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Broadband and ICT Access *Background Paper – Panel 1*

1. PURPOSE OF THIS PAPER

This background paper focuses on the need to promote investment in ICT connectivity in the CIS region to support economic growth, employment and development. It highlights the current situation and proposes future courses of action. The objective is to facilitate discussion on the next steps that could be taken to improve connectivity. In particular, it focuses on ways to complement and extend the existing access networks to ensure greater availability of broadband connectivity, including in rural and remote areas, and on attracting investment in ICT infrastructure, including backbone and access networks.

2. CONTEXT AND ISSUES

Recognizing the catalytic role of ICTs to help achieve the United Nation's Millennium Development Goals¹ by 2015, world leaders identified a number of targets during the World Summit on the Information Society (WSIS)² in 2003 and 2005. ITU was mandated as the lead agency for ICT infrastructure development. Efforts are underway in all parts of the world to accelerate progress in meeting the goals of the Summit. The Connect CIS Summit is one such effort aimed at mobilizing resources for infrastructure development.

The last few years have seen increasing investments in ICT infrastructure in CIS countries. Much of it has sought to improve mobile infrastructure and access. However, the high-speed internet services which are so important for key business, government and consumer applications continue to be either expensive (particularly in relation to average local incomes) or unavailable in rural and remote areas (depending on location).

Broadband networks are increasingly recognized as a core infrastructure of any modern economy and are fundamental for promoting economic and social development. Broadband can play a central role in supporting advanced ICT applications and services for governments, businesses and consumers. They can support effective delivery of government services, and play a major role in health, education, agriculture, trade etc³:

¹ United Nation's Millennium Development Goals, available at: <http://www.un.org/millenniumgoals/>

² World Summit on the Information Society, available at: <http://www.itu.int/wsis/index.html>

³ ITU, Birth of Broadband, http://web.itu.int/dms_pay/itu-s/opb/pol/S-POL-IR.BB-2003-PDF-E.pdf

- For governments, broadband is a way of promoting economic development and social benefits. As many countries have also experienced, broadband can also facilitate the provision of public services (such as e-learning, telemedicine and e-government).
- For telecommunication companies, broadband services enable alternative business propositions.
- For consumers, broadband offer a much wider and richer range of applications, especially when higher speed services are available.
- For businesses, in particular small- and medium-sized enterprises, broadband brings the advantages of access to high-speed communications, and the ability to reach a worldwide audience that were previously only available to larger companies.

3. OPPORTUNITIES

Unsatisfied demand for affordable high-speed Internet services represents a major opportunity for business development and the emergence of new players and fresh investment, making new technologies and services available. While active participation by the private sector is essential to ensuring effective and viable broadband supply, governments also have a key role to play in the introduction, expansion and provision of services over broadband. Some governments have provided direct subsidies for the construction of broadband networks. Incentives may take the form of investment subsidies and tax holidays, amongst others.

Governments can play a major leadership role in advocating the development of broadband and also act as a catalyst to private sector broadband network deployment, by guaranteeing to act as a major user of broadband networks deployed by the private sector. Government institutions such as schools, hospitals and community centers can provide an assured customer base for broadband services. This effectively provides a guarantee to private sector providers, creating an incentive for entry into un-served markets.

Availability of content addressing local and specific needs of countries and communities may impose limitations on the network and facilities already available. This is an opportunity to encourage the emergence of local content industry by enhancing human resource capacities in several areas. To turn these opportunities into viable avenues of investment, new approaches are needed, including innovative public-private partnerships, regulatory framework and proactive policies.

4. CURRENT SITUATION⁴

Mobile sector: CIS mobile penetration has grown quickly over recent years. Mobile penetration in the region grew from just 17.9 percent in 2003 to 113 per cent in 2008. This rapid growth is partly attributable to growing competition in the mobile market.

Fixed line sector: The fixed penetration in CIS region has been increased to 26 percent in 2008, though it is not significant. The difference in main fixed line infrastructure between urban and rural areas in the CIS, however, is significant – only 17 percent of fixed lines are deployed in rural areas, while 82.9 percent are in urban areas.

⁴ For further information on ICT Statistics, please see: <http://www.itu.int/ITU-D/ict/index.html>

Internet use: The average penetration rate of the CIS region is 24.8 percent, just above the global average of 23.7 percent. Comparatively higher numbers of Internet users are enjoying services via mobile connection.

Broadband: Availability of broadband is limited to a few countries. In some countries, broadband availability may be considered negligible.

Backbone: As a result of the recent exponential growth of the mobile sector, there is now solid backbone infrastructure in some countries. Apart from the backhaul network of fixed line operators, mobile operators have set up their own network to transport traffic, as a quick means of expanding their subscriber base in different parts of the country.

Table 1: Summary statistics, end 2008

	Fixed telephone lines (per 100 inhabitants)	Mobile Cellular suscriptions (per 100 inhabitants)	Internet users (per 100 inhabitants)		Fixed Broadband subscribers (per 100 inhabitants)
CIS	26	113.4	24.8		4.6
Africa	1.4	31.8	4.2		0.1
Americas	30.8	81.4	43.8		12.7
Arab States	11.8	70.2	15.6		1.3
Asia & Pacific	15.8	46.1	17.2		3.9
Europe	43.8	116.1	55.2		20.3
World	18.8	58.8	22.3		6.0

Source: ITU World Telecommunications/ICT Indicators Database.

Overall, the CIS region presents a diverse picture. Some countries are well-advanced and enjoy high-quality telecom infrastructure, while others lag behind comparatively. Significant sections of the population cannot afford new services, due to low per capita incomes. Yet, there is high unsatisfied demand in virtually all CIS countries. This presents an attractive opportunity to potential new players who can emerge as service providers, given favourable conditions. Much remains to be done in order to enable countries to expand telecommunication services to rural and remote areas and provide advanced ICT services. Coordinated efforts that complement ongoing initiatives with a focus on the remote and/or underserved areas can make a significant difference, within a relatively short time period.

5. CHALLENGES

In general, serious challenges persist, which can be summarized as follows:

Policy and Regulatory domain

- Different and sometimes inadequate policies with respect to rural and remote areas;
- Market liberalization and regulatory reform has yet to be fully completed;
- Lack of regulatory harmonization at the regional and sub-regional levels;
- Gaps in policy and strategy formulation, as well as implementation; and
- Lack of competition in access networks and high interconnection costs.

Technical and economic domain

- Specific problems relating to the last mile;
- Availability of energy;
- Magnitude of investment required;
- Scattered population, increasing the costs of provision of infrastructure;

- Limited affordability, reducing demand for services;
- Lack of resources for backbone and broadband network development;
- High risks for investment projects, in particular in rural and remote areas and high operational and maintenance costs, significantly exceeding possible revenues; and
- Lack of infrastructure including challenges of the geographical terrain – government offices for delivery of services, schools, hospitals etc.

End-users/ Human Resources

- Low economic activity and low incomes;
- Limited availability of technical personnel;
- Low rates of literacy and digital literacy; and
- Limited technical and management competence in some areas.

6. WAY FORWARD⁵

Access to the Internet via broadband is important for the development of countries as information societies. Apart from speed, the main characteristics of advanced broadband technologies that make them desirable are that they are always-on, flexible, less costly and more secure. Individuals are able to obtain more services and a richer experience from the Internet; private and public sectors are able to add value to their online interactions with customers and suppliers and make them more efficient; and governments are able to enhance the e-government experience for their citizens.

Generally speaking, the growth of broadband is largely due to competition and declining prices, but it also depends on available infrastructure. In many developing countries, due to the lack of economies of scale and infrastructure, the incentive to expand broadband outside urban areas is reduced. Wireless technology and satellites can help avoid the cost of infrastructure for remote or rural areas, or for areas without a critical mass of users. Governments have an important role to play in improving access to broadband through infrastructure creation and a series of policy initiatives; policy can either encourage or hinder the development of competition, thus impacting availability and prices.

Best practices: As countries plan their national investments in broadband networks⁶, it is critical that they do so within the context of a broader ICT sector development strategy. Some of the best practices supported by the ITU Global Symposium of Regulators (GSR)⁷ include the following:

- Any state investment in the ICT sector should accompany market reforms or be framed within the context of a level competitive playing field.
- Active governments should not mean an absence of the private sector in such expansion plans.
- Successful broadband strategies have involved a mixture of private sector enterprise and public sector engagement.
- The state should look to invest in complementary activities in addition to infrastructure. By investing in e-services for the public, education, health centers, or funding the development of local language content, governments can make broadband services more relevant to their citizens, thereby creating incentives for subscription.
- Policies for creation of demand for services are an essential element of the strategy for effective and productive use of the infrastructure.

⁵ For further information on the ITU projects in CIS, please see: http://www.itu.int/ITU-D/projects/proj_reg-init_CIS.asp

⁶ For more information on ITU-D-SG2, see: http://www.itu.int/ITU-D/study_groups/SGP_2006-2010/SG2/SG2-index.html

⁷ Best practices issued by the ITU are available from: <http://www.itu.int/ITU-D/treg/bestpractices.html>

Infrastructure development must be well-coordinated with the other needs of countries in order to exploit synergies with other programmes and initiatives⁸ in the region. This will necessarily involve the participation of governments, industry, financial institutions and other stakeholders, as part of a shared effort to promote connectivity within the CIS region.

It is recommended that a two-pronged approach is followed - the first part relating to access networks and the second to national and regional backbone infrastructure.

1. Wireless Broadband Access Network: The ITU Wireless Broadband Partnership will mobilize key stakeholders to finance, plan, build, operate and maintain wireless broadband infrastructure within beneficiary countries, with particular attention to underserved populations in rural and remote areas. The ITU Wireless Broadband Partnership aims to provide access to broadband-supported services and applications at rates comparable to those in developed countries over time.

ITU will work with governments and other partners to:

- Identify specific countries in the CIS region to be covered under this proposal;
- Identify specific areas to be covered within each participating country;
- Determine and mobilize the resources required for implementation; and
- Draft viable projects for implementation in each participating country.

Expected Outcomes: The following outcomes are expected for each participating country in the Wireless Broadband Partnership:

- Deployment of wireless broadband infrastructure for identified areas;
- Development of a national ICT broadband network plan for beneficiary countries;
- Training of local experts on the operation of the deployed network;
- Development of ICT applications and services that improve public services and create opportunities for sustainable economic growth and employment; and
- Provision of low-cost devices to expand ICT access.

2. High-capacity backbone networks. This proposal aims to explore ways and means of improving high-speed connectivity in the region. All investment decisions need to be based on accurate estimation of all the key issues and a clear picture of connectivity. The following actions are proposed:

- Identify existing/ongoing and planned projects in order to update information on the current status of backbone and broadband networks/infrastructure;
- Identify the demand for international high-capacity links, which is an essential precondition for the expansion broadband within the country;
- Develop strategies and plans, followed by more specific country-level/sub-regional feasibility studies and bankable projects to address remaining infrastructure gaps;
- Encourage private investment in broadband and backbone networks by improving the enabling environment;
- Attract partners and secure financing to accelerate upgrading the implementation of existing and planned projects;
- Encourage human capacity-building for maintaining and ensuring sustainability;
- Enhance coordination of ICT infrastructure investment amongst donors and financial institutions; and
- Put in place policy mechanisms to ensure the maximum use of the backbone infrastructure – in other words, maximize the number of customers.

8 For more information about ITU regional projects, please see: <http://www.itu.int/ITU-D/projects/>