The Role of E-Governance in Creating Digital Bangladesh

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Abstract

This paper has identified and examined the role of E-governance towards creating ‘Digital Bangladesh’. The Government of Bangladesh has taken initiatives with the vision of creating a digital Bangladesh by 2021. This study has focused on pertinent literature to assess the potentialities, issues and implementation challenges of E-governance in Bangladesh. The results of this study have found that issues such as lack of awareness, language barriers, lack of access to the Internet, financial constraints are major challenges for implementing the concept. In this research, a model for implementing an efficient E-governance system for Bangladesh has been proposed.

Keywords: E-governance, ICT, Electronic Services, developing countries, Bangladesh.

1. Introduction

In Bangladesh, service at doorsteps through ICTs is vital not only to establish a democratic and transparent government, but also to fight against poverty and act as a cross-cutting enabler for interventions geared towards attainment of all the millennium goals. Service at doorsteps is also necessary for ensuring government accountability, decentralization and providing effective and efficient service delivery to citizens. If bi-directional flow of information between citizens and government is established, consensus-building within a society will be ensured, thus the poor and disadvantaged groups will have the voice to contribute to policy making and implementation. Keeping these objectives in mind, the present Government of Bangladesh has took office with the vision of creating a digital Bangladesh by 2021 [1]. Implementation of E-governance can play a vital role to make this vision success.

Electronic governance or E-governance can be defined as the delivery of government services and information to the public using electronic means to support good governance. Policy makers of developed countries like the US, the UK and Singapore have fully recognized the power of E-governance to make a significant contribution in achieving the objectives of good governance. Along with Governments of many developing nations, Bangladesh is also coming to a fast realization that ICT is not only necessary for promoting economic growth but also can be a great engine for driving good governance.

E-governance often refers to the use of ICT by the government agencies to transform relations with citizens, business and other arms of government in the delivery of services. The use of ICT in government facilitates an efficient, speedy and transparent process for performing government administration activities and for disseminating information to the public and other agencies. In addition, e-governance is a form of e-business in governance and refers to the processes and structures pertinent to the delivery of electronic services to the citizens and businesses, collaborating with business partners and conducting electronic transactions [2-4].

E-governance promises transparency, shortens service delivery time, alleviates poverty, reduces corruption, strengthens democracy and implements good governance. Good governance can play an important role in economic and social development cooperation. Bangladesh can be benefited by implementing E-governance both in internal government sectors and the public sectors for the ultimate socio economic development.
In most of the developed and developing countries governments have identified the potentials of ICT for doing business and have recognized as a powerful tool for social welfare and economic growth. These governments have gone ahead in implementing E-governance systems. E-governance makes scope for mass community to get all the public services offered by any agency who maintains interactive website where governmental duties or instructions are available online. E-governance is the ICT enabled system of government service delivery for achieving good governance. Like other developing countries, Bangladesh government has given high priority to this sector. As it is still a new concept for Bangladesh, the government is facing a lot of challenges to implement it. Government is trying to give an infrastructural solid framework on the basis of which everything can run smoothly and perfectly. Financial unsoundness and lack of skilled manpower is the main obstacle to introduce pure E-governance [5-7]. This research has clarified the potentialities of E-governance as well as the common threats and key success factors for implementing E-governance in Bangladesh.

2. Objectives

In today’s world Information and Communication Technology (ICT) has tremendous impact on socio-economic livelihood of people of the country. Government functions are the most profound areas where ICT can play a pivotal role in fostering and ameliorating the citizen centric services. Adaptation of E-governance is a key for smart governance and making information technology (IT) relevant to ordinary citizens in Bangladesh where a large proportion of the population suffers from digital divide. E-governance will allow ordinary people to interact with the government at various levels and matters of governance to provide inputs for decision makers. To achieve these desired objectives a critical assessment of ICT status at various levels of government and society is needed. The specific objectives of this study are:

a) To assess the current status of the ICT infrastructure for the development of E-governance and its potentialities in the Government systems.
b) To assess the citizens’ expectation regarding e-governance and their recommendations in this regard.
c) To promote awareness of the need for action to increase e-readiness throughout the country.
d) To identify and review the backlogs and problems that inhibits the e-readiness and proposes solutions and recommendations to eliminate obstacles and improve readiness.
e) To build a coordination and network in the Government infrastructure to strengthen the capacity of public sectors.

3. Research Methodology

The methodological approach focused on the collection of data from different sources, study of the survey reports of different groups, depth interviews with key informants and informal focus group sessions. Finally data were analyzed and conclusion was drawn. The collection of data has been focused in the following ways:

• Study on the past and ongoing projects reports
• Surveys to citizens expectations
• Focus group discussions
• Key informant interviews
• Draft reports on all the studies and surveys
• Final conclusions

Citizen survey has been conducted to know the citizen’s perspective of E-governance in different areas. The questionnaire for citizen survey is designed to get the idea about how ready the citizens are for E-governance and what are the citizens’ wants and needs in terms of E-governance from the government. In addition, a survey on ministries and divisions has been conducted with a view to analyze the ICT infrastructure and connectivity status of that institution. Focus Group Discussion (FGD) and Key Informant Interviews (KII) have been conducted and the recommendations provided by the different stakeholders have been considered. Data were collected from 250 samples in which the valid response rate was 80%; so finally it turned into 200 sample elements for data analysis.
4. Potentialities of E-Governance in Government Systems

Bangladesh as well as other developing countries inherited a structure of governance characterized by large amount of paper work and file handling, time consuming process and many levels of explicit controls and approvals. Government in the developing nations costs too much, delivers too little and is not sufficiently responsive or accountable. E-governance offers a new way forward, helping improve government processes, connect citizens and build interactions with and within civil society. Information gathered from cross section of the government such as ministries, departments, directorates, offices etc. if not utilized properly is a waste of effort and money and has no value of its own. The resources need planning and management. Therefore the computerization of government, today and the foreseeable future is a prerequisite for the effective national development [8].

The potentialities of e-governance are:

- It will bring transparency in government operations and government-public interface. Computerization and networking of the government will bring transparency in the activities of different government operations by enabling everyone to access the network and see what is happening in other agencies. At the same time it will also create a bridge between the government and the public for the basic information access and interchange.
- E-governance can improve the efficiency and effectiveness of government’s service delivery systems. Once the basic computerization infrastructure is in place government could disseminate information to the public as well as gather information by setting up information kiosks at different public places.
- It will reduce corruption in the different agencies of the government.

5. Current ICT Infrastructure in Bangladesh

A summary of key findings based on the study of the survey reports of different groups are as under:

**Uses of Computers**

- PC-Employee ratio at Ministry/ Division level is 0.22
- PC-Employee ratio at Department/ Corporation is 0.065
- PC-Employee ratio in Academic Institutions is 0.23

**Internet Connectivity**

- 79% of Ministries/Divisions are currently connected to the Internet.
- 76% of Departments/Corporations are currently connected to the Internet.
- 75% of Academic Institutions are currently connected to the Internet.
- Internet-connected PC-Employee ratio at Ministry/ Division level is 0.045.
- Internet-connected PC-Employee ratio in Academic Institutions is 0.1.
- At the Ministry/Division level, about 11.6% of the offices have broadband and about 7% have radio--link connectivity.
- At the Department/Corporation level, about 10% of the offices have broadband and about 4.2% have radio-link connectivity.
- At academic institutions, 8.3% of the offices have broadband, and about 12.5% have radio link connectivity.
• 6 government offices have VSAT.
• At the Ministry/Division level, about 40% have LAN.
• About 15.2% of Academic Institutions have no mechanism for IT Maintenance.
• About 18.6% of Ministries/Divisions have maintenance being handled under projects.

Use of ICT

• At the Ministry/Division level, about 30.64% officers and about 32.64% staff use PCs.
• At the Department/Corporation level, about 20.6% officers and about 6.49% staff use PCs.
• In academic institutions, about 40% officers and about 7.4% staff use PCs.
• At the Ministry/Division level, more than 88% of the offices that are connected to the Internet use it for purposes of official e-mail, about 80% for information search and more than 52% for downloading files.
• At the Department/Corporation level, about 50% use the Internet for official e-mail purposes, about 42% for searching information and about 32% for downloading files.
• In academic institutions, about 21% use the Internet for official e-mail purposes, about 25% for searching information and about 25% for downloading files.
• At the Ministry/Division level, a little more than 8% of the officers use e-mail directly and about 5% of the officers use e-mail through computer operators.
• At the Department/Corporation level, on an average, 6.5% officers use e-mail directly while about 5.75% officers use e-mail through the help of computer operator.
• In academic institutions, 42.4% of the officers use e-mail directly and about 38% of the officers use e-mail through computer operators.
• Percentage of offices with websites: Ministry – 24%; Division – 50%; Department – 14%; Corporation – 14%; Academic Institution – 25%.

Use of Cellular Phones

Cellular Phone has revolutionized the telecommunication infrastructure in Bangladesh. It is really amazing that, since 1989; especially within the last decade, mobile phone service has provided about forty million people with telecommunication services resulting a tele-density of 23.3%. Figure 2 indicates the growth of mobile communication.

Maintenance of ICT Systems

• About 56% of Ministries/Divisions have outsourced maintenance.
• About 51% of Departments/Corporations have outsourced maintenance.
• About 46% of Academic Institutions have outsourced maintenance.
• About 16.3% of Ministries/Divisions have no mechanism for ICT Maintenance.
• About 15.7% of Departments/Corporations have no mechanism for ICT Maintenance.
• About 15.2% of Academic Institutions have no mechanism for ICT Maintenance.
• About 18.6% of Ministries/Divisions have maintenance being handled under projects.
• About 7.6% of Departments/Corporations have maintenance being handled under projects.

**IT Training**

• At Ministry/Division level, percentage of officers trained in IT is 28% and percentage of staff trained is 29%.
• At Department/Corporation level, percentage of officers trained in IT is 23% and percentage of staff trained is 7%.
• In Academic Institutions, percentage of officers trained in IT is 6% and percentage of staff trained is 4%.
• About 28% of the Ministries/Divisions have in-house IT training facilities.
• About 27% of the Departments/Corporations have in-house IT training facilities.
• About 50% of Academic Institutions have in-house IT training facilities.

**IT Human Resource**

• About 58% of the Ministries/Divisions have no IT human resource.
• About 65% of Departments/Corporations have no IT human resource.
• About 35% of Academic Institutions have no IT human resource.
• At Ministry/Division level, the number of IT trainers stand at 11% of IT Human Resource.
• At Department/Corporation level, the number of IT trainers stand at 28% of IT Human Resource.
• In Academic Institutions, the number of IT trainers stand at 37% of IT Human Resource.

According to an UN survey of E-government, Bangladesh has ranked just above the extremely poor African countries (USA 3.11, Bangladesh 0.90, Uganda 0.46). Dhaka (Point 14.20) ranked 73 among 81 countries where Seoul (Point 81.70) ranked first according to the survey report “Digital Governance in Municipalities Worldwide 2005” [9].

6. Implementation Challenges

Bangladesh is facing various obstacles to the promotion and implementation of ICT in the Government. This study focuses some major problems which include:

a) **Poor ICT Infrastructure:** Although infrastructure such as telecommunication, power, road access and sanitation has been improving lately but it is not yet adequate in most parts of the country. Presently the main focus is given to the voice communication infrastructure. But we should develop Data Communication parallel with equal importance. Infrastructure for IT education, training, research should be facilitated by the government.

b) **IT Policy:** The government is in the process of adopting of an IT policy. The said policy should be appropriate and ensure that the policy addresses the IT problems from the grass root level.

c) **Lack of Awareness of government officials:** More than anything else, it is the mindset of government officials that poses the biggest bottleneck to e-Government. There are a number of reasons why they resist the use of computers beyond usual typing of letters and documents. Some of the primary reasons are: (a) they are resistant to any kind of change in their familiar working environment; (b) they fear that computerization of different government activities may make some people redundant; (c) they think that computers are meant for low-level typist-kind of work.

d) **Non-acceptability of IT systems:** Government higher officials are not interested to accustom with new technology. Besides the general lack of awareness about ICT and the fears discussed earlier, some other factors also play a part in their non-acceptability of IT systems.

e) **Lack of Coordination:** Lack of coordination and integration among the IT professionals from the government, industry and private sector. This is essential because IT utilization and acquisition particularly in developing country like ours needs to interplay among all the stakeholders.

f) **Low Level of IT literacy:** Low level of IT literacy in society at large and specifically in the government. There is an urgent need for widespread IT training for the employees on the continuous basis together with the induction of fresh IT graduate in the government.
g) Lack of IT Training: The curriculum of the various training Institutes should be designed to meet the human resource requirements for the conditions in the market and the Government as well. Or the government should have its own Training Institution catering the IT training needs of the government.

h) High-cost, Lower Liability of Internet Access: Internet access cost in Bangladesh is very high and highly unreliable. There are virtually no dial-up options outside major cities since long distance calls are exorbitantly expensive. Internet access and availability of PCs are disproportionately concentrated in Dhaka. Most ISPs are dependent on VSAT transmission and the bandwidths being used varies from 64Kbps to 4Mbps. 60 percent ISPs are between 128Kbps and 1Mbps in this concern. This is far below what is required even by current demand.

i) Lack of IT Funds: This is an information age. We need to know what is going around the world to better our performance and to be more effective and efficient in our service delivery but we face difficulty generating fund for the international connectivity and computerization of the government.

j) Poor Salary Structure: In government sector IT professionals are getting very poor salary. That's why good professionals are not coming in government job. As a result the government is not getting any output as the government expected.

k) Wrong task and blocked post: IT officials have no proper job description. Some times they are used work in such task that they lost the interest to work in IT sector. Moreover most of the organization’s IT post is blocked. Only a few promotion make IT professional frustrated.

l) Wide Spread Corruption: Corruption is the main barrier for the economic growth of the country. Bribery is the most used form to obtain government services. Lack of accountability & transparency among the government officials make them insincere about responsibilities. Lack of transparency also inspires corruption. All surveyed people depicted it as main hurdle to provide good governance. They think ensuring accountability and transparency can really change the scenario.

m) Lack of Education: Access to education is still a great problem in Bangladesh. Though the government has taken numerous steps to increase literacy rate, the number of high schools, colleges and universities are comparatively limited. Lack of teachers and their quality of teacher is a prime concern for the guardians. A difference in quality of education between urban and rural area has been observed. Insufficient teaching materials in rural areas are one of the reasons of rising of illiteracy in the children.

n) Lack of Attention in Complain Centre: There is a complain centre in many government departments but general people do not get effective and rapid responses to their respective complains and sometimes the complain remains unattended.

o) Law and Order situation: Extortion is still a major problem to establish a new business or operating a business in the country. Though there is a common perception that it is city centric problem but the survey has depicted that it is also a major problem in rural areas. Kidnapping and murdering is frequent in Bangladesh. Violating law and order in rural areas generally occurs in the case of property and land.

p) Hassle in Getting Required Service: Government provides many services to the citizen. But people are not satisfied with the way the service is provided. They have to go through huge botheration to access these services. The surveyed people have expressed their deep concern to reduce the hassle to get a loan service.

q) Lack of Information: Government offers many services to its citizen but common people are not aware of them. People do not know how to get the help from government when they face a problem. People are not even aware about their rights. Access to information is very much limited and they are not even aware of the availability of information.

r) Lack of Information While Deep Sea Fishing: Every year Bangladesh is struggling with many natural calamities like cyclone, tornado which ultimately takes lives from the coastal belt. Many fishermen go for deep sea fishing without any precautionary measures during bad weather and often they are not concerned about the precautions at all. Improved mechanism is yet to develop in this area for providing adequate information about the precautionary measures and of bad weather. The lack of information in deep sea fishing is a serious concern. Wireless technology for that specific area can be used to help them in crises moment.

The constraints influencing e-governance implementation are depicted in the Table-1.
Table 1. Factors Influencing E-Government Implementation in Bangladesh.

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Status</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of Infrastructure</td>
<td>Not at all</td>
<td>Government Perspective</td>
</tr>
<tr>
<td>Lack of Strong IT Policy</td>
<td>A lot</td>
<td>Government Perspective</td>
</tr>
<tr>
<td>Lack of High Speed Internet</td>
<td>Not at all</td>
<td>Government Perspective</td>
</tr>
<tr>
<td>Lack of Internet Access</td>
<td>A lot</td>
<td>Citizen Perspective</td>
</tr>
<tr>
<td>Lack of Computer Knowledge</td>
<td>A lot</td>
<td>Citizen Perspective</td>
</tr>
<tr>
<td>English Language Barrier</td>
<td>A lot</td>
<td>Citizen Perspective</td>
</tr>
<tr>
<td>Lack of Bangla Computing</td>
<td>Some</td>
<td>Citizen Perspective</td>
</tr>
<tr>
<td>Lack of Adequate Training</td>
<td>A lot</td>
<td>Government Perspective</td>
</tr>
<tr>
<td>Lack of IT Funds</td>
<td>A lot</td>
<td>Government Perspective</td>
</tr>
<tr>
<td>Lack of Coordination</td>
<td>Some</td>
<td>Government Perspective</td>
</tr>
<tr>
<td>Lack of Maintenance</td>
<td>A lot</td>
<td>Government Perspective</td>
</tr>
<tr>
<td>Fear of Change</td>
<td>Slightly</td>
<td>Government Perspective</td>
</tr>
<tr>
<td>Wide Spread Corruption</td>
<td>A lot</td>
<td>Government Perspective</td>
</tr>
<tr>
<td>Lack of Awareness</td>
<td>Some</td>
<td>Citizen Perspective</td>
</tr>
</tbody>
</table>

7. Recommendations

The recommendations provided by the citizens to face the challenges of implementing e-governance in Bangladesh are summarized below:

a) Provide Website, E-Mail and Phone based Government Services: Different countries around the world provide the services through websites and telephones. The successful story in SSC and HSC result in Bangladesh is a remarkable initiative in this section. Now anyone can get his/her SSC or HSC result through SMS.

b) Must have strong road map: There will be a long-term project to implement e-governance. Short-term projects will be implemented as small modules of long-term projects. Small projects will be synchronized so that government can save money and time.

c) Reduce internet and local bandwidth costs: The Internet bandwidth costs are almost ten times higher in Bangladesh than that of our neighbour country India. All sorts of network bandwidth costs must be drastically reduced. This will also help to reduce the network access and bandwidth costs for businesses and general citizens.

d) Every organization should have strong IT division: Real IT professionals of IT division should maintain IT related tasks. If the organization is very large then there will be more than one IT division. And central IT division will control other divisions.

e) Must have structured IT posts with handsome salary: There will be no block post. While an employee works he will try his best to improve his works as because he knows he will get promotion for his good performance. IT professionals will have good salary structure.

f) Provide information through Village Info Centers: Access to information is very much limited in our society. The situation in the villages is worse than that in the city. Village information centers can be a solution to provide necessary information.

g) Establish online Mobile Phone based complaint centre: Use of Internet is no more a dream in Bangladesh – it is a reality. In the recent time the usage of mobile phone is increasing day by day. So mobile phone can be used as a strong tool to provide service to the mass people.

h) Arrange more TV programs on Social and Economic Development issues: Television is the most popular media of transmitting information in Bangladesh. Television should be used to increase awareness and disseminate information dissemination. Rural people watch BTV as it is the only terrestrial channel in Bangladesh, so the programs should focus more on the different development programs like agricultural program, health care, education, gender issue etc.

i) Provide Weather Forecast through Mobile Phone: Mobile phone is used widely among the citizens. It can be used to broadcast weather forecast in times of national emergency.

j) Submission of Utility Bills through SMS: Payment of utility bill is a hassle and time consuming for general people. It wastes important working hours. Broader ICT delivery channels, like SMS, web etc can be used to pay the utility bills.
k) Internet which could decrease the Educational Expense: Internet can be used to deliver education to every corner of the country. Distance learning should be strengthened as our infrastructure for formal education is still lacking in resources.

l) Make Disability-Friendly software with steps from the Government: Disability issue is still underestimated in our country. Government should take some steps so that other organization can be influenced from this. In this regard, Government can develop read out software to teach the blind people.

m) Technical infrastructures should be flexible: In order to compete in this new era, governments at all levels must be able to react quickly to challenges - constantly innovating their processes to stay relevant in meeting public service expectations and priorities. To accomplish this, it is becoming imperative for government organizations to build technical infrastructures flexible enough to absorb new technologies quickly, and rapidly to alter the scope and function of applications to support changes in the government business model.

9. Proposed Network Model for an Efficient E-Governance System in Bangladesh

The target of the E-governance is to make all the citizens of the government under a secured network. In the perspective of Bangladesh, Union Parishad (UP), which is formed constituting some adjacent villages, can be considered as the granular part of the government, because it plays the main administrative role in the root level. In Bangladesh the very root level is the village. Some UPs create an Upazila (or sub-district) and with some upazilas a district is constructed. A division manages some districts and Bangladesh now has 6 divisions, 64 districts and 482 upazilas. The whole country is governed by the central administration having government official up to the upazila level.

Figure 3 shows the proposed network model of the e-governance system in Bangladesh. In Level-1 villages can be connected with the UP (Level-2). Upazila in Level-3 bridges communication with its UPs. Most of the areas of Level-1, Level-2 and Level-3 are rural and undeveloped and surrounded by riverside. That’s why, it is not so easy to establish telephone lines in these levels. Thus, the network from Level-1 to Level-3 can be implemented by mobile phone that would be the easiest and most cost effective telecommunication medium with respect to other available medium. So here the “Village Phone” or “Grameen Phone” can be the most effective mobile phone since it has become a weapon of a social revolution in rural areas of Bangladesh. Though phone lines (UHF & VHF) are available between Level-3 up to Level-6, but their speed is extremely low. So here we should try to implement fibre optic network to get sufficient high speed.

The root level connection of the network can be established in the UP chairman’s office, from where local people can access the Internet. The villagers can take the Internet line to their home also if they can provide.

Upon successful implementation of village phone-based communication infrastructure, one of the major drawbacks of implementing E-Governance, can be transformed into a state-of-art telecommunication infrastructure in the context of Bangladesh. This infrastructure development particularly in the rural areas is the urgent issue to cover the major portion of the country under the administration of e-governance.

Figure 3. Proposed network model for implementing E-Governance system in Bangladesh.
10. Conclusion

Bangladesh is facing a lot of challenges to work on implementing E-governance system. This paper has identified a number of challenges faced at both government and citizens’ level. This study predicts that the actual implementation of e-governance is a complex and lengthy task that may proceed well beyond the government’s target of 2021. From a citizen’s perspective, social issues such as lack of awareness, IT literacy, language barriers, lack of access to the Internet etc. will impede citizens from using E-government services, while from the government’s viewpoint financial and political constraints are the key challenges for implementing E-governance that must be overcome. These social issues are further compounded by technical complexities such as, the need of a strong ICT infrastructure and the demand to integrate business processes and technology across different government agencies to facilitate the efficient and effective delivery of e-services. This paper suggests that, creating awareness of the potentiality of E-governance can play in citizen welfare as well as economic and social development of Bangladesh. By implementing E-governance in different agencies of the government and the public sectors, we can reduce corruption and strengthen democracy. This study also suggested some specific recommendations to overcome the challenges regarding the implementation of E-governance system in Bangladesh. This research has proposed a network model that can be useful to design and implement of an efficient e-governance system.

11. References

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