



Executive Brief

Smart City Asia/Pacific Awards 2021: Promoting the Best Practices of Local and Regional Governments

By Manoj Vallikkat, Ravikant Sharma, Gerald Wang

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The full version of this IDC Perspective showcases 70 selected Smart City projects from the Smart City Asia/Pacific Awards (SCAPA) 2021, which tracks the progress Asia/Pacific (AP) cities and municipalities have made in 14 functional domains of eServices. The awards program also provide a forum for sharing best practices to help accelerate Smart City development across the region.

"IDC's seventh year of facilitating the SCAPA awards has brought about new milestones. Despite the impact of the COVID-19 pandemic in 2020, we received hundreds of public nominations and saw a six-figure count in unique public votes. These circumstances reinforced our continued assessment that the COVID-19 pandemic accelerated public sector digitalization initiatives. In AP, we noted that local public sector agencies drove forth increased social development and outreach touch points; the administrative transformations of cities; the reimagining of the use of residential, commercial, industrial, and public spaces; the improved automation and resilience of critical infrastructure services; and the aiding of local enterprises to transition to new digital economy norms," says Gerald Wang, head of public sector, IDC AP.

Key Takeaways

- IDC predicts that by 2025, 30% of cities will leverage automation via Internet of Things (IoT), artificial intelligence (AI), and digital twins to blend the physical and the digital as well as improve the remote management of critical infrastructure and digital services.
- Sixteen Smart City projects across AP are named winners in the 14 e-Services categories with entries from Singapore leading the charge.

| COUNTRY | WINNING PROJECTS |
|-------------|------------------|
| China | 2 |
| Indonesia | 1 |
| New Zealand | 2 |
| Philippines | 1 |
| Singapore | 5 |
| South Korea | 2 |
| Taiwan | 3 |

Situation Overview

The ever-increasing urban population, along with the demand for more digital touch points driven by the COVID-19 pandemic, sets Smart Cities across AP to become more interconnected. Citizen digital ID, real-time street surveillance, and facial recognition are some of the technological trends that are gaining momentum, harnessing the power of Internet of Things (IoT), artificial intelligence (AI), and augmented reality (AR)/virtual reality (VR). IDC predicts that by 2025, 30% of cities will leverage automation via IoT, AI, and digital twins to blend the physical and the digital as well as improve the remote management of critical infrastructure and digital services. IDC launched the seventh Smart City Asia/Pacific Awards (SCAPA) to recognize outstanding Smart City projects in the region. SCAPA 2021 recognizes the progress AP municipalities have made. It will also provide a forum for sharing best practices to help accelerate Smart City development in AP.

SCAPA 2021: The Process

IDC Government Insights received over 260 Smart City initiatives from the public sector and technology suppliers, with 70 of the said projects named as finalists across 14 functional eservice categories. The full version of this IDC report highlights the 70 shortlisted finalists. All finalists were selected using IDC's Smart City Development Index Framework, a rigorous six-phase benchmarking process, which involves input from various stakeholders, including the public. Public or citizen voting is the second phase of this framework and constitutes 25% of the criteria for judging to determine the best of the best among 14 Smart City functional eservice categories. These functional domain areas are:

- Administration
- Civic engagement
- Digital equity and accessibility
- Economic development, tourism, arts, libraries, culture, and open spaces
- Education
- Public health and social services
- Public safety — data-driven policing
- Public safety — next-generation emergency services
- Smart buildings or smart tech parks
- Smart water
- Sustainable infrastructure
- Transportation — connected and autonomous vehicles, public transit, and ride hailing/ride sharing
- Transportation — transport infrastructure
- Urban planning and land use

Case Studies

Out of the 70 finalists across the 14 e-services categories, here are the 16 winning projects and the organizations who planned and implemented them, as grouped according to category themes:

I. People and Communities

- **Taipei City Government (Taiwan)** wins Outstanding Smart City Project for Civic Engagement for *TaipeiPass: Digital Pass to Government's Mobile Service*.
- **Government Technology Agency of Singapore** wins Outstanding Smart City Project for Digital Equity and Accessibility for *Singapore Personal Access (SingPass)*.
- **The Office for Seniors, Digital Inclusion Alliance Aotearoa, 20/20 Trust (New Zealand)** wins Outstanding Smart City Project for Education for *Digital Literacy Training for Seniors*.
- **Taipei City Government (Taiwan)** wins Outstanding Smart City Project for Public Health and Social Services for *Taipei City Technology-Assisted Pandemic Prevention Project* tied with **Government Technology Agency of Singapore** for *TraceTogether, world's first national digital contact tracing solution*.
- **Singapore Police Form (SPF) and Home Team Science and Technology Agency (HTX)** wins Outstanding Smart City Project for Public Safety – Data-Driven Policing for *Multipurpose All-terrain Autonomous Robots (M.A.T.A.R)*.

II. Critical Infrastructures

- **New Taipei City Government (Taiwan)** wins Outstanding Smart City Project for Public Safety – Next-Generation Emergency Services for *Real-Time Life guardian – Smart Cloud Dynamic System*.
- **Shenzhen Water Group (China)** wins Outstanding Smart City Project for Smart Water for *Shenzhen Smart Water Project*.
- **Ministry of Environment and Forestry (KLHK) (Indonesia)** wins Outstanding Smart City Project for Sustainable Infrastructure for *Smart Forest Guardian*.
- **Daegu Metropolitan City Government (South Korea)** wins Outstanding Smart City Project for Transportation – Transport Infrastructure for *WING Stations - Small Electric Mobility Smart Charging/Parking Station*.

III. Administration and Economic Affairs

- **Government Technology Agency of Singapore** wins Outstanding Smart City Project for Administration for *Agile Governance through Digitalization (IM8)*.
- **Yunnan Provincial Department of Culture and Tourism (China)** wins Outstanding Smart City Project for Economic Development, Tourism, Arts, Libraries, Culture, and Open Spaces for *“Yunnan at Your Fingertips” Project*.
- **Auckland District Health Board (ADHB) (New Zealand)** wins Outstanding Smart City Project for Smart Buildings/ Smart Tech Parks for *Auckland Hospital Digital Twin*.
- **Sejong Special Self-Governing City (South Korea)** wins Outstanding Smart City Project for Transportation – Connected & Autonomous Vehicles, Public Transit, Ride-Hailing / Ridesharing for *Self-Driving Shuttle Taxi*.
- **Government Technology Agency of Singapore and JTC Corporation** wins Outstanding Smart City Project for Urban Planning and Land Use for *Open Digital Platform* tied with **Department of Agriculture (Philippines)** for *WeSquire Platform*.

Presented in this executive brief are three of the 70 selected Smart City projects described in the full report, all of which are poised to catalyze digitalization in more cities in AP.

Category 1: Administration

Agile Governance Through Digitalization | *Government Technology Agency (Singapore)*

The Singapore Government Instruction Manual (IM) on ICT and Smart Systems (SS) Management, also known as the IM8, is used to manage around 4,000 government systems, including those used by citizens and businesses, such as Singpass/Corpass, TraceTogether, MyInfo, Parents Gateway, and the 40 digital services on LifeSG. During the establishment, it was initially found that IM8 did not meet or support the government's goal of agile governance. Following months of rigorous consultations that garnered around 17,500 responses, the rewritten IM8 was rolled out in July 2020. It was complete with agile governance processes for the compliance of all agencies. The IM8 is risk based and has proven to be implementable on systems that are built by agencies in support of Smart Nation Singapore. With more than 30% of requirements that were tiered by the security and sensitivity classifications of systems in view of the likelihood and impact of risk to systems and data, the net cost impact for compliance has been potentially lowered by SGD24 million and 74,685 man-days per year across the government. About 88% of the cost savings and 92% of the reduced efforts are attributable to around 75% of government systems. The initiative also delivered:

- A refined purpose for IM8, which enables digitalization to deliver fit-for-purpose, secure, and cost-effective systems and services
- An intuitive and expandable IM8 framework, which organizes IM8 requirements in three broad focus areas and can be further grouped into intuitive domains and subdomains that can be expanded as required
- A governance model, in which the central government, as the functional leader, formulates policy directions for ICT and SS, allowing the agencies to situate the rules, operationalize the policy intent, and use the enablers to fast-track their digitalization journeys
- Rewritten IM8 requirements that are benchmarked against industry standards
- IM8 governance processes that are more agile
- Change management programs, which ensure that governance "sticks"

Category 2: Civic Engagement

TaipeiPASS: Digital Pass to Taipei City Government's Mobile Service | *Taipei City Government*

TaipeiPASS is a digital service pass that integrates municipal service functions, solving two major pain points at the same time. One, it integrates the many cards that Taipei citizens must carry for identification verification, and two, it autofills the bearer's government-recognized name when filling out government and contact tracing forms. With almost 11 million users, the pass has saved 680,000 sheets of paper and an average of 22 man-hours for every 10,000 people whose entry or exit

information must be monitored for contact tracing purposes. This initiative is used in 380 venues and has improved the efficiency of COVID-19 prevention while reducing information security risks with strict protocols for information retention or deletion. The information gathered by the pass has also helped in crowd control for citywide events, such as New Year's Eve 2021, and even in the distribution of face masks from automated vending systems.

Category 3: Sustainable Infrastructure

Smart Forest Guardian | Ministry of Environment and Forestry (Indonesia)

The Ministry of Environment and Forestry or the Kementerian Lingkungan Hidup dan Kehutanan (KLHK) has partnered with Huawei Technologies and Rainforest Connection to implement an AI-based forest monitoring project called Smart Forest Guardian. This aims to protect the forest from illegal activities and poachers. Piloted in West Bali National Park for supervision, the AI-based monitoring technology can detect and distinguish sounds of animals, birds, and even detect chain saw or other suspicious sounds in the forest. To enhance monitoring, a modified cellphone is placed in a special box tied to a tree trunk where cloud and AI support can analyze all sounds sent through the cellphone. This AI technology can help notify forest rangers of any illegal action in real time as well as help gather data that will enable them to better understand animals, their language, and emotional state so that conservationists can protect endangered animals more effectively.

Advice for the Technology Buyer

Smart City authorities have bigger responsibilities in the post-COVID-19 pandemic world. In AP, efforts will focus on striving for the inclusion of more Smart Cities while exploring more digital solutions to enhance citizen experience and increase operational efficiency.

- Enter a strategic partnership.
- Prioritize tech solutions to meet changing expectations.
- Instill a data-rich and data-driven approach.
- Plan for what is necessary and not just what is possible.

Related Readings

For more of these case studies and actionable insights into digital transformation in the public sector, refer to the full report: [Smart City Asia/Pacific Awards 2021: Promoting the Best Practices of Local and Regional Governments](#).

We also recommend getting ahead of the curve with these IDC reports:

- [IDC FutureScape: Worldwide Smart Cities 2021 Predictions – China Implications](#)
- [Reinventing Korea Smart City in the Digital Transformation Age](#)
- [Southeast Asia \(ASEAN\) Digital Governments: Key Focus Areas to Define the Future](#)

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