sdmimd
Shri Dharmasthala Manjunatheshwara Institute for Management Development, Mysuru, India
9th International Conference on
Economic Growth and Sustainable Development- Emerging Trends– November 21-22, 2024

Smart Cities in India

Diwakar
Associate Professor & H O D
Dept of Political Science
Maharaja's college
University of Mysore
Mysuru

A city equipped with basic infrastructure to give a decent quality of life, a clean a sustainable environment through application of some smart solutions. Public information, grievance redressal, electronic service delivery, citizens' engagement, waste to energy & fuel, waste to compost, 100% treatment of waste water, smart meters & management, monitoring water quality, renewable source of energy, efficient energy and green building, smart parking, intelligent traffic management system. Smarter City use digital technology and information and communication technologies (ICT) to better quality and performance this engage more effectively and actively with its citizen. A developed urban area that creates sustainable economic development and high quality of life by excelling in multiple key areas; economy, mobility, environment, people, living, and government. Excelling in these key areas can be done so through strong human capital, social capital, and or ICT infrastructure. The smarter city applications are major goal of improving the management and transforming the urban areas. The major technological, economic and environmental changes have generated interest in smart cities. Smart cities lead to sustainable development.

Key words: *Infrastructure, Smart city and Sustainable Development*

Introduction

India launched its National Smart Cities Mission (SCM) in 2015 with the goal of transforming urban areas into more inclusive, sustainable environments. The program was a response to the needs of a rapidly urbanizing population which requires a radical transformation of the built environment in order to realize a more prosperous and egalitarian society.

A city equipped with basic infrastructure to give a decent quality of life, a clean a sustainable environment through application of some smart solutions. Public information, grievance redressal, electronic service delivery, citizens' engagement, waste to energy & fuel, waste to compost, 100% treatment of waste water, smart meters & management, monitoring water quality, renewable source of energy, efficient energy and green building, smart parking, intelligent traffic management system.

Objectives of the study:

1.To find out Smart city and Sustainable development
2.. To find out the implementation of National smart cities Mission
3. To find out the role of the Government.

Methodology

1.Based on secondary data

The smart city mission aims to enhance the quality of life in 120 selected cities by providing efficient services, robust infrastructure, and a sustainable environment. Through smart solutions, the mission seeks to promote economic growth, inclusivity, and sustainability by focusing on the social, economic, physical, and institutional pillars of urban development.

ISBN code 978-93-83302-74-1

By addressing residents' diverse needs— from housing and transport to education, healthcare, and recreation—the mission aspires to create dynamic urban spaces that evolve to meet the aspirins of their citizens, serving as replicable models for other cities.

Approach of the Mission

Implementing the Smart City Mission is carried out primarily through two approaches. First, under the Smart Cities Mission, cities are being developed using an Area-Based Development (ABD) approach, where each of the 100 cities has selected a defined area for targeted interventions. These ABD areas, chosen through citizen participation, are being developed as replicable models for other parts of the city.

Second, every city has included Pan-City Projects, which are technology-driven solutions. Other key dimensions of the mission include creating a Special Purpose Vehicle (SPV) structure for program implementation, promoting multiple sources of funding for projects, fostering competitive federalism, and engaging citizens.

Progress under the Mission

More than 8,000 multi-sectoral projects are being developed by these 100 cities, amounting to approximately ₹1.6 lakh crore. More than 90% of the total projects (7,244 projects amounting to ₹1,45,312 crore) undertaken under the Smart Cities Mission have been completed. Each city has developed a diverse set of projects, many of which are unique and being implemented for the first time, thus enhancing the cities' capabilities and experience and achieving broader transformational goals at the city level. 75% of projects have been completed in 75 smart cities. Across the 100 cities to date, seventeen (17) cities have completed 100% of their projects under the mission. This is followed by thirty-four (34) cities with more than 90% of projects completed and another twenty-four (24) cities with more than 75% of projects completed. On the financial front, the total outlay of Central assistance for the Smart Cities Mission was ₹48,000 crore. The Central Government has already released ₹46,787 crore to 100 Smart Cities under the SCM, of which over 90% has been utilized.

Major Projects Under the Smart City Mission Key Achievements of the Mission Integrated Command and Control Centers (ICCC): All 100 Smart Cities have operational ICCCs, which utilize data for making informed decisions. These ICCCs functioned as COVID war rooms during the pandemic and have significantly improved city operations such as transport, water supply, and solid waste management by integrating emerging technologies like AI, IoT, and Data Analytics.

Public Safety and Security: Over 83,000 CCTV surveillance cameras have been installed in 120 Smart Cities, aiding in crime monitoring. Additionally, 1,884 emergency call boxes, 3,000 public address systems, and traffic enforcement systems for red light violations and automatic number plate recognition have been installed, enhancing public safety.

Water Supply: More than 9,900 kilometers of the water supply system are being monitored through SCADA, reducing non-revenue water and leakages. Solid Waste Management: Over 50 cities are managing solid waste with increased technology use, improving route management, efficiency of collection, and daily management. Around 4,400 vehicles have been RFID-enabled for Automatic Vehicle Location (AVL) to digitize and improve

ISBN code 978-93-83302-74-1

solid waste management efficiency. Streetlights: More than 52 lakh solar/LED streetlights have been installed, and over 86,000 kilometers of underground electricity cabling have been constructed.

Mobility: Over 4,700 kilometers of smart roads have been constructed or improved, and 580 kilometers of cycle tracks have been developed. Furthermore, an Intelligent Transport Management System (ITMS) has been implemented and is being monitored through ICCCs, improving traffic operations, enforcing traffic violations, and reducing journey time.

Affordable Housing and Shelter: 49,300 dwelling units have been constructed, along with 1,562 rooms in community housing projects such as Rain Basera, hostels (noneducational), and night shelters under the Mission. Vibrant Public Spaces: Over 1,300 parks, green spaces, and lakefront/riverfront promenades have been developed or are under development. Education: 7,654 smart classrooms and 40 digital libraries have been developed. Health: 172 e-health centers and clinics (without dedicated beds) have been developed, and 155 health ATMs also have been installed. Economic Hubs: 21 incubation centers/skill development centers have been developed, and over 56 market redevelopment projects have been completed. PPP: More than 50 cities have successfully developed or are developing 199 projects through Public-Private Partnerships (PPP) worth ₹9,200 crore.

The Mission has continually adapted to emerging needs, providing cities with the flexibility to respond effectively. For example, when the COVID-19 pandemic raised global awareness about the importance of open spaces for active and healthy lifestyles, the Mission launched campaigns such as India 'Cycles4Change' and 'Streets4People' in a challenge format. To ensure that even the most vulnerable citizens have access to public spaces, especially young children and caregivers, cities participated in 'Placemaking Marathons' and the 'Nurturing Neighborhoods Challenge'. Other challenges like 'Transport4All' and 'Eat Smart Cities' are promoting startups in public transport and improving food hygiene in smart cities, respectively.

Only 10% of the remaining projects are at the implementation stage. Some of these projects have been delayed due to legal issues, delays in obtaining clearances from different departments, land acquisition challenges, construction in hilly areas, and challenges in vendor and resource availability in small and medium cities. Following multiple requests from State governments and Members of Parliament, the mission period has been extended to 31st March 2025 to complete the ongoing projects.

Strategy for Smart Cities Mission

The Smart Cities Mission aims to drive economic growth and improve the quality of life by fostering local area development and leveraging technology for smart outcomes. The strategy includes transforming existing areas (through retrofitting and redevelopment), developing new areas (greenfield development), and applying smart solutions city-wide (Pan-city initiatives).

Retrofitting involves enhancing a built-up area (over 500 acres) to make it more efficient and livable by introducing intensive infrastructure and smart applications, often

ISBN code 978-93-83302-74-1

completed in a shorter timeframe for replication. Redevelopment replaces existing structures to create a new layout with improved infrastructure, mixed land use, and increased density, typically in areas over 50 acres. Notable examples include the Saifee Burhani Upliftment Project in Mumbai and the redevelopment of East Kidwai Nagar in New Delhi. Greenfield Development introduces smart solutions in previously undeveloped areas (over 250 acres) with innovative planning and affordable housing, addressing the needs of expanding urban populations. The GIFT City in Gujarat is a prime example.

Pan-city Development applies selected smart solutions to enhance existing city-wide infrastructure. For instance, intelligent traffic management systems can reduce commute times, while smart metering and wastewater recycling can improve water management. Each city's Smart City proposal should include one of the area-based models (retrofitting, redevelopment, or greenfield development) and a Pan-city feature, ensuring inclusivity and benefits for all residents. For North Eastern and Himalayan states, the development area requirements are halved.

Smarter City use digital technology and information and communication technologies (ICT) to better quality and performance this engage more effectively and actively with its citizen. A developed urban area that creates sustainable economic development and high quality of life by excelling in multiple key areas; economy, mobility, environment, people, living, and government. Excelling in these key areas can be done so through strong human capital, social capital, and or ICT infrastructure. Definitions The term "smart cities" is a bit ambiguous. Some people choose a narrow definition That is cities that use information and communication technologies to deliver services to their citizens. Some people are a broader definition: Smart cities use Information and Communication Technologies (ICT) to be more intelligent and efficient in the use of resources, resulting in cost and energy savings, improved service delivery and quality of life, and reduced environmental footprint - all supporting innovation and the low carbon economy. A city that monitors and integrates conditions of all of its critical infrastructures, including roads, bridges, tunnels, rails, subways, airports, seaports, communications, water, power, even major buildings, can better optimize its resources, plan its preventive maintenance activities, and monitor security aspects while maximizing services to its citizens.

The 100 Smart Cities Mission in India was launched by **Prime Minister Narendra Modi** on June 25, 2015, project that aims to drive economic growth and improve the lives of urban citizens across the country by enabling local area development and harnessing smart technology**,** that is the vision and mission of the Prime Minister of India**.** The **IBM** is the company that originally coined the term "smart city." With their Smarter City Challenge programme, the company has developed their vision of urbanization – based on centralization of data, with a strong focus on security – across the world. The smarter city applications are major goal of improving the management and transforming the urban areas. The major technological, economic and environmental changes have generated interest in smart cities. Smart cities lead to sustainable development. It is a city where there is a significant and extensive improvement in the physical, social and economic infrastructure.

THE IMPORTANT FEATURES OF SMART CITY MISSION IN INDIA

Smart Cities Mission, which is to drive economic growth and improve the quality of life.

ISBN code 978-93-83302-74-1

- It promotes mixed land use as per the area. With the mission, the states will have more flexibility to use the land for various purposes and make bye-laws as per the change. However, fulfillment of environmental safeguards will be taken care of.
- It aims to expand housing opportunities for everyone. Housing is one of the essential requirements for the growth of the Smart Cities Mission. Smart cities require more housing projects to cater to large and lower-income demographics.
- Smart Cities Mission visions to reduce congestion, ensure security, reduce air pollution and promote interaction and local economy. New way pedestrians are built for walkers and cyclists to reduce accidents.
- Development of playgrounds, parks, open gyms and other recreational spaces is another objective. This is done to enhance the quality of life for Indian citizens.
- More transport options are promoted, like transit-oriented development (TOD) and public transport.
- To bring transparency and accountability in governance, more online services are launched. For example, a citizen can use an online website instead of going to the municipal offices.
- Identity is provided to the city based on the education sector, health sector, local cuisine, sports, culture, art, furniture etc.
- Smart Solutions are applied to infrastructure and services for area development.

SMART SOLUTION OF SMART CITIES MISSION

Under the mission smart solutions are being used for the basic infrastructure like: -

1. Public information and grievance redressal
2. Electronic service delivery
3. Citizens-city's eye and ear
4. Video crime monitoring
5. Citizen engagement
6. Waste to compost
7. Waste to energy and fuel
8. Every drop to be treated
9. Treatment of C&D waste
10. Smart meters and management for water and electricity

List of 110 Cities Selected under Smart City Mission

Name of State/UT	Names of Selected Cities
Andaman & Nicobar Islands	1. Port Blair
Andhra Pradesh	1. Vishakhapatnam
	2. Tirupati
	3. Kakinada
	4. Amaravati

ISBN code 978-93-83302-74-1

Arunachal Pradesh	1. Pasighat
Assam	1. Guwahati
Bihar	1. Muzaffarpur
	2. Bhagalpur
	3. Biharsharif
	4. Patna
Chandigarh	1. Chandigarh
Chhattisgarh	1. Raipur
	2. Bilaspur
	3. Naya Raipur
Daman & Diu	1. Diu
Dadra & Nagar Haveli	1. Silvassa
Delhi	1. New Delhi Municipal Council
Goa	1. Panaji
Gujarat	1. Gandhinagar
	2. Ahmedabad
	3. Surat
	4. Vadodara
	5. Rajkot
	6. Dahod
Haryana	1. Karnal
	2. Faridabad
Himachal Pradesh	1. Dharamshala
	2. Shimla
Jammu and Kashmir	1. Srinagar
	2. Jammu
Jharkhand	1. Ranchi
Karnataka	1. Mangalore
	2. Belagavi
	3. Shivamogga
	4. Hubli-Dharwar
	5. Tumakuru

ISBN code 978-93-83302-74-1

	6. Davanegere
	7. Bengaluru
Kerala	1. Kochi
	2. Trivendrum
Lakshadweep	1. Kavaratti
Madhya Pradesh	1. Bhopal
	2. Indore
	3. Jabalpur
	4. Gwalior
	5. Sagar
	6. Satna
	7. Ujjain
Maharashtra	1. Navi Mumbai
	2. Nashik
	3. Thane
	4. Greater Mumbai
	5. Amravati
	6. Solapur
	7. Nagpur
	8. Kalyan-Dombivali
	9. Aurangabad
	10. Pune
	11. Pimpri chinchwad
Manipur	1. Imphal
Meghalaya	1. Shillong
Mizoram	1. Aizawl
Nagaland	1. Kohima
Odisha	1. Bhubaneshwar
	2. Raurkela
Puducherry	1. Oulgaret
	2. Puducherry
Punjab	1. Ludhiana
	2. Jalandhar
	3. Amritsar
Rajasthan	1. Jaipur
	2. Udaipur
	3. Kota
	4. Ajmer
Sikkim	1. Namchi

ISBN code 978-93-83302-74-1

	2. Gangtok
Tamil Nadu	1. Tiruchirapalli
	2. Tirunelveli
	3. Dindigul,
	4. Thanjavur,
	5. Tirupur,
	6. Salem,
	7. Vellore,
	8. Coimbatore,
	9. Madurai,
	10. Erode,
	11. Thoothukudi
	12. Chennai
Telangana	1. Greater Hyderabad
	2. Greater Warangal
	3. Karimnagar
Tripura	1. Agartala
Uttar Pradesh	1. Moradabad
	2. Aligarh
	3. Saharanpur
	4. Bareilly
	5. Jhansi
	6. Kanpur
	7. Allahabad
	8. Lucknow
	9. Varanasi
	10. Ghaziabad
	11. Agra
	12. Rampur
Uttarakhand	1. Dehradun
West Bengal	1. New Town Kolkata
	2. Bidhannagar
	3. Durgapur
	4. Haldia

A total of 120 cities are selected as of date. In the first slot, West Bengal, Mumbai and Navi Mumbai submitted the proposal, but later, they withdrew the application. Most of the cities are from Uttar Pradesh and Tamil Nadu in the Smart Cities Mission.

SMART CITY A PROBABLE SOLUTION

Cities are real time systems and deem to be supermodels of efficiency, friendliness and preparedness on a mass scale but as the populations swell inexorably due to migration and other factors leading to formation of urban agglomerations from cities, they need to navigate their challenges of growing demand for new constituent services by identifying potential solutions for ever increasing complicated problems within the constrained budgets, often resulting into proliferation of point solutions: emergency response integration, traffic congestion alleviation, waste and water management, smart buildings, smart grids, etc.The cities need to equip themselves to integrate these point solutions to cater to the increasing demands placed on them, rather than crumbling under the growing demand and pressure. The "smart city" has become a buzzword over last few years in the realm of government/administration, marketing giants/investors, academia/urban research laboratories and the common mass or the end users. Almost everyone has their own comprehension and conception of Smart City i.e. “what should it be?” and “how should it be?” etc. The smart city projects (i.e. development of new towns or transformation of old cities) that are currently going on or have completed (like Amsterdam, Seoul, etc.) have different set of parameters and characteristics to address different priorities and problems and to call themselves SMART. In the absence of any clear cut or globally accepted definition of Smart City, various attempts have been made to define, categorize and integrate the parameters of smart cities as different subsystems of the urban system. One such categorization has been done by Chourabi et. al. as eight critical factors of management and organization, technology, governance, policy context, people and communities, economy, built infrastructure, and natural environment besides some others, and the major classification include some or all of these in one way or the other. Some of the green field development in the name of sustainable and smart cities have also been conceptualized and developed in India as Lavasa, Gift City (Ahmedabad), Kochi Smart City, Nano City besides some other like Dholera being labelled as Smart Cities. But there are far from satisfactory in terms of numbers and scale to meet the pace of urbanization and demand in the country, and is an urgent need of brown field development in this regard.

THE NEED FOR THE DEVELOPMENT OF SMART CITIES

1. Smart cities are needed to bring in growth and development in a country.
2. Smart cities are needed for the development of the quality of life of people in the cities.

ISBN code 978-93-83302-74-1

3. If the quality of life of the people is improved in cities, then naturally the city will attract more people and thereby more investments.

The Smart Cities Mission - Government of India, launched 100 smart cities missions in 2015.The objective is to integrate city functions; utilize scarce resources more efficiently and overall improve the quality of life of citizens. To improve safety and security to improve the efficiencies of municipal services. Use of Information and Communications Technology (ICT) is at the core of enhancing the city's live ability, workability, and sustainability. The Ministry of Urban Development has identified 24 key areas that cities must address in their 'smart cities' plan. Of these 24 key areas, 3 are directly related to water and 7 are indirectly related to water Smart-meter management, leakage identification, preventive maintenance and water quality modelling. Smart Cities Mission is one of the mechanisms that will help operationalize the nationwide implementation of the Sustainable Development Goals (SDG) priorities like poverty alleviation, employment and other basic services. Smart Cities Mission - Planning Initially, there was a lack of clarity as there was no universal definition of a smart city. The Government of India did not prescribe any particular model as they realized one size did not fit all, from the experiences of previous Urban Development Missions. Every city had to formulate its own concept, vision, mission and plan which is appropriate to its local context, resources and level of ambition.

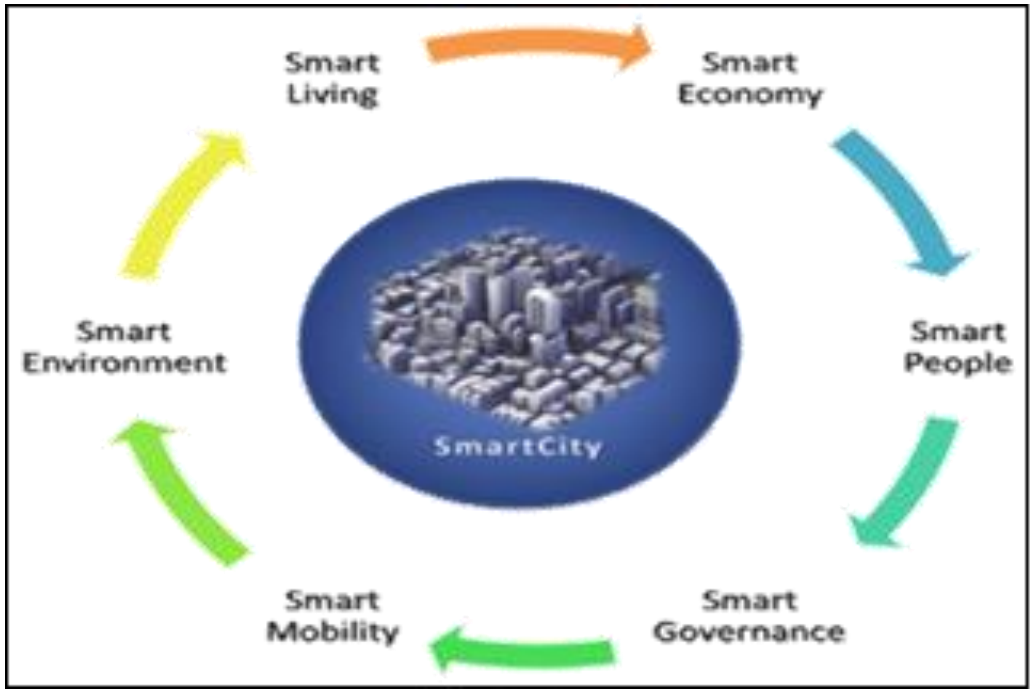
DIMENSIONS

Cities development presently depends not only on the city's endowment of hard infrastructure (Physical Capital) and social infrastructure (Intellectual and Social Capital) but also on the availability and quality of ICTs (Information and Communication Technologies). The ICT Form of capital is decisive for urban competitiveness. Based on this background the concept of the "smart city" has been introduced as a strategic device to encompass modern urban production factors in a common framework. Smart Cities outlines many of the opportunities for cities afforded by these contemporary technologies, indicating how the 'smart city' approach might fundamentally transform the way that cities are governed, operated, interacted with and experienced. Smart Cities can be identified along six main dimensions

These axes are

- Smart Economy - Innovation and Competitiveness
- Smart Mobility- Transport and Infrastructure
- Smart Environment - Sustainability and Resources
- Smart People - Creativity and Social Capital
- Smart Living - Quality of Life and Culture
- Smart Governance - Empowerment and Participation

ISBN code 978-93-83302-74-1



TECHNOLOGICAL AGENTS

The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it, Digital technologies captures, stores, analyses, manages, and presents data that is linked to a particular location and helps in resource management, asset management, archaeology, environmental impact assessment and urban planning.

These digital technologies introduced in the very fabric of the city space is inflicting fundamental changes on the connection between the city and its inhabitants. At the same time, it is making the hidden layers of social, economic, political processes and environmental, tensions, and flows transparent and visible in ways that were never possible before. Cities are made up of huge networks of people, organizations, businesses, infrastructure, consumption, energy, spaces and last but not least with technologies.

In a Smart City, these networks are linked together, supporting and feeding off each

ISBN code 978-93-83302-74-1

other. The process of linking the many different networks of the city together in a system presents a number of technological as well as governance-related and social challenges.

Starting with the technological challenges, most of the solutions which are needed in a Smart City have already been developed Solar panels, smart home appliances, electric vehicles, wind turbines, smart grids, building management systems etc. all have the potential to become part of the Smart City.

Being a smart technology, however, is not just about using less energy or being made of smart and reusable materials. It is about being able to function as an integral part of a larger system.

GATHER DATA

Smart City technology means being able to constantly gather information about the city which can be used by the technology itself in order to adapt to the most sustainable and smart behavior. An Ex. of this is a Smart Building System, whichconstantly gathers data about performance of a building, which it then uses to optimize energy use.

COMMUNICATE DATA

It should also be able to share that data with people or things (Objects) or other technologies or borrow relevant data from elsewhere. In this sense, smart technology should be able to communicate with the rest of a Smart City system. For this to be the case, it needs to be able 'speak the same language' as the other devices in the Smart City system. Furthermore, it needs to be connected to a common communicative platform where information can be shared and interoperability can be promoted.

MULTI-FUNCTIONAL

Although technology which is able to gather data and communicate with other technologies is indeed smart, truly smart technologies are multi-functional. This means that they provide solutions to multiple problems. One Ex. could be the electric vehicle. This not only leads to less congestion; in connection with a smart grid, it can also serve as an energy buffer, which would help level outthe energy supply and demand curve. Cities are adopting smart technologies for different reasons: Amsterdam to reduce its carbon emissions, Tokyo to become more competitive, and China to tackle its resource scarcity. Elsewhere, South Korea is using cities like living labs to help domestic companies drive growth in other markets, specifically in India and China. In every case, the smart city is the beginning of initiatives that will drive big changes on the earth over several decades. "The city is a relatively manageable entity when compared to the earth. Smart cities use Internet of Things (IoT) technologies to be more intelligent and efficient in the use of resources, resulting in cost and energy savings, improved service delivery and quality of life, and

ISBN code 978-93-83302-74-1

reduced environmental footprint-all supporting innovation and the low-carbon economy. The main advantages of creation of smart cities are Smart Grid, Prevent Fires, Digital Governance, Waste Management, Water Management, Surveillance Security, Land – Use Planning Changes, Intelligence Transportation, Regional Green Cities, Quality of Urban Citizen Life Improvement, Smarter places to Visit, Live, Work and Play, Sustainable Development through Innovation Cities and finally which leads to for the nation's Economic Growth.

THE STATE OF ART

According to IBM's report from the IBM Institute for Business Value, "A Vision of Smarter Cities", in the next 20 years, for every minute, on an average 30 Indians will migrate from rural areas to smarter cities for their livelihood. So as per this prediction, India needs to create 500 new cities in the forthcoming 20 years. In addition to this according to a study by consulting firm of Booz & Company also an average of 30 people will move from rural areas to the city for every minute in India, so the country is set to build 500 new cities over the next 20 years to house 700 million more city dwellers by 2050,

Establishing two smart cities in each of India's 28 states in the country under phase II of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM): that is the goal of the wide-range in project introduced by the Indian government to inject smart technology into cities home to between 500,000 and one million people an ambition that goes hand in hand with seven other smart- city projects already underway. The smart cities project is not meant for metropolitan cities. It is for smaller cities with half a million to one million population cities like Ujjain, and Jabalpur, as officially cited. Bigger cities are already covered under other schemes.

According to 2011 census, about 32% of India's population lives in urban areas. It is projected to grow and reach 40% in a decade and 50% in about 30 years. The JNNURM was launched in 2005 by the Government of India to last for a period of seven years.

Upgrading social and economic infrastructure in cities, provision of basic services to urban poor, introducing reforms to strengthen municipal governance are the principal strategies adopted in this JNNURM mission. The aim of the Mission is to encourage reforms and fast-track planned development of identified cities. The Mission also focuses on inclusive growth of cities with safe drinking water, improved public transport, sustainable environment, and standardized service level. Community participation in urban local bodies is also part of the mission. One of the basic reasons for investments flocking in to the smaller cities is available properties and affordable prices. Moreover, the special initiatives taken by the respective governments in providing the smaller cities with infrastructural facilities and creation of SEZs, has played a vital role in promoting these small towns into cities of the future. Keeping in view all the congenial factors necessary for setting up corporate infrastructure, the investing companies ranging from pharmaceuticals to financial institutions, automobiles to

ISBN code 978-93-83302-74-1

the IT & ITES (IT-Enabled Services) sectors; to the retail and real estate sector are opting for the smaller cities transforming them into India's fastest growing cities in a matter.

GIFT (Gujarat International Finance Tec-City)

Designed as modern recreation of India's architectural past, mirrored twins of the Gateway. It will house over a million people with millions more commuting there daily. Well placed between the political and commercial capitals of Gujarat. GIFT is a public-private partnership, it will India's first major super tall Central Business District project that is designed to be the focal point of both the world's and India's booming financial services market by providing companies with all those things Mumbai is still developing: comprehensive infrastructure, power, virtualized office space, a well-designed, planned & expandable urban form.

KOCHI

Smart City Kochi is an IT Special Economic Zone under construction in Kochi, Kerala Smart City (Kochi) Infrastructure Pvt. Ltd. is a joint venturecompany formed to develop the Kochi Smart City project. Government of Kerala (16% share), TECOM Investments (84% share), a subsidiary of Dubai Holding are the main investors of the company. “The four-storeyed building project of 22 lakh sq. ft. spread over 50 acres will be located on the banks of Kadambraya at Edachira near Kakkanad.

BANGALORE

Bangalore is going to be a Smarter City through an Indo-German-Research Project mainly, Smart Mobility including (Noise, Pollutants); (E-Mobility, Car Sharing); (Information, Traffic Management); (Walkability,Distances, Modal Split); (High Occupation Rate); (Smart PT, Linkage with Private); (Safety, Accessibility, Costs); (Energy Efficiency).The Government of Karnataka has inked an agreement with networking solution provider Cisco for a pilot programme to develop the roadmap for an intelligent, smart and sustainable Bangalore city. The pilot programme would aim at developing replicable ICT solutions to help promote sustainable, intelligent urban development practices in the city. The company also unveiled its blueprint for "Intelligent Urbanization," a global initiative to help cities around the world use the network as the next utility for integrated city.

FINANCING OF SMART CITY MISSION IN INDIA

In total, the government has funded a sum of Rs 7,20,000 crore. On average Rs 100 crore per city over the five years. The scheme will be operated as a Centrally Sponsored Scheme (CSS) on a 50:50 model, meaning Rs 50 crore will be contributed by the center and Rs 50 crore by the state government or Union Territories. This has also become one of the challenges for India's smart city mission because, until

ISBN code 978-93-83302-74-1

November 2021, the Center government released Rs 27,282 crore, whereas states have released only Rs 20,124 crore.

Smart Cities Mission - Implementation

Established SPV (Special Purpose Vehicle) in each city for

1. Decision making
2. Planning
3. Project designing and
4. Implementation.

Smart Cities Mission - Progress/Achievements

1. Creation of smart command and control centers in 17 cities - this has integrated different service networks and the city administration can centrally monitor and it gives an impetus to decision making.
2. Smart Roads - 60 projects completed in 25 cities.
3. Smart Solar Projects - 27 projects completed in 17 cities
4. Smart Waste Water Projects - 12 projects completed in 10 cities
5. Smart Water Projects - 38 projects completed in 24 cities

Notable Progress in Bhopal Smart City Project

1. Establishment of Integrated Command and Control Centre - to increase the safety and security of its people.
2. Establishment of Cloud-based disaster recovery center.

Smart Cities Mission - Challenges

3.. A lot of progress is desired in creating energy-efficient and green buildings.
4. Making Urban Bodies self-reliant
5.. Share of public transport is declining; it needs to be increased to meet the needs of increasing urbanization.
6. Rising air pollution, increase in road congestion due to increase in urbanization

OTHER MISSIONS RELATED TO SMART CITIES MISSION

To make the mission successful, other government-initiated projects are interlinked. Overall development can occur by integrating the social, economic, physical, and institutional infrastructure. A great benefit can be achieved by the convergence of sectoral schemes

- AMRUT- Atal Mission for Rejuvenation and Urban Transformation
- HRIDAY- Heritage City Development and Augmentation Yojana
- Make in India
- Digital India
- Swach Bharat Abhiyan
- Pradhan Mantri Awas Yojana

ISBN code 978-93-83302-74-1

RECOMMENDATIONS FOR SMART CITIES MISSION

There are a few recommendations that can help achieve more significant benefits from the mission

- It should be a long-term programme, not only a five-year programme as most of the cities cannot perform the best within this time frame.
- To meet the city requirement, more projects should be identified. There are many smart cities whose drainage issue is not yet solved.
- Studies should be done on why a single project has not been completed in cities like Amaravati, Bhagalpur, Muzaffarpur and Shillong.
- For the mobilization of funds, more revenue should be generated through taxation. The fund transfer process should also be made accessible.
- All these cities should be secured by cyber security- ensuring data security and encryption.

CHALLENGES OF SMART CITIES

The following are the challenges of smart cities in India

1. Most of the ingredients needed for the urban transformation exist, their full potential remains underutilized.
2. There is negligence in monitoring the progress of development schemesand in the upkeep of public places.
3. Sufficient efforts are not being made to understand the working conditions of functionaries (i.e., local government officials and elected representatives) and their grievances.
4. Governance practices are influenced by numerous internal and external forces. In other words, due to vested interests, civic officials and electedrepresentatives do not perform their duties efficiently and at timesindulge in corrupt practices.
5. When citizens see a management and governance deficit, many of themoperate in an irresponsible manner.
6. The Ministry of Urban Development used a competition method

ISBN code 978-93-83302-74-1

based on an area-based-development strategy to select the cities for the mission.

7. At first, cities competed at a state level, and then the winner competed on a national level Smart City Challenge. The cities that scored the highest marks were selected as Smart City. The nominations came from the state government.

CONCLUSION

The smart city concept is one such upcoming concept which is deemed to be the solution for the present-day problems as well as the sustainable future. Smart cities are the modern urban concepts that are essential for people to have quality life. It is the conceptual view of grouping various technologies to attain smart and sustainable practices. But in the absence of any definite guidelines and case specific solutions to develop the smart cities in India, there is need for further research to work out the parameters, definitions and guidelines for the development of new cities on green field as well as the brown field developments.

ISBN code 978-93-83302-74-1

REFERENCES

[1] J. Belissent, WEBINAR: The Core of A Smart City Must Be Smart Governance, CIOS, Forrester, 2011.
available:
https://www.forrester.com/The+Core+Of+A+Smart+City+Must+Be+Smart+Governance/-/EWEB7738

[2] E.N. Parasuraman, Blog: So, what is the smartness quotient of your city? Schneider Electric, 2013.available: http://blog.schneider-electric.com/smart-grid/2013/08/18/so-what-is-thesmartness-quotient-of-your-city/.

[3] H. Chourai et. al. "Understanding Smart Cities: An Integrative Framework", Proc. IEEE Computer

[4] Science Society, 45th Hawaii International Conference on System Sciences, Hawaii, 2012, pp. 2289-2297.

[5] https://smartcities.gov.in/

[6] https://smartcities.gov.in/mission-dashboard

ISBN code 978-93-83302-74-1

ISBN code 978-93-83302-74-1

ISBN code 978-93-83302-74-1