







O P E N B A N K I N G

Open Banking is an opportunity to transform the value chain of banking — in how banks engage customers, provide products and services, and work with third parties.

IDC Financial Insights and Finastra have embarked on a first-in-the-industry research to help banks stay ahead of the intensifying drive in Open Banking.



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146 top banks across Asia-Pacific region.

The Makings of a Phenomenon

Open Banking in the Asia-Pacific region is unlike Europe, where it is primarily driven by regulators. In general, banks in the Asia-Pacific can decide for themselves if they want to pursue it, how soon, and their preferred approach for partnering with trusted third parties (TTPs). So far, the Asia-Pacific style of Open Banking appears to be a combination of capabilities, with different markets taking different paths. Whichever approaches are taken, it is clear the capabilities will converge on providing more collaborative, innovative, and responsive banking services.

Innovation efficiency

By improving structures for innovation, formalizing budgets for it, and taking on new innovation methodologies, banks can go to market with new innovations more effectively.

New direct or indirect revenues out of data

Banks are mapping out ways to leverage data, analytics and insights to grow new revenue sources. Data monetization can be indirect (using data and analytics better internally) or direct (generating revenue from partnerships).

Data pipelines within and outside banks

Banks are building capabilities to move data, applications and functionalities within different systems internally (internal APIs), but also between the institution and TTPs.

A convergence of capabilities that make up

O P E N B A N K I N G

Collaboration and partnerships

Banks are enhancing their value proposition to customers by working with a growing ecosystem of third parties: fintech start-ups, the academia, service providers, and other business partners.

Data transformation

Extending single-customer view initiatives, banks are preparing data on customers to be shared with third parties.

The Promise of Open Banking

Open Banking is ultimately about empowering customers and engaging with them on their own terms. An Open Banking strategy has the potential to extend a bank's products and services beyond the traditional banking realm.

BENEFITS TO THE CUSTOMER

■ Transparency for the customer

Subject to customer consent, customer data traditionally held within banks will increasingly be made available to TTPs. Banks will work on a more complete view of each customer for credit-decisioning, product development, and personalized customer offerings. The customer, too, will have a better grasp of his/her finances.

■ Lifestyle integration

As data and APIs become more standardized, banking services can be extended to and consumed by third parties. In short, banking can be originated, provided, and completed by third parties, integrating banking more closely with the life of the customer.

■ More personal, more real-time

With greater reliance on customer data, access to technologies (e.g. Al, real-time data capture and algorithmic models for high-precision risk/fraud management) usually provided by third parties, and the use of new customer touchpoints, Open Banking enables in-context, real-time, hyper-personal engagement.

Expanding customer reach

Open Banking enables banks to build applications that have advanced layers and can be opened up to third parties. Banks can increase reach through new channels and find new ways to meet unserved and underserved customers

Create new revenue

With greater reliance on customer data, banks will be able to generate deeper consumer insights and create a value proposition that enhances their products and services offerings.

Continuous innovation

With the help of more agile external partners, banks are able to develop innovations fast, and ensure that as market dynamics change, innovation projects keep pace.



banks see alternate direct/ indirect revenue streams in **Open Banking**



IDC estimates that less than 10% of banks today can claim to be "innovators". Open Banking has the potential to level the playing field among banks

IDC InfoBrief Ready for Open Banking?

banks see

increasing

reach

Open Banking

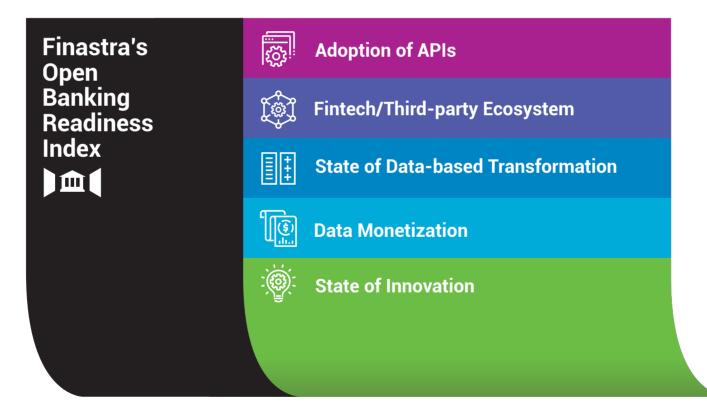
Finastra's Open Banking Readiness Index, Powered by IDC

Results from a July 2018 survey of 146 Asia-Pacific banks show that the momentum for Open Banking is accelerating, and a majority of banks are expected to ramp up their capabilities between 2018 and 2020.

To help banks stay ahead of the challenging world of Open Banking, Finastra's Open Banking Readiness Index:

- Provides a framework for banks to assess their Open Banking capabilities
- Offers a snapshot of the Asia-Pacific Open Banking landscape
- Identifies areas for improvements, including how to move to more advanced stages of readiness

Finastra's Open Banking Readiness Index is defined by 5 dimensions:



Note: Total N=146; with number of banks surveyed in each market representing minimum combined 60% share of total banking sector assets. IDC Financial Insights points out individual bank scores might deviate significantly from market averages.

5 Dimensions of the Open Banking Readiness Index

These factors and elements within each dimension work together to unleash the true potential of Open Banking for institutions across the Asia-Pacific.

Finastra's Open Banking Readiness Index





Adoption of APIs

Internal API Adoption

External API Adoption

Investments into API Management



Fintech/ Third-party Ecosystem

Extent of External Partnerships

Number of Fintech Partnerships

Categories of Partnership



State of Data-based Transformation

Data Discovery Capabilities

Data Infrastructure Readiness



Data Monetization

Data Augmentation

Bank as Producer of Data

Bank as a Producer of products

Distributor of Insights

Distributor of Insights as a Service

Platform-Building



State of Innovation

Adoption of Cloud (Private & Public)

Adoption of New Technology

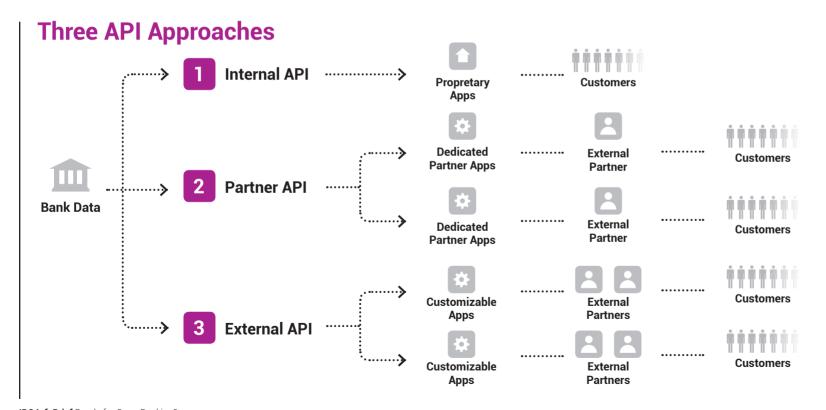
Central Business Innovation Team

Innovation Uniqueness



Adoption of APIs

Banks need to be increasingly connected with TTPs and a growing business ecosystem for inbound and outbound flows of data, applications and functionalities. APIs play a foundational role in Open Banking, because they facilitate these connections.



Typically used in

- Better data visibility
- Insights-based customer profiling and product development
- Improved marketing effectiveness
- Externalizing customer-facing processes
- Acquiring new technology such as Al, cloud, blockchain
- Providing customer information at the moment of interaction
- Featuring banking products/ services on third-party websites
- Providing payments facilitation in third party-owned channels
- Co-innovating with multiple external partners



Adoption of APIs: The Asia-Pacific Scorecard

68%

of Asia-Pacific banks have initiated projects to connect key LoBs using Internal APIs 36%

of Asia-Pacific banks have adopted at least 5 external partner APIs 23%

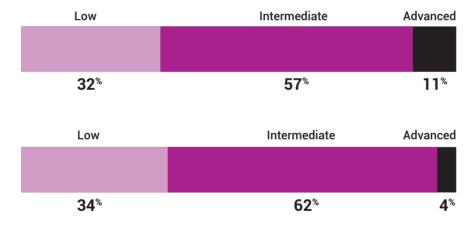
of Asia-Pacific banks have invested in an API management platform

The State of API Adoption in Asia-Pacific Banks

Internal API adoption
Overall measure/extent of internal APIs adoption in A/P

External API adoption

Extent of External API (Partner APIs and Open APIs) adoption in A/P



Top 3 API-related investments among Asia-Pacific banks
API Design API Management

A facility that enables banks to develop and test APIs with different protocols and formats

Technology that enables management, control, configuration of multiple APIs with internal infrastructure

API Identity Management

Technology that enables identification and verification of licensed third parties based on a certificate issued by qualified certification authority

Who leads



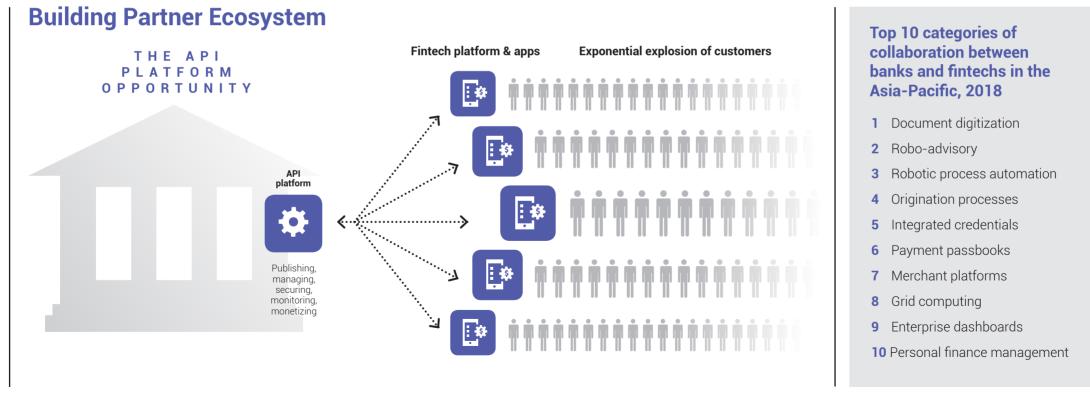
- → Built an ecosystem of innovators by launching its global API developer hub in November 2016 with an aim to enable developers from the outside world to connect to information
- → Connected external developers to information such as account management, person-to-person (P2P) payments, money transfer to institutions, Citi rewards, investment purchases, and account authorization to build innovative customer solutions for better experience at a faster pace.

Banks need to map out a plan to move enterprise and business applications to Open APIs as a way to future-proof their technology. This migration needs to be done iteratively, potentially one application at a time.



Third-party and Fintech Ecosystem

With Open Banking, banks can create new forms of distribution channels and servicing capabilities, generate new direct/indirect revenue streams, and expand their customer base through third parties. They will also be able to innovate by partnering with more agile fintechs, without having to spend significant time, effort and resources themselves.





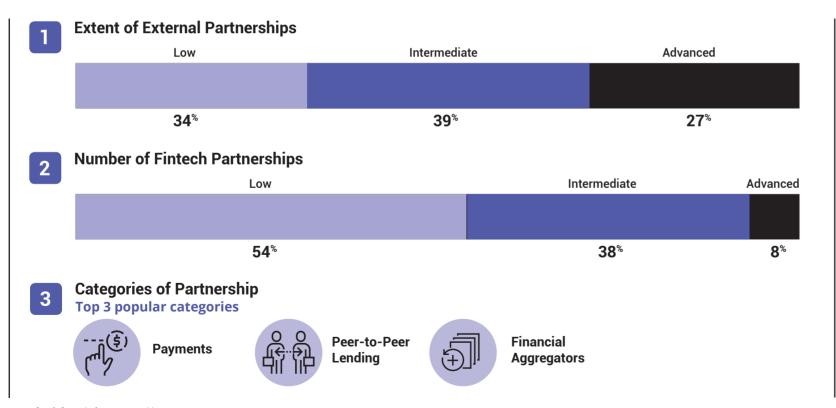
Third-party and Fintech Ecosystem: The Asia-Pacific Scorecard

84%

of Asia-Pacific banks consider collaboration with external partners a critical factor for success in Open Banking 53% of Asia-Pacific banks have concerns around regulatory compliance

65%

of Asia-Pacific banks consider the lack of readiness of technological infrastructure as Open Banking



Who leads



- → DBS Bank started by connecting internal APIs and later created an API developer hub, DBS Developers, in November 2017, to expose selected APIs for external developers to build solutions over them. Today DBS is said to have one of the world's largest API developer platforms.
- → DBS Bank has over 155 APIs across 20+ categories and has already onboarded more than 50 companies to develop solutions that will bring more convenience and value to customers.

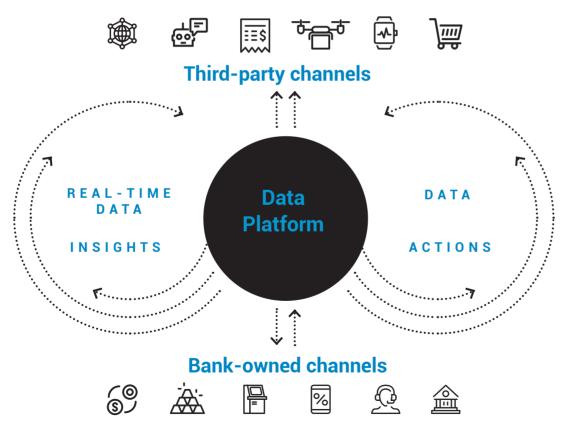
Banks may not have to release a long list of APIs but a handful of useful, reusable and in-demand APIs which can integrate with multiple external partners to expand the banking ecosystem.

DIMENSION 3

Finastra's Open Banking Readiness Index

State of Data-based Transformation

In running data-based businesses, banks need to connect different channels, data, actions and insights. This is an essential capability to utilize data as a source of value in interactions between the bank and a network of third parties. Banks need to leverage their long-term investments in data management, data analytics and data infrastructure, including cloud.



Top 5 "data-related" concerns in Open Banking, 2018

- 1 Information security
- 2 Data privacy
- 3 Data governance
- 4 Accuracy and reliability of data
- **5** Lack of single customer views

Finastra's Open Banking Readiness Index

State of Data-based Transformation: The Asia-Pacific Scorecard

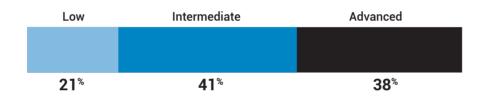
25%

of Asia-Pacific banks are in the advanced stage of data-based transformation 80% of Asia-Pacific banks believe they lack capabilities to manage cybersecurity

71 % of Asia-Pacific banks are concerned about customer data privacy

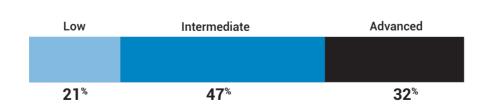
Data discovery capabilities

Banks' capabilities in collecting and preparing digital data before it can be leveraged for insights that can be used in and out of the banking institution



Data infrastructure capabilities

Analytics, algorithms, program
management, and quality



Who leads



- → DBS Bank's technology, hardware, data centers, network management and app development became 85% insourced, meaning DBS can justifiably see itself as a bank – and one that owns its tech.
- → DBS Bank has built robust data infrastructure that allows it to accelerate development of applications based on changing market requirements and conditions.

A robust infrastructure enables banks to accelerate their Open Banking transformation. Instead of building it internally, procuring a good API management platform can help speed up the pace of adoption.

DIMENSION 4

Finastra's
Open
Banking
Readiness
Index

Data Monetization

There are several models for generating new value from data that eventually leading to the monetization of data. A bank with more than 3 of the 6 key externally focused data monetization models is considered at the advanced stage of adoption.

6 Models for Data Monetization



Data Augmentation

Bank looks at other organizations as sources of data and insights, supplementing what the bank already has to generate richer context to its customer data.



Bank as Producer of Data

Bank acts as a producer of data to be consumed by third parties. The process of selling or licensing data outright quickly generates additional revenues.



Bank as a Producer of Product

A hybrid model where the bank might have to pay an external party for the "facilitation" – for example, a referral fee to the third party for lead generation, selling or promotion of the bank's products/services that helps to generate revenue from customer.



Distributor of Insights

Bank is not just a producer but also becomes a distributor of insights, where "insights" here refer to processed analyzed data.



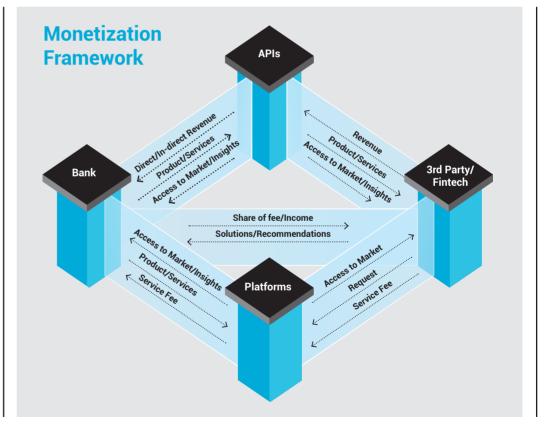
Distributor of Insights as a Service

Bank creates a platform that serves as a facilitator or service provider to an ecosystem of third parties, such as Know Your Customer advisory services. Through this platform, banks are expected to charge third parties directly for the services consumed.



Platform-Building

Bank creates a platform to collaborate with third parties to innovate and co-create banking products/services that integrate more with the life of the consumer.





Data Monetization: The Asia-Pacific Scorecard

78%

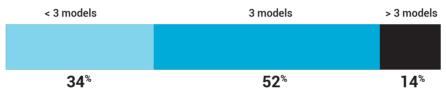
of Asia-Pacific banks consider data monetization as one of the most important factors for success in Open Banking 56% of Asia-Pacific banks lack the ability to monetize from data, citing Open Banking as major challenge

Average number of monetization models adopted by banks in the Asia-Pacific



Adoption of data monetization models

Banks capabilities of collecting and preparing digital data before it can be leveraged for insights that can be used in and out of the banking institution



Top 7 Data Monetization Opportunities, 2018

- 1 Using data and analytics capabilities internally
- 2 Partnerships in providing real-time access to data
- 3 Providing data 4 Generating on a barter insights into true financial habits of customers for aggregation
- **5** Generating leads for external partners
 - derating **6** Advisory strong platforms platforms
- **7** Financial platforms offered to other industries

services

Services

Who leads



AXIS BANK

- → Axis Bank has not only collaborated with fintechs to build a platform but also acquired fintechs to expand their network, customer reach, and improve efficiency.
- Axis Bank's retail banking business acquired a digital payment company in July 2017 to get access to its base of 50 million customers. On the corporate banking side, it formed a trade receivables discounting platform, A.Treds, which onboarded over 100 SMEs and executed over 3,000 invoices worth more than US\$15.3 million within 100 days of launch in July 2017.

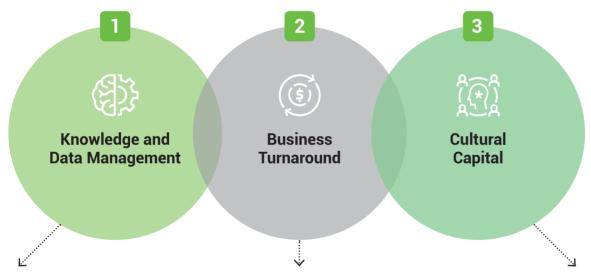
Banks need to think of non-traditional and innovative ways to directly or indirectly monetize and benefit from APIs using Open Banking.

Finastra's Open Banking Readiness Index

State of Innovation

Banks will compete in terms of innovation readiness to get new products and services to market early, for faster adoption of new technology, and to enable parallel innovation with multiple partners.

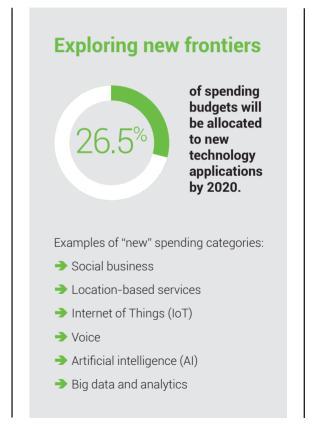
3 characteristics of a bank's readiness to innovate



This is how effectively the enterprise 'learns' and retains information crucial to future transformation

More 'transactional' business units with rapid fulfillment cycles are more likely to transform. Faster business turnarounds also generate more data that can be monetized internally through optimizing operations, or externally through data partnerships.

Indicators on how receptive the workforce is to innovative change is difficult to capture, as each organization has unique operational and administrative nuances.





State of Innovation: The Asia-Pacific Scorecard

45%

of digital channel workloads have moved to the cloud (predominantly private) in top banks across Asia-Pacific of IT-budget is allocated by top Asia-Pacific banks to 'new technologies' such as cognitive/AI and mobility

of banks across the
Asia-Pacific scored close
to the standard of market
leaders in innovation

Adoption of cloud (private and public)

How much of banks' digital channel workloads are on the cloud in Asia-Pacific?

Adoption of new technology

Percentage of total IT budgets are spent on "new" technologies such as cloud, mobility, big data and social business, and innovation accelerators such as cognitive/ AI, AR/VR, next-gen security, IoT, robotics 3

Innovation team

Banks that have a centralized business innovation/digital transformation team 4

Innovation uniqueness

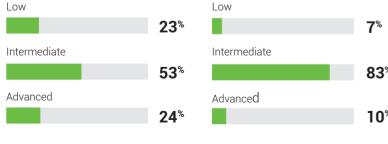
IDC looks at the most recent innovations of a bank and compares them with the IDC Financial Insights Innovations Awards (FIIA) winners in terms of uniqueness among the best in the region.

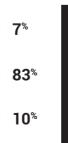




- → In collaboration with multiple external partners, OCBC Bank has started implementing a program around the adoption of AI, machine learning, robo-advisory, cloud, and blockchain
- → By broadening its collaboration with fintechs, OCBC Bank boosted its efficiency and product line. For example, the bank improved the efficiency of suspicious transactions detection using AI, and launched OneWealth, an automated advisory platform that uses blockchain to allow interbank payments between Singaporean and overseas banks without requiring a payment intermediary.

Banks emboldened to collaborate with startups to adopt new technologies such as blockchain, Al, and cloud, find new ways to bring innovation to their business models, products and services, and modes of distribution.

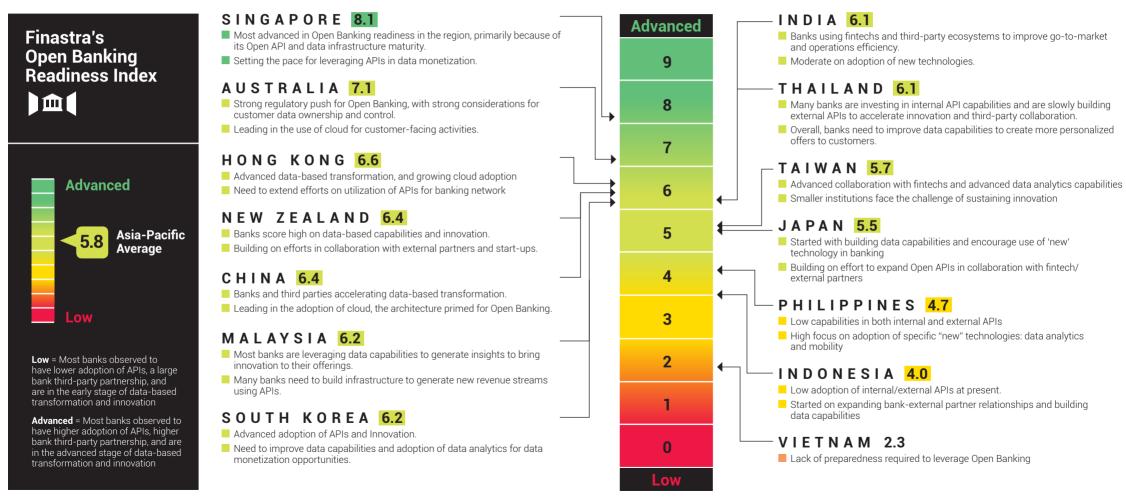




of Asia-Pacific banks claim to have created centralized business innovation/ digital transformation team to drive innovation

Asia-Pacific Open Banking Readiness Index Scorecard

Average scores of banks surveyed for this Index reveal that some markets appear more ready than others for Open Banking.



Asia-Pacific Open Banking Readiness Index Across Dimensions

Market	Adoption of APIs	Fintech/Third-Party Ecosystem	State of Data-based Transformation	Data Monetization	State of Innovation	Overall Index (on 10 point scale)
Singapore	Advanced	Advanced	Advanced	Intermediate	Advanced	8.1
Australia	Advanced	Intermediate	Advanced	Intermediate	Advanced	7.1
Hong Kong	Intermediate	Intermediate	Advanced	Intermediate	Advanced	6.6
China	Intermediate	Intermediate	Intermediate	Advanced	Intermediate	6.4
New Zealand	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	6.4
Malaysia	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	6.2
South Korea	Advanced	Intermediate	Intermediate	Intermediate	Intermediate	6.2
India	Intermediate	Advanced	Intermediate	Intermediate	Intermediate	6.1
Thailand	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	6.1
Taiwan	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	5.7
Japan	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	5.5
Philippines	Intermediate	Low	Intermediate	Intermediate	Intermediate	4.7
Indonesia	Low	Intermediate	Intermediate	Low	Low	4.0
Vietnam	Low	Low	Low	Low	Low	2.3

Note: Total N=146; with number of banks surveyed in each market representing minimum combined 60% share of total banking sector assets. IDC Financial Insights points out individual bank scores might deviate significantly from market averages.

Regulatory Guidelines for Open Banking: Asia-Pacific Markets and Varying Paths to Open Banking

EARLY ADOPTERS







SINGAPORE

- → In 2016, Monetary Authority of Singapore (MAS) was the first regulatory body in Asia-Pacific to publish guidelines on Open Banking and to map out a plan for banking data to be made available through Open APIs.
- → Common APIs and guidance on security standards and governance models can be found in the "Finance-as-a-service API Playbook" by the Association of Banks in Singapore and MAS.
- → Singapore continues to set the pace for other regulators in the region.

AUSTRALIA

- → Guidance for Open Banking was released in May 2018, requiring Australia's major banks to make data on credit and debit card, deposit, transaction accounts, and mortgages available to customers through Q1 2020.
- → Guidelines on data utilization and access ensure that privacy remains the fundamental feature of Open Banking.
- → The emergence of new digital banks in Australia will intensify investments into Open API architectures for the industry.

HONG KONG

- → Hong Kong Monetary Authority (HKMA) released a consultation paper in early 2018, creating a general classification of Open APIs. The final list of HKMA-endorsed Open APIs is set for Q4 2018.
- → HKMA has emphasized the need for a central entity to certify third-party services providers under a model of "certify once, access to all banks".
- → Hong Kong has probably the most wide-ranging consultations for ensuring ROI for investments into Open APIs.

STEADY WARM-UPS







NEW ZEALAND

- → Regulators have not released any guidelines on Open Banking, but the evolution of Open Banking concepts is tracked industry-wide.
- → Banks and financial services providers are trialing software that will enable providers to make retail payments on behalf of customers. The trials that are being coordinated by Payments NZ will set common standards for customer data-sharing in the future.

SOUTH KOREA

- → Open Banking remains limited, although South Korea was an early advocate for the concept back in 2016.
- → The Joint Financial Industry Fintech platform, through which banks and brokerage firms can jointly provide financial information through APIs, is considered the basis for Open Banking.
- → The "Fintech Activation Roadmap" is expected to support the collaboration of financial services providers and fintech companies.

INDIA

- → Reserve Bank of India (RBI) has consolidated expert opinions on the pros and cons of Open Data. Firm guidelines around Open Data and APIs are not expected before 2020.
- → RBI has been supportive of Open Banking as a concept by playing the role of catalyst for recent innovations in payments.
- → India is among the few markets in Asia/Pacific that generates momentum for Open Banking from regulators and government

Regulatory Guidelines for Open Banking: Asia-Pacific Markets and Varying Paths to Open Banking (Con't)

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THAII AND

- → Regulatory guidelines around Open Banking are expected in early 2020, after the launch of the national digital ID and the implementation of the Personal Data Protection Act
- → Bank of Thailand (BOT) has mandated five APIs from banks on non-customersensitive data, while experiments on other Partner APIs have already started via the BOT Fintech sandbox.
- → Thailand will see Open Banking concepts flourish among select banks first.

MAI AYSIA

- → Bank Negara Malaysia (BNM) has started industry-wide consultation in 2018. with the first draft of guidelines on Open Banking set by mid-2019
- → Emphasis seems to be the value created for customers and the economy at large through collaboration, with a few leading banks stepping up their initiatives by partnering heavily with select fintechs/third parties.

GIANTS WITH POTENTIAL





JAPAN

- → Discussion on firm regulation is not expected before 2020, even though Japan has moved to a registration system for Electronic Settlement Agency Service Providers and the announcement of few policies on collaboration between banks and TTPs.
- → Japan will be a late adopter to Open Banking as the three largest Japanese banks are seen to have "sunk costs" in traditional banking processes, practices and systems - and their investments into Open Banking might benefit their smaller competitors.

CHINA

- → China has not come out with any specific regulatory guidelines yet. However, with central bank interest to open the financial sector for foreign banks and insurers, some clarity on the guidelines related to Open Banking is expected by 2019.
- → China will focus on the role and function of non-bank institutions that have moved into financial services in recent times

OTHER PRIORITIES









TAIWAN

- → Although fintech innovation was a strong focus through a string of legislation in 2017, no guidelines and regulations have been issued.
- → Financial Supervisory Commission (FSC) is focused on driving the adoption of digital platforms that will deliver better customer experience, amid weakening bank-fintech collaboration.

INDONESIA

- → Discussion on regulatory guidelines are not expected before 2019
- → The current focus of both Bank Indonesia and the Indonesian Financial Services Authority is in the development of a sound FinTech regulatory framework.

PHILIPPINES

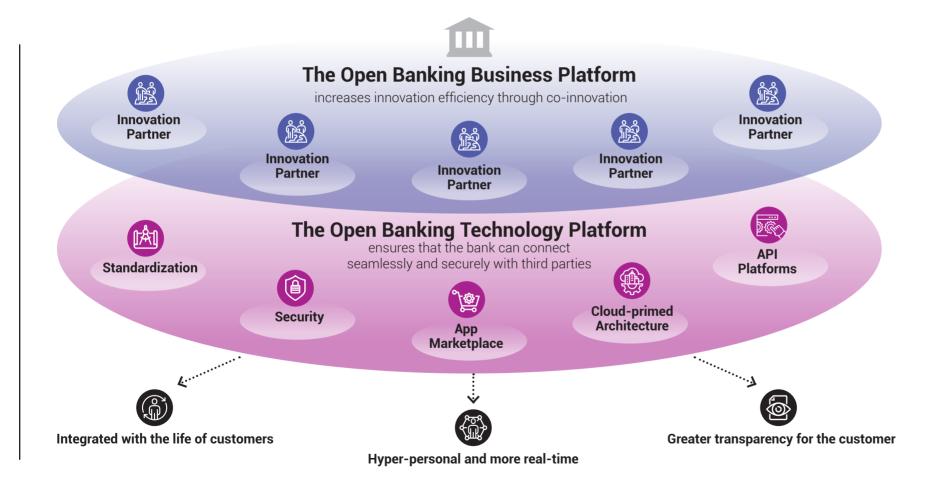
- → No regulatory guidelines expected before 2020.
- → The Philippines will continue to focus on financial inclusion, and any roadmap to Open Banking will be driven by this objective.

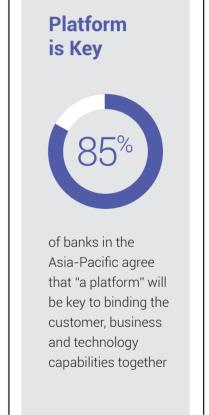
VIETNAM

- → No firm discussions on Open Banking have started.
- → The Vietnamese government is developing a national financial inclusion strategy which it plans to issue in 2020.
- → The State Bank of Vietnam (SBV) established its fintech steering committee in March 2017 and a regulatory sandbox framework will be released within 2018.

How Banks Can Accelerate Open Banking

In a world of distributed knowledge and capabilities, financial institutions can benefit from building platforms that enable innovation in collaboration with a wider financial ecosystem





Platformification - A Route to Banking Innovation Through Collaboration

A bank needs a strong infrastructure capability that not only manages APIs but also provides security without compromising speed of execution. Issues around infrastructure uptime, availability, and cost of development will be important as the volume of API and data usage increases.



of banks like the **bank as a platform** approach in addressing Open Banking and PSD2¹

Key reasons

■ Drives open standards connectivity

The platform integrates a bank's entire IT landscape using Open APIs, connects functional capabilities, and enables real-time processing. This standardization drives efficiency through Open Banking – to facilitate broader adoption and improved information sharing/integration experience.

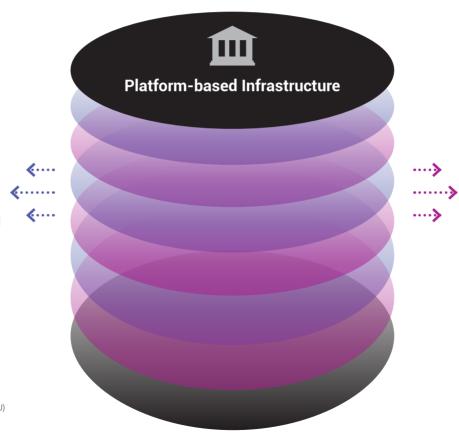
■ Creates low-code development environment

Low code is the new standard for software development and integration, usage of graphical tools and libraries of prebuilt object cuts down development time dramatically. This environment brings agility to co-innovate new products and applications at lower time-to-market.

■ Creates an app marketplace and reduces runtime

An app marketplace is a collection of applications preintegrated to the platform. Platform enables banks to instantly run these apps in the cloud with no need for additional infrastructure and to install and run as consumer apps on smartphones.

¹ The Payment Services Directive (PSD 2) is administered by the European Commission (EU) to regulate payment services and payment service providers throughout the EU and the European Economic Area



In banking, speed of development and integration defines time-to-market and is critical for agility.

Key characteristics of a good banking platform

■ Ease of integration

Easy to adopt and migrate to. There should be no need to rip and replace existing applications such as core banking or digital channels.

■ Scales up tech components

Platform that offers scale of advanced and innovative technology component which can be exposed and monetized as X-as-a-Service components, such as Valuation as a Service, Credit decisioning as a Service, Advisory as a Service.

■ A full-service platform provider

The technology provider manages all operational issues surrounding the platform, including access, consumption, security, regulatory compliance, updates, hardware, and onboarding of new partners.

What Leading Banks are Doing to Prepare for Open Banking

STATE OF INNOVATION

- Digital Initiatiives managed by central business innovation/digital transformation team
- Have at least 25% of IT budgets associated with "new" technologues



ADOPTION OF APIS

- All internal banks' data pipelines across products/ services are interconnected using APIs to enable single-customer view, advanced data analytics
- Offer at least 5 external (partner & public) APIs to the external world

DATA MONETIZATION

- Adoption of at least 3 of 6 models of data monetization
- Forecast to "notably grow data monetization" revenues in the next 3 years



OPEN BANKING

Characteristics of Advanced Banks in



FINTECH/THIRD-PARTY ECOSYSTEMS

- Have relationship with at Have relationship with at least 5 fintech partners to accelerate innovation
 - least 10 external partners (not necessarily fintech)



DATA-BASED TRANSFORMATION

- Data discovery capabilities: High capability to collect and prepare digital data which can further be leveraged for useful insights
- Data infrastructure readiness: Capabilities for advanced analytics, algorithms, program, and quality management

