Introducation to Smart Cities in India,Smart Solutions,Features,Process and Challenges

Dr.Deoman S.Umbarkar
Department Of Sociology Late.Vasantrao Kolhatkar Arts College,Rohana Tah.Arvi Dist.Wardha(M.S.)

Abstract

In the last two decades, the concept of "smart city" has become more and morepopular in scientific literature and international policies. To understand thisConcept it is important to recognize why cities are considered key elements forthe future. Cities play a prime role in social and economic aspect worldwide, and have a huge on the environment. According to the United Nations Population Fund, 2008 marked the year when more than 50 percent of all people, 3.3 billion, lived in urban areas, a figure expected to rise to 70 percent by 2050. In Europe, 75 percent of the population already lives in urban areas and the number is expected to reach 80 percent by 2020. The importance of urban area as a global phenomenon is confirmed by the diffusion of megacities of more than 20 million people in Asia, Latin America, and Africa. As a result, nowadays most resource are consumed in cities worldwide, contributing to their economic important, but also to their poor environmental performance. Cities consume between 60 percent and 80 percent of energy worldwide and are responsible for large shares of GHG emissions. However, the lower the density, the more energy is consumed for electricity and transportation, as proved by the fact that CO_2 emissions per capita drop with the increase of urban areas density.

Introduction:-

Cities are engines of growth for the economy of every nation,including India.Nearly 31% of India's current population lives in urban areas and contributes 63% of India's GDP (Census 2011).With increasing urbanizations,urban areas are expected to house 40% of India's population and contribute 75% of India's GDP by 2030.This requires comprehensive development of physical,institutional,social and economics infrastructure.All are important in improving the quality of life and attracting people and investments to the City,setting in motion a virtuous cycle of growth and development.Development of Smart Cities is a step in that direction.

What is a 'smart city':-

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 focus is on sustainable and inclusive development and the idea is to look at compact areas,create a replicable model which will act like a light house to other aspiring cities.The Smart Cities Mission of the Government is a bold,new initiative.It 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.

As far as Smart Solutions are concerned,an illustrative list is given below.This is not,however,an exhaustive list,and cities are free to add more applications.
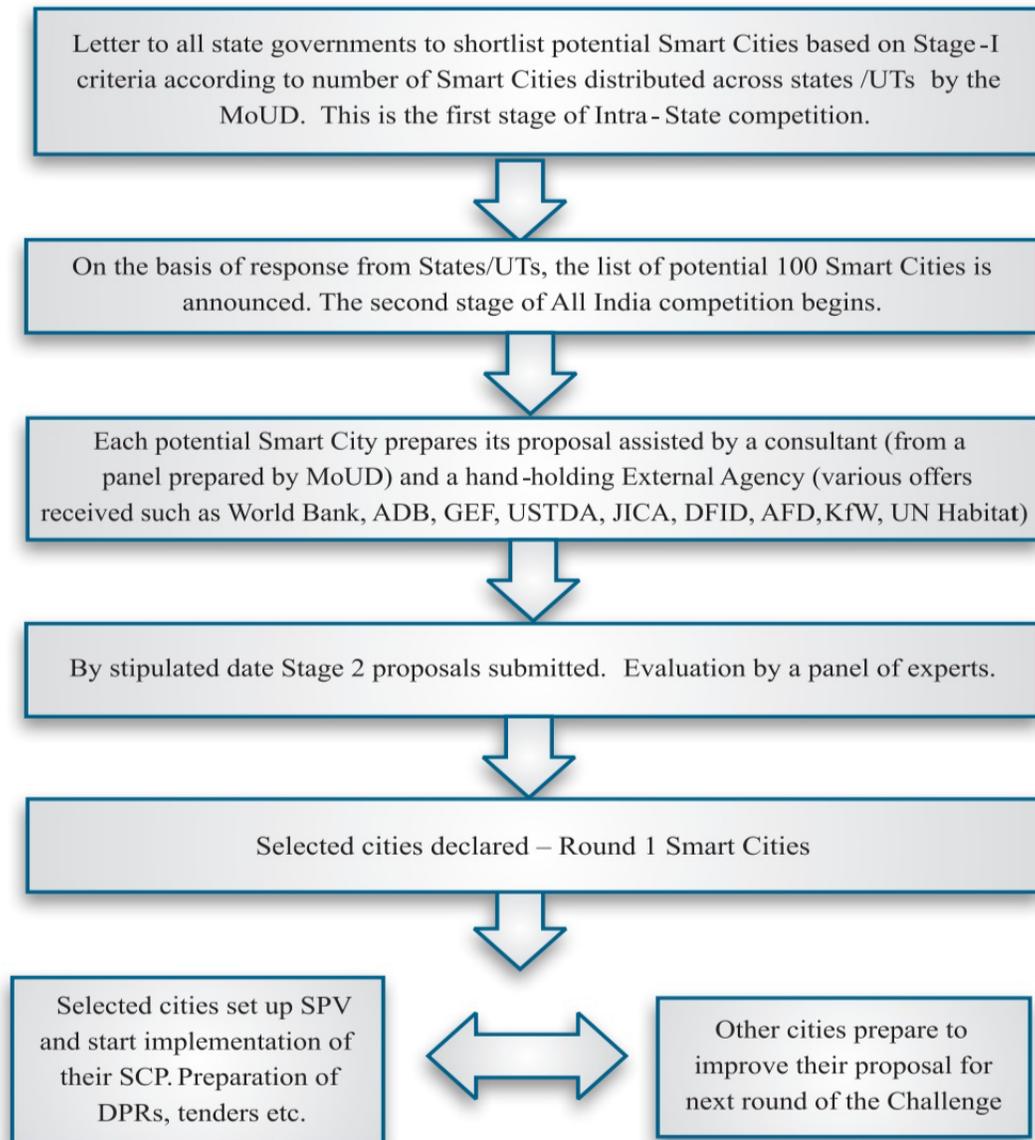
Smart City Features:-

1) Promoting mixed land use in area-based developments planning for 'unplanned areas' containing a range of compatible activities and land uses close to one another in order to make land use more efficient.The States will enable some flexibility in land use and building bye-laws to adapt to change;

2) Housing and inclusiveness-expand housing opportunites for all;

3) Creating walkable localities-reduce congestion,air pollution and resource depletion,boost local economy,promote interactions and ensure security.The road network is created or refurbished not only for vehicles and public transport,but also for pedestrians and cyclists,and necessary administrative services are offered within walking or cycling distance;

4) Preserving and developing open spaces-parks,playgrounds,and recreational spaces in order to enhance the quality of life of citizens,reduce the urban heat effects in areas and generally promote eco-balance;

5) Promoting a variety of transport options-Transit Oriented Development,public transport and laet mile para-transport connectivity;

6) Making governance citizen-friendly and cost effective-increasingly rely on online services to bring about accountability and transparency,especially using mobiles to reduce cost of services and providing services without having to go municipal offices;from e-groups to listen to people and obtain feedback and use online monitoring of programs and activities with the aid of cyber tour of worksites;

7) Giving an identity to the city-based on its main economic activity,such as local cuisine,health,education,artsandcraft,culture,sportsgoods,furniture,hosiery,textile,dairy,etc;

8) Applying Smart Solutions to infrastructure and services in area-based development in order to make them better.For example,making areas less vulnerable to disasters,using fewer resources,and providing cheaper services.

Smart Cities Selection Process:-

Different steps in the seletions of Smart Cities are given below.

Letter to all state governments to shortlist potential Smart Cities based on Stage-I criteria according to number of Smart Cities distributed across states /UTs by the MoUD. This is the first stage of Intra-State competition.

On the basis of response from States/UTs, the list of potential 100 Smart Cities is announced. The second stage of All India competition begins.

Each potential Smart City prepares its proposal assisted by a consultant (from a panel prepared by MoUD) and a hand-holding External Agency (various offers received such as World Bank, ADB, GEF, USTDA, JICA, DFID, AFD,KfW, UN Habitat)

By stipulated date Stage 2 proposals submitted. Evaluation by a panel of experts.

Selected cities declared – Round 1 Smart Cities

Selected cities set up SPV and start implementation of their SCP. Preparation of DPRs, tenders etc.

Other cities prepare to improve their proposal for next round of the Challenge

How many Smart Cities in each State/UT?

The total number of 100 Smart Cities have been distributed among the States and the basis of an 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/UTwill,therefore,have a certain number of potential Smart Cities,with each State/UT having at least one.This distribution is given in Annexure 2.The number of potential Smart Cities from each State/UT will be capped at the indicated number.(This distribution formula has also been used for allocation of funds under Atal Mission for Rejuvenation and Urban Transformation-AMRUT)
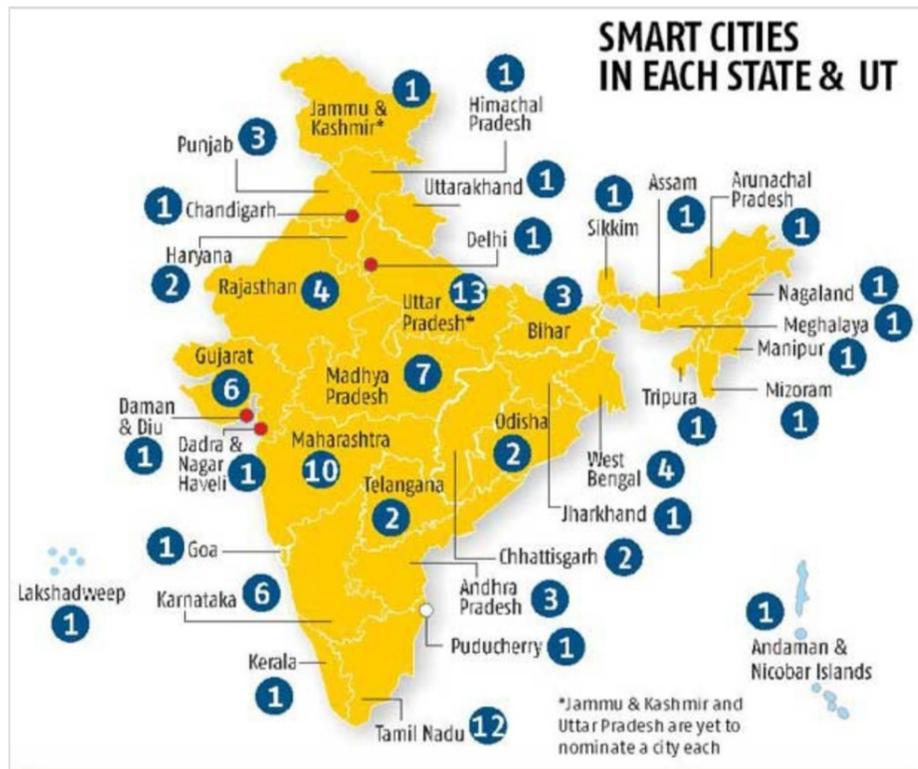
Challenges:-

1) This is the first time,a MOUD programme is using the 'Challenges' or competition method to select cities for funding and using a strategy of area-based development.This captures the spirit of 'competitive and cooperative federalism'.

2) States and ULBs will play a key supportive role in the development of Smart Cities. Smart leadership and vision at this level and ability to act decisively will be important factors determining the success of the Mission.

3) Understanding the concepts of retrofitting,redevelopment and greenfield development by the policy makers,implementers and other stakeholders at different levels will require capacity assistance.

4) Major investments in time and resources will have to be made during the planning phase prior to participation in the Challenge.This is different from the conventional DPR-driven approach.

5) The Smart Cities Mission requires smart people who actively participate in governance and reforms. Citizen involvement is much more than a ceremonial participation in governance.Smart people involve themselves in the definition of the Smart City,decisions on deploying Smart Solutions,implementing reforms,doing more with less and oversight during implementing and designing post-project structures in order to make the Smart City developments sustainable.The participation of smart people will be enabled by the SPV through increasing use of ICT,especially mobile-based tools.

Conclusions:-

This paper attempts to clarify the meaning of a concept that is getting increasingly popular that of the smart city.An in-depth analysis of the literature revealed that the meaning of a smart city is multi-faceted.Descriptions of smart cities are now including qualities of people and communities as

well as ICTs.Many elements and dimension characterizing a smart city emerged from the analysis of the existing literature.

Results show how complicated the measurement of a smart city is some attempts to create all embracing indexes have been reviewed.However,this paper was not meant to define a new framework for the assessment of the smartness of a city,since the authors believe that such an assessment should be tailored to a particular city's vision.A universal fixed system may be difficult to define with the variety of characteristics of cities worldwide.However,it has been made clear that the definitions posed by particular cities calling themselves "smart cities"lack universality.

A smart city assessment must take into account that cities have different visions and priorities for achieving their objectives,but they must promote an integrated development of different aspects,both hard and soft.At the same time,the authors demonstrated the problemes of many ranking systems that led to a loss of information on the complexity of smart cities.This study showed how cities can be considered "smart"by reviewing definitions,components,and measures of performance of cities.We hope that this paper will be useful to policy makers in learning how to identify smart cities,to plan incentives for their development,and to monitor the "smart"progress of their cities.

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