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Economic and Social Commission for Asia and the Pacific
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**Regional capacity-building and overview of information
and communications technology for development**

Review of the progress made in implementing the outcomes of the World Summit on the Information Society in Asia and the Pacific

Note by the secretariat

Summary

For the last decade, the Asian and Pacific region has witnessed significant development in the area of information and communications technology. Particularly in recent years, mobile networks have expanded and the mobile telephone has solidified its position as the predominant means of voice communication in developing countries. Broadband network development has shown varied growth patterns according to subregion. The number of fixed telephone subscribers has either stagnated or decreased across the region, while the trend toward mobile and broadband use and development has accelerated.

In the present document, the secretariat reviews the emerging trends in information and communications technology and development throughout the region, the progress made towards meeting the targets set by the World Summit on the Information Society, and the contribution of mobile applications and broadband network development to accelerated socio-economic development. Based on the findings, the report concludes with recommendations for future action at the national and regional levels.

The Committee may wish to deliberate on the issue covered in the present document regarding the progress made on Summit targets in the region, and to provide the secretariat with guidance on its future strategic direction in this area, including potential focus areas that could be reflected in the programme of work for the biennium 2012-2013.

Contents

I.   Introduction

1.   Since the first session of the Committee on Information and Communications Technology, held in November 2008, Asia and the Pacific has witnessed significant development in the area of information and communications technology (ICT). Mobile networks have continued to expand, and mobile telephones have solidified their position as the predominant means of voice communication in developing countries. At the same time, broadband network development has shown varied growth patterns according to subregion, as detailed below, while the number of fixed telephone subscribers has either stagnated or decreased across the region. These points highlight the accelerating shift towards mobile and broadband technologies throughout the region.

2.   In the light of the recent economic crisis and the multiple challenges of addressing climate change, meeting internationally agreed development goals and sustaining economic growth, what do these trends in information and communications technology mean for ESCAP member countries?

3.   In the area of information and communications and technology for development, the targets set by the World Summit on the Information Society are drawn from the guiding principles articulated in the Declaration of Principles, which are the basis for developing an inclusive and sustainable information society.[1] As socio-economic progress is measured against the Summit targets, ESCAP member countries should use these targets as a foundation for placing ICT into the framework of inclusive and sustainable socio-economic development.

4.   Rapidly expanding mobile networks and broadband network capabilities offer unparalleled opportunities for the ESCAP member countries to accelerate the achievement of both the Summit targets and the Millennium Development Goals. An increasing number of people living in remote and rural areas can now be reached by mobile phone, while more information, services and applications can be carried on a growing number of mobile broadband networks throughout the region. The combined capabilities of applications and connectivity have the potential to significantly expand access to critical information, knowledge and services for previously under-serviced people, some of whom lack literacy skills, to improve their lives.

5.   Against this background, the present document aims to review in detail the emerging trends in ICT development in the region, the progress made towards achieving the Summit targets, and the development of mobile applications and broadband networks, to review and assess what more could be done to accelerate socio-economic development. Based on the findings, the report concludes with a number of recommendations for future action at both the national and regional levels.

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[1]   See A/C.2/59/3, chap. I.

II. Regional overview: the current status of information and communications technology connectivity

6.   According to the latest statistical figures on ICT compiled by the ESCAP secretariat, one of the noticeable developments in ICT for development since the last session of the Committee is the continuing proliferation of mobile telephony and the rapid growth of broadband networks in certain subregions. As the regional overview indicates (figure I), the predominance of mobile subscribers continues to characterize ICT development in Asia and the Pacific.
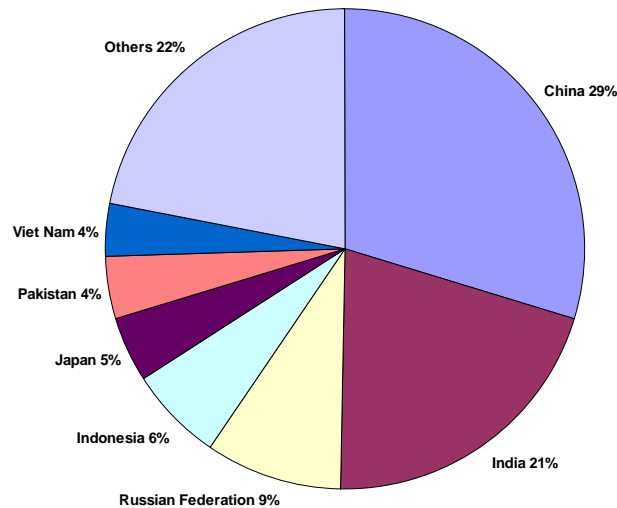
Figure I
Regional overview of information and communications technology access
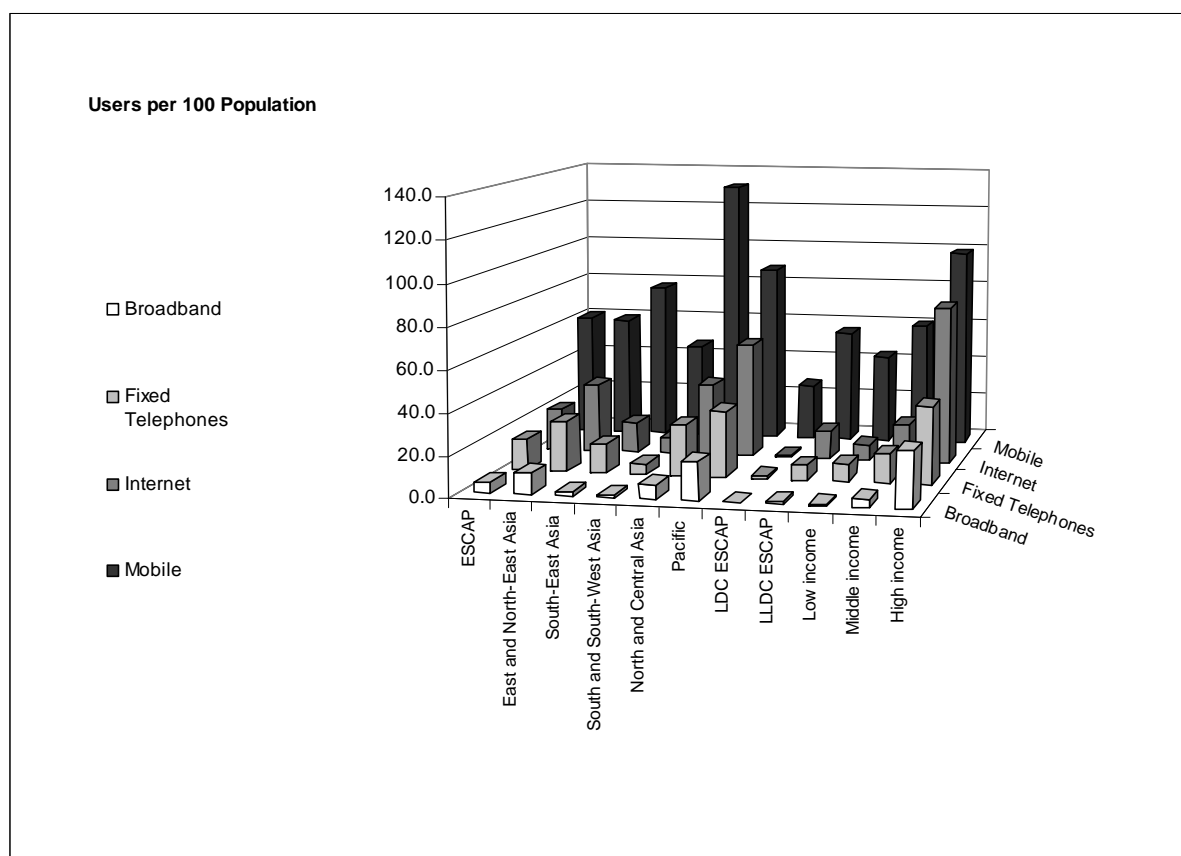
Source: ESCAP, using data from International Telecommunication Union, ICT Statistics Database, 16 July 2010. Available from www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx; and United Nations, *World Population Prospects: The 2008 Revision,* Population Database, 28 April 2009. Available from http://esa.un.org/unpp/.

7.   Over the same period, the share of mobile and broadband Internet subscribers in Asia and the Pacific as a proportion of the total number of subscribers worldwide increased to 54 per cent and 42 per cent, respectively. For mobile service subscriptions in the region in 2009, China and India were the leaders, with a combined 50 per cent share of subscribers, while China and Japan led for broadband subscriptions, with 52 per cent and 16 per cent of subscriptions, respectively (see figures II and III).

Figure II
Mobile subscribers by country as a percentage of total subscribers in Asia and the Pacific, 2009

China 29%

Others 22%

Viet Nam 4%

Pakistan 4%

Japan 5%

Indonesia 6%

Russian Federation 9%

India 21%

Source: ESCAP, using data from International Telecommunication Union, ICT Statistics Database, 16 July 2010. Available from www.itu.int/ITU-D/icteye/Indicators/ Indicators.aspx; and United Nations, *World Population Prospects: The 2008 Revision,* Population Database, 28 April 2009. Available from http://esa.un.org/unpp/.
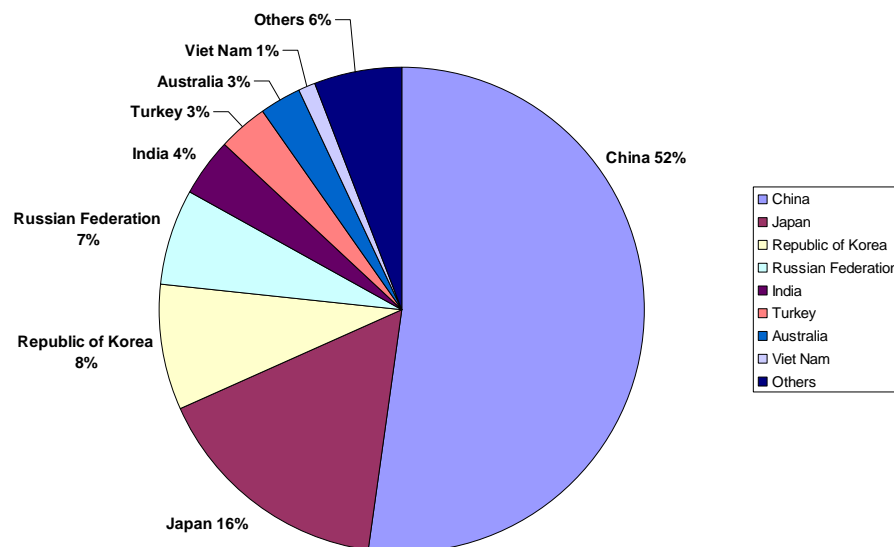
Figure III
Broadband subscribers by country as a percentage of total subscribers in Asia and the Pacific, 2009

Others 6%

Viet Nam 1%

Australia 3%

Turkey 3%

India 4%

Russian Federation 7%

Republic of Korea 8%

Japan 16%

China 52%

- China
- Japan
- Republic of Korea
- Russian Federation
- India
- Turkey
- Australia
- Viet Nam
- Others

Source: ESCAP, using data from International Telecommunication Union, ICT Statistics Database, 16 July 2010. Available from www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx; and United Nations, *World Population Prospects: The 2008 Revision,* Population Database, 28 April 2009. Available from http://esa.un.org/unpp/.

8.   The growth patterns observed demonstrate distinctive features, as illustrated in figure IV. Among various means of access, broadband subscriptions in Central Asia and in landlocked developing countries showed by far the highest growth rates. High-income countries showed slow growth rates for mobile, Internet and broadband subscriptions, demonstrating the saturation of high-income markets, while Pacific developing economies continued to show slow growth patterns, as well.

Figure IV
**Growth rate by subregional and income groups, 2009**
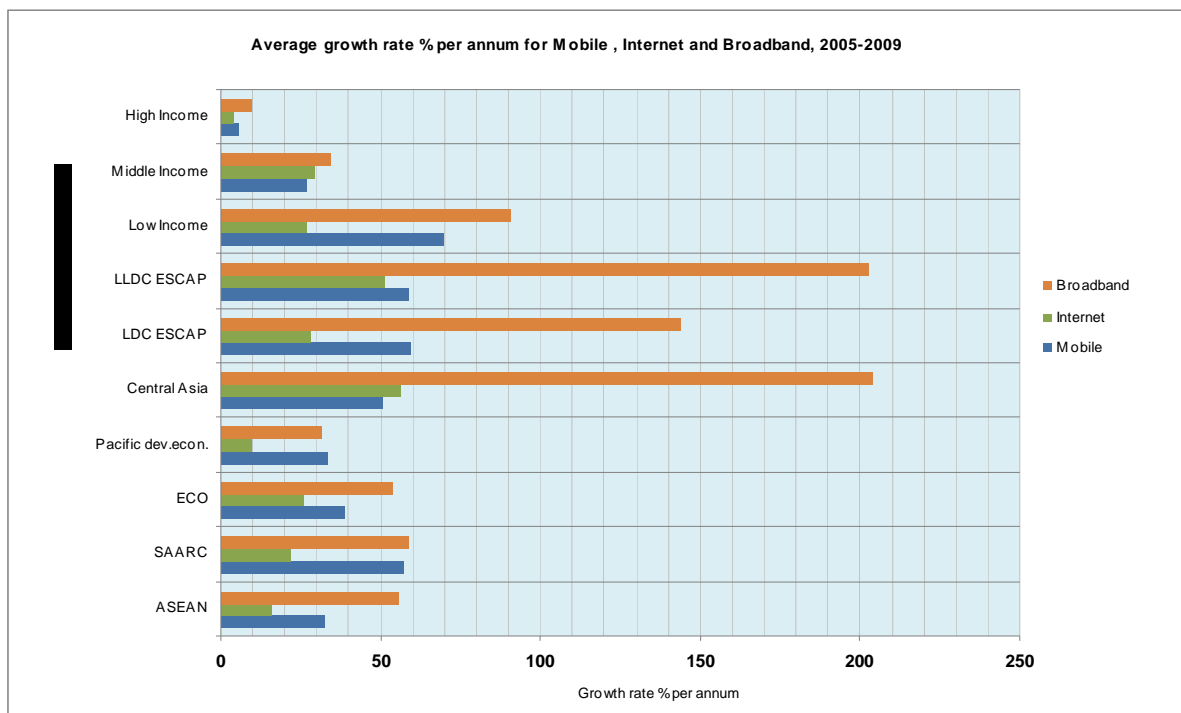
Average growth rate % per annum for Mobile , Internet and Broadband, 2005-2009

Source: ESCAP, using data from International Telecommunication Union, ICT Statistics Database, 16 July 2010. Available from www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx; and United Nations, *World Population Prospects: The 2008 Revision,* Population Database, 28 April 2009. Available from http://esa.un.org/unpp/.

9.   When the ESCAP region is examined by country, significant differences can be seen. Figure V shows the number of mobile subscribers per 100 population in 2009 by country.[2] The Russian Federation and the Maldives registered the highest numbers, while the majority of countries surpassed the threshold of 50 subscribers per 100 population, although a number of Pacific countries still lagged behind.

10.   The number of Internet subscribers per 100 population in 2009 showed an interesting pattern, as illustrated in figure VI, with a small number of high-income countries having Internet penetration rates of over 70 subscribers per 100 population. This was followed by a second group with between 60 and 30 subscribers per 100 population. According to the figures, over half of the countries have less than 30 subscribers per 100 population, and 22 countries are still below 10 subscribers per 100 population.

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[2]   The number includes pre-paid card holders and multiple SIM card holders.

Figure V
Mobile subscribers per 100 population, 2009
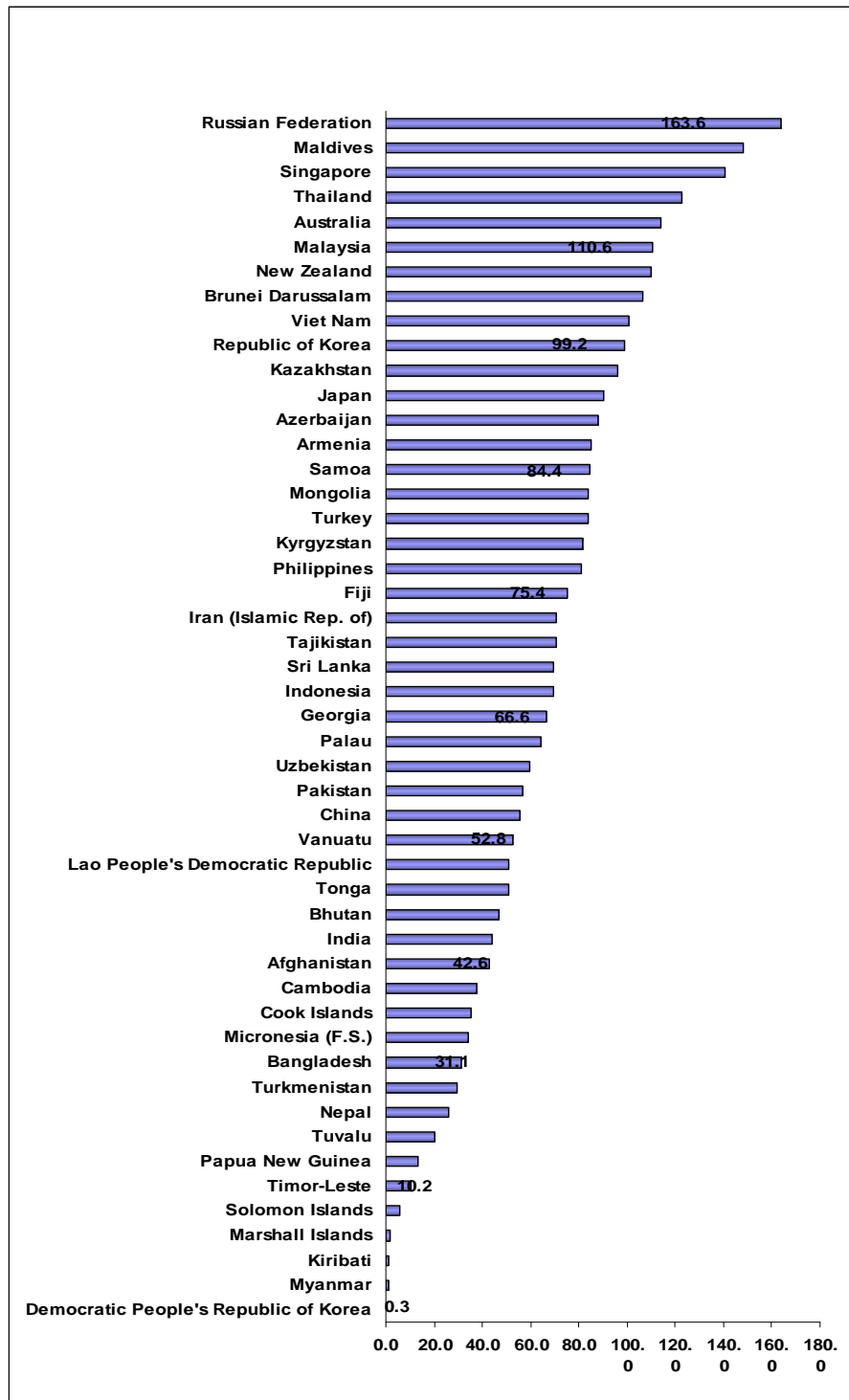
Source: ESCAP, using data from International Telecommunication Union, ICT Statistics Database, 16 July 2010. Available from www.itu.int/ITU-D/icteye/Indicators/Indicators.aspx; and United Nations, *World Population Prospects: The 2008 Revision,* Population Database, 28 April 2009. Available from http://esa.un.org/unpp/.

11.   Some economic theories have identified network effects, such as employment generation and the setting of a threshold for fixed telephone penetration, as a basis for generating multiplier effects. [3] These theories indicate that, once infrastructure reaches a determined critical mass of users, the economic impact will be maximized and a significant increase in return on investment will be realized.

12.   For instance, one study puts the critical mass threshold for mobile penetration, beyond which network effects are observed at 25 per cent, [4] while another study places the equivalent threshold for broadband penetration at 20 per cent. [5]

13.   If these threshold levels are applicable, it would mean that mobile networks have reached a critical mass of users in most of the ESCAP member countries and therefore could generate the desired multiplier effects. This is one of the reasons why the use of mobile phones for socio-economic development could be highlighted. In terms of the number of broadband Internet subscribers, figure VI shows that significantly fewer countries in the region satisfy the 20 per cent threshold. A distinctive dichotomy exists between the more advanced countries and other countries in terms of broadband Internet subscribers per 100 population, as illustrated in figure VII. Even if a 10 per cent threshold is applied, only five countries satisfy the threshold requirement to achieve network effects. However, the discussion would benefit from more economic research, as conditions surrounding mobile, Internet and broadband usage, as well as how they accrue benefits, may differentiate.

14.   The last characteristic of recent ICT trends is the increased predominance of mobile phones as a share of total telephone lines in 2009, as illustrated in figure VIII.