United Nations A/72/64-E/2017/12

General Assembly
Economic and Social Council

Distr.: General
27 February 2017

Original: English

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

Economic and Social Council
2017 session
28 July 2016–27 July 2017
Item 18 (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

Summary

This report has been prepared in response to the request by the Economic and Social Council, in its resolution 2006/46, for 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 highlights major activities undertaken by stakeholders in 2016 to implement WSIS outcomes. It has been prepared by the United Nations Conference on Trade and Development (UNCTAD) secretariat based on information provided by entities in the United Nations system and other international organizations and stakeholders.

* A/72/50.
** E/2017/100.

GE.17-03236(E)
1703236

Introduction

1. This report has been prepared in response to Economic and Social Council resolution 2006/46. It includes information provided by 28 United Nations entities and other international organizations and stakeholders,[1] responding to a letter from the Secretary-General of UNCTAD that invited contributions on trends, achievements and obstacles in the implementation of WSIS outcomes. The report summarizes major developments and activities in 2016. Further information on the implementation of WSIS outcomes in 2016 is available in document E/CN.16/2017/CRP.2.

I. Key trends

A. Substantial but uneven growth in information and communications technology access and use

2. In 2016, there was substantial continued growth in access to information and communications technology (ICT) services. The International Telecommunication Union (ITU) estimates that the number of mobile cellular subscriptions worldwide reached 7.37 billion, just under half of which are broadband subscriptions, with over 60 per cent of the world's population estimated to have at least one mobile cellular subscription. ITU estimates that 47 per cent of the world's inhabitants made use of the Internet at least once within a three-month period in 2016, and that 52 per cent of households worldwide had Internet access at home.[2]

3. However, these global figures mask substantial continued digital divides in ICT access and use. ITU estimates for 2016 show that there were 90 mobile broadband subscriptions per 100 people in developed countries, compared with 41 in developing countries and less than 20 in the least developed countries (LDCs). The proportion of households with Internet access at home is estimated at 84 per cent in Europe, but only 15 per cent in sub-Saharan Africa. In addition, broadband speeds are much higher in developed countries than in developing countries, while the cost of access is generally lower in relation to average household income.[3]

[1] Association for Progressive Communications (APC); Council of Europe; Economic and Social Commission for Asia and the Pacific (ESCAP); Economic and Social Commission for Western Asia (ESCWA); Economic Commission for Africa; Economic Commission for Europe (ECE); Economic Commission for Latin America and the Caribbean (ECLAC); European Commission; End Child Prostitution, Child Pornography and Trafficking of Children for Sexual Purposes International; Food and Agriculture Organization (FAO); International Labour Organization; International Trade Centre; Internet Corporation for Assigned Names and Numbers (ICANN); Internet Governance Forum (IGF); Internet Society (ISOC); ITU; Organization for Economic Cooperation and Development (OECD); UNCTAD; United Nations Department of Economic and Social Affairs (DESA); United Nations Economic, Scientific and Cultural Organization (UNESCO); United Nations Environment Programme; United Nations Industrial Development Organization; Universal Postal Union; World Bank; World Food Programme; World Health Organization; World Intellectual Property Organization; World Meteorological Organization (for these contributions, see http://unctad.org/en/Pages/CSTD.aspx).

[2] http://www.gsmaintelligence.com/research/?file=97928efe09cdba2864cdcf1ad1a2f58c&download; http://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx; http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx.

[3] ibid.; ITU world telecommunication/ICT indicators database; ITU, 2016, *Measuring the Information Society Report 2016* (Geneva, United Nations publication), available at http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2016/MISR2016-w4.pdf.

4. Much attention has been paid to the significant gender digital divide identified in the 10-year review of the implementation of WSIS outcomes by the General Assembly in December 2015.[4] ITU estimates for 2016 show that women worldwide are 12 per cent less likely to be online than men, with the difference reaching 31 per cent in LDCs.[5]

5. The ITU annual *Measuring the Information Society Report* presents findings for 11 indicators of ICT access, usage and skills that are included in an ICT development index. Almost all countries improved their index ratings in 2016, with particularly strong increases in mobile broadband. The majority of least connected countries in the index were LDCs, while the strongest improvements in ratings were experienced in middle-income countries.[6]

B. Information and communications technology and sustainable development

6. In September 2015, the United Nations adopted the 2030 Agenda for Sustainable Development, including 17 Sustainable Development Goals and 129 targets.[7] Goal 9, which deals with infrastructure and innovation, includes a target to significantly increase access to ICTs and strive to provide universal and affordable access to the Internet in LDCs by 2020. ICTs are recognized as important catalysts for achieving other Goals and targets, whose importance will grow as they become more pervasive and capable in the period to 2030.

7. The General Assembly, in its resolution 70/125, called for a close alignment between the WSIS process and the 2030 Agenda.[8] The WSIS Forum in 2016 focused on links between the Sustainable Development Goals and WSIS, including the publication of a forward-looking WSIS action lines and Sustainable Development Goals matrix intended to facilitate coordination.[9] In March, the United Nations Statistical Commission drew up a list of 231 indicators to measure progress towards the Goals.[10] Six ICT indicators were selected to support monitoring of the Goals concerned with infrastructure, education, women's empowerment and science, technology and innovation.[11]

8. The World Bank, in its *World Development Report 2016: Digital Dividends*, included a comprehensive review of experience in ICTs for development.[12] This review recognized that digital technologies have spread rapidly in much of the world, in many cases boosting growth, expanding opportunities and improving service delivery, but that their aggregate impact on development has fallen short of expectations and been unevenly distributed.

As a result, the World Bank suggests that in some countries, ICTs might have, to date, increased inequalities. As well as addressing the digital divide, the report recommends that Governments address the enabling environment of analogue complements to digitalization by strengthening regulations that ensure competition among businesses, developing workforce skills to meet the demands of the new economy and ensuring that governance institutions are accountable to stakeholders.

[4] A/RES/70/125.
[5] http://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx.
[6] ITU, 2016.
[7] A/RES/70/1.
[8] A/RES/70/125.
[9] http://www.itu.int/net4/wsis/sdg/.
[10] E/CN.3/2016/2/Rev.1.
[11] ITU, 2016, chapter 3.
[12] http://www.worldbank.org/en/publication/wdr2016.

C. The growing importance of electronic business and commerce

9. There has been continued strong growth in interest and participation in electronic commerce (e-commerce), as Governments and businesses in developing countries have become increasingly aware of the relationship between high-quality connectivity and competitiveness. Online trading is vital for large and small firms, enabling production and distribution through global supply chains. For small and medium-sized enterprises (SMEs), e-commerce can enable better integration with world markets. UNCTAD estimates that the global value of e-commerce grew by 38 per cent, from US$16.4 trillion in 2013 to US$22.1 trillion in 2015, most of which occurred in emerging economies.[13] The bulk of global e-commerce comprises business-to-business transactions.

10. E-commerce is increasingly transformative, creating both opportunities and challenges. Its rapid growth can facilitate more inclusive trade and contribute to international flows of goods and services. However, some countries are better equipped than others to take advantage of this trend. The UNCTAD business-to-consumer e-commerce readiness index shows that readiness is least developed in Africa, where there is a particular need for investment in both connectivity and in the underlying transactions and logistics infrastructures that enable cost-effective trade.[14]

11. Connectivity and e-commerce capabilities are especially challenging in LDCs. ESCAP has demonstrated that e-commerce strongly correlates with fixed broadband connectivity in the Asia and Pacific region, emphasizing the critical importance of infrastructure.[15] Alongside this, however, countries must develop relevant skills, establish appropriate legal and regulatory frameworks and raise awareness among all stakeholders. Businesses in LDCs are less likely to have websites or offer online transactions, which reduces their ability to engage in e-commerce and to participate in global value chains. Cybersecurity is also critical. These challenges require increased capacity-building efforts. A growing number of countries are designing national policies and strategies incorporating these in order to harness the potential of e-commerce for economic development.

D. Developments related to the Internet and Internet governance

12. The Internet continued to evolve in 2016 as a result of technological advances and services innovation. It has become the most significant platform for communications and the sharing of information in business, and is increasingly important to the performance of Governments and central to the lives of a high proportion of the world’s population.

13. Three examples illustrate the Internet’s growing importance in all economies and societies. The increasing pervasiveness of data management through cloud services, whereby individual and business data and applications are held in data centres rather than on owned devices, has led to new challenges related to data privacy, security and jurisdiction. New platform businesses, such as Airbnb and Uber, have disrupted traditional business models in areas such as local transport and accommodation, raising issues related to the future of service businesses and employment relationships. Social media are displacing traditional media as the most important sources of news and opinion for many users, leading to debate on their impact on social norms and the diversity of political discourse.

[13] April 2016 estimates; e-commerce includes both business-to-business and business-to-consumer (http://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=1281).

[14] http://unctad.org/en/PublicationsLibrary/tn_unctad_ict4d07_en.pdf.

[15] http://www.unescap.org/resources/state-ict-asia-and-pacific-2016-uncovering-widening-broadband-divide.

14. The rapid evolution of the Internet is increasingly considered within a wider range of changes in the information society, including the emerging Internet of things, automation and the development of autonomous devices such as driverless vehicles, as well as big data analysis, algorithmic decision-making and artificial intelligence. These developments offer many opportunities for development but have also raised significant public policy concerns, including with regard to the cybersecurity of Internet of things devices, data protection and the risks of cyberconflict. Their long-term impact is expected to be profound but is difficult to predict.

15. In 2016, a significant development in Internet governance concerned the functions of the Internet Assigned Numbers Authority, which manages Internet protocol assignments, number resources and root-zone management. The contract between the Government of the United States of America and ICANN to perform these functions expired on 30 September. It was replaced by new stewardship arrangements, endorsed at the fifty-fifth meeting of ICANN in March following extensive multi-stakeholder negotiations, which transferred stewardship of the functions of the Internet Assigned Numbers Authority to the global stakeholder community, operating through a wholly owned subsidiary of ICANN that is subject to oversight and monitoring from representatives of the ICANN community. The arrangements also introduced enhanced accountability measures for the governance of ICANN, including measures related to its budget and strategic plan, the composition of its board and the role of its Governmental Advisory Committee, which has 171 member Governments.[16]

16. The Global Commission on Internet Governance published a report entitled "One Internet", together with a range of research reports, which examined different possible scenarios for the evolution of the Internet and recommended the development of a multi-stakeholder social compact to sustain an open, secure, trustworthy and inclusive Internet.[17]

17. UNESCO initiated a project to develop Internet indicators to facilitate comparisons between countries over time of the Internet's contribution to sustainable development. UNESCO is also working with ICANN and ISOC to assess and make recommendations concerning modalities for multi-stakeholder participation in decision-making.

II. Implementation and follow-up at the regional level

A. Africa

18. The Economic Commission for Africa held a review meeting on WSIS outcomes in November, providing an opportunity to share experiences and address the challenges that this region faces in implementing WSIS outcomes.[18] While there has been great progress in the adoption and use of ICTs in Africa, it remains the least connected region, and more action is needed in many countries, particularly LDCs, to ensure that the continent benefits fully from the information society. This challenge is multifaceted, requiring investment in infrastructure, services, skills development and content.

19. Infrastructure investment on the continent is supported by multilateral agencies, including the Programme for Infrastructure Development in Africa led by the African

[16] http://gacweb.icann.org/display/gacweb/About+The+GAC.
[17] http://www.ourinternet.org/report.
[18] http://www.uneca.org/sites/default/files/images/wsis_meeting_report_draft_dec_2016_0.pdf.

Development Bank, as well as by the private sector.[19] The African Internet Exchange System project supports the establishment of national and regional Internet exchange points.[20] Network operators and research institutes are identifying ways to improve broadband connectivity and reduce access barriers, particularly for women.

20. In September, the African Union Commission and Economic Commission for Africa organized the African Internet Governance Forum, preceded by the African School on Internet Governance co-organized by APC and the New Partnership for Africa's Development.[21]

B. Asia and the Pacific

21. This region includes countries with diverse economic and communications contexts. In August, ESCAP published a study, *State of ICT in Asia and the Pacific 2016*, which alerts regional governments to a widening divide in broadband access and use between the region's more and less prosperous countries, partly due to the fact that private investment prioritizes more profitable markets. ESCAP also emphasizes the need for improved data-gathering and greater integration of ICTs in socioeconomic development.[22]

22. ESCAP works with regional partners, including the Asian Development Bank and Asia-Pacific Telecommunity, to stimulate regional infrastructure development and address intraregional digital divides. In October, member States endorsed the master plan and regional cooperation framework document for the Asia-Pacific information superhighway, a regional broadband initiative that aims to improve the connectivity of landlocked developing countries through links to submarine cables and the deployment of Internet exchange points.[23]

23. ESCAP states that private investment in infrastructure is hampered by poor regulation, and is encouraging member States to improve the environment for public-private partnerships and mainstream ICTs into strategic development plans. Its Asian and Pacific Training Centre for ICT for Development supports member States in strengthening human and institutional capacities, notably through its flagship academy of ICT essentials for government leaders, which is also delivered in other United Nations regions.[24]

C. Western Asia

24. ESCWA promotes awareness and policy development on the information society within this region, building on evidence of developments since WSIS in its *Regional Profile of the Information Society in the Arab Region*.[25] This report draws on the information society portal for the region,[26] which gathers and analyses data on regional trends in order to provide information and resources to policymakers and other stakeholders.

[19] http://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/programme-for-infrastructure-development-in-africa-pida/; http://allafrica.com/download/resource/main/main/idatcs/00101051:fdc3120bff2c2c3215a2179645733ecf.pdf.

[20] http://www.au.int/en/african-internet-exchange-system-axis-project-overview.

[21] http://afigf.org/TheAfIGF; http://afrisig.org/afrisig-2016/about-afrisig-2016/.

[22] http://www.unescap.org/resources/state-ict-asia-and-pacific-2016-uncovering-widening-broadband-divide.

[23] E/ESCAP/CICTSTI(1)/2.

[24] http://www.unapcict.org/.

[25] http://www.unescwa.org/publications/profile-information-society-arab-region-2015.

[26] http://isper.escwa.un.org/.

25. ESCWA reports significant progress in the formulation and modernization of national ICT strategies, infrastructure and enabling environments, but also expresses concern about the lack of integration between sustainable development and ICTs, and between technology and administration. In 2016, ESCWA worked to develop regional approaches to innovation and inclusive sustainable development, including national technology transfer.

26. In November, ESCWA published a report on innovation policy for inclusive sustainable development in the Arab region.[27] In December, ESCWA and the League of Arab States launched the Arab Internet Governance Forum 2020 initiative, to develop the Forum during its renewed mandate.[28]

D. Europe

27. ECE plays a central role in e-commerce development through the United Nations Centre for Trade Facilitation and Electronic Business, and through work to develop electronic data interchanges, single-window data-sharing arrangements and intelligent transport systems. ECE uses electronic tools to monitor environmental developments through its Protocol on Pollutant Release and Transfer Registers and its Shared Environmental Information System. In 2016, it paid extensive attention to the future environment for automated vehicles.

28. In March, the Council of Europe adopted a new strategy on Internet governance for 2016 to 2019,[29] as well as recommendations on Internet freedom and on the Internet of citizens. Cybersecurity and the development of a strategy to counter extremism and radicalization on the Internet are priorities for the Council, alongside efforts to address hate speech and the sexual exploitation of children online.

29. In June, the annual European Dialogue on Internet Governance was held in conjunction with the European Commission, on the theme of "Embracing the digital (r)evolution".[30] The Commission has continued work to establish a Global Internet Policy Observatory.[31]

E. Latin America and the Caribbean

30. ECLAC implements WSIS outcomes through the Digital Agenda for Latin America and the Caribbean, a regional ICT action plan that was approved by member States in 2015. Its priorities include access and infrastructure, digital economy, e-government, sustainable development and inclusion and governance. A working group has been established to consider the process for establishing a single digital market in the region.

31. ECLAC prepared a report on the state of broadband in the region, which shows that the percentage of inhabitants using the Internet grew from 35.7 to 54.4 per cent between 2010 and 2015.[32] The Regional Broadband Observatory reports that the affordability of broadband has improved dramatically since 2010, but that the region still lags behind in quality of service.

[27] http://www.unescwa.org/sites/www.unescwa.org/files/events/files/souheil-marine.pdf.
[28] http://www.unescwa.org/ArabDIG.
[29] http://search.coe.int/cm/pages/result_details.aspx?objectid=090000168061fda9.
[30] http://www.eurodig.org/fileadmin/user_upload/eurodig_Brussels/Messages_from_Brussels.pdf.
[31] http://giponet.org/en.
[32] http://www.cepal.org/es/publicaciones/estado-la-banda-ancha-america-latina-caribe-2016.

32. OECD and the Inter-American Development Bank published a toolkit on broadband policies for the region.[33]

33. The ECLAC Conference on Science, Innovation and ICTs, held in September, adopted objectives focused on capacity-building, the exchange of information and coordination on issues, including ICTs.[34]

III. Implementation and follow-up at the international level

A. United Nations Group on the Information Society

34. The United Nations Group on the Information Society was established by the United Nations System Chief Executives Board for Coordination in 2006 as an inter-agency mechanism to coordinate the implementation of WSIS outcomes throughout the United Nations system.[35] Its role was reaffirmed by the General Assembly in 2015.[36] It meets annually during the WSIS Forum.

B. Economic and Social Council and Commission on Science and Technology for Development

35. The 10-year review of the implementation of WSIS outcomes by the General Assembly concluded in 2015.[37] In May, at its nineteenth session, CSTD discussed priority themes of foresight for digital development and smart cities and infrastructure. The session prepared a draft proposal on the implementation of WSIS outcomes for consideration by the Economic and Social Council, and took note of the proposal by the Chair on the composition of the Working Group on Enhanced Cooperation.[38] In July, the Economic and Social Council adopted resolution 2016/22 on assessment of the progress made in the implementation of and follow-up to WSIS outcomes.[39]

C. General Assembly

36. In December, the General Assembly adopted resolution 71/212 on ICTs for development, which recalled the outcomes of the review of the implementation of WSIS outcomes by the General Assembly, and reaffirmed the important relationship between the 2030 Agenda for Sustainable Development and ICTs.[40]

D. Facilitation and coordination of multi-stakeholder implementation

37. In May, the WSIS Forum took place in Geneva, Switzerland, with the theme of "WSIS action lines: Supporting the implementation of the Sustainable Development Goals".

It attracted 1 800 participants from more than 140 countries, who participated in more than