

eGovernance in Bangladesh: Current Status and Way Forward

Improving Service Delivery for e-Inclusion

Subhash Bhatnagar, PhD

Adjunct Professor, Indian Institute of Management Ahmedabad

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Contact: 12 Balcombe Place, Colombo 00800, Sri Lanka. +94 11 267 1160. info@lirneasia.net
www.lirneasia.net

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List of abbreviations

A2I	Access to Information Programme
AFIS	Automated Fingerprint Identification System
BCC	Bangladesh Computer Council
BEC	Bangladesh Election Commission
BDT	Bangladeshi Taka
CISC	City Information and Service Centre.
DLRS	Directorate of Land, Records and Surveys
EGDI	e-Governance Development Index
e-GP	e- Government Procurement
GIS	Geographic Information Systems
ICT	Information and Communication Technology
ICTD	ICT for Development
IVR	Interactive Voice Response
LAN	Local Area Network
MDG	Millennium Development Goal
MMC	Multimedia Classroom
MSME	Micro, Small and Medium Enterprises
NIRA	National Identity Registration Authority
NISG	National Institute of SMART Governance
NRI	Network Readiness Index
NGO	Non – Governmental Organization
PERP	Preparation of the Electoral Roll with Photographs
PISC	Pourashova Information and Service Centre
PMO	Prime Minister's Office
RTI Act	Right to Information Act
SICT	Support for Information and Communication Technology
SMS	Short Messaging Service
UISC	Union Information and Service Centre
UNDP	United Nations Development Programme
WAN	Wide Area Network
WEF	World Economic Forum
WiMAX	Worldwide Interoperability for Microwave Access
XML	Extensible Mark-up Language

Abstract

The paper reviews the progress of eGovernance in Bangladesh covering three vital milestones of eGovernance evolution--development of country-wide connectivity infrastructure; technological readiness of Government offices to carry out ICT-enabled reforms in service delivery, and capability to design and implement eGovernance projects. The assessment is based on secondary sources and meetings with key functionaries of Government of Bangladesh handling ICT infrastructure, capacity building and development of an overall strategy.

Deployment of ICT within the public and private sector in Bangladesh has a long history with a policy framework being put in place in 2002. The paper discusses the performance of various eGovernance initiatives in terms of the ICT enabled services being delivered to various stake holders, particularly those living in rural areas. Projects that have the potential to improve governance and quality of service delivery to the poor are discussed in some detail. The overall strategy and road map for development of eGovernance is examined and some of the novel approaches that could be adopted by other Asian countries are discussed. Finally, taking cues from the evolution of eGovernance in some South Asian countries, a few suggestions are put forth on how Bangladesh can move forward.

1 Introduction

The People's Republic of Bangladesh with an area of 144000 square Kilometres and an estimated population of 163 million is located on the fertile Bengal delta. It is a parliamentary democracy. The country is divided into 7 administrative divisions which are subdivided into 64 districts (zila). The lowest rung of administration is an upazila or thana (sub-districts). The official language of Bangladesh is Bengali.

Agriculture is the largest sector of the economy contributing 18.6% to the Gross Domestic Product and employs around 45% of the total labour force. The performance of this sector is very important for employment generation, poverty alleviation, human resources development and food security¹. Even though the performance of Bangladesh on MDG indicators is better than its Asian neighbours, child malnutrition is amongst the highest in the world. The number of midwives per 1,000 live births is 8 and the lifetime risk of death for pregnant women is 1 in 110. Bangladesh has a literacy rate of 61.3% for males and 52.2% for females. The unemployment rate is only 5% but about 40% of the population is underemployed. Population below the poverty line is 31.5%².

2 Policy Framework for ICT and e-governance in Bangladesh

Bangladesh recognized the potential of ICTs for development ahead of many other countries when it automated the railway ticketing system in mid 1990s. It focused on developing a software export industry as well as an employment-generating ICT sector to boost economic growth³. An early project was the e-birth registration project in Rajshahi City Corporation. Another experiment included GIS mapping of all schools and collection of detailed information on the schools (including logistics, teachers, etc.), enabling efficiency in education planning⁴.

The National ICT Task force was formed in 2000 and headed by the Prime Minister which led to Bangladesh's first National ICT Policy in 2002. It was housed in the Planning Commission and played a key role in infrastructure building and process automation. The formation of the Support to ICT (SICT) Task Force Project in 2002-3 (a publicly funded implementation arm) provided a push to the process. The SICT functioned like an internal facilitator and was involved in conceptualizing, planning and prioritizing projects, and providing funding and technical assistance to line ministries to implement

¹Agriculture in Bangladesh. (n.d.) In *Wikipedia*. Retrieved from http://en.wikipedia.org/wiki/Agriculture_in_Bangladesh

² Bangladesh. (n.d.) In *Wikipedia*. Retrieved from http://en.wikipedia.org/wiki/Bangladesh#cite_note-bbs-75

³ United Nations Development Programme. (n.d.) *Bangladesh: Services for all*. Retrieved September 2013, from <https://www.undpegov.org/featured/Bangladesh>.

⁴ Ferdous, H. S., Ahmed, S., Anik, M., Alam, T., & Tasnim, M. (2013, June). SNS Search in Developing Countries: Linking the People to End Digital Division in Information Retrieval. In *Computational Intelligence, Communication Systems and Networks (CICSyN), 2013 Fifth International Conference on* (pp. 57-62). IEEE

them. Another public entity, the Bangladesh Computer Council (BCC), provided support with respect to infrastructure development, technical assistance and capacity building for various e-Government initiatives. However, many of the projects initiated by the SICT or the line ministries on their own during this period did not sustain in the long run⁵.

Then in 2006, UNDP launched the Access to Information Programme (A2I). Two years later (in 2008), a national vision for Digital Bangladesh was developed as a long-term development platform for the country with the following objectives⁶:

- Ensure that new initiatives and programmes on e-governance operate within the context of national development priorities and mainstream ICT for Development (ICTD) into national development plans.
- Support the development of innovative ICTD programmes and provide technical assistance for monitoring and evaluation.
- Develop a national e-governance vision and strategy to harness digital opportunities for development in close consultation with stakeholders.

Since 2006, with the caretaker government in place, the approach to e- Government has shifted gradually from a top-down approach to a more participatory approach. It was realized that without internal ownership the extensive change management that is needed will not be achieved. In early 2009, the innovative Digital Bangladesh agenda of the newly elected government provided a new momentum. The vision for Digital Bangladesh focused on both increasing Bangladesh's ability to compete more effectively in the global economy, and on building a responsive and effective government capable of delivering services to the poor and marginalized. A structured policy and regulatory environment, was put in place with the passage of ICT Policy 2009 and the ICT Act 2009.

3 Current Readiness for eGovernance in Terms of ICT infrastructure

The Table 1 below summarizes comparative performance of Bangladesh on development of eGovernance in 2012. The eGovernance Development Index (EGDI) reflects a country's status on offering of online services, telecommunication infrastructure and human capital and an index of participation by citizens in the process of governance. The quality of online services is assessed in terms of the extent of interactivity and the degree to which all steps in a transaction for getting a service can be completed on line. Telecom infrastructure reflects the penetration of Internet, mobiles

⁵ Bangladesh Enterprise Institute. (2010). Realising the vision of digital Bangladesh. Retrieved 2013 from <http://www.bei-bd.org/images/publication/whc4f4b6fd3c20ed.pdf>

⁶ United Nations Development Programme. (n.d.) *Bangladesh: Services for all*. Retrieved September 2013, from <https://www.undpegov.org/featured/Bangladesh> .

and fixed line telephony in the population. E-participation measures the extent of interaction and consultation with the citizens.

Table 1: : Comparative Performance of Asian Countries on eGovernment Development Index

	eGovernment development index		World EGD I Ranking	
	2012	2010	2012	2010
Maldives	0.4994	0.4392	95	92
Iran	0.4876	0.4234	100	102
Sri Lanka	0.4357	0.3995	115	111
India	0.3829	0.3567	125	119
Bangladesh	0.2991	0.3028	150	134
Bhutan	0.2942	0.2598	152	152
Pakistan	0.2823	0.2755	156	146
Nepal	0.2664	0.2568	164	153
Afghanistan	0.1701	0.2098	184	168
Sub-regional average	0.3464	0.3248		
World average	0.4882	0.4406		

Source: Department of economic and social affairs, United Nations. (2012). *United Nations E-Government survey 2012: E-Government for the people*. Retrieved September 2013 from <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf>

EGDI is a weighted average of normalized scores of the country on the above dimension. Indices reported have values from 0 to 1 and therefore may be difficult to interpret. However, the ranks give an idea of the progress of a nation. Data in the tables indicates that Bangladesh needs to further develop its e-infrastructure. Bangladesh ranks 150 out of 190 countries. In comparison India was ranked 125, Sri Lanka 115 and Pakistan 156. All these countries slipped by a few ranks from the previous year but Bangladesh slipped by 26 positions. In terms of absolute number of users, the internet users in Bangladesh are 8 million as against 137 million in India. Table 2 below provides the penetration of Internet users, fixed line users, mobile users. Large Asian countries such as India and Bangladesh are ranked low amongst all countries on these parameters. Bangladesh would have to double its penetration to reach the Asian average and therefore the task requires urgent attention.

Table 2: Telecom Penetration, and Other EGD I components for Bangladesh and India

Indicators	Bangladesh	India
e-government development index		
Rank	150	125
Index value	0.2991	0.3829
Online service index		

Index value	0.4444	0.5359
Telecommunication infrastructure index		
Index value	0.0641	0.1102
Estimated internet users per 100 inhabitants.	3.70	7.50
Main fixed phone lines per 100 inhabitants	0.61	2.87
Mobile subscribers per 100 inhabitants	46.17	61.42
Fixed internet subscriptions per 100 inhabitants	0.11	1.53
Fixed broadband per 100 inhabitants	0.04	0.90
Human capital index		
Index value	0.3889	0.5025
Adult literacy (%)	55.90	62.75
Enrolment (%)	48.70	62.61
e-participation index		
Rank	29	25
Index value	0.0789	0.1842
Environment index		
Index value	0.7059	0.6471

The World Economic Forum's (WEF) Networked Readiness Index (NRI) is another measure to assess the propensity of a country to exploit the opportunities offered by ICTs for enhancing competitiveness. The Index is a composite of three components: the environment for ICT in a given country (market, political and regulatory, infrastructure environment), the readiness of the community's key stakeholders (individuals, businesses, and governments) to use ICT, and finally the usage of ICT amongst these stakeholders. Table 3 below presents comparative ranks for 4 South Asian countries out of the 142 countries that were surveyed.

Table 3: Rankings in the Networked Readiness Index (NRI 2012)

Country	NRI	SUB INDICES		
		Environment	Readiness	Usage
Bangladesh	113	123	103	108
India	69	78	64	78
Sri Lanka	71	71	67	71
Pakistan	102	112	97	107

Source: Dutta, S., & Mia, I. (2011). The global information technology report 2010–2011. In *World Economic Forum* (Vol. 24). Retrieved from http://www3.weforum.org/docs/WEF_GITR_Report_2011.pdf and Dutta, S., & Bilbao-Osorio, B. (2012). The Global information technology report 2012: Living in a hyperconnected world. World Economic Forum. Retrieved from http://www3.weforum.org/docs/Global_IT_Report_2012.pdf

In comparison to other Asian countries, Bangladesh needs to significantly improve on all dimensions. It is worth noting that in comparison to 2011 which had a smaller set of countries, Bangladesh has improved on the readiness (from 104 to 103), and usage (from 122 to 108), whereas the other countries have slipped on all dimensions in one year.

There are other encouraging signs as well. Bangladesh's mobile market stood at 112 million subscribers in early 2013 as penetration reached 67%. In the preceding five-year period the mobile subscriber numbers grew almost 20 times. Of the mobile operators, GrameenPhone was far and away the leader, with 41% of the total mobile subscriber base. In 2013 the internet user penetration still remained low (0.5 million subscribers) and internet subscription rates were even lower. Although broadband internet remains almost non-existent in Bangladesh, with the grant of a number of WiMAX licences, there are early signs that the market could change as the new WiMAX services are rolled out. Currently mobile internet is playing a major role in providing online access, as mobile operators offer 2.5G-based services for connecting to the internet⁷.

4 Assessment of Human capacity and ICT infrastructure in Government Offices

In a study undertaken by the SICT of the Ministry of Planning, a survey of 608 representative government offices (Ministries and Divisions, departments, corporations, commissions and academic institutions), was conducted during April-May 2008.

According to this study, 12% of the government offices have minimum one ICT professional like a Programmer, Network Administrator, Web Developer, Database Expert, Web Administrator, System Analyst or a Computer Trainer. Around 32% of the government offices have Computer Operator for their day to day secretarial and data entry services and 30% of employees in government offices use PCs. About 80% of government offices have minimum one PC. The PC-employee ratio of the government offices is 28 PCs for 100 employees. Around 80% of government offices have minimum one printer; however the printer-employee ratio is 15 printers for 100 employees.

About 73% of the offices of the Ministries and Divisions have LAN where around 81% of PCs are connected with network. More than 96% offices of the Ministries and Divisions have Internet connection where around 65% of the PCs have access to the Internet. Around 36% of the officers are now using e-mails either through direct or indirect network connectivity. The number of e-mail users has been found the highest in Ministries and Divisions and the lowest in Departments, Corporations and Commissions. The survey has also revealed that 47% of the officers of Ministries and Divisions

⁷Evans, P. (2013) Bangladesh - Telecoms, Mobile, Broadband and Forecasts (18th Edition). Retrieved September 2013 from <http://www.budde.com.au/Research/Bangladesh-Telecoms-Mobile-Broadband-and-Forecasts.html>

use e-mail directly or indirectly whereas only 22% of the officers use e-mail in Departments, Corporations and Commissions.

All the Ministries and Divisions have their own websites. Around 22% of offices use customized software to conduct their daily activities and about 14% of offices have internal ICT training facilities⁸.

For implementing Digital Bangladesh, training was imparted at different stages to elected representatives and officers of field administration. During April-July, 2010, 481 Upazila Chairmen received training on Digital Bangladesh. It was expected that the training program would enable the emergence of e-leaders at the field level. In addition, 1500 government officials at the Divisional level were trained. Besides, a laptop with internet connection was distributed to all district and Upazila offices⁹.

According to the study government's ICT infrastructure at the Ministry/Division level has significantly improved over the last few years. Specially, Deputy Secretary and above level position have access to PCs facilities. However, at the lower level position and district or sub-district (Upazila) level offices have a shortage of ICT facilities. In such locations, LAN and WAN are not available for work station to connect with all other offices¹⁰.

5 Achievements in terms of ICT Enabled Service Delivery

Even though Bangladesh ranks low amongst global comparisons on ICT infrastructure, given the extensive plans and policy frameworks and reasonable level of ICT infrastructure in some government offices, a number of services could be delivered through ICT enablement. This section reviews the plans and achievements in actual delivery of services.

In the early stages of eGovernance development, different government agencies rush to create web sites. According to a survey of 44 public officials, the contents of most of the websites are in English while only 27% have Bengali content. None of the sites supports usage by visually impaired people. The survey reported that 70% of eServices were developed for citizens while 12% were for businesses and the remaining 18% were developed for both citizens as well as businesses. There is no service fee required for 34% of the eservices, 28% eServices require cash payment at the service

⁸Support to ICT task force Program project (SICT). (2008). e-Government initiatives in Bangladesh. A sample survey 2008. Retrieved September 2013 from <http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan040894.pdf>

⁹Finance division, Ministry of Finance. Government of the People's Republic of Bangladesh. (2011). *Journey towards a Digital Bangladesh*. Retrieved September 2013 from http://www.mof.gov.bd/en/budget/11_12/digital_bd/digital_bangladesh_en.pdf

¹⁰Islam, M. Z., & Khair, R. (2012, June) Preparation of e-Government in Bangladesh: An exploratory analysis. *JU Journal of Information Technology*. Vol.1. Retrieved September 2013 from <http://www.juniv.edu/jujit/files/2012/09/4.pdf>

counter, and 14% require cash payment at the bank. One of the important observations is that 13% public eServices have provision of paying service fee through mobile phone SMS¹¹.

Globally, once a national strategy is drawn up most countries begin with quick wins, which are applications that have large number of citizens accessing the service and are not too complex to implement. Sometimes services where there is high corruption and great inconvenience to the citizens may also be selected. In 2011 A2I catalyzed the identification of nearly 700 Quick Win projects by various departments. About 120 of these were launched by early 2013 and nearly 20 have been successfully implemented. Table 4 presents a brief profile of a few projects which have positively impacted the poor. The success of most of these applications was possible because of the existence of 4500 UISCs from where citizens could access a variety of services. Another project that has been an enabler for other services to be e-delivered is the National ID project. These two other projects with a significant national impact are discussed in detail.

Table 4: List of a Few Quick Win Projects with Impact on Poor

Project Title	Brief Description
ePurjee	Nearly 200000 sugar cane growers receive SMS indicating date, time and quantity for sugar cane delivery from one of the 15 state owned mills directly, eliminating rent seeking by the middlemen. A paper copy can be got from a UISC.
e-Tathyakosh www.infokosh.gov.bd	Consolidates livelihood information content provided by 350 partners from government, NGO and private sector in a Portal. As of July 2013 it received 6 million hits from 1.6 million individuals. The content can be accessed through IVR and is being opened to the mobile apps market. Citizens can also query experts using email or SMS routed through the portal.
Multimedia Classrooms	A \$40 million program will equip 23000 schools/madrasas/colleges with MMCs and train 70000 teachers. Already in partnership with many agencies, 23500 teachers have received training in content development. A Teachers Portal allows collaboration amongst thousands of teachers who feel greatly empowered. Early results indicate positive impact on dropout rate and attendance of students. In addition all 300 text books for madrasas are available online.
eRegistration of Migrant	Nearly 5 million Bangladeshi migrant workers work in other countries

¹¹ Bhuiyan, M. S. H. (2011). Public Sector eService Development in Bangladesh: Status, Prospects and Challenges. *Electronic Journal of e-Government*, 9(1), 15-29. Retrieved September 2013 from <http://www.ejeg.com/issue/download.html?idArticle=220>

workers	<p>sending \$ 10 billion remittance in a year. So far the entire placement process was handled by many private sector agencies and incidence of exploitation of poor workers and overcharging placement fee are common. A new e-registration program was started where 1.4 million job seekers have registered from UISCs. A few hundred of these job seekers have been placed in a fair and equitable manner. However, partnership with private sector will be needed to follow through with large number of placements across several countries.</p>
eKrishok by Bangladesh Institute of ICT in Development. BIID is a for profit company in development space	<p>It is an agriculture extension service delivering information and advice through a web Portal which can be accessed from 500 tele-centres called Batigarh and Grameen Phone information centres. Such information is also accessed through mobiles using a short code. Portals offering services in health, education, running MSMEs and filing complaints have been added. Effort is to create virtual communities to share experiences with each other.</p>
Improving Education Administration	<p>In 2013 63 million results of public exams were published through the Internet and over 38 million through SMS. Admissions to 32 universities, 400 colleges was facilitated through exchange of SMS.</p>
Digital System for Land Survey, Record and Preservation Programme ¹²	<p>Directorate of Land Records and Survey (DLRS) initiated surveys in 2009. Nearly 45 million records need to be digitized. Of these 400 thousand land records and 4,089 map sheets has been completed. These records are being published on the websites. Several pilots are underway to digitize land records using different technologies like scanning, digitisation, geo-referencing and aerial photography. It is proposed to digitize these records on a “on demand” basis.</p>

¹² Finance division, Ministry of Finance. Government of the People's republic of Bangladesh. (2011). Journey towards a Digital Bangladesh. Retrieved September 2013 from http://www.mof.gov.bd/en/budget/11_12/digital_bd/digital_bangladesh_en.pdf.

6 District E-service Centers (DESCs) and Union Information and Services Centers (UISCs)

Bulk of the services needed by a rural citizen are delivered from one of the 64 districts or a sub district office where nearly 20 directorates covering different departments have a presence. In the existing architecture of e-delivery, each district has a portal through which nearly 400 services can be accessed¹³ (Access to Information (a2i) Programme, n.d.).

Given low income levels and low internet penetration, even if all government services were ICT-enabled, a channel is still needed to access the portal. Towards this Bangladesh has created 4547 Union Information and Service Centres (UISCs) to provide access to Government and private services. A UISC typically has 2-20 desk top/lap top computers, printer, scanners, cameras and allied equipment. Internet connectivity is available through modems and fixed line phones as well as through wireless. Each UISC is run by private entrepreneurs and has a male/female team of 2 persons with basic training in operating a computer and navigating through a portal. Once an application is filed from a UISC, at the back end, the relevant district officer accesses the submitted applications and does the necessary processing to deliver the service. Bulk of this processing is not ICT enabled. In case of request for a certificate, a scanned copy of duly signed certificate on Government stationery is sent to the appropriate UISC for printing and delivery to the citizen. Some simplification of how the requests are processed was carried out for most of the services and documented in a book. A few of these simplifications have been implemented. Some of the transparency features of the new system are: applicants are given an acknowledgement; it is possible to track the status of the service through SMS; and the certificates are issued within a specified time. SMS is sent to citizens when the certificate is ready. A time frame for delivery of different services and a schedule of fee paid to Government and the UISC are also specified.

All transactions are logged on to servers and a dashboard enabled central monitoring of the outcomes. Nearly 3.9 million citizens (67% males) visit the UISCs every month. This means that on the average 870 citizens visit a UISC in a month. In addition to delivering Government services, UISCs provide training, bill payment service, telemedicine, banking, email, browsing services. Data suggests that nearly 1200 UISCs earn over Taka 60,000 a month. The break even for the UISCs is Taka 8000 and nearly 633 (14%) UISCs are still below this mark. The average monthly Internet bill is BDT 596 out of an average total expense of BDT 3862 (6.5%). Equipment and repair services account for 21% of expenses.

A detailed survey of 2750 randomly selected persons living within catchment areas of 275 randomly selected telecenters in Bangladesh was carried out by LIRNEasia in 2009 to understand awareness, use, types of services available and problems faced by different stakeholders in operationalizing the

¹³ The discussion on DESCs and UISCs is based on a field visit to a UISC and information provided by UNDP, Bangladesh access to Information, 2011 program, last retrieved from <http://a2i.pmo.gov.bd/content/district-e-service-centres>

scheme¹⁴. Amongst the top ten services that were most commonly used by users are: photocopying (40%), printing photography, and access to government services (25%). Agriculture/health/law consultancy services were also commonly used. Most UISCs operate like a cyber cafe allowing customers to use the computer at a charge per unit time. Letter writing, Internet access and file transfer were the common uses by such customers. A 2014 report¹⁵ indicates that birth registration, citizen certificate and death registration are amongst the top ten services in 75%, 42% and 32% of the UISCs respectively. As in the earlier survey, photography and photo copying continue to be popular.

The 2009 survey indicated that awareness about the existence of UISCs was high (67% were aware) even then and of those aware nearly 52% had used an UISC. Convenient location and lack of alternative access means may have contributed to high usage. Convenience of location was seen as the major reason for using a USIC. Those who did not use a UISC were largely because they did not need the services being offered. About 71% of those surveyed had accessed or obtained information on government services through UISCs.

Lack of awareness is a serious barrier to use of UISCs for accessing Government services as 38% in Bangladesh did not know that government information and services can be accessed through mobile phones or the Internet. In terms of motivation to adopt new channels a high number (52%) claimed they would like to use the mobile to obtain government information and to access government services by simply calling. SMS and email were much less popular modes to access government services. The main reason cited for not preferring mobile phones was the perception that they could get greater attention by going to a government office personally.

Survey of Upazila chairmen's on performance of UISCs in 2014 (Bangladesh Bureau of Statistics, 2014) indicated that nearly 80% were satisfied (33% very content; 47% content) with the performance of UISCs. UISC is perhaps the most important project for the citizens, and in its current state it has begun to serve large numbers of citizens. Significant cost reduction has been demonstrated for some services. For example, a certificate of land ownership took 6-8 weeks and required a dozen trips to the office. In the new system a scanned copy of the manually processed certificate is available with just 2 visits in 1-2 weeks. Extensive back end computerization of district offices is needed to further improve the citizen experience. In light of the success of UISCs, Pourashova Information and Service Centres (PISCs) and City Information and Service Centres (CISCs) have been established in every Pourashova and City corporation ward level, respectively.

¹⁴ LIRNEasia, (2013). *Delivering Public Services to the Bottom of the Pyramid: Different modes for different folk*.

<http://lirneasia.net/2013/09/lirneasia-research>.

¹⁵ Bangladesh Bureau of Statistics, Statistics and Informatics Division, Ministry of Planning. (2014, May). *Census Report of Union Information and Service Centres (UISCs)*. Retrieved from

http://a2i.pmo.gov.bd/sites/default/files/resource_docs/UISC%20Census%20Report%20August%202014_2.pdf

7 The National ID Card

The 9th parliamentary election was supposed to be held in 2007 after the dissolution of the parliament in Bangladesh in 2006. In preparation the Bangladesh Election Commission (BEC) initiated a 'Preparation of the Electoral Roll with Photographs' (PERP) project. Many countries and the UNDP provided financial and technical support to the project. The operations team of the project coordinated with 508 Upazila election officers on the Upazila level data collection offices. Help from the Bangladesh Armed forces was also used for management and technical support and ad hoc staffing¹⁶.

Nearly 81.3 million cards were issued in 11 months through a large set up consisting of 90,000 fixed and 10,000 mobile enrolment centres employing nearly 0.3 million enumerators. These voter ID cards got translated to national ID cards following a government order in 2010 establishing a National Identity Registration Authority (NIRA).

Registration process of the National ID card requires the citizen to produce a number of documents as proof of age and address for enrolment. These include SSC or equivalent certificate, Birth Certificate, Passport/driving license, Proof of Address, Citizenship certificate and Spouse's ID card. Data from these documents is captured in a pre-enrolment form. A mobile enrolment kit consisting of a web cam, laptop, fingerprint scanner is used to collect biometric data. The compiled data is stored in an XML format and saved on local servers. Later it is transferred to the data base of the central ID management system through compact discs. Next, the data is validated by the AFIS (Automated fingerprint identification system). This information is then sent to the content management system for printing ID cards¹⁷.

The ID card carries the following details: Name, Date of Birth, Blood Group, ID Number, Address, Photograph, and a secure 2D barcode consisting of the fingerprint. The NID is treated as a valid proof of identity by a number of services providers. A survey reported the following use of ID cards in Bangladesh (See Table 5).

Table 5: Use of voter ID cards

Service	% using the service
To vote in election	76
Banking purpose	39
To access public benefit services	26
Employment purpose	23

¹⁶ Akram, S. M., & Das, S. K. (2007). Bangladesh Election Commission: A diagnostic Study. *Transparency International Bangladesh*. Available at: http://www.tibangladesh.org/research/ES_ElectionCommission.pdf. [Accessed 21 September 2013].

¹⁷ Empowering people and commerce: Bangladesh voter registration and National ID program [Presentation Slides]. (2008, September). Retrieved from <http://biometrics.org/bc2008/presentations/145.pdf>. [Accessed 24 September 2013].

To obtain phone connection / mobile SIM card	22
To access/resolve land management issues	22
Academic purpose	18
Business purpose	15
To obtain passport or other travel documents	14
To access health services	13
To obtain driving license or other authentication and register	6
To access services related to agriculture and trade	6
Other	2
To access legal services	2
To access social welfare services	2

Source: LIRNEasia. (2013). *Delivering Public Services to the Bottom of the Pyramid: Different modes for different folk*. Retrieved from <http://lirneasia.net/2013/09/lirneasia-research>.

If this mass repository of information about citizens can be stored in a data base which can be electronically accessed through an authorization process, it could be utilized by agencies such as the police, mobile phone operators, private and public banks and the passport office. A National Population Register which will include under 18 years of age population is being planned. If a family could be identified as a unit, many safety net programs (current expenditure on these programs is 12% of the budget and 2.5% of the GDP) for the poor could be made more efficient.

The example of NID illustrates that even very large projects can be implemented successfully if these are taken in a mission mode involving agencies like the military which have strong project management skills beside the technical skills.

7.1 Information Sharing Initiatives

A variety of initiatives were started for sharing information with citizens. For example Union Information and Service Centres have been opened, where rural population can have easy access to all government forms, notices, passport/ visa related information, national e-information cell, information relating to agriculture, education, health and law, job news, nationality certificates, public examination's results as well as other government services. Union Information and Service Centre. Another example is the use of SMS to send information relevant to sugar cane farmers.

In this backdrop, a number of public and private sector services are provided through mobile phones. Following are some examples:

- Payment of different types of utility bills: About 6.7 million mobile subscribers have been brought under this facility;

- Purchasing railway tickets: About 45,000 railway tickets have been sold through mobile phones;
- Mobile remittances have been introduced for easy transfers of money across borders;
- Results of the public exam in actions are being published through mobile phones;
- A total of 22 public and private universities have introduced registration for admissions through SMS. About 6, 30,000 applicants have applied for admissions through SMS;
- The Postal Department has introduced mobile money order across the country for easy, safe, fast and cheap money transfer;
- Complaints (not of serious nature) can now be lodged with the police stations online and through SMS.

8 eGovernance Challenges and the Way Forward for Bangladesh

E-governance is intended to be an effective tool for service delivery and information dissemination. According to some researches the progress in implementation has been slow. Out of the 103 policy directives of 2002, only 8 were fully accomplished, 61 were partially accomplished and 34 still remain unaddressed. There are many government websites but with limited information. According to some reports, only 15% of these sites offer a two way interaction with citizens, whilst 51% of the sites have only a one way interaction. Public private partnerships are being envisaged to induct the technical knowhow and project management skills in design and implementation of projects¹⁸.

As in the rest of South Asia, e-governance in Bangladesh is still at a nascent stage. Inadequate ICT infrastructure (village level connectivity and functional data centres), legal issues, power interruption and bureaucratic apathy towards citizens act as key barriers.

High penetration of mobiles amongst the poor and recent coordinated efforts of the Government of Bangladesh and Multi-Lateral Aid Agencies in setting up A2i- an organization with a mandate to build an ecosystem to promote ICT enabled innovations in service delivery are important facilitating factors. A2i works directly under the PMO and in partnership with other Government agencies like Bangladesh Computer Council and Department of telecommunications is responsible for the eGovernance programs in Bangladesh. As discussed earlier, there have been some quick wins operating on a reasonable scale.

Global experience suggests that success in eGovernance requires active political and administrative leadership during design phase so that goals and benefits to be delivered to citizens can be clearly identified in measurable terms and a blue print for significant reform/reengineering of existing

¹⁸ Uddin, G. (2012) E-governance of Bangladesh: Present Scenario, Expectation, Ultimate Target and Recommendation. *International Journal of Scientific & Engineering Research*, 3(11). ISSN 2229-5518

processes can be developed. Essentially, an eco-system needs to be created for a nation to benefit from deployment of technology. From the current activities in eGovernance in Bangladesh, it appears that the building of such an eco-system has high priority and considerable administrative energy is being spent on creating it.

There has been a strong emphasis on developing micro entrepreneurs in the IT sector through many programs spreading IT literacy amongst the population. Such entrepreneurs play a key role in taking IT enabled services to rural areas. Implementation of eGovernance at upazila level is effective as such entrepreneurs have been knit into a community of bloggers who help in identifying problems and generating solutions. Moreover senior functionaries keep in touch with ground realities through extensive field visits. Other countries in the region can draw a lesson from the Bangladesh experience.

A national eGovernance effort cannot be entirely driven by a central agency. Nor can it be entirely driven by an ICT agency. At best such agencies can create the necessary technology infrastructure that is a building block for delivery of services. The motivation for reforming delivery must be catalyzed in the field agencies/ personnel that interface with citizens.

In Bangladesh, a2i is charged with the responsibility of building an eco-system. A2i is a UNDP assisted program with a lean organization of about 40 professionals drawn from Government officers, private sector and NGO sectors. UNDP selects the professionals and hires them on fixed tenure contracts. A2i has identified capacity building as their key responsibility. The emphasis in capacity building is on changing values and attitudes and not just skills. For example a 5 day program with an objective of “developing empathy for the citizens seeking service” (a very appropriate way to introduce lasting reforms) requires participants to visit an organization (not her own) and think about ways to improve service delivery. On the second day the participant visits her own organization to identify opportunities to reform delivery process. Over the next 3 days ideas are refined through consultation and group work. The outcome is a proposal for the Service Innovation Fund. Nearly fifty thousand employees from Government agencies have undergone these programs.

Similarly focus on innovation and teamwork can help generate implementable solutions for long existing difficulties faced by citizens. Realizing the enormity of the capacity building tasks, many partnerships have been developed with training institutions in private/public/NGO sectors. Programs for training the trainers are being emphasized. Chief Innovation officers have been designated for all directorates at district/upazilla levels and innovation teams have been formed with about 6000 officers participating in the effort.

Enhanced focus on innovations in service delivery has been achieved by the introduction of a Service Innovation Fund in 2013 to provide seed funding to civil servants to implement their ideas for reforming service delivery through ICTs. The fund started with a capital of \$ 10 million to be disbursed on demand over 3 years. The fund also supports development of tools for improving service delivery.

Digital innovation fairs are being organized to publicly recognize innovative civil servants who have improved service delivery.

One of the distinctive features of a2i strategy is to create a platform for cross fertilization of ideas across different stakeholders of many ICT initiatives. There is a blogging platform that connects teachers developing content for multimedia schools. Similarly a blogging platform for UISC entrepreneurs, field level officers, senior bureaucrats and citizen representatives enable quick redress of problems. The UISC blog has 13600 members that have published nearly 100,000 blog posts mostly in vernacular. A team of 8 administrators handles quality control, membership review and enrichment of the blog.

Another part of the eco system is the establishment of guidelines, standards and policies. For example, a National Portal Framework was designed to harmonise public websites that conform to guidelines for content and visual alignment. At least one officer from nearly 25000 government offices at various levels have been trained in preparing, uploading and editing web content. A2i is working with the information commission to design a proactive Disclosure Policy to give more meaning to the RTI Act 2009.

9 Recommendations

9.1 Focus on scaling up a few applications with large citizen interface

Land records: There are a large number of projects which have been implemented with limited ICT enablement. For example, in land records, significant benefit has been provided by eliminating the need to file a paper request by physically visiting an office. Similarly a visit is avoided for collecting the certificate. Now just two visits to a UISC are required-one for making an application and the other for collecting the certificate. At the back end ICT enablement is limited to scanning the paper record and storing the scan for retrieval as and when requested. The mutation process which is a more complex procedure is still manual. The coverage in terms of digitization of the textual record is very partial.

National ID cards: Similarly the coverage of National ID project needs to be expanded to the entire population. The focus should be on completing a few of the high impact project under state supervision and allow the private sector to expand the scope and scale up a large number of other projects that have been initiated. For completing these projects, many different types of bottlenecks may have to be removed. Some like the National ID Card project may need enabling legislation and executive orders.

eServices: The district eServices project needs decentralized implementation teams to handle the task of ICT enablement at the back office and the corresponding management of change. This program can be done in a phased manner with clear phasing, definition of milestones and monitoring of progress.

9.2 A centralized call centre

The LIRNEasia survey indicated that the percentage Bangladeshi amongst the poor, who say there “isn’t enough information on procedures and requirements needed to get a job done” is double that of Sri Lanka. Therefore the report recommends the implementation of call centres in Bangladesh similar to Sri Lanka’s Government Information Centre. The Sri Lankan centre is simply a call centre that provides information on how to access government services (e.g. gives information on which forms to fill, hours of operation of various offices, where to apply, how much the fees are, etc.). It is also important to increase awareness of services that can be accessed at UISCs and with phones. Therefore campaigns to educate consumers would give huge wins.

9.3 Create an Institutional Structure to Scale-up Successful Initiatives by a2i

Strong administrative leadership is needed to manage project implementation effectively. For example, in case of the very large scope land survey project, more resources as well as strong project management skills are needed. For enabling the PPP model to work, a flexible high powered authority is needed which can also monitor the project.

For strengthening project management at the implementation level, Indian Government has provided skilled personnel hired from the market on a contract basis to work with the field unit. These teams of 4-5 personnel for key projects report to the local administrator overseeing the project. India has in fact created a separate company called the National Institute of SMART Governance (NISG) to work with the government agencies to establish and smoothly operate public private partnerships for implementing major eGovernance projects. NISG has a capacity building unit which conducts large number of training programs for civil servants. A significant program organized by NISG is a two day workshop for political executives from different states. These programs are often conducted in cities where live projects can be demonstrated through field visits. These programs have helped the politicians in understanding the positive impact of eGovernance on citizens. The role of the political class in implementing effective eGovernance is also emphasized.

9.4 Collect feedback from citizens/businesses on project benefits in a structured way

In the literature on eGovernance in Bangladesh, there are hardly any papers which evaluate the impact on citizens of whatever projects have been done so far. Without understanding the concrete benefits being delivered to stake holders, it is not possible to improve an existing eGovernance system. With the exception of a recent report, even statistics on level of usage of different eServices are hard to come by¹⁹. Rigorous and independent impact assessment studies based on citizen

¹⁹ Bangladesh Bureau of Statistics, Statistics and Informatics Division, Ministry of Planning. (2014, May). *Census Report of Union Information and Service Centres (UISCs)*. Retrieved from http://a2i.pmo.gov.bd/sites/default/files/resource_docs/UISC%20Census%20Report%20August%202014_2.pdf

surveys need to be conducted for mature projects that have operated for 2-3 years. Other countries have benefited from such an exercise. An inventory of mature projects needs to be created. A comprehensive list of all projects underway, responsible agency and the stage of lifecycle at which the projects stand currently can be very useful in prioritizing the future effort.

In summary, there are great expectations based on early achievements of Bangladesh's e-Gov journey. A survey revealed that nearly all respondents believed that more manual services could be improved through electronic means to ensure better service delivery. Almost all respondents think service quality has been getting better through online systems compare with traditional over-the-counter service systems. Therefore, the agenda of eGovernance needs to be pursued with vigour.

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