

Finding New Solutions through Building Smart Cities

G20 Climate & Sustainability Working Group meeting
Session 7: Finding Solutions through Building Smart Cities
Tokyo, Japan
February 14-16, 2019



JAPAN GOV
THE GOVERNMENT OF JAPAN



WORLD BANK GROUP
Social, Urban, Rural & Resilience

About TDLC Program

TDLC supports and facilitates **strategic WBG and client country collaboration with select Japanese cities, agencies, private sector entities, and partners** for joint research, knowledge exchange and other activities that develop opportunities to link Japanese and global expertise with specific project-level engagements in developing countries to maximize development impact.

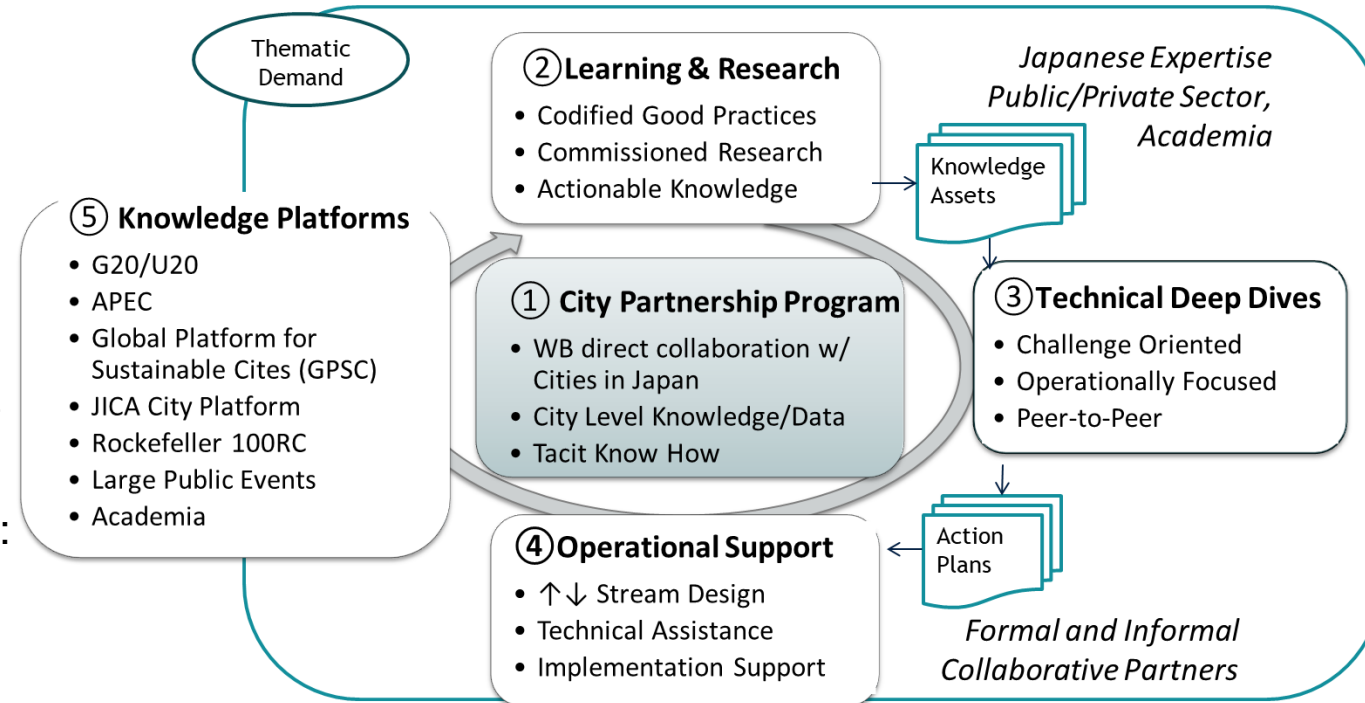
Global in reach and thematically focused on urban planning, urban service provision, urban management, social development, land and geospatial, municipal finance. **Local Economic Development (LED)** and **Quality Infrastructure Investment (QII)** are overarching themes.

Over the past 3yrs TDLC have delivered 21 engaging TDDs w/ 237 delegations from 197 cities in 86 countries (810ppl) **representing +\$59.3 billion (6.5 Trillion Yen)** in @WorldBank projects

Japan City Partners:

- **Yokohama**
- **Toyama**
- **Kitakyushu**
- **Kobe**
- **Kyoto**
- **Fukuoka**

TDLC Engagement Ecosystem



Importance of Cities

- **More than half (54%)** of the global population (4 bn) currently lives in urban areas.
- In two decades, that number will grow to 5.5 bn (**over 60%**)
- Cities face many challenges: **congestion, limited housing, urban sprawl, inequality, and others**
- Cities are responsible for the majority of the world's **economic activity, energy consumption** and **greenhouse gas emissions**.
- Climate change further complicates the urbanization challenge. **By 2030, climate change and natural disasters may cost cities worldwide \$314 billion each year, and push 77 million more urban residents into poverty**



Challenges Cities Face

Buildings & Housing



Energy inefficiency
High building cost
Urban slums

Water & Waste Management



Facility inadequacy
Environmental challenges
Health challenges

Energy



Shortage of fuels
Usage inefficiency
Insufficient infrastructure
Financial weakness



Transportation



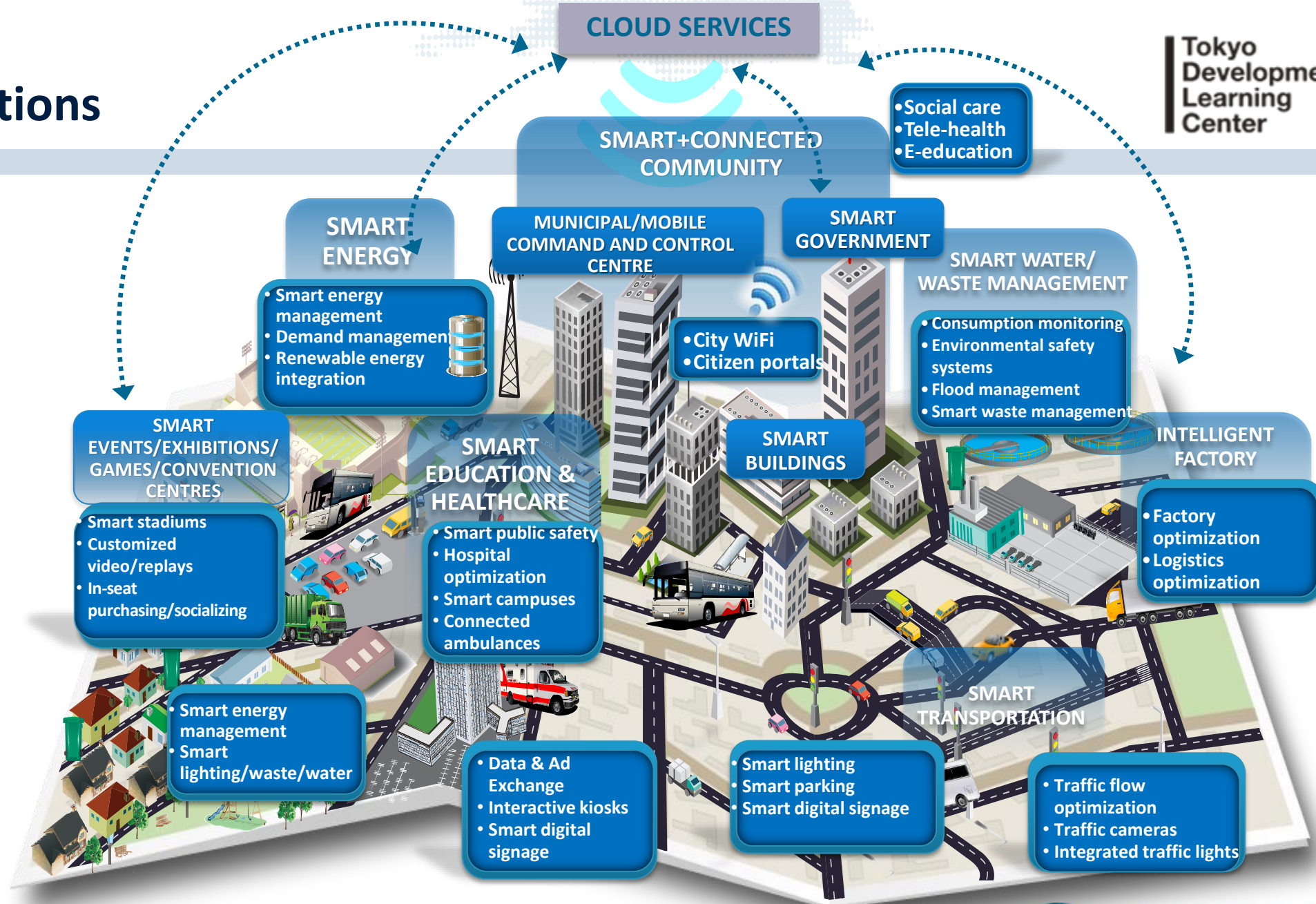
Traffic congestion
Off-schedules
Transport inadequacy
Unavailable transport information

Social & Government



Poor service delivery
Unemployment
Lack of innovation
Non-inclusiveness

Smart City Solutions



Finding New Solutions through Building Smart Cities

Presentations:

- **WBG Engagement on Smart Cities** by Daniel Levine, Manager, TDLC, World Bank Group (WBG)
- **UN-Habitat Engagement on Smart Cities** by Atsushi Koresawa, Director, Regional Office for Asia and the Pacific, United Nations Human Settlements Programme (UN-Habitat)
- **Challenging Zero Energy Town** by Yuta Nakaguchi, Daiwa House Industry Co., Ltd., Department of Environment
- Discussion of Guiding Questions:
 1. What are the keys for realizing “killing two birds with one stone” when we address challenges in developing sustainable societies?
 2. How do you share the regional successful experiments and lessons learned to be improved in your country?
 3. What is the role of the central and/or regional government to build a sustainable smart city avoiding the fallacy of composition?



WBG ENGAGEMENT ON SMART CITIES

G20 Climate & Sustainability Working Group meeting
Tokyo, Japan
February 14–16, 2019



WHY SMART CITIES?

- Two global megatrends: rapid urbanization & ICT revolution
- WBG focus on efficiency, innovation and inclusion
 - Leverage the latest in technology and connectivity to make better decisions and achieve the twin goals
- Client demand
 - Support to 100 smart cities initiative – India
 - Intelligent urban transport projects – Nigeria, Colombia, Poland, China
 - Smart grid – East Asia
 - Green city housing development projects – Brazil
 - Improving public service delivery systems – Mongolia, Bangladesh

DEFINING A SMART CITY

- “Smart city plans and manages its core functions by effectively using **data and digital technologies** to become *efficient, innovative, inclusive and resilient*.”
- “Digital technologies are key enablers, but *urban planning and management* remain in the driver seat.”

(Smart City White Paper, WB, 2018)

Cities becoming “Smarter”



- Leverage technology and existing and planned infrastructure
- Organic integration of the IT physical, social and business infrastructure
- Collecting and translating large amount of data into insights
- A citizen-centric approach

FOUR DIMENSIONS OF A SMART CITY

Efficient	Innovative, Competitive	Inclusive, Responsive	Resilient, Sustainable
<i>Plan and use physical infrastructure & resources efficiently</i>	<i>Create platforms & skills to innovate & compete</i>	<i>Help all people shape the services & future of their city</i>	<i>Monitor and control all aspects of city environment</i>
<ul style="list-style-type: none">• Smart transport• Smart utilities• Intelligent buildings• Broadband; networks• Traffic control• Assets & infra sharing• Smart street lighting• G2G (whole of gov't)• e-Finance• e-Procurement• Predict maintenance• Top-down; AI	<ul style="list-style-type: none">• e-Education; talent• e-Literacy• Citizen co-creation• Open innovation• Innovation hubs• Living lab; incubators• Open data ecosystem• G2B• Smart payments• Knowledge industries• City contests• Bottom-up & down	<ul style="list-style-type: none">• e-Services• Smart health• e-Governance• Citizen participation• Crowd sourcing• Citizen feedback• Digital Identification• SME portals• Predictive policing• Geo-mapping slums• Shared access; hot spots• Bottom-up	<ul style="list-style-type: none">• Pollution control• Flood control• Smart water supply• Smart sanitation• Smart recycling• Smart grid• Operations room• Analytics center• Community network• Smart policymaking• Agile M&E• Top-down

SMART CITIES AND THE WORLD BANK-EXAMPLES

- Over the last five years, the Bank has assisted about *40 Smart City operations*.
- Using a stricter standard definition, they are limited to only *10 operations*.
 - Open and big data, IoT, intelligence, analytics

Wuhan, China

- Developing a “one stop” portal: *“Transport Big Data Center.”*
- Achieving energy savings through Intelligent Transport Systems (ITS)
- Wuhan III: in series, *\$120m Bank loan*, focus on ITS

Dhaka, Bangladesh

- Mayors of Dhaka (DNCC and DSCC) requested Bank to support smart city for Dhaka
- Phase 1: assessment and analysis, definition of smart city solutions & architecture, action planning
- Phase 2: Implementation preparation, bidding docs

Maputo, Mozambique

- Developing a *digital platform to improve solid waste management*
- Goal = make it possible for people to notify municipal authorities in real time, allowing for improved service responsiveness and accountability



KEY CHALLENGES?

- City governance & leadership
- Collaboration among different levels of government
- Bridging government transitions
- Assess, adapt emerging technologies with existing systems
- Plan, implement & management change
- Finance, PPP for investment, O&M
- Citizen engagement and consultation

RISKS?

For Clients:

- “Hype cycle” that distorts city development priorities
- Disconnect digital from analog
- Reinforces existing digital divide
- Uncompetitive market/ oligopoly
- Security and privacy protection

For the World Bank:

- Comparative advantage in dynamic area; learning costs.
- Playing honest, informed broker (aka Risk of Omission): tech giants influence/ dominate

GLOBAL SMART CITY PARTNERSHIP PROGRAM AT THE WORLD BANK

Objective:

Enhance the capacity of planning and implementing Smart City projects, building on best practices and networks of global practitioners and experts

Component 1:

Just-in-time Technical Assistance and operational support

Component 2:

Knowledge sharing and dissemination

Support for project preparation and implementation

- Provide just-in-time technical support to WB teams and clients
- Create smart city components in Bank projects

Support for business development

- Provide an online hub for networking and learning
- Offer cross-sectoral knowledge resources
- Support strategic knowledge and learning activities
- Promote peer-to-peer learning opportunities