



Centre for Regulatory Strategy Asia Pacific

Digital banks in Asia Pacific:
adding value to financial
services?



MAKING AN
IMPACT THAT
MATTERS
Since 1845

Introduction

Regulators across the Asia Pacific region have shown a marked interest in encouraging the growth of digital banks. Licencing regimes have been introduced in Hong Kong Special Administrative Region (SAR), Singapore and Taiwan Province of China (POC), with others likely to follow in Malaysia and Thailand. Fully digital banking services are also operational in South Korea, Australia, Japan, and India.^{1, *}

The approach to digital bank licensing varies across markets, but on the whole financial supervisors have taken the position that digital banks have the potential to promote better outcomes for customers by extending banking services to unserved and underserved populations, spurring innovation and increasing competition. All this is, of course, premised on digital banks giving the same importance to risk management and compliance activities as their traditional competitors to maintain the stability of the financial system, mitigate financial crime and protect customer interests.

Non-bank market participants have been keen to make the best use of this new type of banking licence. The high smartphone penetration rates in Asia have made it both possible and convenient to serve clients via wholly digital channels. Partnerships between traditional financial services providers and other companies, such as fintechs and telcos, can extend customer reach and lower acquisition cost. Advancing technology, including a cloud native approach, allows digital banks to harness customer data in new ways to deliver customised services. The COVID-19 pandemic has provided added impetus for digital transformation.

While digital banks tout the advantages of their technology-first approach, serious questions remain about the ability of these lean organisations to both manage their risks and maintain profitability as regulators provide little leeway in meeting regulatory requirements.[†]

In this report, we explore regulatory and market developments in South East Asia, Hong Kong SAR, and Taiwan POC – all jurisdictions that have specific licences for digital banks.

*. For example, Japan does not have a separate digital bank licensing regime. There are 'internet banks' licensed under the existing Banking Act and 'digital banks' that operate through multiple licences from other governing laws. However, the JFSA has prioritized digitalisation as the first priority in their policy agenda. In Australia, no licence for digital banks was specially created. Instead, digital banks are funnelled into the current licencing regime in a tiered process. A new digital only bank will operate with a restricted licence for a period of time until the regulator grants it full status as an Authorized Deposit Taking Institution.

†. For example, MAS requires that all digital full banks meet the same prudential requirements as a D-SIB once they graduate to full bank status.

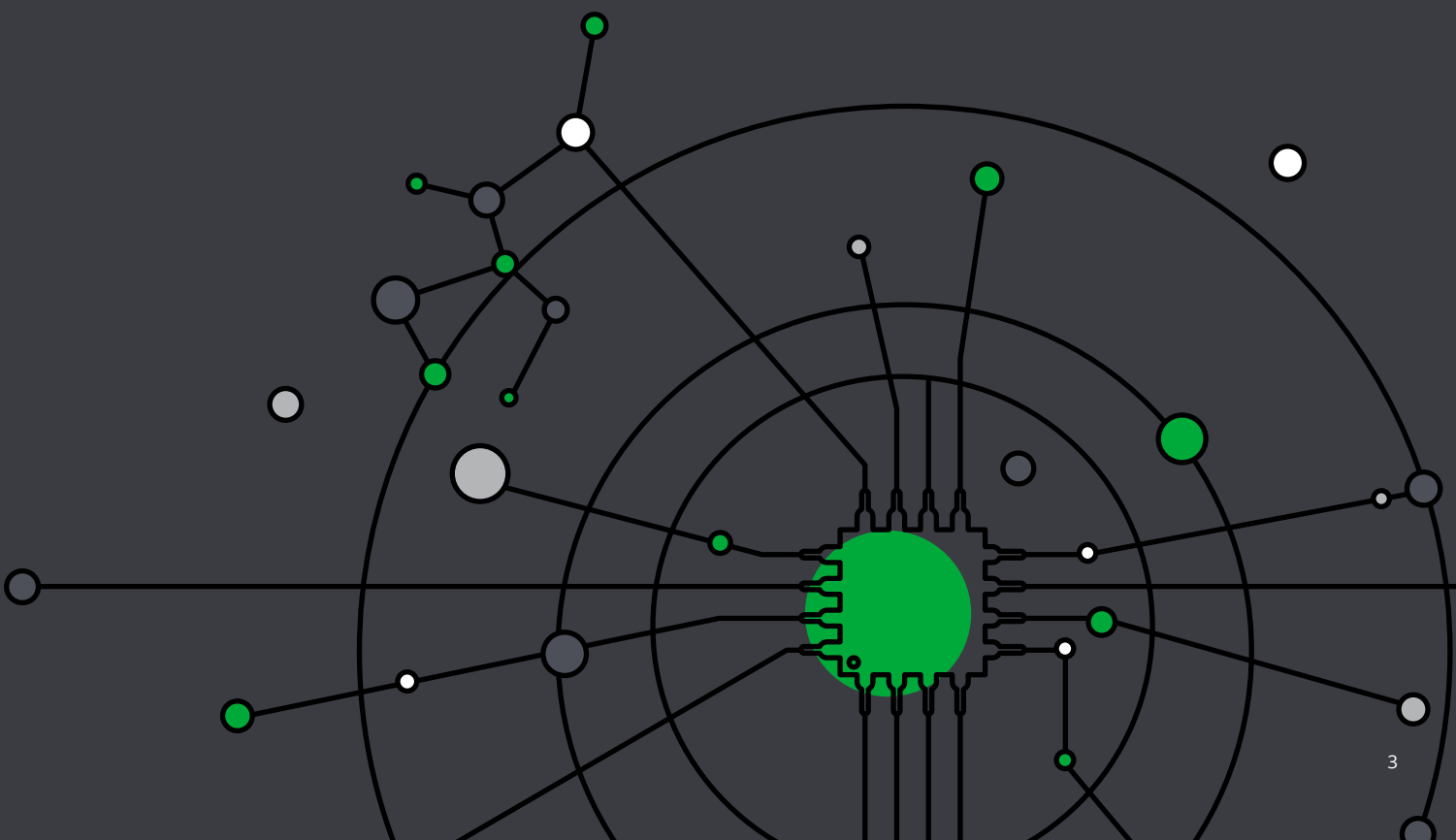
What is a digital bank?

Digital banks go by a number of different names – virtual banks, neobanks, or internet-only banks. All, however, follow roughly the same model: digital-first distribution with no or few physical branches.

The Hong Kong Monetary Authority's (HKMA) definition is perhaps most succinct:

“ a bank which primarily delivers retail banking services through the internet or other forms of electronic channels instead of physical branches.²

”



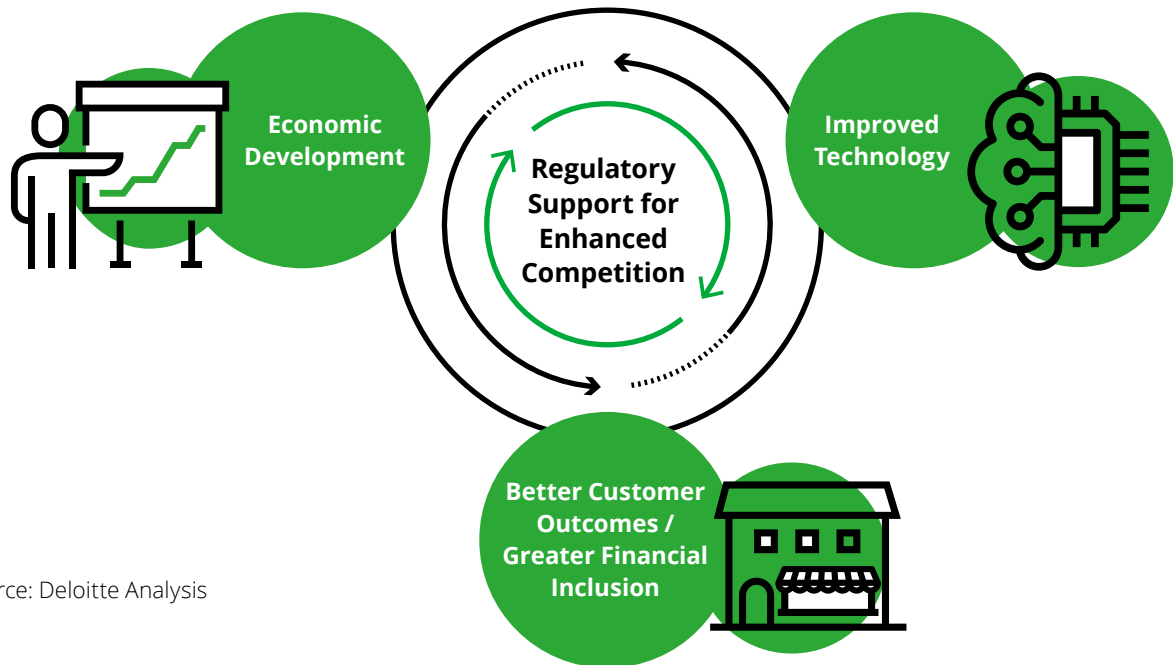
Regulatory objectives

Digital banks, and other similar applications of new technology in financial services, sit at a confluence of public policy and financial stability objectives. Many financial supervisors in the region use a similar narrative to describe their rationale for creating digital bank licences – financial development supports the local economy by improving outcomes for customers. The benefits include more and better choices as well as enhanced competition and coverage, enhancing financial inclusion. Often, and as is the case with digital banks, this is achieved by leveraging improvements in technology like smartphone capability, 24x7 mobile data access, data analytics and cloud computing.

This is a virtuous cycle, where an eye to economic development entails regulatory support for enhanced competition from new entrants. This can generate better customer outcomes and increase financial inclusion, fuelled by innovation by the new entrants and incumbents responding to the new competitive landscape. In turn, economic growth spurs further investments in improved technology and data analytics, contributing to further development and competitiveness in the financial services industry as a whole.



Figure 1 – The digital bank policy objective virtuous circle



Source: Deloitte Analysis

Economic development



Financial regulators in the Asia Pacific region tend to view technological development in financial services as a way to grow their economies and provide better outcomes to customers. This is not to say that they do not see their

primary purpose as preserving the stability of the financial system. Rather, perhaps more so than other parts of the world, financial regulators in Asia are sensitive to how the regulatory landscape for new financial technology can encourage (or hinder) growth and development in the financial sector.

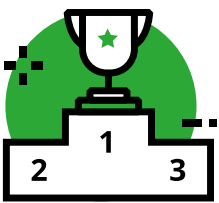
Digital banks are an excellent example of this dynamic. In Hong Kong SAR, digital banks are part of the HKMA's smart banking initiative that "aims to help the

banking sector to rise to a higher level and embrace the enormous opportunities brought about by the convergence of banking and technology, thereby improving the quality of banking products and services for customers".³

Bank Negara Malaysia (BNM) also places digital banks squarely within their ongoing plans to support technological development in financial services. Digital banks are seen as an extension of their work to create a regulatory sandbox and promote open Application Programming Interface (API) specifications as well as their new regulations on the use of cloud and electronic-Know Your Customer (KYC) technologies. According to BNM, "[t]echnology-based innovations have proliferated within the financial sector, enhancing its service and delivering efficiency gains and ultimately contributing to the development of the broader economy".⁴

In Singapore, the Monetary Authority of Singapore (MAS) has included a digital bank's "growth prospects and other contributions to Singapore's financial centre, such as the jobs it will be bringing to Singapore, its commitment to develop the skills of the local workforce, the capabilities (including technology) it will be locating in Singapore, the headquarter functions it will be anchoring [in Singapore] as well as its regional expansion plans" as part of its assessment criteria for digital bank license applications.⁵ Digital banks are seen as a way to anchor fintech and other capabilities in Singapore, with positive spillovers to the financial sector and the broader economy.

Enhanced competition



Regulators in the Asia Pacific region also see new entrants like digital banks as enhancing competition to the benefit of consumers. Encouraging new entrants into a market that is dominated by a small number of established players is certainly not unique to the Asia Pacific region – the United Kingdom (UK), for example, eased the licensing process for new entrants and pioneered open banking when its Competition and Markets Authority (CMA) found that the low levels of competition in the banking market were detrimental to customer outcomes.^{6, 7, 8}

BNM is specific about this desired outcome: "licensing of these new players with innovative business models is expected to add dynamism to the banking landscape to serve the economy and contribute to individual well-being".⁹

The HKMA's chief executive, Eddie Yue, noted that digital banks "will have to come up with innovative ways to offer attractive and competitive banking services. This is likely to force existing banks to consider how to further upgrade their services, and better make use of technology in their offerings. The result, I hope, will be a more innovative and globally competitive banking sector in Hong Kong, offering customers more diversified and efficient services".¹⁰

In Singapore, MAS Chairman and Senior Minister Tharman Shanmugaratnam noted in a speech about digital banks that "we must allow for greater competition and spur greater innovation in finance – competition between new and traditional business models, new players and incumbents, and different ways of using technology to serve business and individual customers better".¹¹

Regulators in the Asia Pacific region are, however, careful in emphasising that such competition should be sustainable and not compromise financial stability. Both BNM and MAS emphasise that digital bank applicants should have sustainable business models that show a path to profitability. MAS specifically mentions that digital banks should not engage in "value destructive behaviour", such as relying on "unfairly favourable transaction terms with related parties to generate short-term profits".¹² The HKMA expects digital banks to "strike an appropriate balance between the desire to build market share and the need to earn a reasonable return on assets and equity".¹³ BNM calls for "a balanced approach that enables admission of digital banks with strong value propositions whilst safeguarding the integrity and stability of the financial system as well as depositors' interest".¹⁴

Financial inclusion



One of the most attractive propositions of digital banks to regulators in the Asia Pacific region is their ability to expand financial services for both individuals and organisations. According to the World Bank, 1.7 billion adults lack access to a bank account and the three countries with the largest percentages of the world's unbanked are in Asia – China at 13% (225 million people), India at 11% (190 million people), and Indonesia at 6% (96 million people).¹⁵ The market size for unbanked and underbanked individuals and enterprises is estimated to be between US\$ 55 billion and US\$ 115 billion in the Asia Pacific region.¹⁶

Financial inclusion is more than simply opening a bank account; it is having access to a range of financial products including payments, savings, credit and insurance. Nor does financial inclusion stop at the individual. There is a need in our region to improve small and medium enterprises' (SMEs) access to financial services. A 2014 survey by the Asian Development Bank found that while SMEs made up 96% of all enterprises and employed 62% of the labour force in the Asia Pacific region, they accounted for only 19% of all bank lending in the region.¹⁷ The SME Finance Forum¹⁸ estimates the SME financing gap in developing countries to be US\$ 5 trillion, of which US\$ 2.2 trillion (or 45%) is found in East Asia and the Pacific.¹⁹

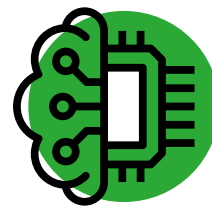
There is no one-size-fits-all solution to the challenges of financial inclusion – digital banks can be an important component of a broader approach. Digital banks can onboard customers more quickly and at a lower cost, as pervasive mobile internet access through widespread smartphone ownership has created a means of delivery where none existed before. For example, digital banks can open accounts in a few minutes through digital onboarding and the use of data. This contrasts with an average business banking onboarding process of 38 days among incumbent banks in Hong Kong SAR in 2017.²⁰ Competition from digital banks should ultimately encourage incumbents to improve their service offerings.

Technology also enables digital banks to have a significantly lower average cost of customer accounts.²¹ Their efficient technology architecture and operations allow digital banks to handle high volume, low value transactions competitively, making them better able to serve customers that traditional banks may find unprofitable. Further, leveraging on smartphone penetration and mobile data access, digital banks extend banking outreach beyond physical branch/ representative networks rapidly and economically. At the November 2019 Singapore Fintech Festival, Henry Ma, Chief Information Officer of WeBank highlighted “We have a very clear goal — promote financial inclusion and also achieve a sustainable business. Only by leveraging the power of technology, WeBank is able to drive financial inclusion at scale”.²²

The HKMA, MAS, BNM, the Financial Supervisory Commission of Taiwan (FSC), and the Bank of Thailand (BOT) have all explicitly tied digital banks to financial inclusion, with MAS going as far as requiring license applicants to explain how they will improve accessibility to banking services and product offerings for underserved customer segments.²³

There is, however, nuance in the interpretation of financial inclusion, depending on the stage of financial sector development, demographics and geography of a jurisdiction. Indonesia, for example, with many remote islands, a young and underserved customer base and high smartphone penetration will see more regulatory focus on and benefit from the simple expansion of access. More saturated and mature markets like Hong Kong SAR or Singapore tend to think about financial inclusion in terms of how increased competition improves consumer choices and therefore, customer outcomes. Indeed, the authorities can crowdsource ideas from digital bank applicants on where financing gaps exist and how to address them.

Technological development



The last part of the argument for digital banks is the technology that makes them possible in the first place. As noted above, regulators in the Asia Pacific region have been particularly invested in helping financial technology grow and develop in their markets and digital banks are part of larger programmes to encourage innovation in the industry.²⁴

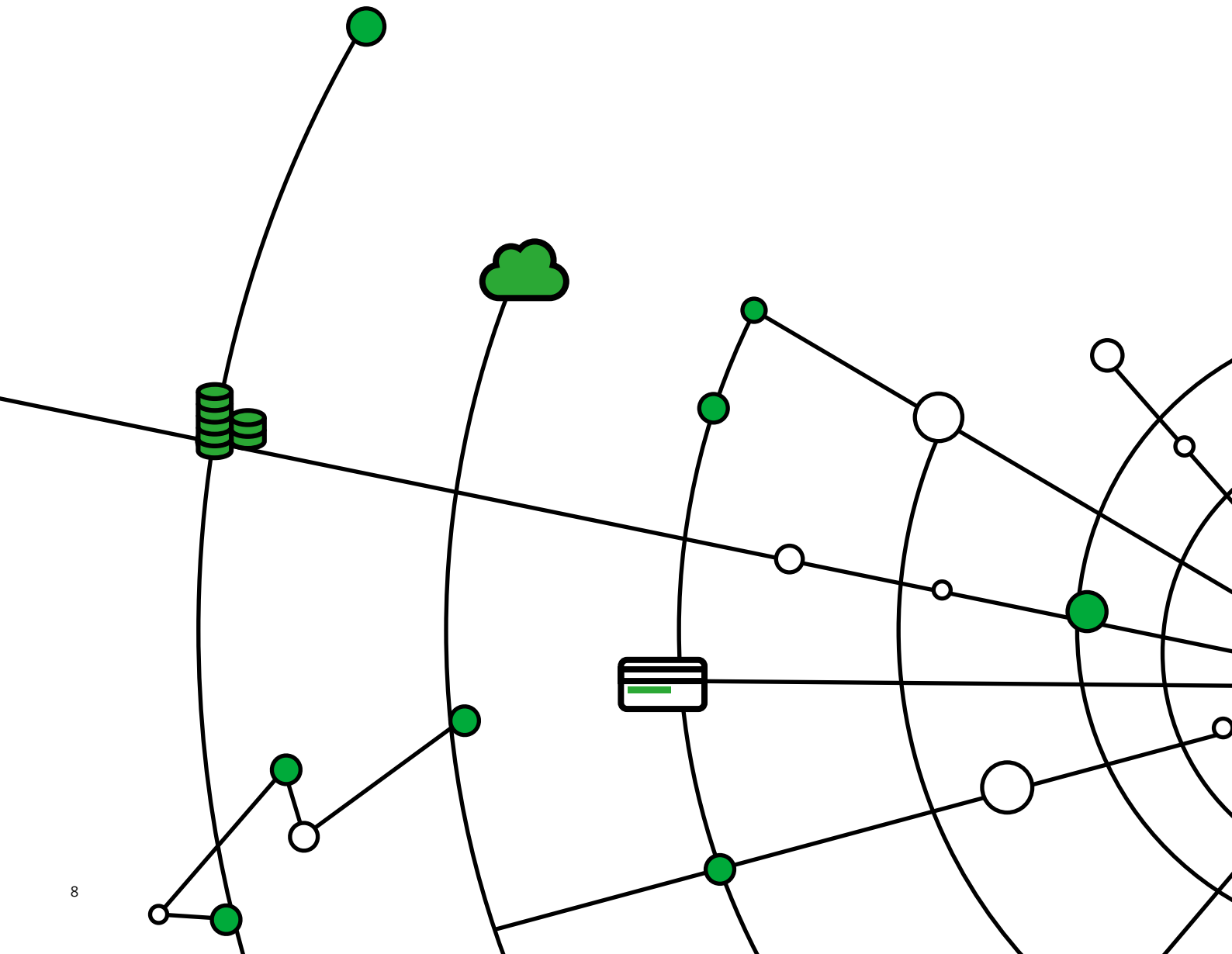
Technological transformation can be seen across the full spectrum of roles within a bank – from back-office administrative tasks to front-office roles directly interacting with the end customer. The industry has leveraged advancements in nearly every form of technology, including robotic process automation (RPA), cloud computing, big data analytics, and natural language processing. More recently, firms have been able to make use of advances in artificial intelligence (AI), machine learning (ML), virtual and augmented reality, and distributed ledger technologies.

In the years ahead, financial services are poised for further disruption from AI and advances in quantum computing.

A natural advantage for digital banks in the Asia Pacific region is the comfort of customers with digital services like popular app-based payments, ride-hailing and other services. Digital savvy customers adopt these technologies quickly.

The use of technology and the formation of consortia/partnerships are critical success factors for digital banks. Leveraging technologies such as distributed ledger technology, digital banks can obtain trusted data from their shareholders and partners, including customer profiles, behavioural data, and sales records.

Such data enable digital banks to identify customer needs and manage their risks, whilst improving productivity. Data captured from the wider ecosystem can help train AI engines to provide alternate credit underwriting models, based on transactional and sentiment data rather than collateral and historical financial statements. Digital banks may also leverage the sales channels operated by their consortium partners and open APIs to provide instant financing at the point of sale. Such innovations will enhance financing success rates for SMEs and individuals. Incumbent banks are not without their own data advantage – they have detailed information on their customers' financial status and transaction histories. However, regulatory changes like open banking (see below) create a more level playing field for digital banks.



Open Banking

Open banking is a regulatory initiative that requires or encourages financial institutions to 'open-up' customer transaction data to third parties through open APIs.²⁵ Customers can choose who to share their financial information with and how much data to share. Advances in open banking will likely enhance the operations of digital banks.

Open banking was pioneered in the UK after a 2016 report by the CMA found that competition between incumbent banks was stagnant and it was challenging for new banks to enter the market.²⁶ To improve customer outcomes, the UK mandated open banking through open APIs in 2018. The objectives were to bring in better-tailored products to customers, expand financial inclusion and services to individuals and SMEs as well as encourage technological and economic development.

In the Asia Pacific region, only Australia has mandated open banking in a similar vein as the UK, taking a phased approach starting in July 2019.²⁷ Singapore and Hong Kong SAR have taken a more cautious approach. Both MAS and the HKMA consulted with industry to create open API playbooks for banks.²⁸ MAS plans to announce details of a portal that will allow consumers to aggregate and share their financial data across different banks and financial service providers this year.²⁹ Other markets in the Asia Pacific region are continuing to develop their approaches.

To judge the impact of this emerging trend, we can look back to the UK. Open banking now allows UK users to designate service providers to be given access to their financial information. This has led to the emergence of new services that help individuals and SMEs find better-tailored products, lower prices, and improve their understanding of their finances.³⁰

Digital banks will make use of these open interfaces with incumbent financial institutions, other fintechs, and perhaps even each other. As noted above, one of the key drivers for the success of a digital bank will be its ability to enrich a customer profile by aggregating data from different sources to power their businesses. A robust open banking ecosystem will be a boon to digital banks.

Beyond open banking, it may be timely for authorities to consider whether to require data portability more generally to include non-financial information. Just as open banking mandates banks and financial institutions to share their customers' financial information with third parties authorised by the customers, should non-financial firms (e.g. social media and e-commerce platforms) be required to allow customers to "port" their data to other service providers? Would broad-based data portability, i.e. "open data", promote a more level playing field between incumbent banks and their digital challengers and generate superior outcomes for consumers and the economy?



Regulatory expectations

The licencing regimes for digital banks in the Asia Pacific region are broadly similar with subtle local variations. For example, most regimes require that a digital bank incorporate locally, have at most one physical place of business (usually a head office or a means to deal with customer complaints or queries), a restricted international footprint in the entry phase[‡] and an exit plan. For a detailed comparison, see Table 1.



[‡]. While only Singapore (MAS) restricts the international operations of a digital bank, the other regulators do reserve the right to intervene if the digital bank's growth is deemed a cause for concern.

Table 1: Comparison of Regulatory Regimes for Digital Banks in the Asia Pacific Region [§]

	Singapore (MAS)	Hong Kong (HKMA)	Taiwan POC (FSC)	Malaysia (BNM)
License type	2 types – digital full bank (DFB) and digital wholesale bank (DWB).	Only 1 type of license.	Only 1 type of license.	Only 1 type of license.
Number of licenses ³¹	Limited number – up to 2 DFB licenses and up to 3 DWB licenses.	No specified limit. 8 licenses granted.	Initially, only 2 licenses were available, but 3 licenses were eventually granted.	Up to 5 licenses to be granted.
Policy Objectives	<ul style="list-style-type: none"> • Financing growth enterprises and SMEs • Reducing costs and improving convenience for consumers • Helping people to plan early and achieve financial security in their later years • Creating good jobs • Financing the growth of infrastructure in emerging Asia, and increasingly of climate-resilient, low-carbon investments 	<ul style="list-style-type: none"> • Promote the application of fintech and innovation • Offer new customer experience • Promote financial inclusion, covering retail and SME segments 	<ul style="list-style-type: none"> • Increase customer convenience and meet customer needs • Promote financial inclusion • Promote financial innovation and fintech 	<ul style="list-style-type: none"> • Financial inclusion, including ensuring quality access and responsible usage of financial services • Focus on reaching underserved and hard-to-reach segments, which includes retail as well as micro, small and medium enterprises (MSMEs), in a sustainable manner, without jeopardising the interest of depositors
Business Locations	One physical place of business. No ATM or cash deposit machines. Allowed to offer cashback services through point of sale terminals at retail merchants.	Must maintain a physical place of business in Hong Kong SAR to deal with customer queries/complaints, but not expected to establish physical branches.	Can have a head office and customer service centre but no branches.	A licensed digital bank is required to establish a registered office in Malaysia but cannot establish physical branches.

§. Digital banks are subject to the same set of supervisory requirements as conventional banks, with certain incremental or amended requirements, of which key items are detailed in the table.

	Singapore (MAS)	Hong Kong (HKMA)	Taiwan POC (FSC)	Malaysia (BNM)
Sponsors	<ul style="list-style-type: none"> • Must be headquartered in Singapore • Must be controlled by Singaporeans (DFB only) • Non-bank sponsors must have a track record in technology or e-commerce • Foreign companies can partner with Singaporean companies to form a joint venture that meets headquarters, incorporation and control requirements • Existing banks can set up internet banking subsidiaries under a separate framework 	<ul style="list-style-type: none"> • Must be locally incorporated • Sponsors can be financial or non-financial firms • Holder of more than 50% of the digital bank should be a bank or financial institution supervised by a recognised financial supervisor. Otherwise, digital bank to be held by an intermediate holding company subject to HKMA supervisory conditions • Sponsors must be committed to providing strong financial, technology and other support to digital bank 	<ul style="list-style-type: none"> • At least 40% of shares in digital bank to be held by licensed financial institutions, of which more than 25% to be held by a single licensed financial institution • Foreign financial institutions can be sponsors, provided they have the approval of home supervisors to establish digital bank • If sponsors are from fintech, e-commerce or telecom industry, they must propose a successful business and operation model and hold more than 10% of shares in digital bank 	<ul style="list-style-type: none"> • Preference will be accorded to an application where the controlling equity interest in the proposed licensed digital bank resides with Malaysians • Open to non-financial players • Existing licensed banks can offer digital services through their current license • Separate license must be sought if the digital bank is to be carried out with another party as a joint venture • A sponsor holding 50% or more in the digital bank should organise all its financial-related subsidiaries under a financial group, headed by a single apex entity • The apex entity should be a licensed institution or approved financial holding company
Directors	Majority of directors must be Singapore citizens or permanent residents, unless the digital bank is a subsidiary of a foreign-owned bank (DWB only) in which case one-third of directors must be Singapore citizens or permanent residents.	No material deviations from current requirements for FIs.	Majority of directors must have qualifications from banks and fintech/e-commerce/telecom industry, of which at least 1 director must have fintech/e-commerce/telecom experience.	No material deviations from current requirements for FIs.
Capital/ Finance	DFB: Paid-up capital similar to other full banks of SG\$ 1.5 billion; but a concessionary level of SG\$ 15 million during initial 1-2 years (Restricted Phase) to be progressively raised to SG\$ 1.5 billion; DWB: Paid-up capital of SG\$ 100 million, similar to other wholesale banks.	Paid-up capital similar to other commercial banks of HK\$ 300 million.	Paid-up capital similar to other commercial banks of TW\$ 10 billion. Banks should be public companies within one year after establishment.	Foundational Phase: Paid up capital of RM 100 million during the initial 3-5 years; Post Foundational Phase: Paid up capital of RM 300 million similar to other banks.

	Singapore (MAS)	Hong Kong (HKMA)	Taiwan POC (FSC)	Malaysia (BNM)
Business Restrictions	DFB: Sources of deposit, the aggregate amount of deposits, and amount of deposit per individual retail depositor are limited during Restricted Phase. Also, can only offer simple credit and investment products during Restricted Phase.	Nil	Nil	Total assets should not exceed RM 2 billion during Foundational Phase.
Exit Plan	Required	Required	Required	Required

There is a clear difference in regulatory approaches between Singapore and Malaysia on the one hand and Hong Kong SAR and Taiwan POC on the other. While digital banks in Hong Kong and Taiwan POC must meet the same prudential requirements as other banks, those in Singapore and Malaysia enjoy a regulatory sandbox with less stringent requirements during an initial start-up period. In exchange, digital banks in Singapore and Malaysia will be subject to business restrictions during the sandbox period to limit the potential impact on customers and the financial system in case they fail.

Another regulatory difference is whether incumbent financial institutions can apply for a digital bank license. Taiwan POC explicitly requires financial institutions to hold significant stakes in digital banks, perhaps with a view to ensuring that these start-up banks manage their risks properly. Hong Kong SAR and Malaysia are silent on the participation of incumbent banks. As it turned out, three of the eight digital banks in Hong Kong SAR have domestic systemically important banks as shareholders.³² In contrast, MAS has reminded incumbent banks that they can set up internet banking subsidiaries under a separate framework, implicitly suggesting that the new digital bank licenses are not available to them. Where there are no such restrictions, incumbent banks may consider submitting a bid to crowd out would-be challengers, especially where there are limited licenses available.

In addition, there is a natural question about a digital bank's ability to expand beyond its home market to operate abroad. This is particularly relevant for smaller and already well-banked markets like Hong Kong SAR and Singapore, where a digital bank may need to operate regionally to generate economies of scale from its technology investments. As we can see from Table 1, any digital bank planning cross-border operations will have to contend with regulatory fragmentation, much like any incumbent bank looking to operate overseas. This being said, digital banks may be better able to customise to meet different requirements without legacy systems weighing them down. The supervisory response to the regional/international expansion of digital banks is also uncertain, given the focus on local economic development and local control requirements/expectations in some markets (which is set to only increase in the current environment).







Another pertinent question is around the supervisory appetite for digital bank failure. Every regime requires an exit plan. This requirement is quite novel, as regulators do not normally expect a licensee to fail at the time of granting the license. This speaks to the fact that digital banks are indeed start-ups, and carry the commensurate risks of any new venture. It also shows that regulators recognise these heightened risks. However, there remains an open question around who would be able and willing to take over the liabilities of a failed digital bank to minimise disruption to depositors.

Who are the digital banking players?

We see a variety of entities among the digital bank licence applicants, each bringing unique characteristics.



Table 2: Applicant Entity Type in the Asia Pacific Region

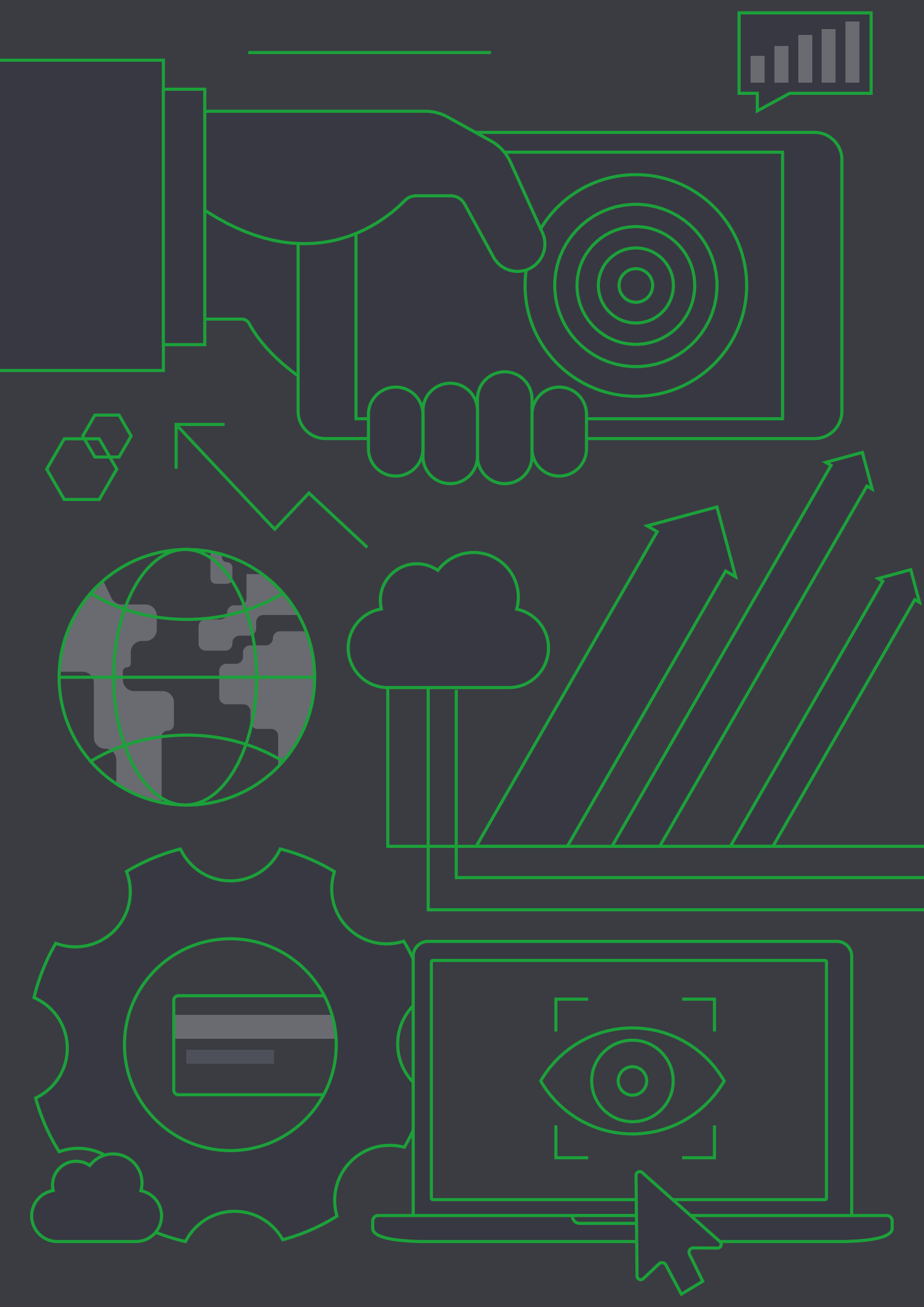
Type	Characteristics
 A digital bank applying to enter a new market	<ul style="list-style-type: none"> • Understanding of banking risks and regulatory landscape • Shallow experience with digital-only offerings • Technology-first business model
 Incumbent financial institution	<ul style="list-style-type: none"> • Understanding of financial services market, risks and regulatory landscape • Knowledge, expertise and relationships with regulators • Potential rigid internal governance requirements and legacy systems • Potential cannibalisation of existing business
 Venture capital / private equity	<ul style="list-style-type: none"> • Experienced with start-ups and market strategies • Strong network of portfolio companies • May find banking regulatory environment constraining
 Technology Company (Payments, e-commerce, social media, fintechs)	<ul style="list-style-type: none"> • Strong technology and digital capabilities • Access to large customer base, data and network (for some) • Unfamiliar with banking risks and may find regulatory environment constraining
 Telecommunications company	<ul style="list-style-type: none"> • Access to large customer base, data and network • Well versed in large system-based networks • Unfamiliar with banking risks and regulations
 Offline firms with large ecosystems (developers, trading firms, utilities)	<ul style="list-style-type: none"> • Access to large customer base, data and network • Generally lacking experience in financial services risks and regulatory environment

While some applicants have chosen to move forward on a solo basis, others have collaborated to leverage on the capabilities and resources of a consortium. Table 3 summarises some of these arrangements. The diverse make-up of some consortia will bring together many different views – alignment will be critical to success. Regulators will be interested in how digital banks ensure

their boards and management teams are sufficiently independent of their sponsors and maintain adequate controls against potential conflicts of interests. Such conflicts may arise from the sponsors’ competing financial businesses or their terms and conditions for sharing data and/or technology with digital banks.

Table 3: Applicant Archetypes in the Asia Pacific Region

Type	Singapore	Hong Kong SAR	Taiwan POC
Tech Company + Incumbent FI	✓	✓	✓
Tech Company + Incumbent FI + Offline firm	✓	✓	
Tech Company + Offline firm	✓		
Telco + Incumbent FI + Tech Company		✓	✓
Telco + Incumbent FI + Offline firm			✓
Telco + Tech Company	✓		
Solo	✓		



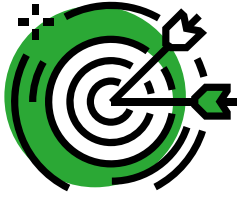
Managing the risks of digital banks

Regardless of their licencing regimes, operating locations and consortium make-up, digital banks will have to contend with similar risks to traditional banks. As part of this report, we have chosen to highlight a few risks which we believe to be particularly relevant. Properly managing the following will be critical to building trust with regulators and customers. Digital banks must assemble the right team, prioritise customer needs, ensure their use of technology is fit for purpose, and finally, guard against misuse of their platforms.

A pivotal part of risk management by applicants will be their risk posture and mind-set. Non-financial services players will have to consider that their funding sources now include depositors, who expect a higher level of confidence than debt or equity investors. Additionally, applicants will have to balance a start-up, 'fail-fast' risk culture with the stability expected of financial institutions by consumers and regulators alike. Regulators have acknowledged the increased risks posed by digital banks and have required applicants to submit exit plans for orderly exits should the banks fail. Applicants would do well to mirror this 'fail-safe' mentality in their applications and when establishing operations.



Gaining customer trust



While digital channels continue to gain popularity, live interactions remain valuable and digital banks may find it challenging to gain the trust of potential customers. This is borne out by data – Deloitte surveyed 17,100 respondents across 17

countries exploring the value of in-person interactions at bank branches.³³

The survey found that most customers prefer services to be delivered through a branch for both simple tasks like opening a savings account as well as for more complex products like loans or wealth management. This preference was seen to be uniform across generations with both older cohorts like baby boomers and younger cohorts like Gen Z or millennials placing value on personal service delivery. Of the 17 countries surveyed, six were from the Asia Pacific region with customers in Indonesia, Japan, and Australia tending to prefer in-person interactions more strongly than customers in Singapore, India, or mainland China.

Customers may also be concerned about a digital bank's longevity, its ability to handle customer service issues,

protect their data, guard against cyberattacks or even ensure service availability. We will speak more to these challenges below as solving them will be key to earning customer trust.

Conversely, there are other drivers which may push customers towards digital banks even if the premium on in-person interaction remains. For example, demographic drivers may be important for ageing populations in the Asia Pacific region. Older customers may find the higher rates of return offered by digital banks more attractive as they have a shorter runway for savings. However, older customers may also be more vulnerable to user error or fraud. Digital banks would do well to incorporate technology to detect and prevent potentially fraudulent transactions as well as monitor and escalate cases where a customer may have misunderstood something or simply made a mistake in their banking transactions.³⁴

Further, Deloitte's survey data was collected before the outbreak of COVID-19 and there has been much written about how the pandemic may shift customer preference towards digital-first channels. It is still too early to judge how significant this shift may be, if it comes at all, but it will bear consideration in the coming months.

Key Differentiating Success Factors

Tailored solution

The use of technology and data can enable digital banks to understand their customer needs, which, in turn, informs bespoke products to help customers address their financial challenges. Further, lean digital operating models may allow digital banks to pursue products that their traditional counterparts find uneconomical.



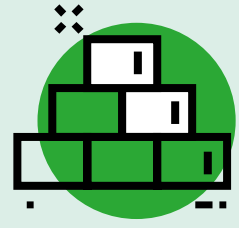
Ease of use

Managing the customer experience through a digital-first channel will be challenging for digital banks given the current customer premium on in-person interactions. An easy to use interface with few points of friction will go a long way to gaining customer confidence. Further, as the customer base of digital banks may have larger than normal populations of traditionally unserved and underserved customers, a well thought-out user journey will help reduce confusion and ensure services are delivered seamlessly.

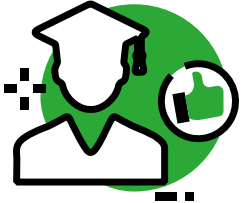


Reliable and responsive

Digital banks are particularly vulnerable to downtime because of their digital-only footprint. Despite having generally leaner teams, digital banks need to maintain reliable and responsive service to keep customer trust. This is not limited to just the speedy resolution of problems, but also being accountable and transparent should/when they occur.



Attracting the right talent



Given digital banks' lean operating models as well as the need for talent with both strong technology skills and a banking background, attracting and retaining talent may prove challenging for a number of reasons.

To start, digital banks are start-ups and carry the higher risks associated with new ventures, a significant departure from the stability of a traditional banking job.³⁵ To keep costs under control, digital bank may not be able to offer higher salary packages to offset the heightened risk.³⁶

There is also a question as to the depth of the talent pool itself. For example, an executive search firm in Hong Kong SAR reported that 64% of fintech employers found the recruitment process difficult, with 47% reporting that a shortage of proven skills

was a key challenge.³⁷ The 2018 Hong Kong Institute of Bankers Talent Development Survey found that while 97% of survey respondents believed that they should develop fintech capabilities, only 44% of respondents had actually taken a training course on their own or completed one offered by their employer.³⁸

Given that talent at digital banks will need to have a wide skill-set in banking (including traditional risk management experience in credit management, capital management, recovery planning and stress testing³⁹) in addition to technology expertise and the intense competition in hiring markets, digital banks will need to address their talent needs upfront. However, the vagaries of the licensing process could make this challenging as potential candidates may prefer to join a digital bank only after it has secured a license and not during the application stage. Another issue would be bridging the mind-set gap between technologists, who are used to a blue-sky environment, and bankers, who are used to operating in a highly regulated field.

Key Differentiating Success Factors

Get the team dynamics right

No individual will have every skill. Digital banks will need to decide what mix of expertise is critical and make strategic calls about hiring people who can work together.



Find passionate people

There is great value in a digital bank's mission statement. Digital banks can leverage their social value proposition to appeal to a younger workforce who may value more highly the positive impact they can make through their employment.



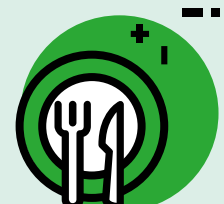
Tap into government-sponsored programmes

There are a number of government programmes in the region to attract, train, or keep technology talent that digital banks can connect with. One example is Hong Kong SAR's Technology Talent Scheme that offers a Postdoctoral Hub programme and training to attract overseas talents.⁴⁰



Compensation mix

Digital banks will need to strike a balance between monetary and non-monetary compensation to attract talent who can grow with them. For example, the business model may lend itself to more flexible or home-based working arrangements



Managing technology and model risk



A key value proposition of a digital bank is the innovative and improved use of technology and data. Digital banks are often green-field builds and as such usually adopt cloud native infrastructures that enable agility, flexibility, scalability as

well as the ability to analyse customer data in real-time (or as close to real-time as is possible). While the benefits of this approach are significant, there are challenges in the appropriate governance and supervision of these technologies.

Digital banks will face many of the same challenges as incumbent players when it comes to managing privacy, cyber security, cloud computing and business continuity risks, and will have to adhere to the same regulatory requirements as any other financial institution. However, the nature of certain technology risks may be different from a traditional bank's and therefore require a different approach to risk management. While their lean operating models and smaller headcounts may be disadvantageous for managing these risks, digital banks have an advantage over incumbents as they are less encumbered by legacy systems and processes, and are likely to begin life as cloud native organisations with compliance-by-design as a core tenet.

Technology & cyber risk

Technology and cyber risk management will be front of mind for a digital bank given its digital-only premise. They will have a lower tolerance for disruptions in their services as they do not have the luxury of manual or analogue fall-backs available to their traditional counterparts. Further, leaner operating models will imply a heavy reliance on cloud services and outsourced services, which will require tight third party risk and business continuity management. Regulators are acutely aware of these heightened risks and have asked digital bank license applicants to provide details on their approach for mitigating the risks.

The pervasive use of cloud services also raises issues around data localisation requirements. As digital banks look to expand in the Asia Pacific region, they will have to contend with local data protection rules and ensure that their service providers satisfy such standards. Applicants have entered into discussions with regional regulators to find workable solutions, with varying degrees of success. Further, the types of data subject to data protection requirements may also differ across jurisdictions. In any case, with the race to market looming, the choice of cloud services becomes both tactical and strategic.

One characteristic of digital banks is their willingness to work with third parties such as fintech organisations to develop services and delivery channels to explore cross-selling opportunities and capture the market. This is enabled by an open technology architecture and the use of application programming interfaces (APIs) to integrate with third party services. However, this openness exposes a larger attack surface to cyber threats. Digital banks will need robust cyber risk and third party management programs to address these threats.

Lastly, digital banks will also have to contend with phishing and other cyber-attacks directed at their staff and customers. Dovetailing with the earlier discussion on customer trust, digital banks will have to invest in preventive and detective controls to protect their customers from these threats vigilantly since digital channels are their primary customer interface. Digital banks may also need to invest in education programmes to boost cybersecurity awareness amongst their employees and customers.

Model risk

Model risk will be one of the most important risks that digital banks need to manage. As part of their value propositions, many digital banks will have lean operating models with a low headcount and heavy reliance on artificial intelligence, machine learning and data analytics to automate processes and drive decision-making. One example is the adoption of

'federated learning' in a digital bank's modelling strategy. Federated learning can help address the rising regulatory concerns regarding privacy and information security, with banks using a distributed encrypted system that integrates data across different servers and jurisdictions, without any data transfer. For example, a digital bank could co-develop a model with other banks for credit assessment of small and micro-enterprises by leveraging their respective datasets. This could improve the performance of the model and also provide visibility over issues such as multiple loan applications.

While AI and machine learning models may yield significant advantages for digital banks, they also expose banks to model risk, i.e. where the failure of a model leads to adverse outcomes for the bank. These may include financial losses, operational lapses, regulatory breaches and reputational damage. A notable example of model risk failure is the collapse of Long Term Capital Management during the Russian Rouble crisis of 1998.








There are diverse sources of model risk. Models, particularly those that use AI and machine learning, are data reliant throughout their lifecycle, from model development and training to deployment. Data quality issues are, therefore, a common source of model risk. Other drivers of model risk include using inappropriate assumptions or modelling methodologies, programming errors, inappropriate use of a model, and failure to update and recalibrate a model. Digital banks will

also have to answer difficult questions about the auditability, explainability and fairness of their models to supervisors and other stakeholders.

To manage model risk effectively, digital banks will need to implement structured model risk management programmes. The programme should be underpinned by adequate governance and oversight and manage the entire model lifecycle, from maintaining a model inventory to conducting a model risk assessment and implementing appropriate model controls such as data quality reviews and model validation. Digital banks will need dedicated resources for such a programme, supported by the necessary processes and technology.

Beyond technology and model risk, the heart of a digital bank will be its systems. Across the Asia Pacific region, we see numerous approaches to technology and solutions. Certain applicants have taken it upon themselves to build everything from scratch, while others are assembling capabilities from the market. Best practice is debatable – one argument in favour of building from scratch is to better incorporate risk management or compliance by design. Building an in-house solution does not in itself imply that a digital bank will have 'better' risk management and compliance, rather as new uses for technology is a major strength of digital banks we may see interesting innovation or even disruption from them in this area. We expect the industry to closely watch for any developments.

Key Differentiating Success Factors

<p>Strong governance</p> <p>Digital banks will need to ensure that they have a comprehensive risk and controls frameworks in place as well as strong governance with clear roles and responsibilities for technology and cyber risk, outsourcing risk, business continuity management and the use of AI and ML.</p> 	<p>Outsourcing risk management</p> <p>Digital banks will need to ensure proper due diligence and ongoing monitoring of their outsourced services (and service providers) to ensure adequate performance and availability of services, including appropriate contingency plans in case of service disruptions.</p> 	<p>Robust testing and documentation</p> <p>Creating a strong and understandable audit trail will be important for conversations with supervisors. Given the complexity of the technologies and models employed, robust documentation will prevent loss of institutional knowledge.</p> 
<p>Leverage cloud capabilities</p> <p>Digital banks should consider the following questions in their cloud strategy. Should service disruption occur, could a digital bank move operations to another server or country? Will their local supervisor be comfortable with this?</p> 	<p>Tight integration and security</p> <p>Digital banks should consider its exposure when integrating components into their ecosystem. Successful implementation will include strong security without compromise to experience.</p> 	<p>Ensure models remain fit for purpose and operate as expected</p> <p>Digital banks should formalise the process to capture, analyse, and report on model performance transparently.</p> 
<p>Work in concert with regulators</p> <p>This is an area where both firms and supervisors will grow their capabilities and skill-sets together as they adopt new technologies and manage the associated risks. In this vein, regulatory views on how to manage technology and data risk, while relatively open and encouraging, will not remain static. Digital banks will need to work closely in concert with regulators to stay on top of changes.^{41,¶}</p>		

¶. For example, MAS is accelerating the development of its Veritas framework to promote the responsible adoption of AI and data analytics. This is intended to be a deep-dive in the subject and will build on the work previously done by MAS through their principles of fairness, ethics, accountability and transparency (FEAT).

Preventing financial crime



Onboarding and eKYC

One of the main challenges facing digital banks will be identity verification. Remote onboarding will be informed by the digital identity approach taken by their operating

jurisdiction and therefore the burden on a digital bank will differ. Singapore has created a digital identity database called MyInfo in 2016 to simplify identity verification.⁴² To this end, once a financial institution has been given access to a customer's MyInfo, MAS does not require further verification. In Hong Kong SAR, there is no similar digital identity database. The HKMA does not have a prescriptive checklist approach to identity verification, but rather requires financial firms to verify the authenticity of an identity document (e.g. security features on the document) as well as match the identity (e.g. using biometrics).⁴³ Malaysia's BNM has adopted a similar approach to Hong Kong SAR.⁴⁴

For digital banks, this means managing different types of challenges, some of which are location based. There may also be operational challenges for verifying the identities of certain demographics, such as foreigners, immigrants and, perhaps, currently unbanked individuals who may not be present in existing banking databases. As the ultimate accountability lies with the financial institution to carry out the requisite customer due diligence, it will be important for digital banks to get

remote onboarding right to manage both Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) as well as reputational risks.

Third party risk management

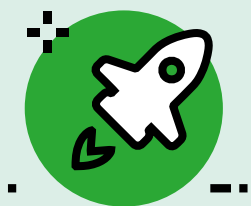
As lean organisations, some digital banks may rely on third party providers to help verify the identities of their customers. Digital banks will need to ensure both the integrity of their own processes and those used by their service providers. Digital banks will also need to satisfy themselves as to the cybersecurity measures of the third party providers, which may be vulnerable to phishing attempts and other malicious cyber attacks. Data leaks can severely impact customers and undermine their confidence in a digital bank, which it already has to work harder to establish compared to traditional banks. Financial supervisors would also be sensitive to privacy breaches.

From a compliance perspective, digital banks must adhere to the same outsourcing guidelines as traditional banks. However, digital banks, as a result of lean staff structures, may by nature be more reliant on third parties to ensure that operations run smoothly, arguably exposing them to a much greater level of reputational risk via their third parties. In the event of the failure of a supplier, it is unlikely that the digital bank's own systems or staff could deal with the sudden extra workload. Hence, contingencies – which add to costs – will be a question of risk appetite.

Key Differentiating Success Factors

Agile approach

Taking a risk-based approach to KYC and customer due diligence that takes account of customer type and product availability to extend services to underserved customers and SMEs. This includes steps like making use of non-traditional data as well



Collaboration with other industry players and regulators

Digital banks can work in collaboration to enhance centralised identity management systems where available. Such collaboration can improve the system as a whole and potentially feed into a multijurisdictional footprint.



The continuing conversation



In addition to the aforementioned risks, the advent of digital banking raises questions that do not have ready answers, which we think are interesting to close this report on.

For example, does the increased access to credit for customers, coupled with competition among financial institutions for market share and revenues, carry the risk of creating a debt-laden society?

Is there a responsibility to promote financial literacy embedded in the mandate for financial inclusion? And, if so, on whom does this responsibility fall – financial institutions, supervisors or someone else?

Overall, digital banks need to give regulators and the market confidence in their risk management and regulatory compliance abilities. For new entrants, a green-field operation could present opportunities for compliance by design, as they would bypass many of the obstacles that traditional banks with legacy technologies may face in its digital transformation. Nevertheless, there remain challenges to effective risk management that digital banks will need to address, working in partnership with their stakeholders, including regulators.

Epilogue: Does COVID-19 strengthen the business case for Digital Banking?



The development of this paper started before COVID-19 became a global pandemic. The global health crisis and the ongoing response have shifted the market environment and highlighted how financial institutions rely on technology to function. While digitisation was undeniably on organisations' transformation agendas, COVID-19 has brought to the fore the need for digital capabilities.

Businesses have pushed their digital infrastructure to support online delivery channels and a remote workforce, with topical examples include expanding server capacity and video conferencing capabilities. Permanent solutions will require time and investment. Incumbent financial services providers will likely continue to be plagued by legacy infrastructure and the governance processes built to support them, making any digital transformation a painful process at best.

Another important aspect of the crisis has been its economic impact on individuals and businesses struggling with multiple disruptions. In financial services, this has meant a renewed focus on ensuring good solutions and outcomes for customers. This is not just about delivering the lowest cost products during an economic crunch. Rather, the pandemic has put a focus on meeting diverse customer needs through personalised products and seamless, uninterrupted service delivered remotely. Customers are paying close attention to which institutions can best meet their needs and act in their best interests.⁴⁵

For individuals, this means helping them to manage their finances through affordable payment holidays on outstanding borrowings and creative ways to access long-term savings for emergencies. For businesses, it

means helping them manage their liquidity and meet their working capital needs to tide them through the downturn. SMEs which have relied on alternative financing sources (e.g. their supply chains) may be particularly vulnerable in the face of supply chain disruptions and the general economic slowdown.

Where does this leave newcomers to financial services like digital banks? While the new normal is certainly challenging, digital banks may have an opportunity to thrive. The promise of digital banks is that they can leverage customer data to provide better products and services that meet changing customer needs in an agile fashion. Separately, COVID-19 lockdowns and social distancing rules have contributed to increased consumer acceptance and confidence in digital services. These advantages notwithstanding, digital banks will need to find a solid footing in the regulatory and risk management landscape to win customer trust and build their businesses.

The roll-out of digital banking in the Asia Pacific region has been impacted by COVID-19. MAS has delayed the announcement of digital bank licenses⁴⁶ while BNM has extended the consultation period for its digital banking framework. This has given more time for digital banks to refine their strategies and ramp up their operations. The delay may also help the digital banks avoid commencing operations in the depth of a recession and instead ride the start of a recovery. But it also means that incumbents will have more time to review their business models and respond to the upcoming challenge. The competitive landscape will continue to evolve and both digital banks and incumbent financial institutions will do well to monitor developments in this dynamic environment.

Contacts



Akihiro Matsuyama
ACRS Executive Sponsor
Partner, RA FSI
amatsuyama@deloitte.com.hk
+852 28521287



Nai Seng Wong
SEA ACRS Co-lead
Executive Director
SEA Regulatory Strategy Leader
nawong@deloitte.com
+65 6800 2025



Mike Ritchie
Australia ACRS Co-lead
Partner, RA FSI
miritchie@deloitte.com.au
+612 9322 3219



Jessica Namad
China ACRS Co-lead
Director, RA FSI
jnamad@deloitte.com.hk
+852 2238 7892

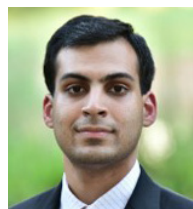


Shiro Katsufuji
Japan ACRS Co-lead
Director, RA FSI
shiro.katsufuji@tohmatsumatsu.co.jp
+81 70 6473 7748

Contributors



Holly Long
Senior Consultant
Coordinator
hollong@deloitte.com.hk



Siddharth Agarwala
Senior Consultant
Contributor
siagarwala@deloitte.com



Nicholas Ferguson
Manager
Contributor
nferguson@deloitte.com.au

Other contributors

Paul Sin

Partner
Hong Kong SAR

Justin Ong

Partner
Malaysia

Kenneth Leong

Partner
Singapore

Mohit Mehrotra

Partner
Singapore

Denise Long

Director
Hong Kong SAR

Neeraj Khurana

Director
Singapore

Alan Wong

Director
Singapore

Maiza Tan

Senior Manager
Malaysia

Timothy Chia

Senior Manager
Singapore

Robbert Wijnsma

Manager
Hong Kong SAR

Endnotes:

1. Japan Financial Services Agency, Overview of Policy Agenda, 2019, https://www.fsa.go.jp/en/news/2019/20190828/Overview_of_the_policy_agenda.pdf
2. Hong Kong Monetary Authority, Authorization of Virtual Banks, <https://www.hkma.gov.hk/eng/key-functions/banking/banking-regulatory-and-supervisory-regime/virtual-banks/>
3. Hong Kong Monetary Authority, Smart Banking, <https://www.hkma.gov.hk/eng/key-functions/banking/smart-banking/>
4. Bank Negara Malaysia, Licensing Framework for Digital Banks-Exposure draft, <https://www.bnm.gov.my/index.php?ch=57&pg=137&ac=924&bb=file>
5. Monetary Authority of Singapore, Digital Bank Licence, <https://www.mas.gov.sg/regulation/Banking/digital-bank-licence>
6. Financial Conduct Authority, New Bank Start-up Unit launched by the financial regulators, 31 Dec 2018, <https://www.fca.org.uk/news/press-releases/new-bank-start-unit-launched-financial-regulators>
7. Open Banking, About Us, <https://www.openbanking.org.uk/about-us/>
8. Competition & Markets Authority, Retail Banking Market Investigation Final Report, 9 August 2016, <https://assets.publishing.service.gov.uk/media/57ac9667e5274a0f6c00007a/retail-banking-market-investigation-full-final-report.pdf>
9. Bank Negara Malaysia, Licensing Framework for Digital Banks Exposure Draft, <https://www.bnm.gov.my/index.php?ch=57&pg=137&ac=924&bb=file>
10. Eddie Yue, Chief Executive, Hong Kong Monetary Authority, Keynote Speech at Hong Kong Fintech Week 2019, 06 Nov 2019, <https://www.hkma.gov.hk/eng/news-and-media/speeches/2019/11/20191106-1/>
11. Tharman Shanmugaratnam, Monetary Authority of Singapore, Keynote addressed by speech "Banking Liberalisation's Next Chapter: Digital Banks", 28 June 2019, <https://www.mas.gov.sg/news/speeches/2019/banking-liberalisations-next-chapter-digital-banks>
12. Monetary Authority of Singapore, FAQs on Digital Bank Licenses, <https://www.mas.gov.sg/-/media/Digital-Bank-Licence/FAQs-on-DFB-and-DWB-Licences.pdf?la=en&hash=688329F094316FF43C2C0EB12984DF4E8D62D095>
13. Hong Kong Monetary Authority, Authorisation of Virtual Banks, <https://www.hkma.gov.hk/media/eng/doc/key-information/press-release/2018/20180530e3a2.pdf>
14. Bank Negara Malaysia, Exposure Draft on Licensing Framework for Digital Banks, <https://www.bnm.gov.my/index.php?ch=57&pg=137&ac=924&bb=file>
15. World Bank Group, UFA2020 Overview: Universal Financial Access by 2020, 1 October 2018, <https://www.worldbank.org/en/topic/financialinclusion/brief/achieving-universal-financial-access-by-2020>
16. Deloitte Analysis, based on World Bank data. Deloitte, 2020 Asia Pacific Financial Services Regulatory Outlook, January 2020, <https://www2.deloitte.com/cn/en/pages/risk/articles/2020-asia-pacific-regulatory-outlook.html>
17. Asian Development Bank, Asia SME Finance Monitor 2014, 2014, <https://www.adb.org/sites/default/files/publication/173205/asia-sme-finance-monitor2014.pdf>
18. Managed by the International Finance Corporation of the World Bank Group
19. SME Finance Forum, MSME Finance Gap, <https://www.smefinanceforum.org/data-sites/msme-finance-gap>
20. Refinitiv, KPY compliance: the rising challenge for financial institutions, 2017, https://www.refinitiv.com/content/dam/marketing/en_us/documents/reports/kyc-compliance-the-rising-challenge-for-financial-institutions-special-report.pdf
21. The Finanser, A bank that runs accounts for just 50 cents a year, 2019, <https://thefinanser.com/2019/08/accounts-that-cost-a-bank-just-50-cents-a-year-to-administer.html/>
22. WeBank, WeBank's Henry Ma on Digital Banks: Promote Financial Inclusion and Achieve a Sustainable Business, 2019, <https://fintech.webank.com/en/newsDetails/?id=5dca0cbb98193a43abb7668a>
23. Monetary Authority of Singapore, Digital Bank Licence, 2019, <https://www.mas.gov.sg/regulation/Banking/digital-bank-licence>
24. MAS, HKMA, BNM, TW all have multi-year programmes to encourage fintech development
25. Deloitte, Open Banking: how to flourish in an uncertain future, 2017, <https://www2.deloitte.com/jp/en/pages/financial-services/articles/future-banking-open-banking-flourish-uncertainty.html>
26. Competition and Markets Authority, Retail banking market investigation, 2016, <https://assets.publishing.service.gov.uk/media/57ac9667e5274a0f6c00007a/retail-banking-market-investigation-full-final-report.pdf>

27. Deloitte, Open banking: a seismic shift, 2018, <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/financial-services/deloitte-au-fs-open-banking-seismic-shift-250319.pdf>
28. Monetary Authority of Singapore and The Association of Banks in Singapore, Finance as a service: API Playbook, 2016, <https://abs.org.sg/docs/library/abs-api-playbook.pdf>
Hong Kong Monetary Authority, Open API framework for the Hong Kong banking sector, 2018, <https://www.hkma.gov.hk/media/eng/doc/key-information/press-release/2018/20180718e5a2.pdf>
29. The Business Times, Consumers to be able to aggregate and share financial data next year, 25 October 2019, <https://www.businesstimes.com.sg/banking-finance/consumers-to-be-able-to-aggregate-and-share-financial-data-next-year>
30. Financial Times, Open banking: the quiet digital revolution one year on, 11 January, 2019, <https://www.ft.com/content/a5f0af78-133e-11e9-a581-4ff78404524e>
31. As of end-June 2020
32. Bank of China, Industrial and Commercial Bank of China, and Standard Chartered Bank.
33. Val Srinivas, Richa Wadhvani, Recognizing the value of bank branches in a digital world, 13 Feb 2019, <https://www2.deloitte.com/us/en/insights/industry/financial-services/bank-branch-transformation-digital-banking.html>
34. Global Partnership for Financial Inclusion and OECD, G20 Fukuoka Policy Priorities on Aging and Financial Inclusion, 2019, <https://www.gpfi.org/sites/gpfi/files/documents/G20%20Fukuoka%20Policy%20Priorities%20on%20Aging%20and%20Financial%20Inclusion.pdf>
35. Alfred Liu, Hong Kong Banks are on an Unusual Hiring Spree, 29 April 2019, <https://www.bloomberg.com/news/articles/2019-04-28/-rare-wave-of-hiring-hits-hong-kong-as-virtual-banks-beef-up>
36. Simon Mortlock, The hottest job in Hong Kong banking doesn't even come with a big pay rise, 3 May 2019, <https://news.efinancialcareers.com/hk-en/3000944/hong-kong-virtual-banking-jobs>
37. Michael Page, Hiring In Fintech Survey and Dialogue, https://www.michaelpage.com.hk/sites/michaelpage.com.hk/files/16785-hk_fintech_brochure_mp.v8.pdf
38. Hong Kong Institute of Bankers, Talent Development Survey 2018, https://www.hkib.org/pdf/1545044094_pdf_en__20181213142526806.pdf
39. Deloitte, Roadmap for Virtual Banks in Hong Kong, <https://www2.deloitte.com/cn/en/pages/risk/articles/roadmap-for-virtual-banks-in-hk.html#>
40. Hong Kong Monetary Authority, A Study of Trends and Challenges Facing Hong Kong, 2019, https://www.hkma.org.hk/pdf/2019_PYA.pdf
41. Monetary Authority of Singapore, MAS Partners Financial Industry to Create Framework for Responsible Use of AI, 13 Nov 2019, <https://www.mas.gov.sg/news/media-releases/2019/mas-partners-financial-industry-to-create-framework-for-responsible-use-of-ai>
42. Government Technology Agency, My Info, <https://www.singpass.gov.sg/myinfo/common/aboutus>
43. Hong Kong Monetary Authority, Remote on-boarding of individual customers, 1 Feb 2019, <https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2019/20190201e1.pdf>
44. Claus Christensen, The Four e-KYC Models Around the World, 5 Apr 2020, <https://www.regulationasia.com/the-four-e-kyc-models-around-the-world/>
45. Deloitte, The Silver Avalanche, 2019, <https://www2.deloitte.com/sg/en/pages/strategy-operations/monitor-deloitte/articles/the-silver-avalanche.html>
46. Monetary Authority of Singapore, MAS Extends Digital Bank Assessment Period in view of COVID-19 Pandemic, 9 April 2020, <https://www.mas.gov.sg/news/media-releases/2020/mas-extends-digital-bank-assessment-period-in-view-of-covid-19-pandemic>

The Deloitte Centre for Regulatory Strategy is a source of critical insights and advice, designed to assist the world's largest financial institutions manage the strategic and aggregate impact of regional and international regulatory policy. With regional hubs in the Americas, Asia Pacific and EMEA, the Centre combines the strength of Deloitte's network of experienced risk, regulatory, and industry professionals — including a deep roster of former regulators, industry specialists, and business advisers — with a rich understanding of the impact of regulations on business models and strategy.



About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited (“DTTL”), its global network of member firms, and their related entities (collectively, the “Deloitte organization”). DTTL (also referred to as “Deloitte Global”) and each of its member firms and related entities are legally separate and independent entities, which cannot obligate or bind each other in respect of third parties. DTTL and each DTTL member firm and related entity is liable only for its own acts and omissions, and not those of each other. DTTL does not provide services to clients. Please see www.deloitte.com/about to learn more.

Deloitte is a leading global provider of audit and assurance, consulting, financial advisory, risk advisory, tax and related services. Our global network of member firms and related entities in more than 150 countries and territories (collectively, the “Deloitte organization”) serves four out of five Fortune Global 500® companies. Learn how Deloitte’s approximately 312,000 people make an impact that matters at www.deloitte.com.

Deloitte Asia Pacific Limited is a company limited by guarantee and a member firm of DTTL. Members of Deloitte Asia Pacific Limited and their related entities, each of which are separate and independent legal entities, provide services from more than 100 cities across the region, including Auckland, Bangkok, Beijing, Hanoi, Hong Kong, Jakarta, Kuala Lumpur, Manila, Melbourne, Osaka, Seoul, Shanghai, Singapore, Sydney, Taipei and Tokyo.

The Deloitte brand entered the China market in 1917 with the opening of an office in Shanghai. Today, Deloitte China delivers a comprehensive range of audit & assurance, consulting, financial advisory, risk advisory and tax services to local, multinational and growth enterprise clients in China. Deloitte China has also made—and continues to make—substantial contributions to the development of China’s accounting standards, taxation system and professional expertise. Deloitte China is a locally incorporated professional services organization, owned by its partners in China. To learn more about how Deloitte makes an Impact that Matters in China, please connect with our social media platforms at <http://www2.deloitte.com/cn/en/social-media>.

This communication contains general information only, and none of Deloitte Touche Tohmatsu Limited (“DTTL”), its global network of member firms or their related entities (collectively, the “Deloitte organization”) is, by means of this communication, rendering professional advice or services. Before making any decision or taking any action that may affect your finances or your business, you should consult a qualified professional adviser.

No representations, warranties or undertakings (express or implied) are given as to the accuracy or completeness of the information in this communication, and none of DTTL, its member firms, related entities, employees or agents shall be liable or responsible for any loss or damage whatsoever arising directly or indirectly in connection with any person relying on this communication. DTTL and each of its member firms, and their related entities, are legally separate and independent entities.

©2020. For information, contact Deloitte China.
Designed by CoRe Creative Services. RITM0501160



This is printed on environmentally friendly paper