused architecture to support banks, fintechs, and technology players

Best practice

Creation of journey led marketplaces to support end to end customer needs (e.g., Singapore's DBS Property Marketplace from discovery to post purchase support of the property)

Rise of invisible banking with digital platform based banking and financial services

New customer and revenue growth through partner ecosystems (e.g., the Federal Bank's API suite services 50+ fintechs in India)

Regulatory approach

Absence of formal policy and governance framework to support API product growth

Banks release their own API frameworks and rules of operation

Requires prescriptive frameworks and testing mechanisms to support the growth of ecosystems

Best practice

Partnerships between big tech and traditional banks

Market driven creation of API architecture and portfolio of services

Emergence of embedded finance services by non banking players such as Uber, Shopify, and Amazon

8 imperatives for success

1/2

1

IT modernization



Legacy infrastructures create multiple dependencies and delay the execution of projects. An API-led approach enables more hybrid integration and reduces the risks associated with ongoing transformation. APIs focus on efficiency gains by breaking down workloads into smaller projects. It works on shared resources and libraries, increasing the speed of innovation.

2

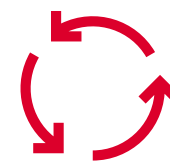
Developer platforms and sandboxes



Industry players must future-proof products and services in a simulator environment, i.e., identical to real-world scenarios, by testing end-to-end customer journeys and seeking practical guidance for improvement. Most countries in the Champions category have regulator-driven sandboxes that provide a controlled environment to test new ideas and concepts before going live. This approach identifies any anomalies, risks, and conflicts of interest before exposing the product to the public.

3

API architecture and lifecycle management



Each layer in the API management architecture carries its own set of stakeholders and costs. Building an API architecture involves more than just developing functional APIs. It is about developing a plan to resolve stakeholder concerns and constructing reliable infrastructure to support new digital platforms. Banks need to have API-led information architecture to support secure data access models, outline the scope of use, and ensure authorization throughout the product and service lifecycle. Banks can also refer and adopt standard country-specific API frameworks to build an efficient approach rather than creating APIs from scratch. For e.g., Data Standards Catalogue and Cross Government UK API Catalogue. A robust, resilient approach to API management is necessary to withstand both immediate and long-term volatilities and open new revenue streams and market opportunities.

4

Revenue sharing models



To deliver better customer propositions, the new wave of digital-only players increasingly unbundle products into micro-products or services or rebundle offerings with components from other providers. The ability to reinvent and "package" attractive propositions wholly centered on the needs and preferences of customers will drive future growth. Banks need to create revenue sharing models that clearly define the distribution scope and customer relationship, reducing the cost of new customer acquisition and pressure on interest incomes.

8 Imperatives for success

2/2

5

Partner ecosystems



Banks must develop ecosystem strategies that equip them with the speed, size, and unique offerings to compete in the digital sphere. This will help them build stronger customer relationships and earn higher wallet share. Digital ecosystems enable banks to become more efficient by giving them access to innovative capabilities that would otherwise be prohibitively expensive to develop or operate on their own.

6

Security



Open finance raises serious concerns about consumers' financial privacy and financial security. Customers' account information could be vulnerable to malicious third-party apps, data breaches, fraud, hacking, and insider threats. Banks must implement a robust application security strategy for 360-degree protection of customer data that goes beyond testing for software vulnerabilities and provides secure customer experience.

7

Data strategy



Sharing data with other financial institutions as a data provider may not be a viable growth strategy in the open finance era. This poses significant churn risk as customers can simply switch services based on the value they provide. To ensure robust progression in open finance evolution, banks must implement a holistic data and analytics strategy as a catalyst in delivering more contextual and connected customer experiences instead of just placing it as an aspect of its API strategy.

8

Data monetization



Banks are custodians of massive amounts of customer data and have an invaluable opportunity to build customized value propositions for their customers. They can utilize the data to generate insights on customer behavior and understand how macroeconomic factors impact saving and spending patterns in creating hyperpersonalized value propositions. Third-party providers benefit significantly from using this quantum of customer data and combining it with datasets such as social media interactions, digital IDs, and geographical data to develop compelling customer solutions.



About F5

About twimbit

SECURE AND DELIVER

BE MORE

EXTRAORDINARY DIGITAL EXPERIENCES

F5's portfolio of automation, security, performance, and insight capabilities empowers our customers to create, secure, and operate adaptive applications that reduce costs, improve operations, and better protect users.

Our aim is to produce exponential impact for every business and career through the power of research. We understand the industry to know that the way research is produced, personalized and consumed needs to change.

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