

‘Smart cities will open up multiple growth opportunities’

Agendra Kumar, President of Esri India, lays down the essential elements that should be in the roadmap for development of smart cities in India.

What is the quantum of opportunities in the smart city space in India that you foresee?

According to a McKinsey Global Institute (MGI) report, India’s urban population is projected to increase from 340 million in 2008 to 590 million in 2030. Recently, the Indian Government has announced its plan to set up 100 smart cities across the country. This opens up a huge opportunity in each aspect of smart city planning, project execution and management. The government has allocated Rs 7,060 crore (approx. \$1.2 billion) in the current year, but the overall investment needed for building smart cities will be much larger.

Smart city is about integration, coordination and synergistic functioning of different participants of the smart city ecosystem. These include several aspects such as smart planning, transparency in governance, smart energy, smart

infrastructure, smart buildings, and smart service delivery mechanisms. Essentially, a smart city is not about a single or a certain industry segment but will open multiple growth opportunities across all industries.

Which are the segments where technology can play a major role and how?

Technology is at the heart of a smart city ecosystem - from urban planning to creating healthy environment, ensuring safety of people, smart and efficient power distribution, ensuring 24/7 water supply, intelligent traffic and transportation management systems that use analytics to provide efficient solutions to ease commuting, and automated building security and surveillance systems requiring minimal human intervention. However, what is imperative is a need for a common technology platform which integrates all aspects of city planning and management providing a common operating picture to all. A centralized information system based on GIS provides an IT framework which integrates every aspect of a smart city - starting from conceptualization, planning, and development to maintenance.

How does Esri India see the growth of smart cities and the opportunities to help in the development of smart cities?

Smart cities are the need of the hour to enable an efficient and sustainable solution for servicing urban growth. Geodesign will be the key framework for conceptualising and planning for smart cities; it will assist at every stage from project conceptualising to site-analysis, design specifications, stakeholder participation and collaboration, design creation, simulation and evaluation. Our Geodesign consultants can



This artist's conception shows an aerial view of Masdar City (in Abu Dhabi) as it will look when completed.

assist with expanding the capabilities of GIS to replicate and support design workflows.

Tools such as Urban Observatory could be used to compare and contrast global cities on numerous subjects, such as their growth patterns, demographics, land use, infrastructure, and transportation. Esri is working with governments, organisations in India as well as globally in helping them setting up an enterprise GIS technology platform which is now the backbone for customers to strategise their decision making, planning, execution and management. There are best practices, references, solution templates, frameworks and experiential learning that could be leveraged for driving similar initiatives in India.

Which are the successful global smart cities India can take a cue from?

Globally, Esri technology is at the core of major smart city initiatives. Masdar City, the world's first carbon-neutral city, is a prime example of how GIS is the core to design our future cities. It is using Esri GIS software in managing the overall spatial information necessary for designing, building, and operating Masdar City. Enterprise GIS solution enables more than 100 organisations involved in developing Masdar City to access maps, data, and analytic services, thus reducing problems of multiple data versions in circulation and building a common operating picture for all. GIS is used to find optimal locations for perimeter parking garages, along with effective road and rail transport routes into the city. Real estate plots were valued using routing GIS.

Which are the sectors you cater to and the products that can help Indian cities become smart and efficiently managed cities?

Worldwide, Esri software is used in more than 350,000 organisations including two-thirds of Fortune 500 companies, and more than 7,000 colleges and universities. Esri applications are currently running on more than one million desktops and thousands of web and enterprise servers, providing the backbone for the world's mapping and spatial analysis need. Our extensive customer base in India spans Government, Private sector and Academia covering various industry verticals such as Land management, Utilities, Infrastructure, Disaster Management, Telecommunications,

Urban/Municipal, Transportation, Defence, Natural resources and many more. The applications that drive them are used in almost every field from climate change to urbanisation and planning.

Our customers are doing carbon accounting, habitat analysis and conservation work extensively. They are using GIS to discover energy potential of various energy technologies, especially renewables such as geothermal, solar and wind. It is also being used for conservation and land use planning, roads and re-development planning and managing land cadastre. It is being used for organising the civil society for taxation and property ownership. It is also being used to design transportation systems and manage them, which not only means just managing roads, railways and air traffic, but also understanding the interaction between these different modes of transportation. Organisations are using technology to manage utilities such as telecommunication and power.

Esri has consistently maintained technology leadership in the GIS industry by way of functionality, features and platform support enabling delivery of GIS services on any device, anytime, anywhere. Esri's ArcGIS platform is being used for all the aspects of smart city planning, design and management. Esri GeoEvent processor solution connects with virtually any type of streaming data (e.g., Facebook/Twitter feeds) and automatically alert personnel when specific conditions occur—all in real time, helping faster response and with remarkable accuracy whenever and wherever change happens. For e.g., this enables applications to leverage capabilities of geo-fencing and geo-triggers.

Esri's CityEngine solution enables 3D modelling which can be used in urban planning, architecture design, simulation, and game development. CityEngine delivers a full suite of industry-leading procedural tools to aggregate geospatial data, layout and edit street networks, generate and modify buildings, create 3D road profiles and distribute street furniture, control the shape of the skyline, and analyse urban planning projects. IT



Agendra Kumar is the President of Esri India, a joint venture between ESRI Inc., USA and NIIT Technologies (NTL), India. He has over 25 years of experience in IT business management and has served as the country head of several multinational technology companies.