# Smart Cities: An Answer to Problems of Urbanization in India

## Table of Content

1. Introduction ........................................................................................................................................... 2
2. Concept of Smart City ......................................................................................................................... 2
3. Smart City Mission ............................................................................................................................... 3
4. Challenges in Design and Implementation ....................................................................................... 4
5. Conclusion ............................................................................................................................................. 5
1. Introduction

- Across the world, the stride of migration from rural to urban areas is increasing. By 2050, about 70 per cent of the population will be living in cities, and India is no exception. It will need about 500 new cities to accommodate the influx.
- While the urban population is currently around 31% of the total population, it contributes over 60% of India’s GDP. It is projected that urban India will contribute nearly 75% of the national GDP in the next 15 years. It is for this reason that cities are referred to as the “engines of economic growth” and ensuring that they function as efficient engines is critical to our economic development.
- The speed of urbanization poses an unprecedented managerial and policy challenge—yet India has not engaged in a national discussion about how to handle the seismic shift in the makeup of the nation.
- As the urban population and incomes increase, demand for every key service such as water, transportation, sewage treatment, low income housing will increase five- to sevenfold in cities of every size and type.
- The government has now realized the need for cities that can cope with the challenges of urban living and also be magnets for investment. The announcement of ‘100 smart cities’ falls in line with this vision.

2. Concept of Smart City

- A 'smart city' is an urban region that is highly advanced in terms of overall infrastructure, sustainable real estate, communications and market viability. It is a city where information technology is the principal infrastructure and the basis for providing essential services to residents.
- **Origin of the Concept:-**
  - The concept of smart cities originated at the time when the entire world was facing one of the worst economic crises. In 2008, IBM began work on a ‘smarter cities’ concept as part of its Smarter Planet initiative. By the beginning of 2009, the concept had captivated the imagination of various nations across the globe.
  - Countries like South Korea, UAE and China began to invest heavily into their research and formation. Today, a number of excellent precedents exist that India can emulate, such as those in Vienna, Aarhus, Amsterdam, Cairo, Lyon, Málaga, Malta, the Songdo International Business District near Seoul, Verona etc.
- **Features of Smart Cities:-**
  - There are three salient features of the smart city conceived in India. They are –
    - **Competitiveness** refers to a city’s ability to create employment opportunities, attract investments, experts, professionals and people. The ease of being able to do business and the quality of life it offers determines its competitiveness.
    - **Sustainability** includes social sustainability, environmental sustainability and financial sustainability.
    - **Quality of Life** includes safety and security, inclusiveness, entertainment, ease of seeking and obtaining public services, cost efficient healthcare, quality education, transparency, accountability and opportunities for participation in governance.
- **Pillars of Smart City:**
  - Institutional Infrastructure (including Governance), Physical Infrastructure, Social Infrastructure and Economic Infrastructure constitute the four pillars on which a city rests.
  - The centre of attention for each of these pillars is the citizen. In other words a Smart City works towards ensuring the best for its entire people, regardless of social status, age, income levels, gender, etc.
  - **Institutional Infrastructure** refers to the activities that relate to governance, planning and management of a city. The new technology (ICT) has provided a new dimension to this system making it citizen-centric,
efficient, accountable and transparent. It includes the participatory systems of governance, e-governance, inclusive governance, the sense of safety and security and the opportunities for creativity.

- **Physical Infrastructure** refers to its stock of cost-efficient and intelligent physical infrastructure such as the urban mobility system, the housing stock, the energy system, the water supply system, sewerage system, sanitation facilities, solid waste management system, drainage system, etc. which are all integrated through the use of technology.

- **Social Infrastructure** relate to those components that work towards developing the human and social capital, such as the education, healthcare, entertainment, etc. It also includes performance and creative arts, sports, the open spaces, children’s parks and gardens. The city has structures which proactively bring disadvantageous sections i.e. SCs, STs, socially and financially backwards, minorities, disabled and women into the mainstream of development.

- For a city to attract investments and to create the appropriate **Economic Infrastructure** for employment opportunities, it has to first identify its core competence, comparative advantages and analyze its potential for generating economic activities.

### 3. Smart City Mission

- In the approach to the Smart Cities Mission, the objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of ‘Smart’ Solutions.

- The Smart Cities Mission is meant to set examples that can be replicated both within and outside the Smart City, catalyzing the creation of similar Smart Cities in various regions and parts of the country.

- The **core infrastructure elements** in a Smart City would include:-:
  - Adequate water supply
  - Assured electricity supply
  - Sanitation, including solid waste management
  - Efficient urban mobility and public transport
  - Affordable housing, especially for the poor
  - Robust IT connectivity and digitalization
  - Good governance, especially e-Governance and citizen participation
  - Sustainable environment
  - Safety and security of citizens, particularly women, children and the elderly
  - Health and education

**Smart City Selection Process**:
Each aspiring city competes for selection as a Smart City in what is called a ‘City Challenge’. There are two stages in the selection process.

**Stage-1: Shortlisting of the cities by States**:
- The State/UT begins with shortlisting the potential Smart Cities on the basis of conditions precedent and scoring criteria and in accordance with the total number allocated to it.

**Stage-2: The Challenge round for selection**:
- In the second stage of the competition, each of the potential 100 Smart Cities prepare their proposals for participation in the ‘City Challenge’. The winners of the first round of Challenge will be announced by MoUD.
• **Coverage and Duration:-**
  o The Mission will cover 100 cities and its duration will be five years (FY2015-16 to FY2019-20). The Mission may be continued thereafter in the light of an evaluation to be done by the Ministry of Urban Development (MoUD) and incorporating the leanings into the Mission.

• **Strategy:-** The strategic components of Area-based development in the Smart Cities Mission are city improvement (retrofitting), city renewal (redevelopment) and city extension (Greenfield development) plus a Pan-city initiative in which Smart Solutions are applied covering larger parts of the city.
  o **Retrofitting** will introduce planning in an existing built-up area to achieve Smart City objectives, along with other objectives, to make the existing area more efficient and livable. In retrofitting, an area consisting of more than 500 acres will be identified by the city in consultation with citizens.
  o **Redevelopment** will effect a replacement of the existing built-up environment and enable co-creation of a new layout with enhanced infrastructure using mixed land use and increased density.
  o **Greenfield development** will introduce most of the Smart Solutions in a previously vacant area (more than 250 acres) using innovative planning, plan financing and plan implementation tools (e.g. land pooling/land reconstitution) with provision for affordable housing, especially for the poor.
  o **Pan-city development** envisages application of selected Smart Solutions to the existing city-wide infrastructure. Application of Smart Solutions will involve the use of technology, information and data to make infrastructure and services better.

• **Implementation:-**
  o The implementation of the Mission at the City level will be done by a Special Purpose Vehicle (SPV) created for the purpose. The SPV will plan, appraise, approve, release funds, implement, manage, operate, monitor and evaluate the Smart City development projects. Each Smart City will have a SPV which will be headed by a full time CEO and have nominees of Central Government, State Government and ULB on its Board.

• **Financing a Smart City:-**
  o The Smart City Mission will be operated as a Centrally Sponsored Scheme (CSS) and the Central Government proposes to give financial support to the Mission to the extent of Rs. 48,000 crores over five years i.e. on an average Rs. 100 crore per city per year.
  o An equal amount, on a matching basis, will have to be contributed by the State/ULB; therefore, nearly Rupees one lakh crore of Government/ULB funds will be available for Smart Cities development.

4. **Challenges in Design and Implementation**

• **Design:-**
  o The smart city concept implies an oversimplified vision of technology. It is based on the belief that technology can solve any problem without fundamentally changing lifestyles.
  o Given a country as diverse as India, the heterogeneity of its cities cannot be accommodated in a linear vision backed by technology.
  o The combined funding from the union and state governments, as well as the urban local bodies, for all cities is less than Rs 1 lakh crore. This is a disproportionately small sum for the scale of ambition involved in a project to develop 100 Smart Cities.
  o Smart city project along with other city development initiatives have sidelined state ministries and agencies by establishing direct contact and transfer of funds. The municipal commissioners, who are trained to administer the city services, are struggling to make the transition in their roles from city administrator to a city planner.

• **Implementation:-**
  o Implementation has been weakest link of urban infrastructure projects. Nearly 54 per cent of such projects taken up in major cities under the Jawahararlal Nehru National Urban Renewal Mission (JNURM) are yet to be completed. Same could be the fate with Smart Cities.
  o JNURM partially relied on private sector investments to speed up its implementation. However, private investors refused to come forward. Out of 2,900 JNURM projects, only 50 projects were backed by the
PPP model, with a private sector capital investment of just about Rs. 1,000 crore, which barely covered 0.2 per cent of the total project cost.

- The total estimate of investment requirements for the smart city comes to Rs 7 lakh crore over 20 years which translates into Rs.35000 crore annually. Raising this capital from private players will require huge efforts on part of government.
- Most ULBs have limited technical capacity to ensure timely and cost-effective implementation and subsequent operations and maintenance of smart city projects owing to limited recruitment over a number of years along with inability of the ULBs to attract best of talent at market competitive compensation rates.
- For timely completion of the project, all clearances should use online processes and be cleared in a time-bound manner. Considering the delays in earlier projects its challenging to secure timely clearances.
- Building capacity for 100 smart cities is not an easy task and most ambitious projects are delayed owing to lack of quality manpower, both at the centre and state levels. The allocation made for capacity building is meager as compared to the requirement over next five years.

5. Conclusion

- To speed up growth for a slowing economy and create a consuming class of city dwellers, the role of a municipal body is crucial. Since the Smart City initiative is cutting out aggressive State spending, municipalities have to generate funds from private investors and take capacity building measures to initiate big projects.
- Before jumping into the deep end with urbanising 100 small towns that have met the “smart city” criteria, the government should consider whether its financing model is feasible. And simultaneously mayors and commissioners should be trained to design new projects and tap into local resources. Otherwise, the Smart City Mission will turn into an unattractive proposition right from the municipal level, which is its core.
- In this era of digitization, it is interesting to see the nation’s leader envision such a future. On paper, the initiative seems to be an ideal plan for the poverty stricken economy, but given the high levels of bureaucracy, it will be interesting to see how it plays out. The move is very much in the right direction; execution, however, will be key.