

AN OVERVIEW OF CRITICAL ISSUES OF E-GOVERNMENT

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ABSTRACT

IT has revolutionized the way public administration performs tasks. To manage the government affairs for the benefits of citizens, governments have adopted e-government technologies in service delivery. The objectives of this study are to provide a comprehensive review of e-government practice, assess the levels of e-government implementation, and evaluate critical success factors of e-government implementation. The analysis of the impact of e-government in service provision is also provided.

Keywords: E-government, Critical issues, Politics, Implementation, Assess

INTRODUCTION

Information technologies (IT) have been used in both the public and private sectors. Governments and their agencies have recently started to move from the traditional service delivery methods to more sophisticated means brought on by the IT revolution. The objective of this article is to provide a comprehensive review of e-government practice and the fundamental issues that directly or indirectly impact a government's adoption of e-government technologies. In particular, the paper focuses on the stages of e-government, from the demand for e-government to an operationalized e-government portal service.

OVERVIEW

E-government refers to the use of information technologies (such as the Internet, the World Wide Web, and mobile computing) by government agencies that can transform their relationship with citizens, businesses, different areas of government, and other governments. These technologies help deliver government services to citizens, improve interactions with businesses and industries, and provide access to information. The use of e-government can lead less corruption, increased transparency, greater convenience, revenue growth, and cost reduction [13]. The aim of e-government is to allow the public to initiate a request for a particular government service without going to a government office or having direct contact with a government employee. The service is delivered through government web sites [1].

IT has brought many possibilities for improving internal managerial efficiency and quality of public service delivery to citizens [7]. In the U.S., state and local government spending on e-government initiatives totaled more than \$1 billion in 2000 [7]. According to the memo, the government reform is guided by three major principles -The government should be citizen centered, result oriented, and market based. More importantly the U.S. government will continue to encourage and expand use of the Internet and computing resources to provide government services [12].

Several factors have triggered governments to provide Internet services. The first is that the unsustainable level of public expenditure could not provide efficient public services. The

inefficiency is attributed to waste, delays, mismanagement, corruption, or poor organization and management skills. Second, the rapid development of IT and the increasing awareness of the value of information systems make e-government efforts acceptable to citizens. The third factor is that the resurgence of neo-liberal thinking, emphasizing the efficiency of market competition and the need to make governments more business like. E-government is the next step in the natural evolution of how governments respond to changes in the broader economy and society [4].

EFFECTS OF E-GOVERNMENT

The potential benefits of e-government that accrue from the use of IT include:

1) Reduced government spending and increased interest earning. Costs incurred by a government in providing services can be reduced by the use of the Internet. For instance, ServiceArizona is maintained and hosted by IBM, which is being paid 2% of the value of each transaction, about \$4 for each vehicle registration. Because processing an online request costs only \$1.60 compared with \$6 for a counter transaction, with 15% of renewals now being processed by ServiceArizona, the motor vehicle department saves around \$1.7 million per year [9].

2) Reduction in the number of in person government contacts. Governments are under pressure to meet rising expectations for their service. With the use of the Internet more individuals are able to access the government's services without necessarily going to the government office or contacting by telephone. The use of the Internet will reduce the negative attitude individuals have toward government agencies because not many people enjoy interacting with their government [9].

3) Delivery of government services from any place to citizens 24 hours a day, 7 days a week. Websites serve as convenient and cost effective platforms for centralized service provision. Businesses, residents, visitors, and intergovernmental agencies can easily access public information related to their specific needs by simply checking on different web links. They can also contact government officers directly through email or online request forms. One such development is the use of CRM software, which provides a vehicle through which governments can increase cooperation through integration of back office and front office [8].

4) Another beneficial outcome of e-government is the promotion of e-democracy. Some examples of digital democracy include voter registration, public opinion polling, and communication among elected representatives and their constituents.

SERVICES PROVIDED THROUGH E-GOVERNMENT

In the past, the government has merely concentrated most of its efforts on simply informing citizens of the services and functions it offers [11]. However, this trend has changed and currently more transactions are being completed via the Internet. Some of the common e-government services include filing a personal income tax return, applying for a state fishing or hunting license, renewing a professional license, renewing a driver's license, requesting a government loan, and submitting employment information [1, 2, 4]. Web services provided by the government have been growing. As a result of various web technologies, 40 million U.S. taxpayers were able to file their 2000 tax returns over the web, while 670,000 online applications were made for student loans using the web based system of the Department of Education [7].

STAGES OF E-GOVERNMENT DEVELOPMENT

In the development of e-government, the government has to undergone various stages of sophistication and technology. According to Howard [4] and Lau [6], the major stages of development include:

Information Publishing. The basic form of e-government is the provision of information. The government merely posts information on the websites for the constituents to read. The challenge for the government in this case is to keep on updating their databases and ensuring clean data is posted. The government web pages may have information about the community, events, employment opportunities, local taxation, public services available, major employers, attractive tourist sites, cultural events and city history.

Two-way communication. This is the second stage of e-government sophistication in which citizens communicate with the government and make simple requests and changes mostly by use of email. In most cases the information requested is not returned immediately online but sent by regular mail or returned by email.

Transaction. At this level of sophistication, websites have been developed to accommodate processing of transactions. Individuals interact with the government and conduct all transactions online. Currently, most governments' websites are at this stage. Examples of these transactions include renewing driver's licenses, paying fines, and applying for financial aid [5].

Integration. This is the most sophisticated level of e-government in which government services are integrated together. Constituents can access the services they need irrespective of the agency or department offering them. Integration can be achieved through establishment of a single portal entry service. In the U.S., such efforts have been made by establishing a portal service at <http://firstgov.gov> [5].

According to a survey conducted by the United Nations on its members in regards to e-government development, the majority of the members are in the enhanced and transactional stage (see Fig. 1).

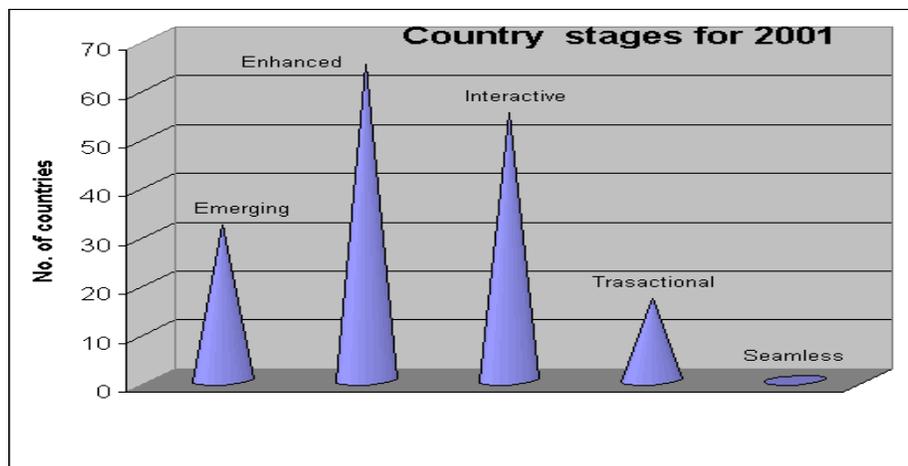


Fig. 1 Stages of e-government development (adapted from [10]).

The UN divided the development process into 5 stages [10]. These stages are as follows:

Emerging: A government Web presence is established through a few independent official sites. Information is limited, basic and static.

Enhanced: Content and information is updated with greater regularity

Interactive: Users can download forms, contact officials, and make appointments and requests

Transactional: Users can actually pay for services or conduct financial transactions online

Seamless: Total integration of e-functions and services across administrative and departmental boundaries

TYPES OF E-GOVERNMENT

E-government involves electronic relationships between the government and different entities. There are four major but sometimes overlapping types of e-government, namely Government to Citizen (G2C), Government to Employees (G2E), Government to Business (G2B), and Government to Government (G2G) [5, 11].

G2C. In this type of e-government, the government keeps a one-on-one relationship with citizens in order to provide services such as social security administration. The e-government also forms a political link with its citizens as part of a democratic process, for instance, voting online, and participation in polls.

G2E. This is an online relationship between government bodies and their employees. Typically the government, through the use of the Internet, can provide information to their employees regarding to pay dates, holiday information, and employee programs being undertaken, for instance restructuring and reorganization.

G2B. Government interaction with the business community is essential to economic development. Similar to the G2C, the G2B relationship is intended to facilitate smooth operation in the market. While businesses can transact many online services from the government, a major proportion of online transactions between them involve procurement – the hiring of contractors or acquisition of goods and services by the government [5].

G2G In G2G, government bodies or agencies work together and provide services to one another. This kind of interrelationship may bring gains in the management and utilization of public resources. By linking sites together, inter-governmental agencies can reach economies of scale; *FirstGov.gov* is the first attempt by the U.S. to interlink government agencies [5].

The relationships between the types of e-government, the stages of e-government development and the natures of information at each point of intersection are summed in Table 1.

Table 1. Summary of Electronic Government Framework (Adapted from [5]).

	Stages of e-government			
	1	2	3	4
Types	Information	Communication	Transaction	Integration
G2C	Description of medical services, benefits, dates of an election	Request and receive individual benefit information, receive election forms	Pay taxes online, receive election funds and disbursements	All services and entitlement
G2B	Regulation outline, posting requests for proposals (RFP)	Request classification or specs	Paying taxes online, receive program funds, agricultural allotment, online vouchers, payments	
G2E	Pay dates, holiday information	Request for employment benefit statements	Electronic paychecks	Employment applications, retirement information
G2G	Agency filing requirement	Request from local government	Electronic funds transfer	

IMPLEMENTATION POLICIES AND CHALLENGES

Various e-government development approaches may be adopted based on the prevailing circumstances. These approaches are; 1) nationally coordinated or a top-down approach in which the central government is the initiator and the coordinator of the activities, 2) a nationally autonomous or parallel approach in which government departments like ministries and agencies come up with their own initiatives with minimal influence by the central government, 3) a sub-nationally or a vertically up approach where the primary movers are the local and state governments, 4) a sub-nationally autonomous approach where the innovations and programs are developed at the local levels but have some influence on the national government's e-government activities [10].

Challenges that must be addressed by governments during the implementation period to ensure effective use of the e-government and acceptance by the citizens include:

Government integration. One of the greatest challenges faced by the public sector is integration of technology across the government. The public sector must move toward integrating data, establishing policies to facilitate cross-agency access of information, and establishing applications that enable the sharing of data [11]. The government should focus on one-stop or a central entry point structure that allows citizens to access services without having to know which department handles the service.

Privacy. Privacy issues on data collected by the government about individuals are of great concern. The Internet allows a faster means of storing data, and at the same time it allows easier manipulation. Currently, there is unauthorized cross-referencing between online and offline databases [5]. Protecting confidential information is a key concern of privacy advocates. The government should ensure that the collection of private confidential information is appropriate, sharing information both within and outside of the government is consistent with how the information was originally collected, and information collected can only be changed by those who provide it. Therefore, the government has to set and enforce laws relating to privacy.

Another challenge of e-government implementation is *authentication*. When the state provides services to an individual it must authenticate that the person receiving is eligible to such services. Advanced technologies such as digital signatures or use of a PIN for authenticating service recipients will have to be explored.

Though the advances in e-government are exciting, the biggest challenge to a government is to ensure that more people have access to the Internet. New strategies must be developed to ensure that access to technology and expertise does not keep citizens from this new service delivery opportunity. According to a survey in the U.S. in August 2000, 41 percent of households and 44.04 percent of all individuals had access [3]. Therefore, more efforts have to be made by the U.S. government and target at least 95 percent of the total population to have access to the Internet.

According to the UN survey, numerous official guidelines and methodologies have been developed to assist government officials to implement e-government projects successfully. However, much has not been achieved due to institutional/operational, managerial, and policy planning barriers. These barriers are summarized in Table 2.

Table 2. Barriers to e-government (adapted from [10]).

Institutional/operational	Managerial	Policy/Training
Technology and infrastructure costs / factors	Lack of capacity to manage large scale IT projects	Lack of coordination and or strategic planning
Lack of resources to support 24 / 7 operations	Lack of conviction of top or middle managers	Lack of comprehensiveness and continuity of policies / programs
Lack of innovative incentives in the public sector particularly regarding IT	Management expectations vs Management realities	Absence of policy guidelines
Organizational / cultural dichotomies	Doubts and resistance by leadership	Organizational / cultural dichotomies
Lack of institutional support	Opposition by professional or union interests	Local governments and municipalities if left behind become bottlenecks
Information mismanagement, reluctance to share among departments Misuse of sensitive data	Obsolete legal frameworks to innovate and incorporate the private sector	Lack of comprehensiveness and continuity of policies / programs
Absence of policy guidelines	Information mismanagement Reluctance to share among departments. Misuse of sensitive data	Opposition by professional or union interests

DIRECTIONS AND RECOMMENDATIONS FOR THE FUTURE

Planning. The government should undertake strategic planning when developing their websites. The government agencies must critically evaluate their projects before they are undertaken with the main mission of achieving their vision. An important aspect, therefore, is to collect input from the citizens concerning future needs and what they expect.

Provision of user-friendly service. A major consideration during implementation of e-government application is to create a user interface that is friendly and easy to operate. The degree of sophistication may hamper effective usage of the sites; therefore, website developers must have the user in mind.

Proper training and adequate staffing. The public sector or agencies must hire and ensure proper staffing of their IT departments. In addition, they must implement staff training mechanisms to ensure they keep abreast of the ever-changing technology. Additionally, training leads to job satisfaction, which is an important ingredient in employee retention.

Agency partnership and support from top leadership. Agencies should consider pooling their resources together as a way of reaching their constituents in providing services. IT projects are cumbersome, controversial, and expensive. For this reason, for projects to survive and succeed, there must be political will and leadership support to ensure smooth implementation.

Set up outreach programs to train citizens. Not all citizens may have the expertise to use this technology. It is imperative for the government to ensure public places like libraries, schools, and any other points of computer contact have instruction manuals.

CONCLUSION

In spite of what people normally perceive the role that the government should play in a society, people tend to accept the benefits and transparency that e-government efforts can

provide. Indeed, citizens across the United States and around the world are benefiting from e-government at the national, state and local levels. From electronic tax filling to online payment for parking tickets, governments everywhere have seen how technology helps them to cut costs and serve the public better.

IT management demands a new vision and determination by government agents and officials to give priority to resources meant for technological change and departmental reorganization. The public sector should be aware that technology alone does not solve a large organization's problems; however, the process of implementing new technology does open up the door to significant institutional change, which may go a long way toward making several federal agencies much more efficient. However, the greatest drawbacks to the realization of the e-government vision are insufficient staff, lack of funding, and digital divide among racial groups.

Finally, building on the lessons learned from their own Internet initiatives, and after seeing how e-business has taken root in the private sector, many government agencies are now well underway with new technology projects aimed at replacing legacy systems and as well improving their back-end operations.

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