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-- The India Smart City Opportunity --An Enovado White Paper

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### **Executive Summary**

The words "smart city" evokes a vision of a city which is superior in planning and is highly digitized in terms of facilities and infrastructure. This vision, although it may be a definite priority for the Indian Government's desire to create 100 intelligent cities over the next 3 years, is a hard task to accomplish without significant foreign collaboration and investment. A necessary and undeniable partner in making such a vision a success is the participation of private sector FDI.

With technology as the enabler, corporates and cities should follow a path of identifying a city's core economic strength. The basis for which will allow it to transform it core through technology whereby acting as a catalyst around which to build a range of smart solutions.

India being a unique and diverse nation, its cities reflect a similar array in opportunities, weakness' and barriers. There is however a tremendous requirement of smart solutions common across most cities by way of smart energy, water, waste and transportation investments which foreign players can exploit. The verticals offer opportunity by way of manufacturing, consultation, analytics, management, innovation and private-public partnership.

With the present wave of urbanization sweeping across India which in twenty years will witness 590 million Indians living in cities (twice the current population of the USA) that will generate 70% of the nation's employment rate gives us a flavor for the stakes involved in the Smart City initiative. An estimated \$1.2 billion already allocated by the Indian government and a further \$1.2 trillion1 required to turn the Indian Smart City initiative into reality, the recently elected Modi government has passed sweeping reforms in liberalizing foreign flows across virtually all sectors. The Indian government's mission to woo foreign counterparts is gathering steam with companies across several nations already having put their foot through the door.

This report provides a detailed framework for potential foreign investors who seek to successfully align themselves with this ambitious project. Insight has been gained through exclusive access with the Government of India's Economic Affairs Wing, secondary data, and a collection of previously released case studies.

"Cities on the past were built on river banks, they are now built along highways. But in the future, they will be built based on the availability of optical fiber network and next-generation infrastructure."- Narendra Modi-Prime Minister Of India.

<sup>&</sup>lt;sup>1</sup> een.ec.europa.eu/tools/services/EVE/Event/DownloadAttachment?attachmentID...

## **Opportunities for Private Sector**

The logic of smart solutions across various verticals ideally optimizes resources through more efficient and real-time collection of consumption patterns and habits. This information enables better monitoring and management on the part of service providers and further enables consumers to make more informed use of resources through mature consumption. In turn, this reduces service operating costs and extends the operating life of existing infrastructure. The benefits are aplenty. In their truest essence, Smart city solutions are disruptive technologies which require system wide deployment. To yield the most benefits existing processes will need to change. Furthermore, successful deployment will require collaboration between multiple actors along the value chain. Though various cities require different smart solutions there are four core elements which encompass numerous product and service market potential that share a common thread across many of the 100 Smart cities across India.

Advanced Western European players have strengths in design, research, finance, and engineering services serving as a natural match with the Gol's Smart City requirements. We recommend that businesses consider the following four verticals studied in this report are fundamentally material to achieving India's Smart City ambitions.

- Smart energy management system & technologies
- Smart water management system & technologies
- Smart transportation management system & technologies
- Smart waste management system & technologies

Application for private players in each of the sphere can be achieved through five primary methods.

- <u>Consultancy</u>: Private sector consultant firms can help local governments in coming up with effective plans for the smart city project. Many such firms have already been employed in planning of projects by state governments.
- <u>Data analytics</u>: The seamless integration of smart technologies within a city relies heavily upon gaining deep insight from data collected through IoT applications. Private businesses with a legacy of planning of projects, architecting solutions upon the building blocks of data can aid the Indian government in swifter roll-out of cutting edge projects and subsequent management.
- Project implementation: Private sector can be involved in public-private partnerships(PPP) for implementation of major projects that are conceived under the smart city mission. In addition, private parties can also be involved on a contractual basis for completing a project.

## Smart Water Management Technological Opportunities

To an economy heavily reliant upon agriculture, water is an invaluable and critical resource for the new breed of Indian cities and its management poses many challenges for the local government. Across Indian cities where low precipitation is common, compounded by drought, it is essential for smart water conservation management realistic sustainably. However, towards India's extreme South and East, many of its cities face the other side of the coin: copious rainfall which overwhelms a city's infrastructure, housing, basic amenities and acts as a perfect carrier for water borne illnesses.

With most of India's Smart cities requiring effective water management technology, both the opportunities and challenges for this sector are immense. The drive to provide better services at an affordable cost is challenging. Entrenched players in the Water utilities industry along with and various stakeholders will need to leverage technological innovation to achieve positive strides in this crucial sector.

With both the demand for water and the cost of water treatment on the rise, a simultaneous reduction in the supply of water means most Indian cities are now facing huge challenges in managing and delivering safe supplies of water to those living and working in cities. The United Nations predicts that global water demand will rise by 40% between now and 2020 and that this will be 50% higher in developing countries- with emphasis upon India.<sup>25</sup> These challenges also provide opportunities to those countries and businesses that are ready to exploit them.

#### **Smart Water Management**

Smart water management is defined here as a system is one in which technology manages the distribution and management of water resources, where advanced water treatment is present, where demand-side efficiency is enabled and where products improve water

<sup>&</sup>lt;sup>25</sup>Water 20/20 Bringing Smart Water Networks into Focus, SENSUS 2012

# Potential State Collaborators for Corporates

#### MINISTRY OF URBAN DEVELOPMENT

Address:	Nirman Bhawan, room no. 122-C, Maulana Azad Road, New Delhi- 110011
Website:	http://indiansmartcities.in/
Details:	The Ministry of Urban Development have assigned a dedicated department for regulating and managing the overall development of 'Smart Cities' in India. The 100 Smart cities project declared by the Government of India falls under the jurisdiction of the ministry. The ministry is working with master developers (Private sector companies) for developing the several smart cities being implemented in India.

#### MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (MMRDA)

Address:	Bandra - Kurla Complex, Bandra East, Mumbai- 400051
Website:	www.mmrda.maharashtra.gov.in
Details:	MMRDA is a government agency working for urban and infrastructure development for the Mumbai
	Metropolitan Region. MMRDA is responsible for the One BKC project in Mumbai and several other
	smart infrastructure initiatives dedicated towards metropolis of Mumbai.

#### CITY AND INDUSTRIAL DEVELOPMENT CORPORATION OF MAHARASHTRA (CIDCO)

Address:	CIDCO Bhavan, 6th floor, Sion Panvel Road, CBD Belapur, Navi Mumbai – 400614
Website:	www.cidco.maharashtra.gov.in
Details:	CIDCO is a city planning organization created by the Government of Maharashtra. They are working on
	several smart cities projects with private companies. CIDCO has launched their own program with a
	self-funding of INR 340 Bn for smart cities for Navi Mumbai (Navi Mumbai is the New Mumbai region
	adjacent to the Greater Mumbai region).

#### MUNICIPAL CORPORATION OF GREATER MUMBAI (MCGM)

ſ	Address:	BMC Head Office, 4th Floor, Annex Bldg, Fort
	Website:	www.mcgm.gov.in
Ī	Details:	Is the government body which looks after proper functioning and services of Mumbai and Greater
I		Mumbai region. They are also involved in projects related to urban infrastructure development and
I		smart cities development and remodeling.

#### NATIONAL INFORMATICS CENTRE (MAHARASHTRA STATE CENTRE)

Address:	11th Floor, New Administrative Building, Mantralaya, Madam Cama Road, Mumbai- 400032
Website:	www.maharashtra.nic.in
Details:	The National informatics Centre is the central ICT department, which works with the state government of Maharashtra. They are working with the state government for 'Digital India Programme'. Relevant for ICT companies interested in working with state government for projects
	and safe city projects.

## Exclusive Interview with Prime Minister Modi's Chief Economic Advisor

Experiencing a major demographic shift, the bulk of India's population will look to migrate from villages into cities in search of new opportunity. This new massmigration of urban dwellers will be supported by the "Smart City" initiative, which



aims to upgrade and build 100 cities stressing urban mobility, low-cost sanitation housing, and and sewerage.27 Enovado had the opportunity to conduct an exclusive interview with one of the chief economic advisors for urban development for Prime Minister Modi, Dr. Kumar V. Pratap. Dr. Pratap shed light on what implications this initiative holds for German investors,

and he identified several major areas for foreign collaboration in high-tech functions to serve the Smart City initiative.

## Q. We have all read the statistics on India's burgeoning population. India's people continue to be its greatest asset and its creates cost, you can say. To what effect does the Smart City project alleviate such pressures on India?

A. To house what is projected to become the world's most populous nation, the basic building blocks of any smart city would be the creation of homes and apartments built with the utilization of environmentally friendly technologies, sustainable amenities and non-traditional building materials. The undertaking of this would open massive opportunities for construction machinery, sanitation equipment, waste and water management equipment, and other capital goods in which German and other European manufacturers excel in.

Q. With the building blocks on place India also has a notorious track-record in being unable to basic amenities to its citizens. How do the provision of facilities, products and manufactured technologies relating to water, electricity and efficient waste management feature in Mr. Modi's Smart City plan?

<sup>&</sup>lt;sup>27</sup> Embassy Of India, Berlin, Press release,

 $https://www.indianembassy.de/pdf/Press_Release\_Smart\_Cities\_Mission\_Statement.pdf$