



Open access Journal

**International Journal of Emerging Trends in Science and Technology**IC Value: 76.89 (Index Copernicus) Impact Factor: 4.219 DOI: <https://dx.doi.org/10.18535/ijetst/v4i10.09>

## Smart City Development and Other Urban Development Programmes In India For Urban Reconstruction And Urban Rejuvenation

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Rapid urbanization is a global phenomenon. With this rapid urbanization comes the increased demand for resources such as energy, water and sanitation along with services such as education and healthcare. This emphasizes the necessity to use the resource efficiently or in a 'smart way' and the need to develop 'smart' cities to meet the need of city residents. Responding to these needs, the government of india applies smart cities mission to select 100 smart cities. A smart city can contribute towards improved governance and efficient management of infrastructure such as water, energy, transportation and housing and to a higher quality of life. The purpose of this paper to analyze urban challenges and need to smart city development through india's smart initiatives for urban reconstruction & rejuvenation. The study based on purely secondary sources of data. Researches proved that in india rapid and unplanned urban growth has threaten the future of city people, in that situation smart city initiatives is one of the major step of the government. But it should be remembered that the smart cities model and plan execute in a proper way.

**Keywords:** rapid urbanization, global phenomenon, smart way, smart city initiatives, infrastructure, urban challenges, unplanned urban growth, 100 smart cities mission, urban development, urban reconstruction and urban rejuvenation.

**Introduction:**

Rapid urbanization is a global phenomenon. It is one of the biggest challenges that both developed and developing countries across the world must face. The challenges differ based on stages of development and regional factors. Some developed countries face the challenges of ageing infrastructure and shrinking cities. In developing countries, cities must bridge the demand and supply gap for core physical and social infrastructure, provide a safe environment for urban dwellers and develop a thriving economy.

Urbanization accompanies economic development. As countries move from primarily agrarian economies to industrial and service sectors, they also urbanize. This is because urban areas provide the agglomerations that the industrials and service sectors need. In fact 90% of the world's urban population growth will take place in developing countries, with india taking a great share of that. Urban areas also contribute a higher of the gdp. The share of the gdp from urban areas in india has been growing. 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 next 15 years. It is for this reason that cities are referred to as the '**engines of economic growth**'. This trend of urbanization that is seen in india over the last few decades will continue for some more time. The global experience is that a country's urbanization up to a 30% level relatively slow but the pace of urbanization speeds up thereafter, till it reaches about 60%-65%. With an urban population of 31%, india is at a point of transition where the pace of urbanization will speed up.

**Urbanization in india (earlier responses to present):**

Municipal institutions in india have a history of over 300 years. The first municipal corporation of the country was set up in madras (now known as chennai) in 1687, followed by the calcutta municipal corporation and bombay municipal corporation in 1726.

Urban planning in india has been a few reforms and specific programmes implemented over a period of time during different five year planning. In the 1990s, reforms were instituted from the 7<sup>th</sup> constitutional amendment, which enabled the devolution the funds, function and functionaries to the ulbs. Interest in the development of the cities was renewed with the launch of an urban rejuvenation programme (jnnurm) in 2005 across 65 cities.

India's urban landscape has undergone dramatic change in very short period of time. Between 2004 and 2014 india's population rose by approximately 14%, of which the urban population grew by almost 27% where as the rural population grew by only about 8%. Urbanization is occurring in two ways: the rural population migrates to cities in search of opportunities, or existing semi-urban areas develop and evolve into urban areas with improved services and offering of its inhabitants.

**indias urban situation:** india's urban data indicate that the present situation of urbanism and urbanization. Major problem of urbanization in india is- unplanned urban growth and urban sprawl which is threat to all the residents. That's why india needed to take some actions for planned urbanization. First and essential step is taken through smart city mission.

**India's urban situation**

Year	2011	2031
Population	1210 million	1440 million
Urban population	377 million	600 million
Cities and towns	7936	-
Million+ cities	53	78
Housing shortage	18.36 million units	30-40 million units
Slum population	95 million	150-200 million

**table 1: india's urban scenario (source- census of india, 2011)**

Future or projected urban scenario of india is more dangerous (shown in table 1). According to data urban population will grow in the year 2031 is 1210 million than 2011. At the same time million cities grown from 53 to 78. And most importantly slum population will grow 55-60 million in the year 2031.

**Smart city initiative:**

with this rapid urbanization comes the increased demand for resources such as energy, water and sanitation along with services such as education and health care. This emphasizes the necessity to use the resource efficiently or in a 'smart' way and the need to develop 'smart' cities to meet the need of city residents. Responding to these needs, the government of india applies smart cities mission to select to select 100 smart cities initially.

A smart city can contribute towards improve governance and efficient management of infrastructure such as water, energy, transportation and housing and to a higher quality of life. The smart cities mission of the government of india applies the concept of 'area improvement' of existing indian cities, bringing the best practices related to the new urbanism movement into the preview of development activities that can stimulate the local economy, harness the economic identity of a place and its people and improve the quality of life of its all citizens.

**Need for the study & study area:**

Planning helps make the most out of municipal budgets by informing infrastructure and services investments, balancing demand for growth with the need to protect the environment. Due to rapid urbanization in developing countries like india, need to urban replants and rejuvenation of urbanization. The cause of rapid urbanization growth in india is mainly due to migration. Migration mainly happens due to job from rural areas to urban area. And that particular situation india needed to take some major initiatives like amrut, hriday city, smart city planning. Study is carried forward through smart city mission and development in india for shaping the future of urban development and urban rejuvenation. The discussion of the paper is based on purely in indian context. The location of india is south central asia. It is the 7<sup>th</sup> largest country of the world. Total area is 3,227,263 square kilometers. The country is situated north of the equator between 8<sup>o</sup>4' n to 37<sup>o</sup>6'n latitude and 68<sup>o</sup>7' e to 97<sup>o</sup>25' e longitude.



**location of the study area**

**Objectives of the study:**

- To study urbanization and discuss about urban challenges in the content of smart cities in india
- To analyze smart city infrastructure in the content of suitable development including smart buildings, transportation, utilities (energy, water and waste), healthcare.
- To find out key challenges of smart city projects
- To understand how far urban development and urban rejuvenation has successful through smart city initiatives.

**Database and methodology:**

this papers discussion is purely based on secondary sources. Information are collected from research journals, magazines, smart city wikipedia and another sources like the energy and resources institute (teri), [www.pwc.in](http://www.pwc.in) , world economic forum and many more.

**Urban challenges in india:** urban india faces challenges across many sectors, with some requiring immediate attention and some long term action. Facing challenges are -

**challenges in the water sector:**

- insufficient access to water
- inadequacy of water
- leakages in distribution

dependency on rain

**challenges in power and energy sector:**



- incomplete access to electricity
- leakages in distribution
- reliance on hydrocarbons

**challenges in the education sector:**



- lagging literacy rate
- insufficient quality of education
- skills gap
- lack of infrastructure and funding for research

**Challenges in the waste and sanitation sector:**



- low waste collection efficiency
- poor recovery of costs & low treatment of sewerage
- inadequate citizen participation
- open defecation and manual scavenging

**challenges in the healthcare sector:**



- low availability of healthcare
- unaffordable healthcare
- little focus on preventive health/wellness

**Challenges in the mobility sector:**

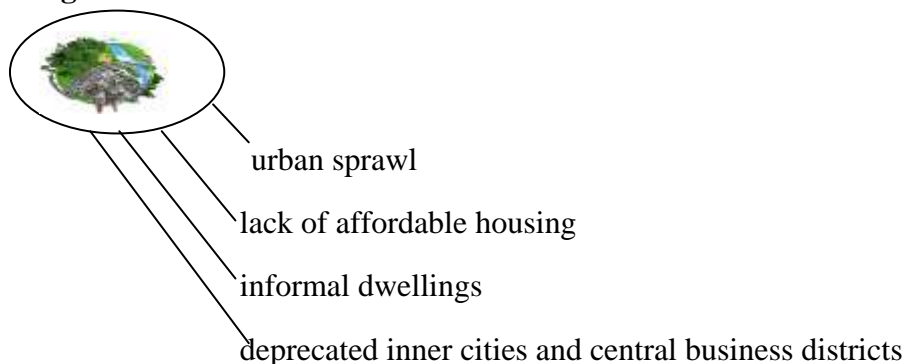


- inadequacy of public transport

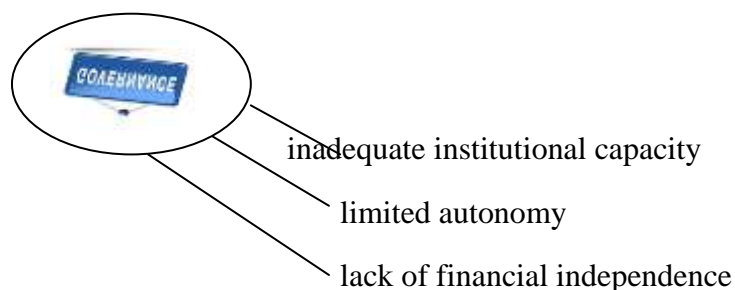
increased reliance on private transport

congestion

#### challenges in the built environment sector:



#### Challenges in the governance:



#### Smart cities mission:

the ministry of urban development of indian has launched a holistic city rejuvenation programme for 100 cities (fig: 1) in india, which aims to improve physical, social, economic and governance infrastructure. The union ministry of urban development is responsible for implementing the mission in collaboration with the state governments of the respective cities. City will be selected based on the smart cities challenge, in which cities will compete in a countrywide competition to get the benefits from this mission. As of jun 2017, 90 cities have been selected for upgrade as a part of smart city mission after they defeated other cities in the challenge.

It is a five year programme (2017-22), where all of the indian states and union territories are participating except west bengal by nominating at least one city for the smart city challenge. Each city creates a corporate company headed by a full time ceo to implement the smart city mission. The execution of projects may be done through joint ventures, subsidiaries, public-private partnership (ppp).

‘100 smart cities mission’ was launched by pri minister narendra modi in june 25, 2015. A total of rupees 98,000 crore has been approved by the indian cabinet for development of 100 smart cities and rejuvenation of 500 others and a total funding of rupees 50,000 crore for the atal mission for rejuvenation and urban transformation (amrut) has been approved by the cabinet.

The smart city initiative is not about union government pumping in extra resources for urban development. The critical element is about citizens planning and interpreting smartness. The smart city proposals of the” winning” cities offers insight into how citizens, states and ulbs have interpreted this smartness differently. The way of looking at smart cities not the similar way. That’s why this mission is refreshingly different.

Modi government has taken a different approach to taken a different approach compared to how schemes are executed previously. In earlier instances, central government will allocate money for development, but if



state government will not work on the projects and money allocated will lapse. Even during implementation, if the a particular municipality or mayor are not showing progress as committed in their city area development plan they may be replaced by another city or next cache of financial support will not be provided.

The list of nomination marked the first stage in the selection process of smart cities, in which the state governments were asked to nominated potential cities based on state level competition, with overall cities across india limited to 100. The total numbers of 100 smart cities have been distributed among the states and uts on the basis of an equitable criterion. The formula gives equal weight age (50:50) to urban population of the state/ut and the number of statutory towns in the state/ut. Based on this formula each state/ut will have a certain number of smart cities, with each state/ut having at least one.

**List of cities nominated by statesfor the smart city challenge**

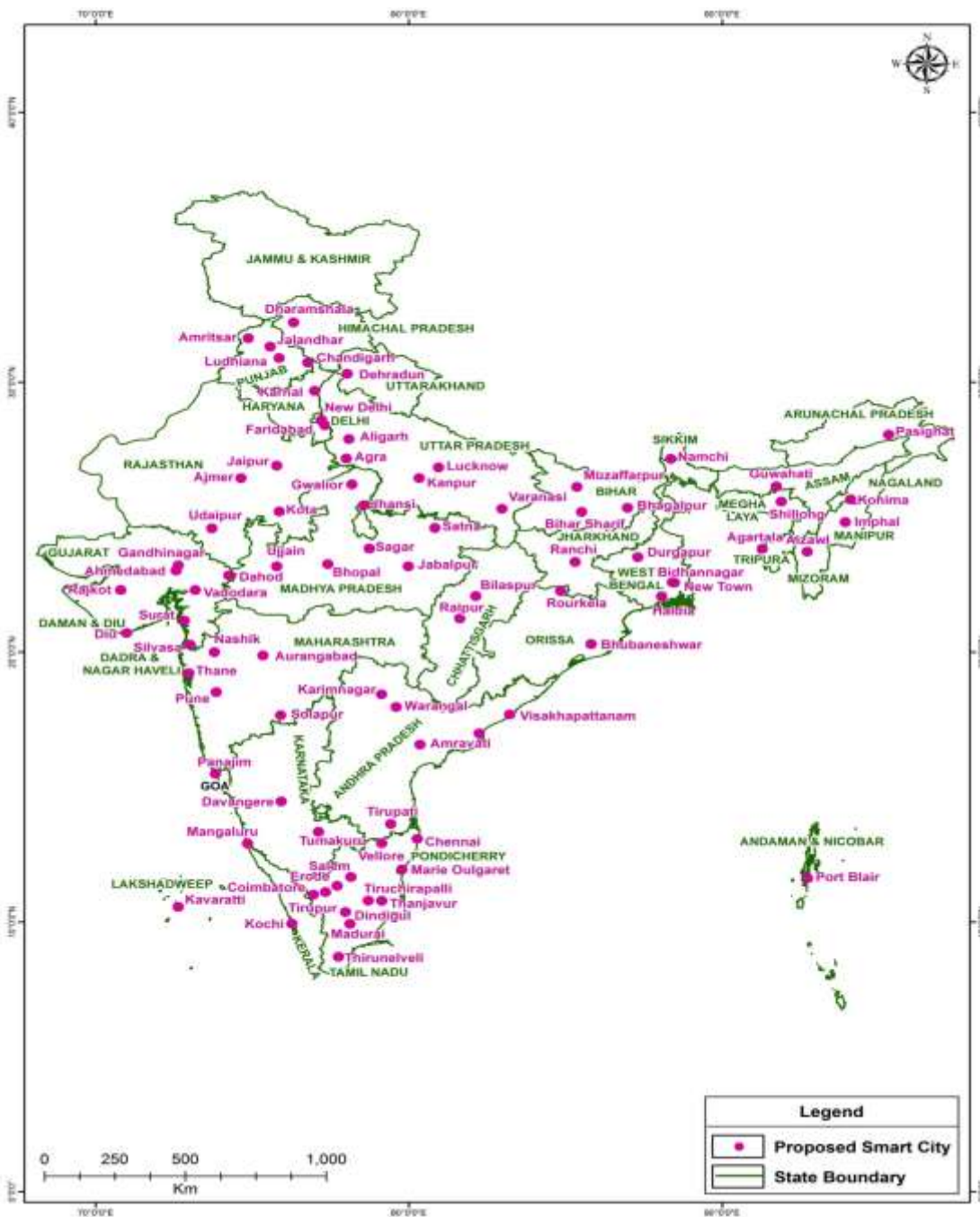


Fig: 1(source: ministry of urban development, government of india, june 2015)

the government envisages the following elements as internal parts or benefits of every smart city:

- Assured electricity supply with at least 10 % of the energy requirements met through renewable energy
- Adequate water supply with the recycling of waste water, harvesting and reuse of storm water
- Adequate urban transport with an emphasis on non-motorized, pedestrian friendly pathway-intelligent traffic management and the smart parking facilities
- Enhance citizen experiences with engaging uses of open space and safe environment for women , children and elderly
- Robust it connectivity and the smart metering of services

(source: ministry of urban development, government of india)

### Objectives of smart city mission:

- Provide clean & sustainable environment
- Make cities that provide basic infrastructure
- Provide applications of smart solution
- Give a good quality of life in the people
- Create republic model

### Smart city framework:

an integrated smart city framework (fig:2) comprising the key enablers like smart governance, smart living, smart people, smart mobility, smart environment and smart economy may be followed to facilitate implementation.

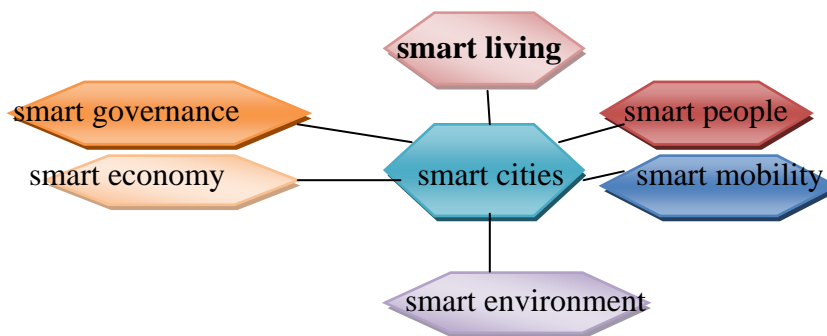


fig: 2; smart city components

### Smart living & smart people:

better educational levels and skill building, health, lifelong learning, and higher participation at community level.

### Smart economy:

economic development, higher employment, more investments. **Smart mobility:** optimum movement of people, goods and information.

### Smart environment:

sustainable development, natural resource utilization- optimal use of water resources and energy, balance between built and green areas.

**Smart governance:**

stakeholder involvement in policy making and implementation, leveraging technology to facilitate the process; better transparency and accountability.

**Features of smart city:** some representative features of inclusive growth of smart cities are define below-

- Encouraging mixed land use in area based expansion preparation for areas containing a variety of well studied activities.
- Making walk able areas- to reduce overcrowding, pollution of air, for resource conservation, enhancement of local economic condition of people. The network of roads and national highways are created not only vehicular and public transportation, but also for cyclists and walkers.
- Housing and inclusiveness- housing opportunity for deprived people specially
- Conservation and development of unused spaces- gardens, playgrounds, entertaining space for citizens better life, at the same time decrease the heat balance
- Making citizens friendly and cost-effective governance – increasing in dependency of online services, smart phones and another cost effective services without going into public services. This is the major step for digital india.
- Encouraging a multiple options of transportation- major development in public transportation.
- Providing uniqueness to the city- depending on its financial activity, like health, education, furniture, hosiery, textile, dairy, crafts etc.
- Use of smart planning for development of structure and services.

**Challenges in smart city project:**

- Recognize the economic contribution of the cities; estimate the gdp of the city.
- Identify vacant houses in the city & plan to put them in use
- Housing plan for slum free city- integrated with drainage plan & mobility plan
- Sewage management
- Smart solid waste management
- Financing urban infrastructure
- The regional inequality, rural urban divide and intercity disparities are strong challenges to india's urban transformation mission as well as for economic progress.
- There are large number of census towns which are not covered under this programme. However they are ruled by village panchayets, have lacks of resources and infrastructure but have the potential to become bridge between rural and urban area
- States and local bodies will show an important role in the improvement.
- The planning given by the policy makers, implementers and other participants at different levels must be understood clearly.
- It will create the spirit of competition and cooperation among cities.
- Most important key for this challenges are time and resources which should be made before the planning.
- The mission requires technical and energetic people who enthusiastically take part of improvement.

**Amrut programme:** the government of india has identified the provision of basic services in 500 cities as a national priority by launching the atal mission for rejuvenation and urban transformation (amrut) programme. The objective of the programme is to-

- ❖ Ensure basic infrastructure and sanitation
- ❖ Focus on water supply and sewerage
- ❖ Promoting public transport
- ❖ Importance on open spaces(for walking, cycling, greenery)
- ❖ Urban governance reform and capacity building



**Other urban development programmes:**

**Clean india (swachh bharat mission-urban):** the abhiyan was launched by prime minister narendra modi on 2<sup>nd</sup> october 2014 at rajghat of an aim to make india clean. Aim to provide sanitation facilities to every family including toilets, solid and liquid waste disposal system, cleanliness, safe and adequate drinking water supply. Objectives of clean india are-

- ✓ To completely start the scientific processing, disposal reuse and recycling the municipal solid waste
- ✓ To remove manual scavenging system
- ✓ Make awareness of people for healthy sanitation
- ✓ To convert poor condition of toilets into pour flush toilets
- ✓ To build up the urban local bodies.
- ✓ To provide required environment for the private sectors.

**Housing for all- urban:**

the housing for all-urban programme will be implemented over a seven year period, starting in 2015. The programme supports the development of affordable housing with basic civic infrastructure such as water, sanitation, sewerage, roads and electricity. Moreover, the programme also intends to empower women by mandating the title ownership of the house of female head of household.

**Hriday cities:**

the heritage city development and augmentation yojana (hriday) development programme focuses on conserving urban heritage by linking the service delivery of basic infrastructure, urban planning and heritage conservation.

**Industrial corridors:**

the government of india plan to establish five industrial corridors to increase exports, industrial output and employment in the regions impacted by corridors. This are-

1. Delhi mumbai industrial corridor
2. Mumbai bangluru economic corridor
3. Amritsar- delhi- kolkata industrial corridor
4. Vizag-chennai industrial corridor
5. Chennai- bangalore industrial corridor

**Private sector participation:**

the programmes will enable the private sector to help to support the government in infrastructure development. Many ulbs in india do not have the financial resources and skills to provide infrastructure and service delivery. They are increasingly seeking support from the private sector to close the gap. In this environment public -private partnerships (ppps) can playing a successful role.

**Challenges in urban transformation:**

urban development programme have been initiated by the government of india, but state and city governments problem is that for execution. There are some challenges-

- i. Institutional challenge(poor collaboration among planning & administrative bodies)
- ii. Challenge in the business environment
- iii. Sector specific business challenges(water, waste& sanitation, mobility, energy, built environment)
- iv. Risks in public private partnership

**Recommendations for urban rejuvenation:**

The government of india has initiated programmes to rejuvenate urban areas to create the environment for investors and private sector organizations that wish to participate in the projects to develop urban

infrastructures and services. The reforms needed to equip ulbs as the drivers of most of the programmes are classified into three broad categories-

- a) Institutional reforms-to equip government organization
- b) Business environment reforms(ppps)
- c) Sector specific reforms(water, mobility, energy, waste & sanitation and built environment, social infrastructure)

**Conclusion:**

the concept of smart city envisioned by the current government is much needed. Rapid growth of urban population is a threat of its residents. In this context making the city smart is both necessary and challenging. We can say smart city initiative is a step towards socio-economic welfare state of india. India is one of the fastest growing economies in the world. Our government has taken towards economic growth and welfare of each and every person. Except few limitations we can say smart city and other initiatives is a great step towards urban reconstruction & urban rejuvenation.

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