

WORLD TELECOMMUNICATION/ICT INDICATORS



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INTERNATIONAL TELECOMMUNICATION UNION

INTRODUCTION

Data are presented for 203 economies with populations greater than 30'000 and where sufficient data are available.

Economies are grouped by 2006 United States dollar (US\$) income levels: *low*, Gross National Income (GNI) per capita of US\$ 905 or less; *lower middle*, US\$ 906–3'595; *upper middle*, US\$ 3'596–11'116; and *high*, US\$ 11'117 or more. The income level classification is based on World Bank methodology whereas the Gross Domestic Product (GDP) per capita shown in Table 1 is based on the methodology described in the *Technical notes*.

The data cover the public telecommunications sector. Due to differing regulatory obligations for the provision of data, a complete measurement of the sector for some economies cannot be achieved. Data for major telecommunication operators covering at least 90 per cent of the market are shown for all economies. More detailed information about coverage and country specific notes together with a full time-series from 1960, 1965, 1970, 1975-2007 is contained in a CD-ROM version available separately.

Data refer to the reporting period that is closest to the end of year indicated.

Communication data come from an annual questionnaire sent to telecommunication authorities and operating companies. These data are supplemented by annual reports and statistical yearbooks of telecommunication ministries, regulators, operators and industry associations. In some cases, estimates are derived from ITU background documents or other references. Other data are provided by the relevant international and national organizations identified in the *Technical notes*.

The following signs and symbols are used in the tables:

<i>italic</i>	Year other than that specified or estimate.
000s	Thousands (i.e. 1'000).
M	Millions (i.e. 1'000'000).
B	Billions (i.e. 1'000'000'000).
US\$	United States dollars. See the <i>Technical notes</i> for how US\$ figures are obtained.
%	Per cent.
–	Zero or a quantity less than half the unit shown. Also used for data items that are not applicable.
...	Data not available.
CAGR	Compound Annual Growth Rate. See the <i>Technical notes</i> for how this is computed.

The absence of any sign or symbol indicates that data are in units.

Comments and suggestions relating to the World Telecommunication Indicators/ICT should be addressed to:

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Additional information about Telecommunication Indicators/ICT can be found at:
<http://www.itu.int/ITU-D/ict>.

TECHNICAL NOTES

General methodology

The compound annual growth rate (CAGR) is computed by the formula:

$$[(P_v / P_0)^{(1/n)}]-1$$

where P_v = Present value
 P_0 = Beginning value
 n = Number of periods

The result is multiplied by 100 to obtain a percentage.

United States dollar figures are reached by applying the average annual exchange rate (from the International Monetary Fund, IMF) to the figure reported in national currency. For countries where the IMF rate is unavailable or where the exchange rate typically applied to foreign exchange transactions differs markedly from the official IMF rate, a World Bank conversion rate is used. For the few countries where neither the IMF nor World Bank rates are available, a United Nations end-of-period rate was used.

Group figures are either *totals* or weighted *averages* depending on the indicator. For example, for main telephone lines, the total number of *main telephone lines* for each grouping is shown, while for *main lines per 100 inhabitants* the weighted average is shown. Group figures are shown in bold in the tables. In cases of significant missing data, group totals are not shown.

Group growth rates generally refer to countries for which data is available for both years.

1. Basic indicators

The data for *Population* are mid-year estimates from the United Nations (UN) or national statistical offices. *Population Density* is based on land area data from the UN; the land area does not include any overseas dependencies but does include inland waters. The data for *Gross Domestic Product (GDP)* are generally from the IMF. They are current price data in national currency converted to United States dollars using annual average exchange rates. *Total telephone subscribers* refers to the sum of main (fixed) telephone lines and mobile cellular subscribers (see below for definitions). *Total telephone subscribers per 100 inhabitants* is calculated by

dividing the total telephone subscribers by the population and multiplying by 100. *Effective teledensity* is the higher value of either main (fixed) telephone lines per 100 inhabitants or mobile cellular subscribers per 100 inhabitants.

2. Main (fixed) telephone lines

The table shows the number of *main (fixed) telephone lines* and *main (fixed) telephone lines per 100 inhabitants* for the years indicated and corresponding compound annual growth rates (CAGR, see above for computation). *Main (fixed) telephone lines* refer to telephone lines connecting a customer's equipment (e.g., telephone set, facsimile machine) to the Public Switched Telephone Network (PSTN) and which have a dedicated port on a telephone exchange. Note that for most countries, main lines also include public payphones. Many countries also include ISDN channels in main (fixed) lines (see below ISDN and ADSL). *Main (fixed) telephone lines per 100 inhabitants* is calculated by dividing the number of main lines by the population and multiplying by 100.

3. Mobile cellular subscribers

The table shows the number of *mobile cellular subscribers* and *mobile cellular subscribers per 100 inhabitants* for the years indicated and corresponding compound annual growth rates (CAGR, see above for computation). *Mobile cellular subscribers* refers to users of portable telephones subscribing to an automatic public mobile telephone service using cellular technology that provides access to the PSTN. *Per 100 inhabitants* is obtained by dividing the number of mobile cellular subscribers by the population and multiplying by 100. *Prepaid subscribers* refers to the total number of mobile cellular subscribers using prepaid cards. *Population coverage* measures the percentage of inhabitants that are within range of a mobile cellular signal whether or not they are subscribers. This is calculated by dividing the number of inhabitants within range of a mobile cellular signal by the total population and multiplying by 100. *As a % of total telephone subscribers* is obtained by dividing the number of mobile cellular subscribers by the total number of telephone subscribers (sum of the main (fixed) telephone lines and the mobile cellular subscribers).

4. Internet

Internet subscribers refers to the number of dial-up, leased line and fixed broadband Internet subscribers. *Internet subscribers per 100 inhabitants* is obtained by dividing the number of Internet subscribers by the population and multiplying by 100. *Internet users* is based on nationally reported data. In some cases, surveys have been carried out that give a more precise figure for the number of Internet users. However, surveys differ across countries with respect to age and frequency of use. The reported figure for Internet users – which may refer to only users above a certain age – is divided by the total population and multiplied by 100 to obtain *Internet users per 100 inhabitants*. Countries that

do not carry out surveys generally base their estimates on derivations from reported Internet Service Provider subscriber counts, calculated by multiplying the number of subscribers by a multiplier. *Fixed broadband subscribers* refers to the sum of DSL, cable modem and other fixed broadband subscribers. Although various definitions of *broadband* exist, it is here defined as sufficient bandwidth to permit combined provision of voice, data and video. Speed should be greater than 256 kbps, as the sum of capacity in both directions. *Fixed broadband subscribers per 100 inhabitants* is calculated by dividing the number of fixed broadband subscribers by the population of the country and by multiplying by 100.