



Just over half of the world's population live in urban areas today. By 2050, this number will hit 70%<sup>1</sup>; Asia and Africa are expected to post some of the fastest urbanisation rates. But rapid, unplanned urbanisation is unsustainable. This realisation alongside the digital revolution has led to the evolution of smart cities and Asia seems poised to lead in this space.

Cities have always played an important role in economic development; more than 80% of today's global GDP is generated in cities. Increasing urbanisation continues to underpin its importance but the global city of the future will no longer be just about size, capital and/or infrastructure. The



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podium will belong to those that integrate technology and become "smart" in the process.

First coined in the early 1990s, the term "smart city", broadly speaking, is one that optimises the use of limited resources by utilising technology and information (including real-time data) to integrate systems, thereby increasing efficiencies and enhancing the quality of life of its residents (see Fig.1).

**Fig.1: Smart cities' impact on residents' wellbeing<sup>2</sup>**

Dimensions	Impact on related aspect of city life	Impact on quality of residents' life
Smart Economy	Industry	Create new and meaningful jobs
Smart People	Education	Ease of online training and lifelong personalised education
Smart Governance	e-Government	Increase citizen engagement and transparency; and reduce corruption
Smart Mobility	Transportation, Logistics & Infrastructure	Lower congestion & pollution, save time and boost convenience
Smart Environment	Efficiency & Sustainability	Optimise energy and water usage; and better waste disposal
Smart Living	Healthcare, Security, Homes & Buildings	Lower disease burden, improve safety and offer flexibility of remote monitoring

A successful smart city is one which first and foremost is a 'user' of digital technology; second, an 'enabler' of innovation; and third, a talent hub for new ideas and solutions.

Digital technology refers to state of technological readiness i.e. high-speed communication networks, optimal mobile penetration, sensors and open data platforms. The enabler phase refers to the number and range of applications which in turn will likely promote high user adoption. Attracting the right talent is another key aspect. High-skilled workers tend to prefer cities which offer proximity to 'knowledge networks' and promote the exchange of ideas which will help to drive new innovations. Last but not least, governments should lead the way by digitising and implementing top-down policy initiatives to facilitate advancement.

## TOP RANKED SMART CITY GOVERNMENTS

Fig.2 shows the top 50 smart city governments from a total of 140 global cities. The ranking is based on several metrics such as vision, leadership, budget, talent-readiness, innovation ecosystems

etc. The encouraging fact is that almost one-third of this list comprises cities in Asia Pacific; 6 of which are in India and 3 in China. Amongst the top 10, Singapore stood out for leadership, Seoul for its people centric approach; and Shanghai for the budget.

Ambitious targets are in place. In 2015, India announced a Smart City Mission to develop 100 cities across the country. Thailand too aims to build 100 smart cities within two decades as per the Digital Thailand 4.0 policy initiative to become a high-income nation. Similarly, Indonesia plans to have 100 smart cities by creating 25 smart cities in 25 districts and municipalities. The Philippines aims to create the biggest smart city sixty miles north of Metro Manila while a recent Deloitte report revealed that 500 Chinese cities have already embarked on a Smart City project, compared with 40 US cities, 90 in Europe and 15 in Japan<sup>4</sup>.

## ASIA IS SERIOUS ABOUT GETTING SMART

Smart city initiatives are increasing across the globe with increased focus on open data platforms, smart grid technologies, transportation, energy

**Fig.2: Smart city government rankings<sup>3</sup>**

Rank	City	Rank	City	Rank	City
1.	London	17.	Chicago	36.	Pune
2.	Singapore	18.	Hong Kong & Seattle	37.	Wellington
3.	Seoul	20.	Charlotte	38.	Kansas City
4.	New York	21.	Vancouver & Washington, D.C	39.	Toronto
5.	Helsinki	23.	New Delhi	40.	Dubai
6.	Montreal	24.	Copenhagen	41.	Dublin
7.	Boston	25.	Columbus, Ohio	42.	Tel Aviv
8.	Melbourne	26.	Los Angeles	43.	Philadelphia
9.	Barcelona	27.	Surat	44.	Reykjavik
10.	Shanghai	28.	Tokyo	45.	Lyon
11.	San Francisco	29.	Berlin	46.	Paris
12.	Vienna	30.	Beijing	47.	Jakarta
13.	Amsterdam	31.	Sydney	48.	Rio de Janeiro
14.	Shenzhen	32.	Ahmedabad & Bhubaneswar	49.	Phuket
15.	Stockholm	34.	Jaipur	50.	Kigali
16.	Taipei	35.	Atlanta		

Asia Pacific

efficient buildings, and government service applications (see Fig.3).

In 2018, global spending on smart city enabling technology is estimated at USD81bn with Asia Pacific accounting for nearly 42%, followed by the Americas (33%). By 2022, it is forecast to hit USD158 billion; one fifth of which is expected to be spent on fixed visual surveillance, advanced public transit and intelligent traffic management<sup>6</sup>. Asia Pacific is also forecast to be the fastest-growing region in the smart energy space by 2025<sup>7</sup>.

Smart city projects are gaining momentum across Asia. In 2018, ASEAN countries, for example, set up a Smart Cities Network comprising 26 pilot cities across 10 countries to tackle the challenges of rapid urbanisation; two thirds of ASEAN's population will live in both high-density (Jakarta, Bangkok, and Metro Manila) and medium-sized cities (Phnom Penh, Da Nang, Vientiane, and Makassar) by 2025<sup>8</sup>. Although a differentiated approach is required to structure the region's smart cities, reducing traffic congestion and pollution, improving infrastructure and health; and enhancing security will be common goals.

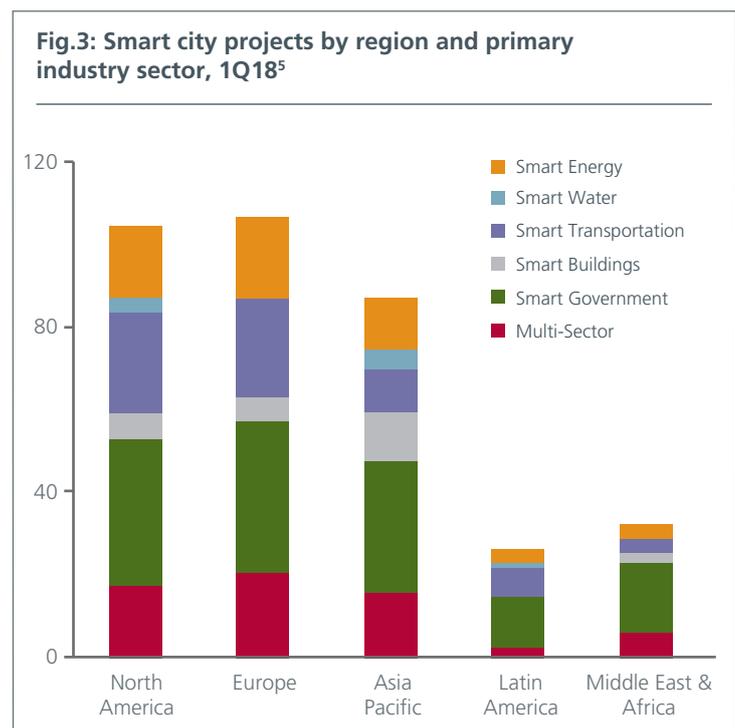
## ASIA SEEMS SET TO CARRY THE SMART CITY TORCH

Asia looks set to emerge as the region leading the smart city development. Rapid urbanisation issues aside, Asia is home to a young digitally savvy population with an affinity for internet-based transactions. More than 60% of ASEAN's population is under 35 years old<sup>9</sup>, 49% of world's internet users reside in Asia<sup>10</sup> and smartphone penetration will hit 62.4% by 2021, by itself a catalyst to drive innovation and smart applications.

Strong government support is another factor. Singapore, for example, has pushed ahead due to the government's strong commitment on tech-friendly legislation and significant government investments in smart city infrastructure<sup>11</sup>. Indian government's investments in smart city project rose by almost 54% in 2018 from 2017<sup>12</sup>.

Asia is also moving quickly up the ladder in terms of innovation and cutting-edge technology. Apart from China, South Korea, Singapore, Japan, and Taiwan are also known hotbeds of innovation. That new technology is being developed across Asia suggests that it is easier for other Asian countries to adopt; the closer to the source of the innovation, the faster its adoption. Ready access to open data, defined as data that can be freely used and distributed, is also crucial except when it involves national security or individual privacy. In this regard South Korea is among the most improved governments for open data over the last five years and has become a strong candidate for world leader<sup>13</sup>.

Many Asian cities are also building smart cities from scratch, unlike the developed cities of the Western world which must face the costly upgrading of archaic infrastructure. According to consulting group, Frost & Sullivan, Asian cities will continue to make up half - or even more - of the top 10 smart cities list in the coming years.



## OPPORTUNITIES AND CHALLENGES

Smart cities are increasingly becoming the focus of global businesses given the wide-ranging commercial and investment opportunities across the business chain. The smart city market size is expected to surpass USD2 trillion by 2025, with artificial intelligence, personalized healthcare, robotics, and distributed energy generation technologies driving this growth<sup>14</sup>.

The economic benefits of employing smart technology are significant. Over the next decade, for example, the incremental impact on Gross Domestic Product (GDP) growth from open data policies and the multiplier effect from public investments is forecast at USD1 trillion and USD10 trillion respectively<sup>15</sup>.

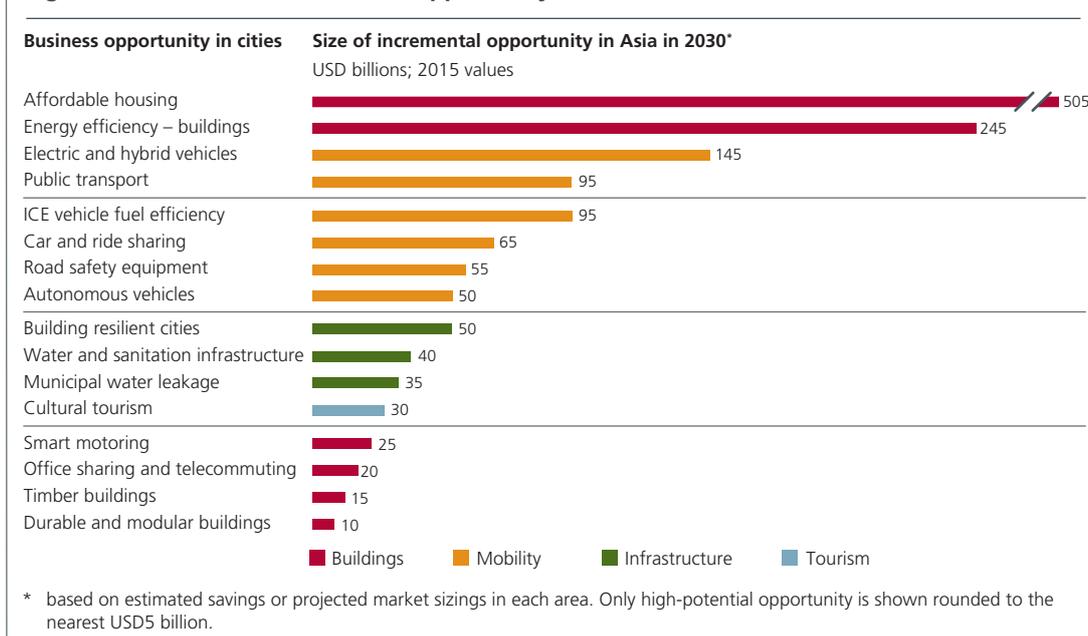
While this wealth creation potential sounds exciting, it must also correspond with the creation of new and purposeful jobs to achieve economic and political stability. There are growing concerns (understandably so) that as the technological footprint widens, industry disruptions are to be expected and many of today's jobs will disappear.

However, history has shown that technology unlocks new opportunities and creates more jobs than it displaces, both in and outside the industry. By extrapolating the employment trends observed across large firms in the global (non-agricultural) workforce, the World Economic Forum's estimates up to 2022 suggest that the 75 million current job roles may be displaced by machines and algorithms, while 133 million new job roles may emerge at the same time<sup>16</sup>.

The business of making a city smart will initially need public sector investments to jumpstart the initiatives and mitigate risks. Over the longer term, however, a successful transformation requires private-public partnerships and investments with both multinational corporations and small medium enterprises having to collaborate to deploy smart solutions.

With Asia set to lead the smart city development, this will help raise the growth potential of the region and offer numerous investment opportunities in time to come, giving investors a compelling case for investing in this region.

**Fig.4: The USD1.5 trillion business opportunity in Asia<sup>17</sup>**



Sources: <sup>1</sup>World Bank, June 2018 <sup>2</sup>Deloitte Smart Cities Report 2015 and McKinsey Global Institute: Smart Cities, June 2018 <sup>3</sup>Eden Strategy Institute and ONG&ONG Pte Ltd, July 2018. Ranking is based on 10 metrics: Vision, Leadership, Budget, Financial Incentives, Support Programmes, Talent-Readiness, People-Centricity, Innovation Ecosystems, Smart Policies and Track Record <sup>4</sup><https://atelier.bnpparibas/en/smart-city/article/smart-cities-china-awakes> <sup>5</sup>Navigant Research: 355 projects in the smart city tracker 2018 <sup>6</sup>DC's Worldwide Smart Cities Spending Guide, July 2018 <sup>7</sup><https://www.energymanagertoday.com/global-smart-cities-market-frost-sullivan-0176058/> <sup>8</sup>Leggett, R.J., "The Age of ASEAN Cities", Nielsen and Company, 2015. <sup>9</sup><https://www.businesstimes.com.sg/hub/asean-singapore-2018/asean-must-be-innovative-a-daptive-to-stay-relevant> <sup>10</sup><https://www.internetworldstats.com/stats3.htm> <sup>11</sup><https://www.cio-asia.com/article/3315258/internet-of-things/top-10-smart-cities-in-southeast-asia.html> <sup>12</sup><https://globe.newswire.com/news-release/2018/09/16/1571390/0/en/Global-Smart-City-Market-Size-Trends-Forecast-to-Reach-USD-2-700-1-Billion-By-2024.html> <sup>13</sup><https://opendatabarometer.org/doc/leadersEdition/ODB-leadersEdition-Report.pdf>, September 2018 <sup>14</sup><https://www.iotttechnews.com/news/2018/apr/04/smart-cities-market-value-hit-2-trillion-2025-says-frost-sullivan/> <sup>15</sup>ABI Research: The role of smart cities for economic development, January 2018 <sup>16</sup><https://www.weforum.org/agenda/2018/09/future-of-jobs-2018-things-to-know/> <sup>17</sup>Better Business Better World: Sustainable Business Opportunities in Asia, June 2017

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