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A REVIEW ON SMART CITIES IN INDIA: MISSION AND CHALLENGES

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Abstract: As the India's population movements to metropolitan domains, policymakers are pressed for answers to congestion, contamination, spending restrictions, maturing framework, asset limitations and the prerequisite for proceeding with development. This action will incorporate development of new regions and redesign of existing urban communities as the country population shifts into metropolitan regions. Smart city idea can be utilized for changing any city into a smart city. Our spatial arranging models dependent on remarkable factors like human variety, actual informal communities and ICT influence on metropolitan texture, city strength and so on make it even more fascinating to advance an outline for arranging a smart city. The paper places the infrastructural improvements for the smart metropolitan advancement in India and brings the knowledge into the mission unbiased, the effecting rules and unusual difficulties in mission's implementation.

Keywords: Smart City, Smart Economy, Smart Solutions, Urbanization, Human Capital, ICT, Electronic Government, Smart Urban Development and Sustainability.

I. Introduction

A city can be characterized as 'smart' when interests in human and social capital and conventional and current (ICT) correspondence framework fuel maintainable monetary turn of events and an excellent of life, with a quick management of regular assets through participatory government. A "smart city" would represent the incorporated organization of data that makes esteem by applying trend setting innovations to look, access, move, and cycle data. "Smartness" here is viewed as a framework quality. Cost and advantage advancement happens when data sources are associated and data is shared progressively as that will significantly affect how urban communities are arranged and overseen for bettering the personal satisfaction for residents, provisioning water supply, transportation, amusement, wellbeing and security, conveyance of taxpayer driven organizations and so forth Metropolitan improvement research focuses towards two mainstays of metropolitan development, for example enterprising climate and personal satisfaction. Those two components are huge and essential for a cutthroat city to create. All around explained in writing and carried out in metropolitan practice idea of metropolitan intensity gave justification for the presentation of "smart city". Papers objective is to examine the countrywide development for smart city improvement on approach level. Additionally we intend to rate this urbanization strategy on smart help group improvement for future theories of ICT incorporation for basing our decisions.

II. Typology of Smart City Functions

SMART ECONOMY (Competitiveness) <ul style="list-style-type: none"> ▪ Innovative spirit ▪ Entrepreneurship ▪ Economic image & trademarks ▪ Productivity ▪ Flexibility of labour market ▪ International embeddedness ▪ Ability to transform 	SMART PEOPLE (Social and Human Capital) <ul style="list-style-type: none"> ▪ Level of qualification ▪ Affinity to life long learning ▪ Social and ethnic plurality ▪ Flexibility ▪ Creativity ▪ Cosmopolitanism/Open-mindedness ▪ Participation in public life 	SMART GOVERNANCE (Participation) <ul style="list-style-type: none"> ▪ Participation in decision-making ▪ Public and social services ▪ Transparent governance ▪ Political strategies & perspectives
SMART MOBILITY (Transport and ICT) <ul style="list-style-type: none"> ▪ Local accessibility ▪ (Inter-)national accessibility ▪ Availability of ICT-infrastructure ▪ Sustainable, innovative and safe transport systems 	SMART ENVIRONMENT (Natural resources) <ul style="list-style-type: none"> ▪ Attractivity of natural conditions ▪ Pollution ▪ Environmental protection ▪ Sustainable resource management 	SMART LIVING (Quality of life) <ul style="list-style-type: none"> ▪ Cultural facilities ▪ Health conditions ▪ Individual safety ▪ Housing quality ▪ Education facilities ▪ Touristic attractiveness ▪ Social cohesion

III. Literature Review

GIS Steering Smart Future for Smart Indian Cities by Anuj Tiwari and Dr. Kamal Jain (2014): The concept of a smart city is a new one. This paper depicts the smart city projects in India specifically Lavasa: Smart Hill City and Gift: Gujarat International Finance Tec-City.

The Smart City Cornerstone: Urban Efficiency by Charbel Aoun (2013): This paper shows a five phases approach for changing over our metropolitan communities into more productive and supportable spots to live.

- ❖ Setting the vision
- ❖ Bringing in the innovation
- ❖ Working on the incorporation
- ❖ Adding development
- ❖ Driving coordinated effort

Smart cities: Researches Projects and good practices for the cities by Rocco Papa, Carmela Gargiulo, and Adriana Galderisi (2013): The idea of smart city is offering the response for making the urban areas more productive and feasible. It hushes up famous in the approach field in the new years. During the 1990's the improvement of the data innovations was at the pinnacle level and individuals felt that new advances can deliver new types of creations, markets, society association, enterprises, business areas, private regions and so on. The term smart city has gotten increasingly more inescapable in the field of metropolitan arranging. Metropolitan organizers could provide the crucial guidance for making cities smart by using smart policy and smart ideas.

Faisal Razzak, (2012): The Internet of Things (IoT) engaged clients to carry actual things into the circle of computerized world. This was made conceivable by various labeling advancements like NFC (Near Field Communication), RFID (Radio Frequency Identification) and 2D scanner tag which permitted actual items to be perceived and referred over the web.

Smart City and the Applications by Kehua Su, Jie Li, Hongbo Fu (2011): This paper predominantly focuses on the new examination on idea of keen city. The connections between the smart city and computerized city are additionally depicted in this paper. The different application frameworks for a smart city are:

- ❖ Construction of a Wireless City
- ❖ Construction of Smart Home
- ❖ Construction of Smart Transportation
- ❖ Smart Public Service and Construction of Social Management

❖ Construction of Smart Urban Management

Smart Cities can be identified along six main dimensions (IBM Smart Cities: www.ibm.com/uk/cities), (Giffinger, R et al, 2007). These axes are

- ❖ Smart Economy - Innovation and Competitiveness
- ❖ Smart Mobility- Transport and Infrastructure
- ❖ Smart Environment - Sustainability and Resources
- ❖ Smart People - Creativity and Social Capital
- ❖ Smart Living - Quality of Life and Culture

The Vision of a Smart City by Robert E. Hall (2000): The vision of the smart city is the metropolitan focus of things to come. The frameworks and construction will screen their own conditions and do self-fix. The smart materials and designs are otherwise called the smart or versatile materials. The smart city idea was in an arranging stage since late 1998, yet it got its first subsidizing in January 2000.

IV. Smart Initiatives in Urban Management across India

Service delivery or City infrastructure can be broadly subdivided into five sectors. Although the concept of smart city goes beyond this narrow field of classification inadequate to ICT, it delivers communications for social and economic initiative concerning economic growth, social capital and higher resources competence.

1. Water Supply

Appropriation and observing framework through GIS, demands determined demonstrating, online water quality checking, maintainable tasks metering and internet charging, and so on are a portion of the fruitful frameworks executed in Indian urban communities which can be recorded under smart water supply administrations. A ton of all day, every day water supply programs in metropolitan and country areas were carried out across India.

2. Waste Water

Reconciliation and robotization of water treatment plant and sewerage frameworks, Enterprise asset arranging (Oracle) framework and complaint the executives financed under state projects and numerous neighborhood bodies. Age of information base for sewerage administrations and complaint the executive's benefits alongside the complaint the board administrations prompted improvement in help conveyance, charge assortment and obtainment prompting proficiency and straightforwardness in smart water area.

3. Solid Waste Management (SWM)

Off-site ongoing observing framework, GIS and GPS empowered administrations, biometric participation frameworks for clean workers, sensor based applications for smart strong waste administration administrations. GPS and GPRS advancements through mobile phone pictures are taken and stepped with time and area and put in open space for examination on constant premise subsequently improving the SWM administration conveyance.

4. Municipal Services

Joining of all tasks of city company through GIS (land based administrations), Computerized assembling plan examination and endorsements, Standardized online resident organization (GIS based), Traffic data framework drive and numerous others as brilliant administration in Urban bodies.

5. Revenue and Management

Civil e-income frameworks utilizing GIS connected property data set, M-Governance, e-offering, dynamic coordination of property enrollment and land records organization framework, Comprehensive Public Works Management Information and Management framework for PWD's and a lot further developed applications, obliging the smart assistance conveyance in this area.

V. Smart Cities Mission

The center framework components in a Smart City would incorporate

- ❖ Adequate water supply
- ❖ Affordable housing, especially for the poor
- ❖ Assured power supply
- ❖ Sanitation, including solid waste management
- ❖ Efficient urban mobility and public transport
- ❖ Robust IT availability and digitalization
- ❖ Sustainable environment
- ❖ Safety and security of residents, especially ladies, youngsters and the old
- ❖ Good administration, particularly e - Governance and resident investment
- ❖ Health and training.

The purpose of Smart Cities Mission is advancement of keen urban areas dish India to empower monetary development and improve the personal satisfaction of individuals by empowering neighborhood improvement and utilizing keen advances to improve its resident's life.

VI. Challenges for Smart Cities in India

- ❖ **Financing Smart Cities:** The High Power Expert Committee (HPEC) on Investment Estimates in Urban Infrastructure has evaluated a for every capita venture cost of Rs 43,386 for a 20-year time frame. Utilizing a normal figure of 1 million individuals in every one of the 100 brilliant urban areas, the complete gauge of venture necessities for the smart city comes to Rs 7 lakh crore more than 20 years.
- ❖ **Three-Tier Governance:** Successful execution of smart city arrangements needs powerful flat and vertical coordination between different various foundations giving different distinctive civil conveniences just as compelling coordination between focal government (MoUD), state government and neighborhood government organizations on different issues related to financing and sharing of best practices and administration conveyance measures.
- ❖ **Technical Constraints of ULBs:** Most ULBs have restricted specialized ability to guarantee opportune and smart execution and resulting activities and support attributable to restricted enlistment over various years alongside powerlessness of the ULBs to draw in best of ability at market serious remuneration rates.
- ❖ **Capacity Building Programmers:** Building limit with respect to 100 smart urban communities is certifiably not a simple assignment and most goal-oriented undertakings are postponed attributable to need and nonappearance of value labor, both at the middle and state levels..
- ❖ **Reliability of Utility Administrations:** For any smart city on the planet, the attention is on dependability of utility administrations, regardless of whether it is power, water, phone or broadband administrations. Smart communities ought to have all inclusive admittance to power 24×7; this is beyond the realm of imagination with the nation's current stockpile and dissemination framework. Urban areas need to move towards sustainable sources and focus on green structures and green vehicle to lessen the requirement for power.

VII. SWOT Analysis in Making Smart Cities

Strengths	Opportunities
<ul style="list-style-type: none"> • Distinct Identity and Heritage • Planned with green, open & public spaces • Basic / core infrastructure well in place <ul style="list-style-type: none"> ○ Coverage of water supply ○ Regular Electricity supply ○ Increasing prevalence of solar energy ○ Coverage of toilets & sewage network ○ Scientific Segregation and waste management ○ Well planned roads, pavements, cycle tracks ○ Housing for different segments; Rehabilitation • Highest on Human Development Index 	<ul style="list-style-type: none"> • Leveraging IT for delivering of citizen services • India's 1st Model Solar City • Geography - Gateway to 3 states • Formulating policies enabling: <ul style="list-style-type: none"> ○ Water recycling ○ Usage of renewable energy ○ Promoting green buildings • Develop Innovations/ Knowledge hub • Enhance position of service sector hub
Weaknesses	Threats
<ul style="list-style-type: none"> • Limited employment opportunities • Inadequate public transport facilities • Pressure issues in water distribution • Limited availability of land for future development 	<ul style="list-style-type: none"> • Increasing citizen safety concerns • Rising traffic congestion, parking issues • Competition from neighboring cities for investment • Outward migration of youth for employment

VIII. Conclusion

In India, organization in the urban areas are frequently faced with a huge number of key issues, as unprepared turn of events, casual housing markets, inescapable populace development, absence of framework, deficient vehicle offices, traffic jam, helpless force supply, in skilled wellbeing administrations, and absence of fundamental administrations both inside the city and in the rural regions, helpless common dangers the board in overpopulated regions, wrongdoing, water, soil and air contamination prompting ecological corruption, environmental change and helpless administration courses of action are driving the metropolitan resident life in miserable. So it is the need of great importance to plan and fabricate the smart urban areas taking into account settling these issues. In above paper we brought knowledge into India's Smart Cities Mission. Different parts of mission like rules, execution subtlety and difficulties are considered. The Smart Cities Mission is acceptable drive and whenever carried out appropriately and viably will prompt a superior life for its residents and accordingly driving India to a superior future.

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