

FRAMEWORK & CHALLENGES FOR DEVELOPING BETTER DIGITAL LIVES FOR SMART CITIES

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Abstract

In today's digital age, the initiative of smart city highlights a new wave of developing and reshaping the better digital lives for tomorrow. Digitalization is ensuring a positive force on developing countries to improve their infrastructure and rethinking the role of city leaders in creating better digital lives for smart cities. The core concept behind developing these smart cities is to create highly advanced urban regions and to improve upon quality of life in a larger connected network within society. The role of digital services are critical in this transformation, as it provides the best possible solution to monitor the wide range of aspects of city living and amenities, connecting every citizen to policy-making and administration. The emerging development of smart cities is a visionary step; the use of digital services will enhance its sustainability in through the number of issues in the development of urban lives. As digital India is centred on providing utility to citizens, offering on demand services and digital empowerment, the program will be the nexus of public services, public service providers and the public. On the other hand, some of the digital bangs have affected the smart cities more profoundly in augmenting the existing social dynamism of the community in question. This study is trying to address the emerging issues of comprehensive innovation and digitalization strategies on the people's quality of life in view of discussing the challenges and opportunities for city leaders, citizens and government in creating better digital lives. In thinking about the leverages of digitalization for making smart cities reality, the important questions need to be analyzed that what benefits are associated with a tailored digitalization strategy to the cities for people. Secondly, how well the smart cities are realizing the worth of their information technology, enabling the city to deliver better services more efficiently. The specific objective of the study that we aim is to identify the current approaches of developing digital lives for smart cities and understanding the construct of technology in propelling individual growth. The research design employed for the present study is to showcase the challenges of designing smart cities with people in mind. For the purpose of this a comprehensive and extensive literature review

was conducted, analyzing the current approaches of rebuilding the smart cities for the digital age. The implication of the study is to meet the challenges of tomorrow by focussing on the needs of people and building new services through human-centered design. It is also very imperative for the city leaders to improve the services and rebuild the infrastructure for developing better digital lives for the smart cities.

Keywords: *Digitalization, Digital Services, Smart Cities*

Introduction

“Smart Cities are those that are able to attract investment”
Shri Narendra Modi
Prime Minister of India

India is on the cusp of a digital transformation and it is the collective responsibility of entire stakeholders of India to make sure that the initiatives of smart cities and Digital India mandate transform dream into reality. With the migration from rural areas to urban areas, an international phenomenon, India has also seen similar movements for several years. Now, it is expected that by 2050, 70% population will be living in cities. It is said that this would mean that around 500 new cities would be needed to accommodate this burgeoning population in urban areas. If India properly plans and develops its urban environment, urbanization can provide an efficient way for people to live, enabling economies of scale in the delivery of infrastructure and services. However, without proper planning and services, sprawling cities can become flashpoints of discontent. It is firmly believed that the cities are the engine of growth and intricate bionetwork of many people, public infrastructure and private platforms. Moreover, the proximity and diversity of people can spark innovation, create employment and provide the country's economic engine. Conventionally, city administrations have always been responsible for creating, managing and delivering better ways of living. There has been no dearth of schemes and policies to address the issues that effect the urban sector growth in India.

At the turn of the 21st century, transforming life, transforming India through digital platforms has laid out immense hope of turnaround India's urban centres. India is looking to modernise and in order to keep pace with this development, the Government of India have committed to turning dream into reality by building 100 ultramodern “smart cities” as satellite towns of larger cities by modernizing the existing mid-sized cities across the country. For this, the union cabinet has approved the smart city mission budget and allocated Rs. 48,000 crores for its development. It also renamed the Jawaharlal Nehru National Urban Renewal Mission targeted by the UPA government

and renamed it as Atal Mission for Rejuvenation and Urban Transformation (AMRUT) for which about Rs.50,000 crs. to be allocated for its development.

The two mission combined is expected to improve the quality of life in urban areas and create better and sustainable cities. Thus as we move to urban economic powerhouses for jobs and opportunities we also have to deal with critical issues like economic hardships such as housing, transport and pollution. And that is really forcing cities to start thinking of how to develop a better digital lives for smart cities. The paper addresses the emerging issues of comprehensive concept of smart cities in thinking about the leverages of digitalization for making smart cities reality.

The problem of the research is to analyze how well the smart cities are realizing the worth of their information technology, enabling the city to deliver better services more efficiently and what are the challenges or stumbling blocks for city leaders, citizens and government that may be encountered in creating the better digital lives for smart cities.

The aim of this research is to make analysis of understanding the concept of smart cities and outlining a roadmap for the development for citizen, city leaders and government

Smart Cities Concepts: Technology trend underpinning

The age of technology has gifted us with many innovations that affect our lives each day, along with a healthy outlook for how we might use information technology to shape our collective future. Our ability to harness advanced computational power and the internet offers us tremendous opportunities to ignite a revolution of efficiency and improvement to our lives by collecting, processing, sharing, and leveraging data in ways that were previously impossible. “ Smart Cities are new style of city providing the sustainable growth and designed to encourage and designed to encourage healthy economic activities that reduce the burden on the environment while improving Quality of Life (QoL)- such as housing, economy, culture, social and environmental conditions” (Japan Smart City Portal, 2013). Smart city concept is an attempt to answer some of the key questions we dwell into that are: urbanization, contribution to economic growth and challenges to to build smart cities.

There are variety of definitions and interpretations of Smart City. It is said that Smart city is an IBM concept in 2008 as part of its Smarter Planet initiative. It is a holistic set of goals where the urban planning can be associated to intensive use of technology so that they have the citizen as protagonist. In the words of Mr. Shirish Sankhe, Director, Mckinsey India, the smartness of city can be defined from all the way to be a technologically smart to all the way to livable and smart and affordable . Smart Cities concept encompasses usually the following areas: smart buildings, smart infrastructures and smart services for citizen of India. According to Mr. Shirish Sankhe, the government is trying to figure out what exactly the mission of smart cities are? The idea of smart

cities with IT focus is also there but that has come from the west where the basic needs like clean city, water supply, electricity are fulfilled. They are talking smart city highly IT enabled city. But if smart city is IT enabled then we use IT as the power of technology to be done in better and most efficient way and at a lower cost. The idea of smart cities is to combine the strength of technology to give us the most cost effective solution. That is being the way of modernization and development all over in society. There is a need to create a new cities or reshape the old cities.

Prime Minister Narendra Modi said, “ Cities in the past were built on riverbanks. They are now built along highways. But in the future, they will be built based on the availability of optical fiber networks and next-generation infrastructure . Smart cities broadly identify themselves with eight key dimensions: Smart Building, Smart term Planning, Smart Waste Management, Smart Safety, Smart Energy, Smart Mobility , Smart Governance, Smart Technology. New Technologies enable the introduction of a new relationship between Local Governments and citizens; in particular regarding the introduction of public on-line services and the use of New Technologies to improve the participation of citizens in public decision-making. In general, e- Government can be considered as a concept that consists in improving public governance and the provision of public services through the use of ICT (e-Government), improving the consultation and decision-making processes using ICT (e-democracy) and improving public policy making, with the use of ICT, incorporating more critical agents throughout the process (e-Government). In all these aspects, the role played by citizens has a special impact. The new relationship emerging from e-Government has led to the emergence of a new kind of citizen, the e-citizen.

On the basis of the above mentioned explanation, the evolving concept of smart cities is increasingly becoming realistic and today the bigger challenges of building smarter cities can be seen across the world. Modern citizens expect to be able to interact with organizations, including digital government through digital technology, not least as private sector firms flood the market with apps tailored to customer needs. And city employees are looking for consumer-grade experiences too. They want user-friendly systems that enable them to be productive anytime and anywhere. In response to this trend, cities need to put greater focus on IT agility. Cities need ecosystems of applications that can, while still remaining simple and agile, be bolted together to tackle the most challenging problems, and can be easily scaled up where greater capacity is needed.

Significance of Smart Cities in the Indian Perspective

India is tackling its growth in the digital age – which gives them far more technology-enabled choices and allows them to build in smartness from the ground up. The urban developments have to be comprehensive including the development of physical, institutional, social and economic

infrastructure. Comprehensive development is important in improving the quality of life and attracting people and investments to the city, setting in motion a virtuous cycle of growth and development. Smart cities are urban eco-systems which are represented by these four pillars of comprehensive development. A smart city needs to be a system which grows in an intelligent way is quite compact, it does't have sprawl in terms of economic development. One good part of this initiative is that a lot of decentralization is envisaged. The cities are supposed to come up with their own plans and what is it they wanted to do. The real positive in this initiative is the government or political leaders are recognising the importance of smart cities for economic development, growth and from shifting people from rural areas to urban areas.

“McKinsey Global Institute study estimated that cities would generate 70% of the new jobs created by 2030, produce more than 70% of the Indian gross domestic product and drive a fourfold increase in per capita incomes across the country.” Smart city is a city that makes sure that all our citizens have a good quality of life. Also its cities where people are able to meet their aspirations.

Smart cities highlights the stronger relevance of cities for society and populations in a country marked by strong technological development. The Smart City Mission is being worked upon in close coordination with the projects like Make In India and Digital India. As per the Make in India programme, a few smart cities are already coming up across the country such as Kochi Smart City, Gujarat International Finance Tec-City (GIFT) in Ahmedabad, Naya Raipur in Chhattisgarh, Lavasa in Maharashtra and Wave Infratech's 4,500-acre smart city near New Delhi. Cities are going through a deep transformation – the main driver is digitization.’

Smart Cities Challenges

Today's cities face significant challenges – increasing populations, environmental and regulatory requirements, declining tax bases and budgets and increased costs. Moreover, the cost of Information and Communication Technologies has plunged making it economical for the government to implement them. Citizens are increasingly getting instant, anywhere, anytime, personalized access to information and services via mobile devices and computers. And they increasingly expect that same kind of access to city services. There is an urgent need to think very differently about how to solve the problem. The India Smart Cities Challenge is a competition designed to inspire and support municipal officials as they develop smart proposals to improve residents lives. In the Indian context, the approach is necessarily different. Since many Indian cities lack basic infrastructure, institutional frameworks, and proper governance, smart city initiatives will first and foremost involve providing basic civic requirements and making the infrastructure robust and scalable. Given below are some of the key challenges that governments/businesses in India will face while implementing their smart city strategies:

- 1 **Acquisition of Land:** The biggest challenge is the acquisition of land for creating smart cities. The land acquisition law might prove to be a deterrent and make the acquisition costlier, thereby making the residential and commercial units costlier. While the government is considering amendments in the Land Acquisition Bill, these changes may take time.
- 2 **Replacing Existing City Infrastructure to Make It “Smart City-Ready”**
There are a number of latent issues to consider when reviewing a Smart City strategy. The most important is to ascertain the business case that will justify the replacement of existing infrastructure. The integration of formerly isolated systems in order to achieve city-wide efficiencies can be a significant challenge.
- 3 **Economic Growth:** Economic growth are the key for the setting up of a smart city. The growth of the city depends on the mix of industries and sectors . A clear plan of vibrant economic growth of the city provides the right mix of livelihood to those migrating to it.
- 4 **Dealing with a different stakeholders :** One of the other main challenges in the Indian smart city space is that (usually) software infrastructure in cities contains components supplied by different vendors. Hence, the ability to handle complex combinations of smart city solutions developed by multiple technology vendors becomes very significant.
- 5 **Employment Opportunities:** The other area of concern is the kind of employment these smart cities will generate. While the smart city will act as a centre of economic growth, it should also provide the right mix of livelihood to those migrating to it. Else, the migration of people will continue to pose a threat to the overall socio-economic scenario of the city.
- 6 **Investment in Infrastructure:** India requires around 120 dollars per capita per year in average spending so on overall basis its one trillion dollars of capital investment and one trillions dollars of operating in operational expenses investment over the next 15 years so from that perspective there is a huge gap because normally we spend something like 1/8 or 1/10 of this that’s why we can see that urban infrastructure is lagging enormously in India so from that perspective even a small drop is always welcome and the smart cities mission which focuses as a facilitator mechanism on getting our cities to a world- class level . A new city would take a long time to develop both the requisite economic drivers and the infrastructure - only after that will it see people stepping in. By the time the city is habitable and has a basic population, the project would at least be 7 to 10 years in the making. Unfortunately, the current funds available for this sector are only for the short-term of 10-15 years. Unless the development of the city is done out of funds that have a 20 to 30 year horizon, these projects are unlikely to survive. India needs a sea change in the way it looks at funding these cities, or their infrastructure.

Commenting on the development, Arindam Guha, Senior Director, Deloitte in India, said: "The Smart City Challenge continues to generate significant enthusiasm throughout the country. With the addition of these 27 cities, a total of 60 cities are now eligible for funding under the programme." The high interest and participation levels in the Smart City plan development phase now needs to be sustained through quick implementation on the ground, he added.

Roadmap Framework

The aim of the presented below smart city roadmap framework is to put forward a new vision and strategies of creating and developing better digital lives. When we are designing a city what we really doing is to design a way of life , what kind of life will make us happier so the first thing before we do anything is to take some time to dream without restrictions what the ideal way of life in a city would be , what would be the ideal city would be it's about having smartness in every aspect of the city . The answer to these questions are it means a smart way of governing , it means smartness in the way institutions are managed, it means smartness in the way big pieces of infrastructure are set up and designed and maintained and down to the smallest pieces of what seemed to be low tech innovations but are smart nonetheless. The focus should be more on aligning the strategic goals of government with that of the cities so as to make the city more economically competitive, developing the strategy in co-operation with the ICT companies and foreign collaboration. The implication of the study is to meet the challenges of tomorrow by focussing on the needs of people and building new services through human-centered design. In response to this trend, cities need to put greater focus on IT dexterity. Cities need ecosystems of applications that can, while still remaining simple and agile, be bolted together to tackle the most challenging problems, and can be easily scaled up where greater capacity is needed.

The crossroads of future Internet technologies and smart cities persistently appearing the shift to the cloud, smart city pilots, and city-wide open platforms of embedded systems. These areas are of primary importance for city policy makers all over the world that are deploying strategies for smart cities, e-infrastructure and e-services to address the contemporary challenges of competitiveness and sustainable development. Thus, the roadmap allows formulating some policy recommendations to city authorities for mastering the new interdisciplinary planning for intelligent / smart cities and the interlinked layers of digital technology, people-driven innovation ecosystems, urban activities and infrastructure.

Conclusion

From the present study , one can easily understand that smart city mission is been a very competitive process as some of the other states saying that their city also should have been there in the first 20 but its absolutely clear right from the beginning that it has been a competitive process and the city

challenge was very well evolved at the very outset. Besides it is the role of the city leader to push the city on the road to become smart. They must have bold vision and mission specifically around technology. What does technology mean for the city and what ways can it contribute towards quality of life and at that time you know did some research and it came up with this vision statement which was to build and enable a leading digital city.

One of the things with city governments that people have a perception of is that they don't take risk to go ahead invest in the infrastructure to make it smarter more connected city and then we're willing to make that investment and to allow people to experiment to run pilot programs and to really be innovative. There is really a need to do work like a start-up. The smart city solution remains an integrated database and decision making system that incorporates innovative ICT technologies to simultaneously generate, process and analyse spatial, transport, energy, municipal services and socio-economic data, the capability and resource base to enable holistic decision making and finally a governance system that encourages informed and prompt decisions.

Cities, of course, can get around the problem of creating smart city proposals by employing consultants-if they are willing to pay. Nevertheless, there will be many challenges beyond; even after cities get picked. It is the city leaders ability to interpret such data in all its complexity and holistic scope, special- purpose vehicles function will have to be formed to implement the smart city mission- the state and the urban local body , freedom of action must be given to them, to run situation for energy efficiency, cost efficiency and financial feasibility and use them all for efficient economy, safer and well performing spaces, effective governance and responsive mobility that would truly drive us to smarter cities.

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