

# SMART CITIES Tech De India

Global technology firms are betting big on India's ambitious programme to construct evolved urban zones. **Shrikant Rao** examines the rush to cater to the Smart Cities construction challenge.

**A**CROSS the country's dustbowl these are busy times for a development dream which now seems to have got moving. Last week in Maximum City, Mumbai, just about recovering from a terrible beating by the rain gods, a 35 member delegation from Down Under – the latest set of development sector conquistadors – arrived to parley with the minders of government, urban local bodies and private enterprises over sharing of Australian technological expertise, and partnerships.

As is wont at the conclusion of such visits the leaders marketing Canberra's vast experience in sectors like infrastructure,

water and waste management were upbeat at their great business prospects to create Smart Urbania on Indian earth.

Like many from other countries they may have reason to.

Two years into the launch of Prime Minister Narendra Modi's flagship Smart Cities Mission there is evidence of some movement happening on the ground. For instance, in Pune, a few hundred kilometres away, local civic authorities announced a few days earlier that the city was the first off the blocks with its multi-crore hi-tech command-and-control centre – this is the first project being implemented across the smart cities programme, which has been developed as the nerve centre for urban governance to centrally manage traffic, water and electricity supply, offer citizen feedback, and to provide CCTV-based city surveillance.

Meanwhile, from a command and control centre perspective, other cities like Nagpur, Kakinada, Naya Raipur and Bhopal are in fairly advanced stages of project rollout. The good news, according to the Ministry of Housing and Urban Affairs, the nodal ministry for the Smart City Mission, is that all the command-and-control centres planned in the first batch of 20 cities will be functional by the end of the current financial year.

Further, if there was a measure of triumphalism – apart from the time being Independence Day month, August – it was also on account of the accolades won by Gujarat International Finance-Tec City (GIFT City) and IFSC at CMO Asia 2017 in Singapore. The Asia Smart City and Best CSR Practices Awards are Asia's highest recognition of

## Smart World

- Smart cities market to grow to \$3.48 trillion by 2026.
- Smart technologies to reach \$1.6 trillion by 2020.
- Global smart infrastructure market to leap to \$712 billion by 2020-22
- Smart energy space to grow to \$137 billion by 2024
- Smart safety and security market to reach \$226 billion by 2021.
- Smart buildings to become a \$101 billion market by 2021.
- Smart housing market to grow to \$405 billion by 2030.
- Smart mobility to catapult to \$1.5 billion segment by 2030.

corporate organisations covering almost 41 countries.

It is instructive that India's first operational Smart City and IFSC won awards in 4 categories namely Best Smart City Initiative, Environmentally Sustainable City, Smart Infrastructure and Best Use of CSR practices.

It is not difficult to see why. GIFT City is included among the Government of India's Smart City Mission Statement as a model city in green-field category for development of 100 smart cities in India. Termed as India's first 'Operational Greenfield Smart City,' GIFT City encompasses world-class infrastructure facilities many of which are being introduced in India for the first time. These include a city-wide underground Utility Tunnel, District Cooling System, India's first Automated Waste Collection System, City Command and Control Centre and potable drinking water supply across the city. **Ajay Pandey, MD and Group CEO, GIFT City**, understandably



**"The project is a benchmark for the growth of the Smart Cities programme."**

**Ajay Pandey,**  
MD and Group CEO, GIFT City



## India Opportunities

- India's Internet of things (IOT) industry to grow at \$15 billion by 2020
- Sensors market is expected to grow at a CAGR of over 20 percent between 2015-20
- India video surveillance market to grow at CAGR over 13 percent between 2016-2012
- Indian electronic security market to reach \$2.31 billion by 2018
- India's homeland security market to be worth \$16 billion by 2018
- Fire and safety equipment market to reach \$ 4.3 billion by end of 2017
- India to spend \$21.6 billion over the next 10 years on smart grid infrastructure
- \$4 billion to be spent on new metering system and upgradation of distribution networks
- 100 GW solar power target by 2022 could make India largest solar power market.



**“They will also be role models for other cities – both in terms of their successes and failures in the years to come – so they will have a demonstration effect.”**

**Harsh Shrivastava,**  
Head, Corporate Affairs & Communications, Feedback Infra

a proud man, is led to say “The project is a benchmark for the growth of the Smart Cities programme.”

### Progress report

At this point close to 3,000 smart city projects collectively worth Rs 1.2 lakh crore are in various stages of

implementation out of which 79 projects worth Rs 841 crore have been completed. The Ministry of Housing and Urban Affairs is now in the process of preparing a Liveable Index for smart cities across the country, the bench marking of which is required to be emulated by the developers of such cities in the



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**Mehnaz Ansari,**  
Country Representative – South Asia, US Trade and Development Agency

## 5 Most Tech Ready Cities

A recent report released by **PricewaterhouseCoopers-Russia** informs of the readiness of the world's largest cities to respond to disruptive innovations and adoption of technology-driven solutions. Based on a survey of 1,500 citizens from 10 global cities – Barcelona, Hong Kong, London, Moscow, New York, Shanghai, Singapore, Sydney, Tokyo and Toronto – it covers a variety of social sectors, including healthcare, education, security, tourism and culture, transport, the economy, utilities, urban development and citizen engagement. The assessment ran across several parameters including presence of basic infrastructure, strategies and regulations to support the adoption and use of new infrastructure; the availability of finished prototypes and the readiness of citizens to use new technologies is expected to serve as a roadmap for municipal authorities on how to advance the technological development of their city. According to the survey Singapore tops the ranking at 75 per cent for its digital economy and well-balanced development of critical infrastructure followed by London with 72 per cent for its autonomous transport, Shanghai, New York and Moscow.

construction of world class dwelling units. It may be recalled that the Central government announced the list of 30 cities for development as smart cities in June this year. The 30 cities announced in June has a proposed total investment of Rs 57,393 crore under respective smart city plans. This includes Rs 46,879 crore for ensuring core infrastructure in the areas identified by citizens for area-based development and Rs 10,514 crore for technology-based solutions for improving governance, service delivery and utilisation of infrastructure. With this the total investment approved under the smart city plans of 90 cities stands at Rs 1,91,155 crore. Some of the cities selected in the third round include Thiruvananthapuram, Naya Raipur in Chattisgarh, Rajkot, Karnal, etc. There are a total of 90 cities selected so far under the Smart City Mission launched on June 25, 2015. None of these can be seen as challengers by any stretch of imagination to the South Korean Songdo but they are expected to be basic urban improvements.

**Harsh Shrivastava, Head, Corporate Affairs & Communications, Feedback Infra,** India's leading infrastructure services company, is led to say, “Smart Cities in India are a plus – they are adding to the development of the cities where work has started. They will also be role models for other cities – both in terms of their successes and failures in the years to come – so they will have a demonstration effect.”

The development of smart cities through dedicated SPVs following the selection of a city – that of bringing different tiers of government and the private sector together – is a new institutional experiment being tried. Despite the novel possibilities Shrivastava feels Smart Cities haven't been a game-changer in that due to its focus on a limited area – given the size of the funding they haven't been able to change the lives of the majority of residents living in the zone of development. He further puts things into perspective when he says, “All the hype of the smart cities has distracted from the day-to-day challenge of improving

urban quality and urban services in all Indian cities and towns. So much more needs to be done on “un-smart” stuff like sanitation and sewerage and solid waste management. We can see these problems in the form of frequent flooding of our big cities.”

Admittedly the report card for project implementation is nothing to write home about. According to the mid-year economic survey 2017-18, tabled in Parliament recently, only 20 per cent or one-fifth of smart city projects will be completed by 2018, and that too only under favourable circumstances.

What is interesting though is that there now appears to be a sense of urgency in the portals of government not seen earlier. To keep the motivation levels high the Centre has announced Rs 3,700 crore as incentive to states for faster completion of projects according to global standards and chief secretaries in state capitals have been instructed to constantly keep reviewing the progress.

Under the smart city plans, the 60 cities which had been announced before June, have proposed an estimated investment of Rs 1.33 crore. The mid-year economic survey projected that 57 projects worth Rs 941 crore have been completed till April. An additional 462 projects with an estimated value of Rs 15,307 crore were likely to be completed by next year if the projects that have already commenced have implementation fixed to their timelines. Thankfully enough though redeveloping or developing cities take time there will be some prominent projects on the ground before 2019.

### Business opportunity

Notwithstanding the fact that movement has been slow on the project implementation front, the business of creating urban smartness across India has proved to be a very attractive proposition for global firms. It is not difficult to detect a level of excitement among companies that only profit can inspire. And supporting that assessment is a veritable sea of statistics.

## Manufacturing: Smart Future

According to research from Capgemini's in-house think-tank Digital Transformation Institute, manufacturers believe that their investments in smart factories will lead to a 27 per cent increase in manufacturing efficiency over the next five years adding \$500 billion in annual added value to the global economy. By the end of 2022, manufacturers expect that 21 per cent of their plants will be smart factories. Sectors, such as aerospace and defense, industrial manufacturing and automotive, where people are working alongside intelligent machines, are expected to be the leaders of this transition. Early-adopters, including factories in the US and Western Europe are leading the pack; half of respondents in the US, France, Germany and the UK have already implemented smart factories as opposed to 28 per cent in India and 25 per cent in China. The upper end of the Digital Transformation Institute's forecast is that half of the factories could be smart by the end of 2022 with the increased productivity gains adding up to \$1,500 billion to the global economy. Described as a building block of the ‘Digital Industrial Revolution’, a smart factory makes use of digital technologies including the Internet-of-Things, Big Data Analytics, Artificial Intelligence and Advanced Robotics to increase productivity, quality and flexibility. A smart factory features include collaborative robots, workers using augmented reality components and machines that send alerts when they need maintenance.



**“We are a key partner in delivering a world class integrated city with a focus on the safety, reliability, efficiency, sustainability and connectivity of citizens.”**

**Prakash Chandraker,**  
Managing Director and Vice President, Schneider Electric Infrastructure Limited

Globally the smart cities market is expected to grow to a whopping \$3.48 trillion by 2026. Technology is a key investment that will determine the future of cities and their infrastructure. The smart technologies market alone is expected to balloon to \$1.6 trillion by 2020, as per a recent Bank of America Merrill Lynch (BAML) report on smart city investment.

The smart cities market is primarily driven by the growth of smart energy, smart transportation and smart security among other sub-markets. The major players in the development zone include EPC giants like Bechtel Corporation, Samsung Engineering, Black & Veatch, Mitsubishi, Hitachi and L&T; technology

firms like Siemens, Smart Grid solutions providers like Schneider Electric, Alstom, Schneider Electric, Accenture, Landis + Gyr – not to mention the major Smart City giants Cisco and IBM.

The development of new cities present great opportunities for technology vendors to establish a significant market presence in the country through large scale deployments. The actors are creating solutions specifically geared for the India market. Both Cisco and IBM, for example have been at the forefront of actively helping urban local bodies achieve their objectives by supporting and enabling initiatives like shared services, increasing e-government services and bringing local



**“We are moving in the direction of three core areas of functions electrification, automation and digitisation.”**

**Sunil Mathur,**  
Managing Director and Chief Executive Officer, Siemens

### Smart Components

**Smart homes:** Security, HVAC, Lighting, Entertainment, Energy Management and Home Health. .

**Smart building:** Smart building automation technologies.

**Smart energy management:** Smart Grid Smart Meter, Software & Hardware, Sensors, Communication Network.

**Smart industrial automation:** Smart citizen services: utilities, health and water management.

**Smart transport:** Smart transportation market traffic management systems, integrated supervision market, passenger information, ticketing and parking management.

**Smart security:** Smart security solution market for smart cities is segmented into urban security, critical infrastructure protection, ID management and cyber security



**“With urban transformatory programmes like Smart Cities Mission the future looks bright for technology focused companies like us.”**

**GS Murli Krishna Gannamani,**  
Founder Chairman, Managing Director and CEO,  
Fluentgrid Limited

government closer to citizens. Using the network as an effective platform solutions are being built by these firms which help in the integration of different services in an intelligent fashion and create smart cities.

along with its consortium partner, IL&FS Technologies Ltd, is helping deliver the first green field integrated smart city of Naya Raipur for the Naya Raipur Development Authority (NRDA).



**“Projects like smart cities, Digital India and e-governance present a very big opportunity for us to improve existing core infrastructure.”**

**Hubert Yoshida,**  
Vice President and Chief Technology Officer,  
Hitachi Data Systems

**Mehnaz Ansari, Country Representative – South Asia, US Trade and Development Agency,** is led to say, “The smart cities programme will push the boundaries of India-US cooperation in areas related to technologies for urban infrastructure construction.”

The company will be responsible for executing the entire gamut of integrated Command & Control Center and its overall integration covering transportation, surveillance, citizen applications, end-to-end Smart Grid and Water Management solutions and integrated Building Management System.

Schneider Electric a global specialist in energy management and automation

Says **Prakash Chandraker, Managing Director and Vice President, Schneider**



**“The concept of Smart Cities will open up new avenues for usage of steel in Indian construction industry.”**

**Vikas Kaushal,**  
President Sales & Marketing,  
Interarch Building Products Pvt Ltd

**Electric Infrastructure Ltd,** “We are a key partner in delivering a world class integrated city with a focus on the safety, reliability, efficiency, sustainability and connectivity of citizens. Our advancements in IoT, mobility, sensing, analytics, and cybersecurity technologies will be leveraged to make Naya Raipur a true smart city.”

The evolving character of cities has led companies to transform themselves in terms of their product offerings and services. Siemens India, for example, which operates over 15 factories has moved its focus from conventional engineering products to becoming a total technology and digital solution provider across all its verticals. The company recently set up a model digitalised low-voltage switchgear factory at Kalwa, near Thane which can manufacture over five million devices annually and is capable of producing more than 180 variants at the rate of one product every nine seconds. **Sunil Mathur, Managing Director and Chief Executive Officer, Siemens,** says, “We are moving in the direction of three core areas of functions electrification, automation and digitisation. Our focus will be to offer next generation technologies and solutions to build efficiencies in areas like power and gas, energy management, mobility, building technologies and smart cities.”

With data being at the heart of the new future cities – different types of IoT technologies which combine operation technology (OT), information technology (IT) and automation will come to play – companies like Hitachi Data Systems see the country as a very exciting market. A consortium of Hitachi, Siemens and CII has come together to enable certain smart city projects. **Hubert Yoshida, Vice President and Chief Technology Officer, Hitachi Data Systems,** says, “Projects like smart cities, Digital India and e-governance present a very big opportunity for us to improve existing core infrastructure.”

Smart technology focused products and system integration services for utilities,

cities and communities provided by firms like Fluentgrid helped civic authorities in cities like Visakhapatnam set up and launch a state-of-the-art centralised City Command Center. Already serving over 25 million consumers through its mPower suite of software products, the company enables smart and sustainable transformation of utility grids and communities through turnkey integrated solutions. The company has also earlier partnered with IBM to implement an integrated smart city project called Palava Smart City in Mumbai for the Lodha Group. **GS Murli Krishna Gannamani, Founder Chairman, Managing Director and CEO, Fluentgrid Ltd,** says, “With urban transformatory programmes like Smart Cities Mission the future looks bright for technology focused companies like us.”

### Smart buildings

India is expected to emerge as the world’s 3rd largest construction market by 2020 by adding 11.5 million homes every year. Under the “Housing for All” programme there are plans to construct 60 million homes by 2022; it also plans to construct 200 low-cost airports in Tier-II and Tier-III towns, apart from developing 2,500 of the 6 lakh villages across the nation.

The smart city surge will see growing application of game changing technologies such as BIM, prefabricated steel structures and modular housing systems; Smart materials including high strength and self-compacting concrete; Smart construction in the form of sophisticated equipment, formwork and scaffolding, Automated Building Solutions, Electronic Surveillance and other best practices which improve quality and productivity.

The next generation projects planned by the government is expected to see increased use of pre-engineered steel in construction. With construction timelines being tight steel buildings solutions will be perceived as an economically smart solution for speedy development. Says **Vikas Kaushal,**

### Technologies List

- Open-data initiatives
- Parking apps
- Apps that allows users to adopt city property
- High-tech waste management systems
- Digital and easy-to-use parking payment systems
- A city guide app
- Touchscreens around the city
- Wi-Fi in subway stations and on trains
- Energy efficient residential/commercial real estate.
- Kiosks that display real-time information
- Social media-based emergency alert and crisis response systems
- Police forces that use real-time data to monitor and prevent crime.
- More public transit, high-speed trains, and bus rapid transit (BRT)
- OLED lights and surveillance in high-crime zones
- Solar powered charging stations
- Roofs covered with solar panels or gardens
- Bike-sharing programs
- Smart climate control systems in homes and businesses
- Widespread use of traffic rerouting apps
- Water-recycling systems
- Crowd sourced urban planning,
- Broadband Internet access for all citizens



**“We are positioned with the broadest technology solutions portfolio to support the government’s vision.”**

**Vikas Chadha,**  
President, Honeywell India

**President Sales & Marketing, Interarch Building Products Pvt Ltd,** “The concept of Smart Cities will open up new avenues for usage of steel in Indian construction industry. A lot will depend on the architects and management consultants of the cities on how they utilise the benefit of steel and its definite advantage of quality, speed, accuracy and efficiencies in their projects.”

As per a survey conducted by Honeywell over 2,000 buildings in India

including airports, hotels will have to raise their investment profile in Smart Building Technologies. Automation technologies to play a key role in the efficient operations of buildings. The industry estimates the Indian building automation and control systems market to grow three fold in revenue terms by 2019 with the smart homes featuring devices for smart monitoring, cross-device compatibility, voice commands, wireless connectivity and lighting enabled by motion sensors.



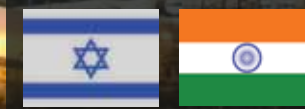
**“Alstom is very much geared to offer smarter, more efficient and more connected means of transportation for future cities.”**

**Bharat Salhotra,**  
Managing Director, India & South Asia, Alstom





# Namaste ISRAEL, Shalom INDIA!



It was a long awaited – and ‘Smart’ – engagement.

Narendra Modi’s visit to Israel this July, the first ever by an Indian prime minister has thrown up possibilities for co-operation in the field of constructing intelligent urban environments.

While as many as 12 strategic pacts envisaging investments worth \$4.3 billion have been signed between Indian and Israeli firms it is significant that New Delhi will be able to draw from Tel Aviv’s technological experience in areas such as transport infrastructure which includes roads, railways, civil aviation and traffic management systems, renewable energy, water and environment, defence and smart cities.

Very clearly, Israel is determined to take the bilateral engagement to a different plane which goes beyond defence hardware and intelligence software. Over the last two years there has been growing evidence of businessmen from both sides demonstrating keen interest in constructive engagement in the wake of the Government of India’s initiation of the Smart Cities programme.

Israeli authorities first announced plans in 2015 to collaborate with India to create Smart Cities in the state of Maharashtra using innovative digital resources and systems. Incidentally Israeli technological prowess has transformed Tel Aviv to become one of the world’s leading smart cities. It was reported urban centres in India would be set up to use Tel Aviv’s DigiTel pass, through which citizens can pay water and municipal tax bills, order parking permits, lodge municipal complaints on line, avail of citywide services like WiFi and GPS-based smartphone apps.

In 2016, Maharashtra Chief Minister Devendra Fadnavis and Tel Aviv’s mayor Ron Huldai agreed to collaborate in building smart, sustainable and friendly urban spaces that integrate the use of technology, social media, community participation and e-governance. This included the prospect of using Israeli expertise in community outreach and participation through use of social media, open data; online municipal services; traffic and parking management through IT; security systems and emergency management. Also discussed was the possibility of using Indian IT capabilities to increase efficiency of smart urban solutions.

Earlier this year, 10 Israeli technology firms specialising in areas like water improvement, environmentally friendly construction and smart city management made presentations at an exhibition in India’s national capital.



**Barak Granot, Head of Economic & Trade Mission, Embassy of Israel, New Delhi** underscored the interest shown by his compatriots when he said, “ Many of

the global firms are eager to do business in the Indian market but India has a huge appetite for Israeli innovation and smart city technologies.”

As an extension of the growing cooperation, Urban Local Bodies from both countries – in this case the Tel Aviv Municipality and the Thane Municipal Corporation – have come together to replicate in the Western Maharashtra city the civic transformation that the Israeli capital underwent on the strength of its digital technologies. DigiTel Aviv Project is being extended as DigiThane.

Very obviously arising from initiatives like Smart Cities and Digital India there exist great business opportunities for Israeli

firms like Vital Intelligence Group, a world leader in cyber security solutions; and telecom service provider Bezeq, which recently ventured into the smart city arena and has earmarked millions of dollars for such intelligent investments. The telco giant is partnering with industrial IoT software provider mPrest to offer a Smart City-Smart Campus software-as-a-service (SaaS) solution to connect sensors and smart systems to provide mission-critical monitoring and control. Smart city projects could eventually encompass internet technology that optimises trash collection, street lights, parking availability and air pollution monitoring.

Already there is a lot happening in terms of a building of a construction ecosystem across Israel which indicate the country’s technological chutzpah. The real estate boom has led to creation of industrial zones, residential enclaves and sustainable cities in the middle of desert land. One such futuristic, self sufficient, greenfield urbania on the anvil is the Eco Smart City at Hazon Ain in Southern Israel, with design and architecture in harmony with local desert elements. The compact city expected to house a population of 50,000 and host about 900 businesses will contain colonnades, gardens, artificial lakes and

fountains. It will also have its own internal transport system, recycling water plant, a large photovoltaic solar power plant, wind farm, research centres, and plantations and buildings with low energy consumption. The project is being developed by Genesis, an umbrella body of about 50 Israeli firms, specialising in various areas of Smart City development like eco-technologies, green and clean tech, home automation, engineering, renewable energies, etc.

Such is the support and feedback received for the enterprise from local and international constructors, institutions and investors that **Yehuda Michael De Castro, CEO &**



**President, Hazon Ain Project, Genesis Eco Smart Cities** is inspired to say, “We are ready to share synergies to develop Smart Cities in India.”

David Ben Gurion, the founding father of Israel and the country’s first prime minister, once famously said he wanted to see the barren Negev bloom.

He would certainly have been proud to see Israeli urban smartness both embracing and flowering across India. – SR

American technology giant Honeywell through its newly formed Home and Building Technologies (HBT) division is offering support to several projects in cities like Bhubaneswar, Aurangabad and Ujjain. Its products include connected devices for commercial, residential and industrial buildings which perform an array of functions including tracking and controlling systems covering fire, air and security. An installation of an IoT-enabled surveillance and emergency response system in Ujjain in 2016 considered a showcase for the company has been widely appreciated. Honeywell technologies are also focused on addressing pollution problems for residential and commercial customers through an air purifier controlled by a mobile app. Says **Vikas Chadha, President, Honeywell India**, “Smart City initiatives are a big opportunity that will continue to play out over the next few years. We are positioned with the broadest technology solutions portfolio to support the government’s vision.”

## Smart transportation

India is poised to grow exponentially in terms of its demand for smart mobility solutions. This growth comes against a backdrop of a colossal urban transformation where over 250 million people are likely to migrate to already congested cities in the next 15 years. For India, apart from increasing existing capacity, the push will have to be towards smarter and efficient public transport services across the country. With the growing pressure on urban infrastructure and public spaces like roads and parks, shifting towards smarter, efficient and affordable public transport network is the need of the hour.

Further emergence of metros in Tier II cities along with expansion across current metro systems will continue to be strong drivers for business for transportation solutions providers like Alstom. The company has globally launched an electric bus called APTIS with a unique and innovative design based on that of a tram with low-floor



## Smart Engagement

### United Kingdom:

UK's traditional engagement with India has moved to the domain of Smart Cities with London collaborating with New Delhi in the development of three urban centres across the country – Pune and Amravati in Maharashtra and Indore in Madhya Pradesh. The UK's smart cities offer is vast, from the development of connected vehicles, intelligent transport systems, data analytics and energy systems.



in states like Karnataka, Telangana and Maharashtra. The Sweden India Smart Cities Platform has been established through Team Sweden and Swedish firms to make the mission a reality. The Nordic country is known for its technological expertise in environment friendly public transport and solid waste management, urban mobility solutions, smart parking systems, air filtration, real time information systems and command and control systems all of which are integral to the smart city plans of Indian cities.

with some infrastructure projects like the Delhi Mumbai Industrial Corridor, Ahmedabad Metro project, Chennai Metro and the bullet train. In Varanasi, Japan is supporting the construction and rehabilitation of sewage facilities under the “Ganga Action Plan Project”. Japan's Nikken Sekkei Research Institute (NSRI) has signed an agreement with the Indian Institute of Technology-Kharagpur to design, plan, develop sustainable habitats and implement smart technologies for India's smart city growth.

### United States:

As per agreements signed by the United States Trade and Development Agency (USTDA) with the state governments of Uttar Pradesh, Rajasthan and Andhra Pradesh Washington is collaborating in the development of smart cities at Ajmer, Allahabad and Visakhapatnam. The cooperation entails contribution of funds for necessary feasibility studies and pilots, advisory services and inviting smart solutions to support the development of the cities. It is reported the agency will enable US industry bodies to mobilise private sector expertise and resources to address important aviation and energy-related infrastructure connected to development of smart cities.



### Germany:

The Federal Republic of Germany is supporting the cities of Bhubanewar, Kochi and Coimbatore in implementing their smart city plans. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) has started engagement in the three cities with the focus on tackling existing problems such as housing shortages, poor water and energy supply and overburdened infrastructure. Germany could initially help by offering to carry out feasibility studies. Germany is sharing its expertise in urban planning and governance, wastewater treatment, integrated computer technology solutions, pre-cast concrete technology and equipment.



### France:

France, a pioneer in sustainable urban development, is associated with the development of Pondicherry, Chandigarh and Nagpur as Smart Cities. In Pondicherry the engagement is mainly around preservation of heritage buildings and finding solutions to water issues. In Chandigarh French experts are offering help in the fields of urban transport, urban transport, water and waste treatment, solar energy, urban planning and architecture. Incidentally Paris has committed to doubling its credit line from \$1.09 billion for 3 years to €2 billion in order to help sustainable urban development and smart cities in India. Ten French firms including Alstom Transport, CAN, Dassault, EDF Energies Nouvelles, Egis, Lumiplan, Schneider Electric and Thales have signed an agreement to participate in Smart Cities Mission.



### Sweden:

Stockholm has shown keen interest in partnering with New Delhi for the development of smart cities through the public private partnership (PPP) mode



### Japan:

Tokyo has decided to associate itself with India in developing Chennai, Ahmedabad and Varanasi as smart cities. Japan has been closely associated with aiding India



accessibility and 360° views. “Alstom is very much geared to offer smarter, more efficient and more connected means of transportation for future cities,” says **Bharat Salhotra, Managing Director, India & South Asia, Alstom.**

## Future Outlook

Very obviously the Smart Urbania planned by the Government of India – whether through retrofits or greenfield

mode – cannot be delivered instantly, but what is significant is that the wheels of action have been set into motion. Understandably therefore it is easy to detect a frisson of excitement among the various stakeholders at the baby steps being taken. Despite the opportunities the road ahead is fraught with numerous hurdles such as government regulations and clearances and deficit of skilled labour – and the requirement of large scale

finance – to be sorted out on a war footing. Corporate governance and transparency will be very crucial requirements for the creation of such cities. The future despite its challenges looks bright for India's urban constructors.

Since much of the smart urban transformation will ride on the back of technology “Tech de India!” could well be the country's clarion call. **C&T**