



## SMART CITY DEVELOPMENT IN INDIA: A GEOGRAPHICAL STUDY

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### ABSTRACT

The paper centers the infrastructural development for the smart urban Development in India .The research helps us arrive at a general line of action for urban planning implications catering to the Infrastructure sector, amongst others, thus affecting environmental, social and economic structure significantly the study various government policies for successful implementation of smart city Development. Smart city concept introduces new practices and services that highly impacts policy making & planning.

*Key words: Infrastructure sector, Smart Urban Development, and Sustainability.*

### INTRODUCTION:

A smart city would describe the integrated management of information that creates value by applying advanced technologies to search access transfer, and process information “smartness” here is seen as an infrastructure quality, cost and benefit optimization takes place when information sources are connected and information is shared in real time as that will have profound impact and how cities are planned and managed for bettering the quality of life for citizens, provisioning water supply transportation entertainment, safety and security, delivery of government services. Smart City is a booming international phenomenon. Smart city word originated back in 1998, but the first funding for smart city came in the year 2000.The six dimensions of a smart city are Smart Economy, Smart Mobility, Smart Environment, Smart People, Smart Living and Smart Governance. Every city can become smarter by focusing on any of the above dimensions. A smart city is a community that is efficient, sustainable & livable. The term smart city has become more and more popular in the field of urban planning. Smart cities can work as a tool for controlling the rapid urbanization and various problems caused by the ever increasing urban population. The implementations of the smart technologies can increase the value of the city.



## OBJECTIVES:

The main objectives of the study were are follows

1. To study for planned inclusive sustainable urban development and there is a need to consider the economic sustenance of the urban centers, if smart development is to implemented.
2. To study the profile of Indian smart city development.

## METHODOLOGY:

Establishment of elaborate sections for parameter sing smart city development, particular to Indian standards. To study the special aspect of Indian City and to study geographical point of view I have collected some unpublished and published record from various departments. The secondary data is being collected through various sources such as books, magazines, journals, newspapers and websites.

## DISCUSSION:

Infrastructure plays a major role in the urban development some cities have fully the grasped possibility of becoming “smart city”, smart cities can be identified ranked along the six main axes or dimension

**Smart Economy**

**Smart mobility**

**Smart environment**

**Smart people**

**Smart living**

**Smart Governance Smart Governance (Participation):** We need to inculcate public participation in decision-making, strengthen public and social services, have a certain level of transparency in governance, and evaluate political strategies & perspectives.

**Smart People (Social and Human Capital):** The level of qualification, affinity to life-long learning, Social and ethnic plurality, flexibility, creativity, open-mindedness and Participation in public life should be necessitated.

**Smart Economy (Competitiveness):** The innovative spirit, Entrepreneurship, Economic image & trademarks, Productivity, Flexibility of labor market, Ability to transform or respond to change are the requisites.

**Smart Mobility:** Local accessibility; availability of infrastructure (ICT); Sustainable, innovative and safe, transport systems.



**Smart Environment (Natural resources):** Attractive natural conditions, Pollution free environments, Environmental protection, Sustainable resource management are necessary for sustainable conditions.

**Smart Living (Quality of life):** The availability of Cultural facilities, Health conditions, Individual safety, Housing quality, Education facilities, Tourist attractions, and Social cohesion can contribute greatly towards our goal

**India's Smart Urbanization narrative:**

The reliance on western models of urban planning and containment has resulted in a catastrophic failure to manage the growth of cities in many low and middle income countries. The equity in Development of Indian cities relies largely on the resources allocation and ingenuity of urban poor, leading towards the sustainable urban development models which India seeks. Analyzing the baffling numbers we understand that the measures to contain this are not an easy. Thus, out of necessity, the urbanization policies of India are subjugated to ICT integrated governance systems

**CONCEPT OF SUSTAINABLE DEVELOPMENT:**

There have been many concepts of sustainable development but most accepted definition of sustainable development is the one given by Brundtland1 report, which says sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs. It aims at assuring the on-going productivity of exploitable natural resources and conserving all species of fauna and flora", (World Commission on Environment and Development 1987). There is a need to understand the deeper meaning of it. And to bring this definition into practice, it is important to understand the sustenance of people and resources in the present context, and trends of their future needs and requirements. The sustainable development needs to be smart in the present context. "Smart cities make urbanization more inclusive, bringing together formal and informal sectors, connecting urban cores with peripheries, delivering services for the rich and the poor alike, and integrating the migrants and the poor into the city. Promoting smart cities is about rethinking cities as inclusive, integrated, and livable." "Smart cities" can reconcile growth and sustainability, says Joshi-Ghani (urban sector manager at the World Bank.). Cities need to adopt green growth to improve the day-to-day lives of residents. Thus urbanization provides a great opportunity to make sustainable development. Sustainable growth needs to house the many generations to come (Greencitiesbysheila.blogspot.in, 2012).



## SMART INITIATIVES IN URBAN MANAGEMENT ACROSS INDIA

Service delivery or City infrastructure can be broadly subdivided into five sectors and further (refer figure). Although the concept of smart city goes beyond this narrow field of classification limited to ICT, it delivers infrastructure for social and economic initiatives concerning economic growth, social capital and higher resources efficiency.

In a broader approach, smart cities are treated as a new urban development paradigm, where we focus on phenomena such as human and social capitals, education and natural environment. Such models of urban development point to smart cities as areas which, on one hand, are a supporting factor for intellectual capital development and well-being growth by institutional system; at the other hand providing a knowledge transfer mechanism for system of innovation along with Sustainable development inclusions.

Following are the ideal smart services successfully implemented in various cities in India. Funding for these projects are being propogandized in various Central and State development policies. It has been established that investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and a high quality of life, with a wise management of natural resources, through participatory governance.

### **Water Supply**

Distribution and monitoring system thru GIS, Hydraulic modeling, Online water quality monitoring, Sustainable operations- metering and online billing, etc. are some of the successful systems implemented in Indian cities which can be listed under smart water supply services. A lot of 24/7 water supply programs in urban and rural sectors were implemented across India. GIS based mapping integrated with the hydraulic modeling, Metering with analyzers and online billing systems, centralized real time web based monitoring of water supply services improved water availability due monitoring of input and output points and checking of water distribution losses.

### **Waste water**

Integration and automation of water treatment plant and sewerage systems, Enterprise resource planning (Oracle) system and grievance management funded under state projects and many local bodies. Generation of database for sewerage services and grievance management services along with the grievance management services led to improvement in service delivery, bill collection and procurement leading to efficiency and transparency in waste water sector.



### **Solid Waste Management (SWM)**

Off-site real time monitoring system, GIS and GPS enabled services, biometric attendance systems for sanitary workers, sensor based applications for smart solid waste management services. GPS and GPRS technologies through cell phone images are taken and stamped with time and location and put in public domain for scrutiny on real time basis thus improving the SWM service delivery.

### **Municipal Services**

Integration of all operations of municipal corporation through GIS (land based services), Computerised building plan scrutiny and approvals, Standardized online citizen administration (GIS based), Traffic information system initiative and many others as smart governance in Urban bodies. Land being the base of all operations for municipal services, GIS mapping and integration of various databases was initiated in Jn NURM 1 for improving the services. Building Plan scrutiny and Approvals automation on a comprehensive level and its integration with GIS database accelerated the pace of development.

### **Revenue and Management**

Municipal e-revenue systems using GIS linked property database, Tulana: online application for service level benchmarking, M-Governance, e-tendering, Dynamic

### **Water Supply Waste water**

### **Solid Waste Management**

### **Municipal Services**

### **Revenue and Management**

- **Water Resource Management** • Distribution Management • Internal Business Process • Water Quality Management • Billing & Collection • Grievances Handling
- **Plant Management** • Collection & Distribution • Billing and Collection • Internal Business Process • Grievance Handling
- **Attendance Monitoring** • Bin Tracking System • Vehicle tracking System • Waste collection & Transfer • Treatment and Disposal • Internal Business Processing
- Birth & Death Certificates • Building Plan Approval • Grievance Management • Utility Bills
- Licenses
- **Traffic** • Street Lights • Flooding
- **Property Tax** • E-Procurement • Accounting System • Personnel Management



## CONCLUSION:

The smart city development is more concerned with making progress as concerns the smart indicators rather than rating a city which inevitably is snapshot in time. Our world is undergoing changes due to globalization, urbanization and technological advancements and it forces us to think and change our ways of living. Urbanization is a global phenomenon that is influencing all aspects of the world economy from power generation through to power consumption. New technologies designed to limit both the environmental and negative economic impact of this global trend are emerging with the potential to transform not only our electricity networks but also entire industries in the process. We need to adopt these and be adaptive in development. Since this built environment lasts a long time, strong infrastructure and services will sustain cities. Planning a city is not merely replicating past practices but needs to adapt based on evidence and analysis of sustainable growth of cities.

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