

# Prospects of E-Governance in India

Puneet Kumar, Prateek Bhanti

*Abstract- India is a developing nation having democratic decentralization and to enhance the participatory approach; e-governance was initiated in early seventies. The focus of this paper is at the current status of e-governance in India and some emerging areas where e-governance can play a vital role in upliftment of the society. This paper also covers key challenges with possible remedial solutions and some strategies for successful implementation of e-governance.*

**Index Terms**—Agriculture, Education, Energy Conservation, Immunization, NeGP.

## I. INTRODUCTION

E-government [1] refers to the use of information and communication technology to carry out government operations such as delivering government information and services. E-government is generally recognized as a means of making government more efficient while allowing it to be more responsive to customer needs [2]. E-governance can also be defined as the application of electronic means in the:-

- Monitoring the performance of various scheme started by government from time to time
- Interaction between government - citizens and government-business
- Simplification processes of the government
- Internal government operations to simplify and improve democratic, government & business aspects of governance

India is a developing nation and diversified too in terms of literacy, language and culture. But despite of so many miscellanies, e-governance is growing tremendously. E-Governance is facilitating rural as well as urban masses by providing various types of ICT (information and communication technology) enabled services. E-governance process brings transparency in the system, so e-governance initiatives in various fields and can reduce the corruption up to a large extent. National Informatics Centre (NIC) is playing a vital in the implementation of e-governance by designing and launching various types of web portals and online management information systems (MIS). There are large number of projects running in India, but still there is a bunch of untouched areas where the implementation of E-Governance is required. This paper is intended to study few present running schemes of E-Governance and explore new areas, where E-Governance can prove to be windfall for the society.

## II. GOVERNMENT AND E-GOVERNANCE

E-Governance is a decisional process and it is about the use of ICT in systems of governance. It ensures the wider participation and deeper involvement of citizens, institutions,

NGOs and companies in governance system. E-governance is a way of participatory approach in today's democratic era [3]. Implementation of E-governance or the modernization of the processes and functions of the government using the tools of ICT so as to transform the way it serves its constituents can be referred as E-Government. The citizens in modern form of government i.e. E-Government are treated as passive recipients of digital information and services without any involvement.

## III. CURRENT STATUS OF E-GOVERNANCE

The concept of e-governance has its origins in India during the seventies with a focus on development of in-house government applications in the areas of defense, economic monitoring, planning and the deployment of Information Technology to manage data for intensive functions related to elections, census, tax administration etc. [4]. A major initiative of the Government for ushering e-Governance on national scale, called National e-Governance Plan (NeGP) was approved on 16th May 2006. NeGP consists of 27 Mission Mode Projects (MMPs) encompassing 9 central MMPs, 11 State MMPs and 7 integrated MMPs that span multiple backend Ministries/ Departments. It also includes 8 program support components aimed at creating the right governance and institutional mechanisms, core infrastructure, policies & standards and the necessary legal framework for adoption of e-Governance in the country. It is implemented at the Central, State and Local Government levels [i].

NIC has leveraged ICT to provide a robust communication backbone and effective support for e-Governance at various levels including sub district level in many States. National Knowledge Network is a core Backbone consisting of 18 Points of Presence with 2.5 Gbps capacity. 96 institutes have been connected to NKN (National Knowledge Network) and 15 virtual classrooms have been setup. NIC has setup National Data Centres at Delhi, Hyderabad and Pune which provide shared hosting and co-location facilities to the Government across India. Multipoint Video Conferencing (VC) services are provided over NICNET from 631 existing studios spread across India. An SMS gateway has been setup to integrate the various applications hosted by NIC for sending alerts and updates [ii]. The state-wise progress of e-governance (especially in rural development) is represented in table given as under in Table 1. The above mentioned scheme of government is a successful attempt to empower the citizen by providing access of information to the rural people. There are certain other areas where the implementation can help in eradicating severe problems of the society viz poverty, education, health,

sanitation etc. from India with special focus towards rural masses.

Rural India covers over 68% of India's total population where half of it living below poverty line and struggling for better and easy access to health care and services [iii]. As e-governance is growing rapidly and by span of time every process of the government will be covered by it. While rest of the world can hope to provide access to all these citizen-centric service through public networks, internet and portals, the digital divide in remote areas in India challenges a last mile connectivity requiring solution like setting up kiosks. As a consequence every decision making process will be fully participatory; which will help in designing policies as well as deciding implementation mechanism by considering all kinds of beneficiaries. Also, e-governance will be having its positive impacts on several other areas like; the government offices will be paperless which also results in a healthier; more green environment. The flow of information will be very fast and its availability will be everywhere, which will give freedom to every individual from carrying unnecessary documents like driving license, ration card, voter ID card, PAN card etc. The transparency in the system will be at its peak i.e. there will not be any inconsistency and redundancy of the data and information. Table is shown in Appendix.

#### IV. EMERGING AREAS FOR E-GOVERNANCE

##### *a. Agricultural and Allied Services*

Implementation of e-governance can provide real time information to the farmers on crop prices to enable farmers to sell his crop at the best possible rates and eliminating the role of middleman. The disbursement of cash and monitoring of agricultural credit can be made more effective, quick and transparent. Information can be provided to farmers helping them increase agricultural produce by adopting new technique for selection of land, buying of seeds, and use of fertilizers to post harvest processing. Farmers can use a network of Telecenters (Known as Agricentres) to co-ordinate their planning so that there is steady supply to the market and more regulated and regular prices.

##### *b. Education*

The studies show that; among 184 countries, India has secured 139th rank in terms of literacy with the literacy rate of 74.1% [iv]. Further, the literacy rate is the key challenge which affects major problems of the society and only e-governance is one of the probable way, which can solve the problem. The rural India suffers from inadequate education services so, e-governance can play an important role in the delivery of education to rural village. Using technology, students in these villages can be taught by teachers in urban areas. Although, Government of India has taken significant steps in this direction like launching of 'EDUSAT' the first Indian satellite built exclusively for serving the educational sector. This is a collaborative project of the Ministry of Human Resource Development, Indira Gandhi National Open University, and the Department of Space/ Indian Space Research Organization. It is mainly intended to meet the

demand for an interactive satellite based distance education system for the country. It strongly reflects India's commitment to use space technology for national development especially for the development of the population in remote and rural locations [v]. But despite of that our education system is lacking in terms of awareness level in rural areas, which can be improved by strictly directing state governments for ensuring successful implementation up to grass root level and including e-governance and its services as a part of educational curriculum. In order to develop awareness about e-governance, a subject of E-Governance and its application can be included at the level of 8th or 10th class with computer education.

The introduction of e-governance in higher education is one such concept that can empower the governing bodies to administer the progress of the education plan in the whole country and serves various stakeholders in a much better ways[vi].

##### *c. Health and Sanitation*

It is evident from the statistics that; 42% of India's children below the age of three are malnourished, only 43.5% of the children are fully immunized and India is having high infant mortality rate where approximately 1.72 million children die each year before turning one's-governance can be used as a tool for comprehensive management of hospitals and health centers in the villages to ensure proper delivery of health related services in rural India. ICT are being used in developing countries to facilitate remote consultation diagnosis and treatment. The immunization process can also be covered by e-governance so that the percentage child vaccination can be improved to a great extent. An infant child can be registered, and as a result of that his/her vaccination detail can be uploaded to a centralized database of portal. An SMS service can be implemented to remind the parents about the scheduled vaccination day for their child. It will also help not only in the process of immunization but also in monitoring the vaccination programmes in various states.

##### *d. Milk Production*

The dairy portal provides information on how to improve their productivity, recognizes if their cattle suffers from a disease and also the dairy unit can interact with collection centers, providing many services including veterinary assistance and artificial insemination services. Computerized system are now being used to process the transaction of buying and selling of milk, a great impact has been made because earlier, people were not paid the proper amount of the milk due to corruption.

##### *e. Use of ICT in energy conservation*

Information and Communication Technologies can play a crucial role in achieving an energy-efficient and low-carbon economy. The European Commission has put ICT at the forefront of an energy revolution. Using ICT in a smart way could help reduce energy consumption in buildings (by 17%), transport and logistics (by 27%), and save 15% in total carbon emissions by 2020. ICT can improve energy efficiency in several ways:

- Optimizing energy and reducing carbon footprint in the logistics industries, in particular transportation and storage requirements.
- Improving production efficiency control, energy distribution, and consumption through smart metering and smart grids. With smart meters in homes, for example, consumers could reduce their energy consumption by as much as 10%.
- Helping consumers to understand better how much energy they consume, how much it costs, and how it varies during the day.
- The rollout of broadband networks facilitating the increased use of online public services and applications could save at least 1–2% of total energy use worldwide by 2020 [vii].

#### V. CONSTRAINTS AND LIKELY CHALLENGES

There are several problems in the effective implementation of e-governance like:

**a.** Lack of awareness is the prime factor in the utilization of e-governance services. This can be improved by sensitizing the people through arranging several awareness camps or workshops at the local grass root levels.

**b.** The table given above depicts that every state is using various e-governance applications whereas the data of various applications is not centralized (i.e. the data will not be shared to other state). The application should be fully customizable and it should be hosted centrally so that availability of data can be nationwide and thus will help in reducing redundancy and inconsistency of data.

**c.** The lack of communication between various e-governance applications (each application will work independently). Therefore the data requirement for each and every application will be separate and it may cause high volume of redundant data which results in inconsistency of data and information as well. There should be the internal communication between various e-governance applications so that space utilization as well as data inconsistency can be minimized [viii]. Those officials and resource person who are actively involved in some project does not document their experience and have not been in touch of others (some time intentionally). Officials are sometimes transferred which results in loss of documents and the knowledge base of the project [ix].

**d.** Still most of the population is illiterate or incapable of reading and writing in English language. Hence web applications should be developed which uses more local language on its interface to make it more user friendly. Mobile phones had addressed this issue to some extent by using pictorial features, but in case of internet this issue still needs more attention.

#### VI. CONCLUSION

Although government of India has taken significant steps towards successful implementation of e-governance but

despite of that, there are some factors which may affect in successful implementation. In spite of some reservations and potential negative implications of implementing and designing e-governance, including disintermediation of the government and its citizens, impacts on economic, social, and political factors, vulnerability to cyber attacks, and disturbances to the status quo in these areas, e-governance can radically change the face of governance[x]. In future India will be having e-governance completely and which will impart an ideal democracy. Several e-governance projects have attempted to improve the reach, enhance the base, and minimize the processing costs, increase transparency. It has been claimed that E-governance has the potential to impact the livelihood of poor and economic backward India. In spite of some reservations and potential negative implications of implementing and designing e-governance, including disintermediation of the government and its citizens, impacts on economic, social, and political factors, vulnerability to cyber attacks, and disturbances to the status quo in these areas, e-governance can radically change the face of governance, especially in a big country like India and provide its citizens, an interface to get better and more efficient government services.

#### ACKNOWLEDGMENT

The authors Mr. Puneet Kumar and Mr. Prateek Bhanti are thankful to Dean, FASC, Mody Institute of Technology & Science for his constant encouragement and support.

#### REFERENCES

- [1] Radl, Alison, & Chen, Y.-C., "Computer Security in Electronic Government: A State-local Education Information System," International Journal of Electronic Government Research, pp. 79-99, 2005.
- [2] Panwar, Vaibhav, "Role of data warehousing & data mining in e-governance," 2008.
- [3] Satyanarayana, J., "E-Government: The Science of the Possible," New Delhi: Prentice Hall of India, 2004.
- [4] Pradhan, S. K., & Kumar, P., "E-Governance in India: A Case Study of Haryana," South Asia Politics, pp. 34-37, February 2010.
- [5] Technology, D. o., "National e-Governance Plan", Retrieved August 28, 2012, from deity.gov.in: <http://deity.gov.in/content/national-e-governance-plan>, January 2012.
- [6] IT, D. o., "Information Technology Annual Report," New Delhi: Ministry of Communications & Information Technology, 2011.
- [7] Wikipedia. "Healthcare in India" Retrieved September 06, 2012, from [http://en.wikipedia.org/wiki/Health\\_in\\_India](http://en.wikipedia.org/wiki/Health_in_India), 2012.
- [8] UNDP. "List of countries by literacy rate," Retrieved September 6, 2012, from [http://en.wikipedia.org/wiki/Literacy\\_rates](http://en.wikipedia.org/wiki/Literacy_rates), 2012.

- [9] Education, D. o., "Outcome Budget", New Delhi: Ministry of Human Resource Development, 2008. information-and-communication-technologies-lead-the-way-to-energy-efficiency-in-europe/, February 2010.
- [10] Bhanti, P., Lehri, S., & Kumar, N., "E-Governance: An Approach towards the Integration of Higher location System in India," International Journal of Emerging Technology and Advanced Engineering, pp. 225-229, 2012.
- [11] Commission, E., "Information and Communication Technologies lead the way to energy efficiency in Europe," Retrieved 1 2012, September, from News website:<http://www.renewableenergyfocus.com/view/7627/>
- [12] Vanka, S., Sriram, K., & Agarwal, "A. Critical Issues in e-Governance," International Conference on e-Governance, pp. 16-19. India, 2007.
- [13] Agarwal, A. e-governance: case studies. In A. Agarwal, "e-governance: case studies", Hyderabad: Universities Press, 2007.
- [14] Berman, H., "E-Governance in India: How Citizens Benefit?" (A. I. Radio, Interviewer), July 2009.

APPENDIX

Sr.	State	Project Name
1.	<b>Andhra Pradesh</b>	<ul style="list-style-type: none"> <li>Comprehensive Modernization of Land Records (CMLR )</li> <li>ePanchayat</li> <li>General Provident Fund System for Zilla Parishads</li> </ul>
2.	<b>Arunachal Pradesh</b>	<ul style="list-style-type: none"> <li>BPL Survey 2002-Report Generation Software</li> <li>Land Record Computerization</li> </ul>
3.	<b>Assam</b>	<ul style="list-style-type: none"> <li>Community Information Centers (CICs) of Assam</li> <li>Land Records</li> </ul>
5.	<b>Chandigarh(UT)</b>	<ul style="list-style-type: none"> <li>e-Jan Sampark Portal</li> <li>Grievances Monitoring System</li> </ul>
6.	<b>Chattisgarh</b>	<ul style="list-style-type: none"> <li>AGMARKNET</li> <li>Computerization of Food grain Supply Chain of Food and Civil Supplies department</li> <li>Land Records computerization</li> <li>Property Registration computerization</li> </ul>
9.	<b>Haryana</b>	<ul style="list-style-type: none"> <li>Dynamic Integration of Property Registration and Land Records Administration</li> <li>e-DISHA Ekal Sewa Kendra</li> </ul>
10.	<b>Himachal Pradesh</b>	<ul style="list-style-type: none"> <li>Double Entry Accounting System MIS for Rural Development Blocks</li> <li>Integrated Land Records Computerization (HIMRIS)</li> </ul>
11.	<b>Jharkhand</b>	<ul style="list-style-type: none"> <li>Land Records Computerization</li> <li>State wide Video Conferencing infrastructure setup</li> </ul>
12.	<b>Karnataka</b>	<ul style="list-style-type: none"> <li>BELE(Crop)-Web enabled AGRISNET Inf.System</li> <li>BHOOMI for Revenue Department</li> <li>e-mandi-Online Agricultural Marketing System</li> <li>Rural Digital Services (Nemmadi)</li> <li>Samanya Mahiti for Department of Rural Development &amp; Panchayat Raj</li> </ul>
15.	<b>Madhya Pradesh</b>	<ul style="list-style-type: none"> <li>I-GeoApproach Internet Geometrics - Based Application for Planning Rural Road Connectivity to Habitations (Under Pradhan Mantri Gram Sadak Yojana (PMGSY)).</li> </ul>
16.	<b>Maharastra</b>	<ul style="list-style-type: none"> <li>e-File implementation in National Rural Health Mission project at Maharashtra</li> <li>Panchayat Raj Portal</li> </ul>
17.	<b>Meghalaya</b>	<ul style="list-style-type: none"> <li>Online Market Information System</li> </ul>

18.	<b>Nagaland</b>	<ul style="list-style-type: none"><li>• Community Information Centers</li><li>• Video Conferencing</li></ul>
19.	<b>Punjab</b>	<ul style="list-style-type: none"><li>• SUWIDHA</li><li>• Treasury Information System Punjab</li></ul>
20.	<b>Rajasthan</b>	<ul style="list-style-type: none"><li>• BPL Census</li><li>• Dharohar Project</li><li>• e-Gram</li><li>• Land Records Computerization (LRC)</li><li>• Mid Day Meal Monitoring System (MDM)</li><li>• Video Conferencing Facility</li></ul>
21.	<b>Tamilnadu</b>	<ul style="list-style-type: none"><li>• Anytime/Anywhere e-Services-Land Records</li><li>• CollabLand (FMB digitization)</li><li>• Online Micro Small &amp; Medium Enterprises</li></ul>
22.	<b>Tripura</b>	<ul style="list-style-type: none"><li>• Land Records Computerization</li></ul>
23.	<b>West Bengal</b>	<ul style="list-style-type: none"><li>• Agri-Portal Matir Katha for Agriculture Department Gov. of West Bengal</li></ul>