JICA DXLab

Japan International Cooperation Agency(JICA)

Cambodia Digital ecosystem assessment report　（Draft version）

1st of April, 2024

Digital ecosystem assessment report: Table of contents

The scope of disclosure for the roundtable meetings, governments and other donors will be discussed separately

ABBREVIATIONS

ABC	The Association of Banks In Cambodia	MAFF	Ministry of Agriculture, Forestry and Fisheries	MoSVY	Ministry of Social Affairs, Veterans and Youth Rehabilitation
ADB	Asian Development Bank	MCFA	Ministry of Culture and Fine Arts	MoT	Ministry of Tourism
AFD	The Agence Française de Développement	MCR	Ministry of Cult and Religion	MoWA	Ministry of Women's Affairs
APN	Asian Payment Network	MEF	Ministry of Economy and Finance	MoWRaM	Ministry of Water Resources and Meteorology
CADT	Cambodia Academy of Digital Technology	MFAIC	Ministry of Foreign Affairs and International Cooperation	MPTC	Ministry of Posts and Telecommunications
CamDX	Cambodia Data Exchange	MINFO	Ministry of Information	MPWT	Ministry of Public Works and Transport
CBC	Credit Bureau Cambodia	MISTI	Ministry of Industry, Science, Technology and Innovation	MRD	Ministry of Rural Development
CMA	Cambodia Microfinance Association	MLVT	Ministry of Labour and Vocational Training	NBC	National Bank of Cambodia
DEBC	Digital Economy and Business Committee	MME	Ministry of Mines and Energy	NIS	National Institute of Statistics
DES	Digital Economy and Society Policy 2021-2035	MND	Ministry of National Defense	NSPC	National Social Protection Council
DGC	Digital Government Committee	MoC	Ministry of Commerce	NSSF	National Social Security Fund
DGP	Digital Government Policy 2022-2035	MoCS	Ministry of Civil Service	RGC	Royal government of Cambodia
DSC	Digital Security Committee	MoE	Ministry of Environment	SMEs	Small and Medium Enterprises
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit	MoEYS	Ministry of Education, Youth and Sport	SPID	Social Protection ID
HEF	Health Equity Fund	MoH	Ministry of Health	TSC/TECHO	Techo Startup Center
IPIS	Integrated Population Identification System	MoI	Ministry of Interior	UNDP	United Nations Development Programme
JICA	Japan International Cooperation Agency	MoJ	Ministry of Justice	USO FUND	Universal Service Obligation Fund
KE	Khmer Enterprise	MoP	Ministry of Planning		
KOICA	Korea International Cooperation Agency				

Digital ecosystem assessment report: Table of contents

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Purpose of digital ecosystem assessment

Japan has started to consider offer-type cooperation through the revision of the General Development Framework. This assessment will be carried out at JICA to examine the content of the Japanese offer in the digital domain in Cambodia.

> **"Japan will not only wait for requests from partner countries, but also strengthen "offer-type" cooperation, which will enable creating and proactively proposing attractive menus that leverage Japan's strengths, while utilizing new social values and solutions created through co-creation, as well as organically combining various schemes such as ODA and OOF to increase synergy"** (Extracts from "Development Cooperation Charter 2023")

Overview of this assessment

Conduct a digital ecosystem assessment to identify gaps in Cambodia's digital domain for consideration of offer-based cooperation

- The study will be conducted in three steps in order to examine the offer-type cooperation in the field of DX.
    - Step 1 Assess the digital ecosystem
    - Step 2 Collect and organise the opinions of Japanese stakeholders
    - Step 3 Co-creation proposal - compilation of proposals
- As Step 1 of the study, the digital ecosystem of Cambodia as a whole and the situation and issues of the main players will be analysed.

Approach to Selecting Survey Items for Digital Ecosystem Assessment

Creating a framework in alignment with Japan's cooperation context (such as 'Digital Co-creation', 'DFFT promotion', etc.), referencing the USAID-DECA framework.

USAID-DECA Framework

Digital Society Rights and governance
1. Digital Rights
2. Digital Repression
3. Internet Governance
4. Civil Society and media
5. Digital Government

Digital Infrastructure and adoption
6. Connectivity
7. Security, Interoperability, Competitiveness
8. Affordability
9. Digital Literacy
10. Digital Divides

Digital Economy
11. Digital Talent Pool
12. Tech Startup Environment
13. Digital Trade
14. E-Commerce
15. Digital Financial Services

Cross-cutting Topics
16. Emerging Technologies
17. Cybersecurity
18. Inclusion
19. Geopolitical Positioning

Framework for this assessment

a. Digital Governance
1. Rights, Principles and Laws
2. Central / Local Government
3. Public or government entity
4. EdTech / Digital Literacy
5. Civil society/media

b. Digital Infrastructure
6. Telecommunications Networks
7. Data storage infrastructure
8. Base Registry
9. Data exchange
10. Cyber security
11. ICT industry

c. Digital Innovation
12. Startup Ecosystem
13. Digital human resources
14. Financial Sector
15. Trade bodies/Commerce

Additional elements based on the context of DFFT promotion

Excluded from the items for individual consideration in Cambodia alone

Source: USAID "https://www.usaid.gov/digital-development/deca-toolkit"

5

Reference) DECA framework

The DECA Framework is a framework published by USAID. It is a comprehensive assessment system that also takes into account the impact on digital society and government, supporting infrastructure and the economy.

USAID-DECA Framework

Digital Society Rights and governance	1	Digital Rights
	2	Digital Repression
	3	Internet Governance
	4	Civil Society and media
	5	Digital Government
Digital Infrastructure and adoption	6	Connectivity
	7	Security,Interoperability,Competitiveness
	8	Affordability
	9	Digital Literacy
	10	Digital Divides
Digital Economy	11	Digital Talent Pool
	12	Tech Startup Environment
	13	Digital Trade
	14	E-Commerce
	15	Digital Financial Services
Cross-cutting Topics	16	Emerging Technologies
	17	Cybersecurity
	18	Inclusion
	19	Geopolitical Positioning

Source: USAID "https://www.usaid.gov/digital-development/deca-toolkit"

Framework for the digital ecosystem to be investigated

Three elements are investigated as part of the digital ecosystem assessment: digital governance, digital infrastructure and digital innovation.

a Digital governance

Digital technology's relationship with governments/governmental organizations and its impact on civil society
- Including digital channels on the government side and digital literacy of citizens.

1 Rights, Principles and Laws

2 Central / Local Government

3 Public or government entity

4 EdTech / Digital Literacy

5 Civil society/media

b Digital Infrastructure

Status of the underlying infrastructure/mechanisms that are enablers of the digital ecosystem
- Including accessibility and usage of infrastructure by citizens/corporations.

6 Telecommunications Networks

7 Data storage infrastructure

8 Base Registry

9 Data exchange

10 Cyber security

c Digital Innovation

The role of digital technology in the economy, industry and commerce
- Including private sector/investor trends, human resources, and commercial developments.

11 ICT industry

12 Startup Ecosystem

13 Digital human resources

14 Financial Sector

15 Trade bodies/Commerce

List of specific survey items
The following highlighted items were surveyed in this assessment

Assessment Items | **Sub-items**

☐ : covered by the survey ☐ : not covered

a Digital Governance

#	Assessment Item	Sub-items
1	Rights, Principles and Laws	Development of digital related laws and rules
2	Central / Local Government	2-1 Digitization of government operation · 2-2 Digitization of government service(G4C)
3	Public or government entity	3-1 Digitization of core infrastructure (roads, electricity, gas, water) · 3-2 Social security · 3-3 Digitization of healthcare · 3-4 Others (agriculture/postal etc.)
4	EdTech / Digital Literacy	4-1 Digitalization of education(EdTech) · 4-2 Digital Literacy
5	Civil Society/Media	Status of citizens' activities in defense of digital rights

b Digital Infra-structure

#	Assessment Item	Sub-items
6	Telecommunications Networks	6-1 Fixed comm · 6-2 Mobile comm · 6-3 Network distribution · 6-4 Infra equipment
7	Data Storage Infrastructure	7-1 Data center
8	Base Registry	8-1 Base registry
9	Data exchange/ID	9-1 ID · 9-2 Identification (KYC) · 9-3 Data exchange platform[2] · 9-4 Other functions
10	Cybersecurity	10 Cyber security

c Digital Innovation

#	Assessment Item	Sub-items
11	ICT industry	11-1 Telecom company · 11-2 Other ICT industry coms
12	Startup Ecosystem	12-1 Startup ecosystem
13	Digital human resources	13-1 Quantity/quality of digital human resources (incl. higher education) · 13-2 R&D
14	Financial Sector	14-1 Financial Insititutions[3] · 14-2 Financial Inclusion · 14-3 Payment Infrastructure · 14-4 Financial information utilisation
15	Trade bodies/Commerce	15-1 Digitization of business transactions (e.g., E-commerce) · 15-2 Digitization of trade (customs clearance)

1.Compulsory education is included in the public sector, but is organised as a separate category from ③ in order to survey basic education in general, including digital literacy initiatives in general2. In the case of Cambodia, CamDX is relevant 3. in addition to central banks, banks and microfinance, non-banks and payment providers are also included

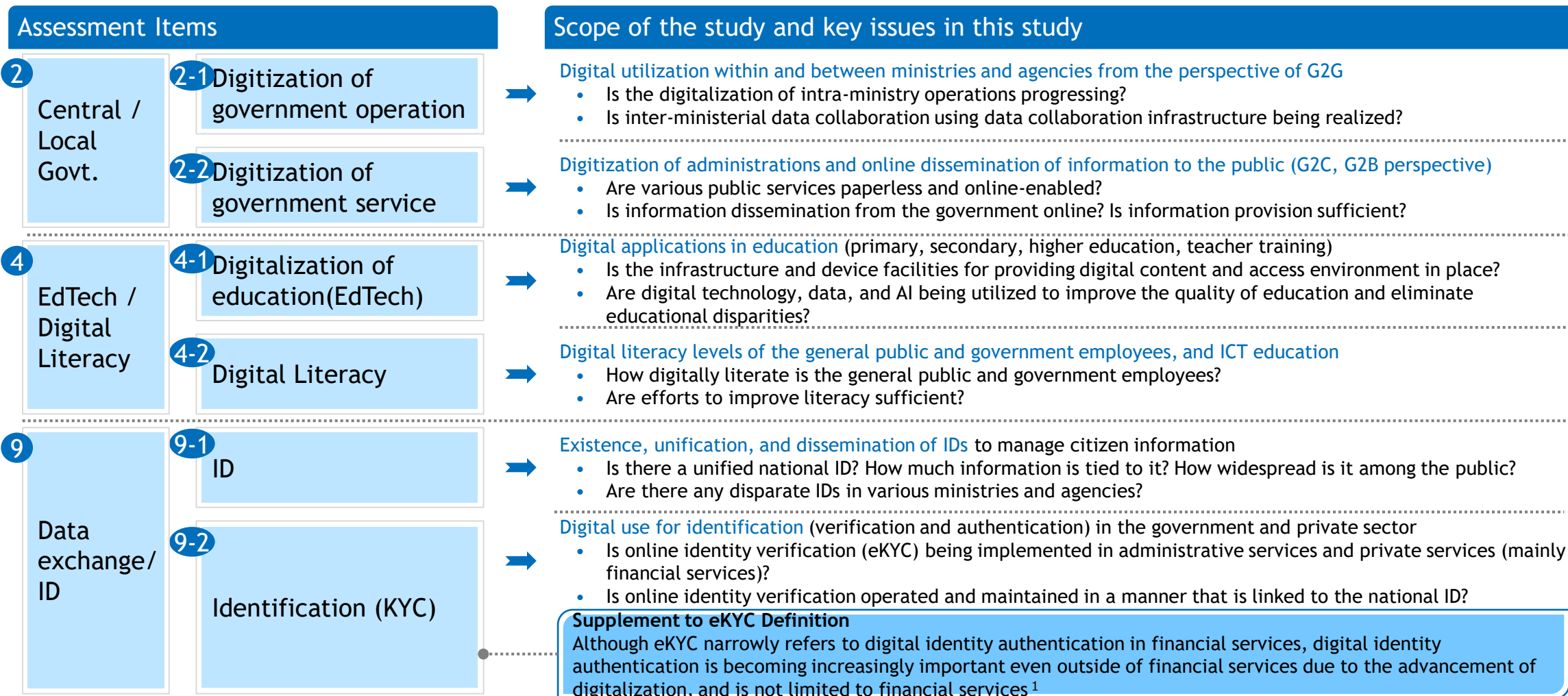# Scope details for each survey item in the Digital Ecosystem Assessment

: covered by the survey : not covered

Scope of research on current situation and gaps

1	Rights, Principles and Laws	**1-1**	Dev. of digital related laws and rules	Development of digital laws and regulations
2	Central / Local Government	**2-1**	Digitization of government operation	Use of digital within and between ministries and agencies in the context of operational efficiency
		2-2	Digitization of government service	Digitization of administrations and online dissemination of information to the public (G2C, G2B perspective)
3	Public entity	**3-1**	Digitization of core infrastructure	Digital use in core infrastructure (roads, electricity, gas and water)
		3-2	Social security	Digital applications to social security system management in the context of social security provision.
		3-3	Digitization of healthcare	Digitization of healthcare (introduction of online medical services, digital use in the healthcare system)
		3-4	Others (agriculture/postal etc.)	Digital Applications in Other Public Entities
4	EdTech / Digital Literacy	**4-1**	Digitalization of education(EdTech)	Digital applications in education (primary, secondary, higher education, teacher training)
		4-2	Digital Literacy	Digital literacy levels of the general public and government employees, and ICT education
5	Civil Society/Media			Information and media regulation
6	Telecommunications Networks	**6-1**	Fixed comm	Fixed-line telecommunications (domestic broadband service) regulations, coverage, and usage
		6-2	Mobile comm	Mobile Communications (4G/5G) Regulations, Coverage, and Usage
		6-3	Network distribution	Passive and active infrastructure sharing (tower, government-led and business-led RAN sharing)
		6-4	Infra equipment	Submarine cables, land cables, international gateways
7	Data Storage Infrastructure			Planning &operation of national data center / Regulation & market for privately owned data centers
8	Base Registry			Quantity and reliability of each ministry's database / Use of data for government statistics
9	Data exchange/ID	**9-1**	ID	Existence, unification, and dissemination of IDs to manage citizen information
		9-2	Identification (KYC)	Digital use for identification (verification and authentication) in the government and private sector
		9-3	Data exchange platform	Maturity of establishment and operation of data exchange infra. Utilization are covered in other items.
10	Cybersecurity			Status of Cyber Security Compliance
11	ICT industry	**11-1**	Telecom company	Maturity of telecommunication service providers
		11-2	Other ICT industry coms	Maturity of ICT industries other than telecommunications
12	Startup Ecosystem			Government support for startups, including investment, capabillity, and mentorship
13	Digital human resources	**12-1**	Quantity/quality of digital HR	Efforts to secure high-level digital human resources
		12-1	R&D	Investment, environment, and organization for research and development related to digital
14	Financial Sector	**14-1**	Financial Insititutions	Digitalization in financial institutions (central banks, microfinance, non-banks, payment providers, etc.)
		14-2	Financial Inclusion	Access to financial services by the public and the level of financial literacy of the public
		14-3	Payment Infrastructure	Digitalization of domestic and international payments (also covers checking AML compliance)
		14-4	Financial information utilisation	Linkage of financial information (e.g. credit, income, use of financial services)
15	Trade bodies/Commerce	**15-1**	Digitization of business transactions	E-commerce market maturity
		15-2	Digitization of trade	Status of digitalization of trade procedures (finance, transportation, customs)

Reference) Details of the scope classification of the survey items

As for the digital ecosystem assessment items, the item scopes are organised as follows

Assessment Items		Scope of the study and key issues in this study

2 Central / Local Govt.

2-1 Digitization of government operation

→ **Digital utilization within and between ministries and agencies from the perspective of G2G**
- Is the digitalization of intra-ministry operations progressing?
- Is inter-ministerial data collaboration using data collaboration infrastructure being realized?

2-2 Digitization of government service

→ **Digitization of administrations and online dissemination of information to the public (G2C, G2B perspective)**
- Are various public services paperless and online-enabled?
- Is information dissemination from the government online? Is information provision sufficient?

4 EdTech / Digital Literacy

4-1 Digitalization of education(EdTech)

→ **Digital applications in education** (primary, secondary, higher education, teacher training)
- Is the infrastructure and device facilities for providing digital content and access environment in place?
- Are digital technology, data, and AI being utilized to improve the quality of education and eliminate educational disparities?

4-2 Digital Literacy

→ **Digital literacy levels of the general public and government employees, and ICT education**
- How digitally literate is the general public and government employees?
- Are efforts to improve literacy sufficient?

9 Data exchange/ ID

9-1 ID

→ **Existence, unification, and dissemination of IDs** to manage citizen information
- Is there a unified national ID? How much information is tied to it? How widespread is it among the public?
- Are there any disparate IDs in various ministries and agencies?

9-2 Identification (KYC)

→ **Digital use for identification** (verification and authentication) in the government and private sector
- Is online identity verification (eKYC) being implemented in administrative services and private services (mainly financial services)?
- Is online identity verification operated and maintained in a manner that is linked to the national ID?

Supplement to eKYC Definition
Although eKYC narrowly refers to digital identity authentication in financial services, digital identity authentication is becoming increasingly important even outside of financial services due to the advancement of digitalization, and is not limited to financial services [1]

1. In Japan, the term "eKYC" is being used more and more for identity verification outside of the financial industry, such as the development of digital identity verification guidelines for private businesses not limited to the financial industry in 2023. Identity verification in the financial industry tends to be at the center of discussions because of its higher level of requirements compared to other industries, but it should be noted that identity verification outside of the financial industry is also important.

Source: Japan METI, OpenID Foundation Japan

Digital ecosystem assessment report: Table of contents

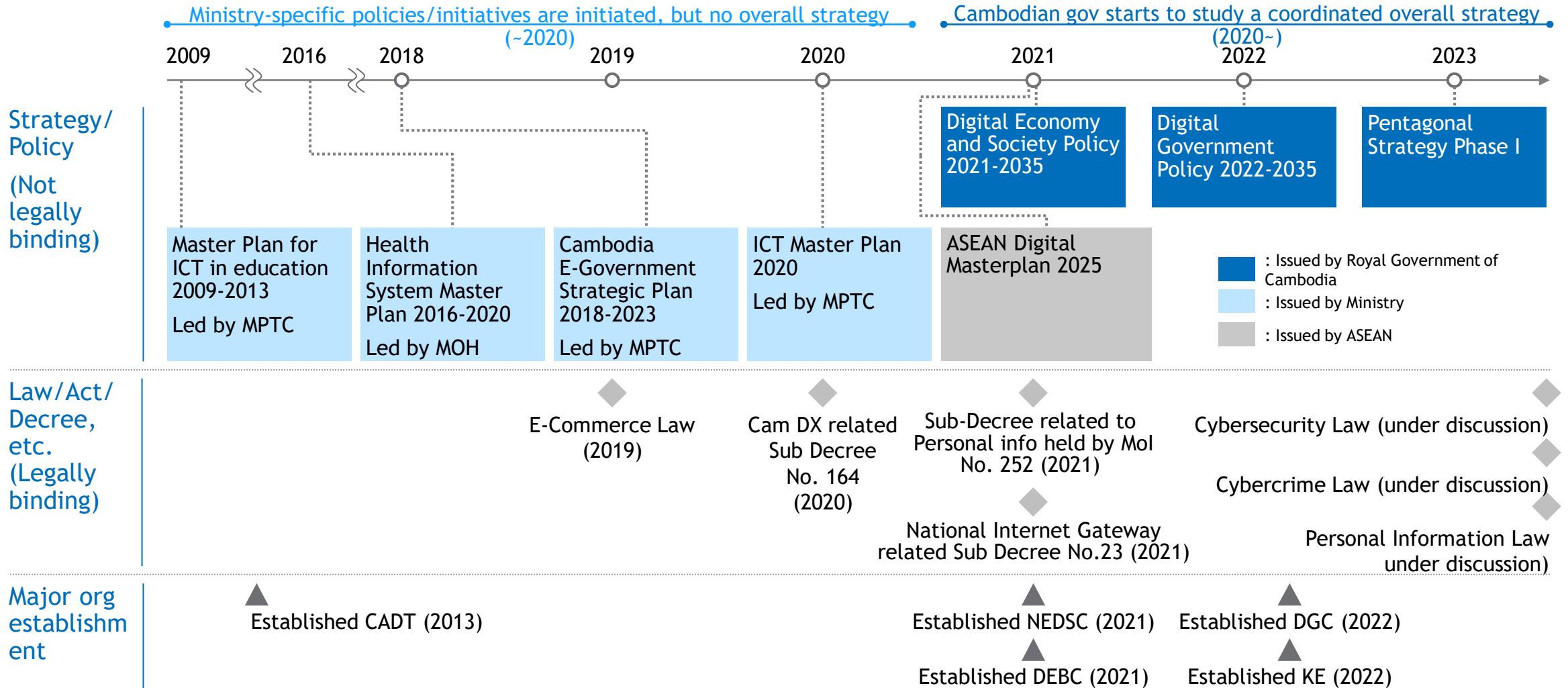The scope of disclosure for the roundtable meetings, governments and other donors will be discussed separately

Disclaimer

This survey was prepared based on public information and hearings with local stakeholders.
Please be aware that the information in this chapter may not be accurate.

History of initiatives by Cambodian government in digitization (as of now)

Since around 2020, gov of Cambodia has launched a cross-ministry committee to formulate an overall strategy. There are issues in implementing the strategy due to strong vertical division of ministries. Therefore, breaking down boundaries bet ministries is important to accelerate the implementation of the strategy

Ministry-specific policies/initiatives are initiated, but no overall strategy (~2020)

Cambodian gov starts to study a coordinated overall strategy (2020~)

2009 · 2016 · 2018 · 2019 · 2020 · 2021 · 2022 · 2023

Strategy/ Policy (Not legally binding)

| | | | | | Digital Economy and Society Policy 2021-2035 | Digital Government Policy 2022-2035 | Pentagonal Strategy Phase I |

Master Plan for ICT in education 2009-2013

Led by MPTC

Health Information System Master Plan 2016-2020

Led by MOH

Cambodia E-Government Strategic Plan 2018-2023

Led by MPTC

ICT Master Plan 2020

Led by MPTC

ASEAN Digital Masterplan 2025

■ : Issued by Royal Government of Cambodia
■ : Issued by Ministry
■ : Issued by ASEAN

Law/Act/ Decree, etc. (Legally binding)

◆ E-Commerce Law (2019)

◆ Cam DX related Sub Decree No. 164 (2020)

◆ Sub-Decree related to Personal info held by MoI No. 252 (2021)

◆ National Internet Gateway related Sub Decree No.23 (2021)

◆ Cybersecurity Law (under discussion)

◆ Cybercrime Law (under discussion)

◆ Personal Information Law under discussion)

Major org establishment

▲ Established CADT (2013)

▲ Established NEDSC (2021)

▲ Established DEBC (2021)

▲ Established DGC (2022)

▲ Established KE (2022)

Source: Organized based on the Cambodia gov docs. "Note: Created based on publicly available information and hearings conducted locally, but please be aware that the information may not always be accurate

13

Ref) Characteristics in the dev of legal structure in Cambodia

Cambodia's legal system itself is a general legal system with the Constitution as the highest level, but there is a tendency to use many subordinate laws under Sub-Decree

Characteristics of legal dev in Cambodia: Extensive use of subordinate laws

Heavy use of Sub-Decree, Parakas, and other subordinate laws for the following reasons;

- Basic legal system is not well developed
- It takes time for congressional approval due to the complex political situations
- Response to rapid social changes (Laws/Acts are not speedy enough)

In enactment, priority is given to speedy issuance of necessary laws/docs (quality < speed), not to sufficient discussion or completeness of laws/docs

Inconsistencies bet laws/docs occur frequently, but in reality, inconsistencies are tolerated at the time of enactment and correct or supplemented when they are discovered etc.

Cambodia's legal system

Laws and regulations	Details	
The Constitution	The constitution of the kingdom of Cambodia enacted in 1993 after congressional approval. The highest level of all laws/regulations, and orders	Superior law
Law/Act (Chhbab)	Laws and regulations. Requires congressional approval	
Royal Decree (Royal Kram)	Royal decree. An order issued by the King in his name within the scope of his constitutionally granted powers. No congressional approval required	
Sub-Decree (Anu-Kret)	Decrees and council of ministries decrees, supplementing Law and Royal Decree. The process of promulgation (who is responsible for promulgation etc..) has the following variations, but in all cases, congressional approval is not required • Issued solely by the authority of Prime Minister within the scope of the constitutional/related laws • Adopted by the council of ministers • Issues only by the signature of the Prime Minister and the competent ministries	
Ministerial Order (Parakas)	Ministerial ordinances and ministerial orders. Issued by gov ministries within the authority provided by law. No congressional approval required	Subordinate law (order)

Note: Above describes laws and regulations at national level only and up to the order level. State laws are not described.
Source: Local expert interviews, JICA "Cambodia investment guidebook 2013 I-1", Data bank for info on intellectual property in emerging and other coms "How to access laws and regulations related to intellectual property in Cambodia" (May 2019)
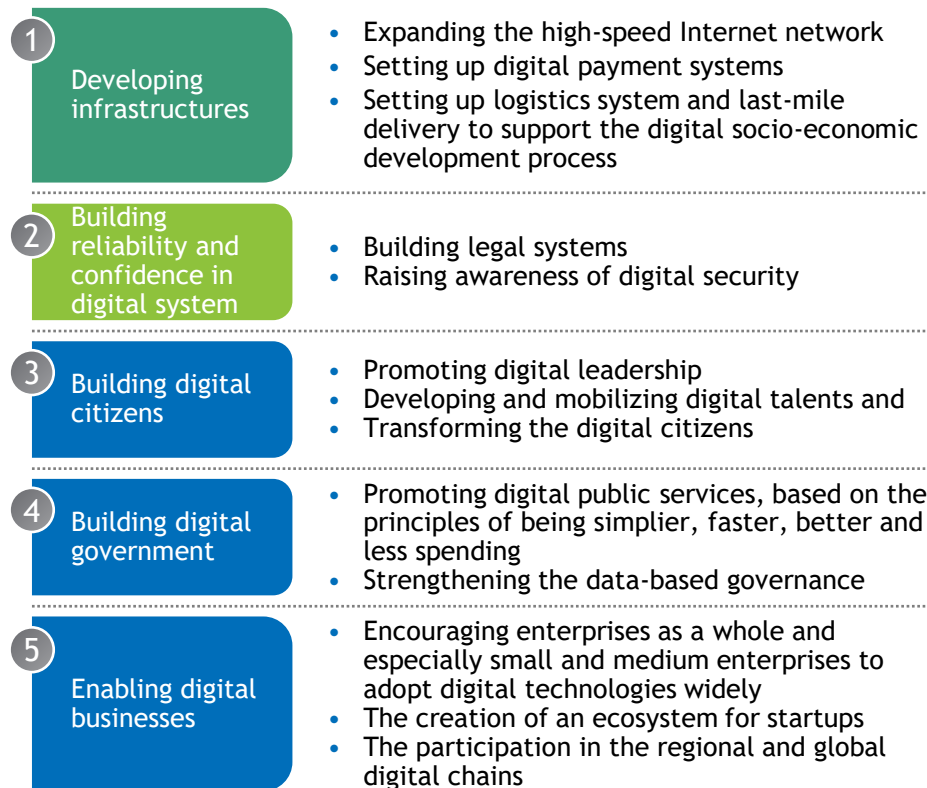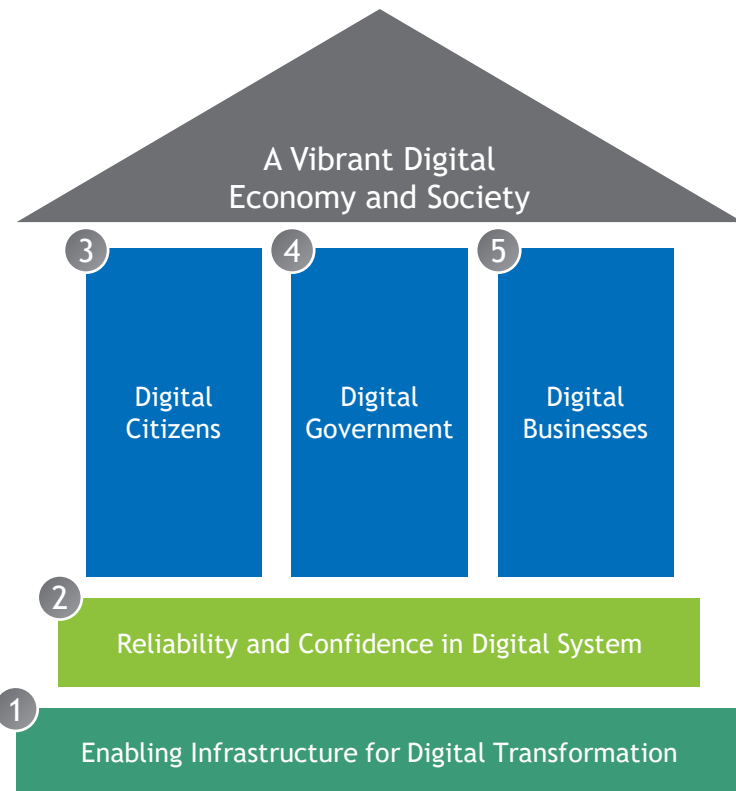
Major digital-related policies: "Digital Economy and Society Policy 2021-2035"
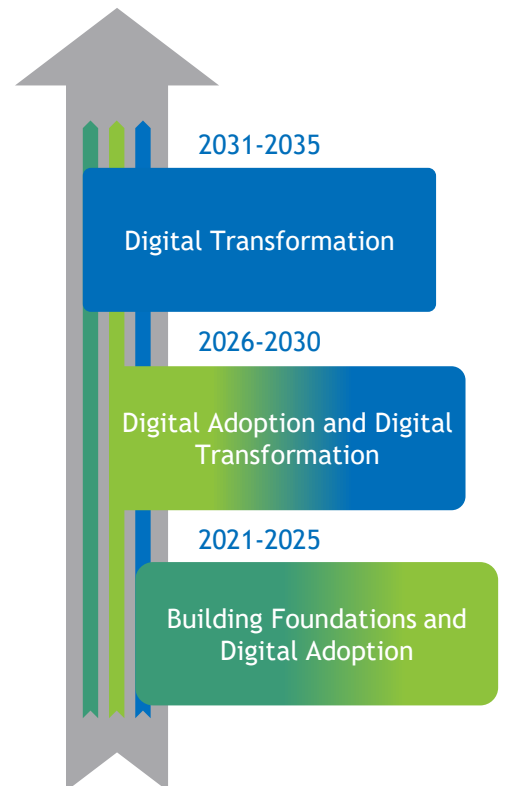
DES Policy defines 5 major goals and aims to achieve in 3 phases until 2035. DEBC said they will prioritize creating 10 use cases to develop base registries and use data exchange platform in order to achieve 3 pillars

Principles and Framework for Building Cambodia's Digital Economy and Society

5 Goals (2 Foundational goals and 3 Pillars)

Time frame

A Vibrant Digital Economy and Society

3 Digital Citizens   **4** Digital Government   **5** Digital Businesses

2 Reliability and Confidence in Digital System

1 Enabling Infrastructure for Digital Transformation

1 Developing infrastructures
- Expanding the high-speed Internet network
- Setting up digital payment systems
- Setting up logistics system and last-mile delivery to support the digital socio-economic development process

2 Building reliability and confidence in digital system
- Building legal systems
- Raising awareness of digital security

3 Building digital citizens
- Promoting digital leadership
- Developing and mobilizing digital talents and
- Transforming the digital citizens

4 Building digital government
- Promoting digital public services, based on the principles of being simpler, faster, better and less spending
- Strengthening the data-based governance

5 Enabling digital businesses
- Encouraging enterprises as a whole and especially small and medium enterprises to adopt digital technologies widely
- The creation of an ecosystem for startups
- The participation in the regional and global digital chains

2031-2035
Digital Transformation

2026-2030
Digital Adoption and Digital Transformation

2021-2025
Building Foundations and Digital Adoption

Source: "CAMBODIA DIGITAL ECONOMY AND SOCIETY POLICY FRAMEWORK 2021 – 2035"   15

Major digital-related policies: "Digital Government Policy 2022-2035"

DGP outlines policies for digital gov-related areas within DES. It aims to realize smart gov using digital infra and tech, sets strategic goals and action plans by 2035, and assigns ministries in charge of these goals and assigns ministries in charge

Priority Actions for Digital Government

10 strategies, 83 actions, and the ministries responsible for them were announced under 4 strategic goals of "1. digital infra", "2. law, policy, and regulatory dev""3. capacity building", and "4. PPP"

Strategic Goal 1:
Promoting the development of digital government infrastructure

Strategy 1: Building and improving digital connectivity infrastructure
Strategy 2: Building and improving infrastructure for digital payment system for public
Strategy 3: Building and strengthening digital security infrastructure
Strategy 4: Development of Postal Service Infrastructure

Strategic Goal 2:
Building Digital Gover-nance and Creating Digital Public Services

Strategy 5: Organizing the Governance of Digital Government
Strategy 6: Digitally Transform the Government and Public Services.

Strategic Goal 3:
Building Digital Capacity and Innovation

Strategy 7: Building Digital Human Capital
Strategy 8: Promoting Digital Research and Innovation

Strategic Goal 4:
Promotion of Co-operation and public and Private Partnership

Strategy 9: Cooperation with Digital Technology Firm
Strategy 10: Promoting Digital Startups

Implementation Principles

The Cambodia gov has 3 policies for digital gov initiatives: "achievement of data exchange bet ministries", "ensuring interoperability of gov systems", and ""small start"

The Once-Only Principle
Data is collected once and share among relevant ministries by adhering to the laws and regulations.

Interoperability as an Ecosystem
Government ICT systems work independently yet & interoperate with other system as an ecosystem.

Land and Expand for Efficiency
Start implementing a small system yet essential and expand the system functionalities as its benefit increases.

Note: Annex includes on overview of 182 systems in 28 gov agencies at a result of a survey of all Digital Info Systems as of 2022
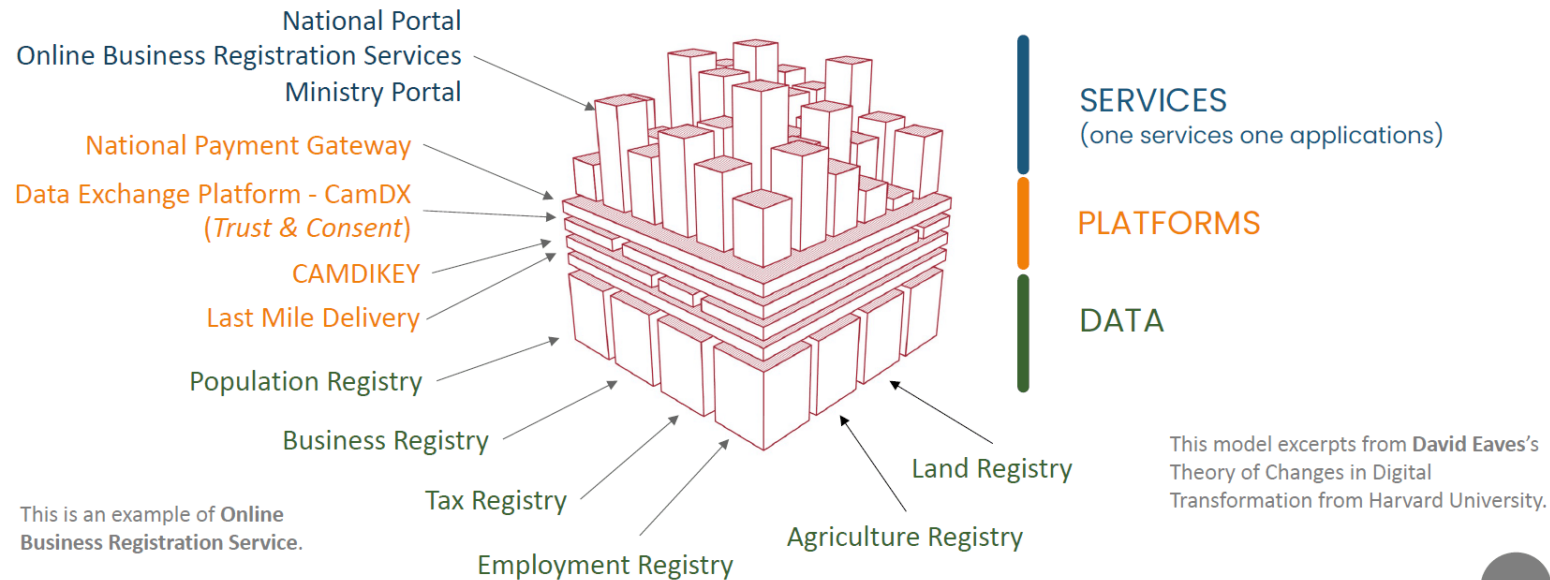Source: "Digital Government Policy 2022-2035"

Ref) Configuration of the digital gov system based on the principle described in DGP

Create a concept of digital gov systems consisting of 3 elements: data layer (various registries), platform layer (data exchange platform CamDX, infra, etc.) and service layer (various administrative services), based on 3 principles of digital gov imple. Based on this concept, CamDX (data exchange platform), CamDigKey (personal authentication) have been built by Techo Startup and are currently in the operation phase

CONCEPTUALIZE THE THREE PRINCIPLES

Digital Government Systems Based on the "Whole-of-Government" Approach

National Portal
Online Business Registration Services
Ministry Portal

National Payment Gateway

Data Exchange Platform - CamDX
(*Trust & Consent*)

CAMDIKEY

Last Mile Delivery

Population Registry

Business Registry

Tax Registry

Employment Registry

Agriculture Registry

Land Registry

SERVICES
(one services one applications)

PLATFORMS

DATA

This model excerpts from **David Eaves**'s Theory of Changes in Digital Transformation from Harvard University.

This is an example of **Online Business Registration Service**.

17

The Once-Only Principle
- Exchange data bet gov orgs via platforms such as CamDX

Interoperability as an Ecosystem
- Develop independent apps for each administrative service
- Link with other services

Land and Expand for Efficiency
- Develop various registries and service apps sequentially from where they can be done

Major digital-related policies: Pentagonal Strategy Phase 1 (2023)

In Cambodia, Triangular Strategy (1998-2003) and Rectangular Strategy (2004-2022) existed in the past, but in 2023, Pentagonal Strategy was announced with the addition of a tech component. Particularly in Pentagon 5, dev policy of digital economy is presented

Past strategies

2023 Pentagonal Strategy Phase I
- Hun Manet cabinet announced on Aug 24, 2023
- Top-tier socio-economic dev strategy in Cambodian gov

2018 Rectangular Strategy Phase IV

2013 Rectangular Strategy Phase III

2008 Rectangular Strategy Phase II

2004 Rectangular Strategy Phase I

1998 Triangle Strategy

Pentagonal Strategy Phase 1

Pentagons / Sides

1 Human capital development
- Enhancement of quality of education, sports, science, and technology
- Technical skills training
- Improvements of people's health and well-being
- Strengthening of social protection system and food system
- Strengthening of quality of citizenship of a highly civilized society with morality, equity, and inclusiveness

2 Economic Diversification and Competitiveness Enhancement
- Development of key sectors and new sources of economic growth
- Enhancement of connectivity and efficiency in transport and logistics, energy, water supply and digital sectors
- Improvements of business and investment environment
- Strengthening of efficiency and attractiveness of special economic zones (SEZs)
- Innovation of financing mechanisms and financial products to support investment

3 Development of Private Sector and Employment
- Promotion of micro, small, and medium enterprises, startups, entrepreneurship, and development of informal economy
- Strengthening pf public-private partnerships
- Development of labor market
- Promotion of competition
- Strengthening of banking system and non-banking financial sector

4 Resilient, Sustainable and Inclusive Development
- Optimization of demographic dividends, strengthening of demographic resilience and promotion of gender equality
- Sustainable management of natural resources, cultural heritages, and tourism
- Promotion of agriculture and rural development
- Strengthening of urban management and modernization
- Ensuring environmental sustainability and readiness for responding to climate change, as well as promotion of green economy

5 Development of Digital economy and Society
- Building digital government and digital citizens
- Development of digital economy, digital business, e-commerce, and digital innovation system
- Building and development of digital infrastructures
- Trustworthiness building in digital system
- Development of financial technology

Source: "Pentagonal Strategy Phase 1"

Overview of major gov orgs in Cambodia (Council/Committee)

NEDSC and 3 Committees were established as orgs to promote digitization in general. Although it is only a few years since its establishment and the demarcation and specific initiatives of each Committee are limited, specific initiatives such as CamDX, CamDigiKey (DEBC), and Verify apps (DBC) are quickly implemented

National Digital Economy and Society Council		
Advisory Board for Digital Technology[1]		**General Secretariat**
Digital Government Committee (DGC)	**Digital Economy and Business Committee (DEBC)**	**Digital Security Committee (DSC)**

	Digital Government Committee (DGC)	Digital Economy and Business Committee (DEBC)	Digital Security Committee (DSC)
Org overview	Established in 2022, led by MPTC • Org with a startup-like culture	Established in 2021, led by MEF	

Key personnel	• Mr. Chea Sereyvath
	  – Experienced in the private sector, leading DGC since 2023
		• Dr. Kong Marry
		  – Main compiler of DES Policy Framework
		• Dr. Taking Nguonly
		  – Executive Director of Techo
			Not established at this time

Areas of jurisdiction	Demarcation is not always clear for DGS and DEBC • DGC is G2G/G4C, DEBC is G2B (DGC explanation) • DEB has jurisdiction over digital gov and economic revitalization thru data exchange. DGC in in charge of initiatives closed within the gov (DEBC explains)		

Initiatives in digital areas	Build and operate a common nationwide system in a short period of time
	• Develop necessary systems across ministries. However, if requested by other ministries, develop solutions in collaboration with them
	• Capable of in-house dev
	  – 70 young/mid-career developers in charge of dev
	  – Some joint dev experience with Singapore GovTech
	• Little involvement in policy and legislation, claiming data centers are outside its jurisdiction
		Base Registry establishment and CamDX use are recommended
		• Emphasize raising demand for digital services by promoting info exchange thru CamDX etc.
		• Both gov and private sector aim to establish base registries and realize use cases based on the premise of CamDX use, but there is an issue in involving other ministries	

1. Expected to be an ad hoc working group and an org that provides policy-level advice to National Digital Economy and Society Council. Not established as of now, but may expect participation of national dev agencies, incl. JICA, in the future

Source: DEBC HP(Digital Economy and Business Committee – DEBC), local business trips

Overview of major gov orgs in Cambodia (ministries 1/2)

The areas of digital-related responsibilities are assigned to ministries according to the high-level strategies, but there are cases where the same initiative is assigned to multiple ministries, and cooperation among ministries will be be necessary. Interviews with other DP points out vertical division among ministries which may become a significant issue

Organization name	Interviewed	Overview of jurisdiction	e.g., of DG policy area in charge[1]
Ministry of Economy and Finance, MEF	✓	Responsible for financial monitoring, structure reform and coordination of economic/financial orgs, and mgmt. of the general economy and state finances	• Assigned as in charge of numerous items, mainly in areas of digital gov and digital infra
Ministry of Interior, MoI	✓	Responsible for national defense/admin. As part of admin, includes the prom of KhmerID	• Develops/improves ID related mgmt. systems • Organizes digital gov
Ministry of National Defense, MND		Oversees agencies and funcs to national security and Cambodian military	• Strengthens digital security mgmt./protection of national info infra
Ministry of Posts and Telecommunications, MPTC	✓	Responsible for dissemination of postal sys/ estab/mgmt. of info/comm systems	• Assigned as in charge of almost all items of digital gov/infra/innovation
Ministry of Industry, Science, Technology and Innovation, MISTI	✓	Responsible for industrial, scientific, tech, and innovation policies. Also in charge of collecting info on the informal sector	• Develops standards/policies to promote digital tech dev • Improves business registration platform
Ministry of Education, Youth and Sport, MoEYS	✓	Responsible for improving the level of education and raising awareness of cultural activities, incl. sports	• Promotes digital literacy from primary to higher education
Ministry of Foreign Affairs and International Cooperation, MFAIC		Responsible for diplomacy with other countries	• Develops/improves identification info mgmt. sys • Develops/improves immigration & visa info mgmt. systems
Ministry of Justice, MoJ		Responsible for the dev of legislation. Org and monitoring of the court mgmt. process	• Enacts a personal info protection law
Ministry of Land Management, Urban Planning and Construction, MLMUPC		Responsible for creating and monitoring urban dev guidelines	• Develops/improves national geographic info sys • Develops/improves real estate info mgmt. systems
Ministry of Agriculture, Forestry and Fisheries, MAFF		Involved in agrarian reform and usage policy, and in charge of directing the agricultural sector dev plan	• Develops/improves national geographic info sys • Develops/improves agricultural info mgmt. sys
Ministry of Civil Service, MoCS		Responsible for assisting civil servants	• Builds/improves info mgmt. systems for civil servants • Conducts digital literacy training for civil servants
Ministry of Commerce, MoC	✓	Responsible for supporting corporate and private dev and regulating domestic and int'l trade	• Enacts a personal info protection law • Improves business registration platform
Ministry of Culture and Fine Arts, MCFA		Responsible for cultural dev and training of specialists in various fields	• Amends the law on content posting/creation and formulates related legal docs
Ministry of Cult and Religion, MCR		Responsible for coordinating all domestic religions	N/A

1. For reference of digital-related areas in charge for each ministry, areas in charge described in DGP are excerpted
Source: Cambodia Digital Government Policy 2022-2035、Cambodian embassy in Japan website, Ministry of foreign affairs of Cambodia website, news articles, Interviews.
Note: Created based on publicly available information and hearings conducted locally, but please be aware that the information may not always be accurate

Overview of major gov orgs in Cambodia (ministries 2/2)

The areas of digital-related responsibilities are assigned to ministries according to the high-level strategies, but there are cases where the same initiative is assigned to multiple ministries, and cooperation among ministries will be be necessary. Interviews with other DP points out vertical division among ministries which may become a significant issue

Organization name	Interviewed	Overview of jurisdiction	e.g., of DG policy area in charge[1]
Ministry of Environment, MoE		Responsible for the protection, dev, mgmt., and use of natural resources Respond to environment pollution issues etc.	• Develops/improves national geographic info sys • Develops/improves integrated tourism info mgmt. sys
Ministry of Health, MoH		Provides public health care and conduct activities to educate/promote healthy lifestyle, in addition to creating a fair, safe, and healthy envir for the public	• Develops/improves emergency telephone sys for citizens • Develops/improves integrated medical info mgmt. sys
Ministry of Information, MINFO		Manage media censorship and info sharing Creates/develops media and publication regulations	• Develops laws on access to info • Works on digital literacy in cooperation with other ministries
Ministry of Labour and Vocational Training, MLVT		Responsible for labor, workforce, and vocational education	• Improves labor market info mgmt. systems • Educates the public about the use of digital techs/public services
Ministry of Mines and Energy, MME		Controls/manages electricity supply Responsible for energy policy and power dev	N/A
Ministry of Planning, MoP	✓	Plans socio-economic dev/manage gov statistical Responsible for tasks related to national dev	• Formulates data governance policy • Develops open data policy
Ministry of Public Works and Transport, MPWT		Manages infra construction/transportation Responsible for public works/construction	• Develops infra for postal services • Develops digital policies for smart cities
Ministry of Rural Development, MRD		Develops/promotes rural and mountain areas dev PJs Responsible for the relief and assistance of poverty-stricken rural communities	N/A
Ministry of Social Affairs, Veterans and Youth Rehabilitation, MoSVY		Oversees and manages domestic social sector, veterans, and youth rehabilitation	N/A
Ministry of Tourism, MoT		Responsible for introducing tourism resources, attracting tourists, and providing biz licenses in addition to promoting and managing the tourist industry	• Develops and improves integrated tourism info mgmt. system
Ministry of Water Resources and Meteorology, MoWRaM		Manages water resources and weather politically and scientifically	N/A
Ministry of Women's Affairs, MoWA		Achieves the reduction of gender disparities in laws and policies, society, and within the family	N/A
Ministry of Inspection		Responsible for formulating laws and regulations, disseminating enforced laws, raising public awareness of the law, and preventing corruption and abuse of power	N/A

1. For reference of digital-related areas in charge for each ministry, areas in charge described in DGP are excerpted
Source: Cambodia Digital Government Policy 2022-2035、Cambodian embassy in Japan website, Ministry of foreign affairs of Cambodia website, news articles, Interviews.
Note: Created based on publicly available information and hearings conducted locally, but please be aware that the information may not always be accurate

Overview of major gov orgs in Cambodia (other gov orgs)
Below are other digitization-related stakeholders that is highlighted in this assessment

	Org name	INTV	Overview of jurisdiction	Related ministries
3-2 Social security	National Social Protection Council (NSPC)	✓	• Responsible for overall coordination and steering of the dev of social protection strategies/policies • Develops registry/PF based on SPID and CamDX premise, but still in the demo phase in some areas	MEF seems to have a strong influence • Headed by Chairman MEF, consisting of reps from MoSAVY, MoLVT, CARD, MoI, MoH, MoP, MoJ, MoCS, etc.
	National Social Security Fund (NSSF)	✓	• Responsible for implementation of each social security scheme	MoLVT seems to have a strong influence • Headed by President MoLVT, consisting of reps of MEF, MOH, etc.
	Health Equity Fund (HEF)		• Largest social health protection sys in the country aimed at improving access to health services for the poor • has a low-income household mgmt. database called IDPoor	MOH seems to have a strong influence
11-2 Tech/start up	Techo Startup Center (TSC)	✓	• Builds CamDX/CamdDigiKEY in house with X-Road as a ref • Supports tech startups from launch to scale	MEF's jurisdiction • Headed by Chairman Dr. Kong Marry, Secretary of State, consisting of reps from MOC, MPTC, and MISTI
	Khmer Enterprise (KE)	✓	• Aims to build a domestic Business Ecosystem • As a Business Coordinator, conducts training, funding, biz matching, etc., for a wide range of actors incl. students, Startup/entrepreneurs, investors, etc	Moved from the jurisdiction of MEF to that of MISTI • Established as an implementing unit of EDF under jurisdiction of MEF • To be moved to the jurisdiction of MISTI in 2024
4-2 Digital literacy	Cambodia Academy of Digital Technology (CADT)	✓	• Responsible for Digital human resources dev • Consists of IDT (education), IDG (technical training for gov), IDRI (Policy/biz training, Research), and offers program in cooperation	MPTC seems to have a strong influence • Headed by Secretary of State of MPTC as Chairman of council, board members consist of reps from MOEYS, MEF, MCS, and CADT
14 Financial Sector	National Bank of Cambodia (NBC)	✓	• As Cambodia's central bank, responsible for the supervision of financial institutions. Also in charge of formulating policies in the financial area	-

Source: Interviews, Each government agency website

Digital ecosystem assessment report: Table of contents

The scope of disclosure for the roundtable meetings, governments and other donors will be discussed separately

Disclaimer

This survey was prepared based on public information and hearings with local stakeholders.
Please be aware that the information in this chapter may not be accurate.

List of specific survey items
The following highlighted items were surveyed in this assessment

Assessment Items　　**Sub-items**　　　　　　　　□ : covered by the survey　□ : not covered

a Digital Governance

#	Assessment Item	Sub-items
1	Rights, Principles and Laws	Development of digital related laws and rules
2	Central / Local Government	2-1 Digitization of government operation ｜ 2-2 Digitization of government service(G4C)
3	Public or government entity	3-1 Digitization of core infrastructure (roads, electricity, gas, water) ｜ 3-2 Social security ｜ 3-3 Digitization of healthcare ｜ 3-4 Others (agriculture/postal etc.)
4	EdTech / Digital Literacy	4-1 Digitalization of education(EdTech) ｜ 4-2 Digital Literacy
5	Civil Society/Media	Status of citizens' activities in defense of digital rights

b Digital Infra-structure

#	Assessment Item	Sub-items
6	Telecommunications Networks	6-1 Fixed comm ｜ 6-2 Mobile comm ｜ 6-3 Network distribution ｜ 6-4 Infra equipment
7	Data Storage Infrastructure	7-1 Data center
8	Base Registry	8-1 Base registry
9	Data exchange/ID	9-1 ID ｜ 9-2 Identification (KYC) ｜ 9-3 Data exchange platform[2] ｜ 9-4 Other functions
10	Cybersecurity	10 Cyber security

c Digital Innovation

#	Assessment Item	Sub-items
11	ICT industry	11-1 Telecom company ｜ 11-2 Other ICT industry coms
12	Startup Ecosystem	12-1 Startup ecosystem
13	Digital human resources	13-1 Quantity/quality of digital human resources (incl. higher education) ｜ 13-2 R&D
14	Financial Sector	14-1 Financial Insititutions[3] ｜ 14-2 Financial Inclusion ｜ 14-3 Payment Infrastructure ｜ 14-4 Financial information utilisation
15	Trade bodies/Commerce	15-1 Digitization of business transactions (e.g., E-commerce) ｜ 15-2 Digitization of trade (customs clearance)

1.Compulsory education is included in the public sector, but is organised as a separate category from ③ in order to survey basic education in general, including digital literacy initiatives in general2. In the case of Cambodia, CamDX is relevant 3. in addition to central banks, banks and microfinance, non-banks and payment providers are also included

25

a Digital governance (As-Is/To-Be)

Focus items of the current survey

As-Is

To-Be

1 Rights, Principles and Laws

Dev of digital related laws/protection of indiv. rights are still under dev
- Completed drafts of several laws incl. Personal Data Protection law, Digital Law, Cyber Security Law, etc., awaiting approval for comments
- Gov agencies in charge have been assigned to policies (DES[1],DGP[2]), but there is no mandatory rules/legal basis

Enhance governance within the gov thru enactment of Sub-Decree
- Data governance policy/open data policy/enactment of digital gov related laws, etc. are described (DGP[2])
- Enactment of rules necessary for the penetration of gov rules (establishment of Digital Transformation Unit, gov standards, etc.)

2 Central government/ Local gov

E-government indicators have room for improvement
- 127th out of 193 countries in 2022 (E-Gov index published by UN[3])
- Under a policy of Small Start, each ministry works on priorities such as digitization of admin services and paperless of admin tasks
- DGC[4] is working on developing cross-agency solutions

Digitize gov services and promote mutual linkage of gov data
- Digitization/improvement of gov service level thru mutual linkage of gov data by using data exchange platform and unified ID system
- Administrative digitization led by DEBC[5]/DGC[4]/DSC[6] (some overlapping efforts may continue due to vertical div among ministries)

3 Public or government entity (current survey is for social security only)

Social security coverage is limited
- Social security use rate is still around 30% (NSSF[7]15%, HEF[8]15%)
- Plans to expand services to informal, but no concrete method has yet been determined
- Demos for data integration with social security unified ID (SPID[9]) were already conducted last year to improve the efficiency of social security mgmt.

Expand social security coverage and establish a centralized platform for social security related info
- Development of info linkage platform for various social security service providers such as NSPC[10], NSSF[7], and HEF[8] (incl. SPID[9])
- NSSF[7]: extended coverage/services. Consider building a common DB among multiple services within social security (Prospects for linkage with NSPC[10] plan are unknown)

4 Education/ Digital literacy

Digital literacy is not sufficient
- There are multiple demonstrations of the introduction of digital measures in education, but challenge is not only infrastructure, but also the lack of teachers' ability to utilize digital technology.
- According to 2023's survey, about 70% of SMEs do not use the internet at all, and the remaining 20% only use 1-2 tools

Improving learning and reducing educational disparities through the introduction of digital measures in the field of education Strengthen digital literacy through Community Tech Centers
- Nationwide expansion of Community Tech Centers to educate the general public and implementation of digital literacy programs for government employees at CADT[11]

5 Civil society/media

Pushback from civil society groups on press freedom is significant
- Scores 43 out of 100 in the 2022 Freedom on the Net, 142nd out of 180 countries in reporters without borders' 2023 press freedom index
- Int'l orgs have pointed out the possibility of digital piracy thru SNS, esp. Facebook censorship

(No clear goals as the gov policy has been identified)

1. Digital Economy and Society Policy 2. Digital Government Policy 3. United Nation 4. Digital Government Committee 5. Digital Economy and Business Committee 6. Digital Security Committee 7. National Social Security Fund 8. Health Equity Fund 9. Social Protection ID 10. National Social Protection Council 11. Cambodia Academy of Digital Technology
Source: Interviews with local ministries/related orgs, Article search Note: Based on publicly available information and interviews in the field, but please note that the information may not always be accurate

b Digital infrastructure

	As-Is	To-Be
6 Telecommunications Networks	4G dev is progressing incl. in rural areas, but there are still issues to be addressed. No 5G intro planned. Fixed line telecoms incl. optical fiber/FWA[1], are also lagging behind • In addition to rural areas, 4G coverage is declining in urban areas due to the increase of high-rise buildings • 5G launch included in national strategy, but no deployment plan • MPTC[2] launched USOFund[3] in 2018	MPTC will prepare a master plan for telecom network expansion; priority given on 4G, but 5G and fixed-line telecoms will also be discussed • A study on gov dedicated NWs thru ADB[4] planned • Priority will be given to promoting 4G coverage, stability, and usage, while 5G will be considered in response to 5G prom in Pentagonal Plan • Establish National Internet Gateway (item to be noted)
7 Data storage infrastructure	Each ministry owns data center (server rooms) which are not connected with each other. Commercial data centers tend to increase investment • Some gov agencies have own data centers (DCs), but they are not interconnected. MPTC[2] promotes the construction of a national DC • There are several investment plans for new DCs by the private sector. Licensing system introduced	Expand commercial/gov use of national DC (Assuming that unification of national DC for gov data will be difficult) • Create a national DC operation/revenue model • Promote the use of national DC (e.g., introduce Sub Decree[5] requiring domestic storage of .kh domains)
8 Base Registry	Technical/resource issues exist in developing the database that can be used as a base registry • Some ministries still have paper data • Decision of base registry building is made by each ministry • Data quality is unknown, and data cleaning tech/resources are insufficient	Establish and maintain a high-quality database for each ministry • DEBC[6] recognizes the maint of the base registry as a top priority • Aim to have each ministry maintain a database for their area of responsibility and to ensure that it continues to operate
9 Data exchange	Digital IDs are in disarray, and there is no common universal ID • There is a plan to build ID infra (IPIS[9]) based on the unified ID code (UIC[8]) in IMoI[7], but concrete initiatives and goals are unclear Already built CamDX on its own. Use cases are limited. • 50 organizations (27 private sector) are registered as members of CamDX, and banks are using the national ID authentication function as eKYC. Current use is limited	MoI establishes a unified ID (UIC) to be used by all citizens throughout their lives and to be widely used by other ministries/private services • Develop/implement ID infra (IPIS) by MoI based on UIC CamDX use expanded to all ministries/throughout the country • Establish base repository + use cases in 10 gov agencies
10 Cyber security *DX room is investigating separately and is not included in the scope of this deep dive	Strategy, framework, and operational capacity for cyber security are not sufficient • Legislation, framework operational capabilities are not adequate for cyber security • SoC[10] pilot underway, using open source	Promote national cyber security initiatives on Digital Security Committee • Establish/operate Digital Security Committee • Promote CamCERT[11] as national CSIRT, enhance critical infra coordination, expand legal systems, etc.,

1. Fixed Wireless Access 2. Ministry of Post and Telecommunication 3. Universal Service Obligation Fund 4. Asian Development Bank 5. Sub-Decree On Management and Use of National Domain Names on the Internet (2022, No.287)
6. Digital Economy and Business Committee 7. Ministry of Interior 8. Universal Identification Code 9. integrated population identification system 10. Security Operation Center 11. Cambodia Computer Emergency Response Team
12. Digital Government Committee
Source: Interviews with local ministries/related orgs, Article search

c Digital innovation

Focus items of the current survey

		As-Is	To-Be
11	**ICT industry** (Only telecom companies are covered in this survey)	**Telecom companies offer low-cost services** • The 5th lowest price of 4G in the world. Issues in coverage and quality of communication **Use USOFund[2], operated by MPTC[1], to expand rural telecom network** • Operation started in 2018. Mainly used for tower construction in rural areas	**Telecom companies aim to expand coverage while maintaining low prices** • Each company plans to invest in infrastructure (mobile communication is mainly 4G). 5G may be considered if MPTC grants license • State-owned telecommunications operator (Telecom Cambodia) management policy is unclear
12	**Startup Ecosystem**	**Number, quality, and funding of startups are limited** • About 30 incubators and accelerators incl. gov, univs, and donor programs support startups, but VCs and investors are scarce • Digital development fund supports pre-seed/seed stage	**Expand presence of investors, funds, and tech accelerators** • Establish gov-led investment schemes • Develop infra, institutions, etc. to attract investment **Expand non-financial support program and increase in no. of series A companies**
13	**Digital human resources**	**High-level human resources are in short; lack of industries to receive advanced human resources** • As of 2018, only 38 out of 123 public/private higher education insts offer 4-year ICT bachelor's degree programs • The rate of univ graduates is 4.8% compared to ASEAN avg of 12.9%	**No clear goals identified by the gov** • Although there is a vision of becoming a middle-income country by 2030 and a high-income country by 2050, the size/requirements of digital human resources needed have yet to be developed
14	**Financial Sector**	**Challenges exist, especially in access to formal financial services** • Insufficient data quality and utilization at the central bank • Certain interoperability of digital payments thru using Bakong is ensured • Local and gender disparities in access to financial services exist. Multiple debtors due to lack of financial literacy, etc. are also a social issue • CBC[4] is handling the linkage of credit information. The challenge is to incorporate non-regulated financial institutions[6]	**Promote using digital data by financial institutions[6] including central banks and other financial institutions. Use of Fintech to promote financial inclusion** • Realization of efficient operations based on accurate data by central banks • Introduction of Bakong in high value interbank payments and further expansion of payments among other countries • Improvement of financial inclusion through the use of digital technology by microfinance institutions to raise the quality and efficiency of their operations and improve their financial literacy • Reduction of over-indebted borrowers by consolidating information on loans, including non-bank and informal finance[5]
15	**Trade bodies/Commerce**	**Promoting the use of E-Commerce (EC), but insufficient regulations related to consumer protection** • Personal transactions through Facebook are the mainstream • SME support for EC expansion (Go4eCAM project) end in Sep 2023 • Guidelines for consumer protection still do not cover EC **Digital system for customs facilitation is implemented. Operational challenges remain, but promoting paperless import/export procedures**	**Activate domestic and international transactions through EC and formulate a policy to respond to overseas digital services** • Expand sales channels through using SME's domestic and international EC • Establish a government policy for digital trade (digital products) **Regional collaboration for system coordination, legislation, and capacity building** • Need to collaborate with neighboring countries and the region as a whole to promote digital format in financial/logistics areas, and to develop laws for EC

1. Ministry of Post and Telecommunication 2. Universal Service Obligation Fund 3. Digital Economy and Business Committee 4. Credit Bureau Cambodia 5.pawnshops, loans by housing providers, rural credit institutions, traditional village mutual aid 6. banks, microfinance, including non-banks, etc.,
Source: Interviews with local ministries/related orgs, Article search

1-1 Rights, principles, and laws

Legislation is planned to be established, but since the emphasis tends to be on the "authority of the state", it is crucial to balance "freedom", "protection of individual rights", and other related elements, to realize content that contributes to digitization throughout the country, and to smoothly pass higher-level legislation

Major relevant gov agencies

- MPTC
- MOI

Relevant strategies, policies, plans

- Digital Economy and Society Policy 2021-2035 (DES Policy)
- Digital Government Policy 2022-2035 (DGP Policy)

Key donor support

EU
- Cyber 4 Dev

Other countries
- Comments on various Drafts

Gap

As-Is 🌱

To-Be 🌳

Legislation

Coverage status

Dev of digital laws is still in progress
- Only a few laws and regulations have been passed, but several laws and regulations are planned to be developed under the new policies (DES, DGP)
- Gov agencies have been assigned to the policies described in the policy, but there are no rules or legal basis to enforce them

Digital gov will be strengthened
- Necessary legal systems will be established to promote the new policy
  - Enact various related laws, establish Digital Transformation Unit, establish gov standards, etc.

Priority/basic philosophy

Focus on areas closely related to "authority of the state"
- Overall, the trend is to place more emphasis on "authority of the state" than on "protection of individual rights"
- Legislative dev is moving ahead with deliberations on security-related laws, incl. state surveillance

Provisions for "freedom" and "protection of individual rights" in digital sector will advance
- In promoting the new policy, work will begin on the dev of laws/regulations related to the "protection of individual rights", such as the personal info protection law
- Content is expected to broadly recognize the authority of the state, and it is expected that a certain level of freedom and individual rights will be recognized on a global level, in balance with economic dev

National mgmt.

Heavy use of Sub-Decree
- Mainly use of Sub-Decree/Parakas and other subordinate legislation to respond to rapidly changing social and political conditions in the country
- Inconsistencies among legal docs occur due to the priority on speed

Superior law = personal info protection law will be enacted to ensure consistency of digital-related laws
- Personal info protection law is currently under consideration. Draft is under examination
- Enactment of the superior law is expected to partially resole inconsistencies bet documents

Note: Backup materials include "digital laws in Cambodia" and "characteristics of the legal system in Cambodia" in Appendix
Source. Cambodian gov public docs, interview with MPTC (conducted in Nov. 2023), JICA expert knowledge, Article search

Digital related laws overview

Four main areas of regulation that need to be covered by digital related laws

Scope of digital related laws

Each country is developing related laws in response to the growing use of digitalization and data

The following four areas of digital regulations are particularly important
- Personal data protection
- Other data protection
  Regulations related to the protection and security of non-personal data (e.g., industrial data)
- Data access/sharing
  Regulations aimed at facilitating data distribution especially data access, rather than data protection
- Market environment development
  Regulations related to the dev of a sound data market, incl. biz regulations

Strictly speaking, not only laws but also their sub-rules (guidelines etc. are important in the practice of data distribution, but in this survey, the main focus is on "laws", and guidelines and detailed implementation rules are sorted out only when they are noteworthy

Digital related laws (≒ data related laws) overview

Various types of data distribution are used within daily business ops of operators, and each operator fulfills the relevant regulations and uses various systems to achieve data distribution

Data protection regulation

Data distribution regulation

| Personal data protection | Other data protection | Data access/sharing | Market envir dev |

Regulation (gov)

- Comprehensive personal data laws e.g.) Personal Data Protection Act
- Various laws e.g.) Cyber Security Act
- Various laws e.g.) Open, Public, Electronic and Necessary Gov Data Act
- Various laws e.g.) Provider regulations

Other individual laws

Guidelines/handbooks

Regulation (gov/ Various orgs)

Various systems
e.g.) Contracts, certifications, standards

Practice/ operation (business)

Operation in daily business

If cross-border transfers are involved, use the laws of the other country and applicable systems

Cambodia's digital related laws (1/2) : overview

Legislation is in its early stages; strong security trends in law dev, diverging from int'l trends

Established　Under discussion/preparation

Overview

Currently, Cambodia does not have a comprehensive law that clearly defines the protection of personal data. Various individual laws, such as the Law on Electronic Commerce (2020), only partially regulate data protection.

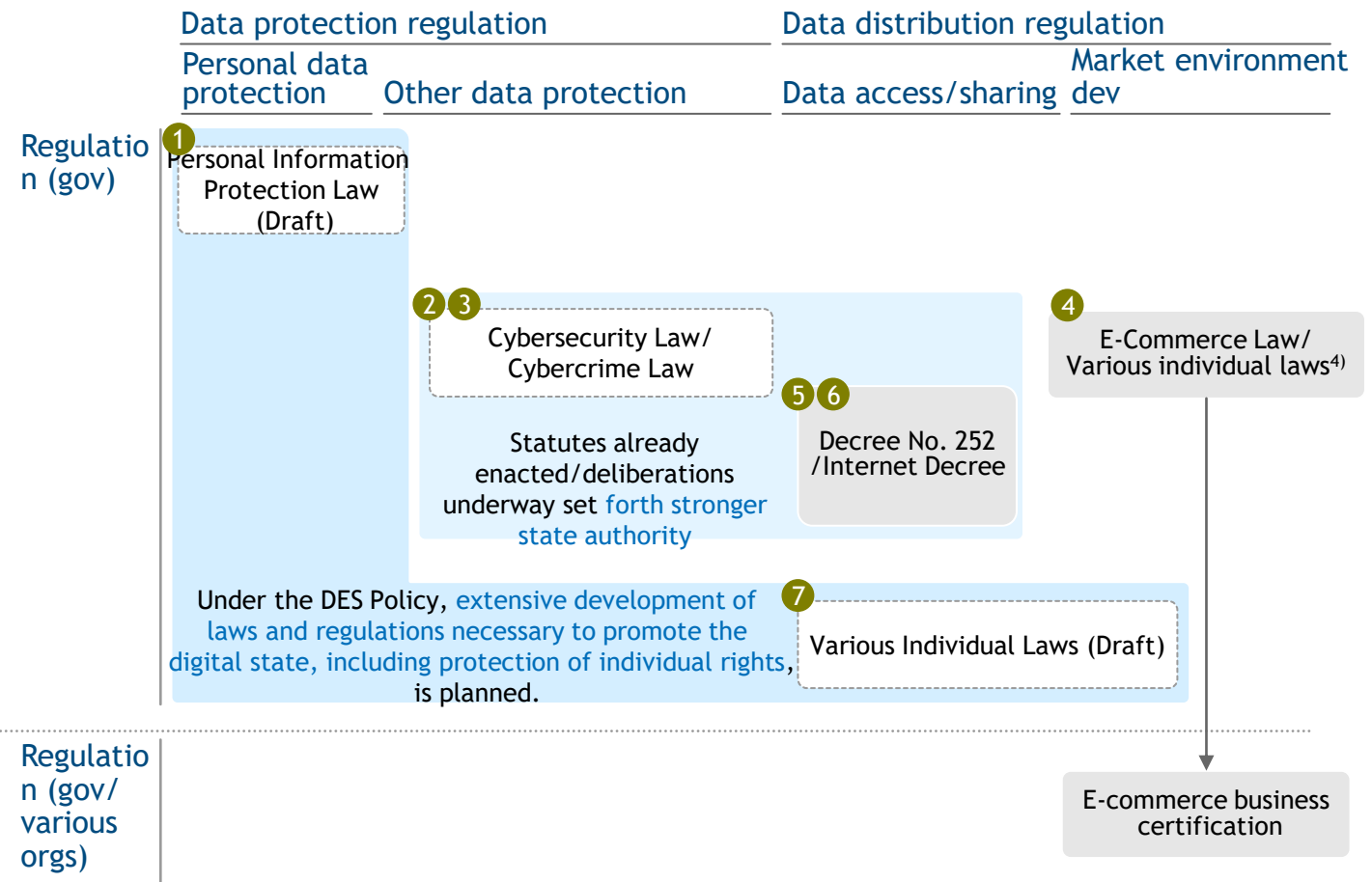Most notably, since the late 2010s, the definition of "personal data" has been discussed at the decree level. However, Cambodian law tends to emphasize security and state authority, such as "surveillance," rather than "rights protection," and has often been criticized internationally[1]
.

Most recently, under the new strategy[2] , several laws and regulations[3] necessary to realize the digital state are scheduled to be formulated. The planned legislation includes the Law on the Protection of Personal Information and other laws focusing on the "protection of individual rights," and it is necessary to keep a close eye on how the traditional Cambodian legal philosophy (which emphasizes the authority of the state) will be reflected or whether it will change in line with the country's development.

In addition, the country tends to use many sub-decrees and subordinate laws in the development of laws, and it will be interesting to see whether the development of higher level laws will progress in line with the country's development.

Overall structure of Cambodian data related laws

Data protection regulation　　Data distribution regulation

Personal data protection　　Other data protection　　Data access/sharing　Market environment dev

Regulation (gov)

1 Personal Information Protection Law (Draft)

2 3 Cybersecurity Law/ Cybercrime Law

4 E-Commerce Law/ Various individual laws[4]

5 6 Decree No. 252 /Internet Decree

Statutes already enacted/deliberations underway set forth stronger state authority

Under the DES Policy, extensive development of laws and regulations necessary to promote the digital state, including protection of individual rights, is planned.

7 Various Individual Laws (Draft)

Regulation (gov/ various orgs)

E-commerce business certification

1. There has been a lot of int'l criticism of Cybersecurity Law, Cybercrime Law, and internet decree in particular, and statements have been issued by int'l orgs such as UN ("Cambodia: UN must increase scrutiny of human rights crackdown" (2021)、"Cambodia Human Rights Crisis: The UN Human Rights Council Should Act Now" (2021)、"Cambodia: Ministries should withdraw draft cybersecurity law which would threaten human rights and expose people to increased cyber threats" (2023) , etc.)、2. Some info protection has been regulated in individual laws in the financial and info and comm fields (Law on Banking and Financial Inst. (1999), Law on Telecoms (2015))

Cambodia's digital related laws (2/2): Details
Legal dev and discussions have been active since the late 2010s

#	Laws and regulations	Year enacted	Subject of regulation	Overview
❶	Personal Data Protection Law	Preparing (Draft)	—	Expected to include significant restrictions on the use and distribution of personal data, such as requiring strict disclosure obligations on coms[1]
❷	Cybersecurity Law		Public/private orgs providing services in the subject area	The purpose is to "establish principles, rules, and mechanisms for managing / maintaining the cybersecurity of critical info infra with the aim of ensuring the security and sustainability of critical national services" (Article 1) but has been criticized by intl orgs for allowing broad regulation and (excessively) severe penalties[2]. MPTC is currently preparing a Final Draft[3]
❸	Cybercrime Law		—	Deliberations have been ongoing since 2017. While it has improved with each edition, the definition of cybercrime is value and broad, and it broadly allows for state regulation (state restrictions and strict oversight)
❹	E-Commerce Law	Enacted in 2019 Enforced in 2020	Applicable orgs	For the handling of personal data on electronic systems, while primarily regulating business operators, established for a wide range of general matters, incl. the following. Established the treatment of personal data only to the extent relevant • If applicable to "intermediary" or "e-commerce service provider", required authorization from the relevant gov agency • Requires applicable biz operators to take data protection measures when using personal data in electronic systems
❺	Sub-Decree No. 252 on the Management, Use, and Protection of Personally Identifiable Data	Enforced in 2021	Public/private insts with access to MoI/personal data belonging to MoI	It is the first in Cambodia to use a term similar to "personal data" and to establish general principles for its mgmt., use and protection. It is characterized by the following features • Applicable only to personal data belonging to MOI (limited scope of application) • Allows public/private orgs to use personal data owned by MOI thru a procedure
❻	Sub-Decree on the Establishment of a National Internet Gateway	Enacted in 2021	National internet gateway operator and all internet connections	**It established the founding of gov-controlled gateway and addition of gateway by all internet. It is positioned as part of cybersecurity regulation but on the other hand, it has been criticized internationally because it allows for strict regulation by the state, incl. possibility of mass surveillance of online activity[2]**
❼	Law on Digital Government, Law on Information Communication Technology (ICT), Law on Telecommunications and Related Regulations, Law on the Right to Access Information will be prepared			

Ref) Characteristics in the dev of legal structure in Cambodia

Recap

Cambodia's legal system itself is a general legal system with the Constitution as the highest level, but there is a tendency to use many subordinate laws under Sub-Decree

Characteristics of legal dev in Cambodia: Extensive use of subordinate laws

Heavy use of Sub-Decree, Parakas, and other subordinate laws for the following reasons;

- Basic legal system is not well developed
- It takes time for congressional approval due to the complex political situations
- Response to rapid social changes (Laws/Acts are not speedy enough)

In enactment, priority is given to speedy issuance of necessary laws/docs (quality < speed), not to sufficient discussion or completeness of laws/docs

Inconsistencies bet laws/docs occur frequently, but in reality, inconsistencies are tolerated at the time of enactment and correct or supplemented when they are discovered etc.

Cambodia's legal system

Laws and regulations	Details
The Constitution	The constitution of the kingdom of Cambodia enacted in 1993 after congressional approval. The highest level of all laws/regulations, and orders
Law/Act (Chhbab)	Laws and regulations. Requires congressional approval
Royal Decree (Royal Kram)	Royal decree. An order issued by the King in his name within the scope of his constitutionally granted powers. No congressional approval required
Sub-Decree (Anu-Kret)	Decrees and council of ministries decrees, supplementing Law and Royal Decree. The process of promulgation (who is responsible for promulgation etc..) has the following variations, but in all cases, congressional approval is not required • Issued solely by the authority of Prime Minister within the scope of the constitutional/related laws • Adopted by the council of ministers • Issues only by the signature of the Prime Minister and the competent ministries
Ministerial Order (Parakas)	Ministerial ordinances and ministerial orders. Issued by gov ministries within the authority provided by law. No congressional approval required

Superior law

Subordinate law (order)

Note: Above describes laws and regulations at national level only and up to the order level. State laws are not described.
Source: Local expert interviews, JICA "Cambodia investment guidebook 2013 I-1", Data bank for info on intellectual property in emerging and other coms "How to access laws and regulations related to intellectual property in Cambodia" (May 2019)

Ref) Sub-item sorting image of **2**

2-1 investigates digitization within the government, and **2-2** is for digitization of service related to G2C
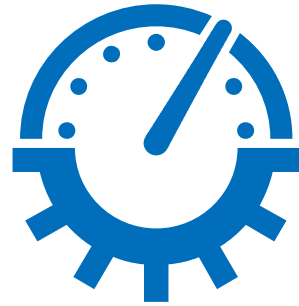
2-1 **Digitization of government operation**

In terms of improving efficiency of administrative operations (central and local), we investigated the gaps of
- Digitization within each ministry and agency
- Digitization of inter-ministerial cooperation

2-2 **Digitization of government service (G4C)**

In terms of G2C / G2B, we investigated the gaps of
- Digitization of various sorts of administration
- Information dissemination for citizens

2-1 Digitization of government operation

Since the publication of the Digital Government Policy (DGP) in 2022, the DGC has been established in Cambodia, and efforts to digitize administrative operations have begun. However, it is still in the early stages of implementation, and the gap between the government's goals and the DGP is expected to be large.

Major relevant gov agencies

- Digital Government Committee
- Ministries and agencies assigned roles in Digital Government Policy

Relevant strategies, policies, plans

- Digital Economy and Society Policy 2021-2035 (DES Policy)
- Digital Government Policy 2022-2035 (DGP)

Key donor support

N/A

Gap

Central Gov

As-Is

Efforts are underway to digitize systems related to administrative operations, but there are still many issues to be addressed.
- DGC[1] works on the development of cross-agency solutions (e.g., VERIFY, which manages government documents using blockchain), but still in the early stages
- The development of ID and base registry can be challenging, especially in operation digitization of national data (more in ⑧ and ⑨).

Institutional and policy efforts are in progress.
- DGP[2] was announced in 2022, but detailed policies/plans are still under consideration.
- DGC is organized as a system, but there are issues in terms of cooperation with other ministries and agencies.

To-Be

Improve work environment of ministries, agencies, and parastatal administrations through the use of digital technology
- Implementing electronic devices and software necessary for paperless operations
- Improved operational efficiency by designing and improving intergovernmental (G2G) services to make them simpler and easier to use
- Strengthen cooperation among ministries and parastatal administrations
- Develop & improve procurement management systems   etc.

Institutions, policies, and systems are in place to promote the digitalization of public administration
- Enactment of laws on digital government
- Establishment of policies to promote software utilization and development
- Establishment of Open-data policy,   etc.

Local Gov

Although the gap is seen as large, this assessment first targets the status of digitalization of the central government, and does not cover in-depth research.

1. Digital Government Committee, 2. Digital Government Policy 2022-2035
Source. Cambodia Government Public Materials 、DEBC, Interview to DGC (2023/11), JICA expert interview, web research

Ref) Verify.com
Document Verification Platform developed by DGC won Gold in ASEAN Digital Awards 2024

Source: Cambodia's VERIFY.GOV.KH Document Verification Platform Wins Gold in ASEAN Digital Awards 2024 – ក្រសួងប្រៃសណីយ៍ និងទូរគមនាគមន៍ (mptc.gov.kh)

Ref）GTMI（GovTech Maturity Index）overview
World Bank's GTMI can be referenced as an indicator of the digitization of administrative ops/services

GTMI（GovTech Maturity Index）overview

GTMI is a comprehensive indicator of digital transformation in the public sector developed by the World Bank
- GTMI was developed by the World Bank as part of its GovTech initiative
- GTMI consists of the following four indicators

CGSI（Core Government Systems Index）
- Measures of support for core gov systems
- Calculated from 18 indicators on key aspects of overall gov approach, incl. gov agency cloud, interoperability frameworks, and other platforms

GTEI（GovTech Enablers Index）
- Measures of environment and other developments to promote GovTech
- 16 indicators assessing strategies, systems, laws, regulations, digital skills, innovation policies and programs to promote GovTech

PSDI（Public Service Delivery Index）
- Measures of enhanced service delivery
- Calculated from 9 indicators measuring the maturity of online public service portals with a focus on citizen-centered design and universal accessibility

DCEI（Digital Citizen Engagement Index）
- Measures of mainstreaming citizen engagement
- Calculated from 6 indicators measuring aspects of citizen participation platforms, citizen feedback mechanisms, open data, and open gov portals

Survey items and response
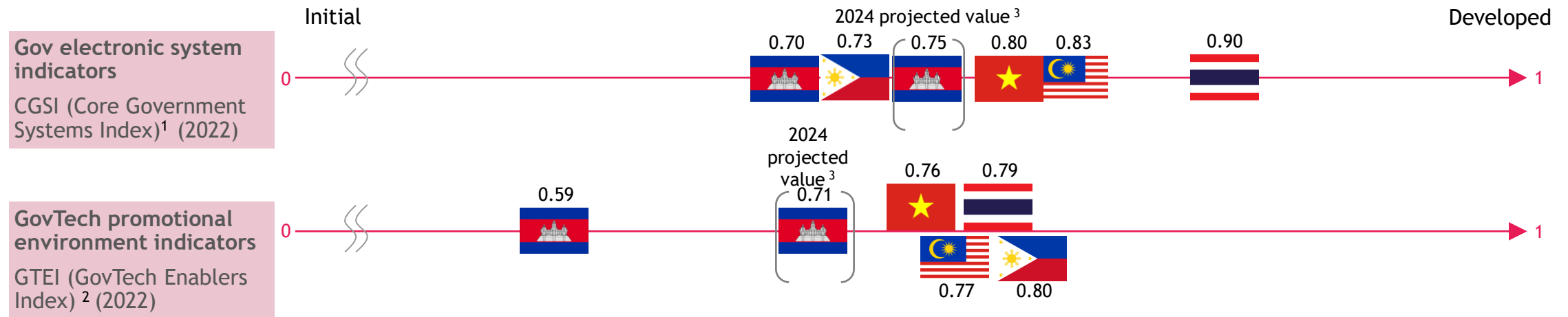
2-1

Digitization of government operation

2-2

Digitization of government service (G4C)

Source：World Bank HP, other Web searches

Comparison with the status of initiatives in other countries regarding the digitization and operational efficiency of administrative ops

Cambodian gov's electronic system and environmental improvement for promoting GovTech lag behind other countries, and many initiatives are still in progress

Initial   2024 projected value [3]   Developed

Gov electronic system indicators

CGSI (Core Government Systems Index)[1] (2022)

0.70   0.73   0.75   0.80   0.83   0.90

GovTech promotional environment indicators

GTEI (GovTech Enablers Index) [2] (2022)

0.59   2024 projected value [3] 0.71   0.76   0.79

0.77   0.80

According to the gov's assessment of electronic systems (CGSI), Cambodia is slightly behind ASEAN countries, and many are still under dev
- In Cambodia, e-procurement portal、public investment management system (PIMS) are not yet developed
- Gov architecture/interoperability framework and open-source policies were under dev (Drafting stage)(As of 2022)
  - Government enterprise architecture framework was scheduled to introduce by 2023
  - In interoperability framework, Digital Government Development Framework was scheduled to introduce by 2022. In Government open-source software policy/action plan, National Policy on Digital Development was scheduled to develop in 2022

In the GovTech prom environment (legislation/systems, etc.)(GTEI), some orgs are not developed, and legislation is under dev
- Data Protection Authority was not yet developed (As of 2022)
- It was partially under dev regarding laws/regulations on data protection and disclosure (Drafting stage)(As of 2022)
  - RTI (Right to Information) Laws was scheduled for approval in 2022
  - Data Protection / Privacy law, Data Protection Authority were scheduled for approval in 2023
  - Digital signature regulation and PKI to support service delivery were scheduled to introduce in 2023
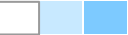
1. Integrated index of 17 assessments, incl. gov cloud services, interoperability platforms, enterprise architecture, etc. 2. Integrated assessment of 16 assessments incl. strategy, institutions, and regulations, as well as digital skills and innovation programs. 3. To-be estimate of 2024 reflects values with updates from 2022 data as of 2024, with changes in assessments. Updated to be "Yes" (maint) for I-2,3,34,37,38,42. However, values from ext surveys such as UN, ITU, etc. are not updated/reflected.
Note: The data is for the year 2022 and does not reflect info as of 2024. The year of planned maint as of 2022 is shown as "planned", and need to confirm at interviews etc., whether or not it is actually being maintained as of now
Source: The World Bank GovTech Maturity Index

Ref) Comparison with Southeast Asias' efforts in digitization of gov't ops (1/2)

In terms of government digitization systems (CGSI values), Cambodia lags slightly behind ASEAN countries, but some gaps are being filled.

☐ ☐ ☐ : The greater the progress, the darker the color.

Ind	CGSI's composition (18 items in total)	Cambodia	Malaysia	Thailand	Singapore	Philippines	Vietnam
CGSI	Core Government Systems Index score: 0-1	0.70	0.83	0.90	0.77	0.73	0.80
I-1	Is there a shared cloud platform available for all government entities?: 0 (No)-2 (Yes)	2	2	2	2	2	1
I-2	**Is there a government enterprise architecture framework?** : 0 (No)-2 (Yes)	① 1	2	2	2	2	2
I-3	**Is there a government interoperability framework?** : 0 (No)-2 (Yes)	② 1	1	2	2	2	2
I-4	Is there a government service bus platform? : 0 (No)-2 (Yes)	2	2	2	2	1	2
I-5	Is there an operational FMIS in place to support core PFM functions? 0 (No)-2 (Yes)	2	2	2	2	2	2
I-6	Is there a TSA supported by FMIS to automate payments and bank reconciliation? : 0 (No)-2 (Yes)	2	2	2	2	1	2
I-7	Is there a Tax Management Information System in place? : 0 (No)-2 (Yes)	2	2	2	2	2	2
I-8	Is there a Customs Management Information System in place? : 0 (No)-2 (Yes)	2	2	2	2	2	2
I-9	Is there a Human Resources Management Information System with self-service portal? : 0 (No)-2 (Yes)	2	2	2	2	2	0
I-10	Is there a Payroll System (MIS) linked with HRMIS? : 0 (No)-2 (Yes)	2	2	2	2		2
I-11	Is there a Social Insurance system (non-health) providing pensions (including public sector) and other SI programs? : 0 (No)-2 (Yes)	2	2		2	2	2
I-12	**Is there an e-Procurement portal?** : 0 (No)-2 (Yes)	① 0	2	2	2	2	2
I-13	Is there a Debt Management System (DMS) in place? (foreign and domestic debt) : 0 (No)-2 (Yes)	2	2	2	2	2	2
I-14	**Is there a Public Investment Management System (PIMS) in place?** : 0 (No)-2 (Yes)	② 0	2	2	0	2	2
I-15	Is there a government Open Source Software policy/action plan for public sector? : 0 (No)-2 (Yes)	1	1	1	1	0	2
I-16	UN Telecommunication Infrastructure Index (TII) [2]: 0-1 (external indicator extracted from the UN e-Gov Survey)	0.56	0.80	0.73	0.88	0.56	0.70
I-17	Does government have a national strategy on disruptive / innovative technologies? : 0 (No)-2 (Yes)	2	2	1	2	1	2

Areas where the gap with other countries is closing

① Government Enterprise Architecture is planned to be introduced by 2023

② Digital Government Development Framework is planned to be introduced by 2022

Areas likely to remain unexplored as of 2024

① As of 2022, the country's own e-procurement portal is not expected to be implemented. However, there are projects listed in Global Tenders, a global e-procurement system.

② No Public Investment Management System (PIMS) expected to be in place as of 2022
- No management framework in place for governments to use to efficiently and effectively manage public projects and investments

1.In draft/Planned, Implementation in progress, etc. For I-15, 1 is Yes (Advisory/R&D), 2 is Yes (Mandatory) 2. TII is (a) estimated number of internet users per 100 inhabitants, (b) number of mobile subscribers per 100 inhabitants, (c) active mobile broadband subscriptions, (d) number of fixed broadband subscribers per 100 inhabitants. In the coloring legend, 0 is white and 1 is dark blue.
Note: Note that some components of the index are covered by other survey items (e.g., telecommunications infrastructure) Source: The World Bank GovTech Maturity Index 2022 data.

Ref) Comparison with Southeast Asias' efforts in digitization of gov't ops (2/2)

In GovTech Enablers Index (GTEI), various efforts are underway regarding legal/organizational development. Some areas remain unaddressed.

☐☐☐ : The greater the progress, the darker the color.

Ind	GTEI's composition (16 items in total)		Cambodia	Malaysia	Thailand	Singapore	Philippines	Vietnam
GTEI	GovTech Enablers Index score: 0-1		0.59	0.77	0.79	0.72	0.80	0.76
I-33	Is there a government entity focused on GovTech (digital transformation, WoG, online services, etc.)? : 0 (No)-2 (Yes)		2	2	2	2	2	2
I-34	**Is there a dedicated government entity in charge of data governance or data management?** : 0 (No)-2 (Yes)	❶	0	2	1	2	1	2
I-35	Is there a GovTech / Digital Transformation strategy? : 0 (No)-3 (Yes)		3	3	3	3	3	3
I-36	Is there a whole-of-government approach to public sector digital transformation? : 0 (No)-2 (Yes)		2	2	2	2	1	1
I-37	**Are there RTI Laws to make data/info available to the public online or digitally?** : 0 (No)-2 (Yes)	❷	1	0	2	0	2	2
I-38	**Is there a Data Protection / Privacy law?** : 0 (No)-2 (Yes)	❸	1	2	2	2	2	2
I-39	**Is there a Data Protection Authority?** : 0 (No)-2 (Yes)	❶	1	2	1	2	2	2
I-40	Is there a national ID (or similar foundational ID) system? : No(0), Yes(1)		1	1	1	1	1	1
I-41	Are records in the national ID system stored in a digitized (electronic) format? : No(0), Yes(1)		1	1	1	1	1	1
I-42	**Is there a digital signature regulation and PKI to support service delivery?** :0 (No)-3(Operational)	❹	1	3	3	1	3	3
I-43	**ITU Global Cybersecurity Index (GCI) [3]: 0-1**	❺	0.19	0.98	0.86	0.99	0.77	0.95
I-44	UN Human Capital Index (HCI) [4]:0-1		0.54	0.77	0.79	0.90	0.76	0.69
I-45	Is there a government strategy/program to improve digital skills in the public sector?:0(No)-2(Yes)		2	2	2	1	2	2
I-46	Is there a strategy and/or program to improve public sector innovation? : 0 (No)-2 (Yes)		2	2	1	1	1	0
I-47	Is there a government entity focused on public sector innovation? : 0 (No)-2 (Yes)		2	2	2	2	2	2
I-48	Is there a government policy to support GovTech startups and private sector investments? : No(0), Yes(1)		1	0	1	1	1	1

Areas where the gap with other countries is closing

❶ Digital Government Committee is established

❷ Draft is ready, RTI law approval scheduled for 2022.

❸ Draft Law on Personal Data Protection is ready, approval scheduled for 2023

❹ Public Sector uses digital signatures, but there is no issuance/utilization publishment. Introduction planned.

❺ n 2022, Japan provides equipment to build cyber security system (Economic and Social Development Plan); JICA also has a technical cooperation project "Cyber Security Capacity Improvement Project" underway.

Areas likely to remain unexplored as of 2024

❶ No information on establishment of Data Protection Authority

1. in draft/planning, in implementation, etc. However, for I-40, 41, 48, 0: No, 1: Yes; for I-42, 1=regulation approved, no infrastructure yet (PKI, CA); 2=regulation and infrastructure in place; 3=in operation; actually used in e-Services 2. For I-35, 2: Yes (old and I-43 is the ITU (International Telecommunication Union) GCI value 4. I-44 is the UN e-Gov survey value Note: Note that some of the survey items overlap with other survey items (ID, human capital, etc.) Sources: World Bank GovTech Maturity Index (2022), ITU (Global Cybersecurity Index 2020 (itu.int)), JICA data, and other article searches.

2-2 Digitization of administrative services

Issues in promoting online administrative services and base registry of owned data. Service delivery to local areas and public literacy are also important

Major relevant gov agencies

- **Digital Economy and Business Committee**
- **Digital Government Committee**
- Ministries assigned roles in Digital Government Policy

Relevant strategies, policies, plans

- Digital Economy and Society Policy 2021-2035 (DES Policy)
- Digital Government Policy 2022-2035 (DGP Policy)

Kay donor support

GIZ / ADB
- Digital governance support (software dev support etc.)

Gap

As-Is 🌱

Various application services

Online is under progress, but many issues exist in digitization/base registry of various types of info
- Business registration is increasingly online (see 9-3 for details)
- DGC is working on developing solutions across ministries, but each ministry needs to work on the online conversion of various applications

Even for service with online support, its usage rate is not increasing. Digital literacy is an issue
- Concern that even if online support is established, its usage will not increase unless the digital literacy of the public improves

Comm for citizens

Lack of online info communication from gov and gov agencies
- Some commented that the shift to Open Data should be promoted (YGIP)

To-Be 🌳

Use cases increase as services go online with the development of necessary database for each service
- Under a policy of Small Start, each ministry considers priority efforts with digitization of administrative services
- However, DEBC has a policy that dev of database and interconnection at each ministry should come first

Digital literacy is improved, and no. of online counters / frequency of use are increased
- Promote the establishment of One Stop Shop (contact points) to establish the "Once Only Principle"

Smooth access to info from gov/gov agencies

Not covered in depth in this survey

Recap

Ref) GTMI（GovTech Maturity Index）overview
World Bank's GTMI can be referenced as an indicator of the digitization of administrative ops/services

GTMI（GovTech Maturity Index）overview

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DCEI（Digital Citizen Engagement Index）
- Measures of mainstreaming citizen engagement
- Calculated from 6 indicators measuring aspects of citizen participation platforms, citizen feedback mechanisms, open data, and open gov portals

Survey items and response

2-1

Digitization of government operation

2-2

Digitization of government service (G4C)

42

Ref) Comparison with Southeast Asias' efforts in digitization of gov't services
Cambodia is slightly behind other countries in terms of administrative services and citizen engagement.

Ind	PSDI's composition (9 items in total)	KHM	MYS	THA	SGP	PHL	VNM
PSDI	**Public Service Delivery Index : 0~1**	0.72	0.90	0.90	0.99	0.83	0.76
I-18	UN Online Service Index (OSI) : 0~1	0.42	0.76	0.78	0.96	0.63	0.65
I-19	Is there an online public service portal? (Also called "One-Stop Shop" or similar) : 0(No)~2(Yes)	2	2	2	2	1	1
I-20	Is there a Tax online service portal? : 0(No)~2(Yes)	2	2	2	2	2	2
I-21	Is e-Filing available for tax and/or customs declarations? : 0(No)~2(Yes)	2	2	2	2	2	2
I-22	Are e-Payment services available? : 0(No)~2(Yes)	2	2	2	2	2	2
I-23	Is there a Customs online service portal (Single Window)? : 0(No)~2(Yes)	2	2	2	2	2	2
I-24	Is there a Social Insurance/Pensions online service portal? : 0(No)~2(Yes)	0	2	2	2	2	0
I-25	Is there a Job portal? : 0(No)~2(Yes)	2	2	2	2	2	2
I-26	Is there a ID that enables remote authentication for (fully) online service access? : No(0), Yes(1)	n/a	n/a	n/a	n/a	n/a	n/a

Ind	DCEI's composition (6 items in total))	Cambodia	Malaysia	Thailand	Singapore	Philippines	Vietnam
DCEI	**Digital Citizen Engagement Index : 0~1**	0.33	0.67	0.94	0.85	0.58	0.40
I-27	UN E-Participation (EPI) : 0~1	0.28	0.68	0.78	0.98	0.49	0.53
I-28	Is there an Open Government web site/portal? : 0(No)~1(Yes)	0	0	1	1	1	0
I-29	Is there an Open Data Portal? : 0(No)~1(Yes)	0	1	1	1	1	1
I-30	Are there national platforms that allow citizen to participate in policy decision-making? : 0(No)~1(Yes)	1	1	1	1	0	1
I-31	Are there government platforms that allow citizen to provide feedback on service delivery? : 0(No)~1(Yes)	1	1	1	1	1	0
I-32	Does the government publish its citizen engagement statistics and performance regularly? : 0(No)~1(Yes)	0	0	1	1	1	0

: The greater the progress, the darker the color.

Note: Note that the DCEI figures for Singapore and Thailand, which are suspected to be inaccurate, are taken directly from publicly available data Source: The World Bank GovTech Maturity Index (2022)

Ref) Comparative results of government digitization (E-gov) indices vs. other countries

OSI is used to evaluate digitalization of admin services, and Cambodia is lower than Thailand 10 years ago

Online admin service evaluation index

OSI/0.19	OSI/0.42	OSI/0.51	OSI/0.76	OSI/ 0.78
Cambodia	Cambodia	Thailand	Malaysia	Thailand
2012	2022	2012	2022	2022

Initial ——————————————————————————————→ Developed

UN E-Government Development Index

- The United Nations has published the E-Government Development Index (EGDI) as a benchmark to determine the numerical ranking of e-gov development among member countries every two years since 2003
- Correspondence bet 3 components of EDGI and the in-depth areas of this study are as follows

	Overview	Correspondence with survey items
TII (Telecommunications Infrastructure Index)	Calculated based on (i) estimated # of internet users, (ii) # of cell phone, (iii) # of wireless broadband subscriptions, (iv) # of fixed broadband subscriptions per 100 residents	⑥ Comm network development ⑦ Data storage infra
HCI (Human Capital Index)	Calculated based on (i) adult literacy rate, (ii) primary, secondary, and tertiary edu gross enrollment rate, (iii) expected years of schooling, (iv) avg years of schooling	Basic education/ ④ Digital literacy
OSI (Online service index)	Calculated based on whether users can easily obtain necessary info on gov websites	

OSI (online service index)

- Confirm availability of 180 items with online admin services, and calculate scores (0-1) for 5 sub-items based on results

	OSI Cambodia ratio	2022	Outline
services provision (SP)	45%	0.3333	Digitalization of admin services • Online support for various certificate applications and tax payments, online access to health/education/ employment services, etc. • Digitalization status of ❸, ⑭, ⑮ is also included in evaluation
e-participation (EPI)	35%	0.2841	Citizen participation in gov • Collection/reflection of citizens' voices, accessibility of various gov info, etc. • Responding to public engagement (services/public relations)
institutional framework (IF)	10%	0.8462	Institutional framework • Existence of gov portals/personal info protection policy, etc.
content provision (CP)	5%	0.8000	Info dissemination • Multilingual support, dissemination of gov procurement/employment related info, etc.
technology (TEC)	5%	0.6471	Introducing gov portal technology • SEO support, search function, use of HTTPS, etc.

Ref) Frequency of Use/Satisfaction with Online Administrative Services in ASEAN

Cambodia's utilization and satisfaction levels are estimated to be low compared to other countries, and it is expected that strengthening efforts to digitize administrative services will be necessary to raise the levels.

Frequency of online access to administrative services

Given that Cambodia has only 11.86% of its 3,508 administrative services applied for online, the frequency of use is likely to be around 10%.

Country	More than once a day	Once a day	2-6 times a week	Once a week	Total
Vietnam (3rd/41 countries)	9	16	13	31	70
Thailand (9th/41 countries)	11	17	14	17	59
Indonesia (16th/41 countries)	13	13	9	16	51
Singapore (21st/41 countries)	18	14	11	5	49
Malaysia (30th/41 countries)	11	14	6	12	42
Cambodia			Around 10%		
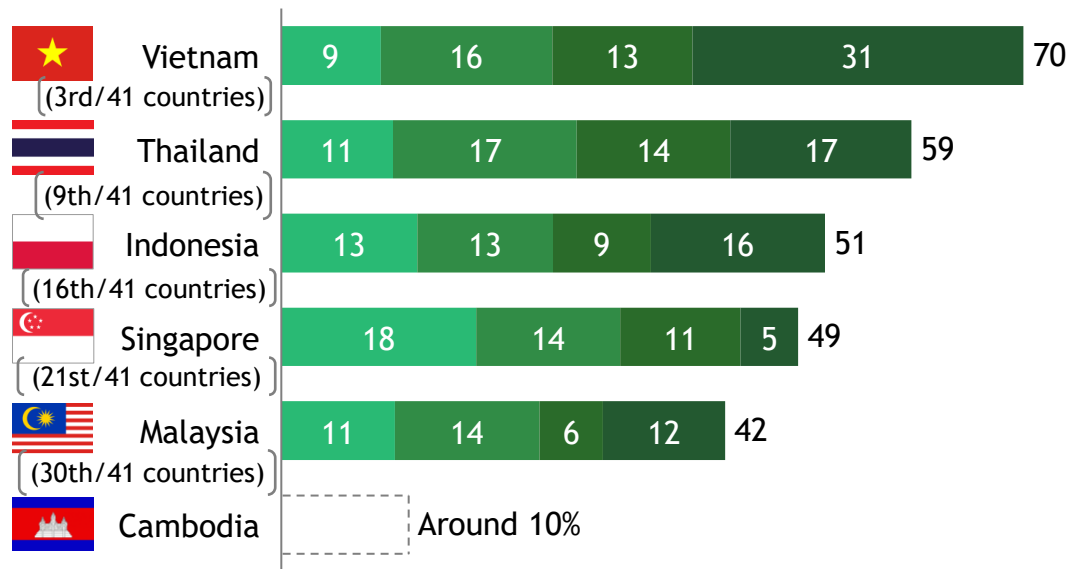
Respondents (%)

■ More than once a day ■ Once a day ■ 2-6 times a week ■ Once a week

Q. How often do you access government services online? Response options: More than once a day, once a day, 2-6 times a week, once a week, 1-3 times per month, Less than once per month, once every three months, once or twice a year, less than once a year, not at all.
Source: BCG 2022 Digital Government Citizen Survey

Satisfaction with online use of administrative services

Since UN OSI in Cambodia is lower than those in the five countries, the level of satisfaction in Cambodia is also estimated to be lower than those in the five countries.

Ø 69

Net satisfaction (% respondents)

Country	Net satisfaction
Indonesia (4th/41 countries)	78%
Singapore (8th/41 countries)	74%
Vietnam (16th/41 countries)	65%
Malaysia (18th/41 countries)	64%
Thailand (20th/41 countries)	64%
Cambodia	unknown
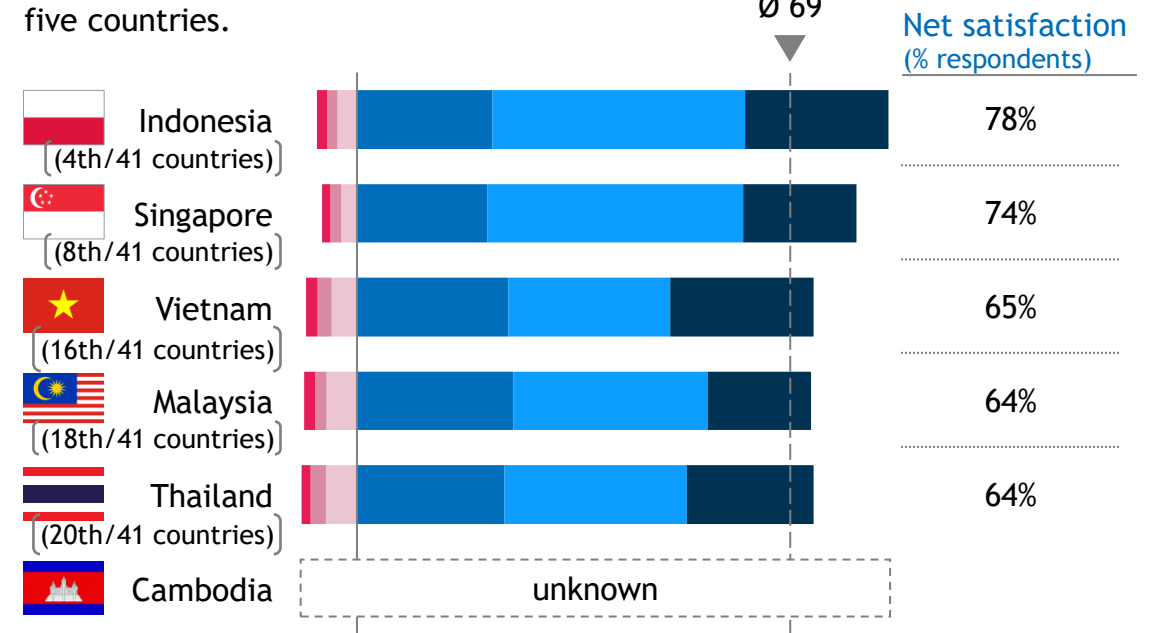
■ Extremely dissatisfied ■ Rather dissatisfied ■ Satisfied
■ Dissatisfied ■ Rather satisfied ■ Extremely satisfied

Survey question: How satisfied are you with the use of the internet in delivering each kind of government service?. Response options range from 1-7, where 1 = Extremely dissatisfied, and 7 = Extremely Satisfied. Respondents who selected "5", "6" or "7" have been included as satisfied. Respondents who selected "1", "2" or "3" have been included as dissatisfied. Net satisfaction reflects total satisfied less total dissatisfied
Source: BCG 2022 Digital Government Citizen Survey

3-2 Social security

Challenges in expanding coverage in the informal sector and in efficiency and service expansion thru the data integration PF for the entire social security system, etc.

Major relevant gov agencies

- National Social Protection Council (NSPC)
- National Social Security Fund (NSSF)
- Health Equity Fund (HEF)
- MOH
- MOP

Related strategy/policy/plan

- The Social Protection Policy Framework 2016 – 2025
- HEALTH STRATEGIC PLAN 2016-2020
- Cambodia Demographic and Health Survey 2021-2022

Major donor support

ADB
- SPID trials (2022~)

GIZ
- Developing IDPoor with the Ministry of Planning (2006~)
- NSSF application support[1]

AUSAID
- IDPoor related support with GIZ

Gap

As-Is

To-Be

Social security coverage and quality

Social security coverage is limited and the involvement of the informal sector is an issue
- Two social security schemes exist: NSSF (15% coverage) for workers and HEF (15% coverage) for low-income earners. Both schemes have started to consider extending coverage

Limited use of insurance by policy holders
- The comprehensive payment structure does not provide hospitals with the benefit of providing good medical care, and insurance usage is sluggish

Social security coverage is expanded and universal health insurance achieved
- There is a statement that National Security Protection Policy Framework (NSPPF) will be developed by 2025 to achieve universal health coverage

Benefit package is revised to improve insurance usage
- Progress may be made in the review of shifting from comprehensive payment to a diagnostic fee system, which requires operational efficiency, such as digitization of payment screening

Digitalization of social security

Some digitalization such as insurance screening and online payment has made progress, but still under development
- PMRS system in place for social security applications in medical field, but not yet linked to hospital information system
- New NSSF enrollment requires visiting NSSF office, but monthly payments can be made via Internet banking

There are issues with data maintenance, causing duplicate payments, etc. Operational efficiency of social security as a whole is an issue
- Data integration trials using Social Protection ID (SPID) have been conducted in some communes last year
- Data utilization between NSSF and MoH has not progressed much

Unified platform for social security-related information is established
- There is a plan to establish info sharing platform for social security service providers based on CamDX, aiming to improve convenience and accuracy of social security services (led by NSPC)
- There is a desire to build the system in-house, but the actual structure and owing infrastructure is unknown. Securing digital talent may be required

1. NSSF comments when visiting NSSF
Note: Backup materials included in the Appendix, "Comparison of social security systems with other Southeast Asian countries," "Overview of social security platform based on SPID"
Source. Cambodian government publications, interviews with NSPC/NSSF (Nov 2023), JICA expert knowledge, article search

Comparison of health & medical insurance systems in SE Asia

Cambodia currently does not have universal health insurance system/health & medical insurance utilization low compared to other countries

	Cambodia	Malaysia	Vietnam	Singapore
System name	NSSF / HEF	mySalam	Bảo hiểm y tế (Health Insurance)	MediSave, MediShield Life, Medifund
Organization	National Social Security Fund (NSSF) Health Equity Fund (HEF)	Ministry of Finance	Viet Nam Social Security (VSS)	Ministry of Health (MOH)
Eligible persons	Private worker/civil servant Low-income household	Citizens in bottom 40% of income bracket (B40 group)	All citizens	All citizens
System overview	NSSF operates a social health insurance system for workers • SHI for private workers started in 2016 • SHI for civil servants started in 2018 • Issues has been pointed out that people can receive better med services without using NSSF as the system gives a fixed-amount subsidy HEF subsidises hospital expenses for low-income households	Operates scheme called mySalam based on mutual assistance (Takaful scheme) among subscribers • Introduced in 2019 • Average of 20M MYR/month paid out since then; functions as social security for low-income citizens	Health insurance system offered by VSS, together with social/ unemployment insurance • Promoting subscription targeting 100% adoption rate by 2020 • Approx. 91.1M subscribers in 2022 Ref.) Digitization in progress • Synced with National Population Database (officially launched in 2021) • Also promoting chip-based ID cards/electronic ID (VNeID) application use	Provides insurance to entire population through 3M, a three-layer system **MediSave:** • Individual savings insurance plan that workers/self-employed persons must join MediShield Life: • Public health insurance program that complements MediSave Medifund: • Publicly funded health insurance program that serves as safety net
Utilization rate for all citizens (2022)	Aprox. 15% for both NSSF/HEF	34.4%[2] (82.5% for B40 population)	92.3%[3]	100%

Ref) Overview of the NSPC-based social security system

NPSC plans to build IDSPS, a system specialized for social security, and to coordinate info with each service provider using CamDX

Social protection service provider MISs

🏛 NSSF 🏛 PCA PMRS[1] 🏛 Other Programs

Subscribe Message
Data Synchronization using RabbitMQ CamDX Interoperability Layer by CamDX
Publish Message

Integrated Digital Social Protection System (IDSPS)

National Social Protection Registry (NSPR)

| Social Registry | Beneficiary Registry | Identification Registry | Biometric Registry |

| Data Duplication Service | Registration Service | Verification Service | Data Synchronization Service | Authorization Service |

Available service from NSPR

CamDX Interoperability Layer by CamDX

🏛 Khmer National ID 🏛 IDPoor

Ref) Architecture image of the NSPC-based social security system
Consists of service-wide operation PF, info mgmt. system for service providers, and authentication system

Management Information Systems
(by Operators and Service Providers)

Management Information System 1
- Outreach and Communication
- Eligibility and Enrolment
- Payment and Service Delivery
- Beneficiary/Member Management
- Others...

Management Information System 2
- Outreach and Communication
- Eligibility and Enrolment
- Payment and Service Delivery
- Beneficiary/Member Management
- Others...

Other MIS...

Interoperability Layer

Send/receive data through single gateway

Send/receive data through single gateway

Integrated Operational Platform

- Integrated Beneficiary Management
- Payment Platform
- Monitoring and Data Analytics
- Feedback and Complaint Management
- Assessment of Need and Condition
- Other Cross-cutting Operations

Inform/Update

Interoperability Layer

Identification and Registries

National Beneficiary Registry

Phase 3
Social Protection Registry

Phase 2
Social Security Registry

Phase 1
Health Beneficiary Registry

Social Protection Identification

Unique Social Protection ID, Starting with Unique Health ID (with National ID Number as Sub Key)

Social Registry (Poor, Disability...)

IPIS/ Khmer ID

Source: Created based on the documents provided by NPSC, Note: Payment at medical institutes

Ref.) Sub-item sorting image of ④

4-1 targets the use of digital in primary education & **4-2** is for improving the digital literacy of the public
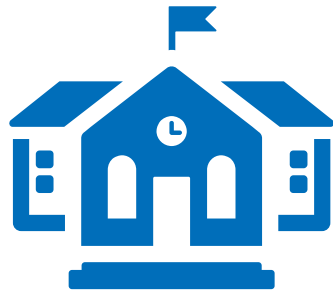
4-1 Digitalization of education(EdTech)

4-2 Digital Literacy

Survey of initiatives, donor support & remaining gaps in the use of digital in primary education
- Digital learning for students
- Digital learning for teachers
- Digitalization in school management

Survey of initiatives, donor support & remaining gaps in the digital literacy of the public & gov employees
- Education program for the public
- Education program for gov employees
- ICT education for students

4-1 Digitalization of education (EdTech)

In order to introduce digital measures into the education field, it is important to secure teachers with high digital literacy. Therefore, as a first step, the introduction of blended learning (learning that combines offline and online) in teacher training schools is seen as important.

Major relevant gov agencies

- MoEYS

Relevant strategies, policies, pla

- Pentagon Strategy (Strategy1)
  - Human capital development
- The Education Strategic Plan
  - Following the Pentagon announcement, the 2024-2028 version is being formulated
- Teacher Policy Action Plan

Key donor support

UNESCO
- Student learning monitoring demonstrated in Siem Reap/ Planning a "TechHub" to connect teacher training schools

UNICEF
- Support Digital PF "MOODLE" for teachers

ADB
- Resource support such as computer provision

KOICA
- Digital content support (students and teachers) / ICTLab installation support

Japan
- Learning apps, etc.

Gap

As-Is

Primary/Secondary Education

Digitalization is underway with donor support, but there are challenges in ensuring the quality of teaching staff and access to content.
- Development of online content, systems, and devices is being expanded with the support of donors in each country. In addition, there is a demonstration project for a system to monitor children's learning.
- Only 30-40 elementary schools have PC rooms (2022) and there are challenges in access environment[1]
- Teachers have low digital literacy, making it a hurdle to effectively introduce digital measures[2]

Teacher Training (Preset)

Shortage of instructors at teacher training colleges due to upgrading of 6 schools to teacher training colleges
- Two of the two schools, which had been mainly two-year Teacher Training Centers, have been upgraded to four-year Teacher Education Colleges with JICA support.
- In the future, the Ministry of Education plans to upgrade four more schools to "Teacher Education Colleges," bringing the total to six, and the shortage of instructors is an issue.

Faculty Recurrent

Currently, efforts are limited
- In terms of Continuous Professional Development, SNS and mobile communities are being used, but they are not effective[2]

To-Be

Increased use of digital tools for learning help correct nationwide educational disparities and improve educational standards.
- Expansion of online learning content, access to content, and educational tools will be improved. Blended learning through the proper use of digital technology will be widespread, reducing regional disparities in educational quality.
- Expansion of telecommunication infrastructure and content.
- Further improvement in education quality will be realized by monitoring students' learning status and providing personalized education through the use of the latest technologies such as AI.

Covering the shortage of teachers by introducing Blended Learning
- Blended Learning (assuming the introduction of distance learning and digital content) will be promoted, making it possible to efficiently provide high quality education at Teacher Education College even with a limited number of instructors.
- As a side effect, it is also expected to facilitate the smooth use of digital technology by students after graduation in the primary and secondary education field.

Faculty members can catch up with changes in educational content through the use of digital content
- Promoting the use of digital content for teacher reeducation

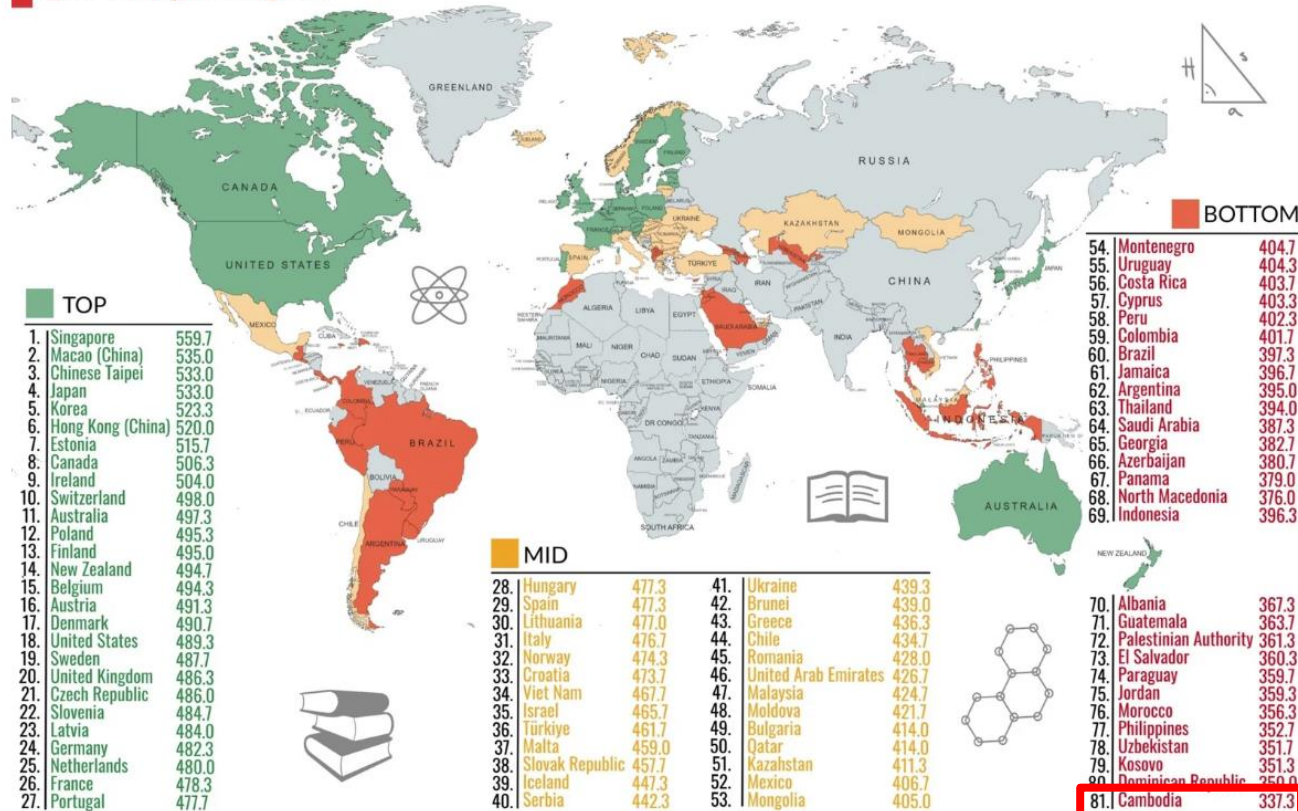# Key challenges & measures in the education sector in Cambodia

The quality of education in Cambodia is poor compared to the rest of the world. The introduction of digital tech is being considered as a possible solution for issues incl. the quality of education & teacher shortage

PISA 2022 Worldwide Ranking
average score of math, science and reading

@factsmaps.com

Source: OECD, 2022-2023

The Program for International Student Assessment (**PISA**) is a worldwide study by OECD in more than 80 nations of 15-year-old students' scholastic performance on mathematics, science and reading.

TOP

1.	Singapore	559.7
2.	Macao (China)	535.0
3.	Chinese Taipei	533.0
4.	Japan	533.0
5.	Korea	523.3
6.	Hong Kong (China)	520.0
7.	Estonia	515.7
8.	Canada	506.3
9.	Ireland	504.0
10.	Switzerland	498.0
11.	Australia	497.3
12.	Poland	495.3
13.	Finland	495.0
14.	New Zealand	494.7
15.	Belgium	494.3
16.	Austria	491.3
17.	Denmark	490.7
18.	United States	489.3
19.	Sweden	487.7
20.	United Kingdom	486.3
21.	Czech Republic	486.0
22.	Slovenia	484.7
23.	Latvia	484.0
24.	Germany	482.3
25.	Netherlands	480.0
26.	France	478.3
27.	Portugal	477.7

MID

28.	Hungary	477.3	41.	Ukraine	439.3
29.	Spain	477.3	42.	Brunei	439.0
30.	Lithuania	477.0	43.	Greece	436.3
31.	Italy	476.7	44.	Chile	434.7
32.	Norway	474.3	45.	Romania	428.0
33.	Croatia	473.7	46.	United Arab Emirates	426.7
34.	Viet Nam	467.7	47.	Malaysia	424.7
35.	Israel	465.7	48.	Moldova	421.7
36.	Türkiye	461.7	49.	Bulgaria	414.0
37.	Malta	459.0	50.	Qatar	414.0
38.	Slovak Republic	457.7	51.	Kazahstan	411.3
39.	Iceland	447.3	52.	Mexico	406.7
40.	Serbia	442.3	53.	Mongolia	405.0

BOTTOM

54.	Montenegro	404.7
55.	Uruguay	404.3
56.	Costa Rica	403.7
57.	Cyprus	403.3
58.	Peru	402.3
59.	Colombia	401.7
60.	Brazil	397.3
61.	Jamaica	396.7
62.	Argentina	395.0
63.	Thailand	394.0
64.	Saudi Arabia	387.3
65.	Georgia	382.7
66.	Azerbaijan	380.7
67.	Panama	379.0
68.	North Macedonia	376.0
69.	Indonesia	396.3
70.	Albania	367.3
71.	Guatemala	363.7
72.	Palestinian Authority	361.3
73.	El Salvador	360.3
74.	Paraguay	359.7
75.	Jordan	359.3
76.	Morocco	356.3
77.	Philippines	352.7
78.	Uzbekistan	351.7
79.	Kosovo	351.3
80.	Dominican Republic	350.0
81.	Cambodia	337.3

PISA 2022 Worldwide Ranking – click to enlarge

Challenges

Worst among 81 participating countries. Challenges in the no. & quality of teachers.

Teacher shortage in primary & secondary schools, quality of education

Teacher shortage in schools providing teacher training, quality of education

Japanese measures

Measures can be effective in teacher education.

Short-term solutions are difficult to find
- Lack of digital infrastructure is a nationwide challenge in terms of digital solutions

Solutions can be considered
- Limited no. of schools (6 schools)
- JICA is a supporting partner in the field of teacher education

Source: OECD, JICA's knowledge

Policy document on digitization in education

Digitalization in education is under consideration by MOEYS, and the Education Strategic Plan & the Teacher Policy Action Plan are being reviewed

"The policy for promoting digital learning" by Education Minister Naron (Nov. 2021)

- The policy for digital learning to be promoted in the future was revealed
    - Learning Management System (such as e-learning & virtual classroom Apps)
    - Digital content (class videos across all subjects & grades)
    - Personal Learning System (e.g., a system that allows students to download digital learning content freely)
    - A hybrid learning combining online classes with in-person classroom methods for students is provided to acquire skills required for the 21st century, etc.
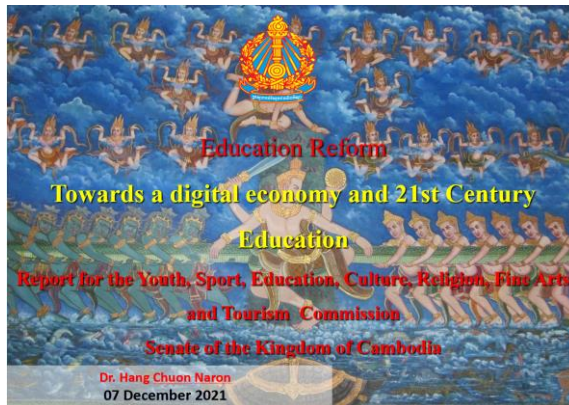
Education Strategic Plan (2024-2028)

- The Education Strategic Plan is being reviewed in response to the Pentagon Strategy
- While "promotion of digital learning" is included in the educational development priorities, this plan presents an improvement of students' & children's learning opportunities, not just digital education
    - Expansion of model schools (1,500 schools to be established by 2026)
    - STEM learning enhancement
    - Use of ICT (training for teachers & self-study for students)
    - Training teachers is also considered necessary, so the Teacher Policy Action Plan 2024-2030 is to be implemented
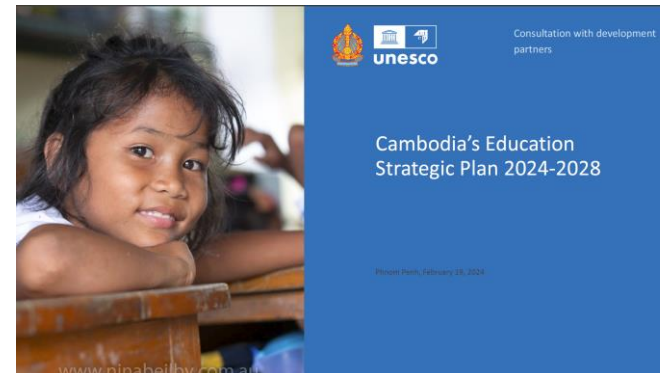
Teacher Policy Action Plan (2024-2030)

- The Teacher Policy Action Plan is being reviewed in response to the need for a long-term roadmap for teacher development identified in the Education Strategic Plan
- The plan aims to provide high-quality education and includes a digital education policy
    - Credit-based & hybrid (in-person & online) training is provided to promote the 21st Century education
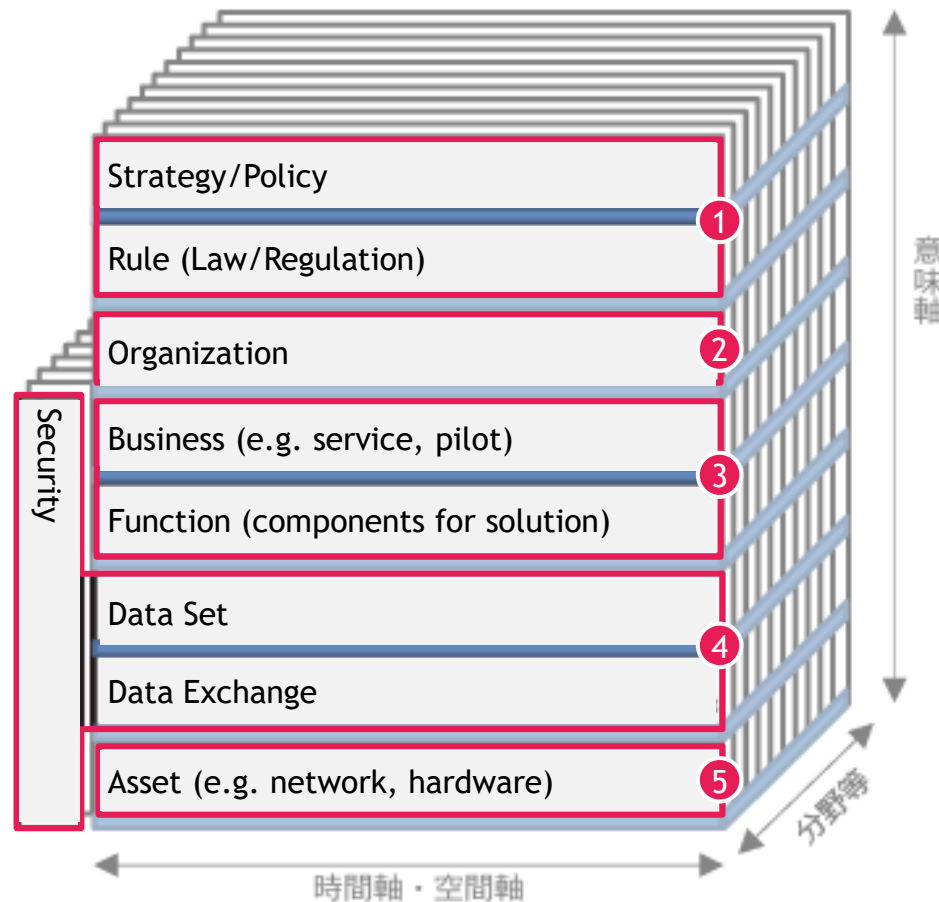   - ICT/digital facilities (incl. internet) of schools providing teacher training are upgraded, etc.
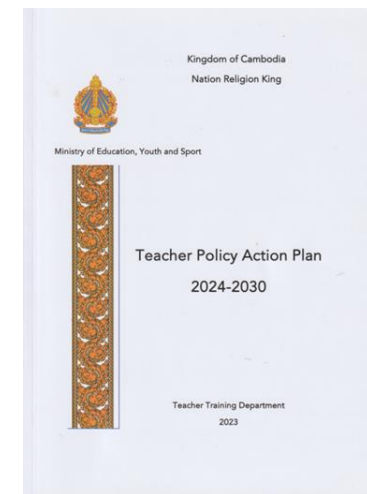
Ref) Socitety 5.0 and the EdTech framework

Based on the architecture of Society 5.0, the components of digital utilization in education (EdTech) are organized as follows. Blended Learning as an educational solution is particularly important from the perspective of improving educational standards

Socitety 5.0 reference architecture

Strategy/Policy ①
Rule (Law/Regulation)
Organization ②
Business (e.g. service, pilot) ③
Function (components for solution)
Data Set ④
Data Exchange
Asset (e.g. network, hardware) ⑤
Security
意味軸
分野等
時間軸・空間軸

Correspondence with components of the digitalization of education.

components		examples of measures
Stra-tegy	① Education policy and survey	• Developing a policy to promote digitization of education • Surveys to understand the current situation and challenges in the country
Solution	② School Management	• Management of educational institutions by education supervisory ministries • Measures to improve operational efficiency in school management

	③ Education Solutions (Blended Learning)	• Introduction and penetration of Blended Learning1
		  – Provide digital learning content
		  – Provide learning support applications

Enabler	④ Collection/Use of education-related data	• Collection and management of learning status data • Introduction of data-based measures to improve the quality of education (e.g. personalized learning)
	⑤ Infrastructure and connectivity in education	• Improved network access environment • Widespread use of devices

1. Refers to learning that combines offline and online
Source: Cabinet Office of Japan「データ連携基盤サブワーキンググループ(Data Federation Infrastructure Sub-Working Group)」

54

Ref.) Overview of the components of digitization in education & the content of donor support by target

Many national donors support the digitization in education. The following initiatives are some examples

			Primary education	Secondary education	Higher education	Teacher training
Strategy	**1**	Education policy and survey	UNICEF. World Education: " Cambodia Digital Education Landscape Scan" (2022)			
			UNESCO: "Paper Commissioned for the 2023 GEM Report" (2023)			
				ADB: Support for "Secondary Education Blueprint 2030"		Japan: Intensive support for teacher training strategies
Solution	**2**	School management				UNESCO: Plans to launch a "Tech Hub" to connect schools offering teacher training
	3	Educational solutions	KOICA: Digital content support	China: Digital content support		
			Japan: Educational App "Think! Think!" Provision of Khmer & English learning App "Sangapac Anuwat"			UNICEF: Support for digital PF "MOODLE" for teachers
Enabler	**4**	Collection/use of education-related data	UNESCO: Monitoring for student learning opps in Siem Reap Province			
	5	Infrastructure and connectivity in education	JICA: Equipment support for PTEC-affiliated schools		ADB: Provision of PCs, etc.	
			World Bank: Provision of PCs for 1,633 schools incl. pre-school, elementary & secondary schools		KOICA: Support for CTC facilities	

55

Ref) Cambodia Digital Education Landscape Scan
World Education research Funded by Cambodia Digital Education Project (UNICEF)

Findings

Digital Access and Inclusion

- Access to technology and the Internet is a major barrier to digital learning. Internet access was cited as the top challenge in the integration of ICT in education among educators (77%, n=337), followed by comfort using technology devices (41%, n=181) in learning and digital skill development

Digital Literacy and Effective ICT integration

- Teachers are using social media, mobile messaging technologies and content organization/ sharing tools, but there is little indication they are leading deep integration of technology into their instructional practices to accelerate learning

Key stakeholders coordination on digital learning

- There is a need to consolidate, integrate and enhance MoEYS digital learning systems as well as improve processes for streamlined coordination towards fostering shared ownership of digital platforms and tools

Key considerations and Recommendations

- Improve Digital Inclusion and Digital Infrastructure at the School-Level

- Digital Skills Development and ICT Integration Training as a Foundation for Strong, Resilient Digital Education Ecosystem

- Supporting Meaningful Participation in Teachers Continuous Professional Development

- Consolidate and Enhance MoEYS eLearning Platforms

- Strengthen Cross-department Coordination and Private Sector Engagement on Digital Learning

Source: Cambodia Digital Education Landscape Scan

4-2 Digital literacy

Plan to provide content and connectivity through Community Tech Centers, and future challenges include nationwide rollout, sustainability, and improved usage

Major relevant gov agencies

- MOEYS
- MPTC
- CADT

Related strategy/policy/plan

- Pentagon Strategy (Strategy1)
  - Human capital development
- DES Policy (Digital Citizen)
  - Building digital citizens
- The Education Strategic Plan 2019-2023
- CAMBODIA SKILL DEVELOPMENT ROADMAP 2023-2035

Major donor support

UNDP
- Survey on digital literacy among young people[1]

ADB
- Resource support incl providing PCs

UNDP, APCTT
- CADT support

GIZ
- Education support for gov employees

Gap

As-Is

For public

Lack of digital literacy, digital divide exists
- Ranked 117th out of 134 countries in the Digital Skills Gap Index[0]
  - Digital literacy among youth (15-18 years old) is still low at 49% (2020)[1] and disparities still exist in rural areas
- About 70% of SMEs do not use internet at all, and the remaining 20% use only 1-2 tools[2]

Established Community Tech Center (CTC) to launch literacy enhancement initiatives
- MOEYC and MPTC[3] jointly established the first Community Tech Center in Sep 2023
- Provide educational content and Internet access not only to students and teachers, but also to nearby citizens

For gov employees

Provide digital education for gov employees
- CADT(IDG) operates School of Digital Governance and provide digital literacy improvement programs for leaders in ministry/public agency and civil servants[3]
- Approx 2,000 people from all 26 ministries participate in the program each year

To-Be

Digital literacy & regional disparities are improved
- Quantitative targets not confirmed
- MoEYS aims to provide opportunities to improve digital literacy through primary education (no details)

Community Tech Center is expanded nationwide
- Plans to rollout Community Tech Centers nationwide, establishing them in all 158 high schools in five years
- Based on learnings from similar initiatives by UNDP in the past, consider adjoining post office/admin application counter to ensure sustainability

Digital Education for gov employees is expanded
- Expand training to cities outside of Phnom Penh
- Expand training from literacy level to specialized levels, especially in cyber security area

4-2 Digital Literacy

Legend: level of progress — Developed | Middle | Initial

Cambodia has the lowest digital literacy among Asian countries; thus, an effort to close the gap is set as a vision

117th: 2.8pt   15th: 4.5pt   13th:5.0pt   10th: 7.2pt

The Digital Skills Gap Index[1] (2021): ranks 134 economies

Initial — Developed

(Tentatively placed due to lack of numerical targets by the Cambodian gov.)

As-Is (2023)

To-Be (2035)
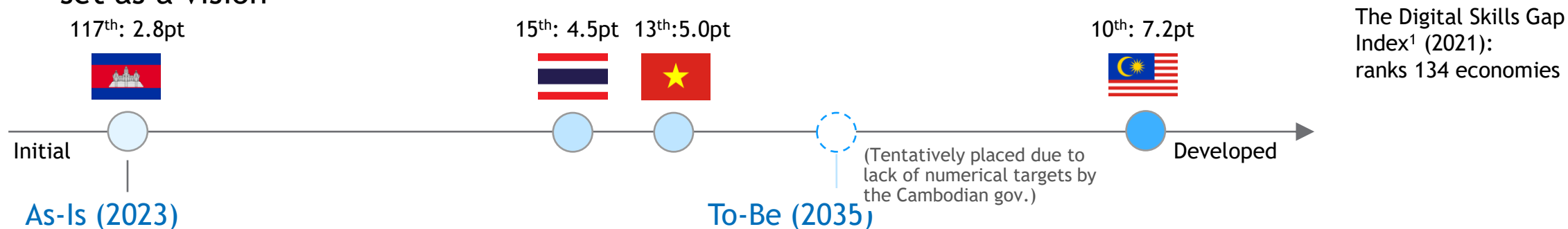
Lack of digital literacy

- Two-thirds of Cambodians are under 30, yet the digital literacy rate is low, with only 3 in 10 having basic digital skills
- Enrollment in STEM (Science, technology, engineering & mathematics) is 27.1%, while only 0.03% in tech & vocational training programs
- Challenges incl. a lack of quality education in science & mathematics, lack of access to online educational content due to language barriers in English, and 93% of Cambodian workers are forced to work in the informal sector

Improving & enhancing digital literacy

- The digital literacy of gov. leaders in ministry & public agency leaders and gov. employees to contribute to the development, management, use and delivery of public services to be improved
- Improve digital literacy in all educational settings
- Develop talent with critical digital skills needed in the Fourth Industrial Revolution, incl. software development, communications & networking, AI, data science, systems architecture & digital security
- Facilitate the development of a nationwide education & training platform, providing content through online channels to bridge the digital divide and encourage lifelong learning, especially among rural people
- The above goals are set without specific measures or numeric targets

6-1 Fixed communications

Low penetration of optical fiber that can provide high quality broadband service; MPTC has a dedicated gov comm network

Major relevant gov agencies

Ministry of Post and Telecommunications (MPTC)
- Lead postal system, telecom system, and digital infra/ICT sector services

Telecommunication Regulator of Cambodia (TRC)
- Independent agency responsible for economic growth & dev of telecom industry

Related strategy/policy/plan

- Digital Government Policy 2022-2035
- MPTC has a policy to dev master plan for telecom infra[1]

Major donor support

N/A

Gap

As-Is

To-Be

Domestic broadband service

As-Is:
Currently, mobile comm is the mainstream and fixed-line comm is not widely used
- Limited optical fiber communication services
  - High-speed optical fiber networks are being developed, but slower vs. other SEAS countries
  - FTTH service is only available in urban areas
- Limited ownership of comm networks by MNOs
  - Most MNOs use cables of domestic cable operators
- Telecom Cambodia has many operational issues
  - The state-owned company has small market share and faces many op issues incl service quality

To-Be:
Backbone network is strengthened (FTTH service expansion policy is unknown)
- Fiber network expanded to rural areas
  - Achieve fiber network installation at each Commune level
  (No specific plans at this time, but the Universal Access Fund is already in operation)
- Dedicated gov comm network renewed/ expanded
  - ADB is supporting the study
  (Korea assisted past dedicated networks, but will not support expansion)

International gateway

As-Is:
Limited license use
- Two international gateway licenses exist
- Telecom Cambodia and a private company each hold one license, but both have almost no traffic

To-Be:
Global connectivity in Cambodia is improved
- Promote high-speed, secure data communications (unconfirmed)
- Operate international gateway
- Multi-routed international communications network (submarine cable), improved latency

Note: 1. ADF appears to be assisting MPTC in developing a comm infra master plan. Backup materials included in the Appendix, "Broadband contract trends with Southeast Asian countries"
Source. Cambodian government publications, interviews with DGC, MPTC (Nov 2023), Expert Interview, World Data Bank, Omdia, article search

Ref) Fixed communications (Comparison vs. other countries)
Fixed communications networks in Cambodia lag far behind those in other SEA countries

| | | Initial | | To-Be 2035 | | | | Developed |

Broadband

Fixed Broadband Subscriptions (per 100 people)
- 3.0 🇰🇭
- 7.6 🇵🇭
- To-Be 2035: 8 🇰🇭
- 12.4 🇲🇾
- 18.5 🇹🇭
- 21.7 🇻🇳
- 60*

Broadband household penetration
- 13.6% 🇰🇭
- 33.2% 🇵🇭
- 49.6% 🇲🇾
- To-Be 2035: 50% 🇰🇭
- 53.6% 🇹🇭
- 75.6% 🇻🇳
- 100

Optical fiber

Fiber Development Index
- 20 🇰🇭
- 49 🇵🇭
- 56 🇲🇾
- 62 🇻🇳
- 70 🇹🇭
- 100
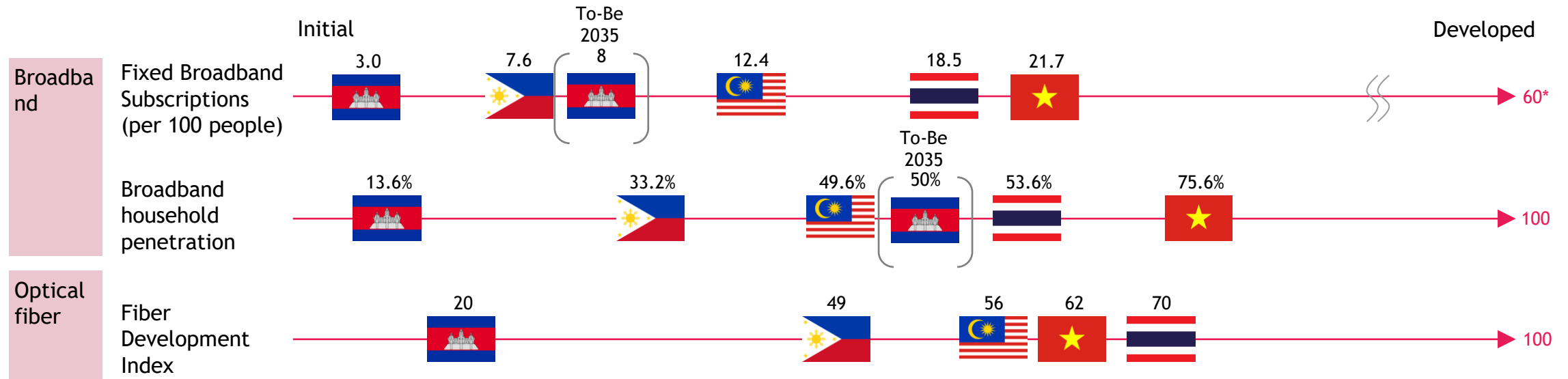
Despite government initiatives for fixed comm, implementation is not progressing in Cambodia
- Voice calls and fixed lines have declined due to the growth of mobile communication. Wired fixed-line operators have little incentive to expand their networks and they focus on low-cost services such as xDSL
- Optical fiber is also installed less than in other countries
- According to World Bank, # of broadband subscribers increased to 509,830 in 2022 (+51.6% YoY)

SEA countries actively introduce fixed comm networks
- Broadband is widespread in other four SEA countries, many with optical fibers

*Upper limit changed to match 2022 maximum figure (Monaco: 58.96)
Fiber Development Index (Omdia's optical fiber index): benchmarking indices incl household coverage, household penetration, corporate penetration, base stations for optical fiber, backbone investment, avg download/upload speeds, and latency
Household penetration: indicates the percentage of households that access and subscribe to fixed broadband services
Source: Omdia, World Data Bank, Fitch Solutions

60

Ref）Fixed-line communication: trend of broadband subscription in each country

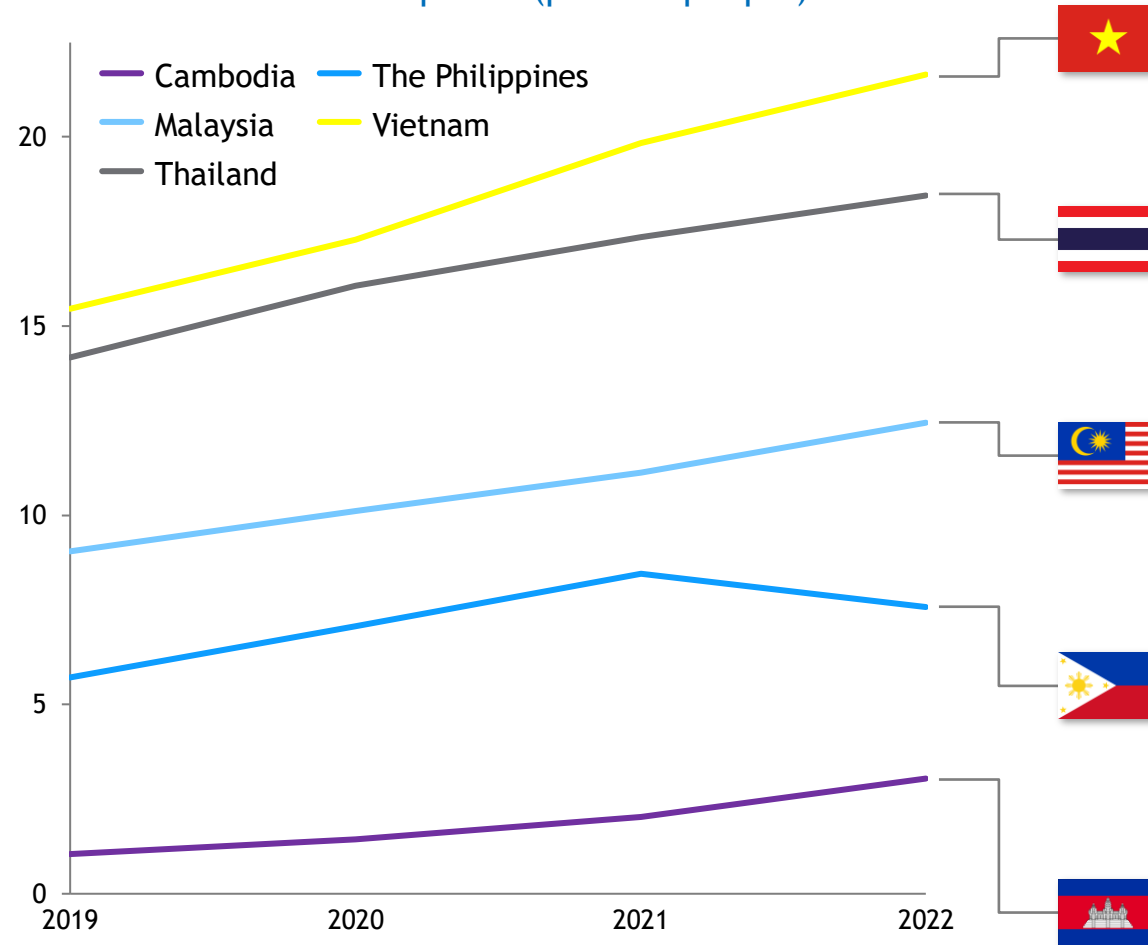## Fixed-line communication in Cambodia is less developed vs other countries

Fixed broadband subscriptions (per 100 people)

Legend:
- Cambodia
- The Philippines
- Malaysia
- Vietnam
- Thailand

Continuing to grow to bridge the digital divide
- The Vietnam gov is active in attracting foreign investment, increasing telecom infra facility for the growth of digital economy and international competency
- Improvement in Internet quality is needed for frequent breakdown of submarine cables, but the no. of broadband subscribers is on the rise

New Giga Thailand Infrastructure Plan launched to strengthen fixed communications infrastructure
- The gov had aimed for 95% population coverage by 2020 with broadband national strategy, but the goal was not achieved and the household penetration remains at 50.3% as of 2023
- The gov announced a new plan, "Giga Thailand Infrastructure," aiming for 100% household penetration of FTTH by 2027

Ph.1 of JENDELA initiative completed; growth of fixed-line comm expected
- Ph.2 of JENDELA initiative aims to provide a broadband of gigabit speed to over 9M facilities by 2025
- Review of the mandatory criteria for access prices and reduction of the service prices are expected (the gov has already introduced the Pakej Perpaduan, a subsidy program for low-income increase, veterans, the elderly, and the disabled)

There are less fixed-line subscription with high penetration of mobile comms
- The National Broadband Plan (NBP) by the Philippine gov, announced in 2017, is rolled out nationwide and aims to accelerate deployment of fiber optic and wireless tech to improve internet speeds and affordability, primarily in remote areas
- The no. of fixed-line subscribers is sluggish due to considerable penetration of mobile comms, but the no. of fixed-line subscribers is on the rise due to the deployment of FWA.

There are initiatives to introduce fixed-line comms incl. optical fiber, but not much progress is made
- Policies to provide broadband to a wide range of urban/rural areas have been promoted but are currently not implemented yet
- In addition, the gov is also discussing an initiative on fiber optic backbone network to provide high-speed Internet for LAST ONE MILE connection to homes and businesses

JENDELA: Government initiatives to bridge the digital divide by improving the country's network infrastructure
Source: The World Bank, Expert Interview, Omdia

(STEP1 image of deliverables① detail)
As-Is comm service in Cambodia, GAP with target, comparison on (preliminary survey)

Major GAP for telecom service in Cambodia is the low usage rate/subscriptions/household penetration despite of low mobile comm cost

Key: Cambodia 2023 | Malaysia 2023 | Cambodia 2035 | Vietnam 2023 | Bangladesh 2023 | Sri Lanka 2023

Item			(With large gap)	Achievement level[1]		Supplement explanation on the items
Mobile communication	Network performance	a	4G coverage rate (Total population)	80% → 100%	Cambodia 88, Malaysia 92, Cambodia 2035 = 100	Measured by availability; a metric that aims to be able to connect to the network where the population uses the most
		b	4G usage rate	50% → 100%	Cambodia 60, Malaysia 97	Indicators of accelerated digital infra, growth of digital economy, and promotion of digital gov services (Cambodia intends to switch to 5G in 2035 thus a green circle is omitted)
		c	5G usage rate	0% → 100%	Cambodia 0, Malaysia 0.9, Cambodia 2035 mid	Indicators of accelerated digital infra, growth of digital economy, and promotion of digital gov services (Half of the contracts is estimated to be 5G in Cambodia by 2030)
		d	Data traffic per person	100GB → 400GB	Cambodia 193, Malaysia 336	Listed after taking into account total population and country's economic/digital infrastructure disparities
		e	Download speed	10Mbps → 50Mbps	Cambodia 18, Malaysia 32	The target is set based on the avg. in Singapore in 2022 (61.8Mbps)
		f	Upload speed	5Mbps → 15Mbps	Cambodia 6.1, Malaysia 7.9	The target is set based on the avg. in Singapore in 2022 (12.3Mbps)
		g	Interoperability (ORAN, etc.)	Not tested → Actively worked	Cambodia 2035 ?, Malaysia	OpenRAN under testing phase for strategic partnership conclusion)
	Market	h	No. of subscription (per 100 pax.)	80 → 150	Cambodia 116, Cambodia 2035 141	Indicators of accelerated digital infra, growth of digital economy, prom. of digital gov services (Advanced countries in the SEA:~140 in 2022)
		i	Affordability	$0.4 → $0.1	Vietnam 0.29, Malaysia 0.28, Bangladesh 0.23, Cambodia 0.12	The price in 2023 is sufficiently low (12x cheaper vs 2020), lower than countries with similar no. of contract/digital & infra status
Fixed-line communication	Network performance	j	FTTP coverage rate	0 → 100	Cambodia 9, Cambodia 2035 mid, Malaysia 83	Omdia predicts that the 2 techs of optical fiber/FWA take the same level of contract as fixed-line comm is not penetrated in Cambodia
		k	Interoperability (FNS, etc.)	Not shared → Actively worked	Cambodia ?, Cambodia 2035 ?, Malaysia	Since NFCP is announced in 2019, Malaysia actively shares fixed-line comm infra by improving the quality/coverage, lowering the price
	Market	l	No. of subscription (per 100 pax.)	0 → 50	Cambodia 3.0, Malaysia 12, Cambodia 2035 mid	The target is set based on the figures from Singapore (37) and Vietnam (22) which already have a large no. of contract in SEA
		m	Household penetration	0% → 100%	Cambodia 14, Cambodia 2035 50, Malaysia 50	Indicators of High-Speed Internet Service Adoption
		n	Affordability	$50 → $10	Malaysia 36, Cambodia 28, Sri Lanka 12, Vietnam 11	Set based on Vietnam/Sri Lanka; broadband has penetrated in these countries, the price is low enough to provide to low-income people
Infra		o	Electricity usage rate	70% → 100%	Cambodia 83, Cambodia 2035 100	Indicator that the higher the usage rate, the more power is available to the infrastructure. Singapore, Malaysia, Vietnam already achieved 100%
		p	Comprehensive evaluation*	120th → 1st	Cambodia 104, Malaysia 36	Indicators that measure a country's readiness to use info and communication tech for social, economic, and political transformation 。

1. The size of the interval does not lead to the size of the GAP. Affordability: average price per GB for mobile communications; average monthly cost of broadband for fixed-line communications

FTTP: Fiber to the Premise, FNS: Fixed Network Sharing, NFCP: National Fiberisation and Connectivity Plan. Electricity usage rate is based on World Bank Data for 2021; overall rating is based on Network Readiness IndexSource: Omdia, Open Signal, World Data Bank, Cable.co.uk, Network Readiness Index, Fitch Solutions

62

6-2 Mobile communications

4G service quality issues in urban and rural areas; currently no 5G rollout plan and expected to start with case studies

Major relevant gov agencies

Ministry of Post and Telecommunications (MPTC)
- Lead postal system, telecom system, and digital infra/ICT sector services

Telecommunication Regulator of Cambodia (TRC)
- Independent agency responsible for economic growth & dev of telecom industry

Related strategy/policy/plan

- Digital Government Policy 2022-2035

Major donor support

CHINA
- Cooperative support for 4.5G & 5G

Gap

As-Is 🌱

4G

Need to secure more coverage (users/area)
- Ensure 4G coverage in urban areas
  - Securing coverage is an issue as more high-rise buildings built in Phnom Penh (previously covered)
- Strengthen 4G environment in rural areas
  - 4G is widespread, with lower usage (less than 90%) vs. other SEAS countries and with stability issues

5G

Cambodia currently has no plans to introduce 5G, while other SEA countries rolling out it
- Delayed launch
  - 5G services was originally launched in 2021, but postponed due to COVID-19
  - Plan to sort out licenses next year
- Infra investment amount is an issue
  - MPTC understands importance of 5G, but wants to determine benefits worth investing
- No official gov info on 5G trials despite reports
  - Media reports that 5G pilot with Huawei has already been conducted

To-Be 🌳

Mechanism established not to reduce 4G usage/coverage rates, bringing them closer to 100%
- Tighter regulation in urban areas
  - For future urban dev plans, consider introducing appropriate regulations on antenna installation for owners of high buildings and real estate companies in urban areas to ensure base stations. Ensure a high level of communication coverage
- Digital divide in rural eliminated
  - Improve 4G usage

With 5G rollout plans and licenses issued, digital infra developed for services worth the investment
- 5G investment effects determined
  - To become a developed country in SEA, 5G must rollout in some way in the future. Need to identify 5G investment effects early nd rollout in required areas and use cases
- Local 5G for industry use
  - Consider local 5G to meet industry needs for new business creation
- Improved communication quality
  - Improve latency, backhaul, and interagency coordination

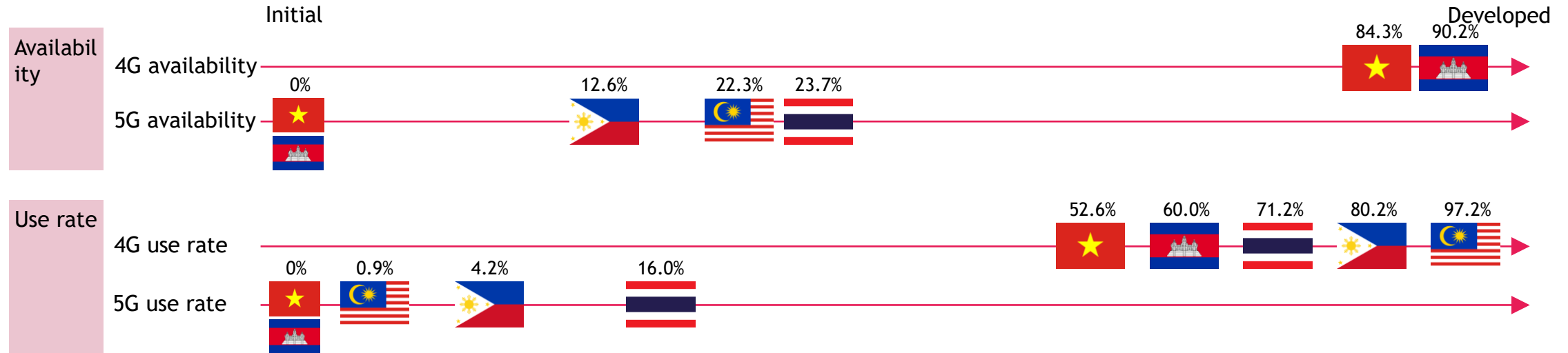Note: Backup materials included in the Appendix,"4G/5G penetration in various countries"
Source. Cambodian government publications, interviews with DGC, MPTC (Nov 2023), Expert Interview, World Data Bank, Omdia, article search

Ref）Communication services (Mobile comm) 4G/5G service penetration

Cambodia has a 4G network with approx. 60% in usage, but lags behind in 5G

Availability

Initial — Developed

4G availability — 84.3% (Vietnam), 90.2% (Cambodia)

5G availability — 0% (Vietnam/Cambodia), 12.6% (Philippines), 22.3% (Malaysia), 23.7% (Thailand)

Use rate

4G use rate — 52.6% (Vietnam), 60.0% (Cambodia), 71.2% (Thailand), 80.2% (Philippines), 97.2% (Malaysia)

5G use rate — 0% (Vietnam/Cambodia), 0.9% (Malaysia), 4.2% (Philippines), 16.0% (Thailand)

Low 4G penetration and lack of plans for 5G licensing limits contribution to the digital economy in Cambodia
- 4G is used at a certain level, but 40% of subscriptions use 2G/3G services due to lack of penetration in rural areas where low cost is a priority
- 5G licensing is not yet planned with a trial offering to a small no. of users, and 5G availability/usage is 0%

There is a wide gap between SEA countries introducing 5G. Some started commercial service as early as 2020, while others have not yet introduced it
- Neighboring Vietnam also lacks 4G development and has not yet introduced 5G
- Thailand started 5G commercial services in Q1 2020

Ref） 4G/5G service penetration comparison

The introduction of 5G is slower in Cambodia vs other countries & 2G networks are still in use

Legend: ■ 2G ■ 3G ■ 4G ■ 5G

Cambodia

	2020	2021	2022	2023e
5G				0
2G	30.5%	27.4%	23.4%	10.8%
3G	33.6%	25.2%	16.6%	7.4%
4G	35.9%	47.4%	60.0%	80.6%

Mainly 4G; 5G not yet introduced. The gov is formulating a roadmap/policy & operators are in trial operation

- The 5G network was originally to be introduced in 2021 but was postponed due to COVID-19. Telecom companies are conducting trials using 5G frequencies, and the government is developing a roadmap and policy for 5G implementation

Malaysia

	2020	2021	2022	2023e
2G	3.2%	2.5%	1.9%	1.0%
3G	19.2%	0.9%		
4G	77.6%	96.6%	97.2%	95.0%
5G			0.8%	3.9%

5G usage keeps growing while 4G coverage reached nearly 100%

- 4G achieved a 96.9% population coverage in Ph.1 of the JENDELA Initiative & will reach 100% in Ph.2
- 5G is planned to cover 80% of densely populated areas by the end of 2023
- On the other hand, the policy landscape is unclear with unstable governments

Thailand

	2020	2021	2022	2023e
3G	33.3%	25.6%	12.8%	5.1%
4G	66.4%	69.8%	71.2%	67.5%
5G	0.4%	4.6%	16.0%	27.3%

Thailand is a leading country in early transition from 4G to 5G vs other SEA countries

- Operators end 4G networks & start introducing 5G
- Future introduction of low-cost 5G devices is expected to accelerate penetration
- On the other hand, delays in the selection of a new prime minister & political uncertainty may affect the development of the telecoms industry (such as spectrum auctions, securing budgets & regulatory approvals)

Philippines

	2020	2021	2022	2023e
2G	8.4%	5.7%	3.8%	2.3%
3G	33.7%	23.5%	11.9%	6.5%
4G	57.7%	69.3%	80.2%	82.0%
5G	0.1%	1.5%	4.1%	9.2%

4G usage tends to grow, while 5G implementation delays due to a decrease in CAPEX in 2023

- 3rd service provider, DITO, entered the market in 2021 after PLDT & Globe
- Meanwhile, PLDT & Globe announced their cut in CAPEX in 2023, slowing the expansion of 5G networks nationwide

Vietnam

	2020	2021	2022	2023e
3G	43.1%	41.3%	35.0%	23.6%
2G	26.8%	21.7%	12.4%	8.0%
4G	30.1%	37.0%	52.6%	68.4%

4G usage tends to grow & 5G is planned for commercialization by 1H of 2024

- 5G testing in major cities, 5G frequency band auctions in late 2023 & 5G commercialization in early 2024 were announced
- Operators need to reinvest in infrastructure for implementation, but a lack of resources (such as a sharp decline in voice-activated communication/SMS & decrease in mobile plans) will slow 5G deployment

JENDELA: A government initiative to reduce the digital divide by improving the network infrastructure nationwide
DNB: Digital Nasional Berhad; The Digital Nasional Berhad, fully funded by the Malaysian government, manages all 5G frequencies and provides services through the DNB infrastructure to operators on a non-auction basis
SWN: Single Wholesale Network, DWN: Dual Wholesale Network
Source: Omdia, expert interview, Fitch Solutions, Jendela Initiative

Ref) 5G services necessary to manage traffic with an acceptable cost

While mobile cellular subscriptions have reached a plateau, internet population and data traffic metrics highlight that 4G insufficiency; neighboring countries demonstrate similar trends and have already adopted 5G

Mobile Cellular Subscriptions (per 100 people)

Although mobile cellular subscriptions have substantially increased in Cambodia since 2005 (approx. 14X), recent years show maturity
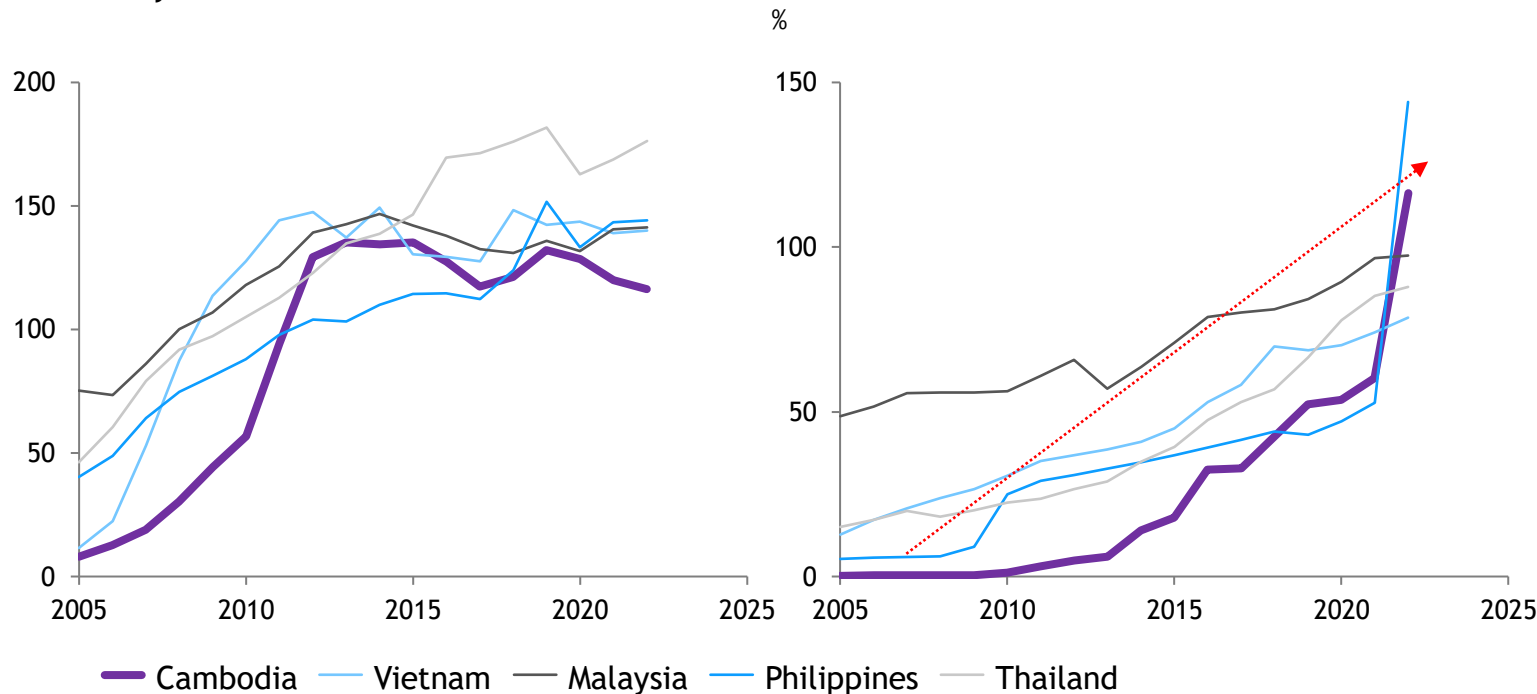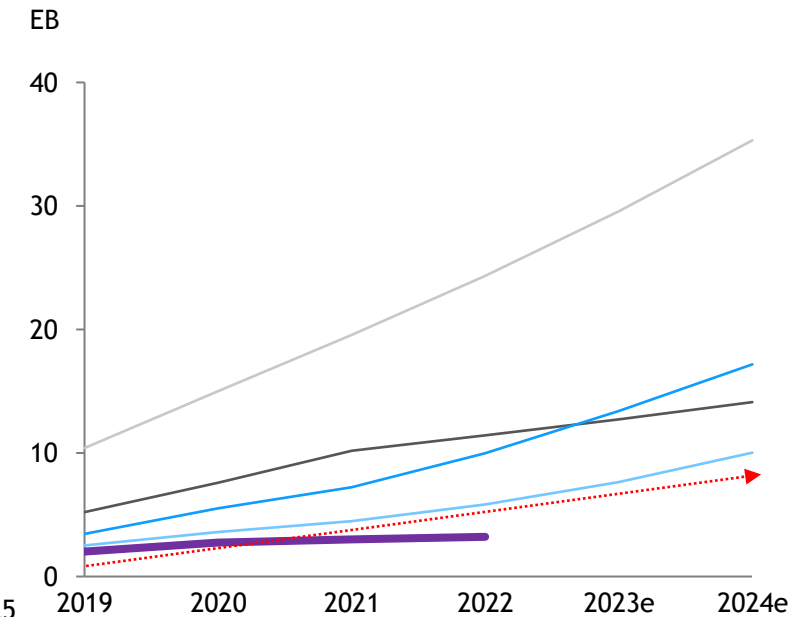
Individuals using the Internet (% of population)

Internet users significantly increasing; in the past 5 years, where users in Cambodia have increased by 3.5X, showing significant growth
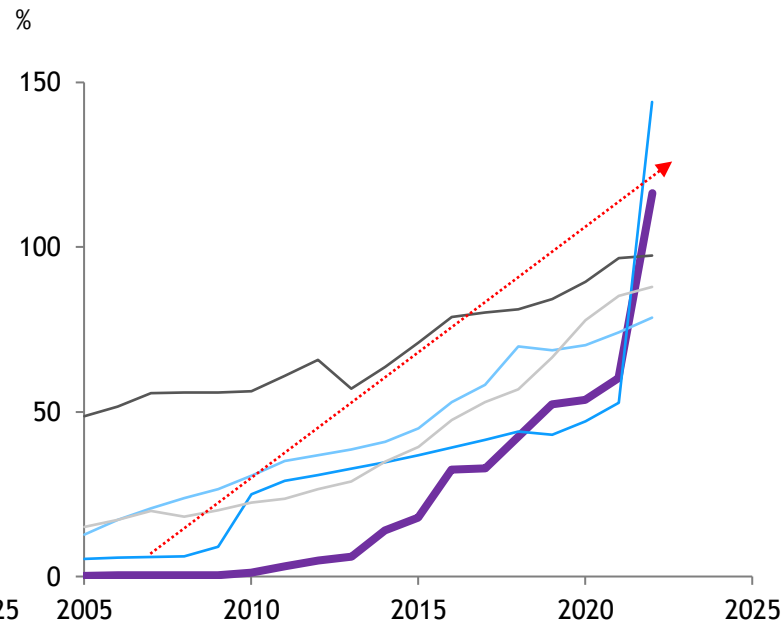
Mobile data traffic

Data traffic in Cambodia has grown 1.6 times in the past 3 years and expected to increase

Cambodia — **Vietnam** — **Malaysia** — **Philippines** — **Thailand**

66

6-3 Network distribution

Limited facility sharing of comm buildings and backbone networks; USO Fund is used to promote regional expansion

Major relevant gov agencies

Ministry of Post and Telecommunications (MPTC)
- Lead postal system, telecom system, and digital infra/ICT sector services

Telecommunication Regulator of Cambodia (TRC)
- Independent agency responsible for economic growth & dev of telecom industry

Related strategy/policy/plan

- Digital Government Policy 2022-2035

Major donor support

CHINA
- Cooperative support for 4.5G & 5G

Gap

As-Is

Passive infra sharing

Tower sharing is implemented by some companies; expected to expand thru USO Fund
- Some telecom coms also own and operate tower companies and engage in passive infrastructure sharing (tower sharing)
- USO Fund plans to promote tower construction, infra network, and comm antenna installation in rural areas

Active infra sharing

5G RAN sharing has not yet been examined
- Room to promote active RAN sharing for 5G rollout, not just tower sharing

To-Be

Tower sharing continued
- Promote facility sharing as an efficient way
- Build infrastructure networks and towers in rural areas by utilizing USO Fund

Application of sharing model for 5G rollout considered
- Active infrastructure sharing is essential
  - Economically sustainable sharing model is needed to launch, manage, and operate 5G at an acceptable cost
- Multiple options for active infra sharing models
  - RAN sharing among companies or gov-driven RAN sharing model is suitable in Cambodia due to low ARPU, high regulatory costs, and no. of MNOs

Note: Backup materials included in the Appendix, "Sharing model overview," "Active RAN sharing and ownership model," "Active RAN sharing benchmarks," "Examples of active RAN sharing"
In Fixed Network Sharing, Telecom Cambodia and private companies own the domestic telecommunications fiber network, and telecom companies use dark fibers of cable operators
Source. Cambodian government publications, interviews with DGC, MPTC (Nov 2023), Expert Interview, World Data Bank, Omdia, article search

Ref) Network Infrastructure Sharing and Ownership Model (1/2)

Both infrastructure sharing models are crucial in Cambodia for 5G rollout to remain economically sustainable. For the context of this case where the focus is on the possibility of Open RAN implementation and 5G distribution methods, emphasis will be on active infrastructure sharing

A Passive Infrastructure Sharing

A-1 Radio towers

TowerCos currently share to the local operators for efficiency purposes

1. Telcos own towers and potentially share with some of their competitors
2. Towers owned by local TowerCos and leased to multiple telcos
3. Towers owned by global/regional TowerCos and leased to multiple telcos

B Active Infrastructure Sharing

B-1 Government-driven RAN sharing

Although not locally implemented, neighboring countries have started testing out the models for 5G

1. Single Wholesale Network
2. Dual Wholesale Network
3. Government-mandated/ incentivized sharing

B-2 Industry-driven RAN sharing

Commercial agreements have been a common model since 2G across the world to cover less attractive areas

1. Active network sharing based on commercial agreement
2. Active network sharing through a JV structure
3. Active network provided as a service to multiple operators in a NetCo construct

Ref）Communication services (Mobile comm) 4G/5G service penetration

Cambodia has a 4G network with approx. 60% in usage, but lags behind in 5G

Initial → Developed

Availability

- 4G availability: 84.3% (Vietnam), 90.2% (Cambodia)
- 5G availability: 0% (Vietnam, Cambodia), 12.6% (Philippines), 22.3% (Malaysia), 23.7% (Thailand)

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There is a wide gap between SEA countries introducing 5G. Some started commercial service as early as 2020, while others have not yet introduced it

- Neighboring Vietnam also lacks 4G development and has not yet introduced 5G
- Thailand started 5G commercial services in Q1 2020

Use rate: calculated based on 2022 annual subscriptions, totaling mobile phones, portable devices incl tablets, and cellular-enabled IoT devices and track subscriptions of active network connections
Availability: Percentage of time people are connected to the network at their most frequent locations thru Open Signal in 2023 (reflecting when users are connected); average calculated from telecom companies in each country
Source: Omdia, Fitch Solutions, Open Signal, Cambodia Digital Government Policy

69

Ref) Network Infrastructure Sharing and Ownership Model (2/2)

Diverse RAN sharing models offering tailored solutions to meet unique operational and coverage needs

B Active Infrastructure

B-1 Government-driven RAN sharing

B-2 Industry-driven RAN sharing

ⓘ Single Wholesale Network	ⓘⓘ Dual Wholesale Network	ⓘ Government-mandated/ incentivized sharing	ⓘ Active network sharing based on commercial agreement	ⓘⓘ Active network sharing through a JV structure	ⓘ Active network providing as a service to multiple operators in a Netco construct
①Owned and operated by the government	Ex.) Malaysia under discussion to introduce a second entity	Ex.) In Singapore, 2 licenses were awarded for 5G and led Starhub and M1 to share their network via Antina (JV)	Ex.) Viettel, Vinaphone, and MobiFone agree to share 5G RAN infrastructure in Vietnam	Ex.) Telenor and Tele2 form Net4Mobility, a JV in Sweden	Ex.) CETIN providing wide range of services including mobile networks, data centers, security, antenna systems, etc.
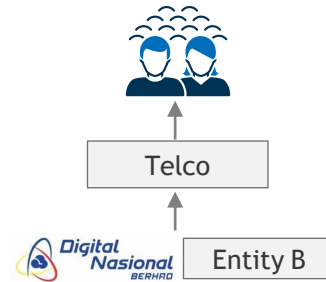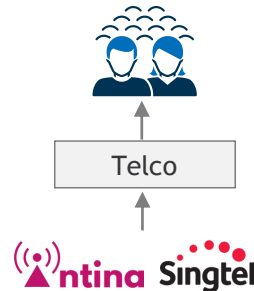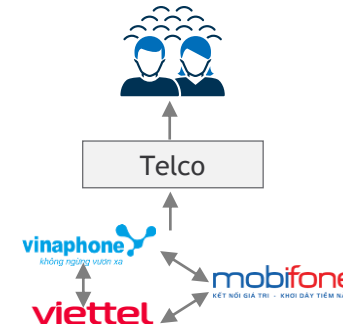
①Owned and operated by the government

Ex.) DNB allocated 5G spectrum and conduct rollouts

②Partly owned by the government and MNOs

Ex.) DNB's second phase where they executed share subscription agreements with MNOs to take equity stake

Netco: refers to a business that sells products or services over the Internet
Sources: Expert interviews, company website

70
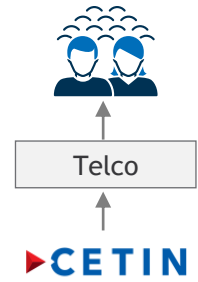
Ref) Government-driven RAN Sharing Benchmark

Government-driven RAN sharing model bet 2 networks looks optimal for Cambodia's 5G deployment

B Active infrastructure sharing

B-1 Government-driven RAN sharing

	i Single Wholesale Network	**ii** Dual Wholesale Network	**iii** Government-mandated
Summary	Potential for cost savings, many limitations / disadvantages	Though slow to launch, fosters competition over SWN	Quicker deployment and cost efficient, but challenging to bring new investors
Cost	✕ Upfront costs to create new entity	✕ Higher upfront costs compared to SWN to create new entities	△ No new entities required; challenging to bring in capital
Security	✕ Single point of failure – all operators will be affected	△ Possible risk of security vulnerability between 2 entities	? Dependent on number of licenses issued; if 1 license is issued, single point of failure
Redundancy	✕ Dependence on a single network requires backup connection	△ Can switch networks if one faces problems but only 2 entities	? Dependent on number of licenses issued
Ease of NW expansion	Network expansion depends on the suppliers' status, regulatory authorities, and technical expertise		
Competitiveness	✕ Limitations due to government control and vendor restriction	△ Broader options / more competition for MNOs compared to SWN	△ Operators focus on providing services and pricing but not unique infrastructure
Flexibility	✕ Easier to manage but creates monopoly and delays in rollout	△ Can decide on wholesale provider, but government remains in control	△ Bringing in new investors may pose challenges to financial flexibility
Governance	△ Easier to manage but creates monopoly and delays in rollout	? Dependent on how government will structure and plan rollout	○ Could provide clear guidelines on shared ownership but must align with government

Source: Expert interviews, BCG analysis

Ref) Active Infrastructure RAN Sharing Amongst 2 Networks

Suitable for Cambodia for the following reasons:
①Low ARPU and high regulatory costs in Cambodia
②Not many MNOs (mainly 3 operators that make up approximately 95% of the market share)
③A single network could lead to risks of monopoly, inefficiency, and cybersecurity

Examples of a Sharing RAN Infrastructure Amongst 2 Networks

ii Dual Wholesale Network

Government receives bids from 2 consortiums rather than allocating licenses to individual telcos
- Can bring in new investors/new capital

Entity B

Mid-21: Digital Nasional Berhad formed and awarded with NFP / NSP license; however, issues of anticompetitive behaviour and lack of control has contributed to lack of buy-in from MY operators

Nov-22: CelcomDigi, TM, YTL, U Mobile have agreed to 10-year access agreement (Maxis still assessing requirements); signing of access agreements comes after Celcom, Digi, TM & YTL agreed to own 65% stake in DNB

May-23: With the new government and the realization of an inefficient structure and not meeting rollout targets, idea of splitting into 2 networks was brought up

iii Government-mandated/ incentivized sharing

Government issues 2 licenses with the requirement that the 2 companies share their infrastructure
- Faster deployment and cost efficient (no new entities)

5G License owners

50% 50%
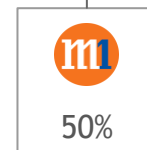
Feb-20: Starhub and M1 created a JV (Antina) to to develop, deploy and operate a 5G mobile network in Singapore; JVCo to lease wholesale mobile network services back to both Starhub-M1

May-20: IMDA awarded two 5G licenses (for 3.5 GHz and mmWave) to Antina and Singtel respectively; requiring >50% coverage by end-2022 and scaling up to nationwide coverage by end-2025

72

Source: Expert interviews, BCG analysis

6-4 Infra facilities

Multiple submarine cables in operation, but commercial positioning of submarine cables and international data exchange bases are in short

Major relevant gov agencies

Ministry of Post and Telecommunications (MPTC)
- Lead postal system, telecom system, and digital infra/ICT sector services

Telecommunication Regulator of Cambodia (TRC)
- Independent agency responsible for economic growth & dev of telecom industry

Related strategy/policy/plan
- Digital Government Policy 2022-2035

Major donor support

CHINA
- Cooperative support as investors/suppliers of submarine cables

Gap

As-Is 🌱

Submarine cable

Two submarine cables exist without data exchange base and limited services available
- **Currently no data exchange base**
  - No data exchange base, and customers consolidate to their own data centers
  - Cambodia Network Exchange (CNX) handles domestic data exchange, but not international data
- **Low service usage**
  - Pointed out that lack of understanding and responses to users[1] by operators may result in 50% of submarine cable capacity unused[2]

Land cable

Exists among Laos, Vietnam, and Thailand with limited use
- Cross-border data transfers exist, but no gateway
- Operated by a private com. Telecom Cambodia is involved in facility mgmt

To-Be 🌳

Cambodia's digital economy policy is accelerated by expanding submarine cables
- **New submarine cable services launched**
  - Cambodia-Hong Kong cable scheduled to open in 2024
- **Mgmt./operation of landing stations and data exchange bases**
  - Plan to connect multiple submarine cables to one landing station in the future
  - Interconnection to handle international data expected with the opening of data exchange bases
- **Improved service usage**
  - Enhance positioning of services and consider remedies to increase users
  - New border license and retail internet license facilitate cross-border access

(No interviews available for this survey)

1. Submarine cable users include telcos, tech companies incl ISP, energy companies (power transmission), government and defense agency 2. from interview with EZECOm Note: Backup materials included in the Appendix, "Submarine cable under Cambodia," "Data exchange base for submarine cables"
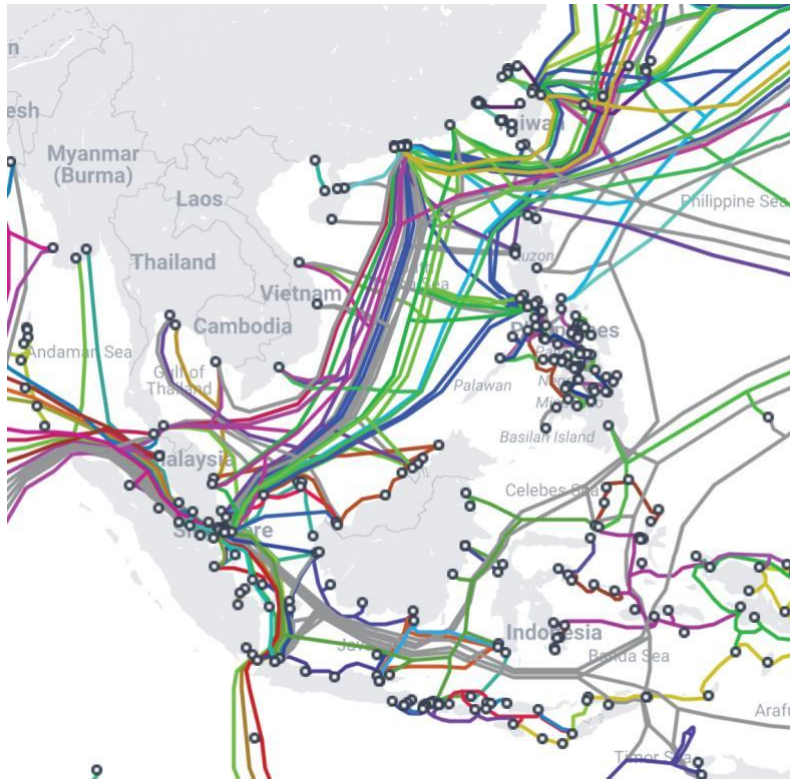Source. Cambodian government publications, interviews with DGC, MPTC (Nov 2023), Expert Interview, World Data Bank, Omdia, article search

Number of submarine cables in Southeast Asian countries
A total of four submarine cables pass through Cambodia

Submarine Cable Map

Country	# of Connections	Cable Name
Cambodia	3 or 4	Asia Africa Europe-1 (AAE-1), Cambodia-Hong Kong, Malaysia-Cambodia-Thailand (MCT)
Malaysia	24	APCN-2, Asia Africa Europe-1 (AAE-1), Asia-America Gateway (AAG), Asia Link Cable (ALC), Asia Pacific Gateway (APG), Asia Submarine-cable Express (ASE)/Cahaya Malaysia, Batam Dumai Melaka (BDM) Cable System, Batam-Rengit Cable System (BRCS), Batam Sarawak Internet Cable System (BaSICS), Bay of Bengal Gateway (BBG), Dumai-Melaka Cable System, East-West Submarine Cable System, FLAG Europe-Asia (FEA), India Asia Xpress (IAX), Labuan-Brunei Submarine Cable, Malaysia-Cambodia-Thailand (MCT) Cable, MIST, SAFE SEA-H2X, SeaMeWe-3, SeaMeWe-4, SeaMeWe-5, SeaMeWe-6, SEAX-1, Sistem Kabel Rakyat 1Malaysia (SKR1M)
Thailand	13	Asia Africa Europe-1 (AAE-1), Asia-America Gateway (AAG) Cable System, Asia Direct Cable (ADC), Asia Pacific Gateway (APG), FLAG Europe-Asia (FEA), India Asia Xpress (IAX), Malaysia-Cambodia-Thailand (MCT) Cable, MIST, SEA-H2X, SeaMeWe-3, SeaMeWe-4, Southeast Asia-Japan Cable 2 (SJC2), Thailand-Indonesia-Singapore (TIS)
Philippines	25	APCN-2 Apricot, Asia-America Gateway (AAG) Cable System, Asia Connect Cable-1 (ACC-1), Asia Direct Cable (ADC), Asia Link Cable (ALC), Asia Submarine-cable, Express (ASE)/Cahaya Malaysia Bifrost, Boracay-Palawan Submarine Cable System (BPSCS), Converge Domestic Submarine Cable Network (CDSCN), EAC-C2C, JUPITER National Digital Transmission Network (NDTN), Pacific Light Cable Network (PLCN), Palawan-Iloilo Cable System, Philippine Domestic Submarine Cable Network (PDSCN), PLDT Domestic Fiber Optic Network (DFON), SEA-H2X, SEA-US, SeaMeWe-3, Sorsogon-Samar Submarine Fiber Optical Interconnection Project (SSSFOIP), Southeast Asia-Japan Cable (SJC), Submarine Cable in the Philippines (SCiP), Tata TGN-Intra Asia (TGN-IA), TPU
Vietnam	8	Asia Africa Europe-1 (AAE-1), Asia-America Gateway (AAG) Cable System, Asia Direct Cable (ADC), Asia Link Cable (ALC), Asia Pacific Gateway (APG), SeaMeWe-3, Southeast Asia-Japan Cable 2 (SJC2), Tata TGN-Intra Asia (TGN-IA)

Including cable service to be launched
Source: TeleGeography (Submarine Cable Map), Arizton

Ref) Communication infra facilities: Submarine cable passing through Cambodia
Total 4 submarine cables pass through Cambodia

Cable name	Service start date	Cable distance	Landing point	Investing company	Supplier
MCT Cable	Mar 2017	1,300km	Sihanoukville, Cambodia Cherating, Malaysia Rayong, Thailand	Symphony, Telcotech, Telekom Malaysia	HMN Tech
Asia Africa Europe-1 Cable	Jun 2017	250,000km	Sihanoukville, Cambodia • Cape D'Aguilar, China • Djibouti City, Djibouti • Abu Talat, Egypt • Zafarana, Egypt • Marseille, France • Chania, Greece • Mumbai, India • Bari, Italy • Butterworth, Malaysia • Ngwe Saung, Myanmar • Al Bustan, Oman • Karachi, Pakistan • Doha, Qatar • Jeddah, Saudi Arabia • Satun, Thailand • Songkhla, Thailand • Fujairah, United Arab Emirates • Vung Tau, Vietnam Aden, Yemen	China Unicom, Djibouti Telecom, Etisalat UAE, Hyalroute, Metfone, Mobily, National Telecom, OTEGLOBE, Omantel, Ooredoo, PCCW, Pakistan Telecommunications Company Ltd., Reliance Jio Infocomm, Retelit, TIME dotCom, TeleYemen, Telecom Egypt, VNPT International, Viettel Corporation	NEC, SubCom
Cambodia-Hong Kong	Scheduled in 2024	2,715km	Sihanoukville, Cambodia Hong Kong, China	Cambodian government	HMN Tech
Southeast Asia-Japan 2 Cable[1]	Scheduled in 2024	10,500km	Chung Hom Kok, China / Lingang, China / Chikura, Japan / Shima, Japan / Changi South, Singapore / Busan, South Korea, / Fangshan, Taiwan / Tanshui, Taiwan / Songkhla, Thailand / Quy Nhon, Vietnam	China Mobile, Chuan Wei, Chunghwa Telecom, DongHwa Telecom, Meta, KDDI, Singtel, SK Broadband, Telin, TICC (True), VNPT	NEC

1. Cambodia is included depending on the source; According to the expert interview, Cambodia used to be a potential landing point but now it is excluded   Source: TeleGeography (Submarine Cable Map), Arizton

Ref) Communication infra facilities: Data Exchange site in Cambodia

Status of submarine cables/data exchange in Cambodia

Operate two submarine cables, but currently have no data exchange bases

- Operate two submarine cables, without no data exchange bases, and customers consolidate to their own data centers
- Cambodia Network Exchange handles domestic data exchange, but not international data
- Two submarine cables in operation are not fully used, not commercially positioned well despite the demand

Cambodia Network Exchange (CNX) overview

CNX is an Internet Exchange Point (IXP) launched in 2008 to connect users in Cambodia to local content and open access to internet users

- Mainly provides connections between production facilities and business mgmt systems
- According to experts, vendor is primarily Cisco and software is open-sourced

Future outlook *Experts' view*

Data Exchange in the future

Neocom or MekongNet may offer their own data exchange in the future

- Two new licenses, the border license and the retail internet license, make it easier for small businesses to access and interconnect across borders
  - MekongNet and Telecom Cambodia have obtained licenses while NeoCom is considering

Role & impact of submarine cables on the digital economy

Promote Cambodia's digital policy by owning submarine cables

- Provide lower latency connectivity and bring price competition
- Having a highly reliable, robust, and secure infra will help the Cambodian gov accelerate its digital economy policy

Room for expansion

Submarine cables are currently concentrated in one location, leaving room for expansion in the west side

7-1 Data center

Commercial data centers are expanding; Issues in data linkage among ministries and unification of server rooms

Major relevant gov agencies

Ministry of Post and Telecommunications (MPTC)
- Leads services in postal/telecom systems and digital infra/ICT sector

Digital Government Committee (DGC)
- Although DGC has commented that it is not in charge of the data center study as of now, seems in charge of the study in writing

Relevant strategies, policies, and plans

- Digital Government Policy 2022-2035

Key donor support

Japan
- Plans to provide the facility portion of the national data center

Gap

As-Is 🌱

National data center

Each ministry has its own data center (server rooms) but unconnected with each other
- Construction of national data center to begin, led by MPTC
- However, ministries that have their own server rooms within their own ministries, such as MEF and MOI, are reluctant to use them
- Current MPTC structure/jurisdiction are assumed to be difficult to operate, but as of now, operation/mgmt. systems are under consideration by Cambodia

Data center owned by private coms

Com-owned data centers exist, but op level is not high, and cloud is mainly used overseas
- Several investment plans for new DCs by private coms
  - Need tech/resources for design
- No high-level data centers is in place
  - Use cloud facilities from AWS, Alibaba, etc.
- Gov has tightened regulations related to data center ops by private coms
  - Licensing system has been introduced from TRC, and data center ops will be required to obtain licenses in the future

To-Be 🌳

Gap bet ministries are bridged by expanding commercial/gov use of national DC (unifying national DC for gov data may be difficult)
- Establish national DC operation/revenue model
  - Expect to build Tier 4 data center (may be at least Tier 3 due to cost considerations)
  - Promote use of national DC (.kh domain already issued)
  - Considering lease business model to private coms (room for use esp. in the financial industry)

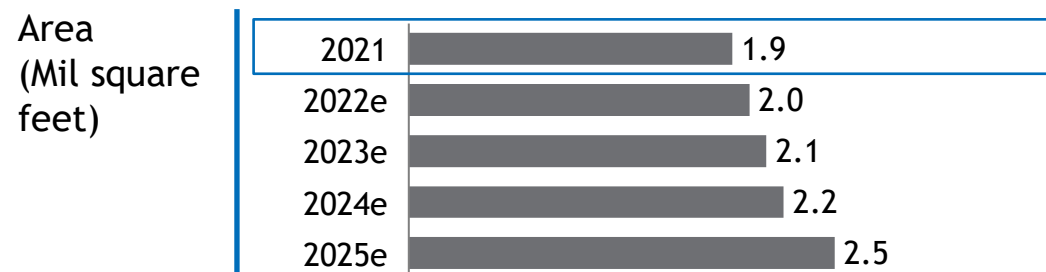**Data centers in private coms increase as demand for local storage glows**
- No. of licenses to build/operate data centers will increase in the future, leading to more data centers of private coms
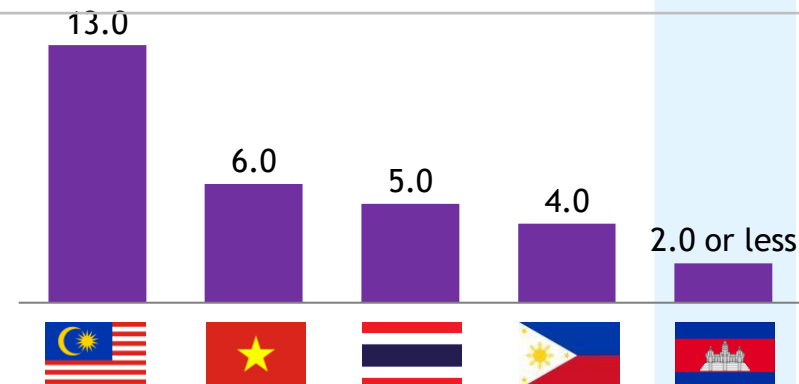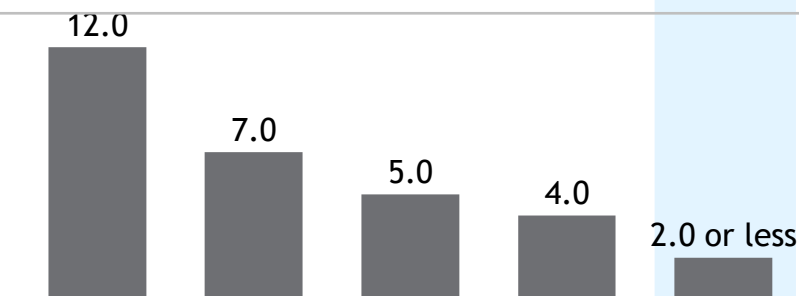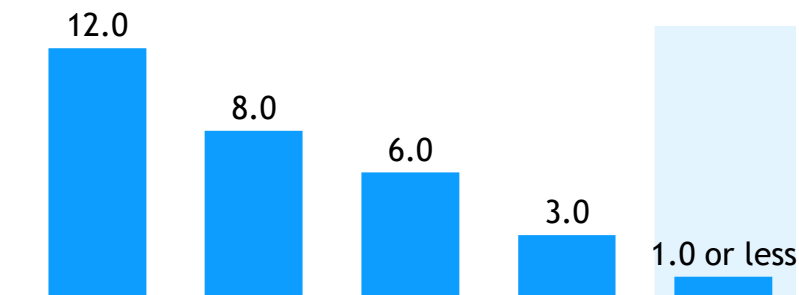- High-level data centers (Tier 3/Tier 4 standards) are also expected to be built in the future

Note: Backup docs include "comparison with southeast Asian countries", "private operators in Cambodia", and "data center market trend in Cambodia" in the Appendix
Source. Cambodian gov public docs, interviews with Cambodian gov agencies DGC, MPTC (conducted in Nov 2023), Expert Interview, other article searches

77

Ref) Data storage infrastructure: Comparison with Southeast Asian countries

In 2021, Cambodia's data center investment, area, and power capacity are less than 2% of the Southeast Asian country's total and are not well developed.

Data Center Infrastructure Figures in Southeast Asia

Data Center Investment (Bil USD)

Year	Value
2021	8.7
2022e	9.2
2023e	9.4
2024e	10.0
2025e	11.5

Area (Mil square feet)

Year	Value
2021	1.9
2022e	2.0
2023e	2.1
2024e	2.2
2025e	2.5

Power capacity (MW)

Year	Value
2021	420.0
2022e	415.0
2023e	421.0
2024e	450.0
2025e	492.0

FY2021 Share by Country (%)

Data Center Investment share: 12.0, 8.0, 6.0, 3.0, 1.0 or less

Area share: 12.0, 7.0, 5.0, 4.0, 2.0 or less

Power capacity share: 13.0, 6.0, 5.0, 4.0, 2.0 or less

Cambodia is relatively underinvested in data storage infrastructure in Southeast Asia.
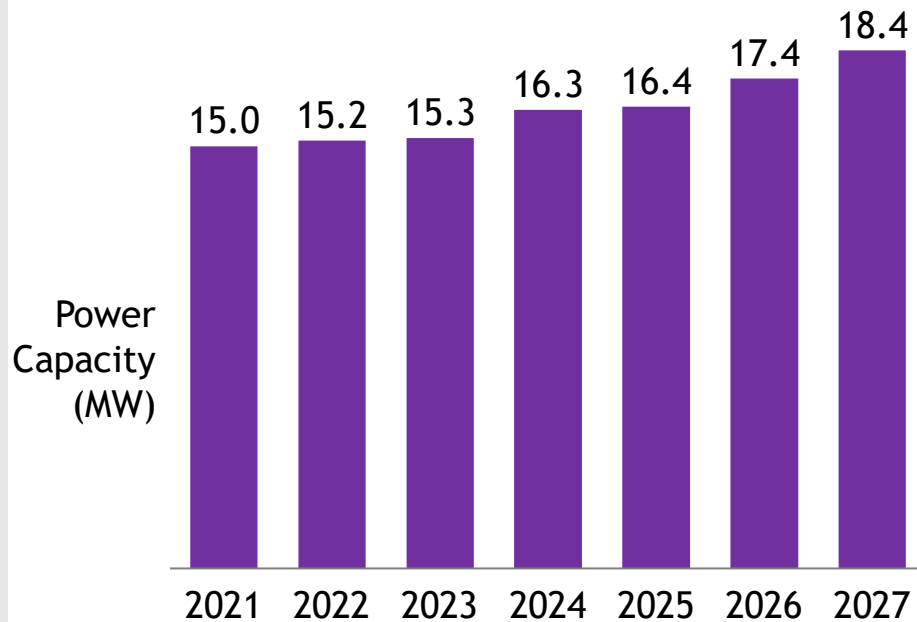
78

Ref) Data Storage Infrastructure : Supply and Demand in Cambodia

4 Data Centers Obtain License from the Government and Economic Development Plan Drives Future Growth

Cambodia, Laos, and Myanmar's DC Market

Market is expected to grow by CAGR 3.46%

Bar chart values by year:
- 2021: 15.0
- 2022: 15.2
- 2023: 15.3
- 2024: 16.3
- 2025: 16.4
- 2026: 17.4
- 2027: 18.4

Y-axis: Power Capacity (MW)

Cambodia's current data center market

While data centers exist, often lacks the high-level standards, necessitating a reliance on global cloud-based data centers

- While some companies in industry (telecommunications, banking, etc.) have their own data center facilities, they do not meet high standards due to lack to technology and human resources
- When high-level data centers are needed, global data centers such as AWS, Alibaba, etc. are used but government pushes for data to be stored locally
- All new data centers require a license to operate (may require all current data centers to obtain a license In the future)

Cambodia's data center market outlook

Data center market is anticipated to expand, but demands high-level capabilities (Tier 3 / Tier 4 standards)

- The government has an economic development plan to break out of the Least Developed Countries by 2027. Within that, the government is striving to build more infrastructure (cities, transportation, etc.), and data center is part of it
- The national data center being built is also a key element to bridge the gap between ministries

Key points to support growth

Support from other countries	Technical expertise	High security	Human resources

Conducted interviews with experts regarding the national data center and future prospects (plans to confirm the situation with government agencies in the future)

Ref) Data storage infrastructure: Private operators in Cambodia (initial survey[1])

Private data storage infrastructure in Cambodia is growing rapidly after 2022

Company Name	Installation year	Main business	Nationality	# of data centers	Area	Installation capacity
BYTEDC	2023	Data center	Cambodia	1	80,000 sq ft	3MW
KEPSTAR DATA CENTRE MANAGEMENT CO. LTD.	2022~	Data center	Cambodia	2+1(in planning)	DC1:110,000 sq ft / DC2: 50,000 sq ft	DC1:6.5MW DC2:3.5MW
Chaktomuk	2022 (Scheduled completion)	Data center	Cambodia	1	115,000 sq meters	TBC
GCX	2017	Data center Cloud Service	Cambodia	1	400㎡	80KW
seatel	2016	Mobile Telecommunications	Singapore/ Cambodia	1	TBC	TBC
HT Networks	TBC	Internet exchange	Cambodia (TBC[1])	1	TBC	TBC
MEKONGNET	TBC	Internet Service Provider	Cambodia	2	6,000 sq ft	TBC
Kingtel 金泰电信	TBC	Mobile Telecommunications	China	1	More than 3,000 sq meters	TBC

> Private data infrastructure providers are rapidly setting up large data centers, and area and capacity are growing rapidly

1. Could be of Chinese descent.

8-1 Base registry

Although DEBC emphasizes the development of a base registry, the main actors involved are government agencies, and there are significant technical and resource challenges

Major relevant gov agencies

- The main actors are all government agencies that have databases. However, DEBC and DGC are the flagship organizations.
- The National Institute of Statistics (NIS) of the Ministry of Planning (MoP) takes the lead in statistics.

Relevant strategies, policies, and plans

- Digital Economy and Society Policy 2021-2035 (DES Policy)
- Digital Government Policy 2022-2035 (DGP Policy)

Key donor support

KOICA: MPWT vehicle mgmt. system

Gap

As-Is 🌱

Reliability of database

Technical and resource challenges exist in building a database that can be used as a base registry
- Data quality is unknown, and data cleansing technology and resources are insufficient.
  - Some ministries and agencies still have paper data
  - The construction of the base registry is a decision made by each ministry and cannot be done top-down.
- When connecting to CamDX, the quality of data needs to be assured, so the data will be reviewed by Techo Startup, but the main responsibility for the development lies with the ministries and agencies.

Gov Statistics

Data linkage is a challenge and government statistics are inadequate
- Insufficient digital utilization for national government surveys. Government statistics utilizing data from other ministries are also underdeveloped
- Lack of MOP resources (funds and digitally literate staff) is a challenge

To-Be 🌳

High quality database is developed/maintained by each ministry
- DEBC prioritizes the dev of a data registry and expects to connect with CamDX to create the following services[1]
  - Data mgmt. systems for family registration/ID mgmt., immigration and visa info mgmt. systems
  - Real estate info mgmt. systems
  - Other mgmt. systems for each type of data such as education/medical/postal/tax, etc.
- Each ministry will use the database of field under its jurisdiction as the base registry and continue to operate it
  - Ensure quantity: promote online submission for each application form and input of missing data
  - Ensure quality: conduct data cleansing and checking with existing data when entering new data

Enable policy making based on correct statistics
- In the Digital Government section of the DES document, there is a need for data collaboration with ministries and agencies, including the National Institute of Statistics (NIS), in order to achieve a data-driven government.
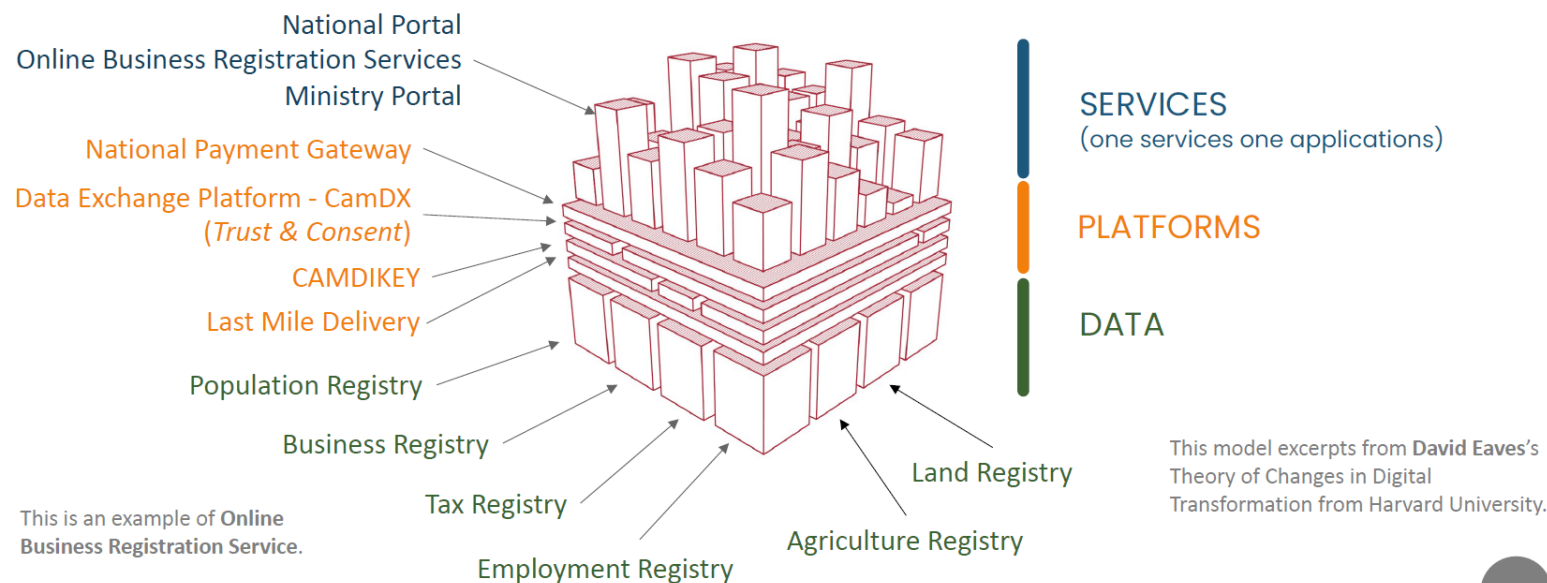
1. From DES description

Recap

Ref) Configuration of the digital gov system based on the principle described in DGP

Create a concept of digital gov systems consisting of 3 elements: data layer (various registries), platform layer (data exchange platform CamDX, infra, etc.) and service layer (various administrative services), based on 3 principles of digital gov imple. Based on this concept, CamDX (data exchange plate), CamDigKey (personal authentication) have been built by Techo Startup and are currently in the operation phase

CONCEPTUALIZE THE THREE PRINCIPLES

Digital Government Systems Based on the "Whole-of-Government" Approach

- National Portal
- Online Business Registration Services
- Ministry Portal

SERVICES
(one services one applications)

- National Payment Gateway
- Data Exchange Platform - CamDX (*Trust & Consent*)
- CAMDIKEY
- Last Mile Delivery

PLATFORMS

- Population Registry
- Business Registry
- Tax Registry
- Employment Registry
- Agriculture Registry
- Land Registry

DATA

This model excerpts from **David Eaves**'s Theory of Changes in Digital Transformation from Harvard University.

This is an example of **Online Business Registration Service**.

17

The Once-Only Principle

- Exchange data bet gov orgs via platforms such as CamDX

Interoperability as an Ecosystem

- Develop independent apps for each administrative service
- Link with other services

Land and Expand for Efficiency

- Develop various registries and service apps sequentially from where they can be done

Source: Excerpts from materials received by JICA from MPTC General Dept of ICT. Note; the above image is not necessarily the unified view of the government

Ref) Types of major government registries
The gov of Cambodia organizes its major registry items by individual/business/property as follows

Basic Registries of the Government

Individual

Population, Living Condition, Social Protection, Education, Income and Taxation

Business

Business, VAT, Tax Declaration, Employment Enterprise, Foreign Trade

Property

Real Estate, Real Estate Tax Assessment, Motor Vehicles, Geography, Dwelling

Techo Startup Center © 2023

5

Source: Excerpts from materials received by JICA from TECHO Startup Center

9-1 ID

Use of national ID data is limited, and each administrative service creates its own ID. Although MoI is considering the establishment of a united ID for all citizens, there is no prospect for its realization

Major relevant gov agencies

- Ministry of Interior
  - Holds KhmerID and citizen registry
- Ministry of Commerce
  - Holds company's registry

Relevant strategies, policies, and plans

- National Strategic Plan of Identification 2017-2026 (NSPI)
- Sub-Decree No. 36 on Khmer Nationality Identity Cards

Key donor support

- Currently no support for IPIS from other donors/partners such as ADB and GIZ. A private com (AKC@Germany) contracted by MEF/MOI is planning to develop
- Vital Strategy and ADB have experience in supporting NSPI

Gap

Personal ID

As-Is

KhmerID is currently the most pervasive ID, but no nationwide coverage
- Acquired at age 15 or older. 15 million cards have already been distributed, mainly in urban areas
- ID cards are renewed every 10 years. Distributed since 2012, coming up for renewal for the first time this year

No unified ID to manage lifetime exists
- MOI has a plan to build ID infra (IPIS) based on UIC, but concrete initiatives and goals are unclear as of now

Other functional IDs are created by each ministry
- Several IDs exist within each ministry (passport, election ID, social security ID, CamDigiKey, etc.)

To-Be

UIC that can be used for the entire nation throughout lifetime is built by MoI
- Applied for by hospitals at birth and used as a lifetime usable ID
- Build and implement ID infra (IPIS) based on the UIC

Data from other ministries/private sectors are linked to UIC and IPIC
- ID info for admin services is linked in IPIS
- ID info is unified in UIC for each ministry, and only functionally necessary info are stored in the data of each ministry
- Use in various social services is promoted by connecting to CamDX

Prepare an updated version of the NSPI based on the CRVS ID Law and clarify the action plan for building the UIC and IPIS

Business ID

Not covered in this survey for in-depth study

Note: Backup docs include "citizen authentication system penetration rate and exchange status with services" and "IDs currently in use in Cambodia" in the Appendix
Source. Cambodia gov public docs, interviews with MPTC/telcos (conducted in Nov 2023), JICA expert knowledge, other article searches

Ref) IDs currently in use in Cambodia

Multiple IDs are used simultaneously in Cambodia, and currently there is no universal ID

KhmerID

KhmerID is widely used, but not sufficient for universal ID because the targets are not the whole nation

Overview of Khmer ID
- Eligible persons: all citizens aged 15 and over
- Adoption rate: more than 12M people have a national ID (asl of 2022)
- Period of validity: 10 years
- Issuing agency: General Department of Identification (GDI), MoI
- Start of issue: current biometric identity card was introduced in 2011
- Registration info: ID number / fingerprint / family registry info / photo, etc.

Issues from the most recent news
- Issues to smooth renewal
    - 1.7M IDs expired in 2022 and 3M IDs will expire by 2025
    - As of Jul 2022, only 1M IDs had been renewed, so the gov has issued a call for thorough renewal to ensure voting rights

Other IDs

In addition to KhmerID, several other IDs are in operation that are not linked to KhmerID

Ref) Social security-related IDs
- IDPoor
    - IDs assigned to low-income households on a per household basis
    - Issuing agency: Ministry of Planning

- NSSF Code
    - IDs held by policyholders to NSSF mutual assistance insurance for employees
    - Issuing agency: NSSF, MoLVT, MEF

- SPID
    - ID being demonstrated by NPSC as a social security ID

- Patient ID managed by each hospital

Ref) Comparison of digital ID system intro status with other countries (initial survey)

Malaysia and Thailand were the first to introduce digital ID systems, while Cambodia appears to be lagging far behind

		Cambodia	Vietnam	Thailand	Malaysia
System name		KhmerID	Digital national identification system VNeID, Vietnam Electronic Contract Development Axis	National Digital ID (NDID)	National Digital ID (NDID)
eID penetration rate		Less than 1% • 30K registered CamDigiKey accounts, an e-certificate app linked to KhmerI (Oct '23)	Approx. 10% • No. of registered accounts: to be confirmed • Population: approx. 100M (2021)	More than 6% • 4.3M accounts registered (Mar '22) • Population: approx. 70M (2021)	Start of use in 2024 • Population: 33M (2021)
Linkage with gov related	Taxes	Not yet linked	Partially linked • Authentication app (VNeID): systems used for electronic ID and authentication when processing administrative procedures, public admin services, and other transactions on the internet	Already linked • ID info registration integrated with customs • Info/authentication platforms such as eKYC and loan	Already linked • Authentication platform for accessing digital services and making digital transactions for public services, online banking, e-commerce, private services incl. telecoms, and medical services • Linkage with MyKad, Malaysia's personal ID
	Other gov services	Not yet linked			
Linkage with other services	Finance	Not yet linked • Plans to link in the future (opening accounts etc.)	Likely to be partially linked • Details to be confirmed		
	Medical	Not yet linked • Managed by social security ID, not KhmerID	Partially linked • Linkage in the national e-identification system	Partially linked • Smart ID card[1], data linkage systems for medical services, etc.	
	Business	Partially linked • Set up from start-up business registration perspective	Partially linked • e-contract platform for online authentication and retrieval of business contracts	Likely to be partially linked • Details to be confirmed	
Findings		Dev of digital IDs is very slow	Digital ID exists, but divided into multiple systems and cannot be integrated	Digital ID exists and is largely integrated except in the medical sys	Integrated digital ID platform in place, linking with multiple services

1. Platform where patient data and medical records are linked bet hospitals   Note: NEC is cooperating in the dev of Digital ID in Vietnam and Malaysia
Source: NDID Thailand、CamDigiKey, articles from various countries

9-2 Identification (KYC)

While the linkage to passports and civil registries is still in the development stage, authentication using KhmerID's CamDX has already been realized. With the development of Integrated Identification System (IPIS), the use of eKYC for information other than KhmerID is expected to develop in the future.

Major relevant gov agencies

TECHO Statup Center・MEF
- CamDigiKey system development and operation

Ministy of Interior
- Jurisdiction over KhmerID. Provides identity verification API through CamDX

National Bank of Cambodia (NBC)
- Member of Camdigikey consideration
- Published Fintech-related policies and roadmap

Relevant strategies, policies, and plans

- Digital Government Policy 2022-2035 (DGP Policy)
- Financial Technology Development Policy 2023-2028
- FinTech Development Roadmap 2020-2025

Key donor support

N/A

Gap

Utilization and dissemination of eKYC

As-Is

Government initiative to provide eKYC API for KhmerID information to the financial sector only.
- MOI (Ministry of Interior) started providing the financial sector with function to verify identity of information related to KhmerID (2022).
- Facial recognition has been implemented.
- Some financial institutions have not yet started to utilize eKYC in CamDX. But this is considered as a matter of time rather than technical issues.

CamDigiKey currently supports only KhmerID, and linking to passports and citizen registries is still in development
- Since KhmerID does not cover all citizens, the challenge is to realize identity verification linked to other personal information.

Personal use of CamDigiKey is still in development.
- CamDigiKey can be registered by individuals and used as eKYC.
- However, the number of individuals registered is still 30,000 (October 2023)
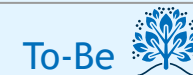
To-Be

More digitization of identity authentication in financial institutions
- Smooth eKYC is necessary to lower the hurdles for mobile banking access, especially for financial inclusion in rural areas.
- In addition, from the perspective of AML/CFT, it is important to improve the accuracy of identity authentication through the penetration of eKYC.

Not only KhmerID, but also other personal information will be linked to IPIS (ID integration platform under consideration by MOI) to realize identity verification

CamDIGIKEY is widely used by individuals, and eKYC will be utilized in government services.
- Written in Digital Government Policy.

Ref) CamDX Usecase Online e-KYC API

CamDX enables financial institutions to check the correctness of personal data linked to KhmerID and facial recognition with MOI's API.

1 Send Request for user info verification

```
"userInfo" : {
    "idNumber" : "id_number",
    "firstNameEn" : "first_name_en",
    "lastNameEn" : "last_name_en",
    "gender" : "M_or_F",
    "dob" : "yyyy-MM-dd",
    "issueDate" : "yyyy-MM-dd",
    "expiredDate" : "yyyy-MM-dd"
},
"faceImg" : "base_64_content",
"idImage" : "base_64_content"
```

2 Receive Request and send a data request to MOI

3 Send data to CamDigiKey server

4 Calculate the Face recognition score and send response

```
"error" : 0,
"message" : "Successfully",
"data" : {
    "userInfo" : {
        "idNumber" : "id_number",
        "score" : 1,  #Range[0,1]
        "incorrectFields" : [ ]
    },
    "faceDocumentScore" : 0.9457877,  #Range[0,1]
    "faceMoiScore" : 0.9792682  #Range[0,1]
```

Source: Prepared from materials received by JICA from TECHO Startup Center

88

Comparison of the implementation status of eKYC & its functions with other countries

Gov.-issued IDs for eKYC are common in Malaysia & India, while industry-led DID is being introduced in Thailand. In Cambodia, gov.-issued IDs & gov.-operated eKYC are planned to be introduced, and the financial sector is adopting IDs

	Cambodia	India	Malaysia	Thailand
Policy	Government operated eKYC x use of government-issued ID • The government aims to establish & promote eKYC linked to government-issued IDs	Government operated eKYC x use of government-issued ID • Government initiatives to realize the use of government-issued ID info with eKYC	Individual company's unique eKYC x use of government-issued ID • The government aims to establish & promote eKYC linked to government-issued IDs	Individual company's unique eKYC ×use of ID through a public-private partnership • A bank-led semi-private organization aims to introduce eKYC linked to DID
Laws & regulations	△ NBC announced its plan to create an eKYC policy in the FinTech Development Roadmap, but it has yet to be introduced[3]	✕ Aadhaar-based eKYC lacks legal basis & challenged in Supreme Court for violating Constitution in 2018	○ Bank Negara Malaysia (BNM) announced the eKYC guidelines in 2020	○ BOT-led eKYC guidelines published in 2016
Use of Identifying info	△ **Active use of ID in the financial sector** • eKYC API linked to government-issued IDs was introduced in 2022 • Only the financial sector actively adopting eKYC (currently only 27 institutions using eKYC)	○ **Collaboration & penetration of ID use** • Aadhaar e-KYC linked to National ID (Aadhaar ID) is used by 170 financial institutions (incl. 105 banks); the application can be completed online using the Aadhaar ID[1]	○ **Collaboration & penetration of ID use** • Info on the government-issued ID (MyKad) was made available for use by financial institutions through eKYC	△ **Demonstration phase in ID use** • NDID[2], a bank-led semi-private digital ID organization, is demonstrating DID (decentralized identifier) and eKYC online ID verification across banks
Uses of biometrics	△ • Facial recognition is used for KhmerID authentication	○ Fingerprint & iris recognition are used based on data held by Aadharr	○ Fingerprint & facial recognition are used based on data held by MyKad	○ NDID achieved biometric ID verification. Biometrics data is linked to ID, stored & managed

1. As of January 2023; 2. National Digital ID Company Limited; 3. NBC & MEF have signed the "Cooperation of Electronic Know Your Customer (e-KYC) Framework" regarding CamDigiKey in 2022. However, guidelines for financial institutions and others seem not to be announced yet.

Ref case) Verified.Me (Canada 🍁)

In Canada, eKYC using IDs, led by a consortium of private financial institutions, has been certified by the gov and is being used as eKYC for public services

Overview

- SecureKey Technologies, along with a consortium of seven major Canadian financial institutions, launched a distributed ledger-based identity authentication system (May 2019)
    - Simplified the identify verification process by allowing users to share user info from trusted sources (e.g., ID info held by financial coms, govs, etc. participating in the consortium) to access services
    - Also, conforms to W3C distributed identity standard (W3C DIDs and Verifiable Credentials) as a model for DIDs and VCs to enable interoperability with other networks

- In Canada, it is widely used by public institutions such as employment insurance and pension application systems, as well as by life insurance coms (Sun Life Financial)

Details

1. Identity & Data Providers (IDP):
Eligible orgs in Canada that participate in Verified.Me and generate / maintain specific info about subjects. Includes financial insts, credit info insts, telecom providers, etc.

2. Service Providers (Relying Parties):
Eligible orgs in Canada that participate in Verified.Me and require subjects to provide specific info thru Verified.Me to verify the subject's identity and eligible to provide products and services

3. Financial insts or Service Host:
7 main banks responsible for authenticating subjects and hosting the core components of NW

4. User Agent: Tool for users (subjects) to agree to share their attributes thru NW (App etc.)

9-3 Data exchange platform

CamDX, based on Estonian X-road, has been established and is in operation as a data integration platform. Use cases are limited to corporate registration and eKYC, but future use case expansion is under consideration

Major relevant gov agencies

- TECHO Startup Center
  - Build/operate CamDX
  - MEF-affiliated organization

Relevant strategies, policies, and plans

- Digital Economy and Society Policy 2021-2035 (DES Policy)
- Digital Government Policy 2022-2035 (DGP Policy)

Key donor support

No linkage with other DPs / private coms due to the policy of proceeding in house

Gap

As-Is 🌱

Establishment of exchange platform

CamDX build started in house
- Start-up was about 10 pax; visited Estonia in 2014; launched in 2015. Use Xroad open source
- Many members are from private coms and have dev capabilities, and also built in house while asking questions via direct contact in the Estonian community (NIS)
- Currently, about 20 developers operate in-house (however, they are also in charge of other applications and are not dedicated to CamDX).

Operation of exchange platform

Issues in involving other ministries/private coms
- CamDX is operational, but there are still few use cases. Challenges in promoting use by other ministries/private companies
- eKYC utilization by financial institutions is progressing, but only for KhmerID
- Cooperation is needed from the establishment of the base registry, but due to human resource issues on the TECHO side, it is necessary for the ministries to take action. Support for legacy systems of each ministry and agency is also necessary

To-Be 🌳

CamDX is deployed nationwide and operated stably
- Operation system and infrastructure are strengthened to withstand large-scale transactions.

Not only public services, but also private companies will create services using CamDX
- All public agencies will maintain a base registry of publicly available data, and CamDX will ensure that it is once-only
- Providing API for KhmerID, but in the future, data linkage with other information such as citizen registries will be necessary
- E-Service for Business Committee (ESBC), a cross-agency meeting body, will begin discussions from 2024
- Promote (commercialize) the use of private companies to publish base repositories and collect fees for transactions through CamDX

1. Universal Identification Code
Note: Backup docs include "CamDX overview" "comparison of data distribution (gov open data platforms) in other countries", and "DFFT overview" in the Appendix
Source. Cambodian gov public docs, interviews with DEBC/TECHO (conducted in Nov 2023), JICA expert knowledge, other article searches

Ref) Data distribution: CamDX as a data distribution platform (1/2)

Current data distribution is limited to digital ID registration for corporate administrative services but aims to reach an equivalent level of Estonia in the future

Characteristics of CamDX

Primary focus is to register/issue digital IDs when corporations (especially SMBs) use administrative services
In the future, the corporate service offerings are expected to expand to tax collection, trade, personal asset management

Land Here →
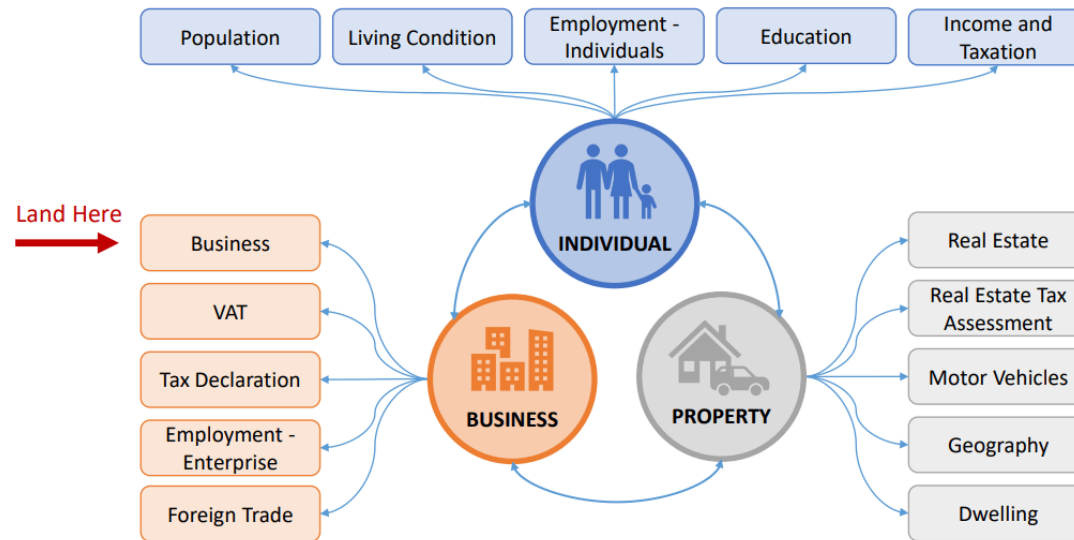
CamDX-to-be

- Adopts the X-Road model from Estonia
- Inherits the all the key properties of X-Road:
  - Operates as an ecosystem in a decentralized manner
  - Offers application-layer security over the public Internet
  - Does not interfere with other systems
  - Has a monitoring system to resolve the disputes
  - Exchanges data via APIs
  - Designed to be scalable

CamDX
A unified data exchange platform!
https://camdx.gov.kh

Aim to localize data exchange model of Estonia for Cambodia

Operated by: partner companies/organizations of Techo Startup Center (selected)

HUAWEI is one of the sponsors

Ref) Data distribution: CamDX as a data distribution platform (2/2)

CamDX comprises three main components. CamDX is built not only as a simple data integration infrastructure ((a) (b)) but also as a comprehensive data distribution PF that includes CamDX member information ((c)), such as personal information

(a) Core Components
- It comprises a security server, a central server, a monitoring system, and so on
- It provides registry service of information systems, service health monitoring, transaction log and proxying with information systems about the data exchange.

(b) Trust Components
- It provides trusted services such as Certificate authority, Time-stamping authority, OCSP, and other identification, authentication & Public key infrastructure (PKI) functionality

③ CamDX Member
- (c) Entities wishing to communicate with each other through CamDX
- Each member connects with information systems of other members through a security server (= all CamDX members need to add a security server, signed to CamDX's PKI, to their infrastructure)

Source: https://camdx.gov.kh/
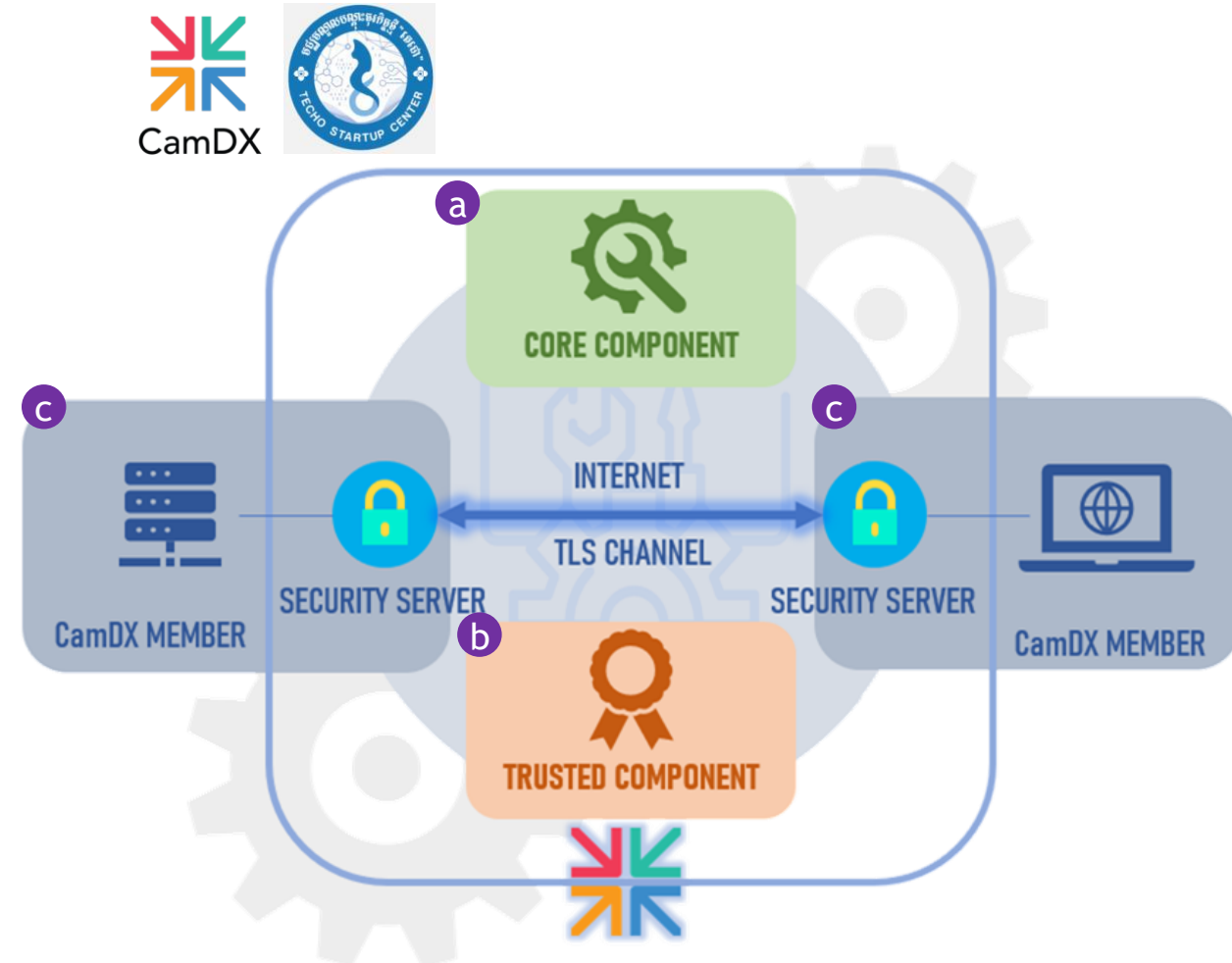
Ref) Conceptual diagram of the CamDX ecosystem (1/2)

CamDX validates the legitimacy of service providers holding/transferring data and approves data exchange, and also connects to various trust service functions
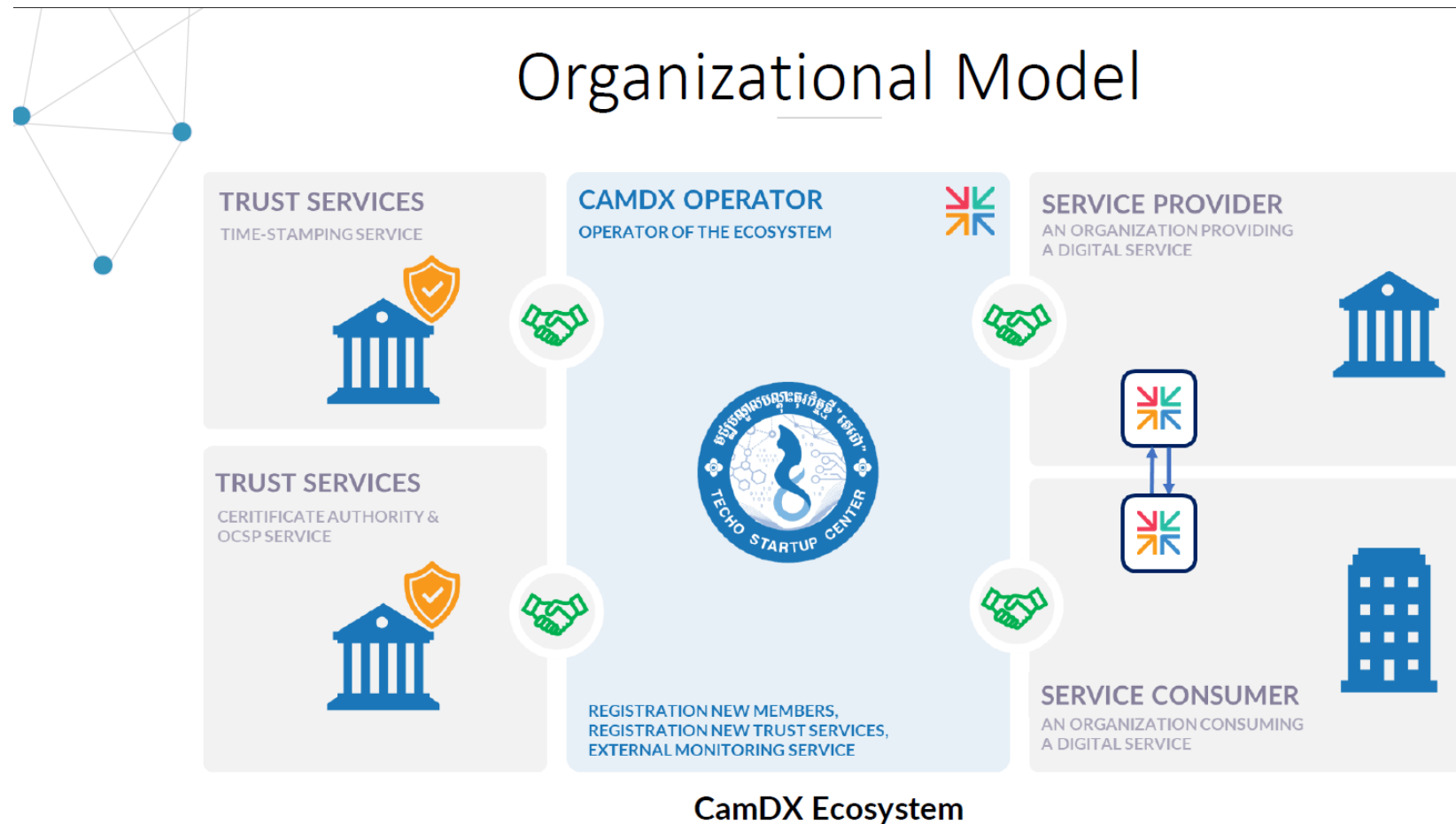
Ref) Conceptual diagram of the CamDX ecosystem (2/2)

CamDX functions as a data exchange PF for private companies as well as gov agencies, and also connects to CamDigiKey, eKYC function, to realize various services requiring personal authentication

Techo Startup Center © 2023

14

Ref) CamDX Usecase Online e-KYC API

CamDX enables financial institutions to check the correctness of personal data linked to KhmerID and facial recognition with MOI's API.

1 Send Request for user info verification

```
"userInfo" : {
    "idNumber" : "id_number",
    "firstNameEn" : "first_name_en",
    "lastNameEn" : "last_name_en",
    "gender" : "M_or_F",
    "dob" : "yyyy-MM-dd",
    "issueDate" : "yyyy-MM-dd",
    "expiredDate" : "yyyy-MM-dd"
},
"faceImg" : "base_64_content",
"idImage" : "base_64_content"
```

2 Receive Request and send a data request to MOI

3 Send data to CamDigiKey server

4 Calculate the Face recognition score and send response

```
"error" : 0,
"message" : "Successfully",
"data" : {
    "userInfo" : {
        "idNumber" : "id_number",
        "score" : 1,  #Range[0,1]
        "incorrectFields" : [ ]
    },
    "faceDocumentScore" : 0.9457877,  #Range[0,1]
    "faceMoiScore" : 0.9792682  #Range[0,1]
```

Conceptual diagram of CamDX ecosystem

CamDX serves as a data exchange platform not only with gov agencies but also with private coms

Members registered in CamDX

Currently 50 members in the public and private sectors

- Public: 23 government agencies
    - MOI (Ministry of Interior)
    - NBC (National Bank of Cambodia)
    - MOC (Ministry of Commerce), etc.
- Private: 27 financial institutions
    - * Currently only the financial sector (banks, insurance, etc.) is allowed to use the system

Current use cases

1 Online Business Registration
- When registering a business, registration with multiple ministries can be done together in CamDX
- Aim to realize One-Stop

> Refer to the following pages for details

2 Open e-KYC API
- Authentication of KhmerID details is possible at financial insts and gov offices
- MoI provides API. By sending KhmerID, name, address, face photo, etc., the result of judging the authenticity of the content is returned

> Refer to the following pages for details

3 e-KYB API
- Com info can be authenticated
- MoC provides API. The existence or non-existence of a com can be checked against the com's registration info held by MOC

Source: materials received from TECHO Startup Center, interview results

参考) CamDX Usecase① Online Business Registration

CamDX allows you to complete your business company registration online instead of having to visit multiple ministries to apply

New Online Business Registration Procedure

Time

Start registering business online

Single Portal → Online Payment — Send data via CamDX

Obtain a decision online

MOC System | GDT System | MLVT System

3 Days | 4 Days | 1 Days

Digital Certificate | Digital Certificate | Digital Certificate

Day 1 Start checking

Day 8 Obtain Licenses/ certificates

online
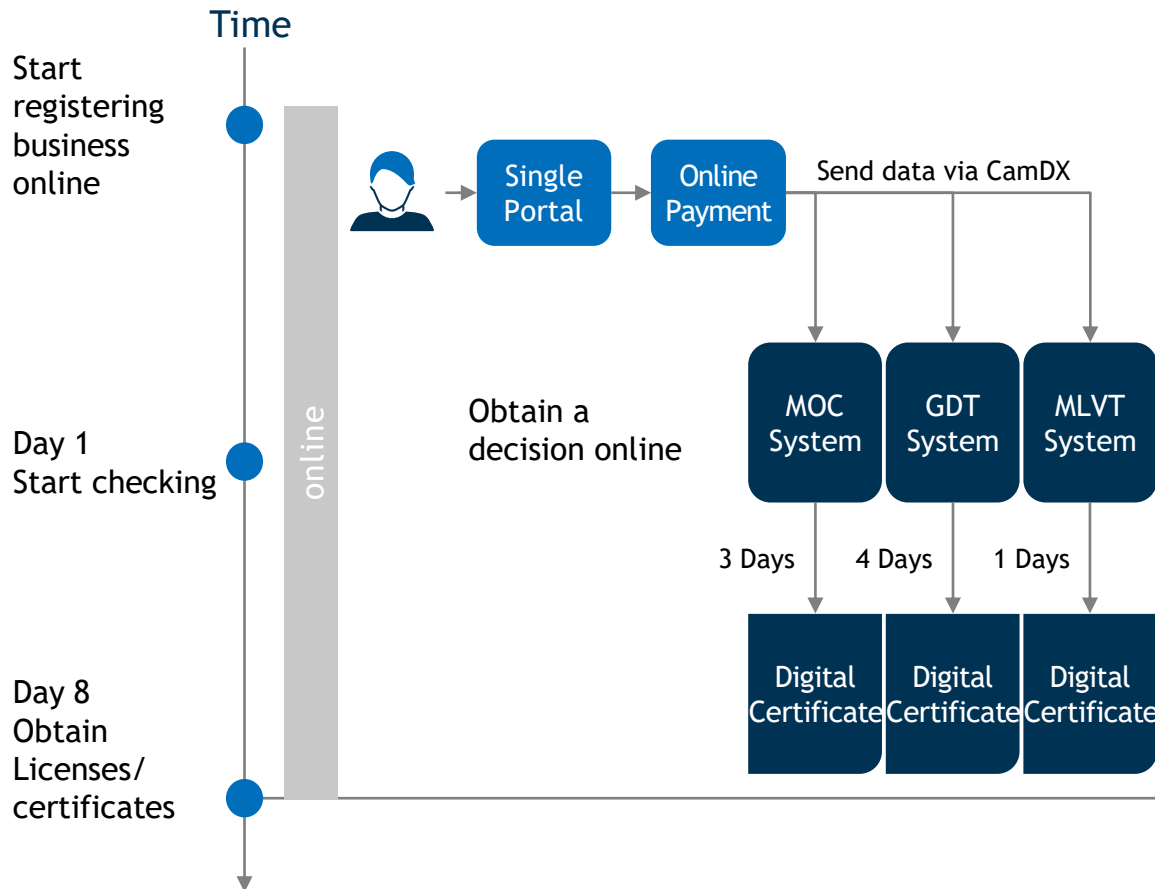
Old vs New Business Registration Procedures

Challenges of the Old Procedure	Benefits of the New Procedure
1 Provide repeated information each time registering at each ministry/institution	1 Wait for approval for a maximum of 8 working days
2 Register at different ministries/institutions through different procedures	2 Eliminate the provision of repetitive information
3 Wait multiple times until each ministry/institution approves	3 Spend much less
4 Operate on monolithic online registration systems for each ministry/institution	4 Register and pay online for all services at once
5 Cost high	5 Obtain digital licenses and certificates via the system

参考) CamDX ecosystem Use case

CamDX plans to expand its use cases beyond the current ones (corporate registration, KhmerID authentication).
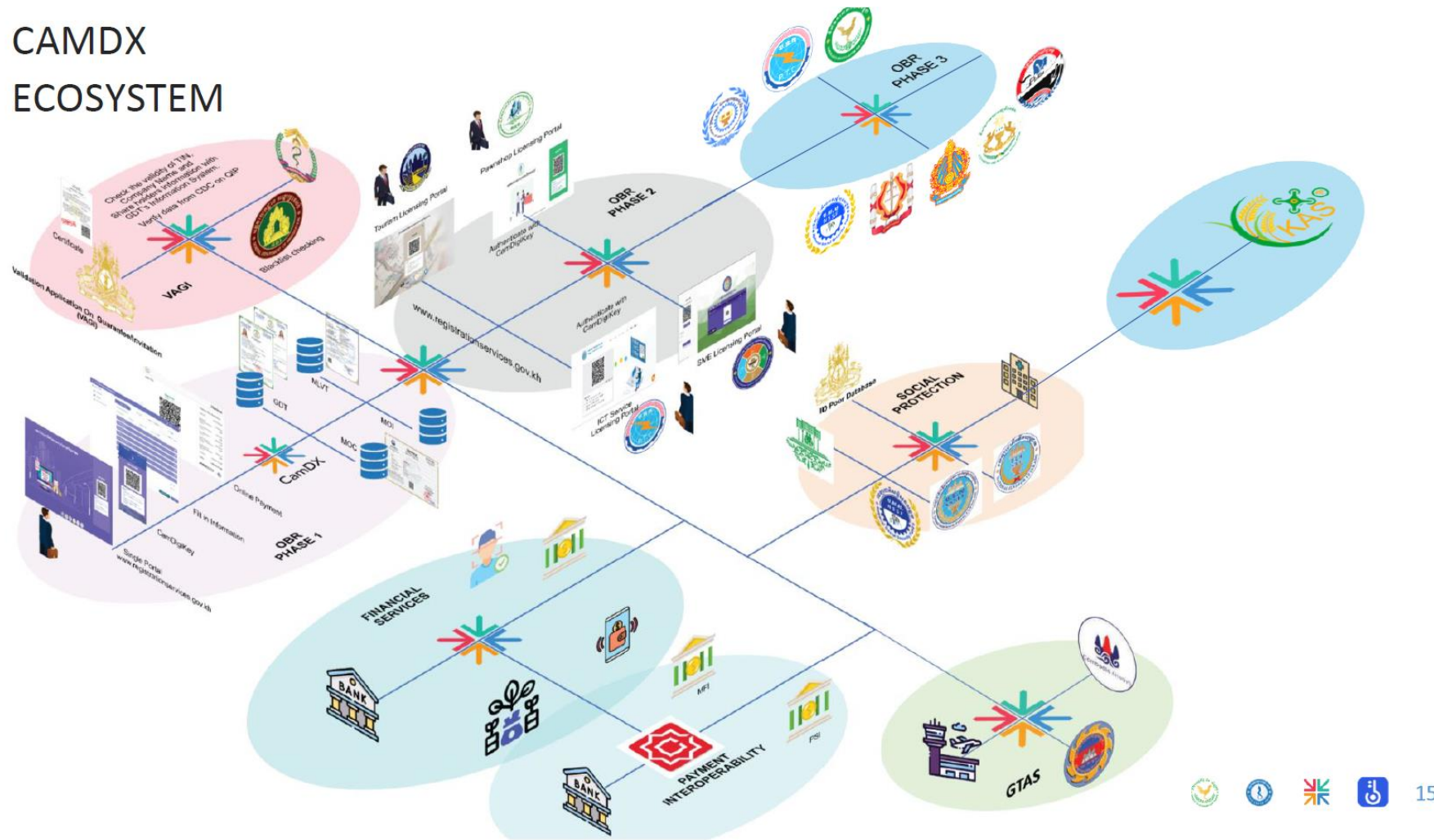
Ref）Comparison of data distribution (gov. open data platforms)

Thailand & Malaysia offer platform services that integrate inter-ministerial data, also allowing private developers to utilize data

		Cambodia	Thailand	Malaysia
Name		Cambodia Data Exchange Platform (CamDX)	Digital Government Development Agency Digital platform	Malaysia Open Data Portal Malaysian Government Central Data Exchange (MyGDX)
Purpose		Build infrastructure for easy access to government databases[1]	Make datasets from all ministries available and accessible to the public[2]	Provide data integration services across all ministries/agencies and make them accessible to the public
Feature	For corporate use	Data accessible to corporations: partly ready • Digital ID registration/issuance possible when using gov. services for SMEs	Data accessible to the public: ready • Public data accessible to the public • Select data from search engines or categories • Available for download	Data accessible to the public: ready • Data sets are available in catalog and dashboard UI
	For personal use	Data accessible to individual citizens: not ready • Willing to achieve in future		
	Social infrastructure data	Social infrastructure data accessible to the public: not ready • Willing to achieve in future	Social infra data accessible to the public: ready • All data on infrastructure, security, economy, tourism, agriculture, education, social welfare, sports, environment, etc.	Social infra data accessible to the public: ready • All data on infrastructure, security, economy, tourism, agriculture, education, social welfare, sports, environment, etc.
	For developers	List of datasets for developers: not published	Data for developers: published • List of datasets for developers/API page	Data for developers: published • List of datasets for developers • Open API specifications & documentation
Comment		Large future vision, but current use cases are limited to digital ID registration for corporations	Datasets from all ministries available & can be used by ministries/private sector	Datasets from all ministries available & can be used by ministries/private sector

100

Ref) Concept of DFFT for Development

In the digital society, no economic activity is possible without participation in the data distribution market. Support is required to take the developing countries into the data distribution market

Definition of DFFT for Development

- Backed by the digital society, developed countries position/implement data usage as the source of national power and aim for further promotion of data distribution

- On the other hand, many developing countries still have weak telecom envir., and infra dev is still a key topic even in the era of data distribution

What is DFFT for Development?
Discussions aiming to achieve economic development centered on data distribution/data usage by incorporating developing countries into the international data distribution market

Structure of DFFT for Development and key points in Japan's dev support

System operation support
- Many regulations for data distribution/transfer set even in the developing countries
- Their execution have issues
- Support for establishment and operation of certification bodies, etc.

Data application support
- Support for specific service deployment using data
- Vaccine support, supply chain mgmt., etc.

Infra development support
- Infra dev support is critical for digitization. Data/infrastructure dev is also essential for building data services
- Japan's priority is assumed low as international org are continuously supporting the PJ

Implementation

Data space/Service
(Services for Citizens and Businesses)

| Administration | Finance insurance | Energy | Mobile contract | ... | Indiv payment settlement |

Data integration platform

Tool

Service Platform

Data

Data Model

Base Registry

Infra (Infrastructure/Asset)

Trust

Regulations/ system
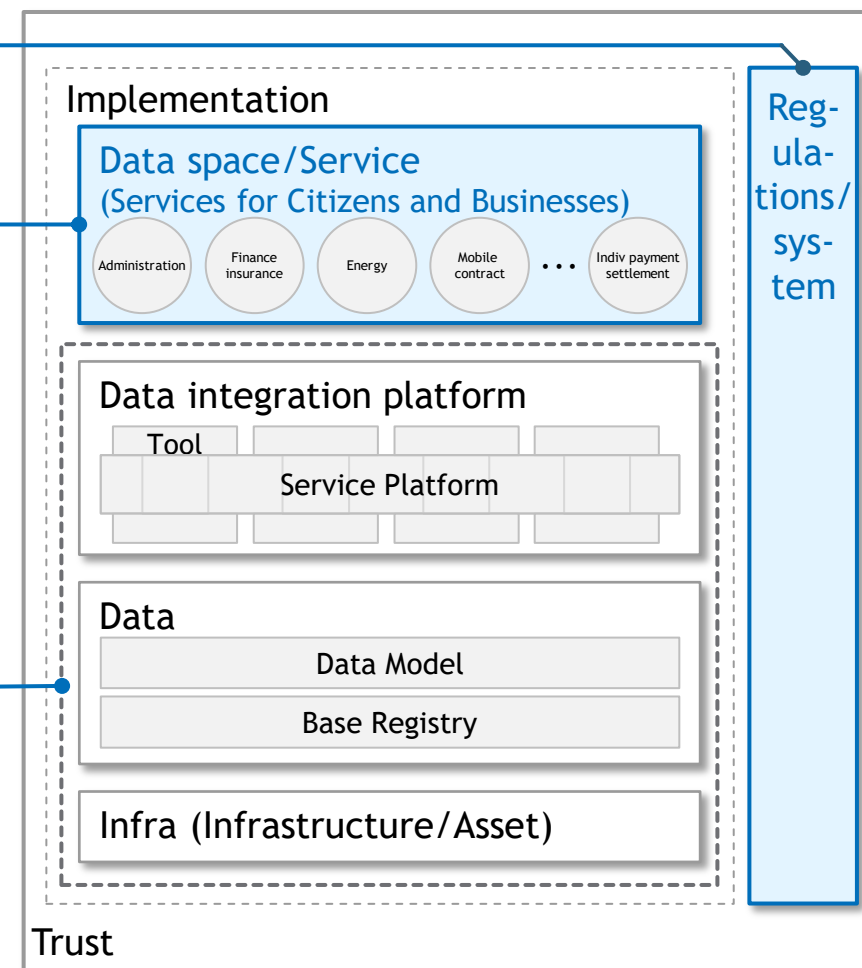
11-1 Telecom companies

Challenge is to balance infra investment to improve/maintain service levels with the cost of providing services

Major relevant gov agencies

- MPTC

Related strategy/policy/plan

(MPTC has a policy to develop a master plan for communication infrastructure[2])

Major donor support

N/A

Gap

As-Is 🌱

Mobile comm

4G: Telecom companies offer low-cost 4G services
- 5th lowest price per 1GB in the world[1]
- Still room for improvement in coverage and network quality, but low prices make it difficult to invest in infrastructure
- USOFund used to expand rural telecom network
  - Established in 2015 and started operation in 2018
  - 3% of telecom companies' profits are operated by MPTC[3]

5G: Not yet started without licenses granted

Fixed comm

Lack of technical/human resources for cable operation and service stability are issues
- Have a certain tech capabilities in laying telecom network, but lack in op tech, and human resources
- In addition, concerns in service stability due to cable disconnection and restoration caused by construction work, etc.

State-owned

Telecom Cambodia owns broadband facilities, but its quality and presence is low

To-Be 🌳

4G:Service level improved while keeping low prices
- With SIM ownership already over 100%, companies are aiming to increase market share by improving service levels
- USO Fund used to reduce regional disparities

5G: Commercial use progresses using common infra
- MPTC is currently studying licensing and implementation method; not yet considered by telecom com side
- May not achieve smoothly in terms of return on investment rather than technical issues

Continued search for balance between service level improvement and service delivery costs
- (Details not yet surveyed)

The government is currently reviwing how to organize Telecom Cambodia

1. According to the cable.co.uk survey, avg comm cost is $0.12 per 1GB in Cambodia 2. ADF seems to help MPTC develop a master plan for comm infra 3. 50% is infrastructure investment in rural areas by approving proposals from infrastructure providers by the committee, 40% is for building comm towers in areas designated by MPTC, and the rest is operational costs
Note: Backup materials included in the Appendix, "List of players in the communications sector" and "Overview of major mobile/fixed-line telecoms"
Source. Cambodian government publications, interviews with MPTC/telecom companies (Nov 2023), JICA expert knowledge, article search

Ref) List of players in the communications sector

In-depth survey on service level of Cambodian telecom companies (mobile and fixed)

Cambodian companies

Foreign-affiliated companies

State-owned | Private companies | | Incl Chinese capital

Mobile comm

Telecom companies

(Royal Group of Cambodia) — cellcard — 16.2%, No. 3 share

(Axiata Group, Malaysia) — Smart — 37.9%, No. 2 share

(Viettel, Vietnam) — metfone — 41.4%, No. 1 share

(Xinwei Technologies) — CooTel — 1.9%, No. 5 share

(Seatel Group) — yes — 2.5%, No. 4 share

Comm tower

Independent TowerCo
• Cam Towerlink

Established by telecom companies
(Royal Group of Cambodia)
• TeleMobile

Established by telecom companies
(Axiata Group, Malaysia) — e.co

Independent TowerCo
• Global Tower Corporation
(Malaysia)

Owned by telecom companies
(Xinwei Technologies) — CooTel

Fixed comm

Broadband

CamNet

(Royal Group of Cambodia) — EZECOM — ONLINE — SINET — Camintel The Best Connections

Smart

metfone

Fixed telecom VoIP

Telecom Cambodia

Camintel The Best Connections — MFone

Other:
Hiway Telecom Cambodia
DialAny Internet Telecom
Cambodia Data Communication
WiCam Corporation

Submarine cables

Cambodia-Hong Kong

MCT Cable

• Asia Africa Europe-1 Cable
• SCJ2

Data storage

Data center

National data center (to be launched in 2025)

BYTEDC — KEPSTAR DATA CENTRE MANAGEMENT CO. LTD. — seatel — HT Networks — GLOBAL TECH EXCHANGE PHNOM PENH | CAMBODIA — Chaktomuk — MEKONGNET

(Shenzhen Keybridge Communications)
Kingtel 金泰电信

MNO market share is based on 2022 Q2 data; 4.5% share for Yes and Cootel combined, and their ratios are based on no. of Omdia contracts
Source: Fitch Solutions, TeleGeography (Submarine Cable Map), Omdia, Arizton, TowerXchange, Data Center Dynamics

Ref) Comparison of three major mobile operators

Future challenge for the mobile business is to increase the speed, quality, and coverage of communications while maintaining current low prices.

	cellcard	**Smart**	**metfone** closer
Company name	Royal Group (Cambodia)	Axiata Group (Malaysia)	Viettel (Vietnam)
Feature	Strengths in high quality and reliability	Succeeded in attracting a younger demographic	Strengths in low-cost service in rural areas
Industry Share	16.2%, 3rd place in share	37.9%, 2nd place in share	41.4%, 1st place in share
4G Coverage Experience[1]	6.0	7.3	7.5
4G Download speed	22.4 Mbps	16.7 Mbps	12.2 Mbps
4G Upload Speed	6.5 Mbps	5.8 Mpbs	6.1 Mbps
Excellent Consistent Quality[2]	63.5%	58.8%	46.7%
5G introduction	Requires issuance of a national license		

1. 4G Coverage Experience measures how mobile subscribers experience 4G coverage on an operator's network. Measured on a scale of 0-10, it analyzes the locations where customers of a network operator received a 4G signal relative to the locations visited by users of all network operators.
2. percentage of users' tests that met the minimum recommended performance thresholds to watch HD video, complete group video conference calls and play games.
Source: OPENSIGNAL "Mobile Network Experience Report 2022"

Ref) Comparison of major broadband operators

Offers low-cost broadband services, but coverage is still limited and needs to be expanded through investment

Brand/Company name	Service Overview	Broadband Service Revenue[1]
CamNet	Corporate/SME/residential broadband services • No price information available on website	0.5 million USD
Royal Group of Cambodia	Corporate/SME/residential broadband services • No price information available on website	21.6 million USD
CogeTel	Corporate/SME/residential broadband services • No price information available on website	NA
metfone closer / viettel	Corporate/SME/residential broadband services • Highly rated for quality of service by UK-based magazine Global Business Outlook (GBO) in 2022 • Example plan for family : 20Mbps for 15USD/month	30.5 million USD
Smart / axiata	Corporate Fiber-optic Internet service "Smart Fiber+" • Example plan for business : 100Mbps for 55USD/month	22.0 million USD

12-1 Startup Ecosystem

Currently few startups and funding, but small loans and accelerator programs are emerging to build the ecosystem

Major relevant gov agencies

- Khmer Enterprise
  - Key organization to establish Startup/Business Ecosystem
- CADT
- TECHO

Related strategy/policy/plan

- Cambodia Digital Economy and Society Policy Framework

Major donor support

ADB
- Released the report "Cambodia's Ecosystem for Technology Startups"

GIZ
- CADT assistance

KOICA、CJCC, Swiss Contact, and other
- KE program support

Gap

As-Is

To-Be

Startup land-scape

Startups are on the rise but still small
- Startups increased from less than 50 in 2013 to around 300 in 2018. However, scale and quality of startups is still low

Startup market is activated
(Quantitative targets not yet confirmed)

Support

Government-led support

Startup support program launched mainly by KE/CADT
- The government operates the Enterprise Development Fund (EDF) to support pre-seed/seed stage companies with small investments[1]
- KE offers various Startup Support Programs with external partners
  - Offer various programs with donors/private partners (ADB, Swis Contact, KOICA, CJCC, SDC, etc.), such as industry specific support, capacity building, and mentorship
- CADT provides equipment rentals, mentorship, etc. with private sector partners

More effective support programs are offered
- Continue to support startups
- KE intends to develop a system to track and evaluate the performance of supported startups

Investors/Funds

Lack of VCs and investors, and limited startups available for funding
- About 30 incubators/accelerators, incl gov, universities, donor programs, and telecom companies, support startups while VCs and investors are few

Presence of investors, funds, and accelerators are expanding
- The gov takes the lead in developing investment schemes, infra and institutions to attract investment

1. KE is responsible for operations
Note: Backup materials included in the Appendix, "Comparison of startup market funding in Southeast Asia" and "Overview of the Cambodia Securities Exchange (CSX)"
Source. Cambodian government publications, interviews with KE/CADT/TECCHO/DEBC(Nov 2023), JICA expert knowledge, article search

12-1 Startup Ecosystem (details)

Currently few startups and funding, but small loans and accelerator programs are emerging to build the ecosystem

Gap

		As-Is	To-Be
Startup land-scape		**Startups are on the rise but still small** • Startups increased from less than 50 in 2013 to around 300 in 2018. However, scale and quality of startups is still low	**Startup market is activated** (Quantitative targets not yet confirmed)

Support	**Government-led support**	**Startup support program launched mainly by KE/CADT**
		 • The government operates the Enterprise Development Fund (EDF) to support pre-seed/seed stage companies with small investments[1]
		 • KE offers various Startup Support Programs with external partners
		   – Offer various programs with donors and private partners (ADB, Swis Contact, KOICA , CJCC, SDC, etc.), such as industry specific support, capacity building, and mentorship
		   – Also operates conferences/WSs for startups to interact with each other
		   – Ref) KE, established in the 1990s to support the private sector, now works to support startups
		     – ① Culture Promotion : Collect resources such as High Schools and Early Startups
		     – ② Capacity Building : Provide Incubation and Solution Programs for development and implementation
		     – ③ Shift Funding : Provide an environment for startups to easily raise funds and expand their markets
		     – ④Business Connecting : Connect students, entrepreneurs, investors, and business organizations
		 • CADT provides equipment rentals, mentorship, etc. with private sector partners
		   – The Institute of Digital Governance (IDG) established the GovTech Center to provide consulting and other services, contracting with the private sector
		   – The Institute of Digital Research & Innovation (IDRI) offers equipment rentals and Accelerator programs (mentoring) at the Innovation Center to those who plan to start a business
			More effective support programs are offered
			 • Continue to support startups
			 • KE intends to develop a system to track and evaluate the performance of supported startups

	Investors/ Funds	**Lack of VCs and investors, and limited startups available for funding** • About 30 incubators and accelerators, incl gov, universities, donor programs, and telecom companies, support startups while VCs and investors are few • Ref) Telecom company Smart launched the 5 million USD Smart Axiata Digital Innovation Fund (SADIF)	**Presence of investors, funds, and accelerators are expanding** • Gov takes the lead in developing investment schemes, infra and institutions to attract investment

1. KE is responsible for operations
Note: Backup materials included in the Appendix, "Comparison of startup market funding in Southeast Asia" and "Overview of the Cambodia Securities Exchange (CSX)"
Source. Cambodian government publications, interviews with KE/CADT/TECCHO/DEBC(Nov 2023), JICA expert knowledge, article search

Ref) Comparison of startup market in Southeast Asia
Cambodia lags behind other countries in no. of startups and their coverage

Legend:
Evolution level

>00	(darkest blue)
11~99	
<10	
0 (None confirmed)	

Status of each country

Cambodia	Thailand	Vietnam	Malaysia	Singapore
Lags behind other countries • Far behind other countries in biz field, no. of startups	Lags behind Vietnam in no. of com • Exist in broad fields • Amount of funding bet Malaysia/ Vietnam	Exist in broad fields • Startups exist mainly in digitization fields	Exist in broad fields • Lags behind S'pore but startups exist in digitization	Exist in broad fields • Established dominant startup market in SEA

Classification by JICA global agenda	No. of coms funded (Amount of funding USD MM)	No. of coms funded (Amount of funding USD MM)	No. of coms funded (Amount of funding USD MM)	No. of coms funded (Amount of funding USD MM)	No. of coms funded (Amount of funding USD MM)
Affluence Urban and regional development	1 (0.01)	1 (23.08)	3 (284.00)	4 (682.40)	12 (586.99)
Transportation		3 (342.67)	6 (173.40)	6 (290.66)	26 (633.63)
Resources / energy	1 (0.30)	19 (259.99)	22 (472.23)	35 (258.02)	89 (1,691.65)
Private sector development[1]	4 (0.30)	69 (3,257.23)	97 (1,017.35)	161 (2,768.76)	349 (16,882.63)
People Agri/rural dev (sustainable food system)		2 (1.00)	3 (0.20)	11 (44.49)	16 (38.36)
Health care		4 (1.88)	8 (57.50)	19 (23.34)	162 (1,764.42)
Nutrition improvement		9 (296.17)	8 (8.55)	11 (12.51)	67 (209.49)
Education		3 (2.48)	15 (39.69)	12 (3.51)	46 (295.87)
Peace Sports and education			4 (0.01)		14 (3,018.50)
Public finance and financial system	3 (19.50)	37 (1,315.48)	79 (224.68)	54 (503.96)	863 (10,482.82)
Gender equality/women's empowerment					8 (10.93)
Earth Promotion of digitization	11 (3.36)	98 (2,304.59)	131 (456.02)	200 (6,025.38)	1,194 (25,562.33)
Climate change				1 (0.94)	56 (1,213.03)
Natural environment conservation		9 (1.00)	11 (39.73)	10 (314.02)	52 (1,025.57)

No. of startups' funding and total amount of funding during one year in 2022 for corresponding category in JICA global agenda (companies included in multiple categories are counted more than once)
Social security, disability and development, peacebuilding, governance, environmental management, sustainable water security and water supply, and disaster risk reduction through disaster prevention and recovery were removed from the table as funding could not be identified. Private sectors includes the following sectors that are not categorized into the above fields; Advanced Manufacturing、Beauty、E-Commerce、Gaming、Industrials、Manufacturing、Pet Technology
Source: PitchBook

参考) Startup Cambodia Ecosystem 2022

Although still small in scale, the startup ecosystem is making progress.

98 Startups

46 Mentors

13 Investors

9 Government Institutions

16 Academic Institutions

10 Service Providers

7 Dovelopment Partners

18 Co-Working Spaces

6 Incubator and Accelerators

3 communities and Associations

11 Corporates

14 Media

Source: TECHO Startup Center "STARTUP CAMBODIA INSIGHT 2022" p.23

Ref) Cambodia Securities Exchange (CSX) overview

Currently 11 companies listed, 4 of which are state-owned

Overview

- Established in 2010
- MEF owns 55% and KRX (Korea Exchange) 45%
- It has two boards; the Main Board and the Growth Board for SMEs
- Currently, 11 companies are listed (incl 2 on the Growth Board)

Listed company name	Industry	Listing date	Market cap.[1]
Mengly J. Quach Education	Education	2023/6/28	Approx 25B yen
CAMGSM PLC. (Cellcard)	Communication	2023/6/27	Approx 165B yen
JS Land Plc	Real estate	2022/2/10 (Growth Board)	Approx 2B yen
DBD Engineering Plc.	construction	2021/9/6 (Growth Board)	Approx 0.5B yen
Pestech (Cambodia) Plc.	Electric power	2020/8/12	Approx 6B yen
ACLEDA Bank Plc.	Bank	2020/5/25	Approx 150B yen
Sihanoukville Autonomous Port	Gov agencies/State-owned companies	2017/6/8	Approx 38B yen
Royal Group Phnom Penh SEZ Plc	Gov agencies/State-owned companies	2016/5/30	Approx 6B yen
Phnom Penh Autonomous Port	Gov agencies/State-owned companies	2015/12/9	Approx 10B yen
Grand Twins International (Cambodia) Plc.	Apparel	2014/6/16	Approx 4B yen
Phnom Penh Water Supply Authority	Gov agencies/State-owned companies	2012/4/18	Approx 23B yen

1. The latest Market Cap. (Mil. KHR) as of 7/11/2023 on the CSX website, converted into JPY at the rate of the same day
Source: Cambodia Securities Exchange (CSX) website

14 Overview of "financial institutions/services" survey items (2/2)

Survey items are determined from the perspective of nation-wide financial digitization

14. Overview of financial institutions/services
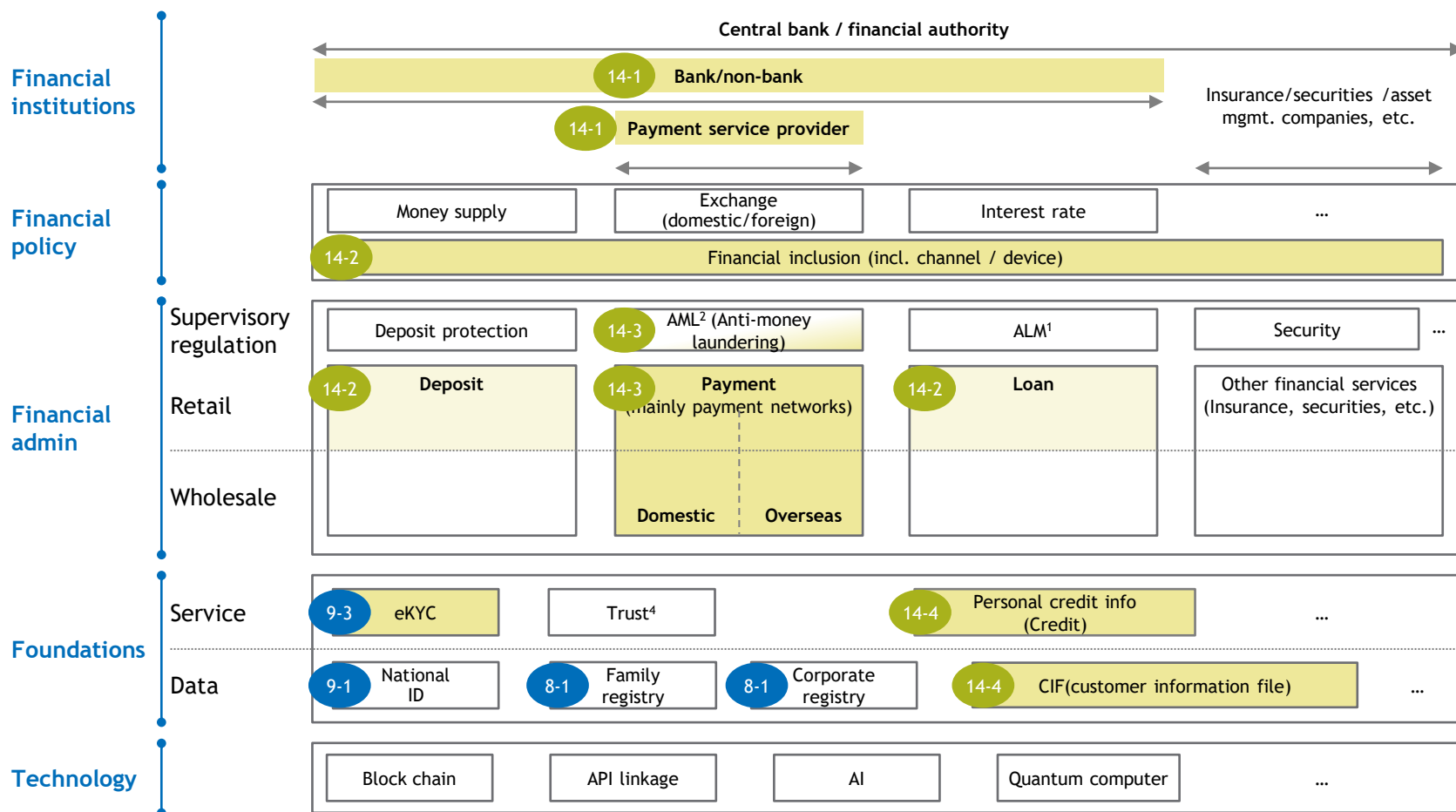
Sub-survey items

14-1 Financial institutions
- Identify gap in the service level and financial institution supervision in terms of financial institution digitization

14-2 Financial inclusion
- Identify gap in the population's access to financial services and their financial literacy

14-3 Payment Infrastructure (incl. AML)
- Identify gap in digitization of domestic/international payment
- (Cover AML response status as a hurdle for international payment)

14-4 Financial information utilization
- Identify gap in the linkage status of personal info incl. financial info (credit, income, financial service use status)
- (For AML[2]/CFT[3]/improving service stability & convenience)

Key diagram labels:

Central bank / financial authority

Financial institutions
- 14-1 Bank/non-bank
- 14-1 Payment service provider
- Insurance/securities /asset mgmt. companies, etc.

Financial policy
- Money supply | Exchange (domestic/foreign) | Interest rate | ...
- 14-2 Financial inclusion (incl. channel / device)

Financial admin
- Supervisory regulation: Deposit protection | 14-3 AML[2] (Anti-money laundering) | ALM[1] | Security | ...
- Retail / Wholesale: 14-2 Deposit | 14-3 Payment (mainly payment networks) Domestic / Overseas | 14-2 Loan | Other financial services (Insurance, securities, etc.)

Foundations
- Service: 9-3 eKYC | Trust[4] | 14-4 Personal credit info (Credit) | ...
- Data: 9-1 National ID | 8-1 Family registry | 8-1 Corporate registry | 14-4 CIF(customer information file) | ...

Technology
- Block chain | API linkage | AI | Quantum computer | ...

1. Asset Liability Management 2. Anti-Money Laundering 3. Countering the Financing of Terrorism 4.Incl. Web Trust and electric certificates

Ref) Priorities of the gov of Cambodia in the financial x digital domain

The gov of Cambodia appears to be focusing on improving financial inclusion, promoting the use of infra/tech (data exchange, personal authentication, etc.), and further penetration of digital payments

Policy Document	Overview of the Policy Document	Extract of TO BE details on the financial x digital domain	
Pentagon Strategy (Government of Cambodia)	• Target the dev of a digital economy/society in the Pentagon's fifth item • As one of its focus areas, stated its policy to work on the dev of financial tech	Platform/technology	• Develop platforms and use the latent techs for the digitalization of finance
		Payment infra	• Aim for continuous modernization of the digital payment infra
		Financial policy	• Aim to develop skills in supervision of laws, regulations, etc.
Financial Technology Development Policy 2023-2028 (NBC)	• Organized 52 policies as a growth strategy for the FinTech industry in Cambodia • Assigned approximate timeframes and responsible organizations for each policy	Platform	• Increase use cases of data exchange platform (CamDX) and eKYC in the financial domain
		Payment infra	• Cooperate with other countries to achieve extra territorial payment
		Financial policy	• Revise laws necessary for the dev of the Fintech industry
National Financial Inclusion Strategy 2019-2025 (NBC/MEF)	• Targeted strengthening of access to financial services for all citizens (esp. women, low-income residents, and SMEs) from the viewpoint of reducing domestic disparities	Financial inclusion	• Halve economic exclusion of women from 27% to 13% by 2025 • Increase the use of financial services from 59% to 70% by 2025
		Financial literacy	• Improve financial literacy to improve financial inclusion
		Payment infra	• Penetrate the digital payment infra
		Platform	• Develop a national ID and establish a platform for credit info linkage

Note: When visited on Nov 2023, DEBC commented that the realization of Data exchange/ID and eKYC is a high priority
Source: Cambodian government documents

Comparison of Cambodia & other countries in financial area (initial survey result)

A large gap in access to financial services & financial literacy; financial inclusion is an outstanding issue

Legend: Cambodia · Malaysia · Vietnam · Thailand · Singapore · Philippines

Item				(Items with large GAP)	Quantitative comparison	Supplementary info on the items
14-2	Financial inclusion	Access to financial services	a	Non-user rate of financial services (% age 15+)	100% — 41, 36 … 5.7 — 0%	• High proportion of adults has no access to financial services vs other countries • 2021 data from UNCFD report
			b	Bank account (incl. mobile account) ownership rate (% age 15+)	0% — 33% … 88%, 96%, 98% — 100%	• Account ownership rate is extremely low in Cambodia vs other countries • 2021 data from UNCFD report
			c	No. of credit card held per person (age 15+)	0 — 0.02, 0.29, 0.39, 0.43 … 1.66 — 3	• Credit card ownership rate is low vs other countries: 1 in 50 • 2022 data from Global Data
			d	No. of debit card held per person (age 15+)	0 — 0.38, 1.01 … 1.84, 2.16, 2.87 — 3	• There are cases of using app at ATM without holding debit card where mobile banking is advanced; even still, the ownership rate is low • 2022 data from Global Data
			e	No. of credit card use per person/year (age 15+)	0 — 0.39, 1.57, 14.40, 27.47 … 154.55 — 250	• No. of credit card use is low vs other countries • 2022 data from Global Data
			f	No. of debit card use per person/year (age 15+)	0 — 9.36, 19.51, 1.76, 76.02 … 207.85 — 250	• No. of debit card use is low vs. other countries • 2022 data from Global Data
			g	Savers rate at financial institutions (% age 15+)	0% — 7% … 47%, 52%, 60% — 100%	• Saving rate at fin. Institutions are extremely low; possibly because of economic disparity • From WorldBank Global Findex 2021
			h	Loan user rate (% age 15+)	0% — 32% … 46%, 55%, 6% — 100%	• Loan user ratio is high • From WorldBank Global Findex 2021
			i	Loan user rate from formal fin. institutions (% age 15+)	0% — 18% — 100%	• Usage rate of formal loan service is low • From WorldBank Global Findex 2021
			j	Loan ratio vs GDP	0% — 113.30, 126.38 … 156.38 … 180.03 — 200%	• Calculated Domestic credit to private sector (% of GDP) (2022)from the World Bank data
		Financial literacy	k	Financial literacy rate (% age 15+)	0% — 18%, 24% … 36% … 59% — 100%	• Low level, as Cambodia is ranked 135th out of 144 countries • From S&P 500 FinLit Survey in 2015
14-3	Payment system	Domestic	l	Interoperability of domestic fin. institutions	0% — 30% … 47%, 3% … 60%, 70% — 100%	• Calculated interoperability of domestic financial institutions (application of unified QR code/financial institution)
		International	m	No. of countries of payment network inter-connection	0か国 — 2 … 4, 5, 6, 6-7 — 10か国	• Cambodia does not participate in the APN (Asia Payment Network), but has inter-connections with Thailand, Vietnam, Laos and China
14-4	Financial info linkage		n	Credit Bureau national coverage rate (% age 15+)	0% — 52.2%, 56.5%, 9.4%, 4.2% … 89.1% — 100%	• Indicates % of population covered by credit bureaus • 2019 data from World Bank
			o	Depth of credit information index	0 — 6 … 7 … 8 — 8	• The index ranges from 0 to 8; higher values indicating that more credit info is available. From World Bank Doing Business Project

1.Source: National Bank of Cambodia, WorldBank Global Findex , UNCFD report, Global Data, S&P 500 FinLit Survey

14-1 Financial institutions（Bank, Non-Bank, Payment Service Providers）

The challenges are that micro and small financial institutions are not yet digitally enabled and that central bank operational data quality and utilization are underdeveloped.

Major relevant gov agencies

National Bank of Cambodia (NBC)
- Monitor and regulate financial institutions (banks & microfinance)
- Established the Fintech Steering Committee (2018) and lead Fintech promotion

Ministry of Economy and Finance (MEF)
- Have jurisdiction over insurance and securities

Cambodia Microfinance Association(CMA)
- Self-regulatory organization for microfinance providers, developing guidelines, etc.

Related strategy/policy/plan

- DES Framework (2021)
- FinTech Policy (2023)
- National Financial Inclusion Strategy 2019-2025

Major donor support[1]

AFD
- provide capacity building support to microfinance associations since the 1990s

AFD/UNCDF/Worldbank
- Supporting the establishment of Credit Guarantee Corporation of Cambodia (CGCC)

Gap

As-Is

Bank / Non-Bank

In addition to commercial banks, Cambodia has a large number of microfinance institutions. Informal finance is also common, especially in rural areas.
- Three megabanks (ABA, ACLEDA, and Canadia Bank) account for approximately 50% of total Commercial Bank deposits.
- Microfinance are expanding their operations in rural areas, but there are still many informal financial institutions in rural areas.

Microfinance institutions, especially microfinance institutions, are facing challenges in digitalization and gender gap among their staff.
- Banks are moving toward mobile payment systems, while microfinance institutions are facing challenges in digitalization and a gender gap in loan officer positions.

Insufficient data quality and utilization at the central bank
- Data quality and data maintenance issues are preventing data utilization from the perspective of improving operational efficiency and sophistication.

(From a monetary policy perspective) High interest rates and over-indebted borrowers in lending in lending and the elimination of informal services are issues

Payment Service Providers

To improve the security of the payment system, NBC introduced the Payment Service Operator (PSO) license in 2020

To-Be

Reduce the financial services gap in rural and urban areas
- Expand formal financial services by increasing the presence of microfinance providers and others in rural areas

FinTech Adoption/Digital Capability Acquisition/Bridging the Gender Gap in Micro and Small Financial Institutions
- No plan to issue digital bank licenses, but aim to make progress in digitalization of existing financial institutions
- Improve service level of microfinance operators (especially in rural areas) by improving their digital capacities
- Diversify borrowers by closing the gender gap among loan officers of microfinance institutions[2]

Realization of efficient operations based on accurate data by the central bank
- Improvement of the central bank's ability to visualize economic activities, conduct monetary policy, and supervise banks based on accurate data
- Improving the quality of data reported to the central bank by supervised banks and micro and small financial institutions
- Enhancement of risk management, including liquidity management, through visualization and automation of risk monitoring across financial institutions

1. JICA also provides support to NBC and microfinance associations, not limited to digital-related assistance (e.g., related to overseas investments and loans). 2. It is assumed that the lender bias toward men may be making it difficult for female borrowers to borrow. As a means of correcting this situation, it is assumed that fair evaluation using digital technology can be considered.
Source. Cambodian government documents, Cambodian government agencies, World Data Bank, Institute for International Monetary Affairs reports, Interview

Overview of financial institutions in Cambodia (banks, microfinance institutions, leasing coms, etc.)

In Cambodia, private banks are the mainstream. In addition to banks, microfinance institutions provide loans, deposits, and remittance services to low-income individuals and SMEs. Microfinance institutions have a high presence, esp. in rural areas

	Bank		Non-bank			Other
	Commercial Bank	**Specialized Bank**	**Microfinance institutions**		**Other (formal)**	**Other (informal)**
			MDI[2]	**MFI[3]**		
Overview	• Bank covering all financial services • Mainly in city centers • Gov-affiliated banks such as ARDB and SME bank are included	• Banks that focus exclusively on specific financial sectors	• Deposits can be accepted • Strengths in rural areas, but also has offices in city center • High potential to become a Commercial Bank in the future[4]	• Microfinance insts in a narrow meaning that are not allowed to accept deposits • Mainly in rural areas	• Rural Credit Institutions etc. in addition to leasing coms (FS Leasing)	• Village funds in rural areas • Black markets that do not report their ops to NBC[5]
No. of coms	58 banks[4] (incl. gov banks such as ARDB & SME bank)	9 banks	5 non-banks[4]	82 non-banks	FS leasing: 17 coms Rural Credit Institutions :224 coms	Size data not available in NBC statistics (However, 22.5% of the population were informal service users as of 2021)
Deposit share[1] (2022)	88.9% 155,028,487 millions of KHR	0.0% 773 millions of KHR	11.1% 19,408,398 millions of KHR	NA	NA	
Loan (retail) share	73%	3%	19%	3%	~1% (Note: No statistics for Rural Credit Institutions, only for FSLeasing)	

1. Share of total deposits 2. Microfinance Deposit Taking Institution 3. Microfinance Institution 4. One of MDIs, Prasac Microfinance, was acquired by KB (a Korean bank) in 2023 and reorganized as Commercial Bank 5. Although there is no data on the breakdown of loan size, according to WBC statistics, 55% of the population aged 15+ use loans, while only 18% use loans from formal financial insts
Source: NBC Statistics、WBC(Global Findex2021), Expert interviews

115

Ref) Payment Service Operators in Cambodia

NBC introduced a Payment Service Operator (PSO) license in 2020, and currently 32 payment service providers are registered. Currently, there is no obligation to report the volume of payment transactions, and the central bank does not appear to have information on the market share of each company. Of the registered operators, the following 9 are Bakong members.

TrueMoney Cambodia	Ly Hour Pay Pro Plc	Pipay
Speedpay Plc	Ipay 88 (Cambodia) Plc	Bongloy Payments Plc
E-money Payment Solution Plc.	Lanton Pay	Wing Bank (Cambodia) Plc

Source: NBC Statistics "List of Payment Service Institutions 2023 Sep", Bakong HP Member list

Ref) Deposit size and share of major commercial banks (2022)

As in Japan, the market is characterized by oligopoly by megabanks (ABA, ACLEDA, Canada Bank). Three megabanks account for about 50% of deposits

Others 15.3%

Top 3 Bank

49.7%

4th ~17th banks which covers more then 2.0% share

35.0%

	(Millions of KHR)	
Name of Bank	Total deposits	Share[1]
Advanced Bank of Asia Limited	29,687,496	19.10%
ACLEDA Bank Plc.	24,167,874	15.60%
Canadia Bank Plc.	23,313,871	15.00%
Sathapana Bank Plc.	6,367,011	4.10%
Foreign Trade Bank of Cambodia	6,167,784	4.00%
Cambodian Public Bank Plc.	6,132,393	4.00%
Hattha Bank Plc.	4,209,245	2.70%
Maybank (Cambodia) Plc.	3,919,752	2.50%
Bank of China (Hong Kong) Limited Phnom Penh Branch	3,811,231	2.50%
J Trust Royal Bank Plc.	3,722,196	2.40%
CIMB Bank Plc.	3,489,486	2.30%
Chip Mong Commercial Bank Plc.	3,334,677	2.20%
Cambodia Post Bank Plc.	3,094,870	2.00%
Vattanac Bank	3,039,264	2.00%

1. 100% is the total deposits at 59 Commercial Banks in Cambodia
2. Source: NBC Statistics data for 2022

Ref) Government banks ARDB and SMEbank have less than 0.1% share

Ref) Composition of loans (formal) by organization type (2022)

Commercial Banks and MDIs account for a high percentage of both retail and wholesale loans.
Microfinance operators handle small loans and play an important role in terms of financial inclusion.

Total (retail & wholesale)

Retail

Millions of KHR

	Total Loans	Share	Retail Loans	Share
Commercial Banks	191,918,217	82%	41,639,810	73%
Specialized Banks	2,338,861	1%	1,922,077	3%
MDI	33,229,969	14%	11,045,046	19%
MFI	5,702,496	2%	1,875,863	3%
FS leasing	1,795,799	1%	370,048	1%
Total	234,985,342		56,852,844	
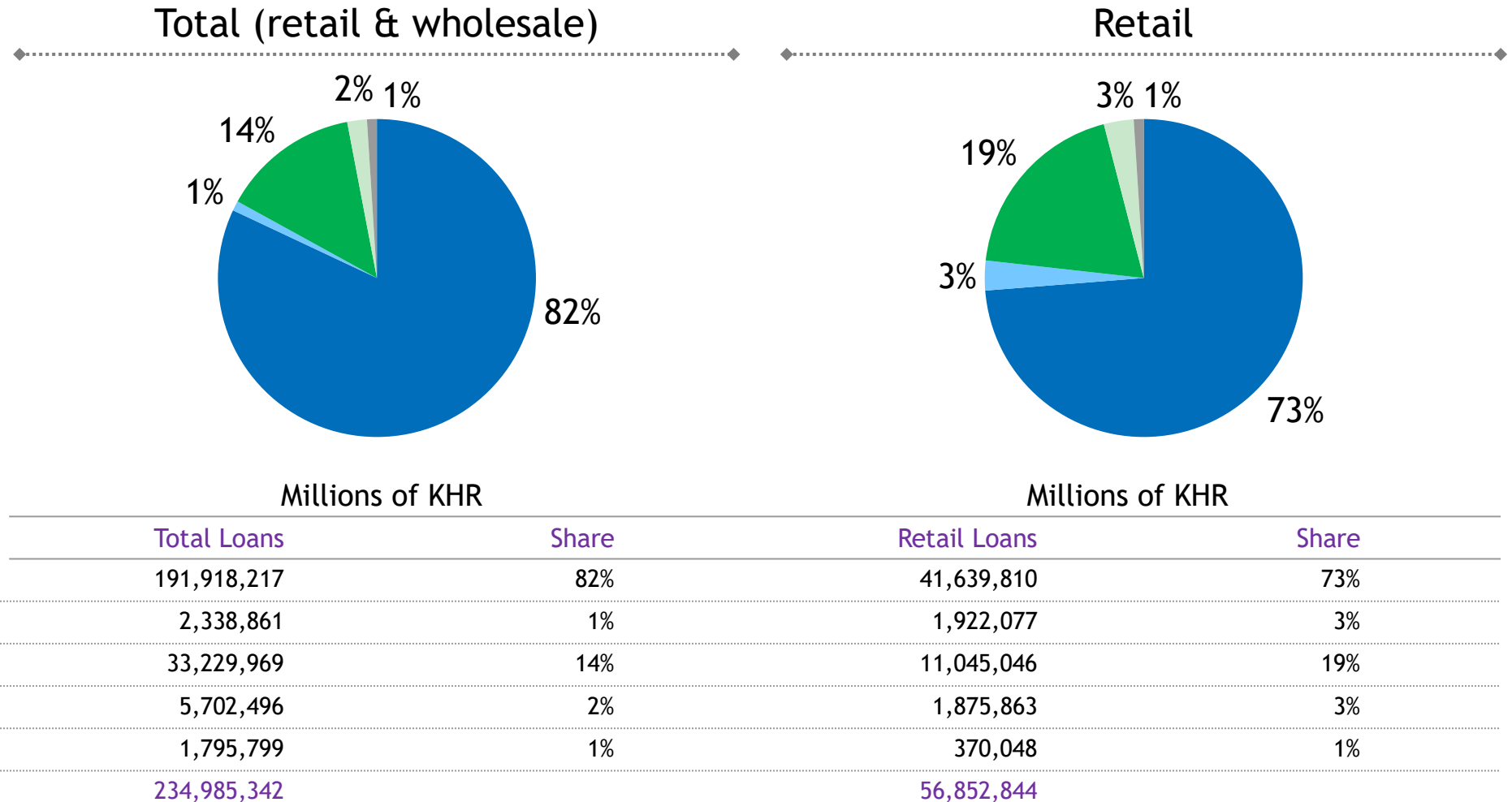
Note: There are also separate informal loans that are not collected in NBC statistics
Source: NBC Statistics

14-2 Financial Inclusion

Bank account ownership is around 30%, which is low compared to other countries. There are challenges in formal financial access, financial literacy, and over-indebted borrowers. Rural and gender disparities also exist, an area of high priority for the government

Major relevant gov agencies

National Bank of Cambodia (NBC)
- NBC has reviewed and issued a policy on specific policies for the digitization of financial institutions

Ministry of Economy and Finance (MEF)
- Prepared "National Financial Inclusion Strategy 2019-2025" with NBC

Related strategy/policy/plan

- DES (2021) by MEF
- FinTech Policy (2023) by NBC
- National Financial Inclusion Strategy 2019-2025

Major donor support

UNICDF
- Continued support for statistical research and roadmap development since 2015 with the project Making Access Possible (MAP).

CUFA (Australia)
- Support Financial literacy with MOEYS

AFD
- Support Cambodia Microfinance Association(CMA)

Gap

As-Is

Access to financial service

The ownership rate of financial inclusion bank accounts in 2019 is about 30%.
- 67% of adults have access to some type of financial service, including microfinance, leasing, rural credit institute (RCI), etc.
- Approximately 75% of the population lives in rural areas, and it is important to provide services to them

While mobile channels are well developed, the challenge is to develop digital infrastructure and improve literacy to increase usage
- Mobile ownership is high among the population, and bank account ownership is expected to increase as digitization progresses

Financial Literacy

Cambodia has a financial literacy problem, especially in rural areas, which is being addressed in collaboration with NBC/MOEYS
- Cambodia ranks last in ASEAN in Financial Inclusion Strategy (as of 2015), especially in rural areas.NBC and MOEYS are collaborating to introduce literacy education into the high school curriculum and provide content for primary education.

Donor support has been received and implementation of response measures is underway
- CUFA is implementing Program[1] with MOEYS

To-Be

Set financial inclusion targets and increase access to quality formal financial services by 2025
- Halve women's economic exclusion from 27% to 13%; increase access to formal financial services from 59% to 70% by 2025Specifically, work to incorporate informal finance (pawnshops, housing providers, etc.) into formal financial services

Promote infrastructure development and digital literacy
- As an example of G2P, increase the number of beneficiaries of government social security benefit payments by reviewing eligible businesses[2], etc.

Raising Financial Literacy Levels
- NBC will take the lead in measuring the effectiveness of financial literacy programs and developing a long-term strategy to target low-income individuals.
- CBC also intends to engage in online financial literacy education

1.Children's Financial Literacy Program(2016-2020) 2. Changed from one Wing Bank company to a multi-company transaction via Bakong
Note. Deposit protection is not included in the scope of this study, although there is information that KOICA is considering supporting deposit protection.
Source. Cambodian government documents, Cambodian government agencies, World Data Bank, Institute for International Monetary Affairs reports, Interview

Current Situation of Financial Inclusion

Compared to 2015, access to formal financial services is on the rise. However, 33% still lack access to formal financial services in 2021. Rural and gender disparities are also an issue.

Comparison of access to financial services over time

- Compared to 2015, access to formal financial services is on the rise (59% ⇒ 67%)
- However, there are still 33% of adults without access to financial services

Access Strand (% of all adults)

- ■ Formally served   ■ Formally excluded
- ■ Banked   ■ Other formal (non bank)[1]   ■ Informal only[2]   ■ Financially excluded
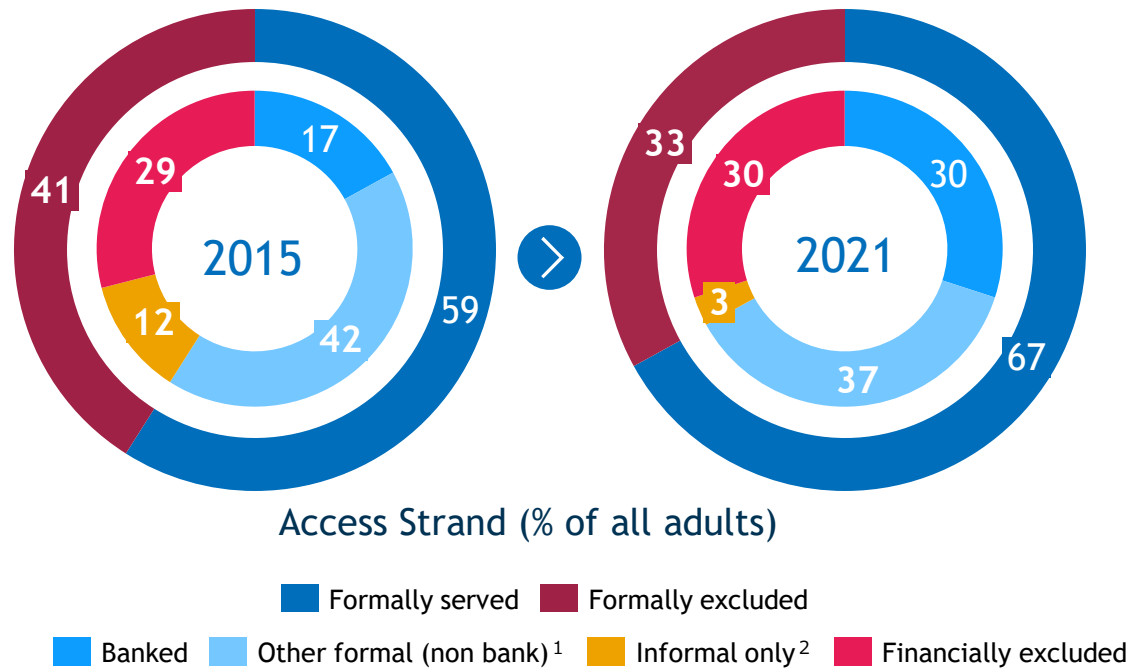
Regional & gender disparities in access to financial services

Rural areas have higher percentages of financially excluded compared to urban areas

URBAN (N=538)   RURAL (N=970)
By location (% of adults in each location)
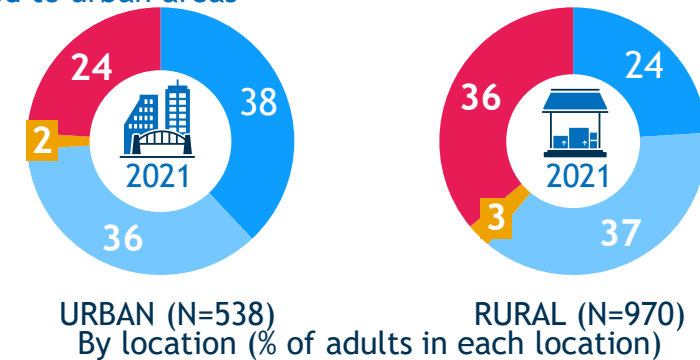
Women are more likely to be financially excluded than men

FEMALE (N=834)   MALE (N=674)
By gender (% of female in male adults)
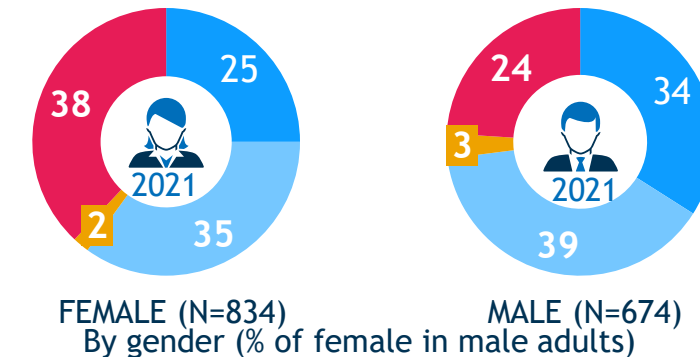
1. Other formal refers to those who do not have access to banking services but have access to formal microfinance providers, leasing providers, insurance providers, and other services. Includes those using informal services 2. Informal Only refers to adults who use financial services that are operated without legal governance

Source: Cambodia Financial Inclusion: Mobile Tracker Survey 2021

Comparison of financial inclusion

Key ● Cambodia ● Malaysia ● Vietnam ● Thailand ● Singapore ● Philippines

A large gap in access to financial services & financial literacy

		(Items with large GAP)	Quantitative comparison	Supplementary info on the items
14-2 Financial inclusion	Access to financial services	a	Non-user rate of financial services (% age 15+)	100% — 41 36 — 5.7 — 0%	• High proportion of adults has no access to financial services vs other countries • 2021 data from UNCDF report
		b	Bank account (incl mobile account) ownership rate (% age 15+)	0% — 33% — 88 9 98% — 100%	• Account ownership rate in Cambodia is extremely low vs other countries • 2021 data from UNCDF report
		c	No. of credit card held per person (age 15+)	0 — 0.02 .29 .39 0.43 — 1.66 — 3	• Credit card ownership rate is low vs other countries: 1 in 50 • 2022 data from Global Data
		d	No. of debit card held per person (age 15+)	0 — 0.38 1.01 — 1.84 2.16 2.87 — 3	• There are cases of using app at ATM without holding debit card where mobile banking is advanced; even still, the ownership rate is low • 2022 data from Global Data
		e	No. of credit card use per person/year (age 15+)	0 — 0.39 .57 14.40 27.47 — 154.55 — 250	• No. of credit card use is low vs other countries • 2022 data from Global Data
		f	No. of debit card use per person/year (age 15+)	0 — 9.36 19.5176 76.02 — 207.85 — 250	• No. of debit card use is low vs other countries • 2022 data from Global Data
		g	Savers rate in financia institutions (% age 15+)	0% — 7% — 47 52% 60% — 100%	• Saving rate at fin institutions are extremely low; possibly because of economic disparity • From WorldBank Global Findex 2021
		h	Loan user rate (% age 15+)	0% — 32% 46% 55% % — 100%	• Loan user ratio is high • From WorldBank Global Findex 2021
		i	Loan user rate from formal fin institutions (% age 15+)	0% — 18% — 100%	• Usage rate of formal loan service is low • From WorldBank Global Findex 2021
		j	Loan ratio vs GDP	0% — 113.3 126.38 — 156.38 180.03 — 200%	• Calculated Domestic credit to private sector (% of GDP) (2022) from World Bank data
	Financial literacy	k	Financial literacy rate (% age 15+)	0% — 18% 24% 6 36% — 59% — 100%	• Low level, as Cambodia is ranked 135th out of 144 countries • From S&P 500 FinLit Survey in 2015

Both access to financial services and literacy are low and have large gaps compared to other ASEAN countries
- All major items such as access to formal financial services, bank account/card ownership rates, and savings in financial institutions are lower than in other countries
- In literacy, Cambodia ranked 135th out of 144 countries in 2015, the lowest among ASEAN countries

High informal ratio of loans is also an outstanding issue

Ref) loan (retail + wholesale) comparison to GDP

Cambodia's loan size is higher than other countries in terms of GDP and is rising. The ratio of non-performing loans is also on the rise, and risks have been pointed out. However, there are doubts about the accuracy of GDP figures, and it is difficult to make comparisons with other countries.

Total private sector loans to GDP (% of GDP)

- **Private debt** in Cambodia has **increased over 20% in a year**, and its total has increased to **180% of its GDP**
- Some say that it is a sign of robust economy, while others point out **risks to the economic stability**
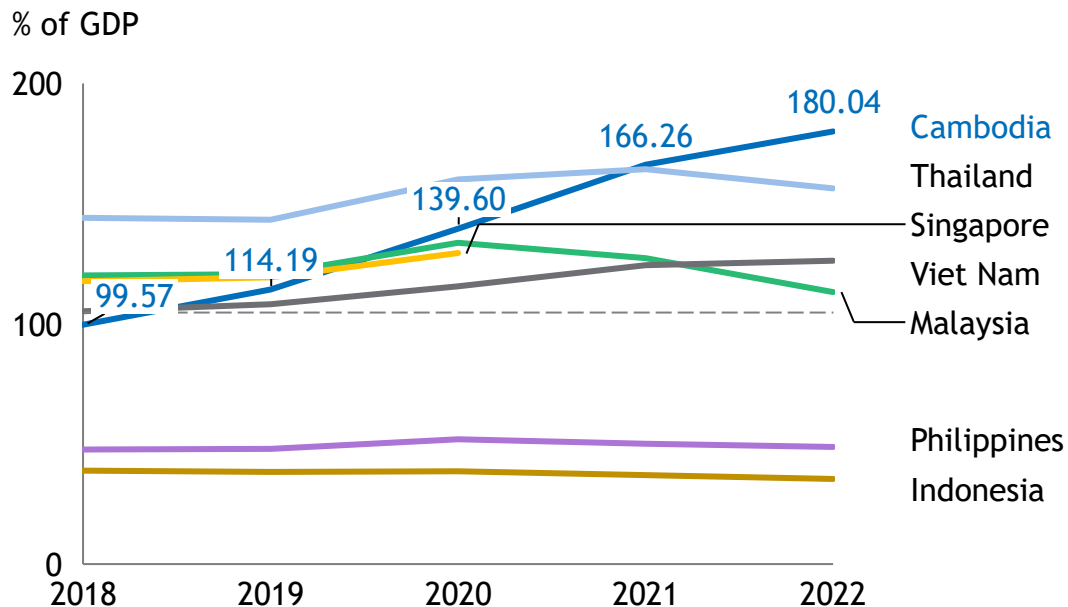
Non-performing loan ratio of total private sector loans (%)

- Non-performing loan rate is on the rise
- It is not extremely high vs other countries, but the following data only cover formal loans; **the informal non-performing loan ratio may be even higher**

% of GDP

Cambodia: 99.57, 114.19, 139.60, 166.26, 180.04
Countries: Cambodia, Thailand, Singapore, Viet Nam, Malaysia, Philippines, Indonesia

%

1.99, 1.55, 1.82, 1.74, 2.71
Countries: Philippines, Thailand, Cambodia, Indonesia, Malaysia, Viet Nam, Singapore

Source: Worldbank Global Findex 2021, article search
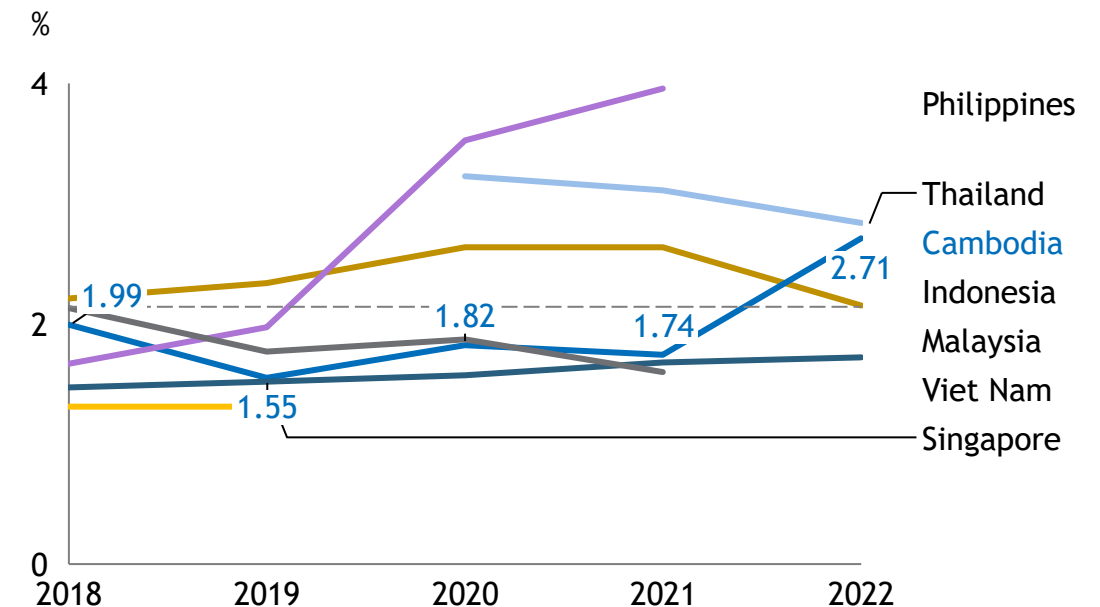
14-3 Payment Infrastructure (Including AML)

Digitalization in the domestic payment system is progressing rapidly. While International payments are still in their infancy, QR interlinkage and other initiatives are underway within ASEAN, and the gap is not expected to be large.

Major relevant gov agencies

National Bank of Cambodia (NBC)
- A central bank that leads currency issuance and monetary policy and supervises financial institutions
- In addition, it is responsible for the operation of the payment and settlement system

Ministry of Economy and Finance (MEF)
- Examine financial industry policies in terms of their impact on Cambodia's overall economy

Related strategy/policy/plan

- FinTech Policy (2023) by NBC
- National Financial Inclusion Strategy 2019-2025

Major donor support

Japan
- Dispatch of Experts to NBCProvided assistance in expanding the operation of the "Bakong" payment system

Gap

As-Is

Domestic — Retail / Wholesale

Certain interoperability has already been ensured. National payment system, Fast Payment System (Bakong) and Online Banking System (OBS) are contributing.
- Interbank remittance payment infrastructure is functioning, using the unified QR code (KHQR) as an interface and Bakong as a backbone system. The number of digital wallet accounts has increased to 16.6 million, a volume comparable to the population
- Total number of payment system transactions at 26.6 million and transaction value at US$172.6 billion, about 6 times the size of GDP

International — Retail

In retail cross-border payments, Cambodia is a step behind other ASEAN countries, but catching up rapidly
- Other SEA countries have already made significant progress in interconnection
- Cambodia has started QR code interconnection with some banks in Thailand and Vietnam

International — Wholesale

Wholesale cross-border settlement was hindered by gray list designation (inadequate money laundering regulations)[3]until recently
- Currently, the gray zone designation has been lifted and improvements are underway[4]
- Progress in wholesale cross-border settlement using digital currencies is difficult due to high technical and operational barriers.

To-Be

High-value settlement system (Bakong LVPS) by Bakong
- Goal exists to implement RTGS system[1] to cover high value payments and mitigate risk in order to improve system capability

Further promote G2P/P2G payments online
- G2P efforts to change government social security benefits that were lumped into Wing Bank via Bakong are being addressed by NBC
- Potential use cases include the use of blogmable money

Further expansion of countries with interoperable retail crossover payments
- Bi-lateral plans to further promote cross-border settlement collaboration[2]

Response is expected to be taken to continue the lifting of the graylist[3]
- Tighter regulation of crypto assets will be required before the next (2028) gray list check, so we will proceed with our response[4]
- (Although there is a policy on cross-border settlement initiatives, I could not find a clear statement on wholesale.)

1. Real-Time Gross Settlement System 2.National Financial Inclusion Strategy 2019-2025 states that progress is being made, with cooperation with four countries by 2023.The country has decided that it is not worthwhile to join the APN and will not participate.3. Cambodian government is aware of the issues, but as of February 2024, the regulating authority has not yet been confirmed Source: Cambodian government documents, Cambodian government agencies, World Data Bank, Institute for Research on Crypto Assets agencies, World Data Bank, Institute for International Monetary Affairs reports, Interview

Payment infrastructure

Digitalization in Cambodia's domestic payment infrastructure is proceeding rapidly but is still developing. Digitalization of payments outside the country has many issues

Initial   Developed

Percentage of the population with bank accounts (Incl. mobile money, ages 15+, 2021) — 31%[1] / 33% / 51% / 88% / 96% → 100

Interoperability among domestic fin insts (application of unified QR code/fin insts[2]) — 30% / 47% / 53% / 60% / 70% / To-Be 2035 XX% → 100

No. of interconnected countries in the retail payment network — 2~ / 4~ / 4~ / 5~ / 6-7~ → 20
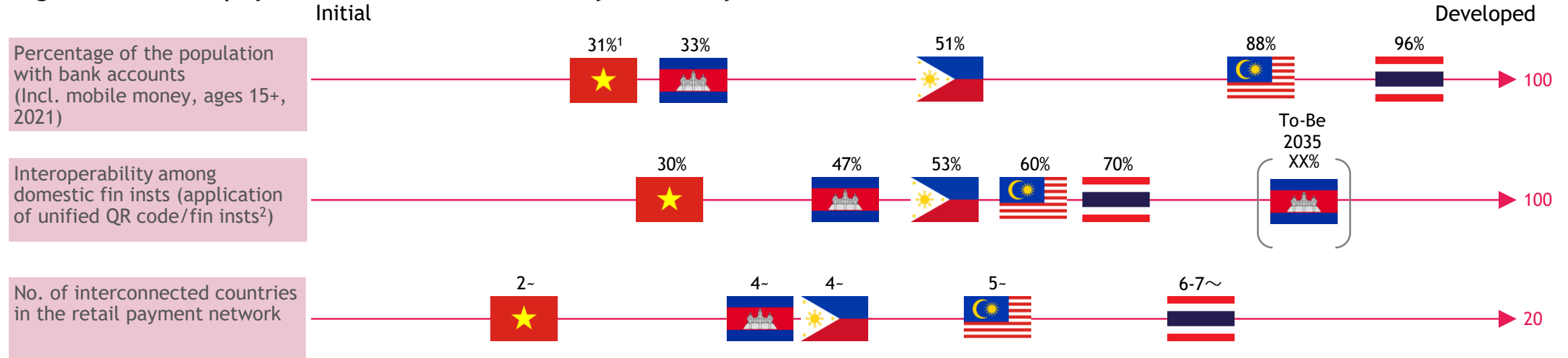
Certain interoperability of the national payment infra is ensured. National payment infra and fast payment system (Bakong) contribute to this. Compared to SEA countries, where digital payments are rapidly progressing, Cambodia lags behind, but digital payments are gradually penetrating into the country

- Interbank remittance settlement functions using the unified QR code (KHQR) as an interface and Bakong as the backbone system
- No. of digital wallet accounts increased to 16.6 million; 510,000 people registered for Bakong accounts (2022)
- Total no. of payment infra transactions is 26.6 million; transaction value is US$172.6 billion, about 6 times the size of GDP

In retail cross-border payments, a step behind other ASEAN countries in collaboration

- Cambodia has started interlinkage with some banks in Thailand and Vietnam and has been moving toward ensuring QR code interoperability with other countries, incl Japan, by signing MOU etc.
- On the other hand, other Southeast Asian countries have started int'l collaboration of real-time payment networks, and QR code-based collaboration thru APN (Asian Payment Network) is in progress

1.2017 data 2. Parameters are banks and financial institutions that accept deposits
Source: Central and National Banks' websites, Finastra, press search

Ref) Cambodia's Payment system

High-value transactions are consolidated in OBS and low-value transactions in Bakong, while checks are handled in the exchange. NBC is working on the use of Bakong for high value settlements as a high priority.

	Card	Electronics		Paper
	ATM	Account Transfer, etc	Payroll, etx	Checks

High-value Transaction

NATIONAL BANK OF CAMBODIA

OBS(Online Banking System)

High-value settlement system by Bakong (Bakong LVPS) is under development and is a priority for NBC's Payment Department.
- Aiming to replace existing OBS with Bakong LVPS for domestic high value settlement. High-value settlements are high-risk from a security perspective, so the use of blockchain technology is planned.
- Low cost, high quality, and security are attractive features.

Low-value transaction

BAKONG

Bakong

Check exchange system
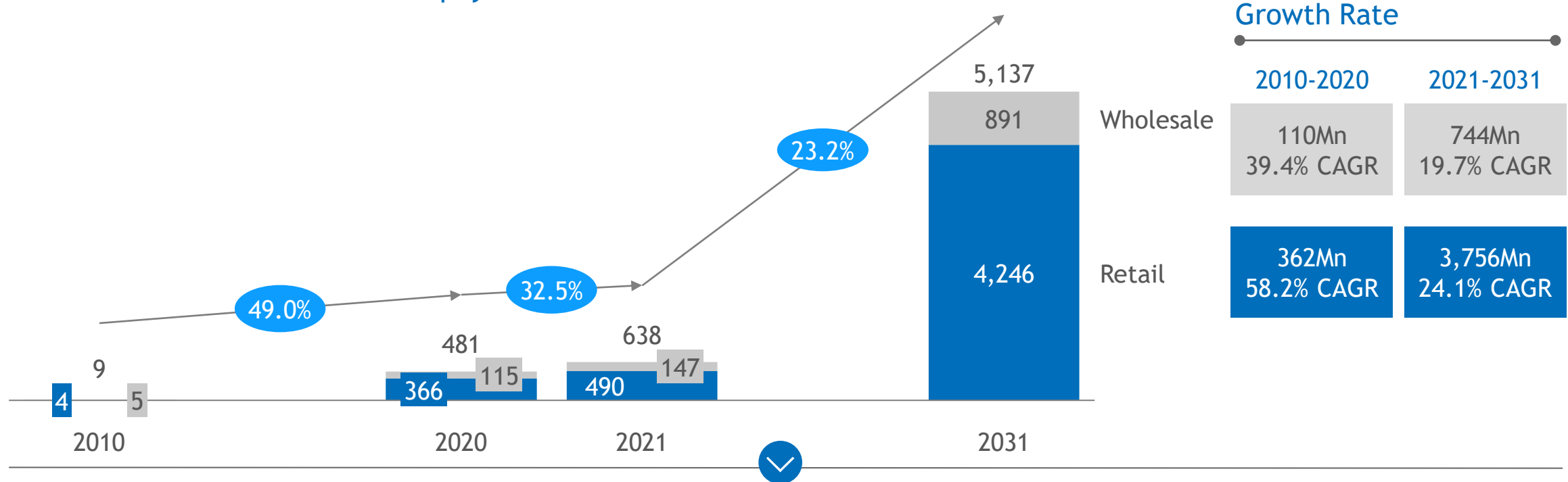
Digital Retail Payments in Cambodia

Digital retail payments in Cambodia are expected to grow significantly in the future.

Projected figures are estimates

Transaction volume of non-cash payments（Mn）

	Wholesale	Retail
2010	5	4
2020	115 (481)	366
2021	147 (638)	490
2031	891 (5,137)	4,246

49.0% → 32.5% → 23.2%

Growth Rate

	2010-2020	2021-2031
Wholesale	110Mn 39.4% CAGR	744Mn 19.7% CAGR
Retail	362Mn 58.2% CAGR	3,756Mn 24.1% CAGR

Key Drivers for Growth

1. Cash to non-cash conversions
2. Macroeconomic growth (GDP/consumer spending)
3. E-commerce
4. Financial Inclusion
5. COVID-19, inflation and other temporary events (e.g., regulatory and policy changes)

Note: Assumes V-shaped recovery scenario ("quick rebound") from Covid-19: scenario based on projected impact on real GDP and annual growth; ATM cash withdrawals are not included in the number of transactions
Source:BCG Global Payments Model 2022

Ref) International Retail Payments: State of the Multilateral Payment Network

International collaboration on Real Time Payment Network (RTP) has started, and in SEA, based on discussions at APN, QR code-based collaboration has progressed. Cambodia will not participate in the APN, but will promote bi-lateral connectivity.

P27

IXB

EBA CLEARING SWIFT
The Clearing House

APN [1]

Nexus

60+ Countries have implemented RTP

Bank or PSP, FX providers, Liquidity Provider

RTP live

RTP development in progress or on the radar

RTP connection initiatives
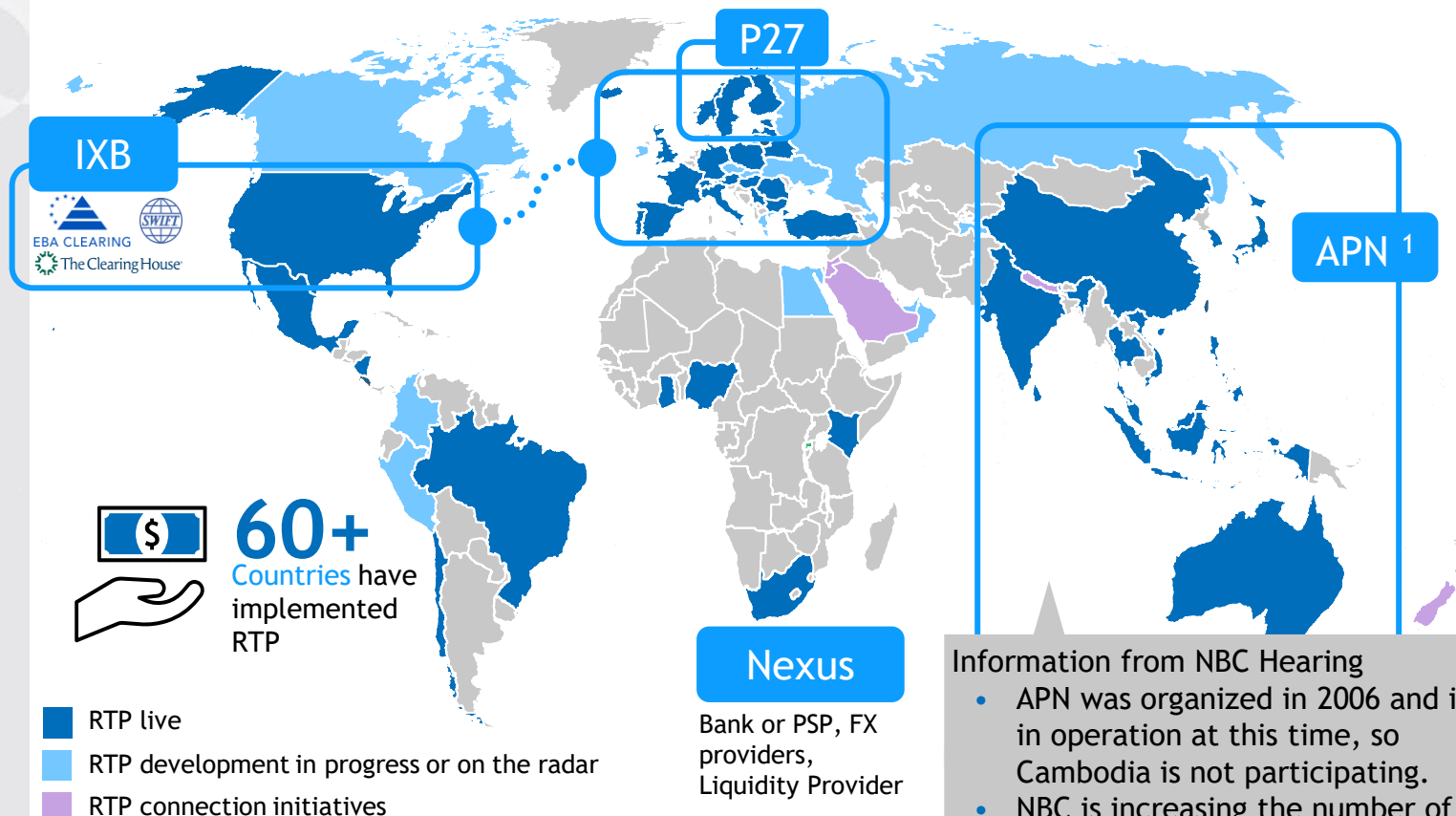
Information from NBC Hearing
- APN was organized in 2006 and is not in operation at this time, so Cambodia is not participating.
- NBC is increasing the number of countries that can be linked one by one through lateral connections.

12 APN[1] members signed on X-border RTP linkage

- Singapore
- Thailand
- Malaysia
- Indonesia
- Philippines
- Vietnam
- Australia
- China
- Japan
- S.Korea
- Myanmar
- Sri Lanka

9 ASEAN[2] (+India, China) X-border Interoperable QR Codes link map

CHINA[3] UnionPay QR
INDIA UPI
VIETNAM QR Payment Linkage
CHINA UnionPay QR·Alipay
CAMBODIA KHQR
SINGAPORE PayNow
THAILAND PromptPay
Laos LAOQR
PHILIPPINES InstaPay
INDONESIA QRIS
MALAYSIA DuitNow
BRUNEI (In plan)

xx — Year that Payments linkage launched

1. APN = Asian Payment Network 2. Myanmar to join when their networks are ready. 3. China-Singapore connecting in bank 4. source: expert from ACELDA bank level e.g. UnionPayQR with DBS Paylah, OCBC PayNow/OCBC App, Note:Cambodia isn't a APN member yet、Cambodia also hasn't connected with ASEAN linkage but Cambodia (and Laos) are set to join the cross-border payment system cooperation later. Cambodia started connecting to members individually e.g. Thailand3, China (Union Pay4, Ant International (Alipay+)5) and Vietnam Napas6. Both UnionPay and Napas are members of APN
Source: Central and National Banks' websites, APN, Finastra, press search

127

Ref) Elements and methods required to realize wholesale settlements using digital currencies

Use of digital currencies for international settlement has not been realized due to many issues in terms of international law and the establishment of an administrative operation structure

Domestic settlement | International settlement

Emerging issues

Limited issues compared to other considerations
- Digitalization of interbank payments is already feasible in many countries

Significant issues in consensus of int'l legislation preparation and in realizing administrative ops
- Takes time to make legislation preparation of countries concerned at the time of int'l settlement, and develop/negotiate standards for security level etc.
- It is quite difficult to realize administrative operation change
  - A huge amount of man-hours are required for study/system construction due to various and complex operational changes

Elements required to realize

Org of roles with existing payment infra & coordination with payment solution vendors
- If there is an existing payment infra, need to confirm the division of roles and means of cooperation in the domestic payment network
- Consider whether the services and costs provided by the payment solution vendor are reasonable

Progress in multilateral discussions for int'l legislation preparation and establishment of administrative ops structure
- Make legislation preparation of countries concerned at the time of int'l settlement, develop standards for security level etc.
- Develop ops and create rules for distributed ledger tech for foreign exchange transactions/securities related admin work
  - Front/middle/back (custody) operations by layer
  - Various admin ops such as foreign exchange reserves/forward transaction, contract, warranty against defects, etc.

Realization requires a complex multi-country consensus-building process and enormous administrative setup studies

AML (anti-money laundering) compliance overview

Cambodia was on the gray list in 2019 but is now removed from it due to AML legislation.

2019   **2023**   **2028**

Listed on Financial Action Task Force's[1] gray list   **Removed from FATF group list**   Deadlines that requires a tighter regulatory response to crypto assets (interview-based info)

Factors

1 **Lack of a legal framework for AML and Countering the Financing of Terrorism (CFT)**
- AML/CFT law has existed since 2007, but was evaluated as insufficient in content

2 **Insufficient structures for AML/CFT measures**
- Lack of resources in law enforcement insts dedicated to money laundering crimes was pointed out

3 **Lack of investigation and prosecution of money laundering and asset forfeiture**
- Insufficient crackdown on inflows of Chinese casino investment into Sihanoukville

Improvement

1 **Enforcement of the new AML/CFT law (June 2020)**
- Includes more specific definitions, requirements for reporting entities to adopt enhanced due diligence measures, and enhanced penalties for violation

2 **Strengthening of structures for AML/CFT measures**
- Strengthen resources in Cambodia Financial Intelligence Unit (CAFIU)
- Announced "National strategy for combating money laundering and financing of terrorism 2019-2023"

3 **Increase and improvement of money laundering and asset forfeiture investigations and prosecutions**
- Closed casinos in 2020
- Intensified crackdown on illegal gambling, and 231 illegal gambling parlors were investigated bet Sep 2022 and Jan 2023

1. Financial Action Task Force (FATF) is an intl org that identifies uncooperative countries/regions in AML/CFT and publishes a "high-risk jurisdictions subject to a call for action" and "jurisdictions under increased monitoring = gray list"
Source: FATF report "Cambodia Follow-Up Report 2022", Interviews on local business trip, Article search

Ref) AML (anti-money laundering) laws and supervisory bodies

In Cambodia, several regulatory bodies supervise and enforce AML regulations, and an AML-related law was developed in 2020. Continued vigilance, enforcement and international cooperation considered essential.

Development of legislation

2020 AML/CFT law enacted as the law on AML

AML/CFT law overview
- Law on Anti-Money Laundering and Combating the Finance of Terrorism
- Lead organization: CAFIU
- Approved by Parliament: June 2020
- Presented in the form of a repeal of the 2007 version and the 2013 decree relating to the old law

Features of the 2020 version
- Enhanced customer due diligence (CDD) measure
- Introduced stiffer penalties. Higher fines and longer prison sentences for violations

KINGDOM OF CAMBODIA

NATION RELIGION KING

LAW
ON
ANTI-MONEY LAUNDERING AND
COMBATING THE FINANCING OF TERRORISM

27 June 2020
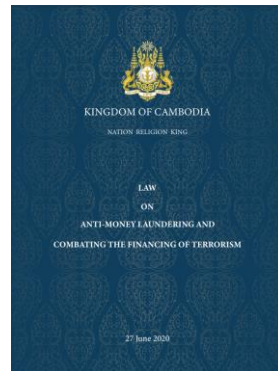
Supervisory bodies for AML regulation

Organization	Overview
Cambodia Financial Intelligence Unit (CAFIU)	• Established in 2008 following the enactment of the AML Act (2007) • Responsible for anti-money laundering measures as a decision-making body independent of the NBC
National Bank of Cambodia	• Central Bank of Cambodia • With extensive supervisory powers over financial institutions, it works to prevent money laundering in the banking sector
National Coordination Committee	• Established in 2012 • Commission with jurisdiction over preventing and controlling money laundering and terrorist financing in Cambodia
Anti-Corruption Unit (ACU)	• Established in 2010 under the Anti-Corruption Law • Investigates and enforces laws relating to corruption and money laundering

Source: CAFIU HP, Sanction Scanner report, Other article searches

130

14-4 Financial Information Utilization

Credit Bureau Cambodia (CBC) is in charge of aggregating national credit information. From the perspective of eliminating high interest rates in rural areas and supporting over-indebted borrowers, it is necessary to consolidate information on loans by non-banks, informal finance companies, etc., which CBC does not capture.

Major relevant gov agencies

National Bank of Cambodia (NBC)
- Oversight and regulation of financial institutions (banks, microfinance)
- Specific policies for digitization of financial institutions are reviewed and policies are issued by NBC

Credit Bureau Cambodia (CBC)
- Gather credit information

MEF/MOI/MOC
- Assigned responsibilities for some of the goals to strengthen the CBC

Related strategy/policy/plan

- DES (2021) by MEF
- FinTech Policy (2023) by NBC
- National Financial Inclusion Strategy 2019-2025

Major donor support

N/A

Gap

As-Is

Personal credit information (credit)

Credit Bureau Cambodia (CBC) exists and is able to report and match credit within its members
- CBC was established in 2012. Currently, there are more than 173 financial institution members (banks, MDIs, MFIs, Leasing, etc.)
- Timely data reporting to the CBC is mandatory, and participating financial institutions are generally reporting.
- A matching engine for integrating information from multiple financial institutions has been developed to improve accuracy.

On the other hand, there are some issues in incorporating Rural Credit Institutions (RCIs) and informal financial institutions
- RCIs and informal financial institutions (pawnshops, housing businesses, etc.) are not members of the CBC and information cannot be aggregated.

Others

CamDX data integration platform (CamDX) is now available to financial institutions, and CamdigiKey is being used for eKYC
- CamDX/Camdigikey is also starting to be used

To-Be

Enhancing the inclusion and reporting of informal finance businesses into formal finance such as CBC will improve the effectiveness of credit information and contribute to the stability of the financial sector
- Going forward, incorporate RCI and informal finance (pawnshops, housing businesses, etc.) into CBC and other formal finance, and expand formal finance.
- In addition, there will be monitor reporting status and promote capacity building for Rural Credit Institutions to ensure that information is shared with CBC in a more timely and accurate manner

Advancing financial information linkage may help to eliminate high interest rates in rural areas and deal with over-indebted borrowers (not mentioned in government documents)
- The possibility exists that the linkage of credit information, including informal finance, will help avoid over-indebtedness and lower interest rates

Further strengthening and expanding the use of CamDX to realize the Inter-Institutional System
- CamDX utilization is mentioned in the Fintech Policy.

Source. Interviews with local ministries and related organizations, Cambodian government published materials, Expert Interview, World Data Bank, other article searches, interviews during local business trips

National and international services provided by credit bureaus (CBCs) in Cambodia

CBC, in addition to providing credit information for the domestic market, started information sharing with outside the country (Singapore) from 2023; potentially aiming to share information within the ASEAN region exists in the future

Information sharing in-country

Credit scoring system (Khmer Score) based on personal credit information
- CBC announced Khmer Score (K-Score) in 2015
- An innovative credit scoring system developed by CBC, which measures potential credit risk at the time of application and predicts the likelihood of non-payment over the next 12 months through a numerical display of an individual's credit profile in a single score

Provides an app that allows Cambodian citizens to check their own credit score
- For the first time in 2020, CBC launches a smartphone app that allows citizens to check their own credit score
- Based on reports from more than 160 financial institutions that are members of CBC, users' credit scores are calculated on a scale ranging from 100 to 1,700 points
- This aims to improve the public's financial literacy and provide motivation to improve their financial health

Information sharing with other countries

Launched credit information sharing with Singapore's Credit Bureau
- Credit Bureau Cambodia (CBC) and Credit Bureau Singapore (CBS) announced their plan to launch the first cross-border initiative between them in 2023
- When an individual applies for a line of credit with a financial institution or applies for a job with a financial institution, CBS and CBC members are expected to be able to request the individual's credit report with the individual's consent
- CBS and CBC announced comments that they also aim to work with other countries to increase economic activity within ASEAN

Note: CBC (Credit Bureau of Cambodia)
Source: Cambodian government documents and other article searches

Comparison of personal credit information linkages in Southeast Asia

Although credit bureaus exist, they are lagging behind in terms of national coverage and the volume of information. However, the low access to financial services is seen as one of the reasons for the low coverage rate, and efforts for financial inclusion are needed in addition to strengthening reporting to the CBC.

	Cambodia	Singapore	Vietnam	Malaysia	Thailand
Name of Credit Bureau (Year established)	CBC : Credit Bureau Cambodia (2012)	CBS : Credit Bureau Singapore (2002) ECBS : Experian Credit Bureau Singapore (1978)	CIC : Credit Information Center of Vietnam (2000) PCB : Vietnam Credit Information Joint Stock Company (2007)	CCRIS : Central Credit Reference Information System (2001) CBM : Credit Bureau Malyasia (2008)	NCB : National Credit Bureau (2005[2])
Credit Bureau's national (% of adults) (2019)	52.2%	64.2%	59.4%~ (Coverage of CIC only) (PCB coverage is 20.6%)	89.1%~ (CBM coverage only) (CCRIS coverage is 64.9%)	56.5%
Depth of credit information index (2019)[1]	6.0	7.0	7.0	8.0	7.0
Ref) financially excluded rate[3]	41%	2%	36%	4%	12%

1. Depth of credit information index measures rules affecting the scope, accessibility, and quality of credit information available through public or private credit registries. The index ranges from 0 to 8, with higher values indicating the availability of more credit information, from either a public registry or a private bureau, to facilitate lending decisions. 2. NCB was established in 2005, but its predecessor, Central Information Services Co.,Ltd. was established in 1999. 3. 2020 data from UNCDF report "Financial Inclusion in Post-COVID Southeast Asia. Source: World Bank; UNCDF; Web search

15-1 Digitization of business transactions (e.g., E-commerce)

Challenges exist in the SME's use of EC, consumer protection, and digital trade. But impact is unclear.

Major relevant gov agencies

Ministry of Commerce
- E-commerce strategies, market access support programs

CambodiaPost
- Warehousing and logistics
- Build Economy Ecosystem

Ministry of Post and Telecommunications
- Digital infrastructure, postal, custom clearance (ASYCUDA)

MISTI
- Supporting SME Support to ensure quality of products, especially in handicrafts.

Related strategy/policy/plan

- E-Commerce Strategy (2019)
  - Created by MOC[1] with funding from EIF[2]

Major donor support

UNDP
- Create E-commerce Strategy
- Support "Cambodia Trade"

EIF
- Funding of Go4eCAM

Swisscontact
- Provide funds to Go4eCAM related to ASYCUDA

Gap

As-Is / **To-Be**

EC (Digital Order)

As-Is

Challenges in E-commerce onboarding by SME
- Go4eCAM project (2020/7~2023/9) has ended the funding by donors and there is no follow-up
- Challenge exists in utilizing a secure platform with after-sales service. Many use personal transactions on SNS, which outperform in terms of visibility and convenience
- Lack of education/publicity for SMEs use of EC

Insufficient consumer protection regulation
- Code of Conduct guidelines do not cover EC.
- New Prakas (sub-clause) is under consideration
- Consumer protection is handled individually by 400-500 staff

To-Be

Follow-up to Go4eCAM to continuously support SMEs to expand into EC
- Secure PFs that allow business mapping, operated by PPPs and Agencies. Encourage use of EC platform through consumer education
- Incubation program in place to support SME skills
- Provide funding for EC onboarding by developing an investor platform, etc.

Develop regulation to protect EC consumers
- Establishment of Trust mark, improvement of legislation

Digital Trade

No policy/regulation currently for digital goods/digital trade, leading to taxation issues
- Taxation is an issue as consumer bills for video streaming services SNS flow only to the country of service provider.
- Since the Pentagon Strategy aims to increase national income, domestic storage of data and taxation of digital goods are important.
  - Taxation of digital delivery products is a high priority because taxing delivery products need a policy

Policy framework for taxation of digital goods
- There is a policy to benchmark other countries for policy review at MOC

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1. MOC: Ministry of Commerce 2.EIF: Enhanced Integrated Framework. Note. Issues related to the development of e-commerce, such as users' Internet literacy, Internet penetration, and digital payment penetration, are also relevant, but are not covered in this section as they are covered in other areas of the assessment.
Source. Government of Cambodia, E-commerce Strategy, Expert Interview, and other article searches.

Overview of the Go4eCAM Project
Support for SME's EC onboarding through establishment of a B2B2C platform, skill support, and grants

Overview

Project Overview
- The first national E-commerce project implemented by the Ministry of Commerce.
- A plan to support the onboarding of Cambodia's SMEs onto E-commerce.
- The total budget is USD 2,120,472.

Duration
- July 2020- September 2023 (Completed)

Implementing Body
- MOC (Ministry of Commerce)

Donors
- EIF
    - Funding USD 1,689,344
- UNDP
    - Co-funding (Australian Government is also a Co-founder) USD 431,128
- Swisscontact
    - Budget Leveraged USD 1,120,790

Initiative

1 Cambodia Trade (B2B2C platform) launch (March, 2022)
- A service that matches domestic vendors with domestic and international buyers
- In the future, there is a desire to advance business matching, transfer the platform to organizations other than MOC, and promote public relations

For details, refer to the following page

2 Support for SME skills/entrepreneurship
- Incubation program was attended by 101 SMEs.
    - In the 4 provinces with a high number of SMEs, study sessions were held and devices were also loaned to SMEs.
- In the Innovation Challenge project, support was provided for the digital transformation of 70 MSMEs

3 Access to finance
- Development of an Investor Platform
- Provided seed funding for EC onboarding as part of the "Small Grant Programme"

Overview of Cambodia Trade
The B2B2C platform, integrating logistics and payment systems, facilitates the entry of SMEs into EC

Overview

Purpose
- Developed a B2B2C platform to enable SMEs to sell products in domestic and international e-commerce markets.
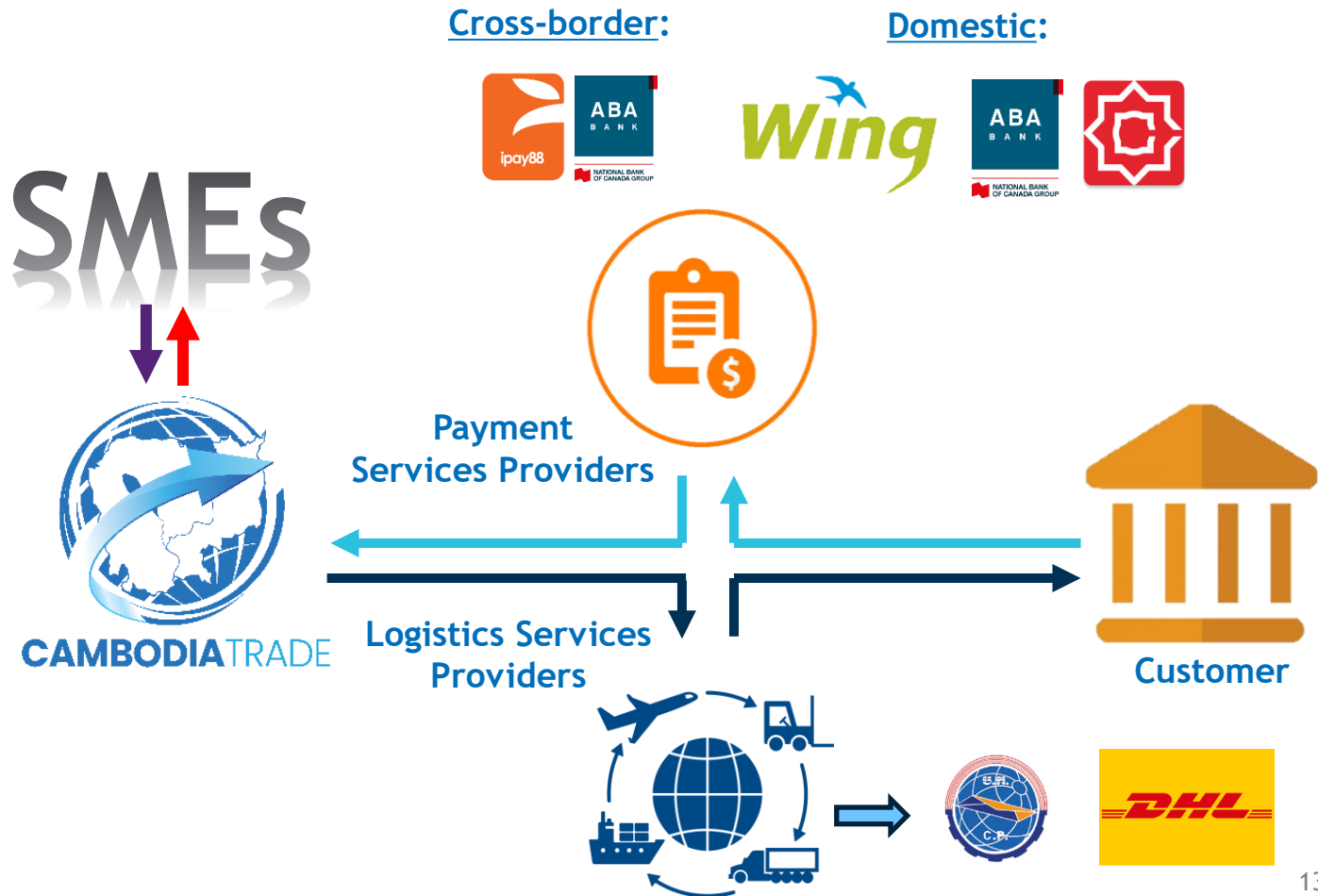- Integrated logistics and payment systems that match international standards/Best Regulatory Practices.
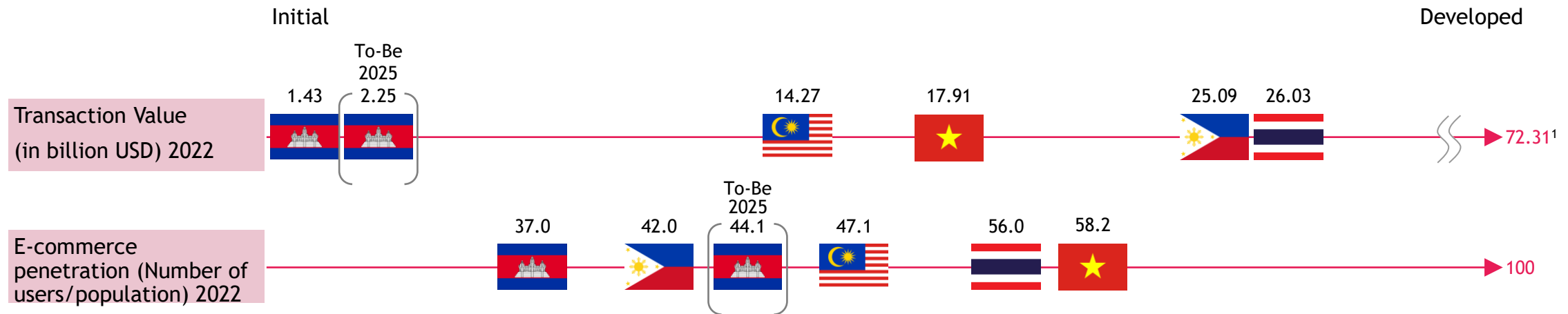
Launch
- March, 2022

Current Scale

- 160 vendors are registered, of which 70-80% are female entrepreneurs.
- The targeted products currently focus on silk, pepper, and fruits, with over 1,100 types of products available.

Conceptual Diagram

Cross-border: Domestic:

SMEs

CAMBODIATRADE

Payment Services Providers

Logistics Services Providers

Customer

Comparison of E-commerce market in Southeast Asia
Cambodia's e-commerce market is small compared to other Southeast Asian countries, but it is growing

Initial   Developed

Transaction Value (in billion USD) 2022

To-Be 2025

1.43   2.25   14.27   17.91   25.09   26.03   72.31[1]

E-commerce penetration (Number of users/population) 2022

To-Be 2025

37.0   42.0   44.1   47.1   56.0   58.2   100

E-commerce in Cambodia has been slow to develop due to poor Internet access, over-reliance on cash, lack of consumer confidence, and low digital knowledge and skills
- E-commerce lags behind other Southeast Asian countries in terms of transaction value.
- E-commerce penetration itself (number of users divided by population) is low compared to other countries

Cambodia's e-commerce sector is on a solid growth trajectory due to Internet penetration, improved access to new technologies, digitization, and rising income levels, and is expected to grow in the future

1. Axis limit changed to match the maximum figure for Southeast Asia in 2022 (72.31 for Indonesia).
Note: The numbers are "Online consumer payment transactions for physical goods and services processed on desktop computers and mobile device. Incl. various payment methods like credit card, bank transfer, invoice or online payment providers. Payment categories: eCommerce goods, digital items or media, online travel etc.", and do not include B2B
Source: Statista、Web search, expert interview

Ref) Current Situation of E-commerce Platform Usage

There are a certain number of e-commerce platforms in Cambodia, but e-commerce is dominated by SNS

Number of users of SNS / e-commerce platforms in Cambodia

The number of users on social networking sites is far higher than on e-commerce platforms

		Overview	Established in	App Downloads (2023) (Ratio to total population[1])
SNS	Facebook	FB has penetrated a large part of the population	2004	10,450,000 (62%) [2]
EC platform	AliExpress	China • Developing payment and logistics ecosystems	2021	422,616 (2.5%)
	Tinhtinh E-commerce	China • Cambodia State-backed	2019	12,369 (0.07%)
	Cambodiatrade	Cambodia • operated by the MoC	2021	1,985 (0.01%)

Current State of SNS Use in E-commerce

E-commerce Revenue[3] (2021)

(万 USD)

Pie chart values: 263.3 (27.1), 230.5 (23.8), 57.2, 46.3, 11.2, 62.9, 44.3, 254.4
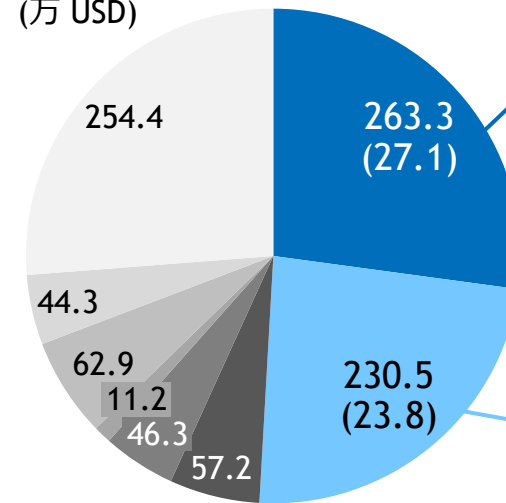
Fashion
When purchasing fashion items online, the majority use social networking services (SNS).
- 90.3% use Facebook
- 14.8% use Instagram
- Only 5.6% use Taobao (Platform)

Beauty
For online purchases of beauty-related items, the majority also use SNS.
- 73.6% use Facebook
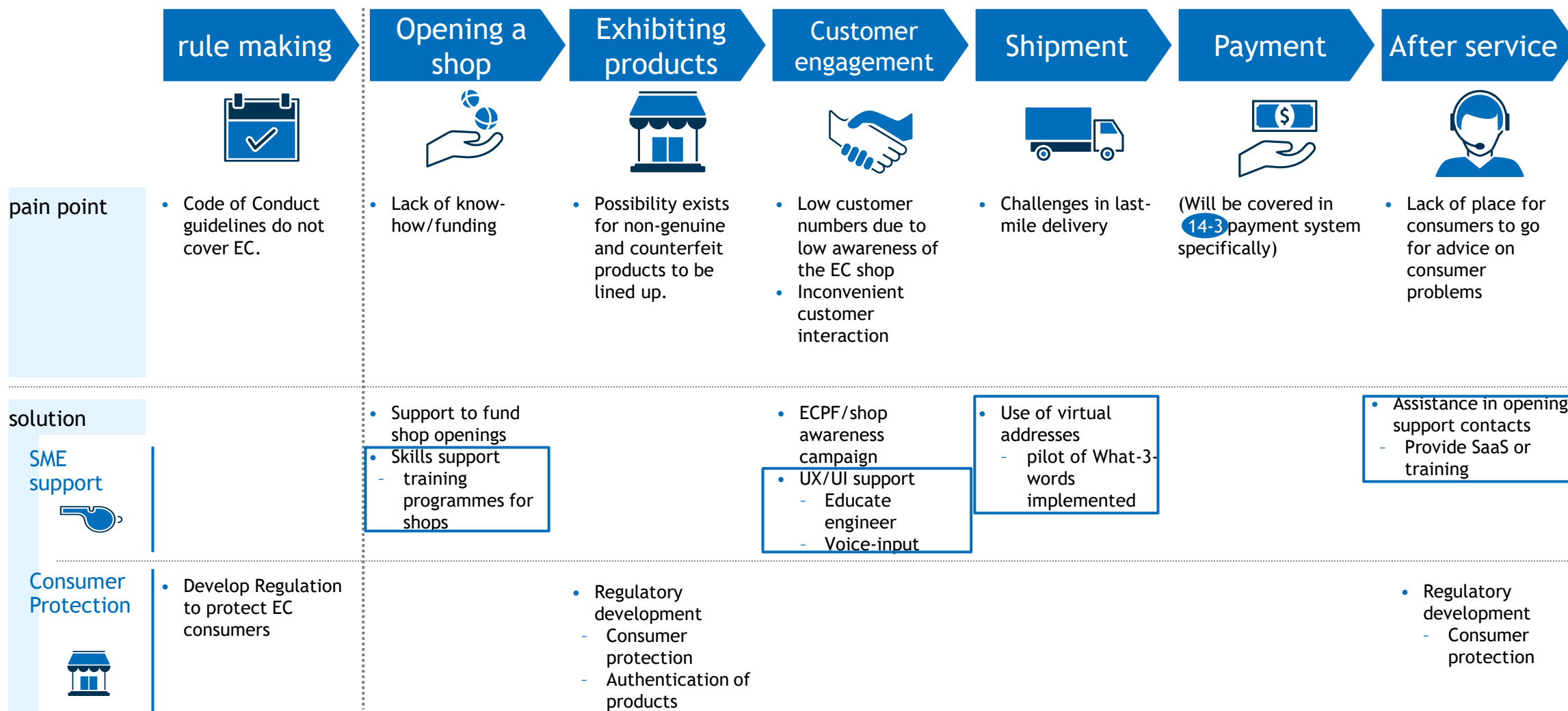- 17.4% use Telegram
- Only 13.7% use Goody (Platform)

Legend:
- Fashion
- Beauty, Health, Personal & amp; Household Care
- Food
- Furniture
- Media
- Toy, Hobby & amp; DIY
- Beverages
- Electronics

138

Ref) Value chains in EC platforms and challenges in Cambodia
In addition to supporting SME to use EC, improvement of consumer-protection legislation is needed

: Digital Related area

	rule making	Opening a shop	Exhibiting products	Customer engagement	Shipment	Payment	After service
pain point	• Code of Conduct guidelines do not cover EC.	• Lack of know-how/funding	• Possibility exists for non-genuine and counterfeit products to be lined up.	• Low customer numbers due to low awareness of the EC shop • Inconvenient customer interaction	• Challenges in last-mile delivery	(Will be covered in **14-3** payment system specifically)	• Lack of place for consumers to go for advice on consumer problems
solution / SME support		• Support to fund shop openings • Skills support – training programmes for shops		• ECPF/shop awareness campaign • UX/UI support – Educate engineer – Voice-input	• Use of virtual addresses – pilot of What-3-words implemented		• Assistance in opening support contacts – Provide SaaS or training
Consumer Protection	• Develop Regulation to protect EC consumers		• Regulatory development – Consumer protection – Authentication of products				• Regulatory development – Consumer protection

Source. Expert interviews, web search

15-2 Digitization of trade (customs clearance)

Financial/logistics part has room for digitalization. Customs clearance needs facilitation as a region

Major relevant gov agencies

Ministry of Commerce
- Custom Declaration
- Classification/inspection at the custom, SeT4SME

General Department of Customs and Excise
- Customs-related services
- Creation of Strategy for Customs Reform and Modernization

Ministry of Economy and Finance
- Payment of custom duties

CambodiaPost
- Digitalization Project for Customs Clearance of Parcels (SeT4SME)

Ministry of Posts and Telecommunications
- Import/export digitization services

Related strategy/policy/plan
- DES Framework

Major donor support

Swisscontact
- SeT4SME, EAD support

EU-ARISE / GIZ[1]
- DGMT Project support

JICA
- Technical cooperation to improve logistics and port administration

UPU(Japan Post)
- Improve Cambodia Post's efficiency through UPU

Gap

Finance/Logistics

As-Is

L/C (Letter of Credit) and B/L (Bill of Lading) related operations take time, resulting in long lead time for export procedures/pickup of cargo
- Time-consuming for bank examination, coordination, document verification for L/C, and sending of original B/L

To-Be

In addition to efficiency improvements, format and laws should be developed in cooperation with other countries and institutions.
- Digitalization in a form compatible with other countries/agencies and a system to give legal effect to digital data are necessary.
- Development of databases, AI using blockchain (OCR) to improve efficiency of LC transaction

Customs

In general cargo trade, ASYCUDA and NSW[2] are in progress and paperless operation is in use
- ASYCUDA and Single Administrative Document have been introduced, National Single Window is also in Phase3
- Paper submission is not required from January 2024. However, there are still operators who submit paper documents.

SeT4SME project to facilitate customs clearance of parcels is underway (2021-2023
- Electronic Advanced Data implementation
  - Aiming to integrate ASYCUDA and Cambodia Post's CDS system interface
- E-Trade Portal development
  - Promote SME[5] presence and cross-border e-trade engagement

Deepen regional integration, develop legislation, promote system connectivity, and use trade facilitation tools in cooperation with the region.
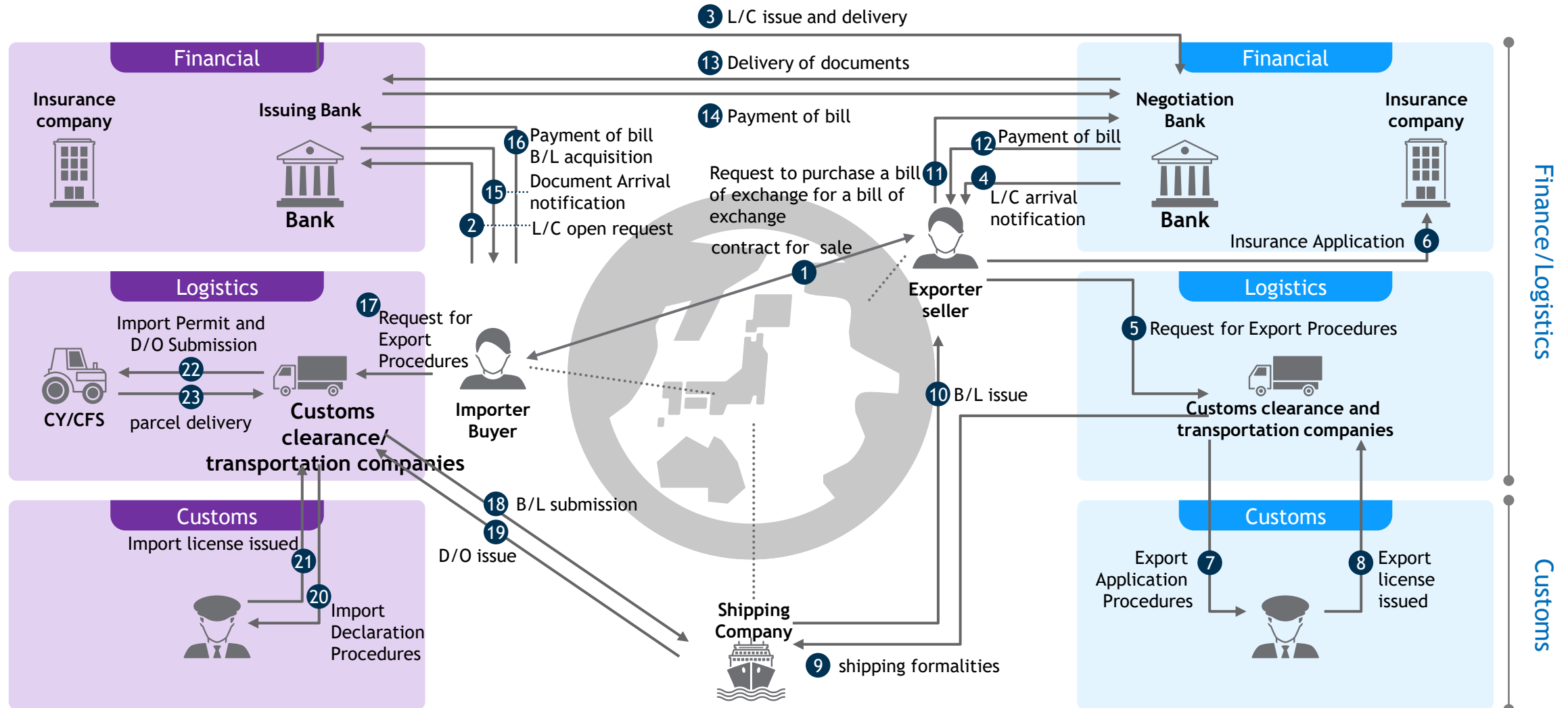
Reduce time for procedures by promoting the digitalization of private sector and building capacity for customs staffs while deploying NSW[2]
- Pre-Arrival Processing is scheduled to be implemented in Q2 2024 for air transportation, and in Q1 2025 for land and sea transportation.
- Issues identified during the trial period to be resolved at explanatory meetings, etc.

Reduce time and cost for import/export of parcels and promote e-trading among SMEs in Cambodia

Overview of Trade
Trade involves financial, logistics, and customs processes

3 L/C issue and delivery

Financial

Insurance company

Issuing Bank

Bank

13 Delivery of documents

14 Payment of bill

Financial

Negotiation Bank

Insurance company

Bank

16 Payment of bill / B/L acquisition

15 Document Arrival notification

2 L/C open request

12 Payment of bill

11 Request to purchase a bill of exchange for a bill of exchange contract for sale

4 L/C arrival notification

1

Exporter seller

Insurance Application **6**

Logistics

17 Request for Export Procedures

Import Permit and D/O Submission

22

23

CY/CFS   parcel delivery

Customs clearance/ transportation companies

Importer Buyer

10 B/L issue

Logistics

5 Request for Export Procedures

Customs clearance and transportation companies

Customs

Import license issued

21

20 Import Declaration Procedures

18 B/L submission

19 D/O issue

Shipping Company

9 shipping formalities

Customs

Export Application Procedures **7**

8 Export license issued

Finance/Logistics

Customs

Issues in the financial/logistics part
Complicated process of exchanging documents and checking them by related organizations

"As-is" of the financial/logistics

LC transactions take longer and export procedures are delayed
- Banks take time to screen suppliers/buyers when issuing letters of credit
  - Banks need to check a large amount of historical data for creditworthiness
- Time-consuming bank-to-bank coordination
  - When transactions are not between correspondent banks, the banks need to be linked, which requires lead time.
- Time-consuming for the bank to check the relevant documents prepared by the exporter
  - Manual (visual) check of necessary items

Long time from issuance of BL to delivery to the importer, delaying pickup of the cargo
- The time required for the exporter to send the BL (bill of lading) to the importer is long, and there are cases where the cargo arrives first but cannot be picked up due to the absence of the BL.
- The BL is still based on the original document principle (the legal validity of electronic documents is not guaranteed), and the original BL is legally required.

"To-be" of the financial/logistics

The government works to create a digital infrastructure for LC transactions in collaboration with other countries and relevant parties, ensuring coherence. However, realization takes time
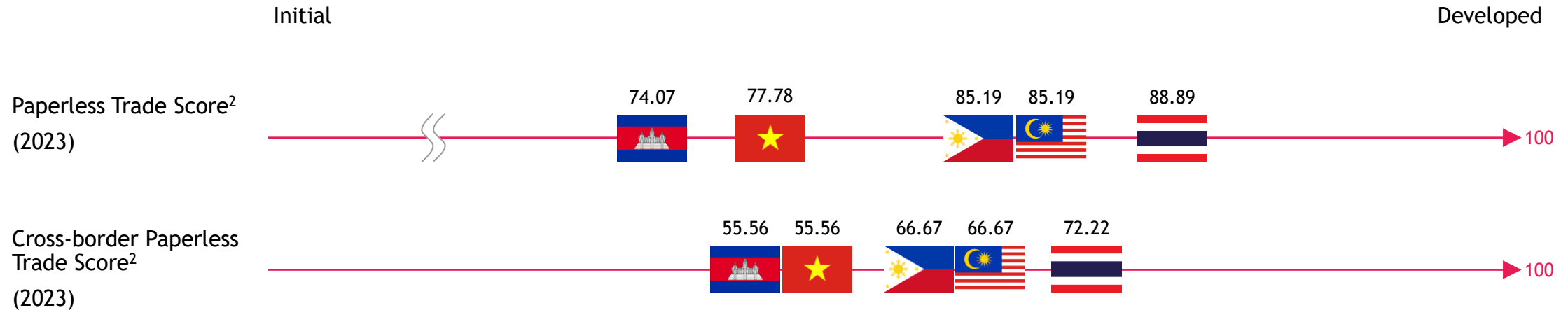- Leading the development of a common format for digitalization and facilitating alignment among financial institutions is effective
  - If institutions digitize their paperwork independently, there is a potential for compatibility issues.
- It takes time to involve cross-industry organizations in these efforts

Introducing IT technologies and shorten the LC operations
- Review: Establishing a database for review processes.
- Coordination: Developing a digital platform for inter-bank coordination.
- Verification: Employing AI to perform basic matching, reducing the burden of manual verification.

Legislation is established to provide a legal basis for eBL (electronic BL)
- Establishment of a system that allows cargoes to be picked up even with eBLs.

Note: This page organizes general issues regarding the financial and logistics part of trade, which are not unique to Cambodia's context, but are common issues in ASEAN as well.
Source: expert interview, web search

Comparison of paperless customs clearance procedures in Southeast Asia

ASYCUDA and NSW[1] are implemented, but paper-based procedures are still used, lagging behind other countries.

Initial   Developed

Paperless Trade Score[2]
(2023)

| 74.07 | 77.78 | | 85.19 | 85.19 | | 88.89 |

→ 100

Cross-border Paperless Trade Score[2]
(2023)

| 55.56 | 55.56 | | 66.67 | 66.67 | | 72.22 |

→ 100

Compared to Thailand, Cambodia lags behind in terms of electronic National Single Window, electronic data submission of Sea/Air Cargo Manifest, etc.
- While Thailand's Electronic Single Window System is "Fully Implemented", Cambodia's is "Partially Implemented", which means that paper documents are still required for trade procedures.

In terms of Cross-Border trade, "Electronic exchange of Customs Declaration" is "Partially Implemented" and some procedure requires paper-based submission
- Although an electronic system exists, there are procedures (e.g., truck border crossing applications for land border crossings) that are not yet supported by the system.
- The use of the online system has not progressed due to a lack of awareness among the private sector. During the procedure, if someone chooses to complete a paper-based procedure in a series of procedures, re-enter of the information is required even if the same system is used.

1. National Single Window 2. UNTF survey score。Paperless TradeとCross-border Paperless Tradeの違い：'Paperless trade' includes measures that utilize electronic formats, instead of traditional paper-based documentation systems, to expedite trade and reduce related costs. 'Cross-border paperless trade' includes the measures for the next step that enables cross-border mutual recognition and the exchange of trade-related data and documents in electronic form"
Source: Trade Facilitation and Paperless Trade in Cambodia | UN Global Survey on Digital and Sustainable Trade Facilitation (untfsurvey.org) ,Fast-tracking implementation of eTrade Readiness Assessments -Second edition (unctad.org)、Expert interview, web search, JICA reports

Ref) Differences to regional cooperation efforts in Asia and Africa

ASEAN has an FTA as a goal to reach economic integration; AU has a process of customs union, common market, common currency and economic union

Attitude/efforts towards regional integration

ASEAN

ASEAN has weak incentives to move forward as FTA is its goal of reaching economic integration
- ASEAN is the body driving towards FTA, so it has the authority to gather the prime ministers of each country for discussions
- However, the capacity of ASEAN Secretariat is weak

SEC Mekong Region Southern Economic Corridor

Conceived Western Gateway plan to create a logistics hub for BIMSTEC countries as Southern Economic Corridor (Cambodia, Vietnam and Thailand)
- Plans for multiple railway lines and port expansion reduce lead times and the risk of encountering pirates

AU

There are processes of FTA, customs union, common market, common currency and economic union, which are modelled on EU
- AU, a continental-level body, has 8 ASEAN-like regional bodies under it
- There is a solid implementation system, with each regional bloc developing its own legal system, which is eventually integrated into the continental level

EAC East African Community

Expand and deepen economic/political/social/cultural integration to improve people's quality of life through increased competitiveness, value-added production, trade and investment
- Steady growth with an increasing number of member states since its establishment in July 2000
- Initiatives to promote regional integration and customs union and modernization of customs administration contribute to growth

Current status and next steps on trade facilitation

ASEAN as a whole has not developed system linkages such as customs clearance systems, and legal systems within the region and between the 2 countries
- Cambodia has not yet developed linkages with neighboring countries (Thailand/Vietnam), and ASEAN in terms of NSW, AEO, GPS cargo tracking systems, etc.
- Member countries signed up, but implementation has not yet been achieved due to the time required for domestic coordination with relevant ministries and development of the legal system

Thailand could lead the region on the Mekong Region/Southern Economic Corridor
- Countries such as Thailand are assumed to have the potential to lead other countries in capacity building/ home country systems as well

AU puts AfCFTA as one of its Agenda 2063, and is currently working to revitalize intra-African trade.
- JICA signed a business partnership agreement with AfCFTA Secretariat in December 2022 and is collaborating in areas such as trade facilitation and corridor development

EAC has particularly developed economic integration within AU and is a Single Custom Territory
- It has the highest number of borders in AU where JICA supported One Stop Border Post is functioning
- Kenya is taking the initiative in building consensus with member states

Note: The Southern Economic Corridor links Ho Chi Minh, Vietnam; Phnom Penh, Cambodia; Bangkok, Thailand; and Dawei, Myanmar
Source: Expert interviews, web search

Ref）Regional Trade Facilitation Movement in Africa
East African Community (EAC) works together to develop Single Window, border infrastructure, etc.

Areas of Program Implementation for Trade in the EAC

Programme areas		Sub-topics
1	Market Access	Logistics, One Stop Border Posts, Ports and Roads
2	Trade Environment	ICT for Trade; Standards and SPS[1]; Trade Policy
3	Business Competitiveness	Advocacy; Export Capability; Trade and Logistics Clusters; and Women and Trade
4	Sustainable and Inclusive Trade	Climate Change; Environmental and Social Safeguards; Gender
5	Safe Trade Emergency Facility	Making ports, borders and critical supply chains safe; Ensuring food security and access to critical medicines and; Support measures to prevent job losses and make region resilient to future crises
6	Conferences	SIAT[2]; Trade Development Forum

Examples of projects undertaken by the EAC as a whole

2010 – 2014: Single Window Information for Trade
- TMEA provided financial & technical assistance for building IT infrastructure to host single window portals across EAC
- Cost of Single Window: $4.6M

2014 – 2023: Operationalization of Single Customs Territory
- Strategy I **(2014-2017)** - TMEA provided financial and technical aid to EAC Secretariat and Country Revenue Authorities to support reforms e.g., single windows, port infra improvements
- Strategy II **(2017-2023)** – TMEA will provide a technical advisor and TWGs[3] to continue progress of Strategy I

2020: Safe Trade Emergency Facility
- $20M facility to minimize disruptive effects of COVID-19 on trade and ensure continued safe trading
- Example initiatives include:
  - Extending tracking of cargo & truck drivers
  - Lobbying to remove air freight restrictions
  - Developing testing and quarantine facilities at key borders

Initiatives by donors in the digital domain in Cambodia

The Government of Cambodia cooperates with several development partners (this slide only covers support and cooperation related to digital and is not an exhaustive list with confirmation of all donors)

Assessment Items		international aid agencies			Bilateral aid agencies				
		UNDP	WB	ADB	JICA	USAID	GIZ	CHINA(1)	KOICA
a Digital Governance	1 Rights, Principles and Laws								
	2 Central / Local Government		E				E	U	
	3 Public entity		F	I			F	V	
	4 EdTech / Digital Literacy	A	G	J			Q	W	b
	5 Civil Society/Media							X	
b Digital Infra-structure	6 ICT network							Y	
	7 Data Storage Infrastructure			K					
	8 Base Registry								c
	9 Data exchange/ID								
	10 Cybersecurity				L	O			
c Digital Innovation	11 ICT industry						R	Z	
	12 Startup Ecosystem		H				S		d
	13 Digital HR	B				P		a	
	14 Financial Institutions/Services			D	M				e
	15 Trade / E-commerce	C			N		T		

A	Digital literacy survey of young people
B	Online recruitment platform/ youth employment support
C	E-commerce Strategy creation, support for ECPF
D	Support for the establishment of Credit Guarantee Corporation of Cambodia (CGCC)
E	Digital governance support
F	Digital Assistance for Social Security project
G	Facility support for the education sector
H	Start-up ecosystem survey
I	Dissemination of ICT systems for social security system management
J	Introduction of application materials
K	Data centre development
L	Cyber security capacity building
M	Support for expansion of Bakong
N	logistics systems,/ port administration capacity
O	Digital Connectivity and Cybersecurity Partnership (DCCP)
P	Digital talent support for students and MSMEs
Q	Digital education support for government employees
R	Improve competitiveness of Cambodia enterprise
S	CADT programme support
T	DGMT project
U	Support for building smart cities
V	Healthcare ICT support
W	Digital content support
X	Investing in media
Y	Submarine cables, 4.5G/5G deployment support
Z	Supporting digital awards in Cambodia
a	'Seeds of the Future' HR development project
b	Digital content support / ICTLab installation support
c	Support to MPWT's fleet management system
d	Establishment of incubation hubs
e	Investment in FinTech markets