7th World Telecommunication/ICT Indicators Meeting (Cairo, 2009)

Information Documents

**BUREAU DE DÉVELOPPEMENT
DES TÉLÉCOMMUNICATIONS**

**Document INF/001-F
23 février 2009
Original: français**

7ÈME REUNION SUR LES INDICATEURS DES TELECOMMUNICATIONS/TIC MONDIALES, CAIRE, LE EGYPTE, 3-5 MARS 2009

POUR INFORMATION

ORIGINE: Ministère des Postes et des TIC du Burkina Faso, Burkina Faso

TITRE: Etat des lieux de la collecte des indicateurs et statistiques dans le domaine des télécommunications et TIC

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Secteur du développement des télécommunications

7ème réunion de l'UIT sur les indicateurs des télécommunications/TIC dans le monde (WTI), Le Caire, 3-5 mars 2009

Document /

Original : FRANCAIS

SOURCE :	MINITERE DES POSTES ET DES TIC DU BURKINA FASO
	CONTACT : Richard ANAGO, Ingenieur des Télécommunications,
	Directeur en charge de la coopération et des organisations internationales
	anago@onatel.bf
TITRE :	ETAT DES LEIUX DE LA COLLECTE DES INDICATEURS ET STATISTIQUES DANS LE DOMAINE DES TELECOMMUNICATIONS ET TIC

I - Présentation du Burkina Faso

Les TICs offrent une occasion exceptionnelle aux pays africains de se mettre au diapason de la technologie et du développement économique. Cette opportunité doit être saisie par tous et singulièrement par le Burkina Faso, pays enclavé, limité au plan des ressources naturelles et donc condamné à rechercher d'autres avantages comparatifs, afin de parvenir à un développement durable.

Classé parmi les pays les moins avancés (PMA) de la planète, le Burkina Faso vit aujourd'hui les handicaps et conséquences de la fracture numérique entre le nord et le sud et se situe ainsi que suit :

Localisation

Le Burkina Faso est situé au cœur de l'Afrique de l'Ouest, à près de 1 000 km de la mer (océan atlantique). Il possède des frontières communes avec six (6) pays: le Niger à l'Est ; le Mali au Nord et à l'Ouest et la Côte-d'Ivoire, le Ghana, le Togo et le Bénin au Sud.

- **Quelques indicateurs**

Official name / Nom officiel	BURKINA FASO
Location / Site	AFRIQUE DE L'OUEST
Boundaries / Frontières	GHANA, COTE D'IVOIRE, MALI, NIGER, TOGO et BENIN
Area/Superficie	274.200 Km²
Population /Population	14.017.262 d'habitants
Official language / Langue officielle	FRANCAIS

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Other languages / Autres langues	MOORE, DIOULA, FOULFOUDE
Per Capita GDP/PIB par habitant	238 959 FCFA (364,3 Euros)
Capital/Capitale	OUAGADOUGOU
Large cities/Grandes villes	Bobo-Dioulasso, Koudougou, Banfora, Tenkodogo, Ouahigouya. Fada N'Gourma, Yako, Dori et Kaya.
Currency / Monnaie	FRANCS CFA
Telephone lines / Lignes téléphoniques	145.301 (Décembre 2008)
Mobile lines / Lignes de téléphones portables	3.024.150 (Décembre 2008)
Parc global (fixe et mobile)	3.169.541 (Décembre 2008)
Télédensité fixe	1, 03 % (Décembre 2008)
Télédensité mobile	21,57 % (Décembre 2008)
Télédensité (fixe + mobile)	22,61%(Décembre 2008)
Connectivité Internet Internationale (CII)	473 Mbits/s dans le sens montant et 491 Mbits/s dans le sens descendant (Décembre 2008)
Investissement global dans le secteur des télécommunications/TIC	46 294 336 644F.CFA. (Décembre 2008)
Nombre d'emploies créés dans le secteur des TIC	Environs 50.000 (Décembre 2008)

- **Cadre Juridique et institutionnel du secteur des Télécommunications/TIC**

En 1997, le Burkina Faso a entamé un processus d'ouverture partielle du secteur des télécommunications/TIC à la concurrence, par la mise en place d'un cadre légal et institutionnel. Ceci a conduit :

- à l'adoption de la loi N° 051/98 AN du 04 décembre 1998 portant reforme du secteur des télécommunications au Burkina Faso ;
- à la mise en place d'une Autorité Nationale de Régulation des Télécommunications ;
- à l'entrée de deux opérateurs privés de téléphonie mobile sur le marché ;
- à la privatisation partielle de l'opérateur historique (ONATEL), afin de lui permettre de faire face à la concurrence.

Le cadre légal et institutionnel issue de la loi ci-dessus référencée a connu une révision qui a aboutit à l'adoption de la Loi N° 061-2008/AN du 27 novembre 2008 portant règlementation générale des réseaux et services de communications électroniques au Burkina Faso.

Aussi, le Gouvernement du Burkina Faso a entrepris dès 1996 la réalisation de projets pilotes d'utilisation des TIC pour le développement. Ceci a facilité l'adoption en 2004 d'une cyberstratégie nationale globale et intégrée qui consacre la promotion de ces technologies comme un principe directeur et transversal du cadre stratégique de lutte contre la pauvreté.

II - Collecte des données du secteur des télécommunications et TIC

A la faveur de la reforme initiée, le secteur des télécommunications/TIC comme ailleurs connait trois niveaux de gestion :

- ❖ Le Minsitère en charge des Télécommunications et des TIC ;

- ❖ L'autorité nationale de regulation des télécommunications ;

- ❖ Les opérateurs de télécommunications et services Intenet.

- **Structures sectoriels télécoms/TIC de collecte des statitiques**

L'Autorité nationale de régulation des télécommunications (ARTEL) qui assure la fonction de régulateur des télécommunications au Burkina Faso est organisée en unités adminsitratives et techniques afin d'assurer sa mission de collecte et de centralisation des indicateurs du secteur au niveau national.

Pour ce faire une procédure a été mise en place pour la collecte des données statistiques auprès des acteurs du secteur. Un ensemble d'indicateurs a été consigné sur des fiches soumises par l'autorité d'une fréquence mensuelle aux différents opérateurs afin qu'ils puissent les rensigner. Ces demandes de données statistiques du secteur des télécommunications/TIC sont en entre autres relatives : au parc d'abonnés, au volume des communications écoulés sur les différents réseaux, aux consommations moyennes/client, aux investissements, aux emploies, aux tarifs et traffics, aux couvertures géographiques des réseaux, aux distributeurs aggréés, aux réseaux commecciales, aux télécentres et cyber café, et à la contribution fiscale des opérateurs dans le secteur.

Le Ministère en charge des Télécommunications et des TIC, en tant représentant du Burkina Faso auprès des organisations régioanales et internationales dispose de ce fait d'une base de

données auprès de l'organe de régulation, qui lui permet de renseigner et servir les différents questionnaires des indicateurs des télécommunications au niveau mondiale.

- **Autres structures de collecte des statistiques**

Conformément d'une part, aux dispositions de leurs cahiers des charges, et d'autre part, tenant compte des impératifs de satisfaction de leurs propres besoins en données statistiques, les opérateurs et fournisseurs de services élaborent des manuels de procédures de mesures et procédent à des mesures de leurs activités necéssaires à la constitution de base de données.

Aussi au niveau national, a l'instar d'autre Pays, le Gouvernement du Burkina Faso a mis en place une structure nationale dénommée «Institut National des Statistiques et de la Démographie – INSD » qui a en charge le pilotage de toutes les questions de statisques et de démographie à l'échelle nationale. Elle est ainsi chargée de la collecte des statitisques de tous les secteurs d'activités. C'est dans ce cadre que le département ministèriel des télécommunications et des TIC, collabore avec cette strusture au travers d'un schéma de remontée des statistiques mis en place à cet effet.

- **Difficultés liées à la collecte des données statistiques**

Les difficultés majeures rencontrées résident essentiellement dans :

- ➢ les procédures manuelles de collecte de données ;

- ➢ la non disponibilité de base de données unique ;

- ➢ la pluralité des sources de renseignement des fiches au sein des opérateurs ;

- ➢ la non disponibilité des statistiques en temps réel.

- **Perspectives**

Classé parmi les pays les moins avancés (PMA) de la planète, le Burkina Faso vit aujourd'hui les handicaps et conséquences de la fracture numérique entre le nord et le sud. C'est pour cela qu'il a toujours réaffirmé avec force sa volonté de contribuer à l'édification d'une société mondiale de l'information, facteur de progrès et de développement, et ouverte à tous. Malgré ses faibles moyens, le Burkina Faso s'est fixé comme point d'honneur de participer activement aux rencontres internationales traitant des questions de politiques publiques pour l'édification d'une telle société afin de joindre sa voix à celle des autres pays en développement partageant la même conviction.

En outre, afin de mesurer de manière plus spécifique l'édification de la société de l'information, le gouvernement a entrepris, la mise en place courant 2009, d'un observatoire de la société de l'information qui serait chargé entre autres de :

- collecter et centraliser l'ensemble des données et informations nécessaires au suivi et à l'évaluation de la Cyberstratégie nationale ;

- suivre l'évolution des indicateurs définis dans la Cyberstratégie nationale ;

- assurer une veille technologique et juridique ;

- élaborer un système de suivi – évaluation de la Cyberstratégie nationale.

**BUREAU DE DÉVELOPPEMENT
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7ÈME REUNION SUR LES INDICATEURS DES TELECOMMUNICATIONS/TIC MONDIALES, LE CAIRE, EGYPTE, 3-5 MARS 2009

POUR INFORMATION

ORIGINE: Ministère des Postes et des Télécommunications Chargé de la Communication et de la Promotion, Comores

TITRE: Tableau des indicateurs sur le réseau Comores Télécom

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UNION DES COMORES

Unité – Solidarité – Développement

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Ministère des Postes et des
Télécommunications
Chargé de la Communication et de la

TABLEAU DES INDICATEURS SUR
LE RESEAU COMORES TELECOM

INDICATEURS PAYS EN MILLIERS – UNION DES COMORES

TABLEAU N° 01

UNION DES COMORES	
Population	671.8 milliers
Superficie	2.2 milliers km2
PNB	267.3 dollars
Taux de croissance	2.6
Espérance de vie	65 ans
Indice de développement humain IDH	137 sur 174 pays

STATISTIQUES SUR LES LIGNES COMORES TELECOM[1](en milliers)

TABLEAU N°2

TELEPHONE		ACTIFS	INACTIFS	OBSERVATION
	Lignes principales	16.788	7.827	
	CDMA prépayés services	123	104	
	CDMA post payés	3.703	657	
	Lignes prépayées services	270	110	
	CDMA prépayés Administration	160	58	
	CDMA prépayés Privés	19	4	
NATURE ABONNEMENT	CDAMA/GATEWAY post payés	18	1	
	CDMA GATEWAY/PCMCA post payés	1	6	
	Particuliers avec abonnement	14	394	
	Lignes prépayées privées	1	3	
	Télé centres	491	133	
	Lignes prépayées Administratives	0	4	
	Non défini	1	2	
TOTAL		**21.589**	**9.303**	

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[1] Statistiques COMORES TELECOM février 2009

TABLEAU N°3

ABONNEMENT INTERNET	ACTIFS	INACTIFS
Abonnement mensuel	16	3
SOUS TOTAL	**16**	**3**
Internet ADSL	100	8
SOUS TOTAL	**100**	**8**
Liaison spécialisées 4 FI	15	5
Liaisons spécialisées 2 FI	5	2
SOUS TOTAL	**20**	**7**
Hébergement site WEB	1	0
SOUS TOTAL	**1**	**0**
Radio diffusion	2	1
SOUS TOTAL	**2**	**1**

	ACTIFS	INACTIFS
TOTAL GENERAL ABONNES	**21.728**	**9.322**

TABLEAU N°4

ABONNEMENT GSM « HURI »	ACTIFS	INACTIFS
Service prépayé	311	144
Fidélité post payé	889	358
Liberté prépayée	92.575	4388
Libre prépayé	25	16
TOTAL	**93.800**	**4.906**

N.B

Les tableaux N° 2,3 et 4 comportent des données fournies au Ministère des Postes et Télécommunications, par la Société Nationale des Télécommunications COMORES TELECOM au 09 février 2009.

Le Conseiller chargé de la promotion des TIC's

YOUSSOUF SOULE

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS

**BUREAU DE DÉVELOPPEMENT
DES TÉLÉCOMMUNICATIONS**

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7ÈME REUNION SUR LES INDICATEURS DES TELECOMMUNICATIONS/TIC MONDIALES, LE CAIRE, EGYPTE, 3-5 MARS 2009

POUR INFORMATION

ORIGINE: Ministère de la communication de la culture, chargé des Postes et des Télécommunications, Djibouti

TITRE: Contribution

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La direction des Postes et des Télécommunications du Ministère de la communication de la culture, chargé des Postes et des Télécommunications a l'intention d'installer un système national sur les TIC avec la liste des indicateurs périodiques, leur définition, les méthodes de leur collecte et de leur calcul afin que ces informations sont à la disposition des institutions nationales et internationales. Après une étude entrepris en novembre 2008 par la direction sur le marché potentiel des TIC dans la République de Djibouti, voici les donnés qui sont disponible pour le moment.

I) Les équipements des TIC dans les foyers.

Équipement en téléphone fixe

Le taux actuel d'équipement des ménages est de 30%, et il faut noter la forte croissance de ces deux dernières années parmi les abonnés puisque 10% d'entre eux sont abonnés depuis moins d'un an et 24% entre un an et deux ans.
Le prix de l'abonnement est la raison principale avec 69% des ménages interrogés.

Equipement en téléphone mobile :

Sur l'ensemble des ménages, 36% ont deux mobiles et 38% ont trois mobiles ou plus, ce qui est beaucoup. Dans d'autres pays africains, le nombre moyen de mobiles par ménage s'explique par l'existence de plusieurs opérateurs mobiles pratiquant des réductions importantes de tarifs sur les communications entre leurs abonnés.

Equipement en ordinateurs à domicile :

Le pourcentage de ménages ayant un ordinateur au domicile est de 28%.
Le pourcentage de ménages ayant un ordinateur depuis moins de 2 ans est de 43%. Ce résultat montre l'impact d'une augmentation récente du nombre d'ordinateurs dans les familles et un taux de croissance de 17% sur la dernière année.

Intention de s'équiper en ordinateur.
Le pourcentage de ménages pour lesquels une réflexion est en cours est de 50%,

Niveau de compétences en informatique.
Un taux de 55% déclare très bien savoir se servir d'un ordinateur. Ce résultat s'explique par les connaissances des adolescents qui reçoivent une formation dans les établissements scolaires et qui fréquentent les cybercafés.

UTILISATION DES CABINES TELEPHONIQUES

Cette question est posée à toutes les personnes interrogées (avec ou sans téléphone fixe au domicile). Le pourcentage d'utilisation fréquente est de 44%.

UTILISATION D'INTERNET

Le pourcentage de personnes interrogées n'ayant pas répondu est de 59% et seulement 21% d'entre elles déclarent savoir s'en servir seul.

Accès d'Internet à domicile :
Le taux d'accès à Internet dans les ménages est de 5% en bas débit et de 4% en haut débit.
Ces pourcentages sont très faibles comparés aux 28% des ménages possédant un ordinateur.
Ce résultat est très important. Il montre que les tarifs élevés de l'abonnement à Internet sont à l'origine d'une faible pénétration des services Internet.

Utilisation d'Internet dans un cybercafé.
Le pourcentage de personnes interrogées utilisant une fois par jour un cybercafé est de 13% et 52% en utilisent un au moins une fois par semaine.

Utilisation d'Internet sur le lieu de travail.
Seulement 34% des personnes interrogées ont accès à Internet sur leur lieu de travail, ce qui montre une disponibilité encore limitée dans les bureaux.

II) les équipements des TIC dans les lieux de travail.

Equipement en téléphonie fixe et mobile dans les lieux de travail :

1) Chez les petits et moyens Entreprises (PME).

Résultats pour les lignes fixes dans les PME

	Effectifs	%
De 1 à 2 Lignes	178	65,68%
De 3 à 4 Lignes	26	9,59%
De 5 à 6 Lignes	7	2,58%
De 7 à 8 Lignes	4	1,48%
De 9 à 10 Lignes	3	1,11%
De 11 à 12 Lignes	1	0,37%
De 13 à 14 Lignes	1	0,37%
De 29 à 30 Lignes	1	0,37%
Sans réponse	50	18,45%
Total	271	100%

Résultats pour les mobiles à usage professionnels dans les PME

	Effectifs	%
De 1 à 2 Téléphones	99	36,53%
De 3 à 4 Téléphones	65	23,99%
De 5 à 6 Téléphones	16	5,90%
De 7 à 8 Téléphones	2	0,74%
De 9 à 10 Téléphones	5	1,85%
De 11 à 12 Téléphones	3	1,11%
De 15 à 16 Téléphones	2	0,74%
De 17 à 18 Téléphones	2	0,74%
De 19 à 20 Téléphones	1	0,37%
De 21 à 22 Téléphones	2	0,74%
De 25 à 26 Téléphones	1	0,37%
De 29 à 30 Téléphones	4	1,48%
Sans réponse	69	25,46%

Ordinateurs personnels en service dans les PME.
Le résultat montre la distribution des 1002 PC dans les PME. Le prix est la raison essentielle de ne pas équiper en ordinateur pour 74% des personnes interrogées.

Disposition d'un site Internet chez les PME.
Seulement 22% des entreprises interrogées disposent d'un site Internet.

2) chez les Administrations et les grands Etablissements.

Equipement en téléphonie fixe dans l'Administration/Etablissement
70% des établissements sont raccordés par des lignes directes et seulement 18% par un PABX et 25% par un Intercom.

Nombre d'ordinateur en service dans l'Administration/Etablissement.

Disposition d'un réseau local pour relier vos ordinateurs.
La réponse est positive pour 71% des établissements interrogés.

L'usage du fax dans les lieux de travail
Les réponses montrent encore une utilisation intensive du fax alors que cette utilisation devrait diminuer avec la modernisation des systèmes de communications.

Disposition d'un site Internet chez les Administrations/Etablissements.
La réponse est positive pour 67% des établissements. Il y a encore une minorité d'établissements dépourvus de site Internet.

Le nombre total d'ordinateurs serait :

- Résidentiels …………………………= 16 661
- PME……………………………………. = 4 814
- Grands comptes, administrations = 12 278

- ……………….**TOTAL……………. = 34 253**

INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION DEVELOPMENT BUREAU

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FOR INFORMATION

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ICT Infrastructure, Access Indicators in Ethiopia

Prepared by: Iyasu kebede

Telecommunication Development Expert

Planning and telecommunication Development Directorate

Ethiopian Telecommunication Agency

Ethiopian Telecommunication Agency

TABLE OF CONTENTS

1. Country Profile

Ethiopia Situated in the horn of Africa, covering an area of 1.25 million square kilometers, with a total population of 73,918,505 grow at an average annual growth rate of 2.6 percent which makes the country the 2nd populous nation in Africa. Out of this population nearly 85% live in rural areas predominantly engaged in the agricultural economy for their livelihood. There is a great diversity of cultures in Ethiopia with more than 80 different ethnic groups. Ethiopia has a common border with Eritrea to the north, Djibouti to the northeast, Somalia to the east, Kenya to the south and Sudan to the west.

2. Ethiopian's Current Telecommunications Environment

All telecommunication networks in Ethiopia are operated by a state-owned monopoly, which is the Ethiopian Telecommunications Corporation (ETC). The Ethiopian Telecommunications corporations provide basic and value-added telecommunication services, including fixed lines, mobile phones, and internet whereas the Ethiopian

Telecommunications Agency (ETA) is the regulatory agency for the telecommunication sector. Both ETC and ETA are accountable to the Ministry of Transport and Communications.

3. Overview of Telecommunication Services Provided in Ethiopia

In Ethiopia, ETC makes efforts to provide telecommunication services to its customers. As of June 2008, 912,695 main (fixed) telephones Connection, 1,954,327 mobile subscribers and 8,676 remote rural kebeles centers are provided with telecom service by a universal access program. In addition, 34,100 dial-up Connection and 1,496 multimedia subscribers also got the telecom service. Furthermore, 10,268 telephone, 221 Internet and 264 Tele-center resale also done.

The Cellular mobile network in Ethiopia presently covers the main cities of Addis Ababa, Shashemane in the south region, Nazareth in south eastern region, Jimma in south western region, Dire Dawa, Harrar in eastern region, Nekemt in western region, Mekele in northern region, Dessie in northeastern region, Bahir Dar and Gonder in northern western region as well as main road connecting Addis Ababa have access to the network.

International traffic link and communication service uses Sululta earth satellite station that could transmit to and receive telecom services both from the Indian Oceans and the Atlantic Ocean Satellites making it easy and accessible to reach. A total of 2,941 telecommunication circuits are currently operational to connect the country with the rest of the world. Out of this total, 1,756 of them are satellite telephone, 167 microwave telephone and the remaining 1,018 are submarine cables.

For National Connection links, until 2008 G.C the country had 960 public telephone Stations out of this 2 manual, 78 semi (Partial) Automatic and 540 full automatic exchanges station with a capacity of 1,146,555. The line geographical distribution was 10% in Addis Ababa and 89.58 in 13 Regions and also national telecom services through satellite, optical fiber, digital radio multi access system (DRMAS), small

aperture terminal (VSAT), ultra high frequency (UHF) and very high frequency (VHF). With the optical fiber projects installed in seven directions of the country, a total of 78 towns are linked with optical fiber with a capacity of STM-1(i.e. 155Mb/s), 46 towns with a capacity of STM16 (i.e. 2.5GB/s) and 9 towns with a capacity of 10GB/s. Thus a total of 113 towns have so far become beneficiaries of optical fiber transmission link. The installation of 4,000 Kms long optical fiber cable in 6 direction of the country is accomplished to realize the smooth and fast national as well as international connection with the remaining world.

Internet connection with the rest of the globe is obtained using 12/50 Mb/s uplink/down link through satellite and 155/155 Mb/s with optical fiber via Sudan as well as 34/34 Mb/s optical fiber through Djibouti.

4. **Overview of The Current status of ICT in Ethiopia**

At present, ICT in Ethiopia is at the very early stage. Nearly the entire rural population lacks telecommunications infrastructure. The major indicators pointing to the low level of ICT development in the country are:

. Lack of skilled human resources coupled with low ICT literacy,

. Low level of Internet service and poor connectivity,

. Lack of organized data and information resources and poor accessibility to those that exist,

. Limited or no public awareness on the role and potential of ICT,

. Undeveloped private sector,

. Legal and regulatory constraints,

Generally, ICT in Ethiopia least developed. It is also highly skewed towards major cities and towns, particularly Addis Ababa. In part, this is due to limitations in both physical and ICT infrastructure, and partly due to the limited number of computers. Consequently, while the Internet and other forms of information and communications technology are readily available in Addis Ababa, limited access to ICT by the rural population continues to be a major impediment to the use of ICT nation-wide. These

Constraints present the Government with real challenges, but also opportunities, for an accelerated development of ICT in Ethiopia.

5. **Over view of ICT infrastructure/broad band VSAT/**

5.1 School Net

A total of 668 high schools throughout the nation are getting similar standard educational programs through television, 279 high schools get the access with the help of 12 channels and 389 high schools access the education with the help of eight satellite channels till December 2007. Furthermore, 183 preparatory schools have the opportunity of getting internet service through network.

5.2 Woreda Net

The very small aperture terminal (VSAT) has enabled the woreda centers of the country to be beneficiary of voice, data and picture–integrated service. A total of 565 woreda centers have been connected with each other through Woreda Net service and the federal government use internet data video conferencing and voice service.

5.3 Agri Net

A total of 29 agricultural institutions have been connected with the federal government and each other through Agri Net service.

Furthermore, about 34 government institutions and private companies such as financial institutions, construction enterprise, Ethiopian Customs Authority, Colleges, Ministry of National Defense and the like have been provided with the internet and data services. Similarly, 34 industrial zone and 23 floriculture firms established in different regions of the country has become the beneficiary of the telecom service such as internet, data, telephone and faxes using VSAT technology.

6. Exchange Capacity in June 2008

- Fixed telephone exchange capacity reached to 1,146,555, of the total existing capacity 1,143,525 (99.74%) is digital and the rest 3,030 (0.26%) is manual.
- The mobile radio network capacity reached 2,333,334, and
- Dial-up internet network capacity reached 100,000 and Multimedia network capacity reached 3G

7. ICT Indicators

7.1 Fixed Telephone Mobile and Internet subscription

Table1

| years | subscription | | |
	fixed phone	mobile phone	internet
2004/05	484,368	155534	12155
2005/06	610347	410630	17710
2006/07	725046	866700	75724
2007/08	880088	1208498	31400
2008/09	912695	1954327	34100

Fig.1 Fixed Telephone and Mobile subscription
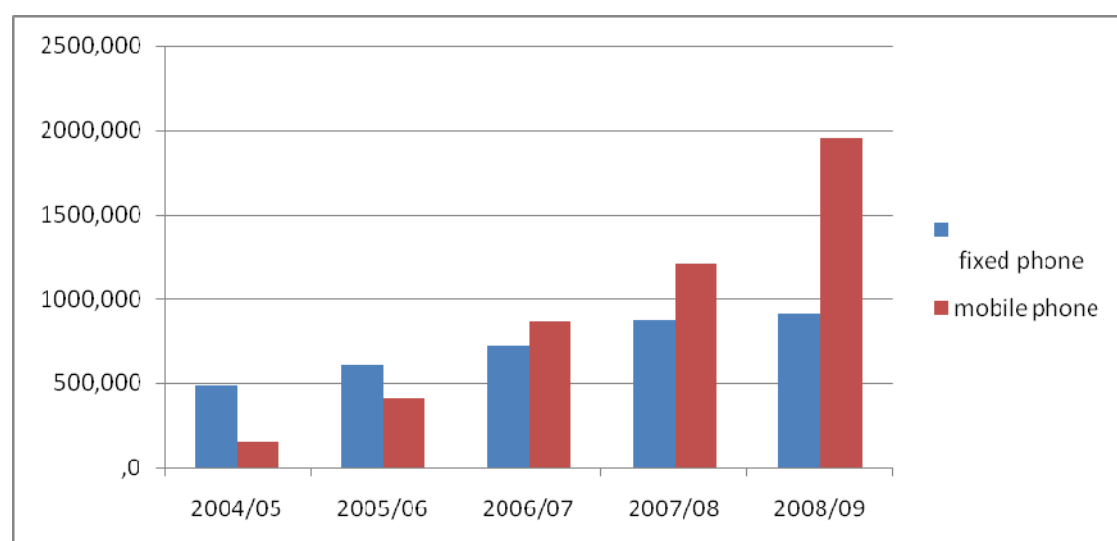
As illustrated in Figure 1, there is a constant increase of the fixed telephone subscriber over the last 5 years, while the mobile telephone subscription follows an exponential growth.

Fig.2 Internet subscription

As shown in Figures 2, there is an increase in the internet connection subscriber over the last 5 years.

Fig.3 Variation of subscribers for fixed Telephone, Mobile and Internet in 2008/09
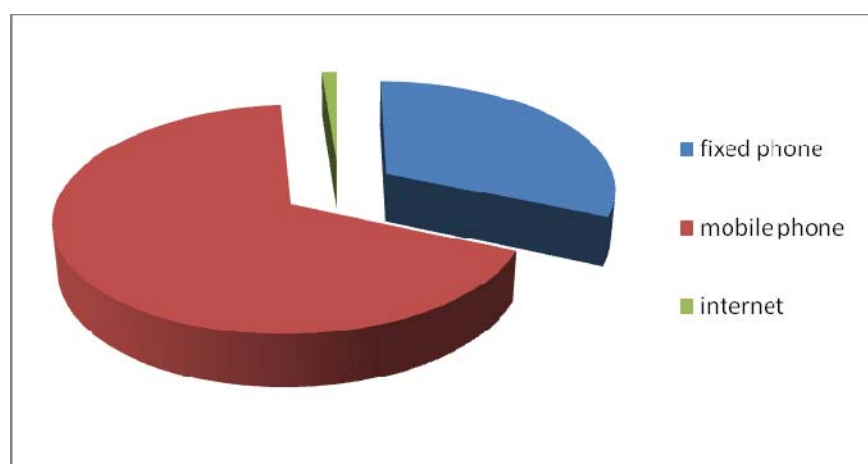
Ethiopian Telecommunication Agency

Generally, Majority of the Ethiopian population live in rural areas where the availability and coverage of infrastructure facilities is critical. So the government should play a key role in promoting the infrastructure of the Information Communication Technology development to attain the development goals of the country.

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

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TITLE: Общий обзор развития информационно-коммуникационных технологий в Кыргызской Республике

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Общий обзор развития информационно-коммуникационных технологий в Кыргызской Республике

Сектор информационно–коммуникационных технологий (ИКТ) является одним из приоритетных направлений развития Кыргызской Республики. Во всех сферах экономической и социальной жизни общества интенсивно идет процесс активного использования современных информационно–коммуникационных технологий.

Начиная с 2001г., Национальный статистический комитет Кыргызской Республики проводит всестороннее статистическое наблюдение не только количественной, но и качественной стороны состояния, развития и использования информационно-коммуникационных технологий (ИКТ) производственной деятельности предприятий и организаций всех форм собственности и видов деятельности.

Предметом статистики информационно–коммуникационных технологий является всестороннее статистическое наблюдение количественной стороны состояния, развития и использования ИКТ в деятельности хозяйствующих субъектов республики.

Ежегодно проводится мониторинг о состоянии и использовании информационно–коммуникационных технологий, что позволяет систематически оценивать текущую ситуацию в этой сфере экономической и социальной жизни республики и ее регионах. На основе данных мониторинга выпускается статистический сборник, характеризующий развитие информационно–коммуникационных технологий за последние пять лет.

В статистическом сборнике приводятся данные о количестве предприятий и организаций, использующих информационно-коммуникационные технологии, занятости в этой сфере, затратах на использование и развитие ИКТ, компьютерном сервисе, рынке услуг современных видов связи и др..

В 2007г. в мониторинг было включено 5,4 тыс. хозяйствующих субъектов, использующих компьютерную технику и информационные технологии, и по сравнению с 2003г. количество таких предприятий возросло на 69,1 процента.

В 2007г. доля хозяйствующих субъектов, использующих средства ИКТ в городской местности составила 69 процентов от общего числа обследованных предприятий, что более чем вдвое превышает уровень использования ИКТ в сельской местности (31 процент).

Доля хозяйствующих субъектов государственной формы собственности, использующих средства ИКТ, в 2007г. составила 53,6 процента, частной формы собственности – 46,4 процента, из них 8,8 процента пришлось на предприятия с иностранными инвестициями.

**Число предприятий и организаций, использующих ИКТ,
по регионам республики**

(единиц)
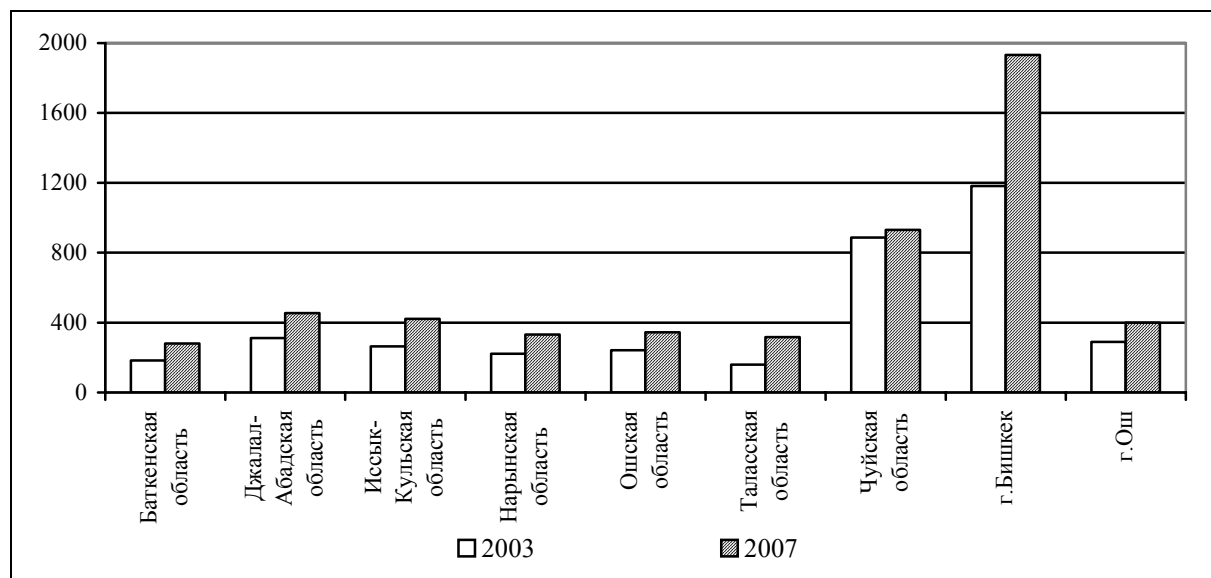
Наибольший удельный вес предприятий и организаций, использующих ИКТ, приходится на г. Бишкек (35,7 процента), наименьший – на Баткенскую область (5,2 процента в общем их числе по республике).

1.1. Занятость в сфере информационно–коммуникационных технологий

В 2007г. по сравнению с 2003г. численность работников, использующих в своей деятельности ИКТ, возросла почти в 2 раза. Наибольший удельный вес таких работников, приходится на г. Бишкек (62,6 процента), наименьший – на Таласскую и Ошскую области, соответственно, (2,5 и 1,9 процента).

В 2007г. на одно предприятие в среднем приходился 11 работников, использующих ИКТ. По областям их численность колеблется от 3 до 8 человек на одно предприятие, в г.г. Бишкек и Ош, соответственно, 19 и 9 человек. Среди работников, использующих ИКТ, женщины составили 58,7 процента и число их в сравнении с 2006г. возросло на 1,9 процента .

Большинство работников, использующих в своей деятельности средства ИКТ, работают на государственных предприятиях (59,8 процента). Численность работников такой категории на госпредприятиях республики в 1,5 раза выше, чем на частных предприятиях.

Значительная часть использующих средства ИКТ в городской местности – это работники предприятий столицы республики - 62,6 процента от республиканского уровня, из них женщины – 57,4 процента.

1.2. Затраты на использование и развитие средств ИКТ

Затраты предприятий и организаций на развитие ИКТ весьма незначительны. В 2007г. на одно обследуемое предприятие расходы на развитие средств ИКТ составили в среднем 338,6 тыс. сомов, в г. Бишкек – 773,3, г. Ош – 129,4, а в среднем по областям – 93,0 тыс. сомов.

Основным источником финансирования работ по ИКТ являются собственные средства предприятий – около 74 процентов объема.

1.3. Парк средств ИКТ

Данные о наличии персональных компьютеров (ПК), используемых на предприятиях и организациях республики, по состоянию на 1 января 2008 г. представлены в следующей таблице:

	Количество персональных компьютеров		из них типа Pentium IV и выше (мощнее по конфигурации) [1]		Приобретено компьютеров в течении года	
	единиц	в процентах к общему количеству ПК	единиц	в процентах к общему количеству ПК	единиц	в процентах к общему количеству ПК
Кыргызская Республика	**73267**	**100**	**39323**	**53,7**	**11569**	**15,8**
Баткенская область	2412	3,3	1181	3,0	365	3,2
Джалал-Абадская область	3785	5,2	1625	4,1	517	4,5
Иссык-Кульская область	4076	5,6	2262	5,8	528	4,6
Нарынская область	2258	3,1	851	2,2	359	3,1
Ошская область	3571	4,9	1140	2,9	255	2,2
Таласская область	2132	2,9	959	2,4	341	2,9
Чуйская область	7045	9,6	3270	8,3	1336	11,5
г.Бишкек	42046	57,3	24739	62,9	6810	58,9
г.Ош	5942	8,1	3296	8,4	1058	9,1

[1] Без учета ПК, используемых малыми предприятиями.

На предприятиях и организациях республики (без учета малых предприятий) число компьютеров типа Pentium IV и выше по конфигурации в 2007 г. составило 53,7 процента от общего имеющихся.

Количество персональных компьютеров по республике в 2007 г. по сравнению с 2003 г. увеличилось почти в 1,9 раза, а по сравнению с 2006 г. - на 15,3 процента. Существенное увеличение количества компьютеров в 2007г. наблюдалось в Чуйской (в 1,2 раза) и Баткенской (на 18 процентов) областях.

В 2007г. приобретено более 15 процентов компьютеров от числа имеющихся в республике, или на 18 процентов больше, чем в 2006г.

В 2007г. в республике использовалось более 6 тыс. лицензионных программных средств (ЛПС), из них лишь около 6 процентов - в сельской местности.

Из общего количества средств оргтехники принтеры составили 74,5 процента, копировальная техника – 16,2, сканеры – 9,3 процента.

В целом по республике один принтер обслуживает в среднем 3 компьютера а один сканер приходится на 22 ПК, т.е сканер имеется только на одном из двух предприятий

Более 57 процентов средств оргтехники, имеющихся в республике, приходится на г.Бишкек, где число принтеров составило 76,3 процента, сканеров – 9,4, копировальной техники – 14,4 процента.

Структура используемых компьютеров и средств оргтехники по видам экономической деятельности в 2007г представлена в следующей таблице:

	Количество персональных компьютеров	Средства оргтехники	в том числе		
			сканер	принтер	копировальная техника
Всего, единиц	**73267**	**35650**	**3322**	**26563**	**5765**
В процентах	**100**	**100**	**100**	**100**	**100**
Сельское, охота, лесное хозяйство, рыболовство	0,6	1,2	0,5	1,1	1,8
Горнодобывающая, обрабатывающая промышленность	5,2	6,2	7,7	6,2	5,0
Производство и распределение электроэнергии, газа и воды	2,0	3,1	1,3	3,5	2,1
Строительство	1,1	1,6	2,0	1,5	2,2
Торговля; ремонт автомобилей, бытовых изделий и предметов личного пользования, гостиницы, рестораны	3,9	3,1	3,7	3,0	3,0
Транспорт	2,8	3,7	3,2	3,7	3,3
Связь	5,1	3,7	7,8	3,5	2,5
Финансовая деятельность	9,8	11,6	6,8	11,9	13,1
Операция с недвижимым имуществом, аренда и предоставление услуг потребителям	0,9	1,0	0,7	1,1	0,7
Деятельность, связанная с вычислительной техникой	0,9	0,6	0,7	0,7	0,3
Исследования и разработки	0,9	1,3	2,0	1,2	1,0
Предоставление прочих видов услуг потребителям	4,2	5,3	6,1	5,1	5,7
Государственное управление	31,1	34,2	29,6	35,1	32,8
Образование	25,8	14,7	17,5	14,2	15,8
Здравоохранение и предоставление социальных услуг	2,9	4,7	3,8	4,7	5,2
Предоставление коммунальных, социальных и персональных услуг	2,8	4,0	6,6	3,5	5,5

1.4. Компьютерный сервис

Компьютерный сервис характеризуется наличием локальных вычислительных сетей (ЛВС), доступом в сеть Интернет, наличием электронных почтовых ящиков и Web-сайтов, вхождением в Государственную компьютерную сеть (ГКС).

В 2007 г. в республике в среднем на каждом втором из отчитавшихся предприятий функционировала локальная вычислительная сеть (ЛВС). Если в городской местности этот показатель равен среднереспубликанскому, то в сельской местности он значительно ниже (на одном из 6 предприятий).

На государственных предприятиях функционировало 56,6 процента имеющихся в республике ЛВС.

В г. Бишкек в среднем на предприятии используется 11 электронных почтовых ящиков, на предприятиях г. Ош – 4, в Иссык-Кульской области – 1.

Количество точек доступа в Интернет на государственных предприятиях составляет 50,8 процента от среднереспубликанского уровня, из них 38,5 процента используют для работы в режиме ADSL или по выделенному каналу.

Данные о наличии компьютерного сервиса представлены в таблице:

	Всего, единиц	в том числе		
		городская местность	из нее г. Бишкек	сельская местность
Локальные вычислительные сети	3426	3152	2552	274
Электронная почта	23842	23570	20811	272
Точки доступ в сеть Интернет	7854	7645	6226	209
в том числе по ADSL, выделенным линиям	1964	1922	1496	42
Собственные WEB-сайты	794	773	682	21
в том числе предоставляющие услуги On-Line	139	135	121	4
WEB-сайты на кыргызском языке	111	106	88	5
Число предприятий, включенных в Государственную Компьютерную Сеть	111	92	46	19

Большая часть Web-сайтов функционирует на хозяйствующих субъектах, расположенных в городских поселениях (97,4 процента), при этом 86 процентов из них – в г. Бишкеке.

Более половины собственных Web-сайтов в 2007г. функционирует на частных предприятиях – 56,0 процента, кыргызский язык используют 14,0 процента Web-сайтов, из них 71,2 процента – на государственных предприятиях.

Структура компьютерного сервиса по видам экономической деятельности в 2007г. представлена в таблице:

	Локальные вычислительные сети (ЛВС)	Электронная почта	Точки доступа в сеть Интернет	в т. ч. по ADSL, выделенным линиям	Собственные WEB-сайты	в т. ч. предоставляющие услуги On-Line	WEB-сайты, использующие кыргызский язык
Всего, единиц	**3426**	**23842**	**7854**	**1964**	**794**	**139**	**111**
В процентах	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Сельское, охота, лесное хозяйство, рыболовство	0,3	0,1	0,2	0,1	-	-	-
Горнодобывающая, обрабатывающая промышленность	4,2	4,3	6,1	5,9	8,3	2,9	3,6
Производство и распределение электроэнергии, газа и воды	2,7	0,5	0,8	0,3	0,4	-	-
Строительство	0,9	0,3	1,1	0,5	1,4	0,7	-
Торговля; ремонт автомобилей, бытовых изделий и предметов личного пользования, гостиницы и рестораны	4,0	3,3	6,9	7,1	6,2	4,3	4,5
Транспорт	2,1	2,4	3,5	2,1	3,8	5,7	0,9
Связь	3,1	10,8	10,2	6,0	6,0	10,1	1,8
Финансовая деятельность	16,5	15,8	9,0	27,5	6,4	9,4	12,6
Операции с недвижимым имуществом, аренда и предоставление услуг потребителям	1,3	0,3	0,6	0,4	1,0	-	-
Деятельность, связанная с вычислительной техникой	1,6	0,5	2,5	5,8	2,3	1,4	1,0
Исследования и разработки	0,5	0,5	0,9	1,0	1,3	1,4	-
Предоставление прочих видов услуг потребителям	4,6	2,1	6,0	4,4	4,8	1,4	6,3

	Локальные вычислительные сети (ЛВС)	Электронная почта	Точки доступа в сеть Интернет	в т. ч. по ADSL, выделенным линиям	Собственные WEB-сайты	в т. ч. предоставляющие услуги On-Line	WEB-сайты, использующие кыргызский язык
Государственное управление	12,3	7,6	10,6	11,9	9,6	10,8	24,3
Образование	41,6	48,2	34,4	17,1	34,5	15,8	33,3
Здравоохранение и предоставление социальных услуг	1,1	0,6	1,2	0,9	1,9	2,2	4,5
Предоставление коммунальных, социальных и персональных услуг	3,2	2,7	6,0	9,0	12,1	33,9	7,2

В 2007г. в Государственную Компьютерную Сеть (ГКС) включены 111 предприятий республики. Большинство из них (41,4 процента) находятся в г. Бишкеке. Значительную часть предприятий, включенных в Государственную Компьютерную Сеть (ГКС), составляют госпредприятия (86,5 процента), из них 67,6 процента - сферы государственного управления.

Сектор связи и информатизации на протяжении последних лет демонстрирует наиболее динамичное развитие и рост отраслевых показателей.

В 2007г. функционировало 646 телефонных станций, в том числе 190 - городской сети и 456 - сельской сети. Общая монтированная емкость телефонных станций фиксированной связи составила 630,1 тыс. номеров, что на 24,1 процента больше, чем в 2003г.

Из общего числа телефонных станций городской и сельской телефонной сети 193 - электронные и квазиэлектронные телефонные станции.

Удельный вес монтированной емкости электронных и квазиэлектронных станций в общей емкости автоматических телефонных станций составил 60,6 процента, в том числе городских телефонных станций - 69,6 процента, сельских - 31 процент.

На начало 2008г. телефонная сеть общего пользования республики насчитывала 482,9 тыс. телефонных аппаратов фиксированной связи, из которых 79 процентов приходится на городскую телефонную сеть и 21 процент - на сельскую. Число таких телефонных аппаратов в 2007г. по сравнению с 2003г. возросло на 81,6 тыс., или на 20,3 процента.

Число домашних телефонных аппаратов телефонной сети общего пользования возросло с 318,9 тыс. в 2003г. до 385,5 тыс. в 2007г., увеличившись на 20,9 процента.

Наиболее обеспечены домашними телефонными аппаратами города Бишкек и Ош , что видно в таблице

Обеспеченность населения домашними телефонными аппаратами
(штук на 1000 населения)

	2003	2004	2005	2006	2007
Кыргызская Республика	**63**	**66**	**69**	**71**	**74**
Баткенская область	24	26	27	28	28
Жалалабатская область	30	30	32	34	36
Ысыккульская область	75	76	80	83	85
Нарынская область	30	31	31	32	33
Ошская область	16	16	16	17	17
Таласская область	28	29	31	32	35
Чуйская область	69	75	81	85	88
г. Бишкек	174	179	187	193	200
г. Ош	126	132	139	144	150

Кроме того, на начало 2008г. в республике насчитывалось 2151,7 тыс. абонентов сотовой связи, что по сравнению с 2003г. увеличились в 15,5 раза.

За истекшие пять лет наблюдался стабильный рост объемов услуг, предоставляемых операторами связи. Если объем услуг электрической связи в 2003г. составлял 2656,5 млн. сомов, то в 2007г. он достиг 8870,1 млн. сомов, увеличившись в 3,3 раза.

В структуре услуг электрической связи 17,7 процента занимают услуги международной и междугородной телефонной связи, 69,5 процента - сотовой связи, 5,6 процента - услуги городской и сельской (местной) телефонной связи, 1,5 процента - услуги радиовещания и телевидения, 3,9 процента - услуги по обеспечению доступа к сети Интернет.

Объем услуг связи в 2008г. по предварительным данным составил 13014,3 млн. сом, или по сравнению с 2007 г. он возрос на 45,3 процента, доля сектора в структуре ВВП достигла 7,03 процента. Катализатором развития сектора телекоммуникаций остается сегмент услуг мобильной беспроводной связи. Это связано с ростом количества абонентов и расширением зоны охвата мобильной связью территории республики. В 2008г. услуги мобильной связи предоставляли 5 операторов. Общее количество абонентов сотовой связи достигло 3,2 млн., в сравнении с 2007г. увеличилось на 2,1 млн., проникновение сотовой связи достигло 60 процентов (в 2007г. этот показатель составлял 26,3 процента) В зоне охвата сотовой связью проживают более 85 процентов населения республики.

В республике для реализации Национальной стратегии «ИКТ для развития Кыргызской Республики» разработан проект Среднесрочного Государственного плана мероприятий по информационно–коммуникационным технологиям в Кыргызской Республике на 2008-2011 годы.

Вместе с тем в Национальном статистическом комитете Кыргызской Республики не решены проблемы по следующим направлениям:

1. *методология использования средств ИКТ в домашних хозяйствах;*
2. *методика расчета показателя по количеству пользователей Интернет;*
3. *методология сопоставления с другими странами по вхождению в мировое информационное пространство;*
4. *индикаторы в сфере электрической связи (наличие сотовых телефонов подключенных к Интернет, использование IP- телефонии и т.д.);*
5. *влияние развития ИКТ на создание новых рабочих мест.*

Национальный статистический комитет Кыргызской Республики был бы признателен, если бы вы не отказали и изыскали возможность включения в список приглашенных Кыргызскую Республику, так как вышеуказанные направления крайне важны для развития ИКТ в целом по стране.

Турсункан Абдылдаева
Национальный статистический комитет
Кыргызской Республики

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS

**BUREAU DE DÉVELOPPEMENT
DES TÉLÉCOMMUNICATIONS**

**Document INF/006-F
23 février 2009
Original: français**

7ᴱᴹᴱ REUNION SUR LES INDICATEURS DES TELECOMMUNICATIONS/TIC MONDIALES, LE CAIRE, EGYPTE, 3-5 MARS 2009

POUR INFORMATION

ORIGINE: Institut National de la Statistique, Madagascar

TITRE: Contexte et diagnostique sur les indicateurs TIC à Madagascar

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CONTEXTE ET DIAGNOSTIQUE SUR LES INDICATEURS TIC AMADAGASCAR

Les nouvelles technologies de l'information et de la communication (Ntic) constituent l'un des éléments importants tant que dans le développement de l'entreprise que dans promotion de la croissance économique. En effet, un ensemble de services à valeur ajoutée sont aujourd'hui mis sur le marché grâce au commerce électronique. Même si, à Madagascar, il ne s'est pas encore développé à une grande échelle, ce genre de commerce dispose encore d'une importante marge de progression. Il existe bien à l'échelle nationale une prise de conscience aussi bien des étudiants, des chefs d'entreprise que des dirigeants sur l'importance des Ntic et la nécessité de les intégrer dans le processus de développement de l'entreprise.

A noter qu'avant l'année 2004, Madagascar ne dispose que quelques indicateurs sur le TIC, notamment les données sur le nombre des abonnées, les chiffres d'affaire qui sont fournies par le Ministère du Poste et de Télécommunications.

En effet, comme il a été constaté que la non-disponibilité de certaines données constitue quelques lacunes lorsqu'il s'agit de diffuser des statistiques sur les TIC. En 2004, l'INSTAT a mené une première enquête sur les TIC mais ne couvre que l'agglomération d'Antananarivo. Cette enquête organisée et finacée par l'INSTAT dans la ville d'Antananarivo et ses agglomérations s'est fixée justement comme objectif principal de recueillir des informations relatives à l'utilisation des TIC par les individus, les entreprises et les Administrations dans le but d'appréhender la profondeur de l'insertion de ces technologies dans notre société, et par la suite, d'identifier les obstacles à leur utilisation par la population.

Cette enquête a été effectuée sur un échantillon de 1500 individus, de 160 personnes morales, y compris les administrations publiques, ainsi que de 30 cybercafés. Pour les individus et les entreprises, l'échantillon a été choisi de façon à représenter au mieux la population mère (les individus selon la catégorie socioprofessionnelle et les entreprises selon la nature de leur activité principale) tandis que les administrations et les cybercafés ont été tiré de manière à avoir un échantillon aléatoire. Ainsi, essentiellement, la technique utilisée par l'enquête est celle du sondage empirique par quotas avec un type d'interview « face à face ». Enfin, l'interview des individus a permis aussi d'avoir des renseignements sur leur ménage respectif. Le résultat de cette enquête est disponible à l'INSTAT, et a été diffusé au public au cours de l'année 2004.

Parallèlement, sur la base de ces documents de référence, OMD et DAI, à la fin de l'année 2004, le Programme des Nations Unies pour le Développement à Madagascar a commandé une étude en vue de la mise en place des Indicateurs TIC nationaux. Cette étude a permis de dresser un état des lieux de l'équipement et de l'usage des Technologies de l'Information et de la Communication dans les ménages, les entreprises, les domaines de l'éducation et de l'administration, ainsi que les cybercafés.

Il mérite d'être souligné que la présente étude constitue une première dans la mise en place des indicateurs TIC nationaux à Madagascar. A travers ce rapport, le Programme des Nations Unies pour le Développement à Madagascar, a mis ces résultats à la disposition des autorités et de tous les acteurs intéressés.

Cette première étude, qui a été voulue aussi détaillée que possible, ne peut pas prétendre rendre compte, de façon exhaustive, de la situation des TIC à Madagascar.

Quoiqu'il en soit, on constate l'insuffisance de la collaboration de l'INSTAT avec les autres Institutions dans la collecte des données sur le TIC même si la gestion des statistiques officielles sur le TIC et la confection des données sur le TIC aux niveaux des autres institutions impliquent une activité de coordination.

Actuellement, le système d'information sur le TIC n'est pas encore bien opérationnel à Madagascar. Les informations statistiques existantes restent encore pour l'année 2004. La mise à jour n'a pas encore faite, due essentiellement à l'insuffisance de financement.

Parallèlement, de forts besoins en informations statistiques sur le TIC se font sentir pour la préparation des stratégies de développement si bien qu'on observe par ci et par là des enquêtes statistiques faites par divers bureaux d'étude dont leurs qualités restent encore discutables.

INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION
DEVELOPMENT BUREAU

Document INF/007-E
24 February 2009
Original: English

7TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, CAIRO, EGYPT, 3-5 MARCH 2009

FOR INFORMATION

SOURCE: Communications Authority of Maldives, Maldives

TITLE: Collection and Dissemination of ICT Statistics in Maldives

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Collection and Dissemination of ICT Statistics in Maldives

Zulaikha Ibrahim

Communications Authority of Maldives

March, 2009

Introduction

The Republic of Maldives is an archipelago of 1,190 small coral islands, of which 199 are inhabited. The islands are grouped into 26 natural coral atolls, which for easy administration, are divided into 20 administrative units or atolls. The total area including land and sea is about 90,000sq.km. A population of around 300,000 is spread among the inhabited islands. Another 85 or so islands are developed exclusively as tourist resort hotels; while the rest besides a few industrial islands are uninhabited. The main economic industries are tourism and fisheries.

Roughly a third of the population live on the capital island Male'. With much of the population distributed among the outer atolls, there has always been a tendency for inward migration to Male', for better education, health care and more employment opportunities.

The de-centralisation of economic activities away from Male' is hampered by lack of basic infrastructure and poorly developed inter island transportation system. As a first step in tackling this problem, the government has recently embarked upon a very ambitious project to develop a transportation network to all inhabited islands. With these geographical and economical characteristics Maldives has a huge potential to take full advantage of ICT.

COUNTRY PROFILE	
Capital	Malé
Area	298 sq km
Population*	309,575
Urban Population	109,899
GDP per Capita	US$2992
Currency	Rufiyaa
TELEPHONE DENSITY	
Overall (including mobile)	156%
Overall (Fixed lines)	15%
Rural (Fixed lines)	6%
TELECOM TOTALS	
Main Telephone Lines	46,925
Mobile Subscribers	435,627
Broadband Subscribers *(registered)*	16,536
International Outgoing Traffic *('000 mins)*	120,906

*note: - projected mid-year population 2008, Statistical Yearbook 2008, Department of Planning and National Development.

Currently, the Ministry of Civil Aviation and Communication is the line ministry responsible for policy-making in the ICT sector. The Communications Authority of Maldives (CAM) is responsible for the development and regulation of telecommunications and postal services. It was established in September 2003 as Telecommunications Authority of Maldives, a separate entity with a mandate of regulating the telecommunications sector, creating a conducive

environment for fair competition and developing the sector in line with the national policies and regulations. With the change in name to Communications Authority of Maldives in December 2008, the mandate was further broadened to include the regulation of both Postal and ICT sectors. The Authority is empowered by the Maldives Telecommunication Regulation 2003 which was enacted through presidential decree to provide the Authority with the flexibility for carrying out its objectives in regulating the telecom sector.

The National Centre for Information Technology (NCIT) looks after IT development and the establishment and the operation of the government network and the services that are provided through the government network.

Within the telecommunications sector, there are currently three licensed operators. The national telecom service provider Dhiraagu provides all telecommunication services, including mobile phone and internet services. Focus Infocom is the second Internet service provider, while Wataniya Telecom Maldives provides mobile services as the second mobile telephone operator. Competition in the telecommunications sector is still in the early stages, with the new players working hard to gain a market share. Focus Infocom and Wataniya have become significant in the market, but Dhiraagu still has the largest share both in the Internet and mobile services market.

Current Telecom and ICT Status

Maldives adopted an accelerated development policy with regard to the vital domain of ICT when it launched its first Telecommunications Policy in 2001. In accordance with this policy, the government went ahead with the liberalization of the internet and mobile services in the Maldives. The second internet service provider was licensed in May 2003 and their services commenced December 2003. The second GSM mobile licence was issued to Wataniya Telecom Maldives in February 2005 and their services commenced in August the same year.

The positive results of the development of telecommunications benefit all social strata. Comprehensive communications services, including telephone on demand and ADSL broadband Internet, are now available in Male' and the major population centres. These areas cover 13 of the 199 inhabited islands, corresponding to about 45% of the population. All inhabited islands have access to fixed line telephones. Cellular telephone services are available throughout the country. The teledensity as of end 2008 was 15% for fixed telephones and 140% for mobile telephones.

In addition to ADSL, broadband Internet is also available via cable TV networks (CATV) in Male and a few other islands. Forty-five percent of the population thus have access to broadband Internet services. In the islands that do not yet have broadband access, the Internet is accessed primarily via small telecentres and through the use of mobile phones. In a growing number of islands Wi-Fi Internet access is also available via wireless hotspots. Currently More than 130 wireless locations serve the outer atolls.

In Maldives, GSM operators can offer 3G without an additional licence. 3G was launched by one of the operators in 2007, and both cellular phone networks have GPRS/EDGE

technology countrywide. An estimated 35% of mobile users use their phones to access the internet. Video calls and other 3G services are slowly being adopted.

Online services have developed rapidly in recent years. The most significant online service launched in Maldives so far is the Maldives Internet Banking (MIB) by Bank of Maldives. This service was launched in August 2007. The most essential service provided via MIB is BillPAY. This service allows bank customers to pay their utilities their MIB portal. Apart from paying the utility bills, bank customers can do transactions and view their transactions online anytime.

Local daily newspapers have websites with content in both English and Dhivehi. Although the biggest audience of these online newspapers are Maldivians studying or living abroad, these newspapers are also finding an audience in islands where it is difficult to circulate the printed version of the newspaper on a daily basis. Most government agencies and major private agencies too have websites.

The government has established a comprehensive computer network to connect all atoll capitals and the government agencies. Applications to run on the network are currently in the final stages of development. The network is later to be widened to include all inhabited islands.

In an effort to be more prepared for emergencies and disasters, the government has embarked on a project to establish an independent network for emergency communications and dissemination of early warnings. The implementation of the network is expected to begin mid 2009.

Collection and Dissemination of ICT Statistics

The main body responsible for collecting and dissemination of statistics in the Maldives is the Department of National Planning and Development.

The ICT statistics collected fall into two categories. Core indicators and statistics on availability and access to ICT. Core indicators are collected mainly by the Communications Authority of Maldives (CAM), which obtain regular data directly from ICT service providers. These include mobile and broadband subscriber numbers and statistics on coverage and actual usage of services. Statistics on the spread of ICT services is partly obtained from core data and partly calculated on the collected data. CAM uses this data in regulating, monitoring and further development of the industry. CAM also provides this data to the Department of National Planning and Development for publishing and related computations. As of end 2008, Maldives has 46,925 fixed lines and a mobile subscriber base of 435,627. The number of mobile subscribers have grown steadily, reaching a growth rate of 37% at the end of 2008. Maldives now boasts a mobile penetration of 140% with 98% nationwide coverage. Measuring the actual number of broadband users is a challenging task. CAM collects the number of broadband connections which reached 16,500 by December 2008. Of the total 2900 are residential connections in the outer atolls.

The Department of National Planning and Development have begun collecting data on household computer and internet penetration and other statistics pertaining to access to ICTs. This data collection is done at the time of the National Census survey, which is carried out once in every five years. The household internet penetration figures give us a measure of the take up and availability of the service. The last housing census in 2006 showed that at the time, about 12,700 households had access to a computer, of which only 3,600 households had access to internet. Again, the number of households in the atolls having access to computers and the internet were much lower at 38% and 20% respectively. Household access to broadband can also be calculated on the assumption that every residential connection serves a household. This can be considered a realistic figure in Maldives as each family unit (sometimes residing together) have different connections.

For the most part ICT statistics are disseminated via publications of the Department of National Planning and Development. The Department of National Planning produces many publications including a Yearbook of statistics which also cover different areas such as population, geography, industry and finance besides ICT. Other publications include Monthly country indicators and Consumer Price indices which too include ICT data. The ICT statistics commonly disseminated via these publications are mostly subscriber numbers and usage data for the different services. ICT indicators are commonly used by the government as well as businesses in making policy decisions and future plans.

Conclusion

The Maldives is looking into the use of ICTs in promoting socio-economic development. As such effective, beneficial use of the technology can only be made by increasing the awareness and benefits of ICTs. Here, Maldives realizes the importance of ICT indicators and plans to look at ways of collecting and disseminating more relevant ICT statistics. Additional Indicators that can be included in the National census surveys are being studied by CAM in collaboration with the Department of Planning and National Development.

FOR INFORMATION

SOURCE: Communications Regulatory Commission, Mongolia

TITLE: ICT sector development policy and measuring the information society in Mongolia

ICT sector development policy and measuring the information society in Mongolia

Mr. T. Naranmandakh
Director
Legal, Information and Administration Department
Communications Regulatory Commission
MONGOLIA

7-th ITU World Telecommunications/ICT Indicators Meeting
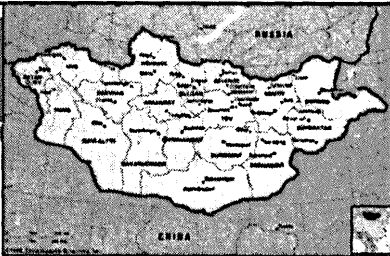
Cairo, Egypt, 2009

Content of the presentation:

Sector development policy and regulatory frameworks

ICT/Telecommunications infrastructure and market

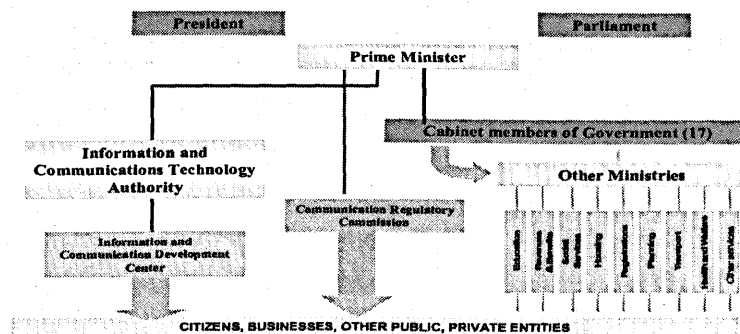Measuring the information society (data/indicators)

Conclusions

2

Introduction of Mongolia

- Area: 1.5 mln. sq. km
- Population: 2.7 mln. (2008)
  In Ulaanbaatar (capital city):1'035'000
- Geography: Northeast Asian Region.
  Between Russian Federation and China,
  mountains, forest, steppe, desert
- Political system: President
  Great Hural (Parliament, 76 seats)
- Administration: Ulaanbaatar and 21 provinces
- GDP per capita: 1130 US $
- Membership: UN, ESCAP, UNCTAD, WTO, WHO, ILO,
  ITU, UPU, APT, APPU, and etc.,

3

Governmental structure for ICT sector policy and regulation

President | Parliament

Prime Minister

Cabinet members of Government (17)

Information and Communications Technology Authority

Communication Regulatory Commission

Other Ministries

Information and Communication Development Center

CITIZENS, BUSINESSES, OTHER PUBLIC, PRIVATE ENTITIES

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ICT sector legal framework

- Law on Communications, 1996 and 2001;
- Law of Radio wave, 1999;
- Postal Law, 2004;
- Other laws: Civil code, Anti-Monopoly Law, Customer Protection Law, Company and Entity Law, Fair competition Law, and etc;
- Amendment of "Laws on Custom" tax-free for computer and its accessories and VAT exception for software products, 2005;
- Law on Governments' Special Funds (USO Fund-2% of all operators' gross revenues), 2006;
- Draft package law on ICT (Basic IT Law, Digital signature Law, e-Commerce Law, e-Governance Law), 2008;

5

Policy and Strategy

- Mongolian Telecom Master Plan up to 2010, Ministry of Infrastructure-MOI, 1994;
- ICT Vision up to 2010, Parliament of Mongolia, 2000
- Telecommunications Sector Mid-term Policy, MOI, 2001;
- Medium Term Strategy and Frameworks for ICT sector, MOI, 2002;
- "E-Government Master Plan" Study (2005-2010), ICTA and KIPA of ROK, 2005;
- "E-Mongolia" National Program 2005-2012, ICTA, CRC, 2005;
- Policy and Regulatory guideline on GSM, 3G, WLL, CDMA-450 business in Mongolia, ICTA/CRC, 2006-2008;

6

Vision of e-Mongolia

This policy aims at establishing the information society and founding the knowledge-based society in Mongolia by enhancing extensive applications of ICT in all sectors of society. By 2012, Mongolia will become one of the top ten ICT developed countries per inhibitants in Asia.

Legal and Regulatory Framework	Infrastructure development	Leadership and Reform	Interoperability and Applications	ICT-enabled Economic Growth	Public Awareness and Participation	ICT Skills and Human Resources Development

Implications

- Designing and implementing new businesses such as e-Commerce, e-Tax, e-Custom, e-Payments, e-Procurement, e-Health, and e-Learning
- Establishment of an electronic system to expand civil participations
- Establishment of a unified information exchange network among Gov. agencies
- Requirement for the leadership at all levels of e-Government execution
- Requirement for legislating laws and regulations on ICT
- Need to build high speed transmission networks throughout Mongolia
- Establishment of nation-wide Digital Community Centers for business
- Reduction of the internet connection fees

7

Regulatory frameworks and activities

- Establishment of the Communications Regulatory Council under the Ministry of Infrastructure (MOI), 1995;
- Liberalization of international and domestic telephone service, cellular mobile market, 1999;
- Amendment of Law on Communications, 2001 (Established the Communications Regulatory Commission of Mongolia-CRC as independent body from policy making authority) www.crc.gov.mn;
- Chairman and 6 Commissioners of the CRC appointed by the Prime Minister of Mongolia;

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Regulatory frameworks and activities

Main functions of CRC, Mongolia include:

- Issuing telecommunications/ICT licenses (including TV and radio broadcasting, postal services, frequency, special number)
- Approving/monitoring the general terms of interconnection, between networks;
- Allocating and monitoring radio frequencies and planning;
- USO Fund administration and management;
- Approving accounting methodologies for the setting of tariffs and price;
- Approving and monitoring tariffs of dominant operators in the market;
- Developing and implementing a nationally integrated numbering plan;
- Settling disputes between license holders and customers;
- Telecom/ICT sector basic data/information collection and reporting to the related Government organizations (ICTA, NSC);

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ICT/Telecommunications infrastructure

Name of biggest company, operator	Service, number of Subscribers	Transmission network, [km]	Comment
Information and Communications Network Company , 2007	Backbone network asset management	Optical fiber-8400+ Digital MW-1,100+ Analog MW-524.7+ VSAT-41	State owned backbone network 21 province center and 300+ districts
Mongolia Telecom Joint Stock Company, 1994	30,200 NGN, CDMA 2000 1X 182,600 Fixed telephony	-	Fixed telephone /WLL service 21 province center and 300+districts
MobiCom Corporation, 1996	920,200 GSM GPRS 7,800 WLL CDMA	Optical fiber-2700 Digital MW-2076	(International open tender) 315 sites
Skytel company, 1999	296,500 CDMA-2001xEVDO	Optical fiber-240 Digital MW-1800	(International open tender) 200+ sites
Unitel company, 2006	370,000 GSM	-	(International open tender) 130+ sites
G-Mobile company, 2007	94,000 CDMA-450	-	(International open tender) 200+ sites

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ICT/Telecommunications infrastructure

Монгол Улсын дамжуулах байгууламжийн нэгдсэн сүлжээ
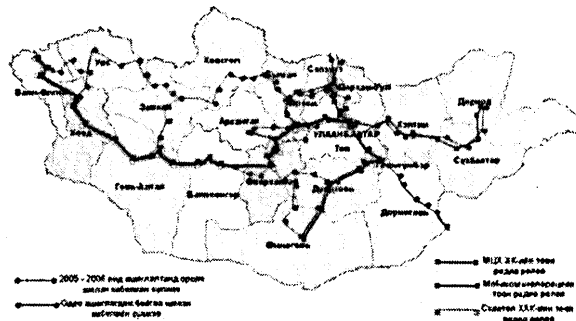
11

Government bodies related to the telecom/ICT sector statistics

Information and Communications Technology Authority (ICTA-www.icta.gov.mn)

Communications Regulatory Commission (CRC-www.crc.gov.mn)
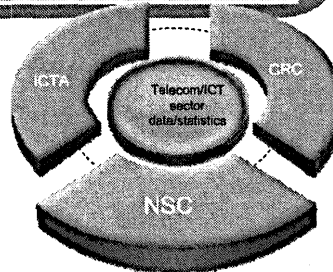
Telecommunication and ICT sector data/statistics

National Statistical Commission (NSC-www.nso.mn)

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Government bodies related to the telecom/ICT sector statistics

Established: 1924
Employees: 120+
Main functions: Implementation of laws, formulation of statistics policy, census
Homepage: www.nso.mn

National Statistical Commission

- To implement related laws ("Law on Statistics", "Law on the Population and Housing Census", and other laws);
- To formulate policy and coordination of statistical data collection and statistics information dissemination;
- To organize and conduct population and housing census;
- Report to the Parliament and Government of Mongolia;

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Government bodies related to the telecom/ICT sector statistics

Main functions of NSC, Mongolia include:

❖ Implementation of national statistics related laws. For example, Law on Statistics of Mongolia (1997, 2004), Law on the Population and Housing Census (2008);

❖ Annual and mid-annual population and housing census in Mongolia;

❖ Approving and monitoring of national and sector statistics methodologies for the census;

❖ Statistical data collection and dissemination of statistical information (monthly and quarterly bulletin);

❖ International cooperation (ITU, UNESCAP, UNSD, UNCTAD, ... NSO);

Note: Nationwide annual census 2010 year (Mongolia)

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Government bodies related to the telecom/ICT sector statistics
(Law on the Population and Housing Census, 2008)

Article 11. Census data
11.1.The following major data collected
by the census:
11.1.1. demographic and social
indicators:
-clan name, surname and name,
-date of birth,
-age and sex,
-ethnicity/nationality
-citizenship,
-education and literacy,
-religion,
11.1.2 Geographic and migration data
place of birth:
-place of usual residence and residence
on census days,
-duration of residence,
-place of residence five years ago from
the census period,

11.1.3 economic indicators:
a. employment status,
b. occupation,
c. types of industry,
d. unemployment and its reasons,
11.1.4 data on housing conditions:
a. type and ownership of dwelling,
b. number of rooms and floor space,
c. kitchen,
d. water supply, bathroom and shower,
e. waste disposal, toilet
f. electricity, heating and
telephone/communication
11.2. The National Statistical Commission can
include additional indicators, which required to
demographic, migration, socio-economic and
housing condition survey except of indicators
specified in 11.1 of this law to census data
regarding to particular situation.

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Government bodies related to the telecom/ICT sector statistics

Established: 2004
Employees: 40+ (4 Departments)
Main functions: ICT sector development
policy & strategy
Homepage: www.icta.gov.mn

Information and Communications
Technology Authority

* To formulate ICT/Telecommunications sector;
  development policy and strategy;
* To provide policy guidance for ICT/Telecom statistics
  data collection and reporting to the Government;
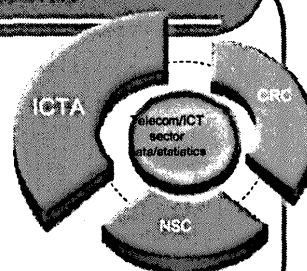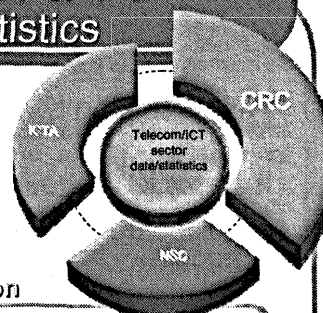* To contribute ICT/Telecom related statistical programs;

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Government bodies related to the telecom/ICT sector statistics

Established: 1995
Employees: 50+ (4 Department)
Main functions: ICT sector regulations
and issuing licenses (including postal and
broadcasting sector)
Homepage: www.crc.gov.mn

Communications Regulatory Commission

* **To issues license and regulatory frameworks;**
* **To collect ICT/Telecom sector data/statistics from licensed operators (subscribers, market and demand) and to report to the ICTA and Government;**
* **To make lists and formats of the required new statistical data and indicators in sector with ICTA and NSC;**

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Government bodies related to the telecom/ICT sector statistics

CRC is collecting the following the Telecommunications and ICT data and statistics from licensed operators and report to the ICTA/NSC:

1. Telecommunications (including postal and broadcasting):
a.Number of subscriber, density and sites (telephone, mobile, FM, TV sets, CATV);
b. Incoming and outgoing international/domestic traffics (fixed, mobile);
c. International and domestic postal market information;

2. Information technology:
a.Types of internet subscribers and users (internet, ADSL, VDSL, wireless access, broadband);
b.Market information (ISPs, share market);
c.Number of PCs (office and house);

3. Finance and HRD information:
a. Investment and finance information (revenue, cost, investment);
b. Tariff and price information;
c. Human resource development information (employees, average salary);

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International partnership on measuring ICT for development

Partnership on Measuring ICT for Development:

➤ Basic ICT infrastructure & access indicators (ITU);
➤ Indicators on access to, and use of, ICT by households and individuals (ITU);
➤ Indicators on use of ICT by businesses (UNCTAD);
➤ Indicators on the ICT sector and trade in ICT goods (UNCTAD);
➤ core indicators for Measuring ICT in education (UIS);

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Future Objectives

- To develop and implement an integrated policy and guidelines of the sector on international cooperation and national statistics/ICT core indicators;
- To create reliable ICT/Telecom database of statistics and broadband technologies (3G, WiMax);
- To improve data collection formats and indicators according to the ITU and UNSD, UNCTAD;
- To improve cooperation with Government/Public organizations and NGOs in collection/dissemination of statistical data and promote their activities;
- International organization and regional cooperation;
- HRD and capacity building;

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Conclusions

Key challenges:

- Specific problems for Mongolia (nomadic lifestyle and population diversity, terrain and natural conditions, lack of basic infrastructure such as road, energy);
- Appropriate legal and regulatory environment, specially IT applications, frequency allocation and pricing, interconnection and tariff, network security, e-commerce and etc.,
- Limited availability and processing of data, and reliability of data sources;
- Lack of compatibility to use of ICT/Telecom core data/indicators in national level;
- Digital divide and USO fund operation;
- Lack of investment to introduce new ICT/Telecom business and need to improve data format and collection process;
- Lack of HRD and capacity building ICT/Telecom data collection and processing;

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Conclusions

Key Success Factors:

- Strong Political & Governmental Leadership;
- Improvement of legal and regulatory environment (fair, transparent regulation, One window approach, Government portal, web information on statistics/data);
- Technology neutral policy and improvement of data collection/processing;
- Bridging Digital Divide and Government special programs, for example "PC for All Children", "Rural internet connection" program, "Rural mobile coverage project", "IT literacy";
- Strengthening of international cooperation and use of internationally recognized statistical data format and core indicators in national level (ITU, UNCTAD, World Bank...);
- Investing Human resource development/capacity building;
- Partnership with Private Sector and Civil Society;

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Thank you for attention

Contact address:
T.Naranmandakh
Director
Legal, Information and Administration Department
Communications Regulatory Commission of Mongolia (CRC)
Amarsanaa Str-26, Ulaanbaatar 16063
MONGOLIA
Tel/Fax: 976-11-300237, 327720
E-mail: naran@crc.gov.mn, crc@mongol.net
http: www.crc.gov.mn

FOR INFORMATION

SOURCE: Postal and Telecommunications Regulatory Authority, Mozambique

TITLE: Production and dissemination of Telecommunications Statistics in Mozambique

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PRODUCTION AND DISSEMINATION OF TELECOMMUNICATIONS STATISTICS IN MOZAMBIQUE

Section I of ISIC - Rev. 1: TRANSPORT, STORAGE AND COMMUNICATIONS

Division 64: Postal Service and Telecommunications

> **641**: POSTAL SERVICE ACTIVITIES
> **642**: TELECOMMUNICATIONS ACTIVITIES

Includes activities that permit the transfer information from a sender to one or more recipients, in various forms (sound, image, text, data, etc..) and media (cable, radio, satellite or a combination of one or more systems, etc..) transmission. That group includes the use of specialized media connections and maintenance of networks.

The telecommunications sector in Mozambique is still an industry dominated by a Public Company that offers fixed telephony services, Internet and data transmission by optical fiber.

Besides this company, there are two companies providing mobile services.

DATA COLLECTION

Data are collected through a monthly survey to each company which collects:
- Number of employees
- Turnover
- Salary

In addition to this monthly collection of information these companies provide the annual report of its activities which include:

- Geographical coverage
- Used lines per 10000 inhabitants
- Used Lines per 1000 km^2
- Tariff (National, Regional and International)
- Total Subscribers
- Postal traffic
- Post Offices
- Given Services income

DATA PROCESSING

The data collected from monthly survey are entered into a program in Microsoft Access where information is processed.

Data from annual reports of companies in Telecommunications and Postal Service (Administrative data) are analyzed and processed in Microsoft Excel to produce the statistical yearbook and other publications.

DISSEMINATION

The information is published annually in the Statistical Yearbook. In addition to this great publication, dissemination is also done in other small publications, including:

- Mozambique in Figures
- Index of Economic Activity
- Website of the INE
- Etc…

CONSTRAINT

Difficulty to receive those data on time
Lack of technicians working in that area (only 2 people)

NOTE:

At the moment Mozambique only produce this kind of information. In 2008 National Statistical Institute has conducted the Population Census which collected data about other kind of telecommunication which are as follows:

- Access of radio
- Access of telephone
- Access of Computer/ Internet

The results of that Census still in processing and we hope to have a final report during the second half of 2009.

Prepared by
Adriano Matsimbe
Directorate of Enterprises and Sectorial Statistics
National Statistical Institute
Maputo - Mozambique

In Excel I attached some tables which show how we produce telecommunications and postal services statistics

INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

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FOR INFORMATION

SOURCE: Nepal Telecommunications Authority, Nepal

TITLE: Background information on the ICT Statistics of Nepal: the state of ICT statistics collection and dissemination

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Background information on the ICT Statistics of Nepal: the state of ICT statistics collection and dissemination

General Introduction

Nepal is a small land-locked Himalayan country located in South Asia that lies between China and India spanning an area of 147,181 square kilometres. Administratively, the country is divided into 5 Development Regions, 14 Zones and 75 Districts. Apart from this, there are 3,915 Village Development Committees and 58 Municipalities. Topographically, Nepal is divided into three regions: the mountain, the hill and the plain region. About 83 percent of the country is rugged terrain and only 17 percent is flat land.

The projected population of the country is approx. 27 million based on 2001 census. The population growth rate is around 2.25%. The average life expectancy is just above 60 years.

Introduction

Nepal is relatively slow to grasp the advantages of the Information and Communication Technologies. Likewise, as is the world trend, getting the ICT related information is still difficult as this encompasses a variety of information viz. Telecommunication, Broadcasting, Information Technology, Community Access, etc. The problem becomes more difficult when the responsibility of collecting and disseminating such information is shared among number of entities, as is the case in Nepal. Nepal Telecommunications Authority (NTA) is primarily collecting and disseminating information on Telecommunication and partly on Information Technology and Community Access.

Historical Background

NTA started collecting and disseminating ICT statistics since October 2003 in the form of Management Information System which is published Quarterly. It consisted of Telecom data as well as the NTA activities in the past quarter. It continued in its original form with slight modification till 11th issue. In July 2006, the 12th issue got major overhauling as collecting and disseminating ICT statistics was given more importance with section dedicated for it. Likewise, each service category of Telecommunication service viz. basic telecommunication, cellular mobile communication, Internet, GMPCS, Rural Telecom Service, etc. were analysed separately comparing with the adjacent quarters. Consequently, in February 2007, information on Basic Core ICT Indicator was added after NTA started collecting information on it following NTA's participation in the Joint UNCTAD-ITU-UNESCAP Regional Workshop on Information Society Measurements in Asia-Pacific, Bangkok, 26-28 July 2006. Although NTA is regularly publishing the basic core indicators, it is still not possible to collect and disseminate all the core indicators due to difficulty in collecting those data. In order to collect data from the operators, the forms are developed in excel for different services which is made available in NTA's website (http://www.nta.gov.np/Quarterly_Performance_of_Telecom_Operators.html). Operators are required to submit the data to NTA every quarter filling out the respective excel forms.

Likewise, in February 2008, the previous MIS was separated into two parts namely, Management Information System, which contains the activities of NTA and "Quarterly Performance Indicator

of Telecom Sector/Services" which contains the information of the Telecom sector of the past quarter, solely dedicated to disseminate the ICT statistics. This was done to give prime focus on the collection and dissemination of ICT statistics segregating it from the regular activity of NTA. Furthermore, the UNCTAD mission to assist the Nepalese Government on ICT Measurement in June, 2008 helped us in strengthening our expertise in collection and dissemination of ICT statistics in much better way and in making our understanding better on the number of data to be collected. As informed to the mission, NTA is in the process of collecting data that are not yet collected and disseminated.

Current Scenario

As we are well aware that data collection is a tedious job and it is time as well as resource consuming for the operators too. So it is necessary to collect only those data which are very much essential and that are valuable for the general public as well as stakeholders in taking appropriate decisions. Till now NTA is collecting detailed data from the operators and disseminating it through the Quarterly Report for the general public. However, NTA is mulling now to make the data collection process more systematic and make sure that only essential data are collected, thereby making the data reporting job much easier for the operators and consequently NTA can significantly make its data mining process less complicated than before.

At present NTA collects and disseminates the following primary information regarding ICT statistics.

(As of December 2008)

Service	NDCL[1]	SNPL[2]	UTL[3]	STM[4]	GMPCS[5] Operators	Total
Mobile (GSM, CDMA and 3G)	2,512,153	1,725,959				**4,238,112**
Fixed (PSTN, Fixed Wireless)	720,870		66,670			**787,540**
Limited Mobility (LM)			56,208			**56208**
Rural Telecom Service (VSAT, MARTS etc.)				2,980		**2,980**
GMPCS					1,517	**1,517**
Total	**3,233,023**	**1,725,959**	**122,878**	**2,980**	**1,517**	**5,086,357**

Fixed Penetration (including LM and RTS[6])	**3.14**	**Total Penetration**		**18.86**
Mobile Penetration (including GMPCS)	**15.72**			
Internet	**0.35**			

Note: Projected population as per Central Bureau of Statistics is taken as 26,966,581

1: NDCL: Nepal Doorsanchar Co. Ltd., an incumbent operator
2: SNPL: Spice Nepal Pvt. Ltd., a private Cellular mobile operator
3: UTL: United Telecom Ltd., a private WLL based basic telephone operator
4: STM: STM Telecom Sanchar Pvt. Ltd., a rural based telephone operator
5: GMPCS: Global Mobile Personal Communication via Satellite
6: RTS: Rural Telecommunications Service

Apart from those mentioned above, NTA also collects and disseminates scores of other statistically important data such as Average Revenue Per User (ARPU), annual revenue, annual

investment, employment details, parameters related to Quality of Services in terms of Network performance, billing complaints and redressal, fault incidence and repair, customers perception regarding the services etc., traffic data, infrastructure details, no. of cybercafés, capacity of International Internet bandwidth etc. and publishes them in the Quarterly report making it available to the general public via website (www.nta.gov.np). These data are also used in filing out the World Indicator survey carried out by ITU annually.

The following core ICT Infrastructure indicators are being collected.

Core Indicators	Value	Remarks
Fixed Telephone lines per 100 inhabitants	3.14	
Mobile Cellular Subscribers per 100 inhabitants	15.72	
Computers per 100 inhabitants		NTA does not collect this data, similarly it is proposed to be removed from core list
Internet subscribers per 100 inhabitants	0.35	
Broadband Internet subscribers per 100 inhabitants		Will be easier to collect once the broadband internet capacity is defined in the proposed broadband policy
International Internet Bandwidth per inhabitant	4.9 bits/second	
Percentage of population covered by mobile cellular Telephony		NTA is planning to collect this data
Internet access tariff (20 hours per month), in US$, and as a percentage of per capita income	US$10.57, 3.92%	
Mobile cellular tariffs (100 minutes of use per month), in US$, and as a percentage of per capita income	US$4.7, 1.23%	
Percentage of localities with public Internet access centers (PIACs) by number of inhabitants (rural/urban)		NTA is yet to find out a way to measure it

Of the above four indicators that are yet to be reported by NTA, apart from the computers per 100 inhabitants, NTA is seriously considering to include them as well once the modalities for them are worked out which is also reflected in UNCTAD mission report's recommendation. As stated by the mission, the computers per 100 inhabitants will be taken out from the revised list of core Infrastructure indicators. To address the percentage of population covered by mobile cellular telephony, we have already included in the forms that are provided to the operators. To find out the broadband internet subscribers per 100 inhabitants, we need to first establish the benchmark for broadband service. NTA has already initiated the process to formulate the broadband policy and once the policy is endorsed by the government and the benchmark for broadband service is defined, we can then collect information regarding broadband subscribers. Likewise, to find out the percentage of localities with Pubic Internet Access Centres (PIACs) by number of inhabitants (rural/urban), we have to first make it clear what does localities in case of

Nepal means and we have to develop the proper mechanism on getting such data at regular interval, which is not possible at the moment. Furthermore, private entities which are establishing PIACs has also to be brought under legal framework to make sure the data reported is not misleading. We will be in position to report this information once the above mentioned problems are sorted out.

At present, we are working on preparing the standard forms for different services which have to be reported to NTA on monthly, or quarterly or annual basis. However, the penetration rate for fixed, mobile and Internet service will be disseminated on monthly or bi-monthly basis as part of the Management Information System.

Conclusion

NTA is collecting and disseminating the Telecommunication Indicators those defined by ITU which are comparable across countries. Although this is being done at regular interval, difficulty in obtaining data on time has been a major concern in our effort to make those indicators available to the stakeholders without delay. NTA reports the data available from the operators but does not validate the authenticity of such data. However, after several years' effort, NTA has been able to bring out the report that solely reflects the ICT statistics, which carries much significance for the development of ICT in the country. NTA also feels that there is a need for a regular study/research on the impact of the ICT in the socio-economic as well as overall national development of the country. NTA needs technical assistance to build this capacity. It is believed that periodic reporting of ICT related data is a significant contribution for brining out a reliable statistics for the general public.

INTERNATIONAL TELECOMMUNICATION UNION

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SOURCE: Palestinian National Authority, Palestine

TITLE: Contribution

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السلطة الوطنية الفلسطينية

الجهاز المركزي للإحصاء الفلسطيني
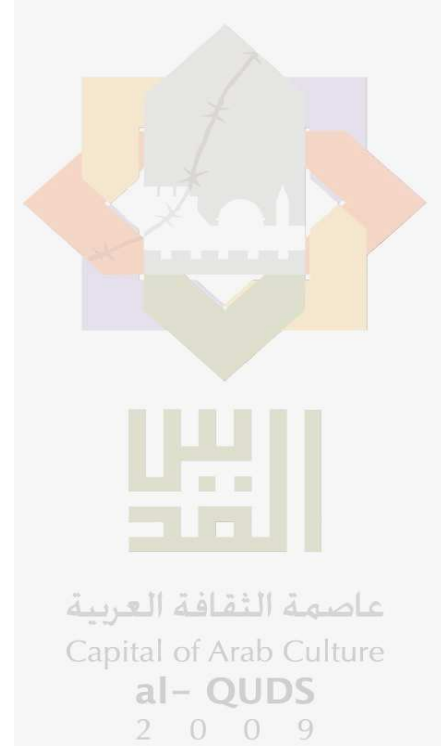
ورقة عمل حول إحصاءات العلم والتكنولوجيا في فلسطين

مقدمة إلى:

الاجتماع السابع للاتحاد الدولي للاتصالات حول إحصاءات مؤشرات تكنولوجيا المعلومات والاتصالات العالمية

القاهرة، 3 – 5 آذار/مارس 2009

شباط، 2009

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بريد إلكتروني: diwan@pcbs.gov.ps

صفحة إلكترونية: http://www.pcbs.gov.ps

مقدمة

أدرك الجهاز المركزي للاحصاء الفلسطيني مدى أهمية إحصاءات العلم والتكنولوجيا وأهمية العمل على تــوفير هــذه الإحصاءات بمركباتها الرئيسية (إحصاءات البحث والتطوير، وإحصاءات تكنولوجيا المعلومات والاتصالات) وبشكل دوري لمواكبة آخر التطورات الدولية على المؤشرات الرئيسية وآلية جمع وتحليل ونشر هذه الإحــصاءات الهامــة، لمساعدة صانعي القرار وراسمي السياسات العامة في الأراضي الفلسطينية في عمليــة رسـم وتـصحيح الــسياسات الاقتصادية وبناء مجتمع المعلومات الفلسطيني.

تتناول هذه الورقة أهداف إحصاءات العلم والتكنولوجيا، واهم مؤشرات العلم والتكنولوجيا الصادرة عن الجهاز، وخبرة الجهاز في مجال جمع واعداد ونشر هذه الإحصاءات، ومصادر بيانات إحصاءات العلم والتكنولوجيا، وواقع تكنولوجيا المعلومات والاتصالات في الأراضي الفلسطينية، كما تتطرق الورقة إلى التوجه المستقبلي للجهاز فيما يختص بإعــداد ونشر مؤشرات قياس مجتمع المعلومات.

أهداف إحصاءات العلم والتكنولوجيا

تهدف إحصاءات العلم والتكنولوجيا بشكل رئيسي إلى توفير بيانات إحصائية شاملة لقياس مجتمع المعلومات من خــلال عرض للفئات المستخدمة (اسر، أفراد، مؤسسات) حسب خصائصها الديمغرافية والاجتماعية والاقتصادية ، وظــروف واهداف وميزات استخدام هذه الفئات المجتمعية لتقنيات المعلومات والاتصالات.

وتتمحور أهداف إحصاءات العلم والتكنولوجيا بما يلي:

1. مراجعة وتقييم لمصادر البيانات الإحصائية المتوفرة حول إحصاءات العلم والتكنولوجيا في الأراضي الفلسطينية.

2. معرفة واقع الأراضي الفلسطينية ومدى تقدمها في مجال مجتمع المعرفة على مستوى الأسر والأفراد والمؤسسات.

3. مساعدة المخططين وصناع القرار لوضع الخطط اللازمة للنهوض بمجتمع المعلومات بالاستناد على الإحــصاءات الدقيقة.

مؤشرات العلم والتكنولوجيا

من اجل تحقيق الأهداف المنشودة من توفير هذه المؤشرات كان لا بد لها أن تلبي الاحتياجات الوطنيــة وتتفـق مــع المؤشرات الموصى بها دولياً. ونظرا لحداثة موضوع إحصاءات تكنولوجيا المعلومات والاتـصالات علــى مــستوى العالم، باشر الجهاز المركزي للإحصاء الفلسطيني منذ العــام 2000 بتــوفير إحــصاءات تكنولوجيــا المعلومــات

والاتصالات ويجري العمل على تطوير مؤشرات تكنولوجيا المعلومات والاتصالات بصورة منتظمــة ومتناسـقة مــع

الجهود الدولية المبذولة لتطوير هذه المؤشرات. تغطي مؤشرات العلم والتكنولوجيا التي ينتجها الجهاز المركزي للإحصاء الفلسطيني البنية الأساسية والنفاذ بالإضافة لاستخدام الأسر والأفراد والمؤسسات لتكنولوجيا المعلومات والاتصالات، ويبذل الجهاز جهودا حثيثه لتحاكي هذه المؤشرات النمو المتسارع لقطاع العلم والتكنولوجيا، ولتتلاءم مع ما يتم تطويره من مؤشرات من قبل المؤسسات والمنظمات الدولية في مجال إحصاءات العلم والتكنولوجيا، والجـــداول الملحقة تبين أهم المؤشرات التي يصدرها الجهاز في هذا المجال.

منهجية إعداد إحصاءات العلم والتكنولوجيا

يعتمد الجهاز مصدرين للبيانات في مجال قياس مجتمع المعلومات وهي المسوح الإحصائية المتخصصة، والسجلات الإدارية.

بخصوص منهجية المسوح الأسرية المتعلقة بتكنولوجيا المعلومات والاتصالات فقد استهدفت هذه المسوح بالإضافة إلى الأسرة كوحدة واحدة، الأفراد 10 سنوات فأكثر. وتم تقسيم طبقات العينة إلى مستويين، المستوى الأول: المحافظة، والمستوى الثاني: نوع التجمع السكاني (حضر، ريف، مخيم). وكانت العينة هي عينة طبقية عنقودية عشوائية منتظمة ذات ثلاث مراحل. المرحلة الأولى وهي اختيار عينة طبقية عشوائية مكونة من 375 منطقة عد. والمرحلة الثانية وهي اختيار عينة عشوائية منتظمة من الأسر من منطقة العد بحيث يتم اختيار12 أسرة من كل منطقة عد مختارة. والمرحلة الثالثة وهي اختيار فرد من الأسرة المختارة من الفئة العمرية 10 سنوات فأكثر إما ذكر أو أنثى حسب رقم الاستمارة المتسلسل في العينة، وتم استخدام جداول كيش (KISH TABLES) في عملية اختيار الفرد من الأسرة لضمان العشوائية.

أما بخصوص استمارة المسوح، وعلى ضوء تحديد الاحتياجات من البيانات، تم تطوير الاستمارات بعد مراجعة التوصيات الدولية وتجارب الدول في هذا المجال، والنقاش مع الجهات المعنية في نطاق حوار المنتجين والمستخدمين لهذه المؤشرات في الوطن. وقد اشتملت الاستمارات على قائمة المؤشرات الأساسية الدولية بالإضافة إلى قائمه أخرى من المؤشرات الوطنية ومثال ذلك الرسائل الاقتحامية، وانفاق الأفراد على أدوات ووسائل التكنولوجيا والاتصالات. والمؤشرات المتعلقة بممارسة الأفراد للأنشطة الثقافية مثل: عادة ممارسة الأنشطة الثقافية، قراءة الصحف، والاستماع للمذياع.

أما بخصوص منهجية مسوح قطاع الأعمال لتكنولوجيا المعلومات والاتصالات، فقد نفذ الجهاز مسحه الأول في هذا المجال في العام 2008، وكانت الفئة المستهدفة في هذا المسح هي جميع المؤسسات العاملة والتي تم حصرها في التعداد العام للمنشآت 2007. وقد بلغ حجم عينة المسح 2,966 مؤسسة موزعة على جميع محافظات الضفة الغربية وقطاع غزة، وكانت العينة عشوائية طبقية منتظمة ذات مرحلة واحدة. تم حصر المؤسسات بشكل شامل ضمن العينة للطبقات التي فيها 30 مؤسسة فاقل، بالإضافة إلى حصر المؤسسات التي تشغل 30 عامل فأكثر. وقد تم تقسيم المؤسسات إلى طبقات تشكل ثلاثة مستويات وهي: المستوى الأول: مستوى التصنيف الجغرافي حيث صنفت المؤسسات إلى منطقتين هما : الضفة الغربية وقطاع غزة. المستوى الثاني: مستوى النشاط الاقتصادي حيث صنفت المؤسسات حسب نشاطها الاقتصادي الرئيسي حسب التصنيف الدولي للأنشطة الاقتصادية إلى ستة قطاعات رئيسية (قطاع الصناعة، والإنشاءات، وتجارة الجملة والتجزئة، والنقل والاتصالات، والوساطة المالية، وقطاع الخدمات). أما المستوى الثالث فهو مستوى حجم العمالة حيث تم تصنيف المؤسسات حسب عدد العاملين كما يلي : الفئة الأولى (عدد العاملين 4 فما دون)، والفئة الثانية (عدد العاملين من 5 إلى 10)، والفئة الثالثة (عدد العاملين 11 – 29)، أما الفئة الرابعة (عدد العاملين 30 فأكثر).

وقد اشتملت استمارة مسح قطاع الأعمال البنية التحتية اللازمة لاستخدام التكنولوجيا وأدواتها ووسائلها في المؤسسة.

مثل توفر جهاز الحاسوب وخدمة الإنترنت، كذلك توفر مجموعة من الأجهزة المتطورة والمرتبطة باستخدام التكنولوجيا مثل الهواتف الثابتة، والفاكس، والهواتف المحمولة، والطابعات، وغيرها، واستخدام الإنترنت، والشبكات فـي إجـراء معاملات تجارية كالبيع والشراء، والمعيقات التي تواجه المؤسسات الفلسطينية في مجال استخدام الشبكات والإنترنت في أعمالهم الاقتصادية وتنفيذ معاملات تجارية إلكترونياً، ومجموعة مؤشرات حول التوجه المـستقبلي للمؤسسـات فـي استخدام وسائل وأدوات تكنولوجيا المعلومات والاتصالات، كذلك الإنفـاق علـى بعـض أدوات ووسـائل تكنولوجيـا المعلومات والاتصالات المتوفرة في المؤسسات الاقتصادية.

اما بخصوص المنهجية المتبعة في جمع مؤشرات البحث والتطوير، فقد تم جمع بيانات البحث والتطوير ولأول مرة في العام 2008، وكانت الفئات المستهدفة في هذا المشروع هي جميع المؤسسات العاملة في مجال البحث والتطـوير فـي الأراضي الفلسطينية (مؤسسات التعليم العالي، المؤسسات غير الهادفة إلى الربح، المؤسسات الخاصة)، حيث تم حصر هذه المؤسسات بشكل شامل، وتم تصميم نموذج موحد يتلائم والقطاعات المستهدفة الثلاثة، ويتم جمع هذه البيانات مـن خلال نظام السجلات الإدارية المعمول به في الجهاز وخصوصا ان عدد المؤسسات العاملة في الأراضي الفلسطينية في مجال البحث والتطوير محدود. وقد اشتمل هذا النموذج على مؤشرات البحث والتطوير الرئيسية الموصى بهـا دوليـا وأهمها، الموارد البشرية في البحث والتنمية التجريبية، وأنوع البحث والتطوير، وأغراض البحث والتطـوير ومقـدار الإنفاق على كل نوع من هذه الأنواع، ومصادر التمويل الرئيسية لأنشطة البحث وأهم مخرجات عملية البحث والتطوير مثل عدد براءات الاختراع والبحوث والدراسات المنشورة، والجوائز الوطنية والدولية للمخترعين والباحثين.

مصادر بيانات إحصاءات العلم والتكنولوجيا
أولا: المسوح الإحصائية المتخصصة
قام الجهاز المركزي للإحصاء الفلسطيني بتنفيذ عدة مسوح في مجال قياس مجتمع المعلومات الفلسطيني، وكان أول هذه الأنشطة تنفيذ مسح وسائل الإعلام والذي خصص جزءاً كبيراً منه لمعرفة مدى استخدام الأسر والأفـراد لتكنولوجيـا المعلومات والاتصالات في العام 2000، كما تم تنفيذ مسحاً متخصصاً بتكنولوجيا المعلومات والاتصالات وهـو مـسح "الكمبيوتر والإنترنت والهاتف النقال" في العام 2004، والذي رصد أكبر قدر ممكن من مؤشرات تكنولوجيا المعلومات والاتصالات، كما تم تنفيذ مسح النفاذ المباشر للإنترنت والذي سعى لمعرفة مدى رضى مـستخدمي خدمـة الإنترنت المباشرة (ADSL) في العام 2005. كما نفذ المسح الأسري لتكنولوجيا المعلومات والاتصالات فـي العـام 2006، وحديثا تم تنفيذ مسح قطاع الأعمال لتكنولوجيا المعلومات والاتصالات2007. ويقوم الجهاز بشكل دوري بإدراج عدد من الأسئلة في المسوح التي ينفذها تتضمن مدى امتلاك الأسر والأفراد لوسائل تكنولوجيـا المعلومـات والاتـصالات والنفاذ. هذا وتتضمن خطة الجهاز السنوية تنفيذ سلسلة مسوح دورية حول البنية الأساسية والجاهزية والنفاذ والاستخدام لأدوات تكنولوجيا المعلومات والاتصالات.

ثانيا: التعدادات
قام الجهاز بإدراج مجموعة الأسئلة ذات العلاقة بتكنولوجيا المعلومات والاتصالات الواردة في القائمة الدولية، والتـي

تضمنت مدى امتلاك الأسر والأفراد لوسائل تكنولوجيا المعلومات والاتصالات والنفاذ إليها.

ثالثا: السجلات الإدارية

حيث يتم الحصول على بيانات إحصاءات البحث والتطوير من خلال نموذج خاص بالبحث والتطوير يتم استيفاؤه مـن كافة المؤسسات العاملة في هذا المجال، وبخصوص البيانات المتعلقة بأعداد خطوط الهواتف الرئيسية والطلب عليهـا، وأعداد المكالمات ومدة المكالمات يتم الحصول عليها من خلال نماذج يتم تزويد شركة الاتصالات الفلسطينية بها، أمـا فيما يتعلق ببيانات خدمة الهاتف الخلوي "جوال" فيتم الحصول عليها من خلال نموذج خاص بشركة الاتصالات الخلوية الفلسطينية "جوال"، وفيما يتعلق بخدمة الإنترنت يتم الحصول عليها من شركات تقديم هذه الخدمة، من خلال تزويـدهم بنماذج خاصة. بعد ذلك يتم تجميع هذه البيانات من مصادرها والتأكد من دقتها ومصداقيتها بالتعـاون مـع مـصادر البيانات ذاتها، وبعد الانتهاء من عملية المعالجة، يتم تفريغ البيانات في جداول نهائية معدة لهذا الغرض، وفحص النتائج وفي حالة وجود ملاحظات حول صحة النتائج يتم مراجعة الجهة المعنية بهدف الوصول إلى تفـسير منطقـي حـول مصداقية هذه البيانات أو تعديلها.

واقع تكنولوجيا المعلومات والاتصالات في الأراضي الفلسطينية

فيما يلي عرضا لواقع تكنولوجيا المعلومات والاتصالات في الأراضي الفلسطينية:

الاتصالات الفلسطينية خلال فترة السيطرة الإسرائيلية

خلال فترة السيطرة الإسرائيلية على قطاع الاتصالات الفلسطيني منذ العام 1967 وحتى العام 1997 والذي تسلمت فيه السلطة الوطنية الفلسطينية مسؤولية تشغيل قطاع الاتصالات في الأراضي الفلسطينية من قبل سلطات الاحتلال، لم ينشر الإحصاء الإسرائيلي أية إحصاءات حول تكنولوجيا المعلومات والاتصالات تخص الأراضي الفلسطينية خـلال فتـرة سيطرته على هذا القطاع الهام. وما تم اعتماده من إحصاءات في هذه الفترة تعود بشكل أساسي للإحصاءات المتوفرة لدى الاتحاد الدولي للاتصالات (ITU) والتي تعود لما قبل عام 1997. أثناء خضوع قطـاع الاتـصالات للـسيطرة الإسرائيلية، تطور هذا القطاع بشكل بطيء لأسباب تعود إلى ظروف الاحتلال فلم تتجاوز كثافة توفر الهاتف الثابـت في الضفة الغربية وقطاع غزة 3.14 لكل مائه من السكان فقط بمقابل 30 لكل مائه من السكان في إسرائيل في العـام 1994 بينما كان يستغرق الانتظار للحصول على خط هاتفي آنذاك مدة زمنية لا تقل عن 10 – 15 عام، وحظر فـي بعض الأحيان استخدام جهاز الفاكس وأجهزة الاتصال الأخرى.

الجاهزية والنفاذ والاستخدام لتكنولوجيا المعلومات والاتصالات للأسر والأفراد

تميزت الأراضي الفلسطينية بنمو متسارع في أعداد الأسر التي يتوفر لديها أدوات تكنولوجيا المعلومات والاتـصالات بعد عام 1997. فقد بلغت نسبة الأسر في عام 2006 التي يتوفر لديها جهاز حاسوب 32.8% من إجمـالي الأسـر، بينما كانت الأسر التي يتوفر لديها خدمة الإنترنت في البيت 15.9% من الأسر للعام 2006، بنسبة نموة 72.8% مقارنة بعام 2004. أما بخصوص توفر جهاز التلفزيون لدى الأسر، فقد بلغت نسبة الأسر التي يتوفر لديها جهاز تلفزيـون 95.3%، بينما كانت نسبة الأسر التي يتوفر لديها لاقط فضائي 80.4% ولنفس العام، في حين كانت نسبة الأسر التـي لديها جهاز فيديو 30.0%، كما استمر الاهتمام باقتناء أجهزة اتصالات لتبلغ نسبة الأسر التي توفر لديها هـاتف ثابـت

وهاتف نقال 50.8% و81.0% على التوالي. (انظر ملحق الجداول). أما بخصوص الأفراد (10 سنوات فاكثر)

الذين يستخدمون الحاسوب ويستخدمون الإنترنت فقد بلغت نسبتهم 50.9% و18.4% على التوالي للعام 2006. فيما تركزت نسبة من يستخدمون الإنترنت حسب وسيلة الربط حسب بيانات العام 2006 على استخدام الهاتف " Dial Up" بنسبة 68.5%، و نسبة من يستخدمون وسيلة خط اشتراك مباشر "ADSL" 14.8%.   أمـا بالنـسبة للغـرض مـن استخدام الإنترنت فقد كانت التسلية والدراسة هما أكثر الأغراض انتشارا بين المستخدمين الذكور والتي بلغت 43.8% و29.6% على التوالي، فيما كانت هذه النسب بين المستخدمات الإناث 34.3% و50.7% على التوالي. (انظر ملحـق الجداول).

الجاهزية والنفاذ والاستخدام لتكنولوجيا المعلومات والاتصالات في مؤسسات الأعمال

أظهرت نتائج مسح تكنولوجيا المعلومات والاتصالات لقطاع الأعمال 2007، أن 21.3% من إجمالي المؤسسات فـي الأراضي الفلسطينية قد استخدمت الحاسوب في العام 2007، بواقع 23.3% في الضفة الغربية مقابل 16.2% في قطاع غزة. كما بلغت نسبة المؤسسات التي تستخدم الإنترنت 12.7% من إجمالي المؤسسات. فيما بلغت نـسبة اسـتخدام الإنترنت 67.8% من بين المؤسسات التي تستخدم الحاسوب، بواقع 68.0% في الضفة الغربية و 67.3% في قطـاع غزة. هذا وقد بلغ مجموع الإنفاق السنوي بالدولار الأمريكي (بالألف) على خدمات تكنولوجيا المعلومات والاتصالات في المؤسسات الاقتصادية في الأراضي الفلسطينية 175,282.9 دولار أمريكي، منها 128,762.6 دولار في الـضفة الغربية، و46,520.3 دولار أمريكي في قطاع غزة. أما بخصوص توزيع الإنفاق فقد كان مـا نـسبته 62.4% مـن إجمالي النفقات على تكنولوجيا المعلومات والاتصالات قد كانت على الاتصالات بشكليها الهاتف الثابـت والمحمـول، يليهما الإنفاق على الحاسوب 9.9%، يليها نسبة الإنفاق على كل من شراء الأجهزة والمعدات الإلكترونيـة وصـيانة الأجهزة والمعدات الإلكترونية بواقع 8.2% لكل منهما. ومن ثم الإنفاق على الإنترنت والشبكات بواقـع 6.1% مـن إجمالي الإنفاق على تكنولوجيا المعلومات والاتصالات. يليها الإنفاق على شراء البرامج الجاهزة بواقع 3.8%، فيمـا بلغت نسبة الإنفاق على تدريب العاملين في المؤسسات على التكنولوجيا واستخداماتها 0.7%. أما نسبة الإنفاق علـى تنفيذ دراسات وأبحاث متعلقة بالتكنولوجيا فقد بلغت 0.4% من إجمالي الإنفاق على تكنولوجيا المعلومات والاتصالات. أما بخصوص نسبة المؤسسات التي قامت بمعاملات تجارية إلكترونية عبر الإنترنت فقد بلغت 2.0%، أمـا نـسبة المؤسسات التي قامت بمعاملات تجارية إلكترونية عبر الشبكات قد بلغت 0.4% مـن إجمـالي المؤسـسات. أمـا المؤسسات التي قامت بمعاملات بيع عبر الإنترنت من المؤسسات التي تستخدم الحاسوب والإنترنت فقد بلغت نـسبتها 9.8%.

جودة البيانات

يتم جمع بيانات المسوح الإحصائية المتخصصة بأسلوب العينة وليس بالحصر الشامل، لـذا فهـي معرضـة لنـوعين رئيسيين من الأخطاء. الأول أخطاء المعاينة (الأخطاء الإحصائية)، والثاني أخطاء غير المعاينـة (الأخطـاء غيـر الإحصائية). ويقصد بأخطاء المعاينة تلك الأخطاء الناتجة عن تصميم العينة، لهذا فهي سهلة القياس، وقد حسب التباين وتأثير تصميم العينة لكل من الأراضي الفلسطينية والضفة الغربية وقطاع غزة.

أما الأخطاء غير الإحصائية فهي ممكنة الحدوث في كل مراحل تنفيذ المشروع، خلال جمع البيانات أو إدخالها والتي

يمكن إجمالها بأخطاء عدم الاستجابة، وأخطاء الاستجابة (المبحوث)، وأخطاء المقابلة (الباحث) وأخطاء إدخال البيانات.
ولتفادي الأخطاء والحد من تأثيرها يبذل جهود كبيرة من خلال تدريب الباحثين تدريبا مكثفا، وتدريبهم على كيفية إجراء
المقابلات، والأمور التي يجب اتباعها والأمور التي يجب تجنبها أثناء إجراء المقابلة ، وتنفيذ التجربة القبلية والتي تعتبر
جزءاً أساسياً من المرحلة التحضيرية لأي مسح، حيث من خلالها يتم فحص كافة الإجراءات والخطوات المطلوبة
لانجاح المسح الرئيسي، والتي تتمحور حول التدريب من خلال فحص البرنامج والأوقات المخصصة لكل بند، وآلية
التدريب المتبعة وقدرة المدربين، ومادة التدريب ومدى شمولها، والتحضيرات اللازمة لتنفيذ المسح، والمتدربون ومدى
الالتزام بالتعليمات، وفحص إجراءات العمل الميداني من خلال هيكلية الفريق، ومعدلات الإنجاز، وفحص آلية إجراء
المقابلة من خلال تعاون المبحوثين، وتقبل الاستمارة، وفحص استمارة المسح من حيث الشكل العام، والترابط
والتسلسل، والانتقال، والأسئلة الصعبة وغير الواضحة، وحساسية الأسئلة، هذا بالإضافة إلى فحص عملية معالجة
البيانات من حيث التأكد من دقة البرمجة والتدقيق الآلي، ومرحلة إدخال البيانات.

بعد انتهاء العمل الميداني للتجربة القبلية يتم عقد اجتماع للباحثين الذين عملوا في التجربة بهدف مناقشتهم والحصول
على ملاحظاتهم سواء أكانت ذات علاقة بالميدان أو بالاستمارة أو بالمبحوثين. ويتم إجراء تقييم للتجربة القبلية
ونتائجها واعداد تقرير التقييم، وبناءً على التوصيات التي ترد في تقرير التقييم، يتم إجراء التعديلات اللازمة
والضرورية على كل من الاستمارة ودليل التدريب وآلية التدريب، والجدول الزمني لبنود التدريب، وهيكلية فريق العمل
الميداني، كذلك برنامج الإدخال وغيرها من الأمور.

كما يتم تدريب مدخلي البيانات على برنامج الإدخال، ويتم فحص البرنامج على بيانات التجربة القبلية. ومن أجل
الاطلاع على صورة الوضع والحد من أية إشكاليات، كان هناك اتصال دائم مع المشرفين والمدققين من خلال الزيارات
المستمرة إلى المكاتب الفرعية، والاجتماعات الدورية. كذلك تم التطرق إلى المشاكل التي واجهها الباحثون أثناء العمل
الميداني وتوضيح هذه الأمور.

يتم تصميم نماذج خاصة للمتابعة على صعيد استلام وتسليم الاستمارات على جميع المستويات، وكذلك على صعيد
متابعة الإنجاز اليومي للباحثين، حيث كان المشرف يقوم بتوزيع العمل على الفريق من خلال الخارطة وكشف العينة
الاستدلالي. وكان يقدم تقارير يومية وأسبوعية إلى منسق العمل الميداني وإدارة المشروع، يوضح فيها عدد المقابلات
المكتملة، وحالات الرفض، والحالات التي لا تنطبق، كالوحدات الإحصائية غير المأهولة والحالات التي لم يتم فيها
تحديد نتيجة المقابلة، والحالات التي لم يكن بالإمكان الاتصال بها بعد ثلاث زيارات. بالإضافة إلى إجراء زيارات
ميدانية من قبل الفنيين ومنسقي العمل الميداني بهدف مراقبة العمل وضمان جودة البيانات والمساعدة في حل أي مشكلة
تواجه فريق العمل الميداني.

ومن الإجراءات الضرورية الأخرى لضبط جودة البيانات يقوم الجهاز بتطوير أدوات لفحص جودة البيانات، ومن تلك
الأدوات إعادة المقابلة لجزء من عينة المسح. ولإعادة المقابلة عدة أهداف يتم تحقيقها من خلال عدة مستويات، أهمها

على مستوى الباحث بحيث يتم التأكد من أن الباحث قد قام بالزيارة ووصل إلى المبحوث. أما على مستوى جمع

البيانات ومعالجتها ليتم التأكد من بيانات أهم المؤشرات المطلوبة وذلك من خلال إنذار مبكر لمشكلة ما قد تحدث في الميدان من خلال معالجة البيانات، وتحليل للمؤشرات وتحديد مدى المصداقية في نشرها. وعادة يتم إجراء إعادة المقابلة لما نسبته 7% من العينة، ويتم المقارنة بين استمارة إعادة الفحص والاستمارة الرئيسية من قبل لجنة جودة البيانات. يقوم المشرف الميداني بجمع البيانات من خلال استمارة إعادة المقابلة، ومن ثم يتم إرسال تلك الاستمارات مباشرة للإدخال، تعاد الاستمارات إلى المشرف لإجراء تدقيق يدوي على الاستمارات بالمقارنة مع الاستمارات الأصلية، ومن ثم يقوم المشرف بإعداد تقرير إلى إدارة المشروع لدراسته، ليتم تقديم التوصيات واتخاذ الإجراء اللازم فيما يتعلق بسير تنفيذ المسح. ثم يتم إدخال بيانات إعادة المقابلة على البرنامج المخصص لذلك، ومن ثم يتم إعداد مؤشر عدم التطابق وتحليل أسباب عدم التطابق بناء على المؤشرات الأخرى المساندة في المشروع. وقد استنتج من تقارير إعادة المقابلة أن البيانات ذات جودة عالية، ومعظم الفروقات مبررة.

الخطط المستقبلية

فيما يلي أهم المتطلبات التي يتوجب العمل عليها خلال المرحلة القادمة للانطلاق بإحصاءات العلم والتكنولوجيا لبناء مجتمع معلومات فلسطيني قائم على إتاحة المعرفة للجميع واعتماد المعلوماتية وسيلة رئيسية للنهوض بالشعب الفلسطيني وتحقيق تطلعاته في مختلف الميادين:

1. اعتماد النظام الآلي في إحصاءات تكنولوجيا المعلومات والاتصالات بحيث يتم استلام البيانات من كافة المصادر بواسطة نظام الشبكات المحلية وإجراء عمليات المعالجة المركزية في الجهاز المركزي للإحصاء.

2. التخطيط لتنفيذ مسح الابتكار والإبداع في المؤسسات العاملة في فلسطين ومعرفة مدى مساهمة الوسائل والأدوات التكنولوجية في هذا المجال.

3. إعداد دراسة حول مؤشرات تضمين التكنولوجيا في مجالات الصحة والزراعة ومكافحة الفقر، والمساواة بين الجنسين.

4. اعتماد مبدأ تضمين أساليب التكنولوجيا والاتصال الحديثة في تطوير أنشطة دائرة العلم والتكنولوجيا، حيث نتطلع إلى إعداد مقترحات تعكس هذا التوجه، ومن هذه المقترحات تنفيذ مسوح من خلال استمارات إلكترونية، كذلك جمع بعض بيانات السجلات الإدارية من منتجيها بالطرق الإلكترونية.

5. الاستمرار في تنفيذ المسوح الأسرية ومسوح قطاع الأعمال الخاصة بتكنولوجيا المعلومات والاتصالات بشكل دوري كل سنتين حسب التوصيات الدولية.

6. إعداد مقالات متخصصة في مجال مجتمع المعلومات وخاصة في المناسبات العالمية المرتبطة بمجتمع المعلومات. كذلك تفعيل العلاقة مع منتجي البيانات ومستخدميها وصناع القرار، وذلك من خلال حوار المنتجين والمستفيدين الذي يعقده الجهاز بشكل دوري.

7. قياس حجم القوى العاملة في أنشطة تكنولوجيا المعلومات والاتصالات واعتماد تصانيف القوى العاملة لتخصصات تكنولوجيا المعلومات والاتصالات.

8. إعداد قاعدة بيانات عن البنية التحتية واستخدام ونفاذ تكنولوجيا المعلومات والاتصالات في قطاع التعليم (المدارس والتعليم العالي) وذلك بالتعاون مع وزارة التربية والتعليم العالي.

التوصيات

1. مواصلة وتوسيع العمل على مساعدة البلدان النامية على تطوير عملها بــشأن إحــصاءات تكنولوجيــا المعلومـــات والاتصالات من خلال الحلقات الدراسية الإقليمية والوطنية وحلقات العمل التدريبية.

2. التأكيد على ضرورة عقد مثل هذه الاجتماعات التي تساعد على توحيد المفاهيم وآليات العمل المشتركة في مجـــال تكنولوجيا المعلومات والاتصالات.

3. تعزيز التوجه نحو مشاريع إحصائية مشتركة بين البلدان العربية.

ملحق مجموعة الجداول الإحصائية

Table 1: List of Selected Indicators, 2007

Indicator	القيمة Value	المؤشر
Percentage of Enterprises Using Computer	21.3	نسبة المؤسسات التي تستخدم الحاسوب
Percentage of Enterprises Using Internet	12.7	نسبة المؤسسات التي تستخدم الإنترنت
Percentage of Enterprises Having Information Technology (IT) Security Measures	10.5	نسبة المؤسسات التي لديها إجراءات أمان تكنولوجية
Percentage of Enterprises Using Electronic transactions	2.3	نسبة المؤسسات التي قامت بمعاملات تجارية إلكترونيا
Percentage of Enterprises Using transactions via the Internet	2.0	نسبة المؤسسات التي قامت بمعاملات تجارية عبر الإنترنت
Percentage of Enterprises Using transactions via Networks	0.4	نسبة المؤسسات التي قامت بمعاملات تجارية عبر الشبكات
Percentage of Enterprises having Website	2.6	نسبة المؤسسات التي لديها موقع إلكتروني
Percentage of Enterprises with (IT) Department	1.2	نسبة المؤسسات التي لديها قسم خاص بتكنولوجيا المعلومات
Percentage of Enterprises Engaged Research and Development in (IT)	1.2	نسبة المؤسسات التي قامت بدراسات (بحث وتطوير) في مجال التكنولوجيا
Number of Computers in Enterprises Per 100 Employees	24	عدد أجهزة الحاسوب في المؤسسات لكل 100 عامل
Number of Telephones Per 100 Employees	28	عدد أجهزة الهاتف الثابت لكل 100 عامل
Number of Mobile Phones Per 100 Employees	40	عدد أجهزة الهواتف المحمولة في المؤسسات لكل 100 عامل
Number of Employees Who Know How to Use Computer Per 100 Employees	43.3	عدد العاملين الذين يعرفون استخدام الحاسوب لكل 100 عامل
Number of Employees Who Are Using Computer Per 100 Employees	22	عدد العاملين الذين يستخدمون الحاسوب لكل 100 عامل
Number of Employees Who Are Using the Internet Per 100 Employees	15	عدد العاملين الذين يستخدمون الإنترنت لكل 100 عامل
Number of (IT) Specialist Per 100 Employees	3.5	عدد العاملين المختصين بتكنولوجيا المعلومات والاتصالات لكل 100 عامل
Number of Male (IT) Specialists Per 100 Employees	3.7	عدد العاملين الذكور المختصين بتكنولوجيا المعلومات والاتصالات لكل 100 عامل
Number of Female (IT) Specialists Per 100 Employees	2.1	عدد العاملين الإناث المختصين بتكنولوجيا المعلومات والاتصالات لكل 100 عامل
Total Expenditure (USD in thousand) on (ICT) Services	175,282.9	الإنفاق السنوي بالدولار الأمريكي (بالألف) على تكنولوجيا المعلومات والاتصالات

Table 2: Percentage of Households Who Have Some (ICT) Tools at Home by Region, 2006

Some (ICT) Tools	Region		المنطقة	أدوات تكنولوجيا المعلومات والاتصالات
	قطاع غزة Gaza Strip	الضفة الغربية West Bank	الأراضي الفلسطينية **Palestinian Territory**	
Computer	30.8	33.9	**32.8**	جهاز حاسوب
Telephone Line	45.6	53.5	**50.8**	خط هاتف
Internet at Home	16.2	15.7	**15.9**	خدمة الإنترنت في البيت
Mobile Phone	78.6	82.1	**81.0**	هاتف خلوي
Radio	80.2	80.9	**80.6**	جهاز راديو
Digital Video Disc (DVD)	7.4	12.0	**10.4**	جهاز فيديو رقمي
TV Dish	75.9	82.7	**80.4**	لاقط فضائي
TV Set	93.4	96.3	**95.3**	جهاز تلفزيون
Video Player	10.8	24.1	**19.6**	جهاز فيديو
Number of Observations	**1,361**	**2,607**	**3,968**	**عدد المشاهدات**

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جدول 3: مجموعة من المؤشرات مقارنة بين العامين (2004، 2006)
Table 3: A List of Selected Indicators Compared With Years (2004,2006)

Indicator	نسبة التغير Percentage of Change	2006 %	2004 %	المؤشر
Households Who Own Computer	**24.2**	**32.8**	**26.4**	الأسر الفلسطينية التي لديها جهاز حاسوب
Households Who Have Access to Internet	**72.8**	**15.9**	**9.2**	الأسر التي لديها خدمة إنترنت في البيت
Households Who Don Not Have Computer by Main Reasons:				الأسباب وراء عدم اقتناء الأسرة جهاز حاسوب :
High cost of the PC	**-1.3**	77.7	78.7	ارتفاع سعر الحاسوب
No one in the household is qualified to use the computer	**-8.7**	38.6	42.3	لا يوجد أحد مؤهل لاستخدام الحاسوب
Time Wasting	**37.0**	18.5	13.5	يهدر الوقت
Households Who Have Satellite Dish	**8.1**	**80.4**	**74.4**	الأسر التي لديها لاقط فضائي (ستالايت)
Households Who Have Telephone Line	**24.5**	**50.8**	**40.8**	الأسر التي لديها خط هاتف
Households Who Have Mobile Line	**11.3**	**81.0**	**72.8**	الأسر التي لديها خط نقال (محمول)
Persons (10 Years and Over) Who Use the Computer	**42.5**	**50.9**	**35.7**	الأفراد(10 سنوات فاكثر) الذين يستخدمون الحاسوب
Persons (10 Years and Over) Who Use the Internet	**54.6**	**18.4**	**11.9**	الأفراد(10 سنوات فاكثر) الذين يستخدمون الإنترنت

Table 4: Indicators For Research and Development (R&D), 2007

Indicator	القيمة Value	المؤشر
Number of Enterprises Engaged in R&D that completed interview	38	عدد المنشآت العاملة في البحث والتطوير التي اكتملت بياناتها
Response Rate	78.0	معدل الاستجابة
Number of R&D Personnel	1,555	عدد العاملين في البحث والتطوير
Number of R&D Personnel with Full – Time Equivalent FTE	566	عدد العاملين في البحث والتطوير بمعادل الوقت الكامل
Number of Researchers in R&D	981	عدد الباحثين في البحث والتطوير
Number of Researchers in R&D with FTE	280	عدد الباحثين بمعادل الوقت الكامل
Number of Researchers in R&D with FTE Per 10,000 in habitants	1.2	عدد الباحثين بمعادل الوقت الكامل لكل 10,000 نسمة
Number of Researchers (Males) in R&D with FTE	187	عدد الباحثين الذكور بمعادل الوقت الكامل
Number of Researchers (Females) in R&D with FTE	93	عدد الباحثين الإناث بمعادل الوقت الكامل
Total Expenditure on R&D (million$)	11.5	الإنفاق على البحث والتطوير (بالمليون دولار أمريكي)
Percentage of External Funds for R&D	50.4	نسبة التمويل المباشر من الخارج على البحث والتطوير
Expenditure on R&D Per Researcher with FTE (Thousands $)	41	الإنفاق على البحث والتطوير لكل باحث بمكافئ الدوام الكامل (ألف دولار)
Number of Researches, Studies, and Consultations	982	عدد البحوث والدراسات والاستشارات:
Percentage of Studies and Consultations	46.1	نسبة الدراسات والاستشارات
Percentage of Basic Research	25.8	نسبة البحوث الأساسية (البحتة/الموجهة)
Percentage of Applied Research	18.1	نسبة البحوث التطبيقية
Percentage of Experimental Development Researches	6.3	نسبة البحوث التجريبية
Percentage of Other Researches and Studies	3.7	نسبة البحوث والدراسات الأخرى

*هذه المؤشرات للضفة الغربية فقط، ولم يتسنى للجهاز جمع بيانات عن قطاع غزة بسبب الظروف التي يمر بها القطاع.

**TELECOMMUNICATION
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FOR INFORMATION

SOURCE: National Communication Corporation, Sudan

TITLE: Background paper on the ICT Measurement in Sudan

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**ITU World
Telecommunication/ICT
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Cairo , 2009**

prepared by:

Ola Hamdi Kamil Amin

March 2009

Introduction:

Sudan (officially the **Republic of the Sudan**) is the largest country by area in Africa, and the tenth largest country in the world by area. Its area is 2.5 million sq. km. (967,500 sq. mi.), it consists of 25 states, situated in Northern Africa. The capital is Khartoum. It is bordered by Egypt to the north, the Red Sea to the northeast, Eritrea and Ethiopia to the east, Kenya and Uganda to the southeast, Democratic Republic of the Congo and the Central African Republic to the southwest, Chad to the west, and Libya to the northwest.

People:

◆Population (2008 est.): 40 million.
◆Annual population growth rate (2003-2008): 2.53%.
◆Ethnic groups: black 52%, Arab 39%, Beja 6%, foreigners 2%, other 1%

◆Religions: Islam (Sunni) 70% (in north), indigenous 25%, Christian 5% (mostly in south and Khartoum)

◆Languages: Arabic (official), , English

◆Local dialects like Nubian, Ta Bedawie, diverse dialects of Nilotic, Nilo-Hamitic, Sudanic languages

◆Education: Literacy rate: 61% (2003 est.)

◆Health: birth rate: 34.5/1000; infant mortality rate: 61.0/1000; life expectancy: 58.9; density per sq mi: 45

◆Economic : GDP (2007 est.)$80.71 billion; per capita $2,200. Real growth rate: 7.7%. Inflation: 11%. Unemployment: 18.7% (2002 est)

Telecom sector policy- making and Regulation:

◆Ministry of information and communication:

It supervises The National Telecom. Corporation (NTC) ,The Public Post and Telegram Corporation, The Sudanese Radio and Television Corporation , Sudan News Agency , The External Information Council, SUNA International Relations, Sudan Academy for Communications Sciences and The National Press Council.

◆National telecom. Corporation (NTC):

Established on 2001 to replace the national telecom council . in 2001 the telecom Act was issued. Its responsibilities include organizing the work of operators and service providers; the execution of the ministry politics; to improve the performance of telecom sector . NTC has a board appointed by the council of ministers. NTC is responsible of the universal service fund which was set up in 2004. It has carried out a range of projects including: selling 50,000 computers to families and 10,000 computers to students, both at cost price; and setting up 150 community telecentres in rural areas. It is looking at providing free hot-spots for universities and schools.

◆ National Information Center (NIC) :

Established in 1999 and launched in September 2001 , it comes under the Council of Ministers in the Prime Minister's office. It is primarily concerned with the use of ICT in Government.

Market Structure:

Two fixed telephone operators:

◆Sudatel:
established in 1993 and started to provide its services in 1994. It had been the monopolizer for long time now it has a competitor (canar); it connects 205 towns and cities.

◆ Canar : established on 2005; started its commercial operation on 2006 ,uses CDMA wireless , connects 88 towns and cities , and offers line services, wholesale infrastructure capacity and Internet services.

Fixed Subscribers
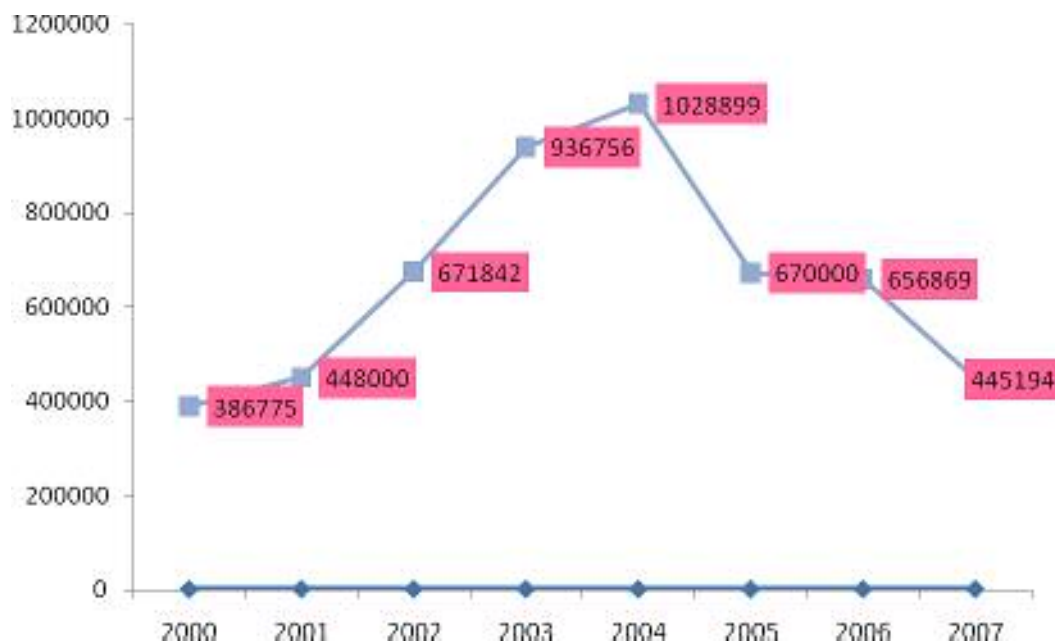
◆Three Mobile operators offer their services nationwide and two mobile operators are licensed to provide their service in southern Sudan:

1. Zain : using GSM and GPRS technologies. It has achieved 58-60% coverage by population.

ZAIN Subscribers Growth
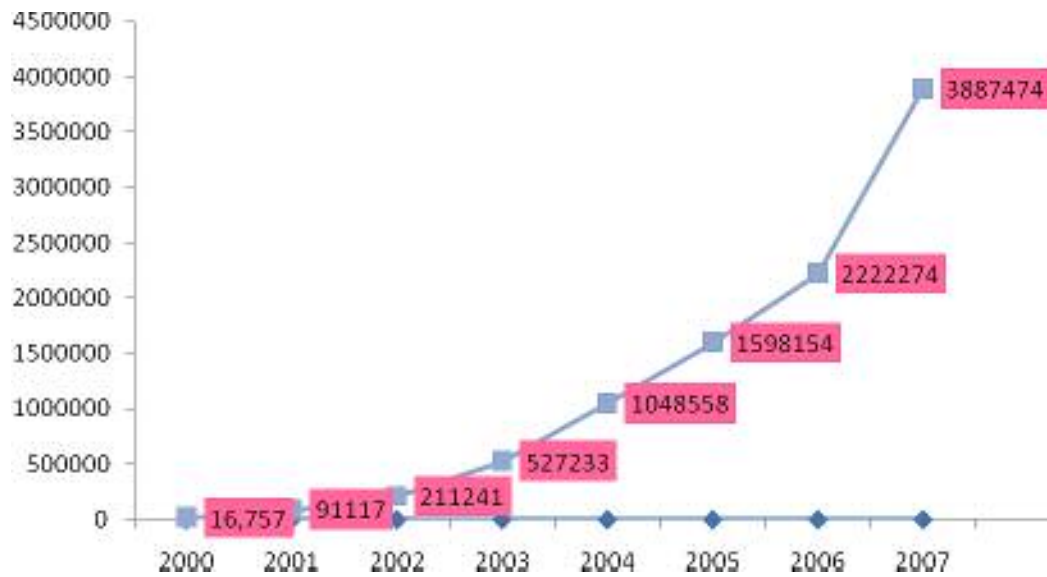
2. MTN : started to provide the service in July 2005 , now it is using GSM technology and 3G .it has achieved 38-40% coverage by population.

3. Gemtel and NOW provide mobile services only in southern Sudan , (Gemtel's subscribers 30,000 in 2008 and NOW has 10,000 subscribers)

MTN Subscribers Growth
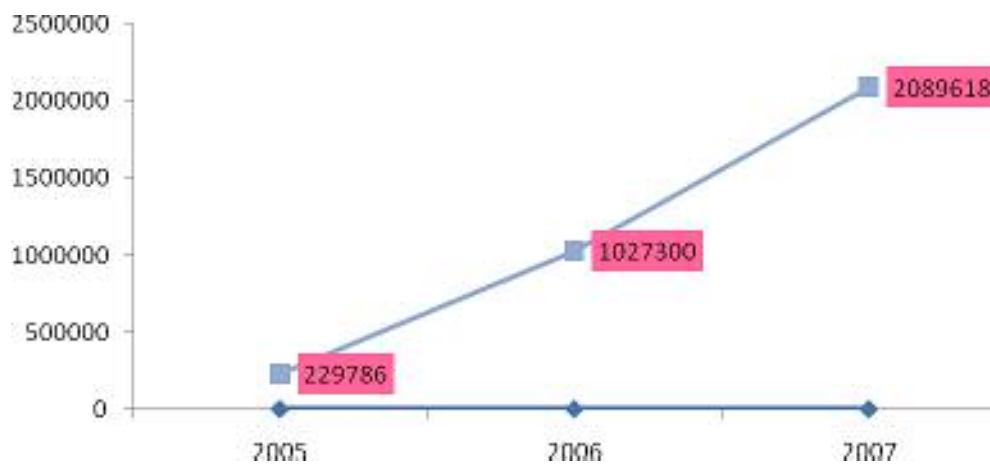
4. Sudani established recently (2006), owned by Sudatel and using its infrastructure: using CDMA technology.

Total number of mobile subscribers
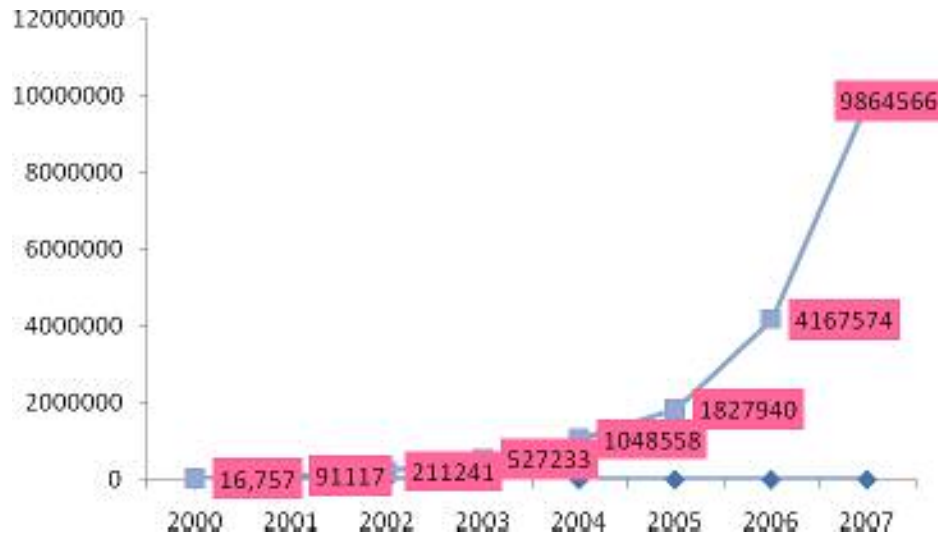
- 21 licensed ISPs , but only 6 of them still offering the services Canar , Sudatel and four wireless ISPs .
- International internet band width up to June 2008 13,3 Gbps .
- Number of broadband subscribers around 80,000 (2008)
- 17 Pre-paid For Fixed telephone Service Providers.
- 48 Value-added Service Providers.(SMS, IVR, Voicemail)
- 3 technical support providers and 3 AVL providers.

The measurement of ICT in Sudan:

The NTC is responsible for the data collection, dissemination, estimation and forecasting, depending on the operators' periodical reports which are composed for the NTC both quarterly and annually. The reports' formats are designed by the NTC and the operators only fill it .in order to get all the detailed information and free it from the manipulation of the operating companies an additional comprehensive format, that includes all the required information, has been developed since 2oo8, this format report should be submitted with their annual financial statements (Annex 1).

More recently the NTC cooperated with national universities and research institutions to see to what extent ICT has contributed to towards the advancement of socioeconomic development. Thus, a study has been commissioned by NTC and a team from Khartoum university to measure the socio-economic impact of using Mobile . In February 2009 another study has been launched to calculate the ICT indicators for both Households and Business sector across northern Sudan , it is the first survey exclusively dedicated for the ICT indicators .

The last two years witnessed a rising demand for the ICT statistics whether from national NGOs , research institutions and , international organizations , as a result the NTC endeavored to match this demand by providing the needed information , following this policy , the NTC is compiling its first annual report which comprises all the ICT statistics and projection .

(Annex 1)

Operating Revenue

Total revenue	current year	previous year
Subscription Revenue		
Revenue from postpaid subscriptions		
Revenue from prepeid subscriptions		
Airtime Revenue		
Revenue from prepaid outgoing traffic		
Revenue from prepaid incoming (off-net)traffic		
Revenue from prepaid incoming (on-net)traffic		
Revenue from prepaid incoming international traffic		
Revenue from prepaid outgoing international traffic		
Revenue from postpaid outgoing traffic		
Revenue from postpaid incoming international traffic		
Revenue from postpaid outgoing international traffic		
Revenue from postpaid incoming(off-net) traffic		
Revenue from postpaid incoming(on-net) traffic		
Revenue from prepaid national SMS		
Revenue from prepaid international SMS		
Revenue from postpaid national SMS		
Revenue from postpaid international SMS		
Revenue from prepaid MMS		
Revenue from postpaid MMS		
Revenue from postpaid international roaming		
Revenue from prepaid international roaming		
Revenue from GPRS traffic		
Revenue from interconnection with mobile networks		
Revenue from interconnection with fixed networks		
Trading Income		
Revenue from terminals		
Revenue from leased lines		
Revenue from submarine		
Revenue from interconnection with mobile networks		
Revenue from interconnection with fixed networks		

Network Traffic

TRAFFIC	Current Year	Previous year
On- net prepaid peak traffic		
On- net postpaid peak traffic		
On- net prepaid off-peak traffic		
On- net postpaid off-peak traffic		
Incoming Off- net prepaid peak traffic (from mobile network)		
Incoming Off- net postpaid peak traffic(from mobile network)		
Incoming Off- net prepaid peak traffic (from fixed network)		
Incoming Off- net postpaid peak traffic(from fixed network)		
Incoming Off- net prepaid off-peak traffic(from mobile network)		
Incoming Off- net postpaid off-peak traffic(from mobile network)		
Incoming Off- net prepaid off-peak traffic(from fixed network)		
Incoming Off- net postpaid off-peak traffic(from fixed network)		
Outgoing Off- net prepaid peak traffic (to mobile network)		
Outgoing Off- net postpaid peak traffic (to mobile network)		
Outgoing Off- net prepaid peak traffic (to fixed network)		
Outgoing Off- net postpaid peak traffic (to fixed network)		
Outgoing Off- net prepaid off-peak traffic(to mobile network)		
Outgoing Off- net postpaid off-peak traffic (to mobile network)		
Outgoing Off- net prepaid off-peak traffic(to fixed network)		
Outgoing Off- net postpaid off-peak traffic (to fixed network)		
International incoming prepaid traffic		
International incoming postpaid traffic		
International outgoing prepaid traffic		
International outgoing postpaid traffic		
GPRS traffic		
Prepaid National SMS traffic		
Postpaid National SMS traffic		
Prepaid International SMS traffic		
Postpaid International SMS traffic		
Prepaid MMS traffic		
Postpaid MMS traffic		

Network Information

Main Information	
Bussiness brand name	
Technology types	
service specific cost	
project life time	

Workforce data	NO of Employees
total no. of employees	
Engineering	
Customer Service	
Marketing and Product Development	
Sales & Distribution	
IT	
HR	
Administration	

Subscribers	
# of prepaid subscribers of each service	
# of postpaid subscribers of each service	
Average traffic demand per prepaid subs.(busy hours)	
Average traffic demand per postpaid subs.(busy hours)	
Average call duration for prepaid	
Average call duration for postpaid	

Network	
network capacity	
# of BTS	
# of BSC	
# of MSC	
# of Repeaters	
# of share sites	
# of roaming agreements	
Percentage of daily calls attempted during the busy hours	

Number of Busy Hours	
Average duration of a call attempt (minutes)	
Conversion factor (i.e., No of annual call minutes per BHE)	

Technical Information	
No of sectors in cells	
Average capacity per cell (BHE)	
Average No. of TRXs per sector	
Average length of backhaul (Kms)	
Average capacity of backhaul (BHE)	
Average capacity of backhaul (Mbit/s)	
No. of TRXs served by the same BSC	
Average length of the BSC – MSC (Kms)	
Average capacity of the BSC – MSC (BHE)	
Average capacity of the BSC – MSC (Mbit/s)	
Average length of the MSC – MSC (Kms)	
Average capacity of the MSC – MSC (BHE)	
Average capacity of the MSC – MSC (Mbit/s)	
Annual minutes served by each MSC (mln)	

NETWORK COSTING

COSTS	current year	previous year
cost of Radio network equipment		
cost of Aggregation network equipment		
cost of Backhaul network equipment		
cost of Core network transmission and switching equipment		
cost of spectrum		
cost of HLR components		
cost of SMSC		
cost of IN platform		
cost of leased lines		
Cost of submarine Cables		
Cost of buildings & rental		
Depraciation & Amoirtization		
Access network depreciation		
Switching network depreciation		
License amortization		
Site Buildings depreciation		

POUR INFORMATION

ORIGINE: Ministère de l'Economies et des Finances, Sénégal

TITRE: Bilan des sources existantes sur les statistiques relatives au NTIC au Sénégal

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République du Sénégal
Un peuple – Un but – Une foi

MINISTERE DE L'ECONOMIE ET DES FINANCES

ANSD
Agence Nationale de
la Statistique et de la Démographie

Bilan des sources existantes sur les statistiques relatives au NTIC au Sénégal

Février 2009

Les Technologies de l'information et de la Communication (TIC) constituent un secteur important de la vie économique et sociale du fait de leur fort potentiel de croissance. A ce titre, elles sont, dans le cadre de la Stratégie de Croissance Accélérée (SCA), un facteur déterminant de croissance économique, pouvant contribuer à l'atteinte des OMD et plus particulièrement à la réduction de la pauvreté. Ce rôle catalyseur des TIC dans la stratégie de développement du pays justifie une connaissance plus approfondie de son environnement pour mieux cerner l'état de leur utilisation ainsi que les principaux usages qui en sont faits, pour améliorer sa fonction par des actions mieux ciblées.

Le Sénégal connaît un développement accru du recours au NTIC, surtout dans les cinq dernières années. Toutefois, on constate qu'il n'existe pas encore un système permanent de collecte de données ayant comme objectif la mesure de l'impact des NTIC dans le développement, tant au niveau macro que micro.

Nonobstant ce fait, l'Office National de la Statistique collecte régulièrement, et ce par le biais des recensements et enquêtes sociodémographiques et économiques réalisées jusqu'ici, des informations pouvant aider à mesurer le degré de pénétration des NITC au niveau des ménages.

I.- Les sources de données statistiques permettant d'évaluer la pénétration des NTIC au niveau des ménages.

1. Recensement général de la population et de l'habitat de 1988 (RGPH-88)
2. Enquête sur les Migrations et l'urbanisation au Sénégal – 1993 (EMUS);
3. Enquête sur les priorités au Sénégal de 1991 (ESP) ;
4. Enquête Démographique et de Santé de 1997 (EDS-III) ;
5. Enquêtes Sénégalaises Auprès des Ménages en 1994-1995 et 2001-2002 (ESAM-I et ESAM-II) ;
6. Enquête MICS de 2000
7. Enquête Emploi (volet de 123) du projet PARSTAT (2002) ;
8. Recensement Général de la Population et de l'Habitat de 2002 (RGPH02) ;
9. Enquête Nationale sur le Travail des Enfants de 2005 (ENTE) ;
10. Enquête Démographique et de Santé de 2005[1] (EDS-IV);
11. Enquête de Suivi de la Pauvreté au Sénégal de 2005-2006 (ESPS).

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[1] Réalisée par le Centre de Recherche pour le Développement Humain (CRDH) du Sénégal

Pour chaque type d'enquête, les variables suivis se présentent comme indiqué dans le tableau ci-dessous :

Sources de données	NTIC collectées
RGPH-88	Possession de Télévision Possession de Radio
EMUS 1993	Possession de Télévision Possession de Radio
ESP, 1991	Possession de Télévision Possession de Radio
ESAM-I de 1994-1995	Possession de Télévision Possession de Radio Possession de micro-ordinateur
EDS de 1997	Possession de Télévision Possession de Radio Possession de téléphone
ENQUÊTE MICS de 2000	Possession de Télévision Possession de Radio Possession de téléphone mobile Possession de téléphone non mobile
ESAM-II, de 2001-2002	Possession de Télévision Possession de Radio Possession de micro-ordinateur
Enquête Projet PARSTAT (Emploi, Secteur Informel à Dakar), de 2002	Possession de Télévision Possession de Radio Possession de téléphone fixe Possession de téléphone portable Possession d'ordinateur
RGPH de 2002	Possession de Télévision Possession de Radio Possession de Téléphone
EDS de 2005	Possession de Télévision Possession de Radio Possession d'ordinateur Possession de téléphone Possession de téléphone cellulaire Connexion à Internet
ENTE de 2005	Possession de Télévision Possession de Radio Possession de micro-ordinateur Possession de téléphone Connexion à Internet
ESPS de 2005-2006	Possession de Télévision Possession de Radio Possession de téléphone fixe Possession de téléphone portable Possession d'ordinateur

La pénétration des NTIC dans les ménages, pour ce qui est des deux dernières enquêtes, se présente comme suit :

Enquête Nationale sur le Travail des Enfants 2005

% de ménages ayant accès à un téléphone	38,00%
% ménage ayant un ordinateur	6,50%
% de ménages ayant accès à un téléviseur	38,50%
% de ménages ayant accès à une radio	79,1 %

Enquête de Suivi de la Pauvreté au Sénégal (ESPS) 2005-2006

% ménage ayant un ordinateur	3,70%
% de ménages avec téléphone fixe	16,40%
% de ménages ayant accès à un téléphone mobile	43,80%
% de ménages ayant accès à un téléviseur	36,40%
% de ménages ayant accès à une radio	82,80%

ESPS 2005-2006 : la répartition selon les régions révèle une différence notoire qui s'accentue suivant le milieu. En effet, sur 16,4% de ménages qui ont accès à un téléphone fixe, 34,6% sont à Dakar contre 3,6% et 2,4% respectivement à Tambacounda et Kolda. Cette même situation se présente pour l'accès à un ordinateur avec 8% pour Dakar contre 0,7 et 0,6% pour Kolda et Matam. S'agissant du téléphone portable, à part Kolda et Tambacounda, plus de 20% des ménages y ont accès dans les autres régions du Sénégal avec un pic qui Dakar (73,1%).

Accès au TIC : proportion des ménages selon les régions

Région	Pourcentage de ménages disposant ou ne disposant pas de matériels?		
	Téléphone Fixe	Téléphone Portable	Ordina teur
Dakar	34,60%	73,10%	8,00%
Diourbel	13,70%	44,70%	2,10%
Fatick	3,60%	28,80%	1,10%
Kaolack	6,80%	24,10%	2,50%
Kolda	2,40%	12,70%	0,70%
Louga	10,10%	32,10%	0,80%
Matam	8,90%	35,90%	0,60%
Saint-Louis	9,10%	40,00%	2,40%
Tambacounda	6,10%	15,20%	1,20%
Thiès	14,20%	42,60%	3,40%
Ziguinchor	7,20%	25,00%	0,90%
Sénégal	16,40%	43,84%	3,66%

Source : ESPS, 2005-2006

La répartition selon les régions révèle une différence notoire qui s'accentue suivant le milieu. En effet, sur 16,4% de ménages qui ont accès à un téléphone fixe, 34,6% sont à Dakar contre 3,6% et 2,4% respectivement à Tambacounda et Kolda. Cette même situation se présente pour l'accès à un ordinateur avec 8% pour Dakar contre 0,7 et 0,6% pour Kolda et Matam. S'agissant du téléphone portable, à part Kolda et Tamba, plus de 20% des ménages y ont accès dans les autres régions du Sénégal avec un pic qui Dakar (73,1%).

II.- Les TIC dans les Entreprises

L'ANSD, gère une base de données contenant les indicateurs économiques et financiers de près de 4 639 entreprises du secteur moderne qui ont déposé au moins une fois leurs Etats financiers entre 1998 et 2007. Parmi ces unités économiques, 5 041 ont communiqué au moins un numéro de téléphones, 511 d'une adresse e_mail connues (dont 46 avec un site). L'enquête de mise à jour de la deuxième base de données sur les unités économiques n'a pas permis de collecter les données sur la possession et l'utilisation d'ordinateurs dans le cadre professionnel du fait que ces unités, la plupart dans l'informel n'ont pas de local fixe pour l'exercice de leur fonction.

III.- Perspectives

A la demande de l'ARTP, l'ANSD compte mener à partir du second trimestre une enquête intitulée « **ENQUETE NATIONALE SUR LES TIC AU SENEGAL (ENTICS, 2008)** ». L'étude cherchera à couvrir l'utilisation et l'usage des TICS par les populations et les ménages d'une part, et les entreprises d'autre part. A cet égard, compte tenue de la spécificité des domaines, elle sera conduite en deux volets : le volet « ménage et individu » et le volet « entreprises ».

- Pour le Volet « Ménages et Individus » l'ENTICS portera sur un échantillon national de 1 600 ménages dont 640 à Dakar, 480 dans les autres communes du pays et 480 en milieu rural. Le questionnaire comprend les 4 modules ci-dessous:
  - o Le module A : Accès et usages du ménage et de l'individu aux technologies de l'information
  - o Le module B : Accès et usages du ménage et de l'individu à Internet
  - o Le module C : Changement d'operateur mobile
  - o Le module D : Tranches de revenu du ménage
- Volet « Entreprises » : les entreprises non individuelles du secteur moderne en constituent la cible. Cependant, pour une vision globale du sujet, les structures de l'Administration centrale et locale qui sont basées au Sénégal seront aussi enquêtées. Ainsi, l'échantillon total à enquêter sera composé de 3620 unités, réparties comme suit : 3 270 SQS, 225 APU, 125 Collectivités locales. Les indicateurs à renseigner sont classés en indicateurs d'infrastructures, d'accès et d'usage

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

**Document INF/014-E
24 February 2009
Original: English**

7TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, CAIRO, EGYPT, 3-5 MARCH 2009

FOR INFORMATION

SOURCE: Statistics Sierra Leone, Sierra Leone

TITLE: Background Paper Describing the State Of ICT Statistics Collection and Dissemination in Sierra Leone

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Background Paper Describing the State Of ICT Statistics Collection and Dissemination in Sierra Leone

Presented By: Abdul Sawar Bakarr, Dissemination and Archiving Officer, Statistics Sierra Leone

Introduction

Before 1996, all information and communication technology was purely in the hands of SIERRATEL. SIERRATEL is a merger between two national telecommunication companies. These are the Sierra Leone External Telecom which was the gateway to the outside world and Sierra Leone National Telecommunication Company which provided local telecommunication. During this time ICT was limited to fixed line telephones, broadband telephone, telex, telegraphs and fax.

The mid 1990s saw the use of internet with SIERRATELL as the sole internet service provider for individual and institution accessing the internet. In 1996 Datatel emerged using Sierratel's gateway and started providing internet service and digital pay phone service in the capital Freetown. In that same year a Scottish business man, Graham, started a mobile phone company, Mobitel which was analog in nature.

The start of this decade saw the proliferation of ICT use in the country with many internet service providers, mobile phone networks and broadband internet and Satellite providers.

Currently, there is only one fixed telephone line provider, that is, Sierratel which has limited subscriber and coverage. Five Mobile phone companies with 60% nationwide coverage and hundreds of thousands subscribers are in operation in the country. Over ten internet service providers are in the country providing services to urban towns. Also, the five mobile phone companies in the country which are part of the internet service providers provide remote internet service in rural area where they have signal for the cell phone subscribers. They provide services to users residing or working in the remote parts of the country.

Mobile telephone use is high in Sierra Leone especially as land line can be unavailable; people see it as a good way of staying in touch with family, friends, colleagues, customer and clients. Gradually the internet is making research simple for students and researchers and also improving inter-institutional communication. Satellite television network is gradually making some impact on the people of the large towns as they keep abreast with the outside world.

Generally, ICT has increase positive impact on the lives of Sierra Leonean economically, social and morally.

Method of Collecting ICT Statistics

Basically there is no form of collecting ICT statistics in the country. The National Telecommunication Commission (NATCOM), the telecommunication regulatory body in the country and Statistic Sierra Leone are in consultation of having a national survey on GSM services and internet users later this year. This can serve as a spring board in the development of a national database and form of collecting ICT data. Today, the country has a lot of internet and cell phone subscribers and they are increasing on a daily basis. It is apparent that, Sierra Leone has one of the largest mobile phone network operations among the least developed countries in Africa. The increase in ICT subscription has raised concerns for a national survey to be conducted where in the nature, scope, methodology, cost and benefit of these services to the people of Sierra Leone can be addressed.

Currently, the mobile phone companies are doing some form of research which is market strategy. They collect weekly report on the sales and promotion pattern of fellow competitors. This they outsourced local and international consultancy groups.

Since there is no system in place on the collection of ICT Statistics in Sierra Leone, it will be of great importance to ITU to give the technical support to Sierra Leone in the collection of these statistics as it can enhance communication and information in the country as the use of information and communication technology is on the increase.

Dissemination of ICT Statistics

Like the collection of ICT Statistics, dissemination of ICT Statistics is not in place. The invitation of Statistics Sierra Leone to the ICT summit at Cairo, in March this year, is an eye opener on this issue.

As at now, the only form of dissemination which is done by service providers is market promotion. Providing information on issues like service or equipment or subscriber per a given number of inhabitants is like a taboo. Access to information is impossible for these service providers to let you.

Conclusion

Sierra Leone has travelled a long way from a state of monopoly of ICT service by Sierratel to it current proliferation. All walks of life are benefiting in their own little way from ICT service. Commerce, research, leisure, agriculture, mining, families etc are all progressing from these services. The importance of ICT service to these people has shown the need for nationwide survey or census on ICT, development of a national database and a proper dissemination strategy.

INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

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7TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, CAIRO, EGYPT, 3-5 MARCH 2009

FOR INFORMATION

SOURCE: Uganda Communications Commission, Uganda

TITLE: A brief on ICT Data Collection and Dissemination in Uganda

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A brief on ICT Data Collection and Dissemination in Uganda

1. INTRODUCTION

This paper provides an overview of Uganda's ICT data collection and dissemination framework.

2. ICT DATA COLLECTION

2.1 Responsible Government Agencies

ICT data collection falls under the realm of the Uganda Communications Commission, the independent communications sector regulator in Uganda. However the Central Statistics Office provides Macro Economic Statistics like population and national income indicators for the compilation of ICT macro economic contribution as well as penetration indicators.

2.2 Data Collection

Currently ICT data collection by the UCC is largely through quarterly and annual submissions by licensed telecommunications service providers. These submissions follow a prescribed template/ list of indicators that have been defined by the Uganda Communications Commission in the Regulatory Reporting Guideline to fulfill its regulatory and policy advisory functions.

2.3 The Regulatory Reporting Guideline

2.3.1 Objective of the Guideline

The objective of these guidelines is to provide a structured regulatory reporting framework which will enable the Commission to;

- Establish and maintain reference points for evaluating information on the communications sector in relation to policy recommendations and interventions
- Effectively monitor overall sector developments
- Support regulatory decision making processes within the Commission

In addition, the guideline also seeks to:

- Enable the comparability of operational information submitted by operators;
- Ensure that operators report to the Commission on a timely, consistent and accurate basis;
- Assist operators/licensees to better understand UCC's information requirements and regulatory functions.

A brief on ICT Data Collection and Dissemination in Uganda

The Regulatory Reporting Guideline seeks to ensure that licensees provide detailed and consistent data that easily translates into useful information for the execution of the Commission's functions and obligations.

The guideline defines reporting obligations for;

- National Telephone Operator (NTO) Licensees
- Public Infrastructure Provider Licensees
- Public Service Provider Licensees

2.3.2 **Legal mandate**

The guideline is premised on the mandate provided within the Communications Act. Specifically sub sections 4 (b) and 4 (e) of the Uganda Communications Act mandate the Commission to "to monitor, inspect, license and regulate communication services" and "to supervise and enforce license conditions" while section 48 of the same prescribes annual reporting requirements for licensees in a manner determined by the Commission from time to time.

In addition, the various licenses issued by the Commission have reporting and record keeping requirements clauses within them. These include;

- Section 17 of the PIP[1] license that prescribes record keeping and reporting requirements for PIP Licensees
- Section 12 of the PSP license that prescribes record keeping and reporting requirements for PSP licensees
- Section 6.7 (a) of the CTO license states that "The licensee shall comply with information requests of and inspection procedures and reporting requirements established from time to time by the Commission"
- Section 7.16 of the NTO license

2.3.2 Content of Operational Reports

The quarterly reports prescribe indicators on;
- Fixed network access and coverage
- Number and distribution of payphones
- Fixed line traffic including domestic on and off net traffic, international incoming and out going as well as domestic and cross border transit traffic.
- Mobile Cellular Subscribers differentiated by mode of payment and network type.
- Mobile network switching capacity
- Mobile signal coverage and distribution of BTS
- Network Key QoS indicators
- Mobile traffic including on net, off net, transit and internal traffic
- SMS and MMS

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[1] Public Infrastructure License

A brief on ICT Data Collection and Dissemination in Uganda

- Roaming volumes
- SMS and MMS
- Tariffs for both voice and data services
- Number, size and distribution of fixed internet subscribers
- Number and distribution of public Internet Access Centres
- Details of local and international bandwidth
- Quality of service indicators
- Rates and Charges
- Licensee financial statements and financial performance indicators

A copy of the detailed guideline is attached in Annex 1

2.4 Other Sources of ICT Data

To supplement the data gathered from operator reports, the UCC collects information from;

- Specific studies and surveys undertaken by the Commission for example household and business surveys on ICT usage and penetration, ICT Policy Review studies, ICT Tax studies among others.
- Central Statistics office (mainly demographic and macro economic data)
- Central Bank

2.5 Challenges and Gaps

We currently face the following major challenges in ICT data collection;

- Lack of national/regional standard definitions for ICT indicators.

- Limited incorporation of ICT indicators in national surveys conducted by the Central Statistical Office.

- ICT data gathered is primarily communications related data which may not wholly capture the ICT industry. Collection of information on ICT businesses that may not be communication related like ICT BPOs, networking services, infrastructure vendors etc remains very limited.

- Studies and surveys are limited because of the associated high costs.

- Limited man power training in ICT measurement.

A brief on ICT Data Collection and Dissemination in Uganda

3. ICT STATISTICS DESSEMINATION

The primary mode of ICT data dissemination is quarterly and annual communication sector reviews by the Commission. These are prepared based on submission from operational reports and financial statements submitted by the licensed service providers.

A copy of the 2007/08 Annual review is attached as **Annex 2**. This and more reviews are available online at www.ucc.co.ug

The Commission also compiles and submits annual statistics for compilation of the National Statistical Abstract and the Background to the Budget to enhance national planning and budgeting initiatives.

ICT data may also be availed to the ITU, academia, government institutions and individuals on request.

FOR INFORMATION

SOURCE: Ministry of Information and Communications, Viet Nam

TITLE: The State of ICT Statistics Collection and Dissemination in Viet Nam

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**The State of ICT Statistics Collection and Dissemination
in Viet Nam**

A. The legal frame work

-The Law on Statistic (2003)
-The Law on Information Technology (29th June 2006)
-The Ordinance on Post and Telecommunication (26th May 2002)
-The Degree No 97/2008/ND-CP (28th August 2008) on management, provision and use of Internet services and Electronic Information on Internet
-The Degree No 187/2007/ND-CP (25th December 2007) defining the functions, tasks, powers and organizational structure of Ministry of Information and Telecommunications (MIC).
-The Decision of Prime Minister No 111/2008/QD-TTg (15th August 2008) defining general statistic report for members of government (include MIC).
-The Regulation of MIC and Home Affair No 03/2008/TTLT-BTTTT-BNV (30th June 2008) guiding functions, tasks, powers and organizational structure of Information Communication Unit of Local Government People Committee (ICU).
-The Decision of Ministry of Post and Telematics No 1141/QD-BBCVT (15th December 2006) on ICT statistical report.
-The new version of regulation to replace the decision no 1141/QD-BBCVT is preparing.

B. The status

1. Telecommunication:

VN has 9 Telecommunication Enterprises (network base). Every company makes report monthly.

MIC collects the data monthly and disseminates 2 times annually on web-site.

-The first time is in every January (when MIC annually meeting held). The statistics is only in general e.g. number of subscriber (mobile, fixed) by the end of the previous year, revenue, tax, etc. The data is disseminated by website and annually report of MIC.

-The second time is in May.

The data is also update to the end previous year, but breakdown to provincial and regional level. The data is disseminated by website.

Now MIC is trying to collect and disseminate three times annually. The third time is about October (tentatively). The data is breakdown to provincial and regional level, but update to (30th July).

2. Internet
VN has about 30 ISPs. Every company makes the report monthly.

MIC collects the data monthly and disseminates 2 times annually on web-site, likes the telecommunication data.

MIC is also trying to collect and disseminate the statistics data on Internet three times per year.

The big challenge is that there are so many types of accesses to Internet: Leased line, DSL, Dialup wire-line, Dialup wireless, TV-cable, WAP, prepaid, postpaid, GPRS, Wi-Fi, Wi-max,… how to calculate exactly the number of subscribers and the number of people who use Internet.

3. Information
VN has about more 1100 enterprises. Most of them are small private or joint stock companies.

Every company makes report annually.

MIC collects processes and disseminates the data annually.

The collection and processing data of them are very difficult.

MIC has to use data based on prediction and data from Annually Enterprise Investigation of GSO (General Statistic Office). The collection and processing of data are late and the data is not very exactly.

4. Others
Press, Publishing, Broadcasting

VN has about more than 600 press organization s, 50 publishing houses, 60 TV broadcasting stations and 60 radio broadcasting stations.

MIC collects and disseminates the data annually.

SOME OVERVIEW DATA ON ICT
OF VIET NAM (BY THE END OF 2008)

Telecommunications

Fixed line: 12 millions
Mobile: 70 millions
Total subscriber: 82 millions
Tele-density: 97%

Internet:
ADSL subscribers 2 millions
Number of people who use Internet: 20.6 millions

Total revenues from posts, telecommunications and internet: 92,445 billions VND. Tax-contribution: 11,831 billions VND. (Exchange Rate 1USD~17,500 VND)

SOME DATA ON TELECOMMUNICATION
BY THE END OF 2007

http://www.mic.gov.vn/details.asp?Object=211055455&news_ID=28434683

http://www.mic.gov.vn/admin/assets/docs/TKBCVT_2006-2007.pdf

FOR INFORMATION

SOURCE: National Statistical Office, Zambia

TITLE: Zambia's Status on the Data Collection and Dissemination of ICT Statistics

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Zambia's Status on the Data Collection and Dissemination of ICT Statistics

Catherine Mwape
Acting Senior Systems Analyst
Central Statistical Office
Lusaka: Zambia

March 2009

Table of Content

Zambia as a Country

Zambia is a land-locked country occupying an elevated plateau in South Central Africa. Eight other countries border Zambia: Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Democratic Republic of Congo and Zimbabwe. The country covers a land mass of 752,612 square kilometers. Its population is currently projected at 12.5 million for 2008 and the GDP per capita is estimated to be around USD 1,215 with the literacy rate estimated at 67.2% of the total population based on the 2000 Census of Population and Housing.

Zambia and ICT

Although Zambia has embraced Information, Communication Technology (ICT) quite late, the Zambian government has recognised the role that ICT can play in achieving its Fifth National Development goals as well as the Millennium Development Goals.

To enable the country fully embrace the significance of ICT, the Zambian Government liberalised the ICT sector in order to allow private participants in the running of the economy. Hence the Government through an Act of Parliament (Telecommunications Act No. 23 of 1994) created the Communications Authority to oversee the liberalization of the Telecommunications Industry in the Country. The Authority came into being in July 1994. The main aim was to increase the role of the private sector towards the development of the ICT sector. To this end, the Ministry of Communications and Transport came up with an ICT Policy known as National Information and Communication Technology Policy in April, 2006. The Ministry spearheaded the process of formulating the ICT Policy facilitated by a National Technical Committee comprising experts with varied experience in research and policy analysis, telecommunications, information technology, media as well as legal and regulatory issues. The team was assisted by an international Consultant hired on a short term basis.

To encourage competitive ICT market, the Zambia Communications Authority has so far registered thirteen (13) Internet Service Providers, three (3) Mobile Cellular Service Providers, two (2) Carrier of Carrier Providers (Public Carrier of Carrier are companies that are allowed to sell bandwidth to other entities as a commercial business) and one (1) Fixed Telephone Service Provider. Currently, the Communications Authority is

considering the entrance of a fourth mobile operator on the market. Despite the above mentioned developments in the ICT sector as well as Zambia being a pioneer of Internet in Sub-Sahara Africa, the potential for rapid growth is undermined by inadequate telecommunication infrastructure development across the country, poor telephony accessibility and high access costs.

Current Status of the ICT Statistics Data Collection

ICT being a new concept in Zambia, very little has been done in the area of developing a national ICT statistics database. To date, the Communications Authority of Zambia does the compilation of some data on telecommunications and other ICT sector.

At the National level, the National Statistical Office (NSO) namely the Central statistical Office (CSO) is responsible for the development and maintaining of various statistical databases. The CSO is the mandated government institution responsible for the collection, processing, validating, authenticating and disseminating official national statistics, in order to ensure uniformity in concepts, definitions and classifications that could enable the comparison of data at national as well as international level. Overall, the CSO is the databank for the country and therefore has the responsibility of publishing statistical reports.

The CSO works closely with different stakeholders in the planning and designing of methodologies that are applied in various surveys for the collection of primary data as well as conducting periodical workshops and training for the development and updating skills of statistical personnel in the country. This network of stakeholders includes; data suppliers, data producers and users of statistics and together they form the National Statistical Systems (NSS) in the country. The NSS encompasses the statistical outputs produced, and the organisations and people involved. The basic concept of NSS is to bring together the most important indicators and datasets within a well planned and well coordinated framework, which provides users with assurances about data quality and integrity.

However, the current NSS in Zambia is not coordinated and harmonised in the collection and provision of the required statistics for effective and efficient monitoring and evaluation of the development programmes. Therefore, the Government has embarked on the formulation of a National Strategy for the Development of Statistics (NSDS) which is being

spearheaded by the CSO. The NSDS is the coordination mechanism which provides a vision on which the NSS should be based. The NSDS is being developed upon the foundation assessments of user needs and perceptions, data quality, legal, institutional and co-ordination arrangements, statistical capacity, and an analysis of strengths and weaknesses of the system, as well as opportunities and threats to the development of the system. The NSDS aims at providing a holistic, coherent and comprehensive framework for improving the NSS and developing official statistics in the country in a sustainable manner. The NSDS is expected to:

- Bring about the production of required statistics efficiently and effectively which will ensure that data is collected, analysed, compiled and disseminated in a consistent and coherent manner.
- Provide a framework for strengthening the statistical capacity across the NSS including mobilising, harnessing and leveraging resources.
- Form the basis for effective and out-put oriented management of the NSS.

Despite being responsible for disseminating official national statistics, the CSO, has never conducted an independent ICT national survey. However, it has incorporated a few ICT elements in previous surveys such as the Living Conditions Monitoring Surveys and the Labour Force surveys. In view of the above, the CSO through its proposed NSDS has planned to undertake a National ICT survey within the period 2009 to 2013 to enable the office come up with a national ICT database.

Currently, the only ICT information available at the CSO is the household asset based information obtained on a two year basis through the Living Conditions Monitoring Surveys in which Zambian residents provide information on how many assets they own in terms of Televisions, DVD/VCR, Home Theatres, Radios, Cellular and Landline Phones, Internet Connection, Satellite Dishes/Decoder and Computers.

Besides the limited ICT information available at the CSO, the Communications Authority of Zambia being the government mandated organisation that oversees the Telecommunication Industry in the country, collects and disseminates Telecommunication indicators such as: Mobile Phone Growth Trends in Zambia, Internet and Internet Service Providers (ISPs) Connectivity Data in Zambia and Public Switched Telephone Network (PSTN) Subscription in Zambia. This information is made available through the organisation's website.

About the Central Statistical Office of Zambia

The CSO is a Department under the Ministry of Finance and National Planning and was established by an Act of Parliament, Cap 127, of the laws of Zambia. This Act provides for an elaborate system of data collection and Dissemination of official statistics in Zambia. The department is headed by a Director who is assisted by four Deputy Directors in charge of subject matter Divisions in the following areas: Economic statistics, Social statistics, Agriculture statistics; and Information, Research and Dissemination.

The mission statement for the CSO is to coordinate and provide timely, quality and credible official statistics for use by stakeholders and clients for sustainable development. This mission statement implies that the CSO will play a crucial role in coordinating and delivering the NSS, which will be central to provision of a broad range of statistical data, necessary for monitoring the implementation of national development initiatives.

Summarised Organisation Structure of the Central Statistical Office

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                          │   Director   │
                          └──────┬───────┘
        ┌────────────────┬───────┴────────┬────────────────┐
        ▼                ▼                ▼                ▼
┌──────────────┐ ┌──────────────┐ ┌──────────────┐ ┌──────────────┐
│Deputy Director│ │Deputy Director│ │Deputy Director│ │Deputy Director│
│     IRD      │ │      ES      │ │     SOS      │ │  Agriculture │
└──────┬───────┘ └──────────────┘ └──────────────┘ └──────────────┘
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┌──────────┐ ┌────────────────┐ ┌────────────────┐
│IT Manager│ │  Research and  │ │   Provincial   │
│          │ │Marketing Manager│ │Statistical Offices│
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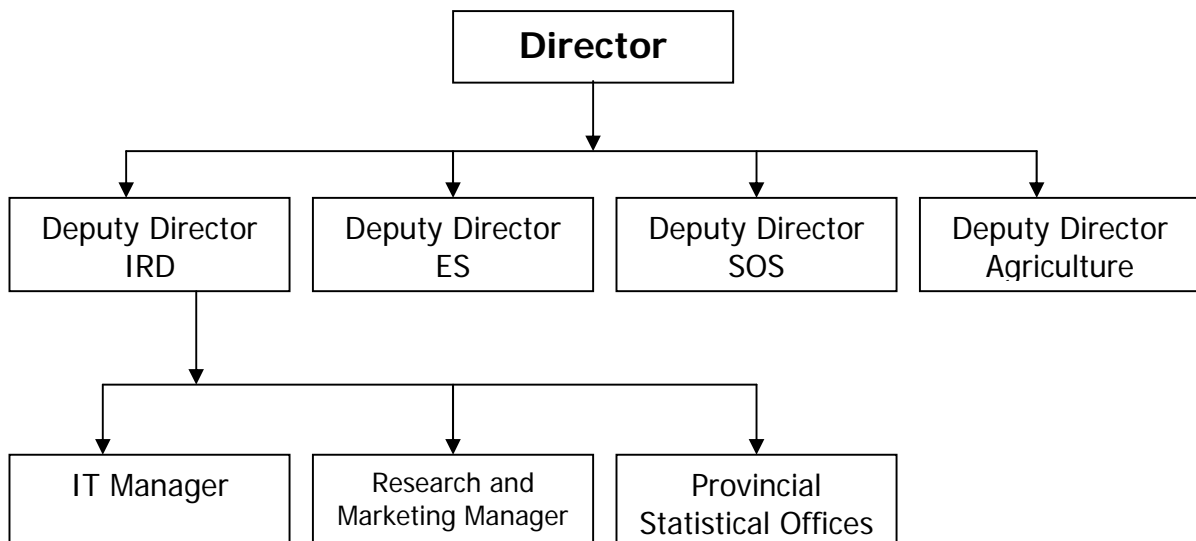
IRD – Information, Research and Dissemination Division
ES – Economic Statistics Division
SOS – Social Statistics Division
IT – Information Technology Manager

Dissemination of Information

As a major supplier of official statistical information, the CSO's work revolves around the collection of statistical information through National Censuses and Surveys.

With the increased demand of statistical information, the CSO disseminates its statistical information to users such as: policy makers in key positions in government ministries including local authorities, the donor community, Civil Society, Non Governmental Organisations (NGO's), and Researchers, Academicians, the media and the general public through the Dissemination Office that falls under the Information, Research and Dissemination Division.

The office also ensures wide availability and usage of statistics through the distribution of reports and, the selling of publications through the Sales Office. Statistical information users are also able to obtain information through the Resource Centre that came into being after the CSO Library merged with that of Zambia Social Investment Funds (ZAMSIF) and Poverty Monitoring Analysis (PMA). The merging of the statistical information collections resulted in an improved and widened range of information. Information users can also get information by visiting the CSO's website on www.zamstats.gov.zm.

The CSO in conjunction with the Ministry of Finance and National Planning also developed a database called the **ZAMBIAINFO** containing various statistical information that can be accessed by users.

Users of the Central Statistical Reports

Like in many other countries, the CSO statistical reports are mainly used by the following users:

- Policy makers and government agencies for planning and decision making;
- Researchers and Academicians for their research reports;
- Business Houses for business projects;
- Non Governmental Organisations (NGO's);
- The media for publicity purposes; and
- International organizations and Donor agencies involved in developmental activities.

Future ICT Plans of the Central Statistical Office

The CSO has planned to develop a reliable National Data Warehouse that could be accessed online by statistical information users. Making data accessible by every user, either in hard or soft copies is the main priority of the CSO.

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

As ICT is a cross-sector activity, the CSO through the planned ICT national survey is looking into possibilities of developing partnership with different stakeholders, both government agencies and private sectors, with a view of obtaining better and accurate information/statistics on ICT sector in order to assist in projecting better facts and figures on Zambian Information Society.

Proposed Logistics for developing an ICT Database

As the CSO just proposed to undertake a national ICT survey within the period 2009 - 2013, no methodology has been developed yet for use in collection of ICT data. As ICT indicators are the best in terms of measuring the information society; CSO therefore needs to develop a national database on ICT indicators based on internationally agreed indicator specifications.

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

Furthermore, the CSO needs to make a provision that could aid in the monitoring of the national information society statistics which in turn would address a number 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. Therefore, there is also need to bring information society measurement into realm of official statistics in order to identify national gap in terms of availability of ICT services.

The CSO also plans for a stronger co-ordination and partnership among stakeholders for the harmonization and expansion of ICT statistics at the national level that could strengthen future policy and analytical work on the development of information society.

Lastly, the CSO intends to embark on capacity building in terms of training statistical personnel and develop statistical compilation programmes on the information society, based on internationally agreed standards.

Expected Knowledge to be Gained from the ICT Meeting

As mentioned earlier on, ICT sector is relatively a new concept in Zambia, therefore, developing a comprehensive ICT indicator will as well be a new concept for the CSO. With this in mind, the CSO through this ICT meeting expects to learn concepts, definitions, standards and methods that were applied in coming up with such indicators by countries that already collect, process and disseminate national ICT indicators. The CSO also expects to learn a lot from individual experts that have participated in such assignments through sharing their previous experiences.

The CSO also looks forward to developing partnership with stakeholder from developed countries in the field of developing a methodology that can be applied in the proposed national ICT survey as well as data processing methods. Such partnership would assist developing countries like Zambia in closing the data gap that exists between developed and developing countries.

Annex 1

ICT Indicators Update in Zambia as at 30th September, 2008

Mobile Phone Growth Trend in Zambia

Year	Country Population	Subscribers	Per 100 Habitants	Mobile Internet	Growth Rate (%)
2000	9, 885,591	49,957	0.505	-	32.47
2001	10,089,492	97,900	0.97	-	95.97
2002	10,409,440	139,258	1.338	-	42.25
2003	10,774,382	204,150	1.895	-	46.60
2004	11,089,691	413,120	3.725	-	102.36
2005	11,441,469	949,558	8.299	-	129.85
2006	11,574,190	1,663,051	14.369	-	75.14
2007	11,708,450	2,639,026	22.539	215,472	58.68
2008	11,900,000	3,207,679	26.955	791,464	21.54

* Source: The Zambia Communications Authority Website

NB: Mobile Internet access in Zambia was introduced in 2007.

Internet and Internet Service Providers connectivity Data – Zambia

Year	Country Population	Total subscribers	Per 100 Inhabitants	Type of Internet		Growth Rate (%)
				Dial-up	Broadband	
2001	10,089,492	8,248	0.082	7,627	621	-
2002	10,409,440	11,647	0.112	10,826	821	41
2003	10,774,382	12,000	0.111	10,857	1,143	3
2004	11,089,691	16,288	0.147	15,334	954	36
2005	11,441,469	10,882	0.095	10,179	703	-33
2006	11,574,190	11,996	0.104	10,067	1,929	10
2007	11,708,450	17,946	0.153	12,578	5,368	49.6
2008	11,900,000	18,078	0.152	12,484	5,671	0.73

* Source: The Zambia Communications Authority Website

PSTN Subscription

Year	Country Population	Subscribers	Per 100 Inhabitants	Per 1000 Inhabitants	Growth Rate (%)
2001	10,089,492	85,680	0.849	8.49	2.83
2002	10,409,440	87,674	0.842	8.42	2.33
2003	10,774,382	88,561	1	10	1.01
2004	11,089,691	90,663	0.818	8.18	2.37
2005	11,441,469	94,665	0.827	8.27	4.41
2006	11,574,190	93,427	0.807	8.07	-1.31
2007	11,708,450	91,789	0.784	7.84	-1.75
2008	11,900,000	90,600	0.761	7.61	-1.29

* Source: The Zambia Communications Authority Website

Annex 2

Questionnaire for Living Conditions Monitoring Survey Household Income and Assets

Percentage distribution of assets owned by residence, Zambia, 2006

Assets	Total Zambia	Rural Areas	Urban Areas
Television	24.1	7.8	54.6
DVD/VCR	10.5	2.0	26.5
Home theatre	2.3	0.5	5.5
Radio	55.6	50.1	65.8
Land Telephone line	1.2	0.2	3.2
Cellular phone	24.2	8.8	53.1
Internet Connection	0.1	0.0	0.1
Satellite Dish/Decoder	3.6	0.7	9.0
Computer	1.8	1.1	3.2

* Source: 2006 Living Conditions Monitoring Survey draft report.

Acronyms

NSO	-	National Statistical Office
CSO	-	Central Statistical Office
NSS	-	National Statistical Systems
NSDS	-	National Strategy for the Development of statistics
ISPs	-	Internet Service Providers
PSTN	-	Public Switched Telephone Network
ZAMSIF	-	Zambia Social Investment Funds
PAM	-	Poverty Monitoring Analysis

INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION DEVELOPMENT BUREAU

Document INF/018-R
24 February 2009
Original: Russian

FOR INFORMATION

SOURCE: National Statistical Service of Armenia, Armenia

TITLE: Contribution

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Опыт Армении по ведению статистики по ИКТ сектору

Вануш Давтян, член Государственного Совета по Статистике Республики Армения, Анаит Сафян, начальник отдела международного статистического сотрудничества Национальной Статистической Службы Республики Армения, e-mail: davtyan@armstat.am, info@armstat.am

Развитие ИКТ технологий является одним из приоритетных направлений в экономике Армении. Для стимулирования развития ИКТ сектора при Правительстве Армении действует Совет по содействию развития ИТ сектора.

В последние годы на рынке Армении появились и успешно действуют многие крупные международные ИКТ компании.

Благоприятным фактором для этого является наличие в стране высококвалифицированных специалистов (это обусловленно тем, что еще со времен СССР в Армении было много НИИ и промышленных предприятий, занимающихся разработкой и внедрением вычислительных устройств и крупных компьютерных сетей), устойчивый рост экономики и относительно дешевая рабочая сила.

Доля ИТ отрасли в ВВП Армении (по данным Министерства экономического развития Республики Армения) на 2005 г. оценивалась как 1,7% . Обьем производства ежегодно возрастает примерно на 12%.

В связи с этим встал вопрос сбора более детальных статистических данных относительно деятельности ИКТ сектора. С этой целью в мае 2005 г. Государственный Совет по Статистике Республики Армения утвердил форму отчетности "ИТ-1" для компаний, работающих в сфере ИТ.

В настоящее время Национальная Статистическая Служба Республики Армения (НСС РА) публикует данные в сфере ИТ по :
- Торговле и услугам в области информационных технологий

(в млн.драм, 1USD = 306 драм):

2003 г.	2004 г.	2005 г.	2006 г.	2007 г.	2008 г.
6898.7	7474.2	11525.3	13529.2	17754.2	20229.1

Для совершенствования методологии по сбору статистических данных относительно деятельности ИКТ сектора НСС РА руководствуется перечнем ключевых показателей сектора электросвязи/ИКТ, принятым Международным Союзом Электросвязи (МСЭ), но пока собирает и публикует, в основном, обобщенные данные, которые представленны, например, в "Статистическом ежегоднике Армении" (http://www.armstat.am/file/doc/99456348.pdf):
- по основным показателям связи (таблица 244)
- по выручке от услуг связи (таблица 245)
- по наличию основных средств в сфере организаций связи (таблица 246).

Имеются данные по обследованию домашних хозяйств за 2004 и 2007 гг.

	Всего		**Город**		**Село**	
	2004 г.	**2007г.**	**2004 г.**	**2007 г.**	**2004 г.**	**2007 г.**
Телевизор	93	97	93	97	92	96
Холодильник	82	87	85	90	78	82
Стиральная машина	70	73	72	75	66	69
Пылесос	33	41	40	47	22	28
Швейная машинка	51	44	50	43	52	45
Спутниковая приемная антенна	3.9	4	3.4	3	4.9	5
Сотовый телефон	5.4	54	7.3	56	1.6	50
Видеомагнитофон	23	32	26	35	16	28
Видеокамера	1.4	3	1.9	3	0.3	2

	Всего		Город		Село	
	2004 г.	2007г.	2004 г.	2007 г.	2004 г.	2007 г.
Фотоаппарат	21	23	26	23	12	23
Музыкальный центр	15	21	19	22	9	18
Компьютер	3.9	8	5.5	11	1.0	1

Доступ к Интернет связи на регулярной основе дома имеют 2.4% домашних хозяйств, не регулярный доступ 2%, и еще 9% имеют доступ к Интернет связи из других мест (публикация НСС РА "Social Snapshot and Poverty in Armenia", 2008).

Имеются также данные по показателям Целей Равития Тысячелетия (ЦРТ), полученным в результате обследований домашних хозяйств, которые выставлены на Интернет сайте НСС РА под заголовком "Armenia MDGs idicators" (www.armstat.am):

Показатели	2000	2001	2002	2003	2004	2005	2006	2007	Источник
47. Количество телефонных каналов и мобильных пользовалей на 100 человек	23572 0.54	23512 0.78	22330 2.24	27635 3.56	27325 6.33	35104 21.12	27850 36.8	25169 57.35	Административный регистр Административный регистр
48. Количество персональных компьютеров на 100 домашних хозяйств		1.6	2.2	2.5	3.9	3.8	5.2	8.0	Интегрированное обследование домашних хозяйств
и Internet пользовалей на 100 человек	0.58	0.21	0.28	0.58	0.56	0.71	0.64	0.60	Административный регистр

По данным Министерства Экономического Развития Республики Армения годовой обьем производства ИТ отрасли в Армении оценивается:

- 2003 г. – 38 млн. долларов США
- 2005 г. – 55-60 млн. долларов США
- 2006 г. - 84 млн. долларов США

В 2005 г. число активно действующих ИТ организаций составило 120, из которых 24 иностранные компании, действующие в Армении. В ИТ отрасли занято было более 4000 человек, в числе которых программисты и компьютерные ученые-инженеры (67%), системные аналитики (6,5%), специалисты компьютерного оборудования (20%) и работающие в ИТ учебных учреждениях ИТ учителя (6,5%).
В других отраслях экономики занято было еще около 2000 ИТ специалистов.

В 2006 г. число активно действующих ИТ организаций составило 200 предприятий, из которых 50 иностранные компании, действующие в Армении. В ИТ отрасли занято было более 5000 человек.

В настоящее время НСС РА в соответствии с международной методологией (Евростат, OECD) предпринимает необходимие меры по разработке и внедрению новых показателей по ИКТ, внедряет необходимые методологические изменения для обеспечения расчета доли ИКТ сектора в ВВП Республики Армения.

Надеемся, что дальнейшее сотрудничество с МСЭ, Евростатом, OECD и другими международными организациями позволит усовершенствовать деятельность НСС РА в области сбора и публикации статистических данных по ИКТ в соответствии с международными стандартами.

FOR INFORMATION

SOURCE: State Statistical Committee, Azerbaijan

TITLE: Information and communication technologies (ICT) statistics in the Republic of Azerbaijan: initial steps, practical works and results

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Information and communication technologies (ICT) statistics in the Republic of Azerbaijan: initial steps, practical works and results

Yusif X.Yusifov
Head of department of the
State Statistical Committee
of Republic of the Azerbaijan
yusify@azstat.org

1. Factors (and stimulus) for creating ICT statistics in Azerbaijan

Mankind has reached its new development stage – information society stage. Which consist of production, dissemination and use of information as a basis of life activity. Rapid increase in the demand for information, wide use of information and communication technologies (ICT) in the world, and serious steps undertaken on a global level in the direction of establishing information society has seriously accelerated the interest on information and communication technologies.

It is not a coincidence that, 2 out of 48 statistical indicators on the objectives to be reached before the year 2015 within the "Millennium Development Goals" adopted by the United Nations General Assembly have been referred to information and communication technologies (ICT).

World Summits on Information Society has been conducted in Geneva 2003 and in Tunis 2005. The President of Azerbaijan participated on summit (Geneva) and called that 'Let's convert black gold to human gold'. ICT was one of the priorities of government since 2003.

Serious works have been carried out in Azerbaijan in the direction of establishing the information society. And this process is still being continued. For this purpose "The National Strategy on the Information and Communication Technologies in the Behalf of the Development of Azerbaijan Republic" has been approved (2003), the Ministry of Communication and Information Technologies of Azerbaijan Republic has been founded on the base of the Ministry of Communication (2003) and other important measures have been implemented. In order to provide the development of communication and information systems and information and communication technologies in Azerbaijan Republic, and has been adopted "State program on the development of communication and information technologies in the Republic of Azerbaijan for 2005-2008 (Electron Azerbaijan)" (2005).

The level of utilization of the information and communication technologies in the society has been increased rapidly and the role of the ICT on the social-economic development of the Azerbaijan has risen. Within the last 5 years (2002-2007) the amount of import of ICT equipments has been increased by 4.3 times while the value added created in ICT sector by 3.8 times, investment to fixed capital by 2.9 times, mobile phone subscribers by 5.7 times and the number of fixed telephone lines by 1.4 times.

The interest and demand for IT are being increased day by day. However, there is insufficient information in the different publications of international organizations the information related with IT statistics. As a result, increase rate of ICT significantly exceeds the official statistics and the statistical measurement of ICT is not adequate with its development, i.e. in spite of the fact that carrying out of ICT policy requires well organized statistics, the suggestion of the statistics is not so significant with respect to users requirement in the framework of the ICT processes.

2. Initials

Current situation of ICT statistics has been discussed between national statistical authorities and policy makers. For example, within the last 3 years issues related with the current situation of ICT statistics and building it has been discussed 7 times in the State Statistical Committee of Azerbaijan Republic and various decisions on more than 30 articles has been adopted (2005-2007).

Theoretical and practical work of foreign countries on this field have been learning including needs of users, indicators system, definitions, questionnaires, survey methods, practice and problems. For this purpose staff of the Committee visited to Latvian NSB in 2005. Also, has been visit of the mission of UNESCAP on ICT statistics 2005 for consultations.

In result, decision of State Statistical Committee has been adopted and was determined responsible for ICT statistics.

3. Logical and theoretically steps

Taking into consideration the above mentioned issues, as well as with the purpose of adequate statistical study of events and processes taking place in the country, "The system of key indicators on Information society (statistics of information and communication technologies) statistics" (1st version) has been prepared by the State Statistical Committee by agreeing with the Ministry of Communication and Information Technologies, the Ministry of Economic Development and the National Academy of Sciences (2006). In order to obtain the information considered in the system of indicators covering more than 200 indicators, organizing the statistical observations among households and enterprises acting in various sectors of economy has taken its start.

"Methodological on information society" prepared by Eurostat has translated into Azeri language (2006).

The questionnaires forms for household survey, methodological recommendations for its filling, and methodological plan of the organization of sample survey in households have been prepared and adopted in order to organize the conduction of sample statistical survey among households (2005). Corresponding statistical questionnaire (report form) and methodological recommendations on its fill up have been prepared with the purpose of organizing the statistical observation among legal entities (2005).

4. Practical steps

List of households and enterprises for survey have been selected. 5.0 thousand households in 2005 and 2006, 6.0 thousand households in 2007 have been selected by the regions of the country on a proportional procedure, random selection method and statistical interviews have been carried out among them. All members of the households at the age of 16 and over have participated in the interview.

Questionnaires have been obtained from all 20.2 thousand acting legal entities in 2005, 24.3 thousand in 2006 and 26.4 thousand in 2007, except agricultural enterprises and trade enterprises with employees less than 5 persons.

Collection of data, control and entry to computer, obtained final data carried out and the data on ICT sector and import and export of ICT goods is processed.

Relevant software's has been prepared.

5. Statistical results.

Has been published official publication first time from CIS countries, 'Information society in Azerbaijan, information and communication technology' (Azeri, English and Russian, 2005-2008) covering new statistical data on the condition of information society in Azerbaijan, ICT usage by households, individuals and enterprises have been obtained in the result of statistical observations. "Core ICT indicators" manual was used for the structure of publication, selection of given information and determining their measurement units, sequence of indicators and carrying out other methodological works in order to meet the international standards and to provide comparison. Therefore, the information is given more briefly and shortly in the introduction part of the publication, in other sections similar and other information has been analyzed in more details and was illustrated in the tables.

In the result of that the information corresponding international standards and meeting the requirements of the government, international organizations and other users was received concerning with IT statistics.

In the results of surveys has been prepared press releases, analithycal reports and has bringing the yearbooks to public notice, filled of questionnaires of UNCTAD, ITU and other users inquiries.

6. Demonstration facts of success

Has invited as expert from Committee to participate in the Expert Group on the "Manual for the Production of Statistics on the Information Economy" in Geneva. Has participate Committee staff in the regional working meeting on "Information society measurement" organized by UN in Bangkok and other seminars and etc.

In connection with result of the work there was held a meeting with the society, where were present representatives of corresponding state and none government agencies.

"The system of key indicators on Information society (statistics of information and communication technologies) statistics" (2nd version) has been improved

Collaboration of the state organizations with statistically has been reached higher position. Ministry of Communication and IT financed publication every year, statistical yearbook distributed participation relevant exhibition.

By level of the availability of the main ICT indicators the Republic of Azerbaijan took 36 (84.4 percent) position amoung of the UN countries. (The Global İnformation Society: a Statistical View 2008, UN http/ www.eclac.org/socinfo)

7. ICT data of Azerbaijan (2005-2007, source – www.azstat.org)

Core indicators	2005	2006	2007
Core indicators on ICT infrastructure and access			
A.1 Fixed telephone lines per 100 inhabitants, units	13	14	15
A.2 Mobile cellular telephone subscribers per 100 inhabitants, abonents	27	39	52
A.3 Computers per 100 inhabitants, units	2.3	3.1	3.7
A.4 Internet users per 100 inhabitants, persons	8	10	11
A.5 Broadband Internet subscribers per 100 inhabitants, persons	...	0.07	0.08
A.6 International Internet bandwith per inhabitant, kbit/s	...	0.06	0.73
A.7 Percentage of population covered by mobile cellular telephone, in percentage	99.0	99.0	99.0
A.8 Internet access tariffs (20 hours per month), and as apersentage of per capita income, in percentage	4.5	2.9	2.4
A.9 Mobile cellular tariffs (100 minutes of use per month), and as a percentage of per capita income, in percentage	16.1	9.7	4.3
A.10 Percentage of localities with public Internet access centres (PIACs) by number of inhabitants (rural/urban)	...	...	...
Core indicators on access to, and use of, ICT by househols and individuals			
HH1 Proportion of households with a radio, in percentage	...	...	17.0
HH2 Proportion of households with a TV, in percentage	98.9	99.0	99.2
HH3 Proportion of households with a fixed line telephone, in percentage	...	...	46.5
HH4 Proportion of households with a mobile cellular telephone, in percentage	...	...	54.0
HH5 Proportion of households with a computer, in percentage	7.3	8.6	10.1
HH6 Proportion of individuals who used a computer, in percentage	15.0	16.8	21.5
HH7 Proportion of households with Internet access at home, in percentage	16.6	21.1	27.8
HH8 Proportion of individuals who used the Internet, in percentage	8.0	9.7	10.7
HH9 Location of individual use of the Internet inthe	a.	a.	a.

last 12 months, in percentage			
HH10 Internet activities undertaken by individuals in the last 12 months, in percentage	a.	a.	a.
Core indicators on use ICT by businesses			
B.1 Proportion of businesses using computers, in percentage	20.5	21.0	22.8
B.2 Proportion of employees using computers, in percentage	4.8	6.7	8.0
B.3 Proportion of enterprises using the Internet, in percentage	3.8	3.9	10.6
B.4 Proportion of employees using the Internet, in percentage	0.9	1.6	2.7
B.5 Proportion of enterprises with a Web presence (Web page, Web site), in percentage	1.2	1.3	2.0
B.6 Proportion of businesses with an intranet, in percentage	...	...	3.8
B.7 Proportion of businesses receiving orders over the Internet, in percentage	...	...	0.9
B.8 Proportion of businesses placing orders over the Internet, in percentage	...	...	…
Core indicators on the ICT sector and trade in ICT goods			
ICT1 Proportion of employees involved in ICT sector, in percentage	1.4	1.7	1.8
ICT2 Proportion of value added of ICT sector in GDP, in percentage	2.2	2.1	1.8
ICT3 ICT goods as imports as a percentage of total imports, in percentage	5.7	7.0	6.9
ICT4 ICT goods as exports as a percentage of total exports, in percentage	0.1	0.1	0.1

INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

**Document INF/020-E
24 February 2009
Original: English**

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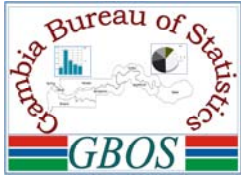
FOR INFORMATION

SOURCE: Gambia bureau of Statistics, Gambia

TITLE: Paper on ICT Statistics Development in GBOS

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PAPER ON ICT STATISTIC DEVELOPMENT IN GBOS

By

MAM DAWDA GAI

DIRECTOR IT

The Gambia Bureau of Statistics (GBoS)

The Gambia bureau of Statistics (GBoS) is a semi autonomous statistic agency under the department of state for Finance and Economic Affairs (DOSFEA). It is the only body in the country entrusted to provide official statistics and is responsible for the collection, compilation, analysis and dissemination of official statistical data. The bureau is as well responsible for Monitoring and coordinating the national statistical system and Carrying out central functions required for all other statistical services.

To better carryout these functions, the bureau shall among others
- Be the principal source of official statistics information
- Provide high quality central statistics information services
- Coordinate statistical policy across government
- Promote standardization in the collection, processing and dissemination of statistics to ensure uniformity in quality, adequacy of coverage and reliability of statistics information
- Provide guidelines, training and other assistance as may be required to other users and providers of statistics
- Promote cooperation, coordination and rationalization among users and providers of statistics at national and local levels to avoid duplication of effort and ensure optimal utilization of scarce resources.

Information Communication Technology (ICT)

The ICT industry is growing fast specifically the Telecommunication sector. The large number of mobile operators in addition to the number of ISP is a clear indication that the industry is growth fast considering the population size of the Gambia about 1.5 million.

Currently there is one fixed line operator and four mobile operators with the forth expecting to start operation this month. There are four ISP operators with more planning to join soon as they have already got the license to operate.

The Department of state for Communication Information and Information Technology (DOSCIIT) is the institution responsible for all policy matters on ICT and The Public Utilities Regulatory Authority (PURA) is mandated to regulate the industry.

Who is responsible for collecting Data?

The Statistics Act 2005 mandates the Bureau to provide official statistics and is responsible for the collection, compilation, analysis and dissemination of official statistical data. However as the bureau is still establishing and the act is new and not fully enforced producer institutions collects and compile data for their

own use. For example DOCIIT would collect data relating to the development of the sector and the PURA would collect data relating to operators, access customers etc. The Bureau collects information on households with access or that owned ICT. Currently most of our statistics is based on administrative data from producer intuitions.

The collaboration with producer institutions can be said to be normal but the main problem is the lack of awareness of the importance of such statistic in most institutions.

GBoS ICT Statistic Unit

The unit responsible for ICT statistics in GBoS is the Tourism, Transport and communication statistic unit under the National Accounts Directorate. This unit is currently staff by one Senior Statistician but recruitment is still ongoing and hopefully someone would be recruited specifically for communications statistics. There is also a Household Survey unit under the directorate of Social Statistics for the coordination of household surveys in collaboration with respective unit. These units will therefore handle any ICT survey.

Data Collection

The primary mode of collecting data for statistic is through surveys especially for household data. Administrative data is also collected for the production of statistics.

At the moment there is no plan for an ICT household survey due mainly to lack of resources though there is the need for one. The only ever survey that can be term as an ICT survey was in 2006 and this being the baseline survey on ICT needs to be followed up with another survey to see the trend. The survey called the scan ICT survey was conducted to measure access, usage and exploitation of ICT. The survey carried out under an Economic Commission for Africa (ECA) project was coordinated by the Departments of State for Finance and Economic Affairs and Communication, Information and Communication technology in collaboration with Central Statistics Department now GBoS. Since the survey not much have been happening in the area of ICT statistics.

Data Collection Challenges

A lot of challenges are face in the production of statistics especially telecommunication statistics, and these includes the following:

- The lack of harmonized processing on the part of the different producers of ICT statistics.
- The lack of qualified staff in the field of ICT statistics.
- Tight budgetary constraints

- The lack of relevant data in producer institution or the little that is available is not systemized.
- Poor response from respondents citing confidentiality of business information lack of authorization etc.

Assistance Needed to Collect ICT Statistic Data

To make ICT data collection happen and successfully, the bureau needs assistance

- To fully setup and organize the ICT statistics unit especially in the area of training and capacity building. This can as well be in form of consultancy where a consultant will be made available to the bureau and partner institution to formulate policies and procedures of collecting ICT statistics data.
- Financially to setup and operate the ICT statistic unit efficiently and to finance a study or ICT household survey.

Statistics Dissemination

The Bureaus attaches a lot of importance to dissemination of statistic with the creation of a department reasonable for Quality, Coordination and Dissemination. The bureau disseminates statistic in three ways online, by publication and by press releases. The two mostly used methods are the online and the publications methods. Statistics is disseminated online with the use of different online dissemination tools and these are
- The GBoS website (www.gbos.gm) that is currently under reconstruction from the old CSD site. This site will be our main online dissemination tool.
- The National Data Archive (GNADA) used to catalogue and disseminate surveys and other administrative data.
- The GamInfo, the Gambian version of DevInfo for cataloguing and dissemination of statistic especially for the monitoring of the MDGs.
- The Statbase, an Ecowas statistical online database for the monitoring and dissemination of harmonized indicators by the Ecowas member states.

Most of the statistic if not all produced by the bureau are disseminate by means of publications mainly in the form of reports.

UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS

BUREAU DE DÉVELOPPEMENT
DES TÉLÉCOMMUNICATIONS

Document INF/021-F
24 février 2009
Original: français

7ÈME REUNION SUR LES INDICATEURS DES TELECOMMUNICATIONS/TIC MONDIALES, LE CAIRE, EGYPTE, 3-5 MARS 2009

POUR INFORMATION

ORIGINE: Agence des télécommunications de Côte d'Ivoire, Côte d'Ivoire

TITRE: Les indicateurs des télécommunications et leur incidence sur la création d'emplois en Côte d'Ivoire

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Document /Contribution

Original :

SOURCE :   Sous Direction des Statistiques de l'ATCI

TITRE :   <u>**LES INDICATEURS DES TELECOMMUNICATIONS ET LEUR INCIDENCE SUR LA CREATION D'EMPLOIS EN COTE D'IVOIRE**</u>

<u>Nom du pays</u> : COTE D'IVOIRE

1)-Population: 19 374 457 habitants(croissance: 3,1%)

2)-Superficie: 322 500 km^2

3)-Nombre de localités

- ✓ Régions   : 19
- ✓ Départements   : 59
- ✓ Sous-préfectures : 257
- ✓ Communes   : 197

Pays de l'Afrique de l'ouest, la Côte d'Ivoire s'étend sur une superficie de 322500 Km^2 Le dernier recensement général effectué en 1998 donnait une population de 15366672 habitants. Avec un fort taux d'accroissement de l'ordre de 3,1% l'an, la population ivoirienne s'établit à ce jour à près de 20 millions d'habitants. Au niveau des circonscriptions administratives, le pays comprend 19 grandes régions, subdivisées en 59 départements comprenant à leur tour 257 sous préfectures. On dénombre par ailleurs 197 communes.

<u>TELEPHONE</u>

Point de contact: Nom/organisation/entité:
                      Numéro de téléphone:
                      Courriel:

4)-Nombre d'opérateurs   Fixe : 01 (Côte d'Ivoire Télécom)

Mobile : 04 (Orange, MTN, Moov, Koz)

Les activités de téléphonie fixe et mobile s'effectuent conjointement sur le territoire ivoirien. **Le marché de la téléphonie fixe** est occupé par deux opérateurs (Côte d'Ivoire Télécom et Arobase Télécom, aujourd'hui rachetée par MTN). Toutefois, l'essentiel des activités est effectué par Côte d'Ivoire Télécom qui, de loin, se présente comme leader de ce marché. Quant au **marché de la téléphonie mobile**, il fut pendant plusieurs années animé par deux (02) opérateurs : Ivoiris, racheté en 2002 par le groupe Orange puis Telecel, racheté en 2005 par MTN. A partir de 2006, on assiste à l'installation d'un nouvel opérateur, Atlantique Télécom (Moov) suivi en 2007 par Comium (Koz). Le dernier né du secteur de la téléphonie mobile s'appelle Grenn ; il a fait son lancement en décembre 2008. A ce jour, ce sont donc cinq (05) opérateurs qui se partagent le marché ivoirien du réseau GSM. Cependant, les données disponibles relèvent que des quatre (04) premiers opérateurs.

5)-Nombre d'abonnés par opérateur (total abonnés fixes – total abonnés mobiles)

	2000	2001	2002	2003	2004	2005	2006	2007
Fixe								
CI Télécom	263 667	293 568	324 839	238 000	257 932	258 515	270 573	247 573
Total Fixe	**263 667**	**293 568**	**324 839**	**238 000**	**257 932**	**258 515**	**270 573**	**247 573**
Mobile								
Orange	214 721	326 220	449 794	639 927	846 906	1 269 977	1 754 688	2 860 407
MTN	245 128	347 026	496 928	599 204	827 426	1 079 462	1 625 408	2 678 678
Moov							685 325	1 324 338
Koz								604 285
Total Mobile	**459 849**	**673 246**	**946 722**	**1 239 131**	**1 674 332**	**2 349 439**	**4 065 421**	**7 467 708**
Total Général	**723 516**	**966 814**	**1 271 561**	**1 477 131**	**1 932 264**	**2 607 954**	**4 335 994**	**7 715 281**

Entre 2000 et 2007, le parc abonné a évolué très rapidement, du moins en ce qui concerne le marché de la téléphonie mobile. Le nombre d'abonnés en téléphone fixe a plutôt eu tendance à se stabiliser autour de 250 000 abonnés, avec de

légères fluctuations en hausse ou en baisse. La véritable évolution a été enregistrée dans le secteur du réseau mobile. A peine 460 000 abonnés en 2000, l'on a enregistré près de 7,5 millions d'abonnés à fin 2007, soit une augmentation spectaculaire de plus 1500%. Cette évolution a connu sa plus grande accélération à partir de 2005 ; la densité téléphonique qui était alors de 12% est passée à 20% en 2006 pour se situer à 37% en 2007. Ce qui témoigne de la couverture très rapide du territoire ivoirien en téléphone mobile. Notons toutefois que le nombre total d'abonnés en réseau mobile se répartit inégalement entre les différents opérateurs comme l'indique bien le graphique ci-dessous élaboré sur la base données disponible à la fin de l'année 2007:
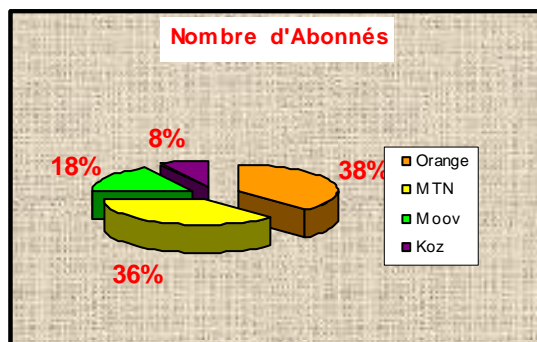
Avec 38% de part de marché Orange CI se positionne comme leader, suivi de MTN puis de Moov.

6)-Emplois directs (personnel des opérateurs : fixe-mobile)

	2000	2001	2002	2003	2004	2005	2006	2007
Opérateur du Fixe(CI Télécom)	2 797	2 456	2 234	1 932	1 636	1 206	1 223	1 225
Opérateurs du Mobile(Ensemble)	751	914	1 244	1 253	1 200	1 210	1 692	2 041
Total Emplois	**3 548**	**3 370**	**3 478**	**3 185**	**2 836**	**2 416**	**2 915**	**3 266**

La structure du marché de l'emploi est matérialisée par le graphique suivant :

EVOLUTION DU MARCHE DE L'EMPLOI DANS LE SECTEUR DE LA TELEPHONIE
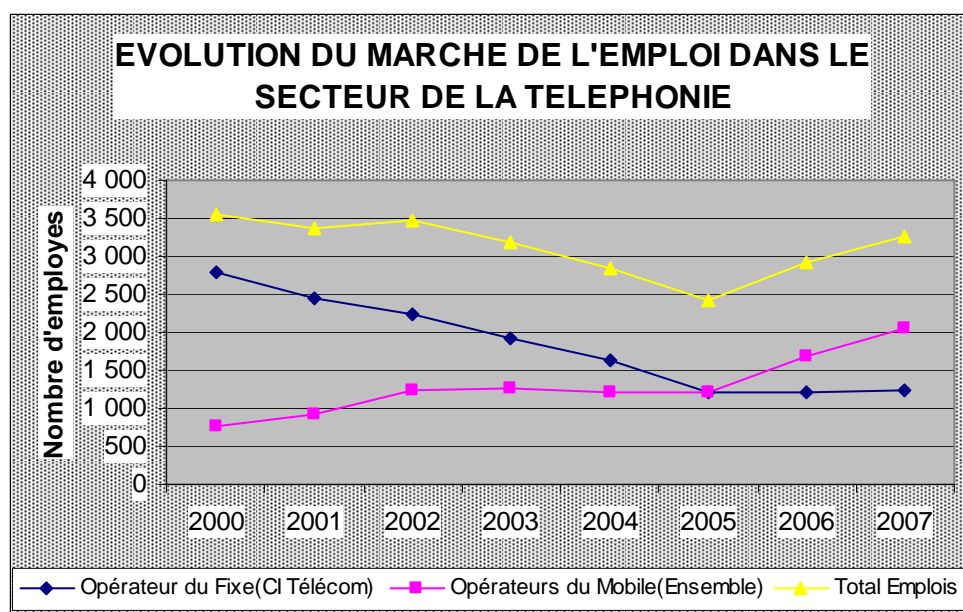
Sur le marché de la téléphonie fixe et celui de la téléphonie mobile, le nombre d'emplois directs évolue en sens opposé. Alors que nous assistons à une baisse continue du nombre d'emplois dans la téléphonie fixe, le mobile quant à lui enregistre une croissance rapide du nombre d'employés. En effet, en 2000 sur un total de 3548 emplois, le secteur du fixe comptait à lui seul 2797 emplois, soit 78% contre seulement 22% pour le mobile. Sept ans plus tard, la situation tend à s'inverser avec 37% d'emplois dans le fixe contre 63% dans le mobile. Toutefois, en combinant les deux secteurs (fixe et mobile) nous assistons à une baisse sensible du niveau de l'emploi surtout entre 2000 et 2005.

Le Rapporteur

Jean Pierre AKA

Sous Directeur des

Statistiques de l'ATCI

INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION
DEVELOPMENT BUREAU

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24 February 2009
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7TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, CAIRO, EGYPT, 3-5 MARCH 2009

FOR INFORMATION

SOURCE: National Computer Board, Mauritius

TITLE: ICT Indicators Situation in Mauritius

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ICT Indicators Situation In Mauritius

Prepared by : Mr Venkatesen Mauree,
　　　　　　　 Manager
　　　　　　　 Planning, Research and Development and CERT-MU

Date : 19th February 2009

1. Introduction

One of the projects which have been identified as a priority project in the National ICT Strategic Plan 2007-11 is the definition of indicators for the ICT sector and the publication of a biennial report on the State of ICT Development which will indicate the current state of ICT exploitation as well as the ICT industry development. This will serve as a valuable tool for policymakers as well as decision makers and will be a good yardstick to measure the progress made in ICT sector and to recommend policy measures which need to be undertaken in order to remediate the situation wherever required. This project is being led by the National Computer Board.

As per the recommendation of the National ICT Strategic Plan (NICTSP) 2007-2011, a National ICT Indicator Taskforce has been set up and chaired by National Computer Board in July 2008.

The taskforce is a multi-stakeholder body entrusted with assuming overall responsibility of monitoring NICTSP initiatives on ICT indicators. The main deliverables to date of the taskforce has been to review the definitions of ICT indicators and align them with the international indicators, to come up with a definition for the ICT Sector and to assign roles for the data collection process for the indicators thus identified.

2. ICT Indicators

Indicators can contribute to three main aspects of ICT policy development:
- Needs assessment;
- Monitoring progress in different economic and social sectors; and
- Providing evaluation and feedback for specific programmes and initiatives.

Indicators are essential for setting policy priorities, measuring progress towards targets, and benchmarking results. Thus, indicators can also be viewed as having a definitional function in terms of setting the parameters of the problem to be addressed. The decision of which indicators are important to collect provides evidence of what is being valued. The definition, design and measurement underlying indicators must be effected in reference to how they are intended to be used.

The ICT indicators have been classified in seven broad categories as follows:

1. Infrastructure Readiness (31 Indicators)

   These indicators depict whether Mauritius has the necessary environment to use the new technologies. This is done by looking at the state of the infrastructure. These indicators would shed light on whether our country has the necessary physical networks and on the level of connectivity to use the new technologies. The regulatory body, the ICT Authority is the main data collecting agency for these indicators. The data is compiled on a quarterly basis based on information supplied by the ICT operators who are licensed by the Authority. The Digital Opportunity Index is

computed based on the data obtained from the ICT Authority and the Central Statistics Office (for data pertaining to ICT Penetration in households).

2. ICT Market Revenue (19 Indicators)

The objective of this group of indicators is to assess the revenue that is derived from ICT goods and related services. ICT market revenue is defined as expenditure by businesses, private households, government and educational institutions to vendors for the following four main ICT segments:-

i.   IT hardware: Servers, Personal Computers (PCs), Mobile Devices workstations, data communications equipment (including LAN hardware), printers, storage devices, bundled operating systems (both single and multi-user) and common add-on peripherals (such as scanners, digital cameras, sound cards for instance).

ii.   IT Software: purchases of all software products and external customisation of computer programmes. This excludes expenses related to the internal customisation of the software and includes system software and utilities, application tools and application solutions. IT Software will include the following segments; customised software and packaged software which itself includes applications software, Systems Infrastructure Software and Software Development Tools.

iii. IT Services: This includes :-
    a. IT Services provided to a corporation by an external agent, above and beyond the services provided by an internal information systems (IS) team. It includes IT consulting, implementation services, operations management, software development, hosting and information technology infrastructure provisioning services, IT training and education, data processing services and IT support services.
    b. Internal IT Spending which comprises the internal portion of the information system operating budgets, internally customised software, capital depreciation and any other expenses related to IT that cannot be tied to a vendor.

iv.   Telecommunications: Expenditure on public network equipment (such as switching, transmission and mobile communications infrastructure), private network equipment (such as telephone sets, PABXs and key systems, mobile and other equipment) and telecommunications services (such as fixed and mobile telephony, switched data, leased lines and ISP services).

The revenue for the ICT market and its segments will be estimated for both the domestic and export market. The total revenue from the domestic and export markets will be the ICT market revenue.

This will enable us to measure the ICT market revenue for local and export market, as well as employment, contribution of the ICT sector to GDP and growth of the ICT

sector. The Central Statistics Office (CSO) and the Registrar of Companies are the main data collection agencies for this category of indicators.

3. ICT Usage in businesses (34 Indicators)

This set of indicators will enable the assessment of the level of utilisation of ICT by different economic sectors. The National Computer Board (NCB) and the Central Statistics Office are the main data collection agencies for this category of indicators. Currently the Central Statistics Office carry out surveys on ICT Usage during their annual Census of Economic Activities targeting large establishments (i.e those employing 10 or more people).

4. ICT Penetration in households (8 Indicators)

The main objective of this group of indicators is to assess the penetration of ICT among the general population and to what extent ICT is changing daily life of Mauritian citizens. The Central Statistics Office is the main data collection agency for this category and the information is collected during the Continuous Multipurpose Household Study. The questionnaire for the study has a section on ICT Penetration in Households and this section is included in the survey every two years. Data is available on ICT Penetration in households every two years.

5. ICT Manpower (16 Indicators)

The importance of a skilled workforce in ICT is growing as we move towards a knowledge based society. This set of indicators will enable us to assess our requirements in terms of manpower to meet the demands of the industry. Data for this category are compiled by the Human Resource Development Council (ICT Manpower Demand side) and by the Tertiary Education Commission (ICT Manpower supply side) on an annual basis.

6. E-Government (9 Indicators)

This set of indicators will enable the assessment of the level of utilisation of ICT by ministries and departments. The Central Informatics Bureau, department of the Ministry of ICT is the main data collection agency for this category.

7. ICT in Education (29 Indicators)

The growing importance of ICT in a knowledge based society implies the need to include ICT in the education curricula at all levels. This set of indicators aims at assessing ICT usage in education to provide a basis for policy planning and programme improvements, specifically demonstrating how ICT is raising standards in education. The indicators for this category are compiled on an annual basis by the Central Statistics Office and the Ministry of Education, Culture and Human Resources.

A National Information and Communication Technology Evaluation and Research Network (NICTERN) comprising people tasked with responsibilities of analysing collected data, undertaking research on various aspects of the NICTSP and produce the State of the ICT Report will be set up by the National Computer Board. The NICTERN will be co-ordinating the collection of data for the various indicators with the data collection agencies identified and analyse and prepare the Biennial State of ICT Report which will contain information about all the indicators and contain an assessment of the impact of current initiatives as well as recommendations on future initiatives and policies which can be implemented.

3. ICT Sector Definition

The ICT Indicators Task Force definition for the ICT sector is based to some extent on the OECD definition of ICT Sector. The definition of the ICT sector was based on the following principles:

For manufacturing industries, the products of a candidate industry:

- Must be intended to fulfil the function of information processing and communication including transmission and display.
- Must use electronic processing to detect, measure and/or record physical phenomena or to control a physical process.

For services industries, the products of a candidate industry:

- Must be intended to enable the function of information processing and communication by electronic means.

Thus, ICT manufacturing + ICT services = ICT sector.

Adoption of these principles led to a definition based on the industrial classes of revision 3 of the International Standard Industrial Classification (ISIC). The classes included in the definition are as follows:

Table 1: ICT sector Definition

Activity Group	ISIC/NSIC[1] Code	Description
Manufacturing[2]	3000	Manufacture of Office, accounting and computing machinery
	3130	Manufacture of insulated wire and cable

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[1] NSIC : National Standard Industrial Classification. 52396 and 74999 are NSIC codes.
[2] Manufacturing will also include Hardware Assembly.

Table 1: ICT sector Definition

Activity Group	ISIC/NSIC[1] Code	Description
	3210	Manufacture of electronic valves and tubes and other electronic components
	3220	Manufacture of TV and radio transmitters and apparatus for line telephony telegraphy
	3230	Manufacture of TV and radio receivers, sound or video reproducing apparatus and associated goods
	3312	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment
	3313	Manufacture of Industrial process control equipment
Wholesale and Retail Trade[3]	5151	Wholesale of computers, computer equipment and software
	5152	Wholesale of electronic and Telecommunications parts and equipment
	52396	Computer Dealers
Telecommunications	6420	Telecommunications
IT Services and IT Enabled Services	7123	Renting of office machinery and equipment (including computers)
	7200	Computer and related activities
	74999 part	Call-Centres[4]

One issue which the task force had to face was how to capture the revenue from organisations engaged in Business Process Outsourcing (BPO) as Mauritius is promoted as a destination for BPO activities and it was noted that these organisations are engaged in various types of activities ranging from back office processing to accounting services, legal and even medical transcriptions. It was also noted that at the level of OECD there is also no classification code for BPO so it was decided to adopt the classifications as depicted by the row *IT Services and IT Enabled Services* in table 1 above for organisations engaged in BPO activities for the time being as it covers the bulk of such activities currently. This definition will need to be reviewed on a periodic basis.

4. National Database of Indicators

Once the definition of the indicators and allocation of data collection responsibilities are done, the next step would be the setting up of a national database on ICT by the National Computer Board. The objective of national databases on ICT is to develop an application that stores a database on ICT and facilitates its access by a wide variety of users in a country. The

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[3] Also includes hardware and software sales

[4] NSIC code 74999 refers to Call Centres only. It does not include organisations involved in Business Process Outsourcing (BPO). There is not an NSIC code for BPO which cuts across all activities.

database will provide details on statutes and regulations of relevance to ICT activities, the status of e-readiness in Mauritius, and ICT usage across different economic sectors, including government and households, the development of the ICT sector as an industry in its own right in terms of turnover, skills profile required, employment generation and segments, and benchmarking of Mauritius against international indices such as the Digital Opportunity Index, the Network Readiness Index, UN E-government Readiness Index and the Knowledge Economy Index of World Bank. This database will collect and store information on all aspects of ICT development.

The National ICT Database would be a key enabler in enabling the monitoring of the extent of digital divide in the Mauritius and would result in the development of a common a set of indicators to assess the state of development of the ICT sector in the country for benchmarking with other countries in the region.

5. Key ICT Indicators for Mauritius

Infrastructure Indicators

Indicator	Sep 2008
Number of Fixed telephone lines	359,955
Number of mobile phone subscribers (prepaid + Postpaid)	971,280
Number of mobile phone subscribers (prepaid)	910,989
Number of Mobile Internet Phone Subscribers: Subscribers to low and medium speed network: GPRS, WAP & Subscribers to high speed (3G) network	93,877
Telephone Traffic - outgoing mobile (million minutes)	941.11
No of SMS sent (million)	601.10
Number of Internet subscribers	163,013
Number of Internet Subscribers for dial-up (Analogue Dial-up)	45,651
Fixed broadband Internet subscribers (Frame Relay & Wireless)	9,459
Incoming Capacity of International Internet Bandwidth (Mbps)	409
Outgoing Capacity of International Internet Bandwidth (Mbps)	400
Ratio of telephone lines per 100 persons	28.60
Ratio of mobile phones per 100 persons	77.04

Digital Opportunity Index

	2005	2006	Sep 2008
Opportunity	**0.97**	**0.97**	**0.97**
Percentage of population covered by mobile cellular telephony	0.33	0.33	0.33

Mobile cellular tariffs as a percentage of per capita income	0.33	0.33	0.33
Internet access tariffs as a percentage of per capita income	0.31	0.32	0.32
Infrastructure	**0.37**	**0.37**	**0.41**
Proportion of households with a fixed line telephone	0.18	0.15	0.15[5]
Mobile cellular subscribers per 100 inhabitants	0.11	0.12	0.15
Proportion of households with Internet access at home	0.03	0.03	0.03
Mobile telephone Internet subscribers per 100 inhabitants	0.01	0.01	0.01
Proportion of households with a computer	0.05	0.05	0.05[6]
Utilization	**0.06**	**0.12**	**0.18**
Proportion of individuals that used the Internet	0.05	0.06	0.06
Ratio of Broadband Internet subscribers to Internet subscribers	0.01	0.05	0.10
Ratio of Broadband mobile subscribers to mobile subscribers	0.00	0.01	0.01
Digital Opportunity Index	**0.47**	**0.49**	**0.52**

ICT Usage in Businesses

Indicator	2006
Percentage of businesses /establishments using computers	91.4
Percentage of businesses with an intranet	35.7
Proportion of businesses using Internet by type of Activity	84.7
Percentage of businesses having a website	38.6
Percentage of businesses receiving orders over the Internet	27.8
Percentage of businesses placing orders over the Internet	29.5

ICT penetration in Households

Indicator	2006
Percentage of households with a television set	95.6
Percentage of households with a fixed telephone	77.4
Percentage of households with a mobile telephone	68.7
Percentage of households with a personal computer	24.2
Percentage of population that use a computer in last 12 months breakdown by age group and gender	31
Percentage of households with Internet access	18

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[5] Latest data available is for Year 2006
[6] Latest data available is for Year 2006

Proportion of households with access to the Internet by type of access	
Dial up	76.0%
ADSL	16.8%
Frequency of use of individual Internet access in last 12 months	
At least once a day	34.5%
At least once a week but not everyday	46.8%
Less than once a month but not every week	13.8%
Less than once a month	4.9%

ICT in Education

Indicator	2007
No of PC per 100 students at Primary schools	1.6
No of PC per 100 students at Secondary schools	4.1
Percentage of primary schools having Internet access for students	5.90
Percentage of secondary schools having Internet access for students	95.2

ICT Manpower

Indicator	2007
No. of persons employed in ICT Sector in Mauritius (ICT Workforce)	10,206
Growth of employment in the ICT sector	5%
ICT Workforce Profile – current	
(a) non-graduate	5,986
(b) graduate	3,229
(c) post-graduate	990
Enrolment ratios at	
(a) Primary level	101
(b) Secondary level	69
(c) Tertiary level	34.1
ICT Professionals output from tertiary institutions	1,110

Annex 1 : Definition of ICT Indicators

1.   Infrastructure Readiness Indicators

It is to be noted that the definitions of the ITU which is the 'supreme' body in telecom related matters have been adopted for these indicators.

Frequency of the updates would be done on a quarterly basis by the ICT Authority, who is the sole data collection agency for these indicators. The indicators for Infrastructure Readiness Indicators are shown in Table 2.

Table 2 : ICT Infrastructure Readiness Indicators

No	Indicator	Definition	Data Collector
1	Number of Fixed telephone lines	A main line is a (fixed) telephone line connecting the subscriber's terminal equipment to the public switched network and which has a dedicated port in the telephone exchange equipment. This term is synonymous with the term main station or Direct Exchange Line (DEL) that are commonly used in telecommunication documents. It may not be the same as an access line or a subscriber. The number of ISDN channels should be included. Fixed wireless subscribers should also be included. If not included, specify in a note.	ICTA
2	Residential monthly telephone subscription cost	Monthly subscription refers to the recurring fixed charge for subscribing to the PSTN. The charge should cover the rental of the line, but not the rental of the terminal (e.g., telephone set) where the terminal equipment market is liberalized. Separate charges should be stated where appropriate, for first and subsequent lines. If the rental charge includes any allowance for free or reduced rate call units, this should be indicated. If there are different charges for different exchange areas, the largest urban area should be used and specified in a note.	ICTA
3	Business monthly telephone subscription cost	Monthly subscription refers to the recurring fixed charge for subscribing to the PSTN. The charge should cover the rental of the line but not the rental of the terminal (e.g., telephone set) where the terminal equipment market is liberalized. Separate charges should be stated where appropriate, for first and subsequent lines. If the rental charge includes any allowance for free or reduced rate call units, this should be indicated. If there are different charges for different exchange areas, the largest urban area should be used and specified in a note.	ICTA
4	Telephone Traffic - local	Local fixed telephone traffic consists of effective (completed) fixed telephone line traffic exchanged within the local charging area in which the calling station is situated. This is the area within which one subscriber can call another on payment of the local charge (if applicable). This indicator should be reported in the number of minutes.	ICTA

Table 2 : ICT Infrastructure Readiness Indicators

No	Indicator	Definition	Data Collector
5	Telephone Traffic - Fixed to mobile	Total outgoing minutes from the national fixed network to the mobile cellular network within the territory.	ICTA
6	Public Pay Phones	Total number of all types of public telephones, including coin- and card-operated and public telephones in call offices. Publicly available phones installed in private places should also be included, as should mobile public telephones. All public telephones regardless of capability (e.g., local calls or national only) should be counted. If the national definition of "payphone" differs from that above (e.g., by excluding pay phones in private places), then respondents should indicate their own definition.	ICTA
7	Total Line Capacity of Local Exchanges	The total capacity of public switching exchanges corresponds to the maximum number of main (fixed) lines that can be connected. This number includes, therefore, main lines already connected and main lines available for future connection, including those used for the technical operation of the exchange (test numbers). The measure should be the actual capacity of the system, rather than the theoretical potential when the system is upgraded or if compression technology is employed.	ICTA
8	Waiting list for main lines (number)	Un-met applications for connection to the Public Switched Telephone Network (PSTN) due to a lack of technical facilities (equipment, lines, etc.). The waitlist should reflect the total number reported by all PSTN service providers in the country.	ICTA
9	Number of mobile phone subscribers (prepaid + Postpaid)	Refers to the use of portable telephones subscribing to a public mobile telephone service and provides access to Public Switched Telephone Network (PSTN) using cellular technology. This can include analogue and digital cellular systems. This should also include subscribers to IMT-2000 (Third Generation, 3G). Subscribers to public mobile data services or radio paging services should not be included. If this service has a name, please indicate in a note, as well as the year the service commenced operation.	ICTA
10	Number of mobile phone subscribers (prepaid)	Total number of mobile cellular subscribers using prepaid cards. These are subscribers that rather than paying a fixed monthly subscription fee, choose to purchase blocks of usage time. Only active prepaid subscribers that have used the system within a reasonable period of time should be included. This period (e.g., 3 months) should be indicated in a note.	ICTA
11	Number of Mobile Internet Phone Subscribers: Subscribers to low and medium speed network: GPRS, WAP & Subscribers to high speed (3G) network	Number of mobile cellular subscribers with access to data communications (e.g., Internet) at low speeds below 256 kbit/s (e.g., GPRS, CDMA 1x (Release 0) etc). WAP and i-mode are services that are enabled by these data communications technologies. These services are typically referred to as 2.5G, although, in the case of CDMA 1x (Release 0), they may also be part of the ITU's IMT-2000 family of 3G services. These include: - General Packet Radio Service (GPRS), a 2.5G mobile standard typically adopted by GSM operators as a migration step towards 3G (W-CDMA). -Wireless Application Protocol (WAP), a protocol for wireless communications that makes it possible to create advanced telecommunications services and to access Internet	ICTA

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Table 2 : ICT Infrastructure Readiness Indicators

No	Indicator	Definition	Data Collector
		pages from a mobile telephone. Number of subscribers to mobile cellular networks with access to data communications (e.g. the Internet) at broadband speeds (here defined as greater than or equal to 256 kbit/s in one or both directions)* such as WCDMA, HSDPA, CDMA2000 1xEV-DO, CDMA 200 1xEV-DV etc. These services are typically referred to as 3G or 3.5G	
12	Cellular monthly subscription cost	The monthly subscription charge for mobile cellular service. Due to the variety of plans available in many countries, it is preferable to use the tariff with the cheapest initiation/connection charge. If prepaid services are used (for those countries that have more prepaid than post-paid subscribers), the monthly subscription charge would be zero. If the plan includes free minutes, this should be put in a note. A note should indicate whether taxes are included (preferred) or not and what the rate is.	ICTA
13	Telephone Traffic - outgoing mobile	Total number of minutes made by mobile subscribers within a country (including minutes to fixed and minutes to other mobile subscribers)	ICTA
14	No of SMS sent	Total number of mobile Short Message Service (SMS) sent, both to national and international destinations.	ICTA
15	Population covered by mobile cellular telephony (%)	Mobile cellular coverage of population in percent. This indicator measures the percentage of inhabitants that are within range of a mobile cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants within range of a mobile cellular signal by the total population. Note that this is not the same as the mobile subscription density or penetration.	ICTA
16	Number of Internet subscribers	The number of total Internet subscribers with fixed access, which includes dial-up, total fixed broadband subscribers, cable modem, DSL Internet subscribers, other broadband and leased line Internet subscribers. Only active subscribers that have used the system within a reasonable period of time should be included. This period (e.g., 3 months) should be indicated in a note.	ICTA
17	Number of Internet Subscribers for dial-up (Analogue Dial-up)	Number of Dial-up Internet subscribers. Dial-up is a connection to the Internet via a modem and telephone line, which requires that the modem dial a phone number when Internet access is needed. Only active subscribers that have used the system within a reasonable period of time should be included. This period (e.g., 3 months) should be indicated in a note.	ICTA
18	Number of Subscribers for ISDN	The number of subscribers to the Integrated Services Digital Network (ISDN). This can be separated by basic rate interface service and primary rate.	ICTA
19	Number of Subscribers for wireless ADSL	Total broadband Internet subscribers refers to a subscriber who pays for high-speed access to the public Internet (a TCP/IP connection), at speeds equal to, or greater than, 256 kbit/s, in one or both directions. If countries use a different definition of broadband, this should be indicated in a note. This total is measured irrespective of the method of payment. It excludes subscribers with access to data communications (including the	ICTA

Table 2 : ICT Infrastructure Readiness Indicators

No	Indicator	Definition	Data Collector
		Internet) via mobile cellular networks.	
20	Number of Subscribers for leased lines	Number of analogue leased line Internet subscribers. Speed should be equal to, or greater than, 256 kbit/s, in one or both directions.	ICTA
21	Other fixed broadband Internet subscribers (Frame Relay & Wireless)	Internet subscribers using other fixed broadband technologies to access the Internet (other than DSL, cable modem and leased lines). This includes technologies such as satellite broadband Internet, Fibre-to-the-home Internet access, Ethernet LANs, fixed-wireless access, Wireless Local Area Network, WiMAX etc. Speeds should be equal to, or greater than, 256 kbit/s, in one or both directions. It would exclude those users of temporary broadband access (e.g., roaming between PWLAN hotspots), and those with Internet access via mobile cellular networks.	ICTA
22	Internet access costs (20 hrs) (Rs)	This indicator refers to the lowest price for 20 hours of dial-up Internet usage per month. It includes the tariff components of monthly line rental, line usage charge and Internet access charge, plus any tax that may be levied (as this is a service used by both residential and business consumers). The tariff chosen for a particular country would be the package for 20 hours per month that is the cheapest, that is widely available (or, in the case of regional service providers, is available in the capital city) and is available to the general public without restriction (e.g., excluding in-company or limited time offers, and excluding offers that are bundled with some other service). It assumes 20 sessions per month of average duration of one hour.	ICTA
23	Incoming Capacity of International Internet Bandwidth (Mbps)	Total incoming capacity of international Internet bandwidth in Mega Bits Per Second.	ICTA
24	Outgoing Capacity of International Internet Bandwidth (Mbps)	Total outgoing capacity of international Internet bandwidth in Mega Bits Per Second.	ICTA
25	Telephone Traffic - Internet Dial-up	The total volume in minutes of dial-up sessions over the public switched telephone network to access the Internet.	ICTA
26	International outgoing total telephone traffic (minutes)	This covers the effective (completed) fixed and mobile traffic originating in a given country to destinations outside that country. The indicator should be reported in terms of number of minutes of traffic.	ICTA
27	International incoming total telephone traffic (minutes)	Effective (completed) fixed and mobile traffic originating outside the country with a destination inside the country. The indicator should be reported in terms of number of minutes of traffic.	ICTA
28	Ratio of Internet users per 100	Total number of Internet users (includes subscribers and users in public places / cybercafes etc) divided by population x 100	ICTA

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Table 2 : ICT Infrastructure Readiness Indicators

No	Indicator	Definition	Data Collector
	persons		
29	Ratio of telephone lines per 100 persons	Total number of telephone lines divided by population x 100	ICTA
30	Ratio of mobile phones per 100 persons	Total number of mobile phones divided by population x 100	ICTA
31	Ratio of broadband per 100 persons	Total number of broadband users (Internet users using connections higher than 256 kbps) x 100	ICTA

The table below maps the Digital Opportunity Index (DOI) to the indicators defined by the task force.

Table 3: Mapping of DOI indicators with the ICT Indicators		
DOI Indicators	**ICT Indicators Category**	
	ICT Infrastructure Readiness	ICT Penetration in Households
Percentage of population covered by mobile cellular telephony	Indicator Number 15	
Internet access tariffs as a percentage of per capita income	Indicator Number 22	
Mobile cellular tariffs as a percentage of per capita income	Derived from Indicator Number 12	
Proportion of households with a fixed line telephone		Indicator Number 2
Proportion of households with a computer		Indicator Number 4
Proportion of households with Internet Access at home		Indicator Number 6
Mobile cellular subscribers per 100 inhabitants	Indicator Number 30	
Mobile Internet subscribers per 100 inhabitants	Indicator Number 11	
Proportion of individuals that used the Internet	Indicator Number 16	
Ratio of fixed broadband subscribers to total Internet subscribers	Indicators Number 28 and 31	
Ratio of mobile broadband subscribers to total mobile subscribers	Indicators Number 9 and 11	

The Score for Mauritius improved to 0.56 in 2007 from 0.50 in 2006 as per the Economic and Social Indicators Report from the Central Statistics Office released in August 2008. Improvements were noted in all the three sub-indices constituting the DOI. Thus, the "Opportunity" sub-index increased to 0.98 from 0.97, the "Infrastructure" sub-index to 0.42 from 0.38 and the "Utilization" sub-index to 0.27 from 0.16.

According to latest DOI figure for 181 countries compiled by the International Telecommunications Union (ITU), in 2006 Mauritius ranked 58th with a DOI of 0.50 while Republic of Korea with highest DOI of 0.80 ranked first. It is noted that Mauritius ranks highest among African countries.

2. ICT Market Revenue Indicators

The indicators for monitoring the turnover and value added generated by the ICT Industry have been defined in the table below. The frequency of updates is done on an annual basis.

Table 4: ICT Market Revenue Indicators

No	Indicator	Definition	Data Collector
1.	List of companies involved in the exports of ICT services	List of companies involved in the exports of ICT services	Board of Investment
2.	Turnover of establishments in the ICT sector	Turnover is the sum of the turnover of ICT companies in the ICT sector as segmented in table 1: ICT sector Definition.	Registrar of Companies
3.	Turnover of establishments in exports of ICT services	Turnover is the sum of the turnover of ICT companies as per the list from Board of Investment (BOI)	Registrar of Companies
4.	Percentage increase in ICT imports compared to previous year	This indicator is calculated by subtracting the imports of ICT Goods for the previous year from the current year and then dividing it by the previous year and finally multiplying it by 100.	Central Statistics Office (CSO)
5.	Percentage increase in ICT imports compared to previous year	This indicator is calculated by subtracting the exports of ICT Goods for the previous year from the current year and then dividing it by the previous year and finally multiplying it by 100.	CSO
6.	ICT Goods imports as a % of total imports	This indicator is calculated by dividing the imports of ICT goods by the total imports and then multiplying by 100.	CSO
7.	ICT Goods exports as a % of total exports	This indicator is calculated by dividing the exports of ICT goods by the total exports and then multiplying by 100.	CSO
8.	Turnover for IT Hardware and software	This indicator provides the Turnover of establishments with the following ISIC Code : 3000 : Manufacture of Office, accounting and computing machinery 3130 : Manufacture of insulated wire and cable	Registrar of Companies

Table 4: ICT Market Revenue Indicators

No	Indicator	Definition	Data Collector
		3210 : Manufacture of electronic valves and tubes and other electronic components 3220 : Manufacture of TV and radio transmitters and apparatus for line telephony telegraphy 3230 : Manufacture of TV and radio receivers, sound or video reproducing apparatus and associated goods 3312 : Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment 5150 Wholesale of machinery, equipment and supplies 7124 : Renting of office machinery and equipment (including computers) 52396 : Computer Dealers	
9.	Turnover for IT Services and IT Enabled Services	This indicator provides the Turnover of establishments with the following ISIC Code : 7200 Computer and related activities 74999 part Call-Centres The activities for IT Services and IT Enabled Services are grouped into the following: (1) BPO/Call Centre (2) Software Development (3) Consultancy (4) Multimedia	Registrar of Companies
10.	Turnover for Telecommunications	This indicator provides the Turnover of establishments with the following ISIC Code : 6420 Telecommunications	Registrar of Companies
11.	Percentage of Turnover for IT Hardware and Software export markets	Turnover of IT Hardware and Software for exports divide by Total ICT Turnover x 100	Registrar of Companies
12.	Percentage of Turnover for IT Services and IT Enabled Services export markets	Turnover of IT Services and IT Enabled Services for exports divide by Total ICT Turnover x 100	Registrar of Companies
13.	Percentage of Turnover for Telecommunications export markets	Turnover of Telecommunications for exports divide by Total ICT Turnover x 100	Registrar of Companies
14.	Growth rate of IT hardware and software turnover	This indicator is calculated by subtracting the turnover of IT hardware and software for the previous year from the current year and then dividing it by the previous year and finally multiplying it by 100.	Registrar of Companies
15.	Growth rate of IT Services and IT Enabled Services turnover	This indicator is calculated by subtracting the turnover of IT Services and IT Enabled Services for the previous year from the current year and then dividing it by the previous year and finally multiplying it by 100.	Registrar of Companies

Table 4: ICT Market Revenue Indicators

No	Indicator	Definition	Data Collector
16.	Growth rate of Telecommunications turnover	This indicator is calculated by subtracting the turnover of Telecommunications for the previous year from the current year and then dividing it by the previous year and finally multiplying it by 100.	Registrar of Companies
17.	Contribution of value added in the ICT sector to total business sector value added	Value added in the ICT sector divide by Value added in total business sector multiply by 100.	CSO
18.	Value Added in the ICT sector as % of total value added in all sectors	This is calculated by dividing the Value Added in the ICT sector by the total value added in all sectors X 100	CSO
19.	Growth of value added in the ICT sector	Percentage of nominal change adjusted to change in prices	CSO

It is noted that some of the indicators are not readily available. In certain cases, the figures are available but not segmented in the different categories such as hardware sales, software sales and telecommunications as per Table 1: ICT sector Definition.

3. ICT Usage in Businesses Indicators

The table below defines the indicators for the ICT Usage in Businesses. Frequency of updates would be done every two years. Currently there is no agency doing this study covering all businesses. The Central Statistics Office (CSO) carries out a study which provides information about large establishments only (i.e those employing 10 or more people) and this will cover only some of the indicators below. A study will have to be carried out to adequately cover all the indicators.

Table 5 : ICT Usage in Businesses Indicators

No	Indicator	Definition	Data Collector
1.	Percentage of businesses /establishments using computers	A computer includes: a desktop, portable or handheld computer (e.g. a personal digital assistant), minicomputer, and mainframe. A computer does not include equipment with some embedded computing abilities: such as mobile phones or TV sets, nor does it include computer-controlled machinery or electronic tills. The proportion of businesses using computers is calculated by dividing the number of in-scope businesses using computers during the 12-month reference period by the total number of in-scope businesses.	CSO

Table 5 : ICT Usage in Businesses Indicators

No	Indicator	Definition	Data Collector
2.	Breakdown of computer usage by business activity	This indicator indicates how the different industry sector is using computer.	CSO
3.	Percentage of businesses having Local Area Networks	A local area network (LAN) refers to a network connecting computers within a localised area such as a single building, department or site; it may be wireless. The proportion of businesses with a LAN is calculated by dividing the number of in-scope businesses with a LAN by the total number of in-scope businesses.	Study would be outsourced
4.	Percentage of businesses having Wide Area Networks (WAN)	A computer network that spans a relatively large geographical area. Typically, a Wide Area Network (WAN) consists of two or more local-area networks (LANs). Computers connected to a wide-area network are often connected through public networks, such as the telephone system. They can also be connected through leased lines or satellites. The largest WAN in existence is the Internet. The proportion of businesses with a WAN is calculated by dividing the number of in-scope businesses with a WAN by the total number of in-scope businesses.	Study would be outsourced
5.	Percentage of businesses using EDI	No of businesses using Electronic Data Interchange divide by Total number of Businesses x 100	Study would be outsourced
6.	Percentage of businesses using Electronic Transfer of Funds	No of businesses using Electronic Transfer of Funds divide by Total number of Businesses x 100	Study would be outsourced
7.	Percentage of businesses with an intranet	An intranet refers to a network using the same protocol as the Internet and allowing communication within an organisation. It is typically set up behind a firewall to control access. The proportion of businesses with an intranet is calculated by dividing the number of in-scope businesses with an intranet by the total number of in-scope businesses.	CSO
8.	Percentage of businesses having an Extranet	An extranet is a private, secure extension of an intranet running on Internet protocol. It allows selected external users to access some parts of an organisation's intranet. The proportion of businesses with an extranet is calculated by dividing the number of in-scope businesses with an extranet by the total number of in-scope businesses.	Study would be outsourced
9.	Breakdown of Internet Access by business activity	This provides percentage of institutions having Internet Access grouped by their main business activity	Study would be outsourced
10.	Percentage of employees using Computers	This is calculated by dividing the number of employees in the industry sector using computers over the total number of employees in the industry sector	Study would be outsourced

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Table 5 : ICT Usage in Businesses Indicators

No	Indicator	Definition	Data Collector
11.	Percentage of employees using Internet	This is calculated by dividing the number of employees in the industry sector using Internet over the total number of employees in the industry sector	Study would be outsourced
12.	Breakdown of Internet Access and E-mail by Employee Job Occupation	This provides percentage of staff having Internet Access grouped by their Job Occupation	Study would be outsourced
13.	Proportion of businesses using Internet by type of Access	A major aim of this indicator is to present the proportion of in-scope businesses with broadband access, therefore the response categories chosen allow aggregation to narrowband and broadband. As businesses can use more than one type of access service, multiple responses are possible. For international comparability, output is most simply presented as the proportion of in scope businesses using each type of access service, for instance, the proportion of businesses accessing the Internet by DSL. Additionally, output should be available for the aggregations, the proportion of businesses with broadband and narrowband access to the Internet.	Study would be outsourced
14.	Proportion of businesses using Internet by type of Activity	Internet activities are: use of the Internet for getting information (several response categories per the model question below), for sending or receiving emails, for performing Internet banking or accessing other financial services, for dealing with government organisations, for providing customer services and for delivering products online. Businesses can respond in respect of more than one activity. For international comparability, output is most simply presented as the proportion of in-scope businesses undertaking each activity, for instance, the proportion of businesses using the Internet for sending or receiving emails. An alternative presentation is the proportion of business Internet users undertaking each activity.	CSO
15.	Percentage of computerised establishments having a policy for employees regarding usage of ICT Equipment	No of computerised establishments having a policy for employees regarding usage of ICT Equipment divided by the total number of computerized establishments.	Study would be outsourced
16.	Percentage of computerised establishments having a policy for employees regarding usage of Internet	No of computerised establishments having a policy for employees regarding usage of Internet divided by the total number of computerized establishments.	Study would be outsourced
17.	Percentage of computerised establishments having a policy for E-mail Usage	No of computerised establishments having a policy for employees regarding email usage divided by the total number of computerized establishments.	Study would be outsourced

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Table 5 : ICT Usage in Businesses Indicators

No	Indicator	Definition	Data Collector
18.	Percentage of computerised establishments having an IT/IS Security Policy	No of computerised establishments having an IT/IS Security policy divided by the total number of computerized establishments.	Study would be outsourced
19.	Percentage of computerised establishments having adopted IT Security Standards	No of computerised establishments having adopted IT Security standards divided by the total number of computerized establishments.	Study would be outsourced
20.	Most Popular IT Security Standards in use	This indicator measures the most common IT Security Standards in use.	Study would be outsourced
21.	Percentage of computerised establishments having an IT Strategy	No of computerised establishments having an IT strategy divided by the total number of computerized establishments.	Study would be outsourced
22.	Percentage of computerised establishments having a knowledge management strategy	No of computerised establishments having a knowledge management strategy divided by the total number of computerized establishments.	Study would be outsourced
23.	Percentage of businesses having a website	The number of businesses having a Website divided by the total number of in-scope businesses	CSO
24.	Percentage of establishments having their website hosted by a service provider	Percentage of establishments that are outsourcing their websites	Study would be outsourced
25.	Percentage of establishments having their website hosted at work	Percentage of establishments that are hosting their websites on their site	Study would be outsourced
26.	Percentage of establishments doing e-commerce through their website	Percentage of establishments that are offering e-commerce features on their websites.	Study would be outsourced
27.	Number and monetary value of Ecommerce Transactions	Orders include orders received via the Internet whether or not payment was made online. This includes orders received via Web sites, specialised Internet marketplaces, extranets, EDI over the Internet, Internet-enabled mobile phones and email. It also includes orders received on behalf of other organisations	Study would be outsourced

Table 5 : ICT Usage in Businesses Indicators

No	Indicator	Definition	Data Collector
		and orders received by other organisations on behalf of the business. It excludes orders which were cancelled or not completed. It calculates the number of orders that have been placed or received by the establishments.	
28.	Percentage of businesses receiving orders over the Internet	The number of businesses receiving orders over the Internet divided by the total number of in-scope businesses.	Study would be outsourced
29.	Percentage of businesses placing orders over the Internet	The number of businesses placing orders over the Internet divided by the total number of in-scope businesses.	CSO
30.	Value of orders received over the Internet (as a percentage of total value of orders)	The transaction amount of the orders received through the Internet over the total transaction amount of orders received.	CSO
31.	Percentage of ICT Capital budget (Vis a Vis total Capital Budget of Government in the last financial year)	This indicator measures the proportion of ICT investment which is allocated to software, hardware, consultancy, maintenance, Internet access, Intranet, staff training, and E-Commerce compared to GDP.	Ministry of Finance
32.	Proportion of recurrent ICT expenditure (vis a vis total recurrent expenditure in Government in the last financial year)	This indicator measures the proportion of ICT expenditure compared to the government total expenditures	Accountant General
33.	Percentage of ICT Capital budget (Vis a Vis total Capital Budget of the private sector in the last financial year)	This indicator measures the proportion of ICT investment which is allocated to software, hardware, consultancy, maintenance, Internet access, Intranet, staff training, and E-Commerce as a once-off basis in a financial year	Study would be outsourced
34.	Proportion of recurrent ICT expenditure (vis a vis total recurrent expenditure for the private sector in the last financial year)	This indicator measures the proportion of ICT investment which is allocated to software, hardware, consultancy, maintenance, Internet access, Intranet, staff training, and E-Commerce on a yearly basis	Study would be outsourced

It is to be noted that most of these indicators are not readily available and recommendations were made to carry out surveys on an annual basis for collecting data on these indicators.

Note: Data for indicators 3-6, 8-13, 15-22, 24-28, 33 and 34 above, would be collected through a study that would be outsourced.

4. Indicators for ICT penetration in private households

The ICT penetration in private households indicators are defined in the table below and are based on the United Nations definition. Frequency of updates would be done on an annual basis by the Central Statistics Office. The next update is being in December 2008 by the Central Statistics Office.

Table 6 : Indicators for ICT penetration in private households

No	Indicator	Definition	Data Collector
1	Percentage of households with a television set	This indicator refers to television access (not use) by in-scope households. The equipment should be in working order or expected to be returned to working order soon. A TV (television) is a device capable of receiving broadcast television signals, using popular access means such as over-the-air, cable and satellite. A television set may be a standalone device, or it may be integrated into another device, such as a computer or a mobile phone. The percentage of households with a TV is calculated by dividing the number of in-scope households with a TV by the total number of in-scope households. Sub-indicators may be constructed using the household classificatory variables, household composition and household size, for example, the percentage of households with a TV where there are no children under 16.	CSO
2	Percentage of households with a fixed telephone	This indicator refers to fixed line telephone access (not use) by in-scope households. The equipment should be in working order or expected to be returned to working order soon. Fixed telephone lines refer to telephone lines connecting a customer's terminal equipment (E.g. telephone set, facsimile machine) to the public switched telephone network (PSTN) and which have a dedicated port on a telephone exchange. The percentage of households with a fixed line telephone is calculated by dividing the number of in-scope households with a fixed line telephone by the total number of in-scope households. Sub-indicators may be constructed using the household classificatory variables, household composition and household size.	ICTA
3	Percentage of households with a mobile telephone	This indicator refers to access to (not use of) a mobile phone by in-scope households. The equipment should be in working order or expected to be returned to working order soon. Mobile	ICTA

Table 6 : Indicators for ICT penetration in private households

No	Indicator	Definition	Data Collector
		cellular telephones refer to portable telephones subscribing to an automatic public mobile telephone service using cellular technology, which provides access to the PSTN. Users of both post-paid subscriptions and prepaid accounts are included. The percentage of households with a mobile cellular telephone is calculated by dividing the number of in-scope households with a mobile cellular telephone by the total number of in-scope households. Sub-indicators may be constructed using the household classificatory variables, household composition and household size.	
4	Percentage of households with a personal computer	This indicator refers to access to (not use of) a computer by in-scope households. The equipment should be in working order or expected to be returned to working order soon. A computer includes: a desktop, portable or handheld computer (e.g. a personal digital assistant). It does not include equipment with some embedded computing abilities such as mobile phones or TV sets. Nhe percentage of households with a computer is calculated by dividing the number of in-scope households with a computer by the total number of in-scope households. Sub-indicators may be constructed using the household classificatory variables, household composition and household size.	CSO
5	Percentage of population that use a computer in last 12 months breakdown by age group and gender	This indicator refers to use of computers in the previous 12 months by in-scope individuals. That use can be from any location, including work. A computer includes: a desktop, portable or handheld computer (e.g. a personal digital assistant). It does not include equipment with some embedded computing abilities: such as mobile phones or TV sets. The percentage of individuals who used a computer etc is calculated by dividing the total number of in-scope individuals who used a computer from any location in the last 12 months by the total number of in-scope individuals. Sub-indicators may be constructed using the individual classificatory variables, age, gender; highest education level, employment status and occupation.	CSO
6	Percentage of households with internet access	This indicator refers to access to (not use of) the Internet by in-scope households. The connection should be functional (that is, any equipment or software needed should be in working order) or expected to be returned to working order soon. The Internet is a world-wide public computer network. It provides access to a number of communication services including the World Wide Web and carries email, news, entertainment and data files. Access is not assumed to be only via a computer - it may also be by mobile phone, games machine, digital TV etc.	ICTA

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Table 6 : Indicators for ICT penetration in private households

No	Indicator	Definition	Data Collector
		The percentage of households with Internet access at home is calculated by dividing the number of in-scope households with Internet access by the total number of in-scope households. Sub-indicators may be constructed using the household classificatory variables, household composition and household size.	
7	Proportion of households with access to the internet by type of access	This indicator refers to in-scope households and the Internet access service/s they use at home to access the Internet. The response categories are designed to enable aggregation to broadband and narrowband access. Broadband is defined in terms of technologies; more generally, such technologies provide advertised download speeds of at least 256 kbit/s.A major aim of this indicator is to present the proportion of households with broadband access; therefore the response categories chosen allow aggregation to narrowband and broadband. As households can use more than one type of access service, multiple responses are possible. For international comparability; output is most simply presented as the percentage of in-scope households using each type of access service, for instance, the percentage of households accessing the Internet by DSL. Additionally, output should be available for the aggregations, the percentage of households with broadband and narrowband access to the Internet. Alternatively, output could be presented as a percentage of households with Internet access. Sub-indicators may be constructed using the household classificatory variables, household composition and household size.	ICTA
8	Frequency of use of individual internet access in last 12 months	This indicator refers to the frequency of (typical) use of in-scope individuals who used the Internet, from any location including work, in the previous 12 months. Frequency of use can be: at least once a day, at least once a week but not every day, at least once a month but not every week, or less than once a month. For international comparability, output is most simply presented as the proportion of in-scope individuals using the Internet with each frequency, for instance, the proportion of individuals using the Internet at least once a day. An alternative presentation is the proportion of Internet users using the Internet with each frequency. Sub-indicators may be constructed using the individual classificatory variables, age, gender, highest education level, employment status and occupation.	CSO

5. ICT Manpower Indicators

The ICT Manpower Indicators provide a snapshot of the availability and supply of ICT skilled labor for the sector and the skill sets in demand for the growth of the ICT sector.

> *ICT professionals are defined as people who possess at least a 2 year diploma in ICT or in an ICT related field.*

The ICT Manpower Indicators are defined in the table below. Frequency of updates would be done on an annual basis by the Human Resources Development Council (HRDC), CSO, Tertiary Education Commission and Employment Division, Ministry of Labour, Industrial Relations and Employment. The next update would be available in December 2008.

Table 7: ICT Manpower Indicators

No	Indicator	Definition	Data Collector
1.	Total number of ICT Professionals employed in Mauritius	This is the total number of ICT professionals employed in all the different industry sector in Mauritius	HRDC
2.	ICT Professionals intensity distribution by sector	ICT Professionals intensity is the number of ICT professionals employed in the sector divided by the total workforce of the sector.	HRDC
3.	Growth of employment in the ICT sector	This indicator is calculated by subtracting the total employment in the ICT sector for the previous year from the current year and then dividing it by the previous year and finally multiplying it by 100.	HRDC
4.	ICT Professionals Profile – current (a) non-graduate (b) graduate (c) post-graduate	The ICT Professionals grouped by highest academic qualifications achieved, professional ICT qualifications, years of experience and salary range	HRDC
5.	ICT Professionals demand projections for next 3 years by business sector	The forecasted ICT Professionals demand projections by business sector and Professionals profile.	HRDC
6.	Percentage of workforce involved in the ICT sector by gender in large establishment (a) Male (b) Female	This is calculated as a percentage of the total workforce in the ICT sector over the total workforce of Mauritius	HRDC
7.	Number of unemployed ICT professionals	This is calculated from the number of unemployed ICT professionals that are registered at the Employment Division	Employment Division

No	Indicator	Definition	Data Collector
8.	Number of ICT vacancies	This is compilation of the number of ICT vacancies advertised in Mauritius. This figure is obtained from the Employment Division	Employment Division
9.	% of foreign ICT workers over total no of ICT professionals	Number of work permits issued to foreign ICT professionals divide by the Total number of ICT Professionals employed in Mauritius	BOI
10.	Enrolment ratios in (a) primary, (b) Secondary (c) tertiary	No of students in primary, secondary divide by population in that particular age x 100	CSO
11.	Pass rate at (a) primary, (b) SC level (c) HSC Level	Pass rate at CPE, School Certificate and Higher School Certificate.	CSO
12.	Proportion of enrolments in SC and HSC in an ICT field of study (as a % of total number of enrolments) (a) SC (b) HSC	No. of students examined in ICT at SC/HSC divide by Total no. of students examined at SC/HSC exams	CSO
13.	Percentage of students enrolled in tertiary education in an ICT field or an ICT-dominated field (of the total number of students)Both sexes	Number of students enrolled in tertiary education in an ICT field or an ICT- dominated field divided by the total number of students enrolled in tertiary institutions.	TEC
14.	ICT Professionals supply from tertiary institutions.	Planned output of PhDs, graduates and diploma holders in ICT from tertiary institutions.	TEC
15.	Percentage of tertiary education institutions with e-learning courses (of the total number of tertiary education institutions	This is calculated by dividing the number of tertiary education institutions with e-learning courses by the total number of tertiary education institutions.	TEC
16.	% students studying ICT overseas at tertiary level	Number of students studying ICT overseas at tertiary level divide by Number of students studying ICT	TEC

6. E-Government Indicators

The table below defines the indicators identified for the E-government. Frequency of updates would be done on an annual basis by the Central Informatics Bureau (CIB), Central Information System Division and the Government Online Centre (GOC).

Table 8: E-Government Indicators

No	Indicator	Definition	Source
1.	Number of Ministries / Departments with web sites over total	Ministries with a web site are those with a definite URL	CIB
2.	Number of Ministries / Departments with online services over total	Online services are services which are offered using forms which can be filled and submitted directly on the WWW	CIB
3.	Frequency of update of web sites	Number of times web sites of Ministries and Departments are updated per month	CISD/GOC
4.	Frequency of update of Government Portal	Number of times the Government Web Portal is updated per month	GOC
5.	Number of Ministries / Departments which have computerisation projects over total	Computerisation project include processes which are being transformed using IT Systems	CIB
6.	Number of Ministries / Departments which have an e-Business plan over total	An e-government master plan is a comprehensive plan for the implementation of Information Systems and e-Government applications in a Ministry / Department	CIB
7.	Percentage of Ministries / Departments which have implemented an e-government master plan over total	A completed e-government master plan is one whose recommendations have been substantially implemented	CIB
8.	Government capital expenditure on ICT vis a vis total Government capital expenditure	Capital budget on ICT in Government vis-à-vis national budget (Capital)	Ministry of Finance
9.	Government recurrent expenditure on ICT vis a vis total Government recurrent expenditure	Recurrent budget on ICT in Government vis-à-vis national budget (Recurrent)	Ministry of Finance

7. Indicators For ICT in Education

The table below defines the different indicators to measure the ICT usage in Education sector. Frequency of updates would be done on an annual basis by the Ministry of Education, Culture and Human Resources. The next update is expected in November 2008.

Table 9 : ICT in Education Indicators

No	Indicator	Definition	Source
1.	No of PC per 100 students at Primary schools	No. of PCs divide by Total Enrolment in Primary schools multiply by 100.	Ministry of Education
2.	No of PC per 100 students at Secondary schools	No. of PCs divide by Total Enrolment in Secondary schools multiply by 100.	Ministry of Education
3.	Student to Computer ratio in Primary schools	total enrolment of students at primary level divide by Total No of PCs in the primary schools	Ministry of Education
4.	Student to Computer ratio in Secondary schools	total enrolment of students in Secondary schools divide by Total No of PCs at Secondary level	Ministry of Education
5.	Percentage of Primary Schools with a LAN	No of Primary Schools with a LAN divide by Total no. of Primary Schools	Ministry of Education
6.	Percentage of Secondary Schools with a LAN	No of Secondary Schools with a LAN divide by Total no. of Secondary Schools	Ministry of Education
7.	Percentage of Tertiary institutions with a LAN	No of Tertiary institutions with a LAN divide by total Number of Tertiary Institutions	TEC
8.	Percentage of primary schools having Internet access for students	No. of Primary schools providing Internet Access to their students divide by Total no. of primary schools	Ministry of Education
9.	Percentage of secondary schools having Internet access for students	No. of Secondary Schools providing Internet Access to their students divide by Total no. of Secondary schools	Ministry of Education
10.	Percentage of students enrolled in tertiary education having Internet access at their place of study	This is calculated by dividing the number of students enrolled in tertiary education having Internet access at their place of study by the total tertiary enrolment.	TEC

Table 9 : ICT in Education Indicators

No	Indicator	Definition	Source
11.	Percentage of institutions at Primary level having a website	No of institutions at Primary level having a website divide by Total no. of institutions at Primary level	Ministry of Education
12.	Percentage of institutions at Secondary level having a website	No of institutions at Secondary level having a website divide by of institutions at Secondary level	Ministry of Education
13.	Percentage of institutions at Tertiary level having a website	No of institutions at Tertiary level having a website divide by of institutions at Tertiary level	TEC
14.	Percentage of teachers with qualification in ICT at Primary level	No of teachers who have qualification in an ICT field at Primary level	Ministry of Education
15.	Percentage of teachers with qualification in ICT at Secondary level	No of teachers who have qualification in an ICT field at Secondary level	Ministry of Education
16.	Percentage of Teachers who use computers in classroom at primary level	No of Teachers who use computers in classroom at primary level divide by Total number of teachers at primary level x 100	Ministry of Education
17.	Percentage of Teachers who use Internet in classroom at primary level	No of Teachers who use Internet in classroom at primary level divide by Total number of teachers at primary level x 100	Ministry of Education
18.	Percentage of Teachers who use computers in classroom at secondary level	No of Teachers who use computers in classroom at secondary level divide by Total number of teachers at Secondary level x 100	Ministry of Education
19.	Percentage of Teachers who use Internet in classroom at secondary level	No of Teachers who use Internet in classroom at secondary level divide by Total number of teachers at secondary level x 100	Ministry of Education
20.	Percentage of budget for purchase of ICT equipment at primary level	Budgeted amount for purchase of ICT equipment at primary level divide by Total Budget	Ministry of Education
21.	Percentage of budget for expenditure on human resources for ICT at primary level	Budgeted Amount for expenditure on human resources at primary level divide by Total Budget for primary education	Ministry of Education

Table 9 : ICT in Education Indicators

No	Indicator	Definition	Source
22.	Percentage of budget for purchase of ICT equipment at secondary level	Budgeted amount for purchase of ICT equipment at secondary level divide by Total Budget	Ministry of Education
23.	Percentage of budget for expenditure on human resources for ICT at secondary level	Budgeted amount for expenditure on human resources at secondary level divide by Total Budget for secondary education	Ministry of Education
24.	Percentage of schools offering ICT as a field of study in the curriculum at SC level	No of schools offering ICT as a field of study in the curriculum at SC level divide by the total number of schools offering SC	Ministry of Education
25.	Percentage of schools offering ICT as a field of study in the curriculum at HSC level	No of schools offering ICT as a field of study in the curriculum at HSC level divided by the total number of schools offering HSC	Ministry of Education
26.	Percentage of schools using dial-up connection for Internet at primary level	No of schools using dial-up connection for Internet at primary level divide by total number of school x 100	Ministry of Education
27.	Percentage of schools using ADSL/leased line connection for Internet at primary level	No of schools using leased line or ADSLconnection for Internet at primary level divide by total number of school x 100	Ministry of Education
28.	Percentage of schools using dial-up connection for Internet at secondary level	No of schools using dial-up connection for Internet at secondary level divide by total number of school x 100	Ministry of Education
29.	Percentage of schools using ADSL/leased line connection for Internet at secondary level	No of schools using leased line or ADSL connection for Internet at secondary level divide by total number of school x 100	Ministry of Education

7ÈME REUNION SUR LES INDICATEURS DES TELECOMMUNICATIONS/TIC MONDIALES, LE CAIRE, EGYPTE, 3-5 MARS 2009

POUR INFORMATION

ORIGINE: Autorité de Régulation de la Poste et des Télécommunications du Congo,
Rép. Dém. du Congo

TITRE: Contribution de l'ARPTC de la République Démocratique du Congo

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ARPTC

Autorité de Régulation de la Poste et des Télécommunications du Congo

7 ᵉᵐᵉ Réunion de l'UIT sur les indicateurs de télécommunications/TIC dans le monde

Contribution de l'ARPTC DE LA République Démocratique du Congo

Caire, 03 – 05 Mars 2009

Sommaire

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I. CADRE REGLEMENTAIRE

Pour s'aligner dans la marche du monde vers la troisième révolution, celle de l'information, la RDC s'est doté de deux lois indispensables pour le développement harmonieux du secteur de télécommunications:

LOI-CADRE N°013/2002 DU 16 OCTOBRE 2002 SUR LES TELECOMMUNICATIONS EN REPUBLIQUE DEMOCRATIQUE DU CONGO

LOI N°014/2002 DU 16 OCTOBRE 2002 PORTANT CREATION DE L'AUTORITE DE REGULATION DE LA POSTE ET DES TELECOMMUNICATIONS

2003 : mise en place de l'Autorité de Régulation de la Poste et des Télécommunications du Congo (ARPTC) :

elle doit veiller principalement au respect des lois, règlements et conventions en matière de télécommunications; en outre, elle doit contribuer à définir et à adapter conformément aux orientations de la politique gouvernementale, le cadre juridique général dans lequel s'exercent les activités du secteur.

II.Etat de lieux des informations sur les TIC en RDC avant l'organisation de l'ARPTC

Les quelques informations en rapport avec le marché des télécoms proviennent des estimations de quelques institutions publiques et des chercheurs indépendants.

2003-2004 : La nécessité de disposer des informations fiables sur le secteur des télécommunications a stimulé le régulateur a mettre en place un système de récolte de données auprès des opérateurs du secteurs.

Ce processus de récolte repose sur l'article 4 de la loi 014 du 16 octobre 2002, portant création de l'ARPTC, qui stipule que dans le but d'exercer son pouvoir effectif de contrôle, l'Autorité de Régulation peut procéder aux visites des installations, mener des enquêtes et des études, réaliser des expertises ainsi que recueillir toutes les données nécessaires requises à cette fin.

III. PROCESSUS DE COLLECTE DES INDICATEURS

1. Objectifs poursuivis par l'ARPTC par la récolte des informations

- L'objectif principal de cette collecte est de permettre à l'ARPTC de disposer d'une base de données à jour en rapport avec les principaux marchés du secteur à savoir, la téléphonie fixe, la téléphonie mobile et l'Internet.

- Ainsi l'ARPTC peut réaliser des études et mettre à la disposition des services, des organisations ou du grand public, l'état des lieux du secteur et des données pertinentes par l'organisation d'un Observatoire des marchés.

2. Base de travail de l'organisation de la collecte des informations.

La principale base de travail est la liste des indicateurs de l'UIT, toute fois, les organisations régionales et sous régionales des régulateurs constituent aussi une source de référence pour l'ARPTC.

3. Collecte des informations

Ainsi, sur base des listes des indicateurs de l'UIT, l'ARPTC conçoit un formulaire à transmettre aux opérateurs des différents segments de marchés énumérés ci-dessus.

Cependant, certains indicateurs provenant de l'UIT ne sont pas d'actualité en RDC, et certaines situations dans la fourniture de service, sont propres à la RDC.

A. Présentation des différents formulaires établis par segment de marchés.

1. **La téléphonie mobile**

Ce formulaire comporte neuf grandes rubriques reparties sur 4 pages:

➢ Page 1

Cette page récolte les données liées à la caractéristique de l'entreprise notamment:

- L'identification
- Les références de l'autorisation
- La répartition de l'actionnariat en pourcentage
- Les chiffres clés : Chiffre d'affaires, effectif des employés par sexe et par poste, les dépenses d'investissements et les dépenses de fonctionnement.

➢ Page2

La page 2 comprend deux rubriques, à savoir:

1. Ventilation du chiffre d'affaires et dépenses de télécommunications
- la ventilation du chiffre d'affaires par type de services offerts et de clients, revente de capacités et vente de terminaux
- les dépenses liés à l'activité de la période considérée (taxes, redevances, …).

2. Utilisateurs, abonnés et capacités de transport :
- Service de téléphonie : Nombre d'utilisateurs (Prepaid, postpaid, cabines publiques, Edge, GPRS)
- la capacité de transmission (terrestre et satellitaires)
- Interconnexion: nombre de points d'interconnexion.

➢ Page 3

Cette page comprend deux grandes parties:

1. Les données en volumes (trafic en minutes, octets ou nombre):
▪ Voix : intraréseau, interconnexion nationale et internationale (entrant, sortant);
▪ Données :
  1. SMS, MMS : Intraréseau et interconnexion nationale et internationale (entrant, sortant);
  2. Internet : Edge, GPRS

2.Les tarifs
  Cette rubrique concerne les tarifs par type de service et par tranche d'heures si elles existent.

➢ Page 4

Cette dernière page comprend les 4 dernières rubriques :

1. Qualité de service : disponibilité du service et réclamations (heures et nombre)

2. Couverture: Nombre d'agglomérations couverte et configuration du réseau (nombre   d'équipements par type).

3. Données prévisionnelles de l'année ou la période suivante: Données financières
 (chiffre d'affaire, investissement, dépenses, effectif des employés), données commerciales(utilisateurs, trafic, capacité de transport), couverture et équipement à mettre en service.

4. Caractéristiques des équipements et le coordonnées de la personne ayant la charge de remplir le questionnaire.

2 Téléphonie fixe

A l'instar de la téléphonie mobile, ce formulaire comprend 9 rubriques repartie sur 4 pages.
➢ Page 1.

Cette page est consacrée aux caractéristiques :
- L'identification
- Les références de l'autorisation
- La répartition de l'actionnariat en pourcentage
- Les chiffres clés : Chiffre d'affaires, effectif des employés par sexe et par poste, les dépenses d'investissements et les dépenses de fonctionnement.

➢ Page 2.

La page 2 comprend deux rubriques, à savoir:
1. Ventilation du chiffre d'affaires et dépenses de télécommunications
- la ventilation du chiffre d'affaires par type de services offerts et de clients, revente de capacités et vente de terminaux
- les dépenses liés à l'activité de la période considérée (taxes, redevances, ...)

2. Utilisateurs, abonnés et capacités de transport :

- Service de téléphonie : Nombre d'utilisateurs (Prepaid, postpaid, cabines publiques)
- La capacité de transmission (terrestre et satellitaires)
- Interconnexion: nombre de points d'interconnexion.

➤ Page 3.

Trois rubriques se retrouve sur cette page :

1. Les données en volumes (trafic en minutes, nombre):
▪ Voix : intraréseau, interconnexion nationale et internationale (entrant, sortant);
▪ Données :
     SMS, : Intraréseau et interconnexion nationale et internationale (entrant, sortant);

2.Les tarifs
   Cette rubrique concerne les tarifs par type de service et par tranche d'heures si elles existent.

3. Couverture: Nombre d'agglomérations couverte et configuration du réseau (nombre d'équipements par type).

➤ Page 4

   Sur cette page nous avons 3 rubriques:

1.Qualité de service : disponibilité du service et réclamations (heures et nombre)
2.Données prévisionnelles de l'année ou la période suivante:
   Données financières (chiffre d'affaire, investissement, dépenses, effectif des employés), données commerciales(utilisateurs, trafic, capacité de transport), couverture et équipements à mettre en service.

3. Caractéristiques des équipements et les coordonnées de la personne ayant la charge de remplir le questionnaire.

3 Internet

- Neuf rubriques reparties sur 4 page :

➢ Page 1.
- Cette page est consacrée aux caractéristiques de l'entrprise:
- L'identification
- Les références de l'autorisation
- La répartition de l'actionnariat en pourcentage
- Les chiffres clés : Chiffre d'affaires, effectif des employés par sexe et par poste, les dépenses d'investissements et les dépenses de fonctionnement.

➢ Page 2
Trois rubriques :
1. Ventilation du chiffre d'affaires et dépenses de télécommunications
- la ventilation du chiffre d'affaires par type de services offerts et de clients, revente de capacités et vente de terminaux
- les dépenses liés à l'activité de la période considérée (taxes, redevances, …)
2. Utilisateurs, abonnés et capacités de transport :
- Service de téléphonie : Nombre d'utilisateurs (Via Lignes spécialisée, via ADSL, via satellite)
- la capacité de transmission (terrestre et satellitaires)
- Interconnexion: nombre de points d'interconnexion.

3. Les données en volumes (trafic en minutes, nombre):
- Trafic (via LS, via ADSL, via satellite)
- Interconnexion

➤ Page3

Nous retrouvons cinq rubrique sur cette dernière page:

1. Tarifs
- Equipements
- Abonnement
- Services

2. Couverture
- Couverture des agglomérations (nombre)
- Réseau : nombres des équipements du réseau par catégories

3. Qualité de service
- Disponibilité du service (en heures)
- Réclamations (nombre enregistrés, nombre traités, délai moyen de traitement :   en heures)

4. Données prévisionnelles

- Données financières
- Nombre d'abonnés
- Trafic
- Transport et données (capacités terrestres et satellitaires)

5. Caractéristique des équipements

Les coordonnées de la personnes chargée de remplir le formulaires sont demandées vers la fin du formulaires

B. Transmission des formulaires aux opérateurs

La transmission des formulaires est soit trimestrielle, semestrielle ou annuelle selon la natures et l'évolution des certaines informations du marché concerné.

Elle se fait de manière physique : lettre de transmission signée par l'autorité compétente (le président ou son intérimaire) et formulaires marqués du seau de l'ARPTC, ensuite le même formulaire est envoyé par courrier électronique à l'adresses indiquée comme point de contact de l'opérateur concerné

Un délai de deux mois leur est accordé pour le retourner dument rempli à l'ARPTC.
Pendant ce temps, l'ARPTC est disposé à fournir des explications nécessaires le cas échéant, en rapport avec certains indicateurs mal interprétés ou mal compris par les opérateurs qui le signale bien entendu.

Cependant, l'ARPTC projete de procéder à la récolte des données en mettant chaque fois qu'il est nécessaire, un questionnaire actualisé pour la période considérée ou prendre le modèle de l'UIT avec le site ''ICT EYES'', c'est-à-dire, octroyer à chaque opérateur un nom d'utilisateur et un mot de passe pour accéder aux questionnaires.

C. Récupération des données.

Tout comme l'ARPTC, les opérateurs utilisent aussi les deux voies pour le retour du formulaire:
- Physiquement: une lettre de transmission signée par des responsables de l'entreprise, avec le formulaires dûment rempli en annexe,
- Par courrier électronique: un mail est envoyé à l'adresse officielle de l'ARPTC avec en copie le service Observatoire des marchés et prospective.

Cependant, l'ARPTC rencontre des difficultés pour la récupération des données concernant le marché de l'Internet, par le fait que certains opérateurs ont tendance à travailler dans la clandestinité.

Mais grâce aux nouveaux équipement de gestion du spectre de fréquences, l'ARPTC arrivent à les démasquer et les remettre en ordre.

L'ARPTC prévoit la publication d'une décision en rapport avec la récolte des données auprès des opérateurs, décision dans la quelle, va figurer la procédure à suivre, la nature des informations et leurs délais de transmission.

IV.TRAITEMENT ET DIFFUSION DES INDICATEURS

A. Traitement

Deux étapes :

1. Enregistrement des données par segment de marché

2. Analyse des données pour les besoins des utilisateurs futures des rapports.

B. Diffusion des informations recueilles

L'ARPTC publie des données regroupées de manière
macroéconomique pour éviter rendre transparentes pour chaque
opérateur les données de son concurrent.

1. Diffusion sur le site WEB de l'ARPTC
2. Diffusion interne à l'ARPTC suivant les demandes (rapport
   d'activités, fiche d'information ponctuelle, …)
3. Diffusion restreinte des données segmentées limitée à la direction
   chargée de l'Economie et prospective et au président de l'ARPTC.
4. Publication d'une rapport annuel présentant un état de lieux des
   télécommunications en RDC limité à une période considérée.

Il est à noter que c'est grâce aux indicateurs recueillies, que
l'ARPTC réponds aux enquêtes en ligne de l'UIT sur ''ICT EYES''.

**V. PRESENTATION DES QUELQUES INDICATEURS DE
TELECOMMNUNICATION EN RDC**

1. Les opérateurs opérationnels:

❖ 3 opérateurs de téléphonie fixes
❖ 4 opérateurs de téléphonies mobiles GSM
❖ 26 Fournisseurs d'accès Internet (FAI) qui utilisent
  principalement la technologie Wireless.

Le marché de la téléphonie mobile constituent la part la plus importante du secteur des télécommunications en RDC, d'où la contribution en moyenne du secteur des télécommunications dans le PIB est d'environ 7%.

Pa rapport à la téléphonie fixe qui présente une télédensité de 0,06 %, la téléphonie mobile est le service de télécommunication le plus distribué en RDC, avec un taux de pénétration de 15 % en fin 2008 et un taux d'accroissement moyen annuel du parc d'abonnés de 49%.
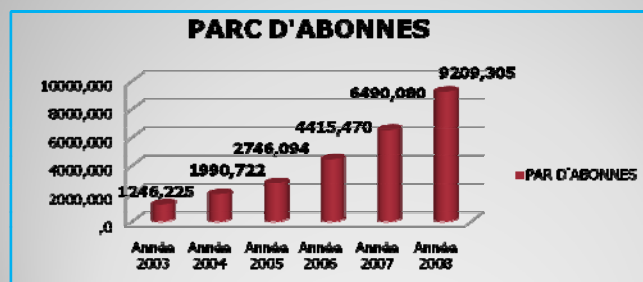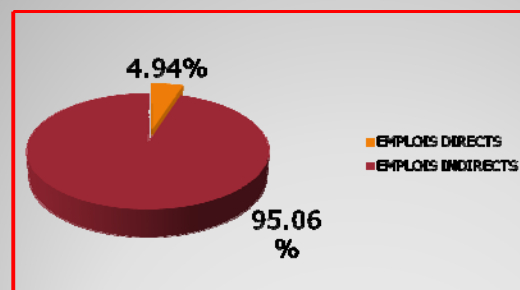

- Voici telle que se présente l'évolution de l'ARPU au cours des six dernières années avec l'accroissement du parc d'abonnés des opérateurs mobiles, soit une diminution de 50 % de 2003 à 2006.
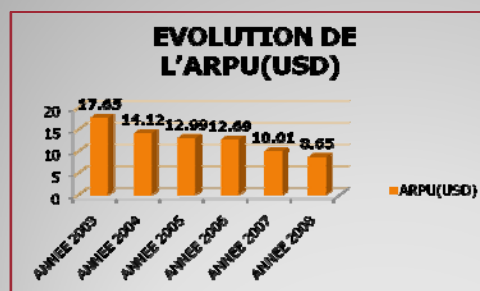
Concernant l'emploi, le secteur de télécommunications contribue avec ses emplois directs et indirects à environ 7% par rapport à l'effectif total des nombre d'employés recensés en RDC.
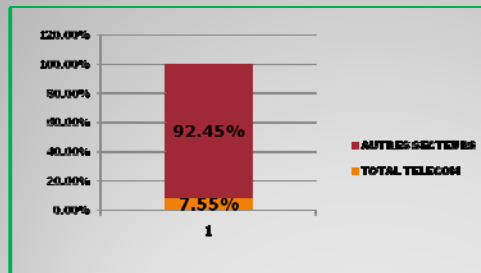
Dans le secteur des télécommunications en RDC, les emplois indirects constituent la part la plus importante soit, 95.06 % par rapport à l'effectif total du secteur des télécommunications, tandis que les emplois directs ne représentent que 4.94%.

Répartition des type de trafic

INTERCO INTERNATIONALE 9%

INTRARESEAU 56%

INTERCO NATIONALE 35%

- INTRARESEAU
- INTERCO NATIONAL
- INTERCO INTERNATIONAL
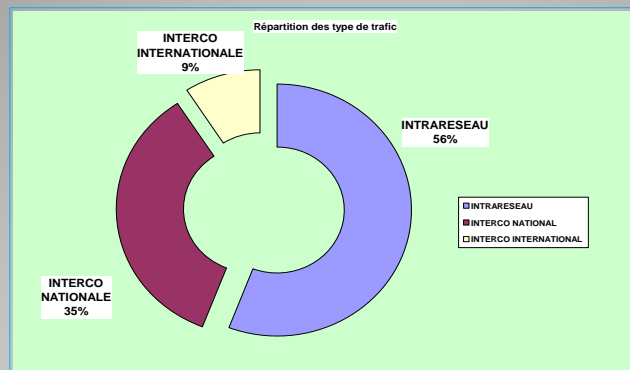
La quasi-totalité du trafic vocal passe par les réseaux de téléphonie mobile, voici comment sont répartis les différent type de trafic:

RATIOS DES DEPENSES D'INVESTISSEMENTS EN 2007

Investissements incorporels 2,37%

Autres investissements 0,00%

Investissements corporels 97,63%

- Investissements corporels
- Investissements incorporels
- Autres investissements
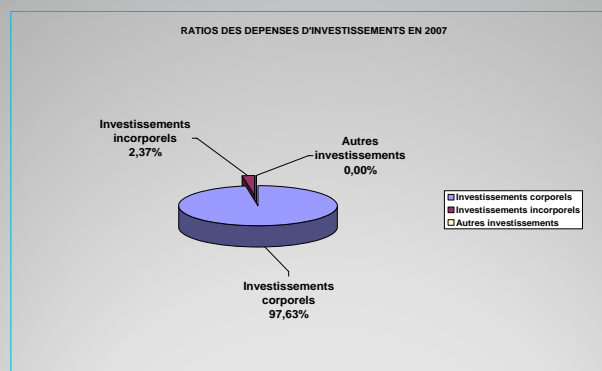
Pour l'amélioration de la couverture et de la qualité de services, les opérateurs réalisent des investissements corporels très significatifs par rapport aux investissements incorporels:

Concernant la téléphonie fixe, l'Etat Congolais a prévu une restructuration de l'opérateur public OCPT, en séparant les services postaux et ceux de télécommunications, d'où son parc d'abonnés est quasi nul.

Quant à la société SOGETEL, ses activités sont aux ralenties depuis la rupture de l'interconnexion avec les opérateurs mobiles par manque de paiement des frais liés à ce service.
Les quelques 35.000 lignes fixes sont celles d'un nouvel opérateur, Standard Télécom, il combine la fibre optique et le Wireless pour acheminer le signal vers le client final.

L'ARPTC a relancé les fournisseurs d'accès Internet pour récupérer les données actuelles et des année antérieures (2006 et 2007) afin de mettre à jour l'observatoire des marchés.

Toute fois, il est important de signaler que les fournisseurs d'accès internet utilisent généralement le Wireless, par manque de réseau national de télécommunication, d'où le nombre d'abonnés Internet est plus important que le nombre de lignes de la téléphonies fixe.

MERCI DE VOTRE ATTENTION.

A.R.P.T.C/R.D.C.
Tél.: 243 13 92491/3
243 810385910
FAX.: 243 812610047
243 13 92492
E-mail: arptc@micronet.cd
B.P. :   3000 KIN 1

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

**Document INF/024-E
24 February 2009
Original: English**

7TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, CAIRO, EGYPT, 3-5 MARCH 2009

FOR INFORMATION

SOURCE: Department of Statistics, Malaysia

TITLE: ICT Statistics Collection and Dissemination in Malaysia

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ICT STATISTICS COLLECTION AND DISSEMINATION IN MALAYSIA

Department of Statistics
MALAYSIA

OUTLINE

- **Overview**
- **Services Statistics on ICT**
- **Statistics on Household Access to Telecommunications /ICT Goods**
- **Issues and Challenges**

OVERVIEW

Value-added of ICT industry is estimated at 9.5% of Malaysia's GDP
• majority by hardware
• followed by telecommunications and software & services sub-sectors

Collections of ICT Statistics mainly conducted by:
• DOSM
• MCMC

D
O
S
M

Services statistics on ICT

Statistics on households use of telecommunications / ICT goods

3

SERVICES STATISTICS ON ICT

- Telecommunications services
- Computer services

First conducted in 2001

Annual basis

Mail inquiry

2008 – 12 new indicators (OECD module)

Coverage based on MSIC 2000
5 industries in telecommunications

Telephone services

Television and radio transmission services

Data communication services

Paging services

Other telecommunication services

4

TELECOMMUNICATIONS SERVICES STATISTICS

INFORMATION COLLECTED

- Legal status
- Ownership
- Revenue
- Expenditure
- CapEx and assets
- Employment
- Salaries & Wages

PUBLICATION

Information and Communications Technology Services Statistics

- 18 months (after reference year)
- Tables by:
  - industry
  - legal status
  - ownership
  - employment size group
  - assets size group

5

STATISTICS ON HOUSEHOLDS USE OF TELECOMMUNICATIONS / ICT GOODS & SERVICES

Compiled from Basic Amenities Survey

Personal interview

Yearly (after 2007)

Latest 2007

Publication table

Percentage distribution of Households with access to:

- Radio/Hi-Fi
- Tv
- Video/VCD/DVD
- Fixed –Line telephone
- Cellular phone
- PC
- Internet subscription

6

Telecommunications Services: Value of gross output, cost of input and value added, 2000-2005

RM billion
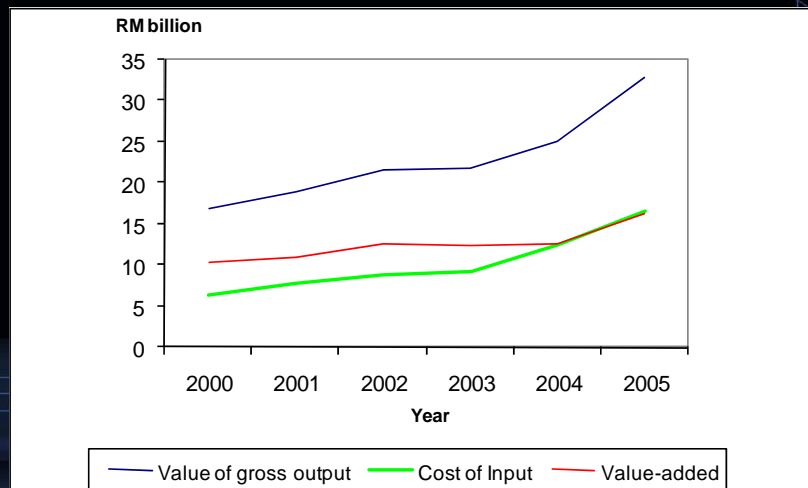
Telecommunications Services: Percentage Contribution of Total Output by Type of Services, 2000-2005
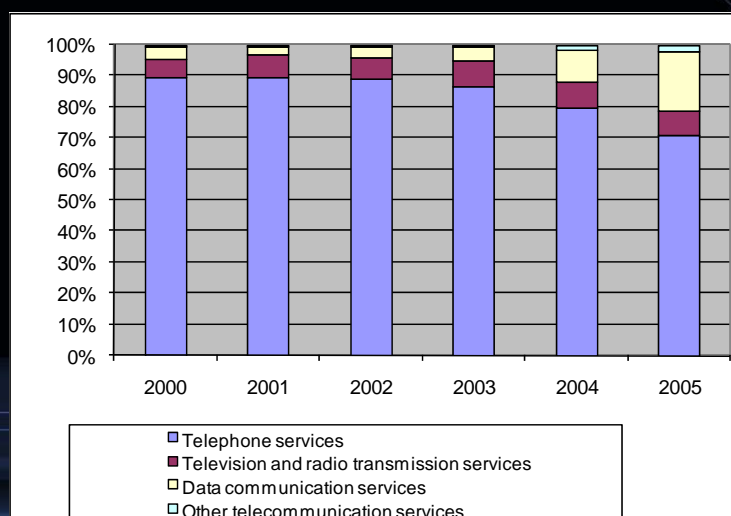
ISSUES & CHALLENGES

- Great demand for telecommunications / ICT statistics
  - new area (households) / expand coverage (industries)
  - new indicators
  - impact of ICT
  - more frequent
- Rapid changes and development of ICT industries
  - comparable difficulties
  - industrial classification not tailored to current situation

9

TERIMA KASIH

THANK YOU

**BUREAU DE DÉVELOPPEMENT
DES TÉLÉCOMMUNICATIONS**

7ÈME REUNION SUR LES INDICATEURS DES TELECOMMUNICATIONS/TIC MONDIALES, LE CAIRE, EGYPTE, 3-5 MARS 2009

POUR INFORMATION

ORIGINE: Algérie Télécom, Algérie

TITRE: Présentation du groupe Algérie Télécom

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Présentation du groupe ALGERIE TELECOM

Algérie Telecom est leader sur le marché Algérien des télécommunications qui connait une forte croissance. Offrant une gamme complète de services de voix et de données aux clients résidentiels et professionnels.
Cette position s'est construite par une politique d'innovation forte adaptée aux attentes des clients et orientée vers les nouveaux usages.
ALGERIE TELECOM, est une société par actions à capitaux publics opérant sur le marché des réseaux et services de communications électroniques.

Sa naissance a été consacrée par la loi 2000/03 du 5 août 2000, relative à la restructuration du secteur des Postes et Télécommunications, qui sépare notamment les activités Postales de celles des Télécommunications

ALGERIE TELECOM est donc régie par cette loi qui lui confère le statut d'une entreprise publique économique sous la forme juridique d'une société par actions SPA.

Entrée officiellement en activité à partir du 1er janvier 2003, elle s'engage dans le monde des Technologies de l'Information et de la Communication avec trois objectifs :
- *Rentabilité*
- *Efficacité*
- *Qualité de service*

Son ambition est d'avoir un niveau élevé de performance technique, économique, et sociale pour se maintenir durablement leader dans son domaine, dans un environnement devenu concurrentiel.
Son souci consiste, aussi, à préserver et développer sa dimension internationale et participer à la promotion de la société de l'information en Algérie.

Missions et objectifs

L'activité majeure d'Algérie Télécom est de :

➡ *Fournir des services de télécommunication permettant le transport et l'échange de la voix, de messages écrits, de données numériques, d'informations audiovisuelles…*
➡ *Développer, exploiter et gérer les réseaux publics et privés de télécommunications ;*
➡ *Etablir, exploiter et gérer les interconnexions avec tous les opérateurs des réseaux.*

ALGERIE TELECOM est engagée dans le monde des technologies de l'information et de la communication avec les objectifs suivants :

➡ *Accroître l'offre de services téléphoniques et faciliter l'accès aux services de télécommunications au plus grand nombre d'usagers, en particulier en zones rurales ;*
➡ *Accroître la qualité de services offerts et la gamme de prestations rendues et rendre plus compétitifs les services de télécommunications ;*
➡ *Développer un réseau national de télécommunication fiable et connecté aux autoroutes de l'information.*

Organisation d'Algérie Télécom

ALGERIE TELECOM est organisée en Divisions, Directions Centrales, et Régionales, à cette structure s'ajoutent trois filiales:

- Algérie Télécom Mobile   (Mobilis)
- Algérie Télécom Internet   (Djaweb)
- Algérie Télécom Satellite   (RevSat)

Introduction massive des nouvelles technologies.

Programme de développement du réseau télécoms 2004-2008
Le montant global des investissements à consentir est évalué à 203 976 millions de DA soit l'équivalent de 2,5 milliards de Dollars US.
Ces investissements mobiliseront tous les segments d'activités d'ALGERIE TELECOM , à savoir les fonctions commutations, Transmission, Moyens auxiliaires des Télécommunications (Energie et Gestion Réseau), les Télécommunications Satellitaires, l'Internet, la Logistique des Télécommunications, les Systèmes Informatiques et Managements.

A propos d' ATM Mobilis

ATM Mobilis, Filiale du Groupe Algérie Télécom, spécialisée dans le domaine de la téléphonie mobile, dispose aujourd'hui :

- de plus de 4200 Stations de Base Radio (BTS)
- de Plateformes de Service des plus performantes.

Et compte :
  - plus de 7 millions d'abonnés.
  - un réseau commercial en progression dépassant les 116 Agences
  - 52 500 points de vente indirects.

A propos d' ATI Djaweb

ATI Djaweb, Filiale du Groupe Algérie Télécom, spécialisée dans le domaine de l'accès à Internet, dispose aujourd'hui de trois types d'accès :

- **Accès bas débit via RTC**
  - Accès direct 1515
  - Accès via cartes prépaid 1533

- **Accès haut débit par liaisons spécialisées**
  - Via une plateforme de 48 POP's, à raison d'un Pop par Wilaya (débit LS de 128 Kbps à 2 Mbps)
  - Via une plateforme backbone international (LS de 2 Mbps à 1 Gbps)

- **Accès haut débit xDSL**
  - Via trois plateformes, dont deux sont mises en ouvre en partenariat avec des équipementiers étrangers.

A propos d' ATS Revsat

ATS Revsat, Filiale du Groupe Algérie Télécom, spécialisée dans le domaine des Solutions satellitaires, dispose aujourd'hui de :

- 2500 stations VSAT déployées
- Près de 1500 abonnés THURAYA
- Une présence nationale optimale sur 48 wilayas.

Quelques chiffres

TELEPHONIE

Equipements d'abonnés : 5.128.262
Nombre d'abonnés fixe : 2.922.731
Demandes en instance : 53 471
Densité téléphonique globale Fixe : 8,91%

RESEAU COMMERCIAL

171 Agences commerciales des télécommunications (ACTEL).
110 Divisions commerciales.
212.040 lignes Kiosques Multiservices (KMS).
4.425 Publiphones

RESEAU DE TRANSMISSION

Réseau public de transmission de données par paquets X25 (DZPAC) :
6.206 accès
Backbone national de transmission à 10 GB/s, 2,5 GB/s, et 80GB/s
Réseau radio rural : 103 réseaux intégrant plus de 1500 localités
961 communes (APC) rattachées en fibres optiques

ALGERIE TELECOM MOBILE (MOBILIS)

Plus de 7 780 000 d'abonnés actifs.

ALGERIE TELECOM SATELLITE (ATS)

47 stations terriennes domestiques.
04 stations internationales.
01 station côtière INMARSAT.
02 réseaux VSAT.
Mobile par satellite (GMPCS) : Provider THURAYA en Algérie avec 1400 abonnés.

INTERNET DJAWEB

7.000 Accès RTC
3.000 Accès liaisons Spécialisées.
Plus de 400.000 abonnés ADSL.

4 046 cybercafés
35 ISP Internet Provider Services
3 500 000 Utilisateurs Internet en Algérie
Couverture en ADSL au niveau des 1243 communes du pays.

RESEAU INTERNATIONAL

Liaisons sous marine à fibre optique reliant l'Algérie au réseau mondial de télécommunications ALPAL II + SEA ME WE IV.

AUTRES CHIFFRES

Rattachement de 11.148 établissements scolaires au réseau internet sur un total de 21 233
Informatisation des bureaux de postes : 3023 sur un total de 3282
90 centres universitaires connectés à Internet Haut débit.
Plus de 200.000 étudiants et chercheurs ayant un accès libre à Internet.

GESTION TECHNIQUE DU RESEAU

Durée moyenne de raccordement d'abonnés : 08 jours
Taux moyen de relevé de dérangement : 0,8 soit l'équivalent de moins d'un
dérangement par an.

INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

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FOR INFORMATION

SOURCE: Ministry of Information Development of Moldova, Moldova

TITLE: Contribution

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Вклад
к VII-му Собранию МСЭ по
всемирным показателям ИКТ

О состоянии общей статистической базы администраций связи Регионального содружества в области связи

Елеонора Василаки,

Заместитель председателя Комиссии РСС по экономике связи,
Начальник отдела анализа, мониторинга и оценки политик
Министерства информационного развития Республики Молдова

Региональное содружество в области связи (*РСС)* – это международная региональная организация с функциями межгосударственного координирующего органа СНГ в области связи, которая имеет статус наблюдателя в МСЭ и ВПС, а также тесно сотрудничает с другими международными организациями и региональными союзами.

Одним из основных направлений деятельности РСС с первых лет создания Содружества является обмен информацией между участниками РСС о развитии связи и информатизации в их странах.

Становление и развитие рыночной экономики в странах СНГ, бурное развитие информационно-коммуникационных технологий и связанный с ним повышенный спрос на новые средства и услуги связи, а также улучшение качества жизни во многом определяются эффективностью использования информации как важнейшего ресурса социально-экономического развития.

Всё это делает необходимым совершенствование и дальнейшее развитие статистики связи и информатизации.

Издание ежегодного Статистического сборника РСС стало закономерным шагом взаимного информирования администраций связи РСС об уровнях развития технических средств и услуг ИКТ. Сборник издается на основе показателей общей статистической базы АС РСС и методических рекомендаций по заполнению показателей, совершенствование которых Советом глав администраций связи РСС было поручено Комиссии РСС по экономике связи совместно с Исполкомом РСС на основе предложений администраций связи РСС.

Первый Статистический сборник РСС был издан в 1993 году по итогам работы за 1991-1992 гг. Сразу после выхода сборник получил популярность не только среди участников РСС и подведомственных им организаций и предприятий, но и среди научных и учебных центров многих стран, международных организаций, региональных организаций по связи, различных фирм и операторов связи.

К настоящему времени издано 16 ежегодных сборников, их содержание значительно расширено как количественно, так и качественно. С 2001 года Статистический сборник РСС выходит не только

на бумажном носителе, но и в электронном виде. Информация в сборнике представляется на двух языках: русском и английском.

Непрерывный процесс технического переоснащения связи и применения наиболее передовых технологий, а также расширение международного сотрудничества предъявляет повышенные требования по соблюдению международных стандартов и рекомендаций международных организаций в области связи при формировании статистической информации по связи и информатизации, вызывают необходимость непрерывного совершенствования форм государственного статистического наблюдения за деятельностью связи и инструкций по их заполнению.

В этой связи, показатели общей статистической базы РСС и Статистический сборник РСС постоянно совершенствуются, актуализируются.

По сравнению с первым изданием, количество показателей Статистического сборника о деятельности АС РСС за 2007 год выросло в пять раз и содержит 525 показателя, из них 129 - общесистемные показатели развития связи, 183 - показатели электросвязи, 30 - радиовещания и телевидения, 70 - почтовой связи, 113 - показатели доступа к телекоммуникационным сетям, информации и информационным ресурсам стран СНГ и «электронного развития» в странах СНГ.

Переход к информационному обществу требует совместных действий всех заинтересованных сторон: государства, бизнеса, гражданского общества, научно-образовательного сообщества, инвесторов в каждой из стран СНГ, а также учета представлений об информационном обществе и аспектов его развития, сложившихся в мире и отображенных в документах МСЭ.

В этой связи, в период 2005-2007 гг. для оценки состояния развития информатизации в странах содружества и уровня их готовности к созданию информационного общества, а также в целях унификации показателей статистической отчетности по связи в странах СНГ, в рамках РСС было выполнены соответствующие научно-исследовательские работы (*НИР)*:

НИР по разработке системы показателей, характеризующих состояние развития информатизации в странах СНГ и рекомендаций по методике их заполнения;

НИР по унификации показателей статистической отчетности по связи в странах СНГ, используемых в статистическом сборнике о деятельности АС РСС.

Научно-исследовательские разработки выполнялись с учетом обеспечения гармонизации показателей с рекомендуемыми международными консолидирующими организациями, занимающимися вопросами развития ИКТ во всем мире (*МСЭ, ВПС, ЕВРОСТАТ, ВЭФ, Статистический отдел ООН, Институт Статистики ЮНЕСКО и др.*).

При этом учитывались особенности, присущие каждой стране, где имеется уже устоявшаяся терминология по связи и информатизации, подкрепленная национальной нормативно-правовой базой.

В результате проведенных исследований были унифицированы показатели ИКТ, используемые в Статистическом сборнике РСС и сформирована новая общая статистическая база АС РСС для обеспечения сопоставимости результатов не только в странах региона, но и с другими странами. Новый *«ПЕРЕЧЕНЬ унифицированных статистических показателей, характеризующих состояние связи в странах участников РСС, предназначенных для включения в Статистический сборник о деятельности АС РСС и рекомендации по их заполнению»* включает 400 унифицированных показателей и представлен пятью блоками, в том числе:

➤ общие сведения о государстве.
➤ сеть операторов связи,
➤ наличие технических средств связи.
➤ услуги связи,
➤ экономические показатели.

На основе научно-исследовательских работ также был разработан *«ПЕРЕЧЕНЬ показателей доступа к телекоммуникационным сетям, информации и информационным ресурсам, показателей электронного развития и показателей, характеризующих бизнес-климат, человеческий капитал и государственное регулирование в сфере ИКТ стран СНГ».*

В ходе выполнения НИР были разработаны рекомендации по методике заполнения и алгоритмы расчета показателей.

Указанный Перечень содержит 9 разделов, в которых определен конкретный набор показателей и построена балльная шкала оценки.

➤ Показатели доступа к сети операторов связи
➤ Показатели доступа к компьютерам
➤ Показатели доступа в Интернет
➤ Индекс цифрового доступа
➤ Экономические показатели сектора ИКТ
➤ Бизнес-климат
➤ Человеческий капитал
➤ Государственное регулирование
➤ Международные композитные индексы готовности к электронному развитию

Анализ отчетных материалов, ежегодно предоставляемых администрациями связи - участниками РСС, позволяет сделать вывод, что развитие в сфере ИКТ направлено на совершенствование информационно-коммуникационных технологий, повышение инвестиционной привлекательности отрасли, развитие конкурентной среды на рынке услуг связи, повышение их качества и уровня обслуживания потребителей.

Практически во всех странах участников РСС отрасль ИКТ приобрела устойчивую позитивную динамику и является одним из наиболее активно развивающихся секторов национальной экономики.

Так, за 2007 год в России вклад отрасли в ВВП страны поднялся до 4,5 %. Удельный вес отрасли ИКТ Молдовы в ВВП страны составил 10%, Украины – 7%. В Кыргызстане темпы роста отрасли связи превышают темпы роста ВВП страны и ежегодно растут на 20-25 %. В Азербайджане удельный вес сектора связи к концу отчетного года составил 1,9 %.

Такая позитивная динамика получает адекватную оценку со стороны государства и бизнеса. Инвестиционная привлекательность отрасли во всех странах участников РСС повышается. При этом следует отметить, что в структуре капитальных вложений основным источником инвестиций являются собственные средства компаний, к примеру, в Беларуси, Молдове и на Украине этот показатель составляет 80,5%.

В странах участников РСС последовательно реализуется планомерная государственная политика развития инфраструктуры связи, в результате связь становится общедоступной и востребованной широкими слоями населения.

Главный упор страны участников РСС делают на модернизацию сетей связи и инновационные проекты.

Активно проводимая технологическая политика цифровизации позволила значительно улучшить качество связи и предоставлять широкий спектр информационных услуг. Расширяется применение инфокоммуникационных технологий в различных сферах деятельности (*образование, здравоохранение, деловая сфера*). Особое внимание уделяется решению задач повышения эффективности использования ИКТ в деятельности органов государственной власти. Были сформированы и апробированы на практике основные подходы и решения в области организации межведомственного информационного обмена на основе ИКТ, обеспечения доступа населения и организаций к информации о деятельности органов государственной власти, предоставления государственных услуг в электронном виде.

Одна из перспективных задач, к решению которой следует приступать уже сегодня, — формирование рынка информационных услуг, движение в сторону информационного общества.

INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION
DEVELOPMENT BUREAU

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7TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, CAIRO, EGYPT, 3-5 MARCH 2009

FOR INFORMATION

SOURCE: Bangladesh Bureau of Statistics, Bangladesh

TITLE: Data Collection and Dissemination of ICT Statistics: The Bangladesh Experience

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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. The present government is also committed to switch to digital Bangladesh within the shortest possible time. A reflection of this view is found in the government's poverty reduction strategy paper for period titled "Moving Ahead: National Strategy for Accelerated Poverty Reduction-II" where ICT has been identified as one of the thrust 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 Telecommunications Company Limited (BTCL) 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, 2008

Type of ICT facilities	Unit	Number
Fixed Telephone lines(November, 2008)	Million	1.34
Mobile Phone (November, 2008)	Million	43.96
Teledensity	Percent	31.24%
International Voice circuit		5100
International Trunk Exchange		2
International Internet Backbone	MB	10
VSAT users		78
VSAT providers		22
VSAT hub		7
ISP's		205
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

Subscribers Growth Report: Telephone Subscriber growth rate for 2004-2008 is given below. It is observed that cellular and fixed telephone has increased tremendously over the last few years.

Name	2004	2005	2006	Sep, 2007	Nov, 2008
Cellular	4,151,000	9,278,000	21,760,000	31,420,000	43,960,000
Fixed	831,000	871,000	1,145,000	1,120,000	1,335,700
Source : Bangladesh Telecommunication Regulatory Commission (BTRC)					
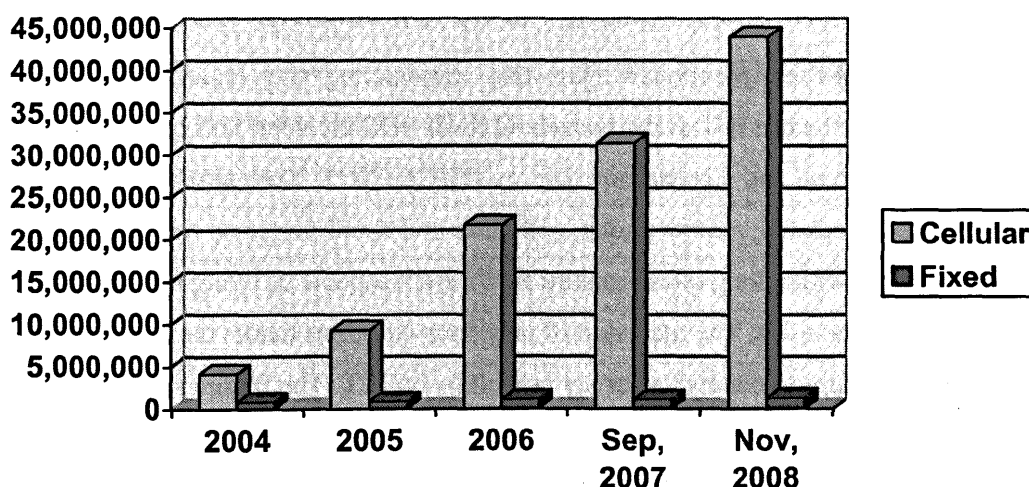
3. Status of ICT statistics data collection in Bangladesh

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 assistance for the development partners to supplement its resources to undertake this activity.

It might be of interest to note how the questionnaire for this survey might be developed by BBS. BBS has a long experience and expertise in conducting surveys. A

draft questionnaire of a particular survey is developed initially by the officials of BBS, sometimes with inputs from the data users. The questionnaire is then shared with all stakeholders, for example, the planning commission, concerned government ministries, development partners, researchers and academics. 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 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 as different aspects of living standards including household ammenities. The inclusion of only four questions marks the beginning of a full effort in the future to conduct a survey especially on ICT. The findings & HIES Survey is around 3 years old and will not conform with the current situation of ICT, Particularly the mobile phone because the use of mobile phone has increased tremendously over the year.

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. According to HIES survey 2005 the information on ICT at the household level is as 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, 2007, Report of the Household Income and Expenditure Survey 2005.

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 ICT Infrastructure for e-Government

With resources are hardly adequate in most government offices. Many of the existing resources are outdated and old. At the Ministry and Division level the PC-Employee ratio, are about 0.30 and 0.08 respectively meaning that for every 100 employees there are 30 PCs available in the Ministries and only 8 PCs available in the Divisions. Also at the Department and Corporation level, it is about 0.07 while in the academia, it is about 0.47. The total number of printers in the government is about half of the total number of PCs. At the Ministry level Printer-PC ratio is the highest, while in the academia, it is the lowest. Sharing printers through LANs can easily bring down the need for buying expensive printers for individual PCs

The government has little resources to buy hardware from its core revenue budget. Usually, hardware resources are acquired through IT-related projects. Since many of the departments and corporations do not have such projects, hardware resources are less available in those offices.

Network connectivity within the Bangladeshi government has made considerable progress over the last two years. A recent nation-wide survey on-e-Government found that all the 39 Ministries/Divisions covered in this survey, are currently connected to the Internet and out of 236 departments and corporations covered in the survey, 180 are connected to the Internet, which is 76%. 22 academic institutions are connected to the Internet out of 24 covered in the survey, which is 92%.

On an average, at the Ministry/ Division level, about 48% of the available PCs are connected to the Internet. And at the Department/ corporation level, only 19% of the available PCs are connected to the Internet. At academic institutions, the figure is higher with about 58% PCs connected.

At the Ministry and Division level, for every 100 employees there respectively 15 and 4 Internet connected PCs available. At the Department/Corporation level, on an average, only 1 Internet-connected PCs is available for every 100 employees and at the academic institutions, 27 Internet-connected PCs are available for every 100 employees.

The majority of these offices are connected through dial=up only. At the Ministry/Division level, 69% of offices connect to the Internet through dial-up only. At the Department and Corporation level, 80% of offices connect to the Internet connect through dial-up only. In academic institutions, 77% connect through dial-up only.

Some government offices, however, are well-connected. At the Division level, about 53% of the offices have broadband and about 27% have radio-link connectivity. At the Department and Corporation level, about 32.5% of the offices have broadband and 6.5% have radio-link connectivity. At academic institution, 23% have broadband, 9% have radio-link connectivity and 18% have VSAT.

One reason for such low level of Internet connectivity is that most of these rely on dial up connection only, which is quite expensive given in additional cost of telephone call. There is generally little or no fund allocated for Internet connectivity- so number of connectivity is often kept to a minimum of one or two. Also dial-up connections hold up telephone lines and many government offices do not have adequate number of telephone lines to spare one for Internet Connectivity. With the submarine cable SEA-ME-WE4 there were increased of internet connectivity.

The efforts for inter-connecting government office have been started. The planning Division, under the Ministry of planning, has taken a pioneering step towards setting up inter-connectivity among key government offices, including the Planning Commission, Prime Minister's Office (PMO) and key ministries at the Secretariat, namely the Ministry of Finance, Ministry of Establishment, Ministry of Science and ICT, Ministry of Agriculture and the Ministry of Local Government and Rural Development (LGRD). The connectivity is done through radio-link towers placed at the Planning Commission, PMP and the Secretariat. The network has enabled crucial databases to be accessed and

information to be shared from anywhere in this huge network of important government offices.

3.3   e-Government Software, Applications and Use of IT

Different government offices have developed their own e-Government services, primarily through customized software and databases. A survey found that 24% of the Ministries, 60% of the Divisions, 25% of the Departments and 41% of the Corporations across the country use customized software. However, customized software is used at varying degrees in different government offices. Accounting and payroll software are the most popular customized software. In many cases, software has been developed under different government projects and after completion of those projects, they are largely left unused. Moreover, similar kind of software, especially those in accounting and human resources, are used in various government offices but they were developed under different programs. As a result, due to lack of integrated efforts, resources may have been wasted in re-creating software that was already built for some other government offices.

At the ministry and division level, a little more than 24% of the officers use e-mail directly and about 5% of the officers use e-mail through computer operators. And at the department and corporation level, on an average 5.13% officers use e-mail directly while about 3.10% officers use e-mail through the help of computer operators. In academic institution, 38.11% officers use e-mail directly and about 19.26% of the officers use e-mail through computer operators.

3.4   Role of Major Government Stakeholders

The table below summarizes the roles that different government stakeholders have in terms of implementing e-Government and also in transforming the nation into a knowledge-society in the near future.

Institutions	Responsibility
Prime Minister's Office (PMO)	- National ICT Task Force has been formed, headed by the Honorable Prime Minister - ICT Task Force has representation from several important ministries, academia, NGOs, and the IT-related private sector
Ministry of Science and ICT	- ICT Policy - ICT-related laws - Facilitate computerization at govt. institutions and schools
Bangladesh Computer Council (BCC)	- IT Training to govt. officials and citizens - Incubator for software companies - Advisory support to govt. institutions regarding IT - Providing connectivity to ISPs - Standardization of IT issues, such as keyboard
Ministry of Post and	- Building and maintaining of telecommunication

Telecommunications	infrastructure
Ministry of Education	- Curriculum for IT education - Computerization of schools
Bangladesh Telecommunications Regulatory Commission (BTRC)	- Regulation of telecommunications providers - Licensing authority
Ministry of Law, Justice and Parliamentary Affairs	- Review of IT-related laws
Planning Division, Ministry of Planning	- Secretarial support to National ICT Task Force - Hosts the Support to ICT Task Force (SICT) Program to implement objectives of the ICT Task Force, particularly in areas of e-Government - Hub for inter-connectivity among the Prime Minister's Office, Planning Commission and the Secretariat

Source: SICT's Steps Towards Good Governance Through ICTs.

3.5 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

3.6 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 the 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	420
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.bbs.gov.bd 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.

In order to get reliable estimate of ICT use by the households, a nationwide sample survey need to be done under the control and guidance of BBS. This survey cab be done with regular or ad-hoc surveys of BBS.

FOR INFORMATION

SOURCE: Swaziland Posts and Telecommunications Corporation, Swaziland

TITLE: State of ICT Statistics collection and data Dissemination in Swaziland

_____

State of ICT Statistics collection and data Dissemination in Swaziland:

Currently Statistics reside with individual operators in Swaziland for completion of Questionnaires and statistics compilation the reminders or information request are sent out to all operators, there is no way to enforce officers to carry out request or to meet required deadline.

With regard to all above stated reasons there are challenges in the collection of data and generally the importance of proper or correct information is not yet appreciated resulting in compromising the quality of information. The BSS/OSS (Business Support System/ Operational Support System) at SPTC is not yet properly configured to Statistics required for formulating sound Business proposals and direction. Only Basic statistics are available.

Some steps are being taken to develop the National Statistics Office to improve the current situation, Secondary and High schools are provided with 20 computers a school, on September 2008 Swaziland Telecoms' launched ADSL Broadband upcoming is the launch of the NGN project in August 2009. Comprising Wi Max and CDMA 2000.International assistance has been sorted out by Government from a Canadian aid United Nations Economic Africa (UNECA) to integrate information from different operators.

PARA INFORMACION

ORIGEN: Comisión Federal de Telecomunicaciones, México

TÍTULO: Contribución

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Contribución de México
Reunión sobre indicadores de las telecomunicaciones/TIC mundial
El Cairo, Egipto

Contenido

1. Definiciones

2. Política de Banda Ancha en México

3. Propuesta de Medición de la penetración del Acceso Universal por medio del Acceso Comunitario

4. Otros Indicadores Nacionales de telecomunicaciones

5. Fuentes oficiales de información estadística de telecomunicaciones/TIC

1. Definiciones

Criterios en México utilizados para delimitar:

•Localidades Rurales

Menos de 2 500 habitantes, excepto las cabeceras municipales

•Localidad mixta o en transición rural - urbana

De 2 500 a menos de 15 mil habitantes se clasifica como mixta o en transición rural-urbana

•Localidades Urbanas

De 15 mil o más habitantes

2. Política de banda ancha de México

El manejo de tecnologías de información constituirá la cuarta habilidad básica para la vida. Por ello, gran número de países han tomado medidas para propiciar el acceso de su población a las TIC. La brecha digital persiste y se profundiza en los hogares de menores ingresos en el interior del país.

Existen dos grandes retos para el desarrollo de banda ancha en países en desarrollo:

1.La expansión de infraestructura de telecomunicaciones
2.El alto costo del acceso

De acuerdo con el censo 2000 del INEGI, México cuenta con 197,479 localidades con 1 a 4,999 habitantes (suman aproximadamente 30 millones), de las cuales sólo el 27% tiene acceso a algún medio de comunicación, resultado de programas de cobertura social promovidos por el Gobierno de México.
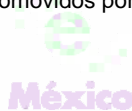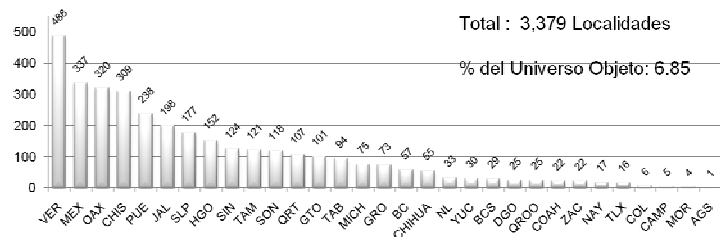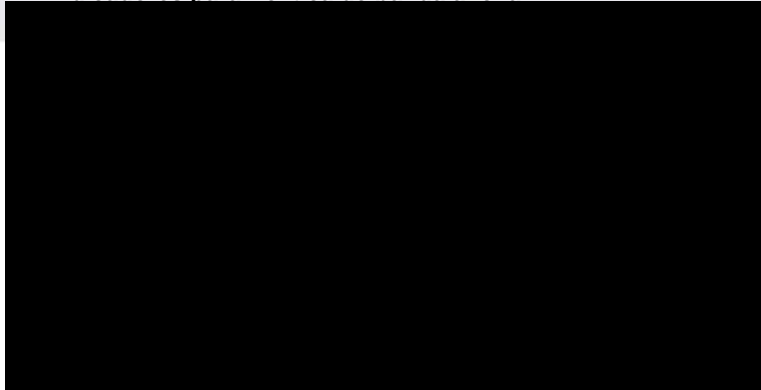
2. Indicadores para Política de banda ancha

Total : 3,379 Localidades

% del Universo Objeto: 6.85

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3. Propuesta de Medición de la penetración del Acceso Universal por medio del Acceso Comunitario

La penetración del Internet en el Hogar es muy relevante pero demanda una infraestructura y requerimientos que es difícil proporcionar en el corto plazo para hogares en comunidades pequeñas con bajos ingresos.

En este contexto para multiplicar en un menor plazo el acceso de individuos y complementar acciones de diversas dependencias, México ha establecido estrategias con un enfoque comunitario.
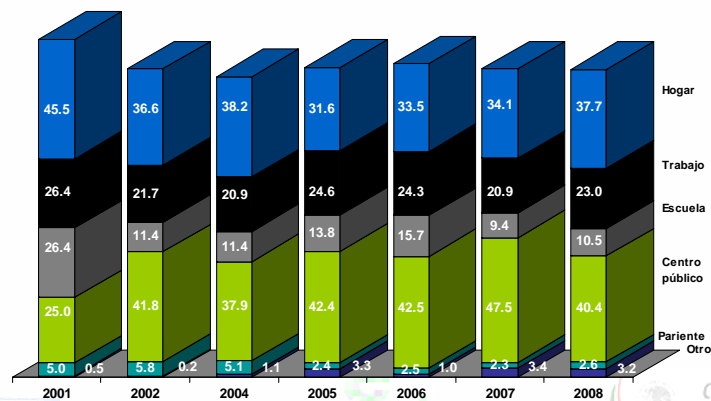
Conclusión

Por ello, en países como México es importante medir la penetración del Acceso Universal por medio del acceso comunitario, en nuestro caso el mayor uso de las TIC se realiza en centros públicos (ver el gráfico en la lámina 7). Por lo anterior proponemos realizar esta medición en el contexto de:
•Centros comunitarios
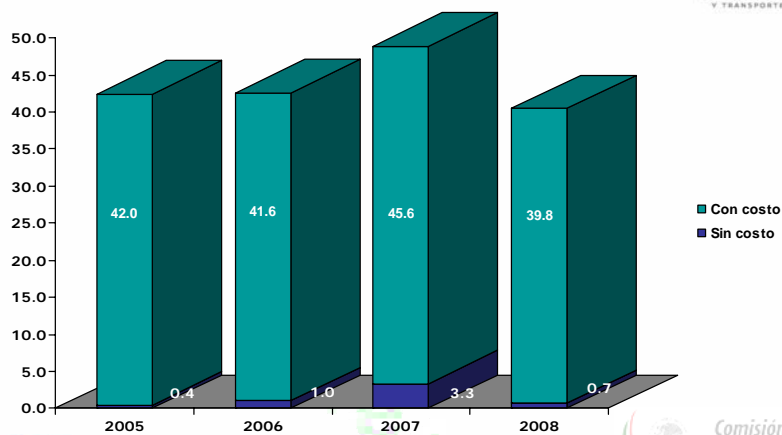•Acceso al Internet
•Telefonía Pública Comunitaria

Usuarios de Internet por lugar de acceso 2001-2008

	2001	2002	2004	2005	2006	2007	2008
Hogar	45.5	36.6	38.2	31.6	33.5	34.1	37.7
Trabajo	26.4	21.7	20.9	24.6	24.3	20.9	23.0
Escuela	26.4	11.4	11.4	13.8	15.7	9.4	10.5
Centro público	25.0	41.8	37.9	42.4	42.5	47.5	40.4
Pariente	5.0	5.8	5.1	2.4	2.5	2.3	2.6
Otro	0.5	0.2	1.1	3.3	1.0	3.4	3.2

FUENTE: **INEGI** – Encuesta Nacional de Disponibilidad y Uso de las Tecnologías de Información en los Hogares

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Usuarios de Internet por centros de acceso público 2005-2008

	2005	2006	2007	2008
Con costo	42.0	41.6	45.6	39.8
Sin costo	0.4	1.0	3.3	0.7

FUENTE: **INEGI** – Encuesta Nacional de Disponibilidad y Uso de las Tecnologías de Información en los Hogares

Centros Comunitarios Digitales (CCDs)

Rurales

- Internet básico de banda angosta
- Servicios para 3 o 4 computadoras (85/64 Kbps por computadora)
- Navegación básica en Internet y posibilidad de
- Posible ofrecer VoIP en una terminal (requiere de 13 a 64 Kbps por servicio)
- Servicios independientes de la red Internet, como procesadores de palabras, hojas electrónicas, de orientación y apoyo en sus instalaciones
- Ancho de banda entre 256 - 512 Kbps

Mixto o en transición rural - urbana

- Internet básico de banda ancha y servicios de navegación avanzada
- Servicios hasta con 5 computadoras (100 Kbps por terminal)
- Algunas terminales pueden ofrecer servicios de VoIP (requiere de 13 a 64 Kbps por servicio)
- Servicios de cómputo independientes de la red Internet, de apoyo, orientación y capacitación en sus instalaciones
- El ancho de banda de este tipo deberá de ser de 512/256 Kbps

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Centros Comunitarios Digitales (CCDs)

Urbanos con conexión alambica

- Internet con servicios multimedia de banda ancha.
- Servicios con 8 computadoras (125 Kbps por terminal) con aplicaciones visuales gráficas y de VoIP (requiere de 13 a 64 Kbps por servicio)
- Servicios de videoconferencia IP en alguna de sus terminales (requiere de 128 a 192 Kbps por servicio) y de apoyo, orientación y capacitación en sus instalaciones
- El ancho de banda ofrecido deberá de ser de 1 Mbps/512 Kbps

Urbanos o mixtos con conexión inalámbrica

- Internet Multimedia de banda ancha por medio de servicios ubicuos
- Servicios de 5 computadoras en adelante (200 Kbps por terminal) con aplicaciones visuales gráficas y de VoIP
- Servicios de video-conferencia IP en alguna de sus terminales y de apoyo, orientación y capacitación en sus instalaciones
- El ancho de banda deberá de ser al menos de 1Mbps

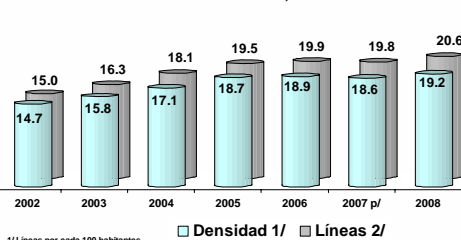4. Otros indicadores de Telecomunicaciones

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Indicadores de Conectividad

TELEFONÍA LOCAL FIJA, 2002-2008

Año	2002	2003	2004	2005	2006	2007 p/	2008
Líneas 2/	15.0	16.3	18.1	19.5	19.9	19.8	20.6
Densidad 1/	14.7	15.8	17.1	18.7	18.9	18.6	19.2

☐ Densidad 1/   ☐ Líneas 2/

1/ Líneas por cada 100 habitantes
2/ Millones de Lines
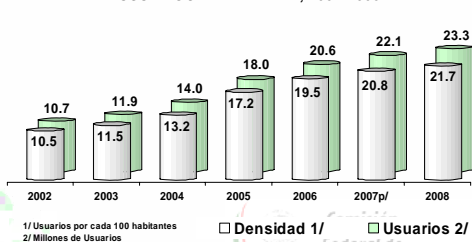
PENETRACIÓN DE BANDA ANCHA SUSCRIPTORES POR CADA MIL HABITANTES, 2002-2008

Año	2002	2003	2004	2005	2006 p/	2007	2008 e/
	2.3	4.1	10.0	18.4	29.3	42.8	58.4
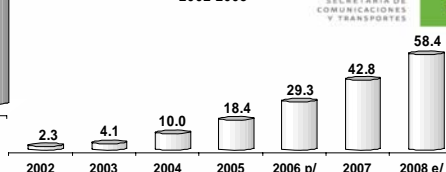
TELEFONÍA MÓVIL, 2002-2008

Año	2002	2003	2004	2005	2006	2007 p/	2008
Usuarios 2/	25.9	30.1	38.5	47.1	55.4	66.6	75.3
Densidad 1/	25.4	29.1	36.3	45.1	52.6	62.6	70.3

☐ Densidad 1/   ☐ Usuarios 2/

1/ Usuarios por cada 100 habitantes
2/Millones de Usuarios
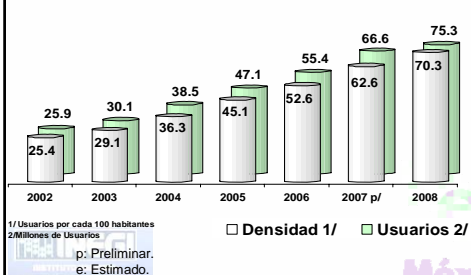
USUARIOS DE INTERNET, 2002-2008

Año	2002	2003	2004	2005	2006	2007p/	2008
Usuarios 2/	10.7	11.9	14.0	18.0	20.6	22.1	23.3
Densidad 1/	10.5	11.5	13.2	17.2	19.5	20.8	21.7

☐ Densidad 1/   ☐ Usuarios 2/

1/ Usuarios por cada 100 habitantes
2/ Millones de Usuarios

p: Preliminar.
e: Estimado.
FUENTE: Dirección de Información Estadística de Mercados, **COFETEL**.

Indicadores Globales de Telecomunicaciones

INVERSIONES EN LA INDUSTRIA DE TELECOMUNICACIONES
MILLONES DE DÓLARES, 2008

PARTICIPACIÓN DE LAS TELECOMUNICACIONES
EN EL PRODUCTO INTERNO BRUTO GLOBAL

INGRESOS DE LA INDUSTRIA DE TELECOMUNICACIONES
MILLONES DE PESOS, 2007

PERSONAL OCUPADO EN LA INDUSTRIA DE TELECOMUNICACIONES PERSONAS, 2007

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5. Fuentes Oficiales de Información Estadística de Telecomunicaciones

Fuentes oficiales de información estadística de telecomunicaciones/TIC

Comisión Federal de Telecomunicaciones
http://www.cft.gob.mx

- **Información que se pública con periodicidad mensual, trimestral, semestral y anual. (http://www.cft.gob.mx/wb/Cofetel_2008/Cofe_estadisticas_e_informacion_de_mercados)**
- **Apéndice Ejecutivo de Estadísticas del Sector Telecomunicaciones, incluye series históricas anuales y comparativos internacionales. (http://www.cft.gob.mx/wb/Cofetel_2008/Cofe_comparativos_internacionales)**
- **Notas de análisis del comportamiento de los servicios de telecomunicaciones, para su publicación, principalmente en la Gaceta de la Comisión.**

  (http://www.cft.gob.mx/wb/Cofetel_2008/Cofe_gacetas)

SECRETARÍA DE COMUNICACIONES Y TRANSPORTES · SCT

Comisión Federal de Telecomunicaciones

México

Fuentes oficiales de información estadística de telecomunicaciones/TIC

Instituto Nacional de Estadística y Geografía
http://www.inegi.org.mx

Coordinación de la Sociedad de la Información y el Conocimiento
http://www.e-mexico.gob.mx

Secretaría de Comunicaciones y Transportes
http://www.sct.gob.mx

SECRETARÍA DE COMUNICACIONES Y TRANSPORTES · SCT

Comisión Federal de Telecomunicaciones

México

¡Gracias!

INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

**Document INF/030-E
24 February 2009
Original: English**

7TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, CAIRO, EGYPT, 3-5 MARCH 2009

FOR INFORMATION

SOURCE: Statistical Institute of Jamaica, Jamaica

TITLE: State of ICT Statistics Collection and Dissemination – JAMAICA– February 2009

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State of ICT Statistics Collection and Dissemination
JAMAICA– February 2009

Background

As Information and Communication Technologies (ICTs) emerge as engines for social and economic growth globally, Jamaica has recognized the need to monitor and evaluate the growth and impact of ICTs on its economic and social development.

Government agencies engaged in planning and development and in the regulation of the utilities have led the demand for data to monitor and evaluate the impact of Jamaica's growing ICT sector. In addition, there is need for data to formulate the policies and strategies that will support ICT-enabled growth of the economy.

One critical component of Jamaica's recently formulated 2030 National Development Plan is the initiative to develop the ICT sector. In April 2007, a taskforce was established to focus specifically on the long-term development of the ICT sector in Jamaica.

It has therefore become necessary for data producers to begin work on the production of ICT statistics in order to supply the Government and people of Jamaica with data for planning and evaluation and for monitoring the development and impact of the ICT sector.

Jamaica's involvement with the measurement of the Information Society began in 2004 when the Statistical Institute of Jamaica (STATIN) participated in a workshop on *"Measuring the Information Society in Latin America and the Caribbean"* hosted by the Observatory for the Information Society in Latin America and the Caribbean (OSILAC). STATIN participated in the sequel to the 2004 workshop on measurement of ICT In 2005.

As part of the regional effort to produce statistics on the ICT Sector in the Caribbean Community, (CARICOM) an ICT Subcommittee on Statistics was formed in October 2007, and Jamaica has been involved in the regional initiative to:-

- formulate a definition of the scope of the ICT sector,
- identify a set of ICT indicators that are pertinent to the region and to
- identify the emerging issues related to the development of ICT statistics in the region.

ICT Data Sources and Statistics

Currently, data resides in several public and private agencies including the Statistical Institute of Jamaica (STATIN), the Office of Utilities Regulation (OUR), the Broadcasting Commission as well as individual utility companies.

Primary Data Sources

In the production of ICT statistics, Jamaica is guided by the list of Core ICT Indicators of the Partnership on Measuring ICT for Development, covering the following:-

- ICT Infrastructure and Access
- Use of and Access to ICTs by Households and Individuals
- Use of ICT by Businesses and;
- Employment in ICT, ICT Value Added and Trade in ICT goods.

In an effort to generate data for calculating some of the basic core indicators, the National Statistical Office, STATIN, has included ICT questions in two household based surveys, namely:

- The Annual Survey of Living Conditions
- The 2001 Population and Housing Census. (See Attachment)

The questions are limited to collecting data from households on *access* to selected ICTs. No data have been collected from individuals or households on the *use* of ICTs. Data regarding ICT use in businesses or employment in the ICT Sector are not currently being captured in any surveys administered by STATIN.

Total Value Added in the ICT sector although not currently available in the GDP estimates can be derived by disaggregating the estimates. By isolating the ICT-related activities included under the Manufacturing and Services sectors in the national industrial classification, "JIC 2005" which is based on the 3rd revision of the International Standard Industrial Classification ISIC Rev 3 it is possible to derive an estimate of the contribution of the Information and Communication technology sector to total value added. Further work in this area is required however especially in light of the modifications made to the definition of the ICT sector by the Organization for Economic Corporation and Development (OECD) following the release of the fourth revision of the International Standard Industrial Classification (ISIC Rev4).

STATIN compiles import and export trade statistics for Jamaica. However, trade in ICT goods is not currently being compiled. It will be necessary to examine the international classification of ICT goods and extract from the available trade data, ICT goods imports

as a percentage of total imports. This would generate statistics on at least one core indicator on ICT goods trade.

Secondary Data Sources

Administrative sources of ICT data include:-

- the Office of Utilities Regulation (OUR),
- the Broadcasting Commission and
- Local cable and utility companies.

These sources have not been explored in order to determine which core or extended core indicators can be derived from the available datasets. Data from these repositories will have to be furthered investigated.

The production of selected core ICT statistics has been incorporated in STATIN's 2009/2010 work Plan and it is expected that funding will be obtained during the 09/10 financial year to begin a programme that will analyse all existing sources of ICT data in house and commence the calculation of some core ICT indicators. In the ensuing years, the work plan will be expanded to include the capture of additional ICT data both from primary and secondary sources as well as the computation of additional indicators.

Capacity Building

There is a need for significant capacity building and training in the measurement of the Information Society at the national statistical office. Resources required include:

- Staff to review available Primary and Secondary sources of data.
- Equipment to facilitate the analysis and evaluation of available data.
- Training in ICT methodologies, measurement and data presentation.
- Funding to initiate data collection in some areas, (particularly from establishments) and to support the expansion of data collection on ICTs. It is expected that funding of the 2011 Census will support a module, or extended questions on access to and use of ICTs by Jamaican households.

STATIN is committed to partnering with national and regional and international stakeholders to create a comprehensive body of statistics on the ICT sector. The centralization and harmonization of data, methodologies and indicators will serve to improve the quality and quantity of ICT statistics available to our national regional and international partners.

EFFORTS ON MEASURING STATISTICS IN ICT – REPORT ON DATA AVAILABILITY AND SOURCES
AS AT JANUARY 2009

Country Name: JAMAICA

ICT Infrastructure and Access				
UN Core Indicators	Data Items/Indicators	Data Sources	Frequency of Availability	Remarks
A1	1. Fixed telephone lines per 100 inhabitants	Statistical Institute of Jamaica (STATIN) – Census	10 yrs	Indicators that require the computation of rates per 100 inhabitants are obtained from the decennial Population and Housing Census of Jamaica. Questions related to these ICT indicators were first included in Census 2001.
A2	2. Mobile cellular subscribers per 100 inhabitants	Office of Utilities Regulation (OUR)		
A3	3. Computers per 100 inhabitants	STATIN – Census	10 yrs	
A4	4. Internet subscribers per 100 inhabitants	STATIN – Census	10 yrs	
A5	5. Broadband Internet subscribers per 100 inhabitants	OUR		Discussions are to be held with the Office of Utilities Regulation and other telecommunications service providers about the supply of data for the computation of indicators related to ICT Infrastructure and Access
A6	6. International Internet bandwidth per inhabitant	OUR		
A7	7. Percentage of population covered by mobile cellular telephony	OUR		
A8	8. Internet access tariffs (20 hours per month), in US$, and as a percentage of *per capita* income	OUR		
A9	9. Mobile cellular tariffs (100 minutes of use per month), in US$, and as a percentage of *per capita* income	OUR		

			Frequency of	
UN Core Indicators	Data Items/Indicators	Data Sources	Availability	Remarks

Access to and Use of ICT by Households and Individuals

UN Core Indicators	Data Items/Indicators	Data Sources	Frequency of Availability	Remarks
HH1	10. Proportion of households with a radio	STATIN – Survey of Living Conditions (SLC)	Annually	Since 2004, the annual Survey of Living Conditions has captured data for the computation of 7 ICT Indicators in this group. The survey is designed to facilitate more in-depth study on pre-determined topics through the attachment of extended data modules. The SLC is a vehicle that could facilitate more in-depth study on the ICT sector among Jamaican households.
HH2	11. Proportion of households with a TV	STATIN - SLC	Annually	
HH3	12. Proportion of households with a fixed line telephone	STATIN – SLC	Annually	
HH4	13. Proportion of households with a mobile cellular telephone	STATIN – SLC	Annually	
HH5	14. Proportion of households with a computer	STATIN – SLC	Annually	
HH7	15. Proportion of households with Internet access at home	STATIN – SLC	Annually	
HHR1 – Reference Indicator	16. Proportion of households with electricity	STATIN – Census, SLC	10 years, Annually	

The ICT Sector and Trade in ICT Goods

ICT3	17. ICT goods imports as a percentage of total imports	STATIN	Annually	Data are available on imports (and exports). The indicators can be developed in accordance with the list of ICT goods classified by SITC codes that is now available.
ICT4	18. ICT goods exports as a percentage of total exports	STATIN	Annually	

Use of ICT by Businesses

Data to compile Indicators on ICT use by businesses (UN Core Indicators B1-B8) are not yet available. A special business survey would be required to obtain benchmark data.

FOR INFORMATION

SOURCE: Ministry of Communications, Ghana

TITLE: State of ICT statistics collection and dissemination in Ghana

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7th ITU World Telecommunication / ICT Indicators (WTI) Meeting, Cairo, 3-5 March, 2009

Topic

State of ICT statistics collection and dissemination in Ghana.

The Republic of Ghana is situated in West Africa and borders Côte d'Ivoire (Ivory Coast) to the west; Burkina Faso to the north; Togo to the east, and the Gulf of Guinea to the south

Map of Ghana

Ghana is divided into ten (10) administrative regions and has about one hundred and forty districts each with its own District Assembly.

Population: 23milliom

Land Area: 92,100 Square km

Population density   92.2 persons per sq km

Rural / Urban %   56.2/ 43.8

THE STATE OF ICT STATISTICS COLLECTION AND DISSEMINATION.

The issue s are:
+ Why the need to collect data
+ How does the Ministry of communications collect statistics
+ What statistics is collected
+ Dissemination- demand for ICT related data
+ Analysis
+ Usefulness of the data, in terms of who gets what.
+ Conclusion.

THE MINISTRY'S STATISTICAL OBLIGATION: WHY

The Monitoring and Evaluation system design clarifies the scope of information requirements and major users of information, responsibility for data collection, analysis and reporting, frequency of reporting and appropriate formats for reporting.

Availability of appropriate information will ensure the following:

- Demonstrate accountability and transparency at all levels of management: The citizenry, and civil society organizations, expect institutions to be values-based and results-driven. To this end M&E will set out levels of performance and measure the appropriateness of resource allocation and utilization of public funds.

- To determine specific implementation problems facing the project in order to diagnose the causes and suggest practical solutions to them.

HOW IS DATA COLLECTED

The Sector agencies Sector agencies , including Ghana-India Kofi Annan Centre of Excellence in ICT, Ghana Investment Fund for Telecommunications (GIFTEL) , Ghana Information and Communications Technology Directorate (GICTeD, Ghana Multimedia Centre (Technological Incubators) , National Communications Authority and Ghana Meteorological Agency are regularly informed to provide the needed information, usually based on a particular format.

The telecom service providers and the National Communication Authority also collect data for specific purposes.

There is also:
online research
- annual reports
- Field visit reports
- Police CID reports
- Other Government Agencies

WHAT IS COLLECTED

Infrastructure Access
- Total telephone subscribers
- Total telephone subscribers per 100 inhabitants
- Fixed line and mobile phone subscribers (per 1,000 people)
- Telephone subscribers
- Telephone mainlines (per 1,000 people)
- Main lines per 100 inhabitants
- % of automatic main lines
- % of digital mainlines
- % of residential main lines

- % of telephone faults cleared by next working day
- % of urban main lines
- Integrated Services Digital Network (ISDN) Channels
- Integrated Services Digital Network (ISDN) subscribers
- # Leased circuits
- # Public pay phones
- Main telephone lines in largest city
- Telephone coverage of population (%)
- Cellular mobile telephone subscribers
- Cellular subscribers per 100 inhabitants
- Mobile phone subscribers (per 1,000 people)
- Population covered by mobile telephony (%)
- Cellular mobile subscribers - prepaid card
- Digital cellular subscribers
- Daily newspapers (per 1,000 people)
- Cable television subscribers
- Radio sets
- Television equipped households
- Television receivers
- Estimated Direct to Home (DTH) satellite receivers
- Telex subscribers

Access by Households
- % of households with a telephone
- % of households with a mobile cellular telephone
- % of homes with Internet
- % of homes with a Personal Computer
- % of households with a radio
- % of households with a television
- % of households with electricity

Affordability
- Telephone average cost of call to US (US$ per three minutes)
- Cost of three minute local call - peak time (in LCU and US$)
- Cost of a local 3 minute call (off-peak rate) (in LCU and US$)
- Residential monthly telephone subscription (in LCU and US$)
- Residential telephone connection charge (in LCU and US$)
- Business telephone connection charge (in LCU and US$)
- Business telephone monthly subscription (in LCU and US$)
- Analog cellular connection charge (in LCU and US$)
- Analog cellular monthly subscription charge (in LCU and US$)
- Analog cellular 3minute call (peak rate) (in LCU and US$)
- Analog cellular -cost of 3 minute local call (off-peak rate) (in LCU and US$)
- Cellular - cost of 3 minute local call (off-peak) (in LCU and US$)
- Price basket for residential fixed line (US$ per month)
- Price basket for mobile (US$ per month)

- Mobile cellular tariffs (100 minutes of use per month) in US$
- Mobile cellular tariffs (100 minutes of use per month) as % of per capita income
- Cost of international bandwidth

Quality
- Telephone faults per 100 main lines

Institutional Efficiency and Sustainability
- Telephone employees, total
- Telephone subscribers per employee
- Mobile communications staff
- # of female telecommunication staff
- Total full-time telecommunications staff
- Waiting list for main lines

Investment/ Revenue
- Total income from telephone service (in LCU and US$)
- Telecommunications investment (% of revenue)
- Telecommunications investment (in LCU and US$)
- Total telecom investment (capital expenditure) (in LCU and US$)
- Annual investment for telephone service (in LCU and US$)
- Mobile communication investment (in LCU and US$)
- Telecommunications revenue (in LCU and US$)
- Telecommunications revenue (% GDP)
- Mobile communication revenue in (LCU and US$)

Telecom Usage/ Traffic
- Total national telephone traffic (calls)
- Total national telephone traffic (minutes)
- Number of local telephone (calls)
- Number of local telephone (minutes)
- Connection capacity of local exchanges
- Number of national long distance telephone (minutes)
- Number of national long distance telephone calls
- International voice traffic (minutes per person)
- International voice traffic (out and in, minutes)
- International incoming telephone traffic (calls)
- International incoming telephone traffic (minutes)
- International outgoing telephone traffic (calls)
- International outgoing telephone traffic (minutes)
- International telephone circuits

Regulatory environment - Data security
- # incidents of cyber crime per year
- Existing IP legislation
- Laws relating to ICT use
- Secure Internet servers
- Secure Internet servers (per 1 million people)

Computer and Internet usage
- Internet users
- Internet subscribers
- Internet users per 100 inhabitants
- Internet users (per 1,000 people)
- % female Internet users
- Percentage of localities with public Internet access centres (PIACs) by number of inhabitants (rural/ urban)
- Broadband subscribers
- Broadband subscribers (per 1,000 people)
- Cable modem Internet subscribers
- DSL Internet subscribers
- Number of internet hosts
- International Internet Bandwidth (Mbps)
- International Internet bandwidth (bits per person)
- # Internet hosts in urban areas
- # Internet users per 1000 people in urban areas
- # Internet users per 1000 people in rural areas
- Proportion of individuals who used the Internet (from any location) in the last 12 months
- Location of individual use of the Internet in the last 12 months: (a) at home; (b) at work; (c)place of education; (d) at another person's home; (e) community Internet access facility; (f) commercial Internet access facility; (g) others
- Frequency of individual access to the Internet in the last 12 months (from any location): (a) at least once a day; (b) at least once a week but not every day; (c) at least once a month but not every week; (d) less than once a month
- Price basket for Internet (US$ per month)
- Internet access tariffs (20 hours per month). in US$
- Internet access tariffs (20 hours per month). as % of per capita income
- Number of personal computers (thousand)
- Personal computers (per 1,000 people)
- # of computers per 1000 people in urban areas
- # of computers per 1000 people in rural areas
- Proportion of individuals who used a computer (from any location) in the last 12 months

ICT Usage by type of activity
- Information about health and health care services
- General web browsing
- Communications
- Purchasing goods and services
- Internet banking
- Info on education opportunities
- E-learning activities
- E-learning activities
- Entertainment

- Access to online news, books, magazines

ITES
- Total ITES revenue (% of GDP)
- Total ITES revenue
- Total ITES SMEs revenue
- Total revenue from ITES exports
- ICT goods exports as a % of total exports
- Total FDI in ITES sector
- High-technology exports (% of manufactured exports)
- High-technology exports (US$)
- Exports - telecommunication equipment (US$)
- Imports - telecommunication equipment (US$)

ITES - Industry data
- # of IT companies
- # of BPO companies
- # of jobs in IT industry
- # of jobs in BPO industry
- % of jobs held by women in BPO industry
- % of total private sector workforce involved in ICT sector
- # of ISO certified companies
- # of CMM/CMMI certified companies
- Value added in the ICT sector (as % of total business sector value added)

ITES Human Resources
- Total IT labor force
- # of IT professionals trained annually
- Total BPO labor force
- # of BPO professionals trained annually
- # of accredited training institution providing training in IT and BPO skills
- Cost of IT labor
- Cost of BPO labor

Government to Government (G2G) Availability and Usage
- % of ministries using computer
- % of government employees using computers
- % of ministries using internet
- % of government employees using internet
- % of businesses with web presence

Government to citizen (G2C) Availability
- % of government services available to citizens electronically
- % of citizens aware of availability of electronic government services

G2C Usage
- % of population using electronic government services
- % of users have positive experience using electronic government services

Government to Business (G2B) Availability
- % of government services available to businesses electronically
- % of businesses aware of availability of electronic government services

G2B Usage
- % of businesses using electronic government services
- % of businesses have positive experience using electronic government services

E-COMMERCE

Business to Business (B2B)
- % of businesses selling services and goods via Internet
- % of businesses buying services and goods via Internet

Business to citizen (B2C)
- # of people per 1000 buying goods and services online
- # of people per 1000 using mobile phone for e-commerce

E-Banking
- # of banks providing electronic services
- Usage of mobile phones for financial transactions

Penetration of ICT in private sector
- % of businesses using computers
- % of employees using computers
- % of businesses using the Internet
- % of employees using the Internet
- % of businesses with web presence
- % of businesses with an intranet
- % of businesses receiving orders over the Internet
- % of businesses placing orders over the Internet
- % of businesses with Local Area Network (LAN)
- % of businesses using the Internet by type of activity:
  - Sending and receiving email
  - Getting information: (a) about goods or services; (b) from government organizations/ public authorities via websites or email; (c) other information searches or research activities
  - Performing Internet banking or accessing other financial services
  - Dealing with government organizations/ public authorities
  - Providing customer services
  - Delivering products online

ICT use in Education

- Schools connected to the Internet (%)
- # of children with internet access

Others
- ICT expenditure (% of GDP)
- ICT expenditure (current US$)
- ICT expenditure per capita (US$)

DATA STORED INCLUDE:

- Annual Reports
- Industry / Country operators 'information (contact details, operator functions short descriptions, etc)
- Information is update systematically to cope with the fast changing telecom / ICT environment.

DATA COLLECTION- CHALLENGES

1. Not all the agencies return nor answers to the mails instructing them to provide the needed information on regular basis
2. Some agencies do not follow the laid down format in providing the needed information. This slows down the process.
3. Operators' data or annual reports sometimes not available.
4. The culture of storing and retrieving soft and hard copies of data and statistics is actually now developing slowly.
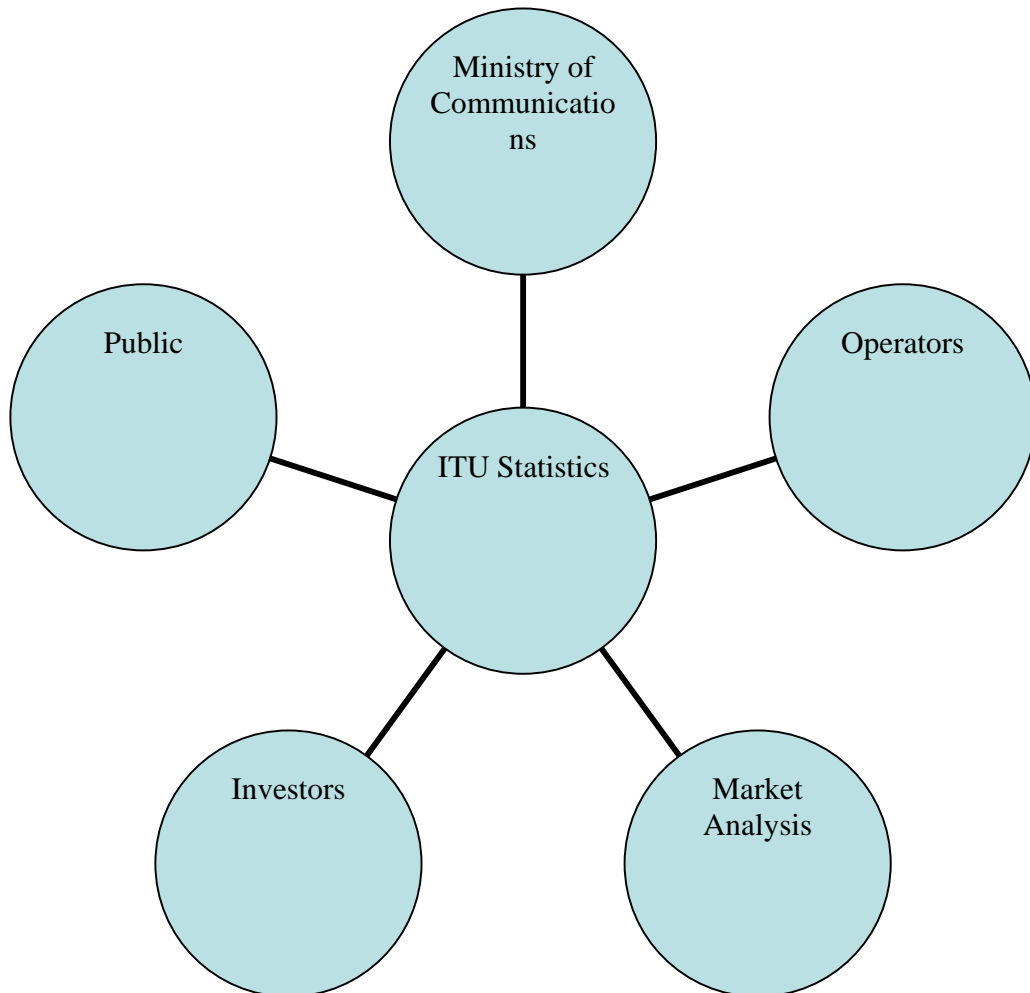
DATA DISSEMINATION
1. Quarterly reports emanating from this Ministry and its sector agencies are produced on very regular basis to the Office of the President and the Office of the Head of Civil Service on bi – annual basis for monitoring and evaluation purposes.
2. Information is also made available to Non Governmental and Civil Society Organizations' when requested for.

Ministry of Communications

Public

Operators

ITU Statistics

Investors

Market Analysis

RECOMMENDATIONS

Collaboration between different ICT   players is crucial in the collection and dissemination of telecom / ICT data.

 Continued   dialogue between the Ministry of Communications, the National Communications Authority   and the service providers on   the indicators appropriate for Ghana's ICT policy needs

There is the need to build capacity in the collection, verification and dissemination   of telecom data in the relevant agencies
 Information and knowledge should be disseminated to all stake holders who need it

INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

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FOR INFORMATION

SOURCE: Ministry of ICT, Gambia

TITLE: Background paper on data collection and dissemination in The Gambia

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BACKGROUND PAPER ON DATA COLLECTION AND DISSEMINATION IN THE GAMBIA

PRESENTED BY

MR LAMIN CAMARA
PRINCIPAL ICT OFFICER
MINISTRY OF ICT
THE GAMBIA

BACKGROUND PAPER ON ICT DATA COLLECTION AND DISSEMINATION IN THE GAMBIA

Introduction

As data or indicators are used to help formulate policies, programmes, projects, among others, or monitor their progress, it has become a necessity for ICT data to be collected and disseminated. Information and data collection is difficult and at times impossible to conduct in most developing countries not excluding The Gambia. Statistical data compilation and dissemination in the country is prevalent but not regular and consistent as it should be. With regard to the role of the Gambia Bureau of Statistics (GBoS), there is no data collection desire and /or indicators in the area of ICTs. This is due to lack of awareness and adaptation of GBoS towards present trends and the need for new indices in relation to our socio-economic realities. However, data collection on the ICT sector was facilitated by the Department of State (Ministry) for Communications, Information and Information Technology (DOSCIIT) in 2006 through the support of UNECA Scan ICT Project. This was a follow up to the e-government baseline study conducted in 2003.

ICT Profile and Data

Table 1 : ICT SUBSCRIBER BASE

Indicators	2003	2006	2007	2008
Fixed Telephony	42,000	48,000	57,000	56,900
Mobile	221,520	430,000	570,000	900,000
Internet Users	42,180	48,620	53,808	67,520

Table 2 : Basic demographic/ICT indicators

Indicators	1983	1993	2003	2006	2007	2008
*Population	687,817	1,038,145	1,360,681	1,509,928f	1,550,656f	1,600,000f
Annual growth rate (%)	3.8	4.2	2.7	2.7	2.7	3.0
Teledensity (%)			3.08	3.18	3.67	3.56
Mobile density (%)/			16.28	28.48	36.76	56.25
Internet Users (%)			3.10	3.22	3.47	4.22

Source : *Gambia Bureau Of Statistics (GBoS); f = forecast

The Government under its liberalization and privatization strategy in the telecommunication sub-sector has shown a significant improvement in the availability and accessibility of services to Gambians. Presently, in addition to the incumbent operator, GAMTEL, we have a very competitive mobile industry with three GSM operators (GAMCEL, AFRICELL & COMIUM) operating under a conducive and flourishing market environment that offers choice to consumers. Our mobile penetration rate has reached 56% by end 2008 (See table 1 below). We want to improve this achievement and therefore efforts have been made to reduce the cost of interconnection and telephony in general to realize our policy goals of not only available access but affordability to all citizens. DOSCIIT has also granted a fourth GSM licence to an indigenous Company called QCELL to provide 3G services such as voice, data and video. The total mobile subscribers have reached 900,000 in 2008 and fixed lines are 57,000 with a stagnant growth since the CDMA fixed wireless expansion in 2007. The CDMA has increased Internet Users by 25.5% to 67,520, which pushes this indicator to 4.22% surpassing tele-density.

Consequently, the CDMA, internet cafes and GPRS by GSM operators has increased internet access drastically in the country. Access to ICT facilities rose due to institutions with internet access, giving opportunities to employees. However, individual or household access is yet to improve. Thus, the increase uptake of GPRS services and operation of the 3G licensed operator is poised to make and impact.

Statistics Collection

Data collection on ICT infrastructure, facilities and usage in the Gambia was undertaken by applying reference indicators identified by ITU, Infodev and other internationally agreed benchmarks. Mostly, data collection is made in consultation with service providers and based on data they provide especially with regard to tele-density, mobile density and Internet users computation. Collecting data was through desk research, followed by survey of institutions and households on ICT access, utilization and exploitation. The survey was done through sampling due to limited funds and time constraint. As a result the sampling frame was small, which might not reflect our ICT status. Consequently, stratification was done using the population data and preliminary figures on electricity availability in households from the 2003 Population and Housing Census. The data collection was through primary and secondary data gathering. The latest ICT indicator survey was completed in 2006 referred to as the Scan ICT. The population forecast of 1.5million from GBoS was used as the baseline. Thus, the population count is estimated to reach 1.6 million as at end 2008.

Dissemination of Data

ICT statistical data collected are disseminated through official channels and by the use of our postal service delivery system. In order to ease and extend access opportunities to such data, the SCAN ICT survey report is uploaded on the DOSCIIT and GBoS websites. The PRSP (Poverty Reduction Strategy Paper) for The Gambia has a chapter on ICT, which requires indicators to be provided and updated annually for donor information and national consumption. This is another means of disseminating our statistical data on ICT

Conclusions and Recommendations

Data collection is a comprehensive and resource oriented exercise that requires adequate human resource and most importantly funds to ensure an accurate, systematic and reliable exercise. Thus, among the findings of the Scan ICT survey, The Gambia is limited in human resources, skills and know how to not only collect ICT data but analyse it in a truly representative manner. The ICT indicators are not comprehensible to GBoS personnel and this inhibits adequate and appropriate collection and analysis. Also, apparent is the inability and limitations to collect certain data annually such as computer usage. Thus, there is the need to come up with a methodology and/or yardsticks to assess access to ICTs especially on Internet use and ownership ICT devices. Apparent is the possibility for the indicators on Internet usage to leapfrog due to the GPRS and 3G services being introduced. The rural electrification programme also presents an opportunity to increase accessibility and utility of Internet. The policy intervention of government to create community access centres will boost our information society initiatives.

The following are recommendations.

- Capacity building of GBoS personnel, the regulator and staff of the ICT ministry on data collection methodology and dissemination strategies.

- Technical and financial support from ITU and other relevant institutions to establish a reference ICT data and also assist in our data collection process.

- Devise mechanisms to collect and update data annually and improve the sampling frame to make the exercise representative and reflective.

- GBoS to ensure that ICT indicators are part of its comprehensive data collection exercise, subsequent surveys and census.

- Use information centres and libraries to disseminate data.

- Surveys need to be conducted to assess methodological approaches and foundation for future or subsequent surveys on ICT.

FOR INFORMATION

SOURCE: National Communications Authority, Ghana

TITLE: State of ICT statistics collection and dissemination in Ghana

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7th WORLD TELECOMMUNICATIONS/ ICT IDICATORS MEETING
CAIRO, EGYPT, 3-5 MARCH 2009

Paper on:
State of ICT statistics collection and dissemination in Ghana

Background

General Profile on Ghana

The Republic of Ghana is a country in West Africa. It borders Côte d'Ivoire (Ivory Coast) to the west, Burkina Faso to the north, Togo to the east, and the Gulf of Guinea to the south, It was created as a parliamentary democracy at independence in 1957. It has a total Land area of 239,460 sq km with a population of about 22.4million and has been divided into ten (10) administrative regions.

Ghana is a multi-ethnic society characterized by commonalities and marked differences in social norms and values. Christianity and Islam are the two main religions.

GDP per capita at current prices as at 2008 is estimated at around US $1,500. GDP real growth rate is 6.3% (2008 est.) and GDP composition by sector is; agriculture 37.3%, industry 25.3% and services 37.5% (2006 est.).

Underlying policies/Framework

The current underlying statutory instruments governing for ICT in Ghana are:

- National Communications Authority Act 769 of 2008,
- the National ICT4AD Policy, 2003,
- the Electronic Communications Act, 2008, Act 775
- The National Communications Regulations 2003, L.I. 1719.
- Electronic Transactions Act 772, 2008
- National Telecommunications Policy, 2005 (NTP-05)

Ghana has been at the fore front of the information and communications revolution in Africa for more than a decade. As one of the first countries to introduce widespread liberalization in basic telecommunication services, in August 1994, Ghana took an important step forward in embracing the potential of competitive markets to generate growth and innovation in the sector (NTP-05).

Furthermore the Government of Ghana is committed to pursuing an ICT for Accelerated Development (ICT4AD) Vision aimed at improving the quality of life

of the people of Ghana by significantly enriching their social, economic and cultural well-being through the rapid development and modernization of the economy and society using information and communication technologies as the main engine for accelerated and sustainable economic and social development.

The main mission of the Ghana ICT4AD Vision is: to transform Ghana into an information-rich, knowledge-based and technology-driven high-income economy and society.

Ghana is determined to be part of the benefits of the new economic revolution, hence thereby acknowledging the fact that it requires the use of intensive and intelligent use of Information and Communication Technology (ICT) not only limited to the city and urban dwellers but to all corners of the country.

ICT INFRASTRUCTURE/ SERVICE PLATFORMS

Development of ICT requires certain supporting instruments in order to successfully accomplish its purpose. These instruments are better known under the term infrastructures, which include tools, capacities and capabilities, distributions and allocations.

Currently the existing ICT infrastructure/services in Ghana include:
- International connectivity via SAT-3 Submarine Optical Fibre Cable
- 800 km National Fibre Optic Backbone which is being extended to 4000km connecting 23 sites nationwide.
- 4 International Gateways via satellite
- 35 operational Internet Service Providers
- 130 installed VSAT nationwide
- 128 FM Broadcasting stations
- 12 Television stations (6 are free on air)
- 2 fixed line telecoms operators
- 5 cellular telecoms operators

There are very competitive Infrastructure Market Systems in the country, in both the private and public sector

Community Information Centres (CICS)

The introduction of the Community Information Centre Concept is to introduce innovative use of technology in the provision of information services to promote economic sustainability and at the same time be more responsive of local needs.

The vision of the Community Information Centre concept is to create rural access centres and use the medium of ICT to promote community-based ICT applications that will promote operational efficiencies delivered through effective and timely availability of information.

The Community Information Centre model has been adopted to provide a hybrid not-for-profit community resource centre and for profit telecentre.

The purpose is to provide community development information and business services to remote communities. CIC's will provide access to: Internet-enabled computers, software based on the local information needs, Fax machines, Printers, Copiers, Telephones, Television and Radios. In addition there will be an adjoining library with books and daily newspapers and magazines.

The CIC's are connected at their remote locations via satellite. The CIC's will further be linked to the government portal at the Information Services Department of the Ministry of Information to facilitate government to citizen (G2C) interaction.

When the District portals are created, CIC's will further then be linked to the respective District portals for the promotion of on-line communication and services. CIC's are therefore aimed at forming an integral part of Ghana's e-government structure.

Summary of Regional distribution of CICs in Ghana

Items	Region	No of CICs
1	Ashanti	14
2	Brong-Ahafo	12
3	Central	13
4	Eastern	14
5	Greater Accra	6
6	Northern	10
7	Upper East	13
8	Upper West	12
9	Volta	13
10	Western	13

E-Ghana Project

Good governance and efficient government control and regulatory systems depend on the availability and accessibility of quality and timely information to government agencies and the citizenry as a whole. This however led to the

establishment of the Ghana Information and Communications Technology Directorate (GICTeD) to coordinate and implement the government's ICT policy initiatives. As it is the aim of government's ICT policy, at furthering good governance and uplifting livelihood of the citizens, an implementation is ongoing on the component 3 of the e-Ghana project aimed at creating an environment for rapid economic growth by achieving greater efficiency, accountability, responsiveness and transparency in government. The component also aims at enlarging opportunities for private sector growth by adopting public private partnerships for delivering e-government services.

The aspects of this component are;

E-Government Applications and Government Communications

The public private partnerships approach which is the intended solution approach for the e-government services has the added advantages of (i) economizing on public spending on e-government by leveraging resources from the private sector; (ii) overcoming the lack of skilled personnel in government and (iii) putting in place incentives for faster roll out of e-government applications.

GICTeD is currently facilitating and coordinating a feasibility study on implementing e-government services and applications by leveraging the private sector through public-private partnerships. A Transaction Advisor engaged to assist in the preparation of the feasibility study has submitted its Inception and Needs Analysis report and a draft copy of the bidding document.

GICTeD is keen at successfully implementing its mandate as directed by the ICT4AD policy and the component three of the e-Ghana project all aimed at making Ghana knowledge based economy. The benefits of this for the country will be;
- transparency in governance
- efficiency and increased productivity
- confidence in the economy and the citizenry
- a destination for foreign capital.

National Data Center

Due to government's policy of making information accessible to all especially the various Ministries, departments and agencies (MDAs), it has become necessary to build a national data center which would serve as the main source of information storage for the MDAs. This will include a Network Operating

Centre (to offer control over all network at the MDAs), Security Operating Centre (to serve as the nucleus of the MDAs intranet and Internet Security Operations) and a Storage Area Network (which will take charge of the storage needs of all the MDAs).

The national data centre is to be hosted by GICTeD on behalf of all the MDAs and will provide services to each MDA relieving them of hosting their own Data Centre and concentrating on their core business.

IT Architecture and Interoperability Standards

The development of IT architecture and interoperability standards for Ghana will ensure interoperability of databases and applications pertaining to different MDAs. This project has been included under the Project Preparation Facility (PPF) advance, as this is a fundamental building block for e-government applications. GoG has put together a team of IT professionals for the development of this framework.

GICTeD has begun initial work on the framework duly taking into account existing frameworks like the UK's e-government Interoperability Framework (eGIF), the Pan European Interoperability Framework, the Federal enterprise architecture of the U.S., Hong Kong's Interoperability Framework and other similar frameworks. A selection of the consultant to validate the work done by GICTeD on both standards is currently in progress.

Government Portal/Gateway

The portal will consist of a data centre (with a backup centre), payment gateway, and security and authentication systems and will incorporate load balancing capabilities. Such shared infrastructure will help government departments in reducing costs, improving security of databases and make it easier for channel partners to plug into government databases for delivery of services.

The portal will also become a key interface between the government and its citizens, media and civil society, thereby promoting transparency and encouraging feedback on public policy programmes. The Ministry of Information and National Orientation will have a role in the provision of content together with other MDAs. With the successful implementation of this Project, Government-to-Citizen, Government-to-Government, and Government-to-Business access to various services will be provided online as well as carry out various financial transactions such as payment of taxes etc. The Portal will also serve as the point where vital government information can be accessed by various individuals.

Telecoms Sector Overview

Following the introduction of competition into the sector, the number of telephones lines in the country has increased remarkably, especially mobile phones.

With a subscriber base of just over 90,000 corresponding to a mere 0.5% mobile telephony penetration as at year end 2000, mobile subscription has risen to a soaring figure of 11,570,430 corresponding to a penetration of 51.8% as at the end of December 2008. This phenomenal achievement has come about as a result of good policies, effective regulation and a heightened level of competition among operators as well as the pre-conditions set by the Authority for Operators who wanted to acquire International Gateway Licenses.

The growth in the mobile market has been accompanied by decreasing end-user tariffs, however, the explosive growth has not been matched with the requisite quality of service delivery – i.e. Mobile operators have not been able to scale up (by providing adequate infrastructure such as more cell sites and interconnect trunk capacity) to meet the growth in demand. The industry has however been facing challenges with respect to site acquisitions, mast installations etc., which hampers the expansion of cell sites thereby impacting negatively on the quality of service delivery by Operators.

The percentage of land area covered by mobile cellular signal is about 33%. Percentage of mobile cellular signal coverage of population is 77%. The telecom sector employs about 6916 people, of these 970 are females.

The annual investment and total revenue from all telecom services in the telecom sector for the year 2008 were over $1billion and over $1.1 billion USD respectively.

Growth in the fixed telephony market has rather been very slow compared to the mobile market. At the end of year 2000, fixed subscribers numbered 206,300 corresponding to 1.1% penetration of the total population. However, by end of 2002, total fixed lines stood at just 270,000 being surpassed for the first time by mobile subscription which stood at 383,000 at the time. Like most countries, since the initial overtake by mobile subscription, fixed service subscription has never been able to catch up and currently, that is, as at December 2008, total fixed lines stood at 143,900 which accounted for just 0.6% of total population.

The table below shows the average telecom tariff structure in Ghana

Mobile	Ave. On net	GH¢0.0022 per second
	Ave. Off net	GH¢0.0025 per second
SMS	Ave. On net	GH¢0.0400 per sms
	Ave. Off net	GH¢0.0430 per sms
Fixed line	Ave. On net	GH¢0.0010 per second
	Ave. Off net	GH¢0.0032 per second
MMS	Ave. On net	GH¢0.1800 per mms
Video calls	Ave. On net	GH¢0.0022 per second
International		GH¢0.0024 – 0.0035 per second
Data		GH¢0.20 per mb

Note: $1USD = GH¢1.3

Telecoms Subscription in thousands ´000

	2002	2003	2004	2005	2006	2007	2008
Total Mobile	383	775	1,051	2,990	5,208	7,604.0	11,570.43
Total Fixed	270.1	292.4	307.4	345.7	360.3	386.1	143.9
Total Access Lines	653.1	1,067.4	1,358.4	3,335.7	5,568.3	7,990.1	11,714.3
Year over year growth		63.4%	27.3%	145.6%	66.9%	49.6%	46.6%
Population	18,911	19,384	19,869	20,365	21,500	21,396	22,348
Penetration Mobile	2%	4%	5.40%	14.90%	24.20%	35.5%	51.8%
Penetration Fixed	1.40%	1.50%	1.60%	1.70%	1.70%	1.70%	0.6%
Penetration	3.40%	5.50%	7.00%	16.60%	25.90%	37.2%	52.4%

Data/Internet Service Provision

Internet service provision has improved significantly with the authorisation of over 75 Service Providers of which 35 are currently operational as against the operation of just a few service providers in the year 2000. Estimated internet users are 1,000,000.

The average installation fee for internet service is $93USD. Monthly average access charge is $80USD.

A number of companies have also been authorised to establish data networks using VSAT and/or frequencies to provide fixed and wireless broadband services to their clients some of which are the banks and mining companies. This has assisted in the networking of offices and institutions and their branches across the country and beyond. Private Internet Cafes are now prevalent in most suburbs and towns. The average internet access fee for an hour at a Cafe´ is 60Gp or $0.4USD.

Challenges

- Unwillingness on the part of some operators to disclose some data

- There is no systematic mechanism in place to verify some data

- There is no systematic data processing mechanism in place (no software)

- There is no ICT secretariat for one-stop shop ICT data collection

Conclusion

Due to the absence of a secretariat for a one stop shop ICT data collection, the NCA will continue to collaborate with other stakeholders, for example, Statistical Service to gather information on ICT indicators which are available from surveys.