

ITU News is pleased to introduce this new four-page pull-out known as *Policy and Strategy Trends*. It is intended to be the first of a series which will appear regularly in the centre pages of *ITU News*. *Policy and Strategy Trends* is produced by ITU's Strategy and Policy Unit (SPU). This first pull-out was prepared in collaboration with the ITU Telecommunication Development Bureau (BDT), and provides an overview of the new *World Telecommunication Development Report: Reinventing Telecoms* (www.itu.int/ITU-D/ict), which was released at the World Telecommunication Development Conference held in Istanbul in March 2002.

Reinventing Telecoms

The new telecommunication world: At a new crossroads

By the beginning of 2002, more than half the countries in the world had fully or partially privatized their incumbent telecommunication operator (see Figure 1). Competition has spread widely, although a majority of countries still retain monopolies in fixed-line services, such as local and long distance calls. However, an overwhelming majority of countries now allows competition in the mobile and Internet market segments, which increasingly substitute for fixed-line voice.

Mobile: raising access to communications

With just short of one billion subscribers at the end of 2001, mobile is poised to take over from fixed lines in the early part of 2002 as the network with the most users (see Figure 2). By the end of 2001, over 90 per cent of countries had a mobile network, almost one in every six of the world's inhabitants had a mobile phone and almost 100 countries had more mobile than fixed telephone subscribers (see Figure 3). Mobile has raised access to communications to new levels. In developing nations, and particularly in the least developed countries (LDC), mobile is increasing telephone access surprisingly rap-

idly. The mobile revolution in developing countries is easily explained by the ease with which mobile networks can be installed. But another key element is the availability of prepaid cards. Among populations which would not meet the financial criteria for subscription-based services, prepaid can bring communication to the masses.

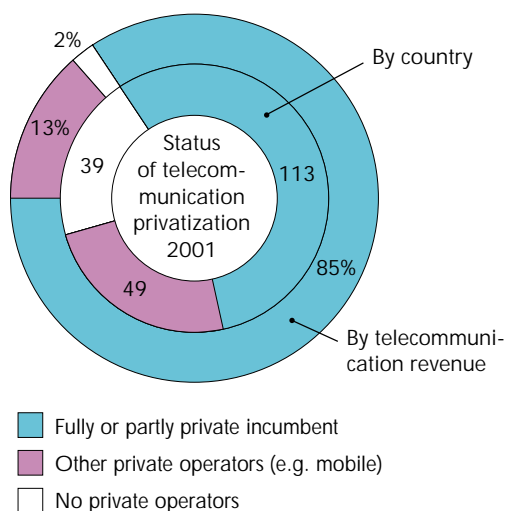
Even in developed countries mobile is gradually substituting fixed — primarily among the lower-income segment of the population. This trend implies that mobile, rather than fixed, is the key to achieving universal access goals and other social policy objectives.

The new digital divide

In 1991, *total* telephone penetration (fixed-line plus mobile telephones) stood at 49.0 in developed nations, 3.3 in emerging nations and just 0.3 in the LDCs. A decade later, the corresponding levels stood at 121.1, 18.7 and 1.1. However, while the ratio between developed nations and emerging ones has halved, between emerging nations and LDCs it has actually grown (see Figure 4). The new digital divide is expressed in the growing gap between these countries and the LDCs, especially in terms of access to Internet (see *Improving IP Connectivity in LDCs* on page 4).

The new digital divide is harder to measure because it is not just about access to the Internet, but also about the *quality* of the experience. For instance, international Internet bandwidth (or IP connectivity),

Figure 1— Private, competitive, mobile and global
Status of telecommunication privatization, by country and by share of global revenue, 2001



Note: Data is based on 201 countries. "Other private operators" refers to percentage of countries in the world that have not privatized their incumbent fixed-line telephone operator but have other private fixed, international or mobile cellular telecommunication companies.

Source: ITU.

Figure 2 – Mobile as the new global network

Mobile and fixed telephone subscribers worldwide, 1982–2005 (millions)

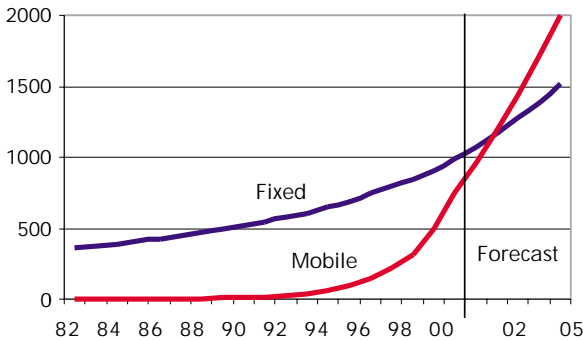
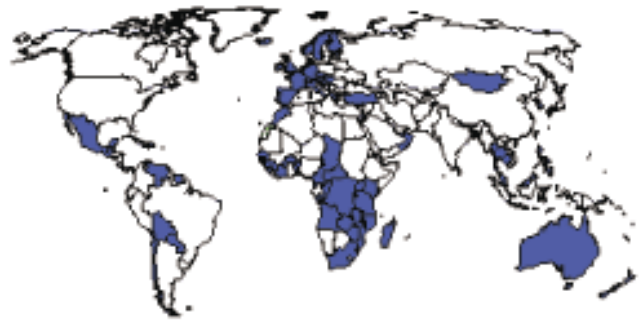


Figure 3 – More mobile countries

■ Countries with more mobile than fixed telephones, 2001



Note: In the left chart, 1982–2001 is based on real data and 2002–2005 on projections. In the right chart, the 97 countries that are shaded had more mobile users than fixed lines, as at year-end 2001.

Source: ITU World Telecommunication Indicators Database and ITU projections.

which is a determining factor in response times, is a good measure of users' experience with the Internet. The 400 000 citizens of Luxembourg between them share more international Internet bandwidth than Africa's 760 million citizens. The reality is that high-speed (broad-

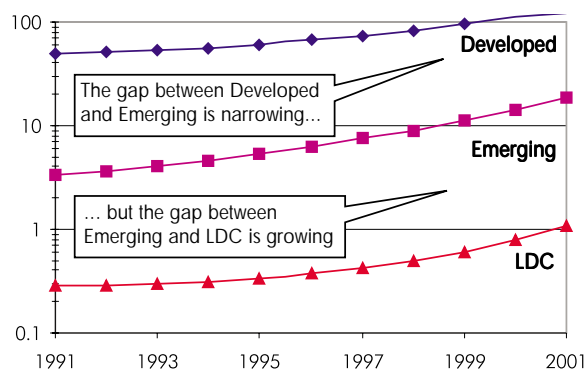
band) Internet access, which has become fashionable in many parts of the developed world, is still a long way off in most developing countries. The new digital divide is about quality, not just quantity.

However, the Internet is of little use to people who are unaware of

how access to electronic information can improve their lives, or who do not know how to use the equipment. Training and locally relevant content will therefore be key factors in bridging the divide. Moreover, there is a shortage of compelling research and examples of how ICTs

Figure 4 – The telephone gap shrinks...but grows between LDCs and emerging economies

Total fixed lines and mobile users per 100 inhabitants

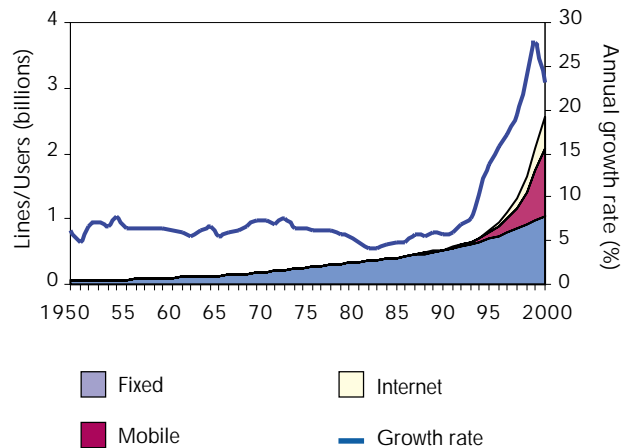


Note: Developed refers to Australia, Canada, the European Union, Hong Kong SAR, Iceland, Japan, New Zealand, Norway, Republic of Korea, Singapore, Switzerland, Taiwan-China and United States. LDC refers to the 49 least developed countries. Emerging refers to all other countries.

Source: ITU World Telecommunication Indicators Database.

Figure 5 – The fifty-year long wave: 1950–2001

Fixed-lines, mobile phones and Internet users (in billions), and annual growth (in %)



Source: ITU World Telecommunication Indicators Database.

Table 1- Winners and losers

*Changes in total teledensity rank, between 1990 and 2000, for selected economies**Economies with rising rank*

Economy	2000	1990	Rank 2000	Rank 1990	Change
China	17.8	0.6	95	159	64
Viet Nam	4.2	0.1	141	189	48
Botswana	21.6	2.1	91	129	38
El Salvador	21.8	2.4	90	125	35
Jamaica	34.1	4.5	71	106	35
Hungary	67.4	9.6	43	78	35
Mauritius	38.6	5.4	67	100	33
Chile	44.4	6.7	61	93	32
Philippines	12.4	1.0	112	143	31
Morocco	13.3	1.6	107	136	29
Paraguay	20.7	2.7	92	120	28
Cambodia	1.2	0.0	167	194	27
Cape Verde	17.2	2.4	98	125	27
Taiwan-China	137.0	31.4	5	31	26
Poland	45.6	8.6	60	85	25

Economies with falling rank

Economy	2000	1990	Rank 2000	Rank 1990	Change
Armenia	15.6	15.7	102	60	- 42
Iraq	2.9	3.9	149	109	- 40
Tajikistan	3.6	4.5	143	105	- 38
Uzbekistan	6.9	6.9	128	92	- 36
Kyrgyzstan	7.9	7.2	125	90	- 35
Angola	0.7	0.8	177	146	- 31
Liberia	0.2	0.4	190	162	- 28
DPR Korea	4.6	3.8	138	111	- 27
Canada	96.1	58.6	33	6	- 27
Turkmenistan	8.4	6.0	123	97	- 26
Cuba	4.4	3.1	140	115	- 25
Moldova	16.5	10.6	99	74	- 25
Kazakhstan	12.5	8.0	111	87	- 24
Comoros	1.0	0.8	171	149	- 22
Ukraine	22.7	13.6	87	66	- 21

Note: Total teledensity is the sum of fixed lines and mobile users per 100 inhabitants. Some 193 economies were ranked.

Source: ITU World Telecommunication Indicators Database.

can transform the development process. Effective solutions will require a triumvirate pact between governments, development agencies and the private sector.

Recipe for reform: privatization, competition and independent regulation

Although many different recipes for reform have been followed, most countries have included three basic ingredients in their reform programme: private sector participation, market competition and creation of an independent regulatory body. Table 1 shows those economies that experienced the greatest change in ranking (up or down) for total teledensity (the sum of fixed lines and mobile users per 100 inhabitants) between 1990 and 2000. Among those that succeeded in improving their status are many economies that began reforms early

in the decade, like Chile, Hungary or the Philippines, as well as several that started more recently, like Botswana or Morocco. The stand-out cases are China and Viet Nam, which both followed a strategy of encouraging competition between different government ministries as well as private sector investment in their mobile sectors. When a government is truly committed to telecommunications investment, it can make a big difference relatively quickly.

The industry in 2000 was worth almost a trillion US dollars in terms of service revenues, but the acceleration in telecom growth rates was reversed in 2001, notably in key market segments such as mobile and Internet. Share prices declined precipitously, and expected profits turned to losses for many of the new market entrants. The sector was left reeling, and wondering what went wrong.

While the recent diagnosis might be one of doom and gloom, the phenomenal growth of the late 1990s should be seen in a historical context, as a wave of change which only happens every fifty years or so (see Figure 5). It was the result of the confluence of rapid technological change with a shift in market expectations, in this case associated with mobile overtaking fixed-line networks, with data overtaking voice, and with widespread implementation of sector reform.

The gale of creative destruction currently blowing through the industry will bring misery to some, but opportunity to many more. Above all, for telecommunication users, who will soon form the majority of mankind, a new age is dawning in which scarcity is being replaced by plentiful and ubiquitous supply. That is *telecoms reinvented!*

Improving IP connectivity in the least developed countries: Breaking the vicious circle of poverty and high prices

ITU is currently looking at ways to improve Internet penetration in the least developed countries

Despite the fact that some 264 countries now have Internet access, the Internet is still a rare privilege in the least developed countries, where just two in each thousand members of the population has Internet access — far less than the average of one in twenty for other developing countries and, as might be expected, way below the one in four citizens who have Internet access in some major economies.

The reasons for this disparity lie not only in the extreme poverty of LDCs, but also in the scarcity of economic, institutional and human resources, often compounded by geophysical factors. The Internet, with its requirement for high-quality, high-speed connections, places heavy demands on infrastructure. In most of these countries however — especially in landlocked territories or remote islands — national and international Internet connectivity is in short supply: optical fibres may not be available, satellite links are limited and expensive,

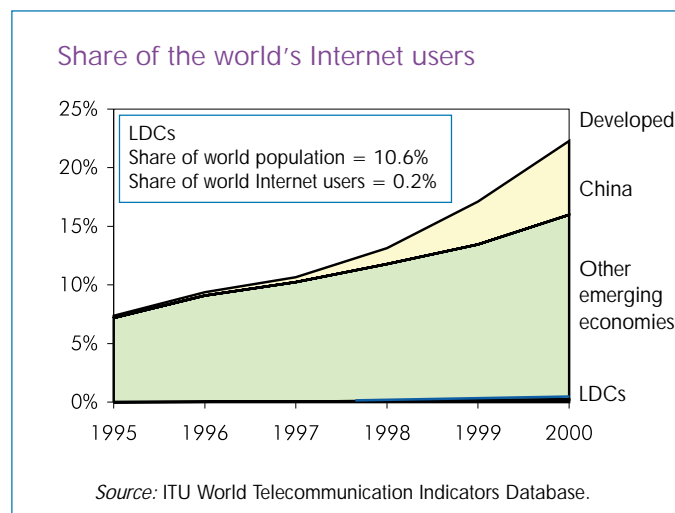
and internal telecommunication infrastructures are typically concentrated in a few main cities and present severe shortcomings in rural areas. These obstacles, together with lack of clear telecommunication policies and regulations and an internal market that is often closed to competition, result in a lack of investment and highly-priced services, all of which impede Internet penetration.

capacity of Internet service providers (ISP) in the LDCs through the use of satellite technology (e.g. very small aperture terminals, or VSAT). This is to be achieved by “pooling” demand for Internet bandwidth among the countries concerned, and helping to finance the purchase of satellite capacity by ISPs to enable them to provide lower-cost access to end-users, schools, hospitals and other entities. The

ISPs would undertake to respect certain conditions and requirements (e.g. number of communities covered, reduced price of services for non-commercial end-users and cybercafés, etc.). In the longer term, connectivity should be self-financing after the project has terminated.

Establishing a reliable infrastructure that can enable access to international Internet

capacity at low cost could be the first step towards breaking the “vicious circle”, and creating a “virtuous [Internet] circle” in LDCs. For further information, visit the website at: www.itu.int/ipdc. ■



ITU is currently considering a project to enhance Internet connectivity in the LDCs, as a practical step towards bridging the digital divide. One of the main objectives of the project is to increase the bandwidth