E-Governance: Issues in Implementation

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Abstract—*The paper is a contribution to the on-going debate on the appropriate mechanism for good governance particularly in the developing countries like India with the involvement of Information Technology in the system of the government and for the betterment of the society. It focuses on the practices and solution for e-Governance implementation and the issues related to its implementation. It highlights the benefits and challenges of implementing e-Governance while considering factual speciality, peculiarities, growing impact of Information Technology and need of developing and developed countries. This paper will be helpful to all people who are interested in developing E-governance project like civil servants in government agency, businesses houses developing e-governance projects, etc.*

1. INTRODUCTION

The concept of e-government started with the advent of government websites in the early 1990s. The system of government is fixed, static hierarchical regulated, whereas web is dynamic, flat and unregulated. Government's function is like mammoth, where one hand does not know what the right hand is doing. With the development of Information Technology and increased dependence on the internet as a transaction medium and the development of adequate infrastructure and regulations, government websites soon developed into a highly potential channel for supporting a frontend and back end applications. Besides fast delivery of services, internet technology brings more transparency to the governance and many benefits to the e-governance community. With the advent of Internet and related technology, the government services can be extended to all geographical segments in the country round the clock, all days in a year. In addition to better and fast monitoring of government tasks, e-governance generates more revenue through online delivery of services. India is ranked 54th in the global e-government readiness ranking of 2009. This indicates significant room for improvement.

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2. E-GOVERNANCE GLOBAL TRENDS

Governments around the globe are awakening to adapt the Internet technology for e-government; some countries show more interest in adapting the technology and some are slow in the process. United Kingdom launched UK online in September 2000, with an aspiration of becoming the world's leading knowledge economies. As a major initiative, a network of almost 6,000 UK online centers is established to allow the people to access and familiarize with the online services. Australia (particularly the state of Victoria) and Singapore are the early adapters of e-governance. Canada's e-governance approach is on par with the U.S. Canada's approach to e-governance is different from that of the U.S. For online services, U.S. focuses more on the business client at the federal level whereas Canada focuses on key services for both citizens and individuals in a more decentralized way. Now the pressure is mounting on the government to reduce the operating cost. The citizen at the same time expects faster, reliable and secure performance. Internet is now commonly available for millions of people round the globe. The common person's skill in digital technology is growing day by day. Internet technology is available in more than 150 countries on the earth. This makes the citizen believe that —anything is possible. The monopoly of the government and the big corporate world is threatened. This is reducing the boundaries between and within the government branches.

3. ISSUES IN THE E-GOVERNANCE IMPLEMENTATION

3.1. Technology Issues

In technology, there are three basic elements. These are infrastructure layer, application layer, integration technology and application layer. The technologies and services for networking in e-governance is the infrastructure layer which is about hardware and software required to generate a web site, as well as it is about the equipment's location and who looks after it. Application layer is made up of software and services that either extend the site's performance or make it easier to manage. The integration layer is to use the Internet to tie together practically all the traditional disciplines associated with various services provided by the web site. Application software is the software that performs the functions of a web based information system.

3.2. Infrastructure Layer

It is made up of various core technologies, which are explained below:

Carrier: The basic element by which site is connected to the internet. Internet service providers (ISP) provide internet connection and bandwidth required for the sites.

Hosting Centre: Like big corporate world, make specially designed rooms for equipment. E-governance also looking for such specially designed rooms, which are cost effective and efficient.

Three more layers of infrastructure are needed for the better performance of the web sites load balancing, security layer, and caching. Load balancing regulates the traffic generated by the incoming requests to the servers. Load balancing software handles information requests with the most available capacity in order to avoid ―server busy messages. Security layer controls which information to be given and to whom. This layer is used to prevent the hacking and making online transaction safe. When web server jumps up against its performance limits, especially when the server has to extract too much information during the peak traffic, the cache gives a helping hand by storing frequently requested information.

3.3. Basic Application Layer

The core technologies in the basic applications layer are content management system, personalization, transaction engines, site analysis, campaign management, and customer support. Content management system makes it easy to create and organize web content especially with thousands of pages and lots of interchangeable words and images. Other features of content management system are server caching and analysis of web site traffic. Personalization system stores the visitor/ citizen profile while they visit the site. The system prompts the visitor to give their profile on voluntary basis. Also it tracks the visitor's visits. Transaction engine allows the visitor to configure his/her request and facilitates to pay by credit card or other means. In addition, it manages the service and visitor information, and it facilitates to have a real time link with a third party such as a credit card company or a bank. As web can reveal more about its visitor behavior than any other medium, most servers collect and store enormous amounts of information about how many page views they serve. Besides, site analysis system stores information such as how many visitors came in every month, how long they stayed on the site, and what they looked at. Campaign management system goes beyond the site analysis and helps to launch certain marketing efforts, such as automated email that responds instantly. Customer support system gives a helping hand to a visitor who has trouble using a site. The system gives automated help with the human touch.

3.4. Integration Technology

The core technologies in integration are application integration, sales integration, and financials. Application integration enables the user to talk with the ―legacy system, which is a non-Internet system. For example, a web site gives the front-end interface to access to various services. To complete the request the back-end systems are to be integrated. This kind of integration is provided by available ―Enterprise Application Integration‖ software. The integration technology bolts together those non-Internet systems and Web operations. Sales integration collects all sales data in various government centers in real time and provides remarkable opportunities to forecast and track the visitors. Once the transactions are completed over the web, the transaction details are to be plugged into accounting system. This is facilitated by financials system.

3.5. Application Software

The visitor interacts with the application software when entering input into an application program and receiving output from the program. The three-step method is proposed for the application software plan to interact with the user. These are:

Where are we?

Where we want to go?

How do we get there?

Where are we: The present status of application in the government organization analyzing the functional area in every government organization? Identifying the systems for which the application software is not yet developed is also a primary task.

Where we want to go: What kinds of governance are required by the next generation? It is trying to utilize internet technology to shape the way of living for the next generation.

How do we get there: Innovative Internet business models are to be created in e-governance context to intertwine the relationship between people and their government? Implementation can be done in progressive stages such as getting online with web sites, providing electronic distribution, implementing financial transaction such as tax or license payments.

3.6. Management of Change Related Issues

It is important to investigate how the business of government and the nature of governance itself change in the digital networking economy. Questioning the policy formulation processes in view of e-citizen expectations is a major initiative in e-governance. Ultimately the objective of the process reengineering is to rethink the value propositions of the government and how they function in serving the citizens. The major goal is to change the behavior of governments with the changing needs.

3.7. Funding Issues

Around the world, governments provided funding for the select pilot projects on government on-line, including projects such as public works, government services, and human resources. The real challenge for the government is to go about funding the full range of initiatives in order to achieve the objective of ―Government Online. One suggestion is that the concerned department has to come up with adequate fund by themselves. Other issue is utilizing the available resources both in the plan sector and outside it.

4. CHALLENGES IN E-GOVERNANCE

There are large numbers of potential barriers in the implementation of e-Governance. Some hindrance in the path of implementation, like security, unequal access to the computer technology by the citizen, high initial cost for setting up the e government solutions and resistance to change. Challenges identified as trust, resistance to change, digital divide, cost and privacy and security concerns.

4.1. Trust

Trust can be defined along two dimensions: as an assessment of a current situation, or as an innate personality trait or predisposition. The implementation of public administration functions via e-government requires the presence of two levels of trust. The first is that the user must be confident, comfortable, and trusting of the tool or technology with which they will interact. The second dimension of trust pertains to trust of the government.

There has to be a balance between ensuring that a system prevents fraudulent transactions and the burden that extensive checks can take place on people who are honest.

Recently, confidential information on military veterans was compromised when a computer containing their personal information was lost. This type of incident can erode trust and user confidence in government systems. Trust, along with financial security, are two critical factors limiting the adoption of e-government services.

4.2. Resistance to Change

The innovation diffusion theory states that over time an innovation will diffuse through a population, and the rate of adoption will vary between those who adopt early—referred to as ―early adopters— and to those who adopt the innovation much later, referred to as ―laggards. The resistant to change phenomenon can explain much of the hesitation that occurs on the part of constituents in moving from a paper based to a Web-based system for interacting with government. Citizens, employees, and businesses can all have their biases with respect to how transactions should be processed. However, government entities and public policy administrators cannot ignore the changes that occur because of the implementation of information and communication technology (ICT). In the

early 1990s identified the important role that ICT would have in shaping public policy, and cautioned both rich and poor governments about neglecting its significance. Education about the value of the new systems is one step toward reducing some of the existing resistance. It can also be particularly useful for a leader or manager, to buy into the new system at an early stage in the adoption process.

4.3. Digital Divide

The digital divide refers to the separation that exists between individuals, communities, and businesses that have access to information technology and those that do not have such access. Social, economic, infrastructural, and ethno-linguistic indicators provide explanations for the presence of the digital divide. Economic poverty is closely related to limited information technology resources. An individual living below poverty line does not afford a computer for him to harness the benefits of e-government and other online services. As the digital divide narrows, broader adoption of e-government in the public domain becomes possible.

Economic poverty is not the only cause of digital divide. It can also be caused by the lack of awareness among the people. Even some of the economic stable people don‗t know about the scope of e-governance. Awareness can only help to bring users to that service delivery channel once. It cannot guarantee sustained use of the system unless the system is also designed in such a way as to deliver satisfactory outcome. Procedures need to be simplified to deliver concrete benefits and clear guidelines provided to encourage their use by the actual end users and reduce users' dependence on middlemen/intermediaries.

4.4. Cost

Cost is one of the most important prohibiting factor that comes in the path of e-governance implementation particularly in the developing countries like India where most of the people living below the poverty line. Elected officers and politician don‗t seem to be interested in implementing e-governance. Its return is not visible in the near future. In 2004, the United Kingdom and Singapore respectively spent 1 percent and 0.8 percent of their gross domestic product (GDP) on e-government. India is spending 3 percent of GDP.

4.5. Privacy and Security

There will be three basic levels of access exists for e-government stakeholders: no access to a Web service; limited 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 complex process with legal consideration. With the implementation of e-government projects, effective measures must be taken to protect sensitive personal information. A lack of clear security standards and protocols can limit the development of projects that contain sensitive information such as income, medical history.

5. E-GOVERNANCE AND THEIR IMPLEMENTATION

The awareness level of the potential of ICTs was extremely low among both proposed providers and targeted beneficiaries. Moreover, delivery infrastructure was weak [ASCI October 2001].

5.1. Enhancing Citizen Awareness

Citizen awareness about the potential of ICT should be enhanced. Citizen access to government information/services must increase rather than further divide the digital divide.

5.2. Upgrading Skills

There is urgent need to upgrade the IT skills of government employees. Employees must be effectively trained before introducing desired changes in work process in government departments. Above all, it must be ensured that trained specialists are on hand to provide support for users of ICT-based systems and services. A major cultural change is required among employees in government citizen dealings.

5.3. Common Standards

All states/ union territories must be adopt common standards to ensure creation and optimum utilization of government databases for nationwide citizen-related services.

5.4. Technology Evaluation

Common evaluation methodology must be evolved for hardware and software selection to derive maximum benefit from investment. Technological obsolescence must be factored in while planning and implementing ICT applications.

5.5. Experience Sharing

Continuous experience sharing between state and union territory governments on projects so as to avoid reinventing the wheel.

5.6. Security

Transactional security must be given priority to ensure that internet use is safe, seamless and crisis free.

5.7. Reliable Infrastructures

Sufficient resources must be allocated to build a reliable ICT infrastructure to avoid breakdown of services. Cementing public-private partnerships to supplement government efforts must be considered.

6. FUTURE TRENDS

With the great scope of Information Technology, it can be very well said that it has a very bright and prosperous future. Government of every nation spends a good part of its GDP in e-Governance. Future e-Governance research agendas can be built around future visions for government and society. Certain themes that will shape the future have worldwide import, but will play out and interact in both expected and unexpected ways in different places. Therefore, no one future is ―best or ―ideal in all contexts. The themes provide a parsimonious analytical framework for planning and evaluating e-Governance practice, and for designing e-Governance research in any context. The framework itself needs assessment and validation.

7. CONCLUSION

With the rapid explosion of internet technology in the world in the last few years, there is need to think where we will be and we want to be in the future. With the time grows new technology will come and develop at a rapid pace. The countries that are faster in adopting the technology have started reaping the benefits already. At the same time the government managers should quickly learn to use technology-fueled management tools for administrative efficiency and use them for a more value added service to the citizen. Despite the success of the project and the bright future, the e-governance initiative face several hindrances like delay in project implementation, spiraling cost, financial feasibility and financial sustainability along with technical bottlenecks and Integration with Government departments and states. Lack of education and trust add it to further difficulty.

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