2019
INTEGRATED SUSTAINABLE SOLUTIONS
FOR SMART CITIES
CAPACITY BUILDING WORKSHOP
Integrated Sustainable Solutions for Smart Cities Capacity Building Workshop

Specially designed for urban actors and decision makers in line with the smart growth for urban development. This capacity building workshop offered a unique opportunity to practice knowledge transfer and to exchange best practices on smart city development especially on innovative ideas to improve existing urban infrastructure. Through this programme, participants were given a chance to think about how to map strategies and policies via study visit and group discussions with other city members as well as partner organizations.
COMPILED AND EDITED BY

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Director of Programmes, CityNet Secretariat

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Program Assistant, CityNet Secretariat

INSEON JEONG
Manager, Seoul Metropolitan Government
CityNet Secretariat

CityNet is the largest association of urban stakeholders committed to sustainable development in the Asia Pacific region. Established in 1987 with the support of UNESCAP, UNDP and UN-Habitat, the network of cities has grown to include 154 municipalities, NGOs, private sector and research centers. CityNet connects actors, exchange knowledge and build commitment to more sustainable and resilient cities. Through capacity building, city-to-city cooperation and tangible projects, we help our members respond to Climate Change, Disaster, Sustainable Development Goals (SDGs) and rising Infrastructure demands.

Seoul Metropolitan Government (SMG)

Seoul Metropolitan Government (SMG) is the administrative organization of the city of Seoul. Seoul is the capital city of the Republic of Korea and has been the center of the country throughout its long history from prehistoric era to the present day. In addition, in just five decades, Seoul has seen its population increase by 43.3 percent and income soaring by 1,389 percent. Along with this fast and tremendous development of Seoul, there were strenuous efforts to tackle urban challenges. With those efforts, Seoul is now one of the most prosperous cities in the world. Nowadays, Seoul Metropolitan Government is supporting other countries to achieve sustainable development by sharing their own experiences and technologies.

UN ESCAP

The Economic and Social Commission for Asia and the Pacific (ESCAP) serves as the United Nations’ regional hub promoting cooperation among countries to achieve inclusive and sustainable development. The largest regional intergovernmental platform with 53 Member States and 9 associate members, ESCAP has emerged as a strong regional think-tank offering countries sound analytical products that shed insight into the evolving economic, social and environmental dynamics of the region. The Commission’s strategic focus is to deliver on the 2030 Agenda for Sustainable Development, which is reinforced and deepened by promoting regional cooperation and integration to advance responses to shared vulnerabilities, connectivity, financial cooperation and market integration.

Seoul Human Resource Development Center (SHRDC)

Established in 1962, the Seoul Human Resource Development Center (SHRDC) is an institute to provide training programs as well as promotion and recruitment exams for the public officials of the Seoul Metropolitan Government and its 25 autonomous districts. The best practices and policies of Seoul have been developed into training programs not only for the benefits of public officials in Seoul but for all global cities. As the Asian Center, the SHRDC had run 13 training programs for approximately 200 public officials from cities in the Asian region, contributing to the development of good administrative practices while promoting cross-border cooperation.
Asia Pacific is the world’s fastest urbanizing region, and the rate of population growth in Asian cities is very rapid. However, various areas of urban development is still needed to meet the needs of heavily growing population, and many of Asian cities challenges.

In 2019, through the Urban SDG Knowledge Platform best practices, CityNet received a request for having a capacity building workshop on Smart Cities and ICT Development solutions. In addition to that request, CityNet ran a survey targeting CityNet members to understand which specific topics were their priorities. The workshop connected urban professionals to discuss best practices and challenges implementation problems in Asia Pacific region, exchange innovative practices and explore potential solutions to the problems raised.

The workshop, staged by Seoul Human Resource Development Center and the Urban SDG Knowledge Platform partners (CityNet, UNESCAP and SMG), took place from August 18th - 25th, 2019. Specifically designed for urban practitioners and decision makers from rapidly growing contexts, the workshop offered discussion with urban actors for sustainable policy making and an opportunity to strategize on a new agenda for urban development.

By the end of the workshop, participants were able to better understand Smart City system and ICT development, concept, design and implementation; foster cooperative relation between Seoul and CityNet member cities by sharing and transferring knowledge, technology and information on smart city; understand challenges from members’ cities on implementing best practices in the Asia Pacific region; analyze problems with other city leaders and find out solutions to develop smart city policies for rapidly developing cities and lastly, with action plan and SWOT analysis, understand any current smart city development performance and contemplate how to enhance smart city policy strategies as per cities.
PARTICIPANTS

Muhammad Ridha
COUNTRY: Indonesia
CITY / ORGANIZATION: Banda Aceh Municipality
POSITION: Head of Economic & Cooperation Division
DEPARTMENT: Economic & Cooperation Division
EXPERTISE AND INTEREST: Making the policies and initiating city-to-city cooperation

Abd Aziz Bin Abd Rahman
COUNTRY: Malaysia
CITY / ORGANIZATION: Kuala Lumpur City Hall
POSITION: Deputy Director
DEPARTMENT: Licensing & Petty Traders Development Department
EXPERTISE AND INTEREST: SME business, NGO

Mohd Adli Amir
COUNTRY: Malaysia
CITY / ORGANIZATION: Kuala Lumpur City Hall
POSITION: Senior Town Planning Officer
DEPARTMENT: Enforcement Department
EXPERTISE AND INTEREST: Town management and implementing enforcement action

Tan Lin Hai
COUNTRY: Malaysia
CITY / ORGANIZATION: City Council of Penang Island
POSITION: Architect
DEPARTMENT: Building Department
EXPERTISE AND INTEREST: Architectural sustainable development
PARTICIPANTS

Aung Myint
COUNTRY : Myanmar
CITY / ORGANIZATION : Yangon Region Government
POSITION : Member
DEPARTMENT : Transportation Department, Yangon Region Transport Authority
EXPERTISE AND INTEREST : Road Transport, Transportation System, Urban Transport, and Road Safety

Myo Thaw
COUNTRY : Myanmar
CITY / ORGANIZATION : Yangon Region Government
POSITION : Member / Advisor
DEPARTMENT : Transportation Department, Yangon Region Transport Authority
EXPERTISE AND INTEREST : Mechanical, Electronical, IT, Transportation

Than Win
COUNTRY : Myanmar
CITY / ORGANIZATION : Yangon Region Government
POSITION : Member / Advisor
DEPARTMENT : Transportation Department, Yangon Region Transport Authority
EXPERTISE AND INTEREST : ITS, Traffic control center, Urban Planning

Bhagawan Aryal
COUNTRY : Nepal
CITY / ORGANIZATION : Hetauda Sub-Metropolitan City
POSITION : Chief Administrative Officer
DEPARTMENT : Chief of the Organization
EXPERTISE AND INTEREST : Urban management, especially waste management
PARTICIPANTS

Pramila Parajuli
COUNTRY: Nepal
CITY / ORGANIZATION: Kathmandu Metropolitan City
POSITION: Architect / Section Chief
DEPARTMENT: Environment Management Department
EXPERTISE AND INTEREST: Design, Sustainability, Urban Planning, and Environment management

Raju Maharjan
COUNTRY: Nepal
CITY / ORGANIZATION: Lalitpur Metropolitan City
POSITION: Aide to the Mayor
DEPARTMENT: Mayor’s Secretariat
EXPERTISE AND INTEREST: Components of smart city and how to materialize it

Francis Anthony Sandejas Garcia
COUNTRY: Philippines
CITY / ORGANIZATION: City of Balanga
POSITION: Mayor
DEPARTMENT: City Mayor’s Office
EXPERTISE AND INTEREST: Smart City

Marilen Zabala Alonzo
COUNTRY: Philippines
CITY / ORGANIZATION: City of Balanga
POSITION: Department Head
DEPARTMENT: City Assessor’s Office
EXPERTISE AND INTEREST: Civil engineering knowledge and real property appraisal
PARTICIPANTS

Nenette Bugay Santos
COUNTRY: Philippines
CITY / ORGANIZATION: City of Balanga
POSITION: Department Head
DEPARTMENT: Management Information Services Office
EXPERTISE AND INTEREST: Smart Solution, Leadership and Management

Subasing Arachchige Kusum Subasinghe
COUNTRY: Sri Lanka
CITY / ORGANIZATION: Colombo Municipal Council
POSITION: Deputy Director
DEPARTMENT: Traffic Design and Road Safety Division
EXPERTISE AND INTEREST: Traffic engineering
INTRODUCTION

LECTURERS

Curt Garrigan
Chief of Sustainable Urban Development Section
Environment and Development Division
United Nations Economic and Social Commission for Asia and the Pacific

Chief Curt Garrigan has served in the Sustainable Urban Development Section for the Environment and Development Division of UN ESCAP. Before joining UN ESCAP, Mr. Garrigan served as Cities and Buildings Programme Manager for UN Environment based in Paris, France. He led UN Environment’s efforts to plan, along with major building sector stakeholders, the first ‘Buildings Day’ at COP21, and to launch the Global Alliance for Buildings and Construction, which has mobilized 24 countries and more than 70 organisations to scale up building sector climate actions. He also coordinated UN Environment’s efforts to assist countries in Southeast Asia to develop Nationally Appropriate Mitigation Actions (NAMAs) for the building sector. Prior to UN Environment, Mr. Garrigan served more than 20 years in many operational and management roles for the Metropolitan Government of Nashville, Tennessee USA including as Deputy Mayor. Mr. Garrigan holds a Bachelor of Science in Architecture degree from Temple University in Philadelphia, and a Certificate of Advanced Studies in Environmental Diplomacy from the University of Geneva.

Kee Sei Lee
Researcher / Urban Infrastructure Department
The Seoul Institute of Technology, Republic of Korea

Researcher Kee Sei Lee is working at Seoul Institute of Technology as a chief researcher. He focuses on smart operation & maintenance (O&M) of city infrastructures such as bridges, buried pipe lines. In addition, as a research professor at Korea University, Kee Sei Lee had performed some significant research projects which are funded by national government. He had conducted several projects related to design specifications such as “establishment of consistent Load Resistance Factor Design (LRFD), design fundamentals of curved steel bridges”. Through these projects, he researched about various limit states of curved girder such as ultimate state, shear buckling, and flange local buckling. He contributed to suggest a guideline for design of horizontally curved steel girder in Korea.

Kyung Hee Ko
Director / Smart City Division
Seoul Metropolitan Government, Republic of Korea

Kyung Hee Ko is director of Seoul Metropolitan Government (SMG). She leads the smart city division which establishes and implements Seoul’s smart city master plan. In addition, she operates smart city cooperative system, promotes Seoul’s smart city policies, implements IoT projects and manages the S-plex center which is the big-data center of SMG. Director Ko is currently focusing on applying block chain technology throughout Seoul and cooperating with private sectors and citizens to develop livable and sustainable smart city. She holds a bachelor’s degree in computer science from Kyunghee University, located in Republic of Korea and a master’s degree in computer science from California Lutheran University, located in USA.
Jeong Joon Ahn
Director / Big Data Division
Seoul Metropolitan Government, Republic of Korea

Director Jeong Joon Ahn has served in the Data & Statistics Division of Seoul Metropolitan Government (SMG) since 2016. He is in charge of utilizing and integrating Seoul’s data and implementing policies related to the big data. In addition, Mr. Ahn committed to making the policies to improve citizens’ lives by using the statistical information data such as developing urban policy indicators of Seoul. Before working at Seoul Metropolitan Government, he worked at private sectors such as KT corporation (previously Korea Telecom), KEB Hana bank, and IBM. He got his degree in economics and business administration in Korea University, located in Republic of Korea.

Young Jun Han
Researcher / Department of Transportation Systems Research
The Seoul Institute, Republic of Korea

Researcher Young Jun Han is an associate research fellow in the department of transportation system research of the Seoul Institute (SI). He earned a doctorate degree in civil and environmental engineering from University of Wisconsin-Madison, located in USA, and particularly focused on future transportation system with connected-automated vehicles. Before studies in UW-Madison, he majored in urban planning & engineering. He holds bachelor’s degree and master’s degree followed by several years of practical experience in a Korea Land and Housing Corporation (LH) in Korea. Since he joined Seoul Institute in 2019 April, he has participated diverse projects related to public transportation and smart cities such as ‘Improvement of Seoul bus operation system’, ‘Traffic demand management for green-traffic area in Seoul’, and ‘Research for Seoul smart city projects’. 
BACKGROUND

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SELF-ASSESSMENT SURVEY

About Self-Assessment Survey
Integrated Sustainable Solutions for Smart Cities Workshop’s contents were based on the participants’ responses. The Self-Assessment Survey is focusing on smart technologies/ innovations supporting SDGs of participant’s city.

Part 1. Information about participant’s personal knowledge on Smart Cities initiatives

A. Overall Assessment

- I understand the weakness of developing Smart City initiatives in my city: 82.8%
- I understand the opportunities of developing Smart City initiatives in my city: 82.2%
- I understand the strengths of developing Smart City initiatives in my city: 81.0%
- I can explain smart cities best practices of my city: 78.8%
- I understand the threats of developing Smart City initiatives in my city: 78.4%
- I can analyze smart city implementation problems in my city: 76.8%
- I understand Seoul’s history and future smart city development plan and process: 64.4%
- I can explain smart cities best practices of other cities in Asia: 60.0%

* 37 respondents answered this question coming from 19 cities: Banda Aceh Municipality, Barisal City, Capital Development Authority, City Council of Penang Island, City of Balanga, Colombo Municipal Council, Hetauda Sub-Metropolitan City, Johor Bahru, Kathmandu Metropolitan City, Kuala Lumpur City Hall, City of Manila, Lalitpur Metropolitan City, Quezon City, Perbadanan Putrajaya, City of Santa Rosa, Municipal Council of Seberang Perai, Sylhet Municipality, Yangon Region Government, and City of Yokohama.
Part 2. Information about participant city’s development status

B. Assessment of your city

- Management of traffic violations (CCTV) 63.8%
- Water purification facilities 62.8%
- Water quality monitoring system 62.8%
- House waste sorting management 59.4%
- Citizens participation via e-Government systems 57.2%
- Public spaces safety monitoring and control 56.8%
- Integrated public services systems 52.4%
- Open data 52.2%
- Sustainable energy production, supply and consumption 52.2%
- Integrated public transportation payment system 48.2%
- Integrated public transportation information system (linked with GPS system) 48.2%
- Urban tech, Start-up support 47.4%
- Incineration facilities 41.6%
- Automatic public transportation re-routing system in case of emergency or disaster 39.0%

* 37 respondents answered this question coming from 19 cities: Banda Aceh Municipality, Barisal City, Capital Development Authority, City Council of Penang Island, City of Balanga, Colombo Municipal Council, Hetauda Sub-Metropolitan City, Johor Bahru, Kathmandu Metropolitan City, Kuala Lumpur City Hall, City of Manila, Lalitpur Metropolitan City, Quezon City, Perbadanan Putrajaya, City of Santa Rosa, Municipal Council of Seberang Perai, Sylhet Municipality, Yangon Region Government, and City of Yokohama.
Part 2. Information about participant city’s development status

C. What would you like to learn from the training?

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart green transportation through bike sharing and walkability improvement</td>
<td>95.2%</td>
</tr>
<tr>
<td>Renewable energy through installation of solar power generators and development of energy sharing community</td>
<td>93.6%</td>
</tr>
<tr>
<td>Efficient transportation management through TOPIS</td>
<td>92.4%</td>
</tr>
<tr>
<td>Smart building technologies and energy saving systems</td>
<td>91.4%</td>
</tr>
<tr>
<td>Integrated public transportation fare collecting system through smart Card</td>
<td>91.4%</td>
</tr>
<tr>
<td>Public services (affordable access to the internet and smart applications)</td>
<td>90.2%</td>
</tr>
<tr>
<td>History of Seoul and its efforts to Smart City development</td>
<td>90%</td>
</tr>
<tr>
<td>Efficient energy and consumption through LED lighting</td>
<td>89.4%</td>
</tr>
<tr>
<td>Citizens safety through CCTV</td>
<td>88.6%</td>
</tr>
<tr>
<td>Household waste control</td>
<td>88.2%</td>
</tr>
<tr>
<td>Citizens participation app (Smart complaining reporting system, m-Voting, and etc)</td>
<td>88.2%</td>
</tr>
<tr>
<td>Water integrated information center through Seoul ARISU water works</td>
<td>86.4%</td>
</tr>
<tr>
<td>Resource recovery centers</td>
<td>86.4%</td>
</tr>
<tr>
<td>Air quality monitoring system</td>
<td>84.4%</td>
</tr>
</tbody>
</table>

*37 respondents answered this question coming from 19 cities: Banda Aceh Municipality, Barisal City, Capital Development Authority, City Council of Penang Island, City of Balanga, Colombo Municipal Council, Hetauda Sub-Municipal City, Johor Bahru, Kathmandu Metropolitan City, Kuala Lumpur City Hall, City of Manila, Lalitpur Metropolitan City, Quezon City, Perbadanan Putrajaya, City of Santa Rosa, Municipal Council of Seberang Perai, Sylhet Municipality, Yangon Region Government, and City of Yokohama.
Part 2. Information about participant city’s development status

D. Challenges that your city faces in terms of Smart City

- Lack of public awareness: 24.4%
- Inadequate budget: 23.0%
- Difficult coordination with other departments / government: 15.6%
- Unskilled engineers, planners and officers: 15.6%
- Political inaction: 14.8%
- Others: 6.7%

* 37 respondents answered this question coming from 19 cities: Banda Aceh Municipality, Barisal City, Capital Development Authority, City Council of Penang Island, City of Balanga, Colombo Municipal Council, Hetauda Sub-Metropolitan City, Johor Bahru, Kathmandu Metropolitan City, Kuala Lumpur City Hall, City of Manila, Lalitpur Metropolitan City, Quezon City, Perbadanan Putrajaya, City of Santa Rosa, Municipal Council of Seberang Perai, Sylhet Municipality, Yangon Region Government, and City of Yokohama.
CITY PROFILE

- **Hetauda Sub-Metropolitan City**
  
  **Country:** Nepal  
  **Total number of Population (City):** 152,875 (2015)  
  **Current Smart Cities Policies:**  
  Hetauda Sub-Metropolitan City has online systems regarding the national ID, civil Registration, and integrated property tax.  
  **Policy Challenges:**  
  The biggest challenge that Hetauda Sub-Metropolitan City is facing is inadequate budget and lack of public awareness.

- **Kathmandu Metropolitan City**
  
  **Country:** Nepal  
  **Total number of Population (City):** 975,543  
  **Current Smart Cities Policies:**  
  Kathmandu Metropolitan City installed solar street light with sensor system in 2016.  
  **Policy Challenges:**  
  Kathmandu Metropolitan City has many challenges including political inaction, lack of public awareness, and difficult coordination with other departments and governments.

- **Lalitpur Metropolitan City**
  
  **Country:** Nepal  
  **Total number of Population (City):** 226,728 (2011)  
  **Current Smart Cities Policies:**  
  Lalitpur Metropolitan City is planning to install smart street light.  
  **Policy Challenges:**  
  Lalitpur Metropolitan City has various challenges such as: inadequate budget, political inaction, unskilled engineers and officers, lack of public awareness, and difficult coordination with other departments.

- **Yangon Region Government**
  
  **Country:** Myanmar  
  **Total number of Population (City):** 4,477,638 (2019)  
  **Current Smart Cities Policies:**  
  Yangon Region Government has a payment system of electric bill on the bank website, bus ticket using mobile application, and online reservation system for vehicle license renewal.  
  **Policy Challenges:**  
  Yangon Region Government challenges are political inaction and inadequate budget.

- **Colombo Municipal Council**
  
  **Country:** Sri Lanka  
  **Total number of Population (City):** 752,993 (2011)  
  **Current Smart Cities Policies:**  
  Colombo Municipal Council has implemented parking meters for collecting parking fee from on-street parking areas.  
  **Policy Challenges:**  
  Colombo Municipal Council challenges are regarding budget, political inaction, unskilled human resources and difficult coordination with other departments.
**CITY PROFILE**

**Kuala Lumpur City Hall**
Country: Malaysia  
Total number of Population (City): 1,808,000 (2017)  
Current Smart Cities Policies:  
Kuala Lumpur City Hall implements Low Carbon Cities project and Integrated Transportation Information System (ITIS).  
Policy Challenges:  
Kuala Lumpur City Hall has issues regarding the political inaction, lack of public awareness, homeless and illegal foreigners.

**City Council of Penang Island**
Country: Malaysia  
Total number of Population (City): 1,767,000 (2018)  
Current Smart Cities Policies:  
City Council of Penang Island strives to encourage more green buildings to achieve energy efficiency, indoor environmental quality and sustainable site planning & management.  
Policy Challenges:  
The main challenge in City Council of Penang Island is lack of public awareness.

**City of Balanga**
Country: Philippines  
Total number of Population (City): 102,679 (2019)  
Current Smart Cities Policies:  
City of Balanga developed the eLGU version 2.0 project, an in-house information system on computerization and an automation of internal process of all departments of the city government.  
Policy Challenges:  
City of Balanga has challenges of inadequate budget, unskilled human resources, and lack of public awareness.

**Banda Aceh Municipality**
Country: Indonesia  
Total number of Population (City): 254,904  
Current Smart Cities Policies:  
Banda Aceh Municipality focuses on various fields such as transportation, environment, community and etc. to achieve smart city.  
Policy Challenges:  
There are some challenges including low development of innovation sectors, lack of water recycle and waste water treatment plan in Banda Aceh Municipality.

*Number of population is based on Google search.*
Integrated Sustainable Solutions for Smart Cities Capacity Building Workshop was organized into in-class sessions – such as lectures, presentations of city profile and concluding action plan sessions – and site visits.

The Workshop was launched with participants’ presentation on their cities performance, including successes, failures and future strategies on smart city. The participants benefitted from the opportunity to reflect upon their own cities, existing problems and exchange feasible solutions.

The lectures provided an insightful overview of Seoul’s smart city initiatives / technology, including the big data, transportation, and smart operation & maintenance (O&M) technologies for infrastructures. A wider range of topics were also examined in the lectures, such as the smart city pilot complex in Magok M-valley located in Seoul, Machine learning process known as AlphaGo, Open Data Plaza where SMG shares their big data with citizens, and existing Smart Monitoring & Management System which are placed on bridges and buried pipes.

Site visits allowed the participants to closely observe Seoul’s best practices. The participants visited TOPIS, Seoul City Hall, Digital Civic Mayor’s Office, Seoul Botanic Garden, Big Data Campus, Seoul Cyber Security Center, Seongsu IoT Street Lab and Seoul Data Center. Site visits offered the participants a chance to directly communicate with Seoul’s experts on smart city technologies and policies.

The workshop concluded with a specialized session for Action Plan designing. The participants were asked to perform a SWOT (Strengths · Weaknesses · Opportunities · Threats) analysis. With the CityNet’s guidelines, the participants elaborated on their analysis to design an Action Plan. The drafting and designing of the Action Plan allowed the participants to explore specific implementation schemes, including day-to-day operations of smart city policies in their respective cities. Upon sharing their Action Plans with fellow participants and urban development experts, dialogues to enhance future strategies and explore fields of future cooperation continued.
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<tr>
<td><strong>Orientation</strong>&lt;br&gt;09:30 - 10:00</td>
<td><strong>Lecture 2</strong>&lt;br&gt;Direction of Linking Big Data and Transportation Policy&lt;br&gt;Dr. Han&lt;br&gt;Seoul Institute&lt;br&gt;09:30 - 11:30</td>
<td><strong>Lecture 3</strong>&lt;br&gt;Public Data Service of Seoul&lt;br&gt;Dir. Ahn&lt;br&gt;Seoul Metropolitan Government&lt;br&gt;09:30 - 11:30</td>
<td><strong>Lecture 4</strong>&lt;br&gt;Smart O&amp;M Technology for Infrastructures&lt;br&gt;Dr. Lee&lt;br&gt;Seoul Institute of Technology&lt;br&gt;09:30 - 11:30</td>
<td><strong>Wrap-up and Build Action Plan</strong>&lt;br&gt;CityNet&lt;br&gt;09:00 - 11:00</td>
</tr>
<tr>
<td><strong>Introduction</strong>&lt;br&gt;SMG / CityNet / UNESCAP&lt;br&gt;14:00 - 14:20</td>
<td><strong>Public Transportation Experience</strong>&lt;br&gt;Bus &amp; Subway&lt;br&gt;13:00 - 14:00</td>
<td><strong>Study Visit 4</strong>&lt;br&gt;Seoul Botanic Park&lt;br&gt;14:00 - 15:00</td>
<td><strong>Study Visit 7</strong>&lt;br&gt;Seoungsu IoT Street Lab&lt;br&gt;14:00 - 15:30</td>
<td><strong>Closing Ceremony</strong>&lt;br&gt;11:30 - 12:00</td>
</tr>
<tr>
<td><strong>City-Paper Presentation</strong>&lt;br&gt;CityNet / Participants&lt;br&gt;14:20 - 16:00</td>
<td><strong>Study Visit 1</strong>&lt;br&gt;TOPIS&lt;br&gt;14:00 - 16:00</td>
<td><strong>Study Visit 5</strong>&lt;br&gt;Big Data Campus&lt;br&gt;15:30 - 16:45</td>
<td><strong>Study Visit 8</strong>&lt;br&gt;Seoul Data Center&lt;br&gt;16:00 - 17:00</td>
<td><strong>Seoul’s Cultural Experience</strong>&lt;br&gt;16:45 - 18:00</td>
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<tr>
<td><strong>Special Session</strong>&lt;br&gt;Smart Cities Solutions supporting SDGs&lt;br&gt;Curt Garrigan&lt;br&gt;UNESCAP&lt;br&gt;16:30 - 18:00</td>
<td><strong>Study Visit 2</strong>&lt;br&gt;City Hall Tour&lt;br&gt;16:00 - 17:00</td>
<td><strong>Study Visit 6</strong>&lt;br&gt;Seoul Cyber Security Center&lt;br&gt;16:45 - 18:00</td>
<td><strong>Pre-Wrap Up</strong>&lt;br&gt;CityNet&lt;br&gt;17:00 - 18:00</td>
<td><strong>Pre-Wrap Up</strong>&lt;br&gt;CityNet&lt;br&gt;17:00 - 18:00</td>
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1. Seoul’s Smart City Initiatives

Kyung Hee Ko
Director / Seoul Metropolitan Government

The lecture focused on the current situation of Seoul as a smart city and the vision for achieving sustainable smart city. Director Ko introduced Seoul Metropolitan Government’s smart city program which is based on 5 core values: 1) people-centered; 2) service centered; 3) governance including public-private cooperation, industry-academy cooperation and citizen’s participation; 4) sustainability; and 5) innovation growth. In addition, Director Ko introduced Seoul’s smart city policy covering transportation, safety, environment, welfare, economy and administration. The participants could learn about the currently ongoing smart city projects of Seoul such as the test-bed for autonomous driving, parking lot sharing based on IoT, AI-based taxi, intelligent CCTV, smart streetlight, etc.

2. Direction of Linking Big Data and Transportation Policy

Young Jun Han
Researcher / The Seoul Institute

The lecture provided a direction of linking big-data and transportation policy. Researcher Han introduced the concept of big data with its characteristics and success-failure examples. To better understand big data, examples including Google Flu trends, a case of using search engine data to detect influenza epidemics, and AlphaGo, which shows the deep learning mechanism, were provided. The participants could learn how to use big data for making better transportation policy with the introduction of international case studies of big data application in transportation such as origin & destination (O-D) study in USA, public transit in UK, and owl (night) bus in Seoul, Republic of Korea.
Public Data Service of Seoul

Jeong Joon Ahn
Director / Seoul Metropolitan Government

The lecture introduced Seoul Metropolitan Government’s IT master plan ‘Global Digital Seoul 2020’ and data value chain system. From this lecture, the participants could understand the whole process of data management including data acquisition, data storage, data analysis and data usage. To better understand the data management process and how to provide public data services, Director Ahn introduced data convergence services on living population and statistics example on Gross Regional Domestic Product (GRDP). Director Ahn also presented useful guidelines on how cities can use and systemize the public data and showed case studies on Seoul’s social innovation, big data campus, and digital civil mayor’s office located in Seoul City Hall.

Smart O&M Technology for Infrastructures

Kee Sei Lee
Researcher / The Seoul Institute of Technology

The lecture introduced smart technologies for operation and management (O&M) of city infrastructures with various examples. The lecture especially focused on the O&M case of buried pipes and bridges in Seoul. Researcher Lee presented 4 facility management systems for bridge: Building Information Modeling (BIM), drone, ground penetrating radar, and 3D modeling using unmanned aerial vehicle drone. In addition, he introduced about leak detection technologies including the guided wave, inspection robot, and Time Domain Reflectometry (TDR) sensor. The participants were able to understand water management system using CCTV, GPS, multi-spectra camera, and ultrasonic technology.
SITE VISITS

1. TOPIS
   August 19

Seoul TOPIS refers to the general transport control center responsible for operating and managing Seoul’s overall traffic. TOPIS does this by collecting traffic information from the bus management system, the transit card system, the unmanned surveillance system and traffic-related authorities and institutions. The system is designed to clear heavy traffic of Seoul and avoid sudden traffic issues by collecting information on bus operations, the number of people using public transport, traffic density, traffic speeds, incidental situations such as traffic accidents and demonstrations, status of express ways, private traffic information and other information related to transportation, and establishing science-based public transit policies through analysis of integrated traffic information.

2. Seoul City Hall Tour
   August 19

Seoul City Hall Tour took participants to various places around Seoul City Hall, including the vertical garden (which has been listed as the largest vertical garden in the Guinness Book of World Records), the former mayor’s office, gungisi (a military weapons depot during the Joseon dynasty) relics exhibition hall, citizen’s hall, and the Seoul metropolitan library. The participants were able to visit the Sky Park, which applies smart construction material that support to keep the building temperature. The front wall of the Sky Plaza is made of two-layer vinyl, not glass. Its official name is “Ultra thin fluoropolymer film” and it helps the Seoul City Hall keep warm by holding air between films. In addition, due to its opacity, this vinyl wall contributes to beautiful landscaping lights on Seoul City Hall every weekend night.
3. Digital Civic Mayor’s Office  
August 19

At the Digital Civic Mayor’s Office, the participants could experience a real-time information system with a collection of 16 million administrative big dataset out of 290 systems and 1,200 CCTVs in Seoul. Digital Civic Mayor’s office is launched in 2017, it is the first platform in the world that integrates all administrative data in Seoul. With this platform, citizens are able to access the information that is given to Mayor Park Won-soon, through their personal computers and smart phones. Since April 2019, citizens are also able to find data at three major subway transfer stations: Hongdae station, Changdong station and Yeouido station. Currently, Seoul Metropolitan Government is upgrading and updating the system to have motion data, voice recognition and AI (Artificial Intelligence) function.

4. Seoul Botanic Park  
August 20

Seoul Botanic Park is located in Magok area and is the first facility in Seoul to combine ‘Botanical garden’ and ‘Urban park’ in one space. Seoul Botanic Park showed participants smart environment technologies regarding maintenance of green facilities in a smarter way. Seoul Botanic Park uses special materials for the roof: Ethylene Tetra Fluoro Ethylene (ETFE) film, which has the advantage of light penetration. In addition, Seoul Botanic Park considered various systems that re-uses rainwater and controls the temperature and light. The participants had the opportunity to directly communicate with Seoul’s expert in charge of Seoul Botanic Park. During this experience, the participants could understand the components using IoT technologies embedded in the park.
5. Big Data Campus
August 20

The aim of Seoul Big Data Campus is to establish enabling environments for big data analysis with public, private, industrial and academic sector by sharing relevant data with citizens. Lecturer introduced strategy to utilize big data, Big Data Sharing Platform and the roles of Seoul Big Data Center. Seoul Big Data center put effort into operating partnership with different stakeholders to emphasize its contents and facilities. Since the opening of this center on July 2016, 1,530 teams and 2,931 individuals utilized the center to create project by using the provided data. 785 projects were completed and covered 10 sectors include urban development, economy, and transportation. To better understand Big data usage, the case of Dream Tree Card (the food support card for poorly-fed children) was introduced.

6. Seoul Cyber Security Center
August 20

Seoul Cyber Security Center is in charge of monitoring network traffic and issuing alerts on potential, imminent or actual cyber threats, vulnerabilities or incidents affecting the critical network infrastructure of 73 organizations including Seoul Metropolitan Government, its district offices and the affiliated organizations. It also runs Digital Forensic Center to collect the evidence of the intrusion incidents. The lecturer introduced the main responsibility of Seoul Cyber Security Center and how they respond to emergency situation. The participants could also see the integrated information board shows real-time situation of cyber attack.
Seongsu-dong is carrying out a “street lab” project that uses advanced technologies such as wireless communication technology and various sensors. ‘Street Lab’ is a project to ‘test the street’ by installing various Internet of Things (IoT) facilities on the street. The participants could see the automatic fire detection system, smart street light, real-time fine dust detection system and LTE plugs. The participants also visited a solar panel facility, which is the only facility in Seoul. During the visit, the participants could ask questions to person who is directly in charge of managing those facilities and technologies.

Seoul Data Center operates and manages the communication infrastructure and information system of Seoul Metropolitan Government, such as internet server, data storage and information and communication devices, in order to support the administration of Seoul. One of its major tasks is to operate integrated monitoring system, which monitors information and communication system and infrastructure unceasingly. The lecturer also introduced Seoul’s informationization project including citizen’s participation, ICT infrastructure, information disclosure, new technology based administration innovation, citizen services, and e-Government as well as detail information about Seoul Data Center.
CONCLUSION

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CONCLUSION

SWOT ANALYSIS & ACTION PLAN

Based on participant city’s current situation and the contents of the program, participants were expected to present an ‘Action Plan’ on how they will implement their learning experience and knowledge to their city’s project or their day-to-day operation.

Having mentioned that, within the action plan, participants also have opinions on lessons and implications learned as well as criteria or index which can be used for future evaluation survey.

For Action Plan, the participants were invited to answer the questions below:

1) From the topics that have been presented during the workshop and site visits, which smart city policy/technology/practice would you like to see in your city?
2) Which urban problem would it solve?
3) What would be the plan to implement the chosen smart city policy/technology/practice in your city?
4) What are the barriers to adopting your chosen smart city policy/technology/practice in your city?

For SWOT, the participants were invited to consider:

1) Strengths: What are the strengths your city have in relation to the Smart City Program?
2) Weaknesses: What are the disadvantages your city have in relation to the Smart City Program?
3) Opportunities: What are the opportunities your city have in relation to the Smart City Program which would make the implementation possible?
4) Threats: What are the threats your city have in relation to the Smart City Program?

SWOT Analysis and Action Plan design are conducted after the lectures and site visits. It was essential to understand participants’ city position on smart cities development and to seek opportunities or further partnerships, cooperation among intersectors, and city-to-city cooperation.

INTEGRATED SUSTAINABLE SOLUTIONS FOR SMART CITIES CAPACITY BUILDING WORKSHOP
**SWOT ANALYSIS & ACTION PLAN**

**INDONESIA**

**BANDA ACEH MUNICIPALITY**

**SWOT Analysis**

**STRENGTHS**
Strong commitment of the mayor to decrease Non-Revenue-Water which means the produced water which get lost before reach the customer; and implementation of SCADA Water Supply Control System which helps control clean water and display real time operational data during the production time.

**WEAKNESSES**
Lack of human resources that can manage water system; water source coming only from the rivers since there is no mountain in Banda Aceh; and flat land which does not provide natural pressure when distributing water.

**OPPORTUNITIES**
Banda Aceh is one of the cities that has pilot project for smart city in Indonesia; support from international partners such as CityNet for the training and workshop related with water management; and good collaboration with partners and clients from ASPAC, ADB, World Bank and others.

**THREATS**
Citizens demand increase for better water system and water supply.

**Action Plan**

**APPLICABLE SMART CITY POLICY**
Time Domain Reflectometer (TDR) sensor technology.

**LOCAL URBAN PROBLEM TO BE SOLVED**
Time Domain Reflectometer (TDR) sensor technology. It will solve the leak in water pipes and inefficient water management system.

**IMPLEMENTATION PLAN**
Banda Aceh plans to conduct several internal workshops in order to introduce the TDR sensor technology and increase awareness from the government.

**BARRIERS**
Since it would need a new technology to be implement, the barriers would be lack of human resource; lack of expert personnel; lack of technology resources; and lack of operation & maintenance.

**MALAYSIA**

**CITY COUNCIL OF PENANG ISLAND**

**SWOT Analysis**

**STRENGTHS**
Penang has a plan to implement Light Rail Transit (LRT) in the city until 2020 to improve and provide more efficient transport mode towards Smart and Intelligent City.

**WEAKNESSES**
The government has a lack of funding to upgrade and improve the current infrastructures from the city; citizens still use motor bike as the most methods for transportation; land usage constraints; and disintegrated government agencies since each agency belongs from different department.

**OPPORTUNITIES**
Penang already has a system that collects data from CCTV and GPS used in the transportation system, therefore the data can be easily combine if big data system is implemented.

**THREATS**
Since the level of competition among local companies is considered low, there is no completion which makes the service’s quality decrease; also ways to protect the data is also something which should be taken care of.

**Action Plan**

**APPLICABLE SMART CITY POLICY**
Seoul’s Big Data System to analyze and implement better policies for citizens while creating a green city.

**LOCAL URBAN PROBLEM TO BE SOLVED**
Big data system will support the government to monitor its policies and run in a more smart and sustainable way to improve the living standard from the citizens of Penang. It would also help to reduce traffic congestion and improve commuting methods.

**IMPLEMENTATION PLAN**
As for the beginning stages for Big Data system implementation, there is a need to make a list of companies owned by the private sector and build a trust relationship among the public and private sector.

**BARRIERS**
Since the budget from the city is separated by sector, the government will have to seek how much from each sector would need to be allocated to implement Big Data.
## SWOT Analysis & Action Plan

### Malaysia

#### Kuala Lumpur City Hall

**SWOT Analysis**

**Strengths**

ITIS is a comprehensive traffic information system to monitor traffic flow and analyze data of road condition in Klang Valley to provide useful traffic information to road users.

**Weaknesses**

The equipment and tools such as CCTV is not up to date and can be used in a limited area.

**Opportunities**

Since the traffic management center is managed by the Kuala Lumpur City Hall, the local government can function as an autonomous body and develop its own policies. Also the city has a strong partnership with several international organizations to receive support during the implementation of traffic management system.

**Threats**

There is a lack of budget that need to be considered for approval from the highest management of the government.

**Action Plan**

**Applicable Smart City Policy**

Establishment of Seoul’s Smart CCTV system.

**Local Urban Problem to Be Solved**

Smart CCTV system shall improve traffic management challenges and safety problems.

**Implementation Plan**

CCTV system shall be implemented by first upgrading and improving the existing ITIS system and integrating with other software and systems.

**Barriers**

Because of the current government and economic conditions, there is a lack of budget and new ways of funding mechanism should be secured.

### Myanmar

#### Yangon Region Government

**SWOT Analysis**

**Strengths**

Yangon traffic control center constructed data center with 4,800TB capacity and 96 core fiber network for 154 intersections in Yangon area.

**Weaknesses**

The equipments and machinery from the data center need to be improved since the network connection is unstable and CCTV traffic cameras are old.

**Opportunities**

Since Yangon Region Government already has a system to collect transportation data through the bus operation, the city can analyze the data and improve the current public transportation routes.

**Threats**

There is a need to partner with bus operation companies to use the data provided by them. Also since there is limited budget amount, it is required to further allocate funds for improving public transportation.

**Action Plan**

**Applicable Smart City Policy**

Real-time bus information at bus stops and phone.

**Local Urban Problem to Be Solved**

By providing actual information of bus operation, it will improve public transportation system and it will also be possible to further integrate the city’s public transportation.

**Implementation Plan**

During the beginning stages of implementation, the government would collaborate with the bus operator companies to collect the raw data and them make a new department which would be able to process it.

**Barriers**

Since this would be a newly implemented system, the biggest barrier would be the lack of experience human resource and allocated budget.
SWOT Analysis & Action Plan

NEPAL

HETAUDA SUB-METROPOLITAN CITY

SWOT Analysis

STRENGTHS
Hetauda Sub-Metropolitan City has strong legal power and political commitment, which makes the city able to develop its own policies and initiatives to improve the life of the citizens.

WEAKNESSES
The city is still under development process, therefore, there is a need to have a long-term plan and include smart city solutions and practices in the plan.

OPPORTUNITIES
Since the local and international NGOs and citizens are willing to participate in government’s projects and initiatives to improve the life quality, Hetauda Sub-Metropolitan City can implement various projects to achieve a smart city.

THREATS
The government has a lack of expertise in the technical field to develop and implement a smart city-related plan.

Action Plan

APPLICABLE SMART CITY POLICY
Install the optical fiber cable, which can provide higher bandwidth and transmit data over longer distances, to government division.

LOCAL URBAN PROBLEM TO BE SOLVED
Fiber-optic communication by using optical fiber cable shall improve public service delivery system in terms of speed and effectiveness. It would also bring the city a more transparent government.

IMPLEMENTATION PLAN
Hetauda Sub-Metropolitan City plans to make a long-term smart city plan, and install the optical fiber cable to data service center.

BARRIERS
There is a need to coordinate among related departments from the government and partner organizations to install and link the advanced IT network.

NEPAL

KATHMANDU METROPOLITAN CITY

SWOT Analysis

STRENGTHS
Kathmandu Metropolitan City is willing to make a new long-term plan and urban policies reform adding smart city initiatives at it.

WEAKNESSES
The local government lacks technical expertise including infrastructure and human resources.

OPPORTUNITIES
Kathmandu has a strong partnership with other cities from Nepal which enable urban policies to be engaged and connected.

THREATS
Kathmandu Metropolitan City does not have an integrated plan for developing a smart city.

Action Plan

APPLICABLE SMART CITY POLICY
Seoul Smart Environment Policies to improve water quality.

LOCAL URBAN PROBLEM TO BE SOLVED
This policy will support to improve Kathmandu River’s water pollution.

IMPLEMENTATION PLAN
Smart Environment Policy shall be initially implemented by increasing the awareness of citizens and receive permission for data collection. Later, a monitoring system shall be implemented to maintain the project sustainability.

BARRIERS
To proceed with this policy implementation, budget constraints and lack of human resources shall be overcome.
## SWOT Analysis & Action Plan

### Nepal
#### Lalitpur Metropolitan City

#### SWOT Analysis

**Strengths**
The current Mayor has strong willingness to develop a smart city Plan for Lalitpur City. Therefore, budget allocation can be provided to smart city related field.

**Weaknesses**
Due to the low salary payment provided to local government officials, there are not many skilled qualified staffs that are able to develop smart cities policies.

**Opportunities**
Since domestics and international donor agencies are willing to provide support to Lalitpur urban development projects, there are high possibilities of building public-private partnership.

**Threats**
The government has a lack of cooperation with other technical skilled agencies.

### Action Plan

**Applicable Smart City Policy**
Transportation policy focused on Bus Rapid Transit.

**Local Urban Problem to Be Solved**
Bus rapid transit system shall improve the transportation problem.

**Implementation Plan**
BRT system shall be implemented by first introducing a smart transportation card to citizens and securing the budget through public-private-partnership and investment.

**Barriers**
Since the government doesn’t have a willingness to focus on BRT system, there are needs for mediator between government and private companies to improve technologies for BRT system.

### Philippines
#### City of Balanga

#### SWOT Analysis

**Strengths**
The current Mayor of Balanga City has a strong leadership which is being supported by various stakeholders and legislative council.

**Weaknesses**
Since there are various information systems in City of Balanga, the government needs to integrate the information system which has different data coming from different sources.

**Opportunities**
City of Balanga already has an ability to provide solutions based on ICT technologies. Strong partnership with an international partners would be great opportunity to achieve smart city policy.

**Threats**
For geographical reason, the City of Balanga is vulnerable to climate change and disaster, which makes the city vulnerable for various attacks during implementation of new policies.

### Action Plan

**Applicable Smart City Policy**
Seoul Metropolitan Government Mayor’s Dashboard.

**Local Urban Problem to Be Solved**
By implementing the Mayor’s Dashboard, Balanda will be able to analyze real-time conditions of the city and provide active support to improve the citizens’ life quality.

**Implementation Plan**
For implementing Mayor’s Dashboard, it would be necessary to analyze which data shall be collected and contact with the department in charge. Also, strong partnership with international organizations and C2C(city-to-city cooperation) are needed to speed-up the process and benchmark best practices on smart cities.

**Barriers**
With the political change, local government willingness is not sustainable and further funding shall also be discussed among sectors.
SWOT Analysis & Action Plan

SRI LANKA

COLOMBO MUNICIPAL COUNCIL

SWOT Analysis

STRENGTHS
With the mayor’s positive attitude toward implementation of smart city project, Colombo Municipal Council already has an experience in smart city project.

WEAKNESSES
Because of the budget constraint and political intervention, there is financial limitation regarding the investment on improvement of equipment.

OPPORTUNITIES
Colombo Municipal Council has a potential to secure the advanced equipment by getting support from international affairs such as CityNet, KOICA, etc.

THREATS
Since the government staffs have a negative attitude toward additional work, the government is required to allocate human resources to assign staffs for new projects to avoid additional work.

Action Plan

APPLICABLE SMART CITY POLICY
Seoul’s Smart Mobility system.

LOCAL URBAN PROBLEM TO BE SOLVED
Since Colombo is the largest city from Sri Lanka, the traffic congestion is terrible during day time. This policy shall improve urban problem regarding traffic congestion.

IMPLEMENTATION PLAN
Colombo Municipal Council need to introduce the GIS system and prepare GIS database for road infrastructure to collect data and analyze the best routes and transportation system.

BARRIERS
New funding mechanism in cooperation with donor organizations would be needed.
I was able to know the detail characteristics of Seoul as one of the best smart cities in the world. I would like to apply the case of TOPIS, which has potentiality to improve the existing Integrated Transportation Information System (ITIS) in Kuala Lumpur City Hall.

Abd Aziz bin Abd Rahman
Kuala Lumpur City Hall
Deputy Director

The lecture “Big Data and Transportation policy” from Seoul Institute was directly concerned with Yangon Region Transport Authority. I would like to share the details from this capacity building workshop to mayor of Yangon City and chief minister of Yangon division.

Aung Myint
Yangon Region Government,
Member of Yangon Traffic Control Center Assessment Committee

I was very impressed with Mayor’s dashboard at Seoul City Hall. If the city mayor updates the current situation with real-time information, this will make governments respond directly to the public needs. That is why I would like to apply dashboard system in City of Balanga.

Francis Anthony Sandejas Garcia
City of Balanga
City Mayor

Integrated Sustainable Solutions for Smart Cities Workshop was well-structured, comprehensive, informative and useful. Site visits were also well organized. Facilitators and staffs were very accommodating, kind and sensitive to the needs of everyone. Thank you very much for the wonderful experience in Korea.

Marilen Zabala Alonzo
City of Balanga
Head of City Assessor’s Office
CONCLUSION & LEARNING POINT

The lecture “Smart City Initiatives” from Seoul Metropolitan Government provided better and more comprehensive systems including improved security levels for citizens, better traffic controls, and efficiency with advanced technologies.

Mohd Adli Amir
Kuala Lumpur City Hall
Senior Town Planning Officer

Seoul has very good system in providing excellent public services for its citizen. In addition, the mindset of citizen has already support the smart city of Seoul. It was so impressive that Seoul identifies the leak of water pipes by using smart technologies. I will try to apply the Time Domain Reflectometry (TDR) technology to Banda Aceh Municipality.

Muhammad Ridha
Banda Aceh Municipality
Head of Economic Cooperation Division

Seoul is considering the pedestrians’ needs when making their urban policies. Among the policies that I learnt in this capacity building workshop, I would like to apply the concept of public mobility right, open data, and safe environment for pedestrians.

Myo Thaw
Yangon Region Government
Member of Yangon Traffic Control Center Assessment Committee

The lecture “Smart City Initiatives” from Seoul Metropolitan Government will surely realize the vision of City of Balanga, an established hub for global technology businesses. I will reflect policies of Seoul by implementing smarter solution in all government processes in my city and by using tri-media platform to develop awareness in the community about city government program on ICT.

Nenette Bugay Santos
City of Balanga
Head of Management Information Services Office

The lecture “Big Data and Transportation policy” from Seoul Institute was very insightful and new for me. I would like to apply new policies such as Smart card system, solar powered cars and data analysis & management. As a follow-up, I will bring this policies to Kathmandu Metropolitan City’s policy makers and try to implement it in Katmandu Metropolitan City.

Pramila Parajuli
Kathmandu Metropolitan City, Architect Section
Chief
The lecture “Big Data and Transportation policy” from Seoul Institute was directly related with what Lalitpur Metropolitan City is looking for. I will first try to implement this idea in a small area for data collection and try to explain the importance of data to improve the public transportation system.

Raju Maharjan
Lalitpur Metropolitan City
Aide to the Mayor

Smart Operation & Management (O&M) technology for Infrastructure is directly related to my work. I would like to reflect policies of Seoul by introducing good database in Geographic Information System (GIS), implementing the project on renewable energy, and increasing greenery in the city with green building and vertical gardening as we saw in the Seoul City Hall.

Subasing Arachchige Kusum Subasinghe
Colombo Municipal Council
Deputy Director Engineering

Big data won’t solve 100% of the urban challenges, however, it will help local government to better control and monitor the cities’ development. It will also provide more smart and efficient ways for making better living standard for the people. I hope Penang can have living standard as Seoul in a near future.

Tan Lin Hai
City Council of Penang Island
Architect

The lecture “Big Data and Transportation policy” from Seoul Institute was directly related to my work and I could learn how the policy could be related to big data and analysis. I will look forward to ways of applying Seoul’s policy by convincing Yangon Region Transport Authority as well as Chief Minister of Yangon Region Government.

Than Win
Yangon Region Government, Advisor
Director of Yangon Transportation Authority

Thank You!