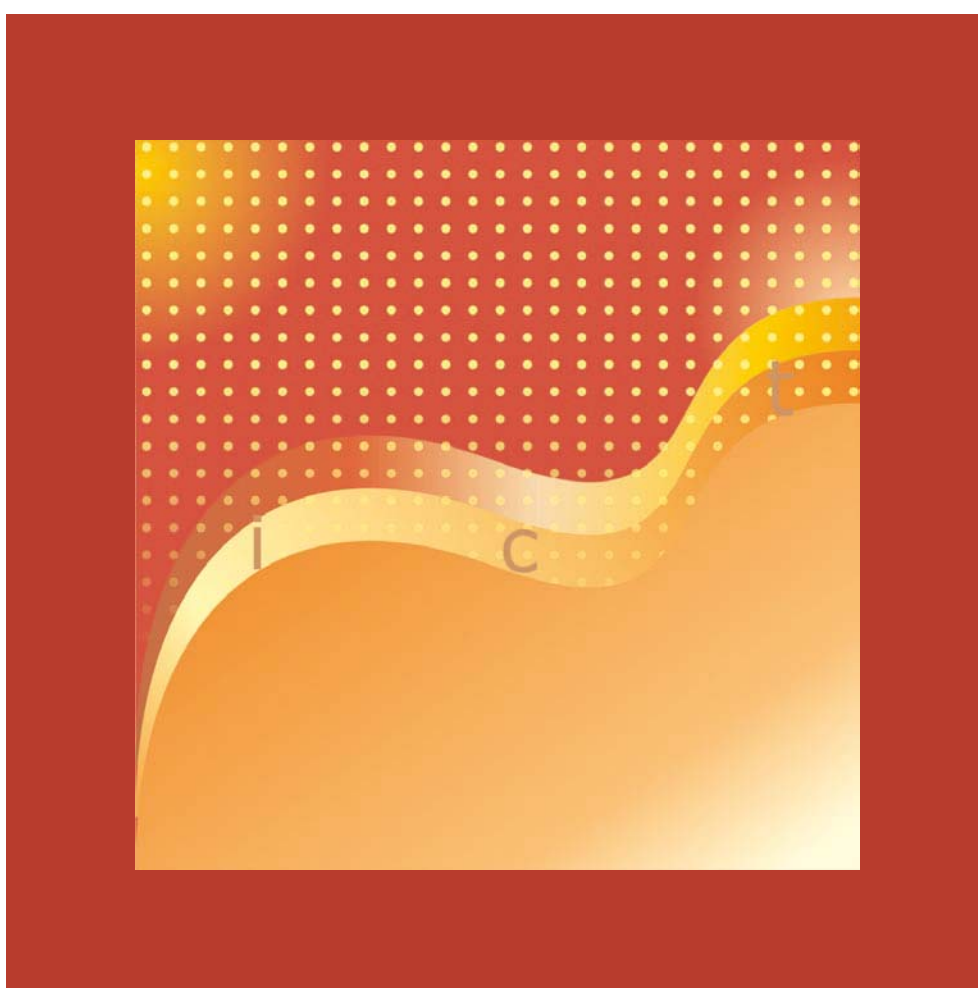


United Nations Conference on Trade and Development

INFORMATION ECONOMY REPORT 2007-2008

Science and technology for development:
the new paradigm of ICT

Prepared by the UNCTAD secretariat



UNITED NATIONS
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Chapter 1

TRENDS IN ICT ACCESS AND USE

A. Introduction

The diffusion of ICTs in developing countries is growing steadily, but except for some East Asian countries that are straddling the line between developed and developing status (notably the Republic of Korea and Singapore), developing countries remain far behind developed ones in the adoption of ICTs and their use by enterprises.¹ Among ICTs, mobile phones are often threshold technologies in many developing countries, and broadband Internet will be essential for developing an information economy (and integrating it at the regional and global levels).

This chapter presents trends since 2002 in ICT access and use by individuals and enterprises worldwide, paying special attention to the situation in developing countries and presenting illustrative examples of those trends. Section B will examine the trends in ICT access and use by individuals, focusing on the technologies of mobile telephony and the Internet, which have been recognized as having the greatest impact on developing countries. Mobile phones have lowered the threshold of ICT access for developing countries, while the Internet and in particular broadband Internet exponentially increase the availability of access to information and the ability to exchange it.

Section C will examine trends related to the use of basic ICT in enterprises, including for electronic transactions (e-commerce) and for conducting business (e-business). The use of the Internet for e-commerce and e-business helps enterprises improve efficiency and can have a positive impact on productivity. Section C also presents the highlights of the results of UNCTAD's annual collection of data on ICT in business in developing countries, which is based on the core list of ICT indicators developed by the Partnership on Measuring ICT for Development, of which UNCTAD is a leading member.² The policy implications of trends in ICT access and use will be summarized in the final part of the chapter, section D. The statistical annex at the end of the chapter provides more detailed country

tables on the evolution of basic ICT access and use worldwide.

Using statistics on ICT access and use, or ICT diffusion, developing countries can analyse trends in their information economies, and formulate and assess their ICT for development policies. Furthermore, in the context of a growing global information society, and of development initiatives such as the Millennium Development Goals, data on ICT allow countries to better assess their position in terms of the digital divide. For those reasons, there should be continued efforts to improve the availability of data on ICT in order to assess the information economy. The World Summit on the Information Society (WSIS) has called for the periodic evaluation of information society developments on the basis of appropriate indicators and benchmarking.

B. ICT access and use by individuals

Among the ICTs to be examined in this section, the differences in access to and use of ICT by individuals (mobile and broadband subscribers) can help countries compare themselves with other countries, or categories of users within national borders, in order to assess the progress in their ICT diffusion policies.³ The statistical annex to this chapter shows the data available by country on mobile phone subscribers and penetration, Internet users and penetration, and broadband subscribers and penetration.

1. Mobile phones as the breakthrough ICT in developing countries

In the past couple of years, mobile telephony has emerged as the most important ICT for low-income countries, and as the principal gateway to increased ICT access and use. The continued and substantial growth in mobile phone coverage in developing countries has been confirmed again in 2007 (see tables 1.1 and 1.2).

Table 1.1. Mobile phone subscribers by level of development and region

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
World	1 166 620 215	21.0	1 412 020 934	24.5	1 757 737 968	23.0	2 161 999 103	23.0	2 658 551 657
Developed economies	606 945 165	9.5	664 725 049	11.3	740 018 120	8.9	805 873 152	9.5	882 647 414
Asia	87 452 320	6.5	93 154 960	5.9	98 661 436	3.9	102 545 000	7.4	110 101 800
Europe	349 980 073	9.3	382 606 705	10.6	423 027 952	9.5	463 043 252	7.1	495 694 514
North America	154 488 772	11.3	172 017 384	15.6	198 852 732	9.8	218 334 900	16.1	253 561 100
Oceania	15 024 000	12.8	16 946 000	14.9	19 476 000	12.7	21 950 000	6.1	23 290 000
Developing economies	520 151 801	30.6	679 319 888	31.6	893 760 760	31.0	1 170 638 544	32.1	1 546 324 643
Africa	36 918 573	39.4	51 456 107	50.8	77 608 792	69.9	131 863 273	43.7	189 497 105
Asia	382 884 203	31.2	502 288 259	27.7	641 318 745	24.6	798 880 468	32.0	1 054 509 700
Latin America and the Caribbean	100 079 725	25.1	125 232 228	39.2	174 347 694	37.2	239 249 946	26.1	301 640 938
Oceania	269 300	27.5	343 294	41.4	485 529	32.8	644 857	5.0	676 900
Transition economies	39 523 249	72.0	67 975 997	82.4	123 959 088	49.6	185 487 407	23.8	229 579 600

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Table 1.2. Mobile phone penetration by level of development and region

Mobile phone subscribers per 100 inhabitants

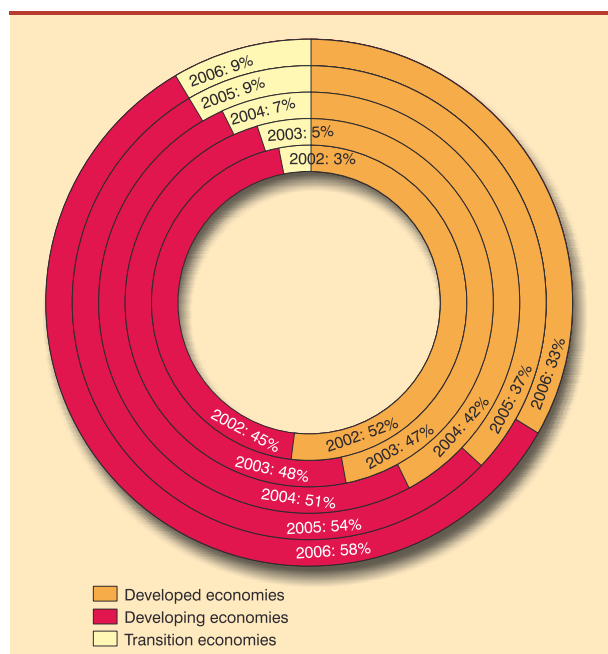
	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
World	18.8	19.5	22.5	22.7	27.6	21.2	33.4	21.4	40.6
Developed economies	64.1	8.6	69.6	10.8	77.1	8.1	83.3	9.0	90.8
Asia	65.2	6.3	69.3	5.8	73.3	3.8	76.1	7.2	81.6
Europe	75.2	8.3	81.4	10.3	89.7	9.0	97.8	6.8	104.4
North America	47.7	10.3	52.6	14.5	60.3	8.2	65.2	15.1	75.0
Oceania	63.7	11.6	71.1	14.6	81.5	11.4	90.7	5.1	95.3
Developing economies	10.6	28.7	13.6	29.4	17.6	28.9	22.7	30.1	29.5
Africa	4.5	36.3	6.1	46.9	9.0	64.0	14.7	39.2	20.5
Asia	10.7	29.5	13.9	25.9	17.5	23.1	21.5	30.5	28.1
Latin America and the Caribbean	18.9	23.4	23.3	36.7	31.8	35.3	43.1	24.1	53.5
Oceania	3.4	24.0	4.2	37.4	5.7	31.4	7.5	2.8	7.7
Transition economies	12.0	72.5	20.6	82.4	37.6	48.6	55.9	23.9	69.3

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

The marked increase in mobile phone penetration rates in developing countries points to the role of mobile telephony as a “digital bridge”, which will help many developing countries reduce the connectivity divide that separates them from others with more developed fixed-line infrastructure.

The number of mobile phone subscribers in developing countries has almost tripled in the last five years, and they now make up 58 per cent of mobile phone subscribers worldwide (see chart 1.1). Although mobile phone subscribers in developing countries are almost twice as many as in developed economies, there is a wide and inverse gap in terms of mobile phone penetration. At one extreme there are several developed countries where mobile phone penetration has even exceeded 100 per cent, while at the other extreme there are some 40 developing countries with a penetration rate of under 10 per cent. The gap has been persistent for years (see chart 1.2), although the divide could be expected to narrow in the next few years, as mobile markets reach saturation point in developed economies and continue their spectacular growth in developing countries.

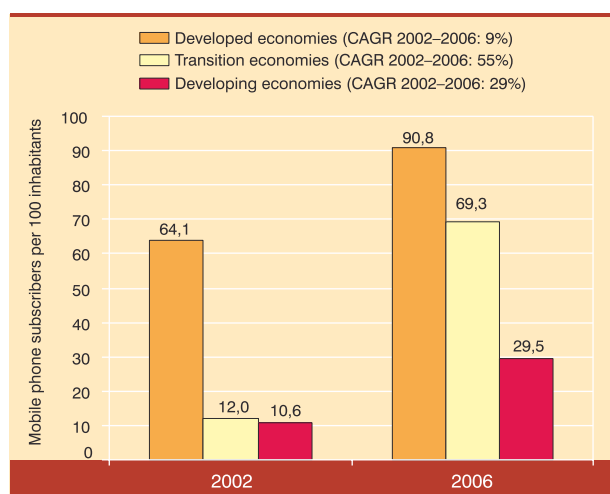
Chart 1.1
Mobile phone subscribers



Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

In Africa, where the increases in terms of mobile phone subscribers and penetration have been highest, this technology’s potential also holds the greatest promise.

Chart 1.2
Mobile phone penetration



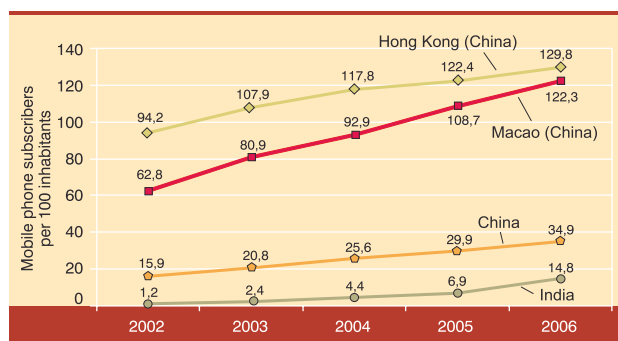
Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

South Africa and Nigeria are the leading countries in terms of number of subscribers in the continent (mobile phones in Africa, and in these two countries in particular, are also the subject of a more in-depth analysis in chapter 6 of this report), followed by Algeria, Egypt and Morocco. In some countries, while growth in the number of mobile phone subscribers might seem impressive, the high rate is mostly due to the low starting levels. Other countries might have a higher penetration but relatively low growth. However, those countries that reflect recent high growth (from 2005 to 2006) and high penetration levels (in 2006) better reflect the popularity (and widespread adoption) of mobile phones in Africa. For example, Algeria, Mauritania, Morocco, Seychelles and Tunisia all have mobile phone penetration of more than 50 per cent, with the most recent penetration growth rate being more than 20 per cent.

Developing Asia is the next region after Africa with the highest growth in the number of mobile phone subscribers and mobile phone penetration. It also accounts for nearly 40 per cent of mobile phone subscribers worldwide. The number of subscribers is not surprising since China and India are the two most populous countries in Asia and in the world. Although in terms of penetration China and India are still well below many other Asian countries, there has been strong growth (see chart 1.3), which is expected to continue. Growth expectations are based on current trends of prepaid mobile telephony, ICT spending in those countries – the so-called emerging BRICS economies (Brazil, Russian Federation, India, China

Chart 1.3

Mobile phone penetration in China and India



Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

and South Africa) accounted for about 10 per cent of worldwide spending on communications equipment in 2006 – and the constant improvement of infrastructure and the competitive and regulatory environment (OECD, 2007a).

The widely differing mobile phone penetration levels (and other ICT diffusion) in the other Asian countries could be a reflection of their political and economic diversity. Asia encompasses conflict and post-conflict countries (such as Afghanistan and Iraq) and least developed countries (such as Myanmar and Nepal) with very low levels of mobile phone penetration. But it also includes two OECD member countries (Japan and the Republic of Korea), oil-rich countries (such as Kuwait and Qatar), and other Asian economic “tigers” (such as Singapore and Taiwan Province of China) with very high levels of mobile phone penetration. Despite countries’ different circumstances, it can be said that, in

general, those countries that have implemented reforms to increase competition in the telecommunications market (for example, Mongolia) and that have brought about or enabled infrastructure development (such as China) have also experienced strong recent growth of the mobile phone market. The political (policies, regulatory environment) and economic (infrastructure, investment) elements that determine the uptake of mobile telephony in Asian countries also hold true for countries in other regions.

European countries account for more than half of mobile phone subscribers in developed economies, and together have a penetration rate of more than 100 per cent. As the market reaches saturation point, overall growth in the number of subscribers and in penetration has slowed down in recent years. The highest recent growth was in Eastern European countries (Croatia, Estonia, Latvia and Poland), which have now reached levels of mobile penetration above the developed country average. Despite saturation, however, revenue from mobile phones has increased, in part thanks to the increased offer of non-voice services such as Internet access and Short Message Service (SMS) (OECD, 2007a). In Germany and the United Kingdom, for example, non-voice services accounted for about 20 per cent of telecommunications revenues in 2006. In the EU, 12 per cent of households that accessed the Internet in 2006 used a mobile phone to do so, reflecting the growing trend of fixed-mobile convergence (see box 1.1).⁴ Noteworthy in that connection is Latvia, where 67 per cent of households reported that the device for Internet access at home is a mobile phone.

Box 1.1

Fixed-mobile convergence: a trend to watch

A trend to watch in the years to come is fixed-mobile convergence (FMC), or the integration of fixed and mobile services. Technology has evolved in recent years, including in hardware and applications, to allow a single device to be used for accessing different platforms. FMC holds great promise for the developing world, where fixed telephony still faces infrastructure hurdles, and where Internet access is often restricted by the limited availability of computers and fixed-line connections. The OECD has identified three technologies that are influencing the current impetus in developing FMC: Internet protocol (IP) network architecture, voice over IP (VoIP), and wireless fidelity (WiFi) and other wireless technologies (OECD, 2007b). FMC started with the bundling of fixed and mobile services, and is being upgraded through broadband and wireless connections, and dual-mode services. Eventually, the next generation of communications will result in network convergence. Telecommunications regulators are still working out how to deal with FMC, and developed countries will be the leaders in FMC development and implementation in the near future. But the continued substantial growth of mobile telephony in developing countries puts the latter in a prime position to readily adopt FMC when it becomes available.

In North America, the United States (the dominant market in this region) has had recent strong growth in the number of mobile phone subscribers and in increased penetration – from 49 per cent in 2002 to almost 78 per cent in 2006 – while Canada’s penetration rate has remained roughly stable at 52 per cent. Latin America and the Caribbean had the third largest growth of all regions in the number of mobile phone subscribers, with Brazil, Mexico, Argentina, Colombia and Venezuela together accounting for 75 per cent of new subscribers in the region. The growth in the number of subscribers in those countries from 2005 to 2006 brought their level of mobile phone penetration to over the 50 per cent mark (except for Argentina, which already had a much higher penetration rate). While the average for the whole region is about 53 per cent, the Caribbean has the countries with both the highest and the lowest penetration (several of the small Caribbean islands have penetration rates of above 100 per cent, while Cuba and Haiti have rates of 1.4 per cent and 5.8 per cent respectively).

Oceania has the fewest mobile phone subscribers, with Australia, the largest country in the region, naturally accounting for most new subscribers. The low numbers of mobile phone subscribers compared with other regions is understandable, since Oceania represents less than 1 per cent of the total world population. On the other hand, mobile phone penetration in Australia and New Zealand (both OECD member countries) is very high, and several of the smaller Pacific islands are catching up.

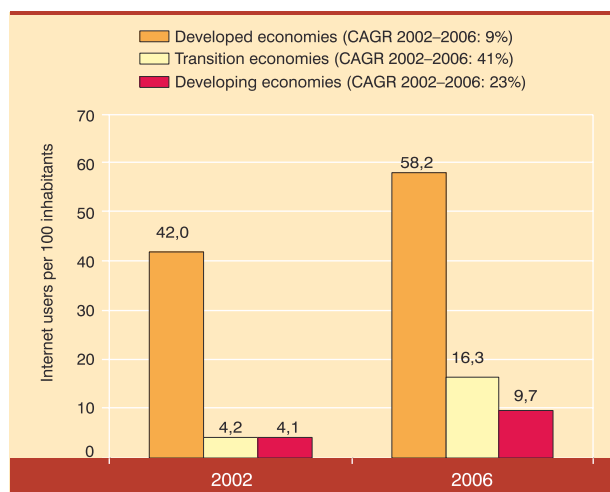
Among transition economies, the Commonwealth of Independent States (CIS) dominates mobile phone subscriber numbers (the Russian Federation alone accounts for about 60 per cent) and growth, and has caught up with South-East Europe in terms of average penetration. There are, however, wide differences between individual countries: on the one hand, Ukraine has experienced spectacular recent growth and reached over 100 per cent penetration, while on the other hand, Tajikistan, Turkmenistan and Uzbekistan have penetration rates of below 5 per cent.

2. The Internet gap is closing slowly

The Internet has continued growing worldwide in terms of users and penetration (see tables 1.3 and 1.4). Although developed economies still account for the majority of Internet users and are still very much ahead in terms of Internet penetration, developing economies are slowly catching up. While in 2002

Chart 1.4

Internet penetration



Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Internet penetration in developed economies was 10 times higher than in developing economies, in 2006 it was only 6 times higher. Transition economies had the highest compound annual growth rate in Internet penetration between 2002 and 2006 (see chart 1.4).

Although the number of Internet users in Africa continues to grow strongly, penetration continues to be extremely low. Four out of 53 countries (Nigeria, Morocco, Egypt and South Africa) account for almost 60 per cent of Internet users in the region. While the small island State of Seychelles has the highest Internet penetration (33.3 per cent), Morocco has the highest penetration on the mainland at only 19.9 per cent. African countries still have much work to do in order to improve Internet penetration, but several are strenuously pursuing ICT diffusion and are slowly but surely improving the situation through a combination of ICT for development policies to improve ICT access and skills, regulatory reforms to increase the offer of services and competition, and the fostering of investments in infrastructure and in the ICT sector.

As in the case of mobile phones, Asia is the region contributing the largest share of Internet users, mostly because of China and India, which together account for nearly 200 million users (more than half of users in the region). The Republic of Korea has the third largest number of Internet users (16 million) and the highest Internet penetration (70.4 per cent) in Asia. Japan follows it closely in terms of penetration. It is interesting to note that a number of West Asian countries (Brunei Darussalam, United Arab Emirates,

Table 1.3 Internet users by level of development and region

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
World	618 514 417	16.0	717 707 944	20.7	866 364 366	16.2	1 006 429 544	12.4	1 131 078 697
Developed economies	397 605 044	7.3	426 435 696	15.6	492 755 839	7.5	529 869 769	6.8	566 077 247
Asia	60 345 200	4.2	62 904 500	28.7	80 976 600	7.4	86 975 900	2.8	89 439 100
Europe	149 899 844	13.4	169 994 796	12.0	190 421 239	7.7	205 089 269	10.7	227 077 547
North America	174 952 000	3.0	180 126 400	14.4	206 008 000	7.2	220 860 600	4.6	231 060 600
Oceania	12 408 000	8.1	13 410 000	14.5	15 350 000	10.4	16 944 000	9.2	18 500 000
Developing economies	207 465 892	28.8	267 302 205	26.1	337 136 119	28.6	433 560 239	17.9	511 035 250
Africa	10 290 156	45.3	14 953 500	48.5	22 206 421	48.8	33 032 605	31.4	43 397 500
Asia	153 538 659	29.9	199 488 152	25.8	250 869 483	24.0	311 164 987	16.1	361 391 800
Latin America and the Caribbean	43 411 477	21.2	52 597 353	21.2	63 756 215	39.6	89 022 947	18.9	105 864 150
Oceania	225 600	16.7	263 200	15.5	304 000	11.7	339 700	12.4	381 800
Transition economies	13 443 481	78.3	23 970 043	52.2	36 472 408	17.9	42 999 536	25.5	53 966 200

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Table 1.4 Internet penetration by level of development and region

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
World	10.0	14.6	11.4	19.0	13.6	14.5	15.6	10.9	17.3
Developed economies	42.0	6.3	44.7	15.0	51.3	6.7	54.8	6.3	58.2
Asia	45.0	4.0	46.8	28.6	60.2	7.3	64.6	2.6	66.3
Europe	32.2	12.3	36.2	11.7	40.4	7.2	43.3	10.4	47.8
North America	54.1	2.0	55.1	13.3	62.4	5.6	66.0	3.7	68.4
Oceania	52.6	6.9	56.3	14.1	64.2	9.1	70.0	8.1	75.7
Developing economies	4.2	27.0	5.3	24.0	6.6	26.5	8.4	16.1	9.7
Africa	1.3	42.1	1.8	44.6	2.6	43.5	3.7	27.3	4.7
Asia	4.3	28.3	5.5	24.0	6.8	22.6	8.4	14.8	9.6
Latin America and the Caribbean	8.2	19.5	9.8	19.0	11.6	37.7	16.0	17.1	18.8
Oceania	2.8	13.5	3.2	12.2	3.6	10.5	4.0	10.1	4.4
Transition economies	4.1	78.8	7.3	52.2	11.1	17.1	13.0	25.6	16.3

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Qatar, Kuwait, Lebanon, Islamic Republic of Iran and Saudi Arabia) experienced recent high growth in Internet penetration and reached a 2006 penetration rate above the world average.

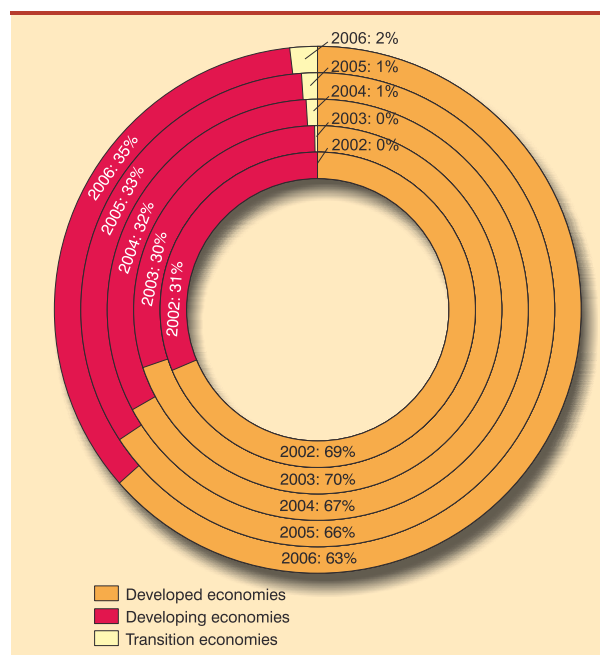
Among developed regions, European countries had the highest growth in the number of Internet users overall, but the lowest average Internet penetration. For the first time, the Netherlands became the European country with the highest Internet penetration rate in 2006, overtaking Sweden. Several Eastern European countries (Hungary, Latvia, Lithuania and Slovakia) have shown remarkable growth in the past five years. The only European country that has not significantly increased its Internet diffusion has been Greece, possibly because of the combined effect of a lack of competition (the Government's national telecommunications company has a monopoly over end-user networks) and individuals' lack of awareness about the benefits of Internet access and use (Yannopoulos, 2006).

Both in developed North America and in developing Latin America and the Caribbean, the numbers of Internet users and Internet penetration have continued to increase, although their growth rates have slowed down. Many of the small island States have the highest Internet penetration rates, while Brazil and Mexico, the two largest Internet markets in Latin America and the Caribbean (60 per cent of the region's Internet users), have shown healthy growth and above-average Internet penetration.

Developed and developing Oceania had moderate recent growth in the number of Internet subscribers and in Internet penetration. While Australia and New Zealand account for the highest average Internet penetration among in Oceania's developed regions, most of the small island States still have very low penetration. Only French Polynesia, the Federated States of Micronesia and New Caledonia have had meaningful increases in Internet penetration rates since 2002.

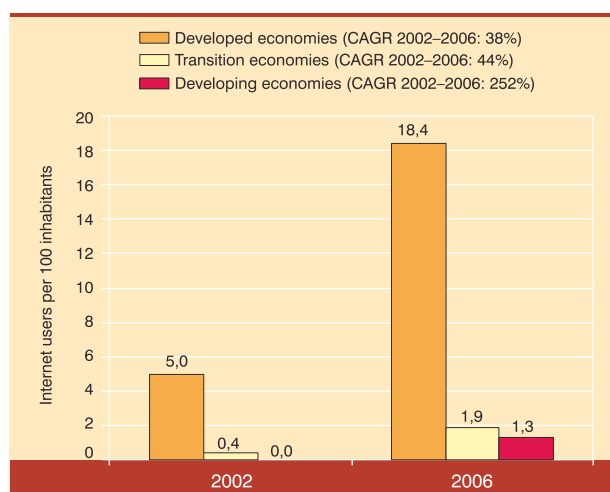
Transition economies have had remarkable growth in the number of Internet users and in Internet penetration in the past five years. In general, the Internet user population has grown significantly in CIS countries, with the Russian Federation as the single largest contributor to Internet user growth. However, Internet penetration in South-East Europe remains higher than in the CIS, and has grown remarkably since 2002.

Chart 1.5
Broadband subscribers



Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Chart 1.6
Broadband penetration



Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

The promise of broadband

Although available data show that the number of broadband Internet subscribers has grown rapidly worldwide, developed economies still dominate subscriptions (see chart 1.5), and the gap in terms of penetration has widened since 2002 (see chart 1.6). As

mentioned in the IER 2006, increased competition has determined broadband growth in almost all developed countries, while continuous improvements and diversification in infrastructure have resulted in increased bandwidth. The European Commission has noted that “the most significant factor enabling broadband growth is the existence of alternative infrastructures, in particular cable”.⁵

The differences in infrastructure and markets result into price conditions that are less than ideal for the adoption of broadband by developing country consumers. In developed, high-income economies, the average cost of a broadband connection is significantly less than in developing countries, both in nominal terms and as a percentage of the average monthly income (ITU and UNCTAD, 2007). To promote affordable access in developing countries, it is important that government policies encourage competition and the expansion of consumer markets, as well as promote investment in, and develop, infrastructure and connectivity.

The ITU reports that from 2002 to 2005 the number of countries where fixed-line broadband services were available grew from 81 to 166 (and about 60 already offered mobile broadband services). While overall trends indicate that broadband Internet is gaining ground and is likely to become ubiquitous in a few years’ time, it is important to keep in mind that, in the meantime, Internet users without broadband will be disadvantaged with respect to broadband users, as

they will be unable to use certain applications. A study recently found that broadband users report higher levels of activity and spend more time on the Internet than dial-up users (although other demographic factors are also taken into account, such as age, education, race and sex) (Davison and Cotten, 2003). In particular, a broadband connection will usually mean that users will engage in activities that require high bandwidth, such as downloading music or playing games online, and be more inclined than dial-up users to engage in e-payments and e-banking.

In Africa, Morocco has the highest number of broadband Internet subscribers (390,000), but a penetration of barely 1.3 per cent. The highest penetration in the continent is in Mauritius, with only 1.7 per cent. It is evident that Africa still has a long way to go in order to reap the potential benefits of broadband connectivity. Plans to install undersea fibre-optic cable systems (see box 1.2) should help Africa achieve better connectivity, although the meaningful adoption of broadband is likely to take still several years.

In Asia, the average levels of broadband subscribers and penetration are better than in Africa mainly because of a handful of countries. China has of course the majority of broadband subscribers in the region (62 per cent), but still a low penetration rate of 3.9 per cent. The best performers in terms of broadband penetration are above the developed country average

Box 1.2

Ambitious broadband plans for Africa

In order to benefit fully from the Internet, Africa needs to improve its connectivity infrastructure in order to achieve affordable broadband. Initiated in January 2003, the Eastern Africa Submarine Cable System (EASSy) is aimed at providing broadband connection to 19 African countries (including 11 landlocked countries) via an undersea fibre-optic cable running from South Africa to Sudan, and could be offering commercial service by the end of 2008. The EASSy project coordinator estimates that it could cut telecommunication costs in Africa at least by half.

However, during EASSy’s slow-starting initial phase, there were disagreements about whether it should be controlled by the private sector or by an open access system (where investors and non-investors are given international bandwidth access at the same price). Kenya withdrew from EASSy and announced the launch of an East African Marine System, and the South African-led New Partnership for Africa’s Development (NEPAD) has launched the NEPAD Broadband Infrastructure Network. At the same time a private company called SEACOM (with African, European and United States capital) is also planning an undersea cable.

Whether African countries support one initiative or the other, it is important that these initiatives result in affordable connectivity soon. This will be particularly significant for landlocked countries, which currently depend on expensive satellite communications. The high prices that Africa continues to pay for broadband owing to the current situation can only be negative for the development of its information society.⁶

(18.4 per cent): the Republic of Korea, Hong Kong (China), Israel and Taiwan Province of China. Singapore and Macao (China) are not far behind. On the other hand, there are still a considerable number of countries (at least 19) with broadband penetration rates of under 1 per cent.

Europe is the broadband leader among regions in terms of subscribers, with the bulk of subscribers coming from the same countries as the bulk of Internet users (Germany, United Kingdom, France and Italy). The significant growth of overall penetration in the past five years, from 3 to 17 per cent, is a reflection of the active pro-broadband policies in the EU (and Norway and Iceland). As in the case of the Internet, the Netherlands took the lead for the first time in terms of Internet penetration, with broadband subscribers accounting for more than one third of Internet users in that country.

In North America, the United States and Canada are lagging behind Europe in terms of the number of broadband subscribers and the growth rate of the broadband subscriber base. And although broadband penetration in the United States and Canada in 2006 was higher than the EU-25 average (14.8 per cent as at July 2006), it is still lower than that of the more industrialized EU members. Furthermore, the compound annual growth rate of broadband penetration in Europe was of 54 per cent, compared with 28 per cent in North America. The IER 2005 had pointed out that the broadband market in the United States in particular was insufficiently competitive.

In Latin America and the Caribbean the growth of broadband Internet subscriber numbers has been very rapid, but penetration remains very low at 2.6 per cent. Broadband penetration in Brazil and Mexico, the dominant countries in terms of subscribers, is above the regional average but still low. The highest levels of penetration are found in the small island States, while Chile maintains the highest rate of penetration among the larger countries. Chile's position is partly due to its active ICT promotion policy, which includes the introduction of ICT in schools, its e-government strategy and its national programme for the support of telecentres (see chapter 7).

Both developed and developing Oceania have experienced strong growth in the number of broadband subscribers in recent years, but while developed Oceania (Australia and New Zealand) is doing very well in terms of penetration (18.3 per cent), the small island economies of Oceania have a very low penetration rate (0.4 per cent). French Polynesia and New Caledonia

are the exceptions, with penetration rates of 7 and 4 per cent respectively, but those figures do not indicate an improvement for other economies.

Despite continued strong growth in broadband subscriptions, the average penetration in transition economies (1.3 per cent) is even lower than the average penetration in developing economies (1.9 per cent). South-East Europe is slightly ahead of CIS countries, mostly because of a recent increase in broadband subscriptions in Bulgaria.

C. ICT access and use by enterprises

Increased access to ICTs by enterprises in developing countries means that they have better access to information, and the use of ICTs for business processes can also help increase productivity (see chapter 3). A study of small and medium-sized enterprises in 14 African countries concluded that the use of ICTs makes a significant contribution to income generation and is linked to increased labour productivity (RIA!, 2006). They help reduce the cost of transactions and increase market access, thereby increasing commercial efficiency.

Despite the increasingly evident advantages of ICTs for business, their adoption by developing country enterprises is still limited. The lack of awareness of the potential benefits of ICT use, and investment and implementation costs, are important constraints on wider ICT adoption. This chapter looks specifically at the adoption of mobile phones, the Internet (and broadband Internet) and e-business (and e-commerce) by enterprises.

With regards to computer use by businesses, chapter 3 makes an in-depth analysis of the firm-level impact of ICTs, including the use of computers by enterprises in Thailand, and shows that computer use, Internet access and web presence are linked to higher sales per employee. The use of computers by enterprises in developed countries is nearly ubiquitous, but for enterprises in poorer countries they can make a substantial difference in the efficiency of managerial processes. When computers provide access to networks such as the Internet, their impact on labour productivity is even higher. A review of other studies supports the finding that an increase in the share of employees using computers has a positive effect on labour productivity, although the magnitude of the impact is determined

Table 1.5.
Argentina: use of ICT in the manufacturing sector (%)

Indicators	2001	2004	2005	% change 2004–2005
Enterprises that invested in ICT	..	43.3	45.1	4.2
Enterprises with access to the Internet	86.9	92.4	95.2	3.0
Enterprises with a website (of those with the Internet)	56.5	60.2	73.5	22.1
Enterprises with an intranet	35.6	42.1	44.2	5.0
Enterprises receiving orders over the Internet (of those with the Internet)	14.6	40.0	45.5	13.8
Enterprises using the Internet for:				
Sending and receiving e-mail	..	89.1	92.4	3.7
Getting information about goods or services	..	70.2	83.4	18.8
Internet banking or accessing other financial services	..	67.1	78.6	17.1
Transacting with government organizations/public authorities	..	45.1	53.4	18.4
Providing customer services	..	34.7	40.7	17.3
Getting information for research and development activities	..	29.0	37.9	30.7
Delivering products online	..	4.4	5.7	29.5

Note: See after table 1.20. in the Statistical Annex for notes to data.

Source: Instituto Nacional de Estadística y Censos de Argentina (INDEC).

by the business environment and variables such as enterprise age, origin of capital, industry affiliation and enterprise size.

The adoption of ICTs by enterprises goes hand in hand with the investments they make in ICTs, and it is the larger enterprises that invest more often. Despite the apparent benefits of ICTs, many SMEs are unsure of what are the appropriate ICT solutions in which to invest (Kotelnikov, 2007). ICT investment can help improve productivity, although it should be noted that in countries with very low ICT diffusion the effects of ICT investment at the macroeconomic level are limited (see chapter 3 of this Report and OECD, 2006). At firm level, an Argentine survey of the manufacturing sector showed that the growth in ICT investments (including system and software development), often combined with training and organizational changes, was accompanied by growth in the use of ICTs and e-business, as seen in table 1.5.

1. Mobile phones are valuable business tools

Mobile phones are being increasingly used by individuals not only for personal purposes, but also for business. The use of mobiles for business purposes has been classified by an Australian study (O'Donnell et al., 2007) into mCommerce, mEnterprise (enterprise solutions enabled through mobiles such as logistics)

and mServices (mobile applications that do not imply a transfer of goods such as mobile banking).⁷

Enterprises will provide their salespeople with mobile phones to ensure they are always connected and able to seize the latest business opportunities. Entrepreneurs without a physical office are permanently in touch. A Spanish study finds that mobile phones are valuable interactive marketing tools, since they complement other direct sales systems such as the Internet and television (Bigné, Ruiz and Sanz, 2007). Internet-enabled mobile phones (including a new generation that will allow high-speed Internet access) will also have a role to play in e-commerce (see also section C.3 below).⁸ As consumers (in particular the younger generations of consumers) are increasingly exposed to ubiquitous and more sophisticated mobile phones, they will probably become more comfortable with, and make more use of, mobile commerce; “the closer an individual’s relationship with a medium, the greater the probability of purchase” (Bigné, Ruiz and Sanz, 2007).

Mobile phones are the main communication tool for many entrepreneurs (particularly small entrepreneurs) in developing countries, especially in Africa (see chapter 6). A study of 14 African countries found that more than 80 per cent of SMEs use a mobile phone for business purposes, and only 51 per cent use fixed lines (RIA!, 2006). Mobiles were the most commonly used ICT (more than faxes, fixed-line phones, the Internet or mail) for communicating with clients and

Box 1.3

Trade at Hand: mobile telephony to increase exports

The Trade at Hand project pilot was launched in sub-Saharan Africa in 2006 by the International Trade Centre (ITC) of UNCTAD/WTO (funded by various donors) to provide real-time market information through mobile phones to exporting SMEs. In Africa, where there is a great need for better business and market information, mobile phones can help meet this need as the most common ICT in the continent.

Trade at Hand sends, via SMS and in real time, product prices on international markets to agricultural exporters from Burkina Faso and Mali. A second module of the project sends to mobile phones information about business opportunities, contacts and markets, in collaboration with the ITC's existing network of local trade support institutions. With better information on daily international prices for mangoes and green beans, for example, exporters are able to negotiate better deals for their produce and improve revenues. Better information on business opportunities also contributes to increasing exports. With time, Trade at Hand should become self-sustainable and will be managed by local organizations. The ITC plans to further expand Trade at Hand in Mali and Mozambique, and also in Benin, Liberia and Senegal.

Source: <http://www.tradeathand.info/mozambique/>.

for ordering supplies. Furthermore, more than 95 per cent of SMEs in that study stated that mobile phones were either important or very important for their business operations. A project in sub-Saharan Africa uses mobile phones to overcome the market information asymmetry suffered by SMEs that want to export (see box 1.3).

The level of use of mobile phones for business purposes, apart from contacting customers and suppliers, and keeping employees in touch, is likely to depend on the development of applications that are relevant for enterprises and provide value added. This means that mobile business applications should not be mere substitutes for applications that are already available and work well through fixed lines, computers or the Internet. Examples of applications are inventory tracking, the provision of cash flow and income statements, and m-payments to replace cash transactions and «build up transaction histories» (which in turn facilitate the access of unbanked enterprises to formal financial services) (RIA!, 2006). However, the Australian study found that while many enterprises want to adopt m-commerce, they find it difficult to make a strong business case that will outweigh the financial and legal risks taken due to the lack of relevant laws and regulations (O'Donnell et al., 2007).

Despite increasing anecdotal evidence about their potential benefits, there are no official statistics on the use of mobile phones by enterprises or by individual entrepreneurs. Countries should collect such statistics in order to take into account the impact of that technology when formulating their ICT for development policies and strategies. There is a need for more empirical studies with firm-level data to determine how the

use of mobile phones impacts business productivity, especially in poor countries.

2. Internet use by businesses is slowly growing

While growth in the number of Internet users in developing countries has been linked to growth in exports (World Bank, 2006), Internet access by enterprises in developing countries continues to grow, as does the number of employees using the Internet in their daily work. The number of enterprises with websites is also slowly increasing.

Firm-level surveys by the World Bank⁹ revealed that service-sector enterprises use websites and computers more than the manufacturing sector, and have a higher proportion of employees that use computers regularly. Within the service sector, it is not surprising that firms in the telecommunications and information technology industries are the main users of ICT; they are followed by the real estate and the hotel and restaurant sectors. Exporters also use the Internet (websites and electronic mail) much more than non-exporters.

In the European Union, Internet access by enterprises with 10 or more employees has continued to grow slowly but surely, reaching an average of 92 per cent in 2007 (including in the two new member countries, Bulgaria and Romania), compared with 86 per cent in 2003. Internet connectivity in individual countries is shown in table 1.6. Approximately one third of employees in enterprises located in EU countries use (computers connected to) the Internet in their

Table 1.6
Enterprises with Internet and website

	Reference year	Proportion of:		
		Enterprises using Internet	Employees using Internet	Enterprises with a website (of those using Internet)
		B3	B4	B5
Argentina	2005	95.8	24.8	74.4
Australia	2005	87.3	..	51.8
Austria	2006	98.0	..	80.0
Azerbaijan	2006	8.7	1.7	32.6
Belarus	2005	37.6	..	27.2
Belgium	2006	95.0	41.0	72.0
Bermuda	2005	71.0	37.0	56.3
Brazil	2006	94.3	36.5	49.6
Bulgaria	2006	74.8	14.5	43.8
Canada	2006	94.9	..	71.2
Chile	2005	48.8	..	38.8
China	2005	47.4	..	23.7
Cuba	2006	70.9	29.6	23.7
Cyprus	2006	86.0	31.0	50.0
Czech Republic	2006	95.0	29.0	74.0
Denmark	2006	98.0	61.0	85.0
Egypt	2006	53.2	9.9	71.0
Estonia	2006	92.0	33.0	63.0
Finland	2006	99.0	59.0	81.0
France	2006	94.0	34.0	65.0
Germany	2006	95.0	39.0	77.0
Greece	2006	94.0	26.0	64.0
Hong Kong (China)	2006	82.8	45.9	51.5
Hungary	2006	80.0	21.0	53.0
Iceland	2006	99.3	51.6	77.5
Ireland	2006	94.0	37.0	67.0

	Reference year	Proportion of:		
		Enterprises using Internet	Employees using Internet	Enterprises with a website (of those using Internet)
		B3	B4	B5
Italy	2006	93.0	28.0	61.0
Japan	2005	97.7	..	85.6
Latvia	2005	77.1	20.9	43.5
Lithuania	2006	88.0	23.0	47.0
Luxembourg	2006	93.0	32.0	65.0
Macao (China)	2003	53.3	..	26.3
Malta	2005	90.0	..	61.0
Mauritius	2006	87.4	..	46.1
Netherlands	2006	97.0	45.0	81.0
New Zealand	2006	94.5	97.4	62.7
Norway	2006	94.0	50.0	76.0
Panama	2006	80.1	20.3	..
Poland	2006	89.0	28.0	60.0
Portugal	2006	83.0	25.0	42.0
Qatar	2005	68.4	90.0	99.0
Republic of Korea	2005	95.9	..	58.9
Romania	2005	58.4	15.9	41.2
Russian Federation	2005	53.3	12.4	27.8
Singapore	2006	87.2	..	69.6
Slovakia	2006	93.0	29.0	65.0
Slovenia	2006	96.0	35.0	65.0
Spain	2006	93.0	35.0	50.0
Sweden	2006	96.0	53.0	90.0
Switzerland	2005	98.2	47.6	91.6
Thailand	2006	69.6	..	50.5
Turkey	2005	80.4	34.1	59.9
United Kingdom	2006	93.0	42.0	81.0

Note: See after table 1.20. in the Statistical Annex for notes to data.

Source: UNCTAD information economy database, 2007.

normal work routine (at least once a week). However, only about 60 per cent of enterprises have interactive websites; as usual, the level of adoption is higher in larger enterprises.

Broadband Internet is essential to the information economy

Last year's report argued that broadband access to the Internet can enable or enhance the adoption of certain applications that have an impact on enterprise productivity. In OECD countries, affordable broadband

connectivity has been linked to the increased use of ICTs by SMEs (OECD, 2004). Although there is still not enough information about broadband adoption in developing countries, it is clear that it is growing and the technology is changing fast. Access speeds are continuously higher in the more advanced countries, and pioneers such as the Republic of Korea are already looking forward to wireless broadband (WiBro).¹⁰

Unlike Internet access, whose growth has slowed down as the market becomes saturated, broadband access in the EU by enterprises with 10 or more employees has increased rapidly in the past few years

and is expected to continue growing. On average, 73 per cent of enterprises had broadband access in 2007 (including the two new member countries, Bulgaria and Romania), up from 40 per cent in 2003. In OECD countries, broadband is quickly becoming the basic medium for service delivery on both fixed and wireless networks (OECD, 2007a).

Broadband increases the capacity of enterprises to benefit from, and deliver through, the Internet, and can enable the adoption of certain applications that have an impact on enterprise productivity. Although broadband particularly enhances multimedia applications and can have evident benefits for the ICT-enabled services and media sectors, it is increasingly being used in non-ICT-intensive economic sectors. In the European manufacturing industry, it is a key enabler of online procurement, which helps enterprises manage their supply chain. Voice over Internet Protocol applications have cost-saving potentials for firms in all economic sectors, while marketing and sales applications can also be applied to all economic sectors. In general, industries can enhance e-business solutions through broadband. Despite growing recognition of the positive impact that broadband can have on productivity, the awareness of its potential among developing country enterprises needs to increase.

3. E-Business is facilitated by government

E-business often requires networked business functions through LANs, intranets and/or extranets. The adoption of LANs in developing countries is more widespread than the use of intranets. In those countries where data for more than one year are available, both indicators have increased (see table 1.8).

In Europe, enterprises are increasingly and rapidly adopting LANs (60 per cent in small enterprises, 85 per cent in medium-sized enterprises and 95 per cent in large enterprises, in 2005). As in the case of the introduction of an intranet, enterprises in the services sector are the more frequent users of LANs, mostly in media and then in business services.

The levels of intranet and extranet use in EU enterprises have remained stable since last year. On average, 35 per cent of EU enterprises have an intranet, while 16 per cent have an extranet, but these figures conceal a much higher level of use in large enterprises (80 per cent of enterprises with 250 or more employees have an intranet and 47 per cent have an extranet).

A further step to the introduction of intranets and extranets is the automated integration of business processes – that is, automatic linking between computer systems to manage orders that have been placed or received and other internal systems (reordering of supplies, invoicing and payment, and management of production logistics or service operations). On average, 34 per cent of European enterprises have automated integration of internal business processes, with the distributive trade sector having the highest level of integration (45 per cent of companies). This sector also had the highest level of integration between different companies, particularly in the sale, maintenance and repair of vehicles (the European average was 15 per cent of enterprises in 2005).¹¹

Some developing countries are not far behind Europe in terms of integrating business processes. In Brazil, for example, 36 per cent of enterprises use information technology to manage orders and purchases, with automated linking to several related activities (inventory control, invoicing and payment, production and logistics). The sector with the highest level of integration is the automobile trade and repair sector. Integration with supplier or customer commercial systems (outside the enterprise) is less common.

In terms of the use of the Internet for different business purposes, data from developing countries is scarce and not always comparable. Table 1.9 sets out the available information for the core indicators on Internet use by activity.

For enterprises in developing countries that are starting to use the Internet, the mere fact of having increased access to information can have immediate positive effects. In Ghana, SMEs that export non-traditional products use the Internet to find information about international best practices and exporting opportunities. Although online payments are almost non-existent at present, as SMEs increase exports they will also become more likely to use the Internet for receiving orders (Hinson, Sorensen and Buatsi, 2007).

The use of e-government services by enterprises is of particular importance for encouraging businesses to make further use of ICT to improve the efficiency of their operations. The Government of the Republic of Korea, for example, provides firms with information on export-import logistics and Customs, and has started to implement an electronic documentation service for private companies that have a high level of document exchanges with it. In Mexico, the taxation agency recently launched online tax returns and e-

Table 1.7
Enterprises with Internet by mode of access

	Reference year	Proportion of:	Proportion of enterprises accessing the Internet by:				
		Enterprises using Internet	Analogue modem	ISDN	Fixed line connection under 2 Mbps	Fixed line connection of 2 Mbps or more	Other modes of access
		B3	B9.a	B9.b	B9.c	B9.d	B9.e
Argentina	2005	95.8	15.4	..	..	..	9.6
Australia	2005	87.3	24.2	7.1	..	68.7	..
Azerbaijan	2006	8.7	67.3	4.8	12.1	5.1	17.8
Belgium	2006	95.0	17.0	28.0	26.0	89.0	12.0
Brazil	2006	94.3	13.9	..	68.7	4.7	4.8
Bulgaria	2006	74.8	26.4	10.9	26.5	6.0	19.1
Canada	2006	94.9	..	..	..	92.2	..
Chile	2005	48.8	16.4	..	19.4	80.6	..
China	2005	47.4	13.6	6.0	..	..	..
Cuba	2006	70.9	51.1	0.0	32.9	0.2	0.1
Cyprus	2006	86.0	33.0	26.0	11.0	63.0	5.0
Czech Republic	2006	95.0	12.0	27.0	41.0	73.0	31.0
Denmark	2006	98.0	4.0	17.0	17.0	84.0	10.0
Egypt	2006	53.2	6.3	1.8	71.9	22.8	0.9
Estonia	2006	92.0	10.0	17.0	20.0	82.0	9.0
Finland	2006	99.0	19.0	22.0	21.0	90.0	22.0
France	2006	94.0	..	22.0	22.0	92.0	..
Germany	2006	95.0	4.0	38.0	13.0	77.0	7.0
Greece	2006	94.0	28.0	43.0	10.0	62.0	5.0
Hong Kong (China)	2006	82.8	3.6	..	93.4	10.2	10.6
Hungary	2006	80.0	14.0	26.0	26.0	77.0	13.0
Iceland	2006	99.3	4.5	5.7	33.0	44.1	5.7
Ireland	2006	94.0	27.0	33.0	30.0	64.0	9.0
Italy	2006	93.0	23.0	30.0	8.0	75.0	8.0
Japan	2005	97.7	9.6	16.1	16.0	63.5	68.1
Latvia	2005	77.1	10.3	20.6	..	73.7	12.6
Lithuania	2006	88.0	33.0	14.0	21.0	65.0	17.0
Luxembourg	2006	93.0	18.0	42.0	16.0	81.0	14.0
Macao (China)	2003	53.3	9.9	..	8.1	..	78.8
Malta	2005	90.0	20.0	7.0	21.0	87.0	7.0
Netherlands	2006	97.0	6.0	23.0	15.0	84.0	5.0
New Zealand	2006	94.5	35.0	..	81.6	..	21.1
Norway	2006	94.0	6.0	16.0	33.0	91.0	15.0
Panama	2006	80.1	8.2	4.0	61.7	..	36.8
Poland	2006	89.0	39.0	34.0	16.0	52.0	14.0
Portugal	2006	83.0	25.0	18.0	24.0	79.0	5.0
Republic of Korea	2005	95.9	0.7	0.8	..	98.2	0.2
Romania	2005	58.4	33.8	11.8	32.1	7.8	42.4
Singapore	2006	87.2	19.3	12.8	66.7	18.3	33.3
Slovakia	2006	93.0	19.0	32.0	18.0	65.0	29.0
Slovenia	2006	96.0	10.0	23.0	14.0	78.0	9.0
Spain	2006	93.0	16.0	19.0	8.0	94.0	9.0
Sweden	2006	96.0	18.0	17.0	30.0	92.0	28.0
Switzerland	2005	98.2	..	..	54.8	42.2	..
Thailand	2006	69.6	52.2	5.3	..	39.4	19.4
Turkey	2005	80.4	35.3	6.8	52.3	27.4	14.1
United Kingdom	2006	93.0	37.0	33.0	16.0	83.0	2.0

Note: See after table 1.20. in the Statistical Annex for notes to data.

Source: UNCTAD information economy database, 2007.

Box 1.4

E-business in Mexico

Mexico's overall ICT policy aims to increase the country's competitiveness and keep foreign investments from moving to other countries with lower labour costs. A main objective of that policy is to increase the diffusion of ICTs to business, creating a regulatory environment conducive to e-commerce, supporting the development of local ICT human resources and industry, and developing a domestic ICT market.

While Internet penetration among Mexico's larger businesses (those with more than 50 employees) is high (90 per cent in 2003), they represent only 8 per cent of all businesses. Only 2.2 per cent of enterprises are engaged in (mostly B2B) e-commerce (although the percentage is much higher among retail companies: 16 per cent). B2C e-commerce is limited owing to lack of demand, although Internet penetration in Mexico grew from 10.7 per cent in 2001 to 20.3 per cent in 2006, and ISP development has continued. Mexico City, Guadalajara and Monterrey are much more advanced than other cities: Guadalajara and Monterrey host important technology parks, and Monterrey also has Mexico's leading technological institute. To increase overall demand, the e-Mexico initiative that was launched in 2002 is establishing a network of digital community centres (also used by micro businesses) and has a portal focused on the subjects of learning, health, economy and government.

Regarding SMEs, Mexico is challenged by the lack of information on ICT diffusion among those businesses, which hinders the formulation of policies and analysis of ICTs' potential impact on them. The large informal economy in Mexico also "flies under the radar" of ICT diffusion assessments, however, this does not preclude the Government from offering most of its research and development tax incentives to SMEs. A preliminary evaluation of that programme showed that those tax incentives had contributed to increased production, new product sales as well as total sales, exports and profits among the beneficiaries. A public-private project has focused on integrating value chains through ICTs and developing the domestic market in four industries (food retailing, processed foods, maquiladoras¹² and hotels).

In order to increase the diffusion of ICTs to business and its positive impact on Mexico's economic performance and competitiveness, an OECD peer review recommended steps in several ICT-related policy areas. The highest priority is given to the coordination of ICT policy actions, which are currently implemented by various ministries and should be centrally monitored. The peer review also suggests that Mexico increase (i) research and development, (ii) its levels of innovation, and (iii) activities to develop locally relevant ICT goods, services and solutions. Equally important is to focus ICT initiatives for SMEs on increasing their productivity and competitiveness. The next priority should be the building of a competitive (and affordable) ICT infrastructure, the continuation of public-private partnerships to develop ICT skills, and better standards and security initiatives that will facilitate e-commerce and increase trust among enterprises. Finally, venture capital, local content creation, and evaluation (including impact studies) should increase.

Source: OECD (2006); Curry and Kenney (2006).

invoices to encourage online transactions (see box 1.4). E-government for businesses is also proving successful in Brazil; more than 60 per cent of enterprises with the Internet use online income tax services and State registries, and varying but significant proportions gather information about other government services, imports and exports, obtain licences and make online payments. About a quarter of Brazilian enterprises use the Internet to submit e-procurement (Government to business, or G2B) tenders, as e-procurement continues to expand in developing countries because of the increased transparency and efficiency it affords both Governments and suppliers.

4. E-Commerce remains limited in developing countries

Despite the relatively high levels of Internet (and broadband Internet) access by enterprises in developed

countries, not all enterprises use the Internet for e-commerce, and there are wide gaps between countries and industries.

In the EU, Denmark has the leading position with 34 per cent of enterprises receiving online orders in 2007, compared with 2 per cent in Bulgaria (the lowest percentage). The average for the EU is 15 per cent in 2007, up from 9 per cent in 2003. During the same period, online payments and the average share of e-commerce in total turnover in EU enterprises also continued to grow. Of all enterprises that received online orders in 2006, 28 per cent received online payments, and e-commerce represented 12 per cent of total turnover. The EU average for online purchases is higher than for online sales, growing from 13 per cent in 2003 to 27 per cent in 2007. In 2007, the highest percentage of enterprises that purchased online was in Ireland (53 per cent) and the lowest in Bulgaria and Latvia (3 per cent in each case).¹³

Table 1.8
Enterprises with intranet, extranet and LAN

	Reference year	Proportion of enterprises with:		
		An intranet	An extranet	LAN
		B6	B11	B10
Argentina	2005	44.2	19.3	76.8
Austria	2006	41.0	19.0	..
Azerbaijan	2006	..	..	11.5
Belarus	2005	..	..	41.1
Belgium	2006	45.0	28.0	..
Bermuda	2005	34.0	..	..
Brazil	2006	39.0	20.3	89.0
Bulgaria	2006	35.0	4.1	52.8
Canada	2006	38.9	16.7	..
Chile	2005	..	3.4	12.6
China	2005	..	..	16.3
Cuba	2006	34.0	..	57.4
Cyprus	2006	21.0	7.0	..
Czech Republic	2006	23.0	7.0	..
Denmark	2006	35.0	22.0	..
Egypt	2006	34.0	2.4	78.9
Estonia	2006	35.0	12.0	..
Finland	2006	39.0	25.0	..
France	2006	40.0	22.0	..
Germany	2006	41.0	24.0	..
Greece	2006	39.0	11.0	..
Hong Kong (China)	2006	28.9	10.1	60.7
Hungary	2006	17.0	4.0	..
Iceland	2003	36.1	30.1	50.3
Ireland	2006	46.0	18.0	..

In terms of economic sectors, EU enterprises engaged in computer and related activities lead the way in terms of making online purchases (56 per cent of enterprises), with the lowest level being in enterprises manufacturing food, beverages, tobacco, textiles, leather, wood, and publishing and printing products (14 per cent). On the other hand, the hotel and accommodation sector leads in terms of online sales (31 per cent of enterprises), and the construction sector has the lowest level (3 per cent).

Few developing countries have information on online sales and purchases (see table 1.10) or are currently keeping track of their volumes of e-commerce, although it is clear that B2B trade continues to largely exceed B2C. There are exceptions in some countries, however, where B2C has been fostered (see box 1.5). For example, B2B trade volume is 10 times that of B2C in the Republic of Korea, where e-commerce continues to show healthy growth. That country's B2B trade volume grew by 14.7 per cent from 2005 to 2006 (to about \$400.3 billion), and B2C grew by 17.5 per cent in the same period (to about \$3.9 billion),¹⁴ while

Table 1.8 (continued)

	Reference year	Proportion of enterprises with:		
		An intranet	An extranet	LAN
		B6	B11	B10
Italy	2006	33.0	13.0	..
Japan	2005	89.5	60.1	39.6
Latvia	2005	21.6	7.6	65.9
Lithuania	2006	57.0	8.0	..
Luxembourg	2006	44.0	25.0	..
Malta	2005	43.0	23.0	..
Mauritius	2006	37.3	..	..
Netherlands	2006	36.0	15.0	..
New Zealand	2006	22.4	7.5	61.6
Norway	2006	34.0	16.0	..
Panama	2006	28.0	13.7	53.3
Poland	2006	30.0	7.0	..
Portugal	2006	33.0	20.0	..
Qatar	2005	38.2	..	..
Republic of Korea	2005	37.3	..	66.5
Romania	2005	23.2	19.1	45.1
Russian Federation	2005	..	..	52.4
Singapore	2006	28.5	12.4	60.1
Slovakia	2006	31.0	12.0	..
Slovenia	2006	27.0	13.0	..
Spain	2006	28.0	13.0	..
Sweden	2006	43.0	20.0	..
Switzerland	2005	61.4	33.1	79.6
Turkey	2005	38.9	7.6	64.6
United Kingdom	2006	34.0	10.0	..

Note: See after table 1.20. in the Statistical Annex for notes to data.

Source: UNCTAD information economy database, 2007.

a decrease in the number of e-commerce websites and e-marketplaces indicated a tougher competitive environment. Companies based in the Republic of Korea are increasingly exporting their ICT-related services, namely search companies (Internet services), the electronic game industry, information security companies (anti-spam, anti-virus products, digital rights protection and PC security), and the software and content industry. In China, the Alibaba.com B2B Marketplace has more than 6 million SME users for

domestic trade, and more than 24 million members for international trade.¹⁵

E-commerce is also restricted by issues of trust on the demand side. A 2007 survey in Thailand showed that despite recent growth in the number of Internet users and improvements in Internet infrastructure (and thus services), there was no concomitant increase in e-commerce. Seventy-one per cent of Thai Internet users had never made an online purchase, mainly because they distrust online merchants (and merchandise) that

Table 1.9 Use of the Internet for e-business activities

Reference year	Proportion of enterprises using the Internet for:									
	Sending and receiving e-mail	Information about goods or services	Information from public authorities	Other information searches or research	Internet banking or financial services	Transacting with public authorities	Providing customer services	Delivering products online	Other types of activity	
	B12.a	B12.b.i	B12.b.ii	B12.b.iii	B12.c	B12.d	B12.e	B12.f	B12.g	
Argentina	2005	97.2	88.1	74.9	40.2	83.7	56.6	43.0	6.1	54.9
Australia	2005	..	..	..	..	..	50.4	..	..	..
Austria	2006	..	..	..	47.0	88.0	81.0	..	..	..
Azerbaijan	2006	..	..	25.8	..	25.5	26.4	..	..	..
Belgium	2006	..	..	..	62.0	88.0	59.0	..	..	..
Brazil	2006	97.7	78.4	59.4	82.4	80.1	84.1	30.9	13.6	..
Bulgaria	2006	..	..	57.3	46.9	53.4	61.4	..	..	..
Canada	2006	92.6	..	..	..	..	..	..	..	..
Chile	2005	99.2	..	..	..	..	..	..	..	..
China	2005	80.4	65.0	46.1	38.9	..	37.4	35.2	11.0	..
Cyprus	2006	..	..	..	67.0	57.0	44.0	..	..	..
Czech Republic	2006	..	..	..	71.0	91.0	76.0	..	..	..
Denmark	2006	..	..	..	53.0	94.0	87.0	..	..	..
Egypt	2006	93.3	58.9	..	58.9	26.8	5.8	36.2	..	0.4
Estonia	2006	..	..	..	49.0	98.0	69.0	..	..	..
Finland	2006	..	..	..	71.0	93.0	93.0	..	..	..
France	2006	..	..	..	..	77.0	66.0	..	..	..
Germany	2006	..	..	..	67.0	77.0	49.0	..	..	..
Greece	2006	..	..	..	62.0	74.0	84.0	..	..	..
Hong Kong (China)	2006	96.9	96.0	72.6	..	42.2	..	23.4	43.2	53.0
Hungary	2006	..	..	..	52.0	68.0	45.0	..	..	..
Iceland	2006	..	..	85.3	..	91.0	100.0	..	..	..
Ireland	2006	..	..	..	46.0	86.0	84.0	..	..	..
Italy	2006	..	..	..	66.0	81.0	87.0	..	..	..
Latvia	2005	..	..	46.3	..	89.2	50.1	..	..	..
Lithuania	2006	..	..	..	61.0	94.0	76.0	..	..	..
Luxembourg	2006	..	..	..	53.0	76.0	83.0	..	..	..
Macao (China)	2003	88.8	..	20.1	68.5	..	..	14.8	..	3.8
Malta	2005	..	..	..	56.0	67.0	68.0	..	..	..
Netherlands	2006	..	..	..	52.0	76.0	70.0	..	..	..

Table 1.9 (continued)

Reference year	Proportion of enterprises using the Internet for:									
	Sending and receiving e-mail	Information about goods or services	Information from public authorities	Other information searches or research	Internet banking or financial services	Transacting with public authorities	Providing customer services	Delivering products online	Other types of activity	
	B12.a	B12.b.i	B12.b.ii	B12.b.iii	B12.c	B12.d	B12.e	B12.f	B12.g	
New Zealand	..	..	68.0	..	87.2	76.8	29.9	..	..
Norway	..	..	..	55.0	92.0	74.0	..	..	..
Panama	97.3	80.6	67.9	60.7	70.1	35.8	39.1	..	69.6	
Poland	..	..	..	56.0	75.0	61.0	..	..	..
Portugal	..	..	..	40.0	75.0	60.0	..	..	..
Republic of Korea	88.6	60.9	53.5	77.5	67.4	43.4	34.5	13.2	2.4	
Romania	93.9	..	64.9	65.3	51.7	10.2	8.7	3.6	..	
Russian Federation	91.6	54.7	42.5	..	14.9	..	4.5	5.3	..	
Singapore	95.1	90.6	82.3	90.6	55.5	85.0	..	35.0	..	
Slovakia	..	..	..	64.0	84.0	77.0	..	..	..
Slovenia	..	..	..	77.0	93.0	75.0	..	..	..
Spain	..	..	..	33.0	85.0	58.0	..	..	..
Sweden	..	..	..	72.0	92.0	80.0	..	..	..
Switzerland	..	97.7	..	59.5	85.0	56.5	21.3	22.4	..	
Thailand	80.7	..	..	65.0	9.5	..	24.0	20.5	14.2
Turkey	..	..	56.3	..	75.4	62.5	15.5	38.0	..
United Kingdom	..	..	..	53.0	73.0	52.0	..	..	..

Note: See after table 1.20. in the Statistical Annex for notes to data.

Source: UNCTAD information economy database, 2007.

Table 1.10
Enterprises receiving and placing orders over the Internet

	Reference year	Proportion of enterprises (of those using Internet)	
		Receiving orders over the Internet	Placing orders over the Internet
		B7	B8
Argentina	2005	45.6	44.6
Australia	2004	19.9	45.7
Austria	2006	18.0	51.0
Belgium	2006	15.0	44.0
Bermuda	2005	14.1	40.8
Brazil	2006	50.3	52.2
Bulgaria	2006	4.7	8.4
Canada	2005	10.7	60.8
Canada	2006	12.5	61.6
Chile	2005	4.2	6.7
China	2005	12.4	9.6
Cuba	2006	1.0	3.7
Cyprus	2006	6.0	21.0
Czech Republic	2006	9.0	27.0
Denmark	2006	35.0	59.0
Egypt	2006	34.8	21.0
Estonia	2006	14.0	25.0
Finland	2006	12.0	56.0
France	2006	16.0	26.0
Germany	2006	19.0	54.0
Greece	2006	8.0	14.0
Hong Kong (China)	2006	2.9	21.6
Hungary	2006	11.0	12.0
Iceland	2006	31.5	58.2
Ireland	2006	23.0	56.0

Note: See after table 1.20. in the Statistical Annex for notes to data.

Source: UNCTAD information economy database, 2007.

	Reference year	Proportion of enterprises (of those using Internet)	
		Receiving orders over the Internet	Placing orders over the Internet
		B7	B8
Italy	2006	3.0	27.0
Japan	2005	15.6	20.6
Latvia	2005	3.7	15.3
Lithuania	2006	15.0	22.0
Luxembourg	2006	..	40.0
Macao (China)	2003	14.8	21.0
Malta	2005	14.0	47.0
Mauritius	2006	32.9	34.8
Netherlands	2006	28.0	45.0
New Zealand	2006	36.8	60.3
Norway	2006	25.0	66.0
Panama	2006	39.0	43.5
Poland	2006	7.0	23.0
Portugal	2006	5.0	20.0
Qatar	2005	50.9	41.3
Republic of Korea	2005	7.9	33.9
Romania	2005	4.1	11.0
Russian Federation	2005	23.6	30.7
Singapore	2006	37.6	42.8
Slovakia	2006	7.0	22.0
Slovenia	2006	12.0	22.0
Spain	2006	8.0	16.0
Sweden	2006	23.0	70.0
Switzerland	2005	23.2	58.0
Thailand	2006	11.1	13.9
United Kingdom	2006	19.0	62.0

they cannot see, electronic payment systems and credit card security. A Brazilian survey has also identified a lack of consumer trust as an obstacle to e-commerce (see box 1.5).

Governments can encourage e-commerce in their economies, particularly among SMEs. In India, for example, the government of West Bengal is planning to launch an electronic trading programme for fruits: through an electronic auction, farmers can set prices for their crop and sell it even before its physical transportation.¹⁶ In Tunisia, it is an objective of the Ministry for Trade and Handicrafts that e-commerce

generate 2 per cent of all export revenues by 2011 (it was estimated at 0.05 per cent in 2006); in order to achieve that goal, the ministry supports private initiatives (raising awareness and training SMEs) and invests in sectoral e-marketplaces.¹⁷

B2C digital content e-commerce is also growing. For example, total worldwide revenues in 2006 from online music sales (legal downloads and other online music services) were estimated at approximately \$1.7 billion, and are expected to more than triple by 2011; currently, 14 per cent of B2C online music services are in non-OECD countries.¹⁸ E-commerce of digital products

Box 1.5

E-commerce in Brazil

In Brazil in 2006, almost 95 per cent of enterprises (in a survey of the formal sector with 10 or more employees) had access to the Internet. Of these, almost 89 per cent had broadband. The high level of enterprise Internet access contrasts with the fact that only half of Brazilian enterprises have a website, which usually serves as a portal for e-commerce. In fact, only 52 per cent of enterprises have placed orders over the Web (through e-mail and Web forms, and many use online payment methods), and about 50 per cent of enterprises have received orders (67 per cent of enterprises that have websites use them to sell products). Among enterprises engaging in e-commerce, online purchases represent 23 per cent of total purchases, and online sales represent about 30 per cent of their revenue, which is quite significant. About 60 per cent of online sales are B2C, and the vast majority are local (items sold are destined for Brazil) and consist of goods and services ordered online and delivered offline.

The Internet is used for other activities related to sales and purchases in addition to e-commerce (see charts 1.7 and 1.8).

Chart 1.7

Brazil: resources provided by enterprise websites

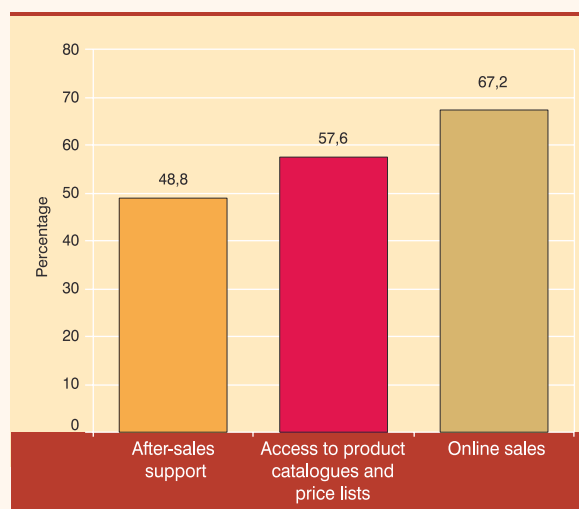
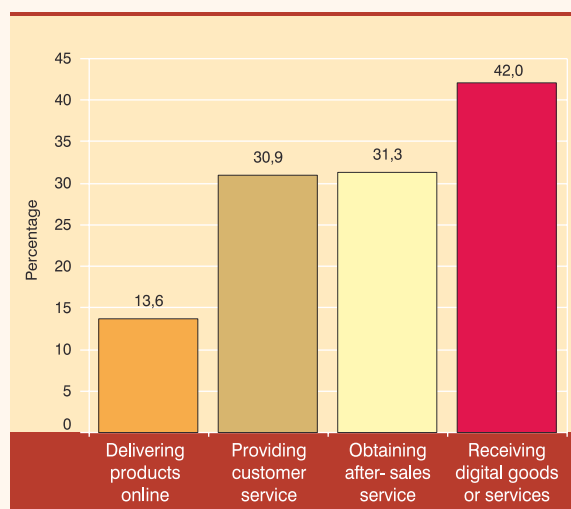


Chart 1.8

Brazil: activities of enterprises with Internet



Those companies that are already engaged in e-commerce recognize that the time and cost of transactions are reduced, and more than half have increased their sales volume or clientele thanks to e-commerce. Brazil sees a great potential for growth in e-commerce on both the supply and the demand sides (only 6 per cent of Internet users made Internet purchases in 2006). To increase e-commerce, trust in the safety of electronic transactions must be increased among consumers and small and medium-sized enterprises, including through awareness-raising and also through a better regulatory environment. The Brazilian Internet Steering Committee asks the private sector, represented by industry and trade associations, to kick-start the adoption of e-commerce among their members, including through the establishment of e-marketplaces.

Source: Brazilian Internet Steering Committee (2006).

includes content for mobile phones (and other wireless handheld devices such as personal digital assistants), such as games, multimedia messaging services, music, ringtones, and wallpapers. In the future, real products (event tickets, retail products) and mobile payments and banking (see chapter 5) are likely to generate the largest growth in this market.

D. Conclusions

Figures show that developing countries continue to increase their access to and use of ICTs, although there is still a gap between them and developed countries. The gap is being reduced more significantly with respect to mobile telephony, which has come to replace fixed lines in several developing country areas. In the future, wireless technologies are likely to have a more prominent role in ICT diffusion in the developing world, including in business.

Mobile telephony is currently the most significant ICT for developing countries

Among ICTs, mobile phones are worthy of special attention as threshold technologies in many developing countries. For enterprises, the increased availability of computers has been proved to have a significant impact in productivity. However, connections to the Internet remain expensive and thus limited, although broadband Internet is essential for developing an information economy (and integrating the information economy at the regional and global levels). However, ICTs cannot really become widespread and effect a change unless they are accessible and affordable.

Government policy can encourage ICT diffusion

The diffusion of ICT in developing countries depends on adequate policymaking and may positively benefit from the involvement of government in the implementation of policies, particularly in building up the telecommunication infrastructure and ensuring a regulatory environment that will allow competition in the telecommunications and ICT sector, as well as facilitate trade and e-commerce. Government can also set an example and pioneer ICTs for e-government. Finally, government can raise awareness among enterprises, particularly SMEs, on the potential of ICTs for business use.

A competitive telecommunications market encourages ICT diffusion

Increased competition can lower prices, and this in turn facilitates the adoption of ICT by lower-income individuals and enterprises. For example, SMEs in Africa find that costs are a major obstacle to increased Internet access.

More data on ICT use by businesses in developing countries are needed in order to better assess the impact of ICT policies

National, regional and international efforts to improve the availability of data on ICT in order to assess the information economy should continue. Official statistical data on ICT in developing countries, particularly on the use of ICT by business and on the ICT sector, are essential so that policymakers can assess progress in their ICT for development policies. The Partnership on Measuring ICT for Development (<http://measuring-ict.unctad.org>) provides guidance in that respect. More research is needed on ICT use by businesses in developing countries to better assess the impact of ICT on firm-level productivity.

STATISTICAL ANNEX

Table 1.11

Mobile phone subscribers: economies by level of development and region

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPED ECONOMIES									
ASIA									
Israel	6 334 000	2.6	6 500 000	10.6	7 187 500	8.5	7 800 000	7.7	8 403 800
Japan	81 118 320	6.8	86 654 960	5.6	91 473 936	3.6	94 745 000	7.3	101 698 000
EUROPE									
Andorra	32 790	58.3	51 893	24.4	64 560	0.0	64 560	0.1	64 600
Austria	6 736 000	5.3	7 094 502	12.6	7 989 955	2.1	8 160 000	13.4	9 255 000
Belgium	8 101 777	6.2	8 605 834	6.1	9 131 705	3.6	9 460 000	2.1	9 659 700
Cyprus	417 933	32.0	551 752	16.1	640 515	12.2	718 842	8.2	777 500
Czech Republic	8 610 177	12.8	9 708 683	10.9	10 771 270	9.3	11 775 878	3.2	12 149 900
Denmark (incl. Faroe Islands)	4 508 461	6.6	4 805 917	7.5	5 165 546	6.7	5 511 878	6.9	5 890 900
Estonia	881 000	19.2	1 050 241	19.6	1 255 731	15.1	1 445 300	14.8	1 658 700
Finland	4 516 772	5.1	4 747 126	5.1	4 988 000	4.9	5 231 000	8.4	5 670 000
France (incl. Guadeloupe, French Guiana, Martinique and Réunion)	39 805 800	6.1	42 248 100	7.3	45 348 800	6.0	48 058 400	7.5	51 662 000
Germany	59 128 000	9.6	64 800 000	10.1	71 316 000	11.1	79 200 000	6.4	84 300 000
Greece	9 314 260	11.0	10 337 000	6.8	11 044 232	-7.1	10 260 400	8.2	11 097 500
Guernsey	36 580	13.5	41 530	5.5	43 824	..	..	..	..
Hungary	6 886 111	15.4	7 944 586	9.9	8 727 188	6.8	9 320 000	6.9	9 965 000
Iceland	260 438	7.4	279 670	4.2	291 372	4.3	304 001	8.1	328 500
Ireland	3 000 000	16.7	3 500 000	8.0	3 780 000	11.4	4 210 000	11.4	4 690 000
Italy	54 200 000	4.7	56 770 000	10.5	62 750 000	14.0	71 535 000	0.0	71 500 000
Jersey	61 400	32.2	81 200	3.3	83 900	..	..	..	..
Latvia	917 196	33.0	1 219 550	26.0	1 536 712	21.8	1 871 602	16.7	2 183 700
Liechtenstein	11 402	119.3	25 000	2.0	25 500	7.8	27 500	..	..
Lithuania	1 645 568	31.9	2 169 866	57.7	3 421 538	27.2	4 353 447	8.4	4 718 200
Luxembourg	473 000	14.0	539 000	19.9	646 000	11.5	720 000	-0.9	713 800
Malta	276 859	4.7	289 992	5.6	306 100	5.8	323 980	7.0	346 800
Monaco	7 200	109.7	15 100	4.6	15 800	8.9	17 200	..	..
Netherlands	12 300 000	9.7	13 491 000	9.9	14 821 000	6.8	15 834 000	..	..
Norway	3 911 136	6.4	4 163 381	8.7	4 524 800	5.1	4 754 453	6.0	5 040 600
Poland	13 898 471	25.2	17 401 222	32.7	23 096 064	26.7	29 260 000	25.6	36 745 500
Portugal	8 528 900	17.6	10 030 000	2.7	10 300 000	11.1	11 447 670	6.8	12 226 400
San Marino	16 759	0.8	16 900	1.2	17 100	0.6	17 200	1.1	17 390
Slovakia	2 923 383	25.8	3 678 774	16.2	4 275 164	6.2	4 540 374	7.8	4 893 200
Slovenia	1 667 234	4.3	1 739 146	6.3	1 848 600	-4.8	1 759 232	3.4	1 819 600
Spain	33 530 996	11.0	37 219 840	3.8	38 622 584	7.0	41 327 911	11.7	46 152 000
Sweden	7 949 000	10.7	8 801 000	-0.2	8 785 000	3.4	9 087 000	..	..
Switzerland	5 736 303	7.9	6 189 000	1.4	6 275 000	9.1	6 847 000	8.3	7 418 000
United Kingdom (incl. Gibraltar)	49 689 167	6.7	52 999 900	15.3	61 118 392	7.1	65 471 700	6.4	69 656 600

Table 1.11 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPED ECONOMIES									
NORTH AMERICA									
Bermuda	30 000	33.3	40 000	22.5	49 000	7.6	52 700	14.0	60 100
Canada	11 872 000	11.4	13 228 000	13.3	14 984 396	10.8	16 600 000	2.5	17 017 000
Greenland	19 924	37.5	27 400	17.5	32 200	..	..	..	..
United States (incl. Puerto Rico and Guam)	142 566 848	11.3	158 721 984	15.8	183 787 136	9.7	201 650 000	17.3	236 451 800
OCEANIA									
Australia	12 575 000	14.1	14 347 000	14.7	16 449 000	12.0	18 420 000	7.3	19 760 000
New Zealand	2 449 000	6.1	2 599 000	16.5	3 027 000	16.6	3 530 000	..	..
DEVELOPING ECONOMIES									
AFRICA									
Algeria	400 000	260.4	1 441 400	224.9	4 682 690	191.7	13 661 000	53.7	20 998 000
Angola	130 000	156.0	332 800	182.5	940 000	16.4	1 094 115	106.9	2 264 200
Benin	218 770	8.0	236 175	63.7	386 700	93.9	750 000	..	..
Botswana	435 000	20.2	522 840	7.8	563 782	46.0	823 070	19.0	979 800
Burkina Faso	113 000	100.9	227 000	75.3	398 000	43.8	572 200	77.7	1 016 600
Burundi	52 000	23.1	64 000	57.2	100 600	52.1	153 000	..	..
Cameroon	701 507	53.5	1 077 000	42.7	1 536 594	46.6	2 252 500	..	..
Cape Verde	42 949	24.2	53 342	23.3	65 780	24.2	81 721	33.3	108 900
Central African Republic	12 600	217.5	40 000	50.0	60 000	66.7	100 000	..	..
Chad	34 200	90.1	65 000	89.2	123 000	70.7	210 000	122.0	466 100
Comoros	..	..	2 000	370.0	9 400	70.9	16 065	0.2	16 100
Congo	221 800	48.8	330 000	16.3	383 653	27.7	490 000	..	..
Côte d'Ivoire	1 027 058	24.7	1 280 696	19.6	1 531 846	43.0	2 190 000	85.6	4 065 400
Democratic Republic of the Congo	560 000	78.6	1 000 000	99.1	1 990 700	37.9	2 746 000	..	..
Djibouti	15 000	53.3	23 000	50.0	34 500	27.8	44 100	..	..
Egypt	4 494 700	29.0	5 797 530	31.8	7 643 060	78.3	13 629 602	32.1	0.4
Equatorial Guinea	32 000	29.7	41 500	33.7	55 500	74.6	96 900	..	..
Eritrea	..	..	..	..	20 000	102.2	40 438	53.3	62 000
Ethiopia	50 369	94.2	97 827	82.0	178 000	130.7	410 600	111.1	866 700
Gabon	279 289	7.4	300 000	63.1	489 367	32.8	649 807	17.7	764 700
Gambia	100 000	49.3	149 300	17.2	175 000	41.4	247 478	63.4	404 300
Ghana	386 775	105.7	795 529	113.1	1 695 000	4.1	1 765 000	195.0	5 207 200
Guinea	90 772	22.8	111 500	38.9	154 900	22.0	189 000	..	..
Guinea-Bissau	..	..	1 275	3170.6	41 700	60.7	67 000	41.8	95 000
Kenya	1 187 122	34.0	1 590 785	60.1	2 546 157	81.1	4 611 970	40.6	6 484 800
Lesotho	96 843	4.8	101 474	56.7	159 000	54.1	245 052	1.9	249 800
Liberia	2 000	2262.5	47 250	99.8	94 400	69.5	160 000	..	..
Libyan Arab Jamahiriya	..	..	..	..	..	..	..	..	3 927 600
Madagascar	163 010	74.0	283 666	17.7	333 888	51.1	504 660	107.2	1 045 900
Malawi	86 047	57.0	135 114	64.4	222 135	93.3	429 305	..	..
Mali	52 639	365.3	244 930	63.3	400 000	117.4	869 576	..	..
Mauritania	247 238	41.9	350 954	48.9	522 400	42.7	745 615	42.2	1 060 100
Mauritius	348 137	-6.3	326 033	56.4	510 000	39.9	713 300	8.3	772 400

Table 1.11 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPING ECONOMIES									
Mayotte	21 700	65.9	36 000	5.6	38 000	26.6	48 100	..	..
Morocco	6 198 670	18.7	7 359 870	26.9	9 336 878	32.7	12 392 805	29.1	16 004 700
Mozambique	254 759	71.0	435 757	62.5	708 000	72.3	1 220 000	91.7	2 339 300
Namibia	150 000	49.1	223 671	27.9	286 095	73.0	495 000	..	..
Niger	16 648	360.0	76 580	93.6	148 276	102.3	299 899	8.0	323 900
Nigeria	1 607 931	95.9	3 149 473	190.4	9 147 209	103.3	18 600 000	73.8	32 322 200
Rwanda	82 391	58.7	130 720	6.1	138 728	109.0	290 000	..	..
Sao Tome and Principe	1 980	143.4	4 819	59.8	7 700	55.8	12 000	..	..
Senegal	455 645	26.4	575 917	78.5	1 028 061	68.3	1 730 106	72.4	2 982 600
Seychelles	44 731	10.1	49 229	0.0	49 230	15.8	57 003	23.3	70 300
Sierra Leone	67 000	69.0	113 214	0.0	113 200	..	..	..	..
Somalia	100 000	100.0	200 000	150.0	500 000	..	..	..	..
South Africa	13 702 000	23.0	16 860 000	15.7	19 500 000	59.0	31 000 000	9.5	33 960 000
Sudan	190 778	176.4	527 233	98.9	1 048 558	89.4	1 986 000	135.8	4 683 100
Swaziland	68 000	25.0	85 000	32.9	113 000	77.0	200 000	25.0	250 000
Togo	170 000	29.4	220 000	51.2	332 600	33.4	443 635	59.6	708 000
Tunisia	574 334	233.9	1 917 530	85.8	3 562 970	59.4	5 680 726	29.2	7 339 000
Uganda	393 310	97.3	776 169	50.1	1 165 035	30.9	1 525 125	31.7	2 008 800
United Republic of Tanzania	760 000	36.9	1 040 640	57.6	1 640 000	106.7	3 389 800	84.1	6 240 800
Zambia	139 092	73.3	241 000	24.5	300 000	145.0	735 000	29.2	949 600
Zimbabwe	338 779	7.3	363 365	9.4	397 500	75.8	699 000	19.1	832 500
ASIA									
Afghanistan	25 000	700.0	200 000	200.0	600 000	100.0	1 200 000	110.0	2 520 400
Bahrain	388 990	13.9	443 109	46.6	649 764	15.2	748 703	20.1	898 900
Bangladesh	1 075 000	27.0	1 365 000	217.0	4 327 516	108.0	9 000 000	112.6	19 131 000
Bhutan	..	..	7 998	122.6	17 800	112.6	37 842	117.0	82 100
Brunei Darussalam	153 600	15.5	177 400	14.1	202 500	15.0	232 900	9.1	254 000
Cambodia	380 000	31.2	498 388	72.9	861 500	23.3	1 062 000	7.3	1 140 000
China	206 004 992	31.0	269 952 992	24.0	334 824 000	17.5	393 428 000	17.2	461 058 000
Dem. People's Republic of Korea	..	..	..	..	..	..	..	..	..
Hong Kong (China)	6 395 725	14.9	7 349 202	10.9	8 148 685	6.0	8 635 532	8.3	9 356 400
India	12 687 637	106.1	26 154 404	80.8	47 300 000	60.7	76 000 000	118.5	166 050 000
Indonesia	11 700 000	60.7	18 800 000	59.6	30 000 000	56.4	46 909 972	36.0	63 803 000
Iran (Islamic Republic of)	2 186 958	54.4	3 376 526	27.3	4 300 000	68.0	7 222 538	89.1	13 659 100
Iraq	20 000	300.0	80 000	617.5	574 000	..	..	..	..
Jordan	1 219 597	8.7	1 325 313	20.3	1 594 513	96.8	3 137 700	38.4	4 343 100
Kuwait	1 227 000	15.7	1 420 000	40.8	2 000 000	19.0	2 379 811	..	..
Lao PDR	55 160	103.5	112 275	81.9	204 191	212.6	638 202	..	..
Lebanon	775 104	5.8	820 000	8.3	888 000	11.5	990 000	11.5	1 103 400
Macao (China)	276 138	31.8	364 031	18.8	432 450	23.2	532 758	19.4	636 300
Malaysia	9 253 387	20.2	11 124 112	31.4	14 611 902	33.8	19 545 000	-0.4	19 463 700
Maldives	41 899	58.6	66 466	70.4	113 246	35.5	153 393	71.2	262 600
Mongolia	216 000	47.7	319 000	34.4	428 700	30.0	557 207	..	..
Myanmar	47 982	38.6	66 517	38.3	92 007	99.4	183 434	..	..

Table 1.11 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPING ECONOMIES									
Nepal	21 881	130.2	50 367	255.6	179 126	26.9	227 300	358.3	1 041 800
Oman	464 896	27.7	593 450	35.6	805 000	65.6	1 333 225	36.4	1 818 000
Pakistan	1 698 536	41.6	2 404 400	108.9	5 022 908	154.3	12 771 203	170.2	34 506 600
Palestine	320 000	50.0	480 000	103.0	974 345	12.3	1 094 640	..	..
Philippines	15 383 001	46.3	22 509 560	46.3	32 935 876	5.6	34 779 000	19.6	41 600 000
Qatar	266 703	41.2	376 535	30.2	490 333	46.2	716 763	28.3	919 800
Republic of Korea	32 342 492	3.9	33 591 760	8.9	36 586 052	4.8	38 342 323	4.8	40 197 100
Saudi Arabia	5 007 965	44.5	7 238 224	26.8	9 175 764	44.9	13 300 000	47.8	19 662 600
Singapore	3 344 800	4.0	3 477 100	11.0	3 860 600	13.6	4 384 600	9.2	4 788 600
Sri Lanka	931 580	49.6	1 393 403	58.7	2 211 158	52.0	3 361 775	61.0	5 412 500
Syrian Arab Republic	400 000	196.3	1 185 000	97.9	2 345 000	25.8	2 950 000	58.5	4 675 000
Taiwan Province of China	24 390 520	5.8	25 799 840	-11.8	22 760 144	-2.6	22 170 702	4.9	23 249 300
Thailand	16 117 000	54.3	24 864 020	10.1	27 379 000	13.7	31 136 500	31.1	40 815 500
Turkey	23 323 118	19.6	27 887 536	24.5	34 707 548	25.6	43 608 965	..	..
United Arab Emirates	2 428 071	22.4	2 972 331	23.9	3 683 117	23.1	4 534 480	21.7	5 519 300
Viet Nam	1 902 388	44.1	2 742 000	80.9	4 960 000	81.5	9 000 000	72.3	15 505 400
Yemen	411 083	70.3	700 000	53.1	1 072 000	86.6	2 000 000	..	..
LATIN AMERICA AND THE CARIBBEAN									
Antigua and Barbuda	38 205	20.7	46 100	17.1	54 000	59.3	86 000	18.6	102 000
Argentina	6 566 740	19.4	7 842 233	72.3	13 512 383	63.6	22 100 000	42.6	31 510 400
Aruba	61 800	13.3	70 000	40.6	98 400	10.0	108 200	..	..
Bahamas	121 759	-4.5	116 267	60.0	186 007	22.5	227 800	..	..
Barbados	97 193	44.0	140 000	43.0	200 138	3.0	206 190	..	..
Belize	51 729	16.8	60 403	61.8	97 755	22.3	119 600	-1.1	118 300
Bolivia	1 023 333	25.0	1 278 844	40.8	1 800 789	34.5	2 421 402	..	..
Brazil	34 880 964	32.9	46 373 264	41.5	65 605 000	31.4	86 210 000	15.9	99 918 600
Cayman Islands	..	..	..	..	..	..	..	..	..
Chile	6 445 698	16.7	7 520 280	27.2	9 566 581	10.5	10 569 572	17.8	12 450 800
Colombia	4 596 594	34.6	6 186 206	68.1	10 400 578	109.6	21 800 000	36.5	29 762 700
Costa Rica	502 478	54.9	778 299	18.6	923 084	19.3	1 101 035	31.1	1 443 700
Cuba	17 851	98.1	35 356	114.4	75 797	77.4	134 480	13.5	152 700
Dominica	12 173	73.3	21 099	98.3	41 838	..	..	..	..
Dominican Republic	1 700 609	24.8	2 122 543	19.4	2 534 063	43.0	3 623 289	27.1	4 605 700
Ecuador	1 560 861	53.6	2 398 161	89.5	4 544 174	37.5	6 246 332	35.8	8 485 000
El Salvador	888 818	29.4	1 149 790	59.4	1 832 579	31.6	2 411 753	59.7	3 851 600
Grenada	7 553	459.9	42 293	2.4	43 313	8.3	46 900	..	..
Guatemala	1 577 085	29.0	2 034 776	55.7	3 168 256	42.4	4 510 100	..	..
Guyana	87 300	35.9	118 658	21.3	143 945	73.7	250 000	12.6	281 400
Haiti	140 000	128.6	320 000	25.0	400 000	25.1	500 200	..	..
Honduras	326 508	16.2	379 362	86.4	707 201	81.2	1 281 462	74.9	2 240 800
Jamaica	1 187 295	34.8	1 600 000	37.5	2 200 000	22.7	2 700 000	3.9	2 804 400
Mexico	25 928 266	16.1	30 097 700	27.8	38 451 136	23.4	47 462 108	20.1	57 016 400
Netherlands Antilles	..	..	200 000	0.0	200 000	0.0	200 000	..	..
Nicaragua	237 248	96.7	466 706	58.3	738 624	51.5	1 119 379	63.5	1 830 200

Table 1.11 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPING ECONOMIES									
Panama	525 845	58.6	834 031	2.6	855 852	58.0	1 351 924	25.3	1 693 500
Paraguay	1 667 018	6.2	1 770 345	-0.1	1 767 824	6.7	1 887 000	71.3	3 232 800
Peru	2 306 944	27.0	2 930 343	39.7	4 092 558	36.4	5 583 356	52.2	8 500 000
Saint Kitts and Nevis	5 000	0.0	5 000	100.0	10 000	..	..	..	..
Saint Lucia	14 313	-0.1	14 300	550.3	93 000	13.7	105 700	..	..
Saint Vincent and the Grenadines	9 982	530.2	62 911	-9.5	56 950	24.0	70 620	24.0	87 600
Suriname	108 363	55.5	168 522	26.3	212 819	9.4	232 785	37.5	320 000
Trinidad and Tobago	361 911	34.3	485 871	33.3	647 870	23.5	800 000	106.9	1 654 900
Uruguay	513 528	-3.1	497 530	20.6	600 000	92.5	1 154 900	101.7	2 330 000
Venezuela	6 463 561	8.5	7 015 735	20.0	8 420 980	48.4	12 495 721	50.4	18 789 500
Virgin Islands (United States)	45 200	9.1	49 300	30.2	64 200	25.1	80 300	..	..
OCEANIA									
American Samoa	2 000	5.0	2 100	4.8	2 200	..	..	..	..
Fiji	89 900	22.2	109 900	29.4	142 200	44.2	205 000	..	..
French Polynesia	52 200	15.1	60 100	59.7	96 000	25.0	120 000	26.7	152 000
Kiribati	495	6.3	526	14.1	600	..	..	..	..
Marshall Islands	552	8.3	598	0.3	600	..	..	..	..
Micronesia (Fed. States of)	100	5 769.0	5 869	117.8	12 782	10.3	14 100	..	..
Nauru	..	..	..	..	..	..	..	..	..
New Caledonia	80 000	21.4	97 113	19.9	116 443	15.3	134 265	0.0	134 300
Northern Mariana Islands	17 100	8.8	18 600	10.2	20 500	..	..	..	..
Palau	..	..	..	..	..	..	..	..	..
Papua New Guinea	15 000	16.7	17 500	176.0	48 300	55.3	75 000	..	..
Samoa	2 700	288.9	10 500	52.4	16 000	50.0	24 000	..	..
Solomon Islands	999	48.9	1 488	101.6	3 000	100.0	6 000	..	..
Tonga	3 354	233.9	11 200	46.4	16 400	82.3	29 900	..	..
Tuvalu	..	..	..	..	..	..	..	..	..
Vanuatu	4 900	59.2	7 800	34.7	10 504	20.8	12 692	0.1	12 700
TRANSITION ECONOMIES									
Albania	851 000	29.3	1 100 000	14.5	1 259 600	21.5	1 530 200	..	..
Armenia	71 300	60.4	114 400	77.7	203 300	56.4	318 000	..	..
Azerbaijan	794 000	33.1	1 057 000	68.7	1 782 900	25.8	2 242 000	48.2	3 323 500
Belarus	462 630	141.7	1 118 000	100.3	2 239 300	83.0	4 097 997	45.4	5 960 000
Bosnia and Herzegovina	748 780	40.2	1 050 000	34.0	1 407 400	13.3	1 594 367	18.4	1 887 800
Bulgaria	2 597 548	34.8	3 500 869	35.1	4 729 731	32.0	6 244 693	32.2	8 253 400
Croatia	2 340 000	9.1	2 553 000	11.1	2 835 500	5.2	2 983 900	49.8	4 469 700
Georgia	503 619	41.2	711 224	18.2	840 600	73.6	1 459 180	16.8	1 703 900
Kazakhstan	1 027 000	29.6	1 330 730	107.3	2 758 940	79.6	4 955 200	58.0	7 830 400
Kyrgyzstan	53 084	160.5	138 279	117.0	300 000	80.6	541 652	..	..
Moldova	338 225	40.7	475 942	65.4	787 000	38.5	1 089 800	24.6	1 358 200
Montenegro	..	..	..	..	..	..	..	..	821 800
Romania	5 110 591	37.8	7 039 898	45.1	10 215 388	30.7	13 354 138	..	..
Russian Federation	8.5	107.3	36 500 000	103.9	74 420 000	61.2	120 000 000	..	..
Serbia	2 750 397	32.1	3 634 613	30.1	4 729 629	16.5	5 510 700	20.6	6 643 700

Table 1.11 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
TRANSITION ECONOMIES									
Tajikistan	13 200	260.7	47 617	183.5	135 000	96.3	265 000	..	..
TFYR Macedonia	365 346	112.4	776 000	27.0	985 600	28.0	1 261 300	12.3	1 417 000
Turkmenistan	8 173	12.4	9 187	445.3	50 100	109.6	105 000	..	..
Ukraine	3 692 700	76.0	6 498 423	111.4	13 735 000	25.3	17 214 280	185.1	49 076 200
Uzbekistan	186 900	71.7	320 815	69.6	544 100	32.3	720 000	..	..

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Table 1.12

Mobile phone penetration: economies by level of development and region

Mobile phone subscribers per 100 inhabitants

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPED ECONOMIES									
ASIA									
Israel	95.4	0.7	96.0	9.1	104.8	7.9	113.0	4.0	117.5
Japan	63.7	6.7	67.9	5.5	71.6	3.5	74.2	7.3	79.6
EUROPE									
Andorra	48.8	47.0	71.8	17.0	84.0	-2.1	82.2	-3.2	79.5
Austria	83.2	4.8	87.2	11.7	97.3	1.1	98.4	13.3	111.5
Belgium	78.2	5.8	82.7	5.6	87.4	3.5	90.5	1.9	92.2
Cyprus	52.9	30.4	69.0	13.3	78.1	10.1	86.0	5.8	90.9
Czech Republic	84.4	12.8	95.2	10.8	105.5	9.2	115.2	2.5	118.1
Denmark (incl. Faroe Islands)	83.2	6.0	88.2	7.3	94.6	6.3	100.6	6.5	107.1
Estonia	64.7	19.7	77.4	20.0	92.9	15.4	107.3	15.0	123.4
Finland	86.7	4.9	90.9	5.1	95.6	4.3	99.6	8.2	107.8
France (incl. Guadeloupe, French Guiana, Martinique and Réunion)	66.7	5.7	70.5	6.4	75.0	5.9	79.4	7.1	85.1
Germany	71.6	9.6	78.5	10.1	86.4	10.8	95.8	6.4	101.9
Greece	84.5	6.7	90.2	10.3	99.5	-7.3	92.3	8.0	99.6
Guernsey	61.0	13.5	69.2	5.5	73.0	..	..	..	..
Hungary	67.9	15.6	78.5	10.1	86.4	6.8	92.3	7.2	99.0
Iceland	89.8	7.4	96.4	4.2	100.5	4.3	104.8	4.5	109.5
Ireland	76.3	15.2	87.9	6.4	93.6	8.4	101.4	9.8	111.4
Italy	96.0	2.2	98.1	10.3	108.2	13.8	123.1	-0.1	123.0
Jersey	70.1	32.2	92.7	3.2	95.7	..	..	..	..
Latvia	39.4	33.5	52.6	27.7	67.1	20.7	81.0	17.2	94.9
Liechtenstein	35.6	112.6	75.8	-1.0	75.0	4.8	78.6	..	..
Lithuania	47.3	33.0	62.9	57.7	99.2	28.0	126.9	8.7	138.0
Luxembourg	105.1	14.0	119.8	17.2	140.4	11.5	156.5	-3.0	151.9
Malta	71.6	4.2	74.6	5.1	78.4	5.5	82.7	3.1	85.2
Monaco	22.2	108.4	46.3	4.0	48.2	8.2	52.1	..	..
Netherlands	75.9	9.1	82.8	10.3	91.3	6.4	97.1	..	..
Norway	86.0	5.8	90.9	8.2	98.4	4.6	102.9	5.6	108.6
Poland	36.4	25.3	45.6	32.8	60.5	26.7	76.7	25.7	96.4
Portugal	81.9	16.9	95.8	2.1	97.8	11.6	109.1	6.3	116.0
San Marino	59.9	-0.9	59.3	-6	59.0	-2.8	57.3	-2.2	56.1
Slovakia	54.3	25.8	68.4	16.1	79.4	6.2	84.3	7.7	90.8
Slovenia	83.5	4.3	87.1	6.3	92.5	-5.1	87.8	2.1	89.6
Spain	81.6	6.9	87.2	2.5	89.4	3.4	92.4	10.7	102.3
Sweden	88.9	10.2	98.0	-0.5	97.5	3.1	100.5	..	..
Switzerland	78.8	6.7	84.1	.6	84.6	8.5	91.8	8.0	99.1
United Kingdom (incl. Gibraltar)	84.1	5.9	89.1	14.7	102.2	7.4	109.7	6.1	116.4
NORTH AMERICA									
Bermuda	49.2	31.2	64.5	20.6	77.8	5.9	82.3	12.3	92.5

Table 1.12 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPED ECONOMIES									
Canada	37.7	10.4	41.6	12.1	46.7	9.7	51.2	2.0	52.2
Greenland	35.3	37.0	48.4	17.1	56.7	..	..	..	..
United States (incl. Puerto Rico and Guam)	48.8	10.3	53.8	14.7	61.7	8.0	66.7	16.2	77.5
OCEANIA									
Australia	64.0	12.7	72.2	14.5	82.6	10.6	91.4	6.2	97.0
New Zealand	62.2	5.9	65.8	15.3	75.9	15.5	87.6	..	..
DEVELOPING ECONOMIES									
AFRICA									
Algeria	1.3	254.8	4.5	219.8	14.5	186.9	41.5	51.7	63.0
Angola	0.9	148.5	2.3	188.1	6.7	5.3	7.0	103.9	14.3
Benin	3.2	4.4	3.4	58.5	5.3	87.7	10.0	..	..
Botswana	24.7	18.2	29.2	7.2	31.3	43.1	44.8	16.1	52.1
Burkina Faso	0.9	96.0	1.9	60.5	3.0	45.5	4.3	72.5	7.5
Burundi	0.7	20.0	0.9	60.3	1.4	42.4	2.0	..	..
Cameroon	4.4	49.5	6.6	42.3	9.4	46.4	13.8	..	..
Cape Verde	9.5	21.5	11.6	20.7	14.0	21.6	17.0	23.0	20.9
Central African Republic	0.3	203.7	1.0	58.8	1.5	61.3	2.5	..	..
Chad	0.4	85.1	0.8	72.8	1.4	55.0	2.2	115.8	4.6
Comoros	..	..	0.3	364.1	1.2	68.8	2.0	-2.2	2.0
Congo	6.7	40.3	9.4	6.5	10.0	22.0	12.3	..	..
Côte d'Ivoire	6.2	23.6	7.7	17.7	9.1	33.1	12.1	82.6	22.0
Democratic Republic of the Congo	1.1	73.6	1.8	93.3	3.6	33.9	4.8	..	..
Djibouti	2.1	49.2	3.1	45.2	4.5	23.2	5.5	..	..
Egypt	6.7	26.5	8.4	29.3	10.9	75.0	19.1	24.9	23.9
Equatorial Guinea	7.0	26.9	8.9	30.9	11.7	71.0	20.0	..	..
Eritrea	..	..	..	..	0.5	93.9	0.9	47.9	1.4
Ethiopia	0.1	88.6	0.1	74.3	0.2	115.7	0.5	106.1	1.1
Gabon	21.5	4.2	22.4	61.9	36.2	29.9	47.1	15.2	54.2
Gambia	7.5	46.0	11.0	9.2	12.0	35.8	16.3	59.2	25.9
Ghana	1.9	100.3	3.7	112.1	7.9	0.7	8.0	189.1	23.1
Guinea	1.2	21.4	1.4	38.0	2.0	19.0	2.4	..	..
Guinea-Bissau	..	..	0.1	3095.7	3.2	57.1	5.0	16.6	5.8
Kenya	3.8	33.1	5.0	54.7	7.8	73.5	13.5	37.2	18.5
Lesotho	5.1	4.2	5.3	53.5	8.2	50.9	12.4	0.6	12.4
Liberia	0.1	2171.4	1.4	98.0	2.8	67.4	4.6	..	..
Libyan Arab Jamahiriya	..	..	..	..	..	..	..	..	65.8
Madagascar	1.0	69.2	1.6	14.6	1.8	47.1	2.7	101.9	5.5
Malawi	0.8	56.3	1.3	39.8	1.8	85.2	3.3	..	..
Mali	0.5	355.4	2.3	59.8	3.6	112.8	7.7	..	..
Mauritania	9.2	38.3	12.8	37.4	17.5	38.5	24.3	38.1	33.5
Mauritius	28.8	-7.1	26.7	55.2	41.5	37.6	57.1	7.4	61.3
Mayotte	13.6	56.1	21.2	5.6	22.4	26.6	28.3	..	..
Morocco	21.3	17.1	25.0	25.2	31.2	30.9	40.9	27.4	52.1

Table 1.12 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPING ECONOMIES									
Mozambique	1.4	67.1	2.4	58.6	3.7	65.1	6.2	88.2	11.6
Namibia	8.0	46.0	11.6	22.2	14.2	71.3	24.4	..	..
Niger	0.1	339.8	0.6	91.6	1.2	79.9	2.1	4.5	2.2
Nigeria	1.3	90.7	2.6	181.7	7.2	96.5	14.1	70.1	24.1
Rwanda	1.0	54.3	1.6	5.1	1.6	96.1	3.2	..	..
Sao Tome and Principe	1.4	138.4	3.3	56.6	5.1	52.8	7.8	..	..
Senegal	4.5	23.0	5.6	78.9	9.9	49.2	14.8	68.4	25.0
Seychelles	53.9	8.7	58.6	-1.2	57.9	14.4	66.3	21.9	80.8
Sierra Leone	1.4	61.4	2.2	-4.1	2.1	..	..	..	..
Somalia	1.3	93.5	2.6	142.1	6.3	..	..	..	..
South Africa	29.4	22.1	35.9	14.9	41.3	58.2	65.4	9.2	71.4
Sudan	0.6	172.8	1.6	91.8	3.0	86.3	5.7	123.6	12.7
Swaziland	6.6	23.8	8.2	28.0	10.5	69.9	17.8	23.2	21.9
Togo	3.1	24.9	3.9	43.5	5.6	26.1	7.1	51.2	10.8
Tunisia	5.9	230.5	19.4	83.9	35.7	57.7	56.3	27.7	71.9
Uganda	1.5	90.7	2.9	45.0	4.2	26.4	5.3	27.1	6.7
United Republic of Tanzania	2.1	34.3	2.8	54.6	4.4	102.9	8.8	80.8	16.0
Zambia	1.3	70.4	2.1	22.4	2.6	145.0	6.4	25.0	8.0
Zimbabwe	2.9	6.1	3.1	8.2	3.3	59.4	5.3	17.1	6.2
ASIA									
Afghanistan	0.1	661.2	0.7	185.9	2.1	91.4	4.0	101.8	8.1
Bahrain	55.6	12.3	62.4	44.6	90.2	13.6	102.6	18.4	121.5
Bangladesh	0.8	24.6	1.0	211.1	3.1	104.1	6.3	108.7	13.2
Bhutan	..	..	1.3	108.9	2.8	101.4	5.6	113.3	12.0
Brunei Darussalam	45.2	12.2	50.7	11.0	56.3	11.9	62.9	6.2	66.8
Cambodia	2.9	28.2	3.7	69.0	6.3	20.1	7.6	3.7	7.9
China	15.9	30.2	20.8	23.3	25.6	16.8	29.9	16.8	34.9
Dem. People's Republic of Korea	..	..	..	..	..	..	..	..	..
Hong Kong (China)	94.2	14.6	107.9	9.1	117.8	3.9	122.4	6.1	129.8
India	1.2	103.0	2.4	78.1	4.4	58.3	6.9	115.3	14.8
Indonesia	5.5	58.5	8.7	54.2	13.5	56.2	21.1	34.4	28.3
Iran (Islamic Republic of)	3.3	52.2	5.1	24.2	6.3	64.5	10.4	84.4	19.2
Iraq	0.1	289.1	0.3	591.4	2.2	..	..	..	..
Jordan	22.9	5.5	24.2	17.5	28.4	93.7	55.0	35.1	74.4
Kuwait	52.0	10.1	57.3	37.0	78.4	12.8	88.5	..	..
Lao PDR	1.0	98.2	2.0	78.4	3.5	205.7	10.8	..	..
Lebanon	22.7	3.4	23.4	6.8	25.0	10.6	27.7	10.5	30.6
Macao (China)	62.8	28.9	80.9	14.9	92.9	17.0	108.7	12.5	122.3
Malaysia	37.7	17.7	44.4	28.6	57.1	33.4	76.2	-1.0	75.4
Maldives	15.0	53.2	22.9	64.7	37.7	34.1	50.6	69.5	85.8
Mongolia	8.9	45.9	13.0	25.7	16.3	29.0	21.0	..	..
Myanmar	0.1	38.3	0.1	35.4	0.2	95.4	0.4	..	..
Nepal	0.1	125.5	0.2	240.3	0.7	15.8	0.8	349.2	3.8
Oman	18.7	26.6	23.6	34.6	31.8	63.0	51.9	34.3	69.7

Table 1.12 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPING ECONOMIES									
Pakistan	1.2	38.8	1.6	105.0	3.3	151.9	8.3	165.0	22.0
Palestine	9.2	43.4	13.3	99.7	26.5	11.7	29.6	..	..
Philippines	19.4	43.5	27.8	43.5	39.8	3.6	41.3	19.2	49.2
Qatar	39.8	33.2	53.0	24.9	66.3	38.7	91.9	19.2	109.5
Republic of Korea	67.9	3.4	70.2	8.4	76.1	4.3	79.4	4.4	82.9
Saudi Arabia	22.1	40.6	31.0	23.5	38.3	41.3	54.1	44.2	78.1
Singapore	80.4	3.7	83.4	10.8	92.4	9.1	100.8	8.5	109.3
Sri Lanka	4.9	47.2	7.2	57.0	11.4	42.7	16.2	59.7	25.9
Syrian Arab Republic	2.3	189.2	6.8	90.6	12.9	20.4	15.5	54.7	24.0
Taiwan Province of China	108.3	5.4	114.2	-12.1	100.3	-2.9	97.4	4.7	102.0
Thailand	25.8	52.9	39.4	9.2	43.0	12.8	48.5	30.0	63.0
Turkey	33.2	17.9	39.1	22.8	48.1	24.0	59.6	..	..
United Arab Emirates	64.7	13.6	73.6	17.0	86.1	17.1	100.8	17.5	118.4
Viet Nam	2.4	42.2	3.3	78.5	6.0	79.0	10.7	70.1	18.2
Yemen	2.1	64.8	3.5	48.9	5.2	84.3	9.5	..	..
LATIN AMERICA AND THE CARIBBEAN									
Antigua and Barbuda	47.8	17.7	56.2	15.7	65.1	57.4	102.4	17.2	120.0
Argentina	17.5	18.3	20.7	70.7	35.3	62.0	57.3	40.6	80.5
Aruba	61.8	12.1	69.3	39.2	96.5	8.9	105.0	..	..
Bahamas	39.3	-4.5	37.5	55.0	58.1	22.5	71.2	..	..
Barbados	34.0	43.0	48.6	42.0	69.0	2.3	70.6	..	..
Belize	19.9	16.8	23.2	61.8	37.6	17.8	44.3	-4.6	42.3
Bolivia	11.8	22.4	14.5	38.2	20.0	32.0	26.4	..	..
Brazil	19.5	31.1	25.6	39.5	35.7	29.7	46.3	14.4	52.9
Cayman Islands	..	..	..	..	..	..	..	..	..
Chile	42.8	15.3	49.4	25.7	62.1	9.2	67.8	11.5	75.6
Colombia	10.6	33.1	14.1	62.4	22.9	108.4	47.8	34.5	64.3
Costa Rica	12.5	49.3	18.7	16.4	21.7	17.1	25.4	29.0	32.8
Cuba	0.2	97.5	0.3	114.2	0.7	76.9	1.2	13.3	1.4
Dominica	17.9	73.3	31.0	98.3	61.5	..	..	..	..
Dominican Republic	19.9	23.1	24.5	17.9	28.8	41.1	40.7	25.6	51.1
Ecuador	12.0	52.5	18.3	88.2	34.5	37.0	47.2	33.9	63.2
El Salvador	13.8	25.9	17.3	60.1	27.7	26.4	35.1	57.0	55.0
Grenada	7.4	454.5	41.1	1.4	41.6	7.3	44.7	..	..
Guatemala	13.1	25.7	16.5	51.5	25.0	43.0	35.8	..	..
Guyana	11.9	35.7	16.1	21.1	19.5	73.4	33.8	12.7	38.1
Haiti	1.7	139.2	4.0	20.7	4.9	20.4	5.9	..	..
Honduras	4.9	13.1	5.6	81.1	10.1	76.2	17.8	71.1	30.4
Jamaica	45.3	33.7	60.6	35.4	82.1	24.1	101.9	3.5	105.4
Mexico	25.8	14.4	29.5	24.3	36.6	21.0	44.3	18.7	52.6
Netherlands Antilles	..	..	108.7	-0.5	108.1	-0.5	107.5	..	..
Nicaragua	4.6	93.4	8.8	55.3	13.7	49.8	20.5	59.4	32.7
Panama	17.5	53.0	26.7	1.0	27.0	55.0	41.9	23.0	51.5
Paraguay	28.8	3.5	29.9	-1.6	29.4	4.3	30.6	67.5	51.3

Table 1.12 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPING ECONOMIES									
Peru	8.6	23.9	10.7	38.0	14.7	35.4	20.0	50.0	30.0
Saint Kitts and Nevis	10.9	-2.1	10.6	95.8	20.8	..	..	..	..
Saint Lucia	9.2	-1.4	9.1	542.2	58.5	12.2	65.7	..	..
Saint Vincent and the Grenadines	8.6	524.9	53.8	-10.2	48.3	23.0	59.3	23.0	73.0
Suriname	24.6	54.1	38.0	25.2	47.5	8.4	51.5	35.7	69.9
Trinidad and Tobago	27.7	33.7	37.0	32.8	49.2	22.8	60.4	105.5	124.1
Uruguay	15.9	-3.4	15.4	20.2	18.5	91.9	35.5	87.9	66.8
Venezuela	25.6	6.5	27.3	17.8	32.2	45.2	46.7	47.8	69.0
Virgin Islands (United States)	42.6	8.1	46.1	28.3	59.1	23.5	73.0	..	..
OCEANIA									
American Samoa	3.4	1.5	3.5	1.4	3.5	..	..	..	..
Fiji	11.2	21.0	13.5	28.1	17.3	42.8	24.8	..	..
French Polynesia	21.8	12.8	24.5	56.5	38.4	22.1	46.9	24.8	58.5
Kiribati	0.6	3.8	0.6	11.5	0.7	..	..	..	..
Marshall Islands	1.1	6.3	1.1	-3.3	1.1	..	..	..	..
Micronesia (Fed. States of)	0.1	5 714.7	5.4	115.8	11.7	9.3	12.8	..	..
Nauru	..	..	..	..	..	..	..	..	..
New Caledonia	35.8	19.1	42.6	17.6	50.1	13.2	56.8	-1.6	55.9
Northern Mariana Islands	23.1	5.9	24.5	7.4	26.3	-2.5	25.6	..	..
Palau	..	..	..	..	..	..	..	..	..
Papua New Guinea	0.3	12.9	0.3	166.5	0.8	54.0	1.3	..	..
Samoa	1.5	284.6	5.8	50.7	8.8	48.4	13.0	..	..
Solomon Islands	0.2	45.7	0.3	97.2	0.6	95.8	1.3	..	..
Tonga	3.4	233.3	11.4	46.1	16.6	81.6	30.2	..	..
Tuvalu	..	..	..	..	..	..	..	..	..
Vanuatu	2.5	55.3	3.8	31.5	5.0	18.0	5.9	-4.8	5.6
TRANSITION ECONOMIES									
Albania	27.6	29.7	35.8	10.2	39.5	23.8	48.9	..	..
Armenia	2.3	61.0	3.8	78.3	6.7	56.9	10.5	..	..
Azerbaijan	9.6	32.3	12.7	67.7	21.4	24.9	26.7	47.2	39.2
Belarus	4.7	142.9	11.3	101.5	22.8	83.9	42.0	46.3	61.4
Bosnia and Herzegovina	19.6	39.9	27.4	32.7	36.4	12.1	40.8	18.4	48.3
Bulgaria	33.1	35.6	44.9	35.8	61.0	32.5	80.8	33.2	107.6
Croatia	53.5	9.1	58.4	9.8	64.2	2.2	65.6	49.5	98.0
Georgia	10.9	42.8	15.6	19.2	18.6	75.5	32.6	17.8	38.5
Kazakhstan	6.9	29.8	9.0	107.6	18.6	79.8	33.4	58.1	52.9
Kyrgyzstan	1.1	158.9	2.7	114.8	5.9	74.7	10.3	..	..
Moldova	8.0	41.4	11.3	64.2	18.5	40.5	25.9	24.6	32.3
Montenegro	..	..	..	..	..	..	..	..	132.5
Romania	23.5	38.5	32.5	45.2	47.1	31.1	61.8	..	..
Russian Federation	12.1	108.3	25.2	104.9	51.7	61.2	83.4	..	..
Serbia	36.7	32.1	48.5	30.1	63.1	-11.4	55.9	17.1	65.5
Tajikistan	0.2	251.9	0.7	194.3	2.1	90.0	4.1	..	..

Table 1.12 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
TRANSITION ECONOMIES									
TFYR Macedonia	18.1	111.4	38.2	27.0	48.6	28.0	62.1	11.8	69.5
Turkmenistan	0.2	11.9	0.2	437.6	1.0	114.4	2.2	..	..
Ukraine	7.7	77.9	13.7	112.2	29.0	26.4	36.7	186.8	105.2
Uzbekistan	0.7	69.5	1.3	64.0	2.1	31.8	2.7	..	..

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Table 1.13
Economies ranked by 2006 mobile phone penetration

Mobile phone subscribers per 100 inhabitants

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
1	Luxembourg	105.1	14.0	119.8	17.2	140.4	11.5	156.5	-3.0	151.9
2	Lithuania	47.3	33.0	62.9	57.7	99.2	28.0	126.9	8.7	138.0
3	Montenegro	..	..	..	..	..	..	..	..	132.5
4	Hong Kong (China)	94.2	14.6	107.9	9.1	117.8	3.9	122.4	6.1	129.8
5	Trinidad and Tobago	27.7	33.7	37.0	32.8	49.2	22.8	60.4	105.5	124.1
6	Estonia	64.7	19.7	77.4	20.0	92.9	15.4	107.3	15.0	123.4
7	Italy	96.0	2.2	98.1	10.3	108.2	13.8	123.1	-0.1	123.0
8	Macao (China)	62.8	28.9	80.9	14.9	92.9	17.0	108.7	12.5	122.3
9	Bahrain	55.6	12.3	62.4	44.6	90.2	13.6	102.6	18.4	121.5
10	Antigua and Barbuda	47.8	17.7	56.2	15.7	65.1	57.4	102.4	17.2	120.0
11	United Arab Emirates	64.7	13.6	73.6	17.0	86.1	17.1	100.8	17.5	118.4
12	Czech Republic	84.4	12.8	95.2	10.8	105.5	9.2	115.2	2.5	118.1
13	Israel	95.4	0.7	96.0	9.1	104.8	7.9	113.0	4.0	117.5
14	United Kingdom (incl. Gibraltar)	84.1	5.9	89.1	14.7	102.2	7.4	109.7	6.1	116.4
15	Portugal	81.9	16.9	95.8	2.1	97.8	11.6	109.1	6.3	116.0
16	Austria	83.2	4.8	87.2	11.7	97.3	1.1	98.4	13.3	111.5
17	Ireland	76.3	15.2	87.9	6.4	93.6	8.4	101.4	9.8	111.4
18	Iceland	89.8	7.4	96.4	4.2	100.5	4.3	104.8	4.5	109.5
19	Qatar	39.8	33.2	53.0	24.9	66.3	38.7	91.9	19.2	109.5
20	Singapore	80.4	3.7	83.4	10.8	92.4	9.1	100.8	8.5	109.3
21	Norway	86.0	5.8	90.9	8.2	98.4	4.6	102.9	5.6	108.6
22	Finland	86.7	4.9	90.9	5.1	95.6	4.3	99.6	8.2	107.8
23	Bulgaria	33.1	35.6	44.9	35.8	61.0	32.5	80.8	33.2	107.6
24	Denmark (incl. Faroe Islands)	83.2	6.0	88.2	7.3	94.6	6.3	100.6	6.5	107.1
25	Jamaica	45.3	33.7	60.6	35.4	82.1	24.1	101.9	3.5	105.4
26	Ukraine	7.7	77.9	13.7	112.2	29.0	26.4	36.7	186.8	105.2
27	Spain	81.6	6.9	87.2	2.5	89.4	3.4	92.4	10.7	102.3
28	Taiwan Province of China	108.3	5.4	114.2	-12.1	100.3	-2.9	97.4	4.7	102.0
29	Germany	71.6	9.6	78.5	10.1	86.4	10.8	95.8	6.4	101.9
30	Greece	84.5	6.7	90.2	10.3	99.5	-7.3	92.3	8.0	99.6
31	Switzerland	78.8	6.7	84.1	.6	84.6	8.5	91.8	8.0	99.1
32	Hungary	67.9	15.6	78.5	10.1	86.4	6.8	92.3	7.2	99.0
33	Croatia	53.5	9.1	58.4	9.8	64.2	2.2	65.6	49.5	98.0
34	Australia	64.0	12.7	72.2	14.5	82.6	10.6	91.4	6.2	97.0
35	Poland	36.4	25.3	45.6	32.8	60.5	26.7	76.7	25.7	96.4
36	Jersey	70.1	32.2	92.7	3.2	95.7	-0.6	95.1	0.0	95.1
37	Latvia	39.4	33.5	52.6	27.7	67.1	20.7	81.0	17.2	94.9
38	Bermuda	49.2	31.2	64.5	20.6	77.8	5.9	82.3	12.3	92.5
39	Belgium	78.2	5.8	82.7	5.6	87.4	3.5	90.5	1.9	92.2
40	Cyprus	52.9	30.4	69.0	13.3	78.1	10.1	86.0	5.8	90.9
41	Slovakia	54.3	25.8	68.4	16.1	79.4	6.2	84.3	7.7	90.8
42	Slovenia	83.5	4.3	87.1	6.3	92.5	-5.1	87.8	2.1	89.6
43	New Zealand	62.2	5.9	65.8	15.3	75.9	15.5	87.6	-0.7	86.9

Table 1.13 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
44	Maldives	15.0	53.2	22.9	64.7	37.7	34.1	50.6	69.5	85.8
45	Malta	71.6	4.2	74.6	5.1	78.4	5.5	82.7	3.1	85.2
46	France (incl. Guadeloupe, French Guiana, Martinique and Réunion)	66.7	5.7	70.5	6.4	75.0	5.9	79.4	7.1	85.1
47	Republic of Korea	67.9	3.4	70.2	8.4	76.1	4.3	79.4	4.4	82.9
48	Seychelles	53.9	8.7	58.6	-1.2	57.9	14.4	66.3	21.9	80.8
49	Argentina	17.5	18.3	20.7	70.7	35.3	62.0	57.3	40.6	80.5
50	Japan	63.7	6.7	67.9	5.5	71.6	3.5	74.2	7.3	79.6
51	Andorra	48.8	47.0	71.8	17.0	84.0	-2.1	82.2	-3.2	79.5
52	Saudi Arabia	22.1	40.6	31.0	23.5	38.3	41.3	54.1	44.2	78.1
53	United States (incl. Puerto Rico and Guam)	48.8	10.3	53.8	14.7	61.7	8.0	66.7	16.2	77.5
54	Chile	42.8	15.3	49.4	25.7	62.1	9.2	67.8	11.5	75.6
55	Malaysia	37.7	17.7	44.4	28.6	57.1	33.4	76.2	-1.0	75.4
56	Jordan	22.9	5.5	24.2	17.5	28.4	93.7	55.0	35.1	74.4
57	Guernsey	61.0	13.5	69.2	5.5	73.0	0.0	73.0	0.0	73.0
58	Saint Vincent and the Grenadines	8.6	524.9	53.8	-10.2	48.3	23.0	59.3	23.0	73.0
59	Tunisia	5.9	230.5	19.4	83.9	35.7	57.7	56.3	27.7	71.9
60	South Africa	29.4	22.1	35.9	14.9	41.3	58.2	65.4	9.2	71.4
61	Suriname	24.6	54.1	38.0	25.2	47.5	8.4	51.5	35.7	69.9
62	Oman	18.7	26.6	23.6	34.6	31.8	63.0	51.9	34.3	69.7
63	TFYR Macedonia	18.1	111.4	38.2	27.0	48.6	28.0	62.1	11.8	69.5
64	Venezuela	25.6	6.5	27.3	17.8	32.2	45.2	46.7	47.8	69.0
65	Brunei Darussalam	45.2	12.2	50.7	11.0	56.3	11.9	62.9	6.2	66.8
66	Uruguay	15.9	-3.4	15.4	20.2	18.5	91.9	35.5	87.9	66.8
67	Libyan Arab Jamahiriya	..	..	..	..	..	..	..	..	65.8
68	Serbia	36.7	32.1	48.5	30.1	63.1	-11.4	55.9	17.1	65.5
69	Colombia	10.6	33.1	14.1	62.4	22.9	108.4	47.8	34.5	64.3
70	Ecuador	12.0	52.5	18.3	88.2	34.5	37.0	47.2	33.9	63.2
71	Thailand	25.8	52.9	39.4	9.2	43.0	12.8	48.5	30.0	63.0
72	Algeria	1.3	254.8	4.5	219.8	14.5	186.9	41.5	51.7	63.0
73	Dominica	17.9	73.3	31.0	98.3	61.5	0.0	61.5	1.5	62.4
74	Belarus	4.7	142.9	11.3	101.5	22.8	83.9	42.0	46.3	61.4
75	Mauritius	28.8	-7.1	26.7	55.2	41.5	37.6	57.1	7.4	61.3
76	French Polynesia	21.8	12.8	24.5	56.5	38.4	22.1	46.9	24.8	58.5
77	San Marino	59.9	-0.9	59.3	-0.6	59.0	-2.8	57.3	-2.2	56.1
78	New Caledonia	35.8	19.1	42.6	17.6	50.1	13.2	56.8	-1.6	55.9
79	El Salvador	13.8	25.9	17.3	60.1	27.7	26.4	35.1	57.0	55.0
80	Gabon	21.5	4.2	22.4	61.9	36.2	29.9	47.1	15.2	54.2
81	Brazil	19.5	31.1	25.6	39.5	35.7	29.7	46.3	14.4	52.9
82	Kazakhstan	6.9	29.8	9.0	107.6	18.6	79.8	33.4	58.1	52.9
83	Mexico	25.8	14.4	29.5	24.3	36.6	21.0	44.3	18.7	52.6
84	Canada	37.7	10.4	41.6	12.1	46.7	9.7	51.2	2.0	52.2
85	Morocco	21.3	17.1	25.0	25.2	31.2	30.9	40.9	27.4	52.1
86	Botswana	24.7	18.2	29.2	7.2	31.3	43.1	44.8	16.1	52.1
87	Panama	17.5	53.0	26.7	1.0	27.0	55.0	41.9	23.0	51.5

Table 1.13 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
88	Paraguay	28.8	3.5	29.9	-1.6	29.4	4.3	30.6	67.5	51.3
89	Dominican Republic	19.9	23.1	24.5	17.9	28.8	41.1	40.7	25.6	51.1
90	Philippines	19.4	43.5	27.8	43.5	39.8	3.6	41.3	19.2	49.2
91	Bosnia and Herzegovina	19.6	39.9	27.4	32.7	36.4	12.1	40.8	18.4	48.3
92	Belize	19.9	16.8	23.2	61.8	37.6	17.8	44.3	-4.6	42.3
93	Azerbaijan	9.6	32.3	12.7	67.7	21.4	24.9	26.7	47.2	39.2
94	Georgia	10.9	42.8	15.6	19.2	18.6	75.5	32.6	17.8	38.5
95	Guyana	11.9	35.7	16.1	21.1	19.5	73.4	33.8	12.7	38.1
96	China	15.9	30.2	20.8	23.3	25.6	16.8	29.9	16.8	34.9
97	Mauritania	9.2	38.3	12.8	37.4	17.5	38.5	24.3	38.1	33.5
98	Costa Rica	12.5	49.3	18.7	16.4	21.7	17.1	25.4	29.0	32.8
99	Nicaragua	4.6	93.4	8.8	55.3	13.7	49.8	20.5	59.4	32.7
100	Moldova	8.0	41.4	11.3	64.2	18.5	40.5	25.9	24.6	32.3
101	Lebanon	22.7	3.4	23.4	6.8	25.0	10.6	27.7	10.5	30.6
102	Honduras	4.9	13.1	5.6	81.1	10.1	76.2	17.8	71.1	30.4
103	Peru	8.6	23.9	10.7	38.0	14.7	35.4	20.0	50.0	30.0
104	Palestine	9.2	43.4	13.3	99.7	26.5	11.7	29.6	0.0	29.6
105	Indonesia	5.5	58.5	8.7	54.2	13.5	56.2	21.1	34.4	28.3
106	Gambia	7.5	46.0	11.0	9.2	12.0	35.8	16.3	59.2	25.9
107	Sri Lanka	4.9	47.2	7.2	57.0	11.4	42.7	16.2	59.7	25.9
108	Senegal	4.5	23.0	5.6	78.9	9.9	49.2	14.8	68.4	25.0
109	Nigeria	1.3	90.7	2.6	181.7	7.2	96.5	14.1	70.1	24.1
110	Syrian Arab Republic	2.3	189.2	6.8	90.6	12.9	20.4	15.5	54.7	24.0
111	Egypt	6.7	26.5	8.4	29.3	10.9	75.0	19.1	24.9	23.9
112	Ghana	1.9	100.3	3.7	112.1	7.9	0.7	8.0	189.1	23.1
113	Côte d'Ivoire	6.2	23.6	7.7	17.7	9.1	33.1	12.1	82.6	22.0
114	Pakistan	1.2	38.8	1.6	105.0	3.3	151.9	8.3	165.0	22.0
115	Swaziland	6.6	23.8	8.2	28.0	10.5	69.9	17.8	23.2	21.9
116	Cape Verde	9.5	21.5	11.6	20.7	14.0	21.6	17.0	23.0	20.9
117	Iran (Islamic Republic of)	3.3	52.2	5.1	24.2	6.3	64.5	10.4	84.4	19.2
118	Kenya	3.8	33.1	5.0	54.7	7.8	73.5	13.5	37.2	18.5
119	Viet Nam	2.4	42.2	3.3	78.5	6.0	79.0	10.7	70.1	18.2
120	United Republic of Tanzania	2.1	34.3	2.8	54.6	4.4	102.9	8.8	80.8	16.0
121	India	1.2	103.0	2.4	78.1	4.4	58.3	6.9	115.3	14.8
122	Angola	0.9	148.5	2.3	188.1	6.7	5.3	7.0	103.9	14.3
123	Bangladesh	0.8	24.6	1.0	211.1	3.1	104.1	6.3	108.7	13.2
124	Sudan	0.6	172.8	1.6	91.8	3.0	86.3	5.7	123.6	12.7
125	Lesotho	5.1	4.2	5.3	53.5	8.2	50.9	12.4	0.6	12.4
126	Bhutan	..	..	1.3	108.9	2.8	101.4	5.6	113.3	12.0
127	Mozambique	1.4	67.1	2.4	58.6	3.7	65.1	6.2	88.2	11.6
128	Togo	3.1	24.9	3.9	43.5	5.6	26.1	7.1	51.2	10.8
129	Armenia	2.3	61.0	3.8	78.3	6.7	56.9	10.5	0.3	10.6
130	Afghanistan	0.1	661.2	0.7	185.9	2.1	91.4	4.0	101.8	8.1
131	Zambia	1.3	70.4	2.1	22.4	2.6	145.0	6.4	25.0	8.0
132	Cambodia	2.9	28.2	3.7	69.0	6.3	20.1	7.6	3.7	7.9

Table 1.13 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
133	Burkina Faso	0.9	96.0	1.9	60.5	3.0	45.5	4.3	72.5	7.5
134	Uganda	1.5	90.7	2.9	45.0	4.2	26.4	5.3	27.1	6.7
135	Zimbabwe	2.9	6.1	3.1	8.2	3.3	59.4	5.3	17.1	6.2
136	Guinea-Bissau	..	..	0.1	3095.7	3.2	57.1	5.0	16.6	5.8
137	Vanuatu	2.5	55.3	3.8	31.5	5.0	18.0	5.9	-4.8	5.6
138	Madagascar	1.0	69.2	1.6	14.6	1.8	47.1	2.7	101.9	5.5
139	Chad	0.4	85.1	0.8	72.8	1.4	55.0	2.2	115.8	4.6
140	Nepal	0.1	125.5	0.2	240.3	0.7	15.8	0.8	349.2	3.8
141	Niger	0.1	339.8	0.6	91.6	1.2	79.9	2.1	4.5	2.2
142	Comoros	..	..	0.3	364.1	1.2	68.8	2.0	-2.2	2.0
143	Eritrea	..	..	..	..	0.5	93.9	0.9	47.9	1.4
144	Cuba	0.2	97.5	0.3	114.2	0.7	76.9	1.2	13.3	1.4
145	Ethiopia	0.1	88.6	0.1	74.3	0.2	115.7	0.5	106.1	1.1
146	Netherlands Antilles	..	..	108.7	-0.5	108.1	-0.5	107.5	..	..
147	Aruba	61.8	12.1	69.3	39.2	96.5	8.9	105.0	..	..
148	Sweden	88.9	10.2	98.0	-0.5	97.5	3.1	100.5	..	..
149	Netherlands	75.9	9.1	82.8	10.3	91.3	6.4	97.1	..	..
150	Kuwait	52.0	10.1	57.3	37.0	78.4	12.8	88.5	..	..
151	Russian Federation	12.1	108.3	25.2	104.9	51.7	61.2	83.4	..	..
152	Liechtenstein	35.6	112.6	75.8	-1.0	75.0	4.8	78.6	..	..
153	Virgin Islands (United States)	42.6	8.1	46.1	28.3	59.1	23.5	73.0	..	..
154	Bahamas	39.3	-4.5	37.5	55.0	58.1	22.5	71.2	..	..
155	Barbados	34.0	43.0	48.6	42.0	69.0	2.3	70.6	..	..
156	Saint Lucia	9.2	-1.4	9.1	542.2	58.5	12.2	65.7	..	..
157	Romania	23.5	38.5	32.5	45.2	47.1	31.1	61.8	..	..
158	Turkey	33.2	17.9	39.1	22.8	48.1	24.0	59.6	..	..
159	Monaco	22.2	108.4	46.3	4.0	48.2	8.2	52.1	..	..
160	Albania	27.6	29.7	35.8	10.2	39.5	23.8	48.9	..	..
161	Grenada	7.4	454.5	41.1	1.4	41.6	7.3	44.7	..	..
162	Guatemala	13.1	25.7	16.5	51.5	25.0	43.0	35.8	..	..
163	Tonga	3.4	233.3	11.4	46.1	16.6	81.6	30.2	..	..
164	Mayotte	13.6	56.1	21.2	5.6	22.4	26.6	28.3	..	..
165	Bolivia	11.8	22.4	14.5	38.2	20.0	32.0	26.4	..	..
166	Fiji	11.2	21.0	13.5	28.1	17.3	42.8	24.8	..	..
167	Namibia	8.0	46.0	11.6	22.2	14.2	71.3	24.4	..	..
168	Mongolia	8.9	45.9	13.0	25.7	16.3	29.0	21.0	..	..
169	Equatorial Guinea	7.0	26.9	8.9	30.9	11.7	71.0	20.0	..	..
170	Cameroon	4.4	49.5	6.6	42.3	9.4	46.4	13.8	..	..
171	Samoa	1.5	284.6	5.8	50.7	8.8	48.4	13.0	..	..
172	Micronesia (Fed. States of)	0.1	5 714.7	5.4	115.8	11.7	9.3	12.8	..	..
173	Congo	6.7	40.3	9.4	6.5	10.0	22.0	12.3	..	..
174	Lao PDR	1.0	98.2	2.0	78.4	3.5	205.7	10.8	..	..
175	Kyrgyzstan	1.1	158.9	2.7	114.8	5.9	74.7	10.3	..	..
176	Benin	3.2	4.4	3.4	58.5	5.3	87.7	10.0	..	..
177	Yemen	2.1	64.8	3.5	48.9	5.2	84.3	9.5	..	..

Table 1.13 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
178	Sao Tome and Principe	1.4	138.4	3.3	56.6	5.1	52.8	7.8	..	..
179	Mali	0.5	355.4	2.3	59.8	3.6	112.8	7.7	..	..
180	Haiti	1.7	139.2	4.0	20.7	4.9	20.4	5.9	..	..
181	Djibouti	2.1	49.2	3.1	45.2	4.5	23.2	5.5	..	..
182	Democratic Republic of the Congo	1.1	73.6	1.8	93.3	3.6	33.9	4.8	..	..
183	Liberia	0.1	2171.4	1.4	98.0	2.8	67.4	4.6	..	..
184	Tajikistan	0.2	251.9	0.7	194.3	2.1	90.0	4.1	..	..
185	Malawi	0.8	56.3	1.3	39.8	1.8	85.2	3.3	..	..
186	Rwanda	1.0	54.3	1.6	5.1	1.6	96.1	3.2	..	..
187	Uzbekistan	0.7	69.5	1.3	64.0	2.1	31.8	2.7	..	..
188	Central African Republic	0.3	203.7	1.0	58.8	1.5	61.3	2.5	..	..
189	Guinea	1.2	21.4	1.4	38.0	2.0	19.0	2.4	..	..
190	Turkmenistan	0.2	11.9	0.2	437.6	1.0	114.4	2.2	..	..
191	Burundi	0.7	20.0	0.9	60.3	1.4	42.4	2.0	..	..
192	Papua New Guinea	0.3	12.9	0.3	166.5	0.8	54.0	1.3	..	..
193	Solomon Islands	0.2	45.7	0.3	97.2	0.6	95.8	1.3	..	..
194	Marshall Islands	1.1	6.3	1.1	-3.3	1.1	-3.5	1.1	..	..
195	Myanmar	0.1	38.3	0.1	35.4	0.2	95.4	0.4	..	..
	Developed economy.									
	Developing economy.									
	Transition economy.									

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Table 1.14
Internet users: economies by level of development and by region

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPED ECONOMIES									
ASIA									
Israel	1 125 200	12.4	1 264 500	18.4	1 496 600	12.6	1 685 900	12.6	1 899 100
Japan	59 220 000	4.1	61 640 000	28.9	79 480 000	7.3	85 290 000	2.6	87 540 000
EUROPE									
Andorra	7 000	43.6	10 049	9.5	11 000	99.3	21 922	5.8	23 200
Austria	3 340 000	11.7	3 730 000	4.6	3 900 000	2.6	4 000 000	5.0	4 200 000
Belgium	3 400 000	17.6	4 000 000	5.0	4 200 000	14.3	4 800 000	..	..
Cyprus	210 000	19.0	250 000	19.2	298 000	9.4	326 000	9.4	356 600
Czech Republic	2 600 180	-7.9	2 395 000	7.6	2 576 000	7.1	2 758 000	28.4	3 541 300
Denmark (incl. Faroe Islands)	2 415 500	3.9	2 509 000	9.9	2 757 000	4.7	2 887 000	11.0	3 205 200
Estonia	444 000	35.1	600 000	11.7	670 000	3.0	690 000	10.1	760 000
Finland	2 529 000	1.2	2 560 000	4.7	2 680 000	4.5	2 800 000	4.5	2 925 400
France (incl. Guadeloupe, French Guiana, Martinique and Réunion)	18 342 000	20.6	22 119 000	9.2	24 159 000	10.2	26 631 000	13.0	30 100 000
Germany	28 000 000	17.9	33 000 000	6.7	35 200 000	6.5	37 500 000	2.9	38 600 000
Greece	1 485 281	15.7	1 718 435	13.8	1 955 000	2.4	2 001 000	2.4	2 048 100
Guernsey	30 000	10.0	33 000	9.1	36 000	..	..	..	..
Hungary	1 600 000	50.0	2 400 000	12.5	2 700 000	11.1	3 000 000	16.7	3 500 000
Iceland	150 000	10.7	166 000	1.1	167 800	9.1	183 000	6.0	194 000
Ireland	1 102 000	14.3	1 260 000	-4.9	1 198 000	16.9	1 400 000	2.6	1 437 000
Italy	19 800 000	15.6	22 880 000	18.8	27 170 000	3.1	28 000 000	3.1	28 855 400
Jersey	..	..	20 000	35.0	27 000	..	..	..	..
Latvia	310 000	80.6	560 000	44.6	810 000	27.2	1 030 000	4.0	1 070 800
Liechtenstein	20 000	0.0	20 000	10.0	22 000	..	..	..	..
Lithuania	500 000	39.1	695 700	10.2	767 000	15.1	882 900	22.7	1 083 000
Luxembourg	165 000	3.0	170 000	59.3	270 810	16.3	315 000	7.6	339 000
Malta	80 410	19.4	96 022	16.3	111 634	14.0	127 247	..	..
Monaco	15 500	3.2	16 000	6.3	17 000	5.9	18 000	11.1	20 000
Netherlands	8 200 000	3.7	8 500 000	17.6	10 000 000	20.6	12 060 000	20.6	14 544 400
Norway	1 398 600	13.2	1 583 300	13.2	1 792 000	89.7	3 400 000	19.8	4 074 100
Poland	8 880 000	1.0	8 970 000	0.3	9 000 000	11.1	10 000 000	10.0	11 000 000
Portugal	2 267 200	17.9	2 674 000	-3.7	2 575 700	14.1	2 939 000	9.3	3 213 000
San Marino	14 340	1.0	14 481	3.6	15 000	0.0	15 000	2.7	15 400
Slovakia	862 833	59.5	1 375 809	20.1	1 652 200	15.3	1 905 200	18.4	2 255 600
Slovenia	750 000	6.7	800 000	18.8	950 000	14.7	1 090 000	14.7	1 250 600
Spain	7 856 000	24.6	9 789 000	46.4	14 332 800	5.5	15 119 000	22.9	18 578 000
Sweden	5 125 000	10.3	5 655 000	20.2	6 800 000	1.3	6 890 000	1.3	6 981 200
Switzerland	3 000 000	13.3	3 400 000	2.9	3 500 000	5.7	3 700 000	17.8	4 360 000
United Kingdom (incl. Gibraltar)	25 000 000	4.1	26 025 000	8.0	28 100 295	1.5	28 515 000	17.6	33 534 000
NORTH AMERICA									
Bermuda	..	..	36 000	8.3	39 000	7.7	42 000	..	..
Canada	15 200 000	15.8	17 600 000	13.6	20 000 000	10.0	22 000 000	..	..
Greenland	25 000	24.0	31 000	22.6	38 000	..	..	..	..

Table 1.14 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
United States (incl. Puerto Rico and Guam)	159 727 000	1.7	162 459 400	14.4	185 931 000	6.9	198 780 600	5.1	208 980 600
OCEANIA									
Australia	10 500 000	7.6	11 300 000	15.0	13 000 000	9.2	14 190 000	7.8	15 300 000
New Zealand	1 908 000	10.6	2 110 000	11.4	2 350 000	17.2	2 754 000	16.2	3 200 000
DEVELOPING ECONOMIES									
AFRICA									
Algeria	500 000	30.0	650 000	130.8	1 500 000	28.0	1 920 000	28.1	2 460 000
Angola	41 000	0.0	41 000	82.9	75 000	13.3	85 000	..	..
Benin	50 000	40.0	70 000	42.9	100 000	325.0	425 000	64.7	700 000
Botswana	60 000	0.0	60 000	0.0	60 000	0.0	60 000	..	..
Burkina Faso	25 000	92.0	48 000	10.8	53 200	21.4	64 600	23.8	80 000
Burundi	8 000	75.0	14 000	78.6	25 000	60.0	40 000	50.0	60 000
Cameroon	60 000	66.7	100 000	70.0	170 000	47.1	250 000	48.0	370 000
Cape Verde	16 000	25.0	20 000	25.0	25 000	0.0	25 000	16.0	29 000
Central African Republic	5 000	20.0	6 000	50.0	9 000	22.2	11 000	18.2	13 000
Chad	15 000	100.0	30 000	16.7	35 000	14.3	40 000	50.0	60 000
Comoros	3 200	56.3	5 000	60.0	8 000	150.0	20 000	5.0	21 000
Congo	5 000	200.0	15 000	140.0	36 000	38.9	50 000	40.0	70 000
Côte d'Ivoire	90 000	55.6	140 000	14.3	160 000	25.0	200 000	50.0	300 000
Democratic Republic of the Congo	50 000	50.0	75 000	50.0	112 500	25.0	140 625	28.0	180 000
Djibouti	4 500	44.4	6 500	38.5	9 000	11.1	10 000	10.0	11 000
Egypt	1 900 000	57.9	3 000 000	30.0	3 900 000	28.2	5 000 000	20.0	6 000 000
Equatorial Guinea	1 800	66.7	3 000	66.7	5 000	40.0	7 000	14.3	8 000
Eritrea	9 000	5.6	9 500	426.3	50 000	40.0	70 000	42.9	100 000
Ethiopia	50 000	50.0	75 000	50.7	113 000	45.1	164 000	..	..
Gabon	25 000	40.0	35 000	14.3	40 000	67.5	67 000	20.9	81 000
Gambia	25 000	40.0	35 000	40.0	49 000	18.4	58 000	..	..
Ghana	170 000	47.1	250 000	47.2	368 000	9.1	401 310	52.0	609 800
Guinea	35 000	14.3	40 000	15.0	46 000	8.7	50 000	0.0	50 000
Guinea-Bissau	14 000	35.7	19 000	36.8	26 000	19.2	31 000	19.4	37 000
Kenya	400 000	150.0	1 000 000	5.5	1 054 920	5.3	1 111 000	149.4	2 770 300
Lesotho	21 000	42.9	30 000	43.3	43 000	19.8	51 500	..	..
Liberia	..	..	..	..	..	..	..	..	..
Libyan Arab Jamahiriya	125 000	28.0	160 000	28.1	205 000	13.2	232 000	..	..
Madagascar	55 000	28.2	70 500	27.7	90 000	11.1	100 000	10.0	110 000
Malawi	27 000	33.3	36 000	28.2	46 140	13.8	52 500	13.7	59 700
Mali	25 000	40.0	35 000	42.9	50 000	20.0	60 000	16.7	70 000
Mauritania	10 000	20.0	12 000	16.7	14 000	42.9	20 000	400.0	100 000
Mauritius	125 000	20.0	150 000	20.0	180 000	0.0	180 000	1.1	182 000
Mayotte	..	..	..	..	..	..	..	..	..
Morocco	700 000	42.9	1 000 000	250.0	3 500 000	31.4	4 600 000	32.6	6 100 000
Mozambique	50 000	66.0	83 000	66.3	138 000	29.0	178 000	..	..
Namibia	50 000	30.0	65 000	15.4	75 000	7.5	80 600	..	..
Niger	15 000	26.7	19 000	26.3	24 000	20.8	29 000	37.9	40 000

Table 1.14 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Nigeria	420 000	78.6	750 000	136.0	1 769 661	182.5	5 000 000	60.0	8 000 000
Rwanda	25 000	24.0	31 000	22.6	38 000	31.6	50 000	30.0	65 000
Sao Tome and Principe	11 000	36.4	15 000	33.3	20 000	15.0	23 000	..	..
Senegal	105 000	114.3	225 000	114.2	482 000	12.0	540 000	20.4	650 000
Seychelles	11 736	2.2	12 000	66.7	20 000	5.0	21 000	38.1	29 000
Sierra Leone	8 000	12.5	9 000	11.1	10 000	0.0	10 000	..	..
Somalia	86 000	4.7	90 000	0.0	90 000	0.0	90 000	4.4	94 000
South Africa	3 100 000	7.3	3 325 000	7.2	3 566 000	43.0	5 100 000	..	..
Sudan	300 000	212.3	937 000	21.7	1 140 000	145.6	2 800 000	25.0	3 500 000
Swaziland	20 000	35.0	27 000	33.3	36 000	15.6	41 600	..	..
Togo	200 000	5.0	210 000	5.2	221 000	35.7	300 000	6.7	320 000
Tunisia	505 500	24.6	630 000	32.5	835 000	14.2	953 770	35.8	1 294 900
Uganda	100 000	25.0	125 000	60.0	200 000	150.0	500 000	50.0	750 000
United Republic of Tanzania	80 000	212.5	250 000	33.2	333 000	15.4	384 300	..	..
Zambia	52 420	109.8	110 000	110.0	231 000	44.9	334 800	..	..
Zimbabwe	500 000	60.0	800 000	2.5	820 000	22.0	1 000 000	22.0	1 220 000
ASIA									
Afghanistan	1 000	1900.0	20 000	25.0	25 000	1100.0	300 000	78.3	535 000
Bahrain	122 794	22.2	150 000	1.8	152 721	1.5	155 000	1.5	157 300
Bangladesh	204 000	19.1	243 000	23.5	300 000	23.3	370 000	21.6	450 000
Bhutan	10 000	50.0	15 000	33.3	20 000	25.0	25 000	20.0	30 000
Brunei Darussalam	..	..	48 000	16.7	56 000	16.1	65 000	154.8	165 600
Cambodia	30 000	16.7	35 000	17.1	41 000	7.3	44 000	..	..
China	59 100 000	34.5	79 500 000	18.2	94 000 000	18.1	111 000 000	23.4	137 000 000
Dem. People's Republic of Korea	..	..	..	..	..	..	..	..	..
Hong Kong (China)	2 918 800	10.1	3 212 800	8.3	3 479 700	1.3	3 526 200	6.9	3 770 400
India	16 580 000	11.5	18 481 044	89.4	35 000 000	71.4	60 000 000	..	..
Indonesia	4 500 000	79.6	8 080 000	38.9	11 226 143	42.5	16 000 000	..	..
Iran (Islamic Republic of)	3 168 000	51.5	4 800 000	14.6	5 500 000	27.3	7 000 000	157.1	18 000 000
Iraq	25 000	20.0	30 000	20.0	36 000	..	..	..	..
Jordan	307 469	44.4	444 000	41.8	629 524	14.3	719 800	10.7	796 900
Kuwait	250 000	126.8	567 000	5.8	600 000	16.7	700 000	16.7	816 700
Lao PDR	15 000	26.7	19 000	10.0	20 900	19.6	25 000	..	..
Lebanon	400 000	25.0	500 000	20.0	600 000	16.7	700 000	35.7	950 000
Macao (China)	115 000	4.3	120 000	25.0	150 000	13.3	170 000	17.6	200 000
Malaysia	7 842 000	10.2	8 643 000	14.3	9 879 000	11.5	11 016 000	2.5	11 292 000
Maldives	15 000	13.3	17 000	11.8	19 000	5.8	20 100	..	..
Mongolia	50 000	185.6	142 800	40.1	200 000	34.2	268 300	..	..
Myanmar	200	5650.0	11 500	1.7	11 700	169.2	31 500	..	..
Nepal	80 000	25.0	100 000	20.0	120 000	-6.3	112 500	121.7	249 400
Oman	180 000	16.7	210 000	16.7	245 000	16.3	285 000	12.0	319 200
Pakistan	1 000 000	700.0	8 000 000	25.0	10 000 000	5.0	10 500 000	14.3	12 000 000
Palestine	105 000	38.1	145 000	10.3	160 000	51.9	243 000	..	..
Philippines	3 500 000	14.3	4 000 000	10.0	4 400 000	4.9	4 614 800	..	..
Qatar	70 000	101.1	140 760	17.2	165 000	32.7	219 000	32.4	289 900

Table 1.14 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Republic of Korea	26 270 000	11.2	29 220 000	8.1	31 580 000	4.5	33 010 000	3.4	34 120 000
Saudi Arabia	1 418 880	5.7	1 500 000	5.7	1 586 000	89.2	3 000 000	56.7	4 700 000
Singapore ^a	2 100 000	1.7	2 135 034	13.4	2 421 782	-28.5	1 731 600	-0.8	1 717 100
Sri Lanka	200 000	25.0	250 000	12.0	280 000	25.0	350 000	22.3	428 000
Syrian Arab Republic	365 000	67.1	610 000	31.1	800 000	37.5	1 100 000	36.4	1 500 000
Taiwan Province of China	10 720 000	9.5	11 740 000	4.0	12 210 000	8.2	13 210 000	..	..
Thailand	4 800 000	25.6	6 030 000	15.6	6 971 500	1.6	7 084 200	19.5	8 465 800
Turkey	4 300 000	39.5	6 000 000	70.3	10 220 000	9.6	11 204 300	9.6	12 283 500
United Arab Emirates	1 175 516	-5.6	1 110 207	11.6	1 238 464	12.8	1 397 207	22.3	1 708 500
Viet Nam	1 500 000	106.5	3 098 007	104.8	6 345 049	68.8	10 710 980	37.1	14 683 800
Yemen	100 000	20.0	120 000	50.0	180 000	22.5	220 500	22.4	270 000
LATIN AMERICA AND THE CARIBBEAN									
Antigua and Barbuda	10 000	40.0	14 000	42.9	20 000	45.0	29 000	10.3	32 000
Argentina	4 100 000	10.5	4 530 000	35.8	6 153 603	11.5	6 863 466	19.2	8 183 700
Aruba	24 000	0.0	24 000	0.0	24 000	0.0	24 000	..	..
Bahamas	60 000	40.0	84 000	10.7	93 000	10.8	103 000	..	..
Barbados	30 000	233.3	100 000	50.0	150 000	6.7	160 000	..	..
Belize	..	..	..	..	16 000	62.5	26 000	30.8	34 000
Bolivia	270 000	14.8	310 000	29.0	400 000	20.0	480 000	20.8	580 000
Brazil	14 300 000	25.9	18 000 000	22.2	22 000 000	65.3	36 356 000	17.2	42 600 000
Cayman Islands	..	..	..	..	..	..	..	..	..
Chile	3 575 000	11.9	4 000 000	7.5	4 300 000	4.9	4 510 900	-7.9	4 155 600
Colombia	2 000 113	36.6	2 732 201	41.5	3 865 860	22.6	4 738 544	41.5	6 705 000
Costa Rica	815 745	10.3	900 000	11.1	1 000 000	10.0	1 100 000	10.4	1 214 400
Cuba	160 000	-38.8	98 000	53.1	150 000	26.7	190 000	26.3	240 000
Dominica	12 500	36.0	17 000	20.6	20 500	26.8	26 000	0.0	26 000
Dominican Republic	500 000	30.0	650 000	23.1	800 000	87.5	1 500 000	33.3	2 000 000
Ecuador	537 881	5.9	569 727	9.6	624 579	55.0	968 000	60.0	1 549 000
El Salvador	300 000	83.3	550 000	6.8	587 475	8.4	637 050	..	..
Grenada	15 000	26.7	19 000	..	..	..	..	..	..
Guatemala	400 000	37.5	550 000	38.2	760 000	31.6	1 000 000	32.0	1 320 000
Guyana	125 000	12.0	140 000	3.6	145 000	10.3	160 000	..	..
Haiti	80 000	87.5	150 000	233.3	500 000	20.0	600 000	8.3	650 000
Honduras	168 560	10.1	185 510	21.3	225 000	15.6	260 000	29.7	337 300
Jamaica	600 000	33.3	800 000	33.4	1 067 000	15.5	1 232 300	..	..
Mexico	10 764 715	13.5	12 218 830	14.9	14 036 475	32.7	18 622 509	18.1	22 000 000
Netherlands Antilles	..	..	..	..	..	..	..	..	..
Nicaragua	90 000	11.1	100 000	25.0	125 000	12.0	140 000	10.7	155 000
Panama	144 963	19.4	173 085	13.6	196 548	4.9	206 178	6.7	220 000
Paraguay	100 000	20.0	120 000	66.7	200 000	0.0	200 000	30.0	260 000
Peru	2 400 000	18.8	2 850 000	13.0	3 220 000	42.9	4 600 000	32.6	6 100 000
Saint Kitts and Nevis	10 000	..	..	..	..	..	..	..	..
Saint Lucia	..	..	34 000	61.8	55 000	..	..	..	..
Saint Vincent and the Grenadines	6 000	16.7	7 000	14.3	8 000	25.0	10 000	..	..
Suriname	20 000	15.0	23 000	30.4	30 000	6.7	32 000	..	..

Table 1.14 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Trinidad and Tobago	138 000	10.9	153 000	4.6	160 000	1.9	163 000	..	..
Uruguay	380 000	39.5	530 000	7.0	567 175	17.8	668 000	13.2	756 000
Venezuela	1 244 000	55.5	1 935 000	14.1	2 207 000	50.1	3 313 000	25.0	4 139 800
Virgin Islands (United States)	30 000	0.0	30 000	0.0	30 000	0.0	30 000	..	..
OCEANIA									
American Samoa	..	..	..	..	..	..	..	..	..
Fiji	50 000	10.0	55 000	10.9	61 000	6.6	65 000	23.1	80 000
French Polynesia	20 000	75.0	35 000	28.6	45 000	22.2	55 000	18.2	65 000
Kiribati	2 000	0.0	2 000	0.0	2 000	0.0	2 000	..	..
Marshall Islands	1 250	12.0	1 400	42.9	2 000	10.0	2 200	..	..
Micronesia (Fed. States of)	6 000	66.7	10 000	20.0	12 000	16.7	14 000	14.3	16 000
Nauru	..	..	..	..	..	..	..	..	..
New Caledonia	50 000	20.0	60 000	16.7	70 000	8.6	76 000	5.3	80 000
Northern Mariana Islands	..	..	..	..	..	..	..	..	..
Palau	4 000	..	..	..	..	..	..	..	..
Papua New Guinea	75 000	6.7	80 000	12.5	90 000	16.7	105 000	4.8	110 000
Samoa	4 000	25.0	5 000	10.0	5 500	9.1	6 000	33.3	8 000
Solomon Islands	2 200	13.6	2 500	20.0	3 000	33.3	4 000	100.0	8 000
Tonga	2 900	3.4	3 000	0.0	3 000	0.0	3 000	3.3	3 100
Tuvalu	1 250	44.0	1 800	66.7	3 000	..	..	..	..
Vanuatu	7 000	7.1	7 500	0.0	7 500	0.0	7 500	..	..
TRANSITION ECONOMIES									
Albania	12 000	150.0	30 000	150.0	75 000	150.7	188 000	150.6	471 200
Armenia	60 000	133.3	140 000	7.1	150 000	7.3	161 000	7.3	172 800
Azerbaijan	300 000	16.7	350 000	16.6	408 000	66.4	678 800	22.1	829 100
Belarus	808 481	72.2	1 391 903	76.8	2 461 093	37.9	3 394 421	61.4	5 477 500
Bosnia and Herzegovina	100 000	50.0	150 000	50.0	225 000	258.4	806 421	17.8	950 000
Bulgaria	630 000	..	..	..	1 234 000	29.0	1 591 705	17.5	1 870 000
Croatia	789 000	28.5	1 014 000	30.9	1 327 700	9.3	1 451 100	8.6	1 576 400
Georgia	73 500	59.2	117 020	50.1	175 600	54.6	271 400	22.3	332 000
Kazakhstan	250 000	20.0	300 000	33.3	400 000	52.3	609 200	104.7	1 247 000
Kyrgyzstan	152 000	31.6	200 000	31.5	263 000	6.5	280 000	6.5	298 100
Moldova	150 000	92.0	288 000	41.0	406 000	35.5	550 000	32.3	727 700
Montenegro	..	..	..	..	..	..	..	..	266 000
Romania	2 200 000	81.8	4 000 000	12.5	4 500 000	6.1	4 773 000	6.1	5 062 500
Russian Federation	6 000 000	100.0	12 000 000	54.2	18 500 000	17.8	21 800 000	17.8	25 688 600
Serbia	640 000	32.3	847 000	..	..	..	..	..	1 400 000
Tajikistan	3 500	17.7	4 120	21.4	5 000	290.0	19 500	..	..
TFYR Macedonia	100 000	26.0	126 000	26.2	159 000	0.6	159 889	67.6	268 000
Turkmenistan	..	..	20 000	80.0	36 000	34.2	48 300	34.2	64 800
Ukraine	900 000	177.8	2 500 000	50.0	3 750 000	21.6	4 560 000	21.6	5 545 000
Uzbekistan	275 000	78.9	492 000	78.9	880 000	..	..	..	1 700 000

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

^a Singapore: Data from the IDA Household Survey. From 2003–2004 data refer to internet users out of the total population, and from 2005–2006 to Internet users out of the resident population (Singapore Citizens and Permanent residents only) aged 15+.

Table 1.15

Internet penetration: economies by level of development and by region

Internet users per 100 inhabitants

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPED ECONOMIES									
ASIA									
Israel	16.9	10.2	18.7	16.8	21.8	12.0	24.4	8.7	26.6
Japan	46.5	3.9	48.3	28.9	62.2	7.2	66.8	2.6	68.5
EUROPE									
Andorra	10.4	33.3	13.9	3.0	14.3	95.0	27.9	2.3	28.6
Austria	41.2	11.1	45.8	3.7	47.5	1.5	48.2	4.9	50.6
Belgium	32.8	17.2	38.5	4.5	40.2	14.2	45.9	..	..
Cyprus	26.6	17.6	31.3	16.3	36.3	7.3	39.0	7.0	41.7
Czech Republic	25.5	-7.9	23.5	7.5	25.2	7.0	27.0	27.6	34.4
Denmark (incl. Faroe Islands)	44.6	3.3	46.0	9.7	50.5	4.3	52.7	10.6	58.3
Estonia	32.6	35.7	44.2	12.1	49.6	3.3	51.2	10.4	56.5
Finland	48.5	1.0	49.0	4.7	51.3	3.9	53.3	4.3	55.6
France (incl. Guadeloupe, French Guiana, Martinique and Réunion)	30.8	20.1	36.9	8.3	40.0	10.1	44.0	12.6	49.6
Germany	33.9	17.9	40.0	6.7	42.7	6.3	45.4	2.9	46.7
Greece	13.5	11.3	15.0	17.5	17.6	2.2	18.0	2.2	18.4
Guernsey	50.0	10.0	55.0	9.1	60.0	..	..	..	..
Hungary	15.8	50.3	23.7	12.7	26.7	11.1	29.7	17.0	34.8
Iceland	51.7	10.7	57.2	1.1	57.9	9.1	63.1	2.5	64.7
Ireland	28.0	12.9	31.7	-6.3	29.7	13.8	33.7	1.2	34.1
Italy	35.1	12.7	39.5	18.5	46.8	2.9	48.2	3.0	49.6
Jersey	..	..	22.8	34.8	30.8	..	..	..	..
Latvia	13.3	81.4	24.1	46.5	35.4	26.1	44.6	4.4	46.6
Liechtenstein	62.5	-3.0	60.6	6.8	64.7	-2.9	62.9	0.0	62.9
Lithuania	14.4	40.3	20.2	10.2	22.2	15.8	25.7	23.0	31.7
Luxembourg	36.7	3.0	37.8	55.8	58.9	16.3	68.5	5.3	72.1
Malta	20.8	18.8	24.7	15.7	28.6	13.6	32.5	..	..
Monaco	47.8	2.6	49.1	5.6	51.8	5.2	54.5	11.1	60.6
Netherlands	50.6	3.1	52.2	18.1	61.6	20.1	74.0	20.1	88.8
Norway	30.7	12.5	34.6	12.7	39.0	88.9	73.6	19.3	87.8
Poland	23.2	1.1	23.5	.4	23.6	11.2	26.2	10.1	28.9
Portugal	21.8	17.3	25.5	-4.2	24.5	14.5	28.0	8.8	30.5
San Marino	51.2	-0.8	50.8	1.8	51.7	-3.3	50.0	-0.6	49.7
Slovakia	16.0	59.4	25.6	20.0	30.7	15.3	35.4	18.3	41.8
Slovenia	37.6	6.6	40.1	18.7	47.6	14.4	54.4	13.2	61.6
Spain	19.1	20.0	22.9	44.7	33.2	1.9	33.8	21.8	41.2
Sweden	57.3	9.8	63.0	19.8	75.5	1.0	76.2	1.0	77.0
Switzerland	41.2	12.1	46.2	2.1	47.2	5.1	49.6	17.5	58.3
United Kingdom (incl. Gibraltar)	42.3	3.4	43.7	7.4	47.0	1.7	47.8	17.2	56.0
NORTH AMERICA									
Bermuda	..	..	58.1	6.6	61.9	6.0	65.6	..	..
Canada	48.3	14.7	55.4	12.5	62.3	8.9	67.9	..	..

Table 1.15 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Greenland	44.3	23.6	54.8	22.1	66.9	-0.4	66.7	..	..
United States (incl. Puerto Rico and Guam)	54.7	0.7	55.1	13.3	62.5	5.3	65.7	4.2	68.5
OCEANIA									
Australia	53.5	6.3	56.8	14.9	65.3	7.8	70.4	6.7	75.1
New Zealand	48.4	10.3	53.4	10.3	58.9	16.0	68.3	15.3	78.8
DEVELOPING ECONOMIES									
AFRICA									
Algeria	1.6	28.0	2.0	127.1	4.6	25.9	5.8	26.4	7.4
Angola	0.3	-2.9	0.3	86.6	0.5	2.5	0.5	..	..
Benin	0.7	35.4	1.0	38.3	1.4	311.4	5.7	42.0	8.0
Botswana	3.4	-1.7	3.4	-0.6	3.3	-2.0	3.3	..	..
Burkina Faso	0.2	87.3	0.4	1.5	0.4	22.9	0.5	20.2	0.6
Burundi	0.1	70.6	0.2	82.1	0.4	49.8	0.5	44.6	0.8
Cameroon	0.4	62.3	0.6	69.6	1.0	46.9	1.5	45.5	2.2
Cape Verde	3.6	22.3	4.3	22.3	5.3	-2.1	5.2	7.1	5.6
Central African Republic	0.1	14.8	0.1	58.8	0.2	18.3	0.3	16.7	0.3
Chad	0.2	94.8	0.4	6.5	0.4	3.7	0.4	45.8	0.6
Comoros	0.4	..	0.6	58.0	1.0	146.9	2.5	2.4	2.6
Congo	0.2	182.9	0.4	119.9	0.9	32.6	1.3	35.9	1.7
Côte d'Ivoire	0.5	54.2	0.8	12.5	0.9	16.4	1.1	47.6	1.6
Democratic Republic of the Congo	0.1	45.8	0.1	45.6	0.2	21.3	0.2	24.2	0.3
Djibouti	0.6	40.6	0.9	34.0	1.2	7.1	1.2	6.2	1.3
Egypt	2.8	54.8	4.4	27.5	5.6	25.8	7.0	13.5	8.0
Equatorial Guinea	0.4	63.1	0.6	63.2	1.1	37.1	1.4	9.1	1.6
Eritrea	0.2	63.1	0.2	63.2	1.2	34.3	1.6	37.8	2.2
Ethiopia	0.1	45.7	0.1	44.3	0.2	35.7	0.2	..	..
Gabon	1.9	35.8	2.6	13.4	3.0	63.9	4.9	18.3	5.7
Gambia	1.9	36.9	2.6	30.4	3.4	13.7	3.8	..	..
Ghana	0.8	43.2	1.2	46.5	1.7	5.5	1.8	48.9	2.7
Guinea	0.5	13.0	0.5	14.3	0.6	6.0	0.6	-16.7	0.5
Guinea-Bissau	1.1	13.0	1.5	33.7	2.0	16.6	2.3	-1.9	2.3
Kenya	1.3	148.3	3.2	2.0	3.2	0.9	3.2	143.3	7.9
Lesotho	1.1	42.1	1.6	40.4	2.2	17.3	2.6	..	..
Liberia	..	..	..	..	..	..	..	..	..
Libyan Arab Jamahiriya	2.2	28.7	2.9	25.2	3.6	9.5	4.0	..	..
Madagascar	0.3	24.6	0.4	24.3	0.5	8.1	0.5	7.2	0.6
Malawi	0.3	32.7	0.3	9.0	0.4	9.0	0.4	11.2	0.5
Mali	0.2	37.0	0.3	39.8	0.5	17.5	0.5	-5.0	0.5
Mauritania	0.4	16.9	0.4	7.7	0.5	38.7	0.7	385.8	3.2
Mauritius	10.3	19.0	12.3	19.0	14.6	-1.6	14.4	0.3	14.4
Mayotte	..	..	..	..	..	..	..	..	..
Morocco	2.4	40.9	3.4	245.3	11.7	29.6	15.2	30.8	19.9
Mozambique	0.3	62.1	0.4	62.3	0.7	23.6	0.9	..	..
Namibia	2.7	27.3	3.4	10.2	3.7	6.4	4.0	..	..

Table 1.15 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Niger	0.1	21.1	0.2	25.0	0.2	7.5	0.2	33.4	0.3
Nigeria	0.3	73.9	0.6	128.9	1.4	173.1	3.8	56.6	6.0
Rwanda	0.3	20.6	0.4	21.4	0.4	23.4	0.6	27.3	0.7
Sao Tome and Principe	7.6	33.6	10.2	30.7	13.3	12.7	15.0	..	..
Senegal	1.0	108.5	2.2	114.6	4.7	-0.6	4.6	17.5	5.4
Seychelles	14.1	1.0	14.3	64.7	23.5	3.8	24.4	36.5	33.3
Sierra Leone	0.2	7.4	0.2	6.5	0.2	..	0.2	..	..
Somalia	1.2	1.3	1.2	-3.1	1.1	-3.3	1.1	1.1	1.1
South Africa	6.7	6.4	7.1	6.6	7.6	42.4	10.8	..	..
Sudan	0.9	208.3	2.8	17.4	3.3	141.6	8.0	18.5	9.5
Swaziland	1.9	33.7	2.6	28.4	3.3	10.9	3.7	..	..
Togo	3.7	1.3	3.8	-0.1	3.7	28.4	4.8	1.1	4.9
Tunisia	5.2	23.4	6.4	31.2	8.4	13.0	9.5	34.2	12.7
Uganda	0.4	20.8	0.5	54.5	0.7	141.3	1.7	44.8	2.5
United Republic of Tanzania	0.2	206.4	0.7	30.7	0.9	13.3	1.0	..	..
Zambia	0.5	106.3	1.0	106.5	2.0	45.0	2.9	..	..
Zimbabwe	4.3	58.2	6.8	1.4	6.9	10.5	7.6	19.9	9.1
ASIA									
Afghanistan	0.0	1803.0	0.1	19.1	0.1	1048.2	1.0	71.3	1.7
Bahrain	17.5	20.4	21.1	0.4	21.2	0.1	21.2	0.1	21.3
Bangladesh	0.2	16.9	0.2	21.2	0.2	21.1	0.3	19.4	0.3
Bhutan	1.8	..	2.5	25.2	3.1	18.4	3.7	18.0	4.4
Brunei Darussalam	..	..	13.7	13.4	15.6	12.9	17.6	148.1	43.6
Cambodia	0.2	14.0	0.3	14.6	0.3	4.6	0.3	..	..
China	4.6	33.7	6.1	17.5	7.2	17.4	8.4	23.0	10.4
Dem. People's Republic of Korea	..	..	..	..	..	..	..	..	..
Hong Kong (China)	43.0	9.7	47.2	6.6	50.3	-0.6	50.0	4.7	52.3
India	1.6	9.8	1.7	86.5	3.2	68.9	5.4	..	..
Indonesia	2.1	77.1	3.8	34.2	5.0	42.4	7.2	..	..
Iran (Islamic Republic of)	4.8	49.3	7.2	11.8	8.1	24.7	10.1	150.7	25.3
Iraq	0.1	16.7	0.1	15.6	0.1	..	..	..	..
Jordan	5.8	40.2	8.1	38.5	11.2	12.5	12.6	8.1	13.6
Kuwait	10.6	115.8	22.9	2.9	23.5	10.6	26.0	13.3	29.5
Lao PDR	0.3	23.3	0.3	7.9	0.4	17.0	0.4	..	..
Lebanon	11.7	22.1	14.3	18.3	16.9	15.7	19.6	34.6	26.3
Macao (China)	26.1	2.0	26.7	20.9	32.2	7.6	34.7	10.8	38.4
Malaysia	32.0	7.9	34.5	11.9	38.6	11.2	42.9	1.9	43.8
Maldives	5.4	9.4	5.9	8.0	6.3	4.7	6.6	..	..
Mongolia	2.1	182.1	5.8	31.0	7.6	33.1	10.1	..	..
Myanmar	0.0	5635.5	0.0	-0.4	0.0	163.8	0.1	..	..
Nepal	0.3	22.5	0.4	14.8	0.5	-14.5	0.4	117.3	0.9
Oman	7.2	15.7	8.4	15.7	9.7	14.5	11.1	10.3	12.2
Pakistan	0.7	684.5	5.3	22.6	6.6	4.0	6.8	12.1	7.6
Palestine	3.0	32.0	4.0	8.5	4.3	51.1	6.6	..	..
Philippines	4.4	12.1	4.9	7.9	5.3	2.9	5.5	..	..

Table 1.15 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Qatar	10.4	89.8	19.8	12.5	22.3	25.9	28.1	22.9	34.5
Republic of Korea	55.2	10.7	61.1	7.6	65.7	4.1	68.4	3.0	70.4
Saudi Arabia	6.3	2.9	6.4	3.0	6.6	84.4	12.2	52.8	18.7
Singapore ^a	50.5	1.4	51.2	13.2	57.9	-31.3	39.8	-1.5	39.2
Sri Lanka	1.1	23.1	1.3	10.8	1.4	17.3	1.7	21.3	2.0
Syrian Arab Republic	2.1	63.1	3.5	26.3	4.4	31.6	5.8	33.1	7.7
Taiwan Province of China	47.6	9.1	51.9	3.6	53.8	7.8	58.0	..	..
Thailand	7.7	24.5	9.6	14.6	10.9	0.8	11.0	18.5	13.1
Turkey	6.1	37.6	8.4	68.0	14.2	8.2	15.3	8.2	16.6
United Arab Emirates	31.3	-12.3	27.5	5.3	28.9	7.3	31.0	18.1	36.7
Viet Nam	1.9	103.7	3.8	102.1	7.6	66.6	12.7	35.3	17.2
Yemen	0.5	16.1	0.6	45.8	0.9	21.0	1.1	18.7	1.2
LATIN AMERICA AND THE CARIBBEAN									
Antigua and Barbuda	12.5	36.6	17.1	41.1	24.1	43.3	34.5	9.0	37.6
Argentina	10.9	9.5	12.0	34.6	16.1	10.5	17.8	17.6	20.9
Aruba	24.0	-1.0	23.8	-1.0	23.5	-1.0	23.3	..	..
Bahamas	19.4	40.0	27.1	7.3	29.1	10.8	32.2	..	..
Barbados	10.5	231.0	34.7	49.0	51.7	5.9	54.8	..	..
Belize	..	..	..	..	6.2	56.5	9.6	26.1	12.1
Bolivia	3.1	12.5	3.5	26.6	4.4	17.8	5.2	18.6	6.2
Brazil	8.0	24.1	9.9	20.6	12.0	63.0	19.5	15.6	22.6
Cayman Islands	..	..	..	..	..	..	..	..	..
Chile	23.8	10.6	26.3	6.2	27.9	3.7	28.9	-12.8	25.2
Colombia	4.6	35.1	6.2	36.7	8.5	21.8	10.4	39.4	14.5
Costa Rica	20.3	6.4	21.6	9.0	23.5	8.0	25.4	8.6	27.6
Cuba	1.4	-38.9	0.9	52.9	1.3	26.3	1.7	26.1	2.1
Dominica	18.4	36.0	25.0	20.6	30.1	26.8	38.2	1.5	38.8
Dominican Republic	5.8	28.2	7.5	21.5	9.1	85.0	16.8	31.7	22.2
Ecuador	4.1	5.1	4.3	8.9	4.7	54.5	7.3	57.8	11.5
El Salvador	4.6	78.4	8.3	7.3	8.9	4.2	9.3	..	..
Grenada	14.7	25.4	18.4	..	..	..	..	..	..
Guatemala	3.3	33.9	4.5	34.5	6.0	32.2	7.9	28.8	10.2
Guyana	17.0	11.8	19.0	3.4	19.6	10.2	21.7	..	..
Haiti	1.0	96.2	1.9	222.0	6.1	15.5	7.0	6.8	7.5
Honduras	2.5	7.1	2.7	17.8	3.2	12.3	3.6	26.9	4.6
Jamaica	22.9	32.3	30.3	31.4	39.8	16.8	46.5	..	..
Mexico	10.7	11.9	12.0	11.8	13.4	30.1	17.4	16.7	20.3
Netherlands Antilles	..	..	..	..	..	..	..	..	..
Nicaragua	1.7	9.2	1.9	22.7	2.3	10.7	2.6	7.9	2.8
Panama	4.8	15.2	5.5	11.8	6.2	3.0	6.4	4.8	6.7
Paraguay	1.7	17.0	2.0	64.2	3.3	-2.3	3.2	27.1	4.1
Peru	9.0	15.8	10.4	11.6	11.6	41.7	16.4	30.7	21.5
Saint Kitts and Nevis	21.7	..	..	..	..	..	..	..	..
Saint Lucia	..	..	21.7	59.7	34.6	..	..	..	..
Saint Vincent and the Grenadines	5.2	15.7	6.0	13.3	6.8	23.9	8.4	..	..

Table 1.15 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Suriname	4.5	14.0	5.2	29.3	6.7	5.7	7.1	..	..
Trinidad and Tobago	10.6	10.4	11.7	4.2	12.1	1.3	12.3	..	..
Uruguay	11.8	39.0	16.4	6.7	17.5	17.4	20.6	5.4	21.7
Venezuela	4.9	52.6	7.5	11.9	8.4	46.9	12.4	22.8	15.2
Virgin Islands (United States)	28.3	-0.9	28.0	-1.5	27.6	-1.3	27.3	..	..
OCEANIA									
American Samoa	..	..	..	..	..	..	..	..	..
Fiji	6.2	8.9	6.8	9.8	7.4	5.5	7.9	21.5	9.5
French Polynesia	8.3	71.4	14.3	26.0	18.0	19.4	21.5	16.5	25.0
Kiribati	2.3	-2.3	2.3	-2.2	2.2	-2.2	2.2	..	..
Marshall Islands	2.4	9.9	2.6	37.7	3.6	6.1	3.9	..	..
Micronesia (Fed. States of)	5.6	0 65.1	9.3	18.9	11.0	15.6	12.7	13.3	14.4
Nauru	..	..	..	..	..	..	..	..	..
New Caledonia	22.4	17.7	26.3	14.5	30.1	6.6	32.1	3.6	33.3
Northern Mariana Islands	..	..	..	..	..	..	..	..	..
Palau	..	..	..	..	..	..	..	..	..
Papua New Guinea	1.4	3.3	1.4	8.6	1.5	15.7	1.8	2.8	1.8
Samoa	2.2	23.6	2.8	8.8	3.0	7.9	3.3	31.2	4.3
Solomon Islands	0.5	11.1	0.6	17.4	0.6	30.5	0.8	90.3	1.6
Tonga	3.0	3.2	3.0	-0.2	3.0	-0.4	3.0	2.3	3.1
Tuvalu	..	..	..	..	..	..	..	..	..
Vanuatu	3.5	4.5	3.7	-2.4	3.6	-2.3	3.5	..	..
TRANSITION ECONOMIES									
Albania	0.4	150.8	1.0	140.6	2.4	155.5	6.0	149.0	15.0
Armenia	2.0	134.1	4.6	7.5	5.0	7.7	5.3	7.7	5.7
Azerbaijan	3.6	16.0	4.2	15.9	4.9	65.2	8.1	21.3	9.8
Belarus	8.2	73.0	14.1	77.9	25.1	38.6	34.8	62.4	56.5
Bosnia and Herzegovina	2.6	49.6	3.9	48.4	5.8	254.7	20.6	17.8	24.3
Bulgaria	8.0	..	..	..	15.9	29.5	20.6	18.4	24.4
Croatia	18.1	28.5	23.2	29.5	30.0	6.2	31.9	8.4	34.6
Georgia	1.6	61.0	2.6	51.4	3.9	56.3	6.1	23.4	7.5
Kazakhstan	1.7	20.2	2.0	33.5	2.7	52.5	4.1	104.8	8.4
Kyrgyzstan	3.0	30.8	4.0	30.2	5.2	3.0	5.3	5.3	5.6
Moldova	3.5	92.9	6.8	40.0	9.5	37.4	13.1	32.3	17.3
Montenegro	..	..	..	..	..	..	..	..	..
Romania	10.1	82.7	18.5	12.6	20.8	6.4	22.1	6.0	23.4
Russian Federation	4.1	101.0	8.3	54.9	12.9	17.8	15.1	19.0	18.0
Serbia	8.5	32.3	11.3	..	..	..	..	..	13.8
Tajikistan	0.1	14.8	0.1	26.0	0.1	277.4	0.3	..	..
TFYR Macedonia	5.0	25.4	6.2	26.2	7.8	0.6	7.9	66.8	13.1
Turkmenistan	..	..	0.4	77.4	0.7	37.2	1.0	32.2	1.3
Ukraine	1.9	180.9	5.3	50.6	7.9	22.6	9.7	22.3	11.9
Uzbekistan	1.1	76.7	1.9	73.0	3.3	..	..	..	6.3

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

^a Singapore: Data from the IDA Household Survey. From 2003-2004 data refer to internet users out of the total population, and from 2005-2006 to Internet users out of the resident population (Singapore Citizens and Permanent residents only) aged 15+.

Table 1.16
Economies ranked by 2006 Internet penetration

Internet users per 100 inhabitants

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
1	Netherlands	50.6	3.1	52.2	18.1	61.6	20.1	74.0	20.1	88.8
2	Norway	30.7	12.5	34.6	12.7	39.0	88.9	73.6	19.3	87.8
3	New Zealand	48.4	10.3	53.4	10.3	58.9	16.0	68.3	15.3	78.8
4	Sweden	57.3	9.8	63.0	19.8	75.5	1.0	76.2	1.0	77.0
5	Australia	53.5	6.3	56.8	14.9	65.3	7.8	70.4	6.7	75.1
6	Luxembourg	36.7	3.0	37.8	55.8	58.9	16.3	68.5	5.3	72.1
7	Republic of Korea	55.2	10.7	61.1	7.6	65.7	4.1	68.4	3.0	70.4
8	Japan	46.5	3.9	48.3	28.9	62.2	7.2	66.8	2.6	68.5
9	United States (incl. Puerto Rico and Guam)	54.7	0.7	55.1	13.3	62.5	5.3	65.7	4.2	68.5
10	Canada	48.3	14.7	55.4	12.5	62.3	8.9	67.9	-0.5	67.5
11	Greenland	44.3	23.6	54.8	22.1	66.9	-0.4	66.7	-1.7	65.5
12	Iceland	51.7	10.7	57.2	1.1	57.9	9.1	63.1	2.5	64.7
13	Bermuda	..	..	58.1	6.6	61.9	6.0	65.6	-1.5	64.6
14	Liechtenstein	62.5	-3.0	60.6	6.8	64.7	-2.9	62.9	0.0	62.9
15	Slovenia	37.6	6.6	40.1	18.7	47.6	14.4	54.4	13.2	61.6
16	Monaco	47.8	2.6	49.1	5.6	51.8	5.2	54.5	11.1	60.6
17	Guernsey	50.0	10.0	55.0	9.1	60.0	0.0	60.0	0.0	60.0
18	Denmark (incl. Faroe Islands)	44.6	3.3	46.0	9.7	50.5	4.3	52.7	10.6	58.3
19	Switzerland	41.2	12.1	46.2	2.1	47.2	5.1	49.6	17.5	58.3
20	Taiwan Province of China	47.6	9.1	51.9	3.6	53.8	7.8	58.0	-0.1	57.9
21	Estonia	32.6	35.7	44.2	12.1	49.6	3.3	51.2	10.4	56.5
22	Belarus	8.2	73.0	14.1	77.9	25.1	38.6	34.8	62.4	56.5
23	United Kingdom (incl. Gibraltar)	42.3	3.4	43.7	7.4	47.0	1.7	47.8	17.2	56.0
24	Finland	48.5	1.0	49.0	4.7	51.3	3.9	53.3	4.3	55.6
25	Barbados	10.5	231.0	34.7	49.0	51.7	5.9	54.8	-0.7	54.4
26	Hong Kong (China)	43.0	9.7	47.2	6.6	50.3	-0.6	50.0	4.7	52.3
27	Austria	41.2	11.1	45.8	3.7	47.5	1.5	48.2	4.9	50.6
28	San Marino	51.2	-0.8	50.8	1.8	51.7	-3.3	50.0	-6	49.7
29	Italy	35.1	12.7	39.5	18.5	46.8	2.9	48.2	3.0	49.6
30	France (incl. Guadeloupe, French Guiana, Martinique and Réunion)	30.8	20.1	36.9	8.3	40.0	10.1	44.0	12.6	49.6
31	Germany	33.9	17.9	40.0	6.7	42.7	6.3	45.4	2.9	46.7
32	Latvia	13.3	81.4	24.1	46.5	35.4	26.1	44.6	4.4	46.6
33	Jamaica	22.9	32.3	30.3	31.4	39.8	16.8	46.5	-0.4	46.3
34	Belgium	32.8	17.2	38.5	4.5	40.2	14.2	45.9	-2	45.8
35	Malaysia	32.0	7.9	34.5	11.9	38.6	11.2	42.9	1.9	43.8
36	Brunei Darussalam	..	..	13.7	13.4	15.6	12.9	17.6	148.1	43.6
37	Slovakia	16.0	59.4	25.6	20.0	30.7	15.3	35.4	18.3	41.8
38	Cyprus	26.6	17.6	31.3	16.3	36.3	7.3	39.0	7.0	41.7
39	Spain	19.1	20.0	22.9	44.7	33.2	1.9	33.8	21.8	41.2
40	Singapore ^a	50.5	1.4	51.2	13.2	57.9	-31.3	39.8	-1.5	39.2
41	Dominica	18.4	36.0	25.0	20.6	30.1	26.8	38.2	1.5	38.8
42	Macao (China)	26.1	2.0	26.7	20.9	32.2	7.6	34.7	10.8	38.4

Table 1.16 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
43	Antigua and Barbuda	12.5	36.6	17.1	41.1	24.1	43.3	34.5	9.0	37.6
44	United Arab Emirates	31.3	-12.3	27.5	5.3	28.9	7.3	31.0	18.1	36.7
45	Hungary	15.8	50.3	23.7	12.7	26.7	11.1	29.7	17.0	34.8
46	Croatia	18.1	28.5	23.2	29.5	30.0	6.2	31.9	8.4	34.6
47	Qatar	10.4	89.8	19.8	12.5	22.3	25.9	28.1	22.9	34.5
48	Czech Republic	25.5	-7.9	23.5	7.5	25.2	7.0	27.0	27.6	34.4
49	Ireland	28.0	12.9	31.7	-6.3	29.7	13.8	33.7	1.2	34.1
50	Seychelles	14.1	1.0	14.3	64.7	23.5	3.8	24.4	36.5	33.3
51	Saint Lucia	..	..	21.7	59.7	34.6	-1.2	34.2	-2.4	33.3
52	New Caledonia	22.4	17.7	26.3	14.5	30.1	6.6	32.1	3.6	33.3
53	Lithuania	14.4	40.3	20.2	10.2	22.2	15.8	25.7	23.0	31.7
54	Malta	20.8	18.8	24.7	15.7	28.6	13.6	32.5	-3.7	31.3
55	Bahamas	19.4	40.0	27.1	7.3	29.1	10.8	32.2	-3.0	31.2
56	Jersey	..	..	22.8	34.8	30.8	-0.6	30.6	0.0	30.6
57	Portugal	21.8	17.3	25.5	-4.2	24.5	14.5	28.0	8.8	30.5
58	Kuwait	10.6	115.8	22.9	2.9	23.5	10.6	26.0	13.3	29.5
59	Poland	23.2	1.1	23.5	.4	23.6	11.2	26.2	10.1	28.9
60	Andorra	10.4	33.3	13.9	3.0	14.3	95.0	27.9	2.3	28.6
61	Costa Rica	20.3	6.4	21.6	9.0	23.5	8.0	25.4	8.6	27.6
62	Virgin Islands (United States)	28.3	-0.9	28.0	-1.5	27.6	-1.3	27.3	-0.9	27.0
63	Israel	16.9	10.2	18.7	16.8	21.8	12.0	24.4	8.7	26.6
64	Lebanon	11.7	22.1	14.3	18.3	16.9	15.7	19.6	34.6	26.3
65	Iran (Islamic Republic of)	4.8	49.3	7.2	11.8	8.1	24.7	10.1	150.7	25.3
66	Chile	23.8	10.6	26.3	6.2	27.9	3.7	28.9	-12.8	25.2
67	French Polynesia	8.3	71.4	14.3	26.0	18.0	19.4	21.5	16.5	25.0
68	Bulgaria	8.0	..	..	..	15.9	29.5	20.6	18.4	24.4
69	Bosnia and Herzegovina	2.6	49.6	3.9	48.4	5.8	254.7	20.6	17.8	24.3
70	Romania	10.1	82.7	18.5	12.6	20.8	6.4	22.1	6.0	23.4
71	Aruba	24.0	-1.0	23.8	-1.0	23.5	-1.0	23.3	-1.0	23.1
72	Brazil	8.0	24.1	9.9	20.6	12.0	63.0	19.5	15.6	22.6
73	Dominican Republic	5.8	28.2	7.5	21.5	9.1	85.0	16.8	31.7	22.2
74	Guyana	17.0	11.8	19.0	3.4	19.6	10.2	21.7	0.1	21.7
75	Uruguay	11.8	39.0	16.4	6.7	17.5	17.4	20.6	5.4	21.7
76	Peru	9.0	15.8	10.4	11.6	11.6	41.7	16.4	30.7	21.5
77	Bahrain	17.5	20.4	21.1	0.4	21.2	0.1	21.2	0.1	21.3
78	Argentina	10.9	9.5	12.0	34.6	16.1	10.5	17.8	17.6	20.9
79	Mexico	10.7	11.9	12.0	11.8	13.4	30.1	17.4	16.7	20.3
80	Morocco	2.4	40.9	3.4	245.3	11.7	29.6	15.2	30.8	19.9
81	Saudi Arabia	6.3	2.9	6.4	3.0	6.6	84.4	12.2	52.8	18.7
82	Greece	13.5	11.3	15.0	17.5	17.6	2.2	18.0	2.2	18.4
83	Russian Federation	4.1	101.0	8.3	54.9	12.9	17.8	15.1	19.0	18.0
84	Moldova	3.5	92.9	6.8	40.0	9.5	37.4	13.1	32.3	17.3
85	Viet Nam	1.9	103.7	3.8	102.1	7.6	66.6	12.7	35.3	17.2
86	Turkey	6.1	37.6	8.4	68.0	14.2	8.2	15.3	8.2	16.6
87	Venezuela	4.9	52.6	7.5	11.9	8.4	46.9	12.4	22.8	15.2
88	Albania	0.4	150.8	1.0	140.6	2.4	155.5	6.0	149.0	15.0

Table 1.16 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
89	Sao Tome and Principe	7.6	33.6	10.2	30.7	13.3	12.7	15.0	-3.2	14.6
90	Colombia	4.6	35.1	6.2	36.7	8.5	21.8	10.4	39.4	14.5
91	Mauritius	10.3	19.0	12.3	19.0	14.6	-1.6	14.4	0.3	14.4
92	Micronesia (Fed. States of)	5.6	0 65.1	9.3	18.9	11.0	15.6	12.7	13.3	14.4
93	Serbia	8.5	32.3	11.3	..	..	..	..	..	13.8
94	Jordan	5.8	40.2	8.1	38.5	11.2	12.5	12.6	8.1	13.6
95	TFYR Macedonia	5.0	25.4	6.2	26.2	7.8	0.6	7.9	66.8	13.1
96	Thailand	7.7	24.5	9.6	14.6	10.9	0.8	11.0	18.5	13.1
97	Tunisia	5.2	23.4	6.4	31.2	8.4	13.0	9.5	34.2	12.7
98	Oman	7.2	15.7	8.4	15.7	9.7	14.5	11.1	10.3	12.2
99	Trinidad and Tobago	10.6	10.4	11.7	4.2	12.1	1.3	12.3	-0.7	12.2
100	Belize	..	..	..	..	6.2	56.5	9.6	26.1	12.1
101	Ukraine	1.9	180.9	5.3	50.6	7.9	22.6	9.7	22.3	11.9
102	Ecuador	4.1	5.1	4.3	8.9	4.7	54.5	7.3	57.8	11.5
103	South Africa	6.7	6.4	7.1	6.6	7.6	42.4	10.8	-0.3	10.7
104	China	4.6	33.7	6.1	17.5	7.2	17.4	8.4	23.0	10.4
105	Guatemala	3.3	33.9	4.5	34.5	6.0	32.2	7.9	28.8	10.2
106	Mongolia	2.1	182.1	5.8	31.0	7.6	33.1	10.1	-1.1	10.0
107	Azerbaijan	3.6	16.0	4.2	15.9	4.9	65.2	8.1	21.3	9.8
108	Fiji	6.2	8.9	6.8	9.8	7.4	5.5	7.9	21.5	9.5
109	Sudan	0.9	208.3	2.8	17.4	3.3	141.6	8.0	18.5	9.5
110	Zimbabwe	4.3	58.2	6.8	1.4	6.9	10.5	7.6	19.9	9.1
111	El Salvador	4.6	78.4	8.3	7.3	8.9	4.2	9.3	-1.7	9.1
112	Kazakhstan	1.7	20.2	2.0	33.5	2.7	52.5	4.1	104.8	8.4
113	Saint Vincent and the Grenadines	5.2	15.7	6.0	13.3	6.8	23.9	8.4	-0.8	8.3
114	Benin	0.7	35.4	1.0	38.3	1.4	311.4	5.7	42.0	8.0
115	Egypt	2.8	54.8	4.4	27.5	5.6	25.8	7.0	13.5	8.0
116	Kenya	1.3	148.3	3.2	2.0	3.2	0.9	3.2	143.3	7.9
117	Syrian Arab Republic	2.1	63.1	3.5	26.3	4.4	31.6	5.8	33.1	7.7
118	Pakistan	0.7	684.5	5.3	22.6	6.6	4.0	6.8	12.1	7.6
119	Haiti	1.0	96.2	1.9	222.0	6.1	15.5	7.0	6.8	7.5
120	Georgia	1.6	61.0	2.6	51.4	3.9	56.3	6.1	23.4	7.5
121	Algeria	1.6	28.0	2.0	127.1	4.6	25.9	5.8	26.4	7.4
122	Indonesia	2.1	77.1	3.8	34.2	5.0	42.4	7.2	-1.2	7.1
123	Suriname	4.5	14.0	5.2	29.3	6.7	5.7	7.1	-1.3	7.0
124	Panama	4.8	15.2	5.5	11.8	6.2	3.0	6.4	4.8	6.7
125	Maldives	5.4	9.4	5.9	8.0	6.3	4.7	6.6	-1.0	6.6
126	Palestine	3.0	32.0	4.0	8.5	4.3	51.1	6.6	0.0	6.6
127	Uzbekistan	1.1	76.7	1.9	73.0	3.3	..	..	..	6.3
128	Bolivia	3.1	12.5	3.5	26.6	4.4	17.8	5.2	18.6	6.2
129	Nigeria	0.3	73.9	0.6	128.9	1.4	173.1	3.8	56.6	6.0
130	Gabon	1.9	35.8	2.6	13.4	3.0	63.9	4.9	18.3	5.7
131	Armenia	2.0	134.1	4.6	7.5	5.0	7.7	5.3	7.7	5.7
132	Kyrgyzstan	3.0	30.8	4.0	30.2	5.2	3.0	5.3	5.3	5.6
133	Cape Verde	3.6	22.3	4.3	22.3	5.3	-2.1	5.2	7.1	5.6
134	Philippines	4.4	12.1	4.9	7.9	5.3	2.9	5.5	-0.3	5.5

Table 1.16 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
135	Senegal	1.0	108.5	2.2	114.6	4.7	-0.6	4.6	17.5	5.4
136	India	1.6	9.8	1.7	86.5	3.2	68.9	5.4	-1.4	5.4
137	Togo	3.7	1.3	3.8	-0.1	3.7	28.4	4.8	1.1	4.9
138	Honduras	2.5	7.1	2.7	17.8	3.2	12.3	3.6	26.9	4.6
139	Bhutan	1.8	..	2.5	25.2	3.1	18.4	3.7	18.0	4.4
140	Samoa	2.2	23.6	2.8	8.8	3.0	7.9	3.3	31.2	4.3
141	Paraguay	1.7	17.0	2.0	64.2	3.3	-2.3	3.2	27.1	4.1
142	Namibia	2.7	27.3	3.4	10.2	3.7	6.4	4.0	-1.0	3.9
143	Libyan Arab Jamahiriya	2.2	28.7	2.9	25.2	3.6	9.5	4.0	-2.0	3.9
144	Marshall Islands	2.4	9.9	2.6	37.7	3.6	6.1	3.9	-3.4	3.7
145	Gambia	1.9	36.9	2.6	30.4	3.4	13.7	3.8	-2.6	3.7
146	Swaziland	1.9	33.7	2.6	28.4	3.3	10.9	3.7	-1.4	3.6
147	Vanuatu	3.5	4.5	3.7	-2.4	3.6	-2.3	3.5	-4.9	3.3
148	Botswana	3.4	-1.7	3.4	-0.6	3.3	-2.0	3.3	-2.4	3.2
149	Mauritania	0.4	16.9	0.4	7.7	0.5	38.7	0.7	385.8	3.2
150	Tonga	3.0	3.2	3.0	-0.2	3.0	-0.4	3.0	2.3	3.1
151	Zambia	0.5	106.3	1.0	106.5	2.0	45.0	2.9	-3.2	2.8
152	Nicaragua	1.7	9.2	1.9	22.7	2.3	10.7	2.6	7.9	2.8
153	Ghana	0.8	43.2	1.2	46.5	1.7	5.5	1.8	48.9	2.7
154	Lesotho	1.1	42.1	1.6	40.4	2.2	17.3	2.6	-1.3	2.6
155	Comoros	0.4	..	0.6	58.0	1.0	146.9	2.5	2.4	2.6
156	Uganda	0.4	20.8	0.5	54.5	0.7	141.3	1.7	44.8	2.5
157	Guinea-Bissau	1.1	..	1.5	33.7	2.0	16.6	2.3	-1.9	2.3
158	Cameroon	0.4	62.3	0.6	69.6	1.0	46.9	1.5	45.5	2.2
159	Eritrea	0.2	..	0.2	..	1.2	34.3	1.6	37.8	2.2
160	Cuba	1.4	-38.9	0.9	52.9	1.3	26.3	1.7	26.1	2.1
161	Kiribati	2.3	-2.3	2.3	-2.2	2.2	-2.2	2.2	-3.2	2.1
162	Sri Lanka	1.1	23.1	1.3	10.8	1.4	17.3	1.7	21.3	2.0
163	Papua New Guinea	1.4	3.3	1.4	8.6	1.5	15.7	1.8	2.8	1.8
164	Afghanistan	0.0	1803.0	0.1	19.1	0.1	1048.2	1.0	71.3	1.7
165	Congo	0.2	182.9	0.4	119.9	0.9	32.6	1.3	35.9	1.7
166	Côte d'Ivoire	0.5	54.2	0.8	12.5	0.9	16.4	1.1	47.6	1.6
167	Solomon Islands	0.5	11.1	0.6	17.4	0.6	30.5	0.8	90.3	1.6
168	Equatorial Guinea	0.4	63.1	0.6	63.2	1.1	37.1	1.4	9.1	1.6
169	Turkmenistan	..	..	0.4	77.4	0.7	37.2	1.0	32.2	1.3
170	Djibouti	0.6	40.6	0.9	34.0	1.2	7.1	1.2	6.2	1.3
171	Yemen	0.5	16.1	0.6	45.8	0.9	21.0	1.1	18.7	1.2
172	Somalia	1.2	1.3	1.2	-3.1	1.1	-3.3	1.1	1.1	1.1
173	United Republic of Tanzania	0.2	206.4	0.7	30.7	0.9	13.3	1.0	-1.8	1.0
174	Nepal	0.3	22.5	0.4	14.8	0.5	-14.5	0.4	117.3	0.9
175	Mozambique	0.3	62.1	0.4	62.3	0.7	23.6	0.9	-1.8	0.9
176	Burundi	0.1	70.6	0.2	82.1	0.4	49.8	0.5	44.6	0.8
177	Rwanda	0.3	20.6	0.4	21.4	0.4	23.4	0.6	27.3	0.7
178	Chad	0.2	94.8	0.4	6.5	0.4	3.7	0.4	45.8	0.6
179	Burkina Faso	0.2	87.3	0.4	1.5	0.4	22.9	0.5	20.2	0.6
180	Madagascar	0.3	24.6	0.4	24.3	0.5	8.1	0.5	7.2	0.6

Table 1.16 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
181	Angola	0.3	-2.9	0.3	86.6	0.5	2.5	0.5	-1.5	0.5
182	Guinea	0.5	13.0	0.5	14.3	0.6	6.0	0.6	-16.7	0.5
183	Mali	0.2	37.0	0.3	39.8	0.5	17.5	0.5	-5.0	0.5
184	Malawi	0.3	32.7	0.3	9.0	0.4	9.0	0.4	11.2	0.5
185	Lao PDR	0.3	23.3	0.3	7.9	0.4	17.0	0.4	-2.3	0.4
186	Central African Republic	0.1	14.8	0.1	58.8	0.2	18.3	0.3	16.7	0.3
187	Bangladesh	0.2	16.9	0.2	21.2	0.2	21.1	0.3	19.4	0.3
188	Cambodia	0.2	14.0	0.3	14.6	0.3	4.6	0.3	-3.4	0.3
189	Democratic Republic of the Congo	0.1	45.8	0.1	45.6	0.2	21.3	0.2	24.2	0.3
190	Tajikistan	0.1	14.8	0.1	26.0	0.1	277.4	0.3	-1.2	0.3
191	Niger	0.1	21.1	0.2	25.0	0.2	7.5	0.2	33.4	0.3
192	Ethiopia	0.1	45.7	0.1	44.3	0.2	35.7	0.2	-2.3	0.2
193	Sierra Leone	0.2	7.4	0.2	6.5	0.2	..	0.2	..	0.2
194	Iraq	0.1	16.7	0.1	15.6	0.1	-0.8	0.1	-11.8	0.1
195	Myanmar	0.0	5635.5	0.0	-0.4	0.0	163.8	0.1	-0.7	0.1
	Developed economy.									
	Developing economy.									
	Transition economy.									

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

^a Singapore: Data from the IDA Household Survey. From 2003-2004 data refer to internet users out of the total population, and from 2005-2006 to Internet users out of the resident population (Singapore Citizens and Permanent residents only) aged 15+.

Table 1.17

Broadband subscribers: economies by level of development and by region

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPED ECONOMIES									
ASIA									
Israel	216 163	192.9	633 100	54.8	980 000	25.5	1 229 626	15.6	1 421 000
Japan	9 397 426	58.7	14 917 165	31.1	19 557 146	14.4	22 365 148	15.2	25 755 100
EUROPE									
Andorra	1 148	213.7	3 601	74.5	6 282	64.6	10 341	..	..
Austria	539 500	11.4	601 000	36.4	820 000	43.4	1 176 000	21.4	1 428 000
Belgium	815 418	52.4	1 242 928	30.1	1 617 185	24.0	2 004 859	0.3	2 010 600
Cyprus	5 879	70.7	10 033	33.2	13 368	99.6	26 684	85.9	49 600
Czech Republic	15 300	126.7	34 690	580.3	235 996	89.7	447 682	142.7	1 086 600
Denmark (incl. Faroe Islands)	451 297	59.2	718 299	42.1	1 020 893	32.9	1 356 283	28.2	1 738 500
Estonia	45 700	97.6	90 300	23.7	111 699	60.4	179 200	27.3	228 100
Finland	273 500	79.6	491 100	62.9	800 000	46.8	1 174 200	21.6	1 428 000
France (incl. Guadeloupe, French Guiana, Martinique and Réunion)	1 682 992	112.4	3 575 381	85.1	6 619 077	43.0	9 465 600	33.8	12 669 000
Germany	3 205 000	40.4	4 500 000	53.3	6 900 000	55.1	10 700 000	31.6	14 085 200
Greece	..	..	10 476	391.2	51 455	211.2	160 113	204.7	487 900
Guernsey	..	..	..	..	..	..	..	..	..
Hungary	111 458	137.1	264 311	55.6	411 171	58.5	651 689	49.9	976 700
Iceland	24 270	66.5	40 419	36.4	55 112	41.6	78 017	12.4	87 700
Ireland	10 600	294.3	41 800	263.9	152 100	78.0	270 700	91.1	517 300
Italy	850 000	164.7	2 250 000	97.8	4 450 000	52.4	6 780 000	27.4	8 638 900
Jersey	..	..	..	..	..	..	..	..	..
Latvia	10 000	95.3	19 533	151.6	49 147	23.7	60 800	80.4	109 700
Liechtenstein	1 400	7.1	1 500	213.3	4 700	83.0	8 600	..	..
Lithuania	20 000	234.0	66 790	93.2	129 051	81.4	234 081	57.5	368 700
Luxembourg	5 697	169.5	15 351	137.8	36 500	92.1	70 100	33.0	93 200
Malta	17 679	28.6	22 736	65.6	37 642	18.7	44 672	-5.8	42 100
Monaco	4 900	32.7	6 500	16.9	7 600	23.7	9 400	..	..
Netherlands	1 068 966	86.0	1 988 000	61.3	3 206 000	27.9	4 100 000	26.6	5 192 200
Norway	205 307	94.2	398 758	68.4	671 666	47.6	991 352	28.9	1 278 300
Poland	121 684	60.9	195 752	314.7	811 796	53.2	1 243 949	112.2	2 640 000
Portugal	262 789	91.5	503 128	70.6	858 419	41.2	1 212 034	20.5	1 460 300
San Marino	..	..	600	..	..	..	..	..	1 500
Slovakia	..	..	7 708	538.1	49 188	181.7	138 569	128.8	317 000
Slovenia	56 735	2.2	57 992	98.4	115 069	47.7	169 950	55.2	263 700
Spain	1 247 496	76.5	2 202 000	56.3	3 441 630	45.1	4 994 274	33.3	6 654 900
Sweden	716 085	10.7	793 000	56.0	1 237 000	56.1	1 931 000	21.5	2 346 300
Switzerland	455 220	72.2	783 874	55.3	1 217 000	41.8	1 725 446	24.0	2 140 300
United Kingdom (incl. Gibraltar)	1 821 225	110.0	3 824 500	86.4	7 130 500	33.8	9 539 900	36.2	12 995 100
NORTH AMERICA									
Bermuda	..	..	..	..	..	..	18 500	27.6	23 600
Canada	3 515 000	28.4	4 513 000	20.0	5 416 000	23.8	6 706 699	14.4	7 675 500
Greenland	..	..	..	..	..	..	..	..	..

Table 1.17 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
United States (incl. Puerto Rico and Guam)	19 904 281	41.8	28 230 149	34.2	37 890 646	30.4	49 391 060	17.9	58 254 900
OCEANIA									
Australia	258 100	100.2	516 800	98.4	1 025 500	105.1	2 102 800	85.5	3 900 000
New Zealand	43 500	90.8	83 000	131.0	191 695	72.7	331 000	74.0	576 100
DEVELOPING ECONOMIES									
AFRICA									
Algeria	18 000	100.0	36 000	441.7	195 000	..	..
Angola
Benin	21	0.0	21	285.7	81	142.0	196	2.0	200
Botswana	1 600	..	..
Burkina Faso	50	190.0	145	6.2	154	68.8	260	553.8	1700
Burundi
Cameroon	200
Cape Verde	283	231.1	937	92.1	1800
Central African Republic
Chad
Comoros	1	300.0	4	..	..
Congo
Côte d'Ivoire	1 000	-17.4	826	45.3	1 200	..	..
Democratic Republic of the Congo	1 450	3.4	1 500	..	..
Djibouti	42	..	..
Egypt	937	417.6	4 850	879.5	47 504	139.0	113 526	81.0	205 500
Equatorial Guinea	200
Eritrea
Ethiopia	57	..	..	..	..	..	200
Gabon	170	282.4	650	133.1	1 515	-20.8	1 200
Gambia	71	40.8	100
Ghana	1 904	567.0	12 700
Guinea
Guinea-Bissau
Kenya
Lesotho	45	..	..
Liberia
Libyan Arab Jamahiriya
Madagascar
Malawi	69	100.0	138	192.8	404	..	..
Mali
Mauritania	164	326.8	700
Mauritius	285	315.8	1 185	128.5	2 708	14.5	3 100	606.5	21 900
Mayotte
Morocco	2 000	35.6	2 712	2284.2	64 660	285.3	249 138	56.9	390 800
Mozambique
Namibia
Niger	77	175.3	212	..	..

Table 1.17 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Nigeria	..	..	..	..	..	..	500	..	..
Rwanda	..	..	..	..	..	..	..	..	..
Sao Tome and Principe	..	..	..	..	..	..	..	..	..
Senegal	1 200	75.0	2 100	264.9	7 663	140.1	18 396	57.1	28 900
Seychelles	..	..	..	..	349	64.8	575	126.1	1 300
Sierra Leone	..	..	..	..	..	..	..	..	..
Somalia	..	..	..	..	..	..	..	..	..
South Africa	2 669	661.1	20 313	195.4	60 000	175.5	165 290	..	..
Sudan	..	..	..	..	1 400	28.6	1 800	16.7	2 100
Swaziland	..	..	..	..	..	..	..	..	..
Togo	..	..	..	..	..	..	..	..	..
Tunisia	..	..	2 590	9.6	2 839	480.9	16 491	165.6	43 800
Uganda	..	..	..	..	..	..	..	..	1 200
United Republic of Tanzania	..	..	..	..	..	..	..	..	..
Zambia	48	89.6	91	119.8	200	0.0	200	..	..
Zimbabwe	..	..	4 618	94.2	8 967	13.6	10 185	0.1	10 200
ASIA									
Afghanistan	..	..	..	..	200	10.0	220	127.3	500
Bahrain	4 980	95.5	9 737	54.1	15 000	42.7	21 400	80.4	38 600
Bangladesh	..	..	..	..	..	..	..	..	..
Bhutan	..	..	..	..	..	..	..	..	..
Brunei Darussalam	2 800	35.7	3 800	65.8	6 300	28.6	8 100	29.6	10 500
Cambodia	50	738.0	419	90.9	800	25.0	1 000	..	..
China	5 367 000	107.7	11 147 000	123.2	24 875 000	50.8	37 504 000	35.8	50 916 000
Dem. People's Republic of Korea	..	..	..	..	..	..	..	..	..
Hong Kong (China)	1 038 995	22.0	1 267 966	19.9	1 519 837	9.2	1 659 098	8.3	1 796 200
India	82 409	70.3	140 362	67.4	235 000	453.2	1 300 000	76.9	2 300 000
Indonesia	38 300	60.8	61 600	37.8	84 900	27.4	108 200	..	..
Iran (Islamic Republic of)	16 171	9.5	17 700	8.5	19 200	8.3	20 800	2136.1	465 100
Iraq	..	..	..	..	..	..	..	..	..
Jordan	3 177	57.3	4 996	108.6	10 424	132.2	24 200	100.8	48 600
Kuwait	10 500	23.8	13 000	53.8	20 000	25.0	25 000	..	..
Lao PDR	..	..	..	..	..	..	100	..	..
Lebanon	35 000	100.0	70 000	14.3	80 000	62.5	130 000	30.8	170 000
Macao (China)	16 954	63.6	27 744	63.0	45 218	50.4	68 030	35.5	92 200
Malaysia	19 302	472.0	110 406	128.9	252 701	94.2	490 630	82.9	897 300
Maldives	190	164.7	503	42.5	717	191.6	2 091	124.8	4 700
Mongolia	90	455.6	500	80.0	900	100.0	1 800	..	..
Myanmar	..	..	..	..	..	..	119	68.1	200
Nepal	..	..	..	..	..	..	..	..	..
Oman	97	40.2	136	391.2	668	1154.2	8 378	81.4	15 200
Pakistan	..	..	..	..	22 300	100.0	44 600	26.9	56 600
Palestine	..	..	..	..	..	..	7 665	..	..
Philippines	21 000	161.9	55 000	61.8	89 000	38.2	123 000	..	..
Qatar	228	1211.8	2 991	256.1	10 652	136.3	25 168	86.0	46 800

Table 1.17 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Republic of Korea	10 405 486	7.4	11 178 499	6.6	11 921 440	2.3	12 190 711	15.2	14 042 700
Saudi Arabia	34 800	32.2	46 000	49.3	68 700	-1.3	67 800	221.8	218 200
Singapore	270 000	56.2	421 700	21.5	512 400	29.9	665 500	19.7	796 500
Sri Lanka	592	477.2	3 417	497.0	20 400	27.9	26 100	11.5	29 100
Syrian Arab Republic	..	..	..	..	600	100.0	1 200	366.7	5600
Taiwan Province of China	2 100 000	44.9	3 043 273	23.3	3 751 214	15.7	4 340 900	3.8	4 505 800
Thailand	15 000	200.0	45 000	66.7	75 000	40.0	105 000	..	..
Turkey	21 205	840.0	199 324	189.9	577 931	175.1	1 589 768	74.5	2 773 700
United Arab Emirates	16 177	84.4	29 831	86.2	55 541	131.3	128 493	87.2	240 600
Viet Nam	1 076	753.2	9 180	474.2	52 709	298.5	210 024	146.0	516 600
Yemen	..	..	..	..	..	..	..	..	..
LATIN AMERICA AND THE CARIBBEAN									
Antigua and Barbuda	..	..	..	..	1 600	256.3	5 700	..	..
Argentina	115 000	104.0	234 625	112.0	497 513	69.0	841 000	86.4	1 567 700
Aruba	..	..	1 400	400.0	7 000	75.7	12 300	..	..
Bahamas	7 540	45.1	10 941	17.0	12 803	4.7	13 400	..	..
Barbados	..	..	27 319	8.3	29 600	7.9	31 942	..	..
Belize	..	..	940	200.7	2 827	51.4	4 280	30.8	5 600
Bolivia	3 330	72.4	5 740	52.0	8 723	23.7	10 788	..	..
Brazil	731 000	64.0	1 199 000	88.2	2 256 000	46.5	3 304 000	79.2	5 921 900
Cayman Islands	..	..	..	..	..	..	..	..	..
Chile	188 454	86.9	352 234	36.0	478 883	47.9	708 358	38.1	978 100
Colombia	34 888	84.7	64 436	97.3	127 113	150.7	318 683	97.0	627 800
Costa Rica	363	3998.6	14 878	87.7	27 931	67.2	46 700	26.6	59 100
Cuba	..	..	..	..	..	..	..	..	..
Dominica	2 238	18.5	2 651	22.7	3 253	1.4	3 300	..	..
Dominican Republic	..	..	..	..	37 257	76.8	65 856	1.0	66 500
Ecuador	..	..	..	..	11 620	130.5	26 786	..	..
El Salvador	..	..	..	..	29 321	44.3	42 314	..	..
Grenada	563	6.6	600	1.5	609	425.5	3 200	71.9	5 500
Guatemala	..	..	..	..	..	..	27 106	..	..
Guyana	..	..	..	..	..	..	2 000	..	..
Haiti	..	..	..	..	..	..	..	..	..
Honduras	..	..	..	..	..	..	..	..	..
Jamaica	9 000	0.0	9 000	200.0	27 000	66.7	45 000	..	..
Mexico	231 486	85.1	428 378	142.2	1 037 455	122.1	2 304 520	61.8	3 728 200
Netherlands Antilles	..	..	..	..	..	..	..	..	..
Nicaragua	2 319	89.9	4 403	13.6	5 001	110.6	10 534	80.4	19 000
Panama	12 235	22.9	15 039	11.4	16 746	4.9	17 567	..	..
Paraguay	500	0.0	500	520.0	3 100	80.6	5 600	185.7	16 000
Peru	34 400	172.4	93 695	47.6	138 277	152.8	349 582	38.7	484 900
Saint Kitts and Nevis	500	..	..	..	..	..	..	..	..
Saint Lucia	..	..	..	..	..	..	..	..	..
Saint Vincent and the Grenadines	1 086	5.5	1 146	15.2	1 320	176.3	3 647	53.6	5 600
Suriname	94	129.8	216	94.4	420	138.3	1 001	169.7	2 700

Table 1.17 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Trinidad and Tobago	95	830.5	884	378.8	4 233	155.2	10 803	90.7	20 600
Uruguay	..	..	..	..	27 000	126.6	61 186	74.9	107 000
Venezuela	78 151	49.7	116 997	79.8	210 303	69.7	356 898	50.6	537 500
Virgin Islands (United States)	..	..	..	..	1 500	100.0	3 000	..	..
OCEANIA									
American Samoa	..	..	..	..	..	..	..	..	..
Fiji	..	..	..	..	..	..	7 000	..	..
French Polynesia	..	..	946	359.9	4 351	152.8	11 000	65.5	18 200
Kiribati	..	..	..	..	..	..	..	..	..
Marshall Islands	..	..	..	..	..	..	..	..	..
Micronesia (Fed. States of)	..	..	..	..	..	..	..	..	..
Nauru	..	..	..	..	..	..	..	..	..
New Caledonia	700	138.3	1 668	208.5	5 146	86.6	9 600	..	..
Northern Mariana Islands	..	..	..	..	..	..	..	..	..
Palau	..	..	..	..	..	..	..	..	..
Papua New Guinea	..	..	..	..	..	..	..	..	..
Samoa	..	..	..	..	..	..	100	..	..
Solomon Islands	108	89.8	205	0.0	205	95.1	400	..	..
Tonga	..	..	..	..	300	100.0	600	..	..
Tuvalu	..	..	..	..	..	..	..	..	..
Vanuatu	..	..	15	53.3	23	334.8	100	..	..
TRANSITION ECONOMIES									
Albania	..	..	..	..	..	..	..	..	300
Armenia	8	25.0	10	9 900.0	1 000	100.0	2 000	..	..
Azerbaijan	..	..	..	..	900	142.7	2 184	..	..
Belarus	20	515.0	123	509.8	750	108.5	1 564	628.9	11 400
Bosnia and Herzegovina	213	604.2	1 500	342.5	6 637	106.4	13 702	191.9	40 000
Bulgaria	..	..	..	..	..	..	165 469	132.3	384 310
Croatia	12 000	..	..	..	26 800	235.1	89 800	180.4	251 800
Georgia	920	53.3	1 410	34.8	1 900	26.3	2 400	1025.0	27 000
Kazakhstan	..	..	..	..	1 997	50.2	3 000	916.7	30 500
Kyrgyzstan	36	286.1	139	1271.9	1 907	28.9	2 459	..	..
Moldova	418	42.8	597	306.9	2 429	328.0	10 395	109.7	21 800
Montenegro	..	..	..	..	..	..	..	..	25 800
Romania	15 800	1141.2	196 106	95.2	382 783	96.2	751 060	..	..
Russian Federation	11 000	..	..	..	675 000	135.4	1 589 000	82.5	2 900 000
Serbia	..	..	..	..	..	..	..	..	121 700
Tajikistan	..	..	..	..	..	..	..	..	..
TFYR Macedonia	..	..	..	..	..	..	12 436	193.5	36 500
Turkmenistan	..	..	..	..	..	..	..	..	..
Ukraine	..	..	..	..	..	..	..	..	..
Uzbekistan	..	..	2 757	99.5	5 500	50.9	8 300	..	..

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Table 1.18

Broadband penetration: economies by level of development and by region

Broadband subscribers per 100 inhabitants

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
DEVELOPED ECONOMIES									
ASIA									
Israel	3.3	187.3	9.4	52.8	14.3	24.7	17.8	11.5	19.9
Japan	7.4	58.5	11.7	31.0	15.3	14.3	17.5	15.2	20.2
EUROPE									
Andorra	1.7	191.3	5.0	64.1	8.2	61.1	13.2	..	..
Austria	6.7	10.9	7.4	35.3	10.0	42.0	14.2	21.3	17.2
Belgium	7.9	51.8	12.0	29.5	15.5	23.9	19.2	0.1	19.2
Cyprus	0.7	68.5	1.3	30.0	1.6	95.8	3.2	81.7	5.8
Czech Republic	0.2	126.7	0.3	579.6	2.3	89.5	4.4	141.1	10.6
Denmark (incl. Faroe Islands)	8.3	58.3	13.2	41.9	18.7	32.4	24.7	27.7	31.6
Estonia	3.4	98.4	6.7	24.2	8.3	60.9	13.3	27.6	17.0
Finland	5.2	79.2	9.4	62.9	15.3	45.9	22.4	21.4	27.1
France (incl. Guadeloupe, French Guiana, Martinique and Réunion)	2.8	111.5	6.0	83.5	11.0	42.8	15.6	33.4	20.9
Germany	3.9	40.4	5.5	53.4	8.4	54.7	12.9	31.6	17.0
Greece	..	..	0.1	407.1	0.5	210.6	1.4	204.2	4.4
Guernsey	..	..	..	..	..	..	..	..	..
Hungary	1.1	137.6	2.6	55.9	4.1	58.5	6.5	50.3	9.7
Iceland	8.4	66.5	13.9	36.4	19.0	41.6	26.9	8.7	29.2
Ireland	0.3	289.4	1.1	258.5	3.8	73.3	6.5	88.4	12.3
Italy	1.5	158.2	3.9	97.4	7.7	52.1	11.7	27.3	14.9
Jersey	..	..	..	..	..	..	..	..	..
Latvia	0.4	96.2	0.8	154.9	2.1	22.6	2.6	81.2	4.8
Liechtenstein	4.4	3.9	4.5	204.1	13.8	77.8	24.6	..	..
Lithuania	0.6	236.9	1.9	93.2	3.7	82.4	6.8	58.0	10.8
Luxembourg	1.3	169.5	3.4	132.6	7.9	92.1	15.2	30.1	19.8
Malta	4.6	28.0	5.8	64.8	9.6	18.3	11.4	-9.3	10.3
Monaco	15.1	31.8	19.9	16.2	23.2	22.9	28.5	..	..
Netherlands	6.6	84.9	12.2	61.9	19.8	27.3	25.2	26.1	31.7
Norway	4.5	93.0	8.7	67.7	14.6	47.0	21.5	28.4	27.5
Poland	0.3	61.0	0.5	314.9	2.1	53.3	3.3	112.4	6.9
Portugal	2.5	90.4	4.8	69.6	8.2	41.7	11.6	19.9	13.9
San Marino	..	..	2.1	..	..	..	..	..	4.8
Slovakia	..	..	0.1	537.8	0.9	181.6	2.6	128.6	5.9
Slovenia	2.8	2.2	2.9	98.3	5.8	47.3	8.5	53.1	13.0
Spain	3.0	69.9	5.2	54.5	8.0	40.2	11.2	32.0	14.8
Sweden	8.0	10.2	8.8	55.5	13.7	55.6	21.4	21.1	25.9
Switzerland	6.3	70.3	10.7	54.0	16.4	41.0	23.1	23.6	28.6
United Kingdom (incl. Gibraltar)	3.1	108.5	6.4	85.5	11.9	34.1	16.0	35.8	21.7
NORTH AMERICA									
Bermuda	..	..	..	..	..	..	28.9	25.6	36.3
Canada	11.2	27.2	14.2	18.8	16.9	22.6	20.7	13.9	23.6

Table 1.18 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Greenland
United States (incl. Puerto Rico and Guam)	6.8	40.5	9.6	32.9	12.7	28.4	16.3	16.8	19.1
OCEANIA									
Australia	1.3	97.8	2.6	98.1	5.2	102.5	10.4	83.6	19.1
New Zealand	1.1	90.3	2.1	128.6	4.8	71.0	8.2	72.8	14.2
DEVELOPING ECONOMIES									
AFRICA									
Algeria	0.1	96.8	0.1	432.6	0.6	..	..
Angola
Benin	0.0	-3.3	0.0	273.5	0.0	134.2	0.0	-12.0	0.0
Botswana	0.1	..	..
Burkina Faso	0.0	182.9	0.0	-2.8	0.0	70.9	0.0	534.7	0.0
Burundi
Cameroon	0.0
Cape Verde	0.1	224.2	0.2	77.3	0.3
Central African Republic
Chad
Comoros	0.0	295.0	0.0	..	..
Congo
Côte d'Ivoire	0.0	-18.7	0.0	35.3	0.0	..	..
Democratic Republic of the Congo	0.0	0.4	0.0	..	..
Djibouti
Egypt	0.0	407.5	0.0	860.6	0.1	134.5	0.2	71.2	0.3
Equatorial Guinea	0.0
Eritrea
Ethiopia	0.0
Gabon	0.0	279.5	0.0	128.0	0.1	-22.5	0.1
Gambia	0.0	37.2	0.0
Ghana	0.0	553.7	0.1
Guinea
Guinea-Bissau
Kenya
Lesotho
Liberia
Libyan Arab Jamahiriya
Madagascar
Malawi	0.0	70.0	0.0	180.5	0.0	..	..
Mali
Mauritania	0.0	314.7	0.0
Mauritius	0.0	312.4	0.1	126.7	0.2	12.6	0.2	600.8	1.7
Mayotte
Morocco	0.0	33.8	0.0	2252.3	0.2	280.0	0.8	54.7	1.3
Mozambique
Namibia
Niger	0.0	145.0	0.0	..	..

Table 1.18 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Nigeria	..	..	..	..	..	..	0.0	..	..
Rwanda	..	..	..	..	..	..	..	..	..
Sao Tome and Principe	..	..	..	..	..	..	..	..	..
Senegal	0.0	70.3	0.0	265.6	0.1	112.9	0.2	53.4	0.2
Seychelles	..	..	..	..	0.4	62.8	0.7	123.5	1.5
Sierra Leone	..	..	..	..	..	..	..	..	..
Somalia	..	..	..	..	..	..	..	..	..
South Africa	0.0	655.2	0.0	193.6	0.1	174.2	0.3	..	..
Sudan	..	..	..	..	0.0	26.5	0.0	10.6	0.0
Swaziland	..	..	..	..	..	..	..	..	..
Togo	..	..	..	..	..	..	..	..	..
Tunisia	..	..	0.0	8.5	0.0	474.5	0.2	162.5	0.4
Uganda	..	..	..	..	..	..	..	..	0.0
United Republic of Tanzania	..	..	..	..	..	..	..	..	..
Zambia	0.0	86.4	0.0	116.1	0.0	0.0	0.0	..	..
Zimbabwe	..	..	0.0	92.1	0.1	2.9	0.1	-1.6	0.1
ASIA									
Afghanistan	..	..	..	..	0.0	5.2	0.0	118.4	0.0
Bahrain	0.7	92.8	1.4	51.9	2.1	40.7	2.9	77.9	5.2
Bangladesh	..	..	..	..	..	..	..	..	..
Bhutan	..	..	..	..	..	..	..	..	..
Brunei Darussalam	0.8	31.8	1.1	61.2	1.8	25.1	2.2	26.2	2.8
Cambodia	0.0	719.1	0.0	86.7	0.0	21.8	0.0	..	..
China	0.4	106.4	0.9	121.8	1.9	49.9	2.9	35.3	3.9
Dem. People's Republic of Korea	..	..	..	..	..	..	..	..	..
Hong Kong (China)	15.3	21.7	18.6	18.0	22.0	7.0	23.5	6.0	24.9
India	0.0	67.7	0.0	64.9	0.0	445.0	0.1	74.4	0.2
Indonesia	0.0	58.6	0.0	33.2	0.0	27.3	0.0	..	..
Iran (Islamic Republic of)	0.0	7.9	0.0	5.8	0.0	6.1	0.0	2079.9	0.7
Iraq	..	..	..	..	..	..	..	..	..
Jordan	0.1	52.7	0.1	103.8	0.2	128.5	0.4	96.0	0.8
Kuwait	0.4	17.8	0.5	49.6	0.8	18.5	0.9	..	..
Lao PDR	..	..	..	..	..	..	0.0	..	..
Lebanon	1.0	95.4	2.0	12.7	2.3	61.1	3.6	29.7	4.7
Macao (China)	3.9	60.0	6.2	57.6	9.7	42.9	13.9	27.6	17.7
Malaysia	0.1	460.1	0.4	124.1	1.0	93.6	1.9	81.8	3.5
Maldives	0.1	155.6	0.2	37.8	0.2	188.7	0.7	122.6	1.5
Mongolia	0.0	448.8	0.0	68.4	0.0	98.5	0.1	..	..
Myanmar	..	..	..	..	..	..	0.0	66.8	0.0
Nepal	..	..	..	..	..	..	..	..	..
Oman	0.0	39.1	0.0	387.3	0.0	1134.7	0.3	78.6	0.6
Pakistan	..	..	..	..	0.0	98.1	0.0	24.4	0.0
Palestine	..	..	..	..	..	..	0.2	..	..
Philippines	0.0	156.8	0.1	58.7	0.1	35.6	0.1	..	..
Qatar	0.0	1137.9	0.4	241.7	1.4	124.2	3.2	72.7	5.6
Republic of Korea	21.9	6.9	23.4	6.1	24.8	1.8	25.2	14.8	29.0

Table 1.18 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Saudi Arabia	0.2	28.6	0.2	45.5	0.3	-3.8	0.3	213.9	0.9
Singapore	6.5	55.8	10.1	21.2	12.3	24.8	15.3	18.9	18.2
Sri Lanka	0.0	468.2	0.0	490.6	0.1	20.0	0.1	10.6	0.1
Syrian Arab Republic	..	..	..	..	0.0	91.4	0.0	355.4	0.0
Taiwan Province of China	9.3	44.4	13.5	22.8	16.5	15.3	19.1	3.7	19.8
Thailand	0.0	197.4	0.1	65.2	0.1	38.8	0.2	..	..
Turkey	0.0	827.2	0.3	186.1	0.8	171.4	2.2	72.2	3.7
United Arab Emirates	0.4	71.2	0.7	75.7	1.3	120.0	2.9	80.8	5.2
Viet Nam	0.0	741.5	0.0	466.4	0.1	293.2	0.2	142.8	0.6
Yemen	..	..	..	..	..	..	..	..	..
LATIN AMERICA AND THE CARIBBEAN									
Antigua and Barbuda	..	..	..	..	1.9	252.0	6.8	..	..
Argentina	0.3	102.1	0.6	110.0	1.3	67.5	2.2	83.8	4.0
Aruba	..	..	1.4	395.1	6.9	74.0	11.9	..	..
Bahamas	2.4	45.1	3.5	13.4	4.0	4.7	4.2	..	..
Barbados	..	..	9.5	7.6	10.2	7.2	10.9	..	..
Belize	..	..	0.4	200.7	1.1	45.8	1.6	26.2	2.0
Bolivia	0.0	68.9	0.1	49.1	0.1	21.4	0.1	..	..
Brazil	0.4	61.7	0.7	85.6	1.2	44.5	1.8	76.9	3.1
Cayman Islands	..	..	..	..	..	..	..	..	..
Chile	1.3	84.7	2.3	34.4	3.1	46.2	4.5	30.7	5.9
Colombia	0.1	82.6	0.1	90.5	0.3	149.2	0.7	94.1	1.4
Costa Rica	0.0	3851.2	0.4	84.2	0.7	64.1	1.1	24.5	1.3
Cuba	..	..	..	..	..	..	..	..	..
Dominica	3.3	18.5	3.9	22.7	4.8	1.4	4.9	..	..
Dominican Republic	..	..	..	..	0.4	74.4	0.7	-0.3	0.7
Ecuador	..	..	..	..	0.1	129.8	0.2	..	..
El Salvador	..	..	..	..	0.4	38.6	0.6	..	..
Grenada	0.6	5.5	0.6	0.5	0.6	420.4	3.0	70.3	5.2
Guatemala	..	..	..	..	..	..	0.2	..	..
Guyana	..	..	..	..	..	..	0.3	..	..
Haiti	..	..	..	..	..	..	..	..	..
Honduras	..	..	..	..	..	..	..	..	..
Jamaica	0.3	-0.8	0.3	195.5	1.0	68.6	1.7	..	..
Mexico	0.2	82.4	0.4	135.7	1.0	117.8	2.2	59.8	3.4
Netherlands Antilles	..	..	..	..	..	..	..	..	..
Nicaragua	0.0	86.6	0.1	11.5	0.1	108.2	0.2	75.9	0.3
Panama	0.4	18.6	0.5	9.6	0.5	3.0	0.5	..	..
Paraguay	0.0	-2.5	0.0	510.7	0.1	76.5	0.1	179.4	0.3
Peru	0.1	165.7	0.3	45.8	0.5	150.8	1.2	36.7	1.7
Saint Kitts and Nevis	1.1	..	..	..	..	..	..	..	..
Saint Lucia	..	..	..	..	..	..	..	..	..
Saint Vincent and the Grenadines	0.9	4.6	1.0	14.2	1.1	174.0	3.1	52.3	4.7
Suriname	0.0	127.7	0.0	92.7	0.1	136.2	0.2	166.2	0.6
Trinidad and Tobago	0.0	827.0	0.1	377.0	0.3	153.9	0.8	89.4	1.5

Table 1.18 (continued)

	2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
Uruguay	..	..	..	..	0.8	125.9	1.9	62.9	3.1
Venezuela	0.3	46.9	0.5	76.4	0.8	66.1	1.3	48.0	2.0
Virgin Islands (United States)	..	..	..	..	1.4	97.5	2.7	..	..
OCEANIA									
American Samoa	..	..	..	..	..	..	..	..	..
Fiji	..	..	..	..	..	..	0.8	..	..
French Polynesia	..	..	0.4	350.7	1.7	146.9	4.3	63.0	7.0
Kiribati	..	..	..	..	..	..	..	..	..
Marshall Islands	..	..	..	..	..	..	..	..	..
Micronesia (Fed. States of)	..	..	..	..	..	..	..	..	..
Nauru	..	..	..	..	..	..	..	..	..
New Caledonia	0.3	133.8	0.7	202.7	2.2	83.2	4.1	..	..
Northern Mariana Islands	..	..	..	..	..	..	..	..	..
Palau	..	..	..	..	..	..	..	..	..
Papua New Guinea	..	..	..	..	..	..	..	..	..
Samoa	..	..	..	..	..	..	0.1	..	..
Solomon Islands	0.0	85.6	0.0	-2.2	0.0	91.0	0.1	..	..
Tonga	..	..	..	..	0.3	99.2	0.6	..	..
Tuvalu	..	..	..	..	..	..	..	..	..
Vanuatu	..	..	0.0	49.7	0.0	324.7	0.0	..	..
TRANSITION ECONOMIES									
Albania	..	..	..	..	..	..	..	..	0.0
Armenia	0.0	25.4	0.0	9933.0	0.0	100.7	0.1	..	..
Azerbaijan	..	..	..	..	0.0	140.9	0.0	..	..
Belarus	0.0	518.1	0.0	513.5	0.0	109.6	0.0	633.4	0.1
Bosnia and Herzegovina	0.0	602.4	0.0	337.9	0.2	104.3	0.4	191.9	1.0
Bulgaria	..	..	..	..	..	..	2.1	134.1	5.0
Croatia	0.3	..	..	..	0.6	225.5	2.0	179.8	5.5
Georgia	0.0	54.9	0.0	35.9	0.0	27.7	0.1	1035.2	0.6
Kazakhstan	..	..	..	..	0.0	50.4	0.0	917.4	0.2
Kyrgyzstan	0.0	283.8	0.0	1258.5	0.0	24.8	0.0	..	..
Moldova	0.0	43.5	0.0	304.0	0.1	334.1	0.2	109.7	0.5
Montenegro	..	..	..	..	..	..	..	..	4.2
Romania	0.1	1147.5	0.9	95.3	1.8	96.8	3.5	..	..
Russian Federation	0.0	..	..	..	0.5	135.3	1.1	84.3	2.0
Serbia	..	..	..	..	..	..	..	..	1.2
Tajikistan	..	..	..	..	..	..	..	..	..
TFYR Macedonia	..	..	..	..	..	..	0.6	192.1	1.8
Turkmenistan	..	..	..	..	..	..	..	..	..
Ukraine	..	..	..	..	..	..	..	..	..
Uzbekistan	..	..	0.0	92.9	0.0	50.3	0.0	..	..

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Table 1.19
Economies ranked by 2006 broadband penetration

Broadband subscribers per 100 inhabitants

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
1	Bermuda	..	..	..	..	..	..	28.9	25.6	36.3
2	Netherlands	6.6	84.9	12.2	61.9	19.8	27.3	25.2	26.1	31.7
3	Denmark (incl. Faroe Islands)	8.3	58.3	13.2	41.9	18.7	32.4	24.7	27.7	31.6
4	Iceland	8.4	66.5	13.9	36.4	19.0	41.6	26.9	8.7	29.2
5	Republic of Korea	21.9	6.9	23.4	6.1	24.8	1.8	25.2	14.8	29.0
6	Switzerland	6.3	70.3	10.7	54.0	16.4	41.0	23.1	23.6	28.6
7	Norway	4.5	93.0	8.7	67.7	14.6	47.0	21.5	28.4	27.5
8	Finland	5.2	79.2	9.4	62.9	15.3	45.9	22.4	21.4	27.1
9	Sweden	8.0	10.2	8.8	55.5	13.7	55.6	21.4	21.1	25.9
10	Hong Kong (China)	15.3	21.7	18.6	18.0	22.0	7.0	23.5	6.0	24.9
11	Canada	11.2	27.2	14.2	18.8	16.9	22.6	20.7	13.9	23.6
12	United Kingdom (incl. Gibraltar)	3.1	108.5	6.4	85.5	11.9	34.1	16.0	35.8	21.7
13	France (incl. Guadeloupe, French Guiana, Martinique and Réunion)	2.8	111.5	6.0	83.5	11.0	42.8	15.6	33.4	20.9
14	Japan	7.4	58.5	11.7	31.0	15.3	14.3	17.5	15.2	20.2
15	Israel	3.3	187.3	9.4	52.8	14.3	24.7	17.8	11.5	19.9
16	Luxembourg	1.3	169.5	3.4	132.6	7.9	92.1	15.2	30.1	19.8
17	Taiwan Province of China	9.3	44.4	13.5	22.8	16.5	15.3	19.1	3.7	19.8
18	Belgium	7.9	51.8	12.0	29.5	15.5	23.9	19.2	0.1	19.2
19	Australia	1.3	97.8	2.6	98.1	5.2	102.5	10.4	83.6	19.1
20	United States (incl. Puerto Rico and Guam)	6.8	40.5	9.6	32.9	12.7	28.4	16.3	16.8	19.1
21	Singapore	6.5	55.8	10.1	21.2	12.3	24.8	15.3	18.9	18.2
22	Macao (China)	3.9	60.0	6.2	57.6	9.7	42.9	13.9	27.6	17.7
23	Austria	6.7	10.9	7.4	35.3	10.0	42.0	14.2	21.3	17.2
24	Germany	3.9	40.4	5.5	53.4	8.4	54.7	12.9	31.6	17.0
25	Estonia	3.4	98.4	6.7	24.2	8.3	60.9	13.3	27.6	17.0
26	Italy	1.5	158.2	3.9	97.4	7.7	52.1	11.7	27.3	14.9
27	Spain	3.0	69.9	5.2	54.5	8.0	40.2	11.2	32.0	14.8
28	New Zealand	1.1	90.3	2.1	128.6	4.8	71.0	8.2	72.8	14.2
29	Portugal	2.5	90.4	4.8	69.6	8.2	41.7	11.6	19.9	13.9
30	Slovenia	2.8	2.2	2.9	98.3	5.8	47.3	8.5	53.1	13.0
31	Ireland	0.3	289.4	1.1	258.5	3.8	73.3	6.5	88.4	12.3
32	Lithuania	0.6	236.9	1.9	93.2	3.7	82.4	6.8	58.0	10.8
33	Czech Republic	0.2	126.7	0.3	579.6	2.3	89.5	4.4	141.1	10.6
34	Malta	4.6	28.0	5.8	64.8	9.6	18.3	11.4	-9.3	10.3
35	Hungary	1.1	137.6	2.6	55.9	4.1	58.5	6.5	50.3	9.7
36	French Polynesia	..	..	0.4	350.7	1.7	146.9	4.3	63.0	7.0
37	Poland	0.3	61.0	0.5	314.9	2.1	53.3	3.3	112.4	6.9
38	Chile	1.3	84.7	2.3	34.4	3.1	46.2	4.5	30.7	5.9
39	Slovakia	..	..	0.1	537.8	0.9	181.6	2.6	128.6	5.9
40	Cyprus	0.7	68.5	1.3	30.0	1.6	95.8	3.2	81.7	5.8
41	Qatar	0.0	1137.9	0.4	241.7	1.4	124.2	3.2	72.7	5.6
42	Croatia	0.3	..	..	..	0.6	225.5	2.0	179.8	5.5

Table 1.19 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
43	Bahrain	0.7	92.8	1.4	51.9	2.1	40.7	2.9	77.9	5.2
44	Grenada	0.6	5.5	0.6	0.5	0.6	420.4	3.0	70.3	5.2
45	United Arab Emirates	0.4	71.2	0.7	75.7	1.3	120.0	2.9	80.8	5.2
46	Bulgaria	..	..	..	..	..	..	2.1	134.1	5.0
47	San Marino	..	..	2.1	..	..	..	..	..	4.8
48	Latvia	0.4	96.2	0.8	154.9	2.1	22.6	2.6	81.2	4.8
49	Lebanon	1.0	95.4	2.0	12.7	2.3	61.1	3.6	29.7	4.7
50	Saint Vincent and the Grenadines	0.9	4.6	1.0	14.2	1.1	174.0	3.1	52.3	4.7
51	Greece	..	..	0.1	407.1	0.5	210.6	1.4	204.2	4.4
52	Montenegro	..	..	..	..	..	..	..	..	4.2
53	Argentina	0.3	102.1	0.6	110.0	1.3	67.5	2.2	83.8	4.0
54	China	0.4	106.4	0.9	121.8	1.9	49.9	2.9	35.3	3.9
55	Turkey	0.0	827.2	0.3	186.1	0.8	171.4	2.2	72.2	3.7
56	Malaysia	0.1	460.1	0.4	124.1	1.0	93.6	1.9	81.8	3.5
57	Mexico	0.2	82.4	0.4	135.7	1.0	117.8	2.2	59.8	3.4
58	Brazil	0.4	61.7	0.7	85.6	1.2	44.5	1.8	76.9	3.1
59	Uruguay	..	..	..	..	0.8	125.9	1.9	62.9	3.1
60	Brunei Darussalam	0.8	31.8	1.1	61.2	1.8	25.1	2.2	26.2	2.8
61	Russian Federation	0.0	..	..	..	0.5	135.3	1.1	84.3	2.0
62	Belize	..	..	0.4	200.7	1.1	45.8	1.6	26.2	2.0
63	Venezuela	0.3	46.9	0.5	76.4	0.8	66.1	1.3	48.0	2.0
64	TFYR Macedonia	..	..	..	..	..	..	0.6	192.1	1.8
65	Mauritius	0.0	312.4	0.1	126.7	0.2	12.6	0.2	600.8	1.7
66	Peru	0.1	165.7	0.3	45.8	0.5	150.8	1.2	36.7	1.7
67	Trinidad and Tobago	0.0	827.0	0.1	377.0	0.3	153.9	0.8	89.4	1.5
68	Maldives	0.1	155.6	0.2	37.8	0.2	188.7	0.7	122.6	1.5
69	Seychelles	..	..	..	..	0.4	62.8	0.7	123.5	1.5
70	Colombia	0.1	82.6	0.1	90.5	0.3	149.2	0.7	94.1	1.4
71	Costa Rica	0.0	3851.2	0.4	84.2	0.7	64.1	1.1	24.5	1.3
72	Morocco	0.0	33.8	0.0	2252.3	0.2	280.0	0.8	54.7	1.3
73	Serbia	..	..	..	..	..	..	..	..	1.2
74	Bosnia and Herzegovina	0.0	602.4	0.0	337.9	0.2	104.3	0.4	191.9	1.0
75	Saudi Arabia	0.2	28.6	0.2	45.5	0.3	-3.8	0.3	213.9	0.9
76	Jordan	0.1	52.7	0.1	103.8	0.2	128.5	0.4	96.0	0.8
77	Dominican Republic	..	..	..	..	0.4	74.4	0.7	-0.3	0.7
78	Iran (Islamic Republic of)	0.0	7.9	0.0	5.8	0.0	6.1	0.0	2079.9	0.7
79	Georgia	0.0	54.9	0.0	35.9	0.0	27.7	0.1	1035.2	0.6
80	Viet Nam	0.0	741.5	0.0	466.4	0.1	293.2	0.2	142.8	0.6
81	Suriname	0.0	127.7	0.0	92.7	0.1	136.2	0.2	166.2	0.6
82	Oman	0.0	39.1	0.0	387.3	0.0	1134.7	0.3	78.6	0.6
83	Moldova	0.0	43.5	0.0	304.0	0.1	334.1	0.2	109.7	0.5
84	Tunisia	..	..	0.0	8.5	0.0	474.5	0.2	162.5	0.4
85	Cape Verde	..	..	..	..	0.1	224.2	0.2	77.3	0.3
86	Nicaragua	0.0	86.6	0.1	11.5	0.1	108.2	0.2	75.9	0.3
87	Egypt	0.0	407.5	0.0	860.6	0.1	134.5	0.2	71.2	0.3
88	Paraguay	0.0	-2.5	0.0	510.7	0.1	76.5	0.1	179.4	0.3

Table 1.19 (continued)

		2002	% change 2002–2003	2003	% change 2003–2004	2004	% change 2004–2005	2005	% change 2005–2006	2006
89	Senegal	0.0	70.3	0.0	265.6	0.1	112.9	0.2	53.4	0.2
90	Kazakhstan	..	..	..	..	0.0	50.4	0.0	917.4	0.2
91	India	0.0	67.7	0.0	64.9	0.0	445.0	0.1	74.4	0.2
92	Sri Lanka	0.0	468.2	0.0	490.6	0.1	20.0	0.1	10.6	0.1
93	Belarus	0.0	518.1	0.0	513.5	0.0	109.6	0.0	633.4	0.1
94	Gabon	..	..	0.0	279.5	0.0	128.0	0.1	-22.5	0.1
95	Zimbabwe	..	..	0.0	92.1	0.1	2.9	0.1	-1.6	0.1
96	Ghana	..	..	..	..	..	..	0.0	553.7	0.1
97	Equatorial Guinea	..	..	..	..	..	..	..	..	0.0
98	Pakistan	..	..	..	..	0.0	98.1	0.0	24.4	0.0
99	Syrian Arab Republic	..	..	..	..	0.0	91.4	0.0	355.4	0.0
100	Mauritania	..	..	..	..	..	..	0.0	314.7	0.0
101	Burkina Faso	0.0	182.9	0.0	-2.8	0.0	70.9	0.0	534.7	0.0
102	Albania	..	..	..	..	..	..	..	..	0.0
103	Gambia	..	..	..	..	..	..	0.0	37.2	0.0
104	Sudan	..	..	..	..	0.0	26.5	0.0	10.6	0.0
105	Uganda	..	..	..	..	..	..	..	..	0.0
106	Benin	0.0	-3.3	0.0	273.5	0.0	134.2	0.0	-12.0	0.0
107	Afghanistan	..	..	..	..	0.0	5.2	0.0	118.4	0.0
108	Cameroon	..	..	..	..	..	..	..	..	0.0
109	Myanmar	..	..	..	..	..	..	0.0	66.8	0.0
110	Ethiopia	..	..	..	..	..	..	..	..	0.0
	Developed economy.									
	Developing economy.									
	Transition economy.									

Source: UNCTAD calculations based on the ITU World Telecommunication/ICT Indicators database, 2007.

Table 1.20 Core indicators on use of ICT by businesses and on the ICT sector
Enterprises with 10 or more employees, latest available year

Reference year	Proportion of:				Proportion of enterprises:				Proportion of enterprises accessing the Internet by:				
	Enterprises using computers	Employees using computers	Enterprises using Internet	Employees using Internet	With a website (or those using Internet)	With an intranet	Receiving orders online (or those using Internet)	Placing orders online (or those using Internet)	Analogue modem	ISDN	Fixed line connection under 2 Mbps	Fixed line connection of 2 Mbps or more	Other modes of access
	B1	B2	B3	B4	B5	B6	B7	B8	B9.a	B9.b	B9.c	B9.d	B9.e
Argentina	2005	100.0	39.7	95.8	24.8	74.4	47.0	45.6	44.6	15.4	..	..	9.6
Australia	2005	95.5	..	87.3	..	51.8	..	20.6	54.7	24.2	..	68.7	..
Austria	2006	98.0	53.0	98.0	..	80.0	41.0	18.0	51.0	5.0	29.0	71.0	16.0
Azerbaijan	2006	38.4	9.1	8.7	1.7	32.6	..	..	..	67.3	12.1	5.1	17.8
Belarus	2005	83.6	..	37.6	..	27.2	..	..	..	..	..	..	..
Belgium	2006	97.0	57.0	95.0	41.0	72.0	45.0	15.0	44.0	17.0	26.0	89.0	12.0
Bermuda	2005	80.0	62.0	71.0	37.0	56.3	34.0	14.1	40.8	..	..	..	..
Brazil	2006	99.4	47.6	94.3	36.5	49.6	39.0	50.3	52.2	13.9	68.7	4.7	4.8
Bulgaria	2006	89.6	21.2	74.8	14.5	43.8	35.0	4.7	8.4	26.4	26.5	6.0	19.1
Canada	2006	..	..	94.9	..	71.2	..	13.2	65.0	..	..	21.9	..
Chile	2005	60.3	..	48.8	..	38.8	..	4.2	6.7	16.4	19.4	80.6	..
China	2005	..	..	47.4	..	23.7	..	12.4	9.6	13.6	..	..	..
Cuba	2006	94.9	58.7	70.9	29.6	23.7	34.0	1.0	3.7	51.1	32.9	0.2	0.1
Cyprus	2006	95.0	43.0	86.0	31.0	50.0	21.0	6.0	21.0	33.0	11.0	63.0	5.0
Czech Republic	2006	97.0	39.0	95.0	29.0	74.0	23.0	9.0	27.0	12.0	41.0	73.0	31.0
Denmark	2006	98.0	68.0	98.0	61.0	85.0	35.0	35.0	59.0	4.0	17.0	84.0	10.0
Egypt	2006	100.0	17.9	53.2	9.9	71.0	34.0	34.8	21.0	6.3	71.9	22.8	0.9
Estonia	2006	94.0	38.0	92.0	33.0	63.0	35.0	14.0	25.0	10.0	20.0	82.0	9.0
Finland	2006	99.0	67.0	99.0	59.0	81.0	39.0	12.0	56.0	19.0	21.0	90.0	22.0
France	2006	99.0	63.0	94.0	34.0	65.0	40.0	16.0	26.0	..	22.0	92.0	..
Germany	2006	96.0	56.0	95.0	39.0	77.0	41.0	19.0	54.0	4.0	13.0	77.0	7.0
Greece	2006	97.0	37.0	94.0	26.0	64.0	39.0	8.0	14.0	28.0	10.0	62.0	5.0
Hong Kong (China)	2006	87.8	58.0	82.8	45.9	51.5	28.9	2.9	21.6	3.6	93.4	10.2	10.6
Hungary	2006	89.0	31.0	80.0	21.0	53.0	17.0	11.0	12.0	14.0	26.0	77.0	13.0
Iceland	2006	98.8	57.9	97.0	46.0	71.7	36.1	7.1	12.6	10.2	63.9	21.5	5.3
Ireland	2006	97.0	54.0	94.0	37.0	67.0	46.0	23.0	56.0	27.0	30.0	64.0	9.0

Table 1.20 (continued)

Reference year	Proportion of:				Proportion of enterprises:				Proportion of enterprises accessing the Internet by:				
	Enterprises using computers	Employees using computers	Enterprises using Internet	Employees using Internet	With a website (or those using Internet)	With an intranet	Receiving orders online (or those using Internet)	Placing orders online (or those using Internet)	Analogue modem	ISDN	Fixed line connection under 2 Mbps	Fixed line connection of 2 Mbps or more	Other modes of access
	B1	B2	B3	B4	B5	B6	B7	B8	B9.a	B9.b	B9.c	B9.d	B9.e
Latvia	2005	89.7	26.5	75.0	20.9	43.5	21.6	3.7	15.3	10.3	..	73.7	12.6
Lithuania	2006	92.0	27.0	88.0	23.0	47.0	57.0	15.0	22.0	33.0	21.0	65.0	17.0
Luxembourg	2006	98.0	49.0	93.0	32.0	65.0	44.0	..	40.0	18.0	16.0	81.0	14.0
Macao (China)	2003	75.6	..	53.3	..	26.3	..	15.8	21.0	9.9	8.1	78.8	..
Malta	2005	93.0	..	90.0	..	61.0	43.0	14.0	47.0	20.0	21.0	87.0	7.0
Mauritius	2006	94.4	..	87.4	..	46.1	37.3	32.9	34.8	..	..	..	..
Netherlands	2006	100.0	61.0	97.0	45.0	81.0	36.0	28.0	45.0	6.0	15.0	84.0	5.0
New Zealand	2006	96.4	98.7	94.5	97.4	62.7	22.4	36.8	60.3	35.0	81.6	..	21.1
Norway	2006	97.0	59.0	94.0	50.0	76.0	34.0	25.0	66.0	6.0	33.0	91.0	15.0
Panama	2006	89.5	32.2	80.1	20.3	..	28.0	39.0	43.5	8.2	61.7	..	36.8
Poland	2006	93.0	38.0	89.0	28.0	60.0	30.0	7.0	23.0	39.0	16.0	52.0	14.0
Portugal	2006	95.0	35.0	83.0	25.0	42.0	33.0	5.0	20.0	25.0	24.0	79.0	5.0
Qatar	2005	84.4	97.1	68.4	90.0	99.0	38.2	50.9	41.3	..	..	..	..
Republic of Korea	2005	96.6	..	95.9	..	58.9	37.3	7.9	33.9	0.7	..	98.2	0.2
Romania	2005	77.3	22.4	58.4	15.9	41.2	23.2	4.1	11.0	33.8	86.4	7.8	42.4
Russian Federation	2005	91.1	29.8	53.3	12.4	27.8	..	23.6	30.7	..	..	..	..
Singapore	2006	92.8	..	91.0	..	75.0	74.1	14.8	33.9	27.0	73.0	19.2	15.0
Slovakia	2006	97.0	39.0	93.0	29.0	65.0	31.0	7.0	22.0	19.0	18.0	65.0	29.0
Slovenia	2006	97.0	48.0	96.0	35.0	65.0	27.0	12.0	22.0	10.0	14.0	78.0	9.0
Spain	2006	98.0	49.0	93.0	35.0	50.0	28.0	8.0	16.0	16.0	8.0	94.0	9.0
Sweden	2006	96.0	66.0	96.0	53.0	90.0	43.0	23.0	70.0	18.0	30.0	92.0	28.0
Switzerland	2005	99.1	56.5	98.2	47.6	91.6	61.4	23.2	58.0	..	54.8	42.2	..
Thailand	2006	88.4	..	69.6	..	50.5	..	11.1	13.9	52.2	..	39.4	19.4
Turkey	2005	87.8	40.6	80.4	34.1	59.9	38.9	..	..	35.3	52.3	27.4	14.1
United Kingdom	2006	96.0	51.0	93.0	42.0	81.0	34.0	19.0	62.0	37.0	16.0	83.0	2.0

Table 1.20 (continued)

Reference year	Proportion of enterprises with:			Proportion of enterprises using the Internet for:								
	LAN	An extranet	Sending and receiving e-mail	Information about goods or services	Information from public authorities	Other information searches or research	Internet banking or financial services	Transacting with public authorities	Providing customer services	Delivering products online	Other types of activity	
	B10	B11	B12.a	B12.b.i	B12.b.ii	B12.b.iii	B12.c	B12.d	B12.e	B12.f	B12.g	
Argentina	2006	81.9	20.5	97.2	88.1	74.9	83.7	56.6	43.0	6.1	54.9	
Australia	2005	..	..	..	..	..	..	50.4	..	..	..
Austria	2006	..	19.0	..	..	47.0	88.0	81.0	..	..	..
Azerbaijan	2006	10.5	..	..	25.8	..	25.5	26.4	..	..	..
Belarus	2005	41.1	..	..	..	..	..	..	..	..	..
Belgium	2006	..	28.0	..	..	62.0	88.0	59.0	..	..	..
Bermuda	2005	..	..	..	..	..	..	..	..	..	..
Brazil	2006	94.5	21.6	97.7	78.4	59.4	80.1	84.1	30.9	13.6	..	
Bulgaria	2006	52.8	4.1	..	..	57.3	53.4	61.4	..	..	..
Canada	2006	..	16.7	97.6	..	..	..	..	..	..	..
Chile	2005	12.6	3.4	99.2	..	..	..	..	..	..	..
China	2005	16.3	..	80.4	65.0	46.1	..	37.4	35.2	11.0	..	
Cuba	2006	..	..	..	..	..	..	..	..	..	..
Cyprus	2006	..	7.0	..	..	67.0	57.0	44.0	..	..	..
Czech Republic	2006	..	7.0	..	..	71.0	91.0	76.0	..	..	..
Denmark	2006	..	22.0	..	..	53.0	94.0	87.0	..	..	..
Egypt	2006	78.9	2.4	93.3	58.9	..	26.8	5.8	36.2	..	0.4	
Estonia	2006	..	12.0	..	..	49.0	98.0	69.0	..	..	..
Finland	2006	..	25.0	..	..	71.0	93.0	93.0	..	..	..
France	2006	..	22.0	..	..	..	77.0	66.0	..	..	..
Germany	2006	..	24.0	..	..	67.0	77.0	49.0	..	..	..
Greece	2006	..	11.0	..	..	62.0	74.0	84.0	..	..	..
Hong Kong (China)	2006	60.7	10.1	96.9	96.0	72.6	42.2	..	23.4	43.2	53.0	
Hungary	2006	..	4.0	..	..	52.0	68.0	45.0	..	..	..
Iceland	2006	50.3	30.1	..	90.0	87.3	94.3	64.7	..	..	..
Ireland	2006	..	18.0	..	..	46.0	86.0	84.0	..	..	..
Italy	2006	..	13.0	..	..	66.0	81.0	87.0	..	..	..

Table 1.20 (continued)

Reference year	Proportion of enterprises with:		Proportion of enterprises using the Internet for:									
	LAN	An extranet	Sending and receiving e-mail	Information about goods or services	Information from public authorities	Other information searches or research	Internet banking or financial services	Transacting with public authorities	Providing customer services	Delivering products online	Other types of activity	
	B10	B11	B12.a	B12.b.i	B12.b.ii	B12.b.iii	B12.c	B12.d	B12.e	B12.f	B12.g	
Japan	2005	39.6	60.1	..	..	..	..	..	..	..	..
Latvia	2005	65.9	7.6	..	46.3	..	89.2	50.1	..	..	..
Lithuania	2006	..	8.0	..	..	61.0	94.0	76.0	..	..	..
Luxembourg	2006	..	25.0	..	..	53.0	76.0	83.0	..	..	..
Macao (China)	2003	..	..	88.8	20.1	68.5	..	..	14.8	..	3.8
Malta	2005	..	23.0	..	..	56.0	67.0	68.0	..	..	..
Mauritius	2006	..	..	..	..	..	..	..	..	..	..
Netherlands	2006	..	15.0	..	..	52.0	76.0	70.0	..	..	..
New Zealand	2006	61.6	7.5	..	68.0	..	87.2	76.8	29.9	..	..
Norway	2006	..	16.0	..	..	55.0	92.0	74.0	..	..	..
Panama	2006	53.3	13.7	97.3	80.6	67.9	70.1	35.8	39.1	..	69.6	
Poland	2006	..	7.0	..	..	56.0	75.0	61.0	..	..	..
Portugal	2006	..	20.0	..	..	40.0	75.0	60.0	..	..	..
Qatar	2005	..	..	..	..	..	..	..	..	..	..
Republic of Korea	2005	66.5	..	88.6	60.9	53.5	67.4	43.4	34.5	13.2	2.4	
Romania	2005	45.1	19.1	93.9	..	64.9	51.7	10.2	8.7	3.6	..	
Russian Federation	2005	52.4	..	91.6	54.7	42.5	14.9	..	4.5	5.3	..	
Singapore	2006	74.1	35.8	92.7	93.4	..	64.1	..	..	41.5	..
Slovakia	2006	..	12.0	..	..	64.0	84.0	77.0	..	..	..
Slovenia	2006	..	13.0	..	..	77.0	93.0	75.0	..	..	..
Spain	2006	..	13.0	..	..	33.0	85.0	58.0	..	..	..
Sweden	2006	..	20.0	..	..	72.0	92.0	80.0	..	..	..
Switzerland	2005	79.6	33.1	..	97.7	59.5	85.0	56.5	21.3	22.4	..	
Thailand	2006	..	..	80.7	..	65.0	9.5	..	24.0	20.5	14.2
Turkey	2005	64.6	7.6	..	..	56.3	75.4	62.5	15.5	38.0	..
United Kingdom	2006	..	10.0	..	..	53.0	73.0	52.0	..	..	..

Note: See after table 1.20. in the Statistical Annex for notes to data.

Source: UNCTAD information economy database, 2007.

Notes to data for tables 1.5–1.10 and 1.20

Argentina: Data from the “Encuesta Nacional a Empresas sobre Innovación, Investigación y Desarrollo y Tecnologías de la Información y de las Comunicaciones” conducted by the Instituto Nacional de Estadística y Censos de Argentina (INDEC). The survey refers only to the manufacturing sector. Enterprise size is defined by revenue, not number of employees. Results refer to the sample and have not been extrapolated to the target population, but INDEC considers them representative.

Australia: Data from the “Business Use of Information Technology Survey” conducted by the Australian Bureau of Statistics (ABS). The survey is not designed to provide high-quality estimates of numbers of businesses for any of the output classifications (for example, state and territory or industry); a more robust source of counts of Australian businesses is available from the ABS Business Register, Counts of Businesses (cat. no. 8161.0.55.001). Data refer to enterprises with five or more employees. Enterprises “transacting with Government organisations/public authorities” (B12.d) refer to enterprises making “electronic lodgements with government organisations”.

Austria: Data from the Eurostat database. “Proportion of employees using computers” (B2) refers to “percentage of employees using any computer (at least once a week)”. “Proportion of enterprises using the Internet” (B3) refers to “percentage of enterprises with Internet access”. “Proportion of employees using the Internet” (B4) refers to “percentage of persons employed using computers connected to the Internet in their normal work routine at least once a week”. “Proportion of enterprises using the Internet that receive orders online” (B7) refers to “percentage of enterprises which have received orders via Internet over the last calendar year (excluding manually typed e-mails)”. “Proportion of enterprises using the Internet that place orders online” (B8) refers to “percentage of enterprises which have ordered via Internet over the last calendar year (excluding manually typed e-mails)”. “Proportion of enterprises accessing the Internet by fixed line connection of 2 Mbps or more” (B9.d) refers to “percentage of enterprises with broadband access”. “Proportion of enterprises accessing the Internet by fixed line connection under 2 Mbps” (B9.c) refers to “percentage of enterprises connecting to the Internet via another fixed connection (e.g. cable etc.)”. “Proportion of enterprises accessing the Internet by other modes of access” (B9.e) refers to “percentage of enterprises connecting to the Internet via wireless connection (satellite, mobile phones etc.)” and refers to 2005. “Proportion of enterprises using the Internet for other information searches or research” (B12.b.iii) refers to “percentage of enterprises that use the Internet for market monitoring (e.g. prices)”. “Proportion of enterprises using the Internet for transacting with public authorities” (B12.d) refers to “percentage of enterprises which use the Internet for interaction with public authorities”.

Azerbaijan: Data from the Azerbaijan “Census of enterprises” conducted by the State Statistical Committee.

Belarus: Data from the survey on “Usage of global information networks” conducted by the Ministry of Statistics and Analysis.

Belgium: See notes for Austria.

Bermuda: Data from the annual “Economic Activity Survey” (EAS) and “Employment Survey” (ES) conducted by the Department of Statistics of Bermuda.

Brazil: Data from the “Survey on the use of ICT” conducted by the Brazilian Internet Steering Committee. There were methodological changes in the sampling of the survey from 2005 to 2006, and so caution should be used when comparing results for both years. For example, in 2005 the “proportion of enterprises using the Internet for other types of activity” (B12.g) included enterprises that ordered travel and accommodation services via the Internet in the previous 12 months, paid online for any product/service ordered via the Internet in the previous 12 months, or sold any product to another enterprise via a specialized Internet marketplace in the previous 12 months. This response category was not included for 2006. The sampling frame is the RAIS (Relação Anual de Informações Sociais, or Social Information Annual List), which covers approximately 97 per cent of the formal sector.

Bulgaria: Data from the annual “Survey on ICT usage in enterprises” conducted by the National Statistical Institute.

For 2005, “other modes of access” to the Internet (B9.e) included wireless connection (e.g. satellite, mobile phone) and other broadband connection (e.g. cable).

Canada: Data from the annual “Survey of Electronic Commerce and Technology” conducted by Statistics Canada. Enterprises using the Internet for “delivering products online” (B12.f) refer to enterprises “delivering digitised products (via Web site or other Internet)”.

Chile: Data from the 2006 Structural Surveys on trade (commerce), services, and hotels and restaurants, conducted by the Instituto Nacional de Estadística.

China: Data from the “Specialized Survey of ICT Usage of China in 2005” conducted by the National Bureau of Statistics of China.

Cuba: Data from the “Censo Económico TIC” (ICT Economic Census) conducted by the Dirección de Turismo, Comercio y Servicios (Tourism, Trade, and Services Directorate). Results refer to the sample and have not been extrapolated to the target population.

Cyprus: See notes for Austria.

Czech Republic: See notes for Austria.

Denmark: See notes for Austria.

Egypt: Data from the 2007 survey on “Use of ICT in businesses” conducted by the Central Agency for Public Mobilization and Statistics (CAPMAS). The results of the survey refer to the sample and have not been extrapolated to the target population, but CAPMAS indicates that the results can be considered representative at the national level.

Estonia: See notes for Austria.

Finland: See notes for Austria.

France: See notes for Austria.

Germany: See notes for Austria.

Greece: See notes for Austria.

Hong Kong (China): Data from the “Annual Survey on Information Technology Usage and Penetration in the Business Sector” conducted by the Census and Statistics Department. “Fixed line connection under 2 Mbps” (B9.c) refers to Internet and Internet-related services with a transmission speed from hundreds of Kbps to several Mbps (cable modems, asynchronous transfer mode, Ethernet, ADSL (asymmetric digital subscriber line) and other types of DSL (digital subscriber line) are commonly used technologies). “Fixed line connection over 2 Mbps” (B9.d) refers to dedicated circuits (not fixed-line) or unswitched connections with capacity dedicated to the users. “Other modes of access” refers to the public cellular telephone network or Wireless Fidelity. Enterprises using the Internet for “getting information from Government organisations/public authorities” (B12.b.ii) include enterprises engaging in transactions with authorities. Enterprises using the Internet “for other types of activity” (B12.g) include online purchase/ordering and sales of goods, services or information, software download and miscellaneous activities.

Hungary: See notes for Austria.

Iceland: Data from “Enterprises’ use of ICT” survey conducted by Statistics Iceland.

Ireland: See notes for Austria.

Italy: See notes for Austria.

Japan: Data from the annual “Communications Usage Trend Survey” conducted by the Ministry of Internal Affairs and Communications. The results of this survey refer to the sample and have not been extrapolated to the target population. Data refer to enterprises with 100 or more employees. “Fixed line connection under 2 Mbps” and “fixed line connection of 2 Mbps or more” (B9.c and B9.d) refer, respectively, to under 1.5Mbps and 1.5Mbps or more. “Other modes of access” (B9.e) refer to accessing by broadband (CATV, FTTH, FWA, DSL etc.).

Latvia: Data from the annual “Community Survey on ICT Usage and e-Commerce in Enterprises” conducted by the Central Statistical Bureau. “Fixed line connection of 2 Mbps or more” (B9.d) refers to all types of fixed broadband (DSL and other fixed Internet connection, e.g. cable, leased line) and includes connection speeds under 2 Mbps.

Lithuania: See notes for Austria.

Luxembourg: “Proportion of enterprises using the Internet that place orders online” (B8) refers to “percentage of enterprises which have ordered via the Internet over the last calendar year (excluding manually typed e-mails)” and refers to 2005. For other indicators, see notes for Austria.

Macao (China): Data from the survey on “Usage of Information Technology in Business Sector” conducted by the Statistics and Census Service.

Malta: See notes for Austria.

Mauritius: Data from the “Survey of Employment and Earnings, March 2006” conducted by the Central Statistics Office. The results of this survey refer to the sample and have not been extrapolated to the target population.

Netherlands: See notes for Austria.

New Zealand: Data from the “Business Operations Survey 2006” conducted by Statistics New Zealand. Enterprises “accessing the Internet by analogue modem” (B9.a) include enterprises accessing the Internet by ISDN (B9.b). Enterprises “accessing the Internet by fixed line connection under 2 Mbps” (B9.c) refer to any fixed-line connection regardless of speed (including of 2 Mbps or more). “Enterprises using the Internet for providing customer services” (B.12e) includes delivery of products of online (B.12f) and other types of activity (B.12g).

Norway: See notes for Austria.

Panama: Data from the “Survey of Non-Financial Enterprises” (Encuesta Entre Empresas No Financieras) conducted by the Statistics and Census Directorate (Dirección de Estadística y Censo) of the Contraloría General de la República. Preliminary figures.

Poland: See notes for Austria.

Portugal: See notes for Austria.

Qatar: Data from an economy-wide ICT survey conducted by the Statistics Department of the Planning Council.

Republic of Korea: Data from the “Survey on Information Society” conducted by the National Information Society Agency (NIA).

Romania: Data from annual survey on “ICT Usage and e-Commerce in Enterprises” conducted by the National Statistical Institute (Structural Business Statistics Department).

Russian Federation: Data from the annual survey on “Statistics on use of ICT and production of ICT goods and

services” conducted by the National Statistical Office and the State University Institute of Stastical Studies and the Knowledge Economy. Enterprises using the Internet for “banking or accessing other financial services” (B12.c) include enterprises using the Internet to pay for supply products (procurement).

Singapore: Data from the annual “Survey on Infocomm Usage by Companies” conducted by the Infocomm Development Authority (IDA). “Fixed line connection” (B9.c and B9.d) refers to frame relay/dedicated leased line, XDSL and cable modem. Owing to changes in methodology, results for 2005 and 2006 are not directly comparable.

Slovakia: “Proportion of enterprises using Internet that receive orders online” (B7) refers to “percentage of enterprises which have received orders via the Internet over the last calendar year (excluding manually typed e-mails)” and refers to 2005. “Proportion of enterprises using the Internet that place orders online” (B8) refers to “percentage of enterprises which have ordered via the Internet over the last calendar year (excluding manually typed e-mails)” and refers to 2005. For other indicators, see notes for Austria.

Slovenia: See notes for Austria.

Spain: See notes for Austria.

Sweden: See notes for Austria.

Switzerland: Data from the “Swiss Innovation Survey 2005” conducted by ETH Zurich, KOF Swiss Economic Institute.

Thailand: Data from the annual “Information and Communication Technology Survey (Establishment)” conducted by the National Statistical Office. Data refer to enterprises with 16 or more employees. Enterprises accessing the Internet “by fixed line connection of 2 Mbps or more” (B9.d) refer to xDSL. Enterprises accessing the Internet “by other modes of access” (B9.e) refer to cable modem, leased line, wireless and others.

Turkey: Data from the “2005 ICT Usage Survey in Enterprises” conducted by TURKSTAT.

United Kingdom: See notes for Austria.

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Notes

1. There is no established convention for the designation of «developed» and «developing» countries or areas in the United Nations system. In common practice, Japan in Asia, Canada and the United States in North America, Australia and New Zealand in Oceania, and Europe are considered «developed» regions or areas. In international trade statistics, the Southern African Customs Union is also treated as a developed region and Israel as a developed country; countries emerging from the former Yugoslavia are treated as developing countries. Countries of Eastern Europe and of the Commonwealth of Independent States in Europe are not included under either developed or developing regions, although Bulgaria and Romania have recently joined the European Union; «countries in transition from centrally planned to market economies», or transition economies, is a grouping used for economic analysis. Source: United Nations Statistics Division, <http://unstats.un.org/unsd/methods/m49/m49regin.htm>.
2. See <http://measuring-ict.unctad.org> for information on the UNCTAD XII Partnership on Measuring ICT for Development, which works to improve the availability of ICT data in developing countries.
3. On this, the ITU website says that «Examples include differences in availability of infrastructure or advanced technologies by area or region, or urban/rural differences in income and hence in the affordability of ICTs (as a proportion of income). Highlighting internal disparities along these lines can raise national debate in many countries and promote action to address inequality.» <http://www.itu.int/osg/spu/publications/worldinformationsociety/2006/faq.html>.
4. This includes wireless application protocol (WAP), general packet radio service (GPRS), and universal mobile telecommunications system (UMTS).
5. Statement by Viviane Reding, member of the European Commission responsible for Information Society and Media, Connecting up the global village: a European view on telecommunications policy, at the Conference of the ITU, Telecom World 2006, Hong Kong (China), 4 December 2006. Document ref: SPEECH/06/772.
6. See <http://www.fibreforafrica.net/> and <http://mybroadband.co.za/news/Telecoms/827.html>; <http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=3825&language=1>.
7. O'Donnell et al. (2007) state as follows: «mServices encompass a wide range of wireless applications that involve individuals or enterprises... While mCommerce encompasses B2B and B2C transactions, mEnterprise concerns the use of mobile devices in inter- and intra-business operations. MEnterprise projects generally entail some aspect of business process reengineering. These areas overlap and the definitions are not precise.»
8. Mobile devices that can support up to 14.4 Mbps download speed are expected to become available in 2008 in the Republic of Korea.
9. World Bank Investment Climate Surveys, 2000–2003.
10. WiBro is high-speed wireless Internet and data network access over a wide area.
11. Eurostat, Statistics in Focus, 28/2006.
12. A *maquiladora* or *maquila* is a factory that imports materials and equipment on a duty-free and tariff-free basis for assembly or manufacturing and then re-exports the assembled product, usually back to the originating country.

13. To explain the difference between online sales and purchases, the EU states that «adoption of online sales can be more complex than purchases, as it can entail a new business model for the enterprise». Statistics in focus 28/2006, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-NP-06-028/EN/KS-NP-06-028-EN.PDF.
14. B2C trade volume for 2006 was 3.6 trillion Won (KRW) and B2B trade volume was 366.2 trillion KRW, at an exchange rate of 1 KRW = \$0.00109292. Live rate of 28 September 2007 at <http://www.xe.com/>.
15. As at 30 June 2007. See <http://www.alibaba.com/>.
16. http://www.financialexpress.com/print.php?content_id=167102.
17. Interview with Mr. Walid Kooli, focal point for e-commerce at the Tunisian Ministry for Trade and Handicrafts, in the ITC e@work newsletter, September 2007.
18. See <http://www.strategyanalytics.net/> and <http://www.ifpi.org/>.

