A STUDY ON ISSUES AND CHALLENGES OF SMART CITIES

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ABSTRACT

In an effort to address the difficulties experienced by city inhabitants, many professionals have turned their attention to the notion of "smart cities." Given the current international miracle of dynamite development, it is crucial that these ideas spread as quickly and widely as possible. A "smart city" includes information and communication technologies (ICT), social enterprises, and supporting infrastructures. Many scholars think that activity monitoring led by information and communication technologies might be useful in major cities. These ideas are frequently viewed as guides for explaining the city's core components. The framework as a whole is made up of many different parts, each of which has a crucial function in carrying out the design. Experts in this area have recently come to the consensus that a smart city's design should prioritize human flourishing, data innovations, new governance, and growth that may lead to a more sustainable environment. It's a must-have in any respectable city layout, and it's widely accepted as such. Numerous IoT-analyzed apps originated in the system's underlying architecture. The four cornerstones of smart cities are smart cities, the information age, information management, and application caretaking. This study so looks into a connected area, that of employing ingenious techniques to guarantee the environment's continuous vitality.

KEYWORDS:

Smart, City, Infrastructure

INTRODUCTION

Sustainable development is gaining traction in many parts of the world. Inspiring as it is daunting, the challenge of making sustainable cities a reality presents itself to humanity. These urban areas achieve a reasonable compromise between the needs of the present and those of the future by promoting economic growth, ecological sustainability, and social prosperity.

The global environmental conversation has shifted toward a more nuanced focus on a low-carbon city as the significance of environmental change and GHG emissions has become clear. Such a city can reduce its residents' carbon footprint by mitigating the negative effects of industry, transportation, nuclear power plants, and municipal waste. Since the middle of the 2000s, the phrase "Smart City" has been used as the new interplay of urbanization in strategy, innovation, and academics. News articles over the last several months frequently cite research out of Stanford University that estimates 150 smart city initiatives are finished or almost finished. Most of these regions may be found in the continents of Europe, Asia, and North America. (Aggarwal, 2019)

Businesses and governments utilize the marketing concept of "Smart City" to propel urbanization cycles and show their commitment. Most successful IT companies have been concentrating on "smart city" development and expansion. In addition, the academic world is recognizing the Smart Cities issue as one of the most fascinating new topics of study, creating post-graduate courses and examination lines devoted to the topic. Surprisingly, there is still a lot of space for interpretation about the legislative definition, borders, and international authority on standards of "Smart Cities," despite the enormous interest in them and the numerous organizations striving to design, analyze, and build them.

ISO 37120: 2014 is a standard for measuring the happiness of individuals and local governments via the creation of sustainable networks. They were made by the World Bank's Global City Indicators Facility. The term "Smart City" will be used to describe the locations where this research is focused, and it will be defined as "cities where interests in human and social capital and conventional (transport) and current (ICT) correspondence infrastructure fuel sustainable economic development and a great of life, with an astute management of common resources, through participatory administration." (Albino, 2015)

ISSUES AND CHALLENGES OF SMART CITIES

India's Smart Cities Challenge is an incredible show of blind trust and a realistic test of technological breakthroughs. In contrast to portable technologies like smart phones or smart cards, which can be used in any location, smart city initiatives require local adaptation and evaluation to determine their impact on urban sustainability. This point to a variety of interrelated issues, some of which are addressed below:

- **Ideological Issues**

For a long time, urbanization evoked both adulation and loathing in India. The urgent need for relocation came first. After this, the concept of cities as "significant malevolence" emerged, and the modern, mechanized, capital cities we know today were

born. Awkward acknowledgement became the norm after the 1970s. One of the challenges of the post-progress era is the rise of the city. Government initiatives such as the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), the Rajiv AwasYojana, the Provision of Urban Infrastructure in Rural Areas, etc. were implemented in response to the private sector's failure to capitalize on the land opportunity, with varying degrees of success.

As the new administration seizes the opportunity presented by urbanization and pursues its dream of making India "Smart," the country of India finds itself at a crossroads. Since there is currently no agreed-upon way to measure the effectiveness of Smart Cities, the government must explain its goals and strategy in this area. Compounding the issue is India's absence of a public urbanization policy that might guide city development and determine factors like when, where, and what kind of cities should be established. (Alkandari, 2012)

When compared to traditional urban regional projections, rational integration, and staggered planning, will the excitement over 100 new Smart Cities win out? Special economic zones, mechanical areas, development experts, and transportation corridors were all created in the past using open procedures despite having nothing to do with provincial requirements, asset bases, land uses, regions, or neighborhoods.

The current assaulted scene of the country bears silent witness to the random maltreatment and abuse of agrarian grounds, the defiance of guidelines by specialists, the erratic and inconsistent urbanization of urban edges and spreads, the homeless encampments that have made the entire country resemble a ghetto, and the general lack of coherence. The government must persuade the people that 100 "Smart Cities" is a realistic goal, or else they risk losing support. Will it offer a different perspective than the well-known example of unchecked migration, urbanization, and the resulting divide between rural and urban areas?

The historical inequalities in access to energy and materials, income and employment opportunities, physical infrastructure, and monetary institutions that exist between urban and rural areas may be traced back to a lack of common sense, industrialization, and urbanization plans. There is a noticeable gap in accessibility between and even within cities when dealing with local administrations. A survey by the Urban Development Ministry found that in 2011, more than 70% of inhabitants in 1,405 cities across 12 Indian states lacked access to latrines and that fewer than 80% of households had access to water for less than five hours per day.

Between 2001 and 2011, the urban population of India grew from 27% to 31%, yet the country's urban infrastructure was woefully unprepared for this rise. The lack of even the

most fundamental of urban conveniences and improvements in quality of life is a pressing issue in some parts of big Indian cities and even some smaller neighborhoods. Water and electricity are wasted at a per-capita rate that is 33 percent to 24 percent greater in developing nations than in industrialized countries, and this is true even when some rich and middle-class individuals waste water and power that may be put to better use. Given the rising disparities between individuals all around the world and in their own communities, it is conceptually difficult to rationalize how one hundred forward-thinking IT-savvy towns may revise global standards. (Bala, 2018)

- **Technical Issues and Challenges**

If the particular obstacles are properly attended to, then the philosophical challenges we've been discussing thus far, which include studying intensive possibilities and choices, may be rendered generally easy. The integration of sensors, cameras, Wi-Fi, server farms, electronic meters, portable displays, smartphone apps, and the greatest of all "the web of things" into a city's infrastructure raises questions about how to handle information, protection, and security in this new environment.

The public sector must demonstrate that it can effectively manage massive amounts of data. Who is taking care of it, how, and why, exactly? The general public agrees that city governments are superbly placed to oversee their own open data projects. Due of the private sector's greater resources, most individuals are forced to switch to using them instead. However, in the present, putting a lot of faith in individual initiative and ability might lead to the development of a mechanized ring that endangers personal information. It addresses issues of the framework's moral applicability, raises the likelihood of failure, and reduces accountability for competence. Therefore, it will be crucial to cultivate local body-level technical competence to manage the whole engagement, which may be achieved if they are effectively drawn in as a partner directly throughout. While IT has received much attention, conventional infrastructure, planning, and expansion still provide their own set of difficulties.

Cities in India fare poorly when compared to their global peers. When comparing the 2013 EIU and Spatially Adjusted Livability Indexes, New Delhi and Mumbai both rated between 52 and 53. Joshi-Ghani, the World Bank's manager of the urban sector, has found that many agricultural nations' demands revolve around the creation and upkeep of modern infrastructure. This manmade environment lasts for decades, thus investing in long-lasting infrastructure is crucial to shaping a city's character. To avoid simply recycling old practices, we need to base our plans on evidence and thorough examination of how cities may and should expand if we are to construct a metropolis that may last for generations.

There is a reasonable specialized assumption that India, as it rethinks its urban environment, should prioritize elevating its top 100 cities rather than spawning 100 brand-new ones. Building new cities is seen as utopian by some since it is associated with the age of assembly-driven growth, despite the fact that India has been cruising along on the tertiary (administrative area) wave that isn't especially location-based. (Bansal, 2017)

There is a growing need to assess the technological feasibility of any business plan before making any financial commitments now that it is possible to operate effectively from home. But the main problem that the government would need to address as it advances farther into this activity is maybe not the intrinsic qualities connected with Greenfield efforts as compared to the Brownfield ones outlined above, but rather with their cycles of occurrences. Several steps must be taken before ICT innovations may be implemented, including planning, site selection, land acquisition, extensive project studies, tendering, establishing land, common development, introducing administrations, etc.

Even if the government is able to overcome time overwhelms in property securing, forming a separate purpose vehicle for ventures, and dealing with public-private organization (PPP) mode, making the smart city a reality in less than four or five years is a difficult assignment. At first glance, moving to a Greenfield may seem like a simpler and more exciting option for the government. However, in order to show tangible progress to the public, the government will need to take care of business as usual, such as subjecting its employees to the hardships of working in a dirty, rundown city.

Brownfields, with a few exceptions, would eventually be fairly reassuring, reasonable, and speedy in relieving residents' suffering. Organic low-hanging fruit, such as smart flexibility and smart energy, give a variety of benefits and public appeal, as shown by best practices from throughout the globe, and the unexpected fruits may follow a similar pattern. To make the most of one's circumstances, one must be resourceful, which necessitates not just unique ideas, but also a willingness to think outside the box and take calculated risks. Walking to work, secret alleys, elaborate road designs, and the use of natural features and materials are all examples of tried and true common sense practices that need to be reintroduced back to our urban centers.

- **Societal Issues and Challenges**

Shakespeare once asked, "What is a city, however individuals?" Will the requirement for specialized organization appear naturally, or will cultural norms dictate its emergence? According to the World Urban Forum's Medellin Declaration, the New Urban Agenda will play a crucial role in meeting future demands, encouraging deeper social ties, reducing social divides, promoting inclusive and democratic neighborhood governance, and supporting sustainable growth.

To be really "smart," a city must be more than just a hub for cutting-edge technology and efficient government services; it must also be a welcoming and equitable place to live for all of its citizens. However, without well defined and focused full frameworks, it may be dangerous to pursue technical growth with steadfast devotion. Wages and strength are both likely to suffer for those who take the risk option. Potentially disastrous consequences for the economy might result from a widening pay disparity and the resulting risk to domestic investment.

Smart Cities run the risk of becoming expensive gated communities if their architects see them as secluded enclaves on the city's edge, maybe beyond the reach of public transit. The middle and lower classes in India have been left with few options other than to live in squalor and destitution due to the country's long pilgrim history and the modern practice of selective bequests like the august domains, common lines, bungalow zone, urban homesteads houses, and rich-rural districts. Is expanding the concept of the gated community to the size of smart cities possible?

The metropolis will fall apart at the seams if the government prioritizes building out new suburbs above integrating the current city. To counteract this concern, one might present some theoretical reasoning. Joshi-Ghani argues that cities generally act as "lifts" for economic expansion, but that smart cities go above and beyond this. These systems make urbanization more comprehensive by bridging the gap between the city's formal and informal neighborhoods, connecting major nodes to their surrounding communities, ensuring that the city's wealthy and poor have access to the same services, and coordinating the movements of the latter two groups. (Mihir, 2016)

Smart city development is tied to a rethinking of urban areas as holistic, interconnected, and rational. Is there any proof, however, to back up this testimony? Professionals working on smart city initiatives have voiced worries about the difficulties of imposing significant commitment measures.

Also, the level of political will and the amount of money available sometimes affected the order of importance given to certain initiatives. The need of sustainable urban development was emphasized, and many strategies were proposed to achieve it. These strategies include persuasive planning; estimating accomplishments; cooperating with other organizations; and prioritizing efforts.

MischaDohler, a lecturer in wireless communication at King's College London, emphasizes that "enormous data isn't enough, it's only a big proportion of the way." Thus, it is of paramount importance to provide the vulnerable simple access to more effective public administrations. If they want to lead the conversation socially, Smart Cities need to be at the forefront of delivering innovative technological solutions.

- **Governance**

In this way, one may assess whether or not e-government is a relic and Smart City represents the cutting edge of urban planning. A innovative management approach, like a novel concept, must pass the public's scrutiny by demonstrating the competence and authority of its team. The question of whether the existing legal and regulatory framework is suitable for the establishment of one hundred new "Smart Cities" is only one of several that this poses. How exactly will the federal government, the state government, the municipal government, and the private sector divide up their duties and responsibilities?

In what context would it be best to develop a Smart City: I a leader program, like JNNURM, RAY, IAY, and BSUP, all of which fall under the urban portfolios and have state nodal offices; (ii) a separate legal body made to design and build up each of the 100 Smart Cities in the nation; (iii) a separate special purpose vehicle in each state with the Center, State, and ULBs as the partners; The government's possible attitude toward a Smart City needs some background. Is it only a well-run city, or would it also have the type of law and order seen in places like Selective Economic Zones and Special Economic Zones created by legislation? Similar to modern regions, hall zones, and development organizations, they might be administered through the implementation of a uniform set of rules.

There is a complex chain of command when it comes to effective administration, with specialists at the top and local authorities like urban municipal bodies and gram panchayats at the bottom. The government's monitoring of this fine line will no sure inspire amazement. It's probable that Smart Cities will come under the jurisdiction of a distinct Act rather than taking the subtle, demanding, and unusual method of working with the urban neighborhood councils, since manufacturing products, FDI, and greenfield development appear to be the key drivers.

The latter may facilitate the Seventy-Fourth Constitutional Amendment Act of 1992's mandatory devolution of powers to local governments. It is important to think about the potential role that municipal governments can play in implementation and in creating relationships with the current city. A more optimistic outlook on India's urban bodies may be sparked by a policy that is common elsewhere and which mandates citizen participation, ownership, and worldwide recognition for both the original city and the Smart City.

In order to avoid becoming local white elephants or extensions of the power centre, smart cities must avoid becoming the former. It's important to strike a balance between the federal government, state and municipal governments, and the private sector while

implementing even a small number of frameworks. The private sector should also do additional studies, such as examining whether or not an ICT provider can deliver the basic necessities of service and infrastructure.

It's safe to assume that nobody. Access to appropriate professional sources of information is vital during the planning stage of ICT service implementation, despite the fact that actual implementation is typically a distant step. Putting your project's administrative eggs in the basket of a single provider of technology services can be financially dangerous and time-consuming.

Instead, PPP should facilitate a far greater private sector engagement in many rules, enable consortiums, joint offering, and maybe sub-agreements to local firms. The government must also determine how a wider number of cities may participate, like they did in JNNURM, taking into consideration each city's administrative and population profile or according to local public requirements, political requests, corporate interests, etc. Would there be fair limits, or would everyone be allowed to take as much as they want without paying anything? Because the standard has to be more forgiving to novices than JnNURM is, we need to have an open mind.

- **Financial Issues and Challenges**

Between Rs.120 trillion and Rs.150 trillion would be spent in India's urbanization during the next eleven years, from 2020 to 2025, according to the Kotak Institutional Equities Report titled Multiplicities. Although very little has been studied on the topic of money, there are still certain factors that must be considered. By itself, the Rs.70.6 crore granted to each Smart City is a rather tiny amount to gamble on high-stakes speculation on physical infrastructure, but this is without considering the FM's underlying accountability. While it's generally agreed that smart cities would be beneficial, there is still the question of how much they'd cost and what measures would be put in place to reclaim that money.

"The actual city is basically a typical city with best in class innovation that strives like any other city to attract in people and companies to settle down," said the head of Songdo's international business district. This means that Smart Cities will need to implement cutting-edge strategies for meeting their own food requirements. This begs the question of whether or not there will be a breakdown of duties and costs between the federal, state, and local levels of government. How could we possible arrange this? on the basis of a predefined equation given by the Hub, or on the basis of the plausibility of an individual's effort.

CONCLUSION

The foregoing factors take on further relevance in light of India's poor record of welcoming foreign investments in the industrial sector and the fact that prior bets on urban projects like JNNURM have turned out to be a resource-making black hole. Landbanking and land use modification would be necessary if they were constructed using the proposed PPP model, as they account for the vast majority of the costs that would need to be recovered. The government, however, must take precautions to prevent the Smart City project from turning into yet another land grab that bases its expectations of profit on the project's growing length.

Sufficient rules must be in place to manage the financial planning, execution, agreements, risks, and duties that come with it. The initial outlay should be seen as a savings account, and the outcomes of all initiatives should be analyzed to guarantee Smart Cities' viability. In order to make the most money possible from their investments, commercial dealings, cost estimates, measuring interest and supply, and speculations, they need to have a good head for numbers. Support and overhead expenditures expected throughout execution, partner capacity, etc., must be accounted for financially.

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