United Nations

A/66/64–E/2011/77

**General Assembly
Economic and Social Council**

Distr.: General
14 March 2011

Original: English

General Assembly
Sixty-sixth session
Item 17 of the preliminary list*
Information and communication technologies for
development

Economic and Social Council
Substantive session of 2011
Geneva, 4–29 July 2011
Item 13(b) of the provisional agenda**
Economic and environmental questions:
Science and technology for development

Progress made in the implementation of and follow-up to the outcomes of the World Summit on the Information Society at the regional and international levels

Report of the Secretary-General

Executive summary

      This report has been prepared in response to the request by the Economic and Social Council, in its resolution 2006/46, to the United Nations Secretary-General to inform the Commission on Science and Technology for Development on the implementation of the outcomes of the World Summit on the Information Society (WSIS) as part of his annual reporting to the Commission. It reviews progress made in the implementation of the outcomes of WSIS at the international and regional levels, and identifies obstacles and constraints encountered. The report has been prepared by the UNCTAD secretariat based on information provided by entities in the United Nations system and elsewhere on their efforts in 2010 to implement the outcomes of WSIS, with a view to sharing best and effective practices and lessons learned.

*   A/66/50.
** E/2011/1.

Introduction

1.   This report has been prepared in response to Economic and Social Council (ECOSOC) resolution 2006/46, which requests the United Nations Secretary-General to inform the Commission on Science and Technology for Development (CSTD) on the implementation of outcomes of the World Summit on the Information Society (WSIS), based on inputs from relevant United Nations and other entities.

2.   The present report incorporates analysis of responses provided by 19 United Nations and other international organizations, as well as other stakeholders, to a letter from the Secretary-General of UNCTAD, inviting inputs on trends, achievements and obstacles in the implementation of WSIS outcomes.[1] The report does not claim to provide a comprehensive account of all efforts at WSIS implementation but focuses on major initiatives undertaken since February 2010, as reported by relevant organizations.[2]

I.   Key trends

A.   Continued growth and change in mobile connectivity

3.   The growth of mobile telephony has greatly exceeded the expectations at the time of WSIS. Mobile telephone networks are now accessible to 90 per cent of the world's population, including 75 per cent of those living in rural areas,[3] suggesting that the WSIS target of ensuring that more than half the world's population should have ICTs "within their reach" by 2015 has in practice been achieved. The International Telecommunication Union (ITU) estimates that the number of mobile subscriptions worldwide was close to 5.3 billion by the end of 2010, more than one subscription for every adult on the planet,[4] though these numbers are inflated by the significant number of subscribers that use more than one network or have multiple or inactive subscriptions. Almost three quarters of mobile phone subscriptions are in developing countries. The cost of basic mobile handsets continues to fall, while most countries are also experiencing decreasing usage tariffs.

4.   The nature of mobile telephony is changing too. Mobile phones are becoming multipurpose devices that have non-telephony features (such as cameras) integrated with telecommunications to give users a richer range of communications opportunities. The rapid growth in the sales of smartphones, with their potential for mobile broadband, further increases the versatility of mobile handsets. Smartphones and higher-specification feature phones are increasingly used for access to the Internet, offering easier Internet access and more rapid growth in Internet use in developing-country markets. Just under 99 per cent of the 3.25 million Internet subscribers in Kenya in September 2010 had mobile Internet subscriptions.[5]

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[1] COE, ECA, ECLAC, ESCAP, ESCWA, FAO, ICC-BASIS, IGF, ISOC, ITU, UNCTAD, UNDESA, UNECE, UNEP, UNESCO, UNIDO, WHO, WIPO, WMO.

[2] The complete submissions from each organization can be accessed on the CSTD website at http://www.unctad.org/cstd.

[3] See ITU (2010). World Telecommunication/ICT Development Report. *Monitoring the WSIS Targets.*

[4] http://www.itu.int/ITU-D/ict/statistics/at_glance/KeyTelecom.html

[5] Communications Commission of Kenya. *Quarterly Sector Statistics Report.* Sector Statistics Report Q1 2010/11. http://www.cck.go.ke/resc/statcs.html

5.   These changes have led policymakers and businesses to rethink the relationship between fixed and wireless communications, and the infrastructure requirements for both national backbones and local access networks. However, important challenges remain. Mobile networks are not nearly as pervasive in rural Africa as they are elsewhere, with subscription rates as low as 4 per cent in rural parts of the Democratic Republic of the Congo.[6] The cost of access still varies considerably between countries, and is beyond the reach of the poorest social groups. The growth of mobile traffic poses new challenges for regulators in areas such as convergence and spectrum management. With the right policy approach, however, dynamic mobile markets could bring near-ubiquitous telephony within reach within the next five years.

B. Broadband networks grow, and address the development agenda

6.   Increased attention was paid during 2010 to the need for broadband networks, which offer access to higher-quality Internet speed and services, as an essential element in national development strategies and in enabling individuals and communities to gain maximum advantage from information and communications. The Broadband Commission for Digital Development, initiated by ITU and UNESCO, suggested in 2010 that "the social and economic development of every country on earth will depend on accessible and affordable access to broadband networks."[7] The potential impact of broadband on economic development has been emphasized in reports by the World Bank, which suggests that there is a strong association between broadband and economic growth.[8] Governments in developed countries have included broadband infrastructure investment in economic stimulus programmes, while governments in developing countries have begun to integrate broadband in their strategies for national economic growth.[9]

7.   However, broadband access has been growing faster in developed countries than in developing countries, raising concerns of a new digital divide based on the quality of available access. At the end of 2010, it was estimated that there were 24.6 fixed and 51.1 mobile broadband connections for every 100 people in developed countries, but just 4.4 fixed and 5.4 mobile broadband connections for every 100 people in developing countries. Unless this changes, there is a risk that the digital divide in the availability of access, which has been reduced by the growth in mobile telephony, will be replaced by a new digital divide based on the quality of access and what it can offer users.

8.   The challenge of addressing this broadband divide, and the opportunity of increasing communications revenue, is driving investment in regional and national backbone networks in developing countries by communications businesses, national governments and public–private partnerships. The challenge of enabling local access to broadband networks, especially in the rural areas of developing countries, is leading to new thinking about universal access strategies, community access facilities, and the potential of mobile networks and handsets to provide broadband access platforms.

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[6] ITU, op. cit., p. 14.

[7] Broadband Commission. *A 2010 Leadership Imperative: The Future Built on Broadband.* Available at: http://www.broadbandcommission.org/report1/report1.pdf

[8] World Bank (2009). Information and Communications for Development. *Extending Reach and Increasing Impact* (especially chapter 3). Available at:
http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONANDTE CHNOLOGIES/EXTIC4D/0,,menuPK:5870641~pagePK:64168427~piPK:64168435~theSitePK:5870636,00.html

[9] http://blogs.timeslive.co.za/vault/2010/07/14/south-africas-new-broadband-policy/

C. Online and mobile transactions

9.   Much attention is being paid in the development community to the spread of new mobile applications, particularly in two sectors: m-health and m-transactions. As mobile telephony extends its reach throughout developing countries, these may offer substantial added value to end-users.

10.   Mobile health services illustrate the range of uses through which ICTs can enhance service delivery and social welfare, for example by providing support to clinicians in the field (including remote diagnosis), facilitating public health campaigns, and reminding patients to take medication. M-health initiatives have been strongly encouraged by the World Health Organization (WHO), which reports that 83 per cent of countries had at least one m-health initiative under way during 2009, three quarters of which had four or more in progress.[10] Development agencies are keen to monitor the cost-effectiveness of m-health initiatives and their impact on health outcomes, particularly in rural areas.

11.   Mobile transactions have received attention and enthusiasm following the success of services in countries including Kenya and the Philippines. These services, which use mobile phone networks to compensate for the lack of extensive banking networks in developing countries, make it easier for people to manage their savings, obtain access to capital, transmit remittances, and conduct digital micro-transactions. In Kenya, it has been estimated that the value of transactions conducted through m-payment services is at least 11 per cent of national GDP.[11] Different models of financial transactions have been developed in different countries, with varying success, and both businesses and development agencies are keen to identify the drivers and barriers that determine success and offer the greatest value. The commercial opening for m-transaction services depends not just on the communications sector but also on changes in the way that financial services are provided and regulated. A dynamic m-transactions market could have a major impact on the cost and flow of international remittances, which contribute significantly to the income of poorer families in many countries.

D. The changing Internet: "Web 2.0" and social networking

12.   The Internet continues to evolve extremely rapidly. The number of Internet users worldwide is believed to have grown by a further 12 per cent during 2010, and to stand now at around 2 billion – twice the number in 2005 and approaching one third of the world's population. More than half of these users are in developing countries, though there is still a marked difference between Europe, where 65.0 per cent of the population was estimated to be online by the end of 2010, and sub-Saharan Africa, where the estimate was just 9.6 per cent.[12] The Government of Finland has recognized the growing ubiquity and significance of the Internet by making broadband Internet access a legal right.[13]

13.   A dramatic development in the Internet since WSIS has been the growth of user-generated content in what is often called "Web 2.0". For many people, use of the Internet now focuses as much on interactive participation in online communities, and on the sharing of personal content through these social networks, as it does on accessing information that is provided through conventional websites. The most prominent social networking website, Facebook, which first appeared around the time of WSIS, now has more than 500 million

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[10] http://www.unctad.info/upload/WSIS5/Contributions/UNGIS/WHO.pdf

[11] http://www.economist.com/node/16319635

[12] http://www.itu.int/ITU-D/ict/statistics/at_glance/KeyTelecom.html

[13] http://www.businessweek.com/the_thread/techbeat/archives/2009/10/finland_broadband_is_a_legal_right.html

users, around 25 per cent of all Internet users, and is the second most accessed site online after the search engine Google.[14] The microblogging website Twitter, which was launched in 2006, claimed 175 million registered users in early 2011 and is also one of the 20 most accessed Web sites.[15]

14.   The implications of social networking and the growth of user-generated content on the Internet are likely to be profound. They have shifted the balance between publishers and consumers of content, enabling many more people to express their views online. They are believed to have been major sources of information exchange which had significant impact on the recent political changes in both Tunisia and Egypt, and in changing the dynamics of relationships between home and diaspora communities. They offer businesses and creative artists new ways of marketing goods and services, and provide a potential vehicle for crowdsourcing information and for disseminating local and developmental content, as well as engaging grassroots efforts in development. They are likely to have increasing impact over the next five years.

E. Data privacy and security

15.   Concerns over data privacy and security continue to grow, alongside growth in the number of people online and the volume of data held in computer systems and data centres. Governments and businesses are concerned about risks to national security, commercial confidentiality, and industrial espionage. Citizens and civil society organizations are concerned about the exploitation of personal data by government agencies and businesses, and about the risk of identity theft and other fraudulent abuse. The power and capacity of the Internet to disrupt historic assumptions about the confidentiality of data and the diffusion of information were illustrated during 2010 by the publication of confidential documents on some websites, and by the speed of "viral" campaigns on social networking platforms.

16.   Another innovation which may have implications for privacy and security is cloud computing. This alternative ICT architecture moves tasks which have hitherto been undertaken on users' own hardware and software to applications, hardware and software which reside in cyberspace. Projected benefits to end-users include cost savings, improved productivity, and efficiencies in business practice and the use of ICT resources.

17.   Cloud computing is expected to have extensive impact in sectors beyond information technology, including production sectors such as manufacturing, the media, and the delivery of health, education and other government services. Its success may depend partly on the ability of cloud computing businesses, and of governments and those businesses that maintain large databases, to allay anxieties about the privacy and security implications for confidential data in data centres and to rethink the security requirements of data management for this new digital environment.

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[14] http://www.facebook.com/press/info.php?statistics; http://www.alexa.com
[15] http://business.twitter.com/about

II. Implementation and follow-up at the regional and international level

A. Implementation and follow-up at the regional level

18.   United Nations regional commissions continue to support WSIS implementation through regional action plans.[16] Extensive activities have been reported at the regional level, including regional conferences and workshops, facilitation of the sharing of best practice experiences, support to national governments in policy development, capacity-building, the deployment of ICT-enabled services, and cooperation in regional programmes and projects.

1. Africa

19.   There have been continued positive developments in infrastructure in Africa. The entire coastline is now connected to international submarine fibre cables, and governments and businesses in many countries are upgrading national backbone networks and/or inter-country connectivity. Wholesale tariffs have been falling, promising further benefits in the future. There has been continued strong growth in mobile telephone subscriptions, as well as innovation in mobile banking and e-services.

20.   The African Committee on WSIS Follow-Up meets every two years to assess and discuss WSIS outcomes. It assessed three years' experience following the Tunis Summit in a publication entitled *Implementing the WSIS Action Lines in Africa: Analysis of Country Reports*, and has launched a survey of progress during the five years since the Summit, which is to be discussed in May 2011.

21.   The Economic Commission for Africa (ECA) has continued to promote fulfilment of WSIS objectives within the framework of the Africa Information Society Initiative. Forty-three African countries have national ICT policies, with four more in the process of development. This leaves only six countries on the continent that have not initiated an ICT policy process. The top priorities of ICT for Development strategies include infrastructure, education, e-government, and human resource development. Supporting e-strategy development has been one of ECA's priorities, with the support of the Government of Finland. During 2010, it provided support for general or sectoral e-strategies in 10 countries.

22.   A variety of continental and regional programmes have been undertaken by ECA. These include development and implementation of geographic information systems to promote development outcomes. Several countries are developing sectoral strategies to mainstream these in development processes. ECA has also supported African implementation of the "Knowledge Networks through ICT Access Points for Disadvantaged Communities" project, including the establishment of the Knowledge Network of African Community Telecentres which includes 18 community telecentres and eight national telecentre networks. It has published a study of the impact and potential of mobile banking and has commissioned research on the use of mobile technology to collect and disseminate health data, and it has supported work by the Academia Research Network to develop socio-economic impact indicators for ICTs in development, based around experience in the United Republic of Tanzania.

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[16] For details, see the "Report of the Secretary-General on promoting the building of a people-centred, development-oriented and inclusive Information Society" (E/CN.16/2007/2).

23.   The Information Technology Centre for Africa has launched APCICT's Academy of ICT Essentials for Government Leaders programme on the continent, including training for diplomats and parliamentarians. ECA's SCAN-ICT initiative has continued to build the capacity of national statistical offices to collect and analyse ICT statistics.

24.   The African Union summit in February 2010 explored the theme "Information and communication technologies in Africa: Challenges and prospects for development", and adopted a declaration on the future of ICTs in Africa. Work has been undertaken on a draft African Convention on Cybersecurity and e-Transactions. Initiatives led by regional economic communities include the development of supplementary acts on data protection and electronic transactions and a draft directive on cybercrime in the Economic Community of West African States (ECOWAS) region, a workshop on cybersecurity in the Maghreb region, and technical assistance for a strategy to harness ICTs for development and regional integration in the Southern African Development Community (SADC) region.

25.   In collaboration with ITU, UNCTAD, and other international agencies, the Government of Tunisia held the fifth ICT4All Forum in Tunis in November 2010. This forum focused on the participation of young people in the Information Society.

2.   Asia and the Pacific

26.   There are considerable differences in the economic and ICT development status of different countries within the Asia-Pacific region. In 2010, the Economic and Social Commission for Asia and the Pacific (ESCAP) published a review[17] of progress made in implementing WSIS outcomes, which analysed the state of ICT development and made recommendations for the future. Although the WSIS target for ICT access has been statistically achieved within the region, this does not mean that the use of ICTs has reached deeply into society. ESCAP is concerned that lack of relevant content and applications is constraining development of the ICT sector and limiting its contribution towards achievement of the Millennium Development Goals. ESCAP believes that mobile networks provide a crucial opportunity to extend access to information, especially in rural areas, and is seeking to promote development of mobile applications relevant to the needs of the poor, such as mobile banking and mobile health.

27.   ESCAP's Committee on Information and Communications Technology addresses the integration of ICTs in national and regional development programmes, the transfer and application of ICTs, the development of human and institutional capacity in their use, and the application of ICTs in disaster risk reduction. Its second session, which was held in November 2010, emphasized the importance of regional economic cooperation and connectivity, not least in bringing the island nations of the Pacific into closer cooperation with the remainder of the region. The Committee highlighted the importance of regional cooperation for broadband development, including issues of availability, affordability and reliability.[18]

28.   The Asian and Pacific Training Centre for Information and Communication Technology for Development (APCICT) undertakes activities under three pillars: training, research and knowledge management. Its flagship Academy of ICT Essentials for Government Leaders programme[19] has been initiated in 18 countries in the region, has been introduced in Africa by ECA, and is expected to be used by the Economic Commission for Latin America and the Caribbean (ECLAC) and the Economic and Social Commission for

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[17] http://www.unescap.org/idd/events/cict-2010/CUCT2_2E.pdf
[18] http://www.unescap.org/idd/events/cict-2010/index.asp
[19] http://www.unapcict.org/academy

Western Asia (ESCWA). Its eight modules are now available in five languages, and have reached over 7,000 participants since 2006. Two new modules are in preparation, concerned with disaster risk reduction and climate change mitigation and adaptation. The APCICT Virtual Academy now provides a distance learning platform for the Academy.

29. Another ESCAP project concerns strengthening ICT policies and applications to achieve MDG and WSIS goals in Asia and the Pacific. This seeks to raise policymakers' and stakeholders' awareness of the potential of emerging technologies and ways in which they can enhance social and economic development. It has targeted Least Developed Countries and Small Island Developing States, while encouraging countries in the region that have extensive ICT experience (including China, India and the Republic of Korea) to share lessons they have learnt with other countries.

3. Western Asia

30. The Economic and Social Commission for Western Asia (ESCWA) continued its work to implement ICT objectives within the framework of the Regional Plan of Action agreed in Damascus in 2009. Its Information Society Portal and its publication *Regional Profile of the Information Society in Western* Asia provide information on ICTs within the region.

31. During 2010, ESCWA continued to promote "Knowledge Networks through ICT Access Points for Disadvantaged Communities" (KN4DC). This programme stimulates telecentres and other community access points in rural areas. Activities have included workshops on management and sustainability of knowledge hubs and networks in Egypt and the Syrian Arab Republic, and an evaluation which has recommended the establishment of a successor programme to KN4DC.

32. ESCWA has continued to play a full part in many WSIS action lines. Activities have included workshops on the delivery of e-services in civil society, the measurement of ICT statistics, and data collection. It has built on work on the harmonization of cyber-legislation, initiated in 2009, by researching and compiling reports on the status of legislation in 18 Arab countries. It has continued to work with ITU, the League of Arab States, and regional and international organizations to promote linguistic and cultural diversity in the Information Society, including wider use of the Arabic language.

33. Another important issue for ESCWA has been confidence and security in the use of ICTs. Following the publication in 2009 of a study entitled *Building Trust in E-Services in the ESCWA Region*, ESCWA organized a workshop entitled "Building trust and confidence in Arabic e-services." Recommendations from this workshop included the formulation of national strategies for trust-building, the training of judges and lawyers in cyber-law, and the development of regional awareness on the ethical dimension of the Internet.

34. ESCWA believes the benefits of regional integration can be promoted by