

A SURVEY OF INDIA'S SMART CITIES MISSION

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Abstract— The Smart Cities Mission is an innovative and recent initiative by the Government of India to develop smart cities pan-India to enable economic growth and improve the quality of life of people by enabling local development and using smart technologies to make its citizens life better. The Mission will be covering 100 cities and its duration of implementation will be five years (FY2015-16 to FY2019-20). The Mission may be continued thereafter on the basis of the output of an evaluation to be done by the Ministry of Urban Development (MoUD) and absorbing the learnings into the Mission. The Smart Cities Mission is aimed to set examples that can be replicated both within and outside the Smart City, speeding up the creation of similar Smart Cities in various regions and parts of the country. This paper takes the insight into the mission objective, the implementation guidelines and various challenges in mission's implementation.

Index Terms— Growth, Infrastructure, GDP, Smart Cities, Mission, Technology

1 INTRODUCTION

CITIES play an important role in the growth for the economy of every nation, India is no exception. Close to 31% of India's current population lives in urban areas and contributes 63% of India's GDP (Census 2011). With increasing urbanization, 40% of India's population set to house in urban areas and thereby contribute 75% of India's GDP by 2030 [1]. This leads to a challenge of comprehensive development of physical, institutional, social and economic infrastructure. Since all these are important in improving the quality of life of the citizens living in the cities. Thus Smart Cities Mission focuses on development of smart cities pan-India to enable economic growth and improving the quality of life of people by enabling local development and using smart technologies to make its citizens life better. The Smart Cities Mission is aimed to set examples that can be replicated both within and outside the Smart City, speeding up the creation of similar Smart Cities in various regions and parts of the country.

2 RELATED WORK

Smart Cities are the integration of information technology, telecommunications, urban planning, smart infrastructure and operations in an environment geared to maximize the quality of life for a city's population. Such a coordinated approach from the inception of a metropolitan area is key to sustainable growth and development which India requires going forward [5]. Somayya Madakam, Ramaswamy R., in their paper "100 New Smart Cities (India's Smart Vision)" put forth the conceptual view about smart cities and also discussed the six dimensions of smart cities such as smart economy, smart mobility, smart environment, smart people, smart living and smart government for understanding new urban paradigm shift phenomenon. They also discussed various prerequisites to be considered before setting up 100 new smart cities in India. Sheshadri Chatterjee, Arpan Kumar Kar, in their paper

"Smart Cities in Developing Economies: A Literature Review and Policy Insights", explained that for getting maximum benefits of "Smart Cities" where application of ICT is a must, the beneficiaries must be digitally literate. Every citizen of "Smart City" should not be digitally blind but should be aware of on-line culture and concluded that before implementing creation of "Smart Cities" the Central and State Governments shaking off narrow political games should take sincere initiative to explore wealth resources and to take attempt meticulously to throw light of literacy to the citizens of "Smart Cities". Then and only then the citizens can harvest the apex of benefits of "Smart Cities", otherwise conception of "Smart Cities" would lie only on theoretical standpoint without any outcome in the real world.

3 SMART CITIES MISSION

3.1 Definition of Smart City

There are multiple definitions of "Smart City" available, and various "smart" approaches have been understood by different people and sectors differently. Some definitions define smart cities as cities with "smart (intelligent) physical, social, institutional and economic infrastructure while ensuring centrality of citizens in a sustainable environment;" [2]. A definition by the International Telecommunication Union (ITU)'s Focus Group on Smart Sustainable Cities (FG-SSC) reads: "A smart sustainable city is an innovative city that uses Information and Communication Technology (ICT)'s and other means to improve the quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social and environmental aspects."

3.2 Smart Cities Mission

The objective of Smart Cities Mission 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 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 [1].

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A. The core infrastructure elements in a Smart City would include-

- i. Adequate water supply
- ii. Affordable housing, especially for the poor
- iii. Assured electricity supply
- iv. Sanitation, including solid waste management
- v. Efficient urban mobility and public transport
- vi. Robust IT connectivity and digitalization
- vii. Sustainable environment
- viii. Safety and security of citizens, particularly women, children and the elderly
- ix. Good governance, especially e -Governance and citizen participation
- x. Health and education.

The purpose of Smart Cities Mission is development of smart cities pan-India to enable economic growth and improve the quality of life of people by enabling local development and using smart technologies to make its citizens life better.

B. Mission Coverage and Implementation Duration

The Mission is set to cover 100 cities across India. The total number of 100 Smart Cities has been distributed among the States and UTs on the basis of equitable criteria. The formula gives equal weightage (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, therefore, have a certain number of potential Smart Cities, with each State/UT having at least one. The number of potential Smart Cities from each State/UT will be capped at the indicated number [3]. The duration of mission will be five years (FY2015-16 to FY2019-20). The Mission may be continued thereafter on the basis of the output of an evaluation to be done by the Ministry of Urban Development (MoUD) and incorporating the learning's into the Mission. The distribution of Smart Cities will be reviewed after two years of the implementation of the Mission. Based on an assessment of the performance of States/ULBs in the Challenge, some re-allocation of the remaining potential Smart Cities among States may be required to be done by the Ministry of Urban Development.

C. Strategic Components

The strategic components of Area-based development in the Smart Cities Mission are city improvement (retrofitting), city renewal (redevelopment) and city extension (Greenfield development) and a Pan-city initiative in which Smart Solutions are applied covering larger parts of the city.

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 liveable. In retrofitting, an area consisting of more than 500 acres will be identified by the city in discussion with citizens. Depending on the vision of the residents and existing level of infrastructure services in the identified area, the cities will prepare a strategy to become smart. Since existing structures are largely to remain as it is in this model, it is expected that more intensive infrastructure service levels and a large number of smart

applications will be involved into the retrofitted Smart City. This strategy can be completed in a shorter time frame, which may lead to its replication in another part of the city.

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. Redevelopment foresees an area of more than 50 acres, identified by Urban Local Bodies (ULBs) in consultation with citizens. For instance, a new layout plan of the identified area will be prepared with mixed land-use, higher FSI and high ground coverage. Two examples of the redevelopment model, undertaken by the National Building Construction Corporation are the Saifee Burhani Upliftment Project in Mumbai (also called the Bhendi Bazaar Project) and the redevelopment of East Kidwai Nagar in New Delhi.

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. Greenfield developments are necessary around cities in order to address the needs of the increasing population. One well known example is the GIFT City in Gujarat. Greenfield developments could be located either within the limits of the ULB or within the limits of the local Urban Development Authority (UDA) unlike retrofitting and redevelopment,.

Pan-city development foresees application of selected Smart Solutions to the existing city-wide infrastructure. Application of Smart Solutions will include the use of technology, information and data to make infrastructure and services better. For example, applying Smart Solutions in the transport sector (intelligent traffic management system) and reducing average travel time or cost to citizens will have advances in productivity and quality of life of citizens. Another example can be better water management in the city by waste water recycling and smart metering

D. Funds for Implementation

India is developing at high pace and there is constant increase in urbanization and urban population, thus government proposed to invest Rs. 7600 Crore (\$1.24 billion USD) for the creation of 100 Smart Cities in the budget that government presented to Parliament in July 2014. This plan visualizes not only the building of new cities from the ground up but also modernizing older cities. 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. 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.

E. Challenges

The mission has created tremendous enthusiasm amongst many possible stakeholders, including service providers who

have been part of smart city projects elsewhere in the world. Countries such as Japan, Singapore and Germany, among many others, have evinced interest to be a part of this. Yet, in its scale and complexity the project will be second to none. The official estimates of per capita investment requirement is Rs.43,386 for a 20-year period, or a total investment of Rs.7 lakh crore.

4 CONCLUSION

In above paper we took an insight into India's Smart Cities Mission. Various aspects of mission such as guidelines, implementation details and challenges are studied. The Smart Cities Mission is good initiative and if implemented properly and effectively will lead to a better life for its citizens and thereby leading India to a better future.

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