Country Paper on
Managing Statistical Development and Information & Communication Technology for National Statistical Offices: Bangladesh Experience

by

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Introduction :

Bangladesh Bureau of Statistics (BBS), the National Statistical Office of Bangladesh is responsible for collecting, compiling and disseminating statistics of all the sectors of the economy. The government of Bangladesh has been striving to achieve higher living standard for the people of Bangladesh through planned development by providing statistical information to all stakeholders involved in policy making. With this objective of planned development for the country, the Bangladesh Bureau of Statistics was established in 1975 by merging different statistical agencies that   were working under different ministries. It determines objectives, goals and strategies of medium and short-term plan within the frame work of long-term perspective and formulates policy measures for the achievement of planned goals and targets to provide valuable information and data.

After the introduction of ICT, the world is becoming smaller in the sense of communication and may now be called as a Global Village. As we are living in the global village, our aim is to provide the maximum facilities to each employee, user and visitor through ICT.

The National ICT Policy 2002 of Bangladesh states that "the Government of Bangladesh shall implement ICT systems to provide nation-wide coverage and access by any citizen to government databases and administrative systems which can be used to extend public services to the remotest corner".

1.   Management Issues of using ICT in BBS.

1(a). ICT trends influencing Bangladesh Bureau of Statistics.

Bangladesh Bureau of Statistics is influenced by its already existed ICT. It may be discussed in two major 'general' trends, which already led BBS to a complete redesign of our processes.

The first trend is to switch over the centralized mainframe processing to distributed, client/server processing with application of modern (object-oriented) Database Management Systems (DBMS). The modern set-up of computer configurations is the three-tier client/server architecture in which relative small components are directly connected with each other in easily expandable Local Area Networks. Program applications run on 'application servers' while the databases are stored, maintained and updated on the 'database servers'. Workstations are single client operated system who are benefited with the full power of all connected components. Parallel with this evolution in the hardware, a complete revolution took place with regard to the methodology of data base management. Now-a-days, modern, relational or object-oriented database management systems (DBMS) are widely operational. The data are defined independently from the applications and the values of the variables are separated from the descriptions of the properties/characteristics of the variables.

The second trend is the meta-data, which deserves a spill position in the production processes of official statistics. Originally exclusively mentioned in relation with statistical data dissemination, a growing awareness arises that meta-data have to be seen as the integrated element in the whole chain of statistical sub-processes.

Compared with the traditional file processing systems on mainframe the new database concepts combined with the client/server architecture offer the advantages of more flexibility, distributed processing with improved data sharing through the organization (with eventually dislocated staff), minimal data redundancy and improved productivity of application development. The major IT development, which will certainly have profound implications on the future data processing in BBS, is the evolution in communication technology. At the global level the communications infrastructure is widely improved by the worldwide introduction and installation of the technology of fibre optical cables. This enables the transfer of (large volume of) information between connected computers regardless their physical location. The techniques and means for the access to information and the exchange of data are mostly available for everybody at no or relatively low costs. The flexibility of the free Web-browser systems will certainly get a boost because of the growing influence of e-government.

BBS is trying to adopt changing ICT (Information & Communication Technology) revolution rapidly. The statistical processes, a structured overview of relevant technologies, grouped by the sub-processes and explanatory clarifications are given in the following.

A. Input process:

1) Automated transfer from paper based forms into electronic format:

- Imaging; electronic image of the form
- Optical Mark Reader (OMR); reading of bars on the form
- Optical Character Recognition (OCR) & Intelligent Character Recognition (ICR); reading of numbers and letters

2) Manual transfer from paper based forms into electronic format:

- Computer Assisted Data Entry; interactive keying procedure incl. checks and coding/ classification assistance

3) (Paperless) Computer Assisted Interviewing:

- Computer Assisted Personal Interviewing (CAPI); enumerator types the responses straight into a computer

4) (Paperless) Electronic Data Reporting:

- Electronic Data Interchange (EDI); automated data extraction from computer system of the respondent

B. Throughput process:

- Computer assisted data editing; coding and classification combined with record checking in interactive processing
- Automated correction; automated adjustment for erroneously processed data
- Imputation; automated filling in of data records for non-respondents or of partially missing variables

C. Output process:

1) Electronic Publishing:

- Internet publishing; provision of statistical data via a Web-site (static or dynamic)
- CD-ROM publication; provision of statistical data on CD-ROM including retrieval/search software
- Other electronic media; tailor-made selections of statistical tables, which are provided via electronic media

2) Others:

- Computer assisted data analysis and tabulation
- Automated disclosure; automated reduction of disclosure of individual (confidential) statistical data
- Data warehousing & data mining; access to related and unrelated statistical data, stored in various databases

D. Other trends (associated with more basic processes):

- Distributed processing with modern DBMS, groupware, workflow control, Intranets

- Meta data management systems; including classification/coding exchange mechanisms

- Geographic Information Systems (GIS); for support of field operations and graphical display of geographic data

- Process Control; techniques used for the control of the workflows, input of resources and survey planning

- Quality Management; techniques and methodologies for systematic quality control.

The input and output processes outlined above are not fully adopted by BBS. However, BBS is working to adopt all the processes in phases.

1(b). <u>**Strategy for Using ICT in BBS to sustain competitive advantage:**</u>

1)   To equip well the data processing centre of BBS.

2)   To develop the skill of ICT personnel in programming, database administration and networking.

3)   To establish server based networking environment.

4)   To establish optical data archiving system for preservation of data.

5)   To bring the printing system under networking system.

6)   To improve the communication facility with BBS regional offices and overseas countries through submarine cable back bone/VSAT Link.

1(c). <u>**Priorities in ICT Project :**</u>

Our government has taken the ICT sector as Thrust Sector. As such BBS is always giving priority to implement ICT projects. Currently BBS is implementing a project entitled "Optical Data Archiving" supported by GOB. Under this project scientific preservation of data and capacity building of ICT personal will be done.

2. <u>**How ICT is managed in BBS effectively :**</u>

To improve the office intelligence, BBS has given internet connection to all officers working in the headquarter. Statistical data analysis and its interpretation can be done in an effective way through ICT that has already been introduced in all components (Wings) of BBS. ICT is also widely used in administrative work of BBS. As a result, momentum has created in official correspondence, administration and accounts. BBS has developed a website titled www:bbs.gov.bd and key indicators of census & survey's report published by BBS are uploading in the website to meet the growing demand of official statistics.

In order to cater high speed data communication facility, BBS is working to establish link through submarine cable.

3.   Link between govt. support for technology use and BBS ICT strategy :

3.1. Availability of Training:

Training for ICT personnel is not adequate in Bangladesh. Bangladesh Computer Council (BCC) as a government organization conduct time to time ICT courses for ICT personnel. Besides, some private organization conducts periodical computer training courses for ICT personnel. There is no effective ICT training Lab or Institute in BBS. So we cannot impart well training for ICT personnel of BBS. However, some in house computer training is offered to BBS officials engaged in data processing. Our govt. has approved a project on ICT named "Optical Data archive and networking" in BBS. In this project there is some provision for developing the skill of ICT personnel.

3.2. Capacity building ICT strategy in BBS :

For a comprehensive ICT training program in Bangladesh Bureau of Statistics, following programs will be taken.

To provide computer training for effective use of IT.

To provide necessary technical skill for maintenance of IT systems.

To provide management skills for administering and monitoring ICT projects.

To provide vision and leadership skills for guiding the process of transition to e-governance in different offices (Wings) of BBS.

4.   Obstacles in the use of ICT in BBS :

Following are the main obstacles in ICT system.

1. Inadequate ICT infrastructure in BBS.
2. Inadequate access to ICT by Officials.
3. Lack of adequate ICT Training.

4. Lack of reliable maintenance for ICT instruments.

5. Lack of incentive structure for ICT officials.

6. Inadequate human resource in ICT field.

7. Preparedness of local software companies.

8. Disturbance in supply of electricity.

9. High cost but low reliability of internet access.

10. Lack of Bengali standardization. *

*NB: Different people use different fonts. None of these fonts maintain the international standard – UNICODE. As a result Bengali content can not be put up on the internet using these fonts.

5. <u>Conclusion :</u>

E-governance in Bangladesh is a serious strategic consideration at the policy making level in the context of making good governance through ICT. However, E-governance is still at the primary stage in Bangladesh. The management of BBS is now working with the following objectives:

1) To make optimum use of ICT system in all components (8 functional wings) of BBS.

2) To improve efficiency of BBS.

3) To ensure effective use of resources.

4) To enhance strategic plan of BBS.

5) To raise the quality of services

6) To promote interaction between BBS and users of BBS data.

7) To create portal for transact all Ministries/Divisions.

8) To open publicly the key indicators of BBS publications through website.

To improve the communication facility with BBS, Regional Statistical Offices and overseas countries will be linked through submarine cable in order to cater the high speed data communication facility.

Data stored in 7000 Magnetic Tapes (Tape Library) will be down loaded in digital format to establish an Optical Digital Library.

Development of the data warehouse and web-based data retrieval system is going on to meet the regional needs.

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