

ICT4D in South Asia (excluding India): Last updated: 28 September 2008; Contributor: Helani Galpaya

Overview of the region: Excluding India, the South Asian Association for Regional Corporation includes 7 countries: Pakistan, Bangladesh, Nepal, Sri Lanka, Bhutan, Maldives and Afghanistan. Significant variations in population, income, literacy and other demographic indicators exist across the countries (Table_1). But they do share common characteristics such as high unemployment, dependence on agriculture and other low-value add industries, and unstable democratic processes.

Access to and Use of ICTs by citizens: The level of ICT penetration varies significantly across the countries (Table_2). Of the two forms of new ICTs (PC-based access to the internet and mobile phone based access to voice/data services), the former (internet access) is extremely low, and the latter is (phone access, particularly mobile phone) is high. This trend holds true for the citizens at the Bottom of the Pyramid (BOP). Over 92% of the BOP in South Asia have access to and have used phones. Even when the BOP does not own a phone themselves, they can get to one within reasonable time and cost. Sharing phones with friends/ family and use of public phones is common. Though phone access is high, the related regulatory/policy regimes are less than ideal by most measures. But regulators *have* enabled the minimum (and necessary) condition – i.e. enabling market entry. Once allowed to enter, the operators have found innovative ways to compete on low ARPUs and generate high EBITDA margins. They have championed the “budget telecom” model which optimizes network investments by serving large number of consumers who have limited ability to pay and who each consume a small number of minutes individually. In contrast to phones, under 72% of the BOP have never heard of the Internet (LIRNEasia, 2006) and under 3% have used it (Figures 1, 2, 3 and 4; Table 3).

ICT4D activities in the region: The region has a high number of ICT4D initiatives. Ironically, most of these initiatives do not use the already-available mobile phone to reaching citizens. Instead they rely on increasing citizens' access to PC based internet and the delivery of services over the (traditional, non-mobile) internet. This trend is exemplified through strong and popular telecenter movements that have sprung up in every country (Table_4). Most telecenters work on a subsidy model, while a few are finally implementing more sustainable models based on public-private-community partnerships. Telecenters are implemented by governments as well as the very active NGOs (non-government organizations) that are in the region. The countries have also undertaken e-government initiatives aimed at bringing government services to citizens (Table_5). While these projects do have potential to enhance efficiency of public service delivery and to increase transparency of public institutions, clear success stories are yet to emerge and many projects are in pilot phase. The current focus appears to be implementation of new donor-funded projects, as opposed to objective evaluation and learning from existing ones.

Major funding for telecenters and e-government comes from multilateral and bi-lateral aid agencies (World Bank, UNDP, ADB, USAID, IDRC, DFID etc). Other foundations (e.g. Ford Foundation) also fund ICT3D activities, but on a smaller scale

Apart from telecenters and e-Gov projects, there are a very large number of other ICT4D projects that are currently being implemented (limited list in Table_6). These tend to be within a particular sector (e.g. Agriculture or Health), and often have online and off-line components. Majority focus on getting information into the hands of the citizen (as opposed to developing transactional capabilities). Once again, clear winners (unlike in India) are difficult to find.

Barriers: India has created wealth for its citizens through the booming IT-enabled-Services (ITES, e.g. call centers, business process outsourcing, off-shore software development) market. But other South Asian countries are yet to emerge as significant ITES players. One of the biggest barriers appears to be access to affordable local and international band-width, which in turn result in high retail prices for internet access (Table_7). Low ICT-literacy, overly traditional education systems, gender divide, low literacy, existence of various local languages are among the barriers that prevent citizens from benefiting from ICT4D initiatives.

Additional Information

1. General Country Information (Table_1):

Country	Population (in millions) 2007	Population Density (per sq.km) 2007	GPD Per Capita 2006	Gini Coefficient ¹	Literacy Rate (%) 2005	Human Dev. Index 2005	Political stability (%) 2007 ²	Control of corruption (%) 2007 ³
Maldives	0.31	1025	3107	-	96.3	0.741	48.1	23.7
Sri Lanka	19.3	294	1352	40.20	90.7	0.743	5.8	57.5
Afghanistan	27.15	43	257 ⁴	-	28	0.346	1.4	1
Nepal	28.20	199	253	47.20	48.6	0.534	2.9	30.4
Bangladesh	158.66	1102	404	33.40	47.5	0.547	8.7	9.7
Pakistan	163.90	204	803	30.60	49.9	0.551	1	21.3
USA – as a benchmark				40.8		0.951	55.8	91.3

Sources: Human Development Report 2007/2008, World Bank, ITU: http://www.itu.int/ITU-D/icteye/Reporting/ShowReportFrame.aspx?ReportName=/WTI/BasicIndicatorsPublic&RP_intYear=2007&RP_intLanguageID=1

2. Access to different modes of ICTs (Table_2)

Country	Radios (% of households) 2005	TVs (% of households) 2005	Internet users per 100 people 2007	Total telephones per 100 people 2007
Maldives	-	92	2.03	114.86
Sri Lanka	-	31.6	1.05	55.58
Afghanistan	-	6.3	0.18	17.5
Nepal	-	13.2	0.24	6.39
Bangladesh	30.4 ⁵	22.9	0.10	22.41
Pakistan	37.5 ⁶	46.5	2.14	11.7

Source: ITU indicator database 2006, ITU: http://www.itu.int/ITU-D/icteye/Reporting/ShowReportFrame.aspx?ReportName=/WTI/InformationTechnologyPublic&RP_intYear=2007&RP_intLanguageID=1

3. Access to ICTs by the BOP citizens

The following figures make use of data from LIRNEasia's 2006 survey Teleuse@theBOP. The BOP (Bottom of the Pyramid) is defined as those belonging to SEC (socio-economic classification) D and E in each country between the ages of 18-60. SEC classifications are commonly used in market research. The classification is done based on the chief household wage earners' education level and occupation. The classification is not based on income because income tends to be over-stated or understated by respondents when answering different types of surveys. However the SEC classification does have a clear correlation to income. The sample size of the 2006 survey was 8689, of which 6269 were from SEC D and E. The rest were from SEC A, B, C.

¹ World Bank, World Development Indicators 2007. A value of 0 represents absolute equality, and a value of 100 absolute inequality. For example Denmark as Gini of 24.70; Namibia has 74.30

² "Political Stability" indicator, from *Worldwide Governance Indicators 1996 – 2007*, World Bank. Available at http://info.worldbank.org/governance/wgi/mc_chart.asp. Higher the percentage, the better. i.e. Maldives is the most politically stable; Pakistan is the least.

³ "Control of Corruption" indicator, from *Worldwide Governance Indicators 1996 – 2007*. World Bank. Available at http://info.worldbank.org/governance/wgi/mc_chart.asp. The higher the percentage, the better (i.e. less corrupt).

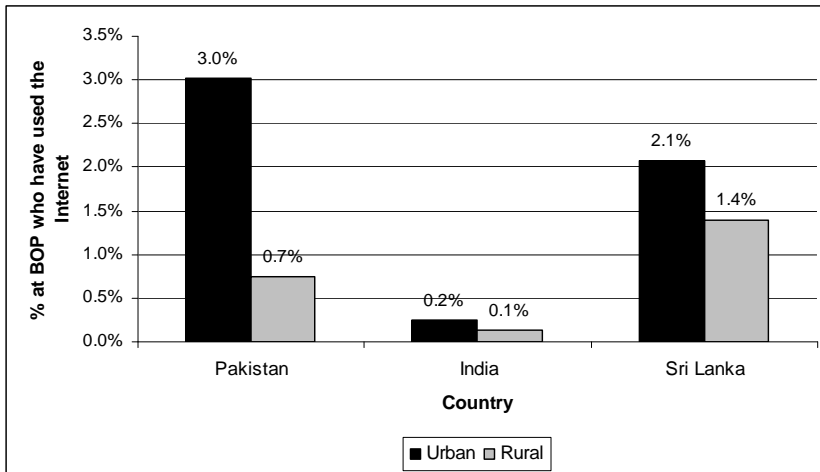
⁴ Calculated using GDP figures from the World Bank and population figures from the CIA Factbook

⁵ 2004 ITU data

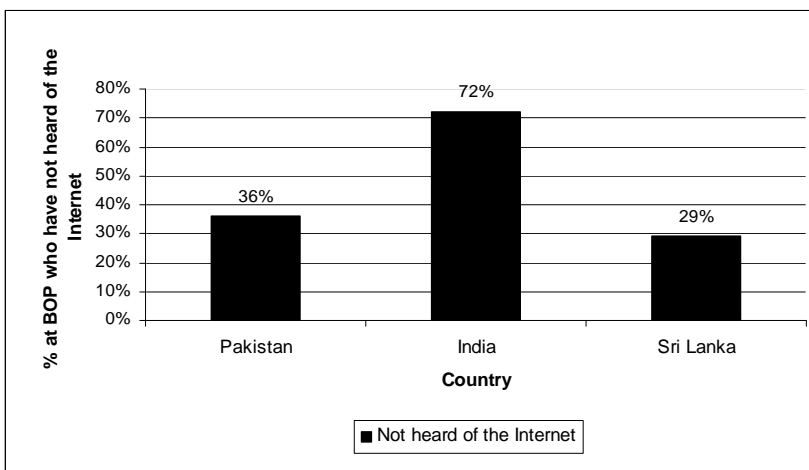
⁶ 2003 ITU data

More data available at <http://lirneasia.net/projects/2006-07/bop-teleuse>. The survey is being repeated in October 2008 in 6 countries (India, Pakistan, Bangladesh, Sri Lanka, Philippines and Thailand). Early results will be available at <http://lirneasia.net/projects/2008-2010/bop-teleuse-3> by December 2008.

Figure_1: % at the BOP who have used the Internet urban vs. rural respondents (indicating negligible internet usage overall and a significant urban-rural divide even in the small number)



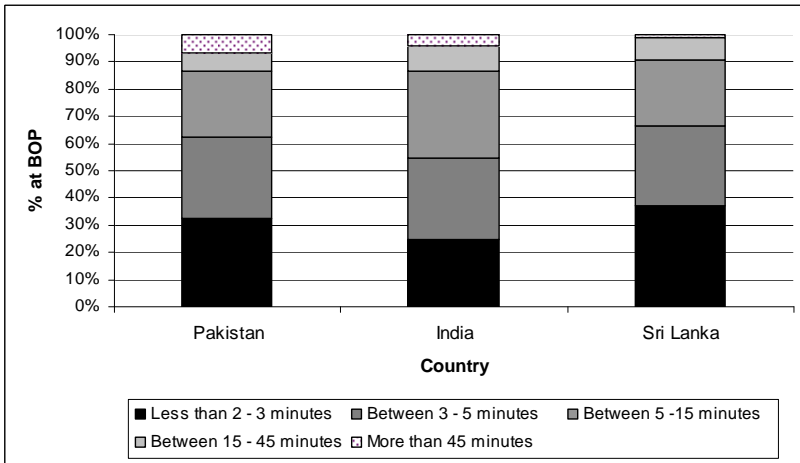
Figure_2: % of the BOP that answered “No” when asked “Have you heard of the Internet?” (indicating low awareness of the Internet)



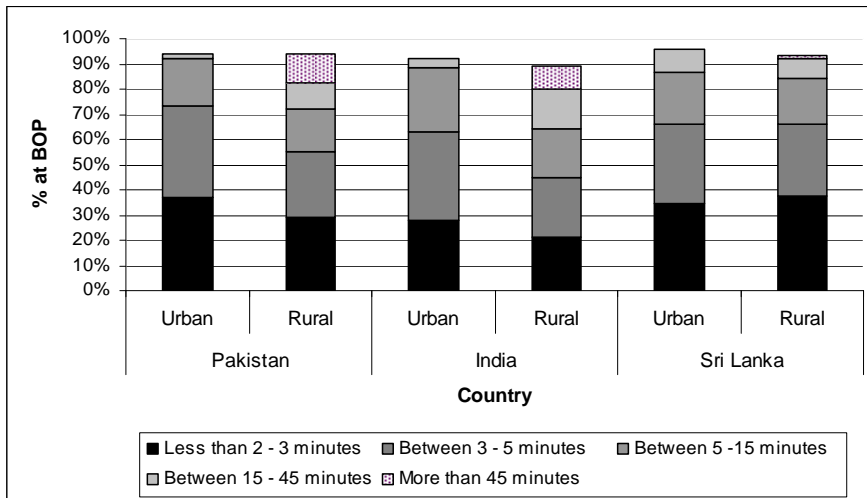
Table_3: High telephone access at the BOP

Country	Pakistan	India	Sri Lanka
% of those approached who have used a phone in the preceding 3 months	98%	94%	92%

Figure_3: Time taken to reach a phone when the respondent doesn't own one (indicating the relative ease of accessing a phone, when one is not owned by the respondent)



Figure_4: Time taken to reach a phone when the respondent doesn't own one – Urban vs. Rural respondents (indicating lack of significant urban-rural divide in accessing a phone)



4. Telecenters in South Asia (Table_4)

Country	Organization	Telecenters to be deployed within next decade	For further information:
Pakistan	Pakistan Telecom Authority	400	http://www.pta.gov.pk/index.php?option=com_content&task=view&id=891&catid=92&Itemid=1&bold=telecenters
	Post Office Telecenters	12,000	http://ifossf.org/files/Telecenters%20in%20Pakistan%20Volume%201.pdf .
	Agha Khan Rural Support Pr.	200	
	Karakoram Dev. Authority	100	
	Allama Iqbal Open Uni.	2,000	
	Telecard, Mobilink, Telenor	200	
	Entrepreneurs	Several 100	
Pakistan State Oil	3,500		
Sri Lanka	USAID	500	http://srilanka.usaid.gov/programme_eg_description.php?prog_id=2
	Sarvodaya	189	http://www.fusion.lk/
	E-Sri Lanka/ICTA	1,000	http://www.icta.lk/Insidepages/Projects/Nenasala_pilots.asp
India	Swaminathan Foundation	95	http://www.mssrf.org/ect/index.htm
	ITC (E-Choupal)	20,000	http://www.itcportal.com/ruraldevp_philosophy/echoupal.htm
	Drishtee	1,020	http://www.drishteefoundation.org/
	Tarahaat	196	http://www.tarahaat.com/
	Gyandoot	21	http://www.gyandoot.nic.in/dhar_district/development.html
	N-Logue	6,000	http://www.apdip.net/resources/case/egov/
	Gramdoot	200	
Nepal	Rural Urban Partnership Program (UNDP)	8 districts to be covered	http://www.undp.org.np/successstories/successstories.php?StoryID=57&showStory=1
	National Information Technology Centre		http://nitc.gov.np/focusareasdetail.php?focusareasid=2
	High Level Commission for Information Technology	1,500	http://www.hlcit.gov.np/telecenters.php
	USAID Nepal	15	http://www.winrock.org.np/news/ict.php
	E-network Research and Development	22	http://www.pan10n.net/english/ENRD.htm
	READ Nepal		http://www.readglobal.org/
Maldives	UNV SVF Project for Atoll Development for Sustainable Livelihood (UNDP)	10 islands to be covered	http://www.unites.org/html/projects/country/maldives.htm
	National Center for Information Technology		http://www.ncit.gov.mv/page/91/TeleCenters.htm

5. Government-led ICT4D Initiatives that include e-Gov applications , ICT infrastructure development and other aspects (Table_5)

Country	Major ICT4D and e-Government initiatives
Bangladesh	A National ICT Policy was adopted in 2002 to be implemented by the Ministry of Science and ICT and the National ICT Taskforce. Significant progress is yet to be made on key initiatives such as the development of e-governance & e-commerce applications, development of an ITeS industry, the use of ICT in many sectors such as Agriculture, Health, Social Welfare and Tourism.
Pakistan	The Electronic Government Directorate (http://www.pakistan.gov.pk/e-government-directorate/)

	under the Ministry of Information Technology is the implementing body for e-Gov initiatives. A number of e-Gob projects have been completed and many are ongoing.
Nepal	The High Level Commission for Information Technology (http://www.hlcit.gov.np) provides strategic direction to a series of initiatives that include the setting up of telecenters, and IT park, and multiple e-governance projects. Projects are currently being implemented.
Sri Lanka	Information and Communication Technology Agency of Sri Lanka (http://www.icta.lk) tasked with implementing cross cutting ICT policy that has infrastructure, human resource development, e-government, technical standards, ICT-private sector and e-society components. Major funding through the World Bank, Govt. of Korea. Significant progress achieved in implementing telecenters, private sector development and capacity building. Moderate success in e-Gov but with many e-services coming online in the near future.
Afghanistan	Though not a comprehensive ICT4D program, the Ministry of Communications & Information Technology has adopted an ICT Policy (http://www.mcit.gov.af/Documents/PoliciesandLaws/Afghanistan%20ICT%20Policy-english.pdf) and has an e-Gov support unit (http://www.egov.gov.af). It is engaged in the development of infrastructure (government wide data network), the establishment of a National Data Center and setting technical architecture standards. Several government Ministries have taken these basic building blocks and are attempting to pilot the delivery of e-services to citizens.
Maldives	Under the Ministry of Communication, Science and Technology (http://www.mcst.gov.mv) the National Center for Information Technology (http://www.ncit.gov.mv) was formed to undertake cross cutting projects including setting up of broad band networks to connect the islands, development of ICT human capacity/resources, developing the IT industry, implementing telecenters, and a series of e-Gov and other applications (e.g. telemedicine, mobile banking etc). Major funding through the ADB

6. Some other ICT4D initiatives targeting rural livelihood development (Table_6)

- India has been at the leading edge of ICT4D initiatives, and can claim a number of projects that are serving as text-book models of success (e-Seva, Gyandhoot, Bhoomi and eChoupal are just some that have global name recognition). The rest of the South Asia still lack such projects with high brand-recognition and multiple objective evaluations. Yet a large number of projects do exist across the countries other countries. The following are just a few of the many projects.
- Information through Community Radio
 - **Kotmale Community Radio (Sri Lanka):** A system where Intermediaries browse the internet, collect information, contextualize it and translate it into the local language and broadcast to the nearby villages. <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/EXTGOVERNMENT/0,,contentMDK:20486095~menuPK:1767268~pagePK:210058~piPK:210062~theSitePK:702586,00.html>
 - **Bangladesh NGOs Network for Radio & Communication (BNNRC, Bangladesh):** a network of organizations that brings development knowledge to underserved areas through radio communication. In addition, piloting of ICT4D projects, implementation of tele-kiosks and other projects are undertaken. <http://www.bnnrc.net/>
- Rural Business Process Outsourcing and income generation
 - **Mahavilachchiya e-Village and Horizon Lanka School (Sri Lanka):** Horizon Lanka School was set up by a local entrepreneur who raised funds (initially through the Diaspora, later through donor agencies and government). It teaches children web-development skills and English. Upon being connected to the internet through a mesh network, the skilled students are able to develop his remote village (Mahavilachchiya) in Sri Lanka currently has a profitable BPO operation that processes accounts for a large conglomerate located in the capital city Colombo. <http://www.horizonlanka.org/>
- Agriculture and Agri-Market Information

- **Govi Gnana Seva (Sri Lanka):** Enabled farmers who trade in largest wholesale produce market in Sri Lanka to obtain current market prices using SMS via a mobile phone.
- **DAM (Department of Agricultural Marketing), Bangladesh:** Provides District- and Division-wise daily retail prices for agricultural produce in the country. <http://www.dam.gov.bd/jsp/index.jsp>
- Market Development/e-Commerce
 - **ESEWA (Nepal):** Gives business skills training to artisans. Helps them create an online presence and access a global marketplace for their goods. <http://openentry.com/esevanepal/EN/exporter-of-crafts.html>
 - **KADO and COMSA project in Northeast Pakistan:** Internet connectivity and ICT skills training provided to individuals and institutions of rural northeast Pakistan's Hunza and Nagar Valley regions. Enabled businesses to communicate with their Southern counterparts more easily. Project also has other components that include skills development and content access for education etc. http://www.idrc.ca/panasia/ev-51829-201-1-DO_TOPIC.html and <http://www.kado.net.pk/>
- Telemedicine
 - **Telemedicine link for Patan Hospital, Katmandu (Nepal):** A low cost project, with a digital camera and a telecom link that enabled digital pictures and emails to be sent from the hospital in Katmandu to specialists across the world in order to get comments, advice. http://www.uq.edu.au/swinfen/pdf/Swinfen_td36.pdf
- In addition to the above, the UN Asia Pacific Development Information Program has a website that provides some case studies in ICT4D in the region. See <http://www.apdip.net/resources/case>
- **NGOs:** The active and vocal NGOs of South Asia are engaged in numerous ICT4D activities. See for example
 - **Sarvodaya,** Sri Lanka's largest NGO which is implementing telecenters and rural livelihood projects using ICT as a tool
 - **BNNRC,** Bangladesh's NGO Network that implements radio communication and internet based information delivery projects to help develop rural communities
 - **D-Net** (Development Research Network) which implements projects that use ICTs to develop Bangladesh

7. Leased Line Prices in USD (Table_7)

Country ¹	2MB, 2km DPLC ² (p.a. ³)	2MB, 100km DPLC ⁵ (p.a.)	2MB Broadband business connection ⁶ (p.a.)	Minimum 256kbps Broadband business connection ⁶ (p.a.)	Minimum 256kbps Broadband residential connection ⁶ (p.a.)
Afghanistan	12,000 ⁷	N/O ⁸	N/O	N/O	N/O
Nepal	55,393 ⁹	2,760,290 ⁹	57,385 ¹⁰	8,608 ¹⁰	6,695 ¹⁰
Bangladesh	23,393 ¹¹	N/O	N/O	8,016 ¹²	2,680 ¹³
Pakistan	49 ¹⁴	2,437 ¹⁴	N/O	964 ¹⁵	964 ¹⁵
India	432 ¹⁶	4,447 ¹⁶	3,779 ¹⁷	241 ¹⁸	379 ¹⁸
Bhutan	2,438 ¹⁹	18,283 ¹⁹	4,540 ²⁰	303 ²¹	303 ²¹
Sri Lanka	3,249 ²²	6,350 ²³	556 ²⁴	250 ²⁵	250 ²⁵
Maldives	18,803 ²⁶	40,576 ²⁷	16619 ²⁸	2,091 ²⁹	379 ³⁰
EU Average	35f8 ³¹		164 ³¹	119 ³¹	119 ³¹

¹ Prices quoted in local currencies converted to US Dollars based on rates from: <http://www.oanda.com/convert/classic> as at 10/02/2008. Annual prices for a Domestic Private Leased Circuit not inclusive of installation charges, modem/ router charges, any discounts, VAT or other taxes

² Countries are ranked according to the GDP per capita obtained from the World Economic Outlook database, Oct 2007.

- ³ Also known as a tail cost;
- ⁴ p.a. = per annum
- ⁵ Cost of two tail charges + 96km link charge
- ⁶ The packages chosen are those that have an unlimited download limit, in the event this package was not found the closest available offering was reported.
- ⁷ Rates obtained from ATRA, 2007 data as reported in the earlier document found at: <http://www.lirneasia.net/wp-content/uploads/2007/09/bbenchmarks-page1-v4.pdf>
- ⁸ N/O = No Offering of this capacity is available at time of publishing
- ⁹ Nepal Telecom, http://www.ntc.net.np/tariff/int_tariff_new.php
- ¹⁰ Radius Communications Pvt Ltd, <http://www.radiusnp.com/index.php>
- ¹¹ BTTB, for a 5km link, <http://www.bttb.net.bd/rates.php#broadband>
- ¹² Grameen Cybernet Ltd, Fibre-optic broadband connection, http://www.citechco.net/pro_int.php
- ¹³ Agni Systems Ltd, Premium package, guaranteed minimum speed is 256kbps. <http://www.agni.com/products/fiber.php>
- ¹⁴ PTCL, <http://www.ptcl.com.pk/contentb.php?NID=43>
- ¹⁵ PTCL, DSL 1MB unlimited package, <http://www.ptcl.com.pk/contentp.php?NID=47>
- ¹⁶ BSNL, http://www.bsnl.co.in/service/leased_tariff.htm
- ¹⁷ BSNL, http://www.bsnl.co.in/service/dataone_tariff.htm
- ¹⁸ MTNL, TriB Unlimited, http://mtnl Delhi.in/broadband/triband_tariff.htm
- ¹⁹ Bhutan Telecom, http://www.druknet.bt/btelecom/index.php?option=com_content&task=view&id=35&Itemid=62
- ²⁰ Bhutan Telecom, DSL 15000, Data limit of 12GB, http://www.druknet.bt/btelecom/index.php?option=com_content&task=view&id=64&Itemid=112
- ²¹ Bhutan Telecom, DSL 1000, Data limit of 500MB, Does not discriminate btw corporate and home users, http://www.druknet.bt/btelecom/index.php?option=com_content&task=view&id=64&Itemid=112
- ²² SLT, for a 0-33km link
- ²³ SLT, for a 33-99km link
- ²⁴ Dialog, WiMax, 2MB Corporate package, <http://www.dialog.lk/en/broadband/products/wimax.html>
- ²⁵ SLT, ADSL Office/ Home Express, <http://www.slt.lk/data/forbusiness/115adsl.htm>
- ²⁶ Dhiraagu, <http://www.dhiraagu.com.mv/tariffs/dhivehinet.php#dedicatedaccess>
- ²⁷ As per the data from the previous document found at: <http://www.lirneasia.net/wp-content/uploads/2007/09/bbenchmarks-page1-v4.pdf>. Data was not available for this quarter. <http://www.lirneasia.net/projects/benchmarks>
- ²⁸ Focus Infocomm, ROL Corporate Access 2MB, <http://www.rol.net.mv/downloads/ROLTariffSheet.pdf>. Dhiraagu does not have a 2MB offering with an unlimited download capacity.
- ²⁹ Dhiraagu, Biz Unlimited package, <http://www.dhiraagu.com.mv/tariffs/dhivehinet.php#broadband>
- ³⁰ Focus Infocomm, ROL broadband 256 value for homes, <http://www.rol.net.mv/downloads/ROLTariffSheet.pdf>. The Dhiraagu package - Home Unlimited charges an annual rental of USD655 for a 256kbps broadband connection, <http://www.dhiraagu.com.mv/tariffs/dhivehinet.php#broadband>.
- ³¹ Calculated average, weighted by number of subscribers. Subscriber data from ITU 2005. Prices from "European Electronic Communications Regulation & Markets 2005 11th Report"