



WeGO-DC Smart City Roundtable Post-Roundtable Report

Walter E. Washington Convention Center, Room 158AB
July 10, 2019, 14:00 - 16:00

To build such complex ecosystems as smart sustainable cities, it is necessary to strengthen cross-stakeholder partnerships and knowledge sharing, not only within governments but also across cities and nations. A diverse group of 30+ smart city experts representing local governments, international organizations, the public and private sectors, and the academia, gathered at the WeGO-DC Smart City Roundtable on July 10, 2019, in Washington, DC, to share knowledge and experience in smart city development, with a focus on identifying innovative solutions in the area of resilience and public safety.

The event was conducted in the format of a roundtable, where the participants first heard several presentations on pertinent challenges and solutions from cities' and other stakeholders' perspectives and were engaged in a discussion thereafter. Below are some of the key lessons learned and practical recommendations voiced at the roundtable.

Definitions

A resilient city is a city that “assesses, plans and acts to prepare for and respond to all hazards – sudden and slow-onset, expected and unexpected.” (Urban Resilience Hub, UN)

“Urban resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and thrive no matter what kinds of chronic stresses and acute shocks they experience.” (100 Resilient Cities)

Leadership's role in responding to acute shocks

Responding to acute shocks and sudden hazards requires, from a technical standpoint, real-time information streamlined from one agency to another and strong communication channels to inform residents, as well as well-trained rescue teams and well-informed residents. However, without interested leadership and policies oriented to the interests of citizens, the first two initiatives may not be successful.

For example, a record 1.2 mln people were evacuated in 24 hours before cyclone Fani hit the densely populated state of Odisha in India in May. Early warnings were undoubtedly vital, but it was primarily the government's prompt actions in delivering alerts to residents that ensured aversion of a mass disaster. Disaster response teams with the support of 45,000 volunteers successfully carried out evacuations, with a total of 33 deaths. Back in 1999, a super-cyclone took away the lives of 10,000 people.

It is emphasized that when acute shocks happen, the cost of damage is oftentimes closely related to such chronic stresses as the aging infrastructure (e.g., an incident in Minneapolis, where I-35W Mississippi River Bridge collapsed in 2007 due to an inadequately increased load) or shortage of affordable homes (e.g., one of the most serious and costly disasters in the country's history, Harvey Hurricane in Houston in 2018, triggered a severe housing crisis).

Leverage the power of data for addressing chronic stresses

Along with natural disasters, cities face challenges of a different nature—challenges that affect our lives over a certain period of time. It is therefore necessary to monitor the gradual impact of certain phenomena, such as aging infrastructure, unemployment, social inequality, homelessness, crime, poor air quality, and heat waves, through various sources of data (IoT sensors, drones, satellites, mobile phones, and SNS) and, most importantly, to combine those different kinds of data to make valuable predictions.

For example, Seoul developed the IoT Robot-Enabled Early Response System, a system that collects and streamlines real-time information (heat, humidity, temperature, oxygen, nitrogen) from underground utility facilities to the control center via so-called IoT robots, then analyzes the collected data and makes predictions and, in case of accidents, immediately notifies relevant safety agencies.

Another example is an ongoing project in Santa Lucia that will assess the vulnerability of house roofs in the city. The city is exposed to many natural disasters, including hurricanes, earthquakes, volcanoes, floods, and landslides, and these risks are getting even higher as a result of climate change. The data will be collected from cameras and drones (e.g., age, height, and slant of roofs) and the imagery will be mapped first for visualizing buildings in terms of their vulnerability against strong winds and hurricanes, which will be crucial for better planning for housing retrofitting and more accurate damage forecasts.

Focus on prevention, not aftermath

That public safety issues intensify with rapid urbanization indicates the necessity of transforming operations at the fundamental level. Particularly, considering that many policies on fighting crime and violence tend to focus on punishing offenders and providing support for victims, it is critical to shift to a new approach centered on prevention.

In addition to optimizing communication channels between agencies and departments and ensuring 24/7 access for citizens, it is critical to focus additionally on mapping incidents and analyzing their patterns. A UN-led initiative in Cali, Colombia, and Querétaro, Mexico, aims to increase community safety through crime-related data collection among local stakeholders. Such data as statistical data, focus group data, interviews, community survey results, and media and social media will help better understand crime trends and risk factors for evidence-based crime prevention policies and strategies by the city government.

One of the challenges in realizing the ideas would be ensuring social inclusion, namely incorporating the special needs of the vulnerable or marginalized groups of people. One of the projects mentioned was a project in Busan, the second largest city in Korea, which entailed the deployment of safety tags for seniors and children. The safety tags do not only track the tag-holder's location and movements but also send alerts to police and families. The solution was implemented by NTELS, a Korean company that provides transformative converged solutions and services across industries based on such innovative technologies as IoT, cloud, AI, big data, and mobile.

Recognizing the potential of smart tech, city governments should equally value non-digital- yet equally innovative- methods, especially in addressing social issues. For example, the first participatory policy against sexual violence in Korea was initiated in 2012. Under the Safer Neighborhoods for Women Program, women returning home late at night can be accompanied by specially assigned volunteers. An association of convenience stores in Korea supported the initiative by providing emergency shelters for women in case of dangerous situations.

Understand the local context

It was observed that local governments need to dedicate a sufficient amount of time to the planning stage, where clear priorities, objectives, and key stakeholders should be determined in keen consideration of each city's local characteristics.

Being surrounded by water and acting as the nation's capital impacts a city's decisions when it comes to resilience. Washington DC's officials observed that in the process of developing the "Resilient DC" strategy, they spent a considerable amount of time trying to understand the city's unique context, identify priority areas and specific challenges they want to solve, analyze local dynamics (e.g. population fluctuations during the day or complexity of public services at different levels of government), conduct a self-perception inventory to compare what is being done vs. what is proposed, and bring together key stakeholders in the given state of affairs. For instance, in order to find a best approach in mitigating risks related to floods, be it caused by effects of climate change or failures of sewer systems, it was critical for the city to first comprehend how different kinds of flooding – rain flooding, river flooding, and drain and sewer flooding – interact with each other.

In Korea, the Local Safety Diagnosis System provides tools for local governments to diagnose and analyze their local safety level in seven key areas (traffic accidents, fires, crimes, safety accidents, suicides, and infectious diseases), which in turn help identify risk factors and better mitigate local risks. The aggregated data is also disclosed to the public in the form of a Safety Index.

Keep communities informed and engaged

Having an uninterrupted communication channel with communities is no doubt the core element in mitigating major risks and ensuring an effective response to natural disasters.

Such countries as the Philippines experience massive typhoons that can occur up to 20 times per year on a regular basis. In addition to close collaboration with the national police and armed forces, fire and rescue brigades, and local barangays, Cauayan City has community engagement strategies. The city holds monthly recruitment and training programs with volunteers and works with schools on the distribution of emergency handbooks. Access to public WiFi was set up in all 65 barangays of the city to ensure everyone stays connected for live weather and other updates through a special app called “Cauayan City Connect!” and SNS.

Another example is West Java, the biggest province in Indonesia with over 48 million people. More than half of the population is at risk due to extreme pollution by chemicals in the Citarum River, which is used for drinking water and farm irrigation. The government decided to install online monitoring across the river watersheds in over 300 sample areas with 10 parameters, and allowed citizens to monitor and report on their implementation. The province, where 20 out of 27 cities are classified as high disaster risk cities, is also developing its ten-year West Java Resilience Culture Province blueprint, which focuses on five components, including resilience index, resilience citizen, resilience center, resilience knowledge, and a resilient financing.

Build local capacity

The potential of data is undeniable; but, in many cases, governments overlook one important pre-requisite for harnessing it: local capacity. Building local capacity is a necessary investment that requires long-term planning.

Located in a highly flood-prone area, the city of Dar es Salaam has initiated a crowdsourcing project called Ramani Huria (“Dar Open Map” in Swahili) that in the long run can make a tremendous difference in the lives of its residents. This community-based mapping project trains local university students and community members to use an open-source OpenStreetMap to ultimately create accurate maps of the unplanned areas that were not previously mapped. The project does not end here. The collected data will then be combined with other data in InaSAFE software to simulate flooding for proper disaster mitigation and response. The project not only engages citizens in collecting data but also helps them build digital skills.

Change the culture

While we hear a lot of buzz words like sustainability, climate change, 5G, blockchain, and AI, it is not the technology that drives change and innovation but the culture. This is even more distinct in the public sector.

To address a number of challenges in its city, such as ageing population, disaster risk, extreme weather conditions, and misbalanced urban development, Taipei created a special platform Smart Taipei Project Management Office that, on one hand, plays an advisory role for the government by putting forward policy recommendations and, on the other hand, acts as a matchmaker between government agencies and vendors for improving public services. The office also serves as a channel of communication with citizens. Since its establishment, the office has established business connections with 30+ government agencies and 500+ vendors for 170+ joint projects. Comparing then to now, the office can see a major mindset shift: government agencies have been approaching the office to seek its assistance in finding new ideas and solutions.

Challenges remain

During the discussion, a couple of valuable observations on challenges were made. For example, many stakeholders still consider silos among local governments as a serious challenge in realizing smart city projects across a respective country. It was suggested that governments explore the market of open standards and leverage their potential in creating smart applications across sectors, which will enable the overall interoperability of public services, lower costs, and accelerate innovation at the same time. In the global community, the FIWARE Foundation promotes the use of open standards among public administrations in the EU and abroad. Particularly, the FIWARE platform built around the notion of context information management has already been used in Colombia, Japan, and India and is expected to be implemented by 30+ cities in member states of the G20 by end of 2019. Notably in the US, Washington DC has been part of several regional movements, including Metropolitan Washington Council of Governments, Greater Washington Board of Trade, and Consortium of Universities of the Washington Metropolitan Area, to facilitate standardization processes in the public, private, and educational sectors in a more holistic way.

On another note, while many cities face issues in finding ways to finance smart city projects, according to the Smart Cities Council, there is a large mismatch between the projects that need financing, especially for infrastructure upgrade, and the actual funding available from investors and financing institutions, with the latter being much higher. The issue, of course, comes from various factors; but, one of the main reasons may be the limited knowledge the government has with respect to financing arrangements.

The World Smart Sustainable Cities Organization (WeGO), established by 50 founding members in 2010, is an international association of city and other local governments, smart tech solution providers, and national and regional institutions committed to the transformation of cities into smart sustainable cities.

WeGO has more than 175 members around the world and serves as their international platform to improve the quality of life, innovate in the delivery of public services, and strengthen regional competitiveness.