

A REVIEW PAPER ON MODERNIZATION OF A CITY INTO SMART CITY

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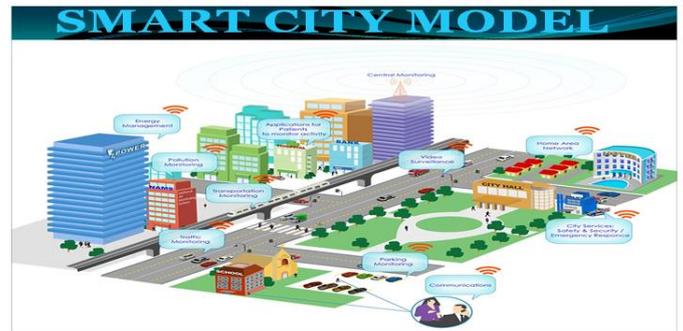
Abstract— This paper explains the various requirements for a city to upgrade into a smart city. A smart city is a well planned city which provides environmental effective and technological sound services for the well being of its citizens. A smart city can help to reduce problems of transportation, pollution, unemployment and provide business opportunities to the people.

Index terms- smart building, smart city, smart economy, smart energy, smart environment, smart governance, smart living, smart mobility, smart people, smart public services, smart solutions.,

I. INTRODUCTION

A 'smart city' is an urban region that is highly advanced in terms of overall infrastructure, sustainable real estate, communications and market viability. It is a city where information technology is the principal infrastructure and the basis for providing essential services to residents. There are many technological platforms involved, including but not limited to automated sensor networks and data centre's. According to the documents released on the Smart Cities website, the core infrastructure in a smart city would include: Adequate water supply, Assured electricity supply, Sanitation, including solid waste management, Efficient urban mobility and public transport, Affordable housing, especially for the poor Robust IT connectivity and digitalization, Good governance, especially e-Governance and citizen participation, Sustainable environment Safety and security of citizens, particularly women, children and the elderly Health and education. 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 following main dimension. 1.Smart Economy-Innovation and Competitiveness 2. Smart Mobility- Transport and Infrastructure 3. Smart Environment - Sustainability and Resources 4. Smart People - Creativity and Social Capital 4.

Smart Living - Quality of Life and Culture 5. Smart Governance - Empowerment and Participation



II. SMART CITY COMPONENTS

A. Background

- City Profile
- Best Practices to City's context
- Review all Policy, Plan, Scheme documents
- Explore program convergence
- Conceptualize how to transform the City into a Smart City & assess preparedness.

B. Citizens Engagement

- Intense citizen engagement at multiple levels with diverse groups using diverse means & contemporary IT&C tools (e.g. My Gov.in, talk show & polling, etc.)
- Identify issues/needs, aspirations and priorities; frugal innovations.
- Generate citizen-driven solutions for basic services and area based developments.
- List out priorities and solutions
- Conceptualize to define City 'smartness' and develop the Smart City Vision.

C. SC Vision, Goals & Objectives

- Develop a contextual definition of the Smart City

- Develop the SC Goals using citizen priorities as directives. Connect each Goal to Objective(s) and generate strategic recommendation (s) for deploying Smart Solutions and area based developments.

D. City Potential & Capability

- Describe operational efficiencies of the City in terms of project execution in past 3 years .
- Potential to become Smart

E. Proposal Development

Conceptualize & Evolve Overall Strategy

- Identify the areas where Smart Solution(s) are to be deployed.
- Explain & define the project boundary
- Assess the inclusivity of the strategy.
- How has disaster resilience built in.
- Is the project scalable to the entire city or to other cities.
- Sub-component of any frugal engineering and citizen innovations.
- Specific clearances and approvals required for implementation.

1) Area Based Developments

- Identify Areas and models for Retrofitting, Re-development & / or Greenfield.
- Conduct Second round of citizen consultation to take several options to the citizens and generate consensus on the best option.
- recommendations for actions, targets on objectives on set indicators, Financial Plan and Plan of Action
- Inform the citizens the sources of funding and discuss the ways to bridge the gap, if any and Potential with other programs.

2) Pan City Solutions

- Identify the specific City-level Smart Solution (s) to be applied. These initiatives should improve services and infrastructure for all the citizens
- Describe the components of improvement envisaged with technological specification for proposed Smart Solution.

F. Final Citizen Consultations

- Revise the Proposal based on citizen's feedback
- How well have contrary "voices" been accommodated in the strategy & planning.

G. Implementation Framework

- Describe institutional arrangement including establishment of the **city level SPV**, leveraging potential partnerships, convergence with other Government Schemes, M&E framework, year-wise milestones and outcomes.
- Present Implementation Plan

H. Financing Plan & Post Project Sustainance

Provide Financial Plan for the complete life cycle of the prioritized development having :

- Arrangement for covering Operation & Maintenance costs.
- –Financial assumptions
- The outputs will be a financial plan (e.g. Capital Improvement Plan, evaluation of financial options), resource improvement action plan (e.g. PPP, O&M) in short, medium, long term and innovative financing models.

I. Project Phasing & Timelines

- Describe the phasing and implementation time frame for various components included in the Proposal.

III. REVIEW PAPERS ABOUT SMART CITY

A. The Smart City Cornerstone:

Urban Efficiency by Charbel Aoun (2013).

This paper presents a steps approach for converting our urban centers into more efficient and sustainable places to live. 1. Setting the vision 2. Bringing in the technology 3. Working on the integration 4. Adding innovation 5. Driving collaboration Every city can become smarter. A smart city is a community that is efficient, liveable & sustainable. The aim of the smart city should be to reduce the energy wastage & give a better quality of life to its residents. Each and every city can be converted into a smart city by simply working on the backward sectors. By the end of 2020, analysts from Pike Research anticipate that annual spending on smart city infrastructure will reach \$ 16 billion.

B. Smart cities:

Researches Projects and good practices for the cities by Rocco Papa, Carmela Gargiulo, & Adriana Galderisi (2013).

The concept of smart city is providing the solution for making the cities more efficient & sustainable. It is quiet popular in the policy field in the recent years. During the 1990's the development of the information technologies was at the peak level & people thought that new technologies can produce new forms of productions, markets, society organization, industries, business districts, residential districts

& so on. The term smart city has become more and more widespread in the field of urban planning. Urban planners could provide the necessary guidance for making cities smart by using smart devices and smart concepts.

C. *Smart City and the Applications*

by Kehua Su, Jie Li, Hongbo Fu (2011).

This paper mainly focuses on the recent research on concept of smart city. The relationships between the smart city and digital city are also described in this paper. The various application systems for a smart city are: 1. Construction of a Wireless City 2. Construction of Smart Home 3. Construction of Smart Transportation 4. Smart Public Service and Construction of Social Management 5. Construction of Smart Urban Management 6. Construction of Smart Medical Treatment

IV. CONCLUSION

- Need of the hour is to transform modern cities into smart cities to avoid problems of unemployment, pollution, transportation etc.
- Smart cities can lead to sustainable development of the society.
- Participation of both government and people is required to make a smart city.

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