

**Economic and Social Commission for Asia and the Pacific**
Committee on Information and Communications Technology**Third session**

Bangkok, 20-22 November 2012

Item 6 of the provisional agenda*

Measuring progress: targets and information and communications technology indicators of the World Summit on the Information Society**Measuring progress: review of the targets and information and communications technology indicators of the World Summit on the Information Society******Note by the secretariat***Summary*

Asia and the Pacific is at the forefront of the information and communications technology (ICT) revolution, ranking as the largest producer and exporter and as one of the main consumers of ICT. Understanding the benefits and costs of ICT has become more complex, making it more challenging for policymakers to analyse its social, economic and environmental impact. Consequently, governments urgently need accurate, relevant and internationally comparable data.

In response, the World Summit on the Information Society called for developing clear indicators for ICT measurement. The Partnership on Measuring ICT for Development was subsequently launched as an inter-agency initiative tasked with defining a core list of indicators and related statistical methodologies and standards in order to build up an internationally comparable database for ICTs. Despite progress made by the Partnership in increasing the availability of statistics, the Asia-Pacific region continues to show the largest data gaps. As a consequence, it is particularly difficult for policymakers of the region to base their strategies on evidence-based analysis. Among other things, the gaps concern key data sets that would facilitate a better understanding of the multidimensional impact that ICTs have on sustainable development goals in the context of the emerging post-2015 development agenda.

The secretariat, as a founding member of the Partnership, proposes to support the region in its efforts related to ICT statistics. In this regard, it will implement a regional review of the availability of indicators in the region and assess progress in the implementation of the targets of the World Summit on the Information Society in preparation for the ten-year review of the implementation of the World Summit on the Information Society in 2014/15.

The secretariat also proposes to support countries by delivering appropriate capacity-building activities in this area through its regional institute, the Asian and Pacific Training Centre for Information and Communication Technology for Development (APCICT).

The Committee may wish to consider these issues and to provide further guidance to the secretariat in its implementation of this work.

* E/ESCAP/CICT(3)/L.1.

** Late submission is due to the timing of expert consultations.

Contents

	<i>Page</i>
I. Introduction	3
II. The Partnership's core indicators and regional trends	3
A. ICT access and infrastructure	4
B. ICT access and use by households and individuals	8
C. ICT use in businesses	9
D. ICT sector measurement	10
E. Indicators on measuring ICT in education	11
F. E-government indicators	12
III. Measuring progress towards achieving the targets of the World Summit on the Information Society	13
IV. Work in progress: selected emerging issues of relevance to the Asia-Pacific region	14
A. E-waste	14
B. Social indicators	14
C. Infrastructure networks	15
D. Economic indicators	15
V. Issues for consideration by the Committee	15
A. Partnership on Measuring ICT for Development	15
B. World Summit on the Information Society review	16
VI. Conclusions	16
Tables	
1. Mobile phone penetration per region	5
2. Fixed broadband Internet subscribers per 100 inhabitants	6
3. International Internet bandwidth per inhabitant	7
4. Top five economies with highest and lowest broadband tariffs in the ESCAP region	8
5. Selected indicators on business use of ICT in Asia and the Pacific	10
6. E-government development index across selected regions	12
Annexes	
I. Revised and extended core list of ICT indicators of the Partnership on Measuring ICT for Development	18
II. Availability of core indicators	20
II. Core indicator levels in the Asia-Pacific region	21
IV. List of economies by categories used in the present report	23

I. Introduction

1. Over the past 20 years, information and communications technologies (ICTs) have become essential in the functioning of societies and economies due to the rapid rate of innovation. Innovations related to the mobile phone and broadband Internet have leapfrogged intermediate technologies, and are providing a host of new services to people who were previously unable to tap into communications technologies. The Asia-Pacific region is at the heart of this progress, both in terms of ICT penetration and as the global hub for the production and export of ICT goods and services.

2. Understanding the benefits and costs of ICT have become more complex, making it more challenging for policymakers to analyse its social, economic and environmental impact. Consequently, governments urgently need accurate, relevant and internationally comparable data. Following a number of initiatives at the individual country level, the World Summit on the Information Society called for the development of clear indicators and methodologies for ICT measurement. The Partnership on Measuring ICT for Development was subsequently launched at the eleventh United Nations Conference on Trade and Development (UNCTAD XI) in Sao Paulo, Brazil, in June 2004.¹

3. The Partnership on Measuring ICT for Development is a multi-stakeholder initiative aimed at improving the availability and quality of internationally comparable ICT statistics.² The work of the Partnership has received the endorsement of the Statistical Commission as well as the Economic and Social Council. Internal and external evaluation exercises have hailed its performance as constituting a good practice in terms of inter-agency coordination, avoiding redundancies of work and facilitating cost-saving synergies.³ ESCAP and other regional commissions are among the members of the Partnership.

4. The purpose of the present note is to review the statistical initiatives of the Partnership, examine the region's trends in ICT development that have emerged from the Partnership's indicators, and present for the consideration of the Committee areas for future work of ESCAP.

II. The Partnership's core indicators and regional trends

5. The Partnership has developed a core list of ICT indicators that every country must agree to collect in order to build a common and internationally comparable database. These core indicators were defined through a global consultation process, which also involved the Asia-Pacific region. The Partnership and its members, in consultation with member countries, are continuously adjusting and improving the core list based on data-collection experiences and technological changes. So far, five clusters of core indicators have been developed. For each cluster, one of the Partnership's agencies assumes a leading role, according to its area of expertise and mandate.

¹ See TD/412.

² See Partnership brochure. Available from www.itu.int/ITU-D/ict/partnership.

³ See E/CN.3/2012/12.

A. ICT access and infrastructure

6. The Partnership has mandated the International Telecommunication Union (ITU) to develop a set of indicators to measure ICT access and infrastructure (see annex I for details).

7. These indicators are mainly collected through administrative data obtained from telecommunication regulators and ICT ministries. Typically, they are available for a large number of countries and are usually up-to-date and relatively inexpensive to gather. Furthermore, as there is a relatively long history of collection for these indicators, they are now available for more than 80 per cent of countries worldwide, allowing for a significant degree of comparability and offering policymakers a very useful broad view on the situation of their national ICT markets. On the other hand, they may provide less statistical insight than data based on surveys through which more information can be collected and cross-variable correlations can be drawn.

8. With regard to data availability for basic ICT access indicators worldwide, Asia and the Pacific not only has the lowest availability rate across developing regions but also has experienced a decline in availability. This highlights the need for more sustained data development efforts among ESCAP members and associate members, a point that will be expanded on in the final section of the present report.

1. Fixed telephony

9. Between 2005 and 2011, the penetration rates of fixed telephony decreased by 8.96 per cent in Asia and the Pacific. This is in line with the declines experienced in most regions worldwide, including developed countries, as mobile phones and voice-over-Internet protocol gained inroads. This regional weighted average is largely influenced by the changes in the two most populous countries of the region, China and India. A closer look at the situation shows that there are significant variations across countries, with a number of ESCAP member countries in all income categories experiencing gains in fixed telephony penetration.

2. Mobile telephony

10. Data on mobile phone subscriptions clearly indicate the realization of the mobile phone miracle in the Asia-Pacific region (see figure 1 in annex III). Thanks to investments in infrastructure, increased competition and declining hardware costs, prices of mobile telecommunications have come down, enabling mobile telephony to be accessible and affordable to a much larger share of the population. The region's average penetration rates have jumped by 215 per cent between 2005 and 2011, increasing from 25.77 per cent to 81.18 per cent. Consequently, with regard to mobile telephony, the World Summit on the Information Society target 10, namely "Ensure that more than half the world's inhabitants have access to ICT within their reach"⁴ has been surpassed well before the end of the implementation period. Furthermore, the rates of increase have been far higher in countries that started from a lower base of mobile phone penetration. In 2005, only 14 countries (all from the high-income or upper-middle-income categories) had a

⁴ www.itu.int/ITU-D/ict/publications/wtdr_10/index.html. Accessed 24 September 2012.

penetration rate of more than 50 per cent. By 2011, at least 45 ESCAP members had surpassed the 50 per cent penetration benchmark, including many least developed countries. Notably, the countries in South Asia have performed particularly well in this area, and, as a result, their large populations are able, for the first time, to reap the multiple benefits of connectivity. The core indicator on mobile phone subscriptions per 100 inhabitants for India increased almost tenfold, jumping from 7.91 per cent to 72 per cent between 2005 and 2011. Similar progress was recorded in Pakistan (8.05 per cent to 61.61 per cent) and Bangladesh (6.4 per cent to 56.48 per cent). Least developed countries in Asia and Central Asian countries have also enjoyed very rapid increases in their penetration rates while Pacific island States have made progress at a slower rate (table 1). At the other end of the spectrum, the developed and more advanced countries of the region have experienced lower growth rates in mobile phone penetration, a reflection of their higher starting base and market saturation.

11. In a few countries in the region, coverage is still very low, such as in Kiribati where only 13.54 per cent of its population had access to a mobile signal in 2010. Other examples are the Democratic People's Republic of Korea (4.09 per cent), the Marshall Islands (7.03 per cent), Myanmar (2.57 per cent) and Nepal (35 per cent). This underlies the need to further increase mobile phone penetration in those countries in order to close the digital divide in mobile telephony. By continuing to incorporate leadership provided by the private sector within an overall pro-poor policy environment provided by governments, the region is moving closer to bringing forward the vision of universal mobile telephony coverage.

Table 1
Mobile phone penetration per region

Regions ^a	A2 – mobile cellular telephone subscriptions per 100 inhabitants		
	2011	2005	Absolute variation in penetration (percentage)
ESCAP developed economies and advanced developing economies	137.57	82.13	55.44
Other ESCAP developing economies ^b	75.65	19.82	55.84
ESCAP least developed economies	47.10	4.70	42.40
ESCAP Pacific island economies	45.60	6.97	38.63
ESCAP landlocked developing economies	77.90	8.99	68.91
Africa ^c	53.10	12.40	40.70
Arab States ^c	96.90	27.10	69.80
Europe ^d	120.80	91.60	29.20
Latin America and the Caribbean ^d	106.65	43.35	63.30
North America ^d	102.89	67.07	35.82

^a See annex IV for details on ESCAP categories of economies.

^b ESCAP developing economies excluding: Republic of Korea; Russian Federation; Singapore; Hong Kong, China; and Macao, China.

^c As available from www.itu.int/ITU-D/ict/statistics/at_glance/keytelecom.html.

^d ESCAP, based on ITU World Telecommunication/ICT Indicators database.

Source: ESCAP, based on ITU World Telecommunication/ICT Indicators database and www.itu.int/ITU-D/ict/statistics/at_glance/keytelecom.html.

3. Internet penetration

12. The availability of indicators on Internet penetration, both fixed and mobile narrowband and broadband, remains a problem in the region. Data for mobile broadband are available for only a handful of countries, while for fixed broadband, data are more extensive. Nevertheless, the information available indicates that there is a digital divide with regards to Internet access, and a widening gap for broadband, both fixed and mobile. As mentioned in other secretariat reports prepared for the Committee at its third session, this is a matter of much concern as broadband offers the most complete benefits of the Internet in terms of speed and quality. For example, the use of broadband has become an essential precondition for such activities as outsourcing services overseas or implementing disaster early warning systems. E-data available for 2005 to 2011 indicates that fixed broadband penetration has grown slowly in the region, from 2.34 per cent to 6.79 per cent. A review of the data also brings out a number of other interesting facts. One is that this growth is low by international standards (see table 2 below). Second, the disparities across countries are greatest in this region as the advanced ICT countries in the region top the world ranks, while the developing countries lag behind the developing countries of Latin America. Similarly, the top ten best performers in the region in terms of increased fixed broadband penetration are exclusively high-income countries. The other seven countries that recorded increases that were higher than the regional average during this time period were all high-income or upper middle-income countries. Third, the divide in fixed broadband access is actually increasing rather than decreasing (annex III, figure 2).

Table 2
Fixed broadband Internet subscribers per 100 inhabitants

Regions ^a	A4 – Fixed broadband Internet Subscribers per 100 inhabitants		
	2011	2005	variation
ESCAP developed economies and advanced developing economies	22.38	11.83	10.57
Other ESCAP developing economies ^b	5.13	1.22	3.91
ESCAP least developed economies	0.09	0.00	0.09
ESCAP Pacific island economies	1.10	0.30	0.80
ESCAP landlocked developing economies	1.89	0.02	1.87
Africa ^c	0.20	0.00	0.20
Arab States ^c	2.10	0.30	1.80
Europe ^c	24.80	10.90	13.90
Latin America and the Caribbean ^d	6.66	1.51	5.15
North America ^d	29.07	17.67	11.40

^a See annex IV for details on ESCAP categories of economies.

^b ESCAP developing economies excluding the following: Republic of Korea; Russian Federation; Singapore; Hong Kong, China; and Macao, China

^c As available from http://www.itu.int/ITU-D/ict/statistics/at_glance/keytelecom.html.

^d ESCAP, based on ITU World Telecommunication/ICT Indicators database.

Source: ESCAP, based on ITU World Telecommunication/ICT Indicators database and http://www.itu.int/ITU-D/ict/statistics/at_glance/keytelecom.html.

13. A more detailed breakdown of Internet access data will likely highlight further disparities within countries as well as between urban and rural areas and across gender, age and income levels. As explained above, the availability of disaggregated data is a critical factor for

understanding the social dynamics and other characteristics of the digital divide and for formulating targeted corrective measures. Data on household use of the Internet, when available, offer some guidance on that matter.

4. International Internet bandwidth

14. International Internet bandwidth per inhabitant reflects the quality and speed that can be anticipated for Internet users. As expected, among ESCAP members and associate members, the indicator reveals a large divide between the hyperconnected economies and poorer countries, notably least developed economies, Pacific island economies and landlocked developing economies. Cross-regional comparisons show that the Asia-Pacific region as a whole has made phenomenal strides in terms of Internet bandwidth availability and hence in its infrastructure capacity to provide ICT services. This is largely because the more advanced countries now have the highest bandwidth availability worldwide, while the rest of Asia and the Pacific is at a level comparable to the Middle East and North Africa grouping and lags behind Latin America. International bandwidth in the least developed economies in the region is comparable to what is available in Africa, and has experienced the lowest growth in the world (table 3).

Table 3

International Internet bandwidth per inhabitant

Regions ^a	A6 – International Internet bandwidth per inhabitant (bits/sec/inhabitant)		
	2011	2005	Increase in percentage
ESCAP developed economies and advanced developing economies	53 664	2 330	2 203
Other ESCAP developing economies ^b	9 860	457	2 056
ESCAP least developed economies	4 054	719	464
ESCAP Pacific island economies	7 301	887	723.18
ESCAP landlocked developing economies	6 863	449	1428
Africa	3 55	340	947
Arab States	9 148	797	950
Europe	72 440	6 897	1 049
Latin America and the Caribbean	19 632	1 341	1 364
North America	49 444	7 431	565

^a See annex IV for details on ESCAP categories of economies.

^b Developing economies excluding the following: Republic of Korea; Russian Federation; Singapore; Hong Kong, China; and Macao, China.

Source: ESCAP, based on ITU World Telecommunication/ICT Indicators database.

5. Tariffs

15. The Partnership collects and disseminates data on tariffs for both fixed broadband Internet access and for mobile cellular telephone (pre-paid).

16. In 2011, the average tariff for broadband Internet access per user among ESCAP members stood at about \$15.63 per month, representing 2.17 per cent of average monthly per capita gross national income (GNI). This figure is a weighted average, thus it is largely influenced by

countries with large populations. Table 4 shows that the disparities across the region range by a factor of almost 100 with regard to tariffs, and even more in terms of share of income. On the other hand, interestingly, some developing economies, including least developed economies, are within the group that has lowest tariffs for broadband in absolute (US\$) terms, demonstrating that there is no inextricable linkage between high broadband prices and low development levels. South Asian economies have, in particular, succeeded in slashing their broadband tariffs to low absolute levels (even though they still remain relatively high in terms of the share of average monthly income). In Bangladesh, the broadband tariff decreased in 2011 to \$7.75 a month, a sharp decline of 84.4 per cent from almost \$50 per month in 2009. Notwithstanding this drastic reduction, the tariff still amounted to 12.08 per cent of average monthly income in Bangladesh and therefore remained affordable only to people in the upper- and middle-income brackets.

Table 4
Top five economies with highest and lowest broadband tariffs in the ESCAP region
(in United States dollars and as a percentage of average monthly income)

	Economies	Fixed broadband Internet monthly access tariff in 2011, US\$	Economies	Fixed broadband Internet access tariff in 2011, percentage of monthly average income
Five economies with highest fixed broadband Internet monthly access tariff	Kiribati	428.3	Tajikistan	478.72
	Tajikistan	347.1	Solomon Islands	280.18
	Solomon Islands	259.2	Kiribati	243.57
	Vanuatu	168.6	Afghanistan	187.83
	Lao People's Democratic Republic	139.2	Lao People's Democratic Republic	147.87
Five economies with lowest fixed broadband Internet monthly access tariff	Macao, China	8.5	Russian Federation	1.17
	Maldives	8.2	Singapore	0.78
	Bangladesh	7.8	Hong Kong, China	0.72
	India	6.0	Japan	0.71
	Sri Lanka	5.5	Macao, China	0.22
	Weighted average ESCAP	15.6	Weighted average ESCAP	2.17

Source: ESCAP, based on ITU World Telecommunication/ICT Indicators database.

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_7255

