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MAIN TRENDS IN PRICING

Abstract. Several major trends have typified telecommunication pricing structures in the past several years. This chapter examines these trends and provides information on dial-up Internet access pricing, DSL pricing, residential and business telecommunications baskets, residential and business rates, international rates, mobile communications, leased lines and local loop unbundling.

Several major trends have typified telecommunication pricing structures in the past several years. The trend toward tariffs that are not related to distance has been discussed in previous editions of the *Communications Outlook*. In some countries, one metered rate now applies to all domestic calls. In those countries continuing to have divisions between local and long distance calling, particularly where local calls are unmetered, the size of local zones is often being expanded at the same time as long distance charges become more uniform. The approach of Canada provides one example of how the process of extending local zones is managed (Box 6.1).

A second trend is the shift toward unmetered public switched telecommunication network (PSTN) access for dial-up Internet service. In the most competitive market segments, full or partially unmetered options are also being made available for telephony for those customers that prefer such a pricing structure. In the United Kingdom, where new entrants have gained the largest share of local access lines, the incumbent has introduced unmetered telephony for local calls. At the same time, in those countries that have traditionally had unmetered local telephony, new options being introduced included full or partially unmetered long distance services.

In the United States, during 2002, AT&T offered unlimited long distance calls to other AT&T customers for USD 19.95 per month. Customers using this service hear “AT&T”, followed by a special tone which lets users know they are talking to another AT&T customer and that the call is unmetered. In other countries, such as Australia and New Zealand, price ceilings are applied to calls such that they become unmetered beyond a certain duration. In the past, some telecommunication carriers suggested that network capacity constrained their ability to offer a variety of pricing plans. The ability of some carriers to make a range of options available to customers suggests this is no longer the case. Traditionally, 25 December has been one of the days when networks carried the greatest amount of traffic. In 2002 it was therefore noteworthy that Swisscom offered free domestic local and long distance calls on its fixed network all day on Christmas.

There has been far greater demand for unmetered dial-up Internet access than telephony. At the beginning of 2000 there were only five OECD countries in which it was possible for users to obtain unmetered Internet access from an incumbent telecommunication carrier. These were all countries where local telephony was traditionally unmetered – Australia, Canada, Mexico, New Zealand and the United States. In 2002 the number of OECD countries in which the incumbent telecommunication carrier offered unmetered access to the Internet, daytime or evenings, had increased to 12 (Table 6.1). Incumbents that introduced unmetered access included those in Czech Republic, Finland, Korea, Japan, Portugal, Spain and the United Kingdom. In several other OECD countries, such as France and Ireland, unmetered offers are available from Internet service providers (ISPs) using unmetered interconnection arrangements. In Poland, unmetered access was introduced by one of the smaller telecommunication carriers but not the incumbent.

Taken together, unmetered dial-up Internet access was available in half the OECD countries by 2002. On the other hand, the incumbent telecommunication carriers in two other OECD countries withdrew unmetered offers. In Germany, Deutsche Telekom replaced unmetered access with a series of packages including fixed amounts of time. In Hungary, Matav, the incumbent in which Deutsche Telekom has an ownership share, also withdrew its off-peak unmetered Internet access option. In addition, a number of telecommunication carriers moved to differentiate unmetered access from the “always on” service enabled by broadband. Even in those countries that have traditionally had unmetered dial-up, volume caps are sometimes applied to ensure that users are not using PSTN lines as permanent connections.

The availability of unmetered digital subscriber lines (DSL) in Germany and Hungary mitigated some of the discord that would have otherwise been generated by the withdrawal of unmetered dial-up services. In those countries where broadband access is relatively inexpensive, users clearly prefer that service to unmetered dial-up. In Korea, for example, unmetered dial-up is among the least expensive in the OECD area but this has not deterred users from making the transition to broadband. In Canada, the United Kingdom and the United States, where dial-up is also relatively inexpensive, the growth of broadband has been influenced more by the price of the service than by dial-up service prices. Lower prices for broadband access in these countries have coincided with higher growth for broadband, rather than the impact of low dial-up pricing. On the other hand, elements of metered broadband access in Australia and New Zealand have made the service less attractive than unmetered dial-up.

One new development in Internet access pricing has concerned peak and off-peak dial-up services. Historically, peak and off-peak rates were used by telecommunication carriers to manage network capacity and encourage usage during periods of lower demand. Peak times generally coincided with the most common working hours whereas off-peak times coincided with evenings and weekends. As PSTN tariffs for dial-up have been separated from local telephony pricing, the distinction between peak and off-peak has tended to disappear. This trend was reinforced as the peak and off-peak times for residential Internet use varied considerably from those associated with telephony. For residential dial-

Box 6.1. Local telephony zones in Canada

In October 2002, the Canadian Radio-television and Telecommunications Commission (CRTC) issued the framework it will use in deciding whether to extend toll-free calling between local telephone exchanges, in effect expanding local call areas. Effective from that date, the new framework sets out the principles, criteria and process the CRTC will follow in these cases.

The recent trend toward municipal amalgamation has underlined the need for the CRTC to establish a general framework to use in expanding local calling areas. The new framework was developed in response to requests from telephone subscribers and municipalities looking to reduce their long distance telephone charges by expanding their local calling areas. It balances the interests of telephone users, municipalities, incumbent local telephone companies and telecommunications competitors.

Under the new CRTC framework criteria, an elected local, municipal or regional government can start the process of expanding its local calling area by passing a motion and making a request to the local incumbent telephone company. The Commission will accept a request from the appropriate level of government as evidence that there is a community of interest for the purpose of expanding a local calling area. As there is great variation in the size of municipal or regional areas in Canada, the Commission will not require a distance criterion to expand a local calling area.

Both incumbent telephone companies and competitors will be compensated for a portion of lost long-distance revenues caused by expanding the local calling area through a temporary surcharge. In its decision, the Commission suggests that this amount be equal to three years' worth of long distance revenue and seeks comments from the parties involved in the hearing on this topic. In exchanges where the proposed temporary surcharge for residential subscribers would be above CAD 1 per month, all telephone subscribers will be able to vote on whether the local calling area should be expanded. A simple majority of respondents must vote in favour of expanding the local calling area for the proposal to go ahead.

The process to expand a local calling area can be triggered by a request from a local, municipal or regional government to the incumbent local telephone company. The local telephone company will then determine the estimated cost increases, lost toll revenue and cost of any required plebiscite. Based on this information, the requesting government would decide whether to proceed or not. If it decided to go forward, the local telephone company would take the next step and file an application with the CRTC. Interested parties would then have an opportunity to comment. Any required vote, to be paid for by the requesting government, would be held following the CRTC conditional approval of the proposal. The local calling area would be expanded if a simple majority of respondents approve the proposal.

up users, the greatest amount of time spent online is during evenings and on weekends. Accordingly, charging peak rates for dial-up service during the day made little sense. Most operators that bundle online time with ISP fees now do not differentiate between peak and off-peak usage. At the same time, some telecommunication carriers are taking this a step further and introducing less expensive pricing during the day. Given these developments, the OECD's peak and off-peak dial-up baskets have been renamed "daytime" and "evening" so that the least expensive option can be applied in each country.

Telecom New Zealand offers a less expensive daytime rate for Internet access than their standard offer. With the "Xtra Daytime Pack", users can access the Internet all day until 17:00 and all night after 23:00 for less than USD 14 per month. Accordingly, the offer includes up to 18 hours of Internet access every day. This option effectively makes working hours the off-peak time for Internet access. In Hungary, Matav has also introduced a rate for dial-up Internet access that makes daytime hours the least expensive.

Dial-up Internet access pricing

For several years, the OECD has been collecting data and comparing a basket of Internet access services. This basket includes line rental, PSTN usage charges and the ISP fee. The line rental charge is used in the basket to balance the fact that traditionally countries that did not charge for local calls had higher fixed charges, whereas countries which charged for local calls had lower fixed charges. The use of the full fixed charge does not imply that customers would require an incremental line to access the Internet, as most residential customers use their existing PSTN line for telephony and access to Internet services. Accordingly, for comparative purposes, the price of Internet access excluding line rental is also available. The prices, for all elements of the baskets, are those of the incumbent telecommunication carrier so as to ensure that they are for services that are comparable.

One caveat to note is that some of the prices shown for a defined duration include further amounts of online time. This is the case for countries with unmetered access or packages with large amounts of online time included. For example, the option used for Bell Canada's monthly Internet access includes 100 hours of online time.

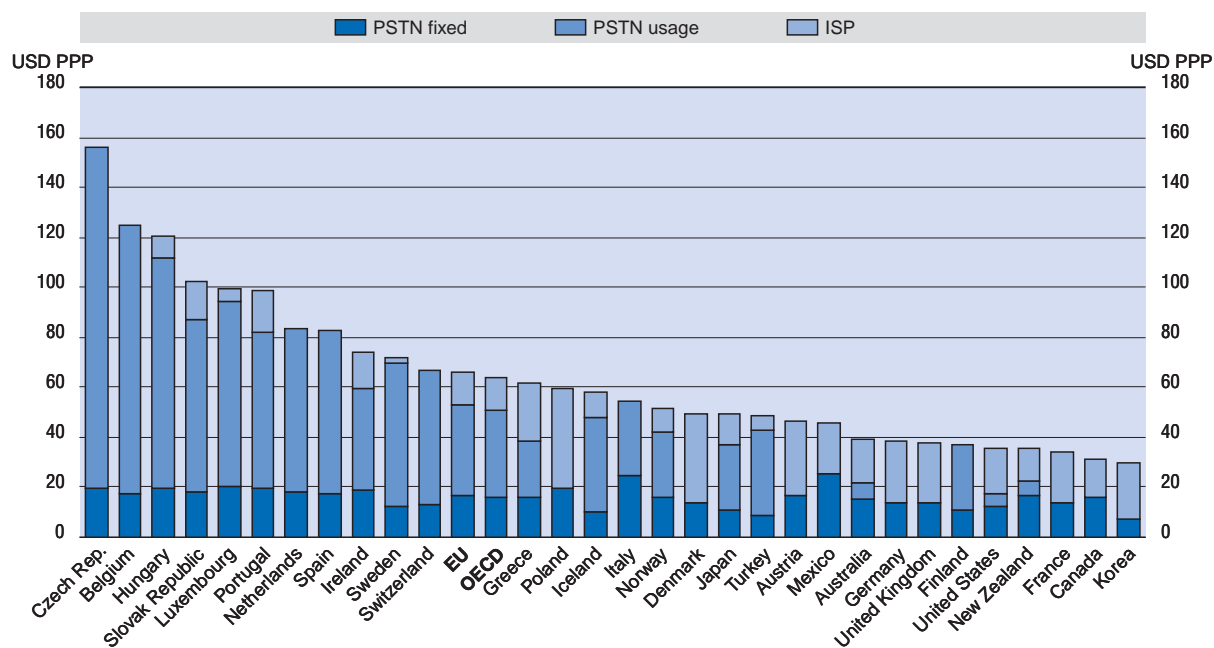
In September 2002, the average OECD monthly price of a 20-hour daytime basket of Internet access services, including line rental, PSTN usage charges and ISP fee was USD 44.01 (Table 6.2). The least expensive country for daytime dial-up service is Korea, followed by Finland, Turkey, France and Germany. Although dial-up Internet access is very inexpensive in Korea, most users prefer broadband access and the number of dial-up users is now decreasing. At evening times, this group of countries are joined by the United Kingdom, Switzerland and Sweden (Table 6.3).

Unmetered options come more to the fore as online time increases. This is because metered pricing, of course, increases the cost to the user with an increase in online time. For the daytime basket of 40 hours of online time, both Canada and the United States, where unmetered rates apply, are among the least expensive countries (Table 6.4). The least expensive country is Korea, followed by Canada, France and the United States. At evening times, the least expensive countries for 40 hours of dial-up service are Korea, Canada, the United Kingdom, France and the United States (Table 6.5).

Internet access pricing time series

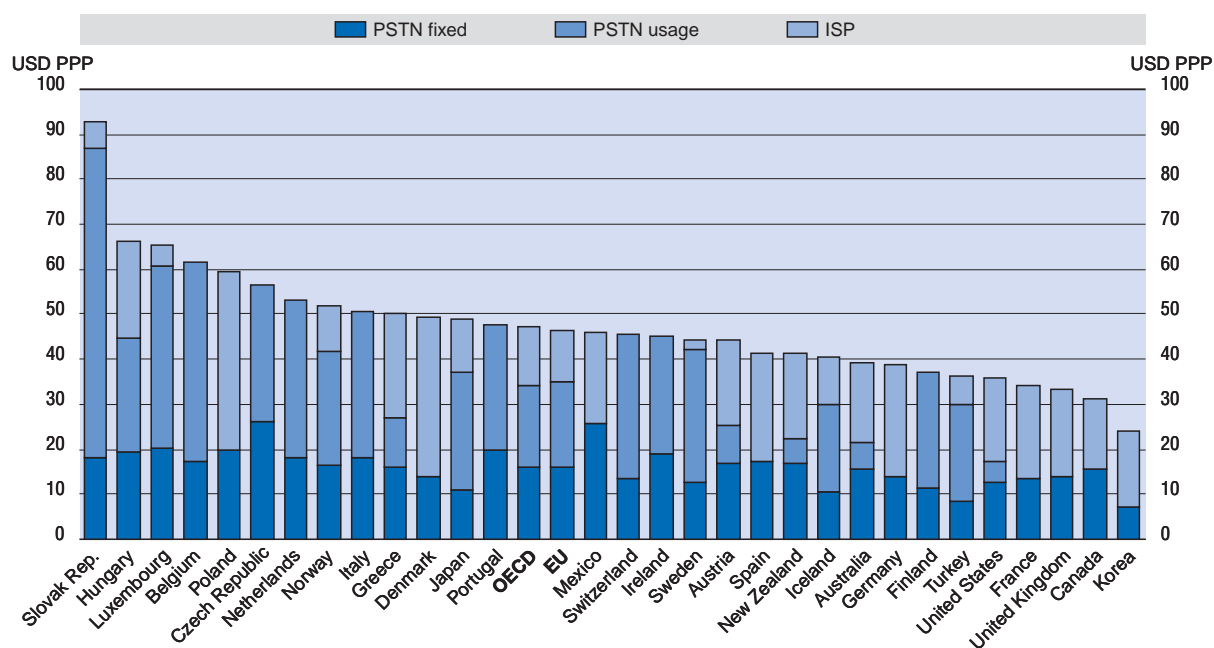
Internet access prices have decreased considerably over recent years. Between 1998 and 2002, the OECD's baskets for 20 hours of service both decreased by just under 7% (Table 6.6). Between 2001 and 2002 prices continued to fall for the daytime basket but rose by just under 1.8% at evening times. The largest relative rises occurred where Internet access costs are among the least expensive, in Turkey and Finland. In Turkey, the regulator ordered Turk Telekom to increase its charges after it decided that the existing rates were anti-competitive. In Finland, the rise resulted from the incumbent telecommunication carrier eliminating its off-peak tariff to create a standard rate at all times. The same impact is recorded for the baskets of 40 hours (Table 6.7). Accordingly, between 2001 and 2002, the daytime rate decreased by 7.9% while the evening rate increased by 1%.

Figure 6.1. **OECD Internet access basket for 40 hours at daytime using discounted PSTN rates, September 2002**
Including VAT



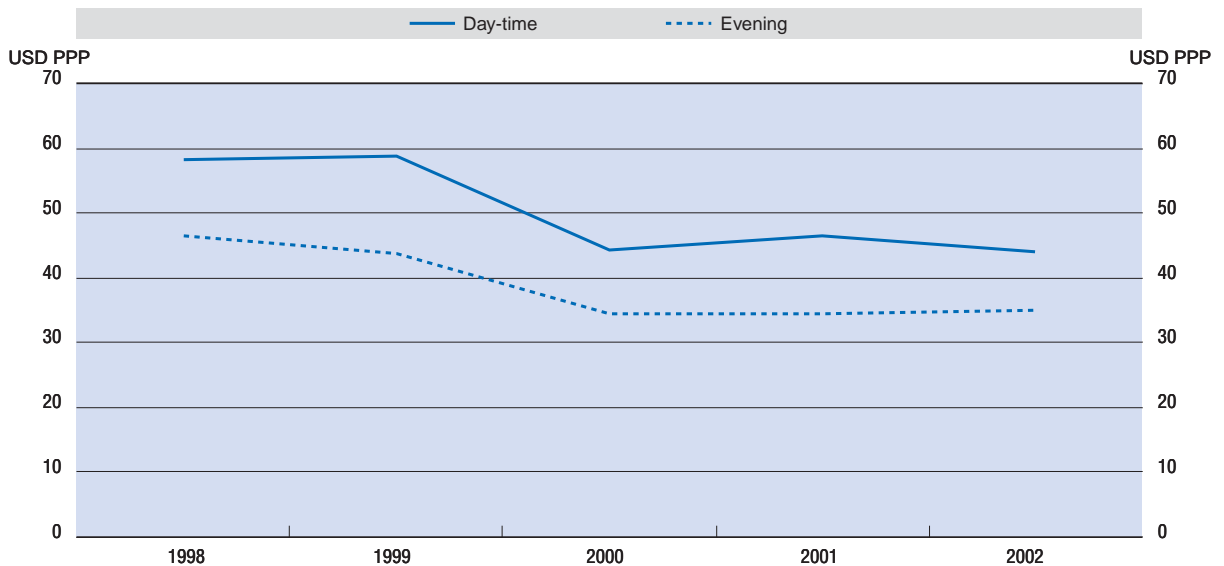
Source: OECD.

Figure 6.2. **OECD Internet access basket for 40 hours at evening using discounted PSTN rates, September 2002**
Including VAT



Source: OECD.

Figure 6.3. **OECD Internet access basket for 20 hours per month, using discounted PSTN rates, 1998-2002**
USD PPP, including VAT



Source: OECD.

Placing Finland and Turkey to one side, the main reasons for price increases showing in the baskets were to do with rebalancing and the trend toward direct payment for ISP services. The main cause of an increase in the time series for the OECD baskets is the increase in line rentals. In one case, for Australia, it is the result of the incumbent withdrawing its “homeline-net” service that provided a line rental aimed at Internet users. At the same time, the rebalancing of line rentals in Australia, and elsewhere, contributed to the rise in the OECD’s time series. Some telecommunication carriers have attempted to lessen the impact of rebalancing on users with additional residential lines for Internet access. In Belgium, for example, a 25% discount was available on the price of second residential lines in 2002. In other cases new schemes offer lower prices for primary lines. Telecom New Zealand has introduced a line rental option called “homeline economy”. Under this option, residential users pay a lower line rental and a flat rate for local calls up to a duration of two hours. This produces a reduction in the price of Internet access in New Zealand from previous years.

At the same time, ISP prices rose in some countries as some models of access pricing proved to be unsustainable. Among these was decreasing use of “free ISP” services that were supported by advertising. Other models of so-called free ISP services, which relied on payment via call charges, are still current in some countries but less popular than in preceding years. These services are generally the most economical for users with relatively low levels of usage. At the same time, some users prefer to pay more for an unmetered rate, or a larger block of online time, so that they know the amount of their monthly bill in advance.

As in past years, the relative gaps between countries in Internet access pricing, at daytime rates, are some of the largest for any communication service. In some OECD countries it costs much more to access the Internet, and although at evening times the differences are not as great, they are still significant. The new factor at work in some countries is the impact of broadband pricing for Internet access. Broadband access provides numerous benefits for Internet users. Foremost among these is improved performance in terms of capacity but also in the ability for users to have “always on”

connections. In addition, in some countries with metered dial-up pricing, broadband may provide the first unmetered option.

DSL pricing

The structure of DSL pricing has a number of variables in OECD countries. Foremost among these is the advertised capacity for connections. In a small number of countries, the lowest price for a DSL connection provides a downstream connection of 128 Kbit/s. As this speed is akin to integrated services digital network (ISDN) levels of service, they are excluded from broadband comparisons. A more common baseline service is for 256 Kbit/s downstream connectivity (Table 6.8). By way of contrast, the baseline level of downstream service in a number of other countries is more than 500 Kbit/s. Accordingly, to compare prices for DSL service, it is necessary to compare a range of baseline offers. Significantly, some services with advertised capacity greater than 500 Kbit/s are less expensive than services in other countries at 256 Kbit/s.

A second aspect of DSL pricing is whether the service has a metered element or is at a flat monthly rate. In more than half of OECD countries, the incumbent offers a flat-rate monthly price. In some countries the service is virtually unmetered with the baseline threshold being set relatively high such as in Belgium, Canada, Portugal and Switzerland. The two countries where the threshold for metered service is relatively low are Australia and New Zealand. However, in both these countries some services from the incumbents' own servers are not counted towards these limits.

In comparing prices, therefore, it is necessary to consider the capacity of the connection and, where applicable, the number of bytes users can download before additional charges are incurred. In September 2002, the best value was available in Canada, Japan and Korea. For offers at low capacity, Switzerland was relatively inexpensive. One caveat to bear in mind is that these prices are for the services of incumbents and less expensive offers are available in some countries, albeit mostly on a more limited geographical basis. This being said, the degree of competition should be reflected in the prices of incumbents. In Japan, for example, the emergence of new competitive ISPs such as Yahoo BB has led to one of the least expensive offers for DSL service in the OECD area and this has placed competitive pressure on the prices of NTT. At the same time, the prices are for individual dwellings, whereas in a small number of cases incumbents provide less expensive offers to multiple users in apartment buildings.

In a number of countries broadband access is less expensive than the cost of dial-up access as measured by the OECD baskets. Due to relatively high dial-up prices for service beyond 20 hours per month and low broadband prices, Japanese users have a tremendous incentive to shift to broadband access. When compared to 40 hours of dial-up service, at daytime rates, broadband access is less expensive in Belgium, Iceland, Japan, the Netherlands, Spain, Sweden and Switzerland. Some times this is because of relatively expensive prices for extended dial-up use at daytime rates. While it is clear that expensive dial-up can provide an incentive to shift to broadband, the reverse is not necessarily the case. There is not much indication that inexpensive dial-up service holds back the take-up of broadband service. The two leaders in the OECD in terms of broadband penetration are Korea and Canada, both of which have relatively inexpensive dial-up service as well as unmetered pricing options. In both countries users have therefore been prepared to pay for improved levels of Internet access. The key ingredient, therefore, is not the level of dial-up prices but the level of broadband prices. Both Korea and Canada have among the lowest DSL prices.

A further factor to take into consideration, in terms of broadband pricing, is that the prices available to users in apartment buildings are sometimes lower than those for users at individual sites. The most widely available prices, and those advertised by most incumbents, are certainly for individual sites. In countries with a high prevalence of people living in apartment buildings, less expensive offers are sometimes available from new entrants using alternative technologies (*e.g.* Ethernet LANs in Sweden). In other cases there are offers available for shared use of DSL connections by users in apartment buildings. In Finland, for example, new entrants have used service levels aimed at business users to provide shared broadband connections for less than USD 10 to residential users in apartment

buildings. The incumbent has responded with a similar offer. This reinforces the experience across the OECD that it costs much less to serve sites with multiple users than individual sites.

Residential and business telecommunication baskets

The OECD has two baskets to compare residential telecommunication prices. The first basket compares the price of domestic telephony (Table 6.9). The second basket, in addition to domestic services, includes international services and calls from the fixed network to mobile communication networks (Table 6.10). Iceland continues to have the least expensive domestic residential telecommunication services when measured in USD using purchasing power parity (PPP), followed by Switzerland, Korea, Sweden, Japan and the United Kingdom. The inclusion of cellular mobile and international calls has a significant impact on the rankings. In this case, the four Scandinavian countries and Switzerland are the least expensive.

The OECD also has two baskets to compare business telecommunication prices. These baskets are for a small business user of telephony. The first basket compares the price of domestic telephony (Table 6.11). The second basket, in addition to domestic services, includes international services and calls from the fixed network to mobile communication networks (Table 6.12). The four Scandinavian countries are once again the least expensive for a basket of domestic telephony. For the composite basket, the Scandinavian countries are also the least expensive, joined by Luxembourg and Switzerland.

Trends in residential and business rates

Between 2001 and 2002 the average price for a basket of telephony services in the OECD was relatively stable for both business and residential users (Table 6.13). This followed more than a decade of declining prices. Between 1990 and 2002 the average price for a basket of residential services fell 14.5% (Figure 6.8a). Starting from a higher base the average decline for a basket of business services was

Figure 6.4. **OECD residential tariff basket, August 2002**
USD PPP, including VAT

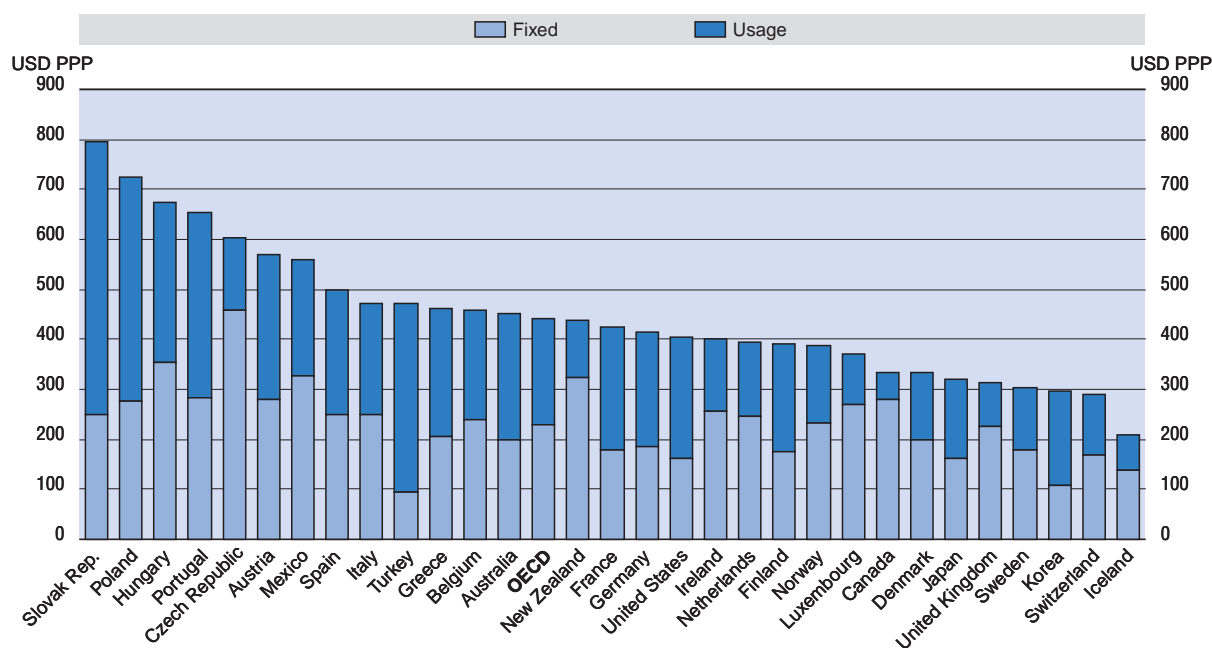
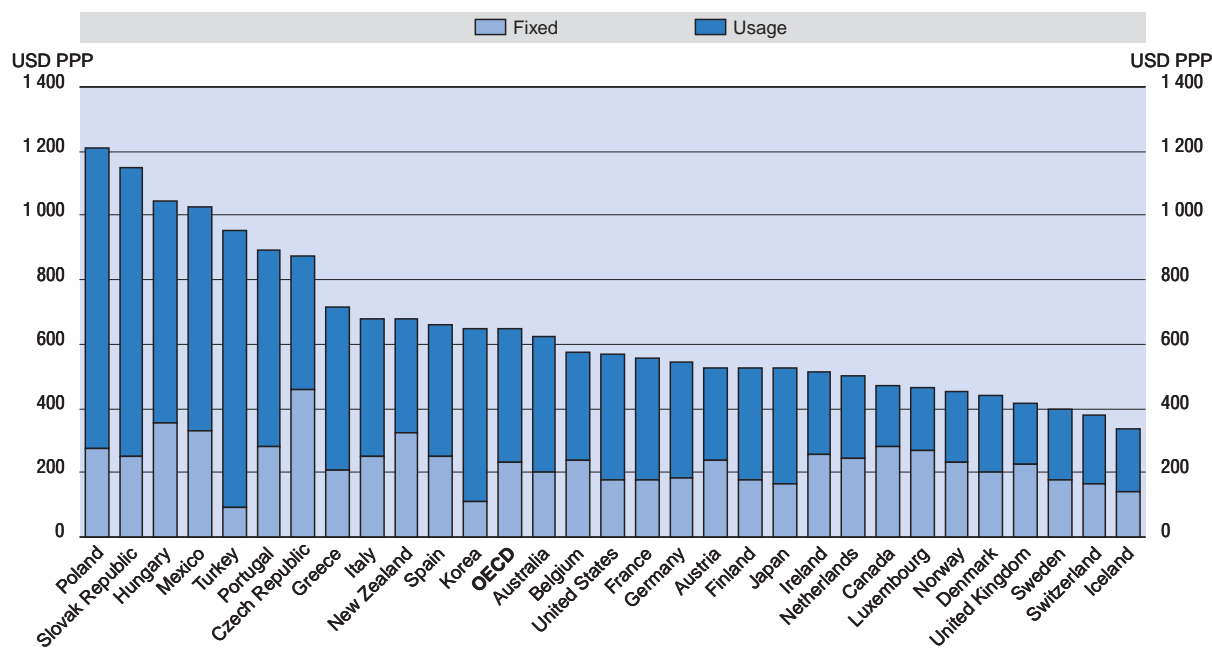


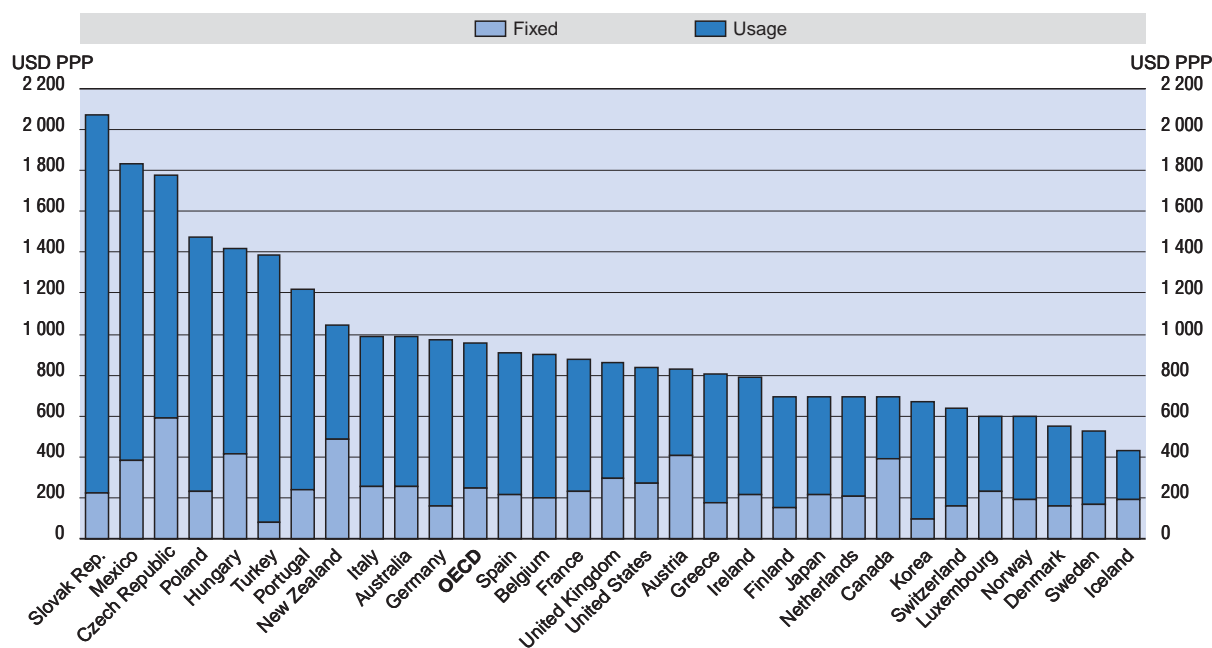
Figure 6.5. OECD composite basket of residential telephone charges, August 2002



Source: OECD.

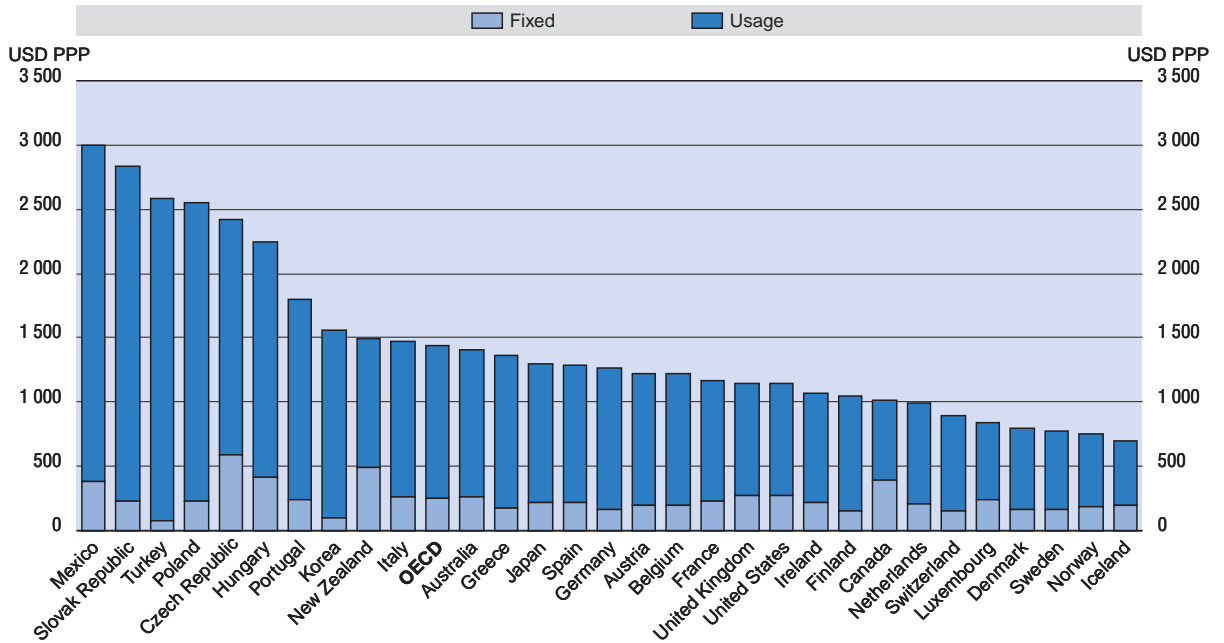
Figure 6.6. OECD business tariff basket, August 2002

USD PPP, excluding VAT



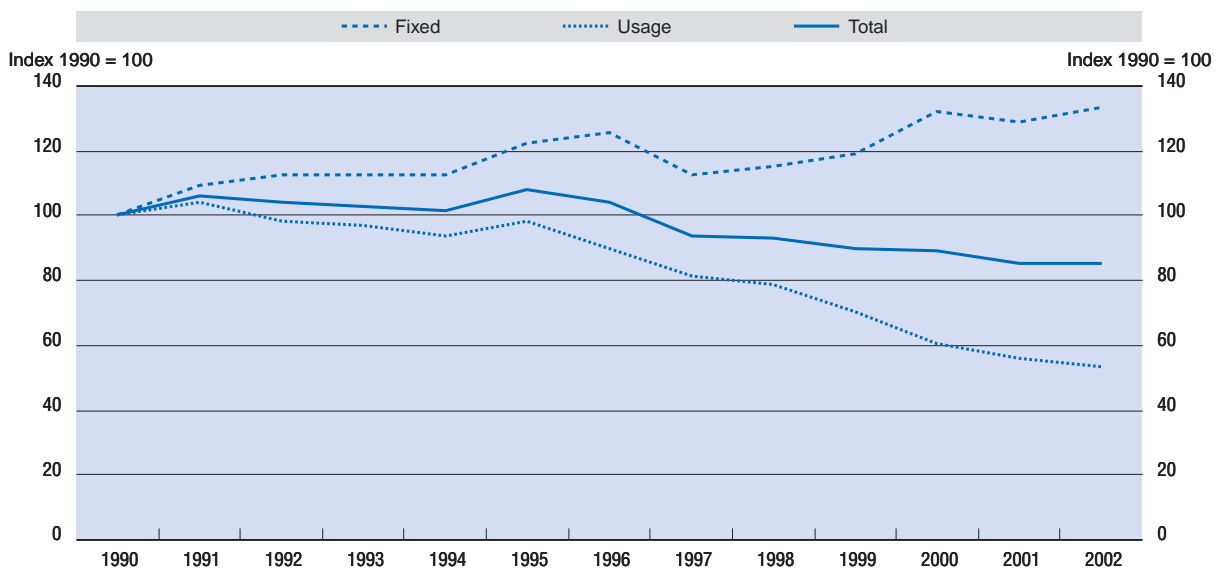
Source: OECD.

Figure 6.7. **OECD composite basket of business telephone charges, August 2002**
Excluding VAT



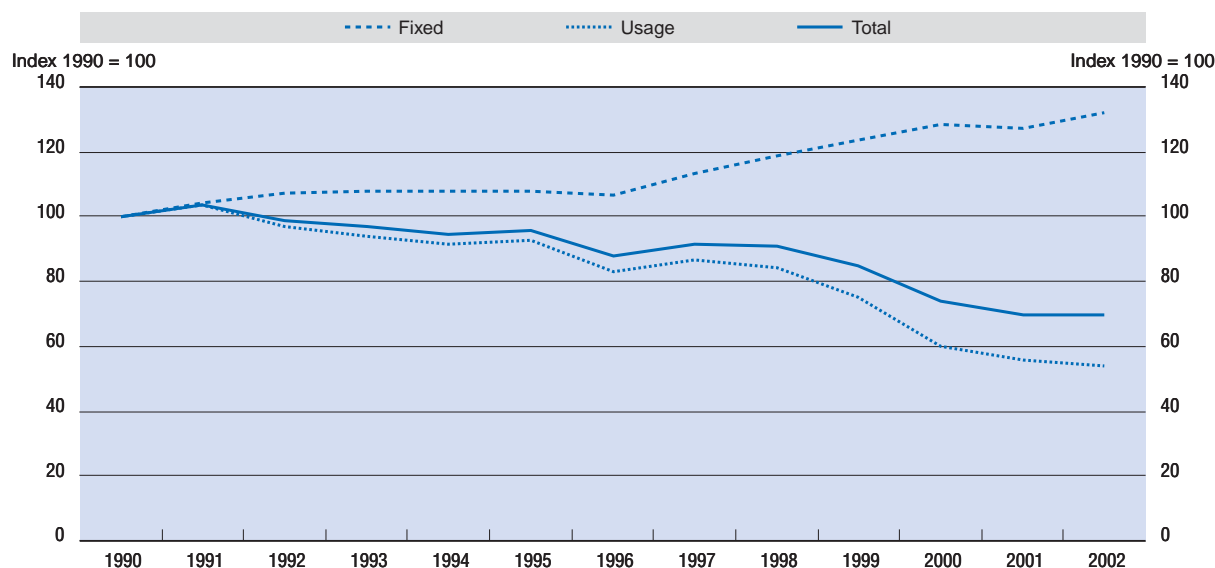
Source: OECD.

Figure 6.8a. **Time series for residential telephone charges**



Source: OECD.

Figure 6.8b. Time series for business telephone charges



Source: OECD.

30% over the same time period (Figure 6.8b). Taking into consideration that the data are based on current dollars, the actual gains for users are greater than shown.

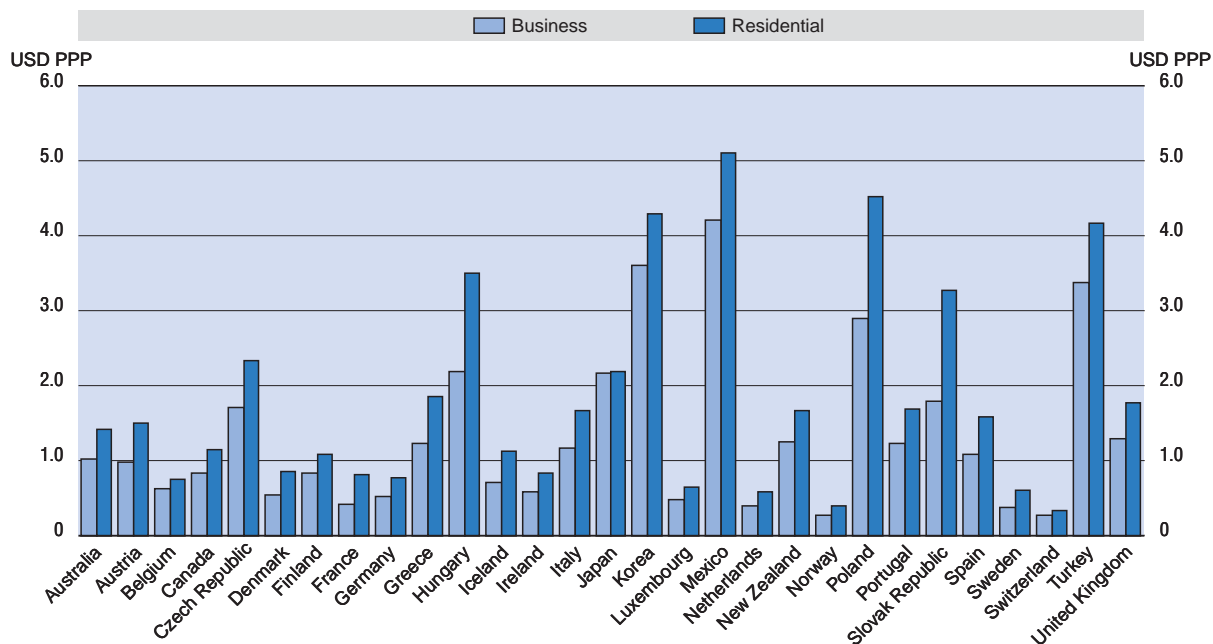
For residential users it is worth noting that all these gains have been made since the middle of the decade when the decrease in usage charges began to outpace the rise in fixed charges. While the direct impact of rebalancing has been to shift the relative weight of charges, the decline in usage charges is directly attributable to increasing competition. For business users, the gains have been particularly noticeable with increased liberalisation. Most of the gains have been made since 1998 coinciding with widespread liberalisation that year. The stability of prices in 2002 may reflect less price competition as some firms exit the telecommunications market. On the other hand, some price changes reflect some degree of “optional rebalancing” as telecommunication carriers introduce a range of line rentals or fixed fees for discount plans. In these cases, users elect to pay higher fixed charges in return for lower usage charges. Given that the OECD time series tracks the price for a fixed number of calls, the benefits users receive are not fully captured if they increase their levels of usage above this amount. Examples of such schemes include partially or fully unmetered long distance plans.

International rates

For business users the least expensive international rates, in August 2002, were to be found in Norway, Switzerland, Sweden, the Netherlands and France (Table 6.14). At the same time, for residential users, the least expensive international rates were in Switzerland, Norway, the Netherlands, Sweden and Luxembourg.

International rates have undergone the most reductions in any segment of telecommunication pricing over recent years. In some countries the standard published rates reflect these falls. In other countries it is necessary to subscribe to a discount plan to benefit from price reductions. In some cases these discount plans are automatically applied and in others the users need to pay an additional fixed monthly fee to receive the reduced rates. In November 2002, for example, a user of Bell Canada would have paid USD 0.63 per minute to call the Netherlands at peak times, using standard rates. If the same user subscribed to Bell Canada’s “First Rate Overseas Plan”, for a fixed charge of USD 3.17 per month,

Figure 6.9. OECD basket of international telephone charges for business and residential users, August 2000



Source: OECD.

the rate would have been USD 0.06 per minute. At the same time, the difference for a call from Canada to New Zealand using standard rate was USD 0.80 but only USD 0.06 under the discount plan. Canada's experience is mirrored in many other countries. Prices under various discount plans have fallen to very low levels compared with those available prior to liberalisation. On the other hand, there is often little movement in the standard published rates that seem to be retained almost as benchmarks to show customers how much they are saving under various plans.

In the future, Internet protocol (IP) telephony will exert pressure on international rates not least because services are now being offered without the need for a PC. In Japan, the standard peak time rate for a KDDI user to call the United States is USD 0.50 per minute. For the payment of USD 1.63 per month, a user can subscribe to the "Danzen Talk II DX" discount plan. Under this plan, users receive a 45% reduction to their most frequently called international number, 35% for their second most frequently called number and 25% off all other calls. Yet even with these reductions, IP telephony offers further significant price savings. For example, a user subscribing to Yahoo BB can make calls to the United States for USD 0.02 per minute. The standard rate for a call over the PSTN from Japan to Belgium is USD 2.42 per minute whereas an IP telephony call is priced at USD 0.19 per minute. This makes IP telephony much less expensive even taking into account various discount plans. In late 2002 this was one reason Yahoo BB was adding more than 100 000 telephony customers per month for its service.

The other significant development in the pricing of international telephony since the previous edition of the *Communications Outlook* is the differentiation between calls to fixed and mobile numbers. In recent years the price to terminate international calls on fixed networks has, in many cases, decreased below the price for terminating domestic calls to mobile networks. Accordingly, an increasing number of operators have negotiated international agreements to charge different rates for termination of incoming calls to fixed and mobile networks. The result, for the users making the call, is a higher price to call a mobile number in a foreign country than a fixed line. France Telecom, for example, charges

USD 0.49 per minute, at peak rates, to call a fixed line in Australia. The same call to a mobile number would cost USD 0.81 per minute. At off-peak times the rates for the same calls are USD 0.24 per minute and USD 0.63 per minute for fixed and mobile respectively. Calls from Australia to France have a similar pricing structure, with Telstra users paying 55% more per minute to call a mobile number than a fixed number.

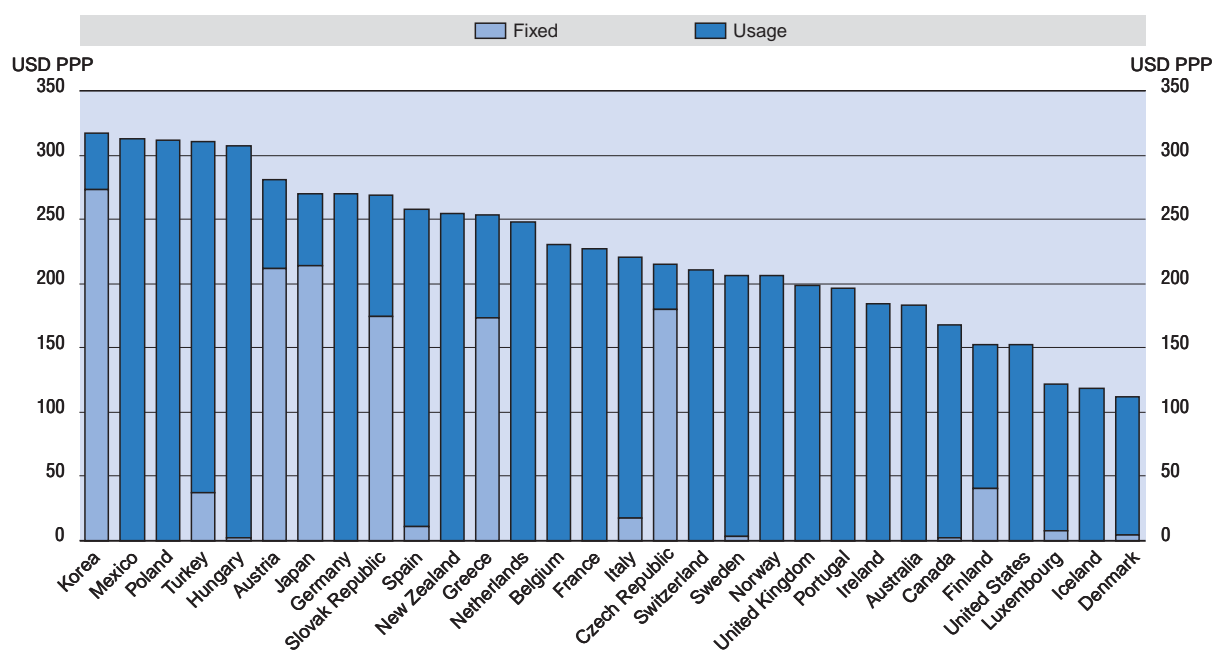
Mobile communications

The OECD has three baskets for comparing cellular mobile communication prices. The low user makes 25 calls per month, the medium user makes 75 calls per month and the high user makes 150 calls per month. The baskets spread the calls over different times of day and days of the week. In addition, the calls are spread over destination including calls to fixed networks, calls to other users on the same network and calls to other users on different mobile networks. A number of SMS (short message service) are also included for each user. In each country, multiple mobile operators are surveyed and the least expensive option chosen for the applicable usage pattern.

For the low user basket the least expensive offers were in Denmark, Iceland, Luxembourg, the United States, Finland and Canada (Table 6.15). The least expensive offers in this category tend to be prepaid. One caveat applies to the pricing for wireless service in the United States, where some pricing options use local calling areas in terms of the location from which users make calls. If users roam outside the local service area, they pay additional roaming charges under such pricing options. For the OECD baskets, the pricing option selected must enable users to roam on a national basis. If this stipulation did not apply, some prepaid options with local calling areas in the United States would be comparable to the pricing found in countries with relatively small national calling areas such as Luxembourg.

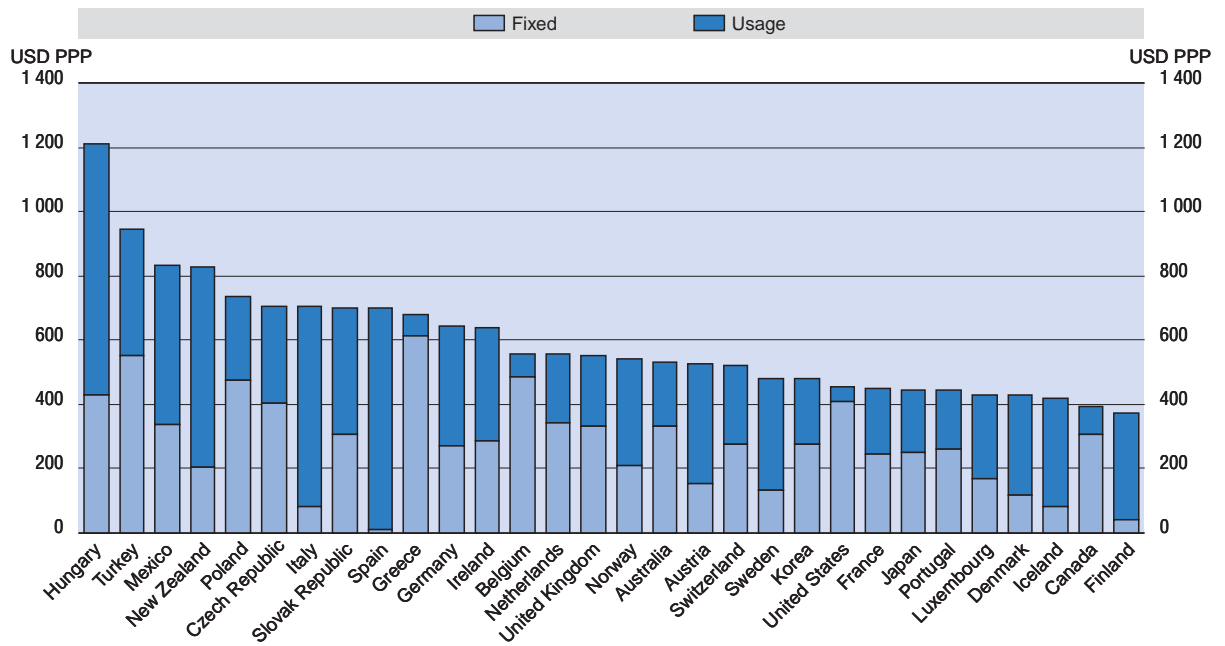
For a medium user, the least expensive baskets are Finland, Canada, Iceland, Denmark, Luxembourg and Portugal (Table 6.16). For the high-volume basket, the least expensive offers were in

Figure 6.10. OECD basket of low user mobile telephone charges, August 2002



Source: OECD.

Figure 6.11. OECD basket of average user mobile telephone charges, August 2002



Source: OECD.

the United States, Canada, Denmark, Luxembourg, Japan and Finland (Table 6.17). The traditional approach to wireless pricing in North America, including large amounts of minutes, comes strongly into its own as the usage level compared increases.

Leased lines

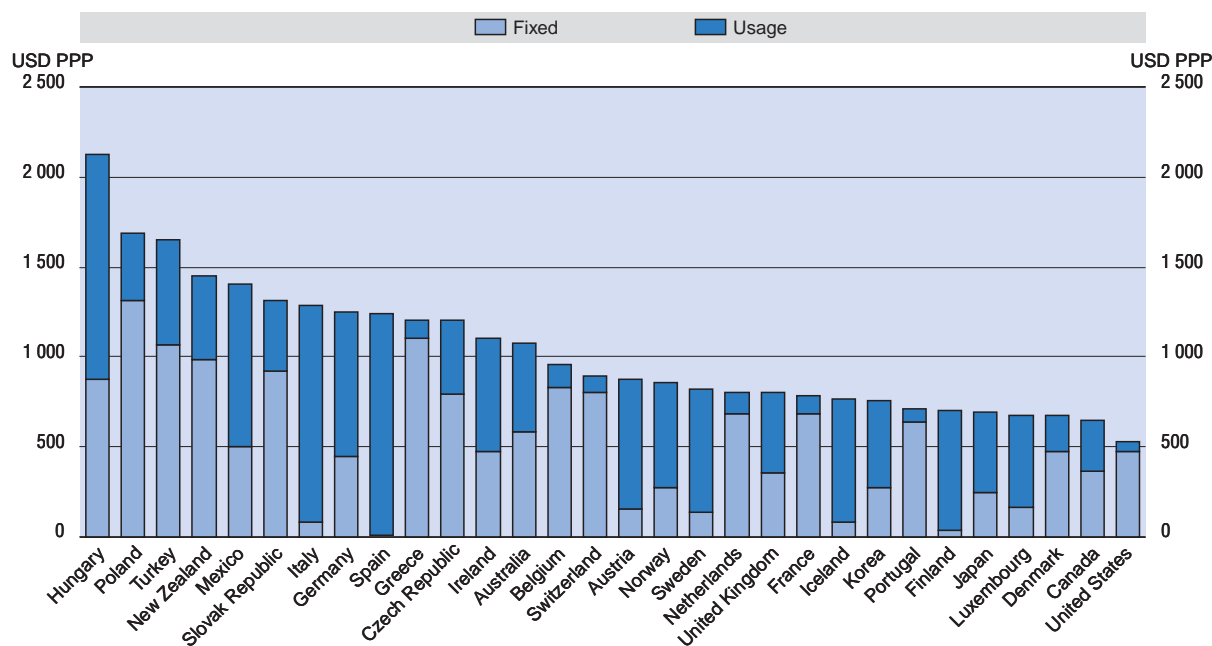
Traditionally, leased lines have provided the main means by which telecommunication carriers have provided broadband services for business users. Leased lines, or private lines as they are called in North America, provide the building blocks for business-to-business electronic commerce. They allow users needing to transport high volumes of traffic to take advantage of lower prices than PSTN pricing and to have control over their own telecommunication facilities and traffic. Leased lines are also used by some companies to provide value-added services, often in competition with PTOs. ISPs use leased lines to build backbone networks for the Internet and large customers use them to access ISP facilities.

The four Scandinavian countries have the least expensive leased lines in the OECD area. For 2 Mbit/s leased lines all the Scandinavian countries have prices 70% less than the OECD average (Table 6.18). For the same amount of capacity the least expensive countries outside the Nordic region are Switzerland, Luxembourg, Ireland, Germany and the United States.

The national leased line basket also includes, where possible, analogue circuits equivalent to M1020 for up to 9.6 Kbit/s data transmission and 64 Kbit/s digital leased lines. Although these circuits are less important than they once were, many businesses still rely on them for local connections. The results shown for each circuit type are the annual prices for a basket of 100 circuits over spread different distances.

In the mid-1990s, prior to full liberalisation, a number of OECD countries that still had monopolies began to allow the competitive provision of leased lines. This began to impose the first competitive

Figure 6.12. OECD basket of high user mobile telephone charges, August 2002



Source: OECD.

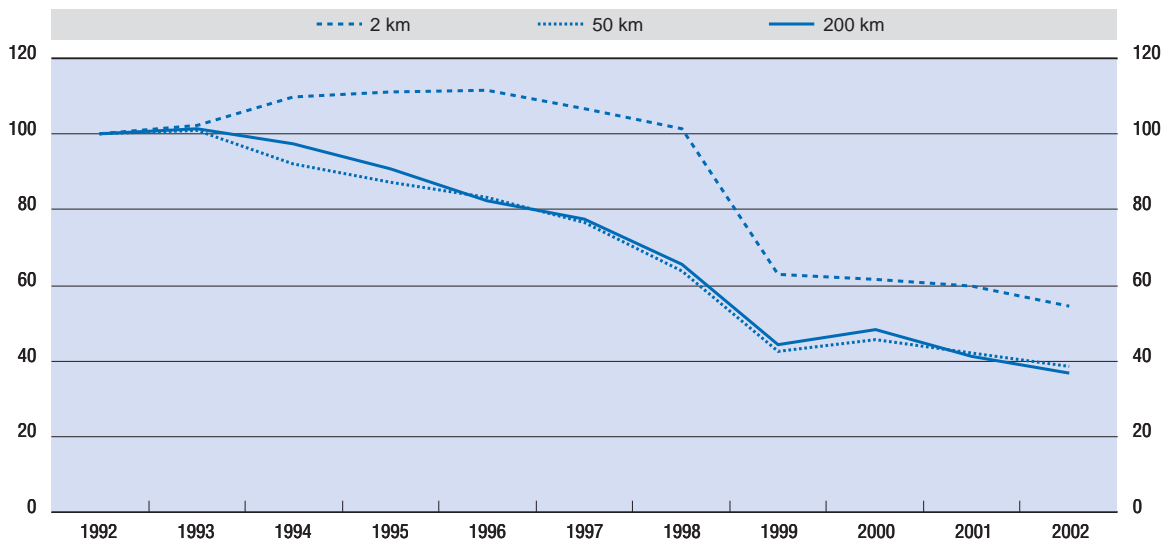
discipline over leased line prices, but only over longer distances. The main reason for this is that it takes time to roll out alternative networks. Accordingly, the average price for short distance leased lines – as represented by the prices at two kilometres – actually increased during this period. Local leased line prices remain of concern because there is currently insufficient competition. For users this means that incumbents can continue to charge prices that are not disciplined by competition. For new entrants, it means that incumbents may price local leased circuits in an anti-competitive manner.

A major turning point in the pricing of leased lines took place in 1998 when a significant number of European countries fully liberalised their telecommunication markets. The impact of increasing liberalisation is evident in the OECD's index of leased line prices (Table 6.19). At the distances of 50 and 200 kilometres, the leased lines (2 Mbit/s) index fell from 75 and 76 in 1997 to 38 and 37 by 2002.

Far greater decreases in the pricing of capacity are evident over long distances. This is as a result of the greater amount of competition for the provision of long distance infrastructure than local infrastructure. However, it is propitious that the prices at two kilometres have also fallen since 1998, reflecting the competition provided by new entrants. In the future it is expected that symmetrical DSL services will provide an increasingly available substitute for local leased connections. This should provide less expensive options for business users to connect to backbone networks.

As noted in past editions of the *Communications Outlook*, an important consideration in any examination of list prices of capacity and the prices available at bandwidth exchanges is the quality of service. Some telecommunication carriers argue that the prices available at exchanges may not have comparable levels of service as their listed offerings. On the other hand, capacity which is listed at these exchanges is available under the conditions specified. A continuing issue, with leased lines, is that while prices are falling, incumbent operators may be less responsive to some customers who are also competitors. For example, a problem regulators often have to face is that incumbents delay the provision of a leased line to a competitor. While competition can no doubt take care of such problems

Figure 6.13. Trends in leased line pricing over different distances (2 Mbit/s), 1992-2002



Note: Index, 1992 = 100.
Source: OECD.

on major routes, there is much less competition available on thin routes and for local connections outside major cities. The previous *Communications Outlook* commented that regulators need to be vigilant in those areas where competition has not had time to mature and may need to consider quality of service indicators to monitor the provision of leased lines. It is therefore pleasing to note the increasing use of quality of service indicators in areas such as delivery times by telecommunication regulators.

Local loop unbundling

Comparing prices of unbundled local loops is difficult because the prices for line rental charges have different coverage from country to country. For example, the price could differ depending on whether the line rental charges include administrative and refurbishment costs. In addition, the monthly rental price often differs according to whether the line is existing (active) or new (non-active) and in some countries prices may be subject to price control. Recognising these complexities, the price for local loop unbundling (LLU) that each regulator or incumbent publishes can be used as a benchmark to compare relative price performance between countries.

The monthly rental charges paid by new entrants to the incumbent for copper pairs often depend on the type of service offered, and the rental charge for providing broadband service is normally higher than that for voice telephony service. In Belgium, for example, the monthly rate for the raw copper loop to be used for the transmission of signals within the voice frequency band is USD 9.79 whereas the rate for a loop used to connect ADSL equipment is USD 11.48. In some countries, such as Australia and Canada, the price differs according to geographic areas. Normally, the price in less populated areas is higher than in urban areas. In Australia, for instance, the monthly rental charge for full unbundling is USD 12.89 in large cities in contrast with USD 22.29 on average in rural and remote areas. In the United States, different cost regulations (and costs) between states have resulted in different prices for LLU across the country.

Table 6.20 shows that there is a wide range in prices between OECD countries for local loop unbundling. In Denmark, where the price for full LLU is the lowest among the OECD countries, the monthly rental fee for full unbundling is USD 7.16; on the other hand, in the Netherlands, the monthly

rental fee is USD 11.67. The monthly rental fee for line sharing also varies to a great extent ranging from about USD 1.40 to USD 3.60 in Belgium, Denmark, France and Japan to more than USD 13 in Norway. These differences result largely from different approaches in calculating costs.

The monthly rental charge for line sharing is normally not more than 50% of the full LLU price. This is the case in most OECD countries. In Austria, for example, the monthly rate of USD 4.71 for line sharing is just 50% of the USD 9.42 rate for full unbundling. In some countries, new entrants have been faced with a “price squeeze” with LLU prices set higher than retail prices. As a result of regulatory initiatives, prices for access to unbundled local loops have decreased over the past few years. In Canada, for example, monthly rental charges for local loops were reduced about 30% on average during 1998 to 2001. In France, France Telecom reduced its monthly prices for full unbundling from USD 12.25 to USD 9.07 and for line sharing from USD 5.30 to USD 2.51 in April 2002. In Japan, the establishment of interconnection rules by the Ministry led to a reduction of charges for LLU provided by incumbents. The charge for line sharing decreased from USD 1.56 in 2000 to USD 1.44 in 2001 and that for full unbundling from USD 17.18 in 2001 to USD 16.14 in 2002.

Table 6.1. Pricing structures for residential users in the OECD area, 2002

	Local telephony	PSTN component of Internet access	Local telephony	Internet access	ISP dial-up fee includes unmetered local calls ²	Unmetered dial-up for Internet access by October 2002	DSL pricing structure
Australia ¹	Unmetered (flat rate)		Per call	Per call		Yes	Metered by bytes downloaded
Austria	Metered	Metered	Seconds	Seconds			Flat rate
Belgium	Metered	Metered	Seconds	Seconds			Flat rate
Canada	Unmetered	Unmetered	None	None		Yes	Flat rate
Czech Republic	Metered	Unmetered/metered	Seconds	Seconds		Yes (weekends and holidays)	No service
Denmark	Metered	Metered	Seconds	Seconds			Flat rate
Finland	Metered	Unmetered/metered	Seconds	Seconds		Yes (evening)	Flat rate
France	Metered	Unmetered/metered	Seconds	Seconds	Yes		Flat rate
Germany	Metered	Metered	Units	Seconds		Unmetered option withdrawn	Flat rate
Greece	Metered	Metered	Units	Seconds			No service
Hungary	Metered	Metered	Seconds	Seconds		Unmetered option withdrawn	Flat rate
Iceland ²	Metered	Metered	Seconds	Seconds			Foreign bytes metered
Ireland	Metered	Unmetered/metered	Seconds	Seconds	Yes (evening)		Flat rate
Italy	Metered	Metered	Seconds	Seconds			Flat rate
Japan ³	Metered	Metered	Units	Units		Yes (late night and ISDN)	Flat rate
Korea	Metered	Unmetered/metered	Units	Units		Yes	Flat rate
Luxembourg	Metered	Metered	Seconds	Seconds			Flat rate

Table 6.1. Pricing structures for residential users in the OECD area, 2002 (continued)

	Local telephony	PSTN component of Internet access	Local telephony	Internet access	ISP dial-up fee includes unmetered local calls	Unmetered dial-up for Internet access by October 2002	DSL pricing structure
Mexico	Unmetered (First 100 calls free, then flat rate)		Per call	Per call		Yes	Flat rate
Netherlands	Metered	Metered	Seconds	Seconds			Flat rate
New Zealand ¹	Unmetered	Unmetered	None	None		Yes	Metered by bytes downloaded
Norway	Metered	Metered	Seconds	Seconds			Flat rate
Poland	Metered	Metered	Units	Units		Yes (not TPSA)	Flat rate
Portugal	Metered	Unmetered/metered	Seconds	Seconds		Yes	Flat rate
Slovak Republic	Metered	Metered	Seconds	Seconds			No service
Spain	Metered	Unmetered/metered	Seconds	Seconds		Yes (evening)	Flat rate
Sweden	Metered	Metered	Seconds	Seconds			Flat rate
Switzerland	Metered	Metered	Units	Seconds			Flat rate
Turkey ⁴	Metered	Metered	Units	Units			Flat rate
United Kingdom	Metered	Unmetered/metered	Seconds	None/seconds	Yes	Yes	Flat rate
United States	Metered/flat rate/unmetered		Seconds/per call/none			Yes	Flat rate

1. Telstra (Australia) and Telecom New Zealand's DSL pricing include a certain number of bytes followed by metered pricing. Some other providers cap allowances but at much higher levels of usage.

2. Siminn (Iceland) has a flat rate for usage within Iceland but meters bytes from foreign sources.

3. NTT East and NTT West offer a flat rate for late evening for certain specified numbers for which subscribers pay a higher rental. The companies are also have an unmetered option using ISDN.

4. Türk Telekom's line rental includes 100 units.

Source: OECD.

Table 6.2. **OECD Internet access basket for 20 hours at daytime discounted PSTN rates, September 2002**
Including VAT

	PSTN fixed		PSTN usage		ISP		Total		Total (excluding fixed)	
	USD	USD PPP	USD	USD PPP	USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia	11.86	15.45	2.38	3.11	13.51	17.61	27.75	36.17	15.89	20.71
Austria	15.63	17.00	0.00	0.00	12.22	13.29	27.84	30.29	12.22	13.29
Belgium	15.85	17.12	49.88	53.90	0.00	0.00	65.72	71.03	49.88	53.90
Canada	12.62	15.61	0.00	0.00	12.72	15.73	25.34	31.35	12.72	15.73
Czech Republic	9.50	19.70	31.45	65.23	0.00	0.00	40.95	84.92	31.45	65.23
Denmark	15.41	13.87	0.00	0.00	18.30	16.47	33.71	30.34	18.30	16.47
Finland	12.18	11.19	14.08	12.94	0.00	0.00	26.26	24.14	14.08	12.94
France	12.71	13.53	0.00	0.00	14.67	15.61	27.38	29.15	14.67	15.61
Germany	13.04	13.95	0.00	0.00	14.47	15.48	27.51	29.43	14.47	15.48
Greece	11.52	15.87	8.12	11.19	16.88	23.26	36.53	50.32	25.01	34.45
Hungary	9.82	19.47	23.34	46.28	4.31	8.54	37.47	74.29	27.65	54.82
Iceland	11.66	10.47	20.90	18.77	11.50	10.32	44.06	39.56	32.40	29.09
Ireland	19.17	18.84	20.60	20.24	14.90	14.64	54.67	53.72	35.50	34.88
Italy	19.71	24.88	11.71	14.78	0.00	0.00	31.41	39.65	11.71	14.78
Japan	15.44	10.92	18.84	13.32	15.44	10.92	49.73	35.15	34.29	24.23
Korea	4.78	7.09	0.00	0.00	7.52	11.15	12.30	18.24	7.52	11.15
Luxembourg	18.00	20.07	33.45	37.31	4.40	4.91	55.84	62.29	37.85	42.22
Mexico	18.30	25.56	0.00	0.00	14.60	20.39	32.90	45.95	14.60	20.39
Netherlands	16.61	18.22	29.57	32.45	0.00	0.00	46.18	50.67	29.57	32.45
New Zealand	11.48	16.82	1.86	2.72	9.25	13.56	22.58	33.10	11.11	16.28
Norway	20.92	16.26	18.45	14.34	12.90	10.02	52.27	40.63	31.35	24.37
Poland	10.26	19.90	0.00	0.00	15.37	29.82	25.63	49.73	15.37	29.82
Portugal	13.56	19.67	27.27	39.56	0.00	0.00	40.82	59.23	27.27	39.56
Slovak Republic	6.30	17.93	12.14	34.57	5.27	15.00	23.70	67.51	17.41	49.58
Spain	13.24	17.11	26.39	34.09	0.00	0.00	39.63	51.20	26.39	34.09
Sweden	13.22	12.53	30.13	28.58	2.54	2.41	45.89	43.52	32.67	30.98
Switzerland	16.87	13.34	33.80	26.72	0.00	0.00	50.67	40.06	33.80	26.72
Turkey	3.65	8.51	5.48	12.76	2.74	6.38	11.86	27.65	8.21	19.14
United Kingdom	14.60	14.00	0.00	0.00	24.58	23.57	39.19	37.57	24.58	23.57
United States	12.60	12.60	2.33	2.33	18.65	18.65	33.58	33.58	20.98	20.98
OECD	13.35	15.92	14.07	17.51	8.89	10.59	36.31	44.01	22.96	28.10
EU	14.96	16.52	16.75	19.00	8.20	8.64	39.91	44.17	24.94	27.65

Source: OECD.

Table 6.3. OECD Internet access basket for 20 hours at evening discounted PSTN rates, September 2002, off-peak¹
Including VAT

	PSTN fixed		PSTN usage		ISP		Total		Total (excluding fixed)	
	USD	USD PPP	USD	USD PPP	USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia	11.86	15.45	2.38	3.11	13.51	17.61	27.75	36.17	15.89	20.71
Austria	15.63	17.00	0.00	0.00	12.22	13.29	27.84	30.29	12.22	13.29
Belgium	15.85	17.12	20.54	22.20	0.00	0.00	36.38	39.32	20.54	22.20
Canada	12.62	15.61	0.00	0.00	12.72	15.73	25.34	31.35	12.72	15.73
Czech Republic	12.67	26.29	3.78	7.84	0.00	0.00	16.45	34.13	3.78	7.84
Denmark	15.41	13.87	0.00	0.00	18.30	16.47	33.71	30.34	18.30	16.47
Finland	12.18	11.19	14.08	12.94	0.00	0.00	26.26	24.14	14.08	12.94
France	12.71	13.53	0.00	0.00	14.67	15.61	27.38	29.15	14.67	15.61
Germany	13.04	13.95	0.00	0.00	14.47	15.48	27.51	29.43	14.47	15.48
Greece	11.52	15.87	4.06	5.60	16.88	23.26	32.46	44.72	20.95	28.85
Hungary	9.82	19.47	8.05	15.96	7.18	14.23	25.05	49.66	15.23	30.19
Iceland	11.66	10.47	10.87	9.76	11.50	10.32	34.03	30.55	22.37	20.08
Ireland	19.17	18.84	13.31	13.08	0.00	0.00	32.48	31.91	13.31	13.08
Italy	14.25	17.99	12.71	16.05	0.00	0.00	26.96	34.03	12.71	16.05
Japan	15.44	10.92	18.84	13.32	15.44	10.92	49.73	35.15	34.29	24.23
Korea	4.78	7.09	0.00	0.00	5.70	8.46	10.48	15.54	5.70	8.46
Luxembourg	18.00	20.07	18.19	20.29	4.40	4.91	40.59	45.27	22.59	25.20
Mexico	18.30	25.56	0.00	0.00	14.60	20.39	32.90	45.95	14.60	20.39
Netherlands	16.61	18.22	15.84	17.38	0.00	0.00	32.45	35.60	15.84	17.38
New Zealand	11.48	16.82	1.86	2.72	12.96	19.00	26.30	38.54	14.82	21.72
Norway	20.92	16.26	18.45	14.34	12.90	10.02	52.27	40.63	31.35	24.37
Poland	10.26	19.90	0.00	0.00	15.37	29.82	25.63	49.73	15.37	29.82
Portugal ²	13.56	19.67	9.71	14.09	0.00	0.00	23.27	33.77	9.71	14.09
Slovak Republic	6.30	17.93	12.14	34.57	2.05	5.83	20.48	58.34	14.19	40.41
Spain	13.24	17.11	12.91	16.68	0.00	0.00	26.15	33.79	12.91	16.68
Sweden	13.22	12.53	15.54	14.74	2.54	2.41	31.30	29.68	18.08	17.15
Switzerland	16.87	13.34	20.44	16.16	0.00	0.00	37.31	29.50	20.44	16.16
Turkey	3.65	8.51	2.74	6.40	2.74	6.38	9.13	21.29	5.48	12.78
United Kingdom	14.60	14.00	14.13	13.55	0.00	0.00	28.73	27.55	14.13	13.55
United States	12.60	12.60	2.33	2.33	18.65	18.65	33.58	33.58	20.98	20.98
OECD	13.27	15.91	8.43	9.77	7.63	9.29	29.33	34.97	16.06	19.06
EU	14.60	16.06	10.07	11.11	5.57	6.10	30.23	33.27	15.63	17.20

1. The off-peak time used for these calculations is 20:00 on a weekday.

2. In Portugal, off-peak pricing does not commence until 21:00. The tariffs in effect at 20:00 are used for this basket.

Source: OECD.

Table 6.4. **OECD Internet access basket for 40 hours at daytime discounted PSTN rates, September 2002**
Including VAT

	PSTN fixed		PSTN usage		ISP		Total		Total (excluding fixed)	
	USD	USD PPP	USD	USD PPP	USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia	11.86	15.45	4.77	6.21	13.51	17.61	30.14	39.27	18.28	23.82
Austria	15.63	17.00	0.00	0.00	27.29	29.68	42.91	46.68	27.29	29.68
Belgium	15.85	17.12	99.76	107.81	0.00	0.00	115.60	124.93	99.76	107.81
Canada	12.62	15.61	0.00	0.00	12.72	15.73	25.34	31.35	12.72	15.73
Czech Republic	9.50	19.70	65.76	136.38	0.00	0.00	75.25	156.08	65.76	136.38
Denmark	15.41	13.87	0.00	0.00	39.37	35.43	54.78	49.30	39.37	35.43
Finland	12.18	11.19	28.17	25.89	0.00	0.00	40.34	37.08	28.17	25.89
France	12.71	13.53	0.00	0.00	19.56	20.82	32.27	34.35	19.56	20.82
Germany	13.04	13.95	0.00	0.00	23.22	24.84	36.25	38.78	23.22	24.84
Greece	11.52	15.87	16.25	22.38	16.88	23.26	44.65	61.51	33.13	45.64
Hungary	9.82	19.47	46.69	92.56	4.31	8.54	60.81	120.57	50.99	101.10
Iceland	11.66	10.47	41.81	37.53	11.50	10.32	64.96	58.32	53.30	47.85
Ireland	19.17	18.84	41.19	40.48	14.90	14.64	75.26	73.96	56.09	55.12
Italy	19.71	24.88	23.62	29.81	0.00	0.00	43.33	54.69	23.62	29.81
Japan	15.44	10.92	36.85	26.04	17.21	12.16	69.50	49.12	54.05	38.21
Korea	4.78	7.09	0.00	0.00	15.04	22.31	19.83	29.40	15.04	22.31
Luxembourg	18.00	20.07	66.89	74.62	4.40	4.91	89.29	99.60	71.30	79.53
Mexico	18.30	25.56	0.00	0.00	14.60	20.39	32.90	45.95	14.60	20.39
Netherlands	16.61	18.22	59.15	64.90	0.00	0.00	75.75	83.12	59.15	64.90
New Zealand	11.48	16.82	3.71	5.44	9.25	13.56	24.44	35.82	12.96	19.00
Norway	20.92	16.26	32.80	25.50	12.90	10.02	66.62	51.79	45.70	35.52
Poland	10.26	19.90	0.00	0.00	20.49	39.76	30.75	59.67	20.49	39.76
Portugal	13.56	19.67	43.01	62.40	11.42	16.57	67.99	98.64	54.43	78.97
Slovak Republic	6.30	17.93	24.28	69.14	5.27	15.00	35.84	102.08	29.54	84.15
Spain	13.24	17.11	50.80	65.64	0.00	0.00	64.04	82.74	50.80	65.64
Sweden	13.22	12.53	60.26	57.15	2.54	2.41	76.02	72.09	62.80	59.56
Switzerland	16.87	13.34	67.61	53.45	0.00	0.00	84.47	66.78	67.61	53.45
Turkey	3.65	8.51	14.60	34.03	2.74	6.38	20.99	48.92	17.34	40.41
United Kingdom	14.60	14.00	0.00	0.00	24.58	23.57	39.19	37.57	24.58	23.57
United States	12.60	12.60	4.66	4.66	18.65	18.65	35.91	35.91	23.31	23.31
OECD	13.35	15.92	27.75	34.73	11.41	13.55	52.51	64.20	39.17	48.29
EU	14.96	16.52	32.61	36.74	12.28	13.07	59.85	66.34	44.88	49.81

Source: OECD.

Table 6.5. **OECD Internet access basket for 40 hours at evening times discounted PSTN rates, September 2002**
Including VAT

	PSTN fixed		PSTN usage		ISP		Total		Total (excluding fixed)	
	USD	USD PPP	USD	USD PPP	USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia	11.86	15.45	4.77	6.21	13.51	17.61	30.14	39.27	18.28	23.82
Austria	15.63	17.00	7.63	8.30	17.51	19.04	40.76	44.34	25.13	27.34
Belgium	15.85	17.12	41.08	44.39	0.00	0.00	56.92	61.51	41.08	44.39
Canada	12.62	15.61	0.00	0.00	12.72	15.73	25.34	31.35	12.72	15.73
Czech Republic	12.67	26.29	14.58	30.24	0.00	0.00	27.26	56.53	14.58	30.24
Denmark	15.41	13.87	0.00	0.00	39.37	35.43	54.78	49.30	39.37	35.43
Finland	12.18	11.19	28.17	25.89	0.00	0.00	40.34	37.08	28.17	25.89
France	12.71	13.53	0.00	0.00	19.56	20.82	32.27	34.35	19.56	20.82
Germany	13.04	13.95	0.00	0.00	23.22	24.84	36.25	38.78	23.22	24.84
Greece	11.52	15.87	8.12	11.19	16.88	23.26	36.53	50.32	25.01	34.45
Hungary	9.82	19.47	12.76	25.29	10.76	21.34	33.34	66.10	23.52	46.63
Iceland	11.66	10.47	21.74	19.52	11.50	10.32	44.89	40.31	33.24	29.84
Ireland	19.17	18.84	26.62	26.16	0.00	0.00	45.79	44.99	26.62	26.16
Italy	14.25	17.99	25.75	32.50	0.00	0.00	40.00	50.49	25.75	32.50
Japan	15.44	10.92	36.85	26.04	17.21	12.16	69.50	49.12	54.05	38.21
Korea	4.78	7.09	0.00	0.00	11.40	16.91	16.19	24.00	11.40	16.91
Luxembourg	18.00	20.07	36.38	40.58	4.40	4.91	58.78	65.56	40.78	45.49
Mexico	18.30	25.56	0.00	0.00	14.60	20.39	32.90	45.95	14.60	20.39
Netherlands	16.61	18.22	31.69	34.77	0.00	0.00	48.29	52.99	31.69	34.77
New Zealand	11.48	16.82	3.71	5.44	12.96	19.00	28.15	41.26	16.67	24.44
Norway	20.92	16.26	32.80	25.50	12.90	10.02	66.62	51.79	45.70	35.52
Poland	10.26	19.90	0.00	0.00	20.49	39.76	30.75	59.67	20.49	39.76
Portugal	13.56	19.67	19.43	28.19	0.00	0.00	32.99	47.86	19.43	28.19
Slovak Republic	6.30	17.93	24.28	69.14	2.05	5.83	32.62	92.91	26.32	74.98
Spain	13.24	17.11	0.00	0.00	18.75	24.23	31.99	41.34	18.75	24.23
Sweden	13.22	12.53	31.08	29.48	2.54	2.41	46.84	44.42	33.62	31.89
Switzerland	16.87	13.34	40.88	32.32	0.00	0.00	57.75	45.66	40.88	32.32
Turkey	3.65	8.51	9.14	21.30	2.74	6.38	15.53	36.19	11.88	27.68
United Kingdom	14.60	14.00	0.00	0.00	19.97	19.15	34.57	33.15	19.97	19.15
United States	12.60	12.60	4.66	4.66	18.65	18.65	35.91	35.91	23.31	23.31
OECD	13.27	15.91	15.40	18.24	10.79	12.94	39.47	47.08	26.19	31.18
EU	14.60	16.06	17.06	18.76	10.81	11.61	42.47	46.43	27.88	30.37

Source: OECD.

Table 6.6. **OECD Internet access basket for 20 hours using discounted PSTN rates, 1998-2002**
USD PPP, including VAT

	1998		1999		September 2000		September 2001		September 2002		Change (%) 1998-2002		Change (%) 2001-2002	
	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening
Australia	36.43	36.43	38.81	38.81	35.07	35.07	30.74	30.38	36.17	36.17	-0.18	-0.18	17.65	19.03
Austria	100.10	64.03	80.24	48.59	44.78	32.40	45.70	32.51	30.29	30.29	-25.83	-17.07	-33.74	-6.85
Belgium	97.70	46.59	82.32	41.94	51.79	35.80	70.30	39.02	71.03	39.32	-7.66	-4.15	1.04	0.76
Canada	30.92	30.92	31.45	31.45	31.38	31.38	30.30	30.30	31.35	31.35	0.34	0.34	3.44	3.44
Czech Republic	105.77	74.60	116.28	77.71	107.29	53.69	82.50	31.14	84.92	34.13	-5.34	-17.76	2.94	9.61
Denmark	54.04	31.73	52.63	27.99	30.51	30.51	30.06	30.06	30.34	30.34	-13.44	-1.11	0.92	0.92
Finland	28.38	19.77	32.15	26.77	29.88	27.78	23.68	18.29	24.14	24.14	-3.97	5.12	1.91	31.98
France	72.05	48.27	60.60	38.15	33.65	33.65	28.62	28.62	29.15	29.15	-20.25	-11.85	1.85	1.85
Germany	68.44	68.44	46.15	46.15	34.12	34.12	28.59	28.59	29.43	29.43	-19.02	-19.02	2.94	2.94
Greece	60.15	60.15	65.38	65.38	41.90	36.77	48.26	42.63	50.32	44.72	-4.36	-7.14	4.26	4.90
Hungary	63.01	63.01	168.97	95.29	101.45	66.30	117.55	68.87	74.29	49.66	4.20	-5.78	-36.80	-27.89
Iceland	41.88	31.31	41.54	28.26	29.83	24.38	40.10	30.97	39.56	30.55	-1.42	-0.61	-1.36	-1.36
Ireland	80.16	50.57	59.26	29.84	54.02	31.04	53.72	31.41	53.72	31.91	-9.52	-10.87	0.00	1.59
Italy	42.27	35.64	41.39	29.45	32.21	26.38	42.96	31.88	39.65	34.03	-1.59	-1.15	-7.70	6.76
Japan	51.65	51.65	40.15	40.15	35.49	35.49	36.07	36.07	35.15	35.15	-9.17	-9.17	-2.54	-2.54
Korea	47.78	47.78	27.22	22.08	27.40	27.40	19.25	15.60	18.24	15.54	-21.39	-24.48	-5.21	-0.34
Luxembourg	73.06	52.98	91.93	61.86	58.56	37.87	62.71	45.66	62.29	45.27	-3.91	-3.85	-0.66	-0.86
Mexico	49.92	49.92	60.91	60.91	37.40	37.40	40.49	40.49	45.95	45.95	-2.05	-2.05	13.48	13.48
Netherlands	62.79	40.23	51.13	33.38	50.08	35.49	47.91	31.48	50.67	35.60	-5.22	-3.01	5.77	13.11
New Zealand	46.23	46.23	40.61	40.61	38.45	38.45	41.81	41.81	33.10	38.54	-8.01	-4.45	-20.83	-7.82
Norway	49.90	35.36	46.71	39.37	45.47	38.70	39.45	39.45	40.63	40.63	-5.01	3.54	3.00	3.00
Poland	50.72	50.72	64.60	64.60	73.88	43.55	53.71	53.71	49.73	49.73	-0.49	-0.49	-7.42	-7.42
Portugal	61.20	46.12	77.33	60.12	47.31	45.82	52.63	34.37	59.23	33.77	-0.82	-7.50	12.54	-1.75
Slovak Republic	..	..	..	..	..	..	105.94	50.04	67.51	58.34	..	..	-36.27	16.60
Spain	42.09	42.09	50.66	50.65	45.53	28.32	47.06	31.79	51.20	33.79	5.02	-5.34	8.79	6.28
Sweden	48.01	36.60	38.81	26.51	35.33	24.14	43.39	29.56	43.52	29.68	-2.43	-5.10	0.29	0.40
Switzerland	66.99	66.99	54.13	31.50	39.10	29.70	42.35	31.93	40.06	29.50	-12.06	-18.54	-5.41	-7.61
Turkey	44.30	37.82	46.81	43.53	20.44	17.78	19.07	14.23	27.65	21.29	-11.12	-13.39	45.03	49.62
United Kingdom	70.01	46.17	60.57	32.42	40.75	26.61	36.19	25.63	37.57	27.55	-14.41	-12.11	3.84	7.49
United States	39.77	39.77	35.18	35.18	33.07	33.07	34.09	34.09	33.58	33.58	-4.14	-4.14	-1.50	-1.50
OECD	58.13	46.62	58.75	43.75	44.35	34.45	46.51	34.35	44.01	34.97	-6.72	-6.94	-5.36	1.80
EU	64.03	45.96	59.37	41.28	41.99	32.03	44.12	32.10	44.17	33.27	-8.87	-7.76	0.12	3.63

Source: OECD.

Table 6.7. **OECD Internet access basket for 40 hours using discounted PSTN rates**
USD PPP, including VAT

	1999		September 2000		September 2001		September 2002		Change (%) 1999-2002		Change (%) 2001-2002	
	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening	Daytime	Evening
Australia	49.33	49.33	42.94	42.94	33.44	32.73	39.27	39.27	-7.32	-7.32	17.44	19.99
Austria	128.15	64.87	70.51	45.73	72.83	46.45	46.68	44.34	-28.58	-11.91	-35.91	-4.54
Belgium	147.00	66.23	81.35	51.79	123.56	61.02	124.93	61.51	-5.28	-2.43	1.11	0.81
Canada	31.45	31.45	31.38	31.38	30.30	30.30	31.35	31.35	-0.11	-0.11	3.44	3.44
Czech Republic	187.90	110.77	173.92	84.51	153.60	50.88	156.08	56.53	-6.00	-20.09	1.61	11.10
Denmark	91.53	42.25	48.09	41.98	49.13	49.13	49.30	49.30	-18.64	5.28	0.36	0.36
Finland	43.73	32.97	41.18	36.97	36.28	25.48	37.08	37.08	-5.35	3.99	2.22	45.51
France	95.73	62.07	59.50	59.50	57.19	57.19	34.35	34.35	-28.94	-17.90	-39.93	-39.93
Germany	76.78	76.78	50.71	50.71	42.40	42.40	38.78	38.78	-20.36	-20.36	-8.53	-8.53
Greece	88.46	88.46	52.16	41.90	58.35	48.26	61.51	50.32	-11.41	-17.14	5.41	4.26
Hungary	332.04	184.69	150.17	82.84	168.23	86.28	120.57	66.10	-28.66	-29.00	-28.33	-23.39
Iceland	63.44	36.87	45.34	34.44	59.13	40.86	58.32	40.31	-2.76	3.01	-1.36	-1.36
Ireland	83.22	41.82	75.38	41.80	74.45	41.87	73.96	44.99	-3.86	2.47	-0.66	7.47
Italy	67.91	44.04	45.71	38.79	70.68	48.52	54.69	50.49	-6.96	4.66	-22.63	4.06
Japan	54.64	54.64	49.01	49.01	48.45	48.45	49.12	49.12	-3.48	-3.48	1.38	1.38
Korea	44.31	34.04	44.62	43.78	30.74	24.08	29.40	24.00	-12.78	-10.99	-4.37	-0.31
Luxembourg	152.06	91.93	99.94	58.56	100.04	65.95	99.60	65.56	-13.15	-10.65	-0.44	-0.59
Mexico	60.91	60.91	37.40	37.40	40.49	40.49	45.95	45.95	-8.97	-8.97	13.48	13.48
Netherlands	85.66	47.77	81.63	50.08	77.92	45.06	83.12	52.99	-1.00	3.52	6.67	17.59
New Zealand	47.23	47.23	38.45	38.45	41.81	41.81	35.82	41.26	-8.81	-4.41	-14.32	-1.32
Norway	64.28	50.76	63.90	51.05	50.56	50.56	51.79	51.79	-6.95	0.67	2.43	2.43
Poland	120.46	120.46	134.54	73.88	81.91	66.83	59.67	59.67	-20.88	-20.88	-27.15	-10.72
Portugal	124.27	82.27	77.24	57.75	82.52	48.57	98.64	47.86	-7.41	-16.52	19.54	-1.46
Slovak Republic	..	..	..	..	179.23	79.72	102.08	92.91	..	..	-43.04	16.55
Spain	85.87	85.87	77.02	31.27	76.80	39.76	82.74	41.34	-1.23	-21.63	7.74	3.98
Sweden	64.09	39.48	58.36	35.98	71.85	44.19	72.09	44.42	4.00	4.00	0.34	0.52
Switzerland	95.28	50.02	65.44	46.63	71.54	50.69	66.78	45.66	-11.17	-2.99	-6.65	-9.93
Turkey	57.75	51.19	33.74	25.76	35.20	25.52	48.92	36.19	-5.38	-10.92	38.98	41.79
United Kingdom	105.61	49.31	60.41	27.13	36.19	28.85	37.57	33.15	-29.14	-12.39	3.84	14.93
United States	37.30	37.30	23.76	23.76	36.42	36.42	35.91	35.91	-1.25	-1.25	-1.40	-1.40
OECD	92.63	63.30	65.99	46.06	69.71	46.61	64.20	47.08	-11.50	-9.40	-7.90	1.01
EU	96.00	61.07	65.52	44.15	68.68	46.18	66.34	46.43	-11.59	-8.73	-3.41	0.55

Source: OECD.

Table 6.8. Internet access by DSL in OECD member countries, September 2002
Including VAT

	Company	Monthly charge (USD)	Monthly charge (USD PPP)	Mbytes included	Additional cost per mbyte (USD)	Additional cost per mbyte (USD PPP)	Speed of connection downstream (kbit/s)	Speed of connection upstream (kbit/s)
Australia	Telstra - Big Pond	32.47	42.31	300	0.09	0.11	256	64
Australia	Telstra - Big Pond	41.67	54.30	1000	0.08	0.11	512	128
Austria	Telekom Austria	39.73	43.21	1000	0.07	0.08	512	64
Belgium	Belgacom - Turbo Line	38.67	41.79	10000	0.12	0.13	750	128
Canada	Bell Canada Sympatico	22.28	27.56	5000	0.005	0.01	960	120
Czech Republic	Czech Telecom	0.00	0.00	0	0.00	0.00	0	0
Denmark	TDC	46.09	41.48	Unlimited	0.00	0.00	256	128
Denmark	TDC	57.28	51.55	Unlimited	0.00	0.00	512	128
Finland	Elisa	48.90	44.95	Unlimited	0.00	0.00	256	128
Finland	Elisa	60.64	55.73	Unlimited	0.00	0.00	512	256
France	France Telecom Wanadoo	44.42	47.28	Unlimited	0.00	0.00	512	128
Germany	Deutsche Telecom	44.00	47.07	Unlimited	0.00	0.00	768	128
Greece	OTE	0.00	0.00	0	0.00	0.00	0	0
Hungary	Matav	59.39	117.76	0	0.00	0.00	384	64
Hungary	Matav	248.64	492.97	0	0.00	0.00	768	128
Iceland	Iceland Telecom	29.03	26.06	0	0.14	0.13	256	128
Iceland	Iceland Telecom	58.06	52.13	0	0.14	0.13	512	256
Ireland	Eircom	105.32	103.50	3000	0.04	0.03	512	128
Italy	Telecom Italia	36.14	45.61	Unlimited	0.00	0.00	256	128
Italy	Telecom Italia	48.85	61.66	Unlimited	0.00	0.00	640	128
Japan	NTT	40.76	28.81	Unlimited	0.00	0.00	1500	512
Korea	Korea Telecom	27.58	40.90	Unlimited	0.00	0.00	1500	640
Korea	Korea Telecom	36.78	54.53	Unlimited	0.00	0.00	8000	640
Luxembourg	P&T	59.05	65.87	Unlimited	0.00	0.00	256	64
Luxembourg	P&T	84.35	94.09	Unlimited	0.00	0.00	512	64

Table 6.8. **Internet access by DSL in OECD member countries, September 2002** (continued)
Including VAT

	Company	Monthly charge (USD)	Monthly charge (USD PPP)	Mbytes included	Additional cost per mbyte (USD)	Additional cost per mbyte (USD PPP)	Speed of connection downstream (kbit/s)	Speed of connection upstream (kbit/s)
Mexico	Telmex	58.32	81.46	Unlimited	0.00	0.00	256	128
Mexico	Telmex	92.72	129.51	Unlimited	0.00	0.00	512	256
Netherlands	KPN	34.18	37.51	1000	0.00	0.01	256	64
Netherlands	KPN	51.10	56.07	Unlimited	0.00	0.00	512	128
New Zealand	Telecom NZ	32.00	46.90	500	0.09	0.14	2000	250
New Zealand	Telecom NZ	41.27	60.50	1000	0.09	0.14	2000	250
Norway	Telenor	59.22	46.03	0	0.00	0.00	384	128
Norway	Telenor	72.38	56.26	0	0.00	0.00	704	128
Poland	TPSA	71.58	138.89	0	0.00	0.00	512	128
Poland	TPSA	155.36	301.48	0	0.00	0.00	1020	256
Portugal	Portugal Telecom	37.16	53.92	4000	0.13	0.18	512	128
Portugal	Portugal Telecom	66.50	96.48	7000	0.13	0.18	768	128
Slovak Republic	Slovak Telecom	0.00	0.00	0	0.00	0.00	0	0
Slovak Republic	Slovak Telecom	0.00	0.00	0	0.00	0.00	0	0
Spain	Telefonica	47.68	61.61	Unlimited	0.00	0.00	256	128
Spain	Telefonica	95.22	123.04	Unlimited	0.00	0.00	512	128
Sweden	Telia	39.65	37.60	Unlimited	0.00	0.00	512	400
Switzerland	Swisscom	32.73	25.88	3000	0.03	0.03	256	64
Switzerland	Swisscom	52.78	41.72	6000	0.03	0.03	512	128
Turkey	Turk Telekom	93.70	218.37	Unlimited	0.00	0.00	256	64
Turkey	Turk Telekom	285.98	666.46	Unlimited	0.00	0.00	512	128
United Kingdom	British Telecom	41.51	39.80	Unlimited	0.00	0.00	500	250
United States	Verizon	39.95	39.95	Unlimited	0.00	0.00	768	128

Notes: Commercial ADSL service was not available in the Czech Republic, Greece and the Slovak Republic. Modem rentals, where applicable, are excluded as in most countries these can be purchased by users.

Source: OECD.

Table 6.9. **OECD basket of residential telephone charges, August 2002**

	Fixed		Usage		Total	
	USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia	155.88	199.85	196.86	252.38	352.74	452.23
Austria	205.09	238.48	134.30	156.16	339.39	394.64
Belgium	209.38	237.93	193.56	219.96	402.94	457.88
Canada	226.05	279.08	45.49	56.16	271.54	335.23
Czech Republic	210.93	458.55	66.88	145.39	277.82	603.95
Denmark	209.55	199.57	140.87	134.17	350.42	333.73
Finland	181.08	175.81	221.51	215.06	402.59	390.86
France	159.81	179.56	219.32	246.43	379.13	425.99
Germany	163.72	183.95	205.26	230.63	368.98	414.58
Greece	144.73	206.75	179.48	256.40	324.21	463.15
Hungary	169.28	352.66	153.56	319.92	322.84	672.58
Iceland	145.77	138.83	75.04	71.46	220.80	210.29
Ireland	244.78	257.66	136.73	143.93	381.51	401.59
Italy	185.32	250.43	165.14	223.16	350.46	473.59
Japan	217.70	162.46	211.57	157.89	429.27	320.35
Korea	68.53	107.07	121.79	190.30	190.32	297.37
Luxembourg	226.79	269.99	83.29	99.15	310.08	369.14
Mexico	239.87	328.59	169.11	231.66	408.98	560.25
Netherlands	210.24	244.47	128.70	149.66	338.95	394.12
New Zealand	218.95	321.99	79.96	117.58	298.91	439.57
Norway	278.81	232.34	185.20	154.34	464.01	386.68
Poland	149.85	277.51	240.95	446.20	390.80	723.71
Portugal	181.90	284.21	235.88	368.57	417.78	652.78
Slovak Republic	87.86	251.03	190.54	544.39	278.40	795.42
Spain	180.19	250.27	179.79	249.70	359.98	499.97
Sweden	179.39	179.39	124.42	124.42	303.81	303.81
Switzerland	201.58	167.99	147.09	122.57	348.67	290.56
Turkey	44.51	92.73	182.05	379.26	226.55	471.99
United Kingdom	222.38	224.63	88.41	89.30	310.79	313.93
United States	163.37	163.37	242.74	242.74	406.11	406.11
OECD	182.78	230.57	158.18	211.30	340.96	441.87

Note: Residential basket excludes international calls and calls to mobile networks.

Source: OECD and Teligen.

Table 6.10. OECD composite basket of residential telephone charges, August 2002

	Fixed		Usage		Total	
	USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia	155.88	199.85	331.76	425.34	487.64	625.19
Austria	205.09	238.48	246.85	287.04	451.94	525.52
Belgium	209.38	237.93	294.40	334.55	503.78	572.48
Canada	226.05	279.08	155.91	192.48	381.96	471.56
Czech Republic	210.93	458.55	190.67	414.49	401.60	873.04
Denmark	209.55	199.57	250.36	238.44	459.91	438.01
Finland	181.08	175.81	359.53	349.06	540.61	524.86
France	159.81	179.56	334.56	375.91	494.37	555.47
Germany	163.72	183.95	318.23	357.57	481.95	541.52
Greece	144.73	206.75	356.08	508.69	500.81	715.44
Hungary	169.28	352.66	332.86	693.47	502.14	1046.13
Iceland	145.77	138.83	207.66	197.77	353.42	336.59
Ireland	244.78	257.66	240.99	253.67	485.77	511.33
Italy	185.32	250.43	317.58	429.16	502.90	679.59
Japan	217.70	162.46	485.33	362.19	703.03	524.65
Korea	68.53	107.07	345.44	539.75	413.97	646.83
Luxembourg	226.79	269.99	162.68	193.66	389.47	463.65
Mexico	239.87	328.59	508.10	696.03	747.97	1024.61
Netherlands	210.24	244.47	222.46	258.67	432.70	503.14
New Zealand	218.95	321.99	241.36	354.94	460.31	676.92
Norway	278.81	232.34	267.69	223.07	546.50	455.42
Poland	149.85	277.51	504.97	935.12	654.82	1212.63
Portugal	181.90	284.21	390.93	610.82	572.82	895.04
Slovak Republic	87.86	251.03	314.76	899.32	402.62	1150.34
Spain	180.19	250.27	293.61	407.79	473.80	658.06
Sweden	179.39	179.39	220.75	220.75	400.14	400.14
Switzerland	201.58	167.99	254.40	212.00	455.98	379.98
Turkey	44.51	92.73	413.83	862.15	458.34	954.87
United Kingdom	222.38	224.63	191.28	193.21	413.66	417.84
United States	176.57	176.57	392.35	392.35	568.92	568.92
OECD	183.22	231.01	304.91	413.98	488.13	644.99

Note: Composite basket includes international calls and calls to mobile networks.

Source: OECD and Teligen.

Table 6.11. OECD basket of business telephone charges, August 2002

	Fixed		Usage		Total	
	USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia	201.21	257.97	570.29	731.13	771.50	989.10
Austria	347.62	404.21	364.12	423.39	711.74	827.60
Belgium	173.04	196.63	617.72	701.96	790.76	898.59
Canada	318.59	393.32	240.74	297.21	559.33	690.53
Czech Republic	272.38	592.13	546.39	1187.81	818.77	1779.94
Denmark	167.64	159.65	412.18	392.55	579.82	552.21
Finland	151.95	147.52	564.67	548.22	716.62	695.74
France	203.10	228.20	577.74	649.15	780.84	877.35
Germany	141.14	158.58	723.45	812.86	864.58	971.44
Greece	122.65	175.21	438.63	626.61	561.28	801.83
Hungary	200.82	418.38	480.67	1001.39	681.49	1419.76
Iceland	201.98	192.36	249.91	238.01	451.88	430.37
Ireland	202.30	212.94	549.00	577.90	751.30	790.84
Italy	190.28	257.14	543.80	734.86	734.08	992.00
Japan	293.30	218.88	635.00	473.88	928.30	692.76
Korea	62.30	97.34	363.88	568.56	426.18	665.90
Luxembourg	197.21	234.78	307.66	366.26	504.87	601.03
Mexico	279.16	382.41	1061.45	1454.04	1340.61	1836.45
Netherlands	176.67	205.44	417.62	485.60	594.29	691.03
New Zealand	332.45	488.90	376.62	553.85	709.07	1042.75
Norway	224.85	187.37	496.09	413.41	720.93	600.78
Poland	122.83	227.47	673.62	1247.44	796.45	1474.91
Portugal	152.85	238.84	625.26	976.96	778.11	1215.80
Slovak Republic	79.50	227.14	644.86	1842.44	724.35	2069.58
Spain	155.34	215.75	500.16	694.67	655.50	910.42
Sweden	163.83	163.83	365.35	365.35	529.19	529.19
Switzerland	187.35	156.12	578.63	482.19	765.97	638.31
Turkey	37.72	78.58	626.72	1305.67	664.44	1384.25
United Kingdom	294.85	297.82	560.36	566.02	855.21	863.85
United States	274.29	274.29	561.14	561.14	835.43	835.43
OECD	197.64	249.64	522.46	709.35	720.10	958.99

Source: OECD and Teligen.

Table 6.12. **OECD composite basket of business telephone charges, August 2002**
Excluding VAT

	Fixed		Usage		Total	
	USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia	201.21	257.97	897.11	1150.14	1098.32	1408.11
Austria	347.62	404.21	567.33	659.69	914.95	1063.89
Belgium	173.04	196.63	900.29	1023.06	1073.33	1219.70
Canada	318.59	393.32	500.66	618.10	819.25	1011.42
Czech Republic	272.38	592.13	840.98	1828.22	1113.36	2420.34
Denmark	167.64	159.65	669.95	638.05	837.59	797.70
Finland	151.95	147.52	921.13	894.30	1073.08	1041.82
France	203.10	228.20	837.67	941.20	1040.77	1169.40
Germany	141.14	158.58	987.05	1109.05	1128.19	1267.63
Greece	122.65	175.21	834.57	1192.24	957.22	1367.46
Hungary	200.82	418.38	875.56	1824.08	1076.38	2242.45
Iceland	201.98	192.36	533.78	508.36	735.76	700.72
Ireland	202.30	212.94	812.54	855.30	1014.83	1068.25
Italy	190.28	257.14	898.00	1213.52	1088.28	1470.65
Japan	293.30	218.88	1442.93	1076.82	1736.23	1295.70
Korea	62.30	97.34	933.65	1458.83	995.95	1556.17
Luxembourg	197.21	234.78	507.05	603.63	704.26	838.40
Mexico	279.16	382.41	1909.87	2616.26	2189.03	2998.67
Netherlands	176.67	205.44	672.73	782.25	849.41	987.68
New Zealand	332.45	488.90	680.01	1000.02	1012.46	1488.92
Norway	224.85	187.37	680.20	566.83	905.05	754.21
Poland	122.83	227.47	1253.15	2320.65	1375.98	2548.11
Portugal	152.85	238.84	997.82	1559.10	1150.68	1797.93
Slovak Republic	79.50	227.14	911.11	2603.17	990.61	2830.31
Spain	155.34	215.75	770.69	1070.40	926.03	1286.15
Sweden	163.83	163.83	605.53	605.53	769.36	769.36
Switzerland	187.35	156.12	884.68	737.23	1072.02	893.35
Turkey	37.72	78.58	1200.41	2500.85	1238.13	2579.44
United Kingdom	294.85	297.82	918.77	928.05	1213.61	1225.87
United States	274.29	274.29	874.36	874.36	1148.65	1148.65
OECD	197.64	249.64	877.32	1191.98	1074.96	1441.62

Note: Composite basket includes international calls and calls to mobile networks.

Source: OECD and Teligen.

Table 6.13. OECD time series for telephone charges

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Residential													
Fixed	100.00	109.18	112.66	112.76	112.82	122.39	125.91	112.97	115.50	119.27	132.02	129.13	133.33
Usage	100.00	104.17	98.45	96.77	94.05	98.55	90.09	81.29	78.69	70.54	60.61	55.83	53.55
Total	100.00	106.17	104.13	103.16	101.56	108.09	104.42	93.97	93.42	90.03	89.18	85.15	85.46
Business													
Fixed	100.00	104.30	107.45	107.59	107.99	108.07	106.37	113.07	118.68	123.37	128.42	127.16	132.38
Usage	100.00	103.50	96.88	94.18	91.29	92.52	83.26	86.46	84.31	75.18	60.13	55.53	54.18
Total	100.00	103.66	98.99	96.86	94.63	95.63	87.88	91.78	91.18	84.82	73.79	69.86	69.82

Source: OECD.

Table 6.14. **OECD basket of international telephone charges, August 2002**

	Business excluding VAT		Residential including VAT	
	USD	USD PPP	USD	USD PPP
Australia	0.79	1.01	1.11	1.42
Austria	0.85	0.99	1.29	1.50
Belgium	0.56	0.63	0.66	0.75
Canada	0.67	0.83	0.92	1.14
Czech Republic	0.78	1.70	1.08	2.34
Denmark	0.56	0.53	0.89	0.85
Finland	0.87	0.84	1.12	1.09
France	0.37	0.42	0.73	0.82
Germany	0.46	0.52	0.69	0.78
Greece	0.86	1.23	1.30	1.86
Hungary	1.05	2.18	1.68	3.50
Iceland	0.74	0.71	1.17	1.12
Ireland	0.56	0.59	0.78	0.82
Italy	0.86	1.16	1.24	1.67
Japan	2.90	2.16	2.93	2.18
Korea	2.31	3.61	2.75	4.29
Luxembourg	0.41	0.48	0.55	0.65
Mexico	3.07	4.21	3.73	5.11
Netherlands	0.35	0.40	0.50	0.58
New Zealand	0.85	1.25	1.14	1.67
Norway	0.31	0.26	0.48	0.40
Poland	1.56	2.89	2.44	4.53
Portugal	0.79	1.24	1.09	1.70
Slovak Republic	0.63	1.79	1.15	3.27
Spain	0.79	1.09	1.13	1.57
Sweden	0.38	0.38	0.60	0.60
Switzerland	0.33	0.27	0.41	0.34
Turkey	1.62	3.38	2.00	4.17
United Kingdom	1.28	1.29	1.75	1.76
United States	0.51	0.51	0.97	0.97
OECD	0.94	1.29	1.28	1.78

Note: Average call charge for one single call, weighted by traffic.

Source: OECD and Teligen.

Table 6.15. **OECD basket of low user mobile telephone charges, August 2002**
Including VAT

		Fixed		Usage		Total	
		USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia, Optus	Free Time Plan	0.00	0.00	143.28	183.69	143.28	183.69
Austria, Mobilkom	A1 Xcite	182.42	212.12	59.51	69.20	241.94	281.32
Belgium, Proximus	Pay & Go Student	0.00	0.00	202.67	230.31	202.67	230.31
Canada, Telus Mobility	Pay & Talk \$50	2.20	2.72	133.51	164.83	135.71	167.54
Czech Republic, Eurotel	Relax	82.96	180.34	16.20	35.22	99.16	215.56
Denmark, Sonofon	Taletid Profil A	4.38	4.17	113.42	108.02	117.81	112.20
Finland, Radiolinja	Tandem Aina	41.58	40.37	116.07	112.69	157.65	153.05
France, SFR	La Carte Soir et Weekend	0.00	0.00	202.24	227.23	202.24	227.23
Germany, T-Mobile	XtraGo	0.00	0.00	240.41	270.12	240.41	270.12
Greece, Vodafone	Vodafone 30	121.65	173.79	55.86	79.81	177.52	253.60
Hungary, Westel 900	Domino 7	1.06	2.20	146.29	304.78	147.35	306.98
Iceland, Iceland Telecom	Frelsi	0.00	0.00	124.40	118.47	124.40	118.47
Ireland, Vodafone	Ready to Go Work & Leisure	0.00	0.00	175.01	184.22	175.01	184.22
Italy, Omnitel	Euro 4 You	13.02	17.59	150.46	203.32	163.47	220.91
Japan, NTT DoCoMo	Cityphone O-Hanashi Plus S	286.02	213.45	75.97	56.70	361.99	270.14
Korea, SK Telecom	Family Standard Plan	175.00	273.43	28.16	44.00	203.16	317.44
Luxembourg, Tango	Pronto	6.51	7.75	95.66	113.88	102.16	121.62
Mexico, Pegaso	Tarjetas Basico	0.00	0.00	227.96	312.27	227.96	312.27
Netherlands, Vodafone	iZi Pre-pay Dal-en-piek	0.00	0.00	213.20	247.91	213.20	247.91
New Zealand, Vodafone	Text 150	0.00	0.00	172.94	254.33	172.94	254.33
Norway, Netcom	Kontant	0.00	0.00	247.32	206.10	247.32	206.10
Poland, Plus GSM	SimPlus TEAM	0.00	0.00	168.39	311.83	168.39	311.83
Portugal, TMN	Spot	0.00	0.00	125.74	196.47	125.74	196.47
Slovak Republic, Eurotel	20More	60.90	174.01	33.03	94.38	93.94	268.39
Spain, MoviStar	Plus Eleccion	7.94	11.03	177.69	246.78	185.62	257.81
Sweden, Teliamobile	Refill	3.53	3.53	203.07	203.07	206.60	206.60
Switzerland, Sunrise	Sunrise Pronto	0.00	0.00	252.27	210.23	252.27	210.23
Turkey, Turkcell	HERO	17.87	37.23	131.17	273.27	149.04	310.50
UK, Vodafone	Pay As You Go Original	0.00	0.00	196.40	198.38	196.40	198.38
USA, AT&T	Free2Go Local \$10	0.00	0.00	152.46	152.46	152.46	152.46

Source: OECD and Teligen.

Table 6.16. **OECD basket of medium user mobile telephone charges, August 2002**
Including VAT

		Fixed		Usage		Grand total	
		USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia, Telstra	More4business \$40 Off-peak Saver	260.40	333.85	152.85	195.97	413.25	529.81
Austria, Mobilkom	A1 Xcite Remix	130.17	151.36	321.42	373.74	451.59	525.10
Belgium, Mobistar	Optimum For Me 4H	427.62	485.93	61.01	69.33	488.62	555.26
Canada, Telus Mobility	Talk 20	248.12	306.32	72.44	89.43	320.56	395.75
Czech Republic, T-Mobile	Tariff 80 Start	185.44	403.13	140.01	304.37	325.45	707.50
Denmark, TDC Mobil	MobilTalk	122.65	116.81	326.04	310.52	448.69	427.33
Finland, Radiolinja	Tandem Aina	41.58	40.37	343.77	333.76	385.35	374.13
France, SFR	Formule 16€ : EUR 0.16 per additional minute	216.74	243.53	183.47	206.14	400.20	449.67
Germany, T-Mobile	TellyActive More Talk	241.26	271.08	329.56	370.29	570.81	641.36
Greece, Cosmote	Privileged Cosmote 150	428.42	612.02	48.97	69.95	477.38	681.97
Hungary, Pannon GSM	Momentum	205.36	427.83	376.56	784.49	581.92	1212.32
Iceland, Iceland Telecom	Almenaskrift	85.44	81.37	356.57	339.59	442.01	420.96
Ireland, O2	Select 1 Weekender Plus	270.05	284.26	335.02	352.65	605.07	636.91
Italy, Omnitel	Euro Italy	60.45	81.69	459.45	620.88	519.91	702.58
Japan, NTT DoCoMo	Cityphone Chotoku Plan	333.81	249.11	263.49	196.64	597.30	445.74
Korea, SK Telecom	Family Standard Plan	175.00	273.43	131.91	206.11	306.91	479.55
Luxembourg, Tango	Twist	140.59	167.36	221.24	263.38	361.83	430.75
Mexico, Pegaso	Pegaso 50	245.78	336.68	360.92	494.41	606.70	831.09
Netherlands, KPN	Mobile 120	292.40	340.00	185.00	215.12	477.40	555.12
New Zealand, Telecom 025 TDMA	GO FREE 100	139.79	205.57	424.79	624.69	564.58	830.27
Norway, Telenor	Primær	253.48	211.23	395.78	329.82	649.26	541.05
Poland, Plus GSM	Czasami 150	255.51	473.17	142.34	263.60	397.86	736.77
Portugal, Vodafone	Privado 120	166.48	260.12	116.79	182.48	283.27	442.60
Slovak Republic, Eurotel	55Plus	107.30	306.56	137.85	393.87	245.15	700.43
Spain, Movistar	Plus Planes 30	7.94	11.03	495.15	687.71	503.09	698.74
Sweden, Comviq	Lokal	132.79	132.79	347.44	347.44	480.22	480.22
Switzerland, Sunrise	Sunrise 75	328.21	273.51	294.66	245.55	622.87	519.05
Turkey, Telism	Gold 90	264.93	551.94	188.77	393.27	453.70	945.21
UK, Vodafone	Leisure 200 + Text 50	329.97	333.30	216.26	218.44	546.23	551.75
USA, Cingular	Nation 300	409.07	409.07	46.20	46.20	455.27	455.27

Source: OECD and Teligen.

Table 6.17. **OECD basket of high user mobile telephone charges, August 2002**
Including VAT

		Fixed		Usage		Total	
		USD	USD PPP	USD	USD PPP	USD	USD PPP
Australia, Telstra	More4business \$70 Off-peak saver	455.70	584.23	386.72	495.79	842.42	1080.02
Austria, Mobilkom	A1 Xcite Remix	130.17	151.36	626.84	728.88	757.01	880.25
Belgium, Proximus	ProxiPro Anytime 300	730.76	830.41	113.77	129.28	844.52	959.69
Canada, Telus Mobility	The BIG Deal	292.15	360.68	229.72	283.60	521.87	644.28
Czech Rep., T-Mobile	Tariff 200 Start	364.27	791.89	188.42	409.62	552.69	1201.51
Denmark, Sonofon	Kvantum	502.35	478.43	204.82	195.07	707.18	673.50
Finland, Radiolinja	Tandem Aina	41.58	40.37	685.82	665.84	727.40	706.21
France, SFR	SFR Pro 300	609.21	684.50	87.23	98.02	696.44	782.52
Germany, T-Mobile	ProTel	397.38	446.50	715.29	803.70	1112.67	1250.20
Greece, Vodafone	Vodafone 300	770.85	1101.21	73.74	105.34	844.58	1206.55
Hungary, Westel 900	Westel 400	422.60	880.42	599.25	1248.44	1021.85	2128.86
Iceland, Iceland Telecom	Almenaskrift	85.44	81.37	721.00	686.66	806.43	768.03
Ireland, O2	Select 2 Weekender Plus	449.94	473.62	597.04	628.46	1046.98	1102.08
Italy, Omnitel	Euro Italy	60.45	81.69	890.62	1203.53	951.07	1285.23
Japan, NTT DoCoMo	Cityphone Chotoku Plan	333.81	249.11	598.88	446.93	932.69	696.04
Korea, SK Telecom	Family Standard Plan	175.00	273.43	310.53	485.20	485.53	758.64
Luxembourg, Tango	Twist	140.59	167.36	427.66	509.12	568.25	676.49
Mexico, Pegaso	Pegaso 100	368.66	505.02	659.60	903.56	1028.26	1408.58
Netherlands, KPN	Mobile 360	585.29	680.57	108.25	125.87	693.54	806.44
New Zealand, Vodafone	Daytime 200	672.33	988.73	313.18	460.56	985.52	1449.29
Norway, Netcom	ActiveTalk	324.93	270.77	702.28	585.23	1027.20	856.00
Poland, Era GSM	Biznes 220	711.75	1318.06	199.75	369.91	911.50	1687.97
Portugal, Vodafone	Privado 480	406.06	634.47	50.19	78.42	456.25	712.89
Slovak Rep., Eurotel	200Plus	322.41	921.17	136.35	389.56	458.75	1310.72
Spain, MoviStar	Plus Planes 60	7.94	11.03	886.22	1230.86	894.16	1241.89
Sweden, Comviq	Lokal	132.79	132.79	684.25	684.25	817.03	817.03
Switzerland, Sunrise	Sunrise 300	966.89	805.74	102.84	85.70	1069.73	891.44
Turkey, Telism	VIP 210	513.03	1068.80	280.33	584.02	793.35	1652.82
UK, Vodafone	Leisure 500 + Text 50	348.31	351.83	443.03	447.51	791.35	799.34
USA, AT&T	National Network 500	475.07	475.07	55.44	55.44	530.51	530.51

Source: OECD and Teligen.

Table 6.18. **OECD basket of national leased line charges, August 2002**
Excluding VAT

	M1020		64 kbit/s		2 Mbit/s		Index 2 Mbit/s
	USD	USD PPP	USD	USD PPP	USD	USD PPP	
Australia	299 114	383 480	344 118	441 177	3 164 345	4 056 852	129
Austria	490 999	570 929	373 843	434 701	1 770 219	2 058 394	66
Belgium	533 936	606 745	430 624	489 345	1 753 417	1 992 520	64
Canada	..	..	347 186	428 624	3 063 297	3 781 848	121
Czech Republic	395 465	859 706	563 733	1 225 506	3 688 108	8 017 626	256
Denmark	127 610	121 534	202 805	193 148	842 950	802 810	26
Finland	..	..	..	..	..	..	..
France	515 453	579 161	433 800	487 416	1 904 103	2 139 441	68
Germany	302 331	339 698	338 989	380 887	1 609 628	1 808 571	58
Greece	253 032	361 475	290 698	415 283	1 633 266	2 333 236	74
Hungary	246 052	512 609	422 623	880 464	2 441 971	5 087 439	162
Iceland	138 785	132 176	139 950	133 286	546 097	520 092	17
Ireland	221 749	233 420	285 713	300 751	1 716 171	1 806 495	58
Italy	403 607	545 415	414 815	560 561	2 392 583	3 233 221	103
Japan	865 234	645 697	1 110 999	829 104	6 175 474	4 608 563	147
Korea	310 460	485 093	636 207	994 073	3 999 538	6 249 278	199
Luxembourg	172 800	205 714	236 010	280 964	1 089 780	1 297 357	41
Mexico	..	..	342 992	469 852	3 646 218	4 994 819	159
Netherlands	209 049	243 080	406 184	472 307	2 096 484	2 437 772	78
New Zealand	322 160	473 765	660 989	972 043	3 241 961	4 767 590	152
Norway	239 862	199 885	208 862	174 052	752 885	627 405	20
Poland	225 934	418 396	342 586	634 418	2 485 906	4 603 529	147
Portugal	443 122	692 378	378 745	591 789	2 584 705	4 038 602	129
Slovak Republic	297 125	848 928	454 426	1 298 361	2 435 080	6 957 370	222
Spain	477 621	663 362	425 045	590 340	2 816 252	3 911 461	125
Sweden	72 926	72 926	259 322	259 322	558 405	558 405	18
Switzerland	466 783	388 986	307 113	255 928	1 332 957	1 110 798	35
Turkey	95 019	197 955	174 949	364 478	1 446 655	3 013 864	96
United Kingdom	366 731	370 435	506 569	511 686	2 111 228	2 132 554	68
United States	..	..	671 386	671 386	1 942 800	1 942 800	62
OECD	326 652	428 960	403 837	542 802	2 249 741	3 134 163	100

Source: OECD and Teligen.

Table 6.19. Trends in leased line pricing over different distances, 1992-2002

OECD average	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
56/64 kbit/s											
2 km	100	100	123	132	139	120	121	78	70	65	61
50 km	100	101	103	94	89	76	68	41	44	39	37
200 km	100	101	108	106	77	71	63	41	42	37	35
2 Mbit/s											
2 km	100	102	110	111	112	107	101	63	62	60	54
50 km	100	101	92	87	83	77	64	42	46	42	38
200 km	100	101	98	91	82	77	65	44	48	41	37

Source: OECD.

Table 6.20. Monthly prices for LLU and retail price for PSTN line rental (as of April 2002)
USD

	Full LLU	Line sharing	One-off connection cost	Residential retail price
Australia (lowest)	6.98 ¹	..	..	9.07 ³⁵
Australia (highest)	31.68 ²	..	..	11.76 ³⁵
Austria	9.42	4.71	94.20/47.10 ²¹	12.05 ³⁶
Belgium	9.79/11.48 ³	2.78	68.00/71.02 ²²	13.50
Canada (lowest)	3.91 ⁴	..	..	14.73 ³⁷
Canada (highest)	33.54 ⁵	..	..	14.73 ³⁷
Czech	LLU has not been implemented.			
Denmark	7.16	3.58	39.14/154.29 ²³	10.46
Finland	10.37/12.96 ⁶	6.48-9.51 ¹⁵	86.42-276.53/25.92-216.04 ²⁴	10.16
France	9.07	2.51	93.27/231.46 ²⁵	10.85
Germany	10.78	4.12	101.22/136.23 ²⁶	9.45
Greece	9.92	5.95	106.62/122.61 ²⁷	7.10
Hungary	11.41	11.20	..	8.62
Iceland	8.72-14.03 ⁷	2.88/5.31 ¹⁶	34.01	..
Ireland	14.53	7.78	105.01/106.65 ²⁸	13.02
Italy	9.32/10.89 ⁸	3.75	70.74/84.39 ²⁹ /81.54 ³⁰	11.78 ³⁸
Japan	16.14	1.44 ¹⁷	..	17.53
Korea	7.18	4.76	..	..
Luxembourg	11.46/13.65 ⁹	6.52	78.75/116.69 ³¹	10.28
Mexico	LLU has not been implemented.			
Netherlands	11.67 ¹⁰	4.84 ¹⁸	68.26/77.06 ³²	13.39
New Zealand	LLU has not been implemented.			
Norway	10.79/18.12 ¹¹	13.49	130.60	..
Poland	LLU has not been implemented.			
Portugal	10.34/11.91 ¹²	6.76/6.84 ¹⁹	71.55/129.45 ³³	10.16
Slovak	LLU has not been implemented.			
Spain	9.70	4.12 ²⁰	17.28	10.09
Sweden	10.02	4.75	142.59 ³⁴	9.51
Switzerland	LLU has not been implemented.			
Turkey	LLU has not been implemented.			
United Kingdom	13.97	6.05	120.56	12.62
United States (Montana)	23.72 ¹³	..	..	..
United States (Ohio)	7.01 ¹⁴	..	..	..

1. In the case of built-up areas. USD 1=AUD 1.86254. 2. In the case of rural areas. 3. For PSTN and ISDN/for ADSL. 4. In the case of MTS, Band A. 5. In case of TCBC, Band G. USD1=CAD 1.5448. 6. For PSTN and ISDN/for broadband. These are average prices. 7. Up to 64 kbps: 10.09/up to 2 Mbps: 13.43/up to 8 Mbps: 16.23. 8. For PSTN and ISDN/for ADSL. 9. For voice telephony/for broadband. 10. Excluding a broadband service charge of EUR 4.54, which has not been authorised by OPTA. 11. For PSTN/for broadband. 12. For PSTN and ISDN/for broadband use. 13. Montana is one of the highest states in the US. This is a geographical average. 14. Ohio is one of the lowest states in the US. This is a geographical average. 15. Without splitter/with splitter. These are average prices. 16. Up to 2 Mbps/up to 8 Mbps. 17. USD 1=JPY 119.775. 18. Excluding a broadband service charge of EUR 4.54, which has not been authorised by OPTA. 19. For PSTN/for ISDN. 20. From January 2003, the monthly price for line sharing will be USD 3.02. 21. New lines/exiting lines. 22. Active for PSTN/non-active for PSTN. 23. For full unbundling/for line sharing. 24. For full unbundling/for line sharing. 25. Where loop continuity exists/where loop continuity needs to be established. 26. Line transfer/new line. USD 60.9 for most frequently required options, simple transfer of a two-wire copper pair without work at the customer end/USD 145 for most expensive one-off connection with work at the customer end. 27. For full unbundling/for line sharing. 28. For full unbundling/for line sharing. 29. Active pair/inactive pair. For full unbundling. 30. For line sharing. 31. To active loops/to non-active loops. 32. For full unbundling/for line sharing. 33. For full unbundling/for PSTN line sharing. 34. Copper access S300, S600, A1100, V12. 35. In case of Telstra's price for residential users. 36. National average, CAD 22.75. 37. Including VAT. 38. Until June 2002.

Source: OECD.

GLOSSARY

..	Data not available
2G	Second generation of mobile communications technology
3G	Third generation of mobile communications technology
ACA	Australian Communications Authority
ADSL	Asymmetric digital subscriber line
APNIC	Asia Pacific Network Information Centre
ARIN	American Registry for Internet Numbers
AS	Autonomous systems
ASN	Autonomous system numbers
ASR	Answer seizure ratio
BB	Broadband
BLS	Bureau of Labor Statistics (USA)
CAGR	Compound annual growth rate
ccTLD	Country code top level domain
CPE	Customer premise equipment
CPI	Consumer price index
CRTC	Canadian Radio-television and Telecommunications Commission
CWTA	Canadian Wireless Telecommunications Association
DNS	Domain name system
DSL	Digital subscriber lines
EPO	European Patent Office
EU	European Union
FCC	Federal Communications Commission (USA)
FTP	File transfer protocol
GDP	Gross domestic product
GFCF	Gross fixed capital formation
GPRS	General packet radio service
GSM	Global system for mobile communications
gTLD	Generic top level domain
HICP	Harmonised indices of consumer prices
HTML	Hypertext mark-up language
HTTP	Hypertext transfer protocol
IP	Internet protocol
ISDN	Integrated services digital network
ISP	Internet service provider
ITS	International trade statistics
ITU	International Telecommunication Union
JPO	Japanese Patent Office
Kbit/s	Kilobits per second (Kbps)
LAN	Local area network
LLU	Local loop unbundling
Mbit/s	Megabits per second (Mbps)
MIC	Ministry of Information and Communications (Japan)
MITT	Minutes of international telecommunication traffic
OBS	European Audiovisual Observatory
PC	Personal computer
PCB	Public call boxes
PCS	Personal communications service
PPI	Producers price index
PPP	Purchasing power parities
PSTN	Public switched telecommunication network

PTO	Public telecommunications operator
R&D	Research and development
RIPE NCC	RIPE Network Coordination Centre
SIC	Standard industrial classification
SITC	Standard industrial trade classification
SMEs	Small and medium-sized enterprises
SMS	Short message service
SNA	Statistics of national accounts
SSL	Secure sockets layer
TCBC	Telus Communications British Columbia Inc. (Canada)
TCP/IP	Transmission control protocol/Internet protocol
TLD	Top level domain
UMTS	Universal mobile telecommunications system
URL	Uniform resource locator
USPTO	United States Patent Office
VAT	Value added tax
VoIP	Voice over Internet protocol
WAP	Wireless application protocol
WiFi	Wireless fidelity
W-LAN	Wireless local area network

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