

PLANNING FOR A SMART CITY WITH A HUMAN FACE IN DEVELOPING INDIA

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ABSTRACT

The increasingly urban and interconnected world today is recognizing the role of the city as ‘an engine of growth’ and development. Though urban centers are associated with greater access to basic facilities and services - educational, medical, cultural, employment opportunities and greater involvement of polity in the developing economies, cities often have poor infrastructure and services and sub-standard living conditions. Though, currently smart cities being mooted as the solution to all problems with the help of ICT and its enabled services over the globe, they lack clarity in totality. The smart city mission launched as a flagship program in India is working in the same spirit.

With the advancement of science and technology, the importance of ICT and digitization in the overall governance of towns and cities cannot be underestimated, but the feasibility of this option in India, where a sizable proportion of the population lives in villages and below poverty line remains debatable. Research studies have proved that, it is also the root cause of compulsive migration to urban areas in search of livelihoods, aggravating urban poverty. In this background, India needs to plan and develop cities and villages in synergy with regional and local contextual realities. On the foundation of this integration, Indian cities could be built more livable, sustainable, prosperous and inclusive-smart cities ‘with a human face’.

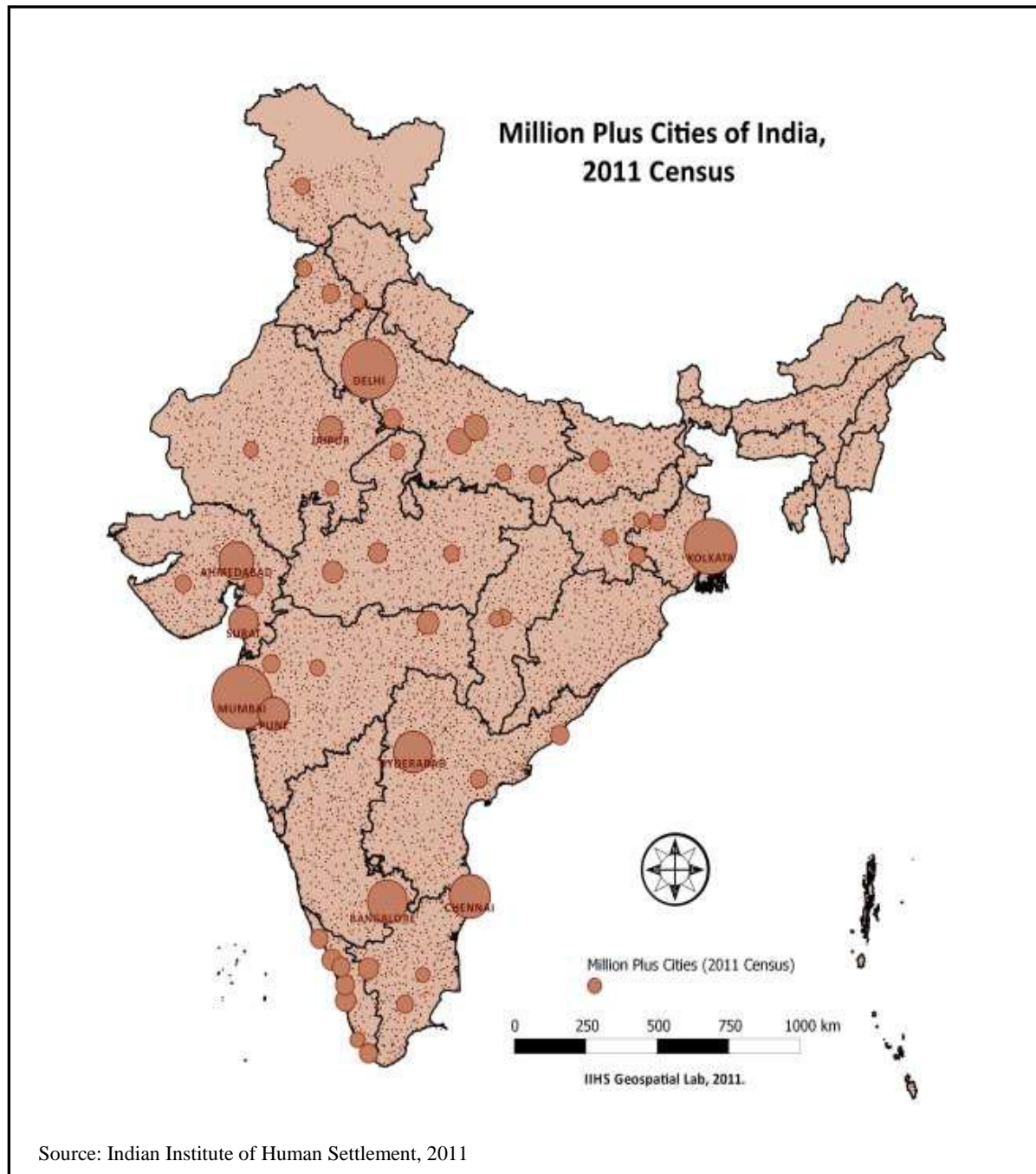
Key words: Urbanization, Urban Poor, ICT, Smart Technology, Smart Cities with a Human Face, Sustainable and Inclusive.

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INTRODUCTION

Presently the world’s urban population is around 54% which is expected to increase to 66 % by 2050, whereas India’s urban population as per census 2011 is 31.2 % which is expected to grow to 600 million i.e. 50% in 2050. While analyzing the urban growth of India, the United Nations has estimated that India is on the ‘brink of urban revolution’.

Figure 1: Million Plus Cities in India, 2011



The Human Development Report (HDR) released by the United Nation Development Program (UNDP) has placed India at 135th position with a value of 0.547 in a list of 187 nations. This stands at the bottom in South Asia and Asia Pacific region only with an exception of Afghanistan. This report is constructed on a combination of long and healthy life, access to knowledge and a decent standard of living. The Human Development Index has profound implications on overall human development of a nation. Similarly, Gender Development Index (GDI) which is the ratio of female to male HDI and calculated for 148 countries with the same

three basic dimensions of human development i.e Health, Knowledge and Living standards, India ranked lowest with female HDI with a value at 0.519, while male represent a value of 0.627 among BRICS (Brazil, Russia, India, China and South Africa) countries. The United Nations has also dwelt upon gender equality considered to be one of the important ingredients of smart city initiatives wherein a woman needs to be protected from any kind of violence and participation has been emphasized for their economic empowerment.

Since growing urban population has become an important concern for developing India in order to cope with the influx of more people into existing cities, a new and robust strategy is needed to replace the heavy top-down approach of development. The urban transformation has become a major contributor to economic, demographic, social and environmental change. A city built on tri-pillars of functions, functionaries and funds if works in an integrated manner can balance its diverse character and resources efficiently.

CHALLENGES:

The World Bank 2011 report indicates that 90% of urban growth is occurring in the developing nations with an estimated 70 million addition of new residents to urban centres each year. With this rate of influx of population, South Asia and Sub-Saharan Africa- the poorest regions will double its population within next two decades. In addition to this, situation on urban slums also present a worse situation. In its report on State of World Cities 2013, UN- Habitat has estimated that at present there are 863 million people living in the slum in the developing regions in comparison to 760 million in 2000 and 650 million in 1990. With half of the urban population of the world Asia is accommodating one third of its slum while the African position is far worse with 61.7 % slum.

The first ever report released by India on urban poverty in 2009 is a pointer to grim future. As migration towards urban centers is on the increase, the urban poverty too is also increasing. Urban poverty poses different challenges such as inadequate water and power facilities, differentiated education and health facilities, housing shortage, social security, lack of livelihood and special needs for the vulnerable section of the society. Besides, slum population is increasing and its dwellers lack barest minimum needs (*India: Urban Poverty Report, 2009*). Moreover, the rising urban population and income stipulated the demand for key services such as transportation, water, sewage treatment from five to sevenfold in city of every size and type. Amongst various urban services, urban transport is a very important service for the balanced development and plays an important role in integrating overall development by providing mobility of people, goods, access to employment, education, shopping, health, and entertainment opportunities which typifies the quality of life.

However, most of the Indian cities are unable to meet increasing demands of growing population due to a variety of reasons such as traffic jams, congestion, accidents, breakdown, and construction and other demonstration or procession which randomly restrict the traffic flow. These factors encouraged a shift towards more personalized modes of travel which resulted in an increase in vehicle ownership levels and their usage. Thus, the traffic problems are increasing in the cities in general and it is becoming more problematic, especially in the core area of the city.

Cities epitomize the concentration of economic, commercial, social and cultural activities. These activities are performed, their functions in a limited geographical context which create competition among different land uses and germinates varied traffic problems. In a developing country like India it becomes very difficult to bear the cost, time and energy spent during traffic jams and congestions. In such situations it becomes important to think of unravelling these bottlenecks created through inappropriate urban planning and cannot be resolved by merely

applying the Smart technology. A number of research studies have shown that all the metropolitan cities of India such as Delhi, Mumbai, Kolkatta, Chennai and Bangaluru etc. are inordinately choked because of deficient public transport and high dependency on personalized vehicles.

Keeping in view the complex urban scenario of its potentials, challenges and involvement of various stakeholders at various levels of the processes, it is of utmost importance and relevance to ponder over as to what a town and/or city should be and how to plan and develop it in its varied setting and culture? Since, towns and cities have been defined differently across the globe in their respective socioeconomic and spatio-temporal contexts; it needs analyzing in a different perspective for better understanding.

DEFINING A SMART CITY:

There are different views on the origin and definition of the concept of smart city. Globally, there are diverse definitions of smart city and obviously so has been its criteria and identification and the fact is that the diverse opinion on the concept has made it more complicated and it has become a buzz word.

In the most basic term smart cities are primarily urban centres, which apply the ICT and its enabled services to enhance the quality and efficiency of urban services which reduce cost and resource consumption and to engage more effectively and actively with its citizens. As it helps working effectively and actively, its application is mostly utilized in the management of traffic and transportation, water and sanitation, energy system, safety and security etc.

One author has defined the smart city along six dimensions of smart governance, smart economy, smart mobility, smart living, smart environment and smart people, while another author has described a smart diamond that defines a smart city; these are smart government, smart energy, smart building, smart mobility, smart infrastructure, smart technology, smart health and smart citizens.

However, Anthony Townsend, an urban planner explains,

“I believe there is a better way to build smart cities than to simply call in the engineers. We need to lift up the civic leaders who would show us a different way. We need to empower ourselves to build future cities organically, from the bottom up, and do it in time to save ourselves from climate change”

While giving emphasis on sustainability with participation of local leaders and citizens, Lucy Warin, a project manager explains that, “Smart people make smart cities and any sustainable solution should start and finish with the citizens.”

SMART CITIES IN INDIA:

Indian Urbanization as product of demographic explosion and compulsive rural urban migration is shaping towns with drastic changes in the face of globalization, liberalization and privatization. India with a total population of 1210.7 million, comprising of 31.2 percent or 377.1 million people are living in urban areas as per 2001 census. Though, this percentage of urban population remains one of the lowest in the world, there were 3768 towns and cities in the country in 1991 which increase to 5161 in 2001 and 7935 in 2011. Besides, the total number of metropolitan cities in the year 1971 was 9 which increased to 12 in 1981, 23 in 1991, 35 in 2001 and 53 in 2011 which almost shows their even distribution across the country except North-eastern states and major parts of Odisha, southern parts of Maharashtra and northern and western part of Karnataka and Jammu and Kashmir as shown in figure 1 (to be referred in the annexure). Urban centers, especially the metropolitan cities are attracting huge population and becoming

hubs of economic, social and cultural activities. In the face of mounting urban population in India, the need for building infrastructure that should be employed with modern technology and innovation for achieving sustainable development was felt.

The introduction of the smart city concept in India is a great idea, but due to the presence of poverty problems, high cost of living, lack of infrastructure and amenities etc, cities might have to face a lot of challenges. These problems have compounded to the extent that they are striking the citizens adversely, which lead to violation of human rights.

There are so diverse of opinion on smart city in India that it has got different meanings for different persons in a different geographical area. For instance, the Delhi-Mumbai Industrial Corridor (DMIC) will have seven smart cities along the proposed corridor while a small locality in Delhi is also being called a smart city. Not only this some builders/ colonizers have renamed their individual group housing building as smart city with the emphasis on ICT and digital technology across all sectors like power, water, safety, transport etc. which will help in reducing energy consumption through smart metering and smart grids.

With a view to make cities more active and efficient, government of India has embarked on a smart city initiative with an identification of 100 cities to be developed in the first phase. With an annual budget requirement of Rs. 35000 crores a year, govt. has identified 100 *cities* with a population of one million each to be developed as smart cities.

In case of India which enjoys varied levels of development with the deep impact of diverse physical landscapes, climate and culture, the planning and development of cities becomes crucial for which one size fit all approach cannot be thrust upon. The literature survey on smart city or for that matter any city has indicated emphasis, baring a few, on one or two aspects rather than a comprehensive whole in its entirety. Some have livability and quality of life thrust, while others have environment and employment orientation. Much interest and leaning is being shown on smart city in the last two decades with the increased application of ICT and digitization in the name of efficiency and activeness, viewing it to be panacea of all urban problems.

SMART CITY WITH A HUMAN FACE:

With this background in view, a town or city must be viewed and seen smart in its totality, with a balanced approach which should envisage and integrate aspects of inclusiveness, livability, prosperity and sustainability and where human – beings remain at the center of planning. Every activity, policy and program should be directed and taken up which focus welfare of human-beings of whatever caste, creed and gender, while providing special care and access to facilities and services to differently abled, women and children, elderly and the marginalized ones. In this context, a city in its broader perspective cannot be considered a smart, unless it encompasses attributes of livability, inclusiveness, prosperity and sustainability.

Livability:

Interplay of social, economic, cultural, environmental, infrastructure with participation and governance forms a livable city (CLC, Singapore, 2013). While rigorous and reinvention from environmental policy to transport along with places that are benchmark for urban renaissance make a city livable as per lifestyle magazine, Monocle's. But in a much broader perspective a livable city should have attributes such as, low crime rate, better public health, better employment opportunities, more expenditure on city services, low cost of living, artistic and cultural opportunity and harmony improving physical and emotional health.

Inclusiveness:

For a city to be inclusive, aspects such as involvement of people from all strata of society, treating everyone with a greater equality, access to services and new opportunities and further engagement and mobilization that reflect diversity of cities and nations are the corner stone. To make a city really smart and inclusive, it is essential to involve local communities and other stakeholders in its design and development and implementation (Townsend, 2014). Jane Jacobs, in her book on *The Death and Life of Great American Cities* argued, “Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody.”

Prosperity:

Prosperity means increased production and employment generation with inter and intra - city trade and commerce. It empowers the economic base of the city. Of late, by including immaterial along with material attributes UN has made it more comprehensive and broad based as this would add contentment and happiness to life.

Sustainability:

It seeks a better quality of life for the whole community without compromising the well-being of the other community. Therefore, it is characterized by healthy ecosystem with increased economic security with effective governance supported by meaningful public participation. Institute for sustainable Communities defines sustainability as, “one that is economically, environmentally, and socially healthy and resilient. It meets the challenges through integrated solutions rather than through fragmented approaches that meet one of the goals at the expense of the others....” Efforts towards conservation of natural environment, alternative sources of renewable energy, better provision of water and sanitation and control on over consumption by the ‘haves’ go to make a city sustainable. A broader view of smart city must include sustainability, livability, inclusiveness and prosperity. This has amply been demonstrated at a conference with the theme of *Sustainable Smart Cities* held in Bengaluru, India, September, 2015, which enhances the effectiveness and activeness of the urban infrastructure and services. Primarily, the concept is considered to be related to urban centres, which apply the ICT and its enabled services to enhance the quality and efficiency of urban services which reduce cost and resource consumption and to engage more effectively and actively with its citizens. As it helps working effectively and actively, its application is mostly utilized in the management of traffic and transport, water and sanitation, energy system, education and health system, safety and security etc. A city can become smart when the use of existing natural resources in a smarter way with the investment in human, social capital, traditional, ICT, infrastructure in order to stimulate sustainable economy through a participatory approach.

Large IT, telecommunication and energy management companies such as CISCO, IBM and Schneider Electric and Microsoft have developed new solutions and initiatives for intelligent cities with the effective and efficient use of ICT and digitization. The application of these tools and techniques have often been utilized in the management of traffic and transport, water and sanitation, energy system, education and health system, safety and security etc.

The present literature on smart city, baring a few as seen above, with the application of ICT and digitization has been considered to be panacea of all ills of a city. While it is true that ICT and digital connectivity has enabled us to make city life more active, efficient and comfortable but in the ethics of public discourse there are reservations about darker side of this technology (A.S

Panneersalvan, 2015). Is it possible to seek solutions of deep rooted problems of poverty, exclusion, environmental, cultural and behavioral disorders engulfing the city in developing nations, by merely applications of ICT and digital technologies?

Table 1: Attributes and Indicators describing a smart city

Sr. No.	Attributes	key Indicators	Supporting Indicators	Supplementary Indicators
1.	Livability	Better health statistics, reduced Crime rates, natural and built environment,	Enhanced Life expectancy, Improved Infrastructure and services, Protection of public spaces	Expenditure on city services
2.	Inclusiveness	Social Inclusion, access to services and new opportunities especially for the urban poor and marginalized groups	Greater Equality	Engagement and mobilization that reflect diversity of cities and nations.
3.	Prosperity	More production, more employment opportunities, infrastructure development	Increase trade and commerce activities, environment sustainability	Rural- urban and urban rural economic linkages, Quality of life
4.	Sustainability	Green economy, Green building	Polluter pays, role of private sector in green investment	Pricing ecosystem services, Poverty reduction

Source: Authors

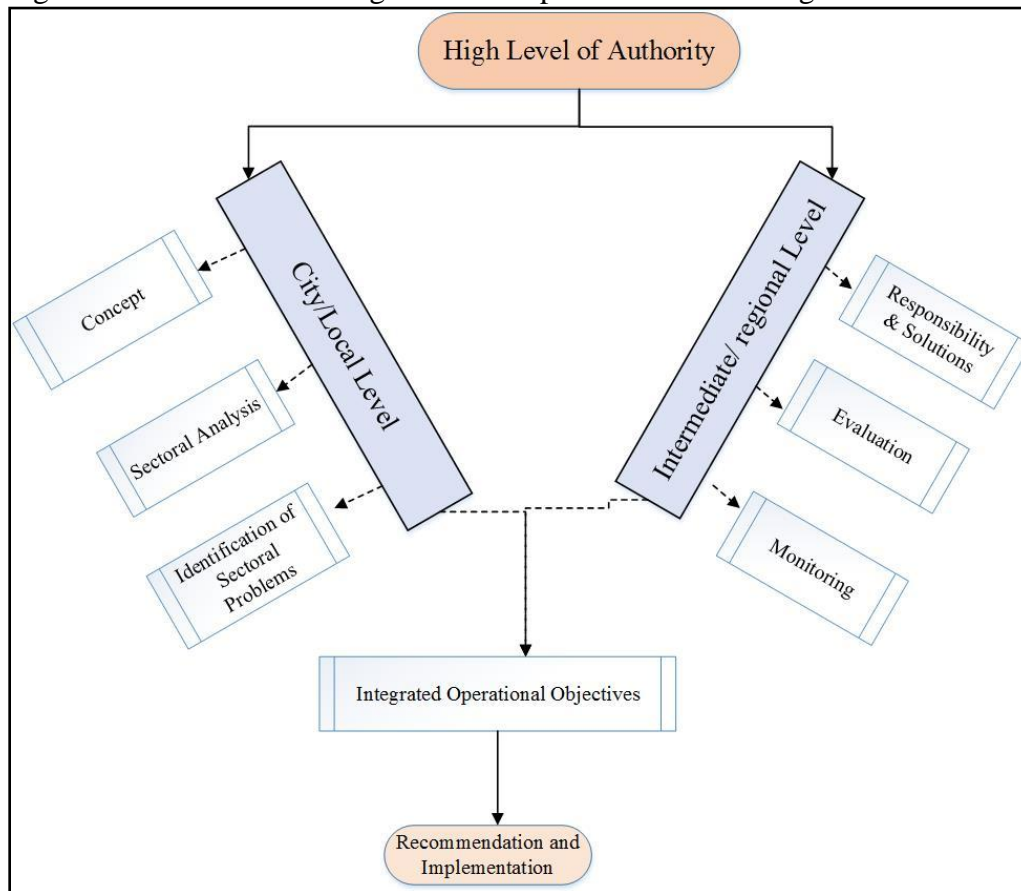
CONCLUSION

A city should be viewed in totality as it is not an independent entity in the overall system of settlements within the framework of rural - urban relationships. The relationship of a city with its area of influence has a great role to play and cannot be viewed in isolation.

The smart city initiative undertaken by Government of India is not only narrow in its design and intent, but it is also divorced from the contextual local and regional realities. The concept has been designed considering the city itself as an entity rather than its place in the process of urbanization as a whole. Moreover, its limited collaborative efforts with urban local bodies inviting investors through Public Private Partnership (PPP) model draw weakness of not involving the local communities and civil society. Recent flooding in Chennai in Tamil Nadu is an example of the failure of urban planners and district administration in realizing the local and regional contextual realities where the deluge caused immense loss of not only property, standing crops, human and animal life but damage of infrastructure such as highways, roads and bridges,

houses, other public buildings as well as water, sewerage, drainage and electricity network. Giving over emphasis to ICT and digitization in amelioration of urban and rural poverty and hunger, improvement in the human development index (HDI) and environmental concerns present a lopsided approach to this end. Thus, application of ICT in some spheres may be necessary and urgent but not a sufficient condition for human development.

Figure 2: Process of Planning and Development and their Integration



The interplay of demographic, economic, social and environmental activities have been responsible for evolving and transforming urban settlements in their regional setting. Therefore, in the face of rapidly growing urban population, it is becoming important that the related issues be addressed in the right perspective with a human face by politicians, planners, administrators and civil society without any delay.

Though, the historic 74th Constitution Amendment Act (CAA), 1992 has paved the way for making a smart city purposeful by decentralising political, administrative and fiscal powers, yet the absence of devolution of adequate funds, functions and functionaries at the urban local bodies, remains the success of the smart city initiative seems far away from its reality. Based on this mandate, the then, Planning Commission formulated a manual on Integrated District Development Plan in quest of bringing symbiotic relationship not only between different spheres of activities and local communities but between rural and urban settlements. Surprising is the fact that smart city mission initiative of India does not mention even at the fringe, what to talk about planning and developing it.

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