Smart Cities: The Future of our Country

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Abstract

The term "Smart City" refers to the digitization of many day to day tasks in which citizens are involved. It should integrate the technology with the system, so as to derive a well-organized system. Here we describe the concept of Smart Cities in other countries and in India and what are the initiatives taken by the Government towards the betterment of society.

Currently 31% of India's population is urbanized and these cities generate 63% of the nation's economic activity. These numbers are rapidly increasing, with almost half of India's population projected to live in its cities by 2030[2, 11].

Driven by rising urbanization and fueled by technologies such as Internet of Things (IoT) and data analytics, Smart cities are the cusp of explosive growth. Urbanization requires up gradation of cities in form of better living, managed traffic and in turn managed city. The concept which emerged a few years back was of "E-Governance "which was the effort to bring the required data on-line. Similarly now when we are moving towards the Smart city concept , we are trying to integrate the Technology (ICT) and all the important systems like Traffic management, Waste Management , Water Supply , Sanitation , Electricity etc.

Definition

City can be defined as smart when investments in human and social capital and traditional and modern (ICT) communication infrastructure fuel sustainable economic development and a

high quality of life, with a wise management of natural resources, through participatory governance.[6,10]

There are various definitions available on the web, but none of them could be considered a fixed or standard definition for Smart city as the term changes from country to country or may be it might be viewed differently state wise. But the Smart city would definitely involve urbanization and should have Smart solutions to cities core systems which should include everything from governance to transport, electricity, sanitization, water, traffic and many more such basic facilities for a smart infrastructure.

The term "Electronic city" was proposed in 1994 in a conference about Digital city. This program was administered in 1996 in some European cities like Helsinki and Amsterdam. Electronic city that developed along with the development of IT during the recent decades, entered the social and economic arena for the use of IT and communication for the purpose of providing onetime and direct services for citizens; 24 hours a day[4,12]. If we label a city as "Smart City" it should imply that it will be a sustainable and livable city.

The concept of Smart city is not new, but recently it has grabbed a lot of attention. With increased urbanization, there is a growing demand of improved and better lifestyle.

By 2030, India's economy is expected to have grown five times, beyond largely by the country's urban centers. During the same period the country's urban growth is expected to grow by 270 million, with urban jobs accounting for 70% of that growth[5].

GIFT City: Gujarat International finance Tech-city

One of the earliest city which was considered for development as of a Smart city was GIFT city near Ahmedabad in Gujarat. The aim was to build it as a financial hub.

Gujarat International Finance Tec-City or GIFT is a central business district in the Indian state of Gujarat. Its main purpose is to provide high quality infrastructure (electricity, water, gas, roads, telecoms) so that finance and tech terms can relocate their operations from various cities where infrastructure is either inadequate or expensive. It will have special economic zone, International education zone, integrated townships, Entertainment zones, malls, Stock exchange, and Software Technology park and service units. The city is under construction. It will be built on 986 acres of land [4,13,15,17].

The project is located on the bank of the river and is around 12 km from Ahmedabad International Airport.

Employment base: approximately 600000.

Target completion date: 2020.

The only limitation with GIFT city in present situation is, it lacks urbanization.

Government Initiatives

A city in which ICT is merged with traditional infrastructures and is integrated using the new digital technologies which provide easy ways to manage the community, helps in governance,

is in the race of smart city.

The Government has initiated the Smart city Project for some major cities of India which promises the best lifestyle for the citizens of India.

We outline the proposed project areas initiated by Government of India in building smart cities. Hence, we first list the "20 Smart Cities selected in the First Round challenge by Government"[1]Of the 98 cities and towns that five years down will graduate into smart cities, 24 are capital cities, another 24 are business and industrial centers, 18 are culture and tourism influenced areas, five are port cities and three are education and health care hubs[1,13,15].

These will be the first 20 smart cities in India:

1. Bhubaneshwar	11. Indore
2. Pune	12. NDMC
3. Jaipur	13. Coimbatore
4. Surat	14. Kakinada
5. Kochi	15. Belagavi
6. Ahmedabad	16. Udaipur
7. Jabalpur	17. Guwahati
8. Visakhapatnam	18. Chennai
9. Solapur	19. Ludhiana
10. Davanagree	20. Bhopal

Figure 1: List of First 20 Smart Cities

Apart from the above list, Gandhinagar has been shortlisted as one of the hundred cities by Ministry of Urban Development (MoUD) to participate in the Smart City Challenge.

The Gandhinagar project is part of the Gujarat government's initiative to develop some cities as smart cities. Sterlite Technologies is among the early companies to have bagged a smart city project. Sterlite, said senior official of the company, has bagged contract from Gandhinagar. The contract entails creating a Wi-Fi city, with applications like smart parking and lighting [3, 18,19].

Smart Solutions

In or der to guide the cities in development, the Government has proposed some Smart solutions for the states to implement the Smart city project.

Following is the list of Smart Solutions which are proposed by Government for each and every sector. The city which will be able to effectively utilize the resources for all the said solutions will remain in the race of smart city.

Fig 2: Smart Solutions [1,14]

Accordingly, the purpose of the Smart Cities Mission is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to Smart outcomes. Area-based development will transform existing areas (retrofit and redevelop), including slums, into better planned ones, thereby improving livability of the whole City. New areas (Greenfield) will be developed around cities in order to accommodate the expanding population in urban areas. Application of Smart Solutions will enable cities to use technology, information and data to improve infrastructure and services. Comprehensive development in this way will improve quality of life, create employment and enhance incomes for all, especially the poor and the disadvantaged, leading to inclusive Cities[1].

The Government has also guided the cities with the Area Based Strategies (ABD) to implement the solutions for Fast Track Smart cities. We list a few of them here.

Redevelopment- Affordable Housing

Retrofitting – Open space management, Lake River Sea-Shore Protection.

Retrofiting – Heritage Areas

GIS based property and land management system.

Robust IT connectivity

Good E-Governance

The researchers continuously meet to discuss the growth potentials in the Smart City Expo in Delhi. The recent expo which was held in May 2016 discussed about the urbanization and expected growth in the coming years.

The three day expo focuses mainly on smart urban planning, Smart water solutions, Public transport and Waste management solutions. It witnessed support from ministries, public and private companies in India and across the globe. The speakers shared their expertise on Smart cities vision [20].

It is indeed a good initiative that the Smart solutions are already registered. The government is of course taking the initiatives and guiding the cities for development, but we as citizens should also strive for making our city smart. If each and every citizen decides to contribute his best, then we can observe a substantial improvement in entire city and entire nation.

Smart Citizen

We are thriving to build Smart cities, but before that we must thrive to be "Smart Citizens". The effects of smart city initiatives will only be visible if all of us understand our basic responsibilities of "Maintaining"our city. The term Maintaining includes

Keeping our city clean

Following Traffic Discipline

Keeping the Nation Corruption free

Using Nation's and Nature's Resources Wisely

Respect for Every fellow Citizen

Following Parking Initiatives by the Government- i.e Using the Pay and Park System, instead of parking anywhere

If all of us believe and positively "Maintain" our city, we would definitely achieve our target of making out cities "Smart" at the earliest.

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