

“Bhutan’s experience in data collection  
and dissemination of ICT statistics”

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## Table of Content

1. Bhutan and ICT .....	1
2. Current Status of the ICT statistics data collection .....	1
2.1 ICT database .....	2
3. Organization responsible for ICT Data collection .....	2
3.1 Method of collection of ICT data .....	3
3.2 Dissemination of information .....	4
4. Users of Bureau' report .....	4
5. Future Plan of Bureau .....	4
6. What needs to adopted for developing ICT database for Bhutan.....	4
7. Lesson to be learned from this forum.....	5
Annex A: Sample of questionnaire from Bhutan Living Standard survey....	6
Annex B: Sample of questionnaire from Household Income and Expenditure survey 2000.....	7
Annex C: Facts and figures of present telecom sector in Bhutan .....	8

# 1. Bhutan and ICT

Bhutan is a small, isolated, landlocked Kingdom in the eastern Himalayas, sandwiched between two giants, Indian and China. Bhutan recently graduated from a low human development to a medium human development country on the UNDP's Human Development Index 2003, ranking 136<sup>th</sup> of 175 nations. The GDP per capita is estimated to be around USD 835 with most Bhutanese engaged in subsistence agriculture. The literacy rate is around 50 % (2005).

Though Bhutan has embraced Information, Communications Technology (ICT) quite late<sup>1</sup>, the Royal Government of Bhutan (RGoB) has recognized the role that ICT can play in achieving its development goals. Bhutan wanted to harness the benefits of ICT, with people at the center of development, both as an enabler and as an industry, to realize the Millennium Development Goals and towards enhancing Gross National Happiness<sup>2</sup>.

In order to fully embrace the significant and potential of ICT, the RGoB intends to liberalize ICT sector, including telecommunications which is still controlled by state-owned corporation. The RGoB's broader aim is to increase the role of the private sector towards the development of the sector. The Ministry of Information and Communications has come out with a ICT policy known as Bhutan ICT Policy & Strategies (BIPS)<sup>3</sup> in July 2004, formulated through an inclusive and participatory process, laid the policy foundation for the use of ICT for good governance, to foster Bhutanese info-culture and create a "high-tech habitat". One of the BIPS targets is to establish a liberalized and competitive telecommunications market by 2007 and ensure appropriate infrastructure development for improving availability, quality and affordability of ICT services.

In order to have a competitive ICT market, soon Bhutan will introduce competition in the mobile cellular sector. The Bhutan Information, Communications and Media Authority; regulator for ICT and Media Sector, has already invited the Expression of Interest for second mobile Telecom license and will soon be licensed in November 2006. Recently the 85<sup>th</sup> Session of the National Assembly<sup>4</sup> has enacted the converged Information, Communications and Media Bill 2006.

Due to its rugged terrain and scattered population, Bhutan's ICT market is still dominated by single integrated monopoly market. The state-owned corporation provides all communications including fixed and mobile services. Competition is only introduced in the Internet and cable television services. There are three Internet Service Providers (ISPs) and almost 43 cable operators in the Bhutan.

## 2. Current Status of the ICT statistics data collection

As mentioned earlier, ICT is a new concept in Bhutan and nothing much has been done in the field of developing a national ICT statistics data-base for Bhutan. Till date, the Bhutan Information, Communications and Media Authority does the compilation of data on telecommunications and other ICT sector as per the format of International Telecommunication Union (ITU) and send it annually to ITU.

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<sup>1</sup> Internet services were formerly introduced in 1999

<sup>2</sup> From the Bhutan's ICT White Paper, October 2003

<sup>3</sup> The BIPS document is available at the official website of the Ministry of Information & Communications (MoIC) [www.moic.gov.bt](http://www.moic.gov.bt).

<sup>4</sup> National Assembly is the highest legislative body

At the national level, the National Statistical Bureau is responsible for developing and maintaining national statistical data bank to build time series database for Bhutan. The National Statistical Bureau is the central apex body to validate, authenticate and disseminate national statistics, including database on ICT, to ensure uniformity in the concepts, definitions and classifications to enable comparison of data at national as well as international level.

The National Statistical Bureau works very close with different stakeholders and also supports them technically as well as planning, designing on methods of conducting surveys for the collection of primary data. The Bureau conducts workshops and training periodically for the development and updating the skills of the statistical personnel within the country. Overall, the Bureau is the data bank for the country and it publishes statistical reports.

## **2.1 ICT database**

At present, there is no comprehensive database for ICT sector. The only information available with the National Statistical Bureau is yearly subscriber base for both fixed and mobile services, number of telephone exchanges, telephone connection capacity by exchange, number of telephone trunk calls, telecommunication traffic in minutes, and revenue generated. This information is collected annually from the incumbent operator, Bhutan Telecom Limited on annual basis. Even the information on number of internet subscribers for both dial-up as well as lease line connection is also collected.

Beside, Information are also collected by National Statistical Bureau during its survey such as Bhutan Living Standard survey, Household income and expenditure survey etc. where general question on number of computer, mobile phone, radio, television and expenditures on communications including telephone (local, long distance and international), postal (domestic and foreign mail), telegraphs and other communications are collected. The formats of the questionnaires are attached as annex A and annex B.

Once information is collected, the Bureau compiles and then published the report annually.

## **3. Organization responsible for ICT Data collection**

In Bhutan, the National Statistical Bureau is an organization responsible for strengthening the statistical system in Bhutan. The Bureau consolidate the main statistical outputs of the Bhutan Statistical System and make these available to general public both in the form of publication as well as electronic formats.

The government has also appointed statistical positions in different government agencies including in various Dzongkhags<sup>5</sup> responsible for data collection, processing, analysis and then reporting to the Bureau.

Beside the Bureau, the ICT and Media regulator; Bhutan Information, Communications and Media Authority also compiles information on the ICT and Media sector. The present information on Bhutanese ICT sector that is available on the International Telecommunication Union (ITU) database is compiled by the regulator. Such information is collected annually as per the format issued by ITU.

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<sup>5</sup> Dzongkhags means district in Bhutanese language.

### 3.1 Organization structure of National Statistical Bureau

The National Statistical Bureau was started as a statistical cell in 1971 and was later upgraded as Central Statistical Organization under the Planning Commission Secretariat with the responsibility as a sole producer of official statistics for Bhutan. In October 2003, it became an autonomous and was then renamed as the National Statistical Bureau.

A board consisting of six members, chaired by Honorable Minister for Labour and Human Resources governs the National Statistical Bureau.

The organizational structure of the National Statistical Bureau is shown below:

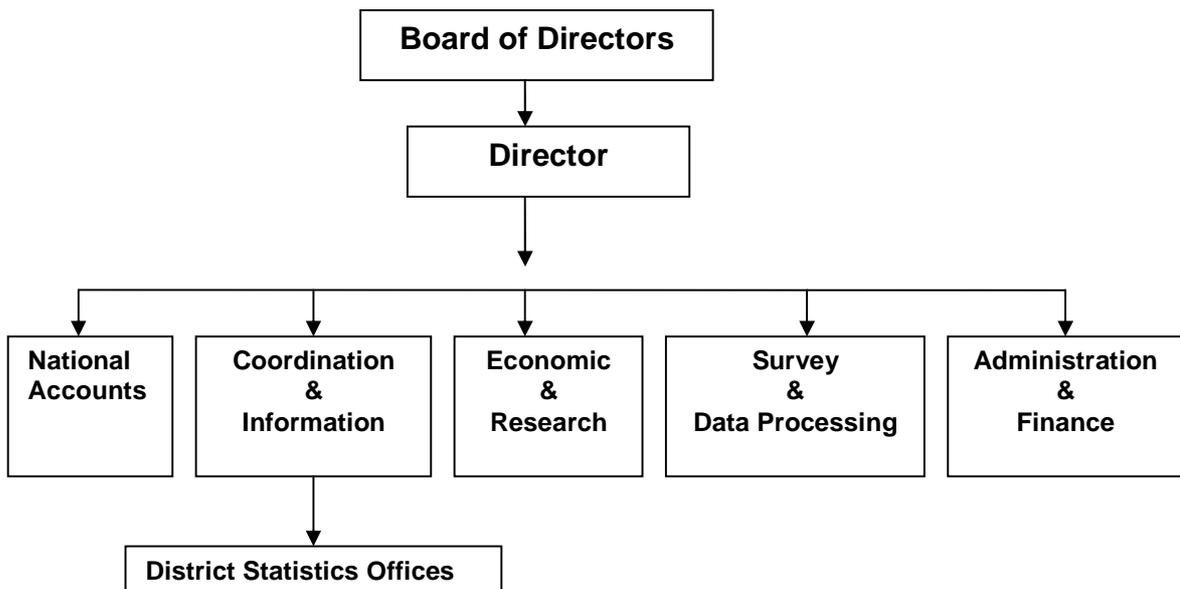


Figure 1: Organization structure of NSB

### 3.1 Method of collection of ICT data

The Bureau uses different methods including working close with different ICT stakeholders including the ICT and Media regulator for collecting ICT data. The Bureau prepares format for collecting information related to ICT and Media and send it to all different stakeholders annually and then once such information is acquired, it is compiled.

The Bureau also conducts different adhoc surveys where information on ICT and Media are also collected. Bureau sends its team to different dzongkhags to collect statistics. Once such information is obtained, it is centrally compiled and then made public.

In future, the Bureau has provision of connecting the statistical database to the IT systems of different dzongkhags, enabling two-way electronic data transfer. The Bureau, under Asian Development Bank's Technical assistance will soon establish sound system designated statistics in place of conventional data collection. Under this system, Bureau would be able to collect right information for the relevant agency, such as Ministry of Agriculture for agriculture related information.

### **3.2 Dissemination of information**

The Bureau compiles the entire database and then makes it public, either annually or bi-annually. The publications are distributed to different stakeholders or are made public in the form of publications. The Bureau also uses media such as newspaper and television for dissemination of information.

Few of the Bureau's publication are:

1. Statistical Year Book
2. Bhutan at a Glance
3. Survey report
4. National Accounts Statistics

There is no specific publication on ICT sector but data on ICT sector could be found on some of the Bureau's publication such as Bhutan at a Glance and Statistical Year Book.

## **4. Users of Bureau' report**

Like in any other countries, even in Bhutan, Bureau's report is mainly used by the following agencies:

- a) Policy makers and governments agencies for preparing official documents and projects;
- b) Researchers for its research report;
- c) Businesses for making business project; and
- d) International organization and donor agencies involved with development activities in Bhutan.

## **5. Future Plan of Bureau**

The National Statistic Bureau is building a sound and reliable National Database system that could be made available online. Making data accessible by everyone, either in hard or soft copies is the main priority of the Bureau.

Since ICT is becoming one of the fast growing sectors in Bhutan, Bureau is also looking into developing a national ICT indicator that could measure the information society from both economic and social aspect.

As ICT is cross-sector activities, Bureau is also looking into the possibility of developing partnership with different stakeholders, both government agencies and private sectors, for getting better and accurate information/statistics on ICT sector and to assist in projecting better facts and figures on Bhutan information society.

## **6. What needs to be adopted for developing ICT database for Bhutan**

At present, Bhutan does not have any standard indicator for collecting ICT data. Good indicator is must for measuring information society; therefore Bhutan needs to develop a national database on ICT indicators based on internationally agreed-upon indicator.

Bureau may also need to look into collecting data in the following areas: ICT infrastructure and usage ( individuals and households), barriers to use of ICTs, ICT skills, and purposes of ICT use based on gender and other socio-economic factor such as age, education and income levels, urban/rural geography and ethnic background. Such information would give a greater picture on Bhutanese information society.

The Bureau also need provision to monitor the information society statistics which will address variety of issues, ranging from the role of ICT in economic and social transformation, use of ICT by households and businesses, and the measurement of their social impacts. There is a need to bring information society measurement into the realm of official statistic in order to identify the current national gap in terms of avail of ICT services and eventually closing up such gap.

The Bureau may also need to look into the possibility of greater co-ordination and partnership between different stakeholders for harmonization and expansion of ICT statistics nationally which could be used as future policy and analytical work on the development of information society.

Lastly, the Bureau will also have to enhance the capacity of the national statistical officers and develop statistical compilation programmes on the information society, based on internationally agreed-upon indicator.

## **7. Lesson to be learned from this forum**

Like ICT sector being new concept for Bhutan, developing ICT indicator is also new concept for National Statistical Bureau. Measuring of the Information society would be relatively new field for Bhutan and much of it would be based on concepts, definitions, standards and methods based on internationally agreed-upon indicator. Details of the measurement work undertaken by developed countries and experience shared in this forum by the individual experts would be beneficial for countries like Bhutan and we look forward to learn and get experienced from such forum.

We also look forward for developing partnership on measurement of ICT for development which will bring together most of the relevant international organization as well as national statistical organization of both developed as well as developing countries. This would be an initial important step in bringing the methodology developed by developed countries to developing countries. Such partnership would assist and help developing countries like Bhutan in closing the present data gap that exist between developed and developing countries.

## Annex A: Sample of questionnaire from Bhutan Living Standard survey

### Block 3: Assets Ownership

1. Does your household own the following items?  
(consider only items which are in working condition)

1. Yes, acquired less than a year ago
2. Yes, acquired a year more ago
3. No

Sofa €	Bukharies €	Motorbike, scooter €
Heater €	Rice cooker €	Electric Iron €
Fan €	Curry cooker €	Passenger car €
Computer €	Refrigerator €	Washing machine €
Bicycle €	Modem stove €	Sewing machine €
Choesham €	Water boiler €	Television €
Camera €	Microwave oven €	VCR/VCD €
Tractor €	Foreign bow €	Rice grinding €
Radio €	Mobile phone €	Wrist watch €

## Annex B: Sample of questionnaire from Household Income and Expenditure survey 2000

### Block (3.4): Communication during the last one month and one year

Code	Item	Unit	Last Month		Last Year		Score
			quantity	value (Nu.0.0)	quantity	value (Nu.0.0)	
419							
421	telephone bills						
	local						
	long distance						
	international						
422	postage						
	domestic mail						
	foreign mail						
423	telegrams etc.						
429	other communication (specify)						

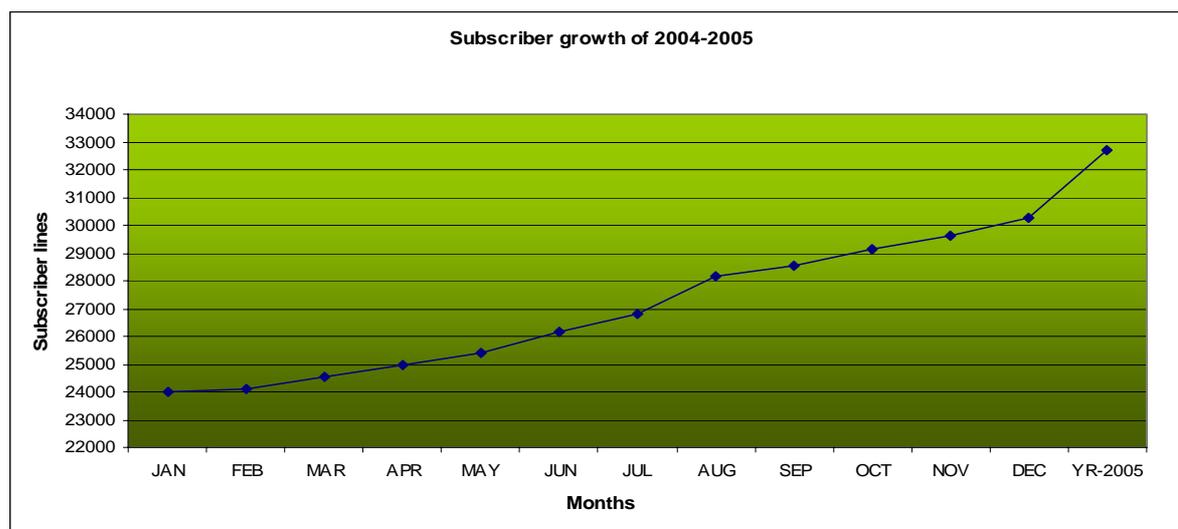
## Annex C: Facts and figures of present telecom sector in Bhutan<sup>6</sup>

### 1. Status of communications sector:

Number of Fixed Telephone service provider	1
Number of Mobile cellular service provider	1
Number of Internet service provider	3

Number of telephone exchanges	82
Number of telephone subscribers	32,684
Number of internet connections	6,136
a. dial-up connection	6,073
b. leaseline connection	63
Number of WT stations	87
Number of mobile subscribers	50,985

### 2. Subscriber growth of Bhutan Telecom Limited (BTL)

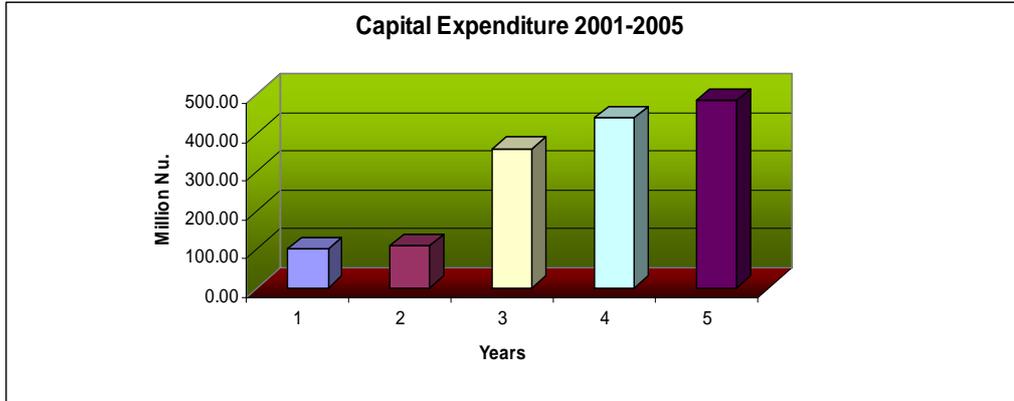


*Source: BICMA<sup>7</sup>*

<sup>6</sup> The facts and figures are as of June 2006.

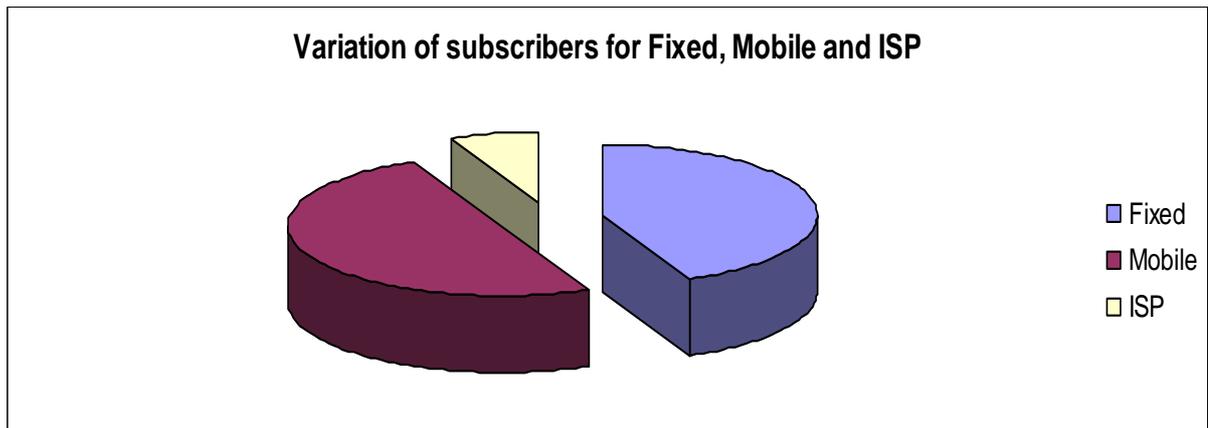
<sup>7</sup> Bhutan Information, Communications and Media Authority

### 3. Capital Expenditure of BTL



Source: BICMA

### 4. Customer distribution of BTL



Source: BICMA