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# BW SMARTCITIES WORLD

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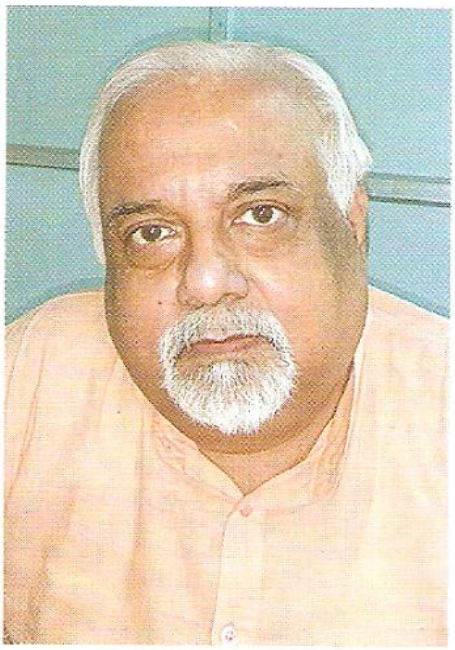
# SMART CITIES: PATH FOR GROWTH IN THE 21ST CENTURY



**By Amitava Basu**

**Prabhakar Kumar**

RECENTLY, Delhi high court said population in Delhi is declining and people are leaving city due to dangerous levels of pollution and high crime levels. The 21st century is observing urbanization at an unprecedented rate. Need for innovative cities are coming up to meet the demands of growing populations looking for a superior quality of life, as city planners embarked on to appreciate the severe effect of imitating outdated city models on a global scale. As the speed of development and transformation accelerates, the traditional ways that cities adapt are becoming less livable. In the past, new organizations and new forms of infrastructure, like the expressway, bullet train, etc took a generation or more to be designed, accepted, and incorporated into urban centers. Today we find experimentation and opinion being included into the act of day to day development. Such opportunities are integrating the new sustainable technologies and businesses in all aspects of city centers, not just in the interesting high end projects, but in common places as well.

### Smart Cities: Need of the hour

More than half of the world's population now lives in towns and cities, and by 2030 this number is projected to swell to about 5 billion. Much of this urbanization will unfold in Africa and Asia, bringing huge social, economic and environmental transformations.

The largest urban growth will take place in India, China, and Nigeria. These three countries will account for 37 percent of the projected growth of the world's urban population between 2014 and 2050. By 2050, India is projected to add 404 million urban dwellers, China 292 million and Nigeria 212 million.

Managing urban areas is one of the most important

development challenges of the 21st century. To maximize their potential as positive agents of change, cities need to become physically, digitally and economically smart. The modes of 'smartness' apply pervasively - extending from physical infrastructure to social infrastructure such as municipal services, transport, energy, and healthcare, to the choices that citizens make as consumers, to the physical space, such as resource-efficient buildings. Smartness of a city is benchmarked on various criteria cutting across three dimensions - Livability, Workability, and Sustainability.

**90**

**The percentage of the total tax revenue of the country that is contributed by our urban centres**

### Global Smart Cities

On 29 April 2016, the Australian Government launched its Smart Cities Plan to help build an agile, innovative and prosperous nation. An ambitious funding plan has been prepared to build "30 minute cities," where residents can access all essential work, school and lifestyle services within a half-hour commute. A strategy has been developed for the federal government to fund state infrastructure projects on the condition that they meet a number of criteria including increased economic growth or tax revenue. The plan outlines an infrastructure financing unit to work with the private sector on "innovative financing solutions."
The Growth Development Strategy (GDS) 2040 is a transformational journey that the City of Johannesburg is embarking on to create a Smart City, in which the citizens and businesses of Johannesburg can enjoy sustainable live, work and interact.

### Indian Scenario

The urban population in India is expected to reach 600 million by 2031. The current pattern of urbanization is largely taking place on the fringe of cities, much of it unplanned. This unprecedented growth is leaving municipal governments with critical infrastructure shortages and service gaps. The report said that in India, the gap in urban infrastructure investment is estimated at $827 billion over the next 20 years, with two-thirds of this required for urban roads and traffic support. Urban air pollution is projected to become the top environmental cause of premature mortality by 2050.

Some 44 percent of India's rapidly growing carbon emissions have urban origins, emanating from transport, industry, buildings and waste

Among the rising costs of unmanaged, unstructured urban expansion in India is urban pollution which caused 620,000 premature deaths in 2010, up more than six-fold from 2001. Recent estimates show that the cost of environmental degradation, largely driven by sprawling cities, is "enormous" and is reducing India's GDP by 5.7 percent annually. Some 44 percent of India's rapidly growing carbon emissions have urban origins, emanating from transport, industry, buildings and waste. Yet, the cities in India generate two-thirds of GDP, 90 percent of tax revenues, and the majority of jobs, with just a third of the country's population. This clearly highlights the potential benefit of a new model of urban development. Therefore our cities need to be productive and accessible. But above all what is most required that our cities must be livable.

**Smart City Mission**

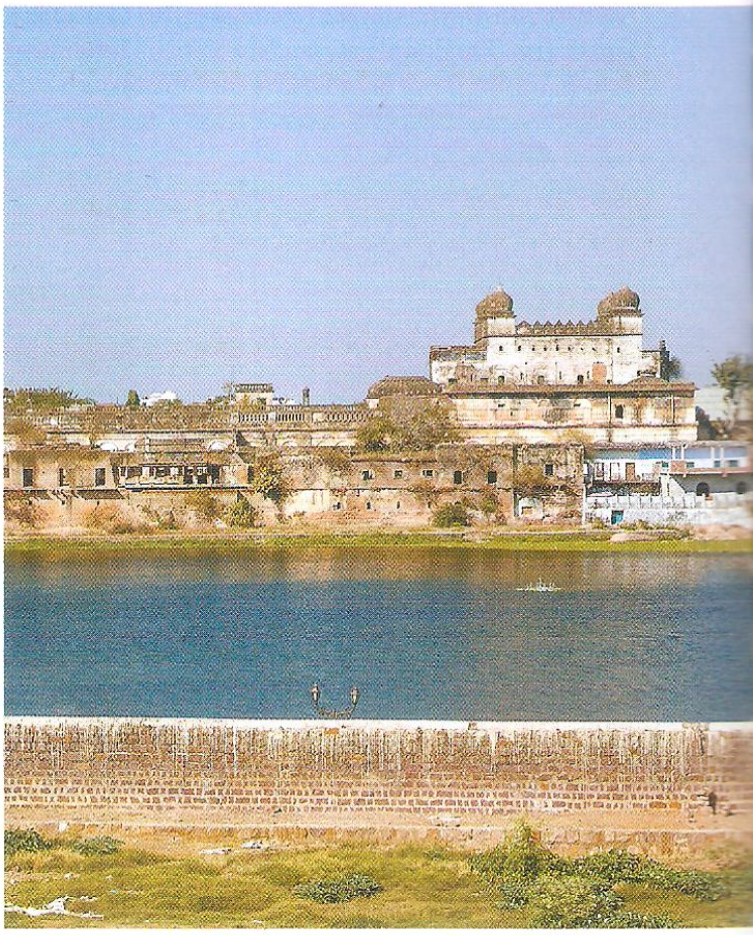
In this backdrop, Government of India has launched the Smart City Mission. The strategy for building smart cities consist of area-based development through city improvement (retrofitting), city renewal (redevelopment) and city extension (green-field development) plus a pan-city initiative in which smart solutions are applied covering larger parts of the city.

India holds strength and resilience in its diversity. But this diversity is also at times a source of conflict. Unique cultures and communities have emerged in townships. No township identity and culture is the same – and even within townships today, a myriad of new cultural identities are constantly being shaped and formed. New waves of migrants from different parts of the country are adding further to the already diverse and cosmopolitan character of the cities, especially the metros and large ones. It is important to consider these dynamics, as they lay the basis for forging an approach to human and social sustainability, resilience and livability that takes account of a city's uniqueness. In this respect, a built environment that offers a good quality of life for all, irrespective of race, ethnicity, place of origin, gender or class – while also building on the cultural character of neighbourhoods, is central to inclusion and cohesion that need to be considered in making a city smart.

**Planning of Bhopal Smart City**

In course of examining the planning of Smart City Plan, we can explore the Master Plan of Bhopal Smart City prepared by REPL consortium which has been envisioned as 24X7 activity based integrated live-work-play-learn-shop concept. The planning approach was based on Transit Oriented Development (TOD) with social inclusiveness. The Proposed Site for development is spread over 280 hectare vacant land in North TT Nagar. The city has been planned to ensure that there is least commutation involved for all the residents, in terms of going to work or accessing the amenities. This has been ensured through land use coordination of carefully balanced areas of residences, office, education, medical and entertainment areas. The modern commercial zone would provide better economic and employment opportunities.

Bhopal Smart City project has proposed master plan entailed a vibrant mixed-use development. At the same

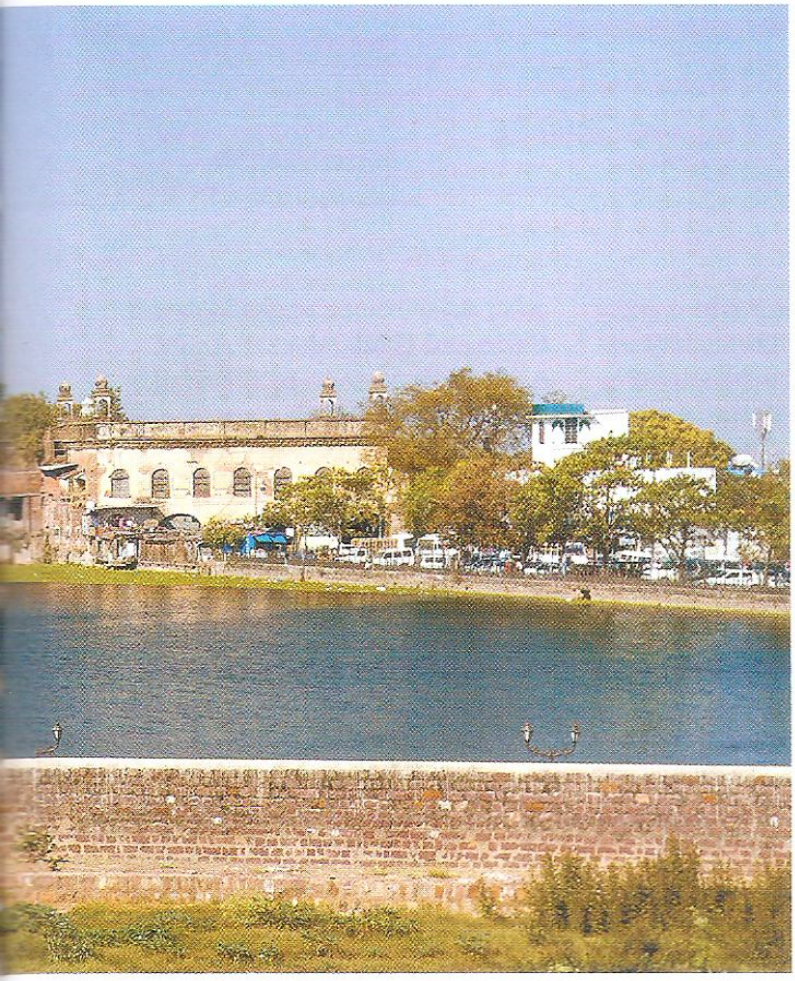


> The cities in India generate two-thirds of GDP, 90 percent of tax revenues, maximum jobs with just one third of the country's population

time, due consideration was given to existing social and cultural infrastructure. Major religious structures and large institutional buildings were retained. In order develop a modern and efficient smart city, Its detailed plan covered multiple aspects like – resource, topography and land use analysis; transportation system; water management system; solid waste management system, activity-based zoning, secured and safe living, etc.

The Bhopal Smart City project proposed LRT and BRT Corridors. The design utilizes potential of these Transit Systems to create a TOD. LRT route is diverted 100 metre into site to reduce walking distance from stations to workplace and home. The Key concept of Smart City Bhopal has been to create walkable city with least amount of vehicles. Idea was to promote public transport, encourage walk-to-work and achieve healthy lifestyle. LRT Stations were strategically located to cover site within 10 minutes' walk. The Whole Development has been inter-connected with multiple Pedestrian Linkages at an Interval of maximum over 150 meters connecting all parcels to Major Plaza and Green Spaces. The vehicles had been restricted to the periphery of the site. A peripheral 4 Lane Service Road was designed to give access to Development on the edge of the site. Also, Multistory Car Parks had been provided on the edge of site to achieve vehicle free site.

City Master Plan also envisaged creating various clusters to cater to different industries & sections of the society. These multiple-hubs provide opportunity to develop new sectors of economy, by making available diverse sets of facilities, while providing comfortable and sustainable lifestyle to the community. Six clusters had been proposed in the Master plan: Digital- Innovation Hub, Knowledge-Research Hub, Health Hub, Commerce Hub, Retail Hub and Entertainment Zone with supporting Residential Clusters.



## Conclusion

Smart Cities focus on the most pressing needs and on the greatest opportunities to improve lives. Smart Cities tap a range of approaches – digital and information technology, urban planning and best practices, public-private partnerships and policy change to make a difference. Smart city plan always put people first. The Indian Smart City Mission is designed to inspire greater creativity from municipal officials and their partners, more involvement and inspiration from the citizens, and development of proposals that produce concrete benefits in people's lives.

A critical success factor is the need for a common technology platform to enable integration, coordination and synergistic functioning of different participants of the smart city ecosystem. However, the lifeline for the success of city plan lies in participation of the city residents as collective team. Together, the city and its citizens can address poverty, create an inclusive economy and healthy environment, and establish livable, resilient and sustainable city – supported by capable, soundly governed municipal government. ■

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