United Nations A/67/66–E/2012/49

General Assembly
Economic and Social Council

Distr.: General
12 March 2012

Original: English

General Assembly
Sixty-seventh session
Item 18 of the preliminary list*
Information and communications technologies for development

Economic and Social Council
Substantive session of 2011
New York, 2–27 July 2012
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 to the United Nations Secretary-General to inform the Commission on Science and Technology for Development (CSTD) concerning the implementation of the outcomes of the World Summit on the Information Society (WSIS). It reviews progress in implementation of WSIS outcomes 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 2011 to implement the WSIS outcomes, with a view to sharing effective practices and lessons learned.

* A/67/50.

** E/2012/1.

Introduction

1. This report has been prepared in response to Economic and Social Council resolution 2006/46, which requests the United Nations Secretary-General to inform the Commission about the implementation of WSIS outcomes, based on inputs from entities in the United Nations system and elsewhere.[1]

2. The report includes information provided by the United Nations and other international stakeholders, following a letter from the Secretary-General of UNCTAD inviting contributions on trends, achievements and obstacles in implementing WSIS outcomes. The report does not provide a comprehensive account of efforts relating to WSIS implementation but focuses on major initiatives undertaken since February 2011, as reported by relevant organizations.[2]

I. Key trends

3. There has been tremendous growth in the information and communications technology (ICT) sector and the role of ICTs in social and economic development since WSIS. The number of mobile subscriptions worldwide has almost trebled to 6 billion.[3] Smartphones have transformed mobile telephones into multi-purpose devices, offering new applications and services. Broadband networks have become pervasive in developed countries, though they are less extensive in developing countries. The proportion of people with a computer worldwide is expected to rise from 1 in 50 in 2008 to 1 in 3 by 2020,[4] while the number of Internet users has more than doubled, to 2.5 billion since 2005.[5] The Internet plays an increasingly important role in public services and private transactions, and the evolving role of Internet intermediaries is creating challenges and opportunities for different stakeholders. New Internet applications, particularly social networking, have made the Internet more interactive and have made it easy for users to publish their own content. At the same time, challenges include getting protected content to users, persons with disabilities and other disadvantaged and vulnerable groups while respecting creators' interests.

4. The United Nations and international agencies have begun preparing for the 10-year review of WSIS outcomes scheduled for 2014–15. During 2011, the Partnership on Measuring ICT for Development drew up indicators to help assess countries' progress in achieving WSIS targets.[6] The General Conference of the United Nations Educational, Scientific and Cultural Organization (UNESCO) considered the impact of the Internet on its

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

[2] Full submissions from these organizations are published on the CSTD website: http://www.unctad.org/Templates/Page.asp?intItemID=6252&lang=1.

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

[4] The Climate Group for the Global eSustainability Initiative, SMART 2020, 2008, http://www.gesi.org/LinkClick.aspx?fileticket=7X8GQ7HNR%2bg%3d&tabid=60.

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

[6] http://www.itu.int/ITU-D/ict/publications/idi/2011/Material/MIS_2011_without_annex_5.pdf; http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-MEAS_WSIS-2011-PDF-E.pdf.

mandate.[7] CSTD published a comprehensive review of experience since WSIS, *Implementing WSIS Outcomes*.[8]

A. Transition from mobile telephony to mobile Internet

5. Mobility and broadband have become the most important indicators for assessing progress in the access, affordability and use of ICTs. The number of mobile-cellular telephone subscriptions almost equals the number of the world's inhabitants.[9] The International Telecommunication Union (ITU) predicts that mobile networks will cover all inhabited areas worldwide by 2015.[10] In little more than a decade, access to telephony in most developing countries has changed from a luxury of the rich to a fact of life for the majority. Even in industrial countries that have near-universal access to fixed telephones, mobility has transformed the way people use telephony and engage with one another.

6. Changes in the quality and character of mobile telephony have become as important as their increasing numbers. Mobile phones are now multi-purpose devices that give access to services far beyond telephony. Since the advent of smartphones and tablet computers, and the deployment of 3G (third generation) mobile technology, mobile devices and networks have become widely used for Internet access, making the Internet available to people wherever they are and facilitating the growth of social networking, microblogging and other sites well suited for use while on the move. In some developing countries such as Kenya, almost all Internet subscriptions are now on mobile networks.[11] The rapid growth of mobile Internet is liberating Internet use from fixed locations and reshaping business models for mobile telecommunications.

B. Broadband infrastructure and prospects

7. By December 2011, ITU estimated there were more than 1.7 billion broadband subscriptions worldwide, up 27 per cent over 12 months. About two thirds of these were mobile-broadband subscriptions, while over 40 per cent were in developing countries.[12]

8. Private and public investment is taking place in all regions, including with support from international financial institutions (IFIs). However, network deployment is slower in the least developed countries (LDCs), and broadband connectivity is much more limited in Africa. United Nations regional commissions are concerned that new digital divides may be emerging as a result, both between and within countries.

9. Governments and international agencies have high hopes that broadband services will enable a step change in economic productivity, public service delivery and access to knowledge, thereby contributing to social and economic development, including the achievement of the Millennium Development Goals (MDGs). The Broadband Commission for Digital Development has assessed the prospects of and promoted broadband networks in development. However, technology alone cannot resolve development challenges. Other

[7] http://unesdoc.unesco.org/images/0019/001920/192096e.pdf.

[8] http://www.unctad.org/Templates/webflyer.asp?docid=15060&intItemID=4839&lang=1.

[9] However, because many people own more than one mobile subscription, the number of mobile phone subscribers is significantly below the number of subscriptions. In contrast, in developing countries, one subscription is often used by multiple users.

[10] *World Telecommunication/ICT Development Report, 2010, Monitoring the WSIS Targets*, p. 3. http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-WTDR-2010-SUM-PDF-E.pdf.

[11] http://www.cck.go.ke/resc/downloads/SECTOR_STATISTICS_REPORT_Q1_11-12.pdf.

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

factors include funding, legal and regulatory frameworks, government capacity and human resources in areas such as health, science, multilingualism and education. Governments, international agencies, ICT businesses and civil society need to work together to integrate new applications with development strategies and build capacity to derive maximum benefit from the opportunities of broadband.

10. ITU has recently established global standards for the radio interface for the next generation of the international mobile telecommunication family of systems able to provide wireless broadband access; this also includes the availability of additional radio frequency spectrum to meet growing requirements for the timely deployment of mobile-broadband networks.

C. Impact of ICTs on politics, society and rights

11. Mobile telephones, social networks and microblogging sites have greatly extended the information sources available to people, their ability to express opinions and their ability to coordinate activities, including political protest. They are widely credited with a significant role in political transformations that took place during 2011, helping to change relationships between citizens and the State. As well as governments, the diversity of new information sources enabled by the Internet challenges the sustainability of the print and broadcast media, while new advertising-focused business models and online marketing have facilitated the rapid growth of new global businesses.

12. These developments exemplify wider changes in society, including rights, which are emerging as mobile telephony and the Internet become more pervasive. ICTs have also raised concerns about creators' interests, privacy and data protection, including the ability of governments and businesses to track personal activity and social networks. Patterns of economic production, employment and consumption are changing as a result of automation and the Internet – trends that are expedited by mobility and broadband. Societies and citizens are becoming increasingly dependent on digital networks and devices, blurring the boundaries between professional and personal lives and increasing vulnerability to cyber-attacks and network failures. The long-term impact of these developments in ICT technology and markets is unpredictable, making it difficult for governments to anticipate outcomes and plan accordingly.

D. Cybersecurity

13. Governments and businesses are paying increased attention to cybersecurity, including the threats posed by cybercrime, disruption to social and economic order and threats to the integrity of the Internet from spam and malware, hacking, distributed denial of service and other attacks. Government databases, business information and individual privacy are all threatened. Cybercrime is now one of the top four economic crimes[13] and has become a focus of activity for organized crime syndicates.

14. Risks posed by these problems are increasing because of the growing dependence of government and business systems on networked computers to manage resources and deliver services and because of the vulnerability of online devices and applications. A 2011 study calculated the annual cost of global cybercrime as $114 billion, with more than twice as

[13] http://www.pwc.lu/en/fraud-prevention-detection/docs/pwc-global-economic-crime-survey-2011.pdf.

much again in consequential losses – significantly higher than that from international drug trafficking.[14]

15. A critical challenge concerns finding ways to address cybersecurity issues without undermining the Internet's ability to foster innovation and deliver the enhanced information and services that users value. The international community has also emphasized the need to tackle these issues within the framework of human rights agreements. Developments such as cloud computing may increase vulnerability, while also providing opportunities to enhance security. Technical innovation, international cooperation and public-private partnerships are essential to the work of governments and other stakeholders in this field. Capacity-building is also needed.

E. ICTs and sustainable development

16. The year 2012 marks the twentieth anniversary of the first United Nations Conference on Environment and Development, and the United Nations Conference on Sustainable Development (UNCSD) will also be held in Brazil. The period since 1992 has seen a transformation in information and communications, including the development of mass markets for mobile telephony and the Internet, enormous growth in computing power and the extensive automation of government services and business processes. The international community has also gained a deeper understanding of environmental threats such as climate change, sustainability and the impact of ICTs on social and economic change.

17. The ICT sector interacts with environmental sustainability in many ways. Sensors and other ICT devices have increased capacity to monitor environmental change, manage weather crises and adapt to meet climate change impacts. Smart systems are expected to improve the efficiency and reduce environmental costs of power generation, transport and logistics. However, electricity consumption by ICT networks and devices is a growing source of greenhouse gas emissions, while the short life cycle of devices generates high volumes of electronic waste. This e-waste causes a rapidly growing disposal problem particularly in developing countries. Governments and businesses can work together to mitigate the negative impacts and maximize the environmental gains from ICT use.

18. The development of an information society towards knowledge societies is also changing the structures of societies and economies. The long-term impact of ICTs on the sustainability of human prosperity, social and economic structures and patterns of behaviour could be profound. In this context, the United Nations Group on the Information Society (UNGIS) coordinated a joint contribution to the preparatory process of UNCSD, highlighting relevant aspects of ICTs and the information society to help achieve a green economy and sustainable development.[15]

[14] http://www.symantec.com/about/news/release/article.jsp?prid=20110907_02.

[15] http://www.ungis.org/ThematicMeetingsActivities/JointContributiontotheRio20Process.aspx.

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

A. Implementation and follow-up at the regional level

1. Africa

19. African countries have continued to make significant progress in the access to ICTs and their application to development. The deployment of new submarine cables and investments in terrestrial broadband infrastructure have improved connectivity, increased bandwidth, reduced costs and facilitated services, including mobile Internet. There are now more than 50 mobile phone subscriptions per 100 inhabitants in sub-Saharan Africa.[16] However, broadband deployment has not grown as rapidly as in other regions.

20. The Economic Commission for Africa (ECA) supports the development of national ICT strategies. Some 43 African countries have national ICT policies, while some have developed sectoral ICT strategies for education, health, agriculture and commerce. A survey of governments in 2011 indicated increased investment in ICTs for development, more widespread deployment of e-government portals and greater integration of ICTs in schools.

21. ECA fostered capacity-building in the measurement of ICT indicators by means of the Scan-ICT initiative during 2011.[17] It is also working with the African Union and regional economic communities to harmonize legislation on cybersecurity and electronic transactions. ECA launched an e-commerce readiness assessment that will result in a subregional e-commerce strategy of the Southern African Development Community.

22. ECA continued to support knowledge networks through ICT access points for disadvantaged communities in conjunction with the Economic and Social Commission for Western Asia (ESCWA). At the sixth Internet Governance Forum (IGF), ECA launched the African IGF in collaboration with the African Union Commission and African subregional IGFs.

23. In collaboration with the Diplo Foundation, ECA has organized training on e-diplomacy and Internet governance, complementing delivery of the Academy of ICT Essentials for Government Leaders online programme through the Information Technology Centre for Africa.

24. The African Regional Preparatory Meeting of the United Nations Global Geospatial Information Management Initiative recommended the development of an African action plan.[18] ECA has supported the development of regional geospatial databases in sectors such as health, water and emergency management.

25. Finally, in West Africa, the European Commission and ITU are sponsoring a project called “Support for the Harmonization of the ICT Policies in Sub-Saharan Africa”.[19]

2. Asia and the Pacific

26. Rapid growth in ICT access and usage has continued in Asia and the Pacific. Mobile phones are rapidly becoming ubiquitous. However, there are substantial disparities between

[16] http://www.itu.int/ITU-D/ict/statistics/at_glance/KeyTelecom.html.
[17] http://www.uneca.org/aisi/docs/ScanICT.pdf.
[18] http://ggim.un.org/docs/Addis%20Ababa%20Declaration%20on%20GIM_Final.pdf.
[19] http://www.itu.int/ITU-D/projects/ITU_EC_ACP/hipssa/index.html.

countries and digital divides affecting women, the poor and those living in rural areas, particularly concerning broadband deployment.

27. The Economic and Social Commission for Asia and the Pacific (ESCAP) works with other regional agencies, including the Association of Southeast Asian Nations, to tackle connectivity challenges and support regional integration. It organized the Asia-Pacific Regional Forum on ICT Applications, in partnership with ITU and the Government of Thailand. The Regional Interagency Working Group on ICT, including ESCAP, ITU and the Asia-Pacific Telecommunity, reviewed the standardization of programmes in the region.

28. The ESCAP Committee on Information and Communications Technology continues to promote efforts to address technical challenges and opportunities for ICTs to enhance development, including mobile banking and digital remittances.

29. During 2011, ESCAP raised awareness of space-based technology in areas such as meteorology and disaster monitoring. With partner agencies, it launched the Asia-Pacific Gateway for Disaster Risk Reduction and Development.

30. UNESCO published *Information Policies in Asia: Development of Indicators*,[20] emphasizing the importance of connectivity, content and competencies required for the transition to information and knowledge-driven economies.

31. The European Commission and ITU sponsor a project on capacity-building and ICT policy, regulatory and legislative frameworks support for Pacific island countries.[21]

3. Western Asia

32. Western Asia has experienced widespread social and political change during 2011. Mobile phones, the Internet and the social media have played a significant part in the dynamics of change and have seen continued strong growth in the number of users, reflecting growing importance of the information society.

33. ESCWA published its fifth *Regional Profile of the Information Society in Western Asia*,[22] illustrating positive trends, including lower costs and more policy engagement with ICTs alongside increased usage. The information society portal for the ESCWA region provides additional information and resources for policymakers and other stakeholders.[23]

34. ESCWA published a study entitled *Promoting the ICT Sector to Meet the Challenges of the Knowledge Economy*,[24] which proposed measures to enhance the contribution of ICTs to development, foster sectoral creativity and stimulate innovation. The ESCWA Technology Centre[25] launched capacity-building initiatives focused on technology transfer, entrepreneurship and intellectual property (IP). ESCWA continued to support the modernization and harmonization of cyberlegislation. A study of the standardization of e-services made recommendations concerning infrastructure, regulation, standards, content and user applications. ESCWA also continued to address the need to standardize and measure development of the information society in its region.

[20] http://unesdoc.unesco.org/images/0020/002070/207048E.pdf.
[21] http://www.itu.int/ITU-D/projects/ITU_EC_ACP/icb4pis/index.html.
[22] http://www.escwa.un.org/information/publications/edit/upload/E_ESCWA_ICTD_11_4_e.pdf.
[23] http://isper.escwa.org.lb.
[24] http://css.escwa.org.lb/ICTD/1433/10a.pdf.
[25] http://www.escwa.un.org/divisions/ictd/etc/main.asp.

35. Work continues to create an enabling environment for Arabic e-services following the introduction of multilingual Internet domain names, including support for the formation of an Arab top-level domains registry.

4. Latin America and the Caribbean

36. Countries in Latin America and the Caribbean have seen continued progress in the access and use of ICTs, but more effort is needed to establish inclusive information societies and take advantage of more sophisticated ICTs for economic development. The Economic Commission for Latin America and the Caribbean (ECLAC) provides the technical secretariat for implementing the 2010–2015 Regional Action Plan for the Information Society (eLAC2015), adopted by regional governments in 2010. This sets out priorities for information societies in the region, with the flagship objective of enabling universal broadband access.[26]

37. ECLAC also acts as secretariat of the Regional Dialogue on Broadband, established with support from the Government of Chile. This has agreed a basic definition of broadband for the region, drawn up relevant indicators, promoted the establishment of Internet exchange points and encouraged the generation and hosting of local content. In 2011, it launched the Regional Broadband Observatory to provide information and indicators on service diffusion and quality to policymakers to facilitate the evaluation and monitoring of broadband development.[27]

38. The Observatory for the Information Society in Latin America and the Caribbean measures other aspects of ICT performance. Its statistical information system on ICT gathers data from household surveys, allowing the analysis of ICT trends over time.[28]

39. ECLAC is implementing a series of regional dialogues for inclusive and innovative digital agendas.[29] Capacity-building initiatives included training for broadband policymakers and workshops concerned with e-health and digital waste management.

40. The European Commission and ITU fund the project, “Enhancing Competitiveness in the Caribbean through the Harmonization of ICT Policies, Legislation and Regulatory Procedures”.[30]

5. Europe

41. ECE manages the United Nations Centre for Trade Facilitation and Electronic Business. During 2011, the Centre issued recommendations on data standardization and legal frameworks for single windows. ECE worked with other regional commissions to organize a global conference on connecting international trade, which initiated the development of a road map for ICT-enabled trade facilitation.[31] It works with ESCAP to support the United Nations Network of Experts for Paperless Trade in Asia and the Pacific and is developing an intelligent transport system strategy.