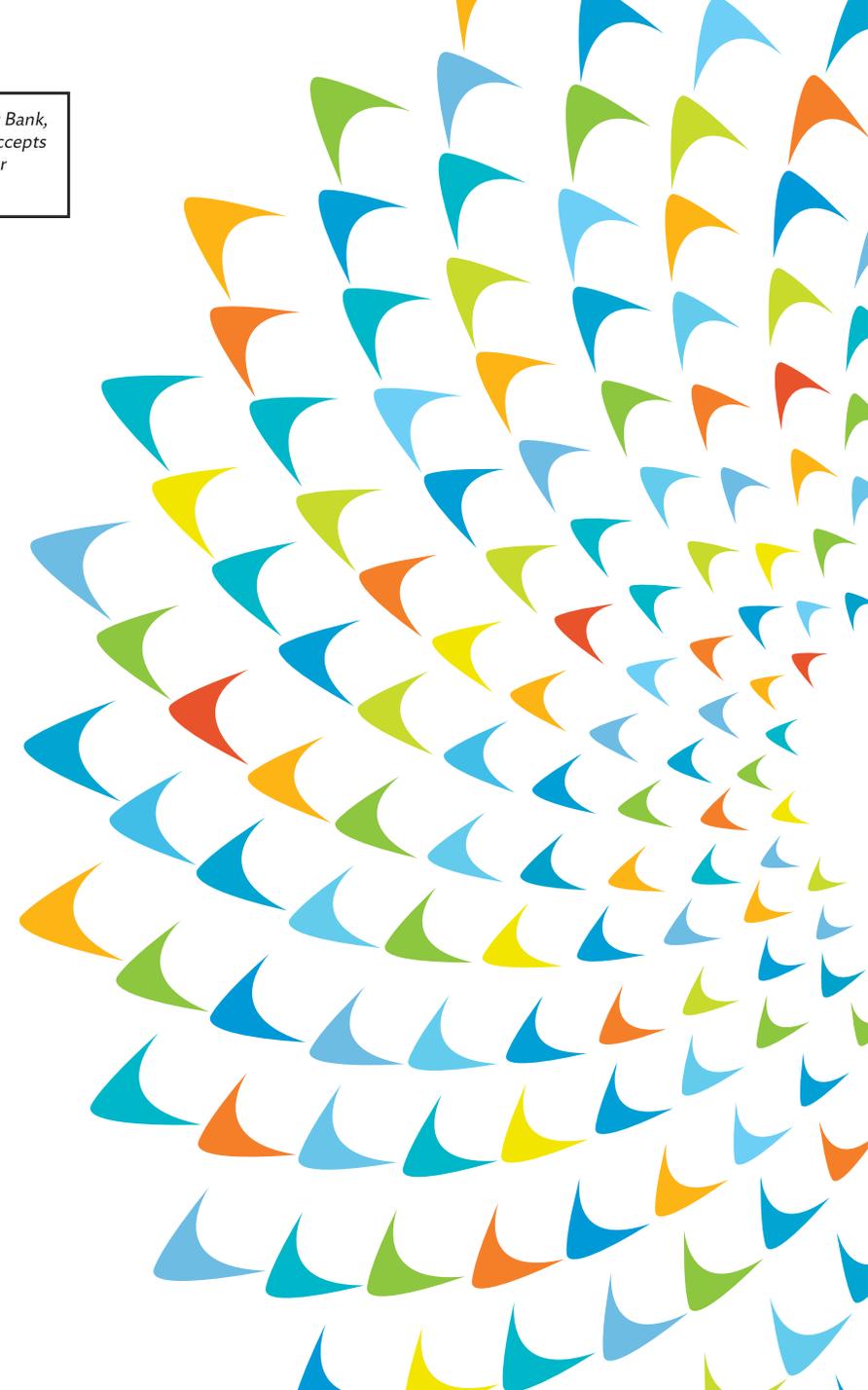




*The views expressed in this presentation are the views of the author/s and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this presentation and accepts no responsibility for any consequence of their use. The countries listed in this presentation do not imply any view on ADB's part as to sovereignty or independent status or necessarily conform to ADB's terminology.*

# Digital Public Infrastructure and the ADB





Centre for Digital  
Public Infrastructure

Digital Public  
Infrastructure 101 -  
South Asia Practitioner  
Roundtable

ADB





## Academic & Non Profit



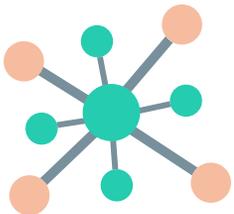
## Pro Bono Advisory

*Philanthropically funded*



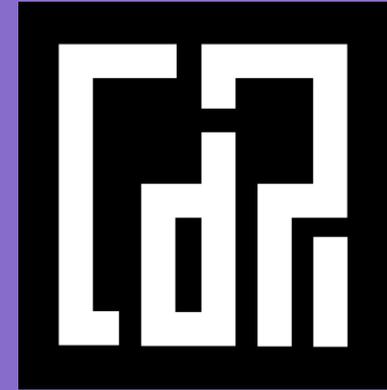
## Global Action Bias

*Team of practitioners*



## Zero software offering

*Help as Strategic Country Tech Design Team members*



Who we are at  
the Centre for DPI

# A cash-driven economy in Brazil brought 71M to digital payments in 2y



2020

Brazil rolled out **interoperable payments** via **'PIX'**

2022

**300+** participating banks + fintechs;  
**140 Million** users (80% of adults)

**71 Million** (~50%) had not used digital payments the year before



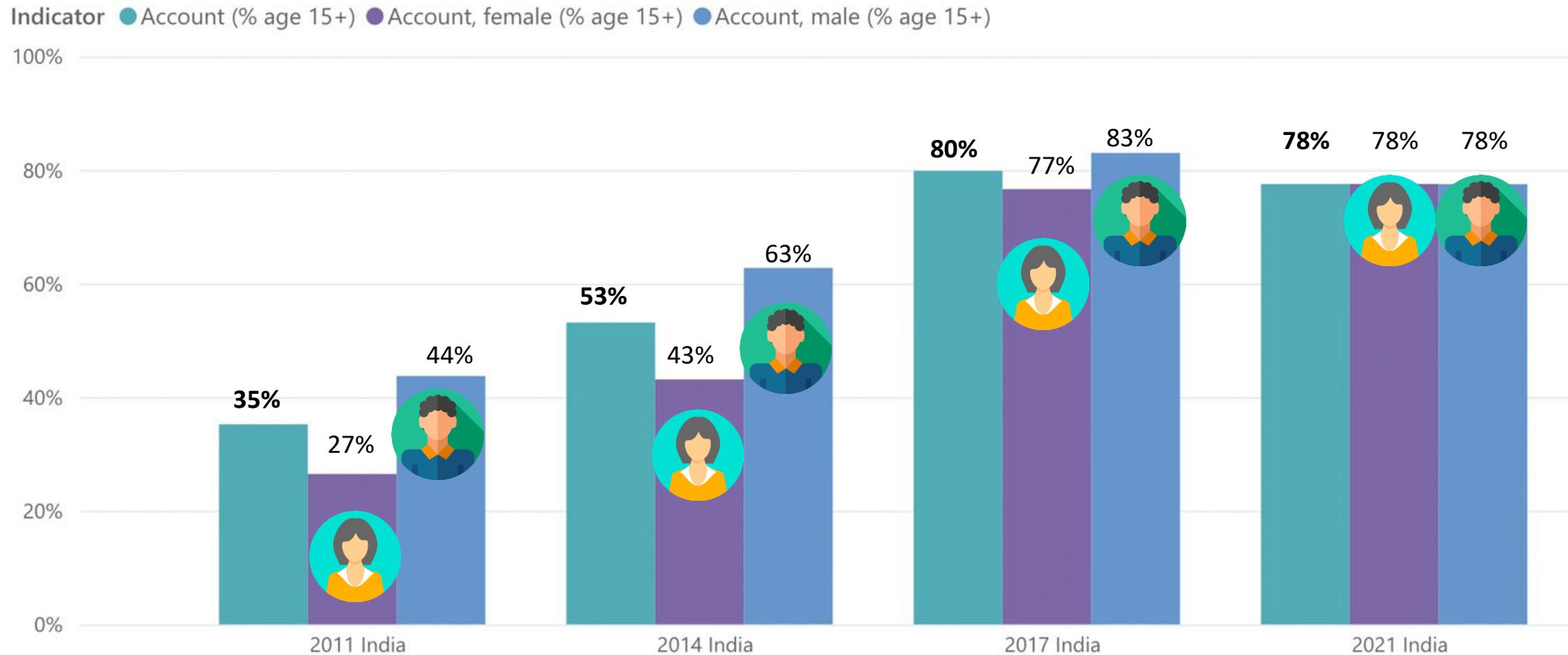
## Thailand

**In under two years, ThaiID reduced the share of population uninsured by healthcare from 29% to under 5%**

Launched in 2019, used to guarantee subsidized health care to all citizens

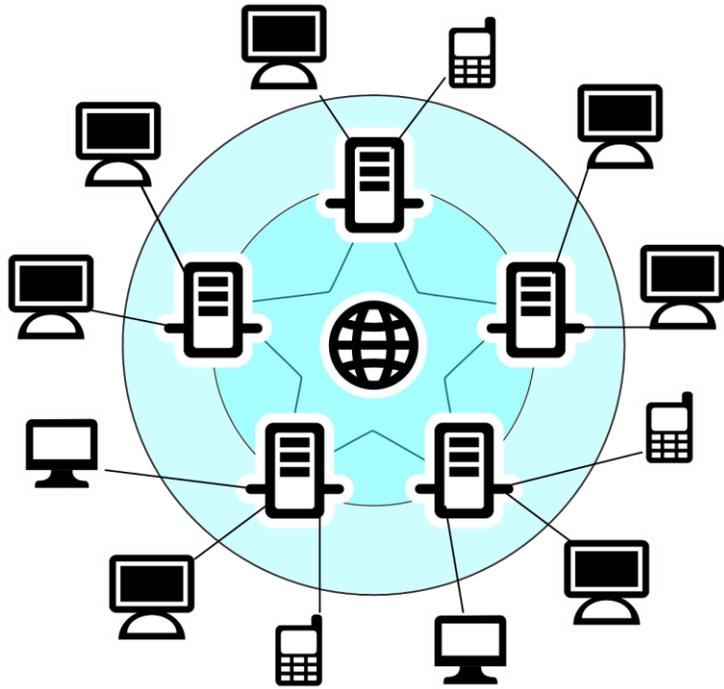


# In 9 years, India's banking penetration shot up from <35% to ~80% using a digital ID, closing the gender gap!

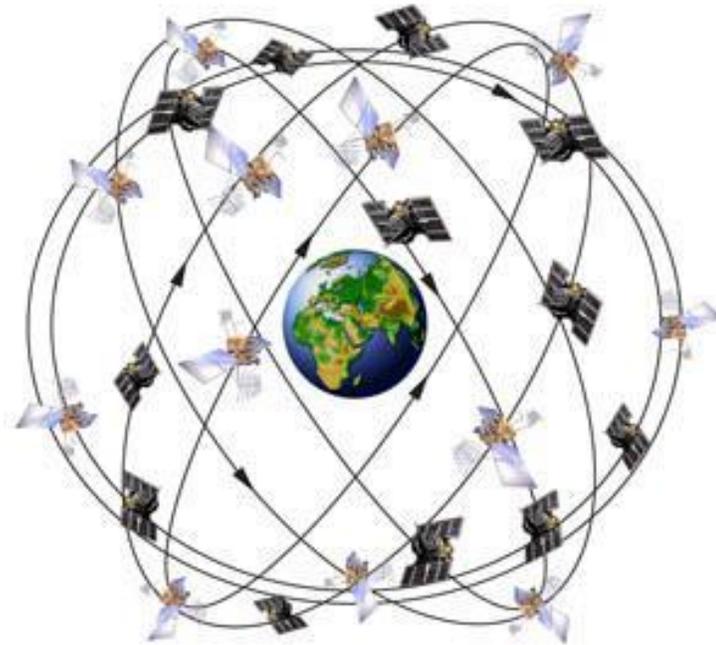


Sources: World Bank Findex Data 2011-2021: <https://www.worldbank.org/en/publication/globalindex/Data>

# Inspired by the original digital infrastructure: Internet, GPS, and Mobile



Internet



GPS

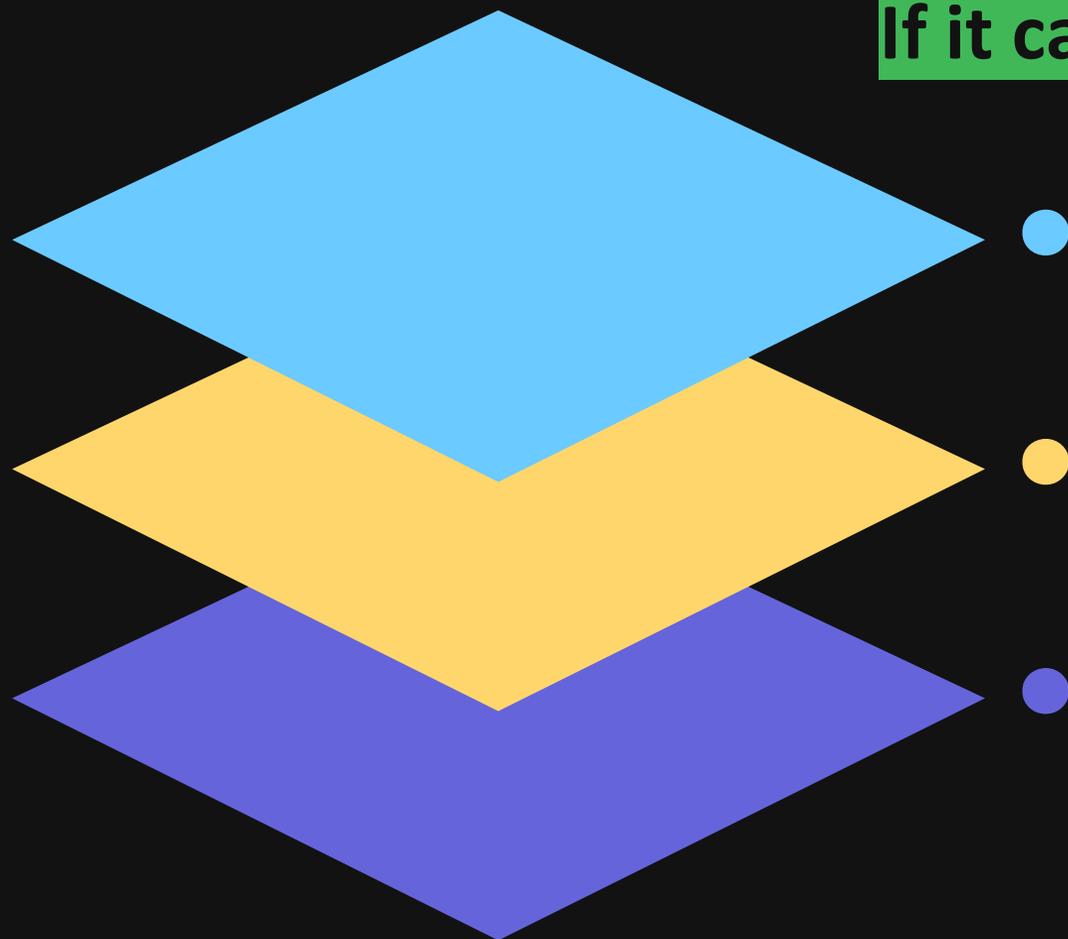


Mobile/GSM



# The DPI approach works by using **open tech standards & enabling policy** to bring the best out of **markets**

**If it can't be reused by others, it's not DPI!**



● **Market:** Public and private innovation; Competitive market players designing diverse solutions;

● **Governance:** Legal and institutional framework; Public programs to drive adoption; Ecosystem facilitation; Participatory governance

● **Open Tech Standards & Building Blocks:** Open specifications & protocols or shared systems across verifiable ID & registries; signatures & consent; payments, data sharing, credentialing, and open AI/ML models; and discovery & fulfillment.

# 5

## Foundational Digital Public Infra Categories within & across sectors



### Identities

Authenticating any noun in a digital ecosystem (people, entities, & objects) via Registries

ID Authentication; eKYC; Single Sign On; Civil/Functional ID; Entity Registries (Hospitals, etc); Land Registries; Object Registries (Drugs) etc.



### Payments

Making financial transactions with ease

P2P; P2M; B2B; G2P (social benefit transfers); P2G (tolls/tax); etc.



### Data Sharing & Credentials

Sharing Data (history, profile, & attributes) or Models peer to peer or publicly

Sharing Personal data with consent; Publishing non personal data via open datasets; Data collection/curation infra to train AI/ML models, etc



### Trust Infra

Enabling trust through signatures, PKI, consent, and beyond

eSignature based on identity, Digital signatures/PKI, Consent artefacts, Key registries, Revocation registries etc.



### Discovery & Fulfillment

Accessing goods and services via open protocols/APIs

Open APIs for services, eg business registration, tax filing, etc (public/private); Open eCommerce and Mobility networks; etc.

# Digital Sector Office Approach to Digital Public Infrastructure

Carolyn Florey, Digital Development Specialist (DPI & Digital Government)

ADB

Digital Sector Office

# Pivotal Moment for DPI in Asia and the Pacific

## Significant digital investments in Asia and the Pacific, promising results but challenges persist

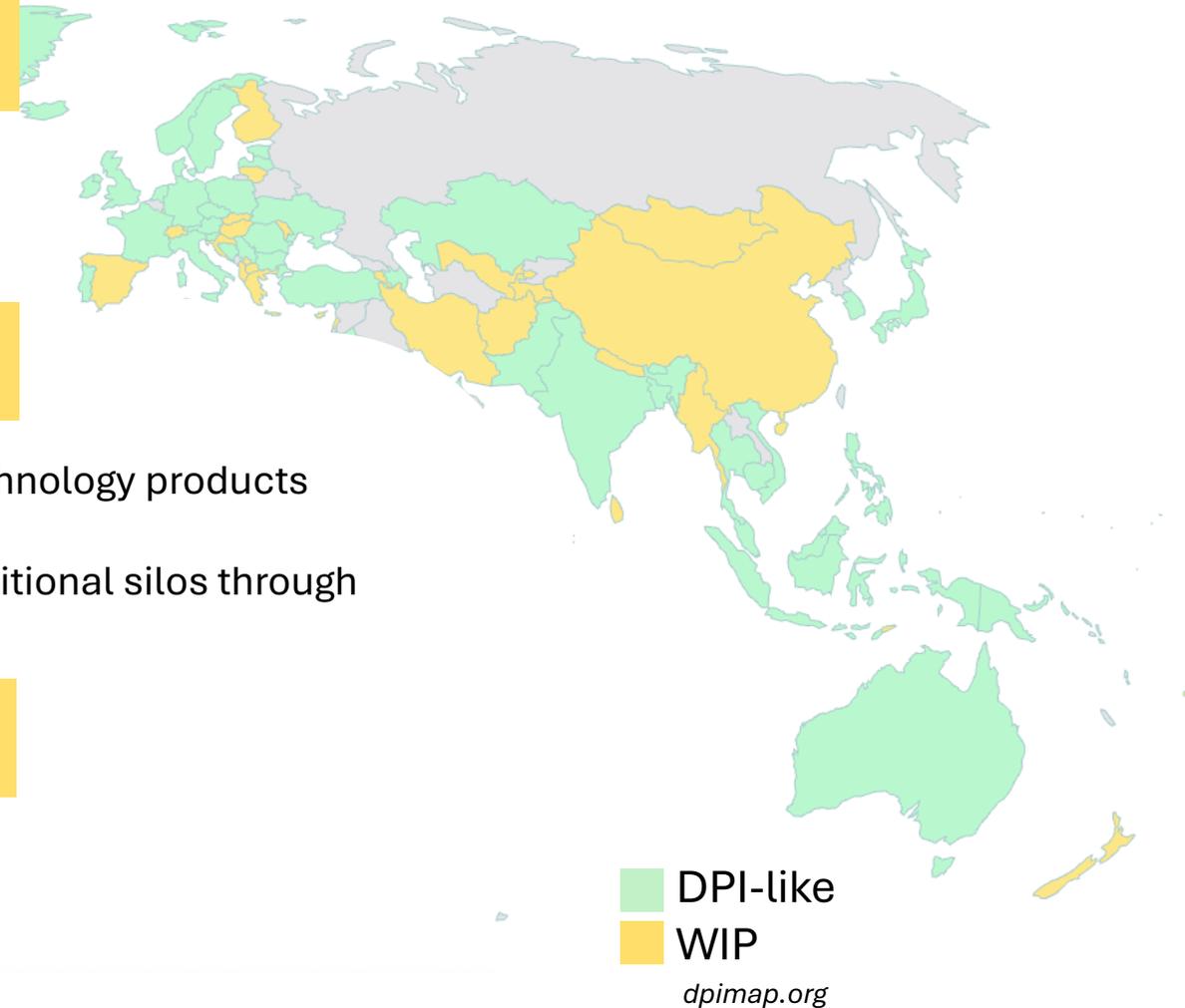
- Fragmented services
- Dissatisfaction with digital public services
- Duplicative investments

## DPI offers an opportunity to maximize the development impact of digital investments.

- DPI is a foundation of digital transformation, and not a suite of technology products
- Links sectors, government, private sector and civil society
- Combines soft and hard infrastructure designed to cut across traditional silos through principles such as interoperability and open standards

## ADB well-positioned to be Asia Pacific DPI lead

- Regional cooperation mandate
- Inter-sectoral integration
- Cross-border facilitation
- Long-term capacity building
- Flexible financing instruments



# DIG's Digital Transformation Approach

**Digital Transformation for a prosperous, inclusive, resilient, and sustainable Asia and the Pacific**

## DIGITAL USE CASES

*Cross-sectoral digital operations in DMCs*

**Digital Solutions for Livable Cities, Countries and Data-driven Innovation**  
EduTech | AgriTech | HealthTech | Trade | Tourism | UrbanTech | Transport | Energy | Water | Justice | GovTech | Social protection | Procurement | Banking and Finance | Disaster Response | Digital change management

## DIGITAL ACCELERATORS

*Amplifying impact of digital technologies for DMCs*

**Digital Public Infrastructure**  
digital ID, digital payments, data exchange for interoperability and integration

**Digital Skills and Capabilities**  
Digital literacy and skills for workforce development

## DIGITAL FOUNDATIONS

*Creating a strong base for DMC digital transformation*

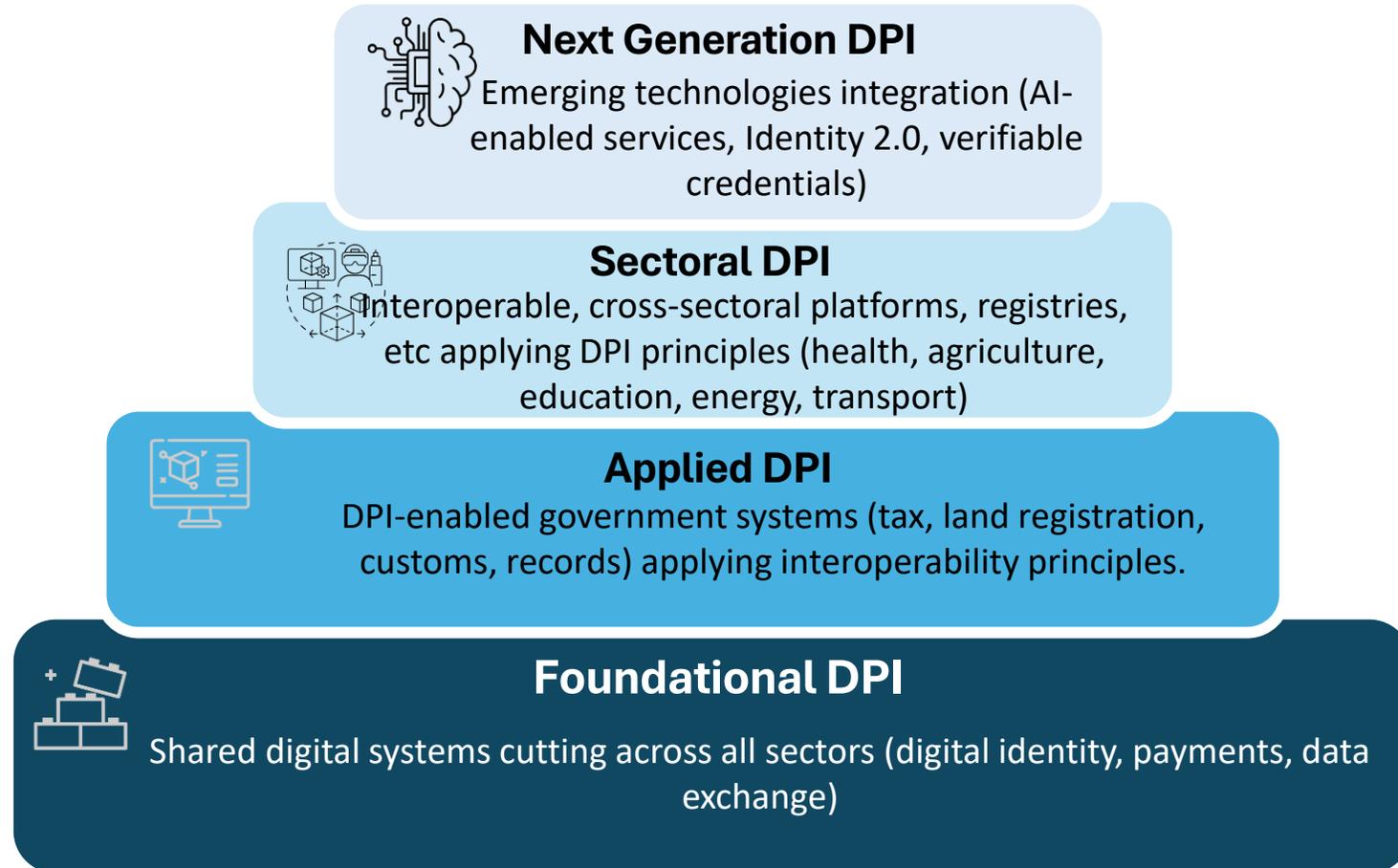
**Digital and Data Infrastructure**  
Deployment and implementation of affordable, accessible, and high-quality networks and compute

**Digital Policy and Regulation**  
Enabling frameworks to drive digital transformation

**Digital Safeguards**  
Trusted and resilient digital systems and infrastructure

**Crosscutting themes**  
Climate action | Private sector development | Regional cooperation and public goods | Resilience and empowerment

# ADB Strategy and Approach to Digital Public Infrastructure



# ADB Strategy and Approach to Digital Public Infrastructure

## FOUR TIER FRAMEWORK



### Next Generation DPI

Emerging technologies integration (AI-enabled services, Identity 2.0, verifiable credentials)



### Sectoral DPI

Interoperable, cross-sectoral platforms, registries, etc applying DPI principles (health, agri, education, energy, transport)



### Applied DPI

DPI-enabled government systems (tax, land registration, customs, records) applying interoperability principles.



### Foundational DPI

Shared digital systems cutting across all sectors (digital identity, payments, data exchange)

## ADB ENGAGEMENT

- Knowledge partnership, South-South learning agenda, next-gen DPI innovation support
- **Example:** India AI Impact Summit (AI+DPI), KAZ DPI AI integration

- Sectoral DPI integration and interoperability, cross-border linkages, governance strengthening, capacity building
- **Example:** Bangladesh digital health, CRVS & health registries, social protection DPI, DPI South Asia

- Application of DPI principles to public sector digitalization
- **Example:** NSDI engagements (AZE, TAJ), tax digitalization and DPI

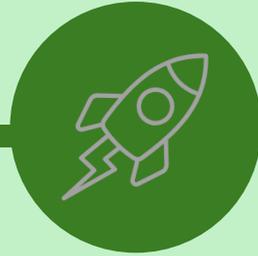
- Foundational DPI investment, policy and regulatory reform, institutional capacity building, regional standards adoption
- **Example:** *Nepal Digital Transformation Project*: integrated online citizen service portal and an integrated social registry; a secure government-wide data exchange
- **Example:** *Cambodia Building Resilience for Integrated Digital Governance and Efficiency*: data exchange, cybersecurity, digital skills

# ADB DPI engagement model



## Engagement Areas

- Diagnostics & Assessment
- Strategy & Policy Advisory
- Technical Assistance
- Capacity Building
- Convening & Knowledge Exchange



## New Initiatives

- DPI Strategy and Guidelines
- DPI Maturity Index & Case Studies
- DPI Trust Fund
- DPI Stewards
- DPI Research Lab



## Collaboration & Partnership

- Co-Develop and CDPI (tripartite MOU)
- Gates MOU
- UNDP MOU
- 50-in-5



## Convert to DPI:

<b>Existing ID</b>	Auth, QR, eKYC ID-Account Mapper
<b>Fast Payments</b>	Update protocol Interoperable QR + Interoperable Auth
<b>Tax System</b>	Verifiable certificate Open filing APIs
<b>Certificate</b>	Verifiable QR
<b>Database</b>	Open APIs Verifiable Registry
<b>Government Services Bus</b>	Open APIs

Many countries already  
have some DPI

If not, it is  
feasible to do quickly



# Supporting ADB and DMCs Advancing DPI



## DPI Architecture Review and Use Case Planning

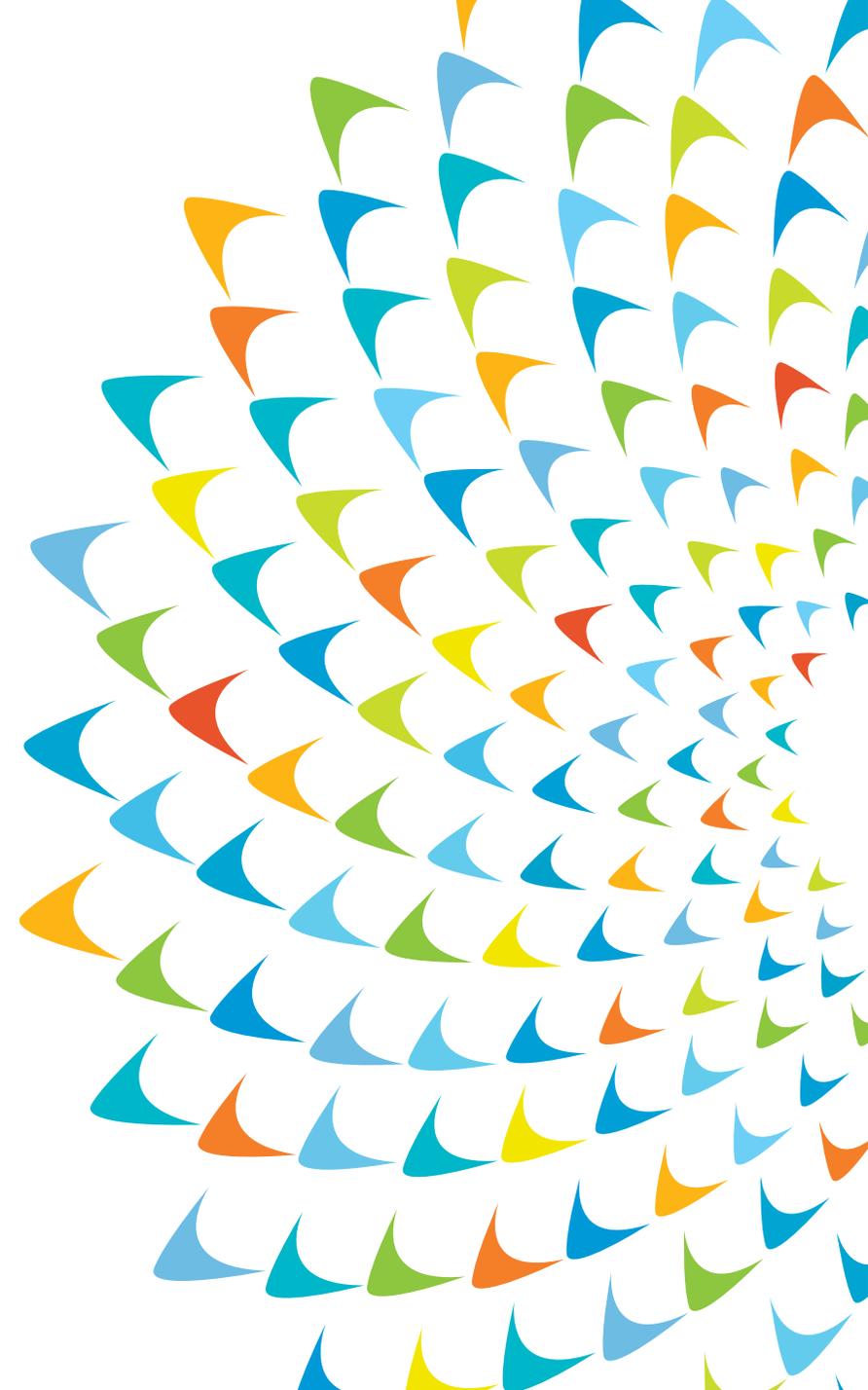
- Tech clinics: Review tech. specs/architecture
- Use-case planning
- Rapid Proof of concepts
- DPI as a packaged Solution (DaaS)



## Peer learning and ecosystem strengthening

- DPI 101, DPI for X
- Regional Hackathon
- Cross-regional learnings

# **Digital Public Infrastructure: Landscape Study Findings and Recommendations**





# South Asia Landscape Study

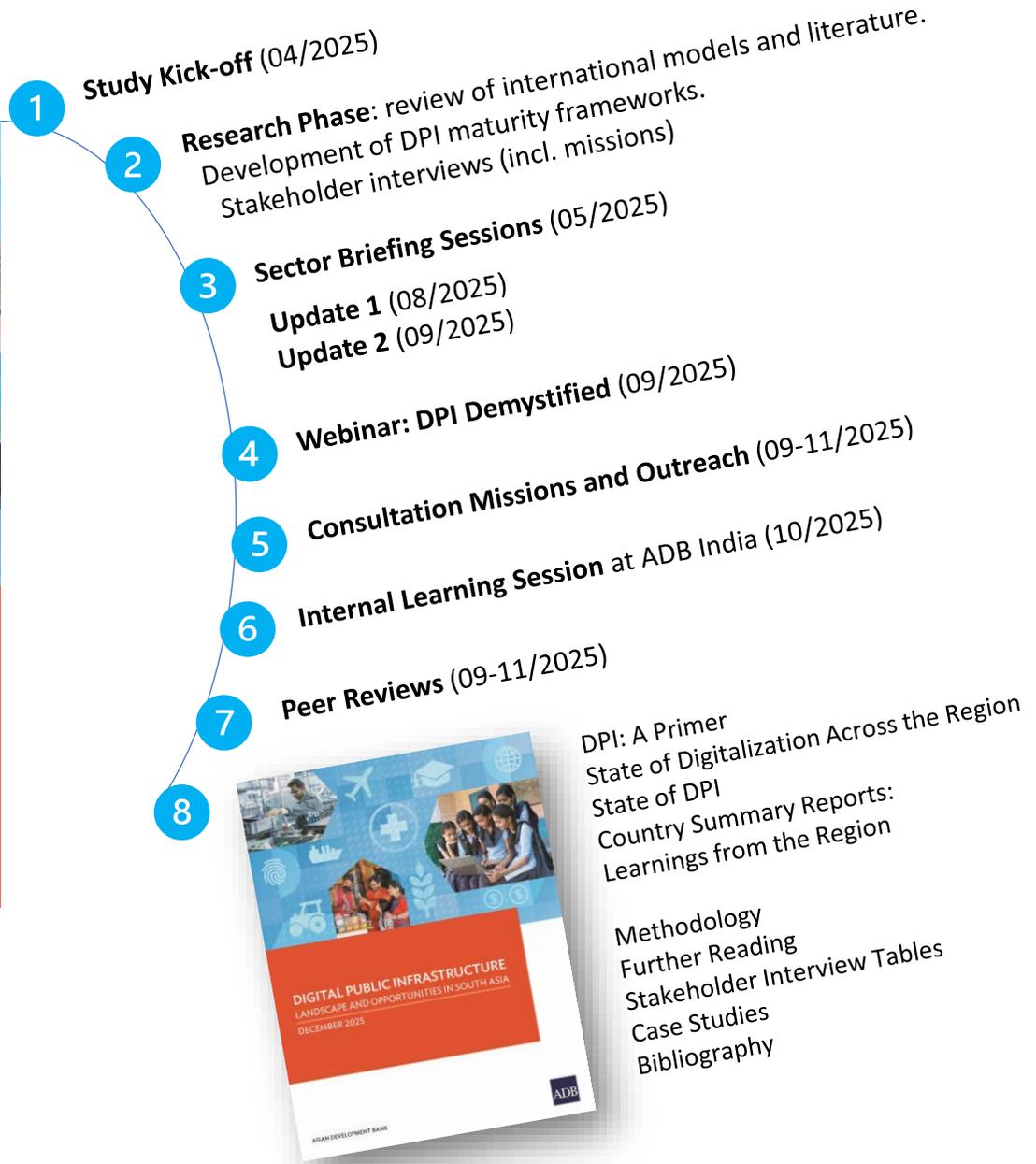


PUBLICATION

## Digital Public Infrastructure Landscape and Opportunities in South Asia

ADB

<https://www.adb.org/publications/digital-public-infrastructure-south-asia>





# We assessed the landscape and opportunities in DPI across South Asia through a mixed-methods approach



## Secondary Research

### Foundational diagnostics

- Reviewed national policy documents, DPI assessments, and multilateral publications (e.g., ADB, WB, UNDP, etc.)
- Analysed **global literature and DPI case studies**
- Assessed digital maturity, institutional readiness, and ecosystem gaps



Baseline country diagnostics



Global design choices & enabling conditions



## Primary Research

### Context validation & depth

- Consulted ADB resident missions and sectoral and thematic stakeholders
- Conducted **field visits and in-depth interviews** across government, private sector, development, and DPI institutions
- Collaborated with **country experts** to validate ongoing efforts, priorities, and coordination dynamics in each country



Ground-level implementation insights



Country-specific priorities & feasibility considerations



## Quantitative Analysis

### Economic benefits analysis

- Developed country-specific quantitative models for selected DPI opportunity areas
- Mapped **impact pathways and outcome-based indicators** using national data and global benchmarks
- Estimated **time, cost, and efficiency gains** through DPI implementation using conservative assumptions



Socioeconomic impact estimates of implementing DPI for each country



Prioritisation of DPI opportunities for each country

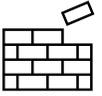
Description

Output



# DPI is a priority in most South Asian countries; but adoption varies

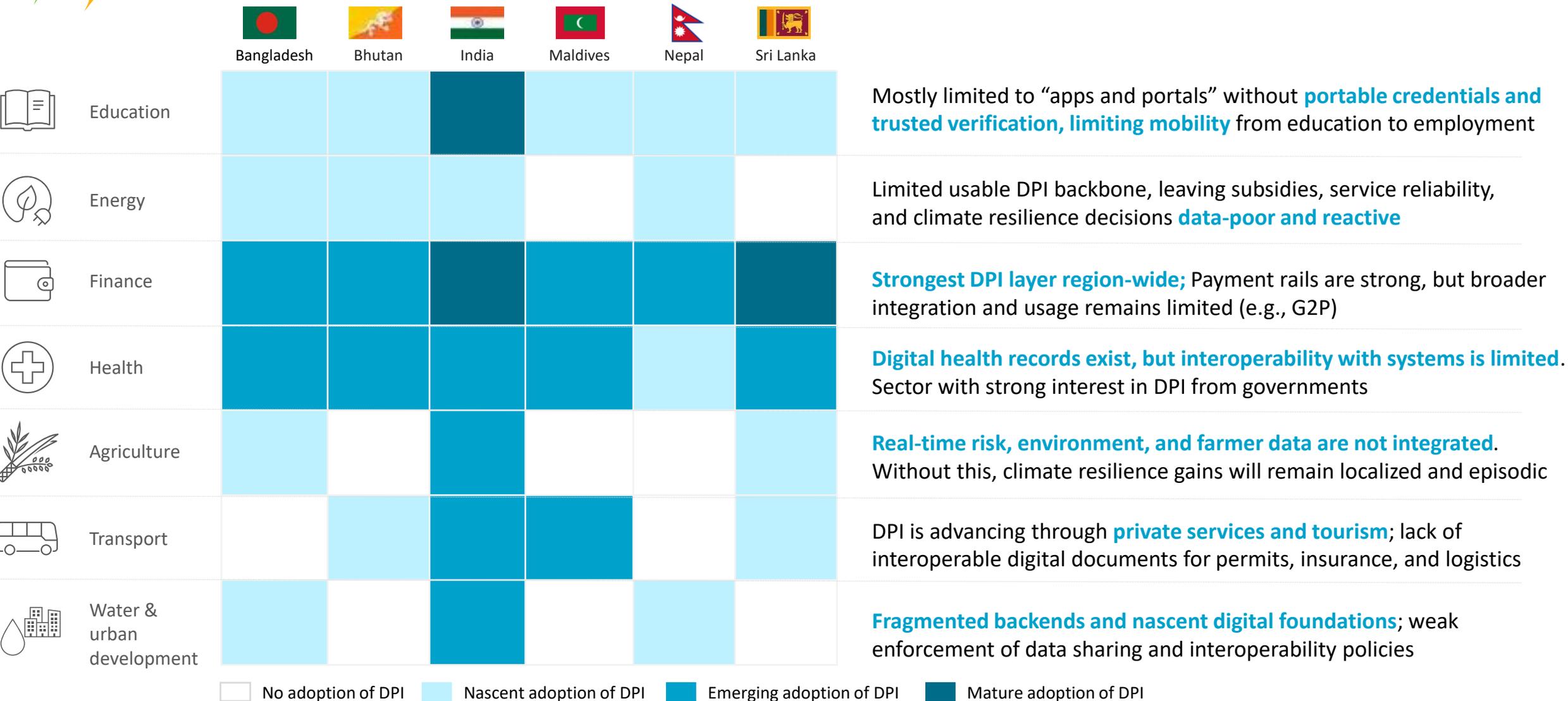
## Summary of findings

		Nascent*	Emerging*	Mature*
	<b>Vision and leadership</b>		 	
			  	
	<b>Core DPI</b>		  	  
	<b>Sectoral DPI</b>	 	 	
	<b>Ecosystem participation</b>	 	 	
	<b>Policy and safeguards</b>		  	 

\*Simplified overview of status quo across countries. Detailed nuances captured in the report  
 INTERNAL. This information is accessible to ADB Management and staff. It may be shared outside ADB with appropriate permission.



# Digital payments are the strongest DPI layer, health platforms the most common sectoral systems



Note: No adoption indicates sector relying on siloed IT systems; Nascent indicates only a few identified pilots for DPI, but still seeing a large gap in DPI adoption in the sector; Emerging indicates existence of DPI for some use cases, but still not integrated with most systems; Mature indicates DPI adoption at scale with integration across most or all systems

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# Key opportunities across core DPI, sectoral DPI, and the enabling environment

Opportunities

Trends

Priorities

## Core DPI

- 1 Core DPI rails are scaling, but impact is limited by weak integration and low reuse
- 2 Payments is the strongest rail; interoperability across providers and borders is the next frontier
- 3 Data exchange is least mature, but there is momentum for minimum viable approaches

- 1 Integrate digital ID into “everyday transactions” and high value registries. Start with small, foundational registries, then link ID to priority public services and payments
- 2 Scale interoperable payment use cases. Focus on (i) G2P & govt collections, (ii) merchant acceptance & shared APIs, and (iii) cross-border corridors
- 3 Build data exchange in phases, starting with 2 to 3 registry linkages; then scale with standards, consent flows, and governance

## Sectoral DPI

- Sector platforms are growing, esp. health & education, but interoperability is limited; many areas are stuck at apps and portals

- Apply a “+1 rule” to sector transformation. For every new sector digitization investment, require connection to at least one core rail, plus one reusable building block
  - Health +1: link health records to trusted ID authentication and consented data sharing
  - Education +1: portable learning credentials plus verification, linked to ID
  - Agriculture +1: farmer registry plus payments targeting, linked to ID and payments

## Enabling environment

- Trust is a binding constraint across the region

- Make “trust-by-design” non-negotiable. Embed privacy, consent, audit, and grievance tooling as non-negotiable components in DPI builds



# South Asia is well positioned to move from ad-hoc bilateral coordination to more structured, institutionalized forms of regional collaboration

*Three opportunities stand out as particularly catalytic for regional cooperation:*



## Build Trusted Infrastructure

*Examples: operationalize trust-by-design*

### South Asia Charter on Trusted DPI and Shared Safeguards Toolkit

Data protection modules, cyber baseline, redressal patterns, audit requirements, etc. to make interoperability feasible and trusted.

### Regional Trust And Inclusion Lab

Practical add-ons such as offline consent tools, accessibility UX standards, privacy-preserving analytics, etc., for testing in controlled sandboxes



## Establish Regional Capacity

*Potential Mechanisms*

### South Asia DPI Fellowship

Leadership capacity building among public officials on governance, sectoral DPI design, procurement, privacy, and financing.

### South Asia DPI Knowledge Exchange

Sharing of laws, architectures, standards, and implementation playbooks, while enabling peer learning, joint research, and regulatory dialogue.



## Coordinate DPI for High-Impact Use Cases

*Example: Cross-Border Use Cases*

### Build payments corridors first, then expand to ID and data exchange

Use momentum in cross-border payments to drive alignment on compliance, safeguards, and eventually ID and data exchange interoperability

### Initiate priority pilots beyond payments

For example, Disaster aid flows: pre-authorized identity and payment rails for emergency disbursements; Tourism-linked payments: interoperable QR acceptance to reduce friction\*

# **Digital Public Infrastructure: Landscape Study Findings and Recommendations**

