Digital Transformation in Banking Industry

Business Research
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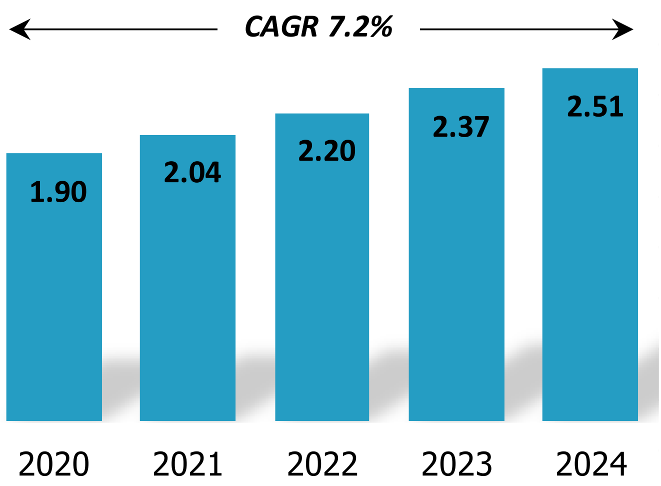
- *The banking sector is accelerating its adoption of digital technology as new technologies and fast speeds of living created new demand. So, banks are shifting from traditional banks to new business model beyond bank while new players especially fintechs and big techs are becoming full-time banks.*

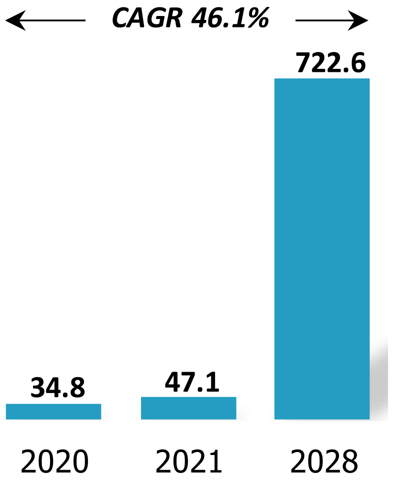
	Traditional bank	Neobank*
Channel	Operates both online & offline	100% digital with no branch presence
Target market	General public, Large corporate, SMEs	Underbanked population & SMEs
Product offerings	Wide range of products and services	In the initial stage, offering a special range of services
Fees & Charges	High	Low
Banking license	Full	Full, partial or no
Approval process	Lengthy, manual	Quick, automatic

The market growth for neobanks is driven by various factors such as the rising penetration of internet and the smartphones, lower interest rates as compared to the traditional banks, improved user convenience and favorable government regulation.

Number of active online banking users worldwide (in Billion)



Market size of neobanks (in Billion USD)



* Neobanks are digital-only banks without any physical branches which offer their services completely via mobile apps.

Digital Banks in APAC

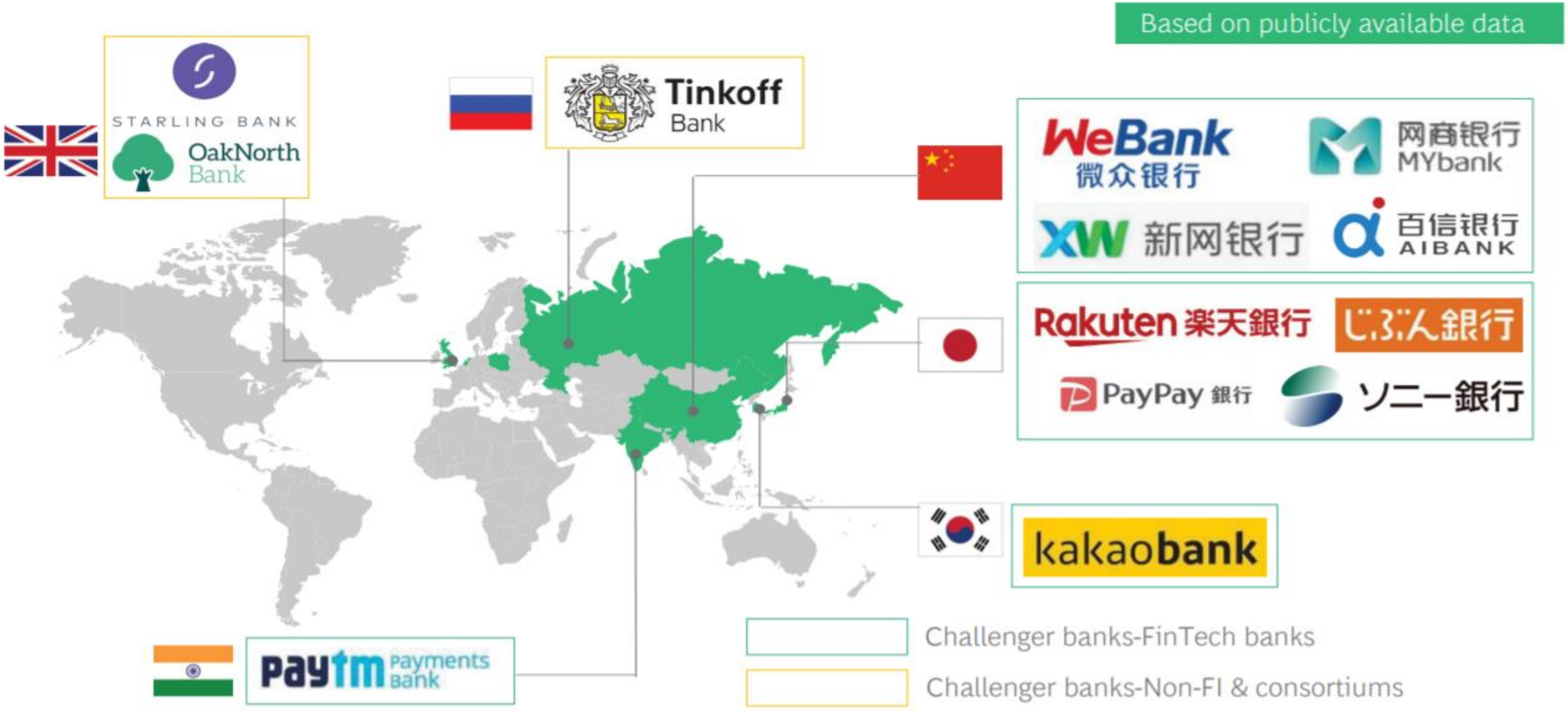
The number of digital or neobanks being created has risen exponentially in recent years, increasing from 60 worldwide in 2018 to more than 400 in 2021, 68 are in Asia Pacific.

Example of digital banks in APAC

Source : BCG analysis

Digital Banks in APAC

Only 13 of the world neobanks are profitable, 10 are based in APAC.

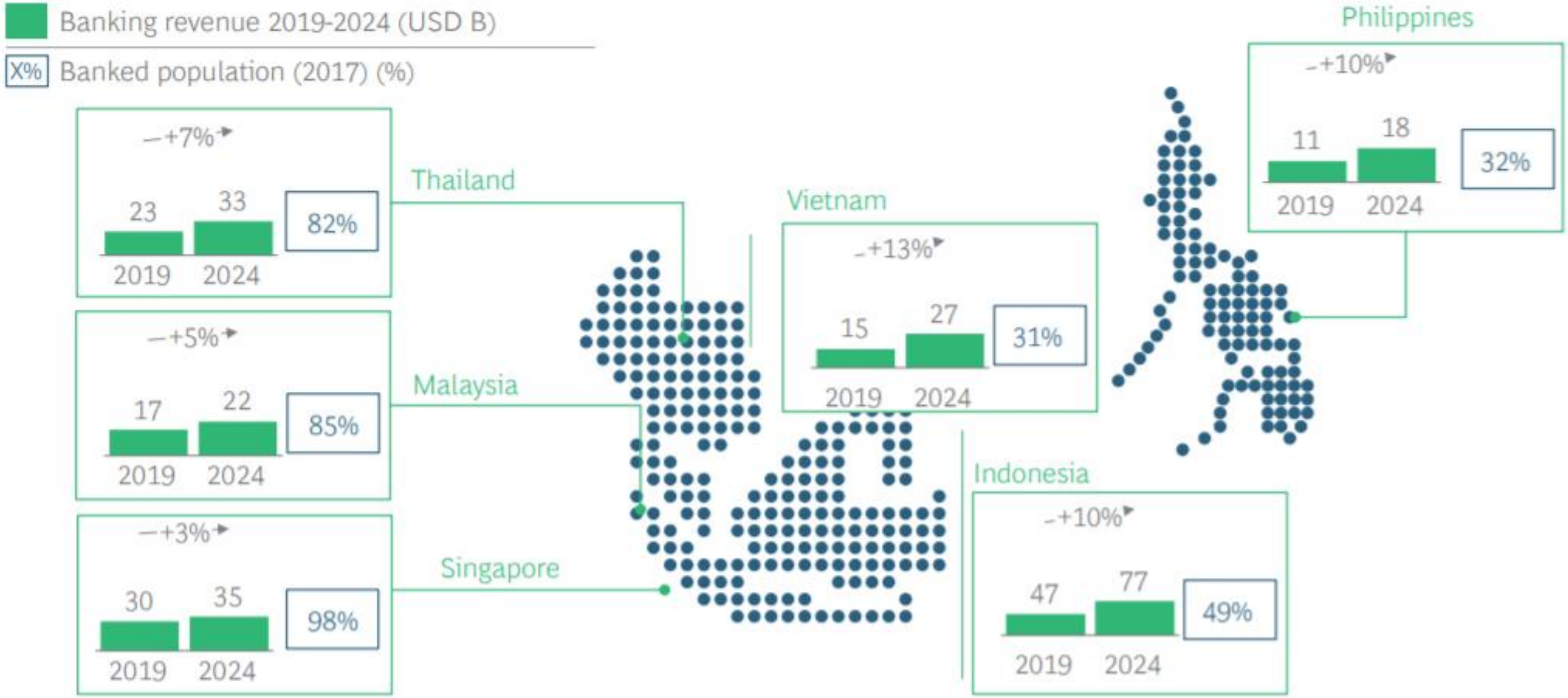


Digital Banks in APAC : Main features of selected Asian virtual banks

Country	Name	Payment	Deposit	Loan	Wealth	Insurance	Other key platform features
China	WeBank	✓	✓	✓	✓	✓	Social media, utilities, dining, entertainment, e-commerce
	MyBank	✓	✓	✓	✓		Social media, transportation, utilities, education, entertainment, e-commerce
	XW Bank	✓	✓	✓	✓		Lifestyle, consumption
	AiBank	✓	✓	✓	✓	✓	n.a.
Hong Kong	ZA Bank	✓	✓	✓		✓	Lifestyle, consumption
South Korea	Kakao Bank	✓	✓	✓	✓		Social media
	K Bank	✓	✓	✓		✓	Lifestyle, consumption
Japan	Ratuken Bank	✓	✓	✓	✓	✓	E-commerce
	Jiban	✓	✓	✓	✓		Diversified financial services
India	YONO	✓	✓	✓	✓	✓	E-commerce, investments
	Digibank	✓	✓	✓	✓	✓	End-to-end travel solution
Indonesia	Digibank	✓	✓	✓	✓		Lifestyle, consumption
	Jenius	✓	✓	✓			Lifestyle, consumption

Digital Bank in APAC : Potential markets

Banking revenue and unbanked population in Southeast Asia



Note : 1) Banked population = Account ownership at a financial institutions or with a mobile-money-service provider (% of population aged 15+)
2) Banking revenue includes both retail and wholesale (covering SME and corporate banking)

Digital Bank in APAC

Success factors that drive a new digital bank

Leveraging Assets	Building and Scaling the Bank	Sustaining Success
Strong brand recognition High awareness and deep trust	**Customer obsession** Compelling, validated value proposition, commercial, branding	**Data-driven** For relevant pipeline of offerings, marketing, and credit risk analytics
Ecosystem advantage Wide reach with customer base and platform	**Scalable and flexible technology** Own tech stack, 100% automation and decisioning, strong tech capabilities	**Risk management** Mitigate risks as a bank and tech player
Existing financial services Financial service experience, capabilities	**Agile org and governance** Digibank as decision maker, accelerated staffing	**Path to profitability** Product sequencing while balancing income and costs

Source : BCG analysis

Digital Bank in APAC

Digital banks take 1.5 to 2 years to build

~4-6 months	18 months to 24 months	
Prepare for Application	Build Digital Bank Venture	Launch

Prepare for Application

- 1-2 months consortium/partnership agreements
- 3~4 months documentation of business plan and application according to regulatory requirements
- 1 month for third-party audit

Build Digital Bank Venture

- Product build (front end)
- Tech build and integration (back end for partners)
- Hiring of of CEO + CEO-1, governance set up
- Operating model establishment
- Risk management and processes systemization
- Talent recruiting
- Vendor selection for outsourced processes and vendor on-boarding
- Go-To Market plan mobilization

Launch

Key directions of the BOT for repositioning the financial sector

Leveraging on technology and data to drive innovation and better financial services through Open Competition, Open Infrastructure and Open Data.

- **Open Competition :** To allow both incumbent and new players to compete on a level playing field to provide better financial services and innovation for customers. Key policies are the following:
  1) **Introduce a virtual banking license** to stimulate competition among service providers in innovating and providing financial services that meet the consumer needs.
  2) Lift the limit on FinTech investment, excluding that in digital assets, by subsidiaries and affiliates in a banking group and allow for more flexible structures of banking groups to encourage innovation while safeguarding deposits and providing appropriate consumer protection.
  3) Expand the scope of non-bank businesses and allow open access to infrastructure at appropriate costs to encourage competition under risk-based supervision and a level playing field.
- **Open Infrastructure** : To provide service providers with access to financial infrastructure at reasonable and fair costs and ensure efficient utilization of key domestic financial infrastructures.
- **Open Data** : To enable better utilization of data and data sharing mechanisms among service providers.

Key directions of the BOT for repositioning the financial sector

Introduce Virtual Bank as a New Player

The objective of the virtual banking license is to foster competition in developing financial services, promote innovations that meet consumer needs, as well as improving suitable access for the retail sector and SMEs.

Virtual Bank Characteristics

- Subject to the same scope of business as a traditional bank, allowing it to offer services to all consumer segments and compete with other service providers while coming under the same risk-based supervisory framework as traditional banks.
- Locally incorporated with a headquarter or parent company in Thailand to enable the BOT to conduct supervision through its presence in the country. This is consistent with the licensing frameworks of virtual banks in Malaysia and the Philippines, and those of digital full banks in Singapore.

Example	Objectives			Scope of business Full bank	Limit on no. of license
	Competition	Innovation	Financial access		
Hong Kong	✓	✓		✓ Retails & SMEs focus	
S. Korea	✓	✓		✓ Lending to large biz in not allowed	
Taiwan	✓	✓	✓	✓	
Singapore	✓	✓		✓	✓
Malaysia			✓ Unserved & Underserved segments	✓ Retails & SMEs focus	✓
Philippines			✓ Unserved & Underserved segments	✓ Retails & SMEs focus	✓

Regulating digital bank in focus countries

How is "Digital Bank" defined in the focus countries?

Different terms are used by different regulators to refer to these banks such as **digital bank**, **virtual bank,** and **internet-only bank**. The countries have different definitions for such banks, although they essentially mean the same. We use the term "**digital bank**" to refer to all of them.

HONG KONG

A **virtual bank** is defined as a bank which primarily delivers retail banking services through the internet or other forms of electronic channels instead of physical branches.

PHILIPPINES

A **digital bank** offers financial products and services that are processed end-to-end through a digital platform and/or electronic channels with no physical branch/sub-branch or branch-lite unit offering financial products and services.

KOREA

An **internet-only bank** is defined as a bank that conducts banking business mainly through electronic financial transactions "as prescribed in (…) the Electronic Financial Transactions Act."

SINGAPORE

Not separately defined

MALAYSIA

A **licensed digital bank** is defined as a person licensed to carry on banking business wholly or almost wholly through digital or electronic means.

TAIWAN

An **internet-only bank** is a bank that mainly utilizes the internet or other forms of electronic communication channels to provide financial services to its customers.

Regulating digital bank in focus countries

Stated policy objectives and target customers in digital bank regulation

HONG KONG

- Promote the application of **financial technology** and **innovation** in Hong Kong and offer a new kind of **customer experience**.
- Promote **financial inclusion** as digital banks normally target the **retail segment**, including the **SMEs**.

MALAYSIA

- Add **dynamism** to the banking landscape to serve the economy and contribute to individual well-being.
- Expand meaningful **access** to and **responsible usage** of suitable financial solutions for **underserved/unserved** market segments, which include **retail, micro enterprises, and SMEs**.

TAIWAN

- Drive market **innovation** and development.
- **Push the incumbents** to speed up the digitization of their operations and to offer more affordable and user-friendly services through new business models and technologies.
- Enhance **financial inclusion**.

KOREA

- Promote **financial innovation** and **sound competition** in the banking business.
- Promote the **convenience** for financial consumers.

PHILIPPINES

- Expand services into the **unserved** and **underserved** market segments.
- Allow **responsible innovation** to flourish.
- Promote **cyber resilience.**
- Advance the **digitalization** of the financial industry.

PAKISTAN (DRAFT)

- Promote **financial inclusion.**
- Provide credit access to **unserved** and **underserved.**
- Extend **low cost DFS**.
- Encourage application of **financial technology** and **innovation** to banking.
- Foster new set of **customer experience.**
- Further develop **digital ecosystem.**

SINGAPORE

- A Digital Full Bank should incorporate the **innovative use of technology** to serve customers' needs and reach **under-served** segments of the Singapore market, that differentiates it from existing banks.

Regulating digital bank in focus countries

Distribution and physical touch points

HONG KONG

- Required to have a principal place of business in Hong Kong.
- **Not expected to maintain physical branches but** could maintain one or more local offices for promotion.

PHILIPPINES

- Required to maintain a principal/head office in the Philippines.
- **Not allowed to have physical branch/sub-branch or branch-lite units.**
- Allowed to offer products and services through agents and other qualified service providers.

SINGAPORE

- Allowed to **only open one physical place of business.**
- Not allowed to operate ATMs or cash deposit machines (CDM) or join existing ATM or CDM networks.
- Allowed to offer cashback services through electronic funds transfer at point of sale (EFTPOS) terminals at retail merchants so that the DFB can meet retail customers' urgent cash needs.

TAIWAN

- **Not allowed to establish branches,** except for the head office and the customer service center as the only physical presence.

KOREA

Not specified

MALAYSIA

- Required to establish an office in Malaysia.
- **Not allowed to establish a branch.**
- Agents can be used – subject to BNM approval.
- Allowed to establish physical offices for administrative purposes.
- Allowed to use registered office and physical offices as a center to facilitate face-to-face customer complaints.
- Allowed to participate in Shared ATM Network and cash-out services.
- Allowed to use network of self-service terminals, incl. ATMs, cash deposit machines, and cheque deposit machines of other banks.

Regulating digital bank in focus countries

Difference in scope of permitted activities and capital requirements of digital banks and traditional banks

KOREA

- Digital banks in Korea are **not allowed to offer loans to larger corporates**. However, they can provide loans to **individuals and SMEs**, which could help enhance financial inclusion. This restriction does not apply to traditional banks.
- As shown in the table, a traditional bank must maintain an **MCR of KRW100 billion** (US$90 million), as compared to only KRW25 billion (US$22 million) for a digital bank. This difference could be due to differences in scope of permitted activities and **limitations in businesses** between these two types of banks, among others.

	Banking Act	Special Act on Internet-only banks
Minimum Capital	KRW 100 billion	KRW 25 billion
Non-financial shareholding	4% of voting shares (max 10% allowed with voting shares limited to 4%)	34% of voting shares
Lending to major shareholder	Up to 25% of equity	Prohibited
Acquisition of securities issued by major shareholder	Up to 1% of equity	Prohibited
Limit on lending to single borrower	Same individual or corporation: up to 20% of equity	Same individual or corporation up to 15% of equity
Limit on lending to same borrower (borrower and related parties as a whole)	up to 25% of equity	up to 20% of equity
Scope of credit	Individuals and corporates	Individuals and SMEs

Regulating digital bank in focus countries

Difference in scope of permitted activities and capital requirements of digital banks and traditional banks

PHILIPPINES

- Digital banks are allowed to offer **a more limited range of products and services** compared to the category of traditional bank (referred to as commercial bank) in the Philippines. While commercial banks, for example, can issue letters of credit; purchase, hold and convey real estate and invest in the equity of enterprises under certain limits; and buy and sell gold or silver bullion, these are not listed in the scope of activities of digital banks.
- Also, while a digital bank must have a minimum capital requirement (MCR) of P1 billion (US$21 million), this requirement is P2 billion (US$42 million) for a commercial bank plus additional capital for its branches.
- The difference between digital banks and traditional banks in terms of MCR could be due to difference in scope of permitted activities for these two categories.

Regulating digital bank in focus countries

Common stated objectives across these countries

KOREA	A non-financial company is allowed to own up to 34% of voting shares of a digital bank, while in the case of traditional banks it can only acquire up to 10% of total shares and not exercise voting rights for shares exceeding 4% of total shares.
SINGAPORE	At least one entity in the applicant group has three or more years of track record in operating an existing business in the technology or e-commerce field – something that is not required for traditional banks.
TAIWAN	Total shares of non-financial companies in a digital bank could be up to 60%, which is not allowed for traditional banks. There is a single shareholding limit for non-financial companies of 10% unless the promoter has a track record in operating business in the financial technology, e-commerce or telecommunication field.
HONG KONG	Both financial firms (including existing banks in Hong Kong) and non-financial firms (including technology companies) may apply to own and operate a virtual bank in Hong Kong.

Source : Worldbank

Regulating digital bank in focus countries

Phased authorization of digital banks

Singapore – Digital full bank and restricted phase

Any applicant for a DFB license must first go through a "restricted phase" which includes the 1) entry phase and then the 2) progression phase before it can become a fully functioning DFB.

Primary Objective of MAS to mandate a restricted phase: To minimize risks to retail depositors.

Length of the restricted period: MAS will **not pre-determine a time period** within which a restricted DFB must progress to a full functioning DFB. The pace of growth of a restricted DFB will depend on its ability to meet its commitments and MAS' supervisory considerations. However, MAS generally **expects a DFB to be fully functioning within 3 to 5 years** from commencement of business.

Business Limitations throughout restricted phase:

- **Not allowed to safeguard other financial institutions' "relevant money",** which is defined in Section 23/14 of the Payment Services Act 2019 and includes the money received by a major payment institution from a customer in exchange for e-money.
- If a DFB offers **unsecured credit facilities** to an individual, it will only be allowed to grant a total unsecured credit limit of up to two times of the individual's monthly income.
- Not allowed to conduct **any proprietary trading activities**.

Source: Monetary Authority of Singapore

Regulating digital bank in focus countries

Phased authorization of digital banks

Singapore – Digital full bank and restricted phase

Business Limitations - Entry phase only:

- A restricted DFB can operate overseas bank branches or subsidiaries in no more than two other markets.
- Where a restricted DFB offers investment products to individuals, it can only offer simple capital markets products.

MCR and Deposit Cap - Entry Phase:

- The restricted DFB can commence with an **MCR of S$15 million (US$11.3 million)** and will be subject to an aggregate **deposit cap of S$50 million (US$38 million)**.
- Deposits per individual will be capped at S$75,000 (US$56,634).
- MAS expects a restricted DFB to be in this phase for 1 to 2 years. In this phase, it **cannot solicit deposits from the general public**, but only from its shareholders, employees, related entities and any other persons who are familiar with the DFB's parent or major shareholders' businesses (e.g., existing customers of the parent entity).

MCR and Deposit cap - Progression Phase:

- After the entry phase, the aggregate deposit cap and the MCR of the restricted DFB will be progressively increased. MAS will not prescribe a path of growth for a restricted DFB. A DFB applicant should project its growth path based on its business plans, with the aim of meeting the **MCR of S$1.5 billion (US$1.1 billion)** within a reasonable period.
- MAS expects to see a path towards profitability in the financial projection. As a rule of thumb, in making its financial projection, a DFB applicant can assume that the **MCR** and the **aggregate deposit cap** will be increased **in tandem by a ratio of 1:4**.

After the entry phase

- A restricted DFB which has moved out of the entry phase will be able to solicit deposits from the general public.
- The deposit cap of S$75,000 (US$56,634) per individual will remain during the progression phase. The cap will be removed after the DFB becomes a fully licensed bank.

Regulating digital bank in focus countries

Phased authorization of digital banks

Malaysia – Digital banks and foundational phase

A digital bank must go through a "foundational phase" before becoming a fully licensed digital bank.

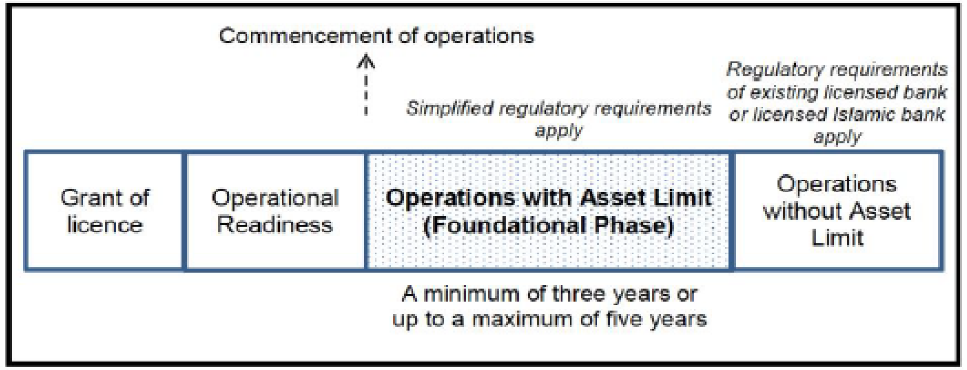
Objective of BNM to mandate foundational phase for digital banks: To enable the admission of digital banks with strong value propositions whilst safeguarding the integrity and stability of the financial system as well as depositors' interests.

Length of the foundational phase: Up to 5 years from its commencement of operations.

Asset Limit: During the foundational phase, its total size of assets does not at any time exceed the limit of **RM3 billion (US$727 million**). After this phase, the asset cap does no longer apply.

MCR and Regulatory requirements:

- **MCR is RM100 million (US$24.2 million)** during the foundational phase.
- Also, some simplification or exemption to the existing banking regulatory framework on prudential rules such as capital adequacy and liquidity are applied.
- By the end of the fifth year from the commencement of its operations, a digital bank must comply with all regulatory requirements applicable to an existing licensed bank or licensed Islamic bank and achieve a **MCR of RM300 million (US$73 million).**



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