

# Overview of e-Governance elements from Indian State IT policy perspective

Rahul Joshi, Vrashali Deshmukh

**Abstract** — This paper is an attempt to give overview of e-Governance elements by studying state IT policy documents of different states in India. It contains three sections viz., first section details out list of elements for E-governance; second section provides analysis of these elements followed by conclusion with open vision of state IT policies towards E-governance.

**Index Terms** — e-Governance, IT policy.

## 1 INTRODUCTION

**E-**Governance or Electronic governance can be defined in a variety of ways. E-governance is the application of electronic means that enables interaction between government and citizens, government and business as well as internal operations of the government. In other words, e-Governance means usage of IT in government operations for transforming government's relations with citizens and businesses. Here, 'e' means 'IT' acts as an enabling tool which in turn facilitates, fastens, and smoothes interactions at the interface between governments or administration and citizens. Active citizen participation is facilitated by the use of e-Governance as it informs the citizens, allows their participation in more efficient, easy, and effective manner, and opens the government agencies for extraction of accountability by citizens.

Organization of rest of the paper is follows. In the section 1.1, I present list of e-Governance elements. In Section 2 analysis of policy provisions pertaining to these elements is presented. In Section 3 analysis of the vision of underlying state IT policies towards e-Governance is presented.

### 1.1 List of E-governance Elements

The following is the list of elements of e-Governance as specified in the IT policy documents of different states in India. The provisions in IT policy documents of different states pertaining to the broad theme of IT for governance or e-Governance are classified in different groups as per these elements. In other words, the policy provisions from different states IT policies corresponding to the following themes are brought together in different groups. The subsequent sections present the comparative analysis of the policy provisions in each of these thematic groups listed below:

- Business Process Re-engineering
- IT Budget
- State WAN & Dept. LAN
- Use of e-mail, bulletin boards and video conferencing
- Digitization of Public Domain Information

- Transaction automation and information data banks
- Standardization of IT infrastructure, data and application
- Development of portal web site
- Use of local language
- e-Citizen Interface
- Delivery of Public Domain IT services
- IT literacy in government
- Use of GIS technology
- Smart Cards
- Flagship Programs or Schemes

## 2 ELEMENT-WISE DETAILS FROM STATE IT POLICY DOCUMENTS

### 2.1 Business or Government Process Re-engineering (BPR/GPR).

Business Process Re-engineering or Government Process Reengineering is essentially used for adaptation to IT by doing intensive re-engineering and administrative reforms, redefining the role, and recasting the structure and functioning of the administrative departments of state government. This exercise is mainly carried to remove redundancies, optimize resources and rationalization of rules and procedures to bring transparency in working and thus enhance efficiency and productivity. This ultimately brings down the time and cost for process deployment. Through this, government can also make extensive reuse of processes, patterns, components and design. Different state IT policy documents have considered BPR for variety of purposes like:

- To improve work-environment within the government departments.
- State like Assam wants to launch appropriate tools for efficient G2C services.
- Andhra Pradesh wants to create a blueprint for e-government.

- Uttaranchal used this for managing interoperable mechanisms in the e-Governance architecture.
- Chhattisgarh IT policy refers this as an instrument for achieving dramatic improvements in critical measures of performance, such as cost, quality, service and speed.
- Bihar IT Policy referred this as a tool to achieve modernization of old disjoint processes.

To achieve above mentioned benefits of BPR/GPR, states like Rajasthan wants to take appropriate measures like hiring external consultants on turn-key basis for development and execution of best practices for BPR.

## 2.2 IT Budget

State government's yearly budget is the key instruments for IT Budget. It is interesting to see how this instrument has been utilized by state IT policies in India. The budget instrument is used in two ways; either the policy provision talks about a certain percentage of the overall budget of the state government, or a certain percentage from budget to be allocated for each department in e-Governance.

Two bodies in India set IT Budget viz. (a) Government of India (5% more recent) and (b) Planning Commission (3% and older). IT budget in states IT policies is set on the basis of norms of one of these two. It is observed from state IT Policy documents that most states earmark 5% of their budget for IT applications. Small in size or less resourceful states like Nagaland, Manipur, Mizoram and Bihar have allocated 3% of total budget as IT budget.

In state IT policy like M.P. consideration for IT budget is made without further specification like what percent of total allocated budget is reserved for IT and how it will be utilized. On the other hand, some states have allocated IT Budget on the basis of purposes. State like Punjab wants to utilize this budget for a very general purpose like 'IT induction'. In some state IT Policies provisions for this budget considers a list of items needed for IT infra as: procurement of hardware, systems software, establishing IT centers, networking, web technology, development of applications software, training and technical consultancy, for e.g., Haryana, Manipur and Nagaland.

Some state like Rajasthan wants to spend nearly half of the allocated IT budget for IT training, while U.P. government wants to utilize half of the allocated budget on software development and its training.

U.P. is the only state that stands out in stating purpose for IT budget for e-Governance by mentioning "IT Pool Fund for e-Governance" which in turn will be used to develop replicable and reusable models of e-Governance, IT innovations in administration.

## 2.3 State Wide Area Network (SWAN)

According to State IT policies SWAN will be implemented as a backbone network for voice, text and video transmission and dissemination. These networks will also be utilized for inter-departmental connectivity, multi-user and multi-service facilities, on-line application processing, query and response which in turn will enable better communication, information sharing, and allowing people to work together in a more effective way ensuring cohesive administration and reduced the communication expenses.

SWAN is also used to connect state capitals with district and sub-divisional HQs to improve supervision and monitoring. It would also be used to provide services at the door steps of the people. Almost every state IT policy has given emphasis for SWAN to implement e-Governance where NIC is going to play a key role in establishment and strengthening of these networks.

States like Haryana and Manipur wants to limit them up to departmental LANs.

For SWAN, some states want to take specific measures like considering the terrain structure of the state like Uttaranchal wants to develop a hybrid type of SWAN which is primarily based on wireless technologies supported by existing networks. To develop a SWAN with proper bandwidth, the state governments are also wants to encourage appropriate Public-Private-Partnership (PPP) models like Common Services Centers (CSCs).

## 2.4 Use of E-mail, Bulletin Boards and Video Conferencing

Interactions with citizens form higher level of element in IT where citizens can interact with the department to avail certain service. Most government departments communicate by using a simple interaction mode like e-mail which acts as a contact link a between people and concerned official in the department. Due to free availability of e-mail services from several ISPs, e-mail now a day's get popularized and provided free to everyone. E-mail also connects far-flung areas of state to Government and other institutions. Also, e-mail can server other purposes like exchange of routine circulars, meeting notices, and meet minutes. States like U.P., Haryana, Chhattisgarh, Karnataka and Manipur wants to use e-mail for Grievance Reporting and Monitoring.

Some states shown aspiration towards usage of videoconferencing so that common citizen's can gain direct access to the higher tiers of administration. Orissa and Manipur wants to use this as a facility for achieving the higher level of connectivity between different levels of state administration, while in Karnataka this facility is already in place in most of the district head-quarters for direct interaction between the

district level officers and the higher authorities at the state capital.

## 2.5 Digitization of Public Domain Information

This involves bringing all information together and also made available to citizens (either individually or publicly) in the digital format and it is made available for electronic access through the government website as and when they are issued. Digitization of public domain information is helpful in efficient and transparent management and delivery of information to users which in turn improves speed and quality of service.

Generally, the following types of information are digitized by states:

- Public domain information like Official Gazette and Notifications,
- Acts, Rules and Regulations, Circulars,
- Policies and program documents.

Some examples of such digitized information are: downloading of non priced forms, information about eligibility, rules, and documents required to be submitted along with various application forms, formats of affidavits, and information related to tenders.

Digitization of certain type of information would also enable the citizens and their organizations to play the role of a watchdog and ensures transparency. Some examples relating to this type are: land owned by the government, details relating to the civil works and payments made for them, mandi market prices, availability of hospital beds, citizens' charters, cause list of various revenue courts, names of licensees under different provisions of law and the terms and conditions thereof.

Nearly every state has included this provision in their IT policy. This digitized public domain information is disseminated through IT Kiosks in states like Karnataka, A.P, Tripura, and U.P.

A good example for digitization of public domain information is "E-Mitra" project initiated by Rajasthan state government to digitize employee related data and transaction information such as payroll, GPF, State Insurance, Pension and Service Books.

## 2.6 Transaction Automation and Information Data Banks

In the process of e-Governance, the next logical step after information digitization is creation of data banks and automation of transactions. Both of these measures significantly help in achieving accountability and efficiency in data administration. While creating and compiling information database, state government has to maintain secrecy and privacy of citizen's data. Establishment of such databases in turn facilitates systematic data exchange between departments.

Some states have considered this as a step for establishing SDC's that provides different functions like the Central

Data Repository, Secure Data Storage, Citizen's Information Portal, Remote Information Management and Service Integrity tool for e.g., Rajasthan, Bihar, Uttaranchal and Orissa.

A.P. has already created different types of information data banks for different applications like MPHS (Multi-Purpose Household Survey Project containing computerized database of 75 mil. citizens & 25 mil. land records), C-TAS (Computerized Treasury Accounting System in which 233 district treasuries & 300 sub-treasuries computerized) and COMPACT (Computerized Administration of Commercial Taxes is a Computer-based system of registration of dealers & processing of their sales tax returns).

Karnataka has carried out a systems requirement study for creating an exhaustive database for decision making process.

## 2.7 Standardization of IT Infrastructure, Data and Application

Standardization of IT infrastructure, data and application is necessary to enable integration of resources into the State Intranet, creation of centralized data warehouses, and compatibility on all systems which will reduce future costs of IT applications. Most states are aware that such standardization is to be followed during procurement of hardware, software, networking equipment, by adhering to specifications and standards laid down by the DIT or the prospective state agency.

IT Policy documents of some states have clearly mentioned the prospective agency and its role to shoulder the responsibility of standardization of IT infrastructure, data, and applications. The agencies and their designated roles vary from state to state. For example, in states like Bihar, Manipur, Uttaranchal and Sikkim, the state IT Department (DIT) is the facilitating agency in deciding the standards. In Karnataka, Centre for e-governance has been given the responsibility to standardize government IT systems to enhance the scope and implement the systems in a uniform and effective way. Hartron (Haryana Electronics Development Corporation) in Haryana is the sole agency for deciding specifications and standards in regard to procurement of software and equipments.

In few states, communication architecture is based on open and Inter-operable Standards which ensures seamless integration with applications across various platforms. Therefore, there is a need to adopt standards which are reliable and scalable to cater to all IT security requirements and growth of the state IT usage.

## 2.8 Development of Web - Portal

The Web Portal can act as a single point of access for information and services provided by the state government to the citizens and other stakeholders. In general, it is a common

gateway for all state services, applications, and information. The content of the Portal need to be regularly updated and made available to the citizens.

Some states have mentioned purpose of developing portal website in their IT policies. States like A.P., Karnataka, Chhattisgarh, Himachal Pradesh, and Assam want to develop the portal for achieve service delivery of different government services. The Punjab state government wants to create this portal for extending help to farmers, rural artisans and poor. In the case of Pondicherry, the government wants to launch a multilingual Portal for information exchange and views on directions of the government's IT strategy and emerging trends in the industry in order to identify key issues associated with EDS (Electronic Delivery of Services) and to discuss the policy framework for developing channels for EDS in an integrated manner.

Certain states have clearly mentioned in their IT policy document about what kind information to be displayed on portal and how it is to be used by public. For example, U.P., Haryana and Orissa, government wants to display information such as various Forms, Procedures, Programs, Projects, Schemes, Tenders, Quotation Calls, and Notice etc on state portal website.

## 2.9 Use of Local Language

Use of local language or Localization of web applications or web services is useful to increase the outreach and extend benefits to the common man in an effective and efficient way. Communication in local language also helps to increase the accountability of governments. To this end, Delhi, Haryana and M.P. state governments want to promote use of Hindi in IT usage. Similarly, Kerala wants to familiarize ICT to common man by putting locally relevant content in Malayalam.

Some states have taken special measures in this regard. The Punjab state government, apart from creation of useful content on the Internet in Punjabi, promoted use of Gurumukhi script in IT. The state has planned specific initiatives to achieve this objective: use of Gurmukhi in computers and web applications and the standardization of Gurmukhi Script Key Board.

Some states have also planned to standardization of word processing software and machine-codes in their local language to achieve wider spread and easy interoperability of e-Governance.

## 2.10 IT Interface for Citizens

It is also called as e-Citizen Interface and is seen as an essential element in efforts of the state government to use IT to communicate with citizens directly, effectively, and efficiently. Citizens' IT Interface makes it possible to achieve this in af-

fordable, friendly, transparent, and convenient manner. As discussed in the beginning of this chapter, normally there are four different types of e-citizen interfaces like G2C, C2G, G2G and G2B.

Few states have clearly mentioned the type of services and facilities they want to provide through e-citizen interface like Mizoram, Chhattisgarh and J&K endeavor to provide facilities for filing of documents electronically to various departments through G2C interface.

The Manipur state government wants to utilize this interface for PIFCs (Public Information Facilitation Counters) so that public domain information is available without delay and citizens can easily access the grievance and suggestion systems and databases made available for them.

On the other hand, certain states want to use this interface for planning purpose like Haryana state government wants to develop OLAP (Online Analytic Processing) for the same.

In this regard, some states have taken special measures. The Bihar government is setting up CSCs called "Vasudha" to provide easy access to G2C and G2B interfaces to the rural masses at village levels. In Rajasthan, E-Mitra initiative is serving as G2C interface and is managed and operated under PPP model.

States like A.P., Karnataka, and Maharashtra want to utilize this interface for priority areas where maximum citizen interaction takes place.

Only Uttaranchal IT Policy has addressed the issue of ensuring access to physically challenged people to this interface, by mentioning that government will ensure that e-Governance services delivery interface will be designed by taking consideration of needs of physically challenged people.

## 2.11 Delivery of Public Domain IT Services

To ensure effective delivery of IT services, some state governments want to establish electronic services delivery system in their departments, and making these services available to the users by charging transaction basis fees. Various mechanisms are proposed in the policy documents for charging fees for IT services provided to the users. The respective departments will be given flexibility in assigning fees by considering complexity and size of the data. Quality assurance in service delivery should be achieved though well-laid-out norms proposed by DIT and the respective department.

States like Jharkhand and Orissa want to set up information kiosks to provide access to government information portal and citizen services by installing them in suitable urban and semi-urban locations through self-employment scheme. Also, the necessary infrastructure and free training for making these kiosks operational will be provided by the government and through private sector.



Some states have mentioned the steps they want to take for developing service delivery system. Pondicherry wants to develop Data Warehouses in every department, which is linked to central databases which are maintained in SDC (State Data Centre). This SDC can in turn act as a facilitation agency for service delivery. In this regard, the Rajasthan government has established CSCs (Community Service Centers) and launched a special drive to use mobile communication facilities for achieving e-Governance service-delivery. This ensures reach of IT services to un-reached sections of society, which in turn can establish contact with the common man and readdress their grievances. States like A.P., Karnataka, Himachal Pradesh, Assam, Bihar and Meghalaya want to establish Web-Enabled interface for creating government to citizen interface to achieve service delivery.

## 2.12 IT Literacy in Government

IT literacy in government is mandatory to cope up with the challenges and increased expectations from the government agencies; this involves capacity building of government employees and people in public sector. Towards this, some states endeavor to implement an ITLP (IT Literacy Plan) for their employees in order to achieve 100% IT literacy in the government like Haryana, U.P. and Manipur. The minimum level of proficiency for IT literacy is defined by IT Policy documents and it includes word processing, e-mail, and data entry and internet access. State like Bihar wants to organize suitable training programs for their employees and want to give appropriate incentives/ disincentives in order to achieve desired level of proficiency within a targeted date.

Some states intended to take specific steps for achieving IT literacy of government employees. This includes including the appropriate level of computer literacy as an essential criterion in the recruitment process or and that sector for e.g. Mizoram and Chhattisgarh.

## 2.13 Use of GIS Technology

Geographic Information System (GIS) is extremely useful in integrating, analyzing, and visualizing different types of data used in many applications having a strong linkage with spatial dimension such as spatial planning, environmental protection, utility management, and traffic regulation. The GIS system can be used as a Decision Support System (DSS) by various departments for long-term planning and for achieving the development of the State.

Some states have taken specific measures to use the GIS for a variety of applications. Chhattisgarh has developed a very comprehensive Geographical Information System (GIS) with 37 layers for natural resource mapping, using satellite imageries and digital processing. Similarly, 'VIKAS DARPAN' is a comprehensive GIS system developed by Rajasthan gov-

ernment which is used by various state government departments for planning purpose. In few cases, NIC is acting as the facilitating agency for providing GIS-based services.

Some states have clearly mentioned the purpose, sectors, or services for which they want to use GIS technology, in the light of the threats and opportunities provided by their geographic characteristics. These include: (a) water supply, electricity, sewerage, (b) Disaster Management applications, (c) forest, rivers, roads, PHC sewerage pipes, and (d) forest management.

So, it is clear from the above mentioned state-wise usages of GIS technology that state IT policy should consider use of GIS technology.

## 2.14 Smart Cards

SMART Cards acts as an effective instrument for citizen's identification and to link together the diverse functions and services provided to the citizens. In other words, it is a multi-function instrument that enables citizens to interact with government agencies and access different services like making payments, acting as a Voter ID, obtaining ration card, passport, driving license and vehicle registration.

Not many state governments have mentioned this facility in their policy documents. Most of them want to introduce this facility with the help of private sector participation.

## 2.15 Flagship Applications

Flagship applications will be developed as proof-of-concept applications for the purpose of demonstration. They are expected to earn acceptance and credibility for other elements of e-Governance. In the case of many states, these applications are yet to be finalized and the responsibility is given to the High Powered IT Committee of the respective state. Generally, the preferred flagship applications include: applications in the areas of Taxation, Treasury, and Transport sector. Only Manipur, Haryana and U.P. have considered developing such applications for building confidence in other government departments of their state.

## 3 CONCLUSION

I have carried out survey of state IT policies in India and presented the analysis of e-Governance elements from the same. Here, I tried to examine the vision inbuilt in these policy documents with regard to e-Governance. As policy document is a statement of intent and the vision, where it reflects guidance for the same and also limits its action and implementation. There are two dimensions of policy vision: substantive dimension and time dimension.

As far as time dimension is concerned, two states—Karnataka and Andhra Pradesh—have redefined their policies, bringing out the second versions, in the light of the rapidly changing macro context and to plough back their own learning's.

Coming to the substantive dimension of the vision, this analysis attempts to analyze the substantive vision reflected in these policy documents in relation to the role of IT in governing five critical areas or sectors that are critical to human development, viz., agriculture, health, literacy, empowerment of citizens, social justice.

- Agriculture is an area noticeably absent in IT policies. Even in a predominantly agrarian state like Haryana, the use of e-services in agriculture extension is not mentioned.
- Use of IT for delivering health related services is confined to few policies and even here, there is a lack of clarity on how exactly IT can help the larger goal of health.
- The policies talk about IT literacy, but none of them has contemplated use of IT for resolution of a knowledge-related chronic problem faced by country, viz. literacy.
- Many state IT policies have talked about encouragement to local language. However, very few have taken pains to elaborate on this issue. Only four states give some details of the measures to be taken in this regard, such as evolving standards, promoting local language content. Neglect of local language in IT sphere has been one of the main reasons for exclusion of “masses” from the benefits of IT. e- Governance which is friendly to the local language can also lead to empowerment of hitherto neglected sections of society.
- Another critical development dimension that is not emphasized adequately by most policies is social justice. The only area covered by the policy that is relevant to social justice is benefits to physically challenged people. The issue is touched upon by only one state.

These overall observations indicate that the IT policies need to look beyond the orthodox understanding of IT and try to envisage use of IT for fulfillment of social and political objectives before the society such as social justice, livelihoods protection, and democratic participation.

#### 4 FUTURE WORK

To achieve SMART (Simple, Moral, Accountable, Responsive and Transparent) governance to the citizens, the provisions corresponding to various elements of e-Governance need to address various aspects by involving views and opinions of policy makers and policy analysts which maximize people involvement like transparency and accountability, participa-

tion and responsiveness.

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## Authors

**Rahul Joshi** is currently working as an Assistant Professor in Computer Science Department at Symbiosis Institute of Technology, Pune. He has completed M.Tech in 2010 from Indian Institute of Technology, Bombay (IIT, Bombay) and B.E. (IT) in 2005 from Shivaji University, Kolhapur. He is having 4 years of teaching and one year of industrial experience.



**Vrashali Deshmukh** is currently working as a Lecturer at Navshyadri College of Engineering, Pune. She has completed her B.E. (Computer Science) from SRTM, University Nanded. She is having research interest in the area of e - Governance.