

## **Data Collection and Dissemination of ICT Statistics** **: The Bangladesh Experience**

### **1. Introduction**

A good deal of enthusiasm prevails in Bangladesh in both government and private sectors about the potential of ICT in accelerating the rate of growth and poverty reduction in the country. A reflection of this view is found in the government's poverty reduction strategy paper for 2006-8 period titled "Unlocking the Potential: National Strategy for Accelerated Poverty Reduction" where ICT has been identified as one of the critical sectors for pro-poor economic growth. The government has undertaken a series of measures to promote rapid expansion of ICT. However, despite government's efforts there has been only moderate progress in ICT in the country. More importantly, there exists some weaknesses in generation and dissemination of ICT statistics.

The rest of the paper is organized as follows: Section 2 provides an overview of government initiatives to facilitate the spread of ICT in the country. Section 3 focuses on status of ICT statistics data collection in Bangladesh Section 4 presents the status of the government agency responsible for collection of ICT statistics and its dissemination. Section 5 presents few concluding observations.

### **2 Overview of Government Initiatives in ICT Sector in Bangladesh**

The government has undertaken a number of initiatives - policies, programmes, projects and regulations to create a vibrant ICT sector and to ensure access of all sections of the population in all regions of the country to the new technology. Some of the key initiatives are mentioned here. Bangladesh has adopted the National Policy on Information and Communication Technology (ICT) in 2002. The policy aims at building an ICT-driven nation for capturing a share of the multi-billion dollar software export market, facilitating e-governance and e-commerce and promoting application of ICT in health care, agriculture, disaster management, social welfare, transportation and judiciary. Bangladesh Computer Council (BCC) is the apex body under the Ministry of Science and Information & Communication Technology responsible for formulating and

implementing the policies on information and communication technology. The government created Bangladesh Telecommunications Regulatory Commission (BTRC) early in 2002, with strong regulatory independence. BTRC has now full authority to grant licenses to all providers of telephony, data, network and content services. Government-owned Bangladesh Telephone & Telegraph Board (BTTB) has set up digital telephone exchanges and ISP in each district town of the country. The government of Bangladesh abolished import tax and VAT on computer hardware, software and accessories. This brought down the cost of computers significantly at the retail outlets. Now even the low income households in the country can afford to have PCs.

The government interventions and a responsive private sector have resulted in expansion of ICT in the country. The ICT infrastructure facilities in Bangladesh stand as follows:

**Table 1: ICT Infrastructure Facilities in Bangladesh, 2003**

<b>Type of ICT facilities</b>	<b>Unit</b>	<b>Number</b>
Fixed Telephone lines	million	1
Mobile Phone (2006)	million	12.5
Teledensity	percent	4.71%
International Voice circuit		5100
International Trunk Exchange		2
International Internet Backbone	MB	10
VSAT users		67
VSAT providers		27
VSAT hub		4
ISP's		145
Ground Satellite station		4
Personal Computers(PCs)	thousand	500
Internet Accounts	thousand	250
Software Export Firms		83
Fibre Optic Cable network	KM	1800
Submarine cable	channels 17 Gbps	11000
ISP users(estimated)	million	2

Source: Bangladesh....technology powered by people... MoSICT, GoB.Appendix-3

### **3. Status of ICT statistics data collection in Bangladesh**

There has not been any attempt in the country to undertake a comprehensive survey to collect information on the use of ICT at the household and individual levels. As can be observed from Table-1 there has been modest use of ICT in the economy though its use is gradually increasing. Increasing importance of this sector in the national economy and its potential for development by now justify a comprehensive survey of this sector. The government has a plan to conduct a survey regarding the use of ICT at the household and individual levels to identify the progress of this sector, its potential for future expansion and its contribution to the economy. However, the government will need donor assistance to supplement its resources to undertake this activity.

It might be of interest to note how the questionnaire for this survey might be developed. BBS has a long tradition in conducting surveys. A draft questionnaire of a particular survey is developed initially by the officials of BBS, sometimes with inputs from consultants. The questionnaire is then shared with all stakeholders, for example, the planning commission, concerned government ministries, donor agencies, researchers and academics. A draft final questionnaire is prepared with inputs from the stakeholders. The questionnaire is finalized after pre-testing. In conducting a survey on ICT the same procedure is expected to be followed.

It should be mentioned here that anticipating the importance of accurate information on the use of ICT at the household level BBS included four questions on ICT in Household Income and Expenditure Survey (HIES) 2005. The questions focused on the use of fixed telephone, mobile phone, computer and email facilities. As is known HIES is a large survey with a long questionnaire. The inclusion of only four questions marks the beginning of a full effort in the future to conduct a survey especially on ICT. At this stage it would be interesting to share the information generated through this survey.

### 3.1 Household Income and Expenditure Survey 2005

As mentioned earlier, “Household Income and Expenditure Survey 2005” sought information on the use of ICT (use of computer, email, internet, telephone, mobile phone etc.) at the household and individual levels. The enumerators were provided with Laptop computers to collect and process field level data. The final result of the survey is yet to be published. However preliminary results show the following:

**Table-2:** Percentage of households having ICT facilities

Type of facilities	National	Rural	Urban
Telephone	2.87	0.33	10.36
Mobile Phone	11.29	6.05	26.73
Computer	1.36	0.17	4.88
email	0.20	-	0.81

Source: BBS, Household Income and Expenditure Survey 2005 (provisional estimates)

The table shows low level of use of computer facilities in Bangladesh especially in rural areas. The most notable information from the survey is that though mobile phone has been introduced in the country in early nineties, there has been substantial growth of mobile phone use. Understandably, the use of the ICT facilities is much higher in urban areas compared to rural areas.

There has been rapid growth of use of Mobile phones between 2000 and 2005. While only 1.50% of households used mobile phones in 2000, more than 11% of households were found to use them in 2005.

**Table-3:** Mobile phone used by households

Locality	2000	2005
National	1.50	11.29
Rural	0.30	6.05
Urban	6.50	26.73

Source: BBS, HIES 2000 and HIES 2005

It may be mentioned here that the government has been trying to popularise ICT in government offices to improve productivity and promote e-governance. The progress in this front has been captured in a recent survey which is discussed below.

### **3.2 Comprehensive Study of e-Government Initiatives in Bangladesh**

A study titled “**Comprehensive Study of e-Government Initiatives in Bangladesh-2003**” covering 303 Government institutions throughout Bangladesh with a total of 35,658 officers and 103,126 staff were conducted to assess the current situation of IT in the government sector. It also gives a comprehensive idea about the IT resources that different government offices have. The study covers areas of existing ICT infrastructure, inventory of ICT resources, nature of use of ICTs, training schemes and maintenance mechanisms in government offices across the country.

#### **3.2.1 Major findings of the study are given below:**

##### **3.2.1.1 Hardware Infrastructure:**

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

##### **3.2.1.2 Connectivity Infrastructure:**

- 79% of Ministries/Divisions are currently connected to the Internet
- 76% of Ministries/Divisions have in-house IT training facilities are currently connected to the Internet
- 75% of Academic Institutions are currently connected to the Internet
- At the Ministry/Division level, about 40% have LAN
- At the Department/Corporation level, about 36.8% have LAN
- At the Academic Institutions level, about 54% have LAN

### **3.2.1.3 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.
- At the Academic Institutions level, about 40% officers and about 7.4% staff use PCs.
- Percentage of offices with websites: Ministry-24%; Division-50%; Department-14%; Corporation-14%; Academic Institutions -25%;
- Percentage of offices with customized software: Ministry-24%; Division-60%; Department-25%; Corporation-41%; Academic Institutions -24%;

### **3.2.1.4 IT Training:**

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

### **3.2.1.5 IT Trained Human Resource:**

- About 58% of 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

### 3.2.1.6 Maintenance of IT 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 IT maintenance
- About 15.7% of Departments/Corporations have no mechanism for IT maintenance
- About 15.2% of Academic Institutions have no mechanism for IT maintenance
- About 18.6% of Ministries/Divisions have maintenance being handled under projects
- About 7.6% of Departments/Corporations have maintenance being handled under project

### 3.2.2 Status of IT trained manpower in the Government

The following table provides a picture of IT trained manpower in government offices. It is observed that about 28% of officials and 29% of staffs of Ministry /Division have received IT training. The percentage of officers of Department/Corporation receiving IT training is about 23%.

**Table-4: Status of IT trained manpower in the government**

Type of institution	% of officers trained	% of staffs trained
Ministry /Division	27.81	29.22
Dept./Corporation	22.58	7.13
Academic institution	5.78	3.57
Total	21.29	7.82

Source: Comprehensive Study of e-Government Initiatives in Bangladesh

### 3.2.3 Hindrances to e-Government

The survey found that offices have faced many kinds of hindrances to successful implementation of e-Government (see Table 5).

**Table 5:** Hindrances to Successful Implementation of e-Government (percentage)

Type of institution	Fear of change	Mindset against computers	Lack of adequate training	Insufficient maintenance	Lack of telecom facilities	Power failure	Lack of legal infrastructure	Lack of adequate hardware	Lack of ICT awareness	Lack of acceptance of IT systems	Lack of bangle interfacing
Ministry	0.00	4.12	25.77	22.68	9.28	1.03	3.09	20.62	5.15	1.03	7.22
Division	10.26	7.69	20.51	12.82	7.69	2.56	2.56	17.95	5.13	5.13	7.69
Department	4.74	4.35	18.58	16.01	9.29	11.26	6.13	16.21	5.73	1.78	5.93
Corporation	6.97	6.47	17.16	12.44	10.20	9.20	6.72	13.93	7.46	4.23	5.22
Academic	0.00	0.00	18.84	14.49	17.39	14.49	5.80	20.29	2.90	0.00	5.80
Total	5.031	4.94	18.78	15.09	10.06	9.52	5.93	16.08	6.11	2.61	5.84

Source: Comprehensive Study of e-Government Initiatives in Bangladesh

The major handicaps to successful implementation of e-government are, in order of declaring importance, found to be lack of adequate training, insufficient maintenance and lack of adequate hardware. The other important factors include lack of telecom facilities and power failures.

## 4. Government Organization for Collecting ICT Statistics

### 4.1 Bangladesh Bureau of Statistics

Bangladesh Bureau of Statistics (BBS) is the National statistical organization (NSO) of Bangladesh. It was established in August 1974 under the Ministry of Planning and is headed by a Director General. The broad functions of the BBS are to collect, compile, analyze and publish statistics on all sectors of the economy to meet the needs of development planning, policy analysis and decision making. Apart from this, BBS is also playing a vital role in improving the quality of data through conducting research

activities, imparting training and organizing seminars, symposiums and workshops. These activities also help disseminate information collected by BBS.

There are two mechanisms to initiate a data collection procedure in BBS. In case of regular activities, BBS initiates the data collection process on its own. However in case of some new surveys, BBS can either articulate the need for data collection and initiate the process or it can respond to the request of some ministries/divisions.

#### **4.2 Functions of BBS in relation to ICT**

The main functions of BBS in relation to ICT are as follows:

- Direct and coordinate all aspects of planning, installation, operation and maintenance of data, server-based applications and computer systems.
- Provide support and planning for network administration.
- Design and development of database and customized software to cope with the requirements of the BBS.
- Provide training to the end-user and build-up ICT sound manpower.
- Troubleshooting of software and hardware.
- Design and development of program to capture, edit & clean, analyze and tabulation of collected data of census and surveys conducted by BBS.
- Backup and recovery of database.
- Assist in designing computer based questionnaire.
- Designing of census questionnaire for OMR and OCR.
- Implementation of optical data archive and networking system.

#### **4.2 Use of ICT in data processing**

BBS has been using computer based equipments in processing data of various Surveys and Censuses. It has long history in using Mainframe and other sophisticated machineries in data processing. At present the main Computing Resources (hardware, software and human resources) of Computer Wing of BBS are the following:

#### 4.2.1 Hardware:

**Table-6:** Hardware resources in BBS

Sl. No.	Hardware Name	Number
a.	PC/Micro Computer	200
b.	OMR	05
c.	OCR	04
d.	Server	10
e.	Scanner	05
f.	Plotter	02
g.	Digitizer	02
h.	Ammonia Printer	02
i.	Line Printer	02
j.	Laser, Desk jet, Dot Matrix Printer	20

#### 4.2.2 Software :

**Table-7:** Software resources in BBS

Sl. No.	Types of Software	Software name
a.	Operating Systems	UNIX, Windows, DOS, Solaris
b.	Application Software	Msoffice, IMPS, Bangla software,
c.	Programming Language	COBOL, FoxPro, Visual Basic
d.	Database	CSPro, FoxPro, Oracle
e.	Utility Software	Norton Utilities and various Anti-virus software.
f.	Analytical Software	SPSS, STATA

**4.2.3 Human Resources:** About 250 trained (foreign & locally) personnel engaged in processing statistical data using various software in networking environment.

#### 4.2.3 Training facilities of ICT in BBS:

BBS is regularly conducting internal training courses to develop skilled manpower in Information and Communication Technology (ICT). BBS has also availed itself of the opportunity to train its officers and staffs in foreign agencies like UNSIAP.

#### **4.2.4 Challenges faced in ICT statistics collection and dissemination**

Besides regular surveys and activities, BBS undertakes surveys and censuses based on some projects funded by the government and/or donor agencies. No comprehensive survey has so far been undertaken to collect ICT statistics. As such the actual challenges to be faced in ICT statistics collection and dissemination are yet not known. However, if our past experience is any guide some general challenges can be readily identified. BBS lacks adequate manpower, proper technical expertise, transport facilities and resources to conduct a quality survey.

**4.2.5 BBS and the Web site:** BBS has its own dynamic web site named [www.bbsgob.org](http://www.bbsgob.org) to disseminate information.

**4.2.6 Users of Data/Statistics:** The users of BBS data/statistics generated through census and survey are usually the government – ministries/divisions and departments, NGOs, private sector organizations, researchers and academics, international organizations and donor agencies.

### **5. Concluding Observations**

The use of ICT has experienced modest growth in Bangladesh with rapid growth of use of mobile phones. BBS, the apex statistical organization is using hi tech sophisticated machineries in data processing. There has also been progress in government offices in terms of use of ICT. However lack of comprehensive survey on the use of ICT prevents us from giving a full picture of ICT statistics in the country. It is observed by experts in the sector that the sector has inadequate infrastructure and insufficient trained manpower. Besides, the quality of training is also not fully satisfactory. Despite these weaknesses, an encouraging future of this sector is anticipated. The universities – both public and private, are producing increasing number of graduates in computer related fields who can contribute to the development of this sector. A wide range of hardware platforms, from mid range to PC, are available in BBS.