JICA Digital transformation

High Level Conference: SIDS 2.0: Defining the pathway for Small Islands DIGITAL States in the Caribbean Session Description: Data Protection and Privacy

May 2024

Office for STI & DX, Governance and Peacebuilding Dept.
Japan International Cooperation Agency (JICA)

JICA?

JICA (ja-i-ka) works for international cooperation projects.

Mission

JICA, in accordance with the Development Cooperation Charter, will work on *human security* and *quality growth*.

Vision

Leading the world with trust

JICA, with its partners, will take the lead in forging bonds of trust across the world, aspiring for a free, peaceful and prosperous world where people can hope for a better future and explore their diverse potentials.
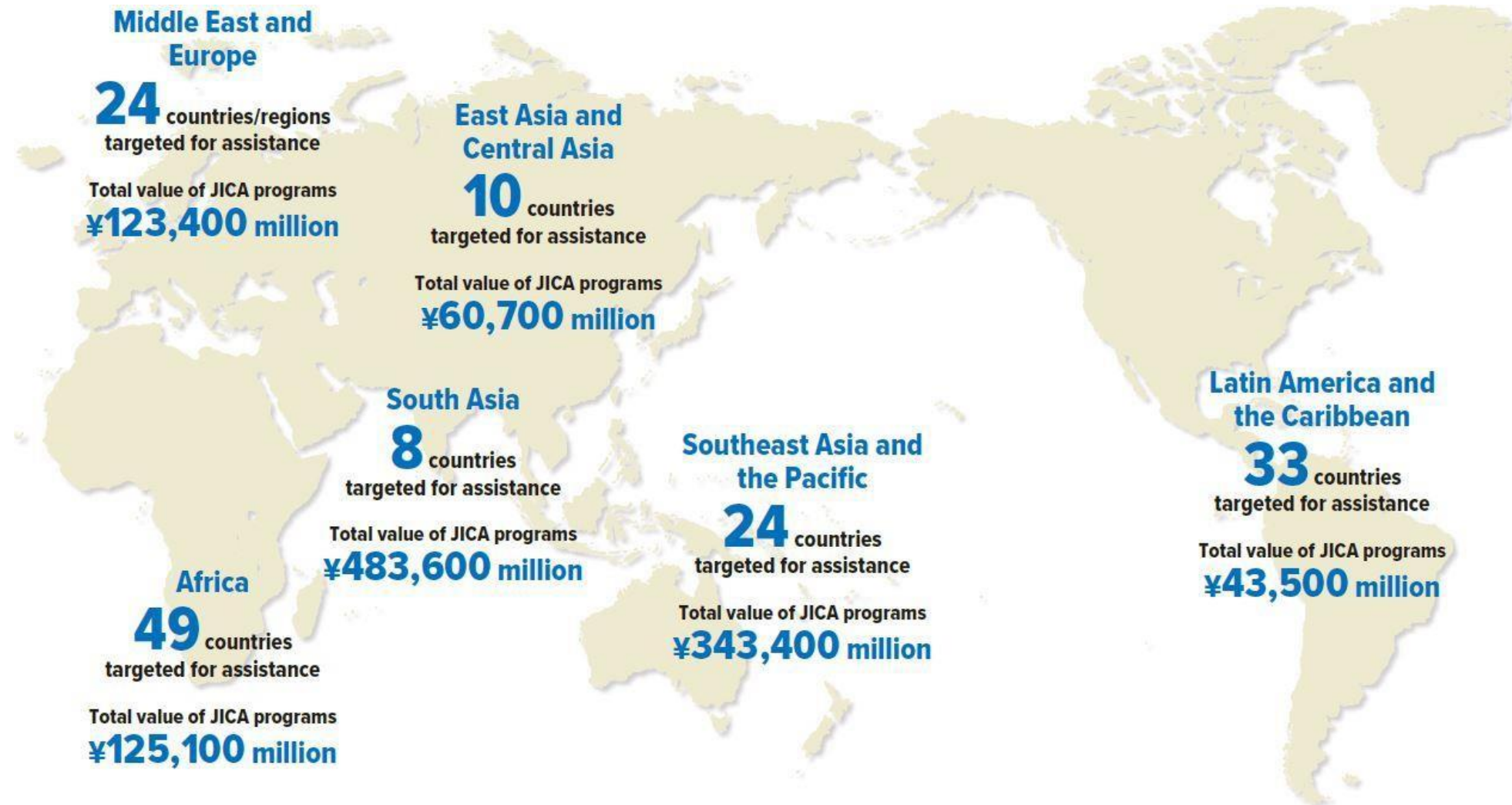
Actions

1 **Commitment:**
Commit ourselves with pride and passion to achieving our mission and vision.

2 *Gemba*:
Dive into the field ("gemba") and work together with the people.

3 **Strategy:**
Think and act strategically with broad and long-term perspectives.

4 **Co-creation:**
Bring together diverse wisdom and resources.

5 **Innovation:**
Innovate to bring about unprecedented impacts.

1. Japan International Cooperation Agency (JICA)
2. 1954 – 2024 (70 years)
3. Official Development Assistance (ODA)

Reference：https://www.jica.go.jp/english/about/index.html

JICA's program by region (2018)

Middle East and Europe
24 countries/regions targeted for assistance

Total value of JICA programs
¥123,400 million

East Asia and Central Asia
10 countries targeted for assistance

Total value of JICA programs
¥60,700 million

South Asia
8 countries targeted for assistance

Total value of JICA programs
¥483,600 million

Southeast Asia and the Pacific
24 countries targeted for assistance

Total value of JICA programs
¥343,400 million

Latin America and the Caribbean
33 countries targeted for assistance

Total value of JICA programs
¥43,500 million

Africa
49 countries targeted for assistance

Total value of JICA programs
¥125,100 million

Mission Team

Office for Science, Technology and Innovation (STI) & Digital Transformation (DX)
Japan International Cooperation Agency (JICA)

Mr. Masayuki FURUKAWA
Director of Office for STI & DX

a digital for development expert with over 15 years of experience in the field.

Currently, as Director of the Office for STI & DX at the Japan International Cooperation Agency (JICA).
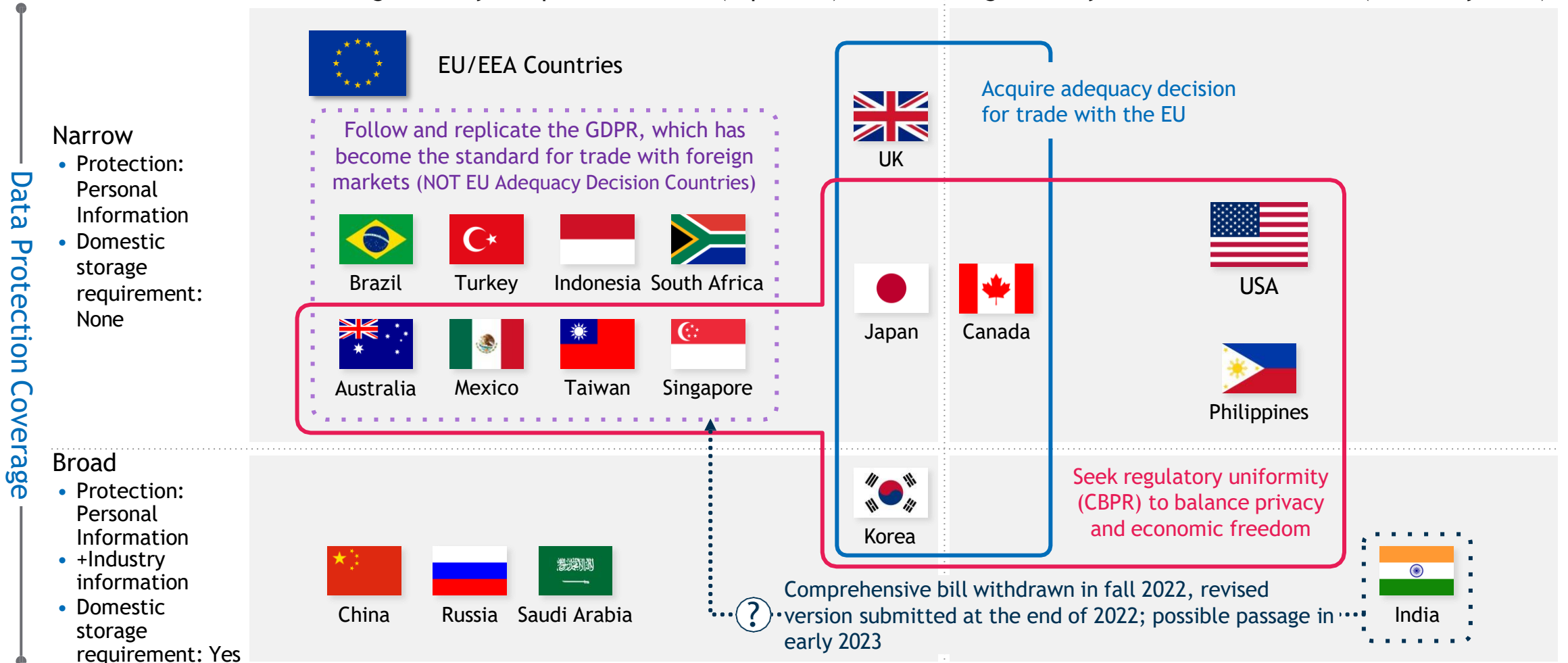
He leads a team responsible for promoting the use of data and digital technology across JICA's projects, as well as developing the foundation for digital development such as digital infrastructure, ICT sector development, and cybersecurity for developing countries,

Personal Data Protection

Data Protection Type

Regulated by comprehensive law (top down) | Regulated by Individual/Sector Law (Voluntary Basis)

Data Protection Coverage

Narrow
- Protection: Personal Information
- Domestic storage requirement: None

EU/EEA Countries

Follow and replicate the GDPR, which has become the standard for trade with foreign markets (NOT EU Adequacy Decision Countries)

Brazil | Turkey | Indonesia | South Africa

Australia | Mexico | Taiwan | Singapore

UK

Acquire adequacy decision for trade with the EU

Japan | Canada

USA

Philippines

Korea

Seek regulatory uniformity (CBPR) to balance privacy and economic freedom

Broad
- Protection: Personal Information
- +Industry information
- Domestic storage requirement: Yes

China | Russia | Saudi Arabia

(?) Comprehensive bill withdrawn in fall 2022, revised version submitted at the end of 2022; possible passage in early 2023

India

Organizing Data Types

	Personal Information	Quasi-Public Data	Public Data	Industry Data
Example	Name, gender, ethnicity, address, etc.	Medical insurance information, Financial data, etc.	Government agency information, land map information, resource information, etc.	Customer and product data collected by ICT products, product data, factory operation data, etc.
Confidentiality Low ★★★★★ High	★★★★★	★★★★★ Exceptionally, confidentiality may be low if personal information or certain sensitive information is not included	★★★★☆ Many data are available to the public, but information pertaining to national secrets is not disclosed or handled with caution (high confidentiality)	★☆☆☆☆ Basically, confidentiality: low, if it does not contain personal information

Related Laws

A Privacy Protection/Cross-border Transfer Regulations	B Regulations by Industry *If personal information is included, A Personal Data Protection/Cross-border Data Transfer Regulations are relevant
	C Trust Related Regulations

Data Distribution Issues in Data Distribution/ Utilization

Personal Information	Quasi-Public Data	Public Data	Industry Data

• Controlled by the privacy laws of each country
 • Domestic privacy violations and international cross-border transfers are the issues
 • The issue of data distribution being hampered by differences in national regulatory requirements, especially when services are deployed across multiple countries
	• A type of private industrial data, but highly relevant to personal data and subject to special regulations
	 • As with personal information, data distribution is hampered by differences in national regulatory requirements, since most of the additional individual regulations are established
		• Subject to government regulations on information collection and disclosure
		 • Information on maps and resources is handled differently by countries and may be subject to strict regulations
		– Europe
		  Integrate map data specifications within the region and promote open data
		– China
		  Strictly regulates the use of map data in some regions in Japan
			• Not within the scope of personal data protection regulations, but subject to general data protection (security)
			 • In recent years, the need to share data among multiple countries and the government's viewpoint of industry promotion have led to the development of mainly technical specifications
			 • On the other hand, the needs for data sharing on the business side are complex (data in the competitive area should be avoided as much as possible)

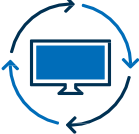# Discussion on DFFT in Japan : Elements of Data distribution

Elements of DFFT
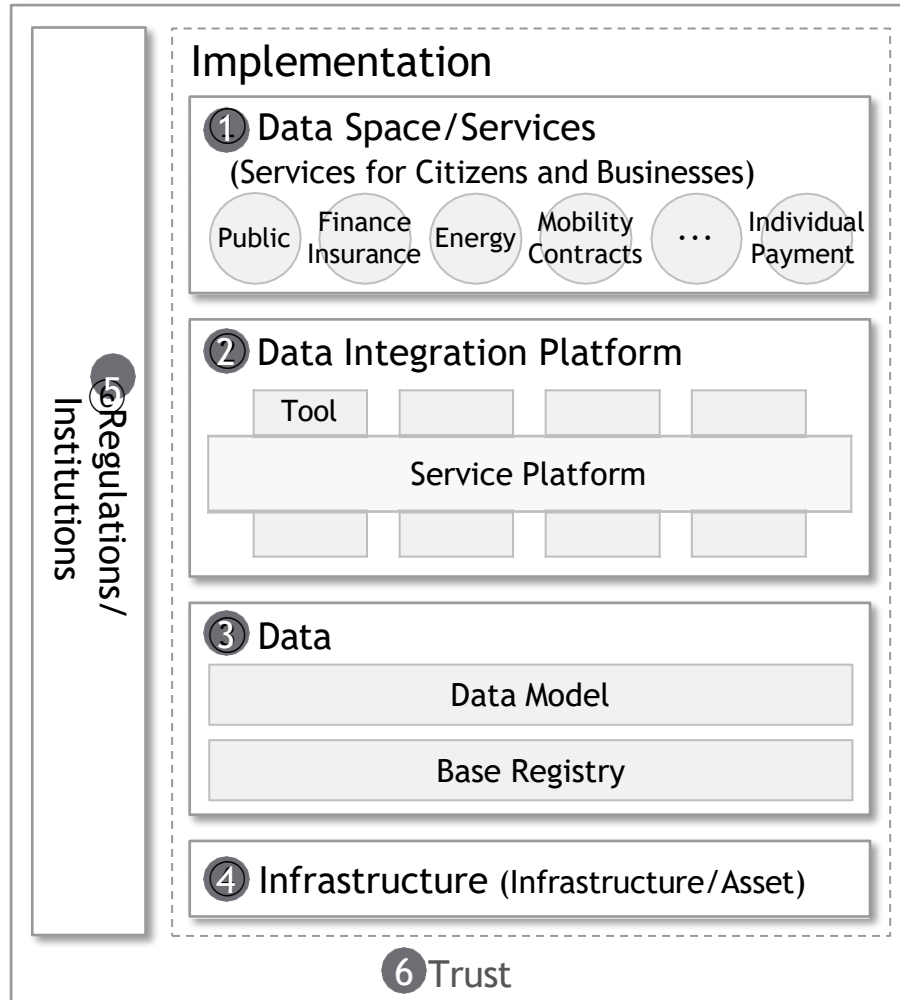
Details of Each Element

① **Data Space/Services**
Private and public sector services (applications) utilizing various data provided

② **Data Integration Platform**
- **Tools**
  Specific methods to turn the Service Platform into applications
  e.g.) eSeal, digital signature, gBizinfo, etc.
- **Service Platform**
  System to ensure
  e.g.) eID (to ensure non-tampering and reliability of data), etc.

③ **Data**
Data infrastructure to promote data distribution
e.g.) Base Registry, Open Data, etc.

④ **Infrastructure**
Elemental technologies/platforms to support interoperability, scalability, security, etc. between countries/companies
e.g.) 5G, etc.

⑤ **Regulations/Institutions**
Rules and international cooperation such as conventions, laws, technical standards, guidelines, etc. related to the above and implementation

⑥ **Trust**
Promote smooth data distribution by ensuring trust parity among the components

Reference) Definition of Trust in this discussion

Since there is no official definition of trust, the three elements generally included in trust at this time are defined as trust for the purpose of this review

- Since the definition of trust is highly abstract, concrete examples of each element are also organized
- In this review, we will discuss trusts, with a view to furthering the discussion from the general definition to specific cases

Elements of Trust	Definition	Specific methods for securing trust (example)

1 Legitimacy of information bearers	The legal entity/individual with access rights to the information must be identified. Proof of legal entity/individual with access rights	• Mechanism to prove the existence and eligibility of a person or organization
		  – Electronic signature
		  – e-Seal, etc.

2 Data Integrity	The data must be the latest data created/updated by the legitimate bearer of information, and proof of such (Data must not have been changed by unauthorized methods/bearers)	• Mechanisms to ensure data accuracy (up-to-date)
		  – Time stamp etc.
		• Mechanisms to prevent unauthorized use of/access to data
		  – Security Support
		  – Privacy (personal information protection) protection

3 Data Reliability	The legitimacy of the information bearer (①) and the quality of the data (②) must be ensured by a reasonable method. Proof and verification must be possible	• Mechanisms to ensure accountability of the data/service administrator
		  – Various electronic certificates (e.g., Web site authentication)
		  – Obtaining necessary consent from data/service users by specifying responsibilities, contracts, etc.

Support for System Operation (1/4): Patterns of Regulations/Systems

Individual Contract Type

Overview: Confirm and coordinate individual requirements of each country/company on a case-by-case basis to ensure regulatory compliance

Image:

Company a (Country A)
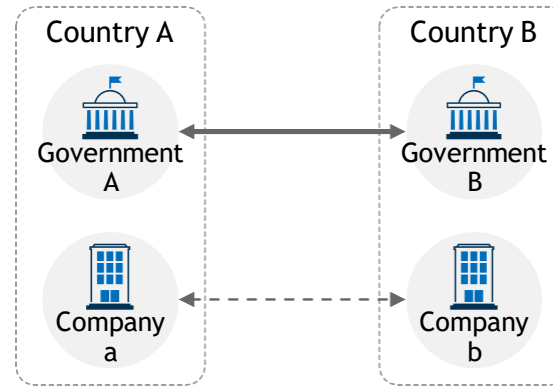
Company b (Country B)

Company c (Country C)
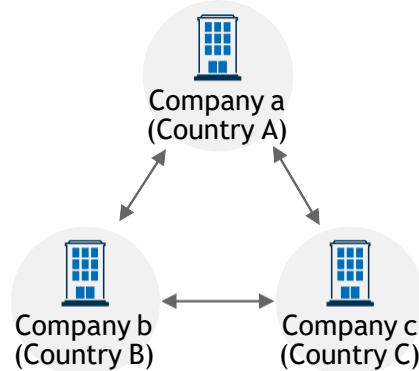
Pros: Less burden on the government/more freedom
- No need for coordination among nations
- Governments are free to set requirements and easily reflect their own ideology

Cons: Large burden on companies and possible disruption of economic activity
- Companies need to understand and comply with the applicable laws of their home and partner countries. Significant cost for each case, including consultation with experts and consultants
- Need to deal with the same issue for each country (additional burden)

Government-Approved Type

Overview: The nations coordinate their requirements and agree to mutual recognition. Companies can do business with companies from the other country as long as they comply with national laws

Image:

Country A — Government A — Company a

Country B — Government B — Company b

**Pros:** Less burden on companies when dealing with mutually-recognized countries
- No additional action is required if the transaction is with a company in an approved country, if the company complies with the laws of the country to which it belongs
- e.g.) If there is mutual recognition between Country A and Country B, Company a can-do business with Company b in compliance with the law of Country A

Cons: Difficulty of coordination between countries
- In some cases, the realization of the project will require a considerable amount of time and is highly difficult, as it may involve some legal amendments, etc.

Regional Agreement Type

Overview: Common requirements are set across regions. If those requirements are met, transactions with multiple countries can be handled

Image:

Mutual Recognition Regions/Frameworks

Country A, Country B, Country C, Country D, Country E
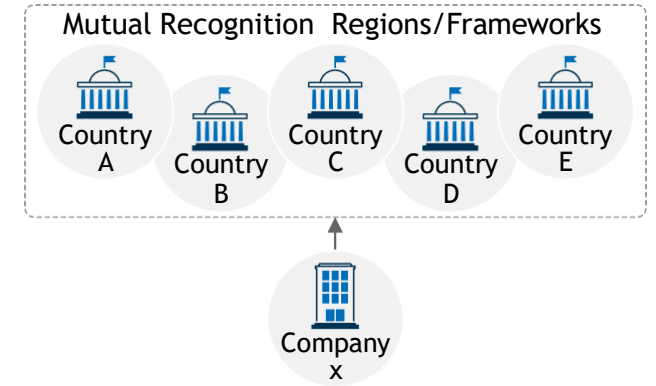
Company x

Pros: Low burden on companies. Promotes economic activity in a wide range of areas
- Companies can achieve a wide range of transactions with little burden if they meet the requirements commonly used in the relevant countries

Smaller burden on state regulatory development and operation
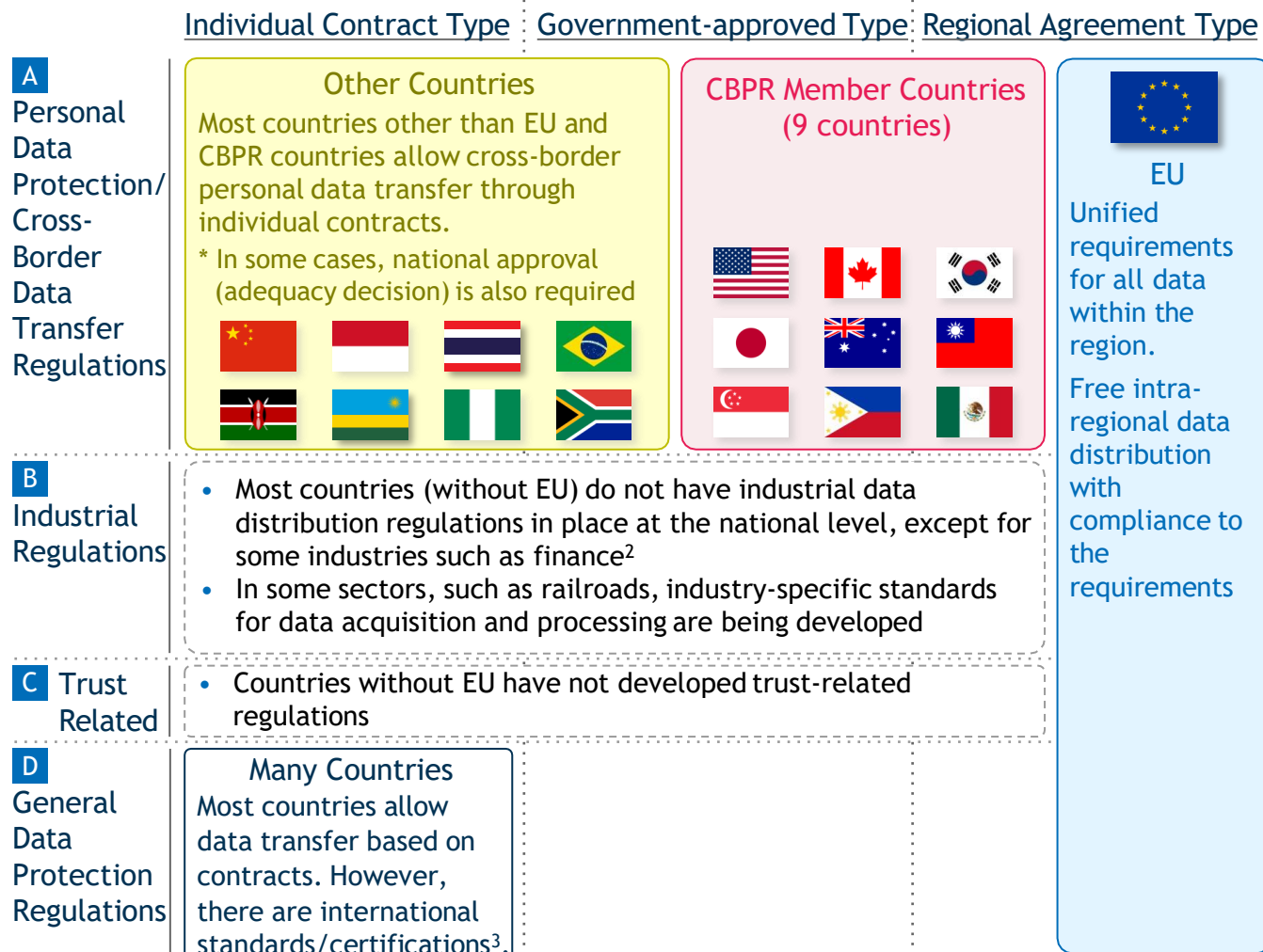- Inter-regional maintenance and operation, thus covering lack of national capacity

Cons: Difficulty of coordination between countries
- It is important to have a country (candidate for initiative) that can lead the effort

Support for System Operation(4/4)： Current Status and Issues

Status of Regulations/Institutions for Data Distribution/Utilization Overview[1]

Individual Contract Type	Government-approved Type	Regional Agreement Type

A Personal Data Protection/Cross-Border Data Transfer Regulations

Other Countries
Most countries other than EU and CBPR countries allow cross-border personal data transfer through individual contracts.
* In some cases, national approval (adequacy decision) is also required

CBPR Member Countries (9 countries)

EU
Unified requirements for all data within the region.
Free intra-regional data distribution with compliance to the requirements

B Industrial Regulations
- Most countries (without EU) do not have industrial data distribution regulations in place at the national level, except for some industries such as finance[2]
- In some sectors, such as railroads, industry-specific standards for data acquisition and processing are being developed

C Trust Related
- Countries without EU have not developed trust-related regulations

D General Data Protection Regulations

Many Countries
Most countries allow data transfer based on contracts. However, there are international standards/certifications[3]

Challenges/Opportunities of DFFT for Development

Development of Regulations/Systems for the Personal Data Protection
- In developing countries, most countries have already developed regulations for the protection of personal information. However, regulations are based on individual contracts, which are easy to establish, but require a high burden for companies to deal with.
- Considering the burden of developing regulations and the burden of companies' response, it is desirable to establish a regional agreement-type system where common standards (requirements) are established in multiple countries with commonality

Development of Industrial Regulations/Systems
- In the digitalized society, the same phenomenon as in the field of personal information protection (development of country-specific/industry-specific regulations → unification of regulatory requirements to promote economic activities) will occur on an industry-specific basis.
- Developing from quasi-public sectors such as healthcare, finance, and infrastructure industries such as railroads, and spreading to other sectors

Promotion of Information/Security Training
- Regardless of the type of data, such as personal information or industrial data, general handling of data (security) is also a basic requirement.
- Especially in Asian countries such as China and India, companies have established information protection systems by utilizing international certifications such as ISMS certification.
- Developing countries also need to provide education on general information protection/handling while utilizing international systems

1. E Others is excluded because each countries develop relevant regulations 2. Some exceptions exist (e.g., China: Restrictions on cross-border transfers of critical industrial data, restrictions on certain cross-border transfers of financial and IT data in India, South Korea, etc.) 3. ISO/IEC 27000, etc. Generally, data exporters require data importers to obtain general information protection certification before contract.
Japan International Cooperation Agency (JICA)

Data Distribution/Utilization (Draft)

Related Regulations/Systems

Support Theme	Data Used	Example of Data	Utilization Plan	Personal data Protection	Industry	Trust related
Counter-measures against Infections	Patient Information	Name, Age, Gender, Weight, Medical History, Vaccination History, etc.	Health Record Management, Medical Record Management, Vaccine and Infection Management	✓		✓
	Insurance Information	Name, Age, National Identification Number, Insurance Number, etc.	Health Record Management, Medical Record Management, Vaccine and Infection Management	✓	✓	✓
	Diagnosis Information	Details of Examination, Diagnostic Results, Diagnostic Images, etc.	Health Record Management, Medical Record Management, Preventive Diagnosis and Analysis	1	✓	✓
	Movement Information	Date, Time, Place, etc.	Vaccine and Infection Management	1	✓	✓
Railway Data Utilization	Service Information	Arrival/Departure Times, Signal Operation Information, etc.	Ground Transportation Management, Route Management		✓	✓
	Vehicle Data	Vehicle Operating Time, Speed, Door Opening Time, etc.	Accident Prediction/Prevention		✓	✓
	People Flow Data	Number of People on Platform, Number of People Passing through Ticket Gates, etc.	Urban Development	1	✓	
	Weather/Disaster Data	Weather Forecast, Disaster Information, etc.	Ground Transportation Management, Route Management, Accident Prediction/Prevention		✓	✓
	IC Card Information	Station Used, Ticket Gate Transit Time (usage time), User ID, User/Payer Name, Other Payment Data, etc.	Urban Development	✓		✓
Cross-Border Logistics	Production Information	Raw Materials, Production Location, Production Date, Production Line, Producer, Inspection Results, etc.	Product/Logistics Traceability		✓	✓
	Distribution Information	Seller, Distribution Channel, Type of Transportation, Deliverer, Date of Sale, etc.	Product/Logistics Traceability, CO_2/ESG Monitoring		✓	✓
	Consumer Information	Name, Address, Purchase Data, Purchase Place, Amount of Payment, Payment Method, etc.	Product/Logistics Traceability	✓	✓	✓
	Import/Export Related Information	Import License, Import/Export Declaration, Tax Certificate, etc.	Supply Chain Management and Efficiency, Ground Transportation Management		✓	✓
	Transport Information	Carrier, Place of Departure/Arrival, Type of Transportation, Date, Cargo Volume, etc.	Supply Chain Management and Efficiency, Ground Transportation Management, Urban Development, CO_2/ESG Monitoring		✓	✓
	Customs and Payment Information	Proof of Payment of Customs Duties, Consumption Tax, Value-added Tax, etc.	Supply Chain Management and Efficiency, Ground Transportation Management, Frame and Crime Control		✓	✓

1. Although not considered personal information by itself, when used in combination with personally identifiable information such as user IDs and names, it is subject to personal data protection regulations.

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# Data Distribution Regulations in Developing Countries

Most data protection regulations have already been enacted in developing countries. However, there are some operational issues, such as the fact that detailed regulations have not been established even several years after enactment

● : Comprehensive law stipulated
● : Can be adopted with provisions/conditions other than the comprehensive law

		Cross-Border Data Transfer Requirements									Data Localization Requirements
		Consent	Protection at Destination		Contract		Cert., etc.		CoC	Others	
			Adequate Level	Adequacy Decision	Legally Binding Documents	SCC	BCR	Others			
Asia	India									● Individual/Sector Laws	● Individual/Sector Laws
	Thailand	●	●				●				Not in operation
	Vietnam										●
	Philippines				No special provisions						
	Indonesia	●	●		●					● Coordination with ministers, agreement between nations	●
	Bangladesh	●									
Africa	Kenya	●	●	●	●		●			● Certification to authorities	● (Not in operation)
	Rwanda	●	●							● Authorities' decision	
	Nigeria	●	●								
	South Africa	●	●		●		●			● When required for contracts, etc.	
South America	Mexico	●	●								
	Brazil	●		●	●	●	●	●	●	● Approval of authorities, etc.	Not in operation
Ref.) Other Countries	EU	●		●	●	●	●	●	●	● Arrangements, etc.	
	US				No special provisions						
	Japan	●	●	●					●		
	China	●			●	●		●		● Approval of authorities, etc.	●
	Singapore	●	●		●	●	●			● Approval of authorities	

Source: Prepared by BCG based on various publicly available information.
Japan International Cooperation Agency (JICA)

11

Delhi Transport Stack is a JICA-led novelty framework consisting of DPI as a data exchange platform with DPGs as core services in a solid perating model under good data governance.
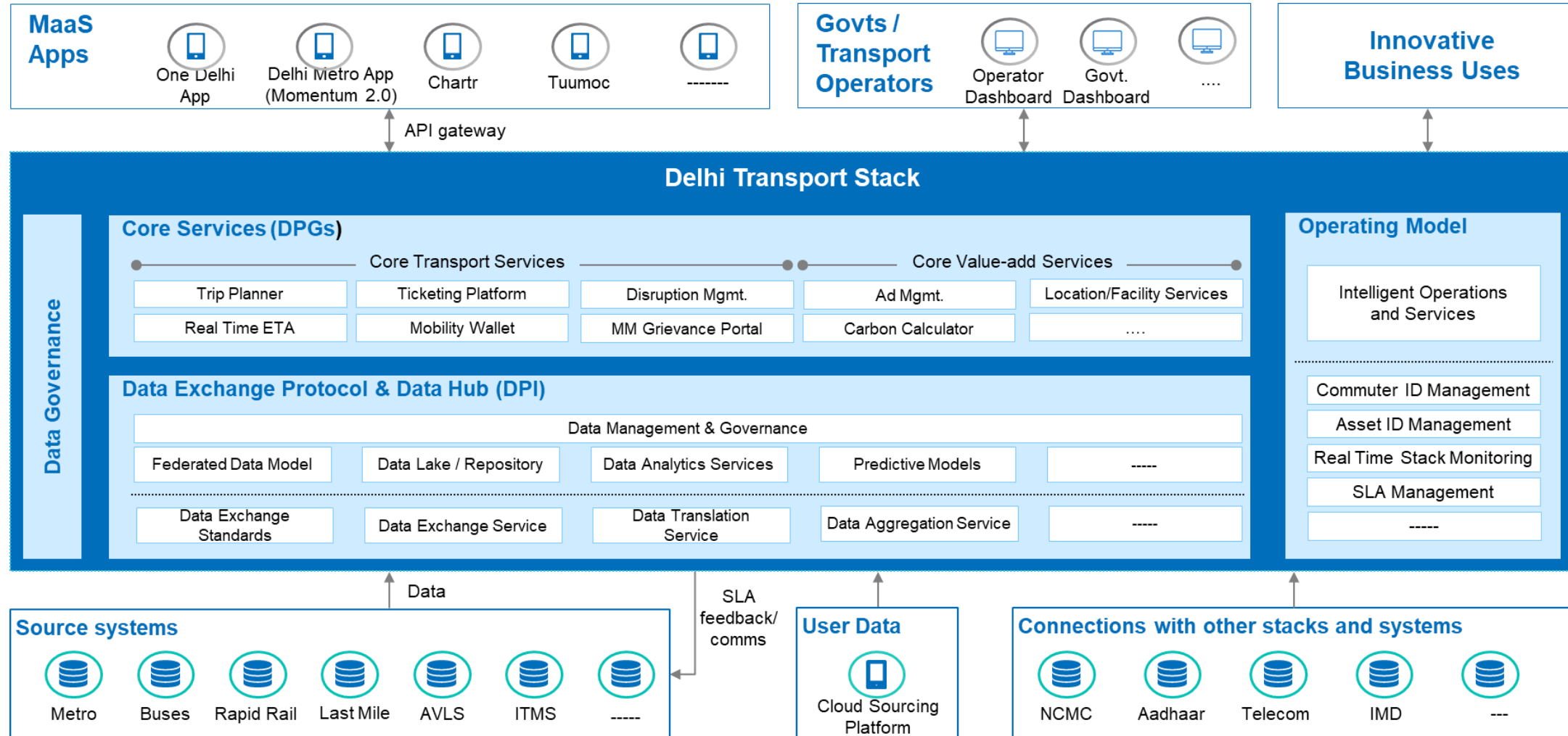
Transport Stack will deliver values to citizens for smoother mobility, transport operators for data-driven operation, government for materializing better public services, and business community for innovation. There will be C&S use cases and functions.

Transport App

Multiple services on the transport App

Dashboard of multiple data points through various sources

Rich data-set for future planning and growth ventures

JICA DX Lab

1 — Search Nearest Metro Station with or w/o Parking

HOME

Check the travel history and points earned

2 — Use journey planner to get route options, select suitable one, and book

Use personal vehicle to reach metro parking with navigation from app

3 — Validation of parking reservation and car parking

Metro Parking Lot

4 — QR code scanned at AFC gates to reach platform and board train

Metro Station

Service Disruption Notification during the journey suggesting alternative mode/route

Navigation to interchange point for alternate modes of transport

5 — QR Code Validation by Conductor during the Bus Journey

Interchange

Bus Stop

Walking to the end destination

Office

Search Para-transit stations nearby to get E-rickshaw or E-Auto

6 — Para-transit Stand
Take E-rickshaw to reach nearest metro station

7

8 — Get deals on retail or F&B services at Metro station; Redeem loyalty points to avail discounts

Origin Station

9 — Pick-up delivery package from the lockers at metro station

Destination Station

10 — Alternatively leverage taxi options for first/last mile instead of personal vehicle and book as part of Journey Plan

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1
Age
Gender
Commuter ID / Card #
Preferences

2
Modes Booked with
Origin / Destination
Booking Number
Booking Time

3
Parking Location
Type of Parking
Parking Availability / Trend
Parking Charges
Operating Hours
Parking Entry Time
Parking Exit Time

4
Stations (Geo-location)
Routes
Schedule
Fare
Service Status
Live Location / ETA
Accessibility
Occupancy Trend
Entry Time & Origin
Exit Time & Destination
Fare Media:
Card # / QR #

5
Stops (Geo-location)
Route
Schedule
Fare
Bus #
Bus Type
Live Location / ETA
Occupancy Trend
Entry Time & Origin (Card)
Exit Time & Destination (Card)
Ticket Time & Destination
QR validation status + time
Card # / QR #

6
Service Location
by type within
PoI radius

7
Assets type
Assets #
Live Location
Fare
SOS / Helpline

8
Service Location
Service Type
Service Provider
Operating Hours
Deals Availed
Points Redeemed

9
Locker Location
Type of Lockers
Locker Availability
Locker Charges
Operating Hours
Locker Start time
Locker End time

10
Asset Type
Asset #
Driver ID
Live Location
Fare
SOS / Helpline
Boarding Time & Origin
Exit Time & Destination

Source Information
Commuter Information

Bhutan: Digital Health Platform