

The 5th Asia Smart City Conference in Yokohama



The 5th Asia Smart City
Conference in Yokohama

Report

November 18, 2016



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Thematic Meeting 1
Showcase of best practice
of smart city management



Thematic Meeting 3
Showcase of financial arrangement
for smart city development



Thematic Meeting 2
Showcase of private sector technologies
and solutions for smart city development



Thematic Meeting 4
Knowledge management
for smart city development





Asia Smart City Conference

01 Conference Outline

Date & Time	Friday, November 18, 2016, 09:30 – 17:00
Venue	InterContinental Yokohama Grand (1-1-1 Minatomirai, Nishi-ku, Yokohama)
Organizer	City of Yokohama, Japan
Supported by	Cabinet Office, Ministry of Foreign Affairs, Ministry of Finance, Ministry of the Environment, Institute for Global Environmental Strategies (IGES), Japan International Cooperation Agency (JICA), Yokohama City University
Outline	<p>Since 2012, Yokohama, a FutureCity, has hosted the Asia Smart City Conference in which the mayors of emerging Asian cities, experts from international organizations and others gather to share their expertise and work together to build sustainable cities.</p> <p>This year, mayors and other representatives from 46 cities as well as the Japanese government, international organizations, academic institutions, private companies and numerous other organizations and institutions attended the 5th conference.</p> <p>Following four thematic meetings in the morning and the plenary meeting in the afternoon, the contributions and the dialogues given throughout the conference were integrated into the 5th Asia Smart City Conference Declaration (Yokohama Declaration), which was introduced at COP22 later on the same day.</p> <p>In the lunch venue, private enterprises in Yokohama displayed unique technologies and services and had business matching opportunities among cities, private enterprises and donor organizations.</p> <p>Before the conference, Yokohama Infrastructure Tour was organized on Wednesday, November 16 at Hokubu Sewerage Center, Tsurumi Waste Treatment Plant, and Kawai Water Purification Plant, all of which are municipal facilities.</p> <p>As the joint events, the following three events were held on Thursday, November 17:</p> <ul style="list-style-type: none"> - 17th Y-PORT Workshop hosted by the City of Yokohama - Asia Infrastructure Business Seminar (Special Event for 50th ADB Annual Meeting in Yokohama) jointly hosted by the City of Yokohama and IDEC Yokohama - World Bank Smart City Conference hosted by the World Bank
Total number of participants	250

02 Agenda

Thematic Meetings	
09:30-12:00 *4 meetings run in parallel	Thematic Meeting 1 Showcase of best practice of smart city management
	Thematic Meeting 2 Showcase of private sector technologies and solutions for smart city development
	Thematic Meeting 3 Showcase of financial arrangement for smart city development
	Thematic Meeting 4 Knowledge management for smart city development
Lunch	
12:00-14:00	Lunch & Business Matching Display unique technologies and services of private enterprises in Yokohama at the lunch venue and provide opportunities for business matching among cities, private donor organizations.
Plenary Meeting	
14:00-14:40	Group Photo & Opening Session
	<p>Opening Speech Ms. Fumiko Hayashi, Mayor, City of Yokohama</p> <p>Keynote Speech Mr. Kiyoshi Odawara, Parliamentary Vice-Minister for Foreign Affairs, Japan</p> <p>Keynote Speech Mr. Hiroshi Kamagata, Director-General, Global Environment Bureau, Ministry of the Environment, Japan</p>
14:40-15:00	Networking Break
15:00-16:40	Roundtable Session Moderator: Mr. Hideyuki Mori, President, IGES
	<p>Panelists:</p> <p>Ms. Mary Jane Ortega, Special Advisor for Y-PORT Center / Special Advisor of CITYNET</p> <p>Dr. Alfonso Vegara, Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli</p> <p>Dr. Bindu Nath Lohani, Special Advisor for Y-PORT Center / Distinguished Adjunct Faculty and Board of Trustee Member, Asian Institute of Technology</p> <p>Dr. Gil-Hong Kim, Senior Director concurrently Chief Sector Officer, Sustainable Development & Climate Change Department, Asian Development Bank</p> <p>Mr. Barjor Mehta, Global Lead, City Management, Governance and Finance, The World Bank</p> <p>Mr. Laxman Perera, Human Settlement Officer, UN-Habitat Regional Office for Asia and the Pacific</p> <p>Mr. Yasuyuki Akimoto, Executive Director for Future City Promotion, Climate Change Policy Headquarters, City of Yokohama</p>
16:40-17:00	Closing Session Declaration of the 5 th Asia Smart City Conference "Yokohama Declaration"

03 Participants List

<Cities> (in alphabetical order by nation)



Lim Vichet
 ■ Cambodia ■ City of Phnom Penh
 Deputy Director of Administration



Ramakrishnan Karaikal Valaven
 ■ India ■ Government of Andhra Pradesh
 Principal Secretary, Municipal Administration and Urban Development Department



Shaik Aleem Basha
 ■ India ■ Kakinada Municipal Corporation
 Commissioner



Vasant Premanand Prabhu
 ■ India ■ Municipal Corporation of Greater Mumbai
 Deputy Municipal Commissioner



Bahagia
 ■ Indonesia ■ Banda Aceh Municipality
 City Manager



Kengo Ishida
 ■ Japan ■ City of Kitakyushu
 Chief Executive (in charge of International Environmental Strategies), Environment Bureau



Ye Lwin
 ■ Myanmar ■ Mandalay City
 Mayor



Rudra Singh Tamang
 ■ Nepal ■ Kathmandu Metropolitan City Office
 Chief and Executive Officer



Maria Adelaida Coloma Lacsamana
 ■ Philippines ■ Baguio City
 City Environment & Parks Management Officer



Nicepuro Lauron Apura
 ■ Philippines ■ Carcar City
 Mayor



Joel Pareja Quiño
 ■ Philippines ■ Compostela
 Mayor



Teresa Pepito Alegado
 ■ Philippines ■ Municipality of Consolacion
 Mayor



Perla Tumalak Amar
 ■ Philippines ■ Lapulapu City
 City Planning and Development Coordinator, City Planning and Development Office



Mae Elaine Tantengco Bathan
 ■ Philippines ■ Mandaue City
 Executive Secretary / Chief of Staff, City Mayor's Office



Evelyn Nacario-Castro
 ■ Philippines ■ Minglanilla
 Director, Program Management Office, Research Program & Organizational Development, Metro Cebu Development & Coordinating Board (MCDCB)



Kristine Vanessa Tadiwan Chiong
 ■ Philippines ■ Naga City
 Mayor



Dominica Bardinas Chua
 ■ Philippines ■ Province of Cebu
 Vice-Chair, Research Program & Organizational Development Executive Committee, Metro Cebu Development & Coordinating Board (MCDCB)



Lakambini Generans Reluya
 ■ Philippines ■ Municipality of San Fernando, Cebu
 Mayor



Eduardo Rivera Gullas
 ■ Philippines ■ Talisay City
 Mayor



I. V. P. Dharmawardhana
 ■ Sri Lanka ■ Colombo Municipal Council
 Chief Municipal Veterinary Surgeon, Municipal Veterinary Department



Vallop Suwandee
 ■ Thailand ■ Bangkok Metropolitan Administration
 Chairman of Advisers to Governor of Bangkok



Dang Viet Dung
 ■ Vietnam ■ Da Nang People's Committee
 Vice Chairman



Do Minh Quang
 ■ Vietnam ■ Hue City People's Committee
 Deputy Director of Hue City Water Environment Improvement Project Management Unit



Fumiko Hayashi
 ■ Japan ■ City of Yokohama
 Mayor



Toshihide Hirahara
 ■ Japan ■ City of Yokohama
 Deputy Mayor



Yasuyuki Akimoto
 ■ Japan ■ City of Yokohama
 Executive Director for FutureCity Promotion, Climate Change Policy Headquarters

- World Bank Technical Deep Dive



Mohammad Abdur Razzak
 ■ Bangladesh ■ Dhaka North
 Municipal Solid Waste Management, Waste Management Department, Dhaka North City Corporation



Ahmed Bin Parvez
 ■ Bangladesh ■ Dhaka South
 Project Analyst, GPSURR South Asia Region, The World Bank



Omar bin abdal Aziz
 ■ Bangladesh ■ Dhaka South
 Councilor, Dhaka South City Corporation



Claudia Namishan Labbe
 ■ Chile ■ Gran Concepción
 Director, Metropolitan Region branch, CORFO Chilean Economic Development Agency



Constanza Beatriz Pacheco
 ■ Chile ■ Gran Concepción
 Project Manager, Smart Cities, Transport and Telecommunications Ministry, Government of Chile



Sebastian Ordoñez Holguin
 ■ Ecuador ■ Quito
 Advisor to the Mayor of Quito, Municipio de Quito



Cheeran Unny Roy
 ■ India ■ Bhopal
 Deputy Director, Urban Administration & Development Department, Government of Madhya Pradesh



Swayandipta Pal Chaudhuri
 ■ India ■ Hubli
 Managing Director & CEO, Imagine Panaji Smart City Development Limited



Rehman Roshan Baig
 ■ India ■ Panjim
 Minister, Urban Development and Haj, Government of Karnataka



Najib Ouradi
 ■ Morocco ■ Casablanca
 Assistant Director, IT and Digital Transformation, Casa Prestations



Flávio Sancho de Almeida
 ■ Mozambique ■ Maputo
 National Director, IT - Infrastructure and Access, National Institute of ICT (INTIC) Mozambique



Takalani Edward Rathiyaya
 ■ South Africa ■ Durban
 Deputy Head, Economic Development and Investment Promotion, EtheKwini Metropolitan Municipality

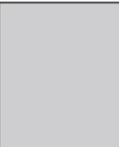


Macricia Auguste-Bushell
 ■ St. Lucia ■ Castries
 Economist, Department of Economic Development, Government of St. Lucia



Lotfi Ben Said
 ■ Tunisia ■ Tunis
 Director General, Ministry of Local Affairs and the Environment, Government of Tunisia

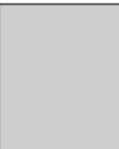
- ADB Water Operators Partnerships



Sitha Sim
 ■ Cambodia ■ Phnom Penh
 Director General, Phnom Penh Water Supply Authority (PPWSA)



Seru Maivuniwi Soderberg
 ■ Fiji Islands ■ Nasinu
 A/General Manager, Planning and Design Unit, Water Authority of Fiji



Phomma Veoravanh
 ■ Lao PDR ■ Vientiane Capital City
 Director General, Department of Water Supply, Ministry of Public Works and Transport



Maily Lynne Bautista Quinto
 ■ Philippines ■ Pampanga
 General Manager, Clark Water Corporation, Manila Water Co. Inc.



Rodora Navarro Gamboa
 ■ Philippines ■ Quezon City
 Head/Assistant Vice-President, Maynilad Water Academy, Maynilad Water Services Inc.



Abdul Gaffoor Irshadh
 ■ Sri Lanka ■ Colombo
 Deputy Director, Engineering (Drainage), Municipal Engineer's Department, Colombo Municipal Council



Arttachai Ketrattanabovorn
 ■ Thailand ■ Bangkok
 Director, Waterworks Academic Development Department, Metropolitan Waterworks Authority (MWA)



Thatsit Sakulpong
 ■ Thailand ■ Bangkok
 Engineer, Waterworks Academic Development Department, Metropolitan Waterworks Authority (MWA)



Folkert Geert Jan De Jager
 ■ The Netherlands ■ Zwolle
 Regional Manager Asia, Vitens Evides International



Harold William Perry
 ■ USA ■ King County
 Infrastructure Coordinator, Department of Natural Resources and Parks, King County Wastewater Treatment Division



Pamela Ann Elardo
 ■ USA ■ New York City
 Deputy Commissioner, Department of Environment Protection, Bureau of Wastewater Treatment



Nguyen Minh Tuan
 ■ Vietnam ■ Haiphong
 Chairman/Chief Executive Officer, Haiphong Sewerage and Drainage Co., Ltd.



Khoi Ngoc Pham
 ■ Vietnam ■ Ho Chi Minh City
 Deputy Chief of Office, Corporate Administrative Office, Saigon Water Corporation (SAWACO)



Nguyen Van Thuan
 ■ Vietnam ■ Quang Binh Province
 Director, Quang Binh Urban and Environment Development One Member Limited Company

<Japanese Government>



Masaaki Takabatake
 ■ Japan ■ Cabinet Office
 Counsellor, Office for Promotion of Overcoming Population Decline and Vitalizing Local Economy in Japan



Naoto Hisajima
 ■ Japan ■ Cabinet Secretariat
 Counselor



Kiyoshi Odawara
 ■ Japan ■ Ministry of Foreign Affairs
 Parliamentary Vice-Minister for Foreign Affairs



Takao Imafuku
 ■ Japan ■ Ministry of Foreign Affairs
 Director for Development Assistance Policy Coordination Division International Cooperation Bureau



Akihiro Tsuchiya
 ■ Japan ■ Ministry of Finance
 Director, Multilateral Development Banks Division, International Bureau



Hideyuki Umeda
 ■ Japan ■ Ministry of Economy, Trade and Industry (METI)
 Deputy Director, Recycling Promotion Division



Toru Ishikawa
 ■ Japan ■ Ministry of Land, Infrastructure, Transport and Tourism
 Director, International Affairs Office, City Bureau



Hiroshi Kamagata
 ■ Japan ■ Ministry of the Environment
 Director-General, Global Environment Bureau

<International Organizations>



Gil-Hong Kim
 ■ Asian Development Bank (ADB)
 Senior Director concurrently Chief Sector Officer,
 Sector Advisory Service Cluster,
 Sustainable Development & Climate Change Department



Amr J. Qari
 ■ Asian Development Bank (ADB)
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Hideyuki Mori
 ■ Institute for Global Environmental Strategies (IGES)
 President



Naoki Mori
 ■ Institute for Global Environmental Strategies (IGES)
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Tsutomu Sudo
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Laxman Perera
 ■ UN-HABITAT
 Human Settlement Officer,
 Regional Office for Asia and the Pacific



Hideki Murakami
 ■ United Nations Industrial Development Organization (UNIDO)
 Deputy Head,
 Investment and Technology Promotion Office (ITPO), Tokyo



Barjor Mehta
 ■ The World Bank
 Global Lead,
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 Senior Operations Officer/Team Lead,
 Tokyo Development Learning Center (TDLC)

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Hidefumi Imura
 ■ Yokohama City University
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<Private Companies>



Toyoomi Shimamura
 ■ Sumitomo Mitsui Banking Corporation
 General Manager, Public & Financial Institutions
 Banking Department, Wholesale Banking Unit



Tomohide Oyama
 ■ The Bank of Tokyo-Mitsubishi UFJ, Ltd.
 Manager, Structured Finance Division,
 Project Finance Office, Asian Origination Team



Motoyuki Okada
 ■ Finetech Co., Ltd.
 President & CEO



Gen Takahashi
 ■ JFE Engineering Corporation
 General Manager, Global Business Development,
 Overseas Business Sector



Lei Zhou
 ■ Deloitte Tohmatsu Consulting LLC
 Partner,
 Automotive Sector



Akihisa Sakurai
 ■ IBM Japan Ltd.
 IBM Distinguished Engineer,
 Cognitive Solutions



William Edwards
 ■ IKEA Japan K.K.
 Store Manager,
 IKEA Kohoku



Taisuke Yoshida
 ■ NEC Corporation
 Deputy General Manager,
 Global SI Service Business Development Division



Tomohiko Miyahara
 ■ Panasonic Corporation
 General Manager, CRE Business Development Group,
 Business Solution Division



Ryo Ishii
 ■ PwC Advisory LLC
 Manager,
 Cities Solution Centre Japan



Stuart Robert Kay
 ■ GreenPlace Assets
 Chief Sustainability Officer,
 Executive Management

<Special Advisors for Y-PORT Center>



Bindu Nath Lohani
 ■ Special Advisor for Y-PORT Center
 Distinguished Adjunct Faculty and
 Board of Trustee Member, Asian Institute of Technology



Mary Jane Crisanto Ortega
 ■ Special Advisor for Y-PORT Center
 Special Advisor of CITYNET



Alfonso Vegara
 ■ Special Advisor for Y-PORT Center
 Founder and Honorary President,
 Fundación Metr poli



Ryokichi Hirono
 ■ Special Advisor for Y-PORT Center
 Professor Emeritus,
 Seikei University

04 Conference Summary

Thematic Meetings

No.1

“Showcase of best practice of smart city management”

- ▶ When we learn of “Best Practice of Smart City Management”, what makes you want to replicate it?
- ▶ What are the challenges you expect to face in replicating Best Practices? Is it the cost of the program, the capacity of the staff, the acceptance of the citizens, or other reasons?
- ▶ What do you think is better city to city collaboration modalities (e.g. South to South, North to South, bilateral, multilateral, etc.)? How about a triangular city cooperation idea?

Moderator

Mary Jane Crisanto Ortega (Special Advisor for Y-PORT Center / Special Advisor of CITYNET)

14 presenters including me participate at this thematic meeting. I introduced briefly each of them. The theme is city to city collaboration for sustainable urban development.



Dang Viet Dung (Vice Chairman, Da Nang People’s Committee)

Da Nang and Yokohama City have cooperated for three years with a focus on urban solutions. We cooperate in dealing with our environmental problems as solid waste and also sewage, as well as in our city planning and infrastructure development including smart transport systems.

Cooperation at the municipal level is a very efficient model. Due to its small scale, this favorable cooperation scheme allows us to identify important matters to deal with and to easily execute the solutions. In December this year, Da Nang and Yokohama City plan to have the fifth forum to discuss further the solutions and also the current problems of urbanization in our city, in order to become an environmental-friendly and also a smart city.

Masaaki Takabatake

(Counsellor, Office for Promotion of Overcoming Population Decline and Vitalizing Local Economy in Japan, Cabinet Office, Japan)

Cabinet Office will create unparalleled best practice towards the solution of environmental issues and a super-aging society as the 21th century’s common challenges and promote the "FutureCity" initiative where we spread the best practice throughout the world and try to reinforce the solution of global challenges. To date, we select 11 cities including Yokohama. The government takes financial measures and deregulation to the endeavors of each city and follow up them regularly. This initiative aims at the city image which means a city that creates people-centered new values.

Moreover, we promote collaboration among domestic and foreign cities, share various best practices and successful processes, and build an international knowledge platform. We have held an international forum for eight times around the world as an opportunity for knowledge exchange.

Hideyuki Umeda

(Deputy Director, Recycling Promotion Division, Ministry of Economy, Trade and Industry (METI), Japan)

Today, I would like to speak about the endeavors to create a Japanese recycling society and our expectations for cities. When we promote recycle policy, the role of cities is essential.

A while ago, there was a policy, the eco-town project where each municipal formulated an eco-town plan for consolidating recycle facilities, and METI and Ministry of the Environment approved the plan and subsidized the facilities. This policy started a trend of industrial symbiosis, which becomes a global theme.

In developing countries, wastes are often inappropriately treated. What is important to tackle this issue is cooperation among municipalities and introduction of adequate recycling systems including laws.

Since fiscal 2016, we have started a project which provides a package of hardware and software technologies through system building support by policy dialogue and technical practice. From now, we will develop the sustainability index tool which provides methodologies to understand the current situation of each city, and we hope to provide an appropriate solution package for each city.

Laxman Perera

(Human Settlement Officer, Regional Office for Asia and the Pacific, UN-HABITAT)

In October this year, Habitat III was held in Quito, Ecuador. The Habitat have been held every 20 years to discuss the global development agenda, and the third conference came up with a vision and a commitment to promote the sustainable urbanization.

With continued and rapid urbanization, the New Urban Agenda focuses on cities and the smart city approach, and also emphasizes city to city cooperation to find urban solutions.

As for SDG 11 and the smart city concept, the solution of e-government has a potential for housing, and cities are already talking about smart urban transportation systems. Application of ICT platforms to urban planning and open communication on the cultural and natural heritage preservation are other features. Disaster risk reduction is crucial in Asia Pacific Region and ICT permits cities to be prepared for disaster and to be resilient.

What is important is to look largely at the global scenarios and the national policies, and to bring in partnership especially in the private sector and cities to promote sustainable urbanization.

Motoyuki Okada

(President & CEO, Finetech Co., Ltd.)

We are a member of Y-PORT Center. This body, as a platform for international technical cooperation, consists of City of Yokohama, big companies in Yokohama such as JGC, organizations such as CITYNET, and Yokohama Urban Smart Solution Alliance which 10 SMEs in Yokohama having high technologies including us belong to, and the Y-PORT Center collaborates with the Japanese government, JICA, various councils, etc.

City of Yokohama forms city to city collaboration with Cebu city in the Philippines, Da Nang City in Vietnam, Bangkok in Thailand, and Batam City in Indonesia. Business matching meetings are held in such cities. In these opportunities, it was decided that, for example, our solar panels were installed on the roof of a painting factory in Bangkok, Thailand as a JCM (Joint Crediting Mechanism) project.

We think of building an advanced energy management system where energy is efficiently used. This can be done not by only one company, but together with other companies. Yokohama Urban Smart Solution Alliance, which we belong to, is a group of SMEs with excellent technologies, and we believe that the Alliance can realize many projects as member companies work together utilizing their technologies.

Rudra Singh Tamang

(Chief and Executive Officer, Kathmandu Metropolitan City Office)

Government of Nepal has launched the new ICT policy in 2015 and Kathmandu has also adopted the policy. ICT is a tool to develop economic growth and to improve the quality of life of citizens, as well as to promote service platform through the e-governance. We are trying to reduce 80% of paperwork by online service, and we also provide two mobile application for our citizens.

We are also cooperating with a foreign partner in the segregation of waste. Moreover, we are working on the renewable energy and are going to reconstruct our own building destroyed by the earthquake in 2015 into an eco-energy building with rooftop solar panels. And a public solar mini-grid project is going on in the city.

There should be smart citizens, then a city can be smart. And the public side should take the strong leadership to implement all the new innovation.

Dominica Bardin Chua

(Vice-Chair, Research Program & Organizational Development Executive Committee, Metro Cebu Development & Coordinating Board (MCDCB), Province of Cebu)

Collaboration at various level is the key in addressing urban challenges. Supported by the City of Yokohama and JICA, the MCDCB formulated the roadmap for the sustainable urban development of Metro Cebu based on the Mega Cebu Vision 2050. This roadmap covers metropolitan competitiveness, urban structures and land use, highway network and public transport, water supply, wastewater and storm water management, solid waste management, energy management, and metropolitan governance.

The priority among them is to improve the management of our traffic. We have established a Mega Cebu Traffic Enforcement Academy to solve educationally the heavy traffic in Metro Cebu, which is a unique initiative never seen elsewhere in the Philippines.



Teresa Pepito Alegado

(Mayor, Municipality of Consolacion)

Our city operates a college where even poor people can enter with the subsidy by the city government. At this college, a thousand people or more study education, political science, business administration, hotel and restaurant management, and accounting. It is my objective to capacitate our youth to live a decent living and in fact this has contributed to the decrease of our poverty index from 27% to 15%. And As a member city of Metro Cebu, it contributes to the solution of a heavy traffic because of learning locally and not going to the central area of Metro Cebu. More investments on commercial and industrial establishments are also encouraged to make a self-contained community.

Ramakrishnan Karaikal Valaven

(Principal Secretary, Municipal Administration and Urban Development, Government of Andhra Pradesh)

The Indian government has launched the Smart City Initiatives and selected 100 cities, three of which are in our state.

Our city services are now moving from the ICT towards the IoT and from e-governance towards mobile governance. And we provide infrastructure which improves quality of life, and such a model can attract private investments, contributing a financial sustainability. Also, we develop an economic master plan and promote city branding.

Our smart city is citizen-centric and citizens participate in the development process. Our mobile application is one of the tools for citizen participation. And the command control center acts as a real-time governance by monitoring the streetlights, the traffic, the property tax collection and the waste-to-energy.

Lim Vichet

(Deputy Director of Administration, City of Phnom Penh)

One of our city's development formula is the public sector 50% and the private sector 50%. The city government provides 50% of funding and residents contributes 50% to construct roads in the community.

We have also a formula of using palm leaf to wrap palm sugar. In urban development, assisted by the private sector, the city leases land and the private sector develops it. Through this formula, many revetments and bridges have been built. And as another of such examples, we have companies advertise on the public buses and allocate the advertising money for the operation cost of the public bus.

Cheeran Unny Roy

(Deputy Director, Urban Administration & Development Department, Government of Madhya Pradesh)

Madhya Pradesh, whose state capital is Bhopal, was the only state in India which got three towns selected under the smart cities program in the list of first 20 towns.

Bhopal is the first to take a lead in the implementation of the smart city projects, including the intelligent transport system, smart poles, smart bikes, and the smart application for services for citizens. For example, we have signed the agreement with a company to install streetlights, or smart poles, having eight services such as surveillance cameras. This is under fully PPP mode and the company has been given the rights for putting advertisements and optical fiber cables for lease to recover the cost. The city will even gain some revenue from the company.

Our friend from Nepal mentioned that citizens have to be smart for smart cities. I will add that citizens have to be happy also with job and housing.

Lofti Ben Said

(Director General, Ministry of Local Affairs and the Environment, Government of Tunisia)

The government of Tunisia has launched an evaluation system of local government's performance. The central government transfers fiscal resources to local governments on the basis of their performance on the assessment. There are 26 indicators and there are three general areas in which the indicators fall, and they are governance, management, and sustainability. The scores of this annual assessment are published on a newly-launched local government website, which are available to the public.

Moderator

Mary Jane Crisanto Ortega

(Special Advisor for Y-PORT Center / Special Advisor of CITYNET)

Which best practice would you like to replicate? And why?

Dominica Bardinas Chua

(Vice-Chair, Research Program & Organizational Development Executive Committee, Metro Cebu Development & Coordinating Board (MCDCEB), Province of Cebu)

I am so much interested in the sustainability index that is being developed by the METI.

Hideyuki Umeda

(Deputy Director, Recycling Promotion Division, Ministry of Economy, Trade and Industry (METI), Japan)

Since we are still developing sustainability index, I would like to introduce only its concept. It diagnoses the development phase of a city and evaluates the condition of the city in terms of some aspects such as waste, energy, ICT and transport, and we hope to provide a solution package of systems and technologies.

Ramakrishnan Karaikal Valaven

(Principal Secretary, Municipal Administration and Urban Development, Government of Andhra Pradesh)

We would like to replicate in three areas. One is the waste processing. And in particular liquid waste management. I have learned that in Japan both of the wastes are being processed together. I'd like to replicate that particular model in my state. Secondly, the community college concept of the Philippines. Thirdly, the traffic management. Our capital city Delhi is the most polluted city because of vehicular traffic. So I would like to learn from Japan.

Lim Vichet

(Deputy Director of Administration, City of Phnom Penh)

In Phnom Penh, we have three problems. First, the traffic situation; and two, sewage system; and waste management. Yokohama is an eco-town and we want to introduce its systems. For that, we have to do the master plan and need collaboration between the government and the private sector.

Rudra Singh Tamang

(Chief and Executive Officer, Kathmandu Metropolitan City Office)

Within this week, I got a chance to learn something outside and within this seminar hall. From the field visit on Wednesday, I would like to figure out the sewage treatment system and the waste management are compatible for us. Also from the presentations, I am interested in the online systems in India and the smart urban grid project by Finetech.

Moderator

Mary Jane Crisanto Ortega

(Special Advisor for Y-PORT Center / Special Advisor of CITYNET)

This is where networking is very important. The City of Yokohama may help you directly or by introducing you a partner city or a company, leading to a south to south, or a triangular city to city cooperation.

Cheeran Unny Roy

(Deputy Director, Urban Administration & Development Department, Government of Madhya Pradesh)

We would like to bring back two. Firstly, the JCM that CEO of Finetech mentioned. It will help us in low carbon project proposal and technology implementation. Secondly, the advanced energy management system that also CEO of Finetech mentioned.

Dang Viet Dung

(Vice Chairman, Da Nang People's Committee)

Da Nang City has cooperated with Yokohama City for a long time. I hope that another city will join us and have a triangular cooperation.

Lotfi Ben Said

(Director General, Ministry of Local Affairs and the Environment, Government of Tunisia)

The government of Tunisia is launching the program, Sustainable Cities Program 2050 and it will attach about 10 cities in Tunisia. We would like to share the experience of Yokohama City to have this program in place.

Moderator

Mary Jane Crisanto Ortega
(Special Advisor for Y-PORT Center /
Special Advisor of CITYNET)

We hope that UN-HABITAT is happy that the SDGs have been mentioned. Would you like to make a comment on that?



Laxman Perera

(Human Settlement Officer, Regional Office for Asia and the Pacific, UN-HABITAT)

I think that the city to city collaboration largely depends on the knowledge-sharing and networking. I don't think that a single city cannot achieve SDGs or roll out the new urban agenda. It is important not only for city managers to create platforms but also how to interact with the communities. As mentioned earlier, if people are not happy, whatever the smart solutions we bring in, it doesn't work.

Moderator

Mary Jane Crisanto Ortega

(Special Advisor for Y-PORT Center / Special Advisor of CITYNET)

I have a question for Mr. Takabatake You mentioned declining population. I just read that Japan may make it easier for permanent residents from abroad to get permission. Do you think this would solve your problem of the declining population?

Masaaki Takabatake

(Counsellor, Office for Promotion of Overcoming Population Decline
and Vitalizing Local Economy in Japan, Cabinet Office, Japan)

It is not yet moving ahead to absorb residents from abroad. One of the factors of the declining population is the heavy concentration of population in Tokyo, where the environment for bringing up children becomes difficult and people cannot decide to have children. We are trying to vitalize local economy so that young people can bring up children in the local area, and we hope to increase the birth rate.



No.2

"Showcase of private sector technologies and solutions for smart city development"

- ▶ What are your fundamental concepts and principles towards building of a smart city?
- ▶ From the entity/company that you represent, which would you say are the main proposals or solutions applied to the development of smart cities?
- ▶ What are the technology trends and how do they apply to urban transformation of the near future?

Moderator

Alfonso Vegara

(Special Advisor for Y-PORT Center /
Founder and Honorary President,
Fundación Metr poli)

The theme of this thematic meeting is how a private sector technology can help to transform cities. Cities do not have a lot of budget but they have a lot of needs. So technology can really help a lot. Many technology companies are working in different sector of the urban solution, but we need to invent new ways of financing. At the same time, we need to be able to apply an intelligent way and to collaborate between public and private sector. Please give a presentation based on these points.



Toshiyuki Iwama

(Executive Technical Advisor to the Director General of Infrastructure and
Peacebuilding Department, Japan International Cooperation Agency (JICA))

I wish to talk how ICT contributes to the implementation of the urban transport masterplan of Vientiane, the capital of Lao PDR. JICA conducted the study in Vientiane from 2005 and a road network plan, improvement of intersection, demand management, and improvement of bus service were proposed.

I will talk about the bus service among these. Firstly to monitor the bus location and passenger distribution through GPS and Wi-Fi. Secondly to grasp speed data and mobility patterns. Then, we can control the operation of buses based on data analysis, which contributes to revenue increase. We also provide smart-card passes for a discounted fare and for students. Students become familiarized with public transportation, and the smart-card system can also avoid cumbersome money transfer, and therefore the revenue of buses increases.

Hideki Murakami

(Deputy Head, Investment and Technology Promotion Office (ITPO),
Tokyo, United Nations Industrial Development Organization (UNIDO))

UNIDO provides assistance to the developing countries or emerging countries to assist them to be more industrialized by utilizing the technologies from advanced countries. UNIDO has eight ITPOs and our offices are mandated solely for investment promotion and technology transfer.

We invite developing countries' government officials, or sometimes chamber of commerce or city government officials and match-make them with Japanese companies for technology transfer development.

I will talk about a recent case. We invited the Executive Official of Japan-India Chamber of Commerce. He is interested in smart technology development and wants to attract Japanese companies to India. We invited him to Smart City Exhibition in Tokyo and tried to make him expose to as many Japanese companies as possible. After that, we realized that in India, they have a problem with the ATM system. So we attracted Japanese companies and asked them to improve it.

Gen Takahashi

(General Manager, Global Business Development, Overseas Business Sector,
JFE Engineering Corporation)

Nowadays, we are specialized especially for some environmental-friendly infrastructure project. For example, we built SkyPark in Singapore and waste treatment and sewage treatment plants in Yokohama.

Talking about the smart city, sometimes we are too much focusing on IT. But from the point of view of engineering companies, IT can be used to optimize each infrastructure facility. For example, we developed high-power remote systems. In our headquarter in Yokohama, we have a remote controlling center. This center is connected to five waste treatment plants to realize safe and stable operation.

We can provide many various types of infrastructures and we also focus on how to make this kind of infrastructure business smarter.

William Edwards

(Store Manager, IKEA Kohoku, IKEA Japan K.K.)

To realize the smart city, we believe that sustainability has to be integrated into everyday life. This is our vision. For example, we invested €600 million into the renewable energy. We use sustainability to transform our business and it is enabling us to strengthen our competitiveness.

We are working strongly with three change drivers. The first one is that we aim to inspire and enable millions of customers to live a more sustainable life at home. The second element is that we strive for resource and energy independence, securing long term access to sustainable raw materials. The third element is that we want to take the lead in creating a better life for people and communities impacted by our businesses.

Taisuke Yoshida

(Deputy General Manager, Global SI Service Business Development Division,
NEC Corporation)

We gather all sorts of information and then visualize and analyze it by using a big data engine and AI in order to operate a city efficiently and satisfy more citizens. Municipalities can make a city master plan by using this analysis. We can contribute for a city to attain the SDGs by providing the ICT platform and services. For example, our face recognition is the world's number one and we have a lot of core technologies such as object identification and crowd behavior analysis.

Of course, each city has a different maturity and requirements. We can provide vertical solutions. We already provide the smart bus business in Hong Kong and India, and waste management and disaster prevention in other countries.

Tomohiko Miyahara

(General Manager, CRE Business Development Group,
Business Solution Division, Panasonic Corporation)

Our smart city concept has two points. Firstly, as for the smart city, we develop a city, focusing around energy, utilizing smart infrastructures and advanced technologies. Since we have created a good life through our home electric appliances, we focus on the process of smart life and think about five elements of the smart life: energy in particular, security, mobility, community, and wellness. Then design a city as a space realizing those elements and as infrastructures supporting them. Secondly, a smart city is not equal to a sustainable city. We cannot forget to develop a sustainable city.

Now we implement projects on two old factory sites. One is Fujisawa Sustainable Smart Town Project, and another is Yokohama Tsunashima Sustainable Smart Town Project. The former aims at reducing CO2 by 70% and using renewable energy at 30% or more. The latter aims at reducing CO2 by 40% compared with the fiscal year 2005 and using new energy at 30% or more. Both of them secure three days of lifelines.

We propose solutions learned from these projects globally.

Lei Zhou

(Partner, Automotive Sector, Deloitte Tohmatsu Consulting LLC)

My topic is rising and transformation of smart mobility. The connectivity of mobility is important and the mobility also should be very automatic.

In the US, ICT companies are taking initiative and the federal government and state governments are helping and supporting the smart mobility initiative. In Japan, the central government, local governments, universities and companies are working together for pilot projects. In China, the central government is very powerful.

In the middle-sized cities in the US, car sharing and bike sharing are promoted. In Germany, railroads play an important role. In Japan, autonomous driving is a hot topic and it is tried in Sendai, Tokyo, and Aichi. In Chinese big cities, autonomous driving and communication are integrated into a platform.

We divide smart mobility models into three patterns: urban center model, visiting tour model, and local depopulated area model.

Akihisa Sakurai

(IBM Distinguished Engineer, Cognitive Solutions, IBM Japan Ltd.)

IoT is essential for the smart city. First of all, we should begin with monitoring the situation of cities, for which we need adequate IoT devices and connection technologies.

For IoT sensors, prevalent cellular network is not appropriate, and a low power wide area network, LPWAN is better. IBM is involved in its development. And as for a network server, long-range signaling and controlling, LRSC, was developed by IBM.

When these technologies are introduced, people are inspired and begin to think of applications, which lead to innovation.

Nicepuro Lauron Apura

(Mayor, Carcar City)

We are building a new city center, which will be completed in January, 2017. This will house not only the city center but also schools, the city hall, the public market and the churches. Also we will construct a public transport terminal, a swimming pool and an oval. There will be a walkway with the rice field on the sides, which will be preserved, and a public plaza.

Maria Adelaida Coloma Lacsamana

(City Environment & Parks Management Officer, Baguio City)

For medium-sized cities like us, adopting and managing technology is necessary but is still considered as an expensive venture. But we need to adjust to the current trends of development to move forward.

We adopted e-governance 10 years ago. Our citizens can apply for various permissions online. We monitor public infrastructures by using GIS. We get feedback from citizens on the city website.

There are problems. Typhoons come frequently and the city often has a power outage, and sometimes we cannot get enough feedback. Therefore, we ventured into a new citywide surveillance project as well as a system to harness information, people and technology to come up with intelligent solutions

Our new project is supported by the private sector through corporate social responsibility. The key to the success is our mayor's leadership and a very good partnership with the private sector.

Bahagia

(City Manager, Banda Aceh Municipality)

Smart city is one of our biggest concerns as it is one of the best approaches to achieve sustainable development.

First of all, we created municipal information management systems and formulated the IT master plan. This is Banda Aceh Islamic Cyber City master plan because we are an Islamic society. Based on it, city staff created 83 applications. With the support from ADB and other organizations, 11 out of 41 agencies are now engaged in open data.

In order to boost ICT innovation, we adapt triple helix concepts, and we communicate and improve our relationship with universities and the private sector. As a result, cooperation with an Indonesian telecommunication company leads to application services such as the E-clinic, and 34 community groups participate in the Digital Innovation Lounge (DILo) established in October 2016.

Our future targets are the improvement in the role of the private sector in smart city, the development of capacity of our civil service, and the improvement of the supportive facilities and infrastructure.

Flávio Sancho de Almeida

(National Director, IT -Infrastructure and Access, National Institute of ICT (INTIC), Mozambique)

I would like to introduce the MOPA project implemented in Maputo with the support of the World Bank. This is an application which can help Mozambique solve the problem of the solid waste management based on IT solutions. It is an integrated application that combines internet and mobile services, which allows citizens to be part of the process of the waste management in Maputo City.

But now, we have challenges for the next few years. One is to deploy the solutions for the rest of the country, focusing on the municipalities. The second one is to develop and implement a program of municipalities as civilizations. The third one is to combine this initiative with other initiatives regarding ICT issues in Mozambique in order to make this sustainable. The last point is how the National Institute of ICT (INTIC) can help MOPA to achieve the goals that we propose.

I want to share with you three points that make part of the IT initiatives we are running in our country. First is the national government network to make citizens and municipalities communicate each other and to be able to share information in real time. Another initiative is the national data center, with which the INTIC can help MOPA keeping the data in a safe place. We also have the e-government which is on the way and want to integrate all those achieved standards developed in MOPA in the framework of e-government.

Constanza Beatriz Pacheco

(Project Manager, Smart Cities, Transport and Telecommunications Ministry, Government of Chile)

In our smart city unit, we work on not only technologies but also integrating innovation process with the government, universities, industries and citizens.

We have, for example, a project for innovative technological ideas about mobility, and our citizens participate in providing solutions to mobility needs in their city. We have mobile tools concerning traffic, which send users traffic information in real time. We provide open data services for citizens. And we encourage walking projects with an application showing the best pedestrian route for walking in the city.



Macricia Auguste-Bushell

(Economist, Department of Economic Development, Government of St. Lucia)

Castries is the capital city of St. Lucia, a small, developing island state in the Caribbean. Our challenge particularly is finding cost-effective solutions.

We have small public and private investment in the infrastructure, and the population decreases. We depend on tourism, whose profits flow overseas due to the high foreign ownership of the hotels.

The government of St. Lucia, in collaboration with the World Bank, developed a US\$15 million project. Its goals are to encourage private sector investments, to promote strategic public investment in infrastructure and to provide incentives for SMEs to improve their business. We still have long term challenges to address our wastewater management and to increase transport efficiencies.

Najib Ouradi

(Assistant Director, IT and Digital Transformation, Casa Prestations, Casablanca)

There is an initiative supporting the smart city, to which a research center of the university and two entrepreneurs in the IT sector contribute. We call this e-Madina, the smart city cluster, and Madina means a city in Arabic. This cluster is based on a 4-P model consisting of the city council and the central government from the public sector; the partnership of with the universities and the research centers; people, civil society and some independent experts; and the private sector. The goal of this cluster is to create collaborative smart city ecosystem for public and private actors. Another goal is to learn from other cities and the regions of the world who experienced the smart city initiatives. Several projects such as the formulation of the IT master plan, the smart village project and the virtual museum have already been launched.

Moderator

Alfonso Vegara

(Special Advisor for Y-PORT Center /
Founder and Honorary President,
Fundación Metr poli)

In this session, we saw the perspective of the technology companies, and at the same time, we saw the vision of different cities. We will try to match the two sides in the discussion. How can we accelerate the implementation of a smart city solution? Probably we need to have a lot of innovation also in financing these mechanisms. JICA and the United Nations, can you suggest any solutions?



Toshiyuki Iwama

(Executive Technical Advisor to the Director General of Infrastructure and
Peacebuilding Department, Japan International Cooperation Agency (JICA))

JICA is not only the financial institution but also we provide technical assistance. We would like to introduce these technologies in partnership with the private sector. Once we are certain that these can be applied in the real field, then we start financing and there is also another chance for the private sector to start with the bigger project.

Hideki Murakami

(Deputy Head, Investment and Technology Promotion Office (ITPO),
Tokyo, United Nations Industrial Development Organization (UNIDO))

Really, it is not so easy to connect needs and technologies. One of the reasons is a financial scheme. For that purpose, JICA or international financial organizations such as the World Bank or ADB might have a financial support scheme. UNIDO unfortunately does not have a nice financial scheme to provide, but can offer information and matchmaking opportunities. This kind of forum is a wonderful opportunity to know what companies can offer and what developing countries need.

In the development of smart city, the city government involvement is very important due to its strategy and its legal framework.

Moderator

Alfonso Vegara

(Special Advisor for Y-PORT Center /
Founder and Honorary President, Fundaci n Metr poli)

I remember a couple of years ago, Japanese Prime Minister said that Japan cannot grow inside although Japan is the second or third economy in the world. People are becoming older and almost all the infrastructure is already done. But the experience of building the infrastructure is very strong. I think it is very difficult to find other countries in the world with more knowledge, better technology, and experience than Japan.

I would like to ask representatives of the industry to provide your vision in relation with these three points. What are fundamental concepts and principles towards building smart cities? What are the main proposals or the main solutions applied to the development of smart cities? What are the technology trends and how are they applied to urban transformation? At the end we can have some feedback from the representatives of the cities.

Gen Takahashi

(General Manager, Global Business Development, Overseas Business Sector,
JFE Engineering Corporation)

The keyword is environmentally friendly or energy-saving for a smart city concept. Our solution proposal is similar to the answer for the first question, and it is also GHG reduction or the energy saving. The trends include various types of technology.

Besides these points, I would like to comment on a financial issue. It is easy to finance constructions of infrastructure because the result is very clear. Waste or energy saving issue, however, is a little difficult to understand the benefit, and often its scheme becomes not in good condition for the private sector to propose good solutions.

William Edwards

(Store Manager, IKEA Kohoku, IKEA Japan K.K.)

The fundamental concepts is a sustainable change in infrastructure and in everyday behaviors. To do that, it has to center around people. The technology trends are digital technologies, agriculture using genetic technology, and renewable energy.

Taisuke Yoshida

(Deputy General Manager, Global SI Service Business Development Division, NEC Corporation)

The keyword is the collaboration of stakeholders. They mean a research center in a university, banks, financial organizations, global and local enterprises, public organizations, and citizens and visitors. The second answer is fundamentally the lifeline but keywords such as the safety, cleanness and mobility are more important. NEC can offer technologies such as face recognition, the waste management, and the smart bus. The technology trend is that after gathering all sorts of information by digitalization, we can recommend, predict and allocate resources appropriately by using the big data engine and the AI technology.

Tomohiko Miyahara

(General Manager, CRE Business Development Group, Business Solution Division, Panasonic Corporation)

The first one is that in cooperation with residents and visitors, we must consider, at the concept phase, an operation system supporting each other after developing a city. I think that our main solution is to combine various technologies in cooperation among various companies. The last one is the use of natural energy and hydrogen energy.

Lei Zhou

(Partner, Automotive Sector, Deloitte Tohmatsu Consulting LLC)

Smart city concepts may differ depending on countries, but I think that the fundamental concept is to integrate energy and mobility into one platform. And we should customize the platform to each country. Building a platform, it is difficult whether data should be open or closed. I believe that the technology trend is the platform technology.

Akihisa Sakurai

(IBM Distinguished Engineer, Cognitive Solutions, IBM Japan Ltd.)

The fundamental concept is to build a data driven city. Main solution is how to get data and how to manage and analyze it. The technology trend for our company is cognitive solutions or the AI technology.

Moderator

Alfonso Vegara

(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

For the representatives of cities, how do you see the role of political leadership and community participation in achieving a smarter city?

Nicepuro Lauron Apura

(Mayor, Carcar City)

All leaders should focus on the smart city development and give their attention to the environment.

Maria Adelaida Coloma Lacsamana

(City Environment & Parks Management Officer, Baguio City)

We should govern effectively. Technology is important, but we should be people-centered and involve people in every phase. We should also develop in-house capacity.

Bahagia

(City Manager, Banda Aceh Municipality)

The government should show strong commitment for smart city and cooperate with universities, the private sector, and citizens.

Flávio Sancho de Almeida

(National Director, IT -Infrastructure and Access, National Institute of ICT (INTIC), Mozambique)

The government should be strongly committed to achieve a smart city. Another is the public and private partnership.

Claudia Namishan Labbe

(Director, Metropolitan Region Branch, CORFO Chilean Economic Development Agency)

A challenge for a developing country like us is the citizen education and engagement about the smart city. It is important for political leaders to bear in mind the long-term solutions. The investment from the government is a big issue. We may receive assistance from international institutions, but with the private sector we have had only pilot projects and nobody finances afterwards.

Macricia Auguste-Bushell

(Economist, Department of Economic Development, Government of St. Lucia)

We need the political commitment to develop a smart city strategy and also need the citizen engagement at every stage of the process to ensure that the smart city development continue, whichever political system is in place.

Najib Ouradi

(Assistant Director, IT and Digital Transformation, Casa Prestations, Casablanca)

The bottom-up initiatives should accompany with the top-down governmental vision. The short-term election cycle needs to be reconciled with a long-term strategic vision. As for technology, the key is knowledge transfer.

Moderator

Alfonso Vegara

(Special Advisor for Y-PORT Center /
 Founder and Honorary President, Fundación Metrópoli)

Five years ago, Singapore decided the strategy that it would become a laboratory of urban solution. The idea is to use external and internal resources and to experiment domestically and then to sell solutions abroad. Yokohama with Y-PORT project, Copenhagen and Bilbao in Spain are trying to do the same to be a reference for others.

Political leadership, creativity, citizen engagement, sharing future projects, creating an intelligent society are essential for implementing the technology.

**No.3****“Showcase of financial arrangement
 for smart city development”**

- ▶ It is expected that countries will further strengthen domestic resources mobilization, including through international support to developing countries to improve domestic capacity for tax and other resources collection. What has been done in the countries (and what has been countries' experience to share) to mobilize more domestic resources for smart city development? What constraints and barriers, if any, are being faced in the countries for such resources mobilization?
- ▶ Developing countries are expecting additional development assistance for implementing SDGs and COP21 Agenda. What additional funds (e.g. ODA, Green Climate Fund, and others) are being received by the countries and how they are being used for smart city development?
- ▶ It is clear that without mobilizing private sector funding, the SDGs and COP21 agenda cannot be successfully implemented. This is also true for meeting the financial needs for current and future needs for smart city development. What are the possible new ways of leveraging private funds and the financial instruments that has been used successfully (and that those which could be used but might need additional efforts, such as creating an enabling environment) for smart city development (e.g. PPP, domestic debt market, viability gap funding, use of capital market by encouraging risk guarantee, blended finance for higher risk projects, thematic bonds like green bonds, institutional investors and pension fund, etc.)?

Moderator

Bindu Nath Lohani

(Special Advisor for Y-PORT Center /
 Distinguished Adjunct Faculty and
 Board of Trustee Member,
 Asian Institute of Technology)

Looking at the situation in 2015 globally, SDGs and the Paris Agreement on climate change were agreed. And the city has become a very important agenda as 65% of the people will live in cities where 70-80% of GDP will come from and 50% of GHG will be emitted.

As for smart city development, considering SDGs, the needs for financing are very huge. The World Bank and ADB reported that it would be important for each country to generate and mobilize domestic resources. However, the countries expect more ODA and new types of funds such as Green Climate Fund. Of course, we need to mobilize the private sector resources as well.

In this session, I have three questions. Firstly, can you really mobilize resources for smart city development and what are the constraints? Secondly, you know there are good financial arrangements available from ODA, JICA, JBIC, ADB and the World Bank, etc., but why can't you use them? Thirdly, how has the private sector used the instruments including ODA? In which country does PPP go well? And how does your domestic bond market go?



Naoto Hisajima

(Counselor, Cabinet Secretariat, Japan)

In 2013, the Japanese government established a council on overseas economic cooperation and infrastructure strategies. This council set the goal to raise overseas infrastructure project orders by Japan to approximately ¥30 trillion by 2020 whereas in 2010 it was approximately ¥10 trillion. To achieve that goal, this council has identified five pillars of Japanese infrastructure export strategies: public-private partnership; development and exploitation of private enterprises and local governments and human resources; international standards; new frontier fields; and energy mineral resources.

And from the viewpoint of smart city development, the tools are contained in the strategies. The first one is the support for master plans and the feasibility studies projects. The second is the utilization of technical cooperation and grant aid. The next one is yen loans including new types of loans. Other public financing are available from JBIC and other governmental financing bodies such as JOIN (Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development) and JICT (Fund Corporation for the Overseas Development of Japan's ICT and Postal Services Inc.).

Japanese government announced in 2015 the partnership for quality infrastructure, which was expanded in May 2016 to stimulate private financing to make more infrastructure projects overseas.

Mr. Akihiro Tsuchiya

(Director, Multilateral Development Banks Division, International Bureau, Ministry of Finance, Japan)

We specialize in the finance side of important infrastructure development issues. To achieve the SDGs and the Paris Agreement, three keys are DRM (Domestic Resource Mobilization), public sector resource mobilization and incentives for the private sector.

The Japanese government provides finances and capacity development support to developing countries for DRM, working together closely with OECD, IMF, World Bank, ADB. Those institutions are also the key sources of public financing. MDBs are all in the replenishment phase. So I believe that finance from the public sector will increase. And it is important to provide de-risking measures in order for private investors to feel safety to step into rather riskier infrastructure projects.



Takao Imafuku

(Director for Development Assistance Policy Coordination Division, International Cooperation Bureau, Ministry of Foreign Affairs, Japan)

The Asian region needs a huge amount of infrastructure development and financial resources for it to unleash its potential aid to continue to be a growth center that leads the world economy of the 21st century. It is important to ensure the quality of infrastructure in order for governments to achieve sustainable development. Against these backdrops the Japanese government has announced two initiatives. First one is as Mr. Hisajima already mentioned, the partnership for quality infrastructure (PQI) and another one is the expanded PQI initiative. And In May, G7 Ise-Shima Summit was held in Japan and G7 leaders adopted the G7 Ise-Shima principle for promoting quality infrastructure investment.

Japan has three types of ODA schemes. The first one is ODA based on request from a recipient country. The second one is grant assistance for grassroots human security project, we called it GGP project. The third one is ODA utilizing knowhow of Japanese local governments.

Masashi Kishioka

(Director, Division 2, Social Infrastructure Finance Department, Infrastructure and Environment Finance Group, Japan Bank for International Cooperation (JBIC))

We provide finance – this is not an ODA but a kind of semi-commercial loans. The first one is the export loan for the importers who purchase Japanese items from Japan. The second one is the overseas investment loan that provides finance to Japanese companies who are working outside Japan. Thirdly, we also have untied loans where Japanese involvement is not actually required. Fourthly, we also provide equity investment when Japanese companies make investment to overseas projects.

I introduce two examples. Example one, this is the project that we are now working in India where we provided equity to our company called DMICDC. DMIC is Delhi Mumbai Industrial Corridor, and India and JBIC set up this company to encourage participation of Japanese companies into infrastructure projects in the area. Example two, this is JBIC finance for climate change protection, what we call Green Facility. It is the facility where global warming protective projects are to be introduced. JBIC provides finance to intermediary bank or financial institutions, then those financial institutions provide finance to eligible projects.

From this October, we began to provide refinance in order to expand the quality infrastructure projects.

Toru Ishikawa

(Director, International Affairs Office, City Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan)

As the Japanese government promotes the export of infrastructure, we support it in terms of the infrastructure. I belong to City Bureau and I am in charge of the overseas expansion of urban development. In the urban development, we do not necessarily use ODA but support the overseas operations of the private sector. The operations of a single company carry a high risk, so we support Japanese companies aiming at the overseas operations by establishing an association. Also, financial risk is high, therefore, we have created a new mechanism for financial support, JOIN.

Tsutomu Sudo

(Manager, Project Department, Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development (JOIN))

In 2014, our company was jointly established by Ministry of Land, Infrastructure, Transport and Tourism and private companies engaging in transport, urban development and infrastructures. We are the first and only fund in Japan for infrastructure investment for transport and urban development. We were established in order to support the operations of Japanese companies in terms of investment and contribute to overseas infrastructure development. We are investment fund, however, we secure necessary funds in cooperation with Japanese public financial institutions such as JICA and JBIC. We implement hands-on support other than investment, such as technology transfer and human resources development. We have 21 billion yen of capital and 110 billion yen of investment capacity. Our business covers railroads, high-speed rail, urban transportation, toll roads, bridges, shipbuilding and ocean business, port development, airport development, urban development, transportation and logistics, etc.

Now, we invest in five support projects such as Thi Vai International Port in Vietnam and make a master plan of region-wide development of the former Clark U.S. base in the Philippines.

Amr J. Qari

(Principal Public-Private Partnership Specialist, Office of Public-Private Partnership, Asian Development Bank (ADB))

I would like to touch on two themes. The first is what sponsors for PPP project think about before they decide to bid on PPP tenders in emerging markets. And the second theme is how ADB is supporting PPPs in our developing member countries.

I explain the first theme. Firstly, what is the certainty that the government will actually go through with the procurement? The second aspect which is very important for sponsors is their chance of actually winning a particular tender. Then a pipeline of projects coming through which are bankable. The next is risk allocation. And they are looking at the environment for long-term enforceability of contracts and transparent procurement.

The second theme. Multiple departments in ADB work in a synergistic fashion to advance the cause of PPPs including capacity building, grants and loans for technical assistance. Then, for specific PPP transactions we are able to come in both through our sovereign and non-sovereign window with long-term financing. Also, we offer transaction advisory both to public and private sector clients. We have also set up the Asia-Pacific Project Preparation Facility to bring in private investment into infrastructure projects. Within our developing member countries, it can be applied by the central government, the local government as well as state-owned enterprises in the key target sectors such as energy, transport, urban development, social infrastructure.

Naoki Mori

(Principal Researcher, Senior Coordinator for Sustainable Finance, Program Management Office, Institute for Global Environmental Strategies (IGES))

Green bond is a very good tool to mobilize private capital to low carbon and resilient infrastructure development at the municipality level. Globally, the green bond has been issued about more than US\$40 billion in 2015. And this year it is expected around the double size. Issuers with the green bond are usually development banks and sometimes private banks and also utility companies as well.

I observed three drivers for the potential of the green bond in the future. One is the strong push by G20. Second driver is the development of voluntary green bond guidelines. The third driver is the change of attitude or behaviors by investors, who have adopted the principles of responsible investment.

At the municipality level, the green bond has been issued around US\$4 billion in 2015, but they are limited in the developed countries. In Japan, Tokyo Metropolitan Government just announced that they are trying to issue a pilot green bond.

One of the challenges for the green bond is the lack of quality in green definition. And many developing countries need to develop the bond market or capital market first of all.

Tomohide Oyama

(Manager, Structured Finance Division, Project Finance Office, Asian Origination Team, The Bank of Tokyo-Mitsubishi UFJ, Ltd.)

Out of several major schemes, infrastructure funding that requires a long investment is particularly important. And project finance is the most suitable for the mobilization of private funds into infrastructure development. There are some major features of project finance that we have to take into account to make it realize. One is that the credit is solely depending on the project cash flow, not balance sheet of the project owner. The persons or the organizations who can purchase the service or the goods from the project are extremely important when we think about the project finance, because they are the provider of the cash flow to the project. In smart city development, organizations who will purchase such a service from the project is generally a local government or state owned entities. Therefore information disclosure of such a local government or state owned-entities is really important, otherwise we need to seek an external rating by the international rating agencies.

Toyoomi Shimamura

(General Manager, Public & Financial Institutions Banking Department, Wholesale Banking Unit, Sumitomo Mitsui Banking Corporation)

Our growth industry cluster department is focused on smart city transaction. In the global market, they are working on infrastructures, eco-friendly and alternative energy, water, environment and healthcare sectors.

Our approach for the smart city transaction is to implement the market research, feasibility study, and planning, and finally in the construction stage we can provide the financing if the project goes well. You can see there are lots of corporate finance and real estate finance and project finance and other ecotype loans. We have sufficient experience in the project finance, especially in infrastructures.

Moderator**Bindu Nath Lohani****(Special Advisor for Y-PORT Center / Distinguished Adjunct Faculty and Board of Trustee Member, Asian Institute of Technology)**

Firstly, what we have heard from the public sector presentations is the ODAs from Japan. I have my own observation that for the last 30 years Japan has enhanced quite a bit of the instruments available for the infrastructure development globally and definitely in the Asia-Pacific region. Secondly, we have noticed various kinds of instruments including PPP which look so obvious but don't happen. Following the next presentations from countries, we will see which of the instruments could match.

We must think how to turn these investments into smart city needs. New instrument discipline is required from the government side to make these things happen. I did not hear much about the municipal bond. The local governments should be rated better. Returns are so low nowadays in this global time and institutional investors would like to invest in infrastructure project which could give you 7%-8% returns. And political risk guarantee is necessary for the private sector.

We can have discussions on this from the government side. What do you think?

(A comment by a participant)

In India, the central government declared that they develop 100 smart cities. There is a huge demand for the smart city, especially on the finances and on the technology side. I realized that people were skeptical of accepting the technological part, but nevertheless it is very, very important. And in the local governments, the management of finance has not been successful so far, and this is one area where Japan can provide technical assistance.

Vasant Premanand Prabhu**(Deputy Municipal Commissioner, Municipal Corporation of Greater Mumbai)**

Urbanization has continued in Mumbai in India. India may be the epicenter of the next urbanization. Through the urbanization, we get innovation ideas, people generate more opportunities. But we have problems. This comes as heavy density populations and a shortage of infrastructure compared to population. There are inadequate funds. Our capital investment percentage comes around 50% to 58%. There is no investment, so there is no income. There is no income, so again there is no infrastructure funding. This is a vicious cycle.

What did we do? One is a fungible floor space index (FSI) and second is a capital value-based property tax. These two developments have increased our income tremendously. We suggest to carefully select underdeveloped areas and make a huge capital investment in infrastructure which will give a continuous return in the future.

Ahmed Bin Parvez**(Project Analyst, GPSURR South Asia Region, The World Bank)**

The Dhaka South Mayor elected in 2015 made a commitment to the rejuvenation of public space in the neglected riverside. The Dhaka South City Corporation decided to receive technical assistance for feasibility studies from the World Bank. The city has also proposed to the Bank a US\$200 million project of public amenities on the riverfront.

In 2009, the Bangladeshi government established BMDF (Bangladesh Municipal Development Fund). In collaboration with various donor agencies, it provides some amounts of money for the local governments' projects.

**Rehman Roshan Baig**
(Minister, Urban Development and Haj, Government of Karnataka)

Karnataka is looking for assistance from the Asian Development Bank to improve the underground drainage, which may require more than US\$150 million to cover the entire state.

Moderator**Bindu Nath Lohani****(Special Advisor for Y-PORT Center / Distinguished Adjunct Faculty and Board of Trustee Member, Asian Institute of Technology)**

JBIC, JICA and the Japanese Embassy in India may also be possible contact window for your project as well as the ADB.

Stuart Robert Kay**(Chief Sustainability Officer, Executive Management, GreenPlace Assets)**

I agree that there is a great opportunity for green bonds, we do a lot in energy retrofit opportunities. I would suggest that Tokyo Metropolitan Government adopts green bonds on all of their assets, which would be a great statement to the market ahead of the Olympics.

Moderator**Bindu Nath Lohani****(Special Advisor for Y-PORT Center / Distinguished Adjunct Faculty and Board of Trustee Member, Asian Institute of Technology)**

As for finance, if the central government guarantees, can the local government receive the necessary finance?

Vasant Premanand Prabhu**(Deputy Municipal Commissioner, Municipal Corporation of Greater Mumbai)**

We can receive the finance, but the issue is the implementation of the projects, then how to use that financial assistance and again the repayment. There should be return on investment and we can repay all the things.

Moderator**Bindu Nath Lohani****(Special Advisor for Y-PORT Center / Distinguished Adjunct Faculty and Board of Trustee Member, Asian Institute of Technology)**

The tax goes to the central government everywhere and the central government does not give you enough. If a city does not have enough money to manage its own asset, what about to privatize it by using a PPP model?

Vasant Premanand Prabhu

(Deputy Municipal Commissioner, Municipal Corporation of Greater Mumbai)

I will give you two examples. We have changed our property tax from ratable value to the capital value. For this we had to fight nearly 10 years. The second one. We started our metro by our private operators. Initially, the charge was 40 rupees. Then again we had to bring it back to 10 rupees and 20 rupees per ticket. And we had to pay the subsidies.

Amr J. Qari

(Principal Public-Private Partnership Specialist,
Office of Public-Private Partnership, Asian Development Bank (ADB))

One of the contributions that ADB was making is offering these partial credit guarantee mechanisms right alongside IIFCL (India Infrastructure Finance Company Limited). Through these partial credit guarantees, we have enabled local Indian banks to offer first loss guarantees to bond investors. That was very innovative.

(A comment by a participant)

While the Japanese companies are very interested in EPC (Engineering, Procurement, Construction), they are not very keen on PPP – BOT (Build, Operate, Transfer) projects. They are insulated from the business risk and need a slightly more preferential treatment than the domestic infrastructure companies. Secondly, when it comes out to the bidding, none of these Japanese companies ever end up winning because they are very costly.

Moderator

Bindu Nath Lohani

(Special Advisor for Y-PORT Center / Distinguished Adjunct Faculty and
Board of Trustee Member, Asian Institute of Technology)

Exactly what I would think is, therefore, you should do EPC. Have you tried it?

(A comment by a participant)

When it comes to EPC, Japan is not the only participant out there. For matters of commercial viability, Japan quite often loses out. One has to override that commercial consideration to get Japan into the picture.

Moderator

Bindu Nath Lohani

(Special Advisor for Y-PORT Center / Distinguished Adjunct Faculty and
Board of Trustee Member, Asian Institute of Technology)

I would like to know a little bit more about the hands-on funding. They do not want to only give the money but they want to take it to implementation, etc.

Masashi Kishioka

(Director, Division 2, Social Infrastructure Finance Department,
Infrastructure and Environment Finance Group,
Japan Bank for International Cooperation (JBIC))

As for now we have not much taken risk of municipal government, especially because it is very difficult for us to assess their credibility and also because the major revenue of municipality is local currency. We are now trying to expand the assessment capability in order to provide more finance to such municipalities.

Akihiro Tsuchiya

(Director, Multilateral Development Banks Division,
International Bureau, Ministry of Finance of Japan)

How to finance local governments is a big issue also in Japan. They collect local taxes. In addition to that, local governments receive a transfer from the central government. And as the moderator said, cities and prefectures issue bonds. I assume there must be an implicit central government guarantee.

Moderator

Bindu Nath Lohani

(Special Advisor for Y-PORT Center / Distinguished Adjunct Faculty and
Board of Trustee Member, Asian Institute of Technology)

Once again, it is essential that the central government or the federal government guarantees the local governments. When you have more credibility, it goes well.



No.4

“Knowledge management for smart city development”

- ▶ What kinds of specific knowledge are required for decision-makers, practitioners, and stakeholders, respectively, for smart city development?
- ▶ What are barriers to such knowledge capture, sharing and use? And what are your recommendations to facilitate knowledge transfer and timely knowledge application in city development process? Are there good examples of knowledge platform established and managed at city level?
- ▶ What roles have peer-to-peer learning played in the cities' development and how to make the twinning program more effective in the long term perspective? Very often, these programs are limited in scale and impact and are viewed as good marketing/publicity exercises rather than having long term impacts.

Moderator

Gil-Hong Kim

(Senior Director concurrently
Chief Sector Officer,
Sector Advisory Service Cluster,
Sustainable Development &
Climate Change Department,
Asian Development Bank (ADB))



I understand you already prepared your presentation, but if possible, please focus on three topics. Firstly, what kind of specific knowledge we are talking about in terms of smart city development? Secondly, what are the major barriers or constraints to share or to capture or use such kind of knowledge for smart city development? Thirdly, in terms of knowledge sharing or core practice sharing, one option is peer-to-peer learning or twinning program. How can we do better to make this twinning program or peer-to-peer learning program more effective for smart city development?

Daniel Levine

(Senior Operations Officer / Team Lead,
Tokyo Development Learning Center (TDLC), World Bank Group)

TDLC is a partnership with the government of Japan and the World Bank. We are a part of the Social, Urban, Rural and Resilience Global Practice which manage roughly 250 projects of about US\$24 billion.

Last year we introduced the City Partnership Program within Japan. We are delighted to see Kitakyushu, and of course Yokohama are selected members. This is the era of the cities. We can no longer just look at a particular sector or theme, we have to address the challenges at the city level. We are working in terms of how we can actually package tacit knowledge to the context that the clients can utilize. We do also joint research, case studies, and Technical Deep Dives which are similar to study tours but more structured and intense in terms of the learning environment and the sequencing of the learning.

Ryo Ishii

(Manager, Cities Solution Center Japan, PwC Advisory LLC)

A smart city should be sustainable, resilient and livable, but there is a gap between the ideal and reality in terms of the smart city. To fill the gap, we need to share our smart ideas. There are three kinds of knowledge that we have to share. The first one is the issue. The second thing is the solution, which should include the technology, a finance scheme, and a new policy system. The third and the most important one is the vision. And then, with whom do we have to share the knowledge? They are the central government and the local government, citizens, and large companies and ventures. I said ventures, because now and in the future, the value of prototyping will be important.

Kengo Ishida

(Chief Executive in charge of International Environmental Strategies,
Environment Bureau, City of Kitakyushu)

Kitakyushu established the Asian Center for Low Carbon Society in June 2010 in order to promote low carbon development in Asia from the perspective of environment business and by taking advantage of local resources such as the city's experience in overcoming pollution. The center has implemented 141 projects in 57 Asian cities together with 106 companies and universities.

In order to effectively promote these initiatives we created the Kitakyushu model, a compilation of Kitakyushu's knowledge. We use the Kitakyushu model to support the development of a master plan for green cities that are being promoted by cities in Asia. In these initiatives we are taking an approach to respect the historical, social, and economic background of each partner city. We aim to create a cordial relationship with such cities. I would like to introduce the case with the City of Haiphong in Vietnam. The two cities concluded a sister city agreement in 2014. Haiphong will improve its urban environment based on the green growth promotion plans which Kitakyushu offered a support for the development of.



Ye Lwin

(Mayor, Mandalay City)

Myanmar, which had been a wealthy country in the Southeast Asia, went down to the least developed country status in 1987. Now it has become the bottom of the world's countries and cities.

I started my office in April this year, and launched the ICT structure development projects, including

the community Wi-Fi system and the upgrading from 3G to 4G. I also integrated the land management and information systems, and one-stop service system for water supply, public transportation, solid waste management and taxation.

Evelyn Nacario Castro

(Director, Program Management Office,
Research Program & Organizational Development,
Metro Cebu Development & Coordinating Board (MCDCB))

In emerging economies, the demands and pressures of metropolitan management continue to increase, and often overwhelming local capacities and resources. Therefore, we need collaboration in the arena of planning, policymaking, development, capacity building, knowledge management, etc.

We have five focal themes where the specific knowledge requirements revolve - integrated development and spatial planning, traffic and transport management, solid waste management, water supply, septic and sewerage management, and disaster risk reduction and management. But in Cebu there is still a lot of silo oriented planning and decision-making and we do not have a permanent mechanism to share knowledge, and MCDCB is working on it.

Ilangange Vipulaguna Premalal Dharmawardhana

(Chief Municipal Veterinary Surgeon, Municipal Veterinary Department,
Colombo Municipal Council)

Our concerns are good governance, the public private partnership and the well planned systemic development. What we implement first is a good governance and the ICT knowledge. From the beginning of December we will start the civic participation system.

We are now engaged in the development of roads, improved environment and the good health of the people, and the challenges are the financial and human resources and the sustainable political commitment.

Mae Elaine Tantengco Bathan

(Executive Secretary / Chief of Staff, City Mayor's Office, Mandaue City)

One of the innovations that the city engaged in is the implementation of good governance reform program which we call the performance governance system or PGS. This technology uses a balance scorecard system which is new in the local government units. With the help of PGS, Mandaue has established a shared vision for the community. We were awarded the 2016 Seal of Good Governance for these initiatives by our Department of the Interior and Local Government. We were also awarded during the APEC 2015 for our green building code and other initiatives to further the environment and update our comprehensive land use plan. Our city offers tax holidays for those who comply with our green-building code. We also house several educational institutions and each year we produce graduates who are highly skilled and competent.

Kristine Vanessa Tadiwan Chiong

(Mayor, Naga City)

We adopted and implemented a program, the community-based monitoring system (CBMS) in partnership with the Department of the Interior and Local Government and the Cebu provincial government. CBMS is a powerful tool to diagnose poverty. We collect data and build up the CBMS database and utilize it to formulate short, medium and long-term development and investment plan. Also, members of the community are engaged and become involved in the CBMS whole process. We use mapping software to facilitate CBMS-based poverty mapping and enhance delivery of city services. It contributes to attaining the sustainable development goals and providing a comprehensive picture on the extent of poverty at the grassroots level.

A message from the City of Naga is that knowledge management is very crucial and our challenges are that we do not have any competent or capable people to gather data and that we must change not only systems but also the mindset.

Lakambini Generans Reluya

(Mayor, Municipality of San Fernando)

It is the paramount duty of the local government unit to increase the sense of awareness and understanding on disaster management. The Philippines is highly prone to earthquakes and within the Pacific typhoon belt. Climate change leads to worsening occurrences and impacts of disasters.

Under the municipal disaster risk reduction management office, we established the emergency command center. It is a multi-sectoral approach to achieve organizational objectives by employing the best use of knowledge and full utilization of resources. Also, we invest in increasing capacities of the people to enhance our functions.

Vallop Suwantee

(Chairman of Advisers to Governor of Bangkok,
Bangkok Metropolitan Administration)

There was flooding in Bangkok in the 2011. First of all, it was due to the mismanagement on the water control of all governmental agencies. And one of the other factors was encroachment on the public waterways.

There are 1682 canals in the total city of Bangkok. A great number of the governmental agencies own plots of lands along the public waterways. However, without coordination, they cannot constantly check whether they have encroachers. The political parties have been very reluctant to tackle the problems.

Bangkok Metropolitan Administration implemented the civic or community engagement. We talk with the people, have some co-researching projects, do some co-planning, and let them self-manage. Moreover, with the Ministry of Social Development and Human Security, we formed a saving and credit cooperative. As a result of these initiatives, new houses were built along the waterfront.

Hidefumi Imura

(Professor, Global Cooperation Institute for Sustainable Cities,
Yokohama City University)

My question is how to connect this city to city cooperation and university to university cooperation. Yokohama city has a long history of cooperation with the city of Penang in Malaysia. At the same time, Yokohama City University is promoting cooperation with the University of Science, Malaysia located in Penang. JICA adopted one project for grassroots cooperation in urban development between Penang and Yokohama city. In this way, university has the potential to be involved in the cooperation between cities. Now this is just an example of bilateral cooperation, maybe we can expand these schemes to multilateral cooperation.

Because Yokohama City University is situated in the big city, Yokohama, we have very modern technology showcases of urban planning, the construction and management of urban infrastructures, etc. We would like to transfer our knowledge to cities in the world. In 2009, we formed International Academic Consortium for Sustainable Cities (IACSC), a multilateral operation scheme of universities in Asia. Its main activities right now is cooperation in research. At the same time, we are developing some pilot education and projects which we call SUDP, Sustainable Urban Development Program and YUSS, Yokohama Urban Solution Studies.

Ryokichi Hirono

(Special Advisor for Y-PORT Center / Professor Emeritus, Seikei Univeristy)

In 1974, I attended the meeting on urban development held by the World Bank. People were much concerned about the physical aspect of development. Then I found that returning to Tokyo, maybe software is equally important as hardware. Therefore, in Musashino City in the suburb of Tokyo, with a population of about 140,000 people, I started off with some kind of software concept of so-called smart city.

The first one is people participation in city building. Then there is always a tremendous opportunity for bringing all kinds of things. To share the vision, joining with people, we drafted what we call, self-governing charter in 1976. The second one is policy. We needed to make planning. Joining with our citizens, we came up with so-called long term development plan. For participation, people had to be healthy, so we created good health and good social security benefit in the city. Then, number three is integration, in short, equity and empowerment. And we monitored and evaluated what every stakeholder in the city had done, as we focused on the efficiency not to waste our resources. The last one is transparency. We had built so many indicators for transparency in our city.

It is important to be sustainable not only environmentally, but also economically, financially, socially and culturally.

Shaik Aleem Basha

(Commissioner, Kakinada Municipal Corporation)

Kakinada city, with a population of 400,000 people, was selected for one of the cities to develop the smart city by the Indian government. We have a couple of issues for smart city development. We need to address the low economic development of more than 40% of our people whose livelihood options have to increase. We also require support for the provision of infrastructure as well as its maintenance, and the capacity development is needed for our local staff. We would like to have technical city to city collaboration with Yokohama and the TDLC of the World Bank.

Takalani Edward Rathiyaya

(Deputy Head, Economic Development and Investment Promotion, Ethekwini Metropolitan Municipality (Durban))

We have created what we call municipal learning initiative. We integrate everything that we learn as the city of Durban into programs and we share them with other municipalities not only in South Africa but across Africa.

I was astonished to hear that we were talking about the same issues back in 1974 as today. It means that those challenges are not going away and we need to continue to work on urban development and improvement of our people's quality of lives, and the opportunities to learn and share with other cities help us become smarter and competitive.

Moderator

Gil-Hong Kim

(Senior Director concurrently Chief Sector Officer, Sector Advisory Service Cluster, Sustainable Development & Climate Change Department, Asian Development Bank (ADB))

We have gone through 14 panelists to share their views on what kind of knowledge is required for smart cities and what kind of challenges each city will face, and what kind of recommendation we can implement. And also we see good practice we can share in various cities.



Plenary Meeting

Opening Speech

Fumiko Hayashi
(Mayor, City of Yokohama)



Many of Asian cities face common challenges such as the population explosion. The nature and the phase of development vary depending on cities. Against the background, the ideal city common to all the cities is the smart city. These days the technology of the smart city makes remarkable advance. The needs of the technology, however, vary according to cities. The most important element for establishing the smart city is not the technology itself but people who choose and use it. Along with citizens, companies, and organizations concerned, we, leaders, should draw a road map on the smart city which is the most suitable for our cities and choose the most effective technology.

Asian cities show a wealth of personalities, and this diversity is the source of dynamism. I hope to deepen our discussion to realize together the growth of Asia filled with diversity.

Now, COP22 is being held in Marrakech, Morocco. We plan to report the "Yokohama Declaration", which we wrap up the discussions of the conference today, to COP22 on its last day. I would like to collaborate more and more with all who are here today to send a hopeful future to the generation that will forge the coming years.



Keynote Speech

Kiyoshi Odawara
(Parliamentary Vice-Minister
for Foreign Affairs, Japan)

Recently we have seen the emerging economies develop remarkably. On the other hand, needs for solving urban problems are increasing rapidly. These problems are what Japan experienced and overcame

during the era of rapid economic growth and Japanese municipalities have accumulated the know-how to deal with these problems. Advanced technology which Japanese companies have will not only solve urban problems, but also promote building cities that are environmental-friendly, convenient and efficient, around the Asian region. Japan is willing to share our wide experience and cutting-edge technologies with Asian countries.

Since huge needs for development of infrastructure have emerged in Asia, the roles of municipalities which have knowledge and experiences, and companies which have excellent technology, are becoming more and more important. One of the pillars of the new Development Cooperation Charter developed by the Japanese government in 2015 is to promote development cooperation with municipalities or through Public-Private Partnership. Japan made a framework where Japanese municipalities take the initiative in proposing and participating in grant aid to developing countries. In addition, with ODA, Ministry of Foreign Affairs of Japan is supporting, with JICA, SMEs' overseas business activities which are addressing the challenges of development with their advanced technology. Japan hopes that Asian municipalities, who play the leading role in urban development and whose representatives are here today, actively use these frameworks, and that smart cities will be further promoted in Asia.

Hiroshi Kamagata
(Director-General,
Global Environment Bureau,
Ministry of the Environment, Japan)

Following the global movements such as the 2030 Agenda and the Paris Agreement in 2015, the role of the city becomes more important. In May 2016, The G7 Environment Ministers' Meeting was held in Toyama. In regard to the role of the city, more support for advanced efforts, promotion of city to city collaboration, mainstreaming the urban role, etc. were summarized by the chairperson. Japan will continue to work on international cooperation projects using collaborations among cities in order to promote positive efforts by cities aiming at a shift to the sustainable society.

As the role of the city grows, we work on various projects towards smart city development. We have been actively working on city to city collaboration aiming at forming JCM projects in order to support low carbon urban development in developing countries. As financial support for project implementation, we have subsidies for offering excellent low carbon technology, products, and systems overseas. In addition, we established the Japan Fund for the JCM in the Asian Development Bank (ADB), a mechanism for supporting funds in introducing advanced low carbon technology. As for knowledge management, we have held high-level seminars to support the realization of environmentally sustainable cities since 2010 in cooperation with ASEAN Secretariat.

At COP22 held in Marrakech, Morocco in November 2016, we announced Japan's Assistance Initiatives to Address Climate Change. The purpose of the initiatives is to promote the implementation of the Paris Agreement in developing countries, fully utilizing Japanese technologies and experience in the area of climate change. In addition, in order to expand adaptability by sharing knowledge and experience, we established Climate Change Adaptation Platform, Japan in August 2016. This platform aims at gathering information on the impacts of climate change in the Asia-Pacific region and developing this platform into adaptation platform in the Asia-Pacific region, having an international hub function on the adaptation.



Roundtable Session



Moderator

Hideyuki Mori
(President, Institute of Global Environmental
Strategies (IGES))

In this session, we are going to have summary presentations of the thematic meetings, three more presentations, a quick polling session, and then a wrap-up.

Summary of Thematic Meetings

Thematic Meeting 1

“Showcase of best practice of smart city management”



Mary Jane Crisanto Ortega
(Special Advisor for Y-PORT Center /
Special Advisor of CITYNET)

I am going to summarize each panelist’s presentation. First, we had Da Nang City, and with Yokohama City, they were able to have four urban development forums. The next one was Kathmandu Metropolitan City, which was able to reduce the use of paper in their city government down to 20%. The mayor also said, “Smart city cannot be smart without smart citizens” , which was later followed by the representative of Bhopal saying, “Smart city cannot be smart without smart and happy citizens.” Cebu City solved the problems of traffic, etc. by PPP. La Consolacion City was able to bring down poverty from 27% to 15% by education. Andhra Pradesh said they have three smart cities out of the 100 in India. Phnom Penh, Cambodia used advertising on the public bus. Bhopal has solar rooftops. Tunisia said, “We want governance management sustainability.” From the Japanese government, Cabinet Office mentioned a declining population, that they vitalize the economy outside of Tokyo. Ministry of Economy, Trade and Industry talked about recycling and a diagnosis for a sustainable city. UN-HABITAT introduced how the cities relate to the SDGs. As for the private sector, Finetech was expected by most of city representatives.

Thematic Meeting 2

“Showcase of private sector technologies and solutions for smart city development”

Alfonso Vegara
(Special Advisor for Y-PORT Center /
Founder and Honorary President,
Fundación Metròpoli)



We had financial organizations and international organizations, private companies, and then representatives of different cities. How technology companies can help cities to become smart cities was one of the key issues. We need to connect the private sector and cities to match and to look for mechanism to help in implementing digital solutions. Probably, the key in the future is connecting digital solutions with the physical design of the city. We had different comments about the role of Japan in this challenge of building a sustainable future. Japan is the third economy in size, but we were discussing that Japan needs to grow abroad. And cities in Japan like Yokohama can be a reference for other cities of the world to learn of a smart city concept. It is also a fantastic contribution of Yokohama to organize this meeting to share knowledge and to bring together the industry, international organizations and cities. We need to look for creative mechanism to finance today the technology of the future. In our session, we had different specific technical solutions. The international organizations gave different suggestions and proposed mechanism of connecting cities and the private sector for the radical transformation of cities in the future.

Thematic Meeting 3

“Showcase of financial arrangement for smart city development”



Bindu Nath Lohani
(Special Advisor for Y-PORT Center /
Distinguished Adjunct Faculty and
Board of Trustee Member,
Asian Institute of Technology)

I asked three questions. First, what are the constraints of the domestic resource mobilization? Number two is what is happening to the ODA? Third one is how to mobilize the private sector. I would like to give you three takeaways from this. First Japan has so much commitment to infrastructure development and the enormous amount of asset available. That means there are more resources that you can tap on from Japanese institutions. They have also introduced new and innovative instruments. And as for multilateral institutions, their capital base has increased and they can do more lending also. There is also willingness on the part of multilateral institutions to have greater use of the instruments they have like PPP. Project bonds are also possible. But it was noted that some of the traditional instruments like municipal bond in developed countries have not been very successfully used in many of the developing countries. The third point is on financing local governments for smart city development. There are resources available, but local governments cannot borrow as much as they would like to. Therefore, the conclusion in our discussion was that the role of the central government becomes very important, and that you need to borrow at the federal level or the central government need to guarantee municipal bonds for some time until those institutions become mature.

Thematic Meeting 4

“Knowledge management for smart city development”

Gil-Hong Kim
(Senior Director concurrently Chief Sector Officer,
Sector Advisory Service Cluster,
Sustainable Development &
Climate Change Department,
Asian Development Bank (ADB))



We discussed in our session to cover three topics, one is what kind of knowledge we are talking about for smart city development, and the second is what is the barrier or constraint for such knowledge management. Then the third point is what is a good practice or some recommendation. First, one is integrated planning with a multi-sector approach. We also need sector specific knowledge on the emerging issues such as climate change issues, etc., as well as financial management and good governance issues. The last but not least, it is important for leaders to establish or to prepare vision for city development and to share the vision with the citizens. As for the second point, we heard comments such as: there is silo mindset, the capacity for analyzing data is very limited, many agencies do not have any institutional system to support more information gathering and sharing, and we have limited commitment from decision makers. Then what are recommendations to address the constraint? We discussed a very clear vision backed by good data and institutional capacity, commitment or proactive participation from different groups. Then, transparency in gathering data and sharing

knowledge. Also, the importance of the pilot, and twinning program and peer-to-peer learning program. Various good examples were presented, such as community based monitoring system in Naga City, citizen engagement in Bangkok, etc.. ADB is also working on knowledge sharing with Yokohama by an integrated, long-term approach under our Future City Program, which we hope to present at our 50th Annual Meeting in Yokohama next year.

In summary, smart city development can be customized to each city's situation. The second point is that citizen participation, information and knowledge sharing is very important. The third point is that knowledge sharing should be connected to actual practice and investment program.

Special Presentations



Barjor Mehta (Global Lead, City Management, Governance and Finance, The World Bank)

I would like to talk about the 5th Technical Deep Dive on the Smart City held between November 14th and 18th in Tokyo and in Yokohama. The Technical Deep Dive takes one subject and goes deep into it. This time, 34 participants came from 9

countries, 12 cities. We are in the middle of a historic transformation of urbanization and a continuous revolution of ICT, and these two intersect in the smart cities. We believe that the smart cities are important to reduce poverty and to share the prosperity.

We selected four thematic areas. In the first thematic area, they focused on quality infrastructure. The second thematic area was the urban challenges of ensuring citizen engagement. The third thematic area was on the public and private collaborations which are absolutely essential. The fourth thematic area is how smart cities can generate economic benefits for all their citizens. The emphasis has been on peer-to-peer knowledge exchange and that is why the Japanese government established the City Partnership Program, where cities can visit Japanese cities where successful implementation has happened.

Laxman Perera (Human Settlement Officer, Regional Office for Asia and the Pacific, UN-HABITAT)

We have had dialogues on urbanization over the last 3-4 years. The preparation of the next urban agenda started at the national level, and then went up to the level of regional and then global platform, Habitat III, which was held in this year, October, in Quito, Ecuador. The UN member countries, after the SDGs adopted in the previous year, met and agreed upon a corrective vision, a political commitment to deal with urbanization in next 20 years. This was a kind of development agenda for countries. We discussed how we are going to deal with key areas such as fulfilling social functions and how we are going to resolve them within the framework of urbanization. We focused on key principles and commitments by urban practitioners, civil society organizations, etc. We adopted the three principles: the inclusive approach, environment sustainability, and sustainable inclusive economic growth. And the role of cities was brought as the center of the new urban agenda. There are a few thematic areas that have been identified within the new urban agenda: How science and technology can be integrated into the urbanization, and innovations and knowledge-sharing.

The next step is to link this new urban agenda to countries, cities, and communities.



Yasuyuki Akimoto (Executive Director for FutureCity Promotion, Climate Change Policy Headquarters, City of Yokohama)

I would like to talk about how the City of Yokohama has implemented historical, cultural, and people-centered urban development other than utilizing technology.

The turning point was 1960s when in Yokohama, the population exploded during an era of rapid economic growth, and when Yokohama faced various urban problems. In 1963, an innovative mayor was elected and he aimed not only at the industrial city or port city but also at citizens-centered urban development. The new mayor positioned six major projects including the reinforcement of the urban area, the control on the private sector's development, and the urban design as the tree pillars of urban development.

Today, I will talk about the seven goals of the urban design. The first goal is to create safe and comfortable pedestrian space. The second, third, and fifth ones are to promote urban development utilizing regional resources, regional topography and vegetation, history and cultural heritage, and water resources in Yokohama. The fourth and sixth ones are to enrich opportunities for communication. And the seventh one is to create a beautiful city. This spirit is passed on to FutureCity initiative that we are promoting. And now, we will steadily address 17 goals of SDGs.

Discussion

Moderator

Hideyuki Mori (President, Institute of Global Environmental Strategies (IGES))

Now, we will have a new exercise, a quick polling exercise. We are going to put three questions. For each question, we present four options and then you choose one option. You have an answering machine in front of you on the desk and answer, using this machine.

Question 1: What do you expect from smart city development?

1. Improved convenience
2. Increased competitiveness of the city
3. Efficient energy management / Countermeasures against climate change
4. Communication reinforcement with citizens

Your answers are divided amongst the four options almost evenly.

Question 2: What are the challenges to realize smart city development?

1. Financing
2. Knowledge enhancement of administration
3. Understanding of citizens
4. Others

Most of us think finance and knowledge enhancement is the key to promote smart cities.

Question 3: What are the challenges to introduce smart technologies?

1. Profitability
2. Understanding of appropriate needs
3. Collaboration with administration
4. Others

Perhaps the most important one, more than 50%, is the second option. The second one, collaboration with the city administration.

We begin the discussion by hearing your observation of this result.

Yasuyuki Akimoto

(Executive Director for FutureCity Promotion,
Climate Change Policy Headquarters, City of Yokohama)

I believe that the result of the first question divided among four options means that needs vary according to cities. We need to develop the smart city, well identifying the needs. On the contrary, the best practices of finance and knowledge are common to cities. So I think that it is essential to know them.

Laxman Perera

(Human Settlement Officer,
Regional Office for Asia and the Pacific, UN-HABITAT)

I think this is something that links the three important points together which goes into the smart city development: the understanding of appropriate needs, the knowledge enhancement, and the improvement of convenience.

Barjor Mehta

(Global Lead, City Management, Governance and Finance, The World Bank)

It was a great learning experience. We have very varied cities, therefore we cannot have one particular definition of the smart city and force it down to our citizens. And because citizens are so varied, it is important to understand their real needs.



Gil-Hong Kim

(Senior Director concurrently Chief Sector Officer,
Sector Advisory Service Cluster, Sustainable Development &
Climate Change Department, Asian Development Bank (ADB))

For me from these three questionnaires, I reconfirm that the smart city should provide clean, safe, affordable and resilient urban services to citizens, and provide better future for the citizens. This will require a better understanding of the citizens' needs, as well as knowledge and finance. ADB is along this line and our support will go from finance plus-plus. ADB will provide finance plus a knowledge for understanding what is the real urban needs and solutions, and plus a help to mobilize additional resources.

Bindu Nath Lohani

(Special Advisor for Y-PORT Center / Distinguished Adjunct Faculty and
Board of Trustee Member, Asian Institute of Technology)

The first question did not surprise me. If you had a fifth option which had said "All of them", I would have voted it. And the second one where finance and knowledge were challenges does not surprise me again because people are now looking for how to best utilize their money, shopping at who has the best knowledge. And the third one is also understandable. If you do not know what is your need, you do not know what to introduce.

Alfonso Vegara

(Special Advisor for Y-PORT Center /
Founder and Honorary President, Fundación Metrópoli)

For me, it is very surprising. Our opinion together is that we need to connect digital technology with urban intelligence, which is about leadership, understanding your place and identity, having a vision, having a project, and then discovering how the technology can help in achieving these objectives.

Mary Jane Crisanto Ortega

(Special Advisor for Y-PORT Center / Special Advisor of CITYNET)

The first question was, what really the definition of a smart city is. As for the second question, from my experience, the city development strategy will bring financing. If the leadership shows dynamism, then you have the administration that will also be dynamic. Lastly, you have to understand your needs. It is profitability based on the needs.

Moderator

Hideyuki Mori**(President, Institute for Global Environmental Strategies (IGES))**

I would like to wrap up all the points presented. First, concept of smart cities. We understand it has developed from the initial ICT technology based approach towards more participatory ones. To make cities livable, sustainable and competitive, technologies should be used for these purposes.

Secondly, this agenda of sustainable urban development for smart cities has been recognized by international community. SDGs recognized this as one of the global works and Habitat III reconfirmed importance of creating sustainable urban cities. COP22, currently being held in Marrakech will generate a strong message to promote climate change actions including smart cities.

The last point is that we see a lot of actions are being taken in various cities. It is quite important to focus upon the implementation side. In this regard, finance is very important, knowledge-sharing is very important, networking like this is quite important. In this respect, the initiative taken at the Conference last year to set up the Asia Smart City Alliance (ASCA) is useful, and thus should be continued.

Declaration of the 5th Asia Smart City Conference (Yokohama Declaration)

We summarized what we had discussed as "Declaration of the 5th Asia Smart City Conference (Yokohama Declaration)". Fumiko Hayashi, Mayor, City of Yokohama and Dr. Vallop Suwantee, Chairman of Advisers to Governor of Bangkok, Bangkok Metropolitan Administration announced the Declaration and it was adopted. (Please refer to the next page for the declaration statement.)

**5th Asia Smart City Conference "Yokohama Declaration"**

For the past 5 years, the Asia Smart City Conference has been held with an aim to enhance city to city collaborations and partnerships among cities and related international institutions with the purpose of achieving smart and sustainable growth in Asia.

In order to reinforce the outcomes of the past four conferences and based on the spirit of the 1st and 4th Asia Smart City Conference Declarations, we have agreed upon the following:

1. At the 5th Asia Smart City Conference, over 40 cities, international institutions and specialized institutions came together, bringing various issues and expertise to the table, and held practical discussions aimed at realizing livable inclusive sustainable and resilient cities and communities. Specifically, opinions from various specialized and technical points of view were exchanged on the following four themes:

- 1) City to city cooperation towards sustainable urban development
- 2) Roles of city leaders to attract high quality involvement of private sector and co-create urban solutions through smart technologies
- 3) Mobilize further financing to achieve smart urban development
- 4) Effective modalities for knowledge sharing and capacity building towards smart urban development

2. The participants observed current international frameworks such as Sustainable Development Goals (SDGs), New Urban Agenda under HABITAT III, and the Paris Agreement under Conference of the Parties (COP21) that acknowledge key roles of sub-national and local governments. Participants reconfirmed that for each city to righteously evolve further, it is essential for each city leader to exhibit strong leadership, in cooperation with citizens and business entities, to ensure successful urban transformation through sustainable smart city management.

3. In the 4th Asia Smart City Conference, the cities and the other supporting agencies participated in the Conference declared to form the Asia Smart City Alliance (ASCA). The participants were pleased to observe that alliance enabled members to link with one another to play active roles in contributing to smart sustainable development in Asia. It was further agreed to enhance the knowledge sharing activities of ASCA.

4. We will report the content of this Yokohama declaration to Conference of the Parties 22 (COP22) which is being concluded in Marrakesh, Morocco today.



05 Conference Photos



Thematic Meeting 1



Thematic Meeting 2



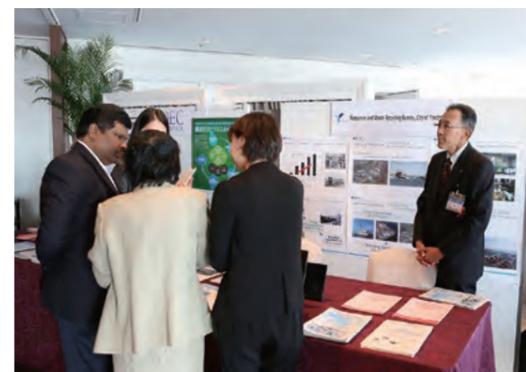
Thematic Meeting 3



Thematic Meeting 4



Lunch & Business Matching



Plenary Meeting



Cocktail Party



Networking Break



Group Photo

