

# Can a city be smart?

**H**ere is a rhyming query: How smart can a smart city be? As smart as Songdo? Or as smart as the proposed traffic controls in Amaravati? Forget London, New York, San Francisco and Paris for a moment. Will it be as smart as the ones being planned in Kuala Lumpur and Smart City Iskandar Malaysia?

If you think that sounds corny, think again. All these cities are in the global smart city sweepstakes. Songdo, in South Korea, was the world's first smart city and Amaravati in Andhra Pradesh, India, is being built from the ground up to be the country's first futuristic, hyper-connected and Singapore-supported smart city. There are about 1,000 cities worldwide, including 100 in India and 500 in China, that want to be "smart" — and as soon as possible, beefed up by stupendous investments.

Here are some stupendous numbers, for a start. International Data Corp (IDC) forecasts that global investments in the technologies that enable smart-city initiatives will reach US\$80 billion this year. By 2021, that spending will cross US\$135 billion, according to the first IDC Worldwide Semi-Annual Smart Cities Spending Guide, released in February.

Research firm MarketsandMarkets says the global market for smart cities will jump from US\$425 billion in 2017 to US\$1.2 trillion by 2022 — seeing a compound annual growth rate (CAGR) of 23% during the period — due mainly to rapid telecommunications connectivity and hyper-urbanisation.

San Francisco-headquartered Grand View Research reports that the smart-city marketplace will skyrocket to US\$2.57 trillion by 2025, registering a CAGR of 18.4% between now and then. "Rising demand for smart-city solutions is anticipated to be driven by factors such as a growing urban population, the need to better manage limited natural resources and an increasing focus on environmental sustainability," says the firm.

## WHAT IS SMART?

What is a smart city? Mark Deakin, author of *From Intelligent to Smart Cities*, defines a smart city as one that utilises information communications technology (ICT) to meet the demands of the market, which comprises the citizens of the city. "Community involvement in the process is necessary for a smart city. A smart city would thus be one that not only possesses ICT in particular areas but has also implemented the technology in a manner that positively impacts the local community," writes Deakin.

IDC defines smart cities as those that attain digital transformation in an urban ecosystem to meet environmental, financial and social outcomes. A smart city begins to be developed when multiple smart or intelligent initiatives are coordinated to leverage technology investments across an entire city, use common platforms to decrease service time or maintenance costs, share data across systems and tie IT investments clearly to smart missions.

"Smart cities have evolved from a collection of discrete flagship projects to a sizeable market opportunity that will drive significant tech investments in 2018 and beyond. Strategic priorities include intelligent transport, data-driven public safety and resilient energy and infrastructure," says Serena Da Rold, programme manager for customer insights and analysis at IDC.

The smart city concept covers sectors such as healthcare, transport, assisted living, security and utilities. "Their implementation varies from city to city due to technological penetration in specific regions. A high amount of initial financial investments, the need for consolidation of different departments and sectors and a lack of a systemic approach may threaten industry growth. Nevertheless, the market is set to grow at a rapid rate in the coming years, driven by the industries' renewed interest, availability of technology and all-inclusive participation of industry stakeholders," notes Grand View Research.

Which geographies lead in smart-city imple-

mentation? The US is the largest market with a total spend of US\$22 billion this year, reports IDC. China is rapidly closing the gap and will invest nearly as much — about US\$21 billion — on smart-city technologies and integration in 2018 alone.

China started smart-city pilots way back in 2012 to boost the use of artificial intelligence (AI) and Internet of Things (IoT) technologies in areas such as traffic management, law enforcement and energy efficiency in public buildings. Management consultancy Deloitte says China aims to nurture 100 new smart cities from 2016 to 2020 to lead the country's urban planning and development.



Tribowl Building at Central Park in Songdo, South Korea

## SMART MALAYSIA

China is reaching outside its borders, first to Malaysia. Early this year, Alibaba Group Holding Ltd tied up with Malaysia Digital Economy Corporation (MDEC) and Kuala Lumpur City Hall (DBKL) to launch the Malaysia City Brain initiative. The first task: improve KL's congested traffic flow. The solution will include AI and IoT in due course.

More brainpower is set to come from the Malaysia Tianchi Big Data Programme, also from Alibaba. This will expose big data professionals in the country to best practices and software from around the world to tackle smart-city problems. The aim? Incubate 500 data professionals and 300 start-ups in two years in Malaysia by collaborating with Alibaba Cloud's Tianchi global community, which has 120,000 developers from 77 countries and regions.

In November 2017, the world's first e-commerce platform outside China — the Digital Free Trade Zone (DFTZ) — was announced by the Malaysian government and Alibaba. Malaysia-headquartered Fusionex International plc will provide the big-data engine. "The DFTZ brings together a multitude of key parties, including trade facilitation firms, e-marketplace players, government agencies, logistics providers, freight forwarders and small and medium enterprises," said Fusionex CEO Ivan Teh.

Smart-city projects are also popping up in Johor. The Iskandar Regional Development Authority (IRDA) has teamed up with Mimos Bhd to develop smart technologies to be deployed in Kulai and Sedenak. IRDA has also signed a memorandum of understanding with the SAS Institute to design and deploy the Iskandar Malaysia Urban Observatory — a one-stop centre to collect and analyse data for a smart-city rollout.

KL made the list in the 2017 Smart Cities Index by Europe-based EasyPark Group, which offers smart car-park services in 600 cities. The firm listed 19 criteria, including smartphone penetration, smart traffic sensors, 4G connectivity, parking options and car-sharing apps. The study analysed 500 cities and ranked the top 100. "To round off the study, we asked 20,000 technology and urban planning journalists for their expert opinion on how the cities where they have lived are moving with the curve of digitalisation," said the firm.

The top six smartest cities? Copenhagen, Singapore, Stockholm, Zurich, Boston and Tokyo — in that order. Taipei was ranked No 57, Hong Kong No

68, Beijing No 81, Kuala Lumpur No 84 and Shanghai No 85. "Big data has changed the face of the world as we know it because it allows us to create better solutions to real-world problems. Every city on this index deserves to be applauded for its efforts. While the results indicate those cities that are leaps and bounds ahead, it also brings to attention the admirable efforts of many cities looking forward to a smart future," says Mauritz Börjeson, chief big data officer at EasyPark Group.

Last month, Intel Corp commissioned Juniper Research to rank 20 cities in terms of smartness measured by IoT integration and interconnected services in mobility, healthcare, public safety and productivity. Singapore was ranked No 1, followed by London, New York, San Francisco, Chicago, Seoul, Berlin, Tokyo, Barcelona and Melbourne.

## THE BIG S

The big S in "Smartness" is security, points out management consultancy McKinsey & Co. Cities will never be 100% secure, nor can they avoid dangers entirely. But they can be resilient in the face of a wide range of stresses and shocks by making the right investments, in both the physical and cyber domains, to prepare for crises, react to restore normalcy and learn from and adapt to the new status quo.

"While city leaders tend to have a solid understanding of the physical threats facing them — from earthquakes to terrorism — their understanding of how to mitigate against cyber risks is often spottier. Building cyber resilience requires a profound shift in the way cyber threats are dealt with and assets protected — from focusing on breach prevention to understanding that cybersecurity failures will happen, and that quick and efficient recovery capabilities are needed," notes a McKinsey commentary.

Resilience can make a huge difference in the wake of a cyberattack. "Consider the UK National Health Service, which suffered a ransomware attack last year. But the hospital system had built in enough redundancies, backed up data and stayed on top of software updates. It was able to continue functioning with only a slight delay," writes Paul Nicholas, a senior director at Microsoft.

"Its resilient data and security practices ensured that it could continue operations even in the face of an attack. On the flipside, a similar attack on several companies across the globe resulted in losses of millions of dollars due to significant business interruption."

Would it be smarter to include climate change into the city's "smartness" equation? By 2020, half of all smart-city objectives will include climate change, resilience and sustainability factors, says research firm Gartner. Cities are defining new objectives and placing them into tangible programmes. This creates measurable outcomes that meet the targets agreed upon in Paris to reduce greenhouse gas emissions.

"With the Horizon 2020 goals of energy efficiency, carbon-emission reductions and renewable energy in mind, many cities in Europe have launched energy sustainability, resource management, social inclusion and community prosperity initiatives. The uptake of ride sharing, electrification of public transport, support infrastructure for e-vehicles and congestion charging for combustion engines — all of those examples are driving cleaner air, producing fewer greenhouse emissions and saving energy while cutting noise levels and improving ambience on streets," says Bettina Tratz-Ryan, a vice-president of research at Gartner.

What is the prognosis for Malaysia? To be a pioneer and combine "clean" and "green" with "smartness". Clean, as in reduce, reuse and recycle. Green, as in reforesting denuded areas and being environment and ozone-friendly. And smart, as in an interconnected government, businesses and citizenry. That will be the golden smart triangle. ■