E-Governance - Trends, Scenario, Problems and Solutions

Vani Jain

Abstract— In the epoch of Information and Communication Technology (ICT) has provided means for faster and better communication, retrieval of data and utilization the information to its users. e-Governance is basically the application of ICT to provide government services to the citizens via internet. In developing countries like India, where literacy level is very low and a large number of people are living below poverty line, people are not even aware about the benefits of e-Governance activities and Citizens do not use Information and Communication technologies to a much extent, there exist a number of internal departmental issues to implement e-Governance activities. This article highlights challenges faced during implementation of e-Governance across all the states of India with special attention to land records computerization as a part of mission mode project (MMP).

Keywords— MMP, E-Government, ICT, GDP, Security, Cloud, Technical Challenging, Interoperability, Requirement Analysis

I. INTRODUCTION

The term e-Government came into existence with the advent of government websites in late 1990s. There are many studies on e-Governance projects defining e-Governance in different ways. E-Governance is not just the ‒use of information and communication technology in managing governance‖ or ‒service delivery over Internet‖ or ‒digital access to public services‖, rather it involves participation of public citizens. In other words, e-Governance involves ICTs, through internet, to deliver effective and efficient government services to citizens, businesses and government agencies. E-Governance is not just limited to the public sector only but also includes the management and administration of policies and procedures in private sector as well. It creates the new interface for citizens to interact with government. It also provides the choice of place from where they want to avail government services. Hence, e-Governance is ‒participation of public in government service delivery system to increase the efficiency, accountability, transparency, convenience and value addition in service delivery by interacting with government through electronic platform.‖

There are many other definitions available for e-Governance. Gartner defines ‗e-Governance‘ as the continuous optimization of service delivery, constituency participation and governance through the Internet and new media. World Bank defines (as per Asia Oceania Electronic Marketplace Association report): ‒e-Government means to the use of information technologies (such as Wide Area Networks, the Internet, and mobile computing) by public/government agencies that have the ability to transform relations with people, businesses, and other areas of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved transactions in business and industry, citizen empowerment through access to information, more effective and efficient management.

One of the earliest uses of ICT in Governance has been putting up information w.r.t. the functioning

of various departments, its rules and regulations and major announcements on the website for everyone to see/know. This simple step has increased transparency by a wide margin, because it has removed the necessity of local officials to be available in person to provide this basic information to the public. In the next step involving e- Governance, a number of Government departments have begun to put up important decisions regarding award of tenders and contracts, etc. on their websites. Each step of the tendering process is widely publicized, so that the chances of a small group of corrupt people colluding with officials to bag tenders have considerably reduced. Some Government departments have automated the application processes for several purposes. For example, one can now apply online for a passport. E-Governance enhances transparency because it saves a record of every transaction, government officials cannot refuse about any action that they have taken, nor can they say that they cannot trace a particular document. For example, if one fills up a passport form online, a unique application number is generated, and that record is available to review their processes. This is the high time for the Government to understand the necessity of e-Governance and Transparency.

Presently citizens are moving towards IT based solutions available at their doorstep/hand. Also the young generation is moving towards an educated society and thus the overall impact of e-governance is highly significant. For instance, as a special case of Land Records, the services are being delivered through various modes:

- Apna Khata Centre at Tehsil Level

- E-Mitra/CSC with digital signature

- Authorized Cyber Kiosks

- Open Domain through Land Records Website

- District Land Records Centre

But in developing countries like India, where literacy level is very low and most of the population being below poverty line it is extremely difficult for the government to provide its services to such citizens via means of internet. There are a number of e-Governance projects running today but most of the e-governance projects fail to sustain in long run due to a large number of obstacles in implementation of e-Governance in India. These can be categorized as: Environmental and Social Challenges, Economical Challenges and Technical Challenges. Nature of government projects is extremely complex and tend to spread across multiple boundaries and time lines. Working with the government resulting poses significance challenges which are explained below.

II. CHALLENGES IN E-GOVERNME SERVICE DELIVERY SYSTEM

A. Environmental and Social Challenges

- Low Literacy: Literacy can be defined as the ability to read & write with understanding in any language. A person who can merely read but cannot write can't be considered as literate. Similarly formal education or minimum educational standard is not necessary to be considered literate. Low Literacy level of India is a huge obstacle in implementation of e-Governance projects. Illiterate people are unable to access the e-governance services; hence the projects do not get much success.

- Low IT Literacy: A large number citizens are not literate and those who are literate, they do not have much knowledge about Information Technology (IT). Most of the peoples in India are not aware about the usage of Information Technology. So, in India, with such low IT literacy level, success of e-Governance projects is difficult to achieve. So, first of all people must be made aware about the usage of Information Technology anywhere.

- Service Unavailability: Even when Internet is available, there are performance related issues either related to application or Internet connectivity leading to non-usage of e-Governance services.

- Diversity in India: People in India come from different backgrounds speaking different languages.

Citizens face language problems while using computerized services. Most of the applications and websites are either in English or Hindi.

- Low Confidence on Technology: The citizens are not well aware to handle the computer & ICT. Even if the system works and they are in a position to use the system, Citizens of India tend to not trust the outcome of technical solution placed. For example in many cases two parallel systems exist to cater the service – manual and computerized system. There generally comes a gap in information available in both the systems due to delays in updating records which leads to lack to trust in available information. Also Manual signature copies of records are valid, where ever it is be placed either for agriculture loan /sale of land/ bank loan etc. It means there is a high dependence on field functionaries in terms of updating and signatures.

- Lack of Expertise: Observation says expertise are not available in different departments of government for immediate repair of hardware/networking, therefore an obvious delay exists in the system. Even if any requirement to repair/ new procurement then its procurement process takes time to fulfill the procurement norms and polices.

- Struggle to Change: The struggle to change phenomenon can explain much of the hesitation that occurs on the part of citizens in moving from traditional paper based manually maintained system to automated wed based solutions. to interact with government.

- Lack of Integration: Majority of the e-Governance services are offered by the state or central government are not integrated with each other. Lack of interoperability & liner communication between departments may be its major cause. Therefore, the data that resides within one part of system/department has zero or very little meaning to some other department of the government.

- Lack of Awareness Amongst Citizens: Most of the people are unaware of the benefits of e-governance services. Even the government doesn't take initiatives to create environment for the people awareness about e-Governance activities. Unawareness is one of the biggest hurdle in successful implementation of e-Governance projects.

B. Economic Challenges

- Limited Financial Resources: The Gross Domestic Product (GDP) is one of the measures of national income and a country's economy. GDP is defined as the total market value of all final goods and services produced within the country in a given period of time. GDP of a country is the measure of its financial strength/ability. Our country has limited financial resources so as to implement and maintain the e-Government projects properly.

- Low per Capita Income: Per capita Income means how much money each individual receives from the yearly income generated in a particular country. This means to what each individual receives if the yearly national income is divided equally among everyone. Per capita income of India is low as compare to the other countries. Therefore, people cannot afford services available on web/internet provided by the government which is a challenge for implementation of e-governance.

- Cost: In developing country cost is one of the most important obstacles in implementing e-Governance where majority of the population is living their livelihood below poverty line. A huge amount of money is involved in implementation, operational and evolutionary maintenance tasks. Installation and maintenance cost of hardware & network is very high. These costs must be low enough so as to guarantee a good cost/benefit ratio.

- Cost for usage: All citizens cannot afford to have Internet facility at their door steps, so government may

facilitate free facility to access the information through any government outlets/Business centers.

- Maintenance of Electronic Devices: As the Information Technology changes very fast and it is extremely difficult for us to update our existing systems that fast. Regulations of different devices and

their different parameters may vary and the system in use must be capable enough to handle all the emerging needs.

C. Technological Challenges

- Defined Requirements: In traditional government functioning, there were large amount of discretion to deliver service but when we convert these processes into application, it becomes the issue of freezing the processes. As requirement analysis is not properly done, therefore process could not be re-engineered significantly. The requirement analysis is a key component of any service mechanism to make it deliverable.
- Inter-operability: Inter-operability is the capability of systems and organizations of different qualities to work together. The e-Governance applications must have this feature so that the newly developed and existing applications can be implemented together.
- Lack of Infrastructure: Many government offices do not have proper adequate ICT infrastructure to make their services deliverable. Lack of Internet connectivity through Broad Band/optical fiber connections in most of the villages leading to difficulty in accessing information. Power cut problem in villages creates problem in service deliveries. Even when resources with Internet is available, there are performance related issues either related to application or Internet connectivity leading to non-usage of e-Governance services.
- Lack of Resources: Dedicated Hardware & Network engineers are required for solving operational problems in many organizations.
- Lack of back up: Most of the departments lack regular and centralized backup system.
- Lack of strategy or policy: It is required to increase citizen's confidence and trust on government services.
- Tried and tested technologies: Technology tends to get out of time delivery very fast. Our government may not be in position to buy new storage infrastructure very frequently. So, it is advisable to use better and safer technologies and products which are tried and tested for durations long enough rather than using the latest ones.
- Privacy and Security: There will be three levels of access available for e-government stakeholders: no access to a web services; extent amount of access to a web-service or full-access to a web service, however when personal sensitive data exists the formation of the security access policy is a much more complicated process with legal consideration. With the implementation of e-governance services related projects, effective measures must be taken to protect sensitive personal information. A lack of security standards and protocols can limit the enhancement of
- pojects that contain sensitive information such as income, medical history.

We saw how the concept of e-governance has evolved over the years in Indian scenario and how much it is required for responsiveness, transparency and accountability on the part of government and at the same time it is also a toll to increase the participation of citizens in making policies by appropriately empowering them with the right information at right time. The penetration of internet, and telecommunication services in India has increased in the last decade and this gives a ray of hope to the citizens of the nation to fight with the long persisting problems of poverty, corruption, regional diversities and unemployment. But at the same time, slow pace of project completion leads to red tapism and resistance from government officials and citizens too has not given the desired result.

I.   PROPOSED FRAMEWORK/MODEL

To overcome such challenges, a well-designated Architecture Governance has to be put in place considering all factors/sources of roadblocks which hinder the success of projects related to e-Governance. A Strategic framework for designating and implementation of e-government may be helpful. On the basis of the study of e-readiness in India and the challenges faced during

implementation of e-government in India, a conceptual framework for the effective designing and implementation of e-government projects in India is suggested. This conceptual framework/model can be divided into five stages:

- Vision for E-Government Implementation - In the first stage, the overall vision for the effective implementation of e-government has to be determined. In this level it must be planned that to what extent the e-government can be implemented.

- Assessment of E-Readiness - To fulfill the vision, e- readiness of India must be assessed. It must be compared with respect to other countries. The e- readiness reveals the position of Indian environment with respect to the other countries e-governance environment.

- Overcoming Challenges of E-Government - In the assessment process the challenges for effective framework of implementation of e-government must be exposed. These challenges are low literacy, non awareness of IT, low per capita income and limited financial resource in India. The challenges should be overcome for the effective implementation of e-government. This can be done in various ways:

- Making a policy choice in favor of computerization. It may require huge investments for the purchase of hardware and software solutions but should still be implemented..

- Sincere efforts would be required to mobilize resources for this arduous job. One way to deal with the situation could be that government enters into arrangements for leasing of computers.

- Establishing the best optimal connectivity between various ministries and departments of government of India so that transfer of documents, papers and images could be done through Internet thereby choosing better speed as an alternative to manual effort Supplying information to citizen in their local language that they understand and are comfortable with, for example their local dialect language.

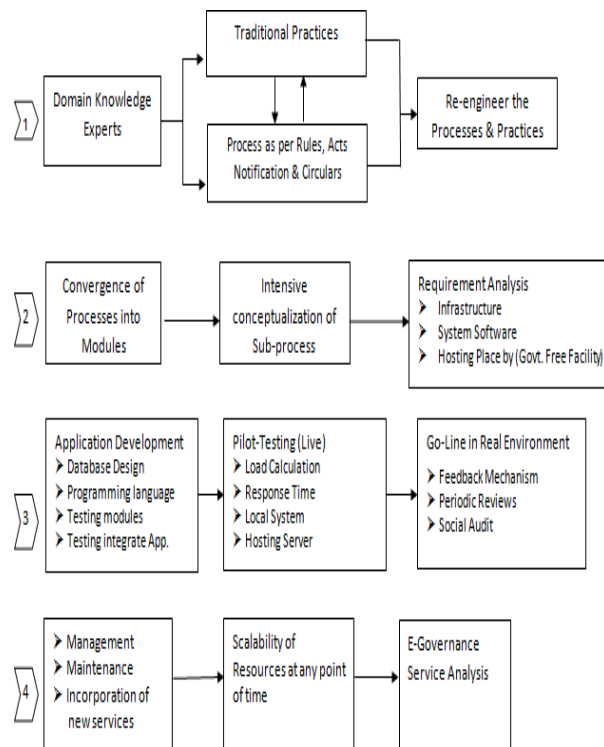- Changing the mindset of the employees who are habitual of working only in the manual mode.

Fig 1: Stages of Designing Framework for E-Governance Application

- Making cyber laws available to the public at the earliest s so as to enable IT systems and information documents being stored in the systems have the same legal validity as the documents stored

today in the form of paper.

- Building infrastructure of power and all weather surface transport system to abridge the digital divide between the rural and urban India. Basic infrastructure such as software environment, Web Server, Data Base Server, Internet connectivity, Firewall etc. resources are to be made available to each department so that access through it then services could be delivered fast and without fail. A significant amount of time would be saved and could be focused on main application to deliver the services.

- Requirement Analysis is to be done in terms of application load, number of hits per unit of time, response time, DR site, application environment and security audit of application etc.

- Professional manpower up to certain period of time may also be provided at the user end to start using the e-Governance services. National cloud through which the government becomes able to support applications and services must be made available. Almost all the initiatives under ‗Digital India' campaign are supported through the cloud. Alternatively, Department may be facilitated to place their servers at Central Data Centre for proper environment and maintenance, this is called as Co-lection. These two solutions to store huge amount of data will boost up department initiatives with regards to service delivery. Developing the ambience for e-government: Positive environment needs to be developed to meet the vision of successful implementation of e- government projects. This environment may either be internal or external .

Implementation of E-Government Projects - Then finally the e-government projects must be implemented. This is the final step of the conceptual framework

III. CONCLUSION

E-Governance offers an opportunity for government organizations to re-invent themselves, get closer to the citizenry and forge closer alliances with varied communities of interest, practice, expertise, conviction and inter-dependence within the context of national development agendas. As an emerging practice, e-governance seeks to realize processes and structures for harnessing the capabilities of ICTs at various levels of government and the public sector and beyond, for the purpose of establishing good governance. The route to e-governance is only now emerging, as governments and citizens across the world try and learn to exploit, new media and the new information technologies.

E-Governance evolves new way of leadership, debating, deciding strategies, using services, new ways of doing business transactions, new ways of accessing education, new ways of listening to citizens and diverse communities and new ways of organizing & delivering information. As a concept, e-governance can be perceived to be inclusive of e-Democracy, e-Government and e-Business. Government Process Re-engineering using IT to simplify and make the government processes more efficient is critical for transformation to make the delivery of government services more efficacious across various government domains and therefore needs to be implemented by all Ministries/ Departments.

REFERENCES

[1] Abramson, A.M. and Means, E.G (2001) E-Government, Price Waterhouse Coopers

[2] Bachus, Michiel. 2001. E-governance in Developing Countries. IICD Research Brief No.1 (March).

[3] Cook, M.E. (2000) "What Citizens Want From E-Government: Current Practice Research," Center for Technology in Government, University at Albany/SUNY, Albany, N.Y.,

[4] Dey, Bata K. (2000), ‒E-governance in India: Problems, Challenges and Opportunities – A Futures Vision‖, Indian Journal of Public Administration, Vol. XLVI, No. 3.

[5] Gartner. (2002). Is IT worth it? Presenting the public sector business case. Stamford, CT: Gartner.

Retrieved March 19, 2010, from http://www3 .gartner.com/resources/104200/104275/ 104275.pdf

[6] Subhash C. Bhatnagar, Nupur Singh (2010), Assessing the Impact of E-Government: A Study f Projects in India, Research Article, Indian Institute of Management

[7] Kumar, P., Zaidi, A., Srivastava, A. and Jain, G. (2015) Evolving Sentiments towards E-Governance Using Opinion Mining. IJCA Proceedings on International Conference on Distributed Computing and Internet Technology, ICDCIT 2015, 24-27.

[8] N. S. Kalsi, Ravi Kiran and S. C. Vaidya, Effective e-Governance for Good Governance in India, International Review of Business Research Papers,Vol.5 No. 1 January 2009 Pp. 212- 229

[9] Dr. Sanjay Kumar Dwivedi, and Ajay Kumar Bharti (2005), E-Governance In India – Problems And Acceptability, Journal of Theoretical and Applied Information Technology

[10]Thakur, Dhanaraj.2009.ICTs and Community Participation:An Indicative Framework.The Journal of Community Informatics, Vol. 5,No. 1.

[11]Tapscott, D. and Caston, A. (1993) Paradigm Shift: The New Promise of Information Technology, McGraw-Hill: New York.

[12]―National e-Governance Plan‖, Ministry of Communication & Information Technology, Government of India, available at http://www.mit.gov.in/content/national-e-governance-plan

[13]―Mission Mode Projects‖, Ministry of Communication & Information Technology, Government of India, available at http://www.mit.gov.in/content/mission-mode-projects [9] Verma R.K., Kumari A. (2010) ―E-Governance at Grassroots Level in South Asia: A Study of Citizen-centric e-Panchayats in India‖. Asia-Pacific Journal of Rural Development Vol. XX, No. 1