International Journal of Economic Research
Volume 16 • Number 1 • 2019, ISSN 0972-9380
available at http: www.serialsjournal.com

Smart City Mission: E-governance for Global Competitiveness

Ritu Srivastava

Assistant Professor, Birla Institute of Management Technology

Abstract: The study deliberates on the conceptual definition of a smart city as a city which demonstrates enhanced capacity of providing government services that are enabled through information and communication technologies. E- Governance is a manifestation of smart governance and the "Smart City Mission" in India is an ambitious project for designing and implementing it. The impact on the business environment of such smart cities is positive as is reported by global competitiveness indices which provide business environment rankings for nations. The evolution of such a framework of governance is differentiated into several ascending levels of e-government services and systems. The first phase of the implementation of mission involved twenty cities and the study attempts to present the level of e-governance achieved so far.

***Keywords*:** Smart City, E-governance, Global Competitiveness

INTRODUCTION TO THE SMART CITY CONCEPT

"Developing intelligent cities as ''smart providers'', with electronically enhanced online services able to meet the learning needs, knowledge transfer requirements and capacity building commitments of the user-communities they serve" has been described as the development of smart cities (Deakin , 2012). According to Amin and Roberts (2008), a smart city encompasses shared enterprise between research institutes, ICT (information and communication technologies) companies and cities, joint venture commitment to product development, building the capacity for ICTs to be used as a means of bridging the digital divide; the co-design of services, shared commitment to social-inclusion and participatory urban regeneration programs as a means to close the gap between the information-rich and –poor, support for the modernization of local government service provision using technological platforms, consensus-based decision-making, consultative and deliberative in nature; monitoring and evaluation.

UNECE (United Nations Economic Commission for Europe) and ITU (International Telecommunication Union) define a smart sustainable city as an innovative city that uses ICTs and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social, environmental as well as cultural aspects.

In the developing economy context, a smart city is developed through intervention in existing cities using smart solutions popularly known as brown field ventures. Several key themes revolve around the concept of a smart city which involves "smart accessibility", "smart financial system", "smart living", "smart energy solutions" and "smart talent pool". These components of smart city are envisioned and implemented through the strategy of "smart governance" which entails community involvement & voice, transparency of operations and real time updation and integration of services of all departments involved in governance. E- Governance has the potential to transform the conventional administration model to a smart governance systemic approach. Urban planners can use network connectivity to e-govern the entire urban eco-system, which is represented by the four pillars of comprehensive development — institutional, physical, social and economic infrastructure towards the smart city concept.

The government in partnership with corporates can e-revolutionise the governance methodology like the Intel Cities Project in which the city of San Jose and Intel are using internet of things in citywide pilot project to create 'smart city' to provide transport efficiency , cleaner environment improving the quality of life of the residents while fostering clean-tech jobs.

The notion of 'e-city governance', regarded as 'good governance 'in which urban government uses advanced ICT to exercise its powers given by the citizens based on a new organisation and relationships with the stakeholders and the local community - a coherent interdisciplinary conceptual framework for public policy and practice, which links e-government with e-democracy, invites citizens participation in local decision-making and bridges the academic practitioner-policy divide.

SMART CITY MISSION IN INDIA

In the words of Dr. A.P.J Abdul Kalam Azad, former President of India, in a big democratic nation like India, the smart city programme would be based on the foundation of seamless access and flow of information across States and Central governments.The 'Smart city Mission' was launched on June 25, 2015 by the Government of India with the objective of providing infrastructure aided by 'Smart Tools' applications for a sustainable, decent and inclusive life for its citizens.

The Smart Cities Mission of the Government is an initiative that is meant to set examples that can be replicated both within and outside the Smart City, catalysing the creation of similar Smart Cities in various regions and parts of the country. The objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions.

Table 1: First list of 20 cities /Towns for Smart City Mission

SMART cities - First phase	
Bhubaneswar	Indore
Pune	Delhi
Jaipur	Coimbatore
Surat	Kakinada
Kochi	Belgaum
Ahmedabad	Udaipur
Jabalpur	Guwahati
Vishakhapatnam	Chennai
Solapur	Ludhiana
Davangree	Bhopal

In the first phase, Government of India has shortlisted 20 cities/towns for development under the "Smart City Mission" and they will be the first ones to receive funds under Atal Mission for Rejuvenation and Urban Transformation – AMRUT (table 1). A total of 100 cities will be upgraded during a five year duration from 2015-2020 involving application of smart solutions using ICT interventions for e-governance, online government services, and for improving the efficiency of core services at a relatively lower cost.

E-governance as a Component of the Smart City Mission

E-governance has been the flavour of the last decade and one of the key performance parameters for each of the Government Department / Agencies has been implementation of e governance. Managing cities effectively and efficiently is critical and becoming more complex as population growth and economic development are taking place in urban areas. Today's big challenges which each nation confronts, such as poverty reduction, economic development, climate change, and the creation and maintenance of an inclusive and peaceful society, will all need to be met through the responses of cities.

The successive evolving levels of e-governance are indicated by OECD as information which is accessible through website/sources followed by online interactions with citizens with subsequent online financial transactions and lastly the highest level of e-governance is transformation in governance through a combination of the above. The Smart specialisation approach combines industrial, educational and innovation policies to suggest that countries or regions identify and select a limited number of priority areas for knowledge-based investments, focusing on their strengths and comparative advantages.

Cities have been recognised as the nuclei of economic development and their able governance involves the capacity building of urban systems that prompt businesses to present innovative offerings (Landry, 2006; Meijer, 2016). Investments in ICT infrastructure acts as the input for sustainable economic growth (Caragliu et. al.2011). Smart governance makes up smart cities and aids in achieving smart economy (Giffinger et al., 2007). Amalgamation of future technologies with public services of government is the hallmark of a smart city (Lee et.al.2013) which demonstrates intelligent, interconnected and efficient public utilities.

E-governance for Global Competitiveness

E-governance is a key enabler for doing business and it improves a nation's rankings in terms of business environment for foreign investors. The World Bank's "Ease of doing business" ranking and the World Economic Forum's Global Competitiveness Index also take into account the e-governance initiatives of the governments (table 2).

Table 2: E-governance activities listed in Global Business Environment Indices

Global Index	Factor	Parameters				
Ease of Doing Business, World Bank	Doing a Business	Obtain a digital signature certificate	Obtain director identification number (DIN) online	Reserve the company name with the Registrar of Companies (ROC) online	Pay stamp duties online, file all incorporation forms and documents online and obtain the certificate of incorporation	Register for VAT online
Global Competitiveness Index, World Economic Forum	Technological Readiness	Technology Adoption	ICT usage			

[*Source:* Websites of World Bank, World Economic Forum]

The World Bank's Ease of Doing business index ranks a nation on ten factors and the parameters include online delivery of government services like registration of a new company, registration as taxpayer, obtaining the identification number and certificate of incorporation. It also takes cognizance of payment systems available online for quick, hassle free payment of taxes. In case of Global Competitiveness Index, technological readiness is one of the twelve pillars and ICT usage is one of the parameters for rating a nation on a scale of 1-7. India is 107th amongst 137 nations as per the Global Competiveness Report 2017-18. Meanwhile, the nation stands on the 100th position among 190 nations in the World Bank's index. Therefore, it is imperative for the governments to invest in scaling up the existing e-governance infrastructure and improving it further through initiatives like ' Smart City Mission' which is spread across the nation.

Performance Indicators for E-governance Initiatives in Smart City Mission

Some priority areas need to be identified by the government (Alkandari et. al, 2012) when they are promoting some cities as smart cities. The KPI (Key Performance Indicators) used for measuring and managing the performance of smart cities should be measurable, comparable and comprehensive. The performance of smart cities can not only be measured but

also further streamlined through assessments on citizen engagement and e-city policies (table 3). Citizen Engagement is enhanced through implementation of Online Payments System and citizen grievances monitoring system. E-city policy is implemented through its website of urban local body of each smart city and enabling E-Procurement services.

Table 3: E-governance by Urban Local Body (ULB)

Smart City	E-Procurement	Online Payment System	Citizens Grievances monitoring System	Own Web-site
Bhubaneswar	Implemented	Implemented	Implemented	yes
Pune	Implemented	No	Implemented	yes
Jaipur	Implemented	Implemented	Implemented	yes
Surat	Implemented	Implemented	Implemented	yes
Kochi	Implemented	No	Implemented	yes
Ahemdabad	Implemented	Implemented	Implemented	yes
Jabalpur	Implemented	Implemented	Implemented	yes
Vishakhapat-nam	Implemented	Implemented	Implemented	yes
Solapur	Implemented	No	Implemented	yes
Davanagere	Implemented	No	Implemented	yes
Indore	Implemented	Implemented	Implemented	yes
Delhi	Implemented	Implemented	Implemented	yes
Coimbatore	Implemented	Implemented	Implemented	yes
Kakinada	Implemented	No	Implemented	yes
Belgaum	Implemented	No	Implemented	yes
Udaipur	Implemented	No	Implemented	yes
Guwahati	No	No	No	yes
Chennai	Implemented	Implemented	Implemented	yes
Ludhiana	Implemented	No	Implemented	yes
Bhopal	Implemented	No	Implemented	yes

[*Source:* Compiled from the website of National Smart City Mission, retrieved on November 15, 2017.]

All the cities identified for the first phase of the Smart City mission have some elements of e-governance in their urban local bodies' functioning. All of them have their own websites and are informative as well as interactive due to their policy of e-procurement and citizen grievance monitoring through their websites (with the exception of Guwahati). Ten cities have online payment facility for availing government services also. The highest level of evolution in a smart city as indicated by OECD is transformation which will happen once the first three levels are complete and integrated. On analysing the websites of these governing bodies at the city level, exact nature and depth of the e-city policy was available for a better understanding of the impact of the mission (table 4).

Table 4: Citizen Engagement and E-city Policy in the 'Smart Cities'

Parameters Cities	Online self-declaration forms, Online Citizen Portal	E-varta, E-Newsletter	Citizen Grievance/ Public Grievance	Online Payment System	Online Services	E- Auctions; E- Mutation; E-Tendering	Online Tracking	E-waste
Bhubneshwar	√	√	√		√			
Pune				√	√			
Jaipur		√	√	√	√			
Surat	√		√		√			
Kochi	√	√		√				
Ahmedabad		√			√			√
Jabalpur		√			√			
Vishakhapatnam	√						√	
Solapur		√	√		√			
Davangree					√			
Indore					√			
Delhi					√	√		
Coimbatore				√		√		
Kakinada					√			
Belgaum				√	√			
Udaipur		√				√		
Guwahati					√			
Chennai	√				√			
Ludhiana	√			√			√	
Bhopal	√			√				

Note: √ indicates the existence of the e-governance activity
Source: Compiled from the website of the Municipal Corporations of the selected cities

The e-services offered by the local bodies range from e-newsletter/e-varta which are informative to more interactive services like on-line tracking, e-auctions, online tendering with online payments systems. The Ahmedabad Municipal Corporation also collects e-waste which is a huge step towards the sustainability of the city. As Tapscott (1999) and Kourtit(2012) have stated that smart governance is the community based, pro-active and open model of governance, citizen engagement and transparency is a key outcome of the smart cities. The contribution of these smart cities towards making the business environment conducive towards investment can be easily correlated with the parameters of the Doing Business rankings and Technological readiness scales which are recognised globally.

Implementation Framework of E-governance System

If cities are viewed as business ecosystems with complex relational structures between citizens and companies, then the city governments can be seen as ecosystem managers which deal with organising and delivering services such as transportation, education and health services to the citizens and facilitating the functioning of economic activities of companies operating within the city area. Ecosystem Governance is largely based on interdependencies (Kapoor et.al., 2013; Gulati

et.al., 2012;) and has been demonstrated through a two model approach v.i.z integrator approach and platform hub (Visnjic et.al.,2017). The integrator approach incorporates the extended enterprise model where the main enterprise controls, monitors and facilitates the co-ordination of the complementary ecosystem players demonstrating stratification with permeability of boundaries (Gulati et.al. 2012). The second approach i.e. platform structure adopts a disintegrated structure of governance being open to collaboration with stakeholders. It leads to alternative ways of providing services where the platform provider just provides the infrastructure and norms for harnessing the engaging business models between multiple stakeholders. Several cities have adopted the integrator based city governance models like the city of Vienna and city of London where city government bodies have been formed to facilitate public utility services like construction of streets, strengthen public transport and delivery of venues with infrastructure for games respectively. The city of London has also used the platform hub model by working with Canary Wharf Group, a private company for developing the city as one of the best places to locate a business. Therefore, sometimes there exists a hybrid approach towards the city governance. Visnjic et.al. suggest the use of the orchestration approach as a strategy in the long term wherein the city governance is not limited to one ecosystem but rather it encompasses "ecosystem of ecosystem" with multiple objectives and stakeholders . The ICT enabled model of governance is best suited for this orchestration approach. E-governance infrastructure would be facilitating the creation of both the platform for collaboration and the extended enterprise for integration. It has been found that the e-governance project in Chhattisgarh- CHOICE (Chhatisgarh Online Information for Citizen Empowerment) in central India has been implemented on a decentralized public private partnership(PPP) model. This ecosystem of governance uses a hybrid approach wherein an extended enterprise i.e. Chattisgarh Infotech and Biotech promotion Society adopts platform approach providing an open source software for any entity with the requisites to act as its agent for providing citizen- government service based interactions.

CONCLUSION

The transition of existing cities to smart cities will be a gradual process as modern technologies will have to be merged with traditional infrastructure. Adoption of the right technology within the constraints of capacity would be a significant enabler of the whole process. The implementation of the smart city mission is already being monitored for the performance. The success of an e-Governance project would also depend on building human capacities in terms of necessary knowledge and skills to conceptualize, initiate, implement and sustain e-Governance initiatives across government as also on the ultimate use by citizens. The implementation framework should have elements of project management with milestones of time and cost. This ambitious initiative will contribute towards developing the nation's competitiveness in attracting investments and acting as a hub for business activities due to the seamless, transparent and good quality infrastructure.

REFERENCES

Deakin, M. (2012). Intelligent cities as smart providers: CoPs as organizations for developing integrated models of eGovernment Services. Innovation: The European journal of social science research, 25(2), 115-135.

Amin, A., & Roberts, J. (2008). Knowing in action: Beyond communities of practice. Research policy, 37(2), 353-369.

Tripathy, P. E-Governance Is A Critical Success Factor For Any Indian Smart Cities–Status, Challenges And Issues. ELK Asia Pacific Journals – Special Issue ISBN: 978-81-930411-5-4

Landry C (2006). The Art of City Making. London: Routledge.

Albert Meijer, Manuel Pedro Rodrı´guez Bolı´var (2016). Governing the smart city: a review of the literature on smart urban governance. International Review of Administrative Sciences.Vol. 82(2) 392–408

Giffinger R, Fertner C, Kramar H, Meijers E and Pichler-Milanovic´ N (2007) Smart Cities: Ranking of European Medium-sized Cities. Vienna. Available at: http://www.smart-cities. eu/download/smart_cities_final_report.pdf

Caragliu A, Del Bo C and Nijkamp P (2011). Smart cities in Europe. Journal of Urban Technology 18(2): 65–82.

Lee JH, Phaal R and Lee S-H (2013).An integrated service-device-technology roadmap for smart city development. Technological Forecasting & Social Change 80(2): 286–306.

Alkandari A, Alnasheet M and Alshekhly IFT (2012) Smart cities: Survey. Journal of Advanced Computer Science and Technology Research 2(2): 79–90.

Tapscott D and Agnew D (1999) Governance in the digital economy: The importance of human development. Finance & Development 36(4): 34–37.

Kourtit K, Nijkamp P and Arribas D (2012) Smart cities in perspective – a comparative European study by means of self-organizing maps. Innovation: The European Journal of Social Science Research 25(2): 229–246.

Visnjic, Ivanka, Carmelo Cennamo, Andy Neely and Nikola Visnjic. Governing the City: Unleashing Value from the Business Ecosystem (vol 59, pg109, 2016). California Management Review. 59(2).168-168.

Ranjay Gulati, Phanish Puranam and Michael Tushman(2012). Meta-organisation Design: Rethinking Design in Interorganisational and Community Contexts. Strategic Management Journal.33/6.571-586

Rahul Kapoor , Joon Mahn Lee(2013).Coordinating and Competing in Ecosystems: How Organisational Forms Shape New Technology Investments . Strategic Management Journal.34/3