CityVoices
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On this edition of CityVoices, we compile a set of good practices and success stories of Asian cities in their efforts in implementing smart cities for sustainable development.

More than half of the world’s population live in the urban areas and is expected to grow by 63% between 2014 and 2050. This trend creates unprecedented sustainability challenges, for example social instability due to rising inequalities and unemployment, environmental pollution, traffic congestion, and urban crime among others.

There are several urbanization models that incorporate digital technologies to address some of the urbanization and sustainability challenges normally referred to as a “Smart City”. However, being a smart city doesn’t always mean to use the most advanced technology, but to use technology in a smart way.

According to the World Bank, “Smart cities make urbanization more inclusive, bringing together formal and informal sectors, connecting urban cores with peripheries, delivering services for the rich and the poor alike, and integrating the migrants and the poor into the city. Promoting smart cities is about rethinking cities as inclusive, integrated, and liveable”.

Some of our member cities showcase their initiatives that represent this concept, Makati uses the GIS technology to provide the necessary data as development parameters and set the standard for a number of policy decisions, Muntinlupa created a one-stop-shop-access in the delivery of public services, which has been modified and simplified over time.

CityNet partners, the Institute for Global Environmental Strategies shares their collaboration with Kitakyushu City to develop an environmental education to increase citizens’ awareness and participation in Mandalay, and Clean Air Asia explains how their recently launched city certification scheme serves as an innovative approach providing cities with a framework to overcome obstacles to advancing air quality.

I’m also pleased to highlight our recent smart collaboration with Sidoarjo Regency and Microsoft developing the winning app from the CityApp event. In addition, there are several other CityNet activities that have been organized to support sustainable development across Asia. We hope this issue will inspire you with a wider perspective of creating smart cities that addressing urban challenges.
The Impact of Smart Technologies on Municipal Finances

Local governments in Asia have been utilising smart technologies to provide them with opportunities to improve city’s efficiency and sustainability including for finances. CityNet Secretary General Vijay Jagannathan shares his perspectives on how Asian cities use smart technologies to improve their municipal finances.

According to you, what are key characteristics of the Asian context regarding smart technologies? And how have Asian cities been using smart technologies to positively impact municipal finances?

The first characteristic of Asia is the rapid spread of smartphones: the number of smartphone users in the region is expected to reach nearly 1.5 billion by 2019 and is expected to grow further at a faster pace than the rest of the world. The second characteristic is the familiarity of young residents to software apps. They have become a digitally-savvy generation, from mobile learning to social media and games. Most of the time spent on mobile device is for apps. And third, games greatly enhance the potentials of utilizing ICT to improve governance and accountability. An interesting example, is the “Block by Block” initiative led by UN-Habitat in partnership with Mojang that uses Minecraft (digital lego) to design public spaces by engaging community for participatory public space design, allowing youth to identify or visualize their needs. Block by Block reaches groups such as urban poor and children who are often not included in the decision making processes. Asian cities have begun to appreciate the power of big data analytics and cloud computing to improve urban management. We are seeing cities as diverse as Kathmandu (Nepal), Makassar and Sidoarjo (Indonesia) run hackathons to encourage young people to suggest innovative apps to enhance city management.

In your opinion, what are the main challenges that local governments in the region face when developing smart projects?

There is the classic ‘tail wagging the dog’ syndrome to watch out for, where particular insignificant issue dominates the municipal finance and other fields. A considerable amount of taxes can be at risk without any transparency and the public or taxpayers are not made aware of this. Technology is an instrument to enhance transparency, accountability and participation and not an end in itself. There are two key challenges in optimizing the use of technology to ensure transparency, accountability and public participation. First is to develop cost effective solutions without creating significant burden to public purse. Second challenge is to be wise in dealing with various vendors or providers in order to avoid irrelevant services to improve city governance. City government has to prioritise citizens first and ensure their satisfaction with government services.
Based on your experience, what advice and recommendations would you give to cities wishing to engage in smart projects to improve municipal finances?

I would suggest three main points to cities that would like to engage in ICT projects: Review options, check with peers and do not sign on to vendors offering magic solutions. Before a city makes any decision, they need to review the available options thoroughly by elaborating both the advantages and risks that might occur in short, mid and long-term. Organisational synergy among relevant departments need to be developed in order to make the right and informed decision. City government also need to realise that there is no ICT vendors that can offer a quick and magic solutions to improve municipal finances, they need to combine all the necessary components for the citizen’s interest and it is a process. We believe that peer to peer learning among cities is the way to go.

Please mention examples of CityNet activities regarding the use of smart technologies in Asian cities.

On this particular topic, CityNet has partnered with Microsoft and developed two main initiatives. Since 2014, CityNet and Microsoft have held CityApp, an innovative series of events designed to create web and mobile applications to help citizens, businesses and governments better address urban challenges. It is a method to employ technology in ways that are citizen-centred, responsive and efficient. Tapping into the talent, creativity and commitment of start-ups, local NGOs, government officials and hundreds of young software developers, CityApp seeks to catalyse technological and social transformation through web and mobile applications. In Sidoarjo, for example, the local government launched the winning app, M-Bonk, for public use. It enables citizens to report poor road conditions to the local governments for prompt actions, using their smartphone’s GPS. Improved road infrastructure means faster and more reliable travel times which eventually bring benefits to the city.

Another initiative was the production of a White Paper that included a survey on the benefits of cloud computing and its applicability to cities. The advantages of cloud adoption were found to be relatively well-known amongst senior city officials. Over 80% of those surveyed acknowledged that cloud computing can deliver a variety of benefits for Asian cities. It debunks some of the common misconceptions around cloud, such as high security risks and costs. If you look at the kind of challenges cities in Asia are facing, you can put them into three categories: providing reliable services, ensuring equity to enable everyone to get access to these services, and environmental sustainability. In order to address these urban problems, you need a common platform that can integrate the various performance indicators and start measuring performance like a private enterprise. In order to do this, cities need a proper infrastructure and ICT has proven to improve municipal governance and finance in many cities in the region.

The winning app of CityApp Sidoarjo has been launched for public use.

This interview was published in the Uraia 2016 Guidelines Report

FOCUS BOX 10 - FOCUS ON REGIONAL PERSPECTIVE: ASIA
INTERVIEW WITH VIJAY JAGANNATHAN, SECRETARY GENERAL CITYNET

Technology is an instrument to enhance transparency, accountability and participation and not an end in itself.

Dr. Jagannathan suggests cities that would like to engage in ICT projects to review options, check with peers and not to sign on to vendors offering magic solutions.
Clean Air Certification, Supporting and Recognizing City Action

Clean Air Asia launched an innovative city certification scheme to help urban centres achieve significant health, economic and climate gains by providing cities with a framework to advance air quality and receive credible recognition.

**The Invisible Killer in Cities – Air Pollution**

What causes nearly one in eight deaths worldwide and affects more than 80% of people living in cities but is often invisible? The answer is air pollution.

While we all often notice the dirty air in our cities, consultations with cities have shown there are challenges to taking action on air pollution. Specifically, cities struggle with a lack of: quality evidence demonstrating the efficacy of solutions (particularly in relation to behaviour change), consideration for air quality impacts in economic and development decision-making processes, and engagement of urban stakeholders around solutions.

The Cities Clean Air Partnership (CCAP) is a Clean Air Asia initiative that addresses the challenges that cities face in improving air quality by making a clear business case linking air quality improvements with cities’ economic and quality-of-life decisions.

The core of the initiative is the development of a certification scheme that recognizes actions that cities take to address air quality, makes it easier to establish new collaborations with public and private stakeholders, and increases opportunities for cities to learn from each other and collectively address issues.

A draft standard has been developed, drawing on input from a balanced and representative group of stakeholders, in alignment with the ISEAL Code of Good Practice for Setting Social and Environmental Standards. The ISEAL Alliance is the global organization for sustainability standards.

Cities will be recognized for taking actions in the following four areas:

a) Identifying core personnel to take actions forward
b) Understanding sources of air pollution
c) Assessing air quality and impacts
d) Addressing air pollution

Clean Air Asia, together with partners from the International Environmental Partnership, gave recognition to the five cities (Baguio, Iloilo, and Santa Rosa, Philippines; Kathmandu, Nepal; and Malang, Indonesia) taking action towards better air quality, during the Better Air Quality Conference 2016 (BAQ 2016) in Busan, South Korea.

[In Photo] City representatives from Malang, Kathmandu, Santa Rosa, and Baguio, together with Clean Air Asia (CAA) and International Environmental Partnership (IEP) representatives.

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**Addressing Air Quality**

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<td>Impacts taken into account in economic and development decisions</td>
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<td>Alignment of urban stakeholders around solutions</td>
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**Understanding Sources of Air Pollution**

Initial suggested focus on: Particles ≤ 2.5µm (PM2.5): sulfur dioxide (SO2): nitrogen dioxide (NO2)

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**Assessing Air Quality and Impacts**

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3. C40 City Report: Unlocking Climate Action in Mega Cities
To demonstrate commitment to addressing air pollution, cities must demonstrate action in three areas: evaluating the impact of control measures; ensuring that the impacts of air pollution are factored into economic and development decisions; and engaging new stakeholders to support solutions. These actions are not linear. This is because CCAP recognizes that at the initial level taking action to address air pollution will help to build momentum to improve both understanding of sources and assessments of air quality.

Upon the completion of the certification requirements, applicable to cities’ circumstances, cities are required to submit supporting documentation for third-party verification. Cities will be able to easily upload evidence online based on common indicators, allowing for easy information sharing. Achievement of the required standard will result in certification and international recognition.

The initiative will be supported by a Knowledge Platform that will highlight actions taken by cities and city stakeholders. City stakeholders will also be able to find information relevant to them and highlight actions they are taking to support city targets.

There are several benefits of the Clean Air Certification: it represents widespread and international recognition for innovative and impactful city actions; it serves as a common and credible assessment for city impact and progress toward meeting commitments on clean air; it builds momentum to meet clean air targets; it serves as a common and credible assessment for city stakeholders. City stakeholders will also be able to find information relevant to them and highlight actions they are taking to support city targets.

SHOW YOUR CITY CARES ABOUT CLEAN AIR - HOW TO BE INVOLVED
Cities are already working on many initiatives that the Cities Clean Air Partnership’s Clean Air Certification recognizes. The following are just a few of the major initiatives that complement and are in alignment with the certification requirements:

SUSTAINABLE DEVELOPMENT GOALS
Goal 3: Ensure healthy lives and promote well-being for all at all ages
3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

Goal 11: Make cities inclusive, safe, resilient and sustainable
11.6: By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Goal 12: Ensure sustainable consumption and production patterns
12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and environment

COMPACT OF MAYORS
The EU Covenant of Mayors and the Compact of Mayors will formally merge from 01 January 2017 creating the largest global coalition of cities – 7,100 – who have made a formal commitment to take action on climate change. C40, ICLEI, UCLG are part of this network. Following commitment cities are expected to upload information on actions taken over a 3 year period and will receive recognition that they are compliant.

NEW URBAN AGENDA
The United Nations Conference on Housing and Sustainable Urban Development has taken place every twenty years. The third conference ‘Habitat’ III took place between 17-20 October 2016. This is a key opportunity to chart new pathways in response to the challenges of urbanization.

The pilot phase for Clean Air Certification was launched on August 31 during the 17th IUAPPA World Clean Air Congress and 9th CAA Better Air Quality Conference in Busan, South Korea, which included Philippines and Indonesia in Southeast Asia, India and Nepal in South Asia, and Taiwan and Japan in East Asia.

If you are a city representative or stakeholder from civil society, government, business or finance who wants to support city action on clean air in the areas mentioned above, please e-mail ccap@cleanairasia.org. For more information, visit www.cleanairasia.org/ccap

Participation will be open to all cities in 2017.

AN ARTICLE BY
Katharine Thoday
Director of the Cities Clean Air Partnership (CCAP)
Clean Air Asia

During the session Introduction of the Clean Air Certification at the BAQ 2016, Clean Air Asia Deputy Executive Director Glynda Bathan presented the Clean Air Certification that will recognize actions that cities take to address air quality. A new set of standards being developed and set for pilot testing in Asian cities was also introduced.
The City of Mandalay, Myanmar’s last royal capital and its second largest city with 1.25 million people, has experienced rapid urbanization and population growth in the recent past. To promote itself as a smart green city, the Mandalay City Development Committee (MCDC) and the Department of Human Settlement and Housing Development (DHSHD) prepared their first major 25 year urban development plan.

The Asian Development Bank (ADB) and the French Agency for Development (AFD) are providing technical and financial support to help the city achieve its vision through the Mandalay Urban Services Improvement Project, which aims to improve the city’s water supply system, wastewater treatment and solid waste management.

In addition, the International Environmental Technology Centre (IETC) of the United Nations Environment Programme (UNEP) has also been providing technical assistance for developing a waste management strategy to help the city achieve a zero waste, zero emissions and resource-efficient society.

All these programs recognize that smart planning, basic urban infrastructure investment, and a radical transition towards a more sustainable lifestyle are requisite steps necessary for ensuring that Mandalay becomes a smart and green city.
IGES AND KITAKYUSHU CITY INTERVENTION

Against this background, the Institute for Global Environmental Strategies (IGES) has been collaborating with Kitakyushu City since 2014, sharing the city’s experience with MCDC to help develop a new environmental education (EE) program for junior schools in Mandalay City.

Kitakyushu City, one of the leading environmentally sustainable cities in Japan, has had a remarkable journey, transforming itself from a “Grey (polluted) City” to a “Green City”, through an environmental education program that raised citizens’ awareness about sustainable development. Kitakyushu City gave particular attention to youth education and built partnerships among different urban stakeholders to overcome environmental pollution in the 1960s. Meanwhile, IGES has applied a Participatory Action Research (PAR) method, which includes a series of consultations and focus group workshops with local key stakeholders, to develop Mandalay City’s new EE program and learning materials.

The project started with an understanding of the existing situation. The initial survey results acknowledged that the existing EE programs (both formal and non-formal) implemented by MCDC and other groups in the city merely focused on raising awareness on environmental issues.

Through a random survey conducted at one of Mandalay’s environmental model schools, IGES found that instruction focused mainly on ecology and that students typically receive only incidental exposure to environmental issues. About 90% of the students answered that they were well aware of the environmental impacts of bad waste management practices and that they were responsible for protecting the environment. However, none of them knew what happens to waste after collection, and only 17% of them were involved in some kind of waste separation or reduction activities at home or school.

ECOLOGY NOTE

As a result, based on Kitakyushu City’s EE experience, IGES developed Ecology Note, a new environmental learning program, and is implementing it in three model schools in Mandalay. Ecology Note offers a new, more innovative approach, combining the three learning domains—knowledge, skills and attitudes (KSA)—to encourage students active contributors to solving environmental issues, rather than just being passive listeners.

Ecology Note includes contents related to:
(i) Awareness and Sensitivity: to provide sufficient knowledge for developing a conceptual awareness of how individual and collective actions may influence the relationship between quality of life and the environment;
(ii) Investigation and Evaluation: to provide sufficient skills to investigate environmental issues and evaluate alternative ways to solve problems; and
(iii) Action Skills: to develop the skills to take positive actions to achieve environmental improvements.

By fostering sustainable lifestyles, Ecology Note—the new learning program—can help Mandalay City achieve its goal of transforming into a smart and green city. Through mainstreaming EE in formal and non-formal education, and mobilizing and empowering youth to pursue sustainable lifestyles, Mandalay City can establish a new norm that saves energy, uses resources efficiently, and minimizes environmental impacts.

The project builds the capacity of teachers, other individuals and organizations to incorporate the proposed principles into concrete learning and actions based on cultural values and traditional social practices. However, it is vitally important to develop a sustainable system for introducing this learning material into the current education system. Additionally, the networks among related organizations must be expanded and partnership to facilitate mutual learning and resource sharing must be created.

MCDC, the Department of Basic Education, Ministry of Education in the Mandalay Region and other key stakeholders, including local non-governmental organizations are implementing the new EE program in 18 model schools in 2016 and will gradually bring it to all 250 schools in the city. To help integrate the learning materials into the school curriculum and support the teachers and other organizations that will implement them, the IGES staff together with experienced teachers from Kitakyushu City conducted a series of trainer training workshops.

AN ARTICLE BY
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Single Window Transaction - Modified Business One-Stop Shop (SWiT-MBOSS)

The Single Window Transaction - Modified Business One-Stop Shop or SWiT-MBOSS is a simplified system implemented by the Business Permits and Licensing Office (BPLO) for processing new business permit applications and renewals. SWiT-MBOSS consists of just three simple steps, all of which are done during the taxpayer’s interface with a single BPLO staff, from the start to the end of the transaction.

The MBOSS is by far the most streamlined version of the Business One-Stop Shop (BOSS), which Muntinlupa City Government adapted in the late 1990s. From the earlier scheme, which featured fourteen steps, the system was simplified into twelve steps, before eventually it was reduced by half to just six steps. This shortened the processing time by a substantial margin. Hence, Muntinlupa City was named the Most Business-Friendly City by the Philippine Chamber of Commerce and Industry (PCCI) for two consecutive years (2001 and 2002). It also earned a special citation from the DTI registration, community tax certificate, contract of lease (if renting the place of business) or tax declaration (if business space is owned), and other necessary attachments depending on the nature of the enterprise. Then, the necessary data and other information are encoded by the frontliner into the same body in 2006. Consequently, this initiative was replicated by other local government units (LGUs) in the Philippines.

Still, in its sustained pursuit of continual improvement in the quality of service it provides to the public, BPLO re-engineered the system in August 2013 to the Modified Business One-Stop Shop or MBOSS, and this time it further simplified the procedure into just three steps. With this intervention, the permit application process became even shorter, averaging thirty minutes from start to finish.

Raising the bar a notch, MBOSS was redesigned in February 2015 to feature the innovative Single Window Transaction or SWiT. The previous process involved interactions between a taxpayer/customer and at least three personnel, while SWiT enables the taxpayer/customer to interact with only one personnel who manages the examination of application documents, the assessment and issuance of payment order, payment acceptance, issuance of receipt, and the release of the approved permit. The total processing time is proportionately shortened since the transition from one staff to another has been eliminated. With SWiT-MBOSS, complete processing time averages thirty minutes (for applications that meet all requirements), though there are many instances when transactions are completed in a fraction of that interval, as shown in transaction slips filed by each frontliner at the end of each working day.

The processing time commences once a frontliner accepts the application form together with all required documents from a taxpayer, which include completed and notarized application forms (two copies) and photocopies of barangay permit for business, Securities and Exchange Commission (SEC) or Department of Trade and Industry (DTI) registration, community tax certificate, contract of lease (if renting the place of business) or tax declaration (if business space is owned), and other necessary attachments depending on the nature of the enterprise. Then, the necessary data and other information are encoded by the frontliner into the system, which then generates the assessment to be paid. The same staff receives the taxpayer’s payment, issues the receipt, and finally releases the approved permit.

The City Government of Muntinlupa rolled out an initiative to implement more efficient governance by creating one-stop-shop access for the delivery of public services, which has been modified and simplified over time. SWiT-MBOSS provides simpler, quicker public service delivery and has resulted in a better, more business-friendly environment.
the conduct of legitimate private enterprise as a strategic means to boost Muntinlupa City’s competitiveness as an investment destination; and (2) the vision to be the model BPLO in the country. In the same manner, the practice is essential to the organization of the City Government of Muntinlupa because it serves as a tool or mechanism by which the local government dispenses a frontline service that effectively contributes to the realization of the city’s goal to become the leading investment hub in the country with the most business-friendly environment.

The impact of SWiT-MBOSS is quite comprehensive, and the entire staff is steadfastly committed to providing excellent service to taxpayers/clients. Although not all personnel are assigned to the frontline windows, most are familiar enough with the system and processes and would be capable of carrying out frontline tasks in case a substitute is needed. The commitment to provide service in a timely, polite and professional manner is reflected by all BPLO personnel, not just those staffed at the frontline windows. Even the simple task of serving free coffee to a waiting client in the taxpayer’s lounge is accomplished with promptness and courtesy.

As for taxpayers/clients, the SWiT-MBOSS practice affects all those applying for new and renewal of business permits, including non-contracting certificates and business account modification. Based on the analysis from client feedback forms, a high percentage of those taxpayers gave the service a “very good” or “excellent” rating. A majority also conveyed their appreciation for the fast and courteous service delivery of BPLO personnel in comparison with their experience from similar transactions with the BPLO of other LGUs.

The impact of the SWiT-MBOSS practice reaches individual entrepreneurs, business partnerships, and corporations that potentially will invest in the city. The positive reviews about the system exert influence on the business decisions of those prospective investors. As a result, they are more likely to choose the City of Muntinlupa as a location for their business, favouring simple, uncomplicated, and streamlined business permits and licensing procedures—an accepted indicator of a business-friendly environment.

In 2015, SWiT-MBOSS won the Government Best Practice Competition conducted by the Development Academy of the Philippines. In the same year, it also earned runner-up honours in the 4th International Best Practice Competition of the New Zealand-based Centre for Organizational Excellence Research.
Mobile App for Sidoarjo Regency Citizens’ Participation Launched

As the result of a CityApp event, where young programmers convened to create a mobile app to solve urban challenges, the government of Sidoarjo is continuing its collaboration with CityNet and Microsoft to launch the winning app for public use and solve one of its urban development challenges.

The mobile app called M-Bonk, which means “road” in Javanese dialect, has gained support from Sidoarjo’s citizens to solve one of their infrastructure issues, following a competition that was held a year ago through a collaboration between Sidoarjo Regency, CityNet and Microsoft.

Approximately 200 students convened to develop apps that address urban challenges faced by Sidoarjo Regency, focusing on strategic issues proposed by the Government of Sidoarjo.

When it won the competition, M-Bonk was called ROAR (Road Infrastructure Report) as it is an app that is used to report damaged roads. It was then further developed together with Microsoft, CityNet and the winning team and renamed M-Bonk. The main goal of the app is to detect damaged roads and potholes through public reports.

Approximately 15% of the total 1,001km road in Sidoarjo was in poor condition (based on the data produced in early 2016) and the condition became worse during the rainy season.

Before this app was officially launched for public use, people usually reported damaged roads by sending sms or e-mails to the Regency or by making complaints on the radio or even calling the Regent directly. It normally took some time for the report to be delivered to the division responsible of the road infrastructure, and the government was not able to validate the report with this kind of reporting system.

The app M-Bonk has allowed citizens to take pictures of damaged roads, and submit them to the relevant division through smartphones. The reports are delivered directly to the responsible authority, which responds to the reports with the necessary repair work as soon as the report is validated through the GPS location shown on the report form. Once the repair or maintenance work has been undertaken the person who reported the issue receives a notification on their phone.

Since its launch in February 2016, M-Bonk has been downloaded by the community about 500 times and the number of reports received has now reached more than 250, with a 100% response rate by the Department of Public Works for Road Construction and Maintenance, the department that is responsible for the road infrastructure in the Regency.

The Department of Public Works for Road Construction and Maintenance formed a special admin team to run and monitor M-Bonk and is manned by two personnel to verify all the reports received through the app.

Eventually, this application will be accessible through various smartphone operating systems, including Windows, Android and iOS; however, during the first phase the app could only be downloaded on Android systems. To maximize the use of this application, Sidoarjo will continue to develop this app, and it is expected to be available for Windows and iOS in 2017.

Through this app, the government of Sidoarjo is committed to engaging citizens in building the city. By using this application, the government is inviting citizens to participate and collaborate in improving the city’s infrastructure.

The development of M-Bonk is a manifestation of Sidoarjo’s commitment to providing the best service to its citizens, especially regarding road infrastructure. This is also part its commitment to establishing Sidoarjo “Cyber Regency”.

Sidoarjo Regency expressed its gratitude to CityNet and Microsoft for their endless support for making Sidoarjo a better city and a “Cyber Regency”.

AN ARTICLE BY
Pipin Kurniawaty
Cooperation Affairs Division
Sidoarjo Regency
Building a Sustainable Future - the Makati Experience: Evaluating Development Impacts Using GIS Technology

Geographic information system (GIS) technology is used to observe and analyze possible impacts of infrastructure projects on land use compatibility and zoning compliance, and to conduct traffic, hazard, and utility impact assessments, and lighting and shadow analyses. GIS can also generate possible impact scenarios and identify possible consequences, interventions and measures to help achieve desired outcomes.

**BRIEF CITY PROFILE OF MAKATI**

Makati is one of the 17 local government units (LGUs) that comprise Metro Manila, Philippines. The total land area of Makati is 27.36km², which makes up 4.3% of Metro Manila.

Based on the 2010 Census, Makati’s nighttime population is 529,000, while its daytime population is estimated to be 3.2-4.2 million, with a total density of 19,336 persons/sq. km. There are 126,457 households with an average size of 4.2 and a population growth rate of 1.16%. The population is comprised of 46.8% males and 53.2% females, and is dominated by young people between 20-29 years old.

**GUIDING PRINCIPLES FOR DEVELOPMENT IN MAKATI**

One of the driving forces behind Makati’s development is that land resources are limited but demand is increasing. Since the city is only 27.36km², commercial, residential, and public projects all vie for rights to the same land, which has led to an exponential increase in land value. The pressing demand is putting pressure on the limited supply of land for redevelopment.

Commercial and residential density increases to address the skyrocketing land prices and to make development economically viable. Based on a newly approved zoning ordinance, the Central Business District (CBD) was expanded based on demand from the periphery. Initially, a Floor Area Ratio (FAR) of 16 could only be found in the CBD, but now it can also be applied to commercial areas outside the CBD.

The city government is required to address the continuous increase in density. As a result, public spaces, greenery and open spaces are luxuries in a densely populated city like Makati. Land acquisition by the city government is barely enough to meet the increasing demand for public facilities. Thus, the city government has to optimize land use for both the public and private sectors. Providing incentives, such as density bonuses to developers who agree to include green networks and open spaces, is just one way to encourage optimized development.

Makati also must avoid incompatible development. The city government must implement strict monitoring processes and thoroughly review incoming infrastructure projects before issuing the required permits and clearances in order to ensure compatibility and compliance to the approved land uses and zoning ordinance.

In addition to infrastructure development, GIS helps to reduce the impact of natural disasters. Using GIS data regarding hazards and vulnerabilities, the city can complete risk assessments, particularly for identified and verified hazard-prone areas, such as flood and fault zones. This way, mitigation and preventative measures can be introduced during projects’ planning and construction phases.

The GIS technology enables balanced development by allowing businesses in the city to prosper while preserving the natural environment and increasing social equity.

**GIS TECHNIQUES**

The GIS software can determine geologic and geographic information as well as demographic data. It can also help in analyzing traffic and transportation situations and can create maps to create various thematic and analytic maps for decision and policy making. Furthermore, it also aids in visualizing the information in 3D.

**DEVELOPMENT PARAMETERS AND DECISION CONSIDERATIONS**

Makati City Government uses GIS technology to provide the necessary data for setting development parameters and standards for the following policy decisions:

- **a. Land use and zoning compatibility**
  Land use and zoning compatibility can be checked through mapping and sieving the compatibility of existing land uses and zoning classifications. Figure 1 shows not only compatibility but also possible development impacts on economic competitiveness, residential supply and social agglomeration.

- **b. Traffic circulation**
  Figure 2 shows a project site within a 500 meter and 1000 meter radius as well as the road networks that can be affected by the development. With GIS, data showing projected pedestrian and vehicular traffic can be spatially visualized. Thus, the city can recommend mitigating measures to prevent negative impacts from development
within a 1000-meter radius of the project site.

c. Susceptibility to natural hazards

Figure 3 shows geo-hazards and figure 4 shows hydro-meteorological hazards that can be considered in project evaluations. Using this data, the city can recommend mitigation measures determined through detailed engineering geo-hazard and geophysical assessments.

The mapping serves as an initial assessment and this will also serve as basis for the formulation of an Emergency Preparedness Program.

d. Impact to basic utilities

Figure 5 shows the drainage system within a 500-1000 meter radius of the development. Using this data the city can project demand for water, electricity, telecommunication and solid waste management, recommend interventions and measures to mitigate impacts.

e. Impact to immediate environment

As shown in Figure 6, GIS data can identify similar developments within a 500 - 1000 meter radius of the proposed project site. Figure 7 shows the shadow and sun path in the development area, and this data enables the development to maintain an east-west orientation to optimize the light and energy the area receives from the sun.

ADVANTAGES AND CHALLENGES

Based on Makati’s experiences, there are numerous advantages of the GIS as an analytical tool; the generated data provides an objective review which is faster, accessible and easier to interpret for evaluating cross-cutting issues. In addition to the spatial analysis for development, GIS is also used to anticipate the impacts of future projects which means that it provides active prevention from passive projection. It examines potential risk trends to communities across different locations and highlights situations that may lead to potential chronic human health risks.

However, there are several challenges in using GIS:

a. High investment cost: the high cost associated with implementing it for the initial investment

b. Disaggregated data: the data required comes from various sources with different formats. Hence, there is a need to standardize the format and develop database for easier management. Data integrity, accuracy, and timeliness must also be considered in the development of the database.

c. High staff turnover rate: GIS experts are in demand not only in the public sector but also in the private sector. Private sector provides attractive salary and benefits for GIS experts, which is much better compared to its public counterpart resulting to rapid staff turnover.

d. Project site-focused development: land owner/developers tend to develop their properties without considering the impacts to the neighbouring areas/communities in terms of traffic, pollution, green and spaces, and aesthetic. This poses a big challenge for the city to educate and encourage developers to address the impacts of their developments in their immediate surroundings.

Based on the advantages and challenges above, Makati City concluded there are three requirements to enable the city to use the GIS technology, first to continue providing technical capacity building to improve human resources. Technological innovations are accelerating in a very fast pace thus continuous education and training is a pre-requisite in order to get the optimum benefits of the technology. Second, systematic digitization and database build-up as regular data or database evaluation/update is the key in developing good spatial information system. And third, the city government needs to educate the developers on the importance of holistic and area-based perspective. Once a key developer is enabled to understand and embraced the importance of considering the immediate environment in their development project, it is expected that the submitted master plans have already incorporated the required elements, hence expediting the process of evaluation and approval.

SUMMARY

GIS is an important tool to assist LGUs. LGUs must contemplate how to harness existing technology to help realize city’s vision. The role of the developer now is not just to provide economic dynamism to the city, but also to provide of green and open spaces within project sites and to connect to existing public spaces. The process provides a holistic assessment of projects in relation to their environments, although it is still a work in progress subject to regular review and continuous innovation. Through the process, Makati can influence development projects to help build a desirable future.
2016 has been an exciting year for CityNet. The Secretariat proactively participated in international conferences like Preparatory Committee Meeting III and the pioneering International Forum on Urban Policy for the Sustainable Development Goals (SDGs) with Seoul Metropolitan Government and UNESCAP. CityNet also spearheaded a series of seminar and capacity building workshops aimed at expanding members’ knowledge and skills in urban development. As always, CityNet continues to strive for the benefits of its network.

The first International Forum on Urban Policy for the Sustainable Development Goals (SDGs), initiated by Seoul Metropolitan Government, UNESCAP and CityNet, took place in Seoul from June 8th–10th. Mayor Park Won Soon of Seoul, UNESCAP Executive Secretary Shamshad Akhtar, and CityNet Secretary General Vijay Jagannathan officially opened the forum. Approximately 300 urban practitioners, including 11 mayors from cities across the Asia Pacific region, convened in the capital of South Korea to discuss how to facilitate and support cities in achieving the SDGs, particularly Goal 11, and identify practical approaches and programs for sharing policy experiences, best practices, and innovative technologies and financing mechanisms among urban stakeholders.

During this pioneering forum, the three institutions introduced their ground-breaking collaborative effort, the Urban SDG Knowledge Sharing Platform, which is an online hub where cities across the Asia Pacific region and beyond can share experiences and best practices in response to the SDGs. Not only will the hub provide access to information and technical resources, but it will also facilitate the replication of successful policies, initiatives and good practices through city-to-city cooperation.

At this trailblazing forum, CityNet launched a special edition of its bi-annual magazine, CityVoices, providing innovative solutions to specific, city-level problems. Recognizing that the multi-dimensional urban challenges the Asia Pacific region faces do not conform to European and North American models, CityVoices focuses on Asian perspectives on sustainable development. The forum concluded with an outcome document issued by Seoul Metropolitan Government, UNESCAP and CityNet as a commitment to fully implement the 2030 Agenda for the SDGs.
The long-awaited and most anticipated third global conference on Housing and Sustainable Urban Development, Habitat III, was held in Quito, Ecuador from October 17th-20th. As the biggest association of urban stakeholders in the Asia Pacific region, CityNet has actively contributed towards the New Urban Agenda, which will set a new global urbanization strategy for the next two decades.

Leading up to the Habitat III Conference, the Secretariat participated in various Preparatory Committee III activities, from attending the World Urban Campaign Steering Committee Meeting to showcasing its programs in the side event and exhibition.

Taking the theme of youth participation in urban development, CityNet held a discussion in partnership with UN-Habitat titled “Civic and Youth Participation in the Wired Age.” It focused on initiatives that use innovative technologies to make cities inclusive, people-centred and sustainable.

Moderated by Rubben Hattari from Microsoft Indonesia, five tech-savvy experts highlighted examples of successful civic and youth participation through innovative technologies that improved urban services and governance: Sigit Setyawan from Sidoarjo Regency explained the CityNet-Sidoarjo-Microsoft collaboration on CityApp; Sohel Rana from UN-Habitat shared about designing public spaces using Minecraft; Mellyana Frederika from Pulse Lab Jakarta explained how big data can be used for humanitarian work; Deevya Desai from Grab spoke about Grab’s social mission; and Seo Sungryul from Seoul Metropolitan Government (SMG) announced the CityNet-SMG-UNESCAP initiative, the Urban SDG Knowledge Platform. The discussion also produced a set of recommendations to be incorporated into the New Urban Agenda.

CityNet also had an exhibition booth to showcase how the network was engaged by Sidoarjo to roll out in partnership with Microsoft, the mobile app M-Bonk, a sustainable public participation project. This app, which helps the city to provide better road infrastructure using public engagement, won the CityNet and Microsoft CityApp hackathon.

In addition, CityNet attended the 15th Steering Committee Meeting of the World Urban Campaign, which convened a broad global network of urbanists, including civil society, city and business groups, to facilitate formal input on the New Urban Agenda from a variety of increasingly active alliances, aligned with UN-Habitat and its agenda. As one of the Campaign’s lead partners, CityNet represented its network, highlighting the important role local authorities play in building the New Urban Agenda, as the main key player in urbanization.

CityNet and Seoul Metropolitan Fire & Disaster Headquarters (SMFDH) signed a MoU to bring Life Safety and Fire Services Trainings and Safety Management Vehicle and Appliance Support Programs. Fire services and disaster resilience capacity in many cities in Asia is still inadequate to meet the needs of quickly growing populations.

CityNet successfully delivered two trainings, exclusively tailored for participating cities from the Philippines and Thailand in June and July respectively. This training was specifically designed for firefighters and rescue team members, offering drills and teaching advanced and professional tactics for protecting the lives and property of citizens. The training modules covered life rescue and emergency medical services, a visit to the emergency operation centre, fire academy and water rescue brigade in Seoul, and problem analysis exercises to further develop fire services for safer cities.
Sustainable interventions exclusively tailored for Sidoarjo Regency

Through a CityNet Services program, CityNet and Sidoarjo Regency worked together to create a more sustainable, inclusive city. Following a series of detailed reviews and discussions about Sidoarjo’s specific urban challenges, a delegation of thirteen, representing Sidoarjo’s Water Utilities, City Council Members, Supervisory Board for Sidoarjo Local Hospital and Advisor to the Regent for Economic Development visited Seoul from September 20th-22nd.

The study visit focused on Seoul’s ICT for public participation in governance, waterworks and hospital management, three areas highlighted by the Sustainable Development Goals as requisite for an inclusive and sustainable city. As CityNet is committed to achieving lasting outcomes, the technical visit will be followed by more tangible projects between Sidoarjo, Seoul City and CityNet.

ARISU workshop for Chinese cities

To cater to Chinese cities’ needs, CityNet held a training program on Seoul Waterworks Policy from September 25th–October 1st in Seoul. This program aimed to construct sustainable cooperative relations in the field of waterworks by sharing information, knowledge and technologies in water supply and sewage treatment. It also sought to provide an opportunity to benchmark Seoul’s successful waterworks model by operating professional and systematic training programs, including theoretical lectures by experts in waterworks and relevant field visits.

All the modules were delivered in Mandarin and attended by officials from Wuhan, Beijing, Jia Musi, and Guangzhou. In addition to learning about Seoul’s waterworks system and policy, participants had a chance to experience Korean culture, visiting several historical palaces and museums, taking in a traditional Korean performance, and enjoying a cruise on the Han River.
Localised workshop for Philippines and Indonesian cities

To support its members in responding to urban challenges, CityNet custom-tailored localised training courses in the Philippines and Indonesia to empower city officials to address specific issues.

CityNet and its associate member League of Cities of the Philippines conducted a localised program for Philippine cities focused on sustainable transport options in Makati City on September 29th. The one-day workshop provided a venue for Philippine cities to learn about various sustainable transport concepts, policies, and practices from foreign experts, the national government, and successful local case studies. It also outlined key policy and technical capacity focus areas for possible interventions.

During the second localised course, CityNet National Chapter Indonesia held a seminar on healthy cities and hospital management in Banjarbaru, Indonesia from October 12th-14th, under the theme “Committed to Collaborate for Improving Services towards Healthier and Smart City with Character.”

This program was the follow-up after a short course and study visit in 2015 that focused on healthy cities and hospital management, attended by CityNet-Indonesia member’s head of health policy and several local hospital directors. The course and study visit was conducted in Europe from October 16th-26th 2015 in cooperation with Erasmus University Rotterdam. The short course material focused on how European countries implement the health insurance for every citizen and the relationship between insurance companies and the hospitals.

The main objectives of the follow-up activity were to share key points and best practices for implementing health insurance, coordinating stakeholder interests to improve insurance implementation, and achieving the SDG’s goal to decrease poverty and increase health and prosperity.

2016 Suwon Human City Forum

In Asian cities, the discourse on progressive human cities, where people are at the centre of urban progress, has spread rapidly. The idea of a ‘human city’ emerged from a critical reflection on urban growth centred on economic value. By focusing on people, city progress can be measured only by the level of human flourishing. The prototypical human city focuses on keywords such as community, public space, social economy, welfare, vernacular culture, human rights, participatory governance, and finally, right to the city.

In order to showcase the achievements of urban communities in the Asia Pacific Region in fostering human-oriented policies, Suwon City and CityNet organised the 2016 Suwon Human City Forum. Held from November 3rd-4th, 2016, the forum provided a platform for leaders in human-oriented urban policymaking, such as municipal leaders, academics, and policy implementers, to discuss human-oriented urban policies. Participants came together to exchange views on progressive urban reforms that promote human flourishing, and to build a public forum to discuss and share theories, policies, methods and tasks related to creating progressive human cities.

Suwon City is one of the Asia Pacific Region’s human city leaders: Suwon is renowned for its human city initiatives, such as the ‘Liberal Arts City’ initiative, which strives to excavate and celebrate Suwon’s unique cultural identity, and the ‘Village Renaissance’ initiative, which aims to restore the collective community within an urban environment. Further details on Suwon’s efforts to create a human-oriented city can be found in CityVoices autumn/winter edition 2015.
The increase in urban population is a global trend that brings huge urbanization challenges. Slums in cities across Asia show the need for faster growth to accommodate new urban dwellers. To protect people from displacement and natural disasters, rapidly growing cities urgently need to increase their affordable housing supply. In addition, the need for public spaces that integrate the community, promote local economies, and offer healthy recreational activities in a safe is greater than ever. To address these shared concerns in Asian cities, CityNet conducted two workshops on these topics at the Kuala Lumpur Regional Training Center in 2016.

The first workshop, the 30th KLRTC, entitled ‘Delivering Affordable Housing’ was held from March 9th-11th, 2016 to help participants develop new skills and knowledge regarding housing policy implementation and share best practices. Led by the renowned architect, activist, and long term CityNet supporter from India, Kirtee Shah, this workshop focused on affordable housing provision and participatory processes to help create communities.

The workshop was further enriched by Claudio Acioly from UN-Habitat and Zafar Iqbal Zafar from Pakistan, who added fresh perspectives on both theory and practice. Participants also discussed the role of community participation in maintaining social relationships within slum areas, and in improving living conditions and public services by looking at examples from countries such as Bangladesh, India, Nepal, Pakistan, and Indonesia.

The 31st KLRTC workshop on ‘Public Spaces: Creating Safe, Inclusive, and Accessible Public Spaces for All’, held from August 2nd-4th, 2016 offered further insight on how to make cities grow, and focused on a definition of public spaces that goes beyond parks to include markets, streets, and basically all areas where city life takes place. Enabled by this definition, participants and speakers from over 10 countries recognized the challenges inherent in building inclusive, healthy, safe, connected, and integrated public spaces, and discovered many innovative ways to do so.

This workshop included a presentation on UN-Habitat’s theoretical framework regarding the key principles of public spaces, and insights from three international guest speakers. Participants also presented examples of public space policies from their cities for group discussion. Finally, a team exercise allowed every participant to apply their new knowledge to a real project in Kuala Lumpur and to present their conclusions to the officials conducting the project.

By Sayel Cortes and Cresti Eka Fitriana
CityNet
Habitat III and the Role of the New Urban Agenda for Asian Cities

The recommendations for sustainable urbanization are defined in the New Urban Agenda that was adopted at the end of the ceremony which brings two years of consultations and negotiations among all kinds of urban stakeholders to conclusion. Being one of the most rapidly urbanized regions, Asia will be greatly affected in the next years, and the New Urban Agenda will have an impact on this.

Some of the key issues included in the New Urban Agenda are promoting a stronger role of local governments in urban development, a progressive view of equity and rights, and using urban planning to promote urban sustainable development that includes social, environmental, and financial elements. These are all areas in which CityNet has been active in different ways by reinforcing the capacities of cities and local governments from various different corners and stages of development in Asia.

Due to its broad and active work with cities, CityNet was invited to actively participate in several events during Habitat III. Represented by Sayel Cortes, CityNet role in Habitat III started with facilitating a pre-event on October 16th, organized by UN-Habitat on “New Settlements and Host Communities: Planning for Sustainable Integration of Refugees” where relevant topics on forced migration, internal displacements, and other issues were addressed by experts from Africa and Asia mainly.

It was then followed by a presentation on the benefits of the Urban SDG Knowledge Platform at the networking event “Why Seoul? Inclusive and Transparent City Development: Sharing Seoul’s Policies and Best Practices” organized by Seoul Metropolitan Government and UNDP on October 18th. This was an important opportunity to promote the online knowledge platform, that UN-ESCAP, Seoul Metropolitan Government and CityNet are currently developing, which will be launched in Bangkok on November 30th.

CityNet also participated as panelist in two sessions: “City Diplomacy: Connecting Global Cities Strategically” on October 19th, which is part of a multidisciplinary research effort to understand how city
networks work and how they can work better; and “Housing for All: An Indian Perspective” that gave a few examples of the policies India is doing to reduce informal settlements, where CityNet shared the result of the Affordable Housing workshop held in March this year.

Finally CityNet had the opportunity to facilitate a three-hour training session on “Urban Planning for City Leaders” where UN-Habitat experts on urban design, law, and finance explained how these three factors come together to plan a city. In addition, Habitat III provided a space for CityNet to meet new and old partners, as well as a few members to advance conversations that CityNet has been advocating particularly the Safer Cities Program and CityNet’s participation in the World Urban Campaign.

In conclusion, Habitat III has marked a historical moment for cities. With this new chapter starting, the challenges to implement the New Urban Agenda, including the specific actions, metrics, or mechanisms that are needed, are here. Asian cities will definitely be a global reference in this process, and CityNet is here to support them.

**Why Are Some Cities More Cheerful than Others?**

Across Asia, there is a markedly different response to that question. In some cities, people feel generally pessimistic about the future, new Microsoft research has found, while other Asian cities have high levels of optimism.

What has caused this, and what does it mean for city governments? We surveyed thousands of people across Asia Pacific, weighting the findings for an even split between 10 cities, covering all generations equally and achieving statistical confidence of 95%.

We found that the top six most optimistic cities in Asia are: Mumbai, Jakarta, Delhi, Manila, Shanghai and Tokyo.

Meanwhile, the top six least optimistic were: Sydney, Taipei, Singapore, Osaka, Seoul and Bangkok.

**ARE YOU FEELING OPTIMISTIC?**

At first glance, the most optimistic seem to be poorer than the pessimists, but Tokyo is one of the richest cities in the world and still has many citizens who feel that life will improve for them in the next decade.

Being more affluent doesn’t directly affect citizens’ enthusiasm. Instead, there must be other factors that affect how positive a city is.

In partnership with CityNet, we recently ran a session with city mayors to discuss this in more detail, and I put this question to our panel.

Kim Chang-beom, Ambassador for International Relations of the Seoul Metropolitan Government noted that there have been high expectations for social mobility thanks to rapid economic growth over the past few decades. But low growth has created a mood in the younger generation where people believe that “the establishment are living a better life at a cost of the future generation.”
This is causing “extra burdens and stress on the public sector” because officials need to embrace those who are not feeling fully respected, he said. “There are more needs emerging in the public sector – in both local and central government – to further reflect the voices and needs and complaints from those growing up.”

This comment is matched by our survey findings on the most useful way that technology can improve living conditions in a city. Many citizens in Seoul – 66% – thought that technology could be used to provide information to residents about city services, and the same percentage thought it could improve communications between the people and the city.

These two findings were, in fact, the most popular uses of technology for all cities, with agreement from 80% and 79% of cities respectively.

Jakarta is a city that has prioritized this over the past year, its Deputy Governor told us at our session, and this may reflect why citizens there were so optimistic – including the younger generation.

“Young people are looking for jobs and want to start their own businesses. Our government provides them with an office,” Mr Oswar Muadzin Mungkasa said. “They can also come to our office to print everything out and it is free.” This is a new policy he said of reshaping government services to help younger citizens find employment.

Microsoft has found that appathons are a good way to bring young people into the economy and encourage them to work with government. We ran one last year in Makassar, and had 500 people in the room with an exciting vibrancy. But in Indian cities, where citizens are amongst the most optimistic, we had demand for 75,000 developers to work with government data at one of our appathons.

Singapore was the most pessimistic city, we found, but interestingly, the city where most citizens in other places wanted to live, according to our survey.

Michael Khoo of the Centre for Liveable Cities suggested that the “grass is always greener” and so while the city has a strong baseline, “people expect more from us.” Expectations for the government have increased, and so the challenge is how to better communicate and interact with citizens.

“The key issue rests with each of us: whether as a civil society we look after each other, whether in times of need we are resilient, those are the key tests that will bring society to the next level,” he said.

Singapore is using technology as an enabler to build this resilience in younger generations, he said, particularly by reshaping the economy to promote technology startups. Old factories have been converted into startup hubs, and there’s “enthusiasm and knowledge in bringing this forward.”

This shows that, even in the richest countries in the world, there is scope to create platforms and do more on citizen relations.

Cities are moving past the one-way service – where the city communicates to you – to the two way service, where it listens, responds, and uses data to provide opportunities.

This has created potential in everything from residency applications to business permits, where feedback and guidance is crucial to guide the citizen journey.

The challenges raised by the Mayors can all be assisted by technology. Platforms built on the cloud provide opportunities to share datasets, build software ecosystems, connect with citizens and boost optimism.

There can be closer communication with city residents than ever before, with new businesses created and booming economies created. Regardless of your city, that’s a reason for optimism.
Mark your calendar for the 2017 CityNet Congress that will take place in November 2017 in Colombo, Sri Lanka.

The 2017 CityNet Congress will consist of the 35th Session of the Executive Committee, General Council, Mayor’s Forum/International Forum, the 36th Session of the Executive Committee, technical sessions and site visits. The Congress meeting is a unique opportunity to voice your cities’ challenges and solutions as well as network and form partnerships with other CityNet members, partners, and business leaders.

Further details on both the event programs and registration process will be announced as they become available.