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# Startup My City



Smart and sustainable cities in Asia

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## About the report

*Startup My City: Smart and sustainable cities in Asia* is a research programme from The Economist Intelligence Unit (EIU) sponsored by Hitachi, which examines sustainable and smart city initiatives in 20 cities across ASEAN (Bandung, Bangkok, Danang, Davao City, Ho Chi Minh City, Jakarta, Kuala Lumpur, Manila, Siem Reap, Singapore and Yangon) and Asia-Pacific (Auckland, Chennai, Hong Kong, Melbourne, Mumbai, Seoul, Shanghai, Taipei and Tokyo).

Kim Andreasson was the author of this report and Charles Ross was the editor. An advisory board, comprised of five experts on smart and sustainable cities, helped to curate the list of 20 cities for this report and provided advice and input throughout the research programme. This report also draws on a survey conducted in August 2016 of 2,000 citizens—100 from each of the 20 ASEAN and Asia-Pacific cities—all of whom were familiar with smart city initiatives operating in their city.

To better understand the drivers and inhibitors of smart city adoption in Asia, interviews were conducted with advisory board experts and supplemented with wide-ranging desk research.

The EIU bears sole responsibility for the editorial content of this report. The findings do not necessarily reflect the views of the sponsor.

Our thanks are due to the following advisory board members for their time and insights:

- Tan Kok Yam, head, Smart Nation Programme Office, Prime Minister's Office, Singapore
- Mathias Steck, executive vice president and regional manager Asia Pacific, DNV GL—Energy
- Amirudin bin Abdul Wahab, chief executive officer, CyberSecurity Malaysia
- Freddy Boey, deputy president and provost, Nanyang Technological University, Singapore
- Sangay Penjor, director, urban and social sectors division, East Asia Department, Asian Development Bank (ADB)

## Executive summary

The concept of what constitutes a smart city is vague, and ranges from a narrow definition of technology to one that considers quality of life more broadly across a range of areas, such as education, the environment, safety and governance. Hence, this report uses the terms smart city and technology-led development interchangeably.

The common denominator, however, is a drive for efficiency: the public sector tries to deliver better services through fewer resources while businesses and citizens demand more. This has driven governments to focus on building smarter and more sustainable cities, which are powered by technologies that can enable them. It is a necessary development due to rapid urbanization and rising expectations.

To provide insights into the development of smart and sustainable cities in ASEAN and the Asia-Pacific, The Economist Intelligence Unit (EIU) established an expert advisory board and conducted a survey of 2,000 citizens in 20 cities across ASEAN (Bandung, Bangkok, Danang, Davao City, Ho Chi Minh City, Jakarta, Kuala Lumpur, Manila, Siem Reap, Singapore and Yangon) and Asia-Pacific (Auckland, Chennai, Hong Kong, Melbourne, Mumbai, Seoul, Shanghai, Taipei and Tokyo). The key findings from the research are as follows:

- **Smart city initiatives are rising in importance and citizens want more of them:** In part due to rapid urbanization in the region and in part due to the drive for greater efficiency among governments, businesses and citizens alike, the development of a smart city is high in demand. The survey conducted for this report shows that citizens are keen for cities to develop more initiatives that allow them to enhance the quality of their lives.

- **Connectivity is central to both supply and adoption:** Fixed- and mobile broadband infrastructure is a necessity to enable smart city technologies such as the Internet of Things (IoT), cloud computing and big data, which can be used to create initiatives such as smart transportation, energy, waste management and e-learning programmes, amongst others. Free Wi-Fi initiatives based on such progress can help stimulate adoption of smart initiatives among citizens.

- **A wide variety of perceived benefits:** When asked about the main benefits of a smart city, citizens cited the environment and education as the top two benefits, illustrating that the concept goes well beyond a narrow definition of technology-enabled services. In fact, easier access to government services was only the fourth most cited benefit among survey takers.

- **A lack of information is the biggest impediment to greater usage:** According to the survey of citizens, it is abundantly clear that they do not understand what smart city initiatives are available to them. This appears to stem from a lack of clear government communication about current efforts. In addition, experts anecdotally point to the fact that city leaders can do more to make the case for return on investment (ROI) for new initiatives and to enhance marketing of current ones.

- **Partnerships are needed to seize the full benefits:** Most survey takers believe the government should take the lead in developing smart city initiatives; however, there is also a strong case to be made for public-private collaboration as well as including citizen users to seize the full benefits, in areas such as the development of innovation communities and leveraging open government data to create new services and products.

## 1

## Introduction: rising demands

**82%**  
of citizens  
want their city  
to create more  
smart city  
initiatives

The global urbanization rate will increase from 54% in 2015 to 66% in 2050, according to the United Nations.<sup>1</sup> It will grow even more in Southeast Asia, from 48% to 65% in the same timeframe, creating a burden on city governments unless they are able to improve efficiency in the delivery of public services. At the same time, tech-savvy and well-educated citizens are expecting an improved quality of life. By 2025, it is estimated that the number of global smart cities will grow to 88 and most of them (32) will be in the Asia-Pacific region, according to IHS, a research consultancy.<sup>2</sup>

In the survey of 2,000 citizens across 20 cities in ASEAN and the Asia-Pacific region conducted for this report, 8 in 10 (82%) say their city should create more smart city initiatives. (Figure 7) Such demand has driven governments to focus on building “smart,” “intelligent,” and “sustainable” cities—the terms are often used interchangeably—which are powered by the technological developments that can enable them, notably online government services, big data, open data, cloud computing and the Internet of Things (IoT), among others.

## What is a smart city?

The definition of what makes a city “smart” varies greatly but the common denominator is technology-led development that leads to greater efficiencies. Boyd Cohen, a smart city expert, created the Smart City Wheel to illustrate the many potential benefits, which range from

technology-led initiatives such as open data and integrated ICTs to using their application to enhance “traditional” areas such as education and the environment.<sup>3</sup>

“There are three aspects to being a smart city,” explains Tan Kok Yam, head of the Smart Nation Programme Office in the Prime Minister’s Office of Singapore. “First, the city itself as a smart ‘user’ of digital technology to improve municipal and public services such as public transport and healthcare. Second, the city as an enabler of innovation by businesses and citizens by providing pervasive connectivity, open data and platforms for experimentation. Finally, the city as a source of ideas and solutions that has relevance not just for itself for others across the world, to solve the common urban problems that we all face.”

To the average citizen, however, the smart city concept remains fuzzy. In the survey, only one-quarter (25%) of respondents were very familiar with it. Notable exceptions were survey takers in Mumbai (61%) and Chennai (51%), India. (Figure 1) A likely reason is the central government’s push to stimulate smart city initiatives, given it is the world’s second largest country by population (after China) and in great need for new solutions to resolve the challenges of urbanization. In 2015, 98 cities competed in the first India Smart Cities Challenge of which the 20 best proposals received funding from the Ministry of Urban Development to develop their ideas into practice, one of which came from Chennai.<sup>4</sup>

<sup>1</sup> [https://esa.un.org/unpd/wup/CD-ROM/WUP2014\\_XLS\\_CD\\_FILES/WUP2014-F02-Proportion\\_Urban.xls](https://esa.un.org/unpd/wup/CD-ROM/WUP2014_XLS_CD_FILES/WUP2014-F02-Proportion_Urban.xls)

<sup>2</sup> <http://news.ihsmarket.com/press-release/design-supply-chain-media/smart-cities-rise-fourfold-number-2013-2025>

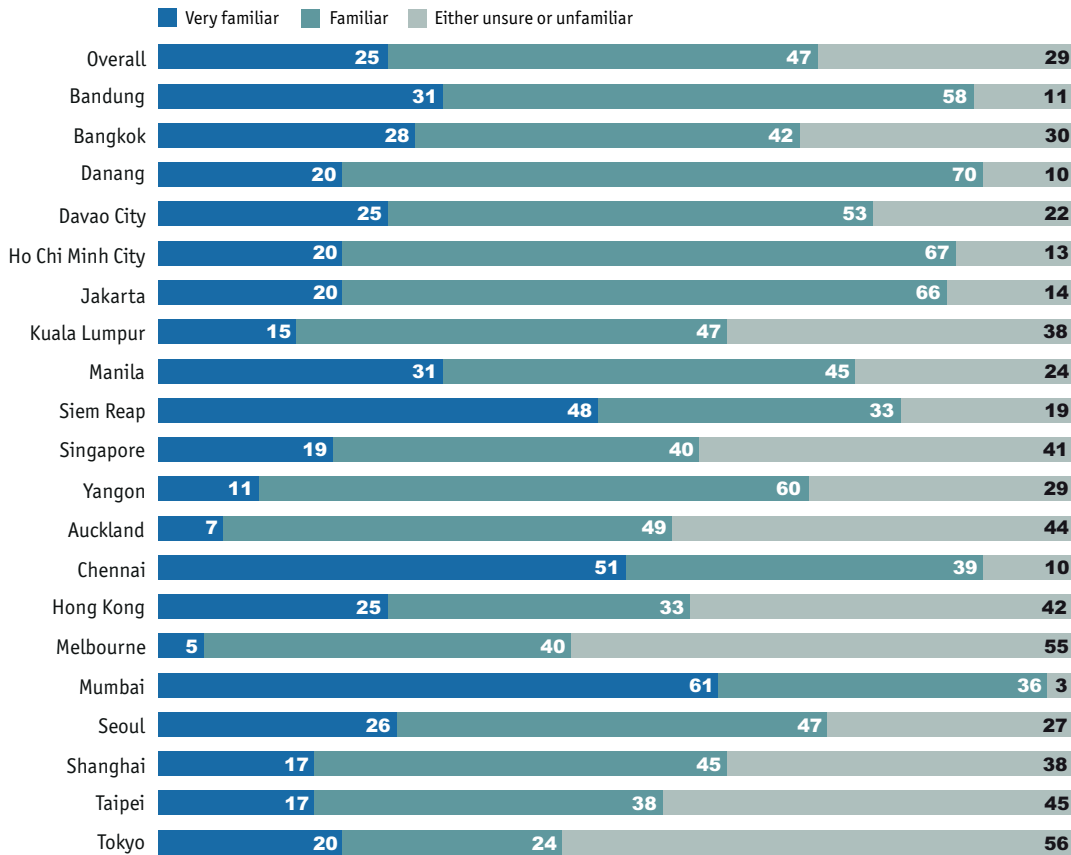
<sup>3</sup> <http://www.smart-circle.org/smartcity/blog/boyd-cohen-the-smart-city-wheel/>

<sup>4</sup> <http://www.smartcitieschallenge.in/index.cfm>

Figure 1: Many citizens familiar, but work still to do

## Familiarity of citizens with the concept of smart cities

(% of respondents)



## Connectivity is the fundamental building block

High-speed broadband (cited by 77% of respondents) is considered one of the most important initiatives in making a city smart and sustainable. (Figure 2) Other highly-cited selections include energy management systems (78%), intelligent water treatment (76%), and smart waste management (76%), all of which rely to a great extent on broadband connectivity. "Availability of broadband is critical to smart city development given the current trend of more connected devices through IoT," says Mr Amirudin bin Abdul Wahab, chief executive officer, CyberSecurity Malaysia. "But also to

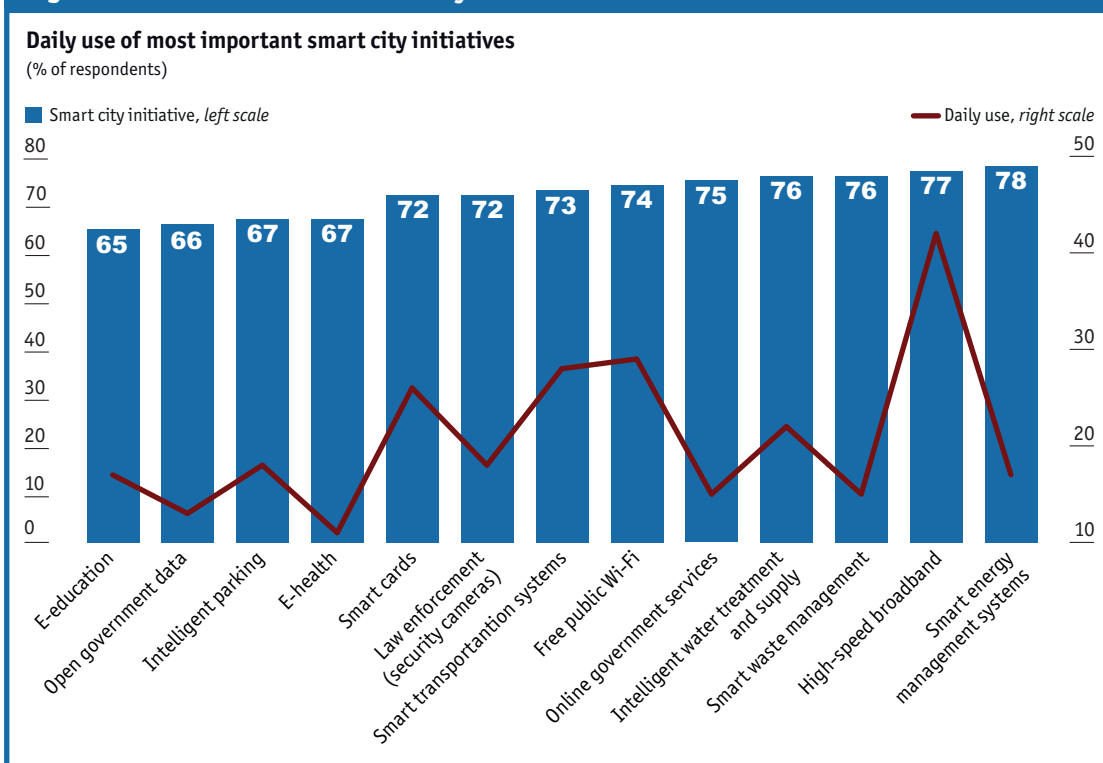
stimulate uptake among citizens, and it needs to be affordable," he adds, regarding the demand-side. The United Nations Broadband Commission for Digital Development defines affordable broadband as less than 5% of average monthly income, and by this measure only Singapore, Brunei and Malaysia meet this criteria in ASEAN.<sup>5</sup>

In the survey, the importance of broadband is more highly cited in emerging market cities such as Bandung (67%), Manila (65%) and Yangon (63%) than in developed ones (Tokyo 20%, Seoul 36% and Hong Kong 40%), presumably because there is a lack of it in the former compared to the latter. As a result, wireless solutions often fill this gap in emerging markets. "Mobile devices have

<sup>5</sup> <http://www.broadbandcommission.org/Pages/default.aspx>



Figure 2: Smart initiatives and daily life



My city is smart:  
**56%** today,  
**78%** in five years

moved from simple voice communication tools to enable interactive apps with the ability to access city services and manage energy consumption in the span of 15 years,” says Mathias Steck, executive vice president and regional manager Asia Pacific, DNV GL—Energy. According to the International Telecommunication Union (ITU), a UN agency, the number of active mobile-broadband subscriptions has increased from 7.4% in the Asia-Pacific region in 2010 to an estimated 42.6% in 2016.<sup>6</sup>

“It is a relatively simple technical advancement but I see great immediate impact of mobile devices and WiFi connectivity,” says Mr Steck about its potential in emerging markets. High-speed broadband (42%) and free public WiFi (29%) are also the most frequently used smart city initiatives on a daily basis across the region while daily broadband usage is highest in developed markets with Singapore (76%) leading the way. (Figure 2)

## Future expectations

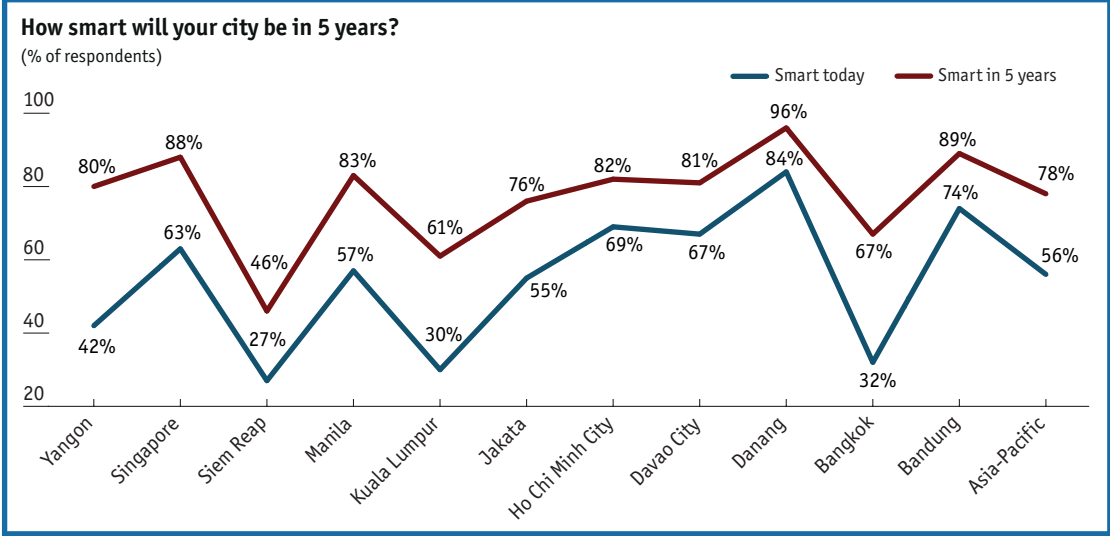
Given the potential benefits for all stakeholders, smart city initiatives are seen as rising in importance: More than one-half (56%) of survey takers consider their city “smart” today. However, more than three-quarters (78%) expect their city will be smart five years from now. (Figure 3)

Whether cities can succeed in meeting such expectations depends in large part on their level of investment, communicating its benefits, as well as the development of partnerships and stimulating local innovation. For instance, the infrastructure investment needs for Southeast Asia are estimated at almost US\$600bn between 2010 and 2020.<sup>7</sup> To assess the extent to which cities provide an environment for progress, this report reviews the potential benefits and challenges towards smart city development across ASEAN and Asia.

<sup>6</sup> [http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2016/ITU\\_Key\\_2005-2016\\_ICT\\_data.xls](http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2016/ITU_Key_2005-2016_ICT_data.xls)

<sup>7</sup> <http://www.pwc.com/ph/en/consulting/assets/smart-cities-in-southeast-asia-report.pdf>

**Figure 3: Getting smarter**





# 2 Benefits across the board

**61%**  
of citizens in Ho Chi Minh City and Hong Kong say the environment benefits the most from smart cities

There are a wide variety of benefits to smart city initiatives across a number of different areas. A common denominator, however, is the underlying reason for pursuing them. According to citizens, the main motivation for government to develop a smart city is perceived to be greater efficiency (28%), followed by enhanced quality of life for residents (26%). A number of surveys and reports are therefore measuring quality of life,<sup>8</sup> or liveability,<sup>9</sup> or similarly-termed outcomes across cities as that is the primary motivation of technology-led development: better outcomes for people.

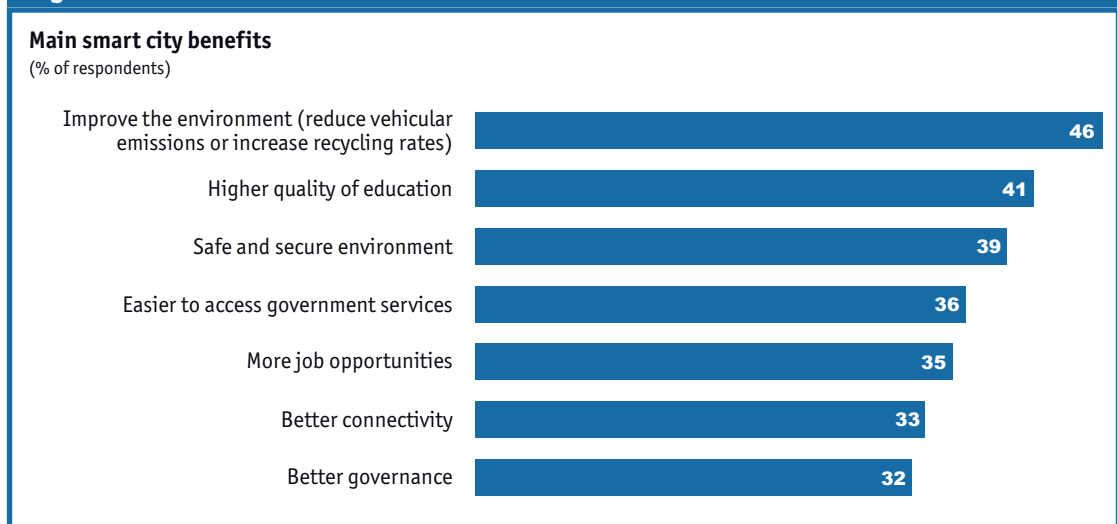
The areas in which technology can greatly improve outcomes range from small everyday benefits, such as electronic travel cards, through to helping to resolve larger societal concerns. Survey takers are hoping for the latter. Citizens say the main benefit of a smart city is improving

the environment (cited by 46% of respondents). (Figure 4) This sentiment was particularly strong in Ho Chi Minh City (61%) and Hong Kong (61%), two cities that have well-known environmental challenges (see case study).

## Putting the environment first

Climate change and the environment have moved to the forefront of the global agenda in recent years, especially in light of COP21 (also known as the 2015 Paris Climate Conference) where a global agreement on reducing emissions was reached. Surveyed citizens appear to believe smart city initiatives can help combat climate change and meet agreed targets. Governments are also pinning their hopes on using technology-led development to improve the environment, which has been a fundamental tenet of smart city development for some time.

**Figure 4: Environment and education benefit the most**



<sup>8</sup> <https://monocle.com/film/affairs/the-monocle-quality-of-life-survey-2015/>

<sup>9</sup> [http://www.eiu.com/public/topical\\_report.aspx?campaignid=liveability2016](http://www.eiu.com/public/topical_report.aspx?campaignid=liveability2016)

## Case study: Ho Chi Minh City on the move

In 2016, Vietnam's southern metropolis was home to more than 7.5m vehicles, an increase of almost 7% from a year prior, according to the city's Department of Transport, while at the same time, public transport only represents 5% of total traffic. Combined with poor infrastructure, traffic jams cost Ho Chi Minh City US\$820m each year.<sup>10</sup> A recent study also shows that without the implementation of smart transportation solutions, traffic congestion will cost the city an estimated US\$97bn by 2045.<sup>11</sup>

"A lot of opportunities in Southeast Asia will be in transport and the optimization of existing infrastructure, as a huge increase in urbanization rates are pushing cities to do more in this area," observes Mr Steck.

Given this backdrop, Ho Chi Minh City is on the move. In 2015, the World Bank approved the Ho Chi Minh City Green Transport Development Project, which is expected to improve the traffic management system and introduce smart cards

for public transportation. In addition, the city itself plans to implement thousands of security and traffic cameras, to enable smart systems of traffic management at a cost of US\$300m. "The cameras can scan number plates to record every single vehicle on the street and detect traffic violations or suspects," Tran Vinh Tuyen, vice chairman of the city's People Committee, told local news sources about the system's benefits.<sup>13</sup>

Moving forward, the first priority in becoming a smart city is to build an electronic infrastructure to improve public administration, although transportation infrastructure is second under a new plan tentatively spanning 2017-2020, which is currently available for public feedback. Le Thai Hy, the director at the Department of Information and Communications, recently told local news sources that the final proposal is expected to be submitted for approval in December.<sup>14</sup>

# A\$28bn

estimated  
economic  
benefit from  
smart-grid  
technologies in  
Australia over  
the next 20  
years

<sup>10</sup> <http://e.vnexpress.net/news/news/traffic-jams-cost-ho-chi-minh-city-820-million-each-year-3378587.html>

<sup>11</sup> [http://www.siemens.com/press/en/pressrelease/?press=/en/pressrelease/2014/corporate/pr2014110053coen.htm&content\[\]=Corp](http://www.siemens.com/press/en/pressrelease/?press=/en/pressrelease/2014/corporate/pr2014110053coen.htm&content[]=Corp)

<sup>12</sup> <http://www.worldbank.org/projects/P126507/ho-chi-minh-city-green-transport?lang=en>

<sup>13</sup> <http://e.vnexpress.net/news/news/saigon-considers-multi-million-dollar-smart-transportation-system-3467637.html>

<sup>14</sup> <http://tuoitrenews.vn/society/36994/ho-chi-minh-city-determined-to-become-smart-city-chairman>



**“You need smart people for a smart nation and you need manpower to make it sustainable”**

*Freddy Boey, deputy president and provost, Nanyang Technological University, Singapore*

In 2009, Australia announced an investment of A\$100m in a “Smart Grid, Smart City” trial project, a collaborative initiative with the energy sector to roll out Australia’s first commercial-scale smart grid consisting of sensors and smart meters. Other stakeholders, including a range of local government agencies and private-sector companies, also invested A\$390m. The project ran from 2010 to 2013 and involved approximately 17,000 electricity customers. Based on the trials undertaken, the government estimated that the net economic benefits from the deployment of smart-grid technologies in Australia could amount to up to A\$28bn over the next 20 years, in part by saving on energy consumption and hence helping the environment.

More recently, the attention has turned to wastewater treatment. “Climate adaptation is a key issue,” explains Sangay Penjor, director, urban and social sectors division, East Asia Department, Asian Development Bank (ADB). In China, for example, each city or province creates their own design which creates inefficiencies. The reason they do not collaborate across geographical areas is because they can potentially receive more foreign direct investment (FDI) individually. As a result, the ADB is working with mid-sized cities to improve technical assistance, reduce demand projections and avoid resettlements, and creating a more inclusive and holistic approach to climate adaptation. “We want to bring about more efficiencies in coordination,” says Mr Penjor.

## A need for education at all levels

Behind the environment, citizens selected higher quality of education (41%) as the second-biggest benefit of a smart city. (Figure 4) The element of technology-led development in learning is varied but affects educational institutions as well as cities and citizens themselves. Schools will be pushed into greater technology adoption in curriculums and demand for e-learning programmes will increase. At the same time, higher levels of development will lead to greater demand for smart city initiatives. “More educated people will have greater expectations and demand smart applications,” says Mr Steck. “But higher education and the income levels that come with it will also increase revenues and opportunities to enable a smart city.”

Skills and education are needed to sustain smart cities more broadly. “Around the region, in places such as Hanoi, Jakarta and Kuala Lumpur, how do you attract the best minds?,” asks Freddy Boey, deputy president and provost, Nanyang Technological University, Singapore. “You need smart people for a smart nation and you need manpower to make it sustainable.” The primary reason, he says, is that without smart people who can deliver on smart city promises, there will be a public perception of failure, which can negatively affect future undertakings.

“It is important to have a core of engineers and skilled technicians who can build on technology,” adds Mr Tan, as he is concerned about the global shortage of people who are software developers, robotic, IoT systems, and cyber security specialists. “But you also need professionals in various fields, as well as private and public sector leaders who are aware of where technology is going, and how it can be used in the context of their respective lines of business” he says, illustrating the point that better education and skills are therefore needed across the board.

## From e-government to jobs

Easier access to government services (36%) in the form of electronic government (e-government), once a tenet of public sector digital development, was only the fourth-most selected benefit of a smart city, according to surveyed citizens.

(Figure 5) This indicates that citizens view smart city development in broad terms, as technology-led development across a range of areas, and at the same time that e-government initiatives have either started to maximize their potential, or that citizens value them less vis-à-vis other areas of daily life.

A safer and more secure environment (39%), for instance, rated just above e-government as a benefit of smart city development in the survey. (Figure 4) Davao City exemplifies the

opportunities in this area as it recently installed a centralized dashboard at the Public Safety and Security Command Center (PSSCC), which enables government personnel to monitor the city via CCTV cameras to improve safety and prevent crimes.

The fifth leading benefit of technology-led development is more job opportunities (35%), according to citizens. (Figure 4) This is a contradiction in terms as the perceived main reason for smart cities is greater efficiency relying on technologies rather than people, which would naturally mean fewer employment opportunities unless highly skilled. It may also, however, explain that citizens pin their hopes on better educational outcomes, which would enable them to contribute to such societies.

## 3

## In the dark: smart city challenges

The challenges to smart city initiatives are as varied as the benefits. Advisory board members cited everything from affordable solutions and data integration to citizen demand and proven return on investment (ROI), amongst key obstacles. “When investing in digital infrastructure, sometimes the payback may not be clear as we cannot forecast the potential use cases, just as those who initially built the Internet could not have predicted all the innovative applications now riding on it.” explains Mr Tan. “But we are confident that the investment is worthwhile, given the continued growth in the digital space.”

Such use cases, ROI and—especially—greater communication about them and technology-led development—appears to be in greater need as awareness appears to be a key hurdle to adoption. The main challenges to taking

advantage of a city’s smart initiatives, according to citizens, are a lack of information about existing initiatives (cited by 66% of survey takers) and new ones (65%). (Figure 5)

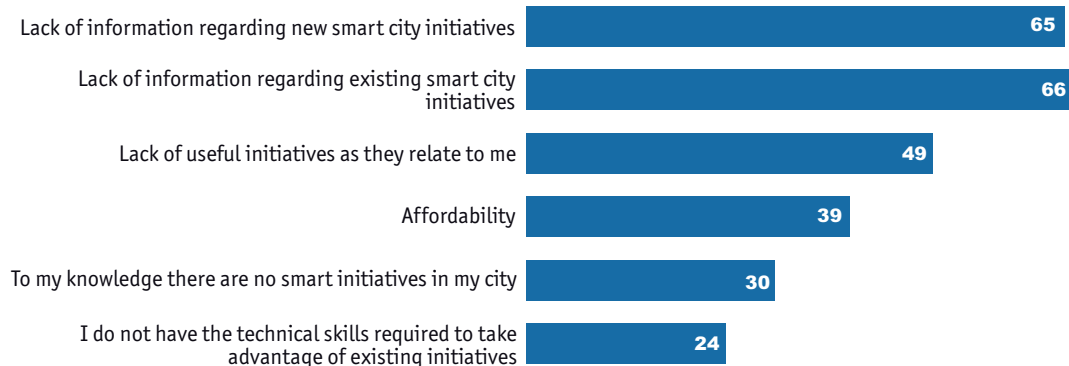
### Lack of information

“Demand and a desire to change is not obvious,” says Mr Boey. “You have to ‘sell it’ because if you have the public pushing back then the best ideas might not happen.” The top-down Singaporean approach helps in this regard. To the contrary, the notion of a lack of existing information was particularly strong in Indonesia: about 8 in 10 survey takers reported this to be the case in Bandung and Jakarta (80% and 78% respectively). (Figure 6) The two cities were also in the top 5 among lack of information regarding new initiatives despite recent initiatives. Bandung, for instance, has 5,000 free WiFi hotspots and aims to increase that to 40,000.<sup>15</sup>

Figure 5: A lack of information

#### Main challenges in taking advantage of smart city initiatives

(% of respondents)



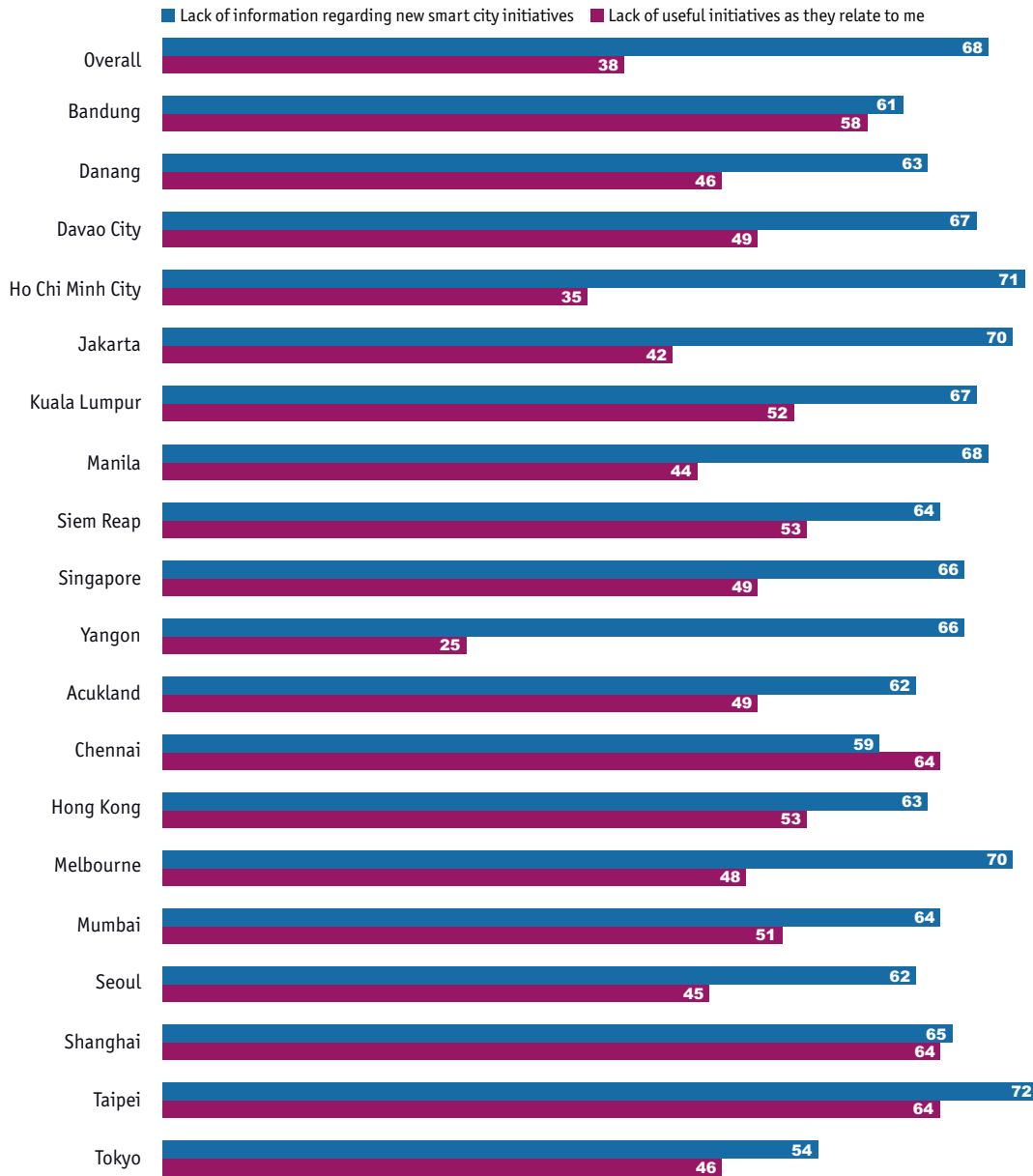
<sup>15</sup> <http://www.enterpriseinnovation.net/article/bandung-smart-city-initiatives-246675038>



**Figure 6: Lacking information and relevance**

**Information challenges restrict demand for smart city initiatives**

(% of respondents)



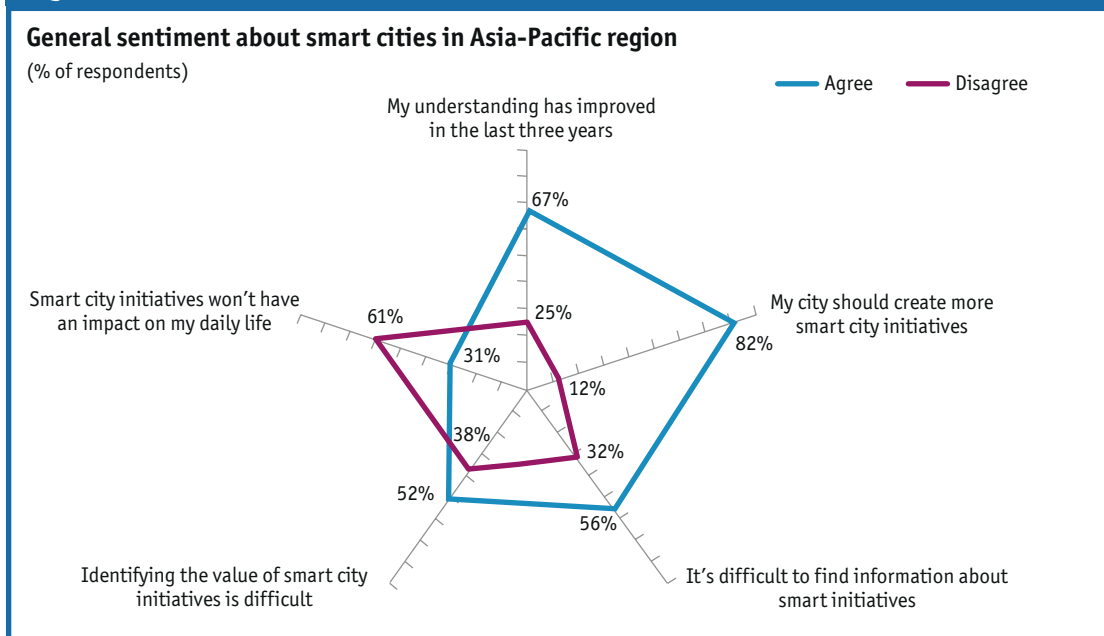
“If smart city initiatives are presented as technical and abstract, then adoption will be a challenge”

*Mathias Steck, executive vice president, regional manager Asia Pacific energy and renewables advisory, DNV GL Energy*

“Demand may come automatically in Singapore,” explains Mr Steck, in part given the level of technology development and digital skills among the population. “But in places such as Siem Reap you need to educate people and advertise benefits. If smart city initiatives are presented as technical and abstract, then adoption will be a challenge,” he advises.

This notion is reflected in the survey. One-third (31%) of survey takers say they do not think their city’s smart initiatives will have an impact on their daily lives, reinforcing the notion that benefits are not properly communicated. (Figure 7) In addition, more than one-half (56%) say they find it difficult to access information regarding their city’s smart initiatives. “Demand

Figure 7: Demand for more initiatives, but unclear on which ones



**“Cyber risk is high and security needs to be built in from the beginning in any smart city initiative”**

Mr Amirudin bin Abdul Wahab, chief executive officer, CyberSecurity Malaysia

will come based on how services and applications are delivered,” says Mr Steck. “The problem is that they often sound complicated.”

## Greater reliance on data necessitates cyber security

While citizens lament a lack of information, many experts are more concerned about protecting it as data becomes increasingly pervasive in smart city projects through connecting everyday things to the Internet. Given recent and high-profile breaches across the region, cyber security is therefore a top concern in the development of smart cities that rely on digital infrastructure and information. Singapore, for instance, has created a government cloud (G-cloud) to securely host information and data at a central facility. “From a security perspective, we need to agree what can be in the cloud and what cannot, and that decision has to be taken at a central level,” says Mr Boey.

Cyber security is often a trade-off between greater efficiency and data protection. In May, for instance, Singapore decided to block access to websites from government computers

to minimize such concerns. “Data-sharing is enabled by trusted platforms and systems that are secure and that protect personal data,” says Mr Tan. “Cyber security remains important for traditional ICT systems but with the increased deployment of IoT systems, there is a need to think very seriously about cyber-physical security, for things like autonomous vehicles and SCADA systems, which will present their own unique challenges,” he notes, as there have recently been online attacks with offline consequences, illustrating that the two worlds are increasingly blurred.

“Cyber risk is high and security needs to be built in from the beginning in any smart city initiative,” advises Mr Abdul Wahab, whose country is among global leaders in terms of cyber security commitment according to the ITU.<sup>16</sup> His agency, CyberSecurity Malaysia is developing an IoT security framework to support the smart city initiative of Cyberjaya, a special economic zone, to promote the implementation and usage of ICTs. At the same time, it is educating potential smart city citizens through programmes such as CyberSAFE to increase awareness.<sup>17</sup> “People are the weakest link in technology,” explains Mr Abdul Wahab.

<sup>16</sup> <http://www.itu.int/en/ITU-D/Cybersecurity/Pages/GCI.aspx>

<sup>17</sup> <http://www.cybersafe.my/en/>



# 4

## The digital road ahead

Most survey respondents say the national government (35%) should take the lead on smart city initiatives. About one-quarter (28%) say it should be the city government or a combination of national/city and the private sector (25%). Taipei (67%) and Singapore (62%) stand out as places where survey respondents believe the national government has a strong role to play. (Figure 8) This is in stark contrast to Australia

and New Zealand where only about one-fifth of citizens in Melbourne (18%) and Auckland (22%) say the same and where public-private partnerships are more popular. Although they extend to a wide variety of areas, there has recently been a particular push in promoting innovation communities by local governments in order to attract talent and help business to flourish (see case study).

**Figure 8: Collaborative smart cities**

**Who should lead smart city development? Top 3 responses.**

(% of respondents)

**Ranked**  
#1  
#2  
#3

		National government	City government	City mayor	A combination private & public sector
ASEAN	Bandung		42%	16%	26%
	Bangkok	41%	21%		23%
	Danang	26%	54%		14%
	Davao City	31%	34%		18%
	Ho Chi Minh City	21%	41%		28%
	Jakarta	24%	35%		28%
	Kuala Lumpur	39%	26%		26%
	Manila	50%	22%		22%
	Siem Reap	39%	21%		17%
	Singapore	62%	5%		26%
Yangon	17%		8%	71%	
Asia-Pacific comparators	Auckland	22%	30%		34%
	Chennai	32%	29%		29%
	Hong Kong	49%	25%		12%
	Melbourne	18%	30%		31%
	Mumbai	34%	22%		29%
	Seoul	47%	24%		14%
	Shanghai	41%	33%		17%
	Taipei	67%	13%		13%
	Tokyo	32%	40%		12%

## Case study: the rise of innovation communities

The city of Auckland invested millions to create an innovation community in the city's Wynyard Quarter,<sup>18</sup> including the GridAKL innovation hub located in the area to serve start-ups, entrepreneurs and other tech-minded people.<sup>19</sup> Almost one-half (48%) of New Zealand's ICT companies are already located in Auckland and the hope is they will benefit from each other, as well as others. "The innovative and entrepreneurial vibe at GridAKL is palpable, as some of our world-class ICT and digital media creative talents spark off each other," said Auckland Mayor Len Brown about GridAKL in 2014.<sup>20</sup>

Innovation communities are generally on the rise across the region. The big difference from the past, however, is that they are now increasingly based on public-private cooperation. In the case of GridAKL, it was funded by the Auckland Tourism, Events and Economic Development (ATEED) organisation. They partnered with The BizDojo, which acts as the operator of the hub in the Lysaght building, which in turn is powered by Huawei, the Chinese telecommunications company and a Foundation Partner for GridAKL.

Innovation communities, such as co-working spaces, start-up networks and business parks, amongst other initiatives, can help stimulate a creative environment, which in turn can aid smart city development. This is where many apps that use open government data, for instance, are created for the benefit of all. HeadStart Taiwan, is another example of this trend, although led from a central government perspective, indicating the differences in approach across the region. In August 2014, the National Development Council (NDC) of Executive Yuan created the programme in order to accelerate technology innovation and entrepreneurship, including the funding of Taiwan Startup Stadium (TSS) in downtown Taipei. Other cities across the region are closely following such government-led initiatives.

"Singapore has world-beating infrastructure but we admit that we have some way to go in the area of open data. We have done much in the past few years, but places like San Francisco and Stockholm, Sweden continue to be the world leaders," says Mr Tan. "We need to continue to connect the dots between government, the R&D community, and businesses, and one way is through the sharing of data and insights."



<sup>18</sup> <http://www.wynyard-quarter.co.nz/grid-akl>

<sup>19</sup> <http://www.gridakl.com>

<sup>20</sup> <http://www.aucklandnz.com/invest/news/listing/gridakl-opening-to-fuel-aucklands-high-tech-economy>

## Five strategies to help start up your smart and sustainable city

- 1. There is demand for smart cities:** According to the survey, citizens want more smart city initiatives. As such, policy-makers need to meet expectations by doing more in this area.
- 2. Connectivity is key:** It doesn't matter what initiatives you have in mind unless you have supporting infrastructure in the form of broadband, cloud computing and the Internet of Things, amongst other technology-related aspects related to connectivity. Roll-out also depends largely on consumer connectivity in order to access the initiatives.
- 3. Focus on simple initiatives first, with clear benefits:** It is better to build a few great initiatives, than many poorly-designed ones. Anecdotally it is clear that simple solutions that provide a benefit in daily life are well-received among citizens, such as free WiFi, and can open the door to more elaborate efforts, such as smart transportation.
- 4. There is demand but the value is unclear:** Citizens are often uncertain how smart city initiatives benefit them in daily life. As such, there needs to be a focus on communicating their value in order for citizens to adopt them.
- 5. Partnerships are important:** Everyone has a role to play in building smart and sustainable cities. Ranging from the public sector as a supplier of basic services and the private sector as an implementer, to end-users to enhance tourism and business. Everyone must be open to work with a range of stakeholders in the development of a smart and sustainable city.

## A need for greater collaboration moving forward

Urbanisation, citizen expectations and the potential to attract businesses and talent (and in the process revenue) have driven cities in the Asia-Pacific region to develop a host of smart initiatives. Such technology-led development cannot occur in isolation, however, as internal and external stakeholders are necessary to improve services and meet ever higher expectations.

"Ideally, from an execution point of view, you want a centralized—but collaborative—approach," says Mr Boey, who cites healthcare as an example in which the sector must work with ministries such as manpower and communications to optimize results.

"In Singapore, there is a strong integrated approach," he says. "A well-coordinated long-term plan is a must because the cost of implementation can reach billions."

Echoing the sentiment of greater collaboration, Mr Steck says that partnerships between different subject matter experts are needed and cities needs to team up with companies. "In a small emerging market, the government might be overwhelmed with the prospect of smart city development," he explains. "It is therefore in their own interest to reach out to the private sector for help to meet emerging demands." Given citizen expectations moving forward, as illustrated by the survey conducted for this report, governments across the region would be wise to consider such an invitation.

"Ideally, from an execution point of view, you want a centralized—but collaborative—approach"

*Freddy Boey, deputy president and provost, Nanyang Technological University, Singapore*

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