



Electronic governance in Bangladesh: challenges and prospects

Azizur Rahman¹, Alvy Riasat Malik²

¹Department of Public Administration and Governance Studies, Jatiya Kabi Kazi Nazrul Islam University, Trishal, Mymensingh

²Department of Human Resource Management, Jatiya Kabi Kazi Nazrul Islam University, Trishal, Mymensingh

ARTICLE INFO

Article history

Received: 01 October 2020

Accepted: 27 October 2020

Keywords

E-governance, Challenges, Prospects, Bangladesh

*Corresponding Author

Azizur Rahman

✉ abir7du@yahoo.com

ABSTRACT

Electronic governance in short e-governance is a smeared concept in the development discourse. This article aims to identify the challenges and to recommend some ways in this regard. Evidently, e-governance is the use of information technologies by government agencies in service provision and by citizens to get services. It may range from e-admission to e-voting. Bangladesh has obtained e-governance idea to reinvent its governance and to transform the society into a creative knowledge society. Nonetheless, it affronts many hurdles like poor infrastructure, lack of political support, shortfall of efficient human resource, digital divide etc. Therefore, it's high time to get some remedies for proper implementation of e-governance strategies. More e-services may create scope for the government to generate revenue through imposing fees for particular e-services and ensure transparency of public services. Citizens may also be benefited with prompt and improved services. In a nutshell, it will foster sustainable development. Public administration of this twenty first century should be dynamic, proactive, public relation expert, policy shaper, and pro positive change for making the service easier.

INTRODUCTION

Electronic Government, termed as e-government is defined by several scholars and organizations. E-governance is a process which helps to provide government service to the citizen as earlier as possible through technology by dint of which people won't have to go to government office. And by using this system government activities will speed up dramatically.

Electronic government (e-government) has cut out a new dosage of governance idea for all the realms in the world. The term e-governance is the effective and efficient use of modern Information and Communication Technologies (ICTs) on quest of service delivery and getting service with sending feedback to service providers to ensure better service provision for the citizens. By the blessing of e-governance, it is a real situation where people are getting all the government facilities round the clock that mean all interaction with the government can be done through one counter 24

hours a day, 7 days a week without physically waiting in lines at government brick-bound offices. Each and every citizen is able to contact with the government through a website where all forms, news and other information will be available 24/7. Bangladesh government took the initiative to implement e-governance, but the implementation of e-Governance in Bangladesh is not up to the mark and the government is not getting the full benefits of e-Governance yet for many reasons.

The objective of the study is to address challenges in implementing e-governance in Bangladesh. The main research questions are: What are the challenges associated in the implementation of e-governance? What are the means to overcome the challenges?

METHODOLOGY

This paper focuses on some current constraints of e-governance by studying various secondary

sources including books, journals and newspapers. It also tries to provide some probable recommendations to overcome the challenges. Information from secondary sources has been collected including books, journals and newspapers. In analyzing data qualitative method has been used.

CONCEPTUAL FRAMEWORK

Electronic government and electronic governance

E-government is the use of information and communication technologies (ICTs) to promote more efficient and effective government, facilitate more accessible government services, allow greater public access to information, and make government more accountable to citizens. E-government might involve delivering services via the internet, telephone, community centers (self-service or facilitated by others), wireless devices or other communications systems.”

According to the World Bank website (2005), “E-governance is the use of information technologies by government agencies that have the ability to transform relations with citizens, business and other arms of the government and can serve a variety of different ends: better delivery of government service to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.”

The E-governance Institute of Rutgers University states (www.newark.rutgers.edu) “E-governance involves new channels for accessing government, new styles of leadership, new methods of transacting business, and new systems for organizing and delivering information and services. Its potential for enhancing the governing process is immeasurable.”

E-governance, meaning ‘electronic governance’ is using Information and Communication technologies (ICTs) at various levels of the government and the public sector and beyond, for

the purpose of enhancing governance (Bedi, Singh and Srivastava, 2001; Holmes, 2001; Okot-Uma, 2000).

Thus E-government refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet and mobile computing) that have the ability to transform relations with citizens, businesses and other arms of government and e-governance denotes using Information and Communication Technologies (ICTs) at various levels of the government and the public sector and beyond, for the purpose of enhancing governance. E-government is separate from e-governance, the latter referring more specifically to how governments perform, in terms of measures such as meeting expectations, judging performance, and evaluating decision making. It is more than just a government website on the Internet. According to relevant literature e-governance has four major components as follows:

G2C (Government-to-Citizen): Involves interaction of individual citizens with the government. G2C allows government agencies to talk, listen, relate and continuously communicate with its citizens, supporting, in this way of accountability, democracy and improvements to public services. G2C allows customers to access government information and services instantly, conveniently from everywhere.

G2B (Government-to-Business): Involves interaction of business entities with the government. It includes e-transaction initiatives such as e-procurement and the development of an electronic marketplace for government helping businesses to become more competitive.

G2G (Government-to-Government): Involves interaction among government offices as well as governments of other countries. Governments depend on other levels of government within the state to effectively deliver services and allocate responsibilities. G2G focus online communication and cooperation among the government agencies and departments to share database, resources, pool skills and capabilities with a view to avoiding duplication and enhancing the efficiency and effectiveness of process.

G2E (Government-to-Employee): Involves interaction between the government and its employees. It gives employees the possibility of accessing relevant information regarding: compensation and benefit policies, training and learning opportunities, civil rights laws, etc. G2E refers also to strategic and tactical mechanisms for encouraging the implementation of government goals and programs as well as human resource management, budgeting and accounting (Taifur, 2006 and Valentina, 2004). According to the United Nations' E-government Survey (2008), there are five stages of e-government evolution. These stages are as follows:

Stage I - Emerging: A government's online presence is mainly comprised of a web page and/or an official website; links to ministries or departments of education, health, social welfare, labour and finance may/may not exist. Much of the information is static and there is little interaction with citizens.

Stage II - Enhanced: Governments provide more information on public policy and governance. They have created links to archived information that is easily accessible to citizens, as for instance, documents, forms, reports, laws and regulations, and newsletters.

Stage III - Interactive: Governments deliver online services such as downloadable forms for tax payments and applications for license renewals. In addition, the beginnings of an interactive portal or website with services to enhance the convenience of citizens are evident.

Stage IV - Transactional: Governments begin to transform themselves by introducing two-way interactions between 'citizen and government'. It includes options for paying taxes, applying for ID cards, birth certificates, passports and license renewals, as well as other similar G to C interactions, and allows the citizen to access these services online 24/7. All transactions are conducted online.

Stage V - Connected: Governments transform themselves into a connected entity that responds to the needs of its citizens by developing an integrated back office infrastructure.

Challenges of E-Governance in Bangladesh

Bangladesh government has taken a massive initiative to materialize e-governance. But things are not so easy as there are multidimensional challenges to the ways.

Social and cultural constraints

Social and cultural factors such as gender, poverty, level of education, class, caste, age, and social exclusion can all directly impede the use of computers in developing dialogue with government using ICTs. One of the key problems is the attitude of "change agents"—some people are uneasy about using computers and the internet. In bureaucracies, the possibilities inherent in flattering hierarchies and decentralizing access to information on to the desks of all employees and in promoting associated changes in power within organizations, are seen as a direct threat to many senior staff, who then block adoption (Jackson, 2000, p. 89). For example, In Bangladesh 16.7% ministries are currently active on launching their e-governance project while 44.4% have responded negatively in respect of owing any e-governance related project.

Political consensus constraints

Bangladesh E-Government program receives strong political support from the present government. In fact, it is widely believed that the people voted AL (Awami League) into power to digitize Bangladesh for development. Immediately after the AL took over the office in January 2009, the opposition political parties are showing non-cooperation and abstaining from joining the Parliamentary sessions. The AL government has taken no effective initiative so far to bring them back in the governing process. This ongoing political impasse further weakens the spirit of revitalizing the multi-party democratic governance in Bangladesh. A political consensus between party in power and the opposition is needed to implement capital-intensive e -Government projects for the purpose of its uninterrupted future journey.

Human resources constraints

UN/ASPA (2002) has identified in adequate supply of quality human resources and lack of good training infrastructure as one of the key impediments to the smooth development of e-governance in developing countries. The quality of e-governance largely depends on the performance of human resources. Bangladesh public administration suffers from an acute shortage of trained personnel, which limits its efficient operation. A recent study (Babu, 2009) estimates that, among the manpower engaged in ICT-related jobs in various ministries and divisions, only 25% of them are system analysts, 2% web developers, 2% web administrators, and 11% IT trainers. System analysts and web developers, among others, are needed the most as the country wants to implement e-governance based service provision system. To fill the gap between demand and supply of IT professionals, almost all public and private universities offer degree programs in computer science and engineering. There are also local and foreign institutes engaged in providing IT-related education and training. The general tendency of such graduates is to work in private and multinational companies than joining the public sector, largely because the former pays a more attractive compensation and benefits package than the latter. Therefore, the perceived shortage of IT professionals in public sector can perhaps never be overcome unless there is a major overhaul in the public sector pay and salary structure, so as to make it more competitive with the offerings of the private sector.

Digital divide constraints

The digital divide implies a widening of the gap between the “haves” and “have-nots” with respect to ICT across the world (Ashraf et al., 2009). In developing countries, the digital divide occurs where there is a lack of infrastructure (for example, power supply) or access to modern technology: the internet, computers, or mobile phones (James, 2007). It is further compounded by low literacy rates, high poverty rates, slow adoption of technology, and the lack of initiative for infrastructural development, and high corruption. Bangladesh is a carrier of all these symptoms that result in the acceleration of digital divide. A survey (2005) on household income and expenditure conducted by the Bangladesh Bureau

of Statistics (BBS) collected data on the use of computer, e-mail, internet, and fixed and mobile phone in both rural and urban households. The survey results indicate that a gap exists between rural and urban households in terms of the access to modern technology. It demonstrates that the rate of use of ICT facilities by urban households is much higher than that of rural households.

Wireless applications are changing the face of the Internet. Users can use digital phones, personal digital assistants, access medical records, and more. But before engaging in wireless transactions, users must be confident that they can reliably identify and authenticate each other, as well as protect information from interception or tampering.

Infrastructural development constraints

The operation of e-governance requires construction of strong technological infrastructure of telecommunications. A significant financial investment is required to develop this infrastructure. Bangladesh's poor telecommunication infrastructure is a barrier for quality electronic service delivery. Plans to improve the structure are underway, but it is unclear whether Bangladesh has the fiscal capability to bear the cost burden of this public investment. A recent report emphasizes that the impact of the global recession on the IT services and telecommunications sectors is still emerging. As a result, worldwide IT spending will decline 6 % compared with 2008, with total spend dropping from 3.4 trillion US dollars to 3.2 trillion US dollars (Robinson, 2009). However, the poor infrastructural readiness was also reflected in the e-Government Readiness Survey 2008 prepared by the United Nations where it scored 0.0246 on infrastructure index (UN, 2008, p. 178).

Central database problem

Bangladesh government did not design any central database for citizen's access using through internet. Even there is no available information of any citizen in government offices to use any emergency situation. For this reason government officers have to face many difficulties to identify any person for any special reason.

Public awareness about government portal

The majority of the government officials and public are unaware about the e-Citizens Service application portal. Very few percent of the government officials and general people of the country are aware about the portal. Only few portions of the people are using the e-governance portal.

All these problems indicate that compared to the past, Bangladesh has made progress in the United Nations overall e-governance readiness ranking. Among 192 member states, Bangladesh uplifted its position from 162 to 142. But it does not imply that Bangladesh is now at a good stage in e-government practice since it lags behind from the effective exercise of e-governance. For example, According to the Global Information Technology Report 2002, Bangladesh ranked 77 among 84 countries because of less professional on ICT.

The content and intensity of the advanced feature of the e-government websites in Bangladesh suggest that they subsist generally to the category of informative phase with in a thin flavor of interactive attribute; where features of 'transaction' and 'networked' stages are almost invisible. In addition, only 19 (42.2%) ministries offer public forms in their websites, on top of that many of these ministries do not offer useful forms.

RECOMMENDATIONS

Recommendations for G2G

Building ICT Infrastructure throughout the government

Investment should be made on building ICT infrastructure throughout the government, keeping in mind that the returns from such investment will be long-term. Stand-alone computers (i.e. those that are not connected in a network) are not very useful for e-Government. There should be plans for computers to be connected internally in offices through Local Area Network (LAN), and then inter-connected with other relevant offices through Wide Area Network (WAN). Eventually the network needs to extend to local-government level. It is important to recognize that the savings

in time and money from e-Government will be realized gradually. No overnight returns should be expected.

Stressing on awareness before training

One of the primary reasons why government officials resist the use of IT lies in the way the training programs are structured. The typical training programs introduce government officials to the world of IT through programs such as Microsoft Word, thus throwing them into confusion about what computers are really about and how it will benefit them. Since most officials do not need to type documents themselves, they cannot relate to the computers as far as their daily office work is concerned. These IT training programs should be re-oriented so that in the first classes they are introduced to the concepts of how computers may make their work more efficient. The training programs should stress on awareness about the potential of IT in government rather than concentrate too much on teaching officials how to type. And more importantly, there is not much typing involved in most of the customized e-Government software. The training programs should concentrate on creating a mental framework towards IT, not on physical skills in using the keyboard.

Providing networked computers

The practice of providing computers to only high-level officials needs to be reconsidered. It is the younger officials who are more enthusiastic about ICTs and, more likely to find more creative use of computers and even train themselves in basic handling of computers. Mid-to-lower level officers should be given access to computers. This would be a good way of investing into the future, of preparing the government officers who will take the lead in the future.

Creating incentive structure for use of IT

There should be some kind of incentive structure for the promoters of IT in the government. Recognition or award from the Prime Minister or the President may be a good way of starting a practice of appreciating the work of IT champions in the government.

Giving importance to regular training

There should be planned training programs to orient officers for using computers and more importantly, to develop awareness about the potential of IT. Without adequate and timely training and awareness programs, e-Government projects are likely to fail no matter how much the investment.

Making plans for reliable maintenance

There should be a process to have 24 hr., and immediate maintenance, without which critical e-Government projects should not be undertaken. It is also vital to maintain confidence of users. The maintenance work should be ideally outsourced since the current government structure does not allow internal IT maintenance team.

Updating of database

There should also be a process for regular updating of data since almost all e-Government projects involve the storage and retrieval of huge amounts of data. An outdated database is worse or potentially more dangerous than no database at all.

Building sustainable models for e-Government

To build sustainable models for e-Government, three processes have to be outsourced: those involving personnel training, hardware and software maintenance and updating of databases. Also, steps have to be taken so e-Government projects that get started through external funds are internalized within the budget of the government so that these projects do not meet sad deaths after external funding stops.

Transfer issue

Transfer of government officials is an inherent part of the government process. While taking decisions about such transfer, the level of IT training of the candidate for transfer should be taken into account.

Appoint of CIO

To create ownership and accountability structure for e-Government projects, an interested mid-to-high level government official in a particular office should be appointed as CIO (Chief Information Officer) of that office. It will be the responsibility of the CIO to make plans for integration of ICT into the activities of that office and promote e-Government. In many Asian countries such as Thailand, Japan and Malaysia, the concept of CIO in government has been internalized and their responsibilities made mandatory. They go through a different kind of more rigorous IT training. In Japan, Inter-Ministerial CIO Council was formed, which meets regularly to discuss issues of e-Government implementation. In Thailand also, CIOs are required to meet regularly and a regular CIO award is given by the government gets much highlight in the media.

Standardization of use of Bangla

To ease the use of Bangla in electronic formats, there should be some kind of standardization of fonts that maintain international UNICODE standards. Since communication and official documents in the government are still in Bangla, this standardization is a very urgent need without which integration of ICTs with government activities will face major hurdles.

Considering interoperability and interconnectivity

Another important issue for consideration is maintaining open standards in building IT systems so that they can be integrated with IT systems in other government offices. Use of open source technologies can be an important step in this respect.

Recommendations for G2B and G2C***Building ICT infrastructure across the nation***

Investment should be made to build ICT infrastructure throughout the nation. The international submarine cable project should be expedited as well as the Internet Exchange (IX) establishment project. The following are some of JICA's recommendations in building

infrastructure: The following are the existing infrastructures that can be used for broadband transmission of optical fiber cable transmission:

OPGW of high tension power line

Power Development Board (PDB) has advanced installation of OPGW (**Optical fiber Grounding Wire**) considering its usefulness as resource. Sooner or later, PDB with PGCB intends to realize an entire 48-core optical fiber network throughout the country. This OPGW network is very valuable as a national ICT resource.

Optical fiber cable of BR: BR (Bangladesh Railway) has installed optical fiber cables along their railways. The entire optical fiber cable network, however, have exclusively used in the mobile telephone network by Grameenphone in accordance with the Contract. Almost all the number of cores is two and those seem not to be always in good condition, as far as we were learned.

Highway: According to Highway & Road Department, there has not existed any plan under which duct installation is considered for optical fiber cable from planning stage. The ducts were always constructed upon the request of Bangladesh Tar and Telephone Board (BTTB), separately from road construction.

Gas Pipelines: According to GTCL, there are no optical fiber cables in its Right of Way (Row). GTCL is aware of how best to use the Row today. The company is desirous to install some optical fiber cables along their pipe lines when newly planned.

Creating online access points at public places

Online access points should be made from public places such as post offices so that anyone can get access to the Internet at low, subsidized cost. This is a model that is popular in almost all countries. Without such facilities, G2C and G2B services may not be able to reach target population easily.

Extension of connectivity outside the cities

Steps have to be taken to allow easy Internet access from outside cities. Incentives will have to be given to ISPs to locate outside cities.

Organizing public awareness programs on IT

Public awareness programs should be arranged highlighting the relevance of IT in daily life. It should be emphasized that IT and computerization is not only about typing documents in the computer. The cultural inhibition to using computers must be overcome.

General Recommendations for e-Governance

Push for a comprehensive regulatory framework for e-Governance. There is an urgent need for a comprehensive regulatory/legal framework for realization of e-Governance. Some of the issues to be included in the framework are IPR laws to protect intellectual property, laws for acceptance of documents in electronic format (such as downloaded documents), laws against cyber-terrorism to protect against unauthorized hacking, laws to enable electronic authentication. Also needed is an Electronic Certification Authority designated by the government which should have the authority to provide electronic certification to organization and individuals.

Creating and retain adequate IT human resource

There needs to be a well-planned program to create a greater number of IT human resource in the country. The number of seats in the computer science and engineering departments of universities needs to be increased. Steps need to be taken to monitor the quality of training institutes. Government certification programs to test individuals need to be arranged for maintaining quality of IT-related diplomas. Efforts should also be taken to retain the massive number of IT-trained personnel Bangladesh is losing each year.

Investing in public IT literacy

IT literacy programs should start early in schools because it is at that tender age that students are most open to new ideas and technologies. The government should also arrange, encourage and

subsidize IT vocational training to create an IT-literate society.

Encouraging local software companies to prepare themselves

The local software companies should take steps to become more prepared for handling government IT projects, especially in areas of project management. The software companies may also need to cooperate among themselves to jointly handle large-scale e-Government projects. Individual software companies in Bangladesh mostly do not have the human resource capacity to handle government projects. The government should take steps to give public projects to software companies so that they gain needed experience for larger projects.

Invest in reliable supply of electricity

Steps need to be taken to explore alternative sources of power or alternative means of power generation. Different developing countries are experimenting with solar power, bicycle-generated power etc. Bangladesh should also take similar steps.

Deregulation of ISP and telephony service providers

The ISP and telephone service provision must be deregulated to allow for greater competition and lower price. Also, VoIP is a popular means of communicating with the outside world, but it is still illegal under current regulations. VoIP should be made legal as soon as possible to allow greater use of computers for everyday activities of people and generate people's interest in ICTs.

Need for E-Government Implementation Strategy

The following steps should be taken for electronic government in Bangladesh:

- a. Identify functional areas in all Ministry/Division/Department and Corporations most necessary to be taken up and also those, which are easily assessable to EG.

- b. Make an inventory of existing applications/packages in use by different Ministry/Division/Department and Corporations facilitating EG.
- c. Initiate moves to encourage Ministry/Division/Department and Corporations to develop and link already existing data bases to the public domain.
- d. Initiate and develop data warehouse in all Ministry/Division/Department and Corporations to facilitate the process of EG.
- e. Create awareness and assist in database building activities in all Government/semi Government organization.
- f. Initiate and develop pilot projects in application that currently not available so as to extend full benefit of IT (say for an example EG in the Planning Division, ERD, Bureau of Statistics, Finance Division, Ministry of Science & Technology, IMED, and the LGED).
- g. Encourage the Government to prescribe knowledge of computers as an essential qualification for recruitment/promotion of various levels.
- h. Develop and integrate suitable models in areas of EG
- i. To launch and ensure wide participation of existing staff in computer literacy programmes.
- j. Develop system for seamless transfer of information between offices dealing with public administration of the Government.
- k. Set up and facilitate specific communication network for the government sectors.
- l. Assist Government in identification and implementation of suitable hardware and software packages for electronic governance.
- m. Establish links worldwide with institutions engaged in similar activities so as to optimize the benefits by building sustaining platform for interchange of ideas and experiences.
- n. Initiate amendments in Government Acts, Rules and Regulations under various Departments and Ministries to put in place IT and web enabled citizen services.
- o. Establish organizations for advising Government regarding development of strategies for use of Information Technology by Government so that latest technologies and best practices are harnessed. This could take the form of National Electronics Government Project/Unit/(NEGP)/(NEGU) on the lines of Central Information Technology Unit (CITU) set up in UK in Nov., 1995.
- p. Develop special pilot projects on Paperless Government-On-Line through use of web and internet technology.
- q. Build convergence into connected Services Delivery Programmes relating to the common citizen.

- r. Develop commercial and governmental systems for issuing and managing digital signatures/electronic signatures smart cards.
- s. Identify measures for suitable protection of data during filling up, transmission and against alterations by using combination of security measures.
- t. Launch the 25% target of Electronically Governance widely and enabled suitable milestones and makers to monitor them.
- u. Establish Industry Consultative Committees (ICC), Citizen Consultative Committees (CCC) and Ministries Consultative Committees (MCC) to provide a forum to various users and implementation groups and organizations to contribute towards the 25% goal and beyond. These committees could discuss
- i. Exchange of information and views on the direction of the Governments IT strategy, opportunities for a whole of Government approach, and emerging trends in the industry.
- ii. Identify key issues associated with electronic service delivery, including generic areas for possible partnership working which can be considered by CITU in conjunction with departments and agencies
- iii. Discuss the possible strategic and policy framework, which would guide Government to develop service delivery in an integrated manner.
- v. Development of existing Facilitation Centers already established in various departments as One Stop Shop (OSS) giving One Click (OCL) to all information required by the citizen through convergent use of linking, programme & multiple data entry mechanism.
- w. Coordinate activities of Information Technology-Citizen Interface set up by the National Task Force on Information Technology and Software Development, as also the High Powered Committee on Improving Efficiency in Government through use of IT under the Chairmanship of Principal Secretary or Cabinet Secretary.
- x. Establish Government Information Services (GIS) and facilitate the setting up of National Information Infrastructure incorporating links with GIS on one hand and State Information Infrastructure, District Information Infrastructure, Local Information Infrastructure (LII) and other networking systems on the other, so as to enable Seamless transfer of information multilaterally between users and providers of information and services.
- y. Enable ministries in Government of Bangladesh to formulate scheme for selected activities and

possible suitable resources facilitation to encourage the same.

- z. Our political and administrative leaders should take these probable recommendations into their considerations to get rid of e-governance implementation constraints.

CONCLUDING REMARKS

As stated in this paper, even though the government of Bangladesh has taken a number of initiatives to implement electronic governance in Bangladesh to develop more collaborative, participatory modern state, it continuously is facing barriers to implement. Implementing e-governance is a challenging undertaking entailing policy, regulatory, technological, human resource and institutional reforms. Public administration of this twenty first century should be dynamic, proactive, public relation expert, policy shaper, and pro positive change for making the service easier.

However, e-governance of Bangladesh requires a strong project management, monitoring and evaluation mechanism. This is not an impossible task. Bangladesh can gain the competitive advantage in this region. So the country needs to boost up its infrastructure so that it can transfer its liabilities into possibilities.

It's the high time to adopt proactive strategies to overcome those challenges to avoid waste of resources, manpower. Consequently, it will foster sustainable development.

REFERENCES

- Alam M (2007). E-Governance: Scope and Implementation Challenges in Bangladesh. International conference on Theory and practice of electronic governance. ICEGOV '07. Macao 2007.
- Backus M (2001). E-Governance and Developing Countries, Introduction and examples, Research Report, No. 3, April 2001.
- Bhuiyan H (2011). Modernizing Bangladesh public administration through e-governance: Benefits and challenges; Government Information Quarterly 28 (2011) 54 – 65.
- Jaeger PT and Thompson KM (2003). E-Government Around the World: Lessons, Challenges, and

- Future Directions, *Government Information Quarterly*, 20, 4, 389-394.
- Ndou V (2004). E-Government for Developing Countries: Opportunities and Challenges. Retrieved December 3, 2007 from <http://unpan1.un.org/intradoc/groups/public/documents/untc/unpan018634.pdf>
- Okot-Uma RW (2000) *Electronic Governance: Re-inventing Good Governance*. London, U.K.: Commonwealth Secretariat.
- OECD (2003). *The e-Government Imperative*. Retrieved November 29 from <http://www.oecd.org/dataoecd/60/60/2502539.pdf>
- Riley T (2007). E-Government: The Digital Divide and Information Sharing. Retrieved December 3, 2007 from [http://www.rileyis.com/publications/](http://www.rileyis.com/publications/research_papers/track04/Divide1Vs.3.pdf)
- research_papers/track04/Divide1Vs.3.pdf
- Sharma SK (2004). Assessing E-government Implementations, *Electronic Government Journal*, 1(2):198-212.
- Taifur S (2006). 'SICT's Steps Towards Good Governance Through ICTs: E-governance Strategies', Support to ICT Task Force program project (SICT), Ministry of Planning, Government of Bangladesh press.
- UN e-Government Survey (2008). *From e-Government to Connected Governance*, New York, 2008.
- Valentina N (2004). 'E – Government for Developing Countries: Opportunities and Challenges', *The Electrical Journal on Information Systems in Developing Countries*, EJISDC (2004)18, 1, 1-24.