

# Changing Cities, Changing Climate

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A CONSUMER CONNECT INITIATIVE

## QUOTE UNQUOTE



Studies suggest carbon emissions from transportation alone in tier-two cities of MP are expected to increase many fold from current average.

Energy consumption in such cities is going to increase. We need to adopt smart solutions now to offset the ecological impact of development.

**Ajatshatru Shrivastava**

Executive Director, Environment Planning and Co-ordination Organisation (EPCO)



Bhopal is ideally placed to be a 'green' smart city. We are committed to reducing the city's carbon footprint by 10 per cent within a decade by promoting green technologies. Bhopal will also receive assistance from the United Nations Industrial Development Organisation (UNIDO) for its solid waste management project.

**Tejaswi Naik**

Commissioner, Bhopal Municipal Corporation



Smart cities project will reshape cities like Bhopal in the next ten years. We need to get started now to provide for the needs of future generations and promote sustainable development. There is a lesson to be learnt from the smart city consultations last year; participatory and consultative measures are indispensable in making a city smart.

**Alok Sharma**

Mayor, Bhopal Municipal Corporation



We have to focus on the larger picture. Half of the population will soon be living in urban centres. The challenge is to promote job creation and economic growth and reduce environmental impact. Stakeholders need to look at developing a smart ecosystem that promotes livability, economic growth, and sustainability.

**Arvind Sharma**

Executive Director - Sustainability, PricewaterhouseCoopers



Our Earth Care Awards has expanded its scope to include climate adaptation in the urban context. This consultation has offered useful insights to mould this category.

**Mukund Gorakshkar**

Executive Officer, JSW Foundation



If a city's vision and goals are aligned towards making it green and clean, then it proves it has already leapt ahead of others in the smart city journey.

**NSN Murty**

Director & Leader - Smart Cities, PricewaterhouseCoopers



Connecting People, Processes and Things is key to planning and delivering smart city solutions. To become a 'smart' city utilising information and communications technology (ICT) to address urban issues is the next frontier for Indian cities. A city's digital platform act as a fabric to connect different smart city services and solutions and helps solve key challenges of integrating processes and multiplicity of authority. This platform allows workflow based command, control, incident detection and response services to promote social, economic and environmental success in the city's delivery of citizen services.

**Rupinder Singh**

Director - Business Development, Cisco India



People want to see the adoption of eco-friendly tools in action. Achieving urban sustainability during times of growth is a challenge. We need to demonstrate development models that are environmentally sound and viable for business in the long term.

**AS Harinath**

Senior Environmental Specialist - Environment & Natural Resources, World Bank



Institutes can house inventories of local knowledge and research as opposed to universal straight solution for all cities, and provide contextual inputs. Institutes as skilled manpower hubs are economically and socially more efficient for innovating and disseminating alternative frameworks of bridging city growth and citizens' aspirations.

**Dr. Sheuli Mitra**

Dean - R&D, Associate Professor - Department of Planning, School of Planning & Architecture



## Cities in Transition

Smart cities, which can realise create a viable roadmap towards the realisation an eco-friendly model of development, are perhaps the pathway towards a greener India

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Indian cities are witnessing unprecedented urbanisation. Urban centres are driving this economic growth by contributing 67 per cent to the country's GDP, even though they cover only 7 per cent of land. People living in urban areas are demanding a better liveability index - services and amenities that impact their life the most.

The process of urban transition has been accomplished by changes in distribution of urban population. It has led to an urban ecosystem crisis. Large cities have problems of over-congestion, shortage of drinking water, air pollution, noise pollution, unemployment and inadequate housing for more than half of the population.

The **Economic Times** and **JSW** organised a panel discussion in Bhopal with special focus on smart and sustainable cities. The event was organised as a part of its Earth Care Initiative to disseminate information and spread awareness about the impact of climate change and adaptation strategies.

There was also a special focus on other related issues such as 'Urban municipal scattered solid waste, Increasing air pollution and Cleaning rivers and water bodies through ICT interventions'. The



Smart cities mission presents an opportunity for developing sustainable urban cities. We are focusing on a four point strategy to reduce environmental impact in our urban centres: Better solid waste management and converting energy from waste; reusing water; efficient and green urban transport and meeting urban housing needs for all.

**VIVEK AGGARWAL,**

Commissioner, Administration and Environment department (UAED), MP Govt.

meeting brought together the relevant stakeholders and experts and facilitated a discussion on the need to combat the impact of climate change while dealing with already existing stresses on the multiple urban centres.

The programme began with opening remarks by the JSW Foundation executive officer, Mukund Gorakshkar who pointed out that economic development and environmental sustainability are not mutually exclusive.

The first panel discussion was on 'Sustainable cities and environment'. The panel comprised of Vivek Aggarwal, commissioner MP Urban Administration and Environment department (UAED); Tejaswi Naik, commissioner Bhopal Municipal Corporation (BMC); Rupinder Singh, Director (Business

Development), Cisco India; Alok Sharma, Bhopal Mayor; and NSN Murty, Director and Leader - Smart Cities, PricewaterhouseCoopers. Madhya Pradesh government officials took the opportunity to highlight the state government's urban development initiatives backed by planned investment of Rs 75,000 crore. Three of its cities, Indore, Bhopal and Jabalpur - the most for any state in India - have been selected for development as smart cities in the first phase under the Union government's ambitious urban development scheme - the 100 Smart Cities Mission.

There is a growing realisation that urban waste is perhaps a source of energy. There is new found enthusiasm for such innovation given the ecological and economic benefits. India's garbage is very

different from the West. While a third of garbage in US is paper and thus bone dry, moisture content in Indian refuse is higher. Cities are now looking at innovation to lower carbon footprint. Bhopal is in the process of setting up the Madhya Pradesh's first biogas plant. It will be able to process 5 tonnes of segregated organic municipal solid waste daily and produce biogas that will then be utilised to generate electricity for lighting up nearby streetlights said Tejaswi Naik. In the future such innovations could also power a city's public transport. Tier two cities like Bhopal and Indore produce the same amount of waste - about 800 MT per day, as Mumbai did in the early 1990s. The MP government wants this year's Simhasth Kumbh in Ujjain to be eco-friendly. It has introduced electric powered auto rickshaws for the Kumbh.

Despite the announcements the truth is that Indian cities are more polluted than ever before. There is a lack of adequate information and techniques to access the environmental impact early enough to foresee emerging problems and take corrective measures. Information and communication technologies (ICT) for climate change adaptation in cities can be an important tool. Existing resources can be better utilised.

Studies have shown that by analysing patterns and determining effective use of roads, a city can push back infrastructural changes by a decade pointed out Rupinder Singh. Cities need to adapt to its harmful effects and the smart cities mission is an opportunity. But there are key roadblocks that must be dealt with, such as the multiplicity of authority in cities.

A power-packed second session on 'Coexisting climate change: From observation to smart action' was chaired by Arvind Sharma, Executive Director - Sustainability, PricewaterhouseCoopers. He was also joined by Ajatshatru Shrivastava, Executive Director, Environment Planning and Co-ordination Organisation (EPCO); AS Harinath, Senior Environmental Specialist - Environment & Natural Resources, World Bank; and Dr. Sheuli Mitra, Dean - R&D, Associate Professor - Department of Planning, School of Planning & Architecture, Bhopal.

An EPCO study predicts that the carbon emissions in transportation will increase from the current average of 4.68 MT to 36 MT by 2030 in Madhya Pradesh. While the energy requirement is likely to increase, we need to adopt smart solutions to offset the ecological impact of development. India's greenhouse effect is a low at 1.8 tonne as compared to the 4.9 tonne globally. With urban and rural temperature differences increasing by the day there is an urgent need to adopt solutions for ecological and economic sustainability. Various models of cost benefit analysis prove that adoption of ecologically sensitive technology is economically viable and better for business according to AS Harinath.

Talking about urban development earlier was a political taboo. Today, urban development is à la mode said Ajatshatru Shrivastava. With the government and planners on the same page, innovations of success need to be showcased.

**EARTH CARE INITIATIVE**  
The Earth Care Initiative (ECI) is a platform that focuses on disseminating information about the impact of climate change in India and developing strategies that can help India adapt to the change. ECI, which is a knowledge and awareness based platform, is an initiative of the Earth Care Awards, a joint collaborative platform created by the JSW and The Times Group. ECA recognises excellence in the area of climate change, and awards projects that focus on mitigation of and adaption to climate change.

## "You cannot be smart without being sustainable"

The smart cities mission provides a unique opportunity; we can work towards creating cities that are not only smart but sustainable says Kartikeya Sarabhai. He is the Founder Director of the Centre for Environment Education (CEE) and a jury member for the Earth Care Awards, a JSW-The Times of India initiative. He takes the time today to talk about the environmental future possibilities of the cities of India.

**In a world where climate change is inevitable what comprises a smart city?**

The word 'Smart Cities' is used in a number of ways but its origin is in making a city smart from an IT and communication perspective. It is obvious today that you cannot be smart without being sustainable and being responsible from a climate change perspective. IT can, in fact, be used to reduce carbon footprint. For instance, today purchases can be done online, decreasing total net travel even after considering travel for delivery. A truly smart city should have a goal of decreasing the requirement for motorized travel by at least 50 - 60 per cent and ensure that a large amount of motorized travel happens through public transport or shared facilities, which are environmentally sound.

**How does a city integrate sustainable into the desired smart target?**

Sustainability needs to be operationalized for making it a tool for evaluating, planning and other decision making at the city level. The recently finalized Sustainable Development Goals is a major step in this direction. We still follow outdated concepts of urban zoning, separating for instance residential areas from commercial ones. With smart phones and internet becoming nearly



universal in India, it is possible for people to transact business without having to visit a centralized office, bank or shop. The concept of zoning needs to be re-examined and planning needs to change at the urban level. At the implementation level urban services largely continue to be with departments which are in their own siloes, with little coordination. They need to work towards a coordinated and common sustainability goal.

**As a first step in upgrading existing cities into smart cities what are the steps that we need to take to make existing urban spaces more**

**sustainable?**

As a first step, we need to review our laws and by-laws to see how they can more efficiently use urban spaces and resources. For instance, in Ahmedabad, an initiative supported by The Times of India has converted a principal street into a public open space on Sunday mornings. It is delightful to see that a number of families with children now have easy access to an open space near their home on a time shared basis. Smart cities do need smart data management. Sensors and data loggers can measure water and sewage flows, provide early information on leakages, etc. GIS and

land information systems, rainfall data, or even pollution data can help in decision making about location and management of infrastructure.

**What green norms need to be an integral infrastructure mandate for smart cities?**

Green norms are to do with the entire value chain from all that is produced, consumed and disposed. They are to do with the energy used, whether for domestic or commercial purposes or as fuel for vehicles. Infrastructure has a lot to do with all of this. Decentralization of several facilities would be one positive step creating infrastructure so that people could walk or bicycle in non-motorized transport mode. Making it easier to use solar power both through PV cells but also more directly in passive solar is another concept.

**What leadership role needs to be taken up by the city civic agencies in order to lead cities towards sustainability in the first phase and smart sustainability finally?**

Sustainable thinking needs to break down the barriers in thinking between different departments. Instead of each department trying to maximize their own mandate we need to find optimal solutions balancing a number of considerations. Leadership, therefore, needs to bring together different facets of the urban reality. For instance, one of the Sustainable Development Goals is to reduce traffic accidents. This requires a combined effort on the part of road planners, traffic police, car manufacturers, RTO, which issues license, and civic educational programmes. It is also to do with the issue of street lighting and other infrastructure. Leadership is critical to be able to bring these elements together.

**How do we help create smart citizens for smart cities?**

The Smart City concept in India has emphasized citizens' participation. Smart tools can enable citizens'

engagement and participation. Social media is well known now. There are other ICT tools that enable online discussion and polling platforms, crowd sourcing of information on municipal services and performance through surveys using mobile phones. Even detailed face to face discussions with large groups of hundreds of people can be done through teams of facilitators working with small groups and networked computers. Furthermore, for smart cities that are sustainable, one needs not only smart citizens but also smart decision makers. Each corporator, mayor, commissioner, policeman and all those who provide services need to be smart along with citizens. It is often mistakenly thought that one can create infrastructure without the necessary public awareness and education that goes with it, and expect people to follow norms. Education needs to be an integral part of making smart decisions and smart planning and must be woven into all Sustainable Development Goals. Today, India is in a unique position of advantage. Most of its urban infrastructure that will be a reality in 2030, is probably not built yet. We need to get out of imitating cities from elsewhere which were built in a very different time and reality. Today we know the consequence of action on environment and climate change, and therefore on us. We work in a technological age totally different from what was available even a few decades ago. Connectivity and access to information is something which one could not even dream about fifty years ago. We must take this opportunity to break new pathways, find solutions that are smart and sustainable for ourselves and therefore, for the planet. We must be able to leapfrog from our current state to that of a sustainable one. The human space in India's thinking is part of nature and not separate from it. So as we leap forward, we need to keep our roots and our core values with us.

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