

Study on effectiveness of public web portals in education sector in Bangladesh and the way out

Introduction and background

Bangladesh has a population of about 142,319,000 - 98.5% of whom live in one of the 32,067,700 houses. Between 2004 and 2014, Bangladesh averaged a GDP growth rate of 6%.. There are 71,255 thousand males and 71,064 thousand females, yielding a sex ratio (number of males per 100 females) of 100.3. There is an average of 964 inhabitants/sq. km (one of the highest in the world), while in the Dhaka district, there are 8,111 inhabitants/sq. Km, and 4.4 persons per household (BBS, 2011). Bangladesh has a total land area of 147,570 sq. Km., containing an effective land area of 119,624 sq. Km. There were 49.5 million civilian laborers (age 15+), 45.07% of the employed population were involved in agriculture, 11.03% in manufacturing, and 40.3% in other sectors (Bangladesh Bureau of Statistics, 2011). The per capita income in 2015, stood at USD 1,314. In October 2013, the inflation rate was 7.03 and the consumer price index was 1947.01 (BBS, 2013). In 2009, the literacy rate (7+) was 59.6% for males, 53.8% for females, and 56.7% for both sexes; the adult literacy rate (15+) was 62.6% for males, 54.3% for females, and 58.4% for both sexes (Bangladesh Bureau of Statistics, 2011).

Bangladesh is possibly the most notable country in the Asia Pacific region with regards to the increasing deployment of ICT in education, particularly with the “Vision 2021: Digital Bangladesh” nation-branding/scheme of 2009 (Akhtar & Arinto, 2009). The scheme has six strategic areas focused on facilitating the adoption of ICT in education: general and TVET education systems, professional development of teachers using ICT, education-related citizen services, ICT literacy for students, ICT infrastructure and delivery channels, and ICT in educational administration (A2I: PMO, 2009). To work toward these strategic objectives, orchestrated and sporadic initiatives have been undertaken by national and international, public and private, collective and individual, and business and non-profit entities (A2I, 2013). Bangladesh’s secondary education system underwent a significant transformation during 2009–13, in relation to the integration and adoption of ICT (MoE, 2013). All educational ministries, directorates, boards, and institutions developed or were provided with online platforms to ensure access to information. The results from the education boards and NTRCA were made accessible online. Web applications for examination administration, i.e. registration, marks submission, etc., were made compulsory. Each educational institution was provided with an administrative email account for required communications with education boards and directorates. Paper-based notices from the directorates and education boards were discontinued; notices are now posted on websites, and in some cases, these notices are sent through emails. All textbooks for the primary and secondary levels were made available online. ICT and computer subjects were made compulsory for different classes in secondary education. Through various projects, multimedia contents are being developed, multimedia classrooms are being introduced by providing resources and training, and teachers are being introduced to blogs and social networking platforms. This list of educational technology initiatives can be very broad, as a significant number of projects and transformation processes have been initiated by public and private entities. However, it is not possible to find any summary or broad overview of the recent and rapid implementations of ICT in education projects.

The waves of e-government are rising through public organizations and public administration across the world. More and more governments are using information and communication technology especially Internet or web-based network, to provide services between government agencies and citizens, businesses, employees and other nongovernmental agencies. As what Jim Melitski described in E-Government Page of ASPA website, “Across the world, public organizations are beginning an ‘e-government journey’ by publishing static information to the Internet and establishing an on-line presence, in the hopes that they too will experience increases in efficiency, effectiveness, and organizational performance”(Jim Melitski, 2001). More and more attractions appeal researchers and practitioners come to search for a consensus regarding e-government diagrams and initiatives. E-government may be defined as a continuum from information provision when organizations and public agencies publish static information to the Internet to web interactive communication and E-transactions, and to one-stop integrated virtual governmental services.

Portals are very powerful window available to government to route all services from different disciplines of science and management today to various users and stakeholders. This is a part of broader e-government agenda in most countries. It is neither a homogeneous nor static phenomena. Research are being done on the dynamics involved, the perspectives, methods and practices to integrate the dynamics into governmental system (Gil-Garcia and Martinez-Moyano, 2006; Heeks and Bailur, 2006). Today e-governance has evolved from its mere presence in Internet to a transactional and integrated application like web portals. Different government levels as a general trend has adapted to technological sophistication thus shifting the focus from the paper work to a more organized approach and technically enhanced efficiency. Several theoretical and conceptual models have been proposed by researchers to conceptualize and characterize e-government (e.g. Cresswell & Pardo, 2001; Dawes, Pardo & Cresswell, 2004; Fountain, 2001; Gil-Garcia & Pardo, 2005; Gupta and Jana, 2003; Moon, 2002). Government portals are designed to encapsulate the size and complexity of government which for decades have acted as traditional barriers to easy access of citizens to government services. Government portals serve more than a simple gateway or single point entry to government services for citizens. They also offer an opportunity to reorient services around the needs of citizens while consolidating back office responsibilities (Gupta, Kumar and Bhattacharya, 2004).

A portal is a gate, a door, or entrance. In the context of the World Wide Web, it is the next logical step in the evolution toward a digital culture. Portals have become one of the most visible information technology (IT) issues in higher education, as well as the commercial sector.

Better public service requires first a thorough rethinking and re-examination of the structure of public services and then to exploit possibilities of creating value by working across boundaries and jurisdictions to foster potential gains of redesigned services in terms of speed and cost (Fountain, 2007). The ‘eGovernment framework’ allows public sector organizations to achieve such a gain through delivery of efficient services at national and local levels using Information and Communication Technology (ICT). Besides gaining efficiency in public service delivery through ICT, there is also evidence that demonstrates the potential of ICTs in empowering the poor (Zambrano, 2008). In spite of continuous efforts of the government toward ICT implementation, Bangladesh is still at a rudimentary stage, ranked 134th position in the EGovernment Development Index 2010 out of 185 countries. On the other hand, the country ranked 60th in Online Service Index 2010 (Global eGovernment Survey 2010); which indicates the potential of the country for online service development.

In fact, major computerization and infrastructure development in the public sector of Bangladesh has been taking place to replace internal manual work processes by ICT-based automation.

Several websites have been launching for different public organizations. A nationwide survey (SICT, 2008. p.34) on the eGovernment initiatives in Bangladesh shows that 91% of government offices inside Dhaka city have their own website. However, very few interactive online services are available for citizens. In this regard, it should be mentioned that an accessible website can help citizens more effectively to interact with electronic government (W3C, 2009). Several countries have national guidelines for public sector websites such as Sweden (VERVA, 2008). Even though web presence of public agencies is not unsatisfactory in Bangladesh, there is a lack of comprehensive official guidelines to ensure accessibility of public websites. In general, public agencies are can only disseminate information by their websites and in some cases even this is not complete. However, the national web portal (www.bangladesh.gov.bd) shows that several online public services have already been introduced in Bangladesh.

Government portals allows for self service, from searching for information to paying tax. Thus it has become essential today to understand the effectiveness of government portals to properly evaluate better service to citizens.

In this context, **Bangladesh Bureau of Educational Information and Statistics (BANBEIS)**, conducted a brief study to examine the factors which influence the effectiveness of the government web portals in education sector thus suggesting the ways to strengthen e-government services.

Objectives of the Study

The objective and deliverables of the study were as below-

The main objectives of the study were:

- to map the governmental web portals especially focused on education sector
- to bring change in use, perception and attitude of stakeholders towards web portal
- to identify the recurring, critical constraints to the adoption of eGovernment in Bangladesh, especially those challenges that are non-technical in nature;
- to determine the factors that have contributed to the success of eGovernment projects that have met or exceeded their objectives;
- to provide an empirical basis for the design and implementation of new program strategies for accelerating the adoption of eGovernment in education sector in Bangladesh, through a combination of private sector, civil society, and government targeted activities and partnerships;
- to provide recommendations on eGovernment initiatives that offer greatest potential to build on lessons learned from past experience

Scope of the Study

The aim of this study is to examine the status of public sector eService development in the education sector in Bangladesh. The main focus is to investigate the presence or availability of eServices. In relation to public eService development, there are usually two major groups of stakeholders - internal and external. Public agency officials are the internal stakeholders directly engaged in supply-side of public services, while students, teachers and researchers are the users, the external stakeholders in the demand-side. There is lack of research to elucidate the supply-side potential of eService development in education sector in Bangladesh and hence this study is designed to examine the role of public agency officials in eService development as supply-side point of view. Bangladesh is still in a rudimentary stage of eService implementation and the

maturity of eServices is low. Hence, it is assumed that demand-side actors (students, teachers and researchers) are less keen to expedite the eService progress at this nascent stage. As public agency officials play major roles in eService development (supply-side), the main research question in this study is “How do public officials experience the progress of eServices in Bangladesh?” Also the question for the demand-side is "How do the stakeholders of demand-side perceived the service and their attitude towards the service"?

In order to investigate these questions, the study is designed to address three major objectives asking the following enquiries:

- What are the major eService initiatives in the public sector of Bangladesh today?
- What are the maturity levels of public sector eServices?
- What are the major challenges encountered in deployment of public eServices?
- What are the opinions of demand-side stakeholders in the education sector about the effectiveness of the services?
- How the services could be improved to yield better success?

2.3 Duration of the study

The study was conducted from for one and half months and from 15 April to 31 May 2015.

Limitations of the Study

Research includes scientific and inductive thinking and it promotes the development of logical habits of thinking so in negotiation of all the prospective part some are found in presently static which will be overcome in latter is called our limitation of the research.

Moreover, some other limitations are pointed out here:

- There was a big gap in identifying the differences between website and web portal, e.g. the Google search identifies the website of the Ministry of Education as web portal
- In a very significant cases it was observed that the web portals are maintained by non-IT personnel and they are reluctant to provide information
- Lack of sufficient time
- Limited knowledge about ICT implementation among the respondents
- Lack of sufficient fund to run the research work
- It was difficult to find the portal users and in all cases the the owner of linked websites with the web portals mentioned that they were not aware about their attachment with the portals.

General recommendation

Internet connection till village level

To gain the ICT knowledge and for participating the e-governance activities internet connection from city to village level is very important. Without using internet no one can access the government web portal for their personal tasks. In the perspective of Bangladesh, this is not so easy for government to provide internet connection till village level within short time. So, government should encourage the private companies to provide internet connection to the public with cheap rate. So that villagers can access the internet easily.

ICT infrastructure

ICT infrastructure is an essential part to establish e-Governance in any country. Bangladesh government has to build ICT infrastructure step by step till village level to make the successful of e-Governance. Though, government has taken a Road Map or master plan for e-Governance

using the limited resources. So government has to give more concentration to build ICT infrastructure within shortage possible time.

Makes automation of government services and applications

Government has to develop different types of applications in different websites so that any people can fill up and submit the different types of forms through internet without visiting government offices. If the people get the opportunity to execute their all kinds of governments officials tasks through internet it will bring force to implement the e-Governance and people will get the fruitful of e-Governance within shortest possible time

Motivate the public to use the government websites

This is not a main aim of e-governance only involvement government officers in the e-governance project. Without public involvement it will not be a successful project. So, government has to take some steps to motivate the public to use different types of government web sites for their daily official tasks.

Proper training

It is very important to provide training to the all government officers regularly. Without proper knowledge of IT of government officers' e-governance will become useless.

Long term planning for e-governance applications Security Issues

Security issue is the major concern in all of aspects of e-Governance. Different types of cyber attacks may come to different sectors of e-Governance. So, Government should take strong modern long term planning to protect the e-governance all kind of websites, automation systems and software protect from any kind of cyber crime or attacks using modern and updated technology and policy.

Moreover, the government should consider:

- Effective implementation of ICT in education requires commitment from the government of Bangladesh, administrators, teachers, parents, students, and the community.
- Lacks of resources within educational institutions are another major hindrance to the implementation of ICT in a developing country like Bangladesh that must be removed.
- The Government of Bangladesh has already taken some necessary steps to increase the enrollment of girls at school. Hence, strategies and proper policies should be formulated for encouraging women and girls with respect to the adoption of ICT.
- Local software companies should be encouraged to work together with teachers to produce Bangla software programs suitable for the teachers and students who don't know English.
- Moreover, effective implementation of ICT in educational institutions of Bangladesh largely depends on teachers and principals, who require in-depth professional development in terms of knowledge and skills.
- To implement computers in the classroom, teachers should feel confident and comfortable using computers, through the use of computers on a consistent basis for instructional activities. Teachers must understand the value of computing in education to be able to benefit their students and to support meaningful learning

Specific recommendations

Policy Makers Level

Experience globally and regionally demonstrates that most of the fundamental issues of educational development cannot be resolved in isolation from each other and cannot therefore be resolved in the absence of a coordinated framework that establishes clear goals and priorities for

reforming other words, in the absence of sector policy. In this context, important policy issues regarding secondary education and ICT education are to:

- i. determine objectives and specific goals of ICT-in-education with wide spectrum of collaborative efforts for establishment of knowledge-based society in Bangladesh.
- ii. identify secondary education sub-system as national power grid of capacity building.
- iii. make a policy statement that articulates and clarifies goals.
- iv. provide a conceptual framework to guide progress towards the goals.
- v. motivate government to become a role model in applying ICT in its own administration and services.
- vi. motivate government to be a rational policy maker because only rational policy makers
- vii. have the power to significantly increase access to internet and telephone by allowing for a substantial reform of telecommunication sector through privatization or otherwise.
- viii. establish e-governance from local to central level.

Regional Coordination Level

Regional coordination is to play a critical role in the three-stage ICT model. Key responsibilities of regional coordination are outlined in the schematic diagram of Fig 3 Central coordination of sophisticated planning matrix provided by national education policy makers is unable to monitor progress because the model includes multi-stakeholders to play in the process. School itself cannot motivate and organize all the stakeholders. As a part of government regulations all government departments are to be included in local planning process and they will declare their share of involvement and ways of participation in regional coordination authority. Except local community, participation in school ICT centers, stakeholders like small business centers, NGOs, social organizations will be the part of regional lobbying process. Regional coordination authority will implement the central planning matrix according to the following scheme:

- i. They will provide individual planning for each Upzila.
- ii. All Schools, Madrasas and Vocational training centers of Upzila will be under the planning.
- iii. In the start up phase they will prepare one school of each Upzila as champion of ICT-based center. Of course priority should be given to the school nearby UNO/TNO office.
- iv. They will be responsible to organize Upzila based workshops, seminars and training both in the planning stage and implementation stage.
- v. They will inform central coordination body about local requirements in planning stage and will submit yearly report about progress.

School Level

Although computer-aided learning and teaching is the prime target of school ICT centers, paying services will create a partnership environment for all stakeholders. However, following important points about school level duties are summarized:

- i. School leaders can arrange for teachers, administrators and school board members to visit local business to find out how the workplace is incorporating technology into daily routine work.
- ii. Business authorities can also invite educators to corporate workshops for technical training.
- iii. Schools can open their own doors for parents and community members to use computers and internet-and, in the process, build community support for technology investments.
- iv. Schools can involve technology users, such as parents, teachers, students, principals and community members in developing technology policies and priorities.
- v. Students troubleshoot for hardware, software and infrastructure.
- vi. Schools can help bridge the digital divide as a mediator of technology educator to villagers, NGO workers, lower level government employees, business centers etc.

Moreover, a thrust for separate educational web portal was observed from the respondents. If the government takes initiatives for hoisting a separate educational web portal, the following steps could be considered:

Initiation

This step usually comes from the business side of the organization and can be driven by tactical or strategic objectives. Moreover, the business must specify what exactly are the services, the need of these services, why they need these services and when do they need it. This initiation can be request for a new service or a change in an existing service.

Evaluation

This is very important step and the scope of work will be defined here. This is like a contract between the business and IT and more important that the acceptance of users will be based directly on the scope of work. Impact analysis document will be provided during the evaluation. Moreover, risk identification document should be present at this stage and it should describe what type of risks the new service will imply. Additionally a plan to mitigate and react to each of these risks must be there. These risks can be technical risks or operational risks. Finally an implementation plan is introduced.

Prioritization

This is very important to prioritize the incoming request for new/changed services. Furthermore, prioritization criteria must be existed within the organization and these criteria must be discussed and approved from the authorities.

Integration and Testing

This is an important step for reviewing the impact analysis and risk documents that will help in testing the services and more important for testing of those other services that may impact on the existing services. Therefore defining the “integration architecture” is much helpful in delivering new integrated services more smoothly.

Deployment and Acceptance

Once the model is tested it will be handover to the end user to ensure according to their requirement. If they have any query about the model so it will be revised according to the end users complaints.

Concluding Remarks

The role of research in several fields of applied economics, whether related to business or to the economy as a whole, has greatly increased in modern times. The increasingly complex nature of business and government has focused attention on the use of research in solving operational problems to be more digitalized the country. Research as an aid to economic policy, has gained added importance, both the government and business. ICTs are potentially a useful tool both for managing education and teaching. Application of ICT in managing educational institutions should be encouraged, as should be used by instructors to gain access to educational materials. By teaching computer skills to youngsters, they may influence inward investment for the future society as well. This research reveals that the level of use and infrastructure of ICTs is not highly satisfactory in all forms of educational institutions to meet the current demands of ICT. But their efforts in this regards will help to build a digital society in Bangladesh in the near future as well.