

**THE ICT JOURNEY  
OF NEPAL CENTRAL BUREAU OF STATISTICS:  
A BRIEF ACCOUNT**

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### **1 Background**

Nepal is geographically located on the southern slopes of the Himalayas and is bordered by the two most populous countries of the world, China and India. East–west elongated and almost rectangular in its shape the country has an area of 147,181 square kilometres. The population of the country projected for the year 2007 is around 26 million.

As regards the national statistical system of Nepal, the present system is de facto decentralised. Central Bureau of Statistics (CBS) is the pivotal statistical agency within the national statistical system. CBS was created in 1959 by virtue of Statistics Act, 1958 as the sole agency for the collection, consolidation, publication and analysis of statistics.

In Nepal, the ICT (information and communication technology) sector is at a developing stage. The ICT industry in the country is growing steadily with a promising future. It includes a mix of “hardware, software, support services, training and telecom firms”. Recognizing the importance of ICT, the government formulated an IT policy in the year 2000 which aims for growth and development of this sector in the country.

### **2 Management Issues of ICT in CBS**

#### **2.1 Changes in the functions of CBS due to ICT**

CBS formally started its ICT journey with the use of IBM 1401 computer to process the 1971 population census of Nepal. The use of IT has been increasing slowly but steadily in the CBS, since then. The advent of IT has provided unprecedented opportunities to CBS in the collection, consolidation, analysis, publication as well as archive of statistics. It has brought different changes in the overall perspectives on the CBS activities. Major changes observed in the functions of CBS due to the intervention of IT include the following.

- Reduction in time frame for surveys and censuses.
- Improvement in the quality of data produced.
- Improvement in data analyses and publications.
- Quick and effective methods of data dissemination.
- Use of GIS techniques in data analyses and dissemination.
- Ease of systematic data storage and retrieval.
- Improvement in user's access to data.
- Positive attitude of data users towards CBS.
- Changes in the perception of CBS personnel.

Increase in the number of computer trained personnel, creation of an environment conducive to work, ability to provide quick responses to queries and issues raised, improvement in co-ordination and collaboration with the stakeholders are some of the positive aspects of changes that have occurred over the years. There is no doubt that these changes have been very much supportive to CBS in carrying out its functions. On its part, CBS also is striving for exploiting the benefits of the IT revolution.

## **2.2 Strategies for using ICT in the production of official statistics**

Realizing the benefits of ICT, CBS has been trying to keep up with the IT race. The CBS's strategy for using ICT to gain and sustain competitive advantage for producing official statistics is outlined in the following:

- Development and maintenance of computer educated personnel.
- Improvement of infrastructure within the Bureau and its branch offices.
- Setting up a section to coordinate the ICT related activities.
- Provision of 24 hours uninterrupted internet services.
- Production of materials compatible to IT and user friendly formats.
- Provision of adequate budget for IT development.
- Setting up a strong data bank leading to one stop service centre.
- Consolidated linkage among stakeholders and users.
- Inventory and assessment of ICT status.

### **2.3 Priorities to the ICT projects**

At present, Nepal is at the cross roads. As Nepal has entered a new age after the restoration of democracy, the IT projects should also embrace the new changes and should lay down priorities accordingly. Against this backdrop, the priorities are set on the basis of the user demand and for making its products more user-friendly. The IT projects are primarily prioritized on the following criteria.

- Directly contributing to the overarching goal of poverty reduction.
- Contributing to social inclusion, reconstruction and rehabilitation.
- Contributing to user friendly products.
- Human resources and infrastructure development.
- Strengthening the field offices.
- Data archival and mapping.
- Poverty mapping and GIS utilization.

### **2.4 Use of ICT to improve office–intelligence**

CBS is faced with an increased pressure to improve the quality of its outputs. Quality, in general, is a function of relevance, consistency, timeliness, accuracy and accessibility. Improvement in these attributes certainly depends on the structure of office intelligence. For CBS, the office intelligence cycle mainly revolves around the following main stages of information system: “identification of data requirement, data collection, data analysis, and dissemination of results”. There is no doubt that IT has a crucial role for the improvement of office intelligence in all of these stages.

At present, the computerized information system is in a developing stage in the CBS. “Data Processing and GIS” section of the Bureau has led the overall ICT initiatives in an integrated approach. Intranet system is in place. Local area network (LAN) within the head office, for example, has been used to share data among different divisions and sections of the Bureau. Awareness creation has become an essential precondition for the development of ICT sector within the Bureau. On the whole, IT is being considered an indispensable tool in improving the office intelligence of the CBS.

Office intelligence has its own paradigm. However, the above issues can be taken into consideration before using ICT for the improvement of the office intelligence.

### **3 Effective and Efficient Management of ICT**

#### **3.1 Investment and expenses on ICT in the CBS**

The use of ICT in CBS can not be over ruled. Correspondingly the necessity of investing on IT can not be over emphasised, either. Over the years, the government has increased interest in the development of ICT sector and has been allocating some budget for its development. This, however, is not sufficient to cope with the increasing needs of the Bureau. Most of the investment and expenses on ICT sector come from different survey and census projects. Role of international donor agencies also is significant in the Bureau's IT sector development programmes.

CBS is a small organization with about 140 staff at the head quarters and around 400 staff at the field offices. At present, CBS has two powerful servers, about 150 desk top computers, a good number of lap top computers and licensed software, own website and high bandwidth internet service and intranet. Due to the budget constraints, only a small portion of its annual budget is allocated for ICT equipments, human resource development and other utilities.

Although, the amount of investment and expense on ICT sector in CBS is meagre, the effectiveness of the investments over the years has been quite noteworthy for the development of the sector.

#### **3.2 ICT resources used to respond the demand of official statistics**

The use of ICT has now made possible to disseminate huge amounts of data through electronic copies, website and intranet. These services have been appreciated by the users. Still there is a lot to do for regular revision of website, intranet and publishing the products in electronic formats as per user's growing demand for official statistics in user friendly ways. For example, there is a lack of high performance processor in the Bureau.

Over the years, demand for ICT compatible official statistics has enormously increased. Introduction of GIS in statistical activities of the Bureau has facilitated its work but the present pace of its development and resources allocated for it is not satisfactory. As we know, preparation

and presentation of official statistics largely depends on the extensive link among the stakeholders for which the present ICT infrastructure is not capable.

## **4 Government Support for ICT and CBS's ICT Strategy**

### **4.1 Types of training available for ICT personnel**

Development of ICT industry of a country is conditional to the development of human resources. CBS has given priority to trainings for its personnel – trainings inside the Bureau, within the country and abroad. However, there is a lack of suitable training programmes.

Realising the importance of training for ICT personnel, the government of Nepal has taken a host of initiatives in this regard. At present, there are more than 1,000 ICT training institutes in addition to several universities which offer ICT courses. The IT Park also provides facilities for training programmes. Most of these training facilities, however, are concentrated in urban areas. The types of training easily available in the country are listed below.

- Basic computer training.
- Basic support services training.
- Basic software training.
- Basic hardware training.

### **4.2 Needs of training for ICT personnel of CBS**

Different types of computer training are available within the country. These trainings, however, are not sufficient for the present needs of the Bureau. For the last several years, CBS also has been organizing short term computer training programmes at its head quarters as well as at its field offices. Most of the trainings are too general in their orientation. Specific trainings are the necessity of the present day Bureau's works. Types of training that are needed for the Bureau's work are outlined below.

- Specific computer software trainings, e.g., SPSS, STATA, GIS, and CSPRO.
- ICT related trainings for questionnaire design, data collection, data entry and data analysis methods.
- Trainings in web based activities with web mapping.
- Computer hardware trainings.

## **5 Major Obstacles in the Use of ICT in CBS**

The use of ICT in CBS is lagging behind other activities and has not been able to track the development as needed. “Lack of human resources, disabling environments and lagging infrastructural development” are some of the factors that have limited the ability of CBS to capitalize on the revolution in ICT. Some of the major obstacles in the use of ICT in CBS are listed below.

- Lack of human resources both in quantity and quality.
- Poor physical infrastructure.
- Budgetary constraints to link with the field offices.
- Variation in the priorities of the stakeholders.
- Organizational structure not ICT friendly.
- Low pay structure for the government employees.

## **6 Conclusions**

Nepal started its ICT journey in the early 1970s. For the first time, a main frame computer (IBM 1401) was used to process the 1971 population census of Nepal. After ten years, one personal computer (PC) was installed in the Bureau to analyse the 1981/82 agricultural census results. Mini computer system was introduced in the 1991 population census. In 1995, personal computers (lap tops) were used in the field for data entry. For the first time, the process of entering, checking, and correcting the data right in the field was introduced in the 1995/96 Nepal Living Standards Survey. Desktop microcomputers were used for the 2001 census data processing.

CBS has come a long way since its first time use of computer for data processing. Today, CBS has computerised its different statistical activities including entry, editing, processing, analysis and dissemination of data. A separate section namely “Data Processing and GIS Section” has been established in the Bureau. CBS is now enriched with local area net work and a good number of PCs (desk tops as well as lap tops). Branch statistics offices are also equipped with computers. Communication with data users are performed using dial-up modem.

CBS is an important part of the IT development initiative of the government of Nepal. It is one of the early adopters of the internet in the government sector. CBS's own website (<http://www.cbs.gov.np>) is fairly developed and is being used to deliver information to a wide range of users. At present, more than 80 percent of the CBS staffs are using email of the non-government domain site and about 70 percent have access also to the government domain site (cbs.gov.np). In spite of these developments, CBS has a long way to go before it can fully exploit the benefits of IT revolution.