

Report on

Telecoms Tariff Data

as of
December 2000

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European Commission
DG Information Society

The opinions expressed in this Study are those of the authors and do not necessarily reflect the views of the European Commission.
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Prepared in May 2001 by:



Teligen Limited
PO Box 39
Richmond-upon-Thames
Surrey TW9 1WT
United Kingdom

tel: +44 208 334 5600
fax: +44 208 334 5610
e-mail: susant@teligen.com

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Important: These appendices are only available for use within the European Commission, and should not be distributed to other parties.

Appendix A: Internet access and service information (Document)

Appendix B: PSTN discount packages (Document)

Appendix C: International ISDN call charges for data calls (Document)

Appendix D: PSTN tariffs (Spreadsheet file)

Appendix E: ISDN tariffs (Spreadsheet file)

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Disclaimer: This report has been commissioned as an independent study to examine tariff developments in the European Community. The Commission does not accept any responsibility for the accuracy or completeness of the information contained herein.



1. Report summary

1.1. Background

This report is produced for the DG Information Society of the European Commission by Teligen Ltd. It is the fourth report in a series presenting telecommunications tariff information from 1998 onwards. **As this report will only present the price situation and development in each country, an accompanying report will analyse the prices, using basket methodologies, in order to compare real price relationships over time.**

This report shows the actual prices as of 1 December 2000. Wherever possible these prices are compared with January 2000 data in order to report on individual price changes. While previous reports referred to data as of January each year, this report (and the ones to follow) will refer to data as of 1 December each year.

Teligen has collected tariff data from primary sources, i.e. directly from the telecoms operators and Internet Service Providers. As a specialist in tariff information, Teligen maintains direct contacts with all the operators covered on a regular basis, using a unique network of personal contacts within the operators' organisations (the so called liaison officers).

Throughout the report prices are converted into euro, and exclude VAT. Due to the fact that four of the currencies are floating in relation to the euro, some of the results may show a change even when there has not been any underlying price change in national currency. **Please see section 2.3 Exchange rates for more information on the changes in exchange rates from January to December 2000.**

This report covers:

- **Fixed telephone tariffs**
- **ISDN tariffs**
- **Leased lines tariffs**
- **Internet tariffs (dial up access)**
- **ADSL tariffs**

1.2. PSTN

After the liberalisation of the telecommunications market in 1998, the prices have changed significantly in many countries. The changes mentioned below have occurred since the last tariff report which covered data as of January 2000, and up to December 2000.

In December 2000, the following 11 countries use per second charging: Belgium, Denmark, Spain, France, Ireland, Italy, the Netherlands, Portugal, Finland, Sweden, United Kingdom. The remaining 4 countries still use unit based charging (Germany, Greece, Luxembourg and Austria).

All countries using per second charging apply some sort of safeguard against calls of short duration, such as a minimum or call setup charge. The following four different ways of doing this have been identified:

1. Call setup charge raised at the beginning of the call, and per second charging thereafter. This applies in Denmark, Italy, Netherlands, Finland and Sweden.
2. A fixed initial charge covering a fixed number of seconds of call time, and per second charging thereafter. This applies in Spain, France and Portugal.
3. An initial charge related to the actual per minute charge covering a fixed number of minutes of call time, and per second charging thereafter. This applies to Belgium.
4. A minimum charge per call, applied when the total call charge is less than the minimum. This applies to Ireland and United Kingdom.

This report covers standard charges from the incumbent operators, i.e. undiscounted prices. In the Netherlands and Austria the most appropriate (basic) tariff package have been selected, in the absence of standard prices.

Please note that the call charges referred to in the following overview relates to standard peak time charges by incumbent operators. Tariffs that are lower than these standard peak time charges are widely available from the incumbent operators and alternative competing suppliers.

Fixed charges have had the following changes from January to December 2000 (based on national currency):

Connection charges

- remained the same in 13 Member States
- decreased in Finland by -25.6%
- the minimum charge in Austria increased 6.7%

Monthly rental charges

- remained the same in nine Member States
- no countries decreased the rental charges
- increased in Germany (0.1%), Greece (4.3%), France (Residential only, 0.3%), Ireland (6.6%), Italy (Residential only, 3.9%), UK (Business 3.3%, Residential 8.0%).

Peak time (3 minute) standard usage charges for local, long distance and intra-EU calls have had the following changes from January to December 2000:

Local call charges

- remained the same in ten member states.
- decreased in the Netherlands with about 1%
- increased significantly in Greece and Finland, while there have been minor increases in Sweden and the UK.
- Spain still maintains the lowest charges for local calls, followed by Greece. The highest charges are found in Austria, followed by the United Kingdom.

Regional call charges are used in five countries (France, Greece, Spain, Italy, Portugal).

- no price change in Spain, Italy and Portugal
- decreased significantly in Greece
- Germany, Austria and the UK have removed their regional call charges since January 2000

Long distance (National) call charges

- remained the same in Spain, Italy, Luxembourg, Portugal and the UK
- increased slightly in Finland (4%)
- decreased in Belgium (72%), Austria (50%), Greece (35%), Germany (33%), Sweden (27%), Ireland (26%), France (16%), Denmark (14%) and the Netherlands (11%)

Calls from fixed to mobile phones

- remained the same in Denmark, Germany, Spain and Ireland.
- decreased in nine of the Member States. Most significant changes are in France (46%), Luxembourg (38%), the Netherlands (37%) and the UK (36%).
- increased in Finland and Portugal

International call charges within the EU, average to all other member states:

- no change in Spain, Austria and Portugal
- minor increases in France, Luxembourg, Finland and the UK (discount packages not included)
- reduced in the eight other member states, most significantly Belgium (60%), Germany 59%) and Sweden 49%).

Some countries have further simplified their time band definitions through the period. Germany and Luxembourg still have the most complicated systems with the call charges changing 4 times during a weekday. Most other countries only change their prices 2 – 3 times a day. No country has more than 3 different price levels related to time of day.

In this report the Economy calls are assumed to be the cheapest rate possible. The weekday night-time (03:00) rate is the lowest rate in Germany and Finland. The Sunday rate is the lowest in Ireland and United Kingdom. The weekday night-time and Sunday rates are the same (and lowest) in the other 11 countries.

1.3. ISDN

Standard ISDN fixed and usage charges of the incumbent operators have been analysed in this study. There are significant variations in the fixed charges with relation to what is seen for PSTN. This means that the ranking of the countries with relation to ISDN rental charges is very different to that seen for PSTN rental, even for Basic rate ISDN.

Rental charges

- decreased in Germany and Finland,
- increased in France.
- Basic rate is least expensive in Greece, while the most expensive is the United Kingdom.

National call charges for voice and data calls are identical to those for PSTN, for all countries. Please see the comments in section 1.2 above.

For **Intra-EU calls**, only the United Kingdom (BT) has different (higher) charges for transparent 64 kbit/s calls (data calls) than for voice calls. The other 14 countries have the same call charges for both voice and data calls.

1.4. Leased lines

As with the previous reports, this report is only looking at circuits 2 Mbit/s and higher. The availability of tariffs for 34 Mbit/s and 155 Mbit/s circuits is increasing, but several operators still offer these circuits on a case by case basis only, and some do not give any information on the availability of these speeds.

The leased lines are covered with 3 national distances (2 km, 50 km and 200 km), and 3 international destinations (near EU country, distant EU country, and USA).

The 2 km circuit will in all cases be a local circuit, and will normally be priced with one single charge, possibly with a distance element.

National circuits include a 2 km local circuit (except for Belgium, where the local circuit is 5 km due to the different structure of the tariffs) at each end. The price of, for example, a 50 km circuit is built from one local circuit of 2 km + trunk circuit of 46 km + one local circuit of 2 km.

In Denmark, Germany, Greece, Ireland, Italy, Austria, Portugal and the United Kingdom (BT), the connection charges for 2 Mbit/s circuits were reduced. Belgacom in Belgium increased their connection charge.

The rental charges for 2 Mbit/s circuits were not changed in Spain, Ireland, Luxembourg, the Netherlands, Sweden and the United Kingdom. The other 9 countries had varying degrees of change.

1.5. Mobile

The GSM service is covered for two operators in each country, the incumbent-owned operator, and the most prominent mobile competitor. There has been a significant change in both the tariff package offerings and the overall price levels. Many operators have completely redefined their tariff packages, something which makes a direct year-to-year comparison difficult.

Prepaid packages are covered for all EU Member States.

1.6. Internet

In this survey, price and service information have been collected from 78 ISPs across the 15 EU Member States, with a total of 187 dial up packages. From these packages, 106 are relevant for business users, and 135 are relevant for residential users (some packages are relevant for both). Prices have been analysed, and an overview is provided in this report.

A strict comparison is not feasible between these prices, as the packages have very different content, with regard to email addresses, web-space, and other service offerings. The survey also shows that the prices vary immensely, and there are few nation-specific trends.

Call charges for PSTN dial up access have been analysed, and in 8 countries (Belgium, Germany, Greece, Ireland, Luxembourg, Austria, Portugal and United Kingdom) there are now alternative rates for Internet access offered by the incumbent.

The assumption is that ISP services shall be reached with a local call. In some countries there are special access codes for Internet access, using free-phone or premium rate numbers to ensure local (or discounted) call charges from all locations of the country (for example in Denmark).

The so called “free” Internet access is now available in most countries, where regular local call charges paid to the telecom operator are also used to cover the ISP charges. Hence the ISP appears to be free to the user, but call charges still have to be paid.

Another variant is where the ISP provides a free-phone number for access. In these cases the ISP will normally have a usage based charge (e.g. per minute) to cover the cost of the access.

Flat rate services are also becoming a reality in some countries. In Ireland and the United Kingdom there are services where the customer pays a fixed monthly fee that covers both the ISP service and the unlimited access.

A number of operators allow “Friends and Family” type of discounts to be used also for Internet access. This can provide additional discounts on the PSTN call charges for Internet access, but has not been included in this report as such discounts are individual to each customer.

Special offerings or deals for schools and libraries have been identified in all countries except Denmark. These offerings are initiated either by the ISPs themselves, or through regulatory pressure.

2. Overview of changes in EU countries for the period 1 January 2000 to 1 December 2000

2.1. Changes in telephone charges

B	<p>On 1 October 2000,</p> <ul style="list-style-type: none"> • Call setup charge introduced on international calls • Call charges to neighbouring countries reduced significantly (61% to 72%) • Calls to other EU countries also reduced (48% to 58%) • Rental charges restructured with same charge regardless of location • Same national call charge to the entire country, now with a call set up charge • Calls to mobiles reduced (19%)
DK	<p>On 1 January 2000,</p> <ul style="list-style-type: none"> • International calls to some countries were reduced by 3% to 7% <p>On 1 February 2000</p> <ul style="list-style-type: none"> • Rental charges increased for Jutland and Funen regions by up to 11% • National call charges reduced by 15%
D	<p>On 1 February 2000,</p> <ul style="list-style-type: none"> • International call charges to 13 of the 14 other EU member states simplified and reduced by up to 75% <p>On 1 March 2000,</p> <ul style="list-style-type: none"> • National tariffs restructured, with the removal of the RegioCall, so that only two distance bands remain: Local and National. Prices for former GermanCall calls were reduced • Calls to C1 and D1 networks reduced and restructured.

EL	<p>On 12 August 2000,</p> <ul style="list-style-type: none"> • monthly line rental was raised by 4%. • the unit charge was increased by 28.6% • long distance zone above 80 km was merged with the regional zone, leaving only Local and National (above 45 km). Same charge all day. • international call charges to EU countries reduced
E	No changes
F	<p>On 3 April 2000,</p> <ul style="list-style-type: none"> • Regional and national call charges changed (both increase and decrease, depending on time of day) <p>On 6 May 2000,</p> <ul style="list-style-type: none"> • Residential call charges changed. • International calls to all EU member states all at same price. Distant countries had rates reduced by 10% to 32%. <p>On 14 October 2000,</p> <ul style="list-style-type: none"> • Residential line rental was increased by 0.3%
IRL	<p>On 17 April 2000,</p> <ul style="list-style-type: none"> • Monthly rental charges increased by 6.6% • National call charge decreased by 26% • Reductions in calls to mobile phones and calls to the UK <p>On 24 October 2000,</p> <ul style="list-style-type: none"> • Minimum call charge for most national calls reduced by 56%

I	<p>On 1 February 2000,</p> <ul style="list-style-type: none"> • Standard rate calls to mobile phones were made cheaper • Residential time band changes • Business call charges same all day and night <p>On 1 August 2000,</p> <ul style="list-style-type: none"> • Residential monthly rental increased by 4% • Standard rate calls to mobile phones were reduced by 2% for residential customers, and increased by a similar amount for business customers • International call charges reduced by 17% to 40%. Same charge all day and night.
L	<p>On 1 February 2000,</p> <ul style="list-style-type: none"> • Calls to mobile phones (Lux GSM) were reduced by 28% to 38% • International, intra-EU calls were reduced by 25%, except for calls to Greece
NL	<p>On 1 April 2000,</p> <ul style="list-style-type: none"> • Local standard rate calls reduced by 1%, and national standard rate calls were reduced by 10% • Charges for calls to mobile phones now differentiate between mobile networks. Calls to some networks were reduced by up to 50%. <p>On 1 August 2000,</p> <ul style="list-style-type: none"> • International call charges are now the same all day and night • Calls to EU member states reduced (e.g. to UK reduced by 23%, to Germany reduced by 36%) <p>On 1 October 2000,</p> <ul style="list-style-type: none"> • National call charges reduced by 6% to 27% • Reduced rate calling hours expanded. • International call charges reduced again. Specific (and higher) call charges to mobile networks in certain countries.

AUT	<p>On 1 March 2000,</p> <ul style="list-style-type: none"> • National call charges reduced, including calls to Internet and mobile phones. Reductions of up to 58% for certain calls.
P	<p>On 1 February 2000,</p> <ul style="list-style-type: none"> • Calls to mobile phones changed from unit based to per second based charging • Low user discount scheme was added. <p>On 1 July 2000,</p> <ul style="list-style-type: none"> • Calls to TNM and Optimus networks reduced by up to 17%
FIN	<p>On 1 June 2000,</p> <ul style="list-style-type: none"> • Installation charge reduced by about 25% • Monthly rental charges for certain zones increased by 7% to 14% • Price for a 3 minute local call increased by 15% • The “Local Network Charge” added to all national calls was also increased
SWE	<p>On 15 March 2000,</p> <ul style="list-style-type: none"> • Call setup charge increased by 12% • Calls to mobile phones reduced by 10% to 16% • Local and National calls charges merged into one nation-wide charge. This resulted in a reduction of national calls of 40% to 42%. <p>On 15 August 2000,</p> <ul style="list-style-type: none"> • Calls to Telia Mobile reduced by 9% to 33% • International calls reduced by 30% to 50%
UK	<p>On 1 October 2000,</p> <ul style="list-style-type: none"> • Business monthly rental charge increased by 3% • Calls to BT Cellnet reduced by between 8% and 33% <p>On 1 December 2000,</p> <ul style="list-style-type: none"> • Residential monthly rental charge increased by 8% • Reduction of the effect of Low user scheme, effectively increasing the cost for users of this scheme by 3%

Notes:

Tariff information is collected directly from the incumbent operators, and covers the “standard” services. Discount schemes are not included.

Percentages are approximate. Where a range of percentages is given this means that different types of calls (e.g. standard rate and reduced rate) have changed at different rates.

2.2. Changes in Leased Line charges

B	<ul style="list-style-type: none"> No changes were made to Belgacom Leased Line prices during this period. The last changes occurred in March 1999.
DK	<p>In January 2000,</p> <ul style="list-style-type: none"> Prices for national high-speed (34M and 140M) circuits were reduced. Installation charges were reduced by between 50% and 90% depending on circuit type. Rental charges on certain long distance circuits were cut by around 10% on average. <p>On 15 August 2000,</p> <ul style="list-style-type: none"> Tele Denmark restructured and reduced all international Leased Lines. Installation charges were cut by 60% for 64k and by 23% for all higher circuits. Quarterly rental charges were also reduced. The average reduction being 25% while a certain number of circuits saw reductions of up to 65%.
D	<p>On 1 August 2000,</p> <ul style="list-style-type: none"> Deutsche Telekom reduced its national digital leased line charges. Installation charges were cut by 2% on 2M circuits and by 25% on circuits of 34M and above. Rental charges experienced the following changes. 2M local circuit charges were reduced by almost 40%, long distance circuits by between 17% and 27% depending on distance. Local high-speed circuits at 34M and above were reduced by over half their original cost. Furthermore, long distance 34M tariffs were reduced by between 20% and 34% and long distance 155M tariffs were reduced by between 16% and 38%.
EL	<p>On 12 August 2000,</p> <ul style="list-style-type: none"> OTE made some slight changes to their national leased lines. Local 64k circuits were reduced by around 15%. Circuits of 2M and above, plus international circuits remained the same.
E	<p>In November 2000,</p> <ul style="list-style-type: none"> Telefonica de Espana reduced connection charges for all national digital circuits by around 27%. Monthly rental charges for 2M circuits were reduced by 20% and by 10% for 34M trunk circuits. Local 34M circuits were increased by 20%. International circuits remain unchanged.

F	No changes were made to France Telecom's Leased Line prices during this period. The last changes occurred in January 2000.
IRL	<p>On 21 April 2000,</p> <ul style="list-style-type: none"> Prices for international leased lines were reduced. Connection charges for 2M circuits were reduced by 40% and 34M connections to UK by almost 95%. Annual rental charges were also dropped with cuts from 30% to 45% depending on speeds and destinations. Rental charges for 34M circuits saw the biggest reduction of over 65% on circuits to UK. <p>On 1 July 2000,</p> <ul style="list-style-type: none"> Eircom made further changes, this time to National leased circuits. Connection charges were increased by 20% for 2M circuits and reduced by 25% for 34M. Annual rental charges on selected circuits were decreased by between 16% and 30%.
I	<p>On 6 May 2000,</p> <ul style="list-style-type: none"> Telecom Italia's monthly charges for international digital leased lines were revised. Reductions of between 5% and 50% (2M and above) were made on circuits to a selection of destinations. 155M tariffs were first published at this time. <p>In September 2000,</p> <ul style="list-style-type: none"> international circuits were restructured. Changes to zones meant increases of up to 80% to a certain few destinations but overall, reductions of between 15% and 30% were given across most speeds and destinations. <p>On 1 November 2000,</p> <ul style="list-style-type: none"> National leased lines were changed. 2M connections were increased by over 230% while monthly rental charges were reduced by between 15% and 30% across all speeds and distances. 622M and 2.5G tariffs were published.
L	<p>On 1 April 2000,</p> <ul style="list-style-type: none"> monthly rental for international digital leased circuits supplied by P&T Luxembourg were reduced by around 40%, for almost all speeds and destinations. Connection and rental charges for all other leased line services remained unchanged, with the exception of monthly rentals on national long distance circuits which decreased by around 7%.
NL	<p>Early in the year,</p> <ul style="list-style-type: none"> KPN restructured National Leased Line tariffs. As a result both DigiStream and Digital Standard are now offered at the same tariffs. <p>On 1 April 2000,</p> <ul style="list-style-type: none"> changes to various international zones took place. This meant reductions of between 3% and 40% on monthly rentals for many speeds ranging from 64k to 2M.

AUT	<p>On 1 May 2000,</p> <ul style="list-style-type: none"> • Telekom Austria revised all national leased circuits. Connection charges were increased by 15% on all circuit types. Monthly rentals were reduced by between 3% and 20% on local circuits and by an average of 15% on long distance circuits. Some long distance circuits were increased by around 5%, mainly 2M and 155M circuits.
P	<p>On 1 July 2000,</p> <ul style="list-style-type: none"> • Portugal Telecom revised their international leased lines. Certain digital circuits experienced reductions of between 15% and 25% dependent on destination.
FIN	<p>No changes were made to Sonera's Leased Line prices during this period. The last changes occurred in January 2000.</p>
SWE	<p>On 1 April 2000,</p> <ul style="list-style-type: none"> • Telia revised their national digital circuits. Short local connection charges were reduced by 12% on 2M circuits and 46% on 34M. Connection charges on transport circuits below and above 40km were also reduced by between 48% and 66%. Quarterly rental charges for 2M circuits were cut by between 15% and 60% and 34M were also reduced by between 25% and 60%. National 155M tariffs were published for the first time.
UK	<p>On 1st March 2000,</p> <ul style="list-style-type: none"> • BT reduced the connection charges for international digital circuits by 6% on Megastream 34 and by almost 70% on Megastream 2. <p>On 1 December 2000,</p> <ul style="list-style-type: none"> • Tariffs for National Megastream 140 and 155 were increased. Annual rental charges rose by almost 5% on all distances.

Notes:

Tariff information is collected directly from the incumbent operators, and covers the "standard" services. Discounts are not included.

2.3. Exchange rates and VAT percentages

The following table lists the exchange rates and the VAT rates used in this report.

Table 2.1 Exchange rates and VAT percentages (January - December 2000)

	Exchange rate to euro		VAT	
	January 2000	December 2000	January 2000	December 2000
B	40.339900	40.339900	21%	21%
DK *	7.443900	7.460000	25%	25%
D	1.955830	1.955830	16%	16%
EL *	331.069000	340.700000	18%	18%
E	166.386000	166.386000	16%	16%
F	6.559570	6.559570	20.6%	20.6%
IRL	0.787564	0.787564	21%	21%
I	1936.270000	1936.270000	20%	20%
L	40.339900	40.339900	15%	15%
NL	2.203710	2.203710	17.5%	17.5%
AUT	13.760300	13.760300	20%	20%
P	200.482000	200.482000	17%	17%
FIN	5.945730	5.945730	22%	22%
SWE *	8.596790	8.660000	25%	25%
UK *	0.618338	0.613000	17.5%	17.5%
USA		0.897000		10% ¹
Japan		100.600000		5%

Prices in this report for both months in 2000 are given in euro and exclude VAT.

*) Exchange rates for the countries outside the euro-zone are average rates for the two months, as reported by European Central Bank.

1) Tax in USA will vary with the state.

Please note the exchange rate changes in Denmark (-0.22%), Greece (-2.91%), Sweden (-0.74%) and the United Kingdom (0.86%) between January and December 2000. These changes will mean that even though prices as reported in euro might appear to have changed for these countries, they may in fact not have changed at all.

3. PSTN prices

The prices given are expressed in euro, using average December 2000 exchange rates. Any individual comparisons with January 2000 prices are done in national currency, to avoid the impact of any exchange rate variations. Comparisons of averages are done in euro.

3.1. PSTN connection

Connection charges for new PSTN lines are listed below. Prices are in euro and exclude VAT.

Table 3.1 PSTN connection charges 12/2000 (in euro excluding VAT)

	Connection charge			Nominal change Business 01/2000 – 12/2000	Nominal change Residential 01/2000 – 12/2000	Notes
	Business	Residential	Low user (8)			
B	54.54	54.54	16.36	0.0 %	0.0 %	1
DK	101.88	101.88		0.0 %	0.0 %	
D	44.46	44.46		0.0 %	0.0 %	
EL	29.35	29.35		0.0 %	0.0 %	
E	127.72	127.72	38.31	0.0 %	0.0 %	2
F	38.56	38.56		0.0 %	0.0 %	
IRL	103.88	103.88		0.0 %	0.0 %	
I	103.29	103.29		0.0 %	0.0 %	
L	61.97	61.97		0.0 %	0.0 %	
NL	38.62	38.62		0.0 %	0.0 %	
AUT	116.28	116.28		6.7 %	6.7 %	3
P	71.83	71.83		0.0 %	0.0 %	
FIN	100.07	100.07		-25.6 %	-25.6 %	4
SWE	90.07	90.07		0.0 %	0.0 %	
UK	161.50	137.44		0.0 %	0.0 %	
USA, CA	66,89	66,89				5
USA, OH	66,89	66,89				
Japan	715.71	715.71				6
EU Average	82.93	81.33				7

Notes:

1. Low income and elderly customers pay euro 16.36 instead of the normal 54.54.
2. Disabled and elderly customers pay euro 38.31 instead of the normal 127.72.
3. This charge is a minimum charge. Actual cost is assessed on a time and materials (equipment) basis.
4. Only business customers pay VAT on this charge. Connection charge is tax free for residential customers
5. Connection charges in USA may vary considerably with the location and nature of service. The figure given is based on a best effort assumption.
6. The telephone connection in Japan is a tradeable asset, and may be resold. Hence the high charge.
7. The EU Average is a simple un-weighted average
8. Low user tariffs are available from some operators to provide a low cost basic service for those who cannot afford to pay the regular charges. Generally these services provide a low fixed cost, as a low cost entry to the service, but higher usage cost. These services are normally reserved for low income customers on social welfare, or elderly people on pensions, or in some cases people with specific disabilities.

3.2. PSTN monthly rental

Rental charges for standard PSTN lines are listed below. Prices are in euro and exclude VAT.

Table 3.2 PSTN monthly rental charges 12/2000 (in euro excluding VAT)

	Monthly rental			Nominal change Business	Nominal change Residential	Notes
	Business	Residential	Low User	01/2000 – 12/2000	01/2000 – 12/2000	
B	13.39	13.39		0.0 %	0.0 %	1
DK	12.90	12.90	10.37	0.0 %	0.0 %	2
D	10.94	10.94	4.00	0.1 %	0.1 %	3
EL	7.04	7.04		4.3 %	4.3 %	
E	8.67	8.67		0.0 %	0.0 %	
F	11.43	9.86	4.93	0.0 %	0.3 %	4
IRL	13.87	13.87		6.6 %	6.6 %	
I	13.63	9.66	4.29	0.0 %	3.9 %	
L	11.90	11.90		0.0 %	0.0 %	
NL	15.68	13.36	7.71	0.0 %	0.0 %	5
AUT	17.44	14.53	11.99	0.0 %	0.0 %	6
P	11.17	11.17	9.92	0.0 %	0.0 %	7
FIN	9.65	9.65		0.0 %	0.0 %	8
SWE	13.39	9.70		0.0 %	0.0 %	
UK	21.45	13.87	5.12	3.3 %	8.0 %	9
USA, CA	10.93	6.35				
USA, OH	22.41	7.47				
Japan	25.84	17.40				
EU Average	12.84	11.37	7.29			10

Notes:

- Rental charge system changed during 2000, removing the relationships to size of local areas, and also removing the low user option.
- Charges vary according to the area in which the subscriber is located. The charge shown relates to the Copenhagen area.
- Low user tariff applies only to customers on social welfare schemes.
- Business package shown is Contrat Professionel. A package with higher rental is available to high volume business users (Professionel Présence), which gives a 10% reduction on all peak rate calls. For low user subscribers, calls are charged at double the normal rates, up to a bi-monthly threshold of FR 272.94. Once this level of spending has been reached during any two month period, all subsequent calls are charged at normal rates.
- Low user (BelBudget) customers who make international calls pay 5.5 times the normal charges. BelBasis is assumed as the residential plan, and BelPlus as the business plan.
- Standard package is assumed as the residential plan, Business 1 package as the business plan. A Business 2 package does also exist, with lower call charges.
- The low user charge shown represents the maximum discount available. This applies to subscribers using between 1 and 167 units per month (6.3% discount).
- Charges vary according to the area in which the subscriber is located. The charge shown relates to the Helsinki area.
- The low user charge shown represents the maximum discount available under the Light User scheme. The maximum discount only applies to subscribers with zero usage. Regular residential users receive a call allowance of GBP 1.80 (incl. VAT).
- The EU Average is a simple un-weighted average

Figure 3.1 PSTN monthly rental for Business customers 12/2000

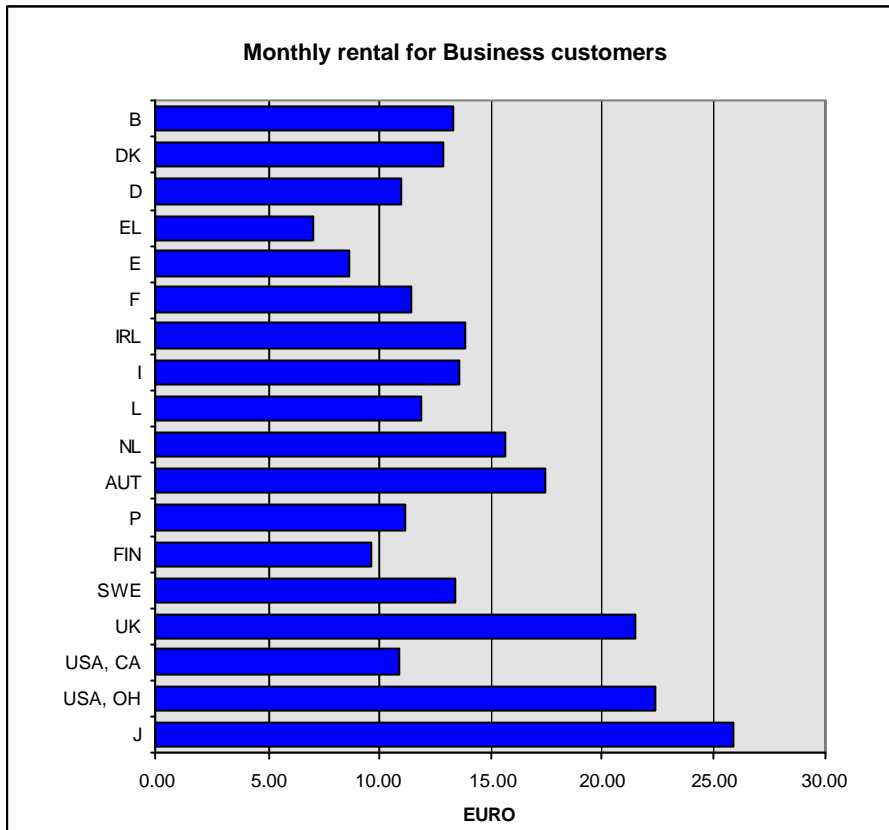
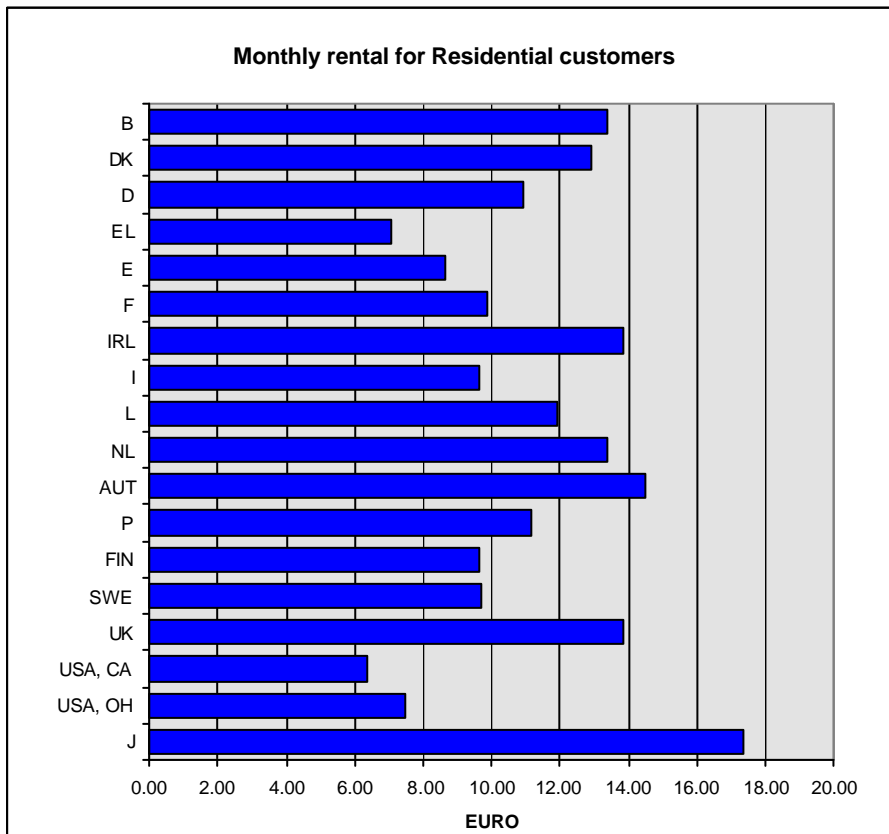


Figure 3.2 PSTN monthly rental for residential customers 12/2000



3.3. PSTN Local call charges

This section lists **local call charges for standard PSTN service**. Discounts are not included. Prices are in euro and exclude VAT. Charges are given for actual calls of 3, 5 and 10 minutes. Peak hour calls are assumed to be at 11:00 on weekdays, off-peak calls are assumed to be at 20:00 on weekdays, and economy calls are assumed to be the cheapest rate possible. The weekday night-time rate is the lowest in Germany, while the Sunday rate is the lowest in United Kingdom. The weekday night-time and Sunday rates are the same (and lowest) in the other 13 countries.

The charges shown in the tables below are valid for both Residential and Business customers. Exceptions may be Austria, the Netherlands and United Kingdom, where different plans with different call charges can be used for the two types of customers.

The call costs includes call setup and minimum charges, and where unit based charging is used, the cost of full units are included, relative to the call duration.

The countries now using per second charging are: Belgium, Denmark, Spain, France, Ireland, Italy, the Netherlands, Portugal, Finland, Sweden and United Kingdom. The remaining 4 member countries still use unit based charging (Germany, Greece, Luxembourg and Austria).

In USA several options may be available: per minute measured rate, message rate or flat rate. Message rate may involve a monthly minimum charge with a call allowance, and flat rate is purely based on a monthly charge.

In Japan (NTT) a unit based system is used.

The size of local calling areas in different countries is a constant source of concern when comparing local call charges. A direct comparison is difficult as many operators are reluctant to provide information on average size of the local calling areas (because it is often considered commercially sensitive information).

**Table 3.3 PSTN local call charges, peak time (11:00 weekdays)
(in euro excluding VAT)**

	Peak 3 minute local call		Peak 5 minute local call		Peak 10 minute local call	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	0.12	0.12	0.20	0.20	0.41	0.41
DK *	0.11	0.11	0.17	0.17	0.33	0.32
D	0.11	0.11	0.21	0.21	0.37	0.37
EL *	0.06	0.08	0.11	0.13	0.21	0.26
E	0.08	0.08	0.12	0.12	0.24	0.24
F	0.09	0.09	0.16	0.16	0.34	0.34
IRL	0.13	0.13	0.21	0.21	0.42	0.42
I	0.10	0.10	0.13	0.13	0.21	0.21
L	0.11	0.11	0.22	0.22	0.32	0.32
NL	0.10	0.10	0.15	0.15	0.26	0.25
AUT	0.19	0.19	0.32	0.32	0.58	0.58
P	0.12	0.12	0.16	0.16	0.26	0.26
FIN	0.11	0.13	0.13	0.14	0.18	0.19
SWE *	0.10	0.11	0.14	0.15	0.25	0.25
UK *	0.16	0.16	0.27	0.27	0.54	0.55
USA, CA meas		0.04		0.06		0.11
USA, OH meas		0.06		0.09		0.17
USA, OH mess		0.09		0.09		0.09
Japan		0.10		0.20		0.40
EU Average	0.11	0.12	0.18	0.18	0.33	0.33

Notes:

The Average is a simple un-weighted average

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

In California, USA a flat rate service is available to residential users at €1.91 per month instead of the measured rate monthly rental of €6.35.

In Ohio, USA a flat rate service is available to residential users at €5.58 per month on top of the monthly line rental at €7.47.

Message rate service involves a monthly charge of €6.85 for business, and €2.58 for residential. This monthly charge includes an allowance of 73 local messages (calls) for business, and 30 for residential. The call charge in the table above is for calls beyond the allowance, but does also largely correspond to the value of the calls in the allowance.

The monthly rental charges will vary with location both in California and Ohio. Charges shown are the most common, applicable in most local areas.

Table 3.4 PSTN local call charges, off-peak time (20:00 weekdays)
(in euro excluding VAT)

	Off-peak 3 minute local call		Off-peak 5 minute local call		Off-peak 10 minute local call	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	0.06	0.06	0.10	0.10	0.21	0.21
DK *	0.06	0.06	0.09	0.09	0.17	0.17
D	0.11	0.11	0.11	0.11	0.21	0.21
EL *	0.06	0.08	0.11	0.13	0.21	0.26
E	0.07	0.07	0.09	0.09	0.14	0.14
F	0.09	0.09	0.13	0.13	0.22	0.22
IRL	0.03	0.03	0.05	0.05	0.11	0.11
I	0.08	0.08	0.10	0.10	0.14	0.14
L	0.11	0.11	0.11	0.11	0.22	0.22
NL	0.07	0.07	0.10	0.10	0.15	0.15
AUT	0.13	0.13	0.13	0.13	0.26	0.26
P	0.12	0.12	0.16	0.16	0.26	0.26
FIN	0.11	0.10	0.13	0.10	0.18	0.10
SWE *	0.07	0.07	0.09	0.09	0.14	0.15
UK *	0.06	0.06	0.10	0.10	0.20	0.21
USA, CA meas		0.03		0.04		0.08
USA, OH meas		0.06		0.09		0.17
USA, OH mess		0.09		0.09		0.09
Japan		0.10		0.20		0.40
Average	0.08	0.08	0.11	0.11	0.19	0.19

Notes: The Average is a simple un-weighted average

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Please see notes about USA after table 3.3.

**Table 3.5 PSTN local call charges, economy time (Cheapest rate possible)
(in euro excluding VAT)**

	Economy 3 minute local call		Economy 5 minute local call		Economy 10 minute local call	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	0.06	0.06	0.10	0.10	0.21	0.21
DK *	0.06	0.06	0.09	0.09	0.17	0.17
D	0.05	0.05	0.11	0.11	0.16	0.16
EL *	0.04	0.05	0.06	0.08	0.11	0.13
E	0.07	0.07	0.09	0.09	0.14	0.14
F	0.09	0.09	0.13	0.13	0.22	0.22
IRL	0.03	0.03	0.05	0.05	0.11	0.11
I	0.08	0.08	0.10	0.10	0.14	0.14
L	0.11	0.11	0.11	0.11	0.11	0.11
NL	0.06	0.06	0.08	0.08	0.12	0.12
AUT	0.13	0.13	0.13	0.13	0.26	0.26
P	0.10	0.10	0.12	0.12	0.17	0.17
FIN	0.11	0.10	0.13	0.10	0.18	0.10
SWE *	0.07	0.07	0.09	0.09	0.14	0.15
UK *	0.04	0.04	0.07	0.07	0.14	0.14
USA, CA meas		0.02		0.02		0.04
USA, OH meas		0.06		0.09		0.17
USA, OH mess		0.09		0.09		0.09
Japan		0.10		0.20		0.40
Average	0.07	0.07	0.10	0.10	0.16	0.15

Notes: The Average is a simple un-weighted average.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Please see notes about USA after table 3.3.

Economy rates are cheapest rate possible, regardless of time of day. The weekday night-time and Sunday rates are the same (and lowest) in 14 countries, except UK.

The variation in the Economy charges across call durations and some changes between January and December 2000 may result from the fact that unit based charging systems may lead to non-proportional call charges relative to call duration, while per second based charging generally gives call charges which are proportional to call duration.

Figure 3.3 Local call charge comparison January - December 2000, peak time

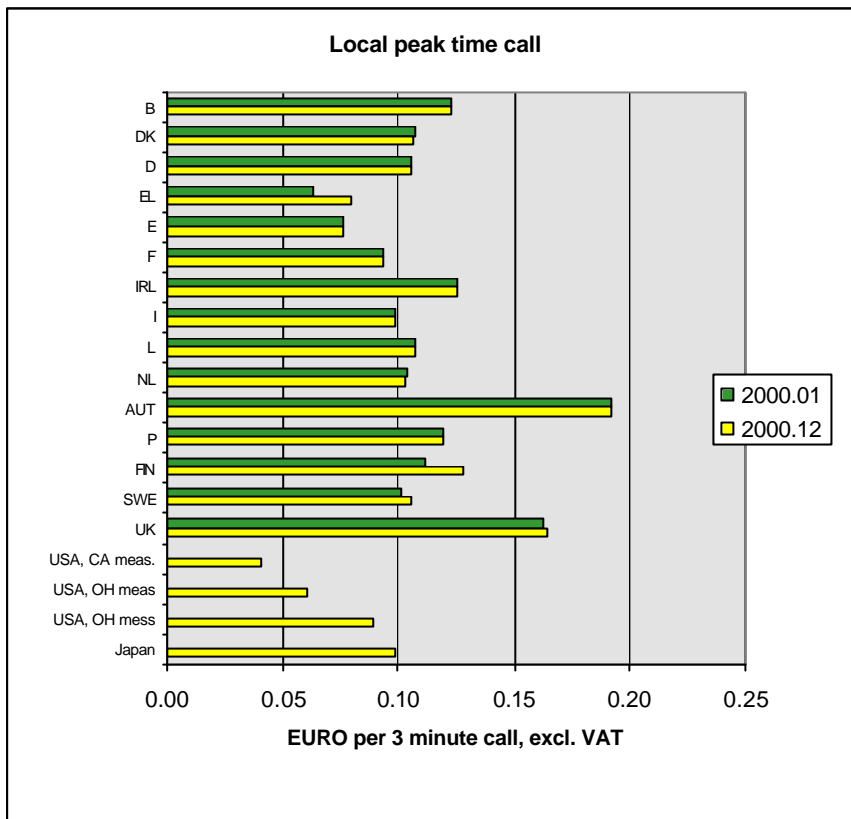
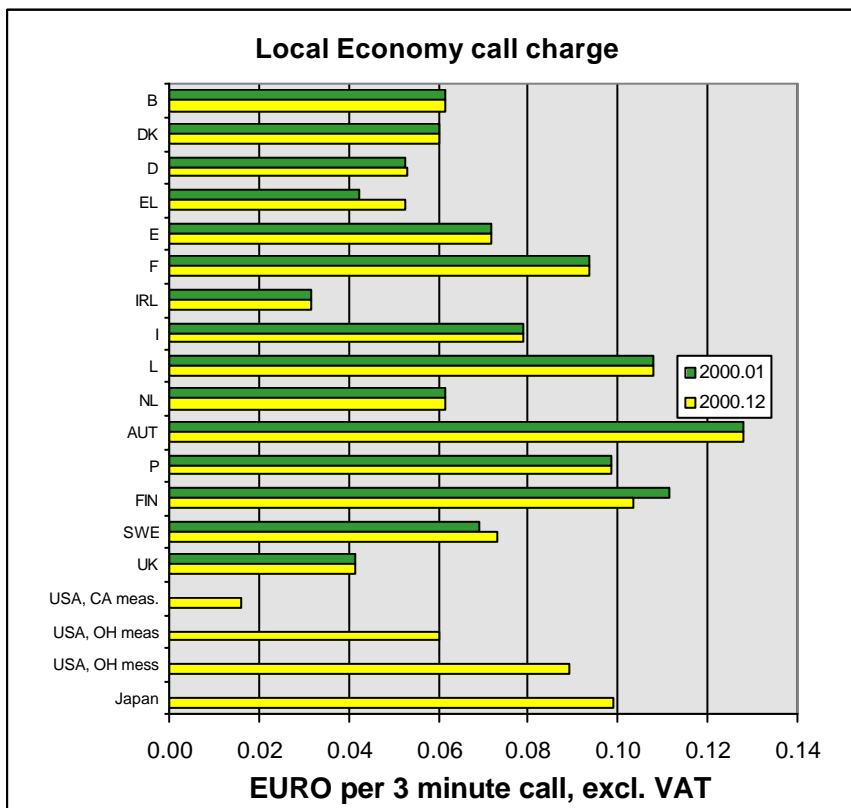


Figure 3.4 Local call charge comparison January - December 2000, economy time



Note: Economy rates are cheapest rate possible, regardless of time of day.

3.4. PSTN regional call charges

Some operators use several tariff zones to price the national calls. Once a call goes beyond the local calling area, it can be classified as a long distance call. But as not all operators use only two zones, local and long distance, it is useful to classify the zones in between as regional zones. Distances covered by these zones will normally be from 10km (or whatever the radius of the local calling area is) and upwards.

Regional call charges for standard PSTN service are listed below. Prices are in euro and exclude VAT. Charges are given for actual calls of 3, 5 and 10 minutes. Peak hour calls are assumed to be at 11:00 on weekdays, off-peak calls at 20:00 on weekdays, and economy calls are assumed to be the cheapest rate. The weekday night-time and Sunday rates are the same (and lowest) in the 6 countries using regional zones.

The charges shown in the tables below are valid for both Residential and Business customers.

The call costs include call setup and minimum charges, and where unit based charging is used, the cost of full units are included, relative to the call duration.

There are 5 countries that have regional zones in their tariffs: France, Greece, Spain, Italy, and Portugal. Except for Luxembourg and Sweden, where there is only one charge for the entire country (local), the remainders have only got local and long distance zones.

Greece and Italy are the only countries with more than one regional zone.

Out of the five countries having regional zones, four use per second charging: France, Spain, Italy and Portugal. Greece still uses unit based charging.

Intra-state charges in the USA can be classified as regional call charges. The local operator has traditionally provided such service, but in recent years the long-distance carriers have been allowed to enter into this market. The prices offered by these operators tend to be lower than the prices from the local operator.

Both Japan and USA will have several distance bands for the regional charges, something which makes these very difficult to compare with other countries on a charge-by-charge basis.

**Table 3.6 Regional call charges at peak time (11:00 weekdays)
(in euro excluding VAT)**

	Distance km	Peak 3 minute Regional call		Peak 5 minute Regional call		Peak 10 minute Regional call	
		January 2000	December 2000	January 2000	December r 2000	January 2000	December 2000
B		N/R	N/R	N/R	N/R	N/R	N/R
DK		N/R	N/R	N/R	N/R	N/R	N/R
D		0.32	N/R	0.53	N/R	1.06	N/R
EL	< 45 km	0.06	0.08	0.11	0.13	0.21	0.26
	45 - 80 km	0.42	0.53	0.70	0.87	1.37	1.72
E	Note 1	0.33	0.33	0.49	0.49	0.90	0.90
F	< 25 km	0.15	0.15	0.32	0.25	0.63	0.51
	Note 4 25 - 30 km	0.20	0.15	0.32	0.25	0.63	0.51
	30 - 50 km	0.26	N/R	0.42	N/R	0.80	N/R
IRL		N/R	N/R	N/R	N/R	N/R	N/R
I	< 15 km	0.22	0.22	0.33	0.33	0.59	0.59
	15 - 30 km	0.36	0.36	0.56	0.56	1.05	1.05
L		N/R	N/R	N/R	N/R	N/R	N/R
NL		N/R	N/R	N/R	N/R	N/R	N/R
AUT		0.18	N/R	0.30	N/R	0.54	N/R
P	Note 1	0.31	0.31	0.47	0.47	0.85	0.85
FIN		N/R	N/R	N/R	N/R	N/R	N/R
SWE		N/R	N/R	N/R	N/R	N/R	N/R
UK		0.33	N/R	0.54	N/R	1.09	N/R
USA, CA	21 - 32 km		0.19		0.30		0.56
	32 - 64 km		0.27		0.44		0.87
	64 - 112 km		0.30		0.49		0.96
	> 112 km		0.31		0.52		1.03
USA, OH	Note 3		0.64		1.06		2.12
Japan	< 20 km		0.20		0.40		0.70
	20 - 60 km		0.40		0.70		1.39
	60 - 100 km		0.70		1.19		2.39
	> 100 km		0.89		1.49		2.98

Notes:

1. Provincial, not defined by distance
2. N/R = not relevant. Regional zones do not exist in the tariff.
3. Regional calls in Ohio are not distance dependent
4. Regional charges in France only differ from long distance for distances below 30 km.

**Table 3.7 Regional call charges at off-peak time (20:00 weekdays)
(in euro excluding VAT)**

	Distance km	Off-peak 3 minute Regional call		Off-peak 5 minute Regional call		Off-peak 10 minute Regional call	
		January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B		N/R	N/R	N/R	N/R	N/R	N/R
DK		N/R	N/R	N/R	N/R	N/R	N/R
D		0.16	N/R	0.26	N/R	0.53	N/R
EL	< 45 km	0.06	0.08	0.11	0.13	0.21	0.26
	45 - 80 km	0.42	0.53	0.70	0.87	1.37	1.72
E	Note 1	0.21	0.12	0.29	0.29	0.49	0.49
F	< 25 km	0.21	0.12	0.29	0.29	0.49	0.49
	Note 4 25 - 30 km	0.12	0.12	0.24	0.17	0.43	0.30
	30 - 50 km	0.21	N/R	0.32	N/R	0.59	N/R
IRL		N/R	N/R	N/R	N/R	N/R	N/R
I	< 15 km	0.14	0.14	0.20	0.20	0.33	0.33
	15 - 30 km	0.21	0.21	0.31	0.31	0.56	0.56
L		N/R	N/R	N/R	N/R	N/R	N/R
NL		N/R	N/R	N/R	N/R	N/R	N/R
AUT		0.12	N/R	0.12	N/R	0.24	N/R
P	Note 1	0.31	0.31	0.47	0.47	0.85	0.85
FIN		N/R	N/R	N/R	N/R	N/R	N/R
SWE		N/R	N/R	N/R	N/R	N/R	N/R
UK		0.16	N/R	0.27	N/R	0.54	N/R
USA, CA	21 - 32 km		0.15		0.24		0.45
	32 - 64 km		0.22		0.36		0.70
	64 - 112 km		0.24		0.39		0.76
	> 112 km		0.24		0.39		0.76
USA, OH	Note 3		0.43		0.72		1.45
Japan	< 20 km		0.20		0.40		0.70
	20 - 60 km		0.40		0.70		1.39
	60 - 100 km		0.40		0.70		1.39
	> 100 km		0.70		1.19		2.39

Notes:

1. Provincial, not defined by distance
2. N/R = not relevant. Regional zones do not exist in the tariff.
3. Regional calls in Ohio are not distance dependent
4. Regional charges in France only differ from long distance for distances below 30 km.

**Table 3.8 Regional call charges at economy time (Cheapest rate possible)
(in euro excluding VAT)**

	Distance km	Economy 3 minute Regional call		Economy 5 minute Regional call		Economy 10 minute Regional call	
		January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B		N/R	N/R	N/R	N/R	N/R	N/R
DK		N/R	N/R	N/R	N/R	N/R	N/R
D		0.16	N/R	0.26	N/R	0.53	N/R
EL	< 45 km	0.04	0.05	0.06	0.08	0.11	0.13
	45 - 80 km	0.34	0.42	0.55	0.69	1.08	1.35
E	Note 1	0.21	0.20	0.29	0.29	0.49	0.49
F	< 25 km	0.12	0.12	0.24	0.17	0.43	0.30
	Note 4 25 - 30 km	0.16	0.12	0.24	0.17	0.43	0.30
	30 - 50 km	0.21	N/R	0.32	N/R	0.59	N/R
IRL		N/R	N/R	N/R	N/R	N/R	N/R
I	< 15 km	0.14	0.14	0.20	0.20	0.33	0.33
	15 - 30 km	0.21	0.21	0.31	0.31	0.56	0.56
L		N/R	N/R	N/R	N/R	N/R	N/R
NL		N/R	N/R	N/R	N/R	N/R	N/R
AUT		0.12	N/R	0.12	N/R	0.24	N/R
P	Note 1	0.20	0.20	0.28	0.28	0.48	0.48
FIN		N/R	N/R	N/R	N/R	N/R	N/R
SWE		N/R	N/R	N/R	N/R	N/R	N/R
UK		0.12	N/R	0.20	N/R	0.41	N/R
USA, CA	21 - 32 km		0.11		0.18		0.34
	32 - 64 km		0.16		0.27		0.52
	64 - 112 km		0.18		0.29		0.57
	> 112 km		0.19		0.31		0.62
USA, OH	Note 3		0.43		0.72		1.45
Japan	< 20 km		0.20		0.40		0.70
	20 - 60 km		0.40		0.70		1.39
	60 - 100 km		0.40		0.70		1.39
	> 100 km		0.70		1.19		2.39

Notes:

1. Provincial, not defined by distance
2. N/R = not relevant. Regional zones do not exist in the tariff.
3. Regional calls in Ohio are not distance dependent
4. Regional charges in France only differ from long distance for distances below 30 km.

3.5. PSTN long distance call charges

Long distance (national) calls apply to all calls outside the regions covered by local and regional calls. The distance definitions used in the different countries vary a lot, and not all operators define the average minimum distance. Please see section 3.10 for the “official” definitions.

Long distance (national) call charges for standard PSTN service are listed below. Prices are in euro and exclude VAT. Charges are given for actual calls of 3, 5 and 10 minutes. Peak hour calls are assumed to be at 11:00 weekdays, off-peak calls are assumed to be at 20:00 weekdays, and economy calls are assumed to be the cheapest rate possible. The weekday night-time rate is the lowest in Finland. The Sunday rate is the lowest in Ireland and the United Kingdom. The weekday night-time and Sunday rates are the same (and lowest) in the other 12 countries.

The charges shown in the tables below are valid for both Residential and Business customers. Exceptions may be Austria, the Netherlands and United Kingdom, where different plans with different call charges can be used for the two types of customers.

The call costs include call setup and minimum charges, and where unit based charging is used, the cost of full units are included, relative to the call duration (i.e. to the end of the last unit after the end of the call).

The countries now using per second charging are: Belgium, Denmark, Spain, France, Ireland, Italy, the Netherlands, Portugal, Finland, Sweden and the United Kingdom. The remaining 4 member countries still use unit based charging (Germany, Greece, Luxembourg and Austria).

Long distance services in USA are traditionally offered by long distance operators. In recent years the local/regional operators have also been allowed to enter into this market, when certain criteria are fulfilled. There are a wide variety of prices available, and it would be impossible to report all of those. Most long distance rates are now quite simple, with a single charge for all of USA, at all times.

**Table 3.9 National (long distance) call charges at peak time (11:00 weekdays)
(in euro excluding VAT)**

	Peak 3 minute National call		Peak 5 minute National call		Peak 10 minute National call	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	0.43	0.12	0.72	0.20	1.44	0.41
DK *	0.16	0.14	0.26	0.22	0.51	0.43
D	0.48	0.32	0.79	0.53	1.58	1.06
EL *	0.57	0.37	0.95	0.61	1.88	1.19
E	0.54	0.54	0.84	0.84	1.59	1.59
F	0.33	0.27	0.52	0.43	1.02	0.81
IRL	0.31	0.23	0.52	0.39	1.05	0.77
I	0.48	0.48	0.75	0.75	1.44	1.44
L	0.11	0.11	0.22	0.22	0.32	0.32
NL	0.17	0.15	0.25	0.22	0.46	0.40
AUT	0.48	0.24	0.72	0.36	1.45	0.66
P	0.39	0.39	0.61	0.61	1.16	1.16
FIN	0.25	0.26	0.38	0.39	0.71	0.72
SWE *	0.14	0.11	0.21	0.15	0.39	0.25
UK *	0.33	0.33	0.54	0.55	1.09	1.10
USA		0.25		0.42		0.84
Japan		0.89		1.49		2.98
EU average	0.34	0.27	0.55	0.43	1.07	0.82

Notes: The Average is a simple un-weighted average

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

**Table 3.10 National (long distance) call charges at off-peak time (20:00 weekdays)
(in euro excluding VAT)**

	Off-peak 3 minute National call		Off-peak 5 minute National call		Off-peak 10 minute National call	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	0.21	0.06	0.36	0.10	0.72	0.21
DK *	0.09	0.08	0.14	0.12	0.26	0.22
D	0.16	0.16	0.26	0.26	0.53	0.53
EL *	0.57	0.37	0.95	0.61	1.88	1.19
E	0.28	0.28	0.40	0.40	0.71	0.71
F	0.24	0.21	0.37	0.31	0.69	0.57
IRL	0.21	0.15	0.35	0.25	0.70	0.51
I	0.29	0.29	0.44	0.44	0.82	0.82
L	0.11	0.11	0.11	0.11	0.22	0.22
NL	0.09	0.08	0.13	0.10	0.21	0.17
AUT	0.18	0.18	0.30	0.30	0.54	0.54
P	0.39	0.39	0.61	0.61	1.16	1.16
FIN	0.16	0.17	0.23	0.24	0.41	0.41
SWE *	0.09	0.07	0.13	0.09	0.22	0.15
UK *	0.16	0.16	0.27	0.27	0.54	0.55
USA		0.25		0.42		0.84
Japan		0.70		1.19		2.39
EU average	0.22	0.18	0.34	0.28	0.64	0.53

Notes: The Average is a simple un-weighted average.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Table 3.11 National (long distance) call charges at economy time (Cheapest rate possible) (in euro excluding VAT)

	Economy 3 minute National call		Economy 5 minute National call		Economy 10 minute National call	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	0.21	0.06	0.36	0.10	0.72	0.21
DK *	0.09	0.08	0.14	0.12	0.26	0.22
D	0.16	0.08	0.26	0.13	0.53	0.26
EL *	0.44	0.37	0.74	0.61	1.48	1.19
E	0.28	0.28	0.40	0.40	0.71	0.71
F	0.24	0.21	0.37	0.31	0.69	0.56
IRL (Sunday)	0.03	0.03	0.05	0.05	0.11	0.11
I	0.29	0.29	0.44	0.44	0.82	0.82
L	0.11	0.11	0.11	0.11	0.11	0.11
NL	0.11	0.09	0.15	0.12	0.27	0.21
AUT	0.19	0.19	0.32	0.32	0.58	0.58
P	0.26	0.26	0.38	0.38	0.69	0.69
FIN (weekday night)	0.16	0.17	0.23	0.24	0.41	0.41
SWE *	0.09	0.07	0.13	0.09	0.22	0.15
UK (Sunday) *	0.12	0.08	0.20	0.14	0.41	0.28
USA		0.25		0.42		0.84
Japan		0.70		1.19		2.39
Average	0.19	0.16	0.29	0.24	0.53	0.43

Notes: The Average is a simple un-weighted average.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Economy rates are cheapest rate possible, regardless of time of day. The weekday night-time and Sunday rates are the same (and lowest) in 12 countries.

Figure 3.5 National call charge comparison January – December 2000, peak time.

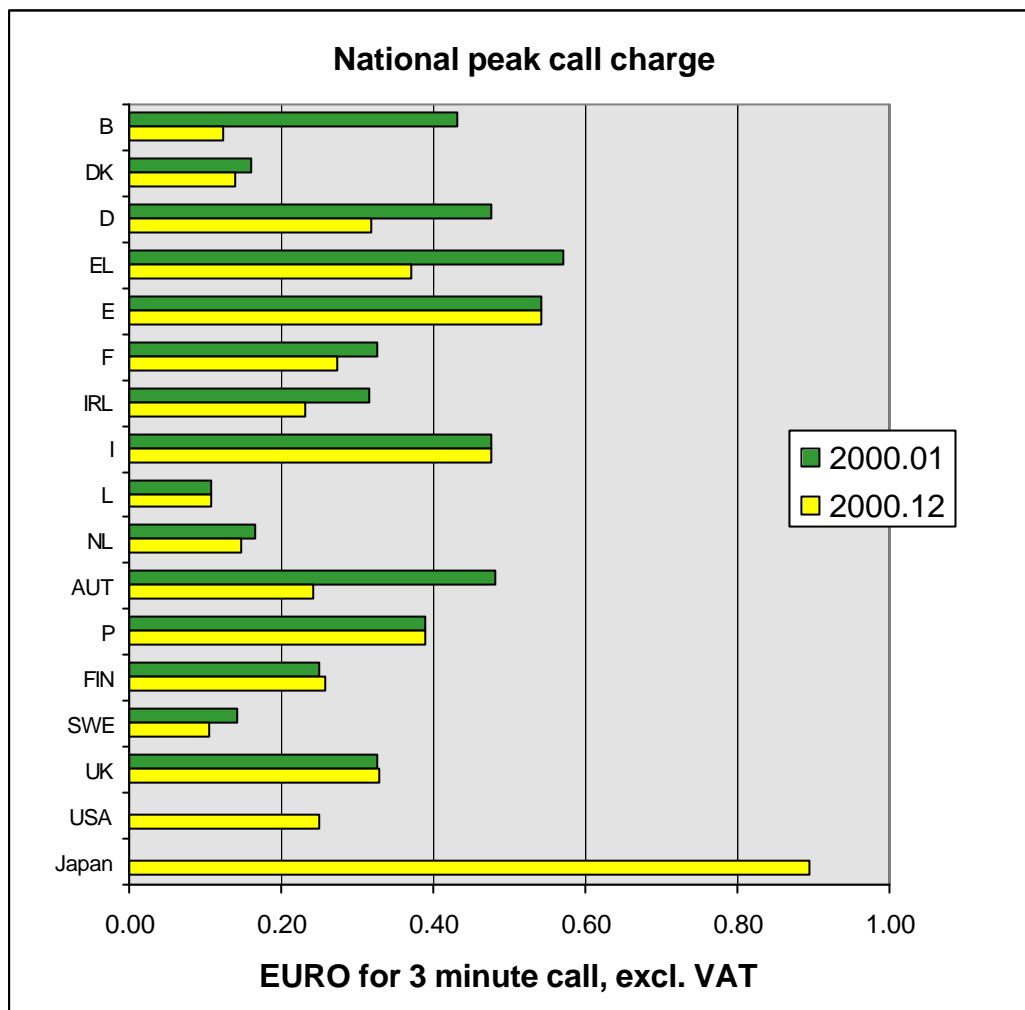
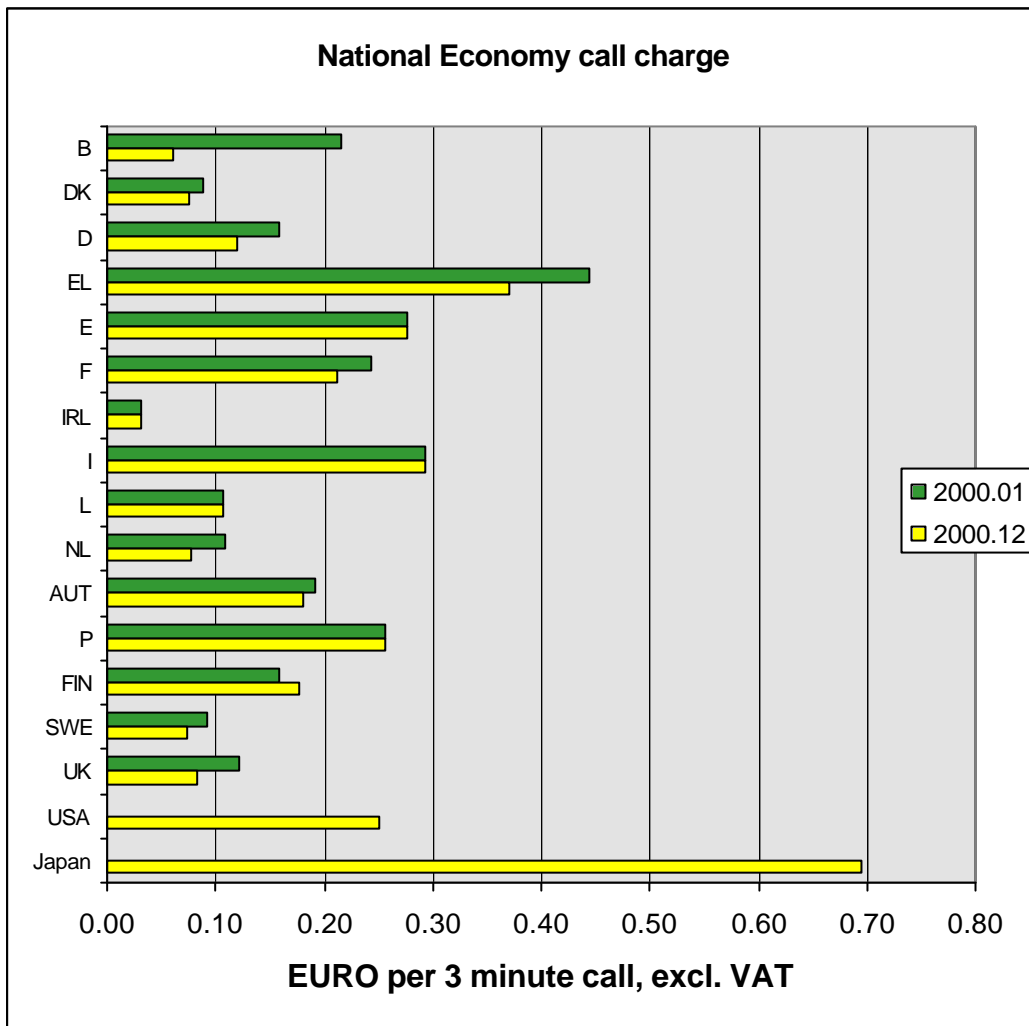


Figure 3.6 National call charge comparison January – December 2000, economy time.



Note: Economy rates are cheapest rate possible, regardless of time of day.

3.6. PSTN calls to mobile phones

Charges for calls from standard PSTN service to mobile phones are listed below. Where charges are different, calls to the mobile network operated by the incumbent operator are assumed. Prices are in euro and exclude VAT. Charges are given for actual calls of 3, 5 and 10 minutes.

Peak hour calls are assumed to be at 11:00 weekdays, off-peak calls are assumed to be at 20:00 weekdays, and economy calls are assumed to be the cheapest rate possible. The weekday night-time and Sunday rates are the same (and lowest) in all countries, except for calls to Telecel in Portugal, where weekend calls are cheaper.

The prices include call setup and minimum charges, and where unit based charging is used, the cost of full units are included, relative to the call duration.

The countries now using per second charging are: Belgium, Denmark, Spain, France, Ireland, Italy, the Netherlands, Portugal, Finland, Sweden and United Kingdom. The remaining 4 member countries still use unit based charging.

Calls to mobile phones in USA are charged in a very different way than is normal in most other countries. The caller pays for the call to the mobile network “gateway” with a local or long distance call, and the mobile user pays for the mobile section of the call (“called party pays”).

Calls to mobiles in Japan (by NTT) are split into two categories: Whether the mobile phone is found in the same “NTT business area” as the caller, or another area.

**Table 3.12 Call charges to mobile phones at peak time (11:00 weekdays)
(in euro excluding VAT)**

	Peak 3 minute call to mobile		Peak 5 minute call to mobile		Peak 10 minute call to mobile	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	1.15	0.93	1.80	1.46	3.44	2.80
DK *	0.59	0.59	0.97	0.97	1.91	1.90
D	1.27	1.27	2.11	2.11	4.23	4.23
EL *	1.10	0.98	1.82	1.64	3.64	3.25
E	0.86	0.86	1.39	1.39	2.71	2.71
F	1.12	0.60	1.88	1.20	3.78	2.71
IRL	0.72	0.72	1.21	1.21	2.41	2.41
I	0.88	0.75	1.42	1.20	2.78	2.33
L	0.86	0.54	1.29	0.86	2.59	1.62
NL	0.91	0.57	1.49	0.95	2.94	1.89
AUT	0.78	0.60	1.27	0.97	2.53	1.87
P	0.93	1.05	1.50	1.70	2.92	3.32
FIN	0.83	0.85	1.36	1.37	2.67	2.68
SWE *	1.01	0.75	1.67	1.25	3.29	2.50
UK *	1.24	0.79	2.06	1.32	4.13	2.64
Japan, same		1.09		1.89		3.68
Japan, other		1.39		2.29		4.47
EU average	0.95	0.79	1.55	1.31	3.06	2.59

Note: The Average is a simple un-weighted average

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

**Table 3.13 Call charges to mobile phones at off-peak time (20:00 we ekdays)
(in euro excluding VAT)**

	Off-peak 3 minute call to mobile		Off-peak 5 minute call to mobile		Off-peak 10 minute call to mobile	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	0.57	0.47	0.90	0.73	1.72	1.40
DK *	0.31	0.31	0.50	0.50	0.97	0.97
D	0.63	0.63	1.06	1.06	2.11	2.11
EL *	1.10	0.98	1.82	1.64	3.64	3.25
E	0.86	0.86	1.39	1.39	2.71	2.71
F	1.12	0.60	1.88	1.20	3.78	2.71
IRL	0.48	0.48	0.80	0.80	1.61	1.61
I	0.42	0.75	0.66	1.20	1.26	2.33
L	0.65	0.43	1.08	0.75	2.05	1.40
NL	0.62	0.57	1.00	0.95	1.97	1.89
AUT	0.60	0.48	0.97	0.78	1.93	1.51
P	0.93	1.05	1.50	1.70	2.92	3.32
FIN	0.60	0.61	0.97	0.98	1.88	1.89
SWE *	0.74	0.42	1.20	0.70	2.36	1.39
UK *	0.83	0.77	1.38	1.29	2.75	2.57
Japan, same		0.89		1.49		2.98
Japan, other		1.09		1.79		3.58
Average	0.70	0.63	1.14	1.04	2.24	2.07

Note: The Average is a simple un-weighted average.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

**Table 3.14 Call charges to mobile phones at economy time (Cheapest rate possible)
(in euro excluding VAT)**

	Economy 3 minute call to mobile		Economy 5 minute call to mobile		Economy 10 minute call to mobile	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	0.57	0.47	0.90	0.73	1.72	1.40
DK *	0.31	0.31	0.50	0.50	0.97	0.97
D	0.63	0.63	1.06	1.06	2.11	2.11
EL *	1.10	0.98	1.82	1.64	3.64	3.25
E	0.47	0.47	0.73	0.73	1.39	1.39
F	0.74	0.30	1.12	0.60	2.07	1.35
IRL	0.48	0.48	0.80	0.80	1.61	1.61
I	0.42	0.75	0.66	1.20	1.26	2.33
L	0.65	0.43	1.08	0.75	2.05	1.40
NL	0.62	0.29	1.00	0.48	1.97	0.97
AUT	0.60	0.48	0.97	0.78	1.93	1.51
P (Sunday)	0.77	0.80	1.23	1.28	2.37	2.47
FIN	0.60	0.61	0.97	0.98	1.88	1.89
SWE *	0.74	0.42	1.20	0.70	2.36	1.39
UK *	0.41	0.10	0.69	0.16	1.38	0.32
Japan, same		0.89		1.49		2.98
Japan, other		1.09		1.79		3.58
Average	0.61	0.50	0.98	0.83	1.91	1.62

Note: The Average is a simple un-weighted average.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Economy rates are cheapest rate possible, regardless of time of day.

The charts below show comparisons of the call charges for a 3 minute call to a mobile phone from the fixed PSTN network.

Figure 3.7 Peak time call charges to mobile phones January – December 2000

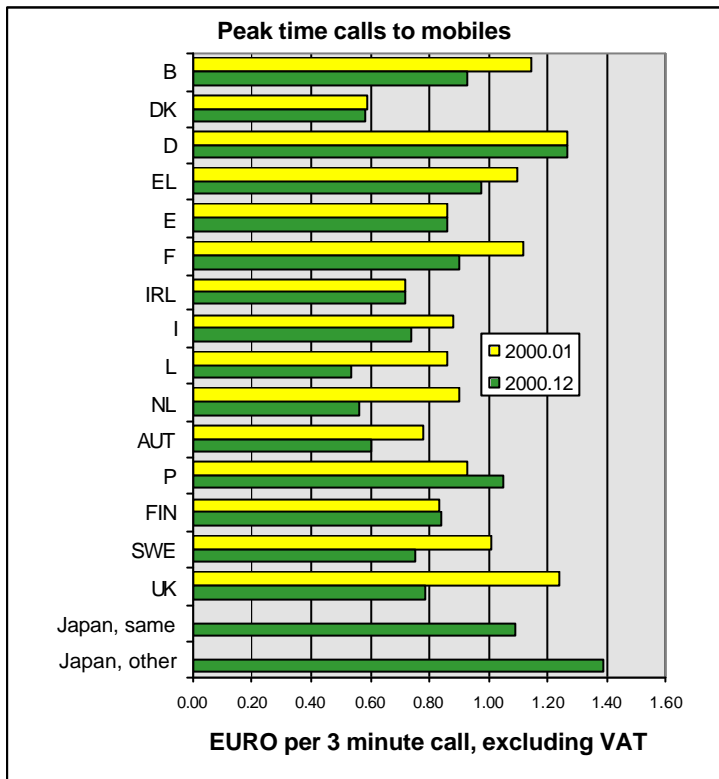
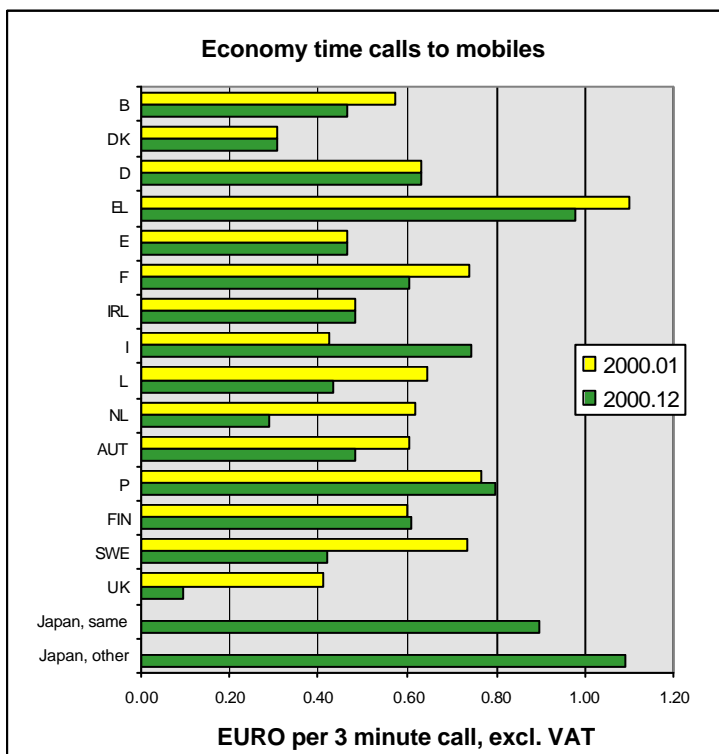


Figure 3.8 Economy time call charges to mobile phones January – December 2000



Note: Economy rates are cheapest rate possible, regardless of time of day.

3.7. PSTN calls to other EU countries

Intra-EU call charges for standard PSTN service are listed below. Prices are in euro and exclude VAT. Charges are given for actual calls of 3, 5 and 10 minutes.

Peak hour calls are assumed to be at 11:00 weekdays, off-peak calls are assumed to be at 20:00 weekdays, and economy calls are assumed to be the cheapest rate possible. All countries have the same rate for weekday night-time and Sundays, so that the Economy rates below will cover both nights and weekends.

The charges shown in the tables below are valid for both Residential and Business customers. Some operators may offer tariff packages aimed at specific customer segments with different tariffs from the ones presented here.

The call costs do include call setup and minimum charges, and where unit based charging is used, the cost of full units are included, relative to the call duration.

The countries now using per second charging are: Belgium, Denmark, Spain, France, Ireland, Italy, the Netherlands, Portugal, Finland, Sweden and United Kingdom. The remaining 4 member countries still use unit based charging.

Comparisons with call charges from USA and Japan are not really relevant because of the geographical positions of these two countries. With the variety of calling packages in the USA there may be implications also for national charges (e.g. additional fixed charges) when selecting a low cost international package.

The charges shown are simple averages of the call charges to all other EU countries. Please see tables in section 3.8 for details on call charges between individual countries.

Table 3.15 Average intra-EU call charges at peak time (11:00 weekdays)
(in euro excluding VAT)

	Peak 3 minute Intra-EU call		Peak 5 minute Intra-EU call		Peak 10 minute Intra-EU call	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	1.32	0.52	2.19	0.87	4.39	1.74
DK *	1.09	0.69	1.81	1.15	3.60	2.28
D	0.84	0.34	1.40	0.57	2.79	1.13
EL *	1.14	0.85	1.90	1.40	3.78	2.77
E	1.02	1.02	1.62	1.62	3.13	3.13
F	0.71	0.73	1.19	1.23	2.38	2.48
IRL	1.06	1.05	1.76	1.75	3.52	3.49
I	1.03	0.88	1.54	1.29	2.82	2.32
L	0.54	0.58	0.97	1.02	1.83	1.95
NL	0.53	0.37	0.86	0.60	1.68	1.15
AUT	0.95	0.95	1.59	1.59	3.17	3.17
P	1.03	1.03	1.67	1.67	3.26	3.26
FIN	1.28	1.29	2.10	2.11	4.15	4.15
SWE *	0.99	0.51	1.62	0.82	3.21	1.59
UK *	1.30	1.31	2.17	2.19	4.34	4.37
Average	0.99	0.81	1.63	1.32	3.20	2.60

Notes: The Average is a simple un-weighted average

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Table 3.16 Average intra-EU call charges at off-peak time (20:00 weekdays)
(in euro excluding VAT)

	Off-peak 3 minute Intra-EU call		Off-peak 5 minute Intra-EU call		Off-peak 10 minute Intra-EU call	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	1.32	0.35	2.19	0.59	4.39	1.18
DK	0.79	0.69	1.31	1.15	2.61	2.28
D	0.75	0.34	1.25	0.57	2.49	1.13
EL	1.14	0.85	1.90	1.40	3.78	2.77
E	1.02	0.91	1.62	1.44	3.13	2.76
F	0.57	0.48	0.93	0.78	1.83	1.54
IRL	0.92	0.92	1.54	1.53	3.08	3.05
I	1.03	0.88	1.54	1.29	2.82	2.32
L	0.43	0.46	0.65	0.71	1.29	1.41
NL	0.49	0.37	0.79	0.60	1.54	1.15
AUT	0.83	0.83	1.36	1.36	2.72	2.72
P	1.03	1.03	1.67	1.67	3.26	3.26
FIN	0.88	0.89	1.44	1.45	2.83	2.84
SWE *	0.99	0.51	1.62	0.82	3.21	1.59
UK *	1.16	1.17	1.94	1.95	3.87	3.91
Average	0.89	0.71	1.45	1.15	2.86	2.26

Notes: The Average is a simple un-weighted average.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Table 3.17 Average intra-EU call charges at economy time (Cheapest rate possible)
(in euro excluding VAT)

	Economy 3 minute Intra-EU call		Economy 5 minute Intra-EU call		Economy 10 minute Intra-EU call	
	January 2000	December 2000	January 2000	December 2000	January 2000	December 2000
B	0.89	0.35	1.48	0.59	2.96	1.18
DK *	0.79	0.69	1.31	1.15	2.61	2.28
D	0.75	0.34	1.25	0.57	2.49	1.13
EL *	0.89	0.85	1.48	1.40	2.96	2.77
E	0.91	0.91	1.44	1.44	2.76	2.76
F	0.57	0.48	0.93	0.78	1.83	1.54
IRL	0.88	0.87	1.47	1.46	2.94	2.91
I	0.88	0.88	1.29	1.29	2.32	2.32
L	0.43	0.46	0.65	0.71	1.29	1.41
NL	0.49	0.37	0.79	0.60	1.54	1.15
AUT	0.83	0.83	1.36	1.36	2.72	2.72
P	0.54	0.54	0.84	0.84	1.58	1.58
FIN	0.88	0.89	1.44	1.45	2.83	2.84
SWE *	0.99	0.51	1.62	0.82	3.21	1.59
UK *	1.03	1.04	1.71	1.73	3.42	3.45
Average	0.78	0.67	1.27	1.08	2.50	2.11

Notes: The Average is a simple un-weighted average.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Economy rates are cheapest rate possible, regardless of time of day. Rates above cover both weekday nights and weekends.

3.8. PSTN intra-EU call charge relationships

The tables in this section show the relationship between the **standard published prices by incumbent operators of calls in both directions between any two EU countries**. The first table (3.18) is a complete matrix of all originating and destination countries, while the originating countries are presented separately for clarity in the following tables. All prices are presented in euro and exclude VAT.

The prices used in these tables are for a **3 minute peak call from one country to another at the end of 2000**, i.e. the prices which form the basis of the peak 3 minute 2000 call prices in the preceding section (table 3.15).

Table 3.18 Peak time call charges from and to all EU Member States (euro excluding VAT)

From →

To	B	DK	D	EL	E	F	IRL	I	L	NL	AUT	P	FIN	SWE	UK
B		0.66	0.32	0.85	1.02	0.73	0.94	0.88	0.54	0.26	0.96	1.05	1.44	0.37	1.18
DK	0.61		0.32	0.85	1.02	0.73	1.20	0.88	0.54	0.31	0.96	1.05	0.49	0.30	1.18
D	0.43	0.48		0.85	1.02	0.73	0.94	0.88	0.54	0.21	0.77	1.02	1.27	0.32	1.18
EL	0.61	1.06	0.63		1.02	0.73	1.20	0.88	1.08	0.69	1.09	1.05	1.44	1.01	1.48
E	0.43	1.06	0.32	0.85		0.73	1.20	0.88	0.54	0.39	0.96	0.90	1.44	0.58	1.48
F	0.43	0.66	0.32	0.85	1.02		0.94	0.88	0.54	0.26	0.96	1.02	1.44	0.37	1.18
IRL	0.61	0.95	0.32	0.85	1.02	0.73		0.88	0.54	0.37	0.96	1.05	1.44	0.58	0.95
I	0.43	0.66	0.32	0.85	1.02	0.73	1.20		0.54	0.39	0.77	1.05	1.44	0.58	1.48
L	0.43	0.79	0.32	0.85	1.02	0.73	0.94	0.88		0.33	0.96	1.05	1.44	0.37	1.18
NL	0.43	0.66	0.32	0.85	1.02	0.73	0.94	0.88	0.54		0.96	1.05	1.44	0.37	1.18
AUT	0.61	0.66	0.32	0.85	1.02	0.73	1.20	0.88	0.54	0.46		1.05	1.44	0.58	1.61
P	0.61	1.06	0.32	0.85	1.02	0.73	1.20	0.88	0.54	0.68	1.09		1.44	1.01	1.48
FIN	0.61	0.37	0.32	0.85	1.02	0.73	1.20	0.88	0.54	0.39	0.96	1.05		0.30	1.61
SWE	0.61	0.19	0.32	0.85	1.02	0.73	1.20	0.88	0.54	0.27	0.96	1.05	0.49		1.18
UK	0.43	0.48	0.32	0.85	1.02	0.73	0.38	0.88	0.54	0.23	0.96	1.02	1.44	0.32	

Table 3.19 Peak time call charges from and to Belgium (euro excluding VAT)

Base country:	<i>Belgium</i>	
3 minute peak time call charge	Call direction	
	Outgoing	Incoming
B		
DK	0.61	0.66
D	0.43	0.32
EL	0.61	0.85
E	0.43	1.02
F	0.43	0.73
IRL	0.61	0.94
I	0.43	0.88
L	0.43	0.54
NL	0.43	0.26
AUT	0.61	0.96
P	0.61	1.05
FIN	0.61	1.44
SWE	0.61	0.37
UK	0.43	1.18

Table 3.20 Peak time call charges from and to Denmark (euro excluding VAT)

Base country:	<i>Denmark</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	0.66	0.61
DK		
D	0.48	0.32
EL	1.06	0.85
E	1.06	1.02
F	0.66	0.73
IRL	0.95	1.20
I	0.66	0.88
L	0.79	0.54
NL	0.66	0.31
AUT	0.66	0.96
P	1.06	1.05
FIN	0.37	0.49
SWE	0.19	0.30
UK	0.48	1.18

Table 3.21 Peak time call charges from and to Germany (in euro excluding VAT)

Base country:	<i>Germany</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	0.32	0.43
DK	0.32	0.48
D		
EL	0.63	0.85
E	0.32	1.02
F	0.32	0.73
IRL	0.32	0.94
I	0.32	0.88
L	0.32	0.54
NL	0.32	0.21
AUT	0.32	0.77
P	0.32	1.02
FIN	0.32	1.27
SWE	0.32	0.32
UK	0.32	1.18

Table 3.22 Peak time call charges from and to Greece (in euro excluding VAT)

Base country:	<i>Greece</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	0.85	0.61
DK	0.85	1.06
D	0.85	0.63
EL		
E	0.85	1.02
F	0.85	0.73
IRL	0.85	1.20
I	0.85	0.88
L	0.85	1.08
NL	0.85	0.69
AUT	0.85	1.09
P	0.85	1.05
FIN	0.85	1.44
SWE	0.85	1.01
UK	0.85	1.48

Table 3.23 Peak time call charges from and to Spain (in euro excluding VAT)

Base country: 3 minute peak time call charges	<i>Spain</i> Call direction	
	Outgoing	Incoming
B	1.02	0.43
DK	1.02	1.06
D	1.02	0.32
EL	1.02	0.85
E		
F	1.02	0.73
IRL	1.02	1.20
I	1.02	0.88
L	1.02	0.54
NL	1.02	0.39
AUT	1.02	0.96
P	1.02	0.90
FIN	1.02	1.44
SWE	1.02	0.58
UK	1.02	1.48

Table 3.24 Peak time call charges from and to France (in euro excluding VAT)

Base country: 3 minute peak time call charges	<i>France</i> Call direction	
	Outgoing	Incoming
B	0.73	0.43
DK	0.73	0.66
D	0.73	0.32
EL	0.73	0.85
E	0.73	1.02
F		
IRL	0.73	0.94
I	0.73	0.88
L	0.73	0.54
NL	0.73	0.26
AUT	0.73	0.96
P	0.73	1.02
FIN	0.73	1.44
SWE	0.73	0.37
UK	0.73	1.18

Table 3.25 Peak time call charges from and to Ireland (in euro excluding VAT)

Base country:	<i>Ireland</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	0.94	0.61
DK	1.20	0.95
D	0.94	0.32
EL	1.20	0.85
E	1.20	1.02
F	0.94	0.73
IRL		
I	1.20	0.88
L	0.94	0.54
NL	0.94	0.37
AUT	1.20	0.96
P	1.20	1.05
FIN	1.20	1.44
SWE	1.20	0.58
UK	0.38	0.95

Table 3.26 Peak time call charges from and to Italy (in euro excluding VAT)

Base country:	<i>Italy</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	0.88	0.43
DK	0.88	0.66
D	0.88	0.32
EL	0.88	0.85
E	0.88	1.02
F	0.88	0.73
IRL	0.88	1.20
I		
L	0.88	0.54
NL	0.88	0.39
AUT	0.88	0.77
P	0.88	1.05
FIN	0.88	1.44
SWE	0.88	0.58
UK	0.88	1.48

Table 3.27 Peak time call charges from and to Luxembourg (in euro excluding VAT)

Base country:	<i>Luxembourg</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	0.54	0.43
DK	0.54	0.79
D	0.54	0.32
EL	1.08	0.85
E	0.54	1.02
F	0.54	0.73
IRL	0.54	0.94
I	0.54	0.88
L		
NL	0.54	0.33
AUT	0.54	0.96
P	0.54	1.05
FIN	0.54	1.44
SWE	0.54	0.37
UK	0.54	1.18

Table 3.28 Peak time call charges from and to the Netherlands (in euro excluding VAT)

Base country:	<i>Netherlands</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	0.26	0.43
DK	0.31	0.66
D	0.21	0.32
EL	0.69	0.85
E	0.39	1.02
F	0.26	0.73
IRL	0.37	0.94
I	0.39	0.88
L	0.33	0.54
NL		
AUT	0.46	0.96
P	0.68	1.05
FIN	0.39	1.44
SWE	0.27	0.37
UK	0.23	1.18

Table 3.29 Peak time call charges from and to Austria (in euro excluding VAT)

Base country:	<i>Austria</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	0.96	0.61
DK	0.96	0.66
D	0.77	0.32
EL	1.09	0.85
E	0.96	1.02
F	0.96	0.73
IRL	0.96	1.20
I	0.77	0.88
L	0.96	0.54
NL	0.96	0.46
AUT		
P	1.09	1.05
FIN	0.96	1.44
SWE	0.96	0.58
UK	0.96	1.61

Table 3.30 Peak time call charges from and to Portugal (in euro excluding VAT)

Base country:	<i>Portugal</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	1.05	0.61
DK	1.05	1.06
D	1.02	0.32
EL	1.05	0.85
E	0.90	1.02
F	1.02	0.73
IRL	1.05	1.20
I	1.05	0.88
L	1.05	0.54
NL	1.05	0.68
AUT	1.05	1.09
P		
FIN	1.05	1.44
SWE	1.05	1.01
UK	1.02	1.48

Table 3.31 Peak time call charges from and to Finland (in euro excluding VAT)

Base country:	<i>Finland</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	1.44	0.61
DK	0.49	0.37
D	1.27	0.32
EL	1.44	0.85
E	1.44	1.02
F	1.44	0.73
IRL	1.44	1.20
I	1.44	0.88
L	1.44	0.54
NL	1.44	0.39
AUT	1.44	0.96
P	1.44	1.05
FIN		
SWE	0.49	0.30
UK	1.44	1.61

Table 3.32 Peak time call charges from and to Sweden (in euro excluding VAT)

Base country:	<i>Sweden</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	0.37	0.61
DK	0.30	0.19
D	0.32	0.32
EL	1.01	0.85
E	0.58	1.02
F	0.37	0.73
IRL	0.58	1.20
I	0.58	0.88
L	0.37	0.54
NL	0.37	0.27
AUT	0.58	0.96
P	1.01	1.05
FIN	0.30	0.49
SWE		
UK	0.32	1.18

Table 3.33 Peak time call charges from and to United Kingdom (in euro excluding VAT)

Base country:	<i>United Kingdom</i>	
3 minute peak time call charges	Call direction	
	Outgoing	Incoming
B	1.18	0.43
DK	1.18	0.48
D	1.18	0.32
EL	1.48	0.85
E	1.48	1.02
F	1.18	0.73
IRL	0.95	0.38
I	1.48	0.88
L	1.18	0.54
NL	1.18	0.23
AUT	1.61	0.96
P	1.48	1.02
FIN	1.61	1.44
SWE	1.18	0.32
UK		

3.9. PSTN time band variations

The charts below show how the peak and off-peak charges are mapped onto the days of the week in the EU countries. The names of the timebands (Standard, Reduced and Cheap) are generic names, and do not imply any specific price relationships.

3.9.1. Weekdays

Figure 3.9 Time band variations for Local calls on weekdays

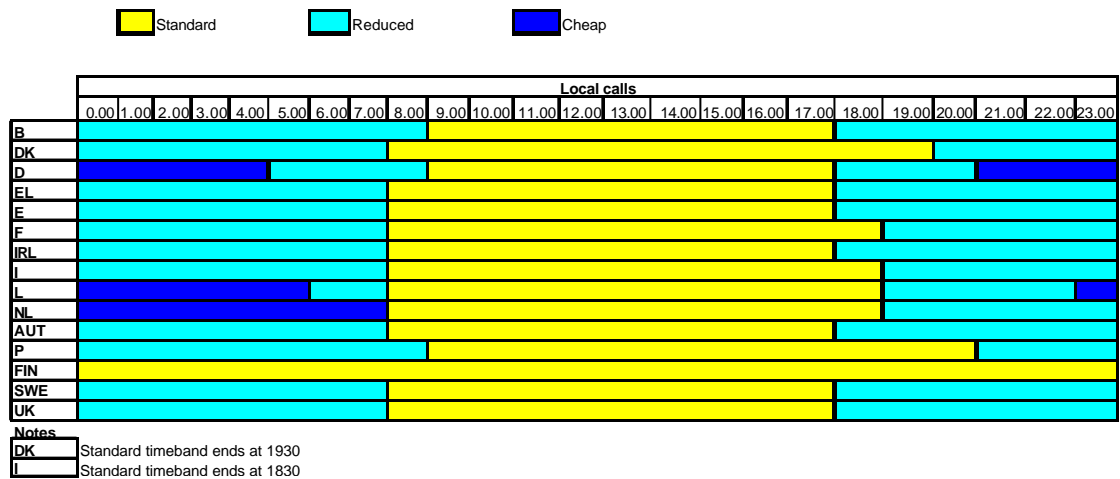
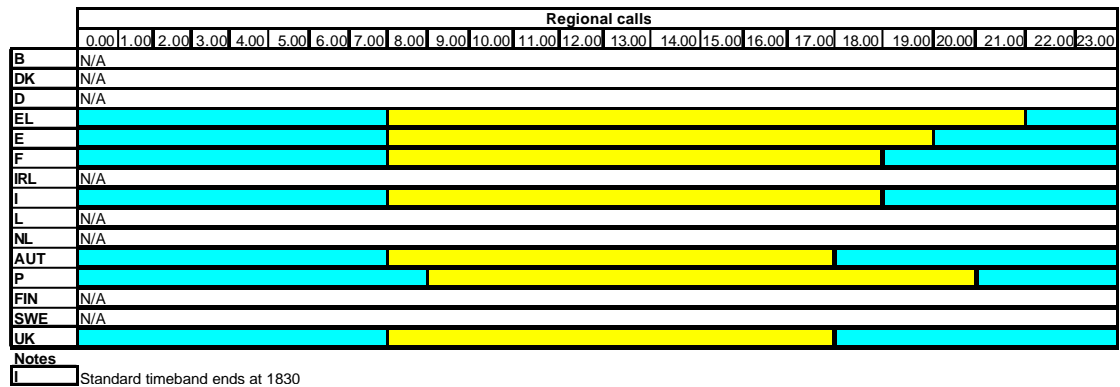


Figure 3.10 Time band variations for Regional calls on weekdays



Regional calls do not apply to Belgium, Denmark, Germany, Ireland, Luxembourg, the Netherlands, Finland and Sweden.

Figure 3.11 Time band variations for National calls on weekdays

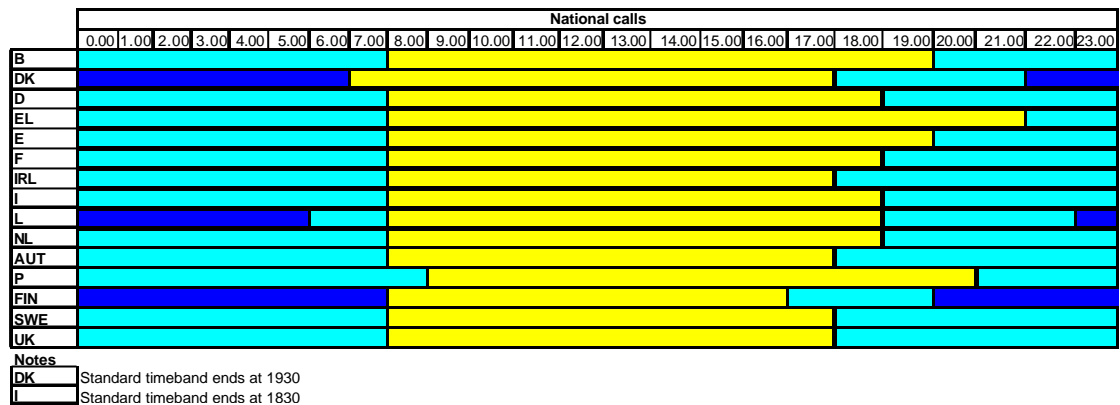


Figure 3.12 Time band variations for calls to mobiles on weekdays

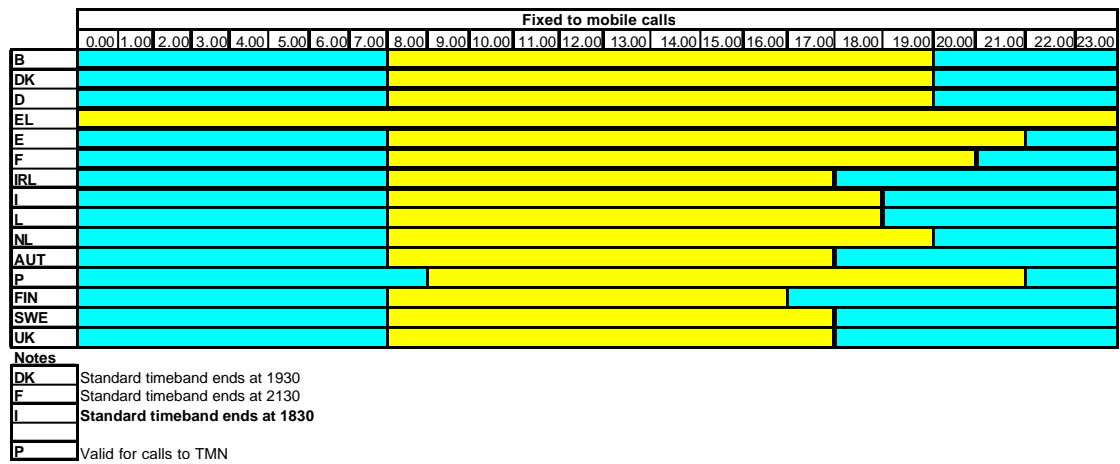
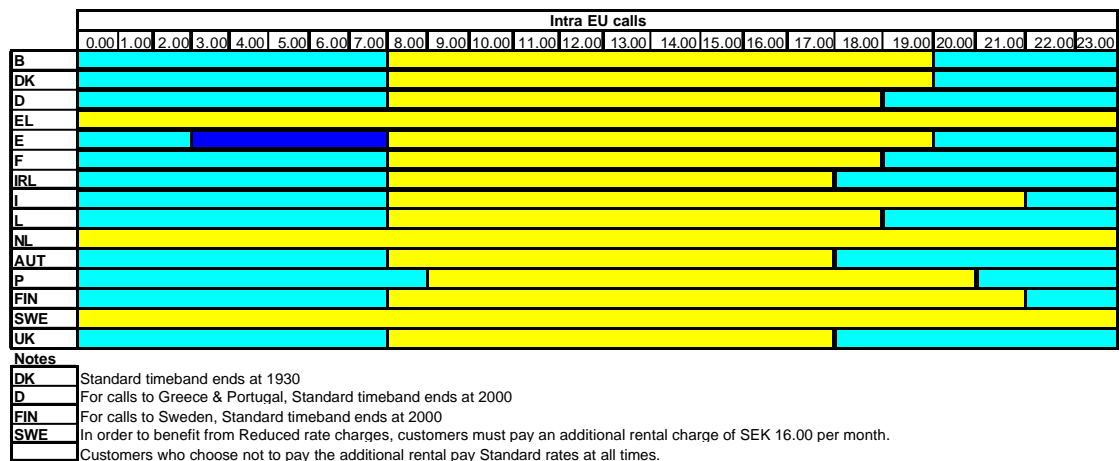


Figure 3.13 Time band variations for Intra-EU calls on weekdays



3.9.2. Saturdays

Figure 3.14 Time band variations for Local calls on Saturdays

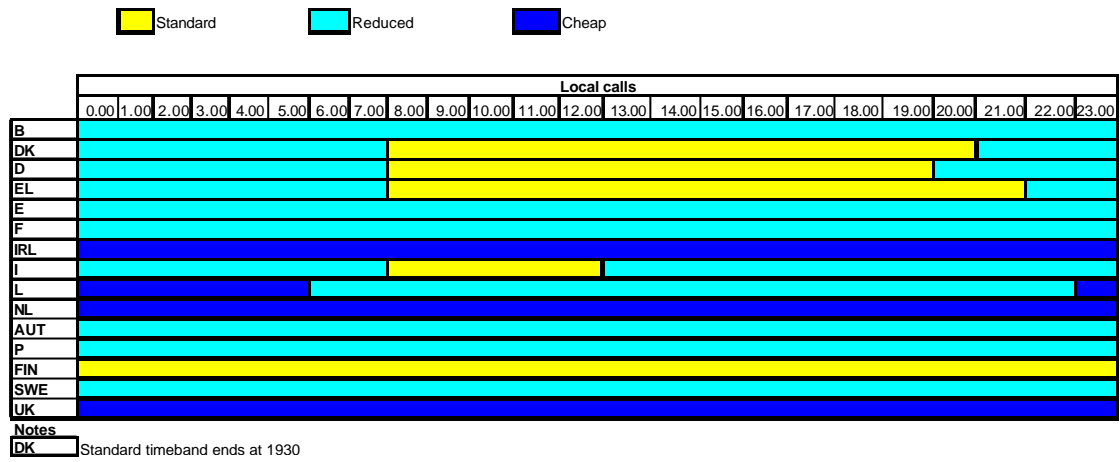
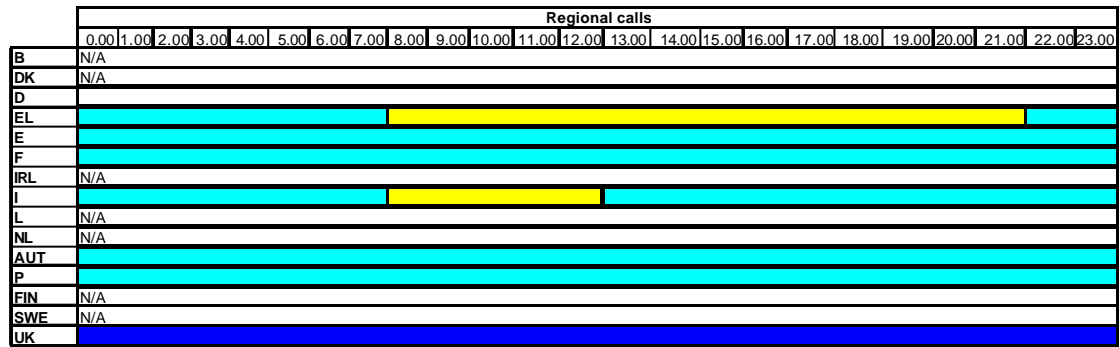


Figure 3.15 Time band variations for Regional calls on Saturdays



Regional calls do not apply to Belgium, Denmark, Germany, Ireland, Luxembourg, the Netherlands, Finland and Sweden.

Figure 3.16 Time band variations for National calls on Saturdays

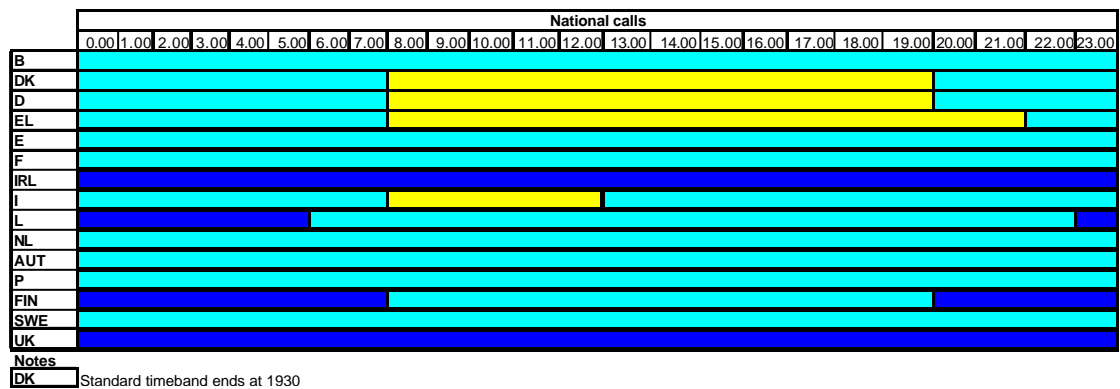
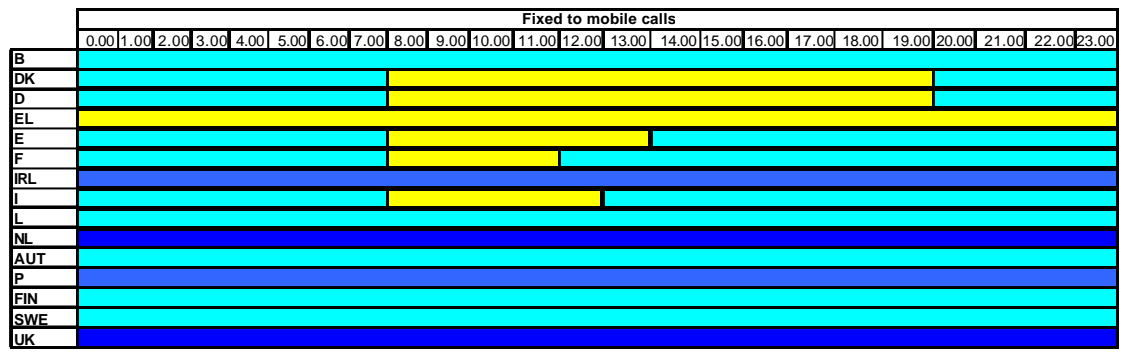
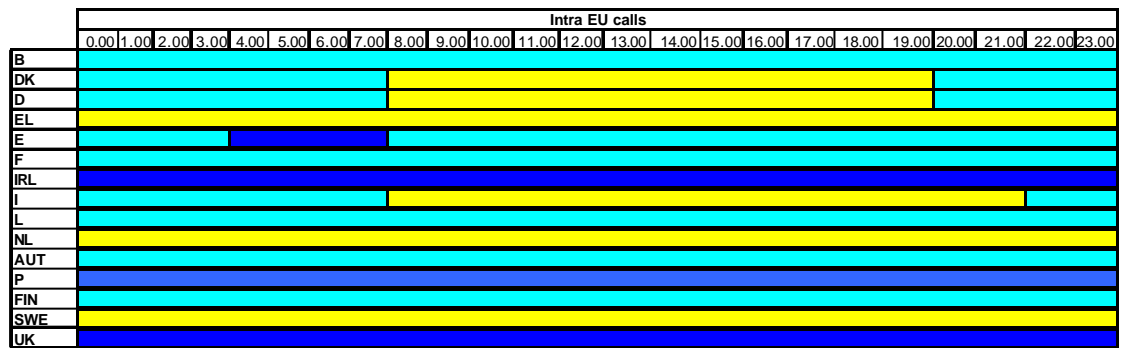


Figure 3.17 Time band variations for calls to mobiles on Saturdays



Notes
 I Times shown refer to calls to Italian mobile networks' business subscribers
 DK Standard timeband ends at 1930

Figure 3.18 Time band variations for Intra-EU calls on Saturdays



Notes
 DK Standard timeband ends at 1930

3.9.3. Sundays

Figure 3.19 Time band variations for Local calls on Sundays

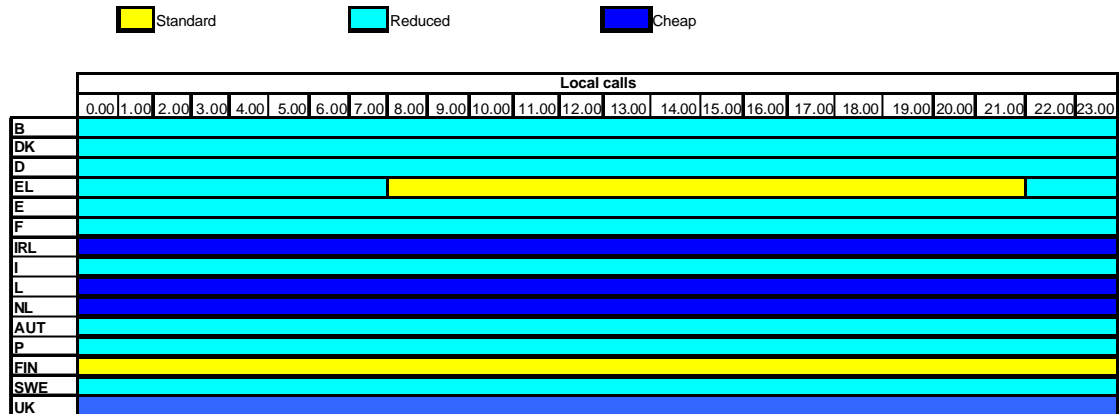
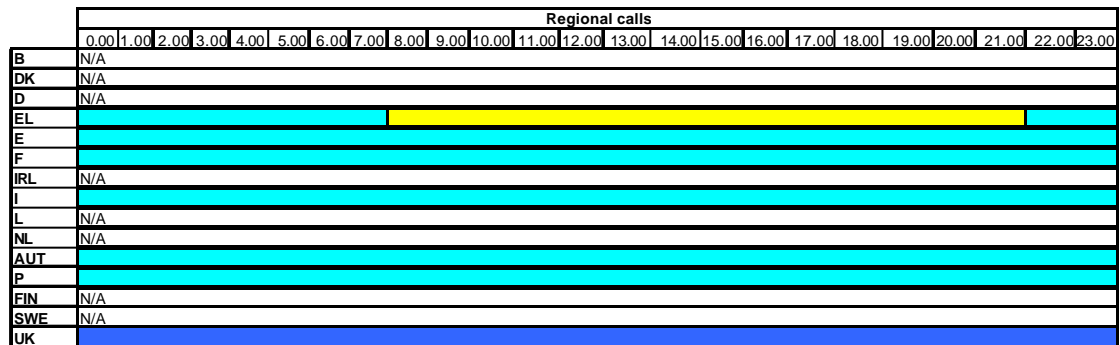


Figure 3.20 Time band variations for Regional calls on Sundays



Regional calls do not apply to Belgium, Denmark, Germany, Ireland, Luxembourg, the Netherlands, Finland and Sweden.

Figure 3.21 Time band variations for National calls on Sundays

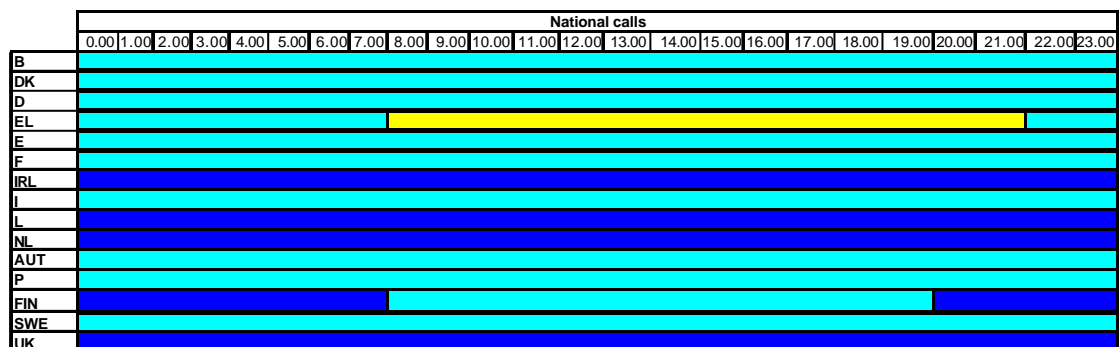


Figure 3.22 Time band variations for calls to mobiles on Sundays

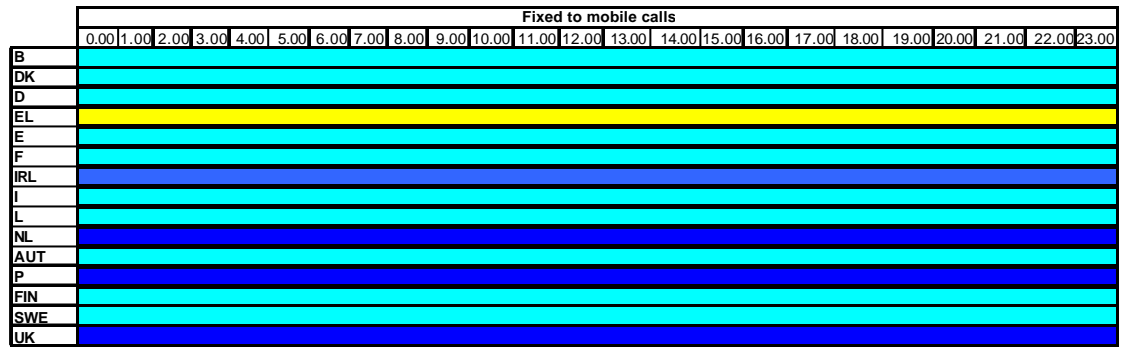
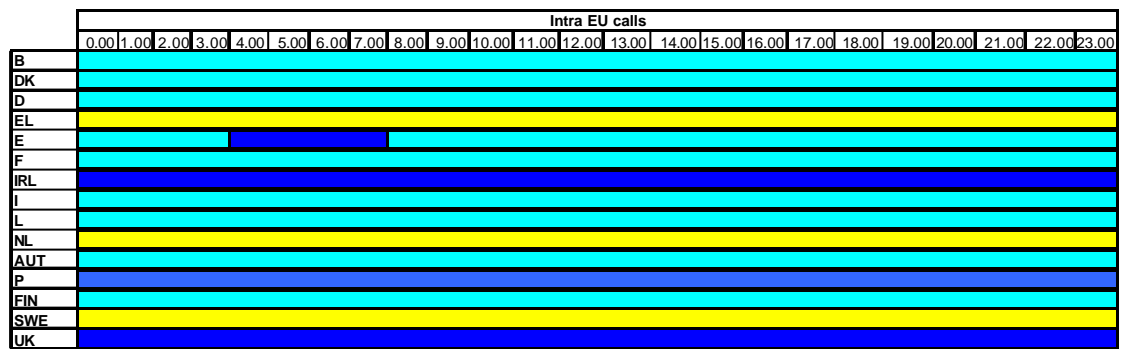


Figure 3.23 Time band variations for Intra-EU calls on Sundays



3.10. PSTN zone definitions

The call charges for domestic calls are defined differently in the different countries. Below is a summary of the zone definitions applied in each country, in the grouping they appear in this report. Distance information is included where possible. Many operators do not define their zones with distance. In such cases the zone boundaries relate to exchange area boundaries, and the actual distance can vary considerably with the location of the caller.

Table 3.33 PSTN zone definitions

	Local	Regional	National
B	Zonal	n/a	Interzonal
DK	Local	n/a	Trunk
D	CityCall: Local	n/a	GermanCall: > 50 km
EL	Local Rate	Trunk: <45km, 46-80km	Trunk: >81km
E	Metropolitan: Calls made within the same area code Calls made between urban area codes and adjacent area codes	Provincial: All non-local calls made within the same province	Interprovincial: Calls between two different provinces
F	Local	n/a	National: >50km
IRL	Local	n/a	National
I	Local	Calls between Local areas inside the same district, Trunk: <15km & 15-30km	Trunk: >30km
L	All calls charged at national rates	n/a	All calls charged at national rates
NL	Local: within the same region	n/a	Long Distance: to a different region
AUT	Regional Zone: 0-50km	n/a	Long Distance Zone: > 50km
P	Local, Inside a local area, between adjacent local areas, or between non-adjacent Local areas up to a distance of 10kms.	Regional: Between non-adjacent Local Areas over 10kms but under 50 kms	National: > 50 km
FIN	Local	n/a	Trunk
SWE	Local	n/a	Long Distance
UK	Local	<56.4km	>56.4km

4. ISDN prices

The prices given are expressed in euro, using average December 2000 exchange rates. Any individual comparisons with January 2000 prices are done in national currency, to avoid the impact of any exchange rate variations. Comparisons of averages are done in euro.

4.1. ISDN connection

Connection charges for new ISDN lines are listed below. Prices are in euro and exclude VAT. Prices are the same for business and residential customers, except in Finland. The charges shown are standard charges, as presented in the regular pricelists. Basic rate service provides two 64 kbit/s channels plus a 16 kbit/s data channel, while Primary rate service provides thirty 64 kbit/s channels plus a 64 kbit/s data channel.

The variation in connection charges is quite large, with the lowest Basic rate charge (Germany) being only 11% of the highest (UK), and similarly for Primary rate the lowest (Germany) is only 2% of the highest (Ireland).

There have been major price changes in Greece, Ireland, Luxembourg, Netherlands, Finland and Sweden.

Primary rate ISDN services in Japan and USA are not comparable in price as they offer 24 channels per system rather than 30. Also, in USA the ISDN service is sold in a variety of ways with different types of channels and additional services. This makes any comparison very difficult.

Table 4.1 ISDN connection charges (in euro excluding VAT)

ISDN Connection charges					
	January 2000		December 2000		Notes
	Basic	Primary	Basic	Primary	
B	66.93	1928.61	66.93	1928.61	1
DK *	150.46	1397.12	150.13	1394.10	2
D	44.46	88.92	44.46	88.92	
EL *	60.41	1510.26	58.70	1467.57	
E	168.28	3606.07	168.28	3606.07	3
F	102.90	640.29	102.90	640.29	4
IRL	441.87	4418.69	208.82	4418.69	
I	103.29	309.87	103.29	309.87	
L	74.37	1673.28	74.37	1673.28	
NL	86.89	3085.71	86.89	3085.71	
AUT	130.81	821.20	130.81	1002.89	5
P	139.66	718.27	139.66	718.27	6
FIN	194.38	2371.17	218.64	2522.82	
SWE *	229.74	1163.22	228.06	1154.73	7
UK *	402.69	929.91	406.20	938.01	8
EU Average	159.81	1644.17	145.88	1663.32	9

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Notes to ISDN connection charges:

1. The Primary Rate connection charge does not include wiring, which is charged on a case by case basis.
2. Within Funen region.
3. Metropolitan area tariffs are shown, higher charges apply in provincial areas.
4. The selected Basic Rate Access package excludes Euro-Numeris.
5. The Primary Rate connection charge includes a 'Building and Measuring' service, installation and an administrative charge.
6. Primary Access Monthly Rental is charged per access. The tariff given is the 'Standard Rate'.
7. Primary Rate Installation charge is for a city with an ISDN exchange. Different charges apply to customers in areas without an ISDN exchange.
8. For Basic Rate Access, the 'Low Start' package tariffs are displayed.
9. The EU Average is a simple un-weighted average.

4.2. ISDN monthly rental

Rental charges for standard ISDN lines are listed below. Prices are in euro and exclude VAT.

Table 4.2 ISDN monthly rental charges (in euro excluding VAT)

ISDN Business monthly rental charges					
	January 2000		December 2000		
	Basic	Primary	Basic	Primary	Notes
B	29.00	348.04	29.00	348.04	
DK *	22.64	271.18	22.88	270.60	1
D	32.89	230.30	25.56	230.30	2
EL *	18.12	332.26	17.61	293.51	
E	22.84	342.58	22.84	342.58	
F	30.18	452.77	32.62	489.36	3
IRL	36.82	368.22	36.82	264.11	4
I	25.82	356.36	25.82	356.36	
L	18.59	223.10	18.59	223.10	
NL	21.22	212.14	21.22	212.14	
AUT	34.88	348.83	34.88	348.83	5
P	23.89	243.66	23.89	243.66	6
FIN	21.53	158.10	13.85	247.24	
SWE *	23.26	255.91	23.09	254.04	7
UK *	47.44	671.15	48.94	709.62	8
EU Average	27.28	320.97	26.51	322.23	9

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

1. Within Funen region.
2. Basic Rate Access Business Monthly Rental shown is for the 'Professional' package.
3. The selected Basic Rate Access package excludes Euro-Numeris.
4. Basic Access is provided with 2 free numbers. Primary Access is provided with 100 free numbers.
5. The 'Business 1' package is shown.
6. Primary Access Monthly Rental is charged per access. The tariff given is the 'Standard Rate'.
7. Tariffs shown are for a city with an ISDN exchange. Rates for cities without an ISDN exchange are offered on a case-by case basis.
8. For Basic Rate Access, the 'Low Start' package tariffs are displayed.
9. The EU Average is a simple un-weighted average

In 6 of the countries the monthly charge for a basic rate access will be lower for residential customers than for business customers, as shown in the table below.

Table 4.3 Residential Basic rate rental charges (in euro excluding VAT)

Basic rate monthly charges			
	Business	Residential	Difference
DK	22.88	17.52	-23.4 %
I	25.82	16.53	-36.0 %
NL	21.22	19.29	-9.1 %
AUT	34.88	23.98	-31.3 %
FIN	13.85	4.20	-69.6 %
UK	48.94	37.48	-23.4 %

Figure 4.1 ISDN Basic Rate rental charges 2000.01 – 2000.12

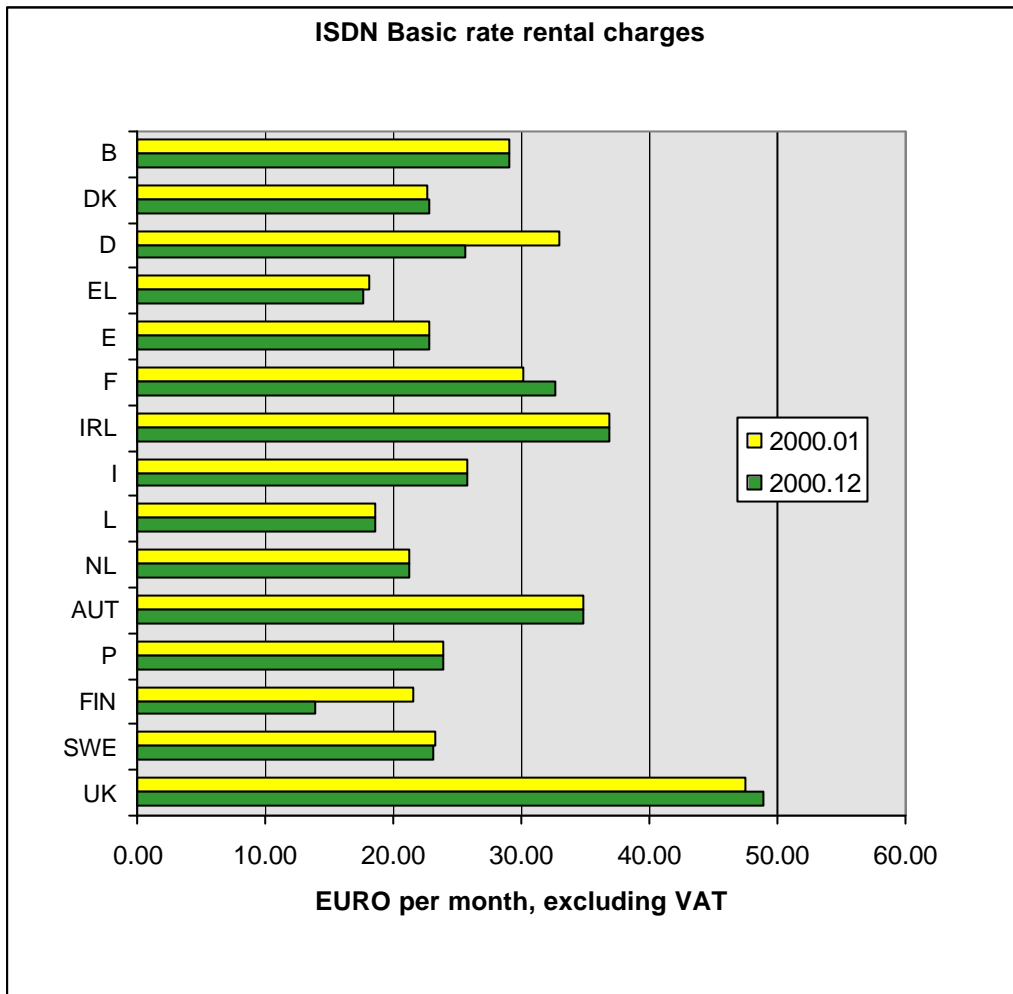
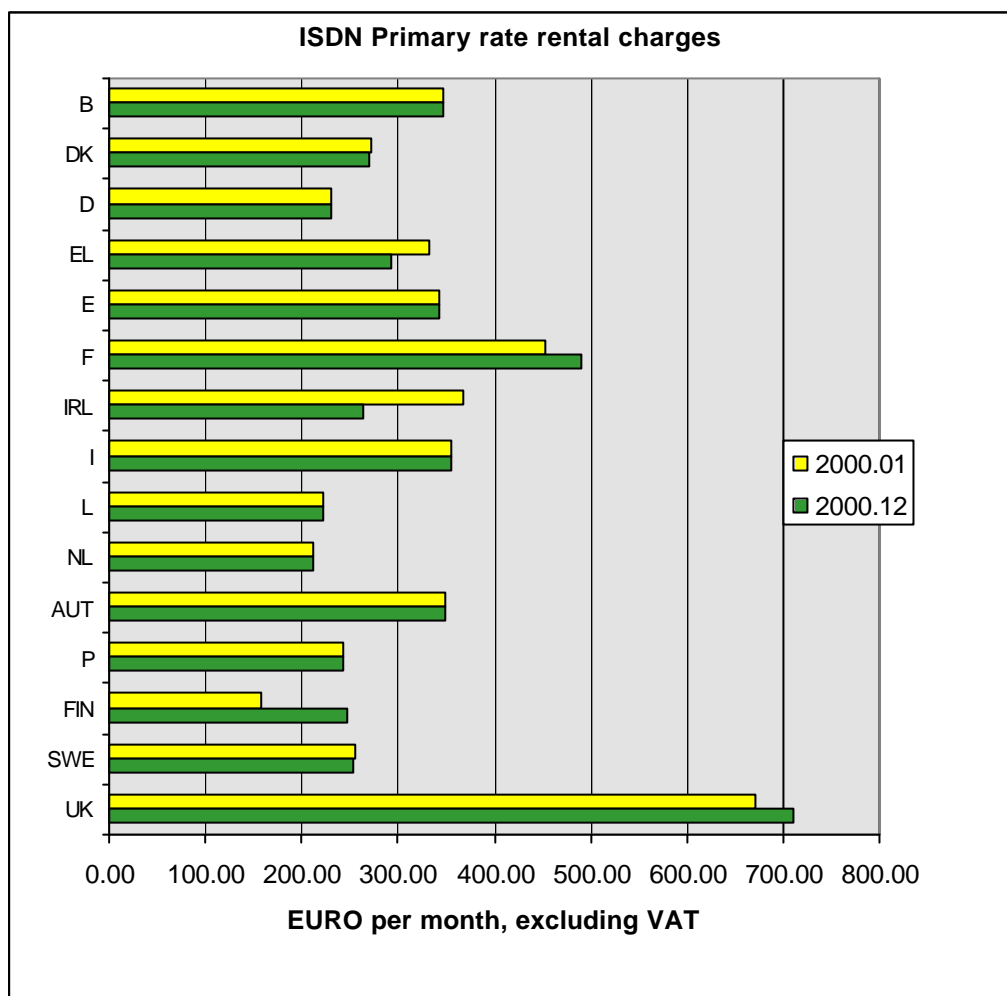


Figure 4.2 ISDN Primary Rate rental charges 2000.01 – 2000.12



4.3. ISDN call charges

ISDN call charges will generally be related to PSTN, as at least for voice calls the same service is provided:

- **National voice and data** call charges from, to or between ISDN phones are exactly the same as for PSTN. PSTN time-band and zone information also applies.
- **International voice** call charges from or to ISDN phones are exactly the same as for PSTN. Time-band and zone information also applies.
- **International data** (transparent 64 kbit/s connections) call charges between ISDN terminals may be different from PSTN. Appendix C to this report gives the status for all member countries. Only in the United Kingdom (BT) are prices identified to be different from PSTN. Calls from all other countries have the same Intra-EU charges as for PSTN.

Table 4.4 International ISDN call charges for 64 kbit/s calls

		Average per minute charges for 64kbit/s ISDN calls	
From:	UK		
To:	Initial 60 minutes	Thereafter	
B	1.04	0.83	
DK	1.04	0.83	
D	0.79	0.63	
EL	1.04	0.83	
E	1.04	0.83	
F	0.79	0.63	
IRL	0.79	0.63	
I	1.04	0.83	
L	1.04	0.83	
NL	0.94	0.75	
AUT	1.04	0.83	
P	1.04	0.83	
FIN	1.04	0.83	
SWE	0.79	0.63	
UK			
Average	0.96	0.77	

Notes:

Charges are in euro, excluding VAT

In the UK the above charges are valid for the whole day

In UK the first charge is valid for the first 60 minutes, and the other charge for all additional minutes

The Average is a simple un-weighted average

5. Leased line prices

The prices given are expressed in euro per month, using the average December 2000 exchange rates for the latest set of data, and average exchange rates for the applicable month each year. VAT is excluded from the prices. Where applicable, 1-year contract terms have been assumed. Discounts for longer-term contracts may be available in some countries. Also, high volume contracts may be available, depending either on number of circuits purchased, or annual spend with the operator.

This report focuses on bitrates from 2 Mbit/s and upwards. Tariffs for 34 and 155 Mbit/s circuits are now becoming available in many of the EU Member States.

When the tables below specify that prices are available on a “case by case basis”, this means that prices for clearly defined circuits can be obtained from the operators through commercial quotes. No general information is published which can be used for comparison and price tracking.

Comparisons with Japan and USA are not always meaningful due to different tariff structures and different bitrates offered. A simple comparison for 2 Mb/s (1.5 Mb/s) national circuits is provided as an example.

5.1. National leased lines

The leased lines are covered by 3 national distances (2 km, 50 km and 200 km).

The 2 km circuits are always local circuits, which in most cases are priced with a single charge.

National circuits include a 2 km local circuit (except for Belgium, where the local circuit is 5 km due to the different structure of the tariffs) at each end. The price of, for example, a 50 km circuit is built from one local circuit of 2 km + trunk circuit of 46 km + one local circuit of 2 km. Not all countries price the local circuit separately. In such cases the full distance (e.g. 50 km) is used for the trunk circuit calculation.

5.1.1. 2 Mbit/s

Connection charges for the 2 Mbit/s circuits vary a lot between countries:

Table 5.1 Connection charges for 2 Mbit/s national circuits (in euro excluding VAT)

	2000.01	2000.12	Note
B	4214	4214	
DK *	2789	2783	1
D	2556	2500	
EL *	2247	2184	1
E	6611	4628	
F	9147	6098	
IRL	3174	3809	
I	310	1033	2
L	2975	2975	
NL	4538	4538	
AUT	1204	1381	
P	4240	4240	
FIN	1346	4205	4
SWE *	6979	3580	1
UK *	7464	15057	3, 5

- Notes:**
- 1 Local circuits will have different (lower) connection charges.
 - 2 Telecom Italia increased the price significantly in November 2000
 - 3 Charges for locations with existing facilities, i.e. fibre already in place
 - 4 Price hasn't changed in Finland, but earlier years only reported the price for main link installation. Price shown for 2000.12 includes the installation of two local "Subscriber lines" in addition.
 - 5 January 2000 price for UK was wrong, in that only one end of the circuit was included. There was no change during 2000.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Monthly rental charges for 2 Mbit/s circuits are listed below, for January and December 2000.

Charges for Japan and USA are included for reference, but these charges refer to 1.5 Mb/s circuits instead of 2 Mb/s.

Table 5.2 Monthly rental for 2 Mbit/s national circuits, 2000.01 – 2000.12 (in euro excluding VAT)

	2000.01			2000.12		
	Local	City to City		Local	City to City	
	2km	50km	200km	2km	50km	200km
B	663	2,785	4,678	663	2,785	4,678
DK *	163	990	1,360	163	988	1,357
D	486	2,444	3,594	350	2,002	2,852
EL *	904	2,863	4,627	878	2,783	4,497
E	1,165	3,874	6,962	942	3,108	5,584
F	739	2,073	3,628	739	2,073	3,628
IRL	592	2,260	3,700	413	1,760	2,913
I	723	3,615	6,149	620	2,494	4,599
L	1,438	1,884	5,156	1,438	1,884	4,814
NL	794	2,904	4,039	794	2,904	4,039
AUT	472	1,931	3,096	378	1,889	3,288
P	622	2,052	4,622	622	2,056	3,650
FIN	430	729	1,057	430	729	1,057
SWE *	466	1,284	1,866	386	473	791
UK *	396	2,067	4,796	399	2,085	4,838
USA, CA				555	1,269	3,727
USA, OH				479	1,182	3,359
Japan				3,728	8,101	11,909
Average	670	2,250	3,955	614	2,001	3,505

Notes: Charges are in euro, excluding VAT

The Average is a simple un-weighted average

B The circuits have been assumed as follows: 2km is a zonal circuit, 50 and 200km are interzonal circuits. The interzonal circuits have zonal access circuits of 5km at each end. The access circuits are included in the distances.

D The circuits have been assumed as follows: 2 km is a local 1 circuit, node to node. 50km and 200km are trunk circuits. The Standard tariff is used.

SWE The Green tariff is used, assuming circuits are in or between major cities only.

Japan, USA Prices refer to 1.5 Mb/s (T1) circuits and are as such not directly comparable with the EU country prices. Prices for USA apply to Intra-LATA circuits in California and Ohio.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

The changes in monthly rental charges for 2 Mbit/s circuits from January to December 2000 are:

Table 5.3 Monthly rental price changes for 2 Mbit/s circuits from 2000.01 to 2000.12

	Local	City to City	
	2km	50km	200km
B	0 %	0 %	0 %
DK	0 %	0 %	0 %
D	-28 %	-18 %	-21 %
EL	0 %	0 %	0 %
E	-19 %	-20 %	-20 %
F	0 %	0 %	0 %
IRL	-30 %	-22 %	-21 %
I	-14 %	-31 %	-25 %
L	0 %	0 %	-7 %
NL	0 %	0 %	0 %
AUT	-20 %	-2 %	6 %
P	0 %	0 %	-21 %
FIN	0 %	0 %	0 %
SWE	-17 %	-63 %	-57 %
UK	0 %	0 %	0 %

Note:

Changes are calculated based on national currency prices.

For a comparison between countries, the December 2000 prices have been normalised to the (simple un-weighted) EU average (i.e. EU average = 0). The charts below show the price relationships.

Figure 5.1 Connection charge relationships against EU average

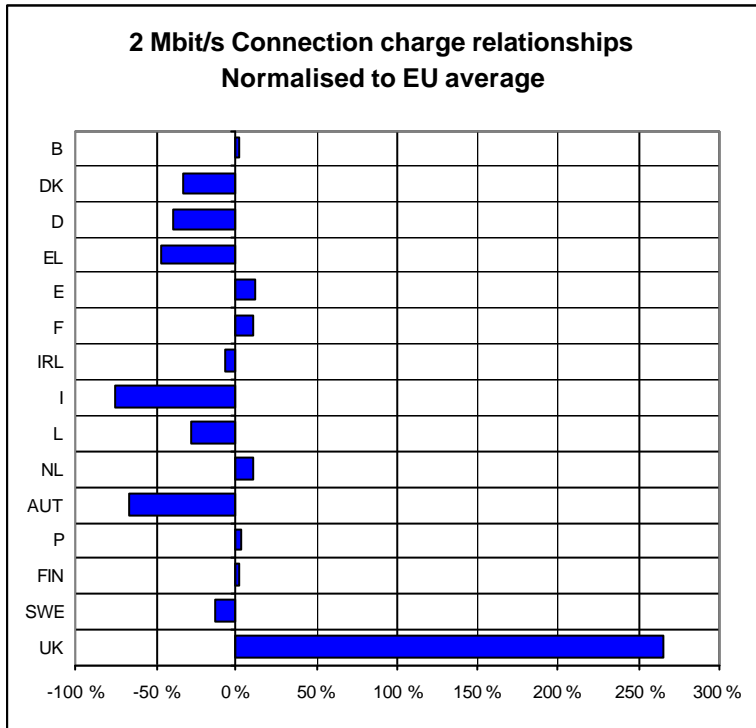
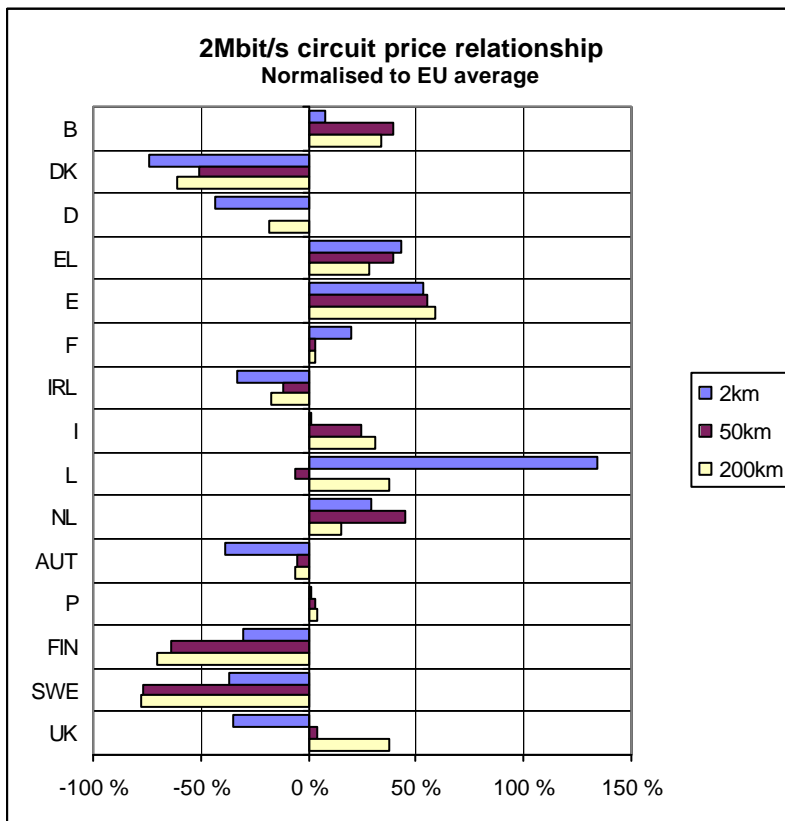


Figure 5.2 Monthly rental charge relationships against EU average



5.1.2. 34 Mbit/s

Published tariffs for 34 Mb/s now exist for 10 EU countries. It is clear that prices for these circuits have not settled yet, as there have been a number of price changes in different directions.

Table 5.4 Connection charges for 34 Mbit/s national circuits (in euro excluding VAT)

	2000.01			2000.12		
	Local	City to City		Local	City to City	
	2km	50km	200km	2km	50km	200km
B	4,958	4,958	4,958	4,958	4,958	4,958
DK *	32,241	44,332	48,362	32,172	10,483	14,504
D	13,294	13,294	13,294	10,000	10,000	10,000
EL *	◆	◆	◆	◆	◆	◆
E	26,445	26,445	26,445	19,833	19,833	19,833
F	15,245	15,245	15,245	12,196	12,196	12,196
IRL	9,523	9,523	9,523	7,034	7,034	7,034
I	8,522	8,522	8,522	8,522	8,522	8,522
L	◆	◆	◆	◆	◆	◆
NL	◆	◆	◆	◆	◆	◆
AUT	1,204	1,204	1,204	1,381	1,381	1,381
P	◆	◆	◆	◆	◆	◆
FIN	◆	◆	◆	◆	◆	◆
SWE *	8,724	20,938	20,938	4,619	6,928	6,928
UK *	18,217	18,217	18,217	18,375	18,375	18,375

Table 5.5 Monthly rental charges for 34 Mbit/s national circuits (in euro excluding VAT)

	2000.01			2000.12		
	Local	City to City		Local	City to City	
	2km	50km	200km	2km	50km	200km
B	1,441	17,432	35,835	1,441	17,432	35,835
DK *	1,124	5,683	16,430	1,122	4,509	15,233
D	2,582	12,552	22,292	500	10,032	15,985
EL *	◆	◆	◆	◆	◆	◆
E	3,306	17,857	32,099	3,979	15,893	28,568
F	4,391	18,019	34,255	4,391	18,019	34,255
IRL	3,666	21,805	42,438	3,089	17,601	34,108
I	5,340	20,059	33,270	3,977	16,268	25,782
L	◆	◆	◆	◆	◆	◆
NL	◆	◆	◆	◆	◆	◆
AUT	2,952	17,535	30,252	2,878	14,971	30,232
P	◆	◆	◆	◆	◆	◆
FIN	◆	◆	◆	◆	◆	◆
SWE *	2,459	7,024	10,514	1,753	2,848	5,619
UK *	5,121	13,596	28,151	5,165	13,715	28,396

Key to symbols

◆	Tariffs available on a case by case basis
* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results	

5.1.3. 155 Mbit/s

More information on 155 Mbit/s circuits is becoming available. 8 operators now publish these prices, and this is 2 more than a year ago. Some operators will still only price on a case by case basis.

**Table 5.6 Connection charges for 155 Mbit/s national circuits
(in euro excluding VAT)**

	2000.01			2000.12		
	Local	City to City		Local	City to City	
	2km	50km	200km	2km	50km	200km
B	4,958	4,958	4,958	4,958	4,958	4,958
DK	59,109	53,037	61,097	4,826	22,359	30,402
D	13,294	13,294	13,294	10,000	10,000	10,000
EL	◆	◆	◆	◆	◆	◆
E	◆	◆	◆	◆	◆	◆
F	15,245	15,245	15,245	15,245	15,245	15,245
IRL	◆	◆	◆	◆	◆	◆
I	◆	◆	◆	18,076	18,076	18,076
L	◆	◆	◆	◆	◆	◆
NL	◆	◆	◆	◆	◆	◆
AUT	1,204	1,204	1,204	1,381	1,381	1,381
P	◆	◆	◆	◆	◆	◆
FIN	◆	◆	◆	◆	◆	◆
SWE	◆	◆	◆	10,393	17,321	17,321
UK	45,267	45,267	45,267	45,661	45,661	45,661

**Table 5.7 Monthly rental charges for 155 Mbit/s national circuits
(in euro excluding VAT)**

	2000.01			2000.12		
	Local	City to City		Local	City to City	
	2km	50km	200km	2km	50km	200km
B	1,802	42,102	89,114	1,802	42,102	89,114
DK *	1,652	10,512	32,006	1,649	9,040	30,487
D	2,608	21,681	41,571	520	17,808	28,945
EL *	◆	◆	◆	◆	◆	◆
E	◆	◆	◆	◆	◆	◆
F	11,586	28,965	70,127	11,586	28,965	70,127
IRL	◆	◆	◆	◆	◆	◆
I	◆	◆	◆	11,259	43,124	66,830
L	◆	◆	◆	◆	◆	◆
NL	◆	◆	◆	◆	◆	◆
AUT	4,805	33,971	57,287	4,448	28,633	59,156
P	◆	◆	◆	◆	◆	◆
FIN	◆	◆	◆	◆	◆	◆
SWE *	◆	◆	◆	2,482	4,859	10,575
UK *	12,639	36,889	76,916	13,330	38,902	81,113

Key to symbols

◆	Tariffs available on a case by case basis
* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results	

5.2. International leased lines

5.2.1. 2 Mbit/s

For a comparison of international half-circuit prices, 3 destinations have been assumed. The Intra-EU destinations will be individual to each country, and are listed in the notes. The third destination is the US.

Table 5.8 Monthly rental charges for international 2 Mbit/s half-circuits (in euro excluding VAT)

	International half-circuits 2000.01			International half-circuits 2000.12		
	Near EU	Far EU	USA	Near EU	Far EU	USA
B	12,060	29,326	18,220	12,060	29,326	18,220
DK *	7,140	15,190	14,627	2,692	9,887	9,598
D	●	●	●	●	●	●
EL *	18,123	27,185	30,205	17,611	26,416	29,351
E	15,025	17,219	21,035	15,025	17,219	21,035
F	11,037	11,861	13,385	11,037	11,861	13,385
IRL	6,772	19,877	16,295	3,704	13,650	10,597
I	27,065	27,065	26,265	18,547	18,547	16,280
L	11,589	21,073	22,558	6,941	12,643	13,535
NL	7,417	12,025	15,696	6,773	12,020	12,336
AUT	13,588	18,433	28,122	13,588	18,433	28,122
P	16,460	23,743	23,743	12,510	20,000	18,000
FIN	5,004	21,245	34,025	5,004	21,245	34,025
SWE *	4,948	22,522	27,085	4,421	22,358	26,887
UK *	12,930	18,145	18,121	13,042	18,303	18,279
Average	12,083	20,351	22,099	10,315	18,139	19,406

Notes:

Charges are in euro, excluding VAT

The Average is a simple un-weighted average

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

- **Important:** As Deutsche Telekom has decided to keep their international leased line prices out of the public domain, it is no longer possible to track price levels for circuits to and from Germany.

The following destinations are used for near and distant EU countries:

Table 5.9 European destinations for near and distant circuits

From:	Near EU	Far EU	From:	Near EU	Far EU
B	F	EL	L	D	EL
DK	SWE	EL	NL	D	EL
D	F	EL	AUT	D	EL
EL	I	DK	P	E	DK
E	P	DK	FIN	SWE	EL
F	B	EL	SWE	DK	EL
IRL	UK	EL	UK	F	EL
I	EL	DK			

Changes in international 2 Mbit/s half-circuit prices from January to December 2000 are:

Table 5.10 Price changes from 2000.01 to 2000.12 in 2 Mbit/s international half-circuits

	Cross-Border		
	Near EU	Far EU	USA
B	0 %	0 %	0 %
DK	-62 %	-35 %	-34 %
D			
EL	0 %	0 %	0 %
E	0 %	0 %	0 %
F	0 %	0 %	0 %
IRL	-45 %	-31 %	-35 %
I	-31 %	-31 %	-38 %
L	-40 %	-40 %	-40 %
NL	-9 %	0 %	-21 %
AUT	0 %	0 %	0 %
P	-24 %	-16 %	-24 %
FIN	0 %	0 %	0 %
SWE	-10 %	0 %	0 %
UK	0 %	0 %	0 %

Note:

Changes are calculated based on national currency prices.

5.2.2. 34 Mbit/s

Information on 34 Mbit/s international circuits is now becoming available in 8 countries. Some types of circuits may still be priced case by case. The remaining 7 countries will still price all circuits on a case by case basis.

Table 5.11 Monthly rental charges for international 34 Mbit/s halfcircuits (in euro excluding VAT)

	Cross-Border					
	2000.01			2000.12		
	Near EU	Far EU	USA	Near EU	Far EU	USA
B	126,630	◆	209,532	126,630	◆	209,532
DK	39,428	◆	◆	22,466	◆	◆
D	●	●	●	●	●	●
EL	151,026	169,149	187,272	146,757	164,367	181,978
E	105,177	119,902	189,319	105,177	119,902	189,319
F	◆	◆	◆	◆	◆	◆
IRL	68,778	◆	◆	23,278	◆	◆
I	207,047	207,047	◆	157,596	157,596	◆
L	◆	◆	◆	◆	◆	◆
NL	76,624	123,442	173,308	76,624	123,442	173,308
AUT	◆	◆	◆	◆	◆	◆
P	◆	◆	◆	◆	◆	◆
FIN	◆	◆	◆	◆	◆	◆
SWE *	◆	◆	◆	◆	◆	◆
UK *	110,255	145,794	137,061	111,215	147,064	138,254

Key to symbols

◆	Tariffs available on a case by case basis
●	Tariffs not published (see note)

Notes:

Charges are in euro, excluding VAT

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Important: As Deutsche Telekom has decided to keep their international leased line prices out of the public domain, it is no longer possible to track price levels for circuits to and from Germany.

5.2.3. 155 Mbit/s

Information on 155 Mbit/s circuits are generally not available. Only 4 operators publish these prices. Most operators will only price on a case by case basis.

Table 5.12 Monthly rental charges for international 155 Mbit/s halfcircuits (in euro excluding VAT)

	Cross-Border					
	2000.01			2000.12		
	Near EU	Far EU	USA	Near EU	Far EU	USA
B	◆	◆	◆	◆	◆	◆
DK	137,327	◆	◆	66,917	◆	◆
D	●	●	●	●	●	●
EL	362,462	422,873	471,201	352,216	410,919	457,881
E	◆	◆	◆	◆	◆	◆
F	◆	◆	◆	◆	◆	◆
IRL	◆	◆	◆	◆	◆	◆
I	◆	◆	◆	379,467	379,467	322,347
L	◆	◆	◆	◆	◆	◆
NL	185,009	298,112	418,538	185,009	298,112	418,538
AUT	◆	◆	◆	◆	◆	◆
P	◆	◆	◆	◆	◆	◆
FIN	◆	◆	◆	◆	◆	◆
SWE *	◆	◆	◆	◆	◆	◆
UK *	◆	◆	◆	◆	◆	◆

Key to symbols

◆	Tariffs available on a case by case basis
●	Tariffs not published

Notes:

Charges are in euro, excluding VAT

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Important: As Deutsche Telekom has decided to keep their international leased line prices out of the public domain, it is no longer possible to track price levels for circuits to and from Germany.

6. Mobile service prices

The prices given are expressed in euro. VAT is excluded.

The operator owned by the incumbent telecoms operator plus the next largest competitor (in terms of market share or established position) have been chosen for each country. The January 2000 charges are taken from the January 2000 Tariff Report, and reflect the packages covered in that report. Many operators will have changed the profiles of their tariff packages over the year, and a direct comparison between the two years may not always be possible.

One high volume usage and one low volume usage package have been chosen to represent the prices of each operator. The packages are listed in the tables below.

The terms “High volume” and “Low volume” will here refer to the intensity of usage. In many cases the terms “Business” and “Residential” are used with the same meaning, but in most cases both types of packages (High / Low volume) will be available to both types of users (Business / Residential).

In general, services are available both from more than the two operators per country given here and a much wider range of packages or tariffs options is available. In addition pre-payment options are also available besides the post-payment arrangements for usage given here. Tariffs for these latter options are covered in section 6.8.

6.1. Connection charges

Connection charges for the different operators and packages are listed in the tables below:

Table 6.1 Connection charges for High Volume Digital Mobile services 2000.01 – 2000.12 (in euro, excluding VAT)

	Operator	High volume 2000.01		High volume 2000.12	
			Package		Package
B	Proximus:	40.97	Proximus Pro	40.97	Proximus Pro
	Mobistar:	20.49	Optimum 2	20.49	Optimum 2
DK *	Tele Danmark Mobil:	85.98	Mobil Erhverv Plus	85.79	Mobil Erhverv Plus
	Sonofon:	75.23	Standard	10.62	Varient
D	T-Mobil D-1:	22.02	ProTel D-1 Standard	22.02	ProTel D-1 Standard
	Mannesmann D-2:	22.02	Classic Premium	22.02	Classic Premium
EL *	Cosmote:	0.00	Basic Programme 2	0.00	Basic Programme 2
	Panafon	0.00	Executive	0.00	Panafon180
E	Movistar:	21.04	General	21.04	Plus Profesional
	Airtel:	21.04	Sin Horarios	21.04	Sin Horarios
F	Itineris:	53.36	Forfait Loft 2H	53.36	Forfait Loft 4H
	SFR:	53.09	Pro 100	53.36	Le Forfait 4H
IRL	Eircell:	44.44	Eirtime 250	44.44	Eirtime 250
	Esat Digifone:	44.44	Select 2	0.00	Select 2
I	Telecom Italia Mobile:	0.00	Euro Professional	0.00	Euro Professional
	Omnitel:	0.00	Dippiu 30	0.00	Dippiu 30
L	LuxGSM:	43.11	Business	0.00	Business
	Tango:	0.00	Swing	0.00	Twist
NL	KPN GSM:	41.97	Flexibel Allround	41.97	Flexibel Allround
	Libertel	40.84	Professional 120	40.99	Libertel 240
AUT	Mobilkom:	27.25	A-1 Business	27.25	A-1 Business
	Maxmobil	26.89	Profi.max	26.89	Profi.max
P	TMN:	0.00	TMN Executive	0.00	TMN Executive
	Telecel	0.00	Mais	0.00	Mais
FIN	Sonera GSM:	6.73	Business	6.73	Business
	Radiolinja:	6.47	Usage	6.47	Usage
SWE *	Telia Mobil:	23.26	Mobitel Volym	23.09	Mobitel Volym
	Comviq	18.61	Grund	18.48	Joker
UK *	Cellnet:	48.18	Frequent Caller Plus	48.60	Net 200
	Vodafone:	48.19	Vodafone 240	48.61	Vodafone 150

Notes:

Prices are expressed in euro, excluding VAT

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Names in **bold** are for new packages (or providers) since January 2000.

General: Packages with a "number" attached (120 or 6H) will normally include the corresponding number of minutes or hours as "free" calls.

Italy: TIM: From July 1998 connection charges no longer apply. An advance payment of ITL 500,000 covers a new subscriber's charges up to the value of the payment. This advance charge is reduced to ITL 100,000 if the customer's bills are deducted automatically from his/her bank account. When the value of the advance payment has been used in call charges, the customer is billed for usage as normal.

Omnitel has a similar approach, but the advance payment is ITL 200,000.

Table 6.2 Connection charges for Low Volume Digital Mobile services 2000.01 – 2000.12 (in euro, Excluding VAT)

		Low volume 2000.01		Low volume 2000.12	
	Operator		Package		Package
B	Proximus	30.73	ProxiFun	30.73	ProxiFun
	Mobistar	20.49	Optimum 1	20.49	Optimum 1
DK *	Tele Danmark Mobil	75.23	Mobil Fritid Plus	21.34	Mobil 45
	Sonofon	75.23	Fritids	10.62	Varient
D	T-Mobil D-1	22.02	Telly D-1	22.02	Telly D-1
	Mannesmann D-2	22.02	Fun	22.02	Fun
EL *	Cosmote	0.00	Basic Programme 2	0.00	Basic Programme 2
	Panafon	0.00	Economy	0.00	Panafon 1
E	Movistar	21.04	Personal	21.04	Plus Eleccion Tarde
	Airtel	21.04	Provincial	21.04	Tarde
F	Itineris	53.36	Declic	53.36	OLA 2H
	SFR	53.09	Forfait SFR 30	53.36	Formule ABC
IRL	Eircell	44.44	Eirtime 10	44.44	Eirtime 10
	Esat Digifone	44.44	Select 1	0.00	Select 1
I	Telecom Italia Mobile	0.00	Euro Time	0.00	Euro Time
	Omnitel	0.00	Nuovo Personal 195	0.00	Nuovo Personal 195
L	LuxGSM	43.11	Liberty	0.00	Liberty
	Tango	0.00	Twist	0.00	Hip Hop
NL	KPN GSM	41.97	Flexibel Hi	41.97	Flexibel Hi
	Libertel	40.84	Personal	40.99	Libertel 60
AUT	Mobilkom	27.25	A-1 Fun	27.25	A-1 Fun
	Maxmobil	26.89	Freizeit.max	26.89	Freizeit.max
P	TMN	0.00	TMN Basic	0.00	TMN Basic
	Telecel	0.00	IntraRede	0.00	IntraRede
FIN	Sonera GSM	6.73	Private	6.73	Private
	Radiolinja	6.47	Basic	6.47	Basic
SWE *	Telia Mobil	23.26	Mobitel Pott	23.09	Mobitel Pott
	Comviq	18.61	Joker	18.48	Grund
UK *	Cellnet	48.18	Occasional Caller +	48.60	Net 100
	Vodafone	48.19	Vodafone 120	48.61	Vodafone 20

Notes:

Prices are expressed in euro, excluding VAT

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Names in **bold** are for new packages (or providers) since January 2000.

General: Packages with a “number” attached (120 or 6H) will normally include the corresponding number of minutes or hours as “free” calls.

Italy: TIM: From July 1998 connection charges no longer apply. An advance payment of ITL 500,000 covers a new subscriber's charges up to the value of the payment. This advance charge is reduced to ITL 100,000 if the customer's bills are deducted automatically from his/her bank account. When the value of the advance payment has been used in call charges, the customer is billed for usage as normal.

Italy: Omnitel has a similar approach, but the advance payment is 200,000.

6.2. Monthly rental charges

The monthly rental charges for the same packages are listed in the table below:

Table 6.3 Monthly rental charges for High Volume Mobile services 2000.01 – 2000.12 (in euro, excluding VAT)

	Operator	High volume 2000.01		High volume 2000.12	
			Package		Package
B	Proximus:	31.75	Proximus Pro	31.75	Proximus Pro
	Mobistar:	20.49	Optimum 2	20.49	Optimum 2
DK *	Tele Danmark Mobil:	17.91	Mobil Erhverv Plus	17.87	Mobil Erhverv Plus
	Sonofon:	8.60	Standard	8.04	Varient
D	T-Mobil D-1:	30.83	ProTel D-1 Standard	30.83	ProTel D-1 Standard
	Mannesmann D-2:	28.63	Classic Premium	28.63	Classic Premium
EL *	Cosmote:	8.46	Basic Programme 2	7.34	Basic Programme 2
	Panafon	36.25	Executive	46.96	Panafon 180
E	Movistar:	24.04	General	6.01	Plus Profesional
	Airtel:	15.03	Sin Horarios	3.01	Sin Horarios
F	Itineris:	25.91	Forfait Loft 2H	38.75	Forfait Loft 4H
	SFR:	24.65	Pro 100	45.10	Le Forfait 4H
IRL	Eircell:	76.18	Eirtime 250	76.18	Eirtime 250
	Esat Digifone:	25.39	Select 2	25.39	Select 2
I	Telecom Italia Mobile:	18.08	Euro Professional	18.08	Euro Professional
	Omnitel:	0.00	Dippiu 30	0.00	Dippiu 30
L	LuxGSM:	32.33	Business	10.78	Business
	Tango:	32.33	Swing	10.78	Twist
NL	KPN GSM:	20.40	Flexibel Allround	15.43	Flexibel Allround
	Libertel	28.96	Professional 120	28.58	Libertel 240
AUT	Mobilkom:	23.62	A-1 Business	23.62	A-1 Business
	Maxmobil	24.16	Profi.max	24.16	Profi.max
P	TMN:	38.41	TMN Executive	38.41	TMN Executive
	Telecel	38.41	Mais	38.41	Mais
FIN	Sonera GSM:	8.41	Business	8.41	Business
	Radiolinja:	8.27	Usage	8.27	Usage
SWE *	Telia Mobil:	15.12	Mobitel Volym	15.01	Mobitel Volym
	Comviq	7.44	Grund	7.39	Grund
UK *	Cellnet:	55.05	Frequent Caller Plus	34.71	Net 200
	Vodafone:	55.05	Vodafone 240	47.92	Vodafone 150

Notes:

Prices are expressed in euro, excluding VAT

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Names in **bold** are for new packages (or providers) since January 2000.

General: Packages with a “number” attached (120 or 6H) will normally include the corresponding number of minutes or hours as “free” calls.

Ireland: Esat: Select 2 includes £7.50 of calling time per month.

Netherlands, Libertel: Professional 120 package includes NLG30.- of free calls.

UK, Cellnet: Frequent Caller Plus includes GBP17.02 of free calls.

**Table 6.4 Monthly rental charges for Low Volume Mobile services 2000.01 – 2000.12
(in euro, excluding VAT)**

		Low volume 2000.01		Low volume 2000.12	
	Operator		Package		Package
B	Proximus	10.76	ProxiFun	10.76	ProxiFun
	Mobistar	10.24	Optimum 1	10.24	Optimum 1
DK	Tele Danmark Mobil	8.95	Mobil Fritid Plus	10.62	Mobil 45
	Sonofon	8.60	Fritids	2.68	Varient
D	T-Mobil D-1	11.00	Telly D-1	11.00	Telly D-1
	Mannesmann D-2	11.00	Fun	11.00	Fun
EL	Cosmote	8.46	Basic Programme 2	7.34	Basic Programme 2
	Panafon	19.63	Economy	10.27	Panafon 1
E	Movistar	12.02	Personal	6.01	Plus Eleccion Tarde
	Airtel	11.84	Provincial	5.83	Tarde
F	Itineris	12.52	Declic	24.65	OLA 2H
	SFR	17.07	Forfait SFR 30	6.32	Formule ABC
IRL	Eircell	12.60	Eirtime 10	12.60	Eirtime 10
	Esat Digifone	12.70	Select 1	12.70	Select 1
I	Telecom Italia Mobile	7.75	Euro Time	7.75	Euro Time
	Omnitel	0.00	Nuovo Personal 195	0.00	Nuovo Personal 195
L	LuxGSM	10.78	Liberty	5.39	Liberty
	Tango	10.78	Twist	0.00	Hip Hop
NL	KPN GSM	13.50	Flexibel Hi	7.71	Flexibel Hi
	Libertel	13.50	Personal	13.33	Libertel 60
AUT	Mobilkom	17.44	A-1 Fun	17.50	A-1 Fun
	Maxmobil	18.11	Freizeit.max	18.11	Freizeit.max
P	TMN	9.98	TMN Basic	9.98	TMN Basic
	Telecel	10.47	IntraRede	10.47	IntraRede
FIN	Sonera GSM	2.30	Private	2.30	Private
	Radiolinja	4.14	Basic	4.14	Basic
SWE *	Telia Mobil	8.84	Mobitel Pott	8.78	Mobitel Pott
	Comviq	2.33	Joker	2.31	Joker
UK *	Cellnet	24.08	Occasional Caller Plus	24.99	Net 100
	Vodafone	34.45	Vodafone 120	18.03	Vodafone 20

Notes:

Prices are expressed in euro, excluding VAT

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Names in **bold** are for new packages (or providers) since January 2000.

General: Packages with a “number” attached (120 or 6H) will normally include the corresponding number of minutes or hours as “free” calls.

Spain, Movistar: Plus Eleccion Tarde reduces the monthly charge from 1000 Pts to 500 Pts after one year.

Ireland, Esat: Select 1 includes £3.75 of calling time per month.

Sweden, Telia: Mobitel Pott allows the entire monthly rental to be used for calls.

UK, Cellnet: Occasional Caller Plus included GBP4.26 of free calls.

6.3. National call charges, mobile to mobile networks

National call charges to other mobile phones in the same network are listed in the table below, for a 3 minute call. Any call setup charges are included.

Some operators apply a different set of call charges if calls are made to another mobile network in the same country (i.e. a competitor). Evidence of such differences have been found in Belgium, France, Austria, Portugal, Finland, Sweden and United Kingdom.

Table 6.11 National High Volume 3 minute call charges to other mobile phones in same network January - December 2000 (In euro, excluding VAT)

	Operator	Package	High volume 2000.01		High volume 2000.12	
			Peak	Economy	Peak	Economy
B	Proximus	Proximus Pro	0.37	0.25	0.37	0.25
	Mobistar	Optimum 2	0.31	0.31	0.31	0.31
DK *	Tele Danmark Mobil	Mobil Erhverv Plus	0.53	0.53	0.53	0.53
	Sonofon	Variet	0.66	0.33	0.40	0.40
D	T-Mobil D-1	ProTel D-1 Standard	0.52	0.52	0.38	0.38
	Mannesmann D-2	Classic Premium	0.52	0.52	0.38	0.38
EL *	Cosmote	Basic Programme 2	0.87	0.87	0.63	0.63
	Panafon	Panafon 180	0.96	0.63	0.53	0.53
E	Movistar	Plus Profesional	0.84	0.48	0.77	0.77
	Airtel	Sin Horarios	0.63	0.63	0.63	0.63
F	Itineris	Forfait Loft 4H	0.57	0.57	0.57	0.57
	SFR	Le Forfait 4H	0.68	0.68	0.46	0.46
IRL	Eircell	Eirtime 250	0.38	0.38	0.38	0.38
	Esat Digifone	Select 2	0.48	0.48	0.38	0.38
I	Telecom Italia Mobile	Euro Professional	0.86	0.54	0.86	0.54
	Omnitel	Dippiu 30	0.72	0.72	0.56	0.56
L	LuxGSM	Business	0.32	0.32	0.32	0.19
	Tango	Twist	0.32	0.32	0.19	0.19
NL	KPN GSM	Flexibel Allround	0.54	0.29	0.68	0.50
	Libertel	Libertel 240	0.29	0.29	0.61	0.56
AUT	Mobilkom	A-1 Business	0.18	0.18	0.18	0.18
	Maxmobil	Profi.max	0.18	0.18	0.18	0.18
P	TMN	TMN Executive	0.33	0.33	0.33	0.33
	Telecel	Mais	0.33	0.33	0.33	0.33
FIN	Sonera GSM	Business	0.41	0.41	0.41	0.41
	Radiolinja	Usage	0.41	0.26	0.41	0.26
SWE *	Telia Mobil	Mobitel Volym	1.05	0.74	1.04	0.26
	Comviq	Grund	1.12	0.11	1.11	0.11
UK *	Cellnet	Net 200	0.83	0.08	0.75	0.42
	Vodafone	Vodafone 150	0.83	0.20	0.42	0.21

Notes:

January 2000 data may be for a different tariff package, as many operators have changed their packages over the year.

Peak calls are at 11.00 on weekdays, and Economy calls are the cheapest call charge available, regardless of time (please see the time band information in table 6.8 for more information).

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Table 6.12 National Low Volume 3 minute call charges to other mobile phones in same network January - December 2000 (In euro, excluding VAT)

	Operator	Package	Low volume 2000.01		Low volume 2000.12	
			Peak	Economy	Peak	Economy
B	Proximus	ProxiFun	0.37	0.25	0.37	0.25
	Mobistar	Optimum 1	0.31	0.31	0.31	0.31
DK *	Tele Danmark Mobil	Mobil 45	1.32	0.25	0.99	0.43
	Sonofon	Variet	1.32	0.25	0.64	0.64
D	T-Mobil D-1	Telly D-1	0.90	0.52	0.90	0.52
	Mannesmann D-2	Fun	0.90	0.52	0.91	0.52
EL *	Cosmote	Basic Programme 2	0.87	0.87	0.74	0.74
	Panafon	Panafon 1	1.59	0.82	0.74	0.74
E	Movistar	Plus Eleccion Tarde	0.84	0.48	0.82	0.34
	Airtel	Tarde	0.84	0.30	0.84	0.30
F	Itineris	OLA 2H	1.36	0.34	0.57	0.57
	SFR	Formule ABC	0.46	0.46	0.76	0.76
IRL	Eircell	Eirtime 10	0.38	0.38	0.38	0.38
	Esat Digifone	Select 1	0.48	0.48	0.38	0.38
I	Telecom Italia Mobile	Euro Time	1.27	0.49	1.27	0.49
	Omnitel	Nuovo Personal 195	1.03	0.41	1.03	0.41
L	LuxGSM	Liberty	0.45	0.32	0.45	0.32
	Tango	Hip Hop	0.32	0.32	0.32	0.32
NL	KPN GSM	Flexibel Hi	1.14	0.29	0.97	0.56
	Libertel	Libertel 60	0.59	0.29	0.79	0.56
AUT	Mobilkom	A-1 Fun	0.18	0.18	0.18	0.18
	Maxmobil	Freizeit.max	0.18	0.18	0.18	0.18
P	TMN	TMN Basic	0.36	0.36	0.36	0.36
	Telecel	IntraRede	0.37	0.36	0.37	0.36
FIN	Sonera GSM	Private	0.41	0.33	0.41	0.33
	Radiolinja	Basic	0.36	0.26	0.36	0.26
SWE *	Telia Mobil	Mobitel Pott	1.71	0.60	1.70	0.26
	Comviq	Joker	1.54	0.56	1.52	0.21
UK *	Cellnet	Net 100	1.53	0.08	0.75	0.42
	Vodafone	Vodafone 20	1.03	0.21	0.42	0.21

Notes:

1999 data may be for a different tariff package, as many operators have changed their packages over the year.

Peak calls are at 11.00 on weekdays, and Economy calls are the cheapest call charge available, regardless of time (please see the time band information in table 6.8 for more information).

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

6.4. National call charges, mobile to fixed network

National call charges are listed in the table below, for a 3 minute call. Any call setup charges are included.

Table 6.5 National High Volume call charges to fixed network for a 3 minute call 2000.01 - 2000.12. (In euro, excluding VAT)

	Operator	Package	High volume 2000.01		High volume 2000.12	
			Peak	Economy	Peak	Economy
B	Proximus	Proximus Pro	0.65	0.37	0.65	0.37
	Mobistar	Optimum 2	0.92	0.31	0.92	0.31
DK *	Tele Danmark Mobil	Mobil Erhverv Plus	0.53	0.53	0.53	0.53
	Sonofon	Variet	0.66	0.33	0.40	0.40
D	T-Mobil D-1	ProTel D-1 Standard	0.52	0.24	0.38	0.20
	Mannesmann D-2	Classic Premium	0.52	0.52	0.38	0.20
EL *	Cosmote	Basic Programme 2	0.87	0.87	0.63	0.63
	Panafon	Panafon 180	0.96	0.63	0.53	0.53
E	Movistar	Plus Profesional	0.73	0.66	0.77	0.77
	Airtel	Sin Horarios	0.73	0.73	0.73	0.73
F	Itineris	Forfait Loft 4H	0.76	0.76	0.76	0.76
	SFR	Le Forfait 4H	0.68	0.68	0.73	0.73
IRL	Eircell	Eirtime 250	0.76	0.38	0.76	0.38
	Esat Digifone	Select 2	0.76	0.48	0.76	0.38
I	Telecom Italia Mobile	Euro Professional	0.86	0.54	0.86	0.54
	Omnitel	Dippiu 30	0.72	0.72	0.56	0.56
L	LuxGSM	Business	0.32	0.32	0.32	0.32
	Tango	Twist	0.32	0.32	0.32	0.32
NL	KPN GSM	Flexibel Allround	0.54	0.29	0.63	0.27
	Libertel	Libertel 240	0.29	0.29	0.61	0.33
AUT	Mobilkom	A-1 Business	0.18	0.18	0.18	0.18
	Maxmobil	Profi.max	0.18	0.18	0.18	0.18
P	TMN	TMN Executive	0.36	0.36	0.36	0.36
	Telecel	Mais	0.45	0.36	0.45	0.36
FIN	Sonera GSM	Business	0.72	0.41	0.72	0.41
	Radiolinja	Usage	0.76	0.26	0.76	0.26
SWE *	Telia Mobil	Mobitel Volym	1.05	0.74	1.04	0.26
	Comviq	Grund	1.12	0.11	1.11	0.11
UK *	Cellnet	Net 200	0.83	0.08	0.75	0.08
	Vodafone	Vodafone 150	0.83	0.20	0.42	0.21

Notes:

2000.01 data may be for a different tariff package, as many operators have changed their packages over the year.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Peak calls are at 11.00 on weekdays, and Economy calls are the cheapest call charge available, regardless of time (please see the time band information in table 6.8 for more information).

Table 6.6 National Low Volume call charges to fixed network for a 3 minute call 2000.01 - 2000.12. (In euro, excluding VAT)

	Operator	Package	Low volume 2000.01		Low volume 2000.12	
			Peak	Economy	Peak	Economy
B	Proximus	ProxiFun	1.60	0.34	1.23	0.34
	Mobistar	Optimum 1	0.92	0.31	1.54	0.31
DK *	Tele Danmark Mobil	Mobil 45	1.32	0.25	0.99	0.43
	Sonofon	Variet	1.32	0.25	0.64	0.64
D	T-Mobil D-1	Telly D-1	1.70	0.52	1.30	0.20
	Mannesmann D-2	Fun	1.70	0.52	1.30	0.20
EL *	Cosmote	Basic Programme 2	0.87	0.87	0.74	0.74
	Panafon	Panafon 1	1.59	0.82	0.74	0.74
E	Movistar	Plus Eleccion Tarde	1.47	0.66	1.47	0.34
	Airtel	Tarde	0.75	0.30	1.47	0.34
F	Itineris	OLA 2H	1.82	0.46	0.76	0.76
	SFR	Formule ABC	0.95	0.95	0.76	0.76
IRL	Eircell	Eirtime 10	1.57	0.63	1.57	0.38
	Esat Digifone	Select 1	1.52	0.48	1.52	0.38
I	Telecom Italia Mobile	Euro Time	1.27	0.49	1.27	0.49
	Omnitel	Nuovo Personal 195	1.03	0.41	1.03	0.41
L	LuxGSM	Liberty	0.65	0.32	0.65	0.32
	Tango	Hip Hop	0.58	0.32	1.23	0.32
NL	KPN GSM	Flexibel Hi	1.14	0.29	0.97	0.33
	Libertel	Libertel 60	0.59	0.29	0.79	0.33
AUT	Mobilkom	A-1 Fun	0.71	0.34	0.71	0.34
	Maxmobil	Freizeit.max	0.53	0.34	0.53	0.34
P	TMN	TMN Basic	0.99	0.99	0.99	0.99
	Telecel	IntraRede	1.02	1.02	1.02	1.02
FIN	Sonera GSM	Private	0.99	0.33	0.99	0.33
	Radiolinja	Basic	0.95	0.26	0.95	0.26
SWE *	Telia Mobil	Mobitel Pott	1.71	0.60	1.70	0.26
	Comviq	Joker	1.54	0.56	1.52	0.21
UK *	Cellnet	Net 100	1.53	0.08	0.75	0.08
	Vodafone	Vodafone 20	1.03	0.21	0.63	0.21

Notes:

2000.01 data may be for a different tariff package, as many operators have changed their packages over the year.

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Peak calls are at 11.00 on weekdays, and Economy calls are the cheapest call charge available, regardless of time (please see the time band information in table 6.8 for more information).

The different operators use different charging methods, using either a straight per second charging, or fixed periods of a defined duration. Some operators have a different initial period, e.g. a 1 minute initial period, and then per second charging after this first minute. The table below shows the situation for the different operators.

Table 6.7 Mobile call charging methods 2000.12

	Operator	Seconds Init. Period	Seconds Additional
B	Proximus	60	1
B	Mobistar	60	1
DK	Tele Danmark Mobil	1	1
DK	Sonofon	1	1
D	T-Mobil D-1	60	1
D	Mannesmann D-2	60	1
EL	Cosmote	20	1
EL	Panafon	20	1
E	Movistar	60	1
E	Airtel	60	30
F	Itineris	60	15
F	SFR	60	30
IRL	Eircell	1	1
IRL	Esat Digifone	1	1
I	Telecom Italia Mobile	1	1
I	Omnitel	1	1
L	LuxGSM	60	15
L	Tango	15	15
NL	KPN GSM	1	1
NL	Libertel	1	1
AUT	Mobilkom	30	30
AUT	Maxmobil	1	1
P	TMN	60	1
P	Telecel	60	1
FIN	Sonera GSM	1	1
FIN	Radiolinja	1	1
SWE	Telia Mobil	1	1
SWE	Comviq	10	10
UK	Cellnet	1	1
UK	Vodafone	1	1

Notes:

A "1" in the table means that calls are charged on a per second basis.

Anything different from "1" means that a period of this number of seconds is used.

Table 6.8 Time band information 2000.12

B	Proximus	Standard hours are 0800 - 1900 Monday to Friday, Reduced hours are all other times.
B	Mobistar	Standard hours are 0700 - 1900 Monday to Friday, Reduced hours are all other times.
DK	Tele Danmark Mobil	Standard hours are 0800 - 1930 Monday to Saturday Reduced are at all other times. Residential Standard hours are 0800 - 1700 Monday to Friday, Reduced hours are all other times.
DK	Sonofon	Business Standard hours are 0800 - 1930 Monday to Saturday, Reduced hours are all other times. Residential Standard hours are 0800 - 1700 Monday to Friday, Reduced hours are all other times.
D	T-Mobil D-1	For Business Tariff Standard hours are Monday to Friday 0000 - 2000 Reduced are at all other times. Residential Standard hours are 0700 – 2000 Monday to Friday Reduced hours all other times Monday to Friday. Economy hours Friday 2000 to Sunday 2400.
D	Mannesmann D-2	For Business Tariff Standard hrs are Monday to Friday 0700 - 2000 Reduced are at all other times Monday to Friday. Economy hours Friday 2000 to Sunday 2400. Residential Standard hours are 0800 - 1700 Monday to Friday Reduced hours all other times Monday to Friday. Economy hours Friday 2000 to Sunday 2400.
EL	Cosmote	Same charge at all times.
EL	Panafon	Same charge at all times.
E	Movistar	For the Business Tariff Standard hours are at all times. Residential Standard hours are 0800 - 1400 & 1600 - 1900 Monday to Friday. Reduced hours at all other times.
E	Airtel	For the Business Tariff one rate applies at all times. Residential Standard hours are 0800 - 1700 Monday to Friday, Reduced hours are all other times.
F	Itineris	Standard hours are Monday to Friday 0700-1700. Reduced are all other times.
F	SFR	Calls are charged at the same rates at all times. Charging is per second.
IRL	Eircell	Standard hours are 0800 - 2000 Monday to Friday. Reduced hours are at all other times and public holidays.
IRL	Esat Digifone	Standard hours are 0800 – 1800 Monday to Friday. Reduced hours are at all other times and public holidays.
I	Telecom Italia Mobile	Business Standard 0800 – 2200 Monday to Friday and 0800- 1300 Saturday Reduced all other times. Residential Standard 0800 - 2000 Monday to Friday, Reduced at all other times.
I	Omnitel	Business calls are charged at the same rates at all times. Residential Standard 0800 – 1600 Monday to Friday, Reduced at all other times.
L	LuxGSM	Standard hours are from 0800 – 1900 Monday to Friday. Reduced hours are at all other times. Calls are charged per in blocks of 15 seconds after the first minute. For calls lasting one minute or less, the whole per minute charge applies.
L	Tango	Business calls are charged at the same rate at all times. Standard Residential hours are from 0700 - 1900 Monday to Friday. Reduced hours are at all other times.

NL	KPN GSM	Standard hours are from 0800 - 2000 Monday to Friday. Reduced hours are at all other times.
NL	Libertel	Standard hours are from 0800 -1900 Monday to Friday, Reduced hours are at all other times.
AUT	Mobilkom	For the Business service one tariff applies at all times. For the Residential tariff Standard hours are from 0800 - 1800 hours. Reduced hours are at all other times. GSM to GSM calls Std. 0800 - 1800 Red. All other times.
AUT	Maxmobil	Business tariff applies at all times, with the exception of calls to other mobile networks, when Standard hours are from 0700 - 2000 hours, and Reduced hours are at all other times. Residential Standard hours are from 0700 - 2000 hours, and Reduced hours are all other times.
P	TMN	Standard hours are 0900 - 2100 Monday to Friday. Reduced hours are 2100 - 0900 Monday to Friday and Economy hours are weekends and Public holidays.
P	Telecel	Standard hours are 0800 - 1300 and 1400 - 2100 Monday to Friday. Reduced hours are 1300 – 1400 and 2100 - 0800 Monday to Friday. Economy hours are all other times and public holidays.
FIN	Sonera GSM	Standard hours are from 0700 – 1700 Monday to Friday. Reduced hours are at all other times.
FIN	Radiolinja	Standard hours for calls to fixed network are from 0800 - 1800 Monday to Friday, Reduced hours are Monday to Friday 1800 - 2200 and 0800 - 2200 Saturday, and Economy hours are all other times. Standard hours for calls to Radiolinja's network are 0800 - 2200 every day, Reduced hours are all other times. Standard hours for calls to other GSM networks are 0800 - 1800 every day, Reduced hours are all other times.
SWE	Telia Mobil	Business Standard hours are from 0800 - 1800 Monday to Friday. Reduced hours are from 1800 - 0800 hours Monday to Friday. Economy hours are Weekends and public holidays. Residential Standard hours are from 0700 – 1900 Monday to Friday. Reduced hours are from 1900 – 0700 hours Monday to Friday. Economy hours are Weekends and public holidays.
SWE	Comviq	Standard hours are from 0700 - 1900 Monday to Friday. Reduced hours at all other times.
UK	Cellnet	Standard calls are from Monday to Friday 0800 - 1900. Reduced hours are Monday to Friday 1900 – 0800 and public holidays. Economy hours are at all other times.
UK	Vodafone	Standard calls are from Monday to Friday 0800 - 1900. Reduced hours are Monday to Friday 1900 – 0800 and public holidays. Economy hours are at all other times.

6.5. Comparison: National fixed and mobile call prices

Using the information about calls from fixed phones for a 3 minute call in section 3, and the information about calls from mobile phones in section 6, the following comparison table can be constructed.

The table below list prices for a 3 minute call in the following situations:

- Mobile to mobile within the same network
- Mobile to fixed network of the incumbent operator
- National call within fixed network of incumbent operator
- Fixed network call to mobile network

Table 6.9 Comparison of 3 minute peak time call charges within, from and to mobile networks for a high volume user (in euro excluding VAT)

	Operator	Mobile to mobile	Mobile to Fixed	Fixed to fixed	Fixed to mobile
B	Proximus	0.37	0.65	0.12	0.93
B	Mobistar	0.31	0.92	0.12	0.93
DK	Tele Danmark Mobil	0.53	0.53	0.14	0.59
DK	Sonofon	0.40	0.40	0.14	0.59
D	T-Mobil D-1	0.38	0.38	0.32	1.27
D	Mannesmann D-2	0.38	0.38	0.32	1.47
EL	Cosmote	0.63	0.63	0.37	0.98
EL	Panafon	0.53	0.53	0.37	0.98
E	Movistar	0.77	0.77	0.54	0.86
E	Airtel	0.63	0.73	0.54	0.86
F	Itineris	0.57	0.76	0.27	0.90
F	SFR	0.46	0.73	0.27	1.13
IRL	Eircell	0.38	0.76	0.23	0.72
IRL	Esat Digifone	0.38	0.76	0.23	0.72
I	Telecom Italia Mobile	0.86	0.86	0.48	0.75
I	Omnitel	0.56	0.56	0.48	0.74
L	LuxGSM	0.32	0.32	0.11	0.54
L	Tango	0.19	0.32	0.11	1.34
NL	KPN GSM	0.68	0.63	0.15	0.57
NL	Libertel	0.61	0.61	0.15	0.78
AUT	Mobilkom	0.18	0.18	0.24	0.60
AUT	Maxmobil	0.18	0.18	0.24	0.75
P	TMN	0.33	0.36	0.39	1.05
P	Telecel	0.33	0.45	0.39	1.05
FIN	Sonera GSM	0.41	0.72	0.26	0.85
FIN	Radiolinja	0.41	0.76	0.26	0.85
SWE	Telia Mobil	1.04	1.04	0.11	0.75
SWE	Comviq	1.11	1.11	0.11	0.87
UK	Cellnet	0.75	0.75	0.33	0.79
UK	Vodafone	0.42	0.42	0.33	0.83

Notes:

Prices in euro, excluding VAT

Peak and off peak times may not correspond for the different types of calls

Calls to and from the fixed network relate to the incumbent fixed network operator

Call charges to and from other operators may be different

Table 6.10 Comparison of 3 minute peak time call charges within, from and to mobile networks for a low volume user (in euro excluding VAT)

	Operator	Mobile to mobile	Mobile to Fixed	Fixed to fixed	Fixed to mobile
B	Proximus	0.37	1.23	0.12	0.93
B	Mobistar	0.31	1.54	0.12	0.93
DK	Tele Danmark Mobil	0.99	0.99	0.14	0.59
DK	Sonofon	0.64	0.64	0.14	0.59
D	T-Mobil D-1	0.90	1.30	0.32	1.27
D	Mannesmann D-2	0.91	1.30	0.32	1.47
EL	Cosmote	0.74	0.74	0.37	0.98
EL	Panafon	0.74	0.74	0.37	0.98
E	Movistar	0.82	1.47	0.54	0.86
E	Airtel	0.84	1.47	0.54	0.86
F	Itineris	0.57	0.76	0.27	0.90
F	SFR	0.76	0.76	0.27	1.13
IRL	Eircell	0.38	1.57	0.23	0.72
IRL	Esat Digifone	0.38	1.52	0.23	0.72
I	Telecom Italia Mobile	1.27	1.27	0.48	0.75
I	Omnitel	1.03	1.03	0.48	0.74
L	LuxGSM	0.45	0.65	0.11	0.54
L	Tango	0.32	1.23	0.11	1.34
NL	KPN GSM	0.97	0.97	0.15	0.57
NL	Libertel	0.79	0.79	0.15	0.78
AUT	Mobilkom	0.18	0.71	0.24	0.60
AUT	Maxmobil	0.18	0.53	0.24	0.75
P	TMN	0.36	0.99	0.39	1.05
P	Telecel	0.37	1.02	0.39	1.05
FIN	Sonera GSM	0.41	0.99	0.26	0.85
FIN	Radiolinja	0.36	0.95	0.26	0.85
SWE	Telia Mobil	1.70	1.70	0.11	0.75
SWE	Comviq	1.52	1.52	0.11	0.87
UK	Cellnet	0.75	0.75	0.33	0.79
UK	Vodafone	0.42	0.63	0.33	0.83

Notes:

Prices in euro, excluding VAT

Peak and off peak times may not correspond for the different types of calls

Calls to and from the fixed network relate to the incumbent fixed network operator

Call charges to and from other operators may be different

6.6. Intra-EU calls, mobile to fixed network

The numbers in the table below are the average call charges to all other EU countries, for a 3 minute call. Any call setup charges are included.

**Table 6.13 International High Volume 3 minute call charges for calls to fixed network
January - December 2000 (In euro, excluding VAT)**

	Operator	Package	High volume 2000.01		High volume 2000.12	
			Peak	Economy	Peak	Economy
B	Proximus	Proximus Pro	1.96	1.25	1.96	1.25
	Mobistar	Optimum 2	2.27	1.19	2.27	1.19
DK *	Tele Danmark Mobil	Mobil Erhverv Plus	1.73	1.43	1.74	1.44
	Sonofon	Variet	1.78	1.14	N/A	N/A
D	T-Mobil D-1	ProTel D-1 Standard	2.34	1.72	2.34	1.72
	Mannesmann D-2	Classic Premium	2.50	1.80	2.50	1.80
EL *	Cosmote	Basic Programme 2	2.00	1.76	1.46	1.46
	Panafon	Panafon 180	1.89	1.43	1.36	1.36
E	Movistar	Plus Profesional	1.74	1.56	1.74	1.56
	Airtel	Sin Horarios	1.74	1.56	1.74	1.56
F	Itineris	Forfait Loft 4H	1.31	1.31	1.58	1.58
	SFR	Le Forfait 4H	1.36	1.32	1.27	1.27
IRL	Eircell	Eirtime 250	2.00	1.62	2.00	1.62
	Esat Digifone	Select 2	2.00	1.62	2.00	1.62
I	Telecom Italia Mobile	Euro Professional	0.86	0.86	0.86	0.86
	Omnitel	Dippiu 30	0.72	0.72	0.74	0.74
L	LuxGSM	Business	0.94	0.77	0.90	0.74
	Tango	Twist	0.91	0.91	0.69	0.69
NL	KPN GSM	Flexibel Allround	1.08	0.78	0.96	0.60
	Libertel	Libertel 240	1.35	1.24	1.75	1.35
AUT	Mobilkom	A-1 Business	1.07	1.29	1.07	1.29
	Maxmobil	Profi.max	1.06	1.06	1.06	1.06
P	TMN	TMN Executive	0.45	0.99	0.45	0.45
	Telecel	Mais	0.45	0.45	0.45	0.45
FIN	Sonera GSM	Business	1.93	1.25	2.00	1.29
	Radiolinja	Usage	1.77	1.27	2.01	1.30
SWE *	Telia Mobil	Mobitel Volym	1.53	1.53	1.51	1.51
	Comviq	Grund	1.54	1.54	1.61	1.61
UK *	Cellnet	Net 200	3.88	3.88	3.92	3.92
	Vodafone	Vodafone 150	3.88	3.88	3.92	3.92

Notes:

January 2000 data may be for a different tariff package, as many operators have changed their packages over the year.

Peak calls are at 11.00 on weekdays, and Economy calls are the cheapest call charge available, regardless of time (please see the time band information in table 6.14 for more information).

Prices are expressed in euro, excluding VAT. Each price is an unweighted average of calls to all other EU countries.

N/A: Information not available

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

**Table 6.14 International Low Volume 3 minute call charges for calls to fixed network
January - December 2000 (In euro, excluding VAT)**

	Operator	Package	Low volume 2000.01		Low volume 2000.12	
			Peak	Economy	Peak	Economy
B	Proximus	ProxiFun	2.92	1.23	2.76	1.23
	Mobistar	Optimum 1	2.85	1.19	2.85	1.19
DK	Tele Danmark Mobil	Mobil 45	1.73	1.43	2.20	2.20
	Sonofon	Variet	2.44	1.06	N/A	N/A
D	T-Mobil D-1	Telly D-1	2.62	1.72	2.62	1.72
	Mannesmann D-2	Fun	2.50	1.79	2.50	1.79
EL	Cosmote	Basic Programme 2	2.00	1.76	1.57	1.57
	Panafon	Panafon 1	2.40	1.52	1.57	1.57
E	Movistar	Plus Eleccion Tarde	1.74	1.56	1.74	1.56
	Airtel	Tarde	1.74	1.56	1.74	1.56
F	Itineris	OLA 2H	1.31	1.31	1.58	1.58
	SFR	Formule ABC	1.47	1.30	1.27	1.27
IRL	Eircell	Eirtime 10	2.00	1.62	2.00	1.62
	Esat Digifone	Select 1	1.97	1.62	1.97	1.62
I	Telecom Italia Mobile	Euro Time	N/A	N/A	1.62	1.62
	Omnitel	Nuovo Personal 195	1.03	1.03	1.03	1.03
L	LuxGSM	Liberty	1.26	1.09	1.22	0.74
	Tango	Hip Hop	1.16	0.91	1.60	0.69
NL	KPN GSM	Flexibel Hi	1.67	0.78	1.30	0.66
	Libertel	Libertel 60	2.05	1.04	1.93	1.35
AUT	Mobilkom	A-1 Fun	1.07	1.29	1.07	1.29
	Maxmobil	Freizeit.max	1.36	1.36	1.36	1.36
P	TMN	TMN Basic	0.45	0.99	0.72	0.49
	Telecel	IntraRede	1.02	0.49	1.02	0.49
FIN	Sonera GSM	Private	2.22	1.20	2.27	1.22
	Radiolinja	Basic	1.96	1.22	2.28	1.23
SWE *	Telia Mobil	Mobitel Pott	1.71	1.53	1.70	1.51
	Comviq	Joker	1.62	1.62	1.61	1.61
UK *	Cellnet	Net 100	3.88	3.88	3.92	3.92
	Vodafone	Vodafone 20	3.88	3.88	3.92	3.92

Notes:

January 2000 data may be for a different tariff package, as many operators have changed their packages over the year.

Peak calls are at 11.00 on weekdays, and Economy calls are the cheapest call charge available, regardless of time (please see the time band information in table 6.14 for more information).

Prices are expressed in euro, excluding VAT. Each price is an unweighted average of calls to all other EU countries.

N/A: Information not available

* Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

Table 6.15 International call timebands

Belgium:

Call prices are calculated from the GSM rate plus the international PSTN charge. The GSM Standard rate applies from 0700 - 1900 Monday to Friday.

The PSTN International Standard rate applies from 0800 - 2000 Monday to Saturday.

On the table above Standard rates are calculated (from 0800 - 1900 Monday to Friday) at the time when both Charge bands are within the Standard hours.

And Reduced rates are calculated when both bands are outside the Standard hours.

However if a Caller made a call at 1930 Hrs, they would pay the tariff for GSM Reduced + PSTN Int'l Standard rate. These differing timeband scenarios have not been costed.

Denmark:

Standard hours are Monday to Friday 0800 to 1930, Reduced hours are all other times.

Germany:

T-Mobil: Standard hours are Monday-Friday 0700-2000, Reduced hours are at all other times, and on Public holidays and 24th and 31st of December

Mannesmann: For Business Tariff Standard hrs are Monday to Friday 0700 - 2000 Reduced are at all other times. Residential Standard hours are 0800 - 1700 Monday to Friday Reduced hours all other times.

Greece:

CosmOTE: One charge at all times

Panafon: One charge at all times

Spain:

Standard everyday 0800 - 2200, Reduced everyday 2200 - 0800.

France:

Itineris: One charge at all times

SFR: One charge at all times.

Ireland:

EirCell: Standard hours for local calls are Monday to Friday 0800 to 1800, Reduced hours at all other times.

Esat Digifone: Standard hours for local calls are Monday to Friday 0800 to 1800, Reduced hours at all other times

Italy:

Calls are charged at the same rates at all times

Luxembourg:

LuxGSM: Standard hours are Monday to Friday 0800 to 1900, Reduced hours are all other times.

Tango: Business calls are charged at the same rate at all times. Standard Residential hours are from 0700 - 1900 Monday to Friday. Reduced hours are at all other times.

Table 6.15 International call timebands (cont)

Netherlands:

KPN: Standard hours are Monday to Saturday 0800 to 2000 for business, 0800 to 1900 for residential, Reduced hours are all other times.

Libertel: Business Standard hours are from 0730 –1930 Monday to Friday, Reduced hours are at all other times. Residential Standard hours are from 0800 -1900 Monday to Friday, Reduced hours are at all other times.

Austria:

Mobilkom: Calls are charged at the same rate at all times

Maxmobil: Calls are charged at the same rate at all times

Portugal:

TMN: Standard hours are Monday to Friday 0900 to 2100, Reduced hours are all other times.

Telecel: Standard hours are Monday to Friday 0800 to 2100, Reduced hours are all other times.

Finland:

Sonera: Standard hours for calls to Sweden are Monday to Friday 0800-2000, Reduced hours are all other times. Standard hours for calls to all other EU countries are Monday to Friday 0800-2200, Reduced hours are all other times.

RadioLinja: Standard hours for calls to Sweden are Monday to Friday 0800-1900, Reduced hours are all other times. Standard hours for calls to all other EU countries are Monday to Friday 0800-2000, Reduced hours are all other times.

Sweden:

Telia: Standard hours are Monday to Friday 0800 to 1800, Reduced hours are all other times.

Comviq: Same charge at all times

United Kingdom:

GSM services are charged per minute or part.

Call charges shown apply at all times

Table 6.16 Average call charge for a 3 minute call to other EU Member States, from mobile and fixed networks (In euro, excluding VAT)

		High volume	Low volume	
	Mobil operator	From mobile	From mobile	From fixed
B	Proximus	1.96	2.76	0.52
B	Mobistar	2.27	2.85	0.52
DK	Tele Danmark Mobil	1.74	2.20	0.69
DK	Sonofon	#N/A	#N/A	0.69
D	T-Mobil D-1	2.34	2.62	0.34
D	Mannesmann D-2	2.50	2.50	0.34
EL	Cosmote	1.46	1.57	0.85
EL	Panafon	1.36	1.57	0.85
E	Movistar	1.74	1.74	1.02
E	Airtel	1.74	1.74	1.02
F	Itineris	1.58	1.58	0.73
F	SFR	1.27	1.27	0.73
IRL	Eircell	2.00	2.00	1.05
IRL	Esat Digifone	2.00	1.97	1.05
I	Telecom Italia Mobile	0.86	1.62	0.88
I	Omnitel	0.74	1.03	0.88
L	LuxGSM	0.90	1.22	0.58
L	Tango	0.69	1.60	0.58
NL	KPN GSM	0.96	1.30	0.37
NL	Libertel	1.75	1.93	0.37
AUT	Mobilkom	1.07	1.07	0.95
AUT	Maxmobil	1.06	1.36	0.95
P	TMN	0.45	0.72	1.03
P	Telecel	0.45	1.02	1.03
FIN	Sonera GSM	2.00	2.27	1.29
FIN	Radiolinja	2.01	2.28	1.29
SWE	Telia Mobil	1.51	1.70	0.51
SWE	Comviq	1.61	1.61	0.51
UK	Cellnet	3.92	3.92	1.31
UK	Vodafone	3.92	3.92	1.31

Notes:

Prices in euro, excluding VAT

Prices apply at peak time in each network. Such times may be different between networks

The incumbent operator's fixed network is assumed

6.7. International roaming

Roaming tariffs as offered by mobile operators for use of the handsets in other countries are very diverse, and are unfortunately not always readily available. Also, a number of options exist that each will incur a different set of charges: Making calls to the home country while roaming, making calls to a 3rd country while roaming, and receiving calls while roaming. As the first situation is probably the most common, and the one that can be tracked with some consistency, this report will focus on the charges for calling back to the home country while roaming.

As this report focuses on 2 main operators in each country the roaming data attempts to cover calls to and from the same operators. It has not been possible to find data for all operators, as will be seen on the following tables. As this data requires a full matrix of all operators the data is divided into 8 tables, with two roaming countries in each. All prices are retail prices, as quoted by the individual operators.

Note: There may be variations in the timeband definitions for certain carrier combinations, beyond what is indicated in the table headings.

Table 6.17 Roaming in Belgium and Denmark

Roaming Country:		B						DK			
Roaming Network:		Proximus		Mobistar		Teledanmark		Sonofon			
Home Country	Home Network	Call set-up		Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
		Peak	Off-Peak	Mon-Fri 7-20	All other times	Mon-Fri 7-19	All other times	Mon-Sat 8-21.30	All other times	Mon-Sat 8-21.30	All other times
B	Proximus							0.803	0.648	0.775	0.620
B	Mobistar										
DK	Teledanmark			1.016	0.758	0.967	0.723				
DK	Sonofon										
D	T-Mobil D1					0.904	0.674	0.714	0.569	0.723	0.577
D	Vodafone D2			0.952	0.710	0.904	0.674	0.714	0.569	0.723	0.577
EL	Cosmote										
EL	Panafon			0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
E	Movistar										
E	Airtel										
F	Itineris			0.836	0.836	0.836	0.836				
F	SFR					0.836	0.836				
IRL	Eircell			1.175		1.375		0.766		1.112	
IRL	Esat Digifone			1.165		1.112		0.798		0.913	
I	TIM										
I	Omnitel										
L	LuxGSM										
L	Tango										
NL	KPN GSM			0.826	0.618	0.784	0.587	0.622	0.498	0.626	0.502
NL	Libertel	0.039	0.039			0.892	0.668	0.684	0.545	0.691	0.552
AUT	A1 Mobilkom			1.153	0.871	1.098	0.829	0.898	0.747	0.867	0.754
AUT	Maxmobil			1.281	0.967	1.220	0.921	0.999	0.831	0.966	0.840
P	TMN			1.377	1.039	1.313	0.887				
P	Telecel			1.442	1.085	1.371	1.033				
FIN	Sonera										
FIN	Radiolinia										
SWE	Telia Mobitel										
SWE	Comviq							0.554	0.462	0.554	0.508
UK	Cellnet			1.374	1.374	1.374	1.374			1.374	1.374
UK	Vodafone			1.175	1.175	1.109	1.109	0.767	0.767	0.930	0.930

All prices in euro excluding VAT

Table 6.18 Roaming in Germany and Greece

Roaming Country:		D						EL			
Roaming Network:		Call set-up		T-Mobil D1		Vodafone D2		Cosmote		Panafon	
Home Country	Home Network	Peak	Off-Peak	Peak Mon-Fri 9-19	Off-Peak All other times	Peak Mon-Fri 7-19	Off-Peak All other times	Peak Mon-Fri 7-22	Off-Peak All other times	Peak At all times	Off-Peak At all times
B	Proximus			1.017	0.606	1.017	0.506	0.719	0.719	0.723	0.723
B	Mobistar			0.973	0.579	0.973	0.484				
DK	Teledanmark										
DK	Sonofon										
D	T-Mobil D1									0.666	0.666
D	Vodafone D2									0.785	0.785
EL	Cosmote										
EL	Panafon			0.600	0.600	0.600	0.600				
E	Movistar										
E	Airtel										
F	Itineris							0.836	0.836	0.836	0.836
F	SFR			0.836	0.836						
IRL	Eircell			1.018				0.819		0.819	0.819
IRL	Esat Digifone			1.007		1.007				0.714	0.714
I	TIM			1.017	0.606	1.017	0.506				
I	Omnitel			0.998	0.594	0.998	0.496				
L	LuxGSM										
L	Tango										
NL	KPN GSM			0.826	0.494	0.823	0.409	0.649	0.579	0.572	0.572
NL	Libertel	0.039	0.039	0.938	0.556			0.629	0.629	0.633	0.633
AUT	A1 Mobilkom					0.995	0.495	0.683	0.683		
AUT	Maxmobil			1.106	0.658	1.106	0.550	0.775	0.775	0.779	0.779
P	TMN			1.191	0.706	1.191	0.706				
P	Telecel			1.243	0.741	1.243	0.619				
FIN	Sonera										
FIN	Radiolinia										
SWE	Telia Mobitel					1.263	0.632				
SWE	Comviq			0.924	0.554	0.905	0.462				
UK	Cellnet			1.374	1.374	1.374	1.374	1.374	1.374	1.374	1.374
UK	Vodafone			1.175	1.175	1.175	1.175	0.799	0.799	0.799	0.799
All prices in euro excluding VAT											

Table 6.19 Roaming in Spain and France

Roaming Country:		E						F			
Roaming Network:		Call set-up		Movistar		Airtel		Itineris		SFR	
Home Country	Home Network	Peak	Off-Peak	Peak Mon-Fri 8-22	Off-Peak All other times	Peak Mon-Fri 8-22	Off-Peak All other times	Peak Mon-Fri 8-21	Off-Peak All other times	Peak Mon-Fri 8-21	Off-Peak All other times
B	Proximus			1.141	1.049	1.141	1.049	1.012	0.603	1.012	0.603
B	Mobistar							0.968	0.577	0.968	0.577
DK	Teledanmark										
DK	Sonofon										
D	T-Mobil D1					0.657	0.573			0.948	0.564
D	Vodafone D2			0.652	0.577	0.657	0.569	0.952	0.569	0.952	0.560
EL	Cosmote										
EL	Panafon			0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
E	Movistar										
E	Airtel										
F	Itineris			0.836	0.836	0.836	0.836				
F	SFR			0.836	0.836	0.836	0.836				
IRL	Eircell			1.144		1.144		1.070		1.070	
IRL	Esat Digifone			1.133		1.133		1.060		1.060	
I	TIM			0.698	0.608	0.699	0.608	1.011	0.603	1.011	0.603
I	Omnitel			0.685	0.604	0.686	0.597	0.992	0.592	0.992	0.592
L	LuxGSM										
L	Tango										
NL	KPN GSM			1.147	1.147	0.568	0.498	0.842	0.510	0.842	0.510
NL	Libertel	0.039	0.039					0.958	0.575	0.958	0.575
AUT	A1 Mobilkom			0.683	0.602	0.684	0.595	1.046	0.640		
AUT	Maxmobil							1.162	0.711		
P	TMN			0.887	0.835	0.951	0.823	1.401	0.765	1.401	0.765
P	Telecel			1.010	0.893	0.934	0.817	1.307	0.800	1.290	0.800
FIN	Sonera										
FIN	Radiolinia										
SWE	Telia Mobitel					1.032	0.173	1.284	0.678	1.284	0.678
SWE	Comviq					0.652	0.567	0.924	0.554	0.924	0.878
UK	Cellnet			1.374	1.374	1.791	1.791	1.374	1.374	1.374	1.374
UK	Vodafone			1.321	1.321	1.321	1.321	1.175	1.175	1.175	1.175
All prices in euro excluding VAT											

Table 6.20 Roaming in Ireland and Italy

Roaming Country:		IRL									
Roaming Network:		Eircell				Esat Digifone		TIM		Omnitel	
Home Country	Home Network	Call set-up		Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
		Peak	Off-Peak	Mon-Fri 8-18	All other times	Mon-Fri 8-18	All other times	At all times	At all times	At all times	At all times
B	Proximus			0.730	0.584	0.847	0.672	1.099	1.099	1.111	1.111
B	Mobistar							0.682	0.682	0.572	0.572
DK	Teledanmark										
DK	Sonofon										
D	T-Mobil D1			0.683	0.547	0.793	0.630	0.696	0.696		
D	Vodafone D2			0.683	0.547	0.793	0.630	0.696	0.696	0.657	0.657
EL	Cosmote										
EL	Panafon			0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
E	Movistar										
E	Airtel										
F	Itineris										
F	SFR							0.836	0.836	0.836	0.836
IRL	Eircell							0.598			
IRL	Esat Digifone							1.091		1.102	
I	TIM										
I	Omnitel										
L	LuxGSM										
L	Tango										
NL	KPN GSM			0.595	0.479			0.602	0.602	0.572	0.572
NL	Libertel	0.039	0.039	0.672	0.541			0.687	0.687		
AUT	A1 Mobilkom			0.785	0.643	0.900	0.743	0.726	0.726		
AUT	Maxmobil			0.873	0.714	1.000	0.825				
P	TMN							0.922	0.922	0.689	0.689
P	Telecel							0.905	0.905		
FIN	Sonera										
FIN	Radiolinia										
SWE	Telia Mobitel									0.873	0.873
SWE	Comviq							0.693	0.693	0.462	0.462
UK	Cellnet			0.625	0.625	0.722	0.722	1.374	1.374		
UK	Vodafone			0.767	0.767	0.881	0.881	1.272	1.272	1.077	1.077

All prices in euro excluding VAT

Table 6.21 Roaming in Luxembourg and the Netherlands

Roaming Country:		L									
Roaming Network:		LuxGSM				Tango		KPN GSM		Libertel	
Home Country	Home Network	Call set-up		Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
		Peak	Off-Peak	Mon-Fri 8-19	All other times	Mon-Fri 8-19	All other times	Mon-Fri 7-21	All other times	Mon-Fri 8-20	All other times
B	Proximus			0.833	0.368	1.083	0.399	1.185	0.673	1.091	0.464
B	Mobistar			0.797	0.352	1.036	0.382			1.043	0.444
DK	Teledanmark										
DK	Sonofon										
D	T-Mobil D1					1.172	0.538	1.111	0.630	1.023	0.436
D	Vodafone D2							1.023	0.467		
EL	Cosmote										
EL	Panafon			0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
E	Movistar										
E	Airtel										
F	Itineris										
F	SFR							0.836	0.836	0.836	0.836
IRL	Eircell			0.902				0.944		1.144	
IRL	Esat Digifone			0.829				1.186		1.144	
I	TIM										
I	Omnitel										
L	LuxGSM										
L	Tango										
NL	KPN GSM			0.680	0.297	0.884	0.324				
NL	Libertel	0.039	0.039	0.769	0.394						
AUT	A1 Mobilkom			0.754	0.331	1.060	0.391	0.919	0.418	1.123	0.498
AUT	Maxmobil			0.905	0.400	0.465	0.465	1.288	0.732	1.248	0.556
P	TMN							1.097	0.502	1.395	0.659
P	Telecel							1.447	0.823	1.459	0.689
FIN	Sonera										
FIN	Radiolinia										
SWE	Telia Mobitel							1.207	0.349		
SWE	Comviq							1.062	0.600	1.016	0.462
UK	Cellnet			4.026	4.026	1.374	1.374	1.374	1.374	1.374	1.374
UK	Vodafone			0.962	0.962	1.436	1.436	1.093	1.093	1.256	1.256

All prices in euro excluding VAT

Table 6.22 Roaming in Austria and Portugal

Roaming Country:		AUT						P			
Roaming Network:		Call set-up		A1 Mobilkom		Maxmobil		TMN		Telecel	
Home Country	Home Network	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
				At all times	At all times	At all times	At all times	At all times	At all times	At all times	At all times
B	Proximus			0.919	0.919	0.662	0.662	0.726	0.726	0.792	0.792
B	Mobistar							0.690	0.690	0.764	0.764
DK	Teledanmark										
DK	Sonofon										
D	T-Mobil D1			0.859	0.859	0.621	0.621				
D	Vodafone D2			0.948	0.948	0.621	0.621	0.679	0.679		
EL	Cosmote										
EL	Panafon			0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
E	Movistar										
E	Airtel										
F	Itineris										
F	SFR			0.836	0.084	0.836	0.836				
IRL	Eircell			0.724	0.724	0.798	0.798				
IRL	Esat Digifone			0.724	0.724	0.661	0.661	0.724	0.724	0.787	0.787
I	TIM			0.724	0.724	0.578	0.578				
I	Omnitel			0.710	0.710	0.649	0.649				
L	LuxGSM										
L	Tango										
NL	KPN GSM			0.823	0.823	0.537	0.537	0.591	0.591	0.722	0.722
NL	Libertel	0.039	0.039	0.154	0.154	0.610	0.610	0.672	0.672		
AUT	A1 Mobilkom							0.710	0.710	0.785	0.785
AUT	Maxmobil							0.789	0.789		
P	TMN										
P	Telecel										
FIN	Sonera										
FIN	Radiolinia										
SWE	Telia Mobitel										
SWE	Comviq										
UK	Cellnet			1.374	1.374	1.374	1.374	1.374	1.374	1.374	1.374
UK	Vodafone			1.550	1.550	1.028	1.028	1.028	1.028	0.930	0.930
All prices in euro excluding VAT											

Table 6.23 Roaming in Finland and Sweden

Roaming Country:		FIN						SWE			
Roaming Network:		Call set-up		Sonera		Radiolinja		Telia Mobitel		Comviq	
Home Country	Home Network	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
				Mon-Fri 8-22	All other times	Mon-Sun 8-21	All other times	At all times	At all times	At all times	At all times
B	Proximus			0.522	0.348	0.745	0.526	0.715	0.715	0.682	0.682
B	Mobistar							0.689	0.689	0.658	0.658
DK	Teledanmark										
DK	Sonofon										
D	T-Mobil D1			0.428	0.326	0.696	0.494	0.701	0.701	0.666	0.666
D	Vodafone D2			0.428	0.326	0.679	0.432	0.696	0.696		
EL	Cosmote										
EL	Panafon			0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600
E	Movistar										
E	Airtel										
F	Itineris										
F	SFR									0.836	0.836
IRL	Eircell			0.525		0.525					
IRL	Esat Digifone			0.514		0.409		0.724			
I	TIM							0.709	0.650	0.724	0.724
I	Omnitel							0.728	0.660	0.775	0.775
L	LuxGSM										
L	Tango										
NL	KPN GSM			0.741	0.599					0.545	0.545
NL	Libertel	0.039	0.039	0.842	0.680	0.699	0.490	0.649	0.649	0.618	0.618
AUT	A1 Mobilkom			0.808	0.647	0.606	0.454			0.696	0.696
AUT	Maxmobil			0.988	0.799	0.810	0.574	0.772	0.772	0.713	0.713
P	TMN							0.881	0.881	0.905	0.905
P	Telecel							0.852	0.852	0.759	0.759
FIN	Sonera										
FIN	Radiolinia										
SWE	Telia Mobitel					0.416	0.224				
SWE	Comviq			0.508	0.462	0.416	0.416				
UK	Cellnet			1.374	1.374	1.374	1.374	1.374	1.374	1.374	1.374
UK	Vodafone			1.044	1.044	0.538	0.538	0.783	0.783	0.734	0.734
All prices in euro excluding VAT											

Table 6.24 Roaming in United Kingdom

Roaming Country:		UK					
Roaming Network:		Cellnet				Vodafone	
Home Country	Home Network	Call set-up		Peak	Off-Peak	Peak	Off-Peak
		Peak	Off-Peak	Mon-Fri 8-18	All other times	Mon-Sat 7.30-21.30	All other times
B	Proximus			1.225	0.773	1.206	0.780
B	Mobistar						
DK	Teledanmark						
DK	Sonofon						
D	T-Mobil D1			1.199	0.758	1.190	0.763
D	Vodafone D2			1.194	0.754	1.172	0.771
EL	Cosmote						
EL	Panafon			0.600	0.600	0.600	0.600
E	Movistar						
E	Airtel						
F	Itineris						
F	SFR			0.836	0.836	0.836	0.836
IRL	Eircell			1.112			
IRL	Esat Digifone			1.081		1.028	
I	TIM			1.160	0.736	1.186	0.762
I	Omnitel			1.171	0.746	1.171	0.739
L	LuxGSM						
L	Tango						
NL	KPN GSM			0.996	0.629	0.989	0.637
NL	Libertel	0.039	0.039	1.135	0.718	1.124	0.722
AUT	A1 Mobilkom			1.661	0.884	1.335	0.902
AUT	Maxmobii			1.841	0.980	1.473	0.991
P	TMN			1.430	0.922	1.430	0.922
P	Telecel			1.453	0.916	1.442	0.928
FIN	Sonera						
FIN	Radiolinja						
SWE	Telia Mobitel			1.137	0.682		
SWE	Comviq			1.386	0.878	1.109	0.739
UK	Cellnet						
UK	Vodafone						
All prices in euro excluding VAT							

6.8. Pre-paid options

The pre-paid tariffs will consist of the pre-paid card, which has a certain value and maximum validity time. Calls are charged against the pre-paid value, up to the value of the card. The Minimum charge per year is calculated based on maximum card validity time.

Pre-paid services will normally have considerably higher call charges than regular (post-paid) services. However the benefit is that there are no fixed charges.

Minimum card cost per year

Table 6.25 Minimum charges for pre-paid packages

	Operator	Package	Minimum Per year	Card price	Card valid for
B	Proximus:	Pay & Go	10.24	10.24	1 year
DK	Tele Danmark Mobil:	MobilTid	42.90	10.72	3 months
D	T-Mobil D-1:	Xtra	22.04	11.02	183 days
EL	Cosmote:	Cosmokarta	12.44	12.44	365 days
E	Movistar:	Joven	6.91	5.18	9 Months
F	Itineris:	Mobicarte Classic	17.70	8.85	6 Months
IRL	Eircell:	Ready to go	31.49	20.99	8 months
I	Telecom Italia Mobile:	RicariCard	21.52	21.52	12 Months
L	LuxGSM:	Tip Top	86.22	21.56	3 Months
NL	KPN GSM:	Hi Pre Pay	9.65	9.53	1 year
AUT	Mobilkom:	B-Free Classic	12.14	12.14	N/A
P	TMN:	Mimo Easy	86.44	21.31	90 days
FIN	Sonera GSM:	Easy	27.57	13.78	6 Months
SWE	Telia Mobil:	Refill	11.55	11.55	12 Months
UK	Cellnet:	Pay+Go	0.00	13.88	6 months

Notes:

Prices are expressed in euro, excluding VAT

N/A: Information not available.

The “minimum per year” is calculated based on maximum validity period for the card.

Call charges for national calls

Table 6.26 National call charges for pre-paid packages

	National 3 minute call to fixed			National 3 minute call to GSM (same network)		
	Peak 11:00	Off-peak 20:00	Economy	Peak 11:00	Off-peak 20:00	Economy
B	1.84	0.61	0.61	0.92	0.61	0.61
DK	1.61	0.80	0.80	1.61	0.80	0.80
D	2.24	0.90	0.25	0.90	0.52	0.52
EL	1.22	1.22	1.22	1.22	1.22	1.22
E	2.70	0.45	0.45	0.90	0.45	0.45
F	1.59	1.59	1.59	1.59	1.59	1.59
IRL	1.57	0.63	0.31	1.10	0.31	0.31
I	1.22	1.22	1.22	1.22	1.22	1.22
L	0.78	0.45	0.45	0.19	0.19	0.19
NL	1.13	0.29	0.29	1.13	0.52	0.52
AUT	1.78	0.76	0.76	0.76	0.76	0.76
P	0.64	0.64	0.42	0.64	0.64	0.42
FIN	1.22	1.22	1.22	1.22	1.22	1.22
SWE	1.66	0.22	0.22	1.66	0.22	0.22
UK	1.03	0.42	0.08	0.44	0.44	0.08

Notes:

Prices are expressed in euro, excluding VAT

For list of operators and packages, see table 6.15 above

Economy time calls are the cheapest rates available. Only in Germany, Ireland and United Kingdom are these lower than the off-peak rates.

Call charges for Intra-EU calls

Table 6.27 International call charges for pre-paid packages

	International 3 minute Intra-EU call (average)	
	Peak	Economy
B	2.48	1.86
DK	2.68	1.58
D	3.98	3.98
EL	2.32	2.08
E	2.01	1.81
F	1.82	1.82
IRL	2.51	2.51
I	1.60	1.60
L	0.94	0.79
NL	2.86	2.86
AUT	1.80	1.80
P	1.00	0.50
FIN	2.44	2.04
SWE	1.66	1.47
UK	6.24	6.24

Notes:

Prices are expressed in euro, excluding VAT

Peak charges are 11:00 weekdays, Economy are the cheapest price available, regardless of time.

For list of operators and packages, see table 6.15 above

International call charges are simple averages of charges to all EU fixed network destinations

6.9. Comparing Post-paid and Pre-paid

The tables below compare the prices of 3 minute calls from high and low volume post-paid packages and pre-paid packages of ex-incumbent mobile operators.

Table 6.28 Post- and pre-paid package call charges for a 3 minute call to another mobile in the same network (in euro, excluding VAT)

		Post-paid High volume	Post paid Low Volume	Pre-paid
B	Proximus	0.37	0.37	0.92
DK	Tele Danmark Mobil	0.53	0.99	1.61
D	T-Mobil D-1	0.38	0.90	0.90
EL	Cosmote	0.63	0.74	1.22
E	Movistar	0.77	0.82	0.90
F	Itineris	0.57	0.57	1.59
IRL	Eircell	0.38	0.38	1.10
I	Telecom Italia Mobile	0.86	1.27	1.22
L	LuxGSM	0.32	0.45	0.19
NL	KPN GSM	0.68	0.97	1.13
AUT	Mobilkom	0.18	0.18	0.76
P	TMN	0.33	0.36	0.64
FIN	Sonera GSM	0.41	0.41	1.22
SWE	Telia Mobil	1.04	1.70	1.66
UK	Cellnet	0.75	0.75	0.44

Notes:

All prices in euro, excluding VAT

Prices apply to peak time calls

Table 6.29 Post- and pre-paid package call charges for a 3 minute call to incumbent's fixed network (in euro, excluding VAT)

		Post-paid High volume	Post paid Low Volume	Pre-paid
B	Proximus	0.65	1.23	1.84
DK	Tele Danmark Mobil	0.53	0.99	1.61
D	T-Mobil D-1	0.38	1.30	2.24
EL	Cosmote	0.63	0.74	1.22
E	Movistar	0.77	1.47	2.70
F	Itineris	0.76	0.76	1.59
IRL	Eircell	0.76	1.57	1.57
I	Telecom Italia Mobile	0.86	1.27	1.22
L	LuxGSM	0.32	0.65	0.78
NL	KPN GSM	0.63	0.97	1.13
AUT	Mobilkom	0.18	0.71	1.78
P	TMN	0.36	0.99	0.64
FIN	Sonera GSM	0.72	0.99	1.22
SWE	Telia Mobil	1.04	1.70	1.66
UK	Cellnet	0.75	0.75	1.03

Notes:

All prices in euro, excluding VAT

Prices apply to peak time calls

Table 6.30 Post- and pre-paid package average call charges for a 3 minute call to other EU Member States (in euro, excluding VAT)

		Post-paid High volume	Post paid Low Volume	Pre-paid
B	Proximus	1.96	2.76	2.48
DK	Tele Danmark Mobil	1.74	2.20	2.68
D	T-Mobil D-1	2.34	2.62	3.98
EL	Cosmote	1.46	1.57	2.32
E	Movistar	1.74	1.74	2.01
F	Itineris	1.58	1.58	1.82
IRL	Eircell	2.00	2.00	2.51
I	Telecom Italia Mobile	0.86	1.62	1.60
L	LuxGSM	0.90	1.22	0.94
NL	KPN GSM	0.96	1.30	2.86
AUT	Mobilkom	1.07	1.07	1.80
P	TMN	0.45	0.72	1.00
FIN	Sonera GSM	2.00	2.27	2.44
SWE	Telia Mobil	1.51	1.70	1.66
UK	Cellnet	3.92	3.92	6.24

Notes:

All prices in euro, excluding VAT

Prices apply to peak time calls

7. Internet prices

This section provides information on 3 specific issues related to Internet:

- Dial up access charges using PSTN for accessing the Internet
- Cost of using different Internet Service Providers (ISPs) with dial up access
- Special arrangements for schools and libraries, to provide a more economical service to these institutions.

Unless otherwise stated, the prices are given expressed in euro, using the average December exchange rates.

The terms Business and Residential are used in this section to identify intensive and less intensive usage, at peak time (working hours) and off-peak time (evenings), respectively. *Many Internet packages are open to both Business and Residential users. This does not necessarily indicate that a Residential user is prohibited from taking a package identified as Business, and vice versa.*

Note also that ADSL service and connection via leased lines (whose pricing is covered elsewhere) are alternatives for intensive Internet users.

The price analysis below assumes a usage of 400 hours per year (33.3 hours per month). However, surveys have shown that in Europe, residential subscribers paying Internet usage charges stays on-line for average of 15 minutes per day (7,5 hours per month) whereas flat rate users stays for 1 hour per day average (30 hours per month).

7.1. Internet dial up access

This section covers Internet access via PSTN, where the user will use a modem and a phone line to dial up the Internet Service Provider (ISP) access point. A range of different charge elements may apply:

- PSTN call charges, either as regular local charges or specific ISP access charges
- ISP usage charges, normally on a per hour basis
- ISP connection charges, as a non-recurring set up charge
- ISP fixed rental charges (e.g. on a monthly basis)

PSTN charges are normally paid to the telecoms operator, while ISP charges are normally paid to the ISP. Fixed PSTN charge elements are not included in this analysis, assuming the use of an already existing telephone line.

A comparison of the PSTN call charges applicable for Internet access is shown below. As Internet related calls are normally local, and have durations of one hour or more, the table below assumes an average local call of 1 hour, multiplied up to an annual usage of 400 hours. Where special Internet access rates are available, these are identified in addition. This makes the PSTN usage costs combinable with the ISP charges in the next section.

The 400 hours is a general assumption of usage, which for businesses would mean slightly less than 2 hours on-line per working day, and for residential users would mean 8 hours of usage (at off-peak hours) per week. The purpose of this traffic volume is not to suggest any specific usage profiles, but simply to produce call cost figures that are combinable with the ISP costs in the next section.

Call charges are the same as for normal local calls, except in Belgium, Germany, Greece, Ireland, Luxembourg, Austria, Portugal and United Kingdom, where specific charges may apply for calls to Internet services. The special "Internet call" charges do not necessarily apply to all ISPs, as the individual ISP may choose to use normal local call charges or a toll-free number combined with a flat fee or a duration-sensitive charge.

In the cost comparisons in section 7.2 only those ISP services that clearly state the use of reduced (special Internet) access charges will be assigned such charges. Many ISPs do not clearly state what kind of charges is used for dial up access, and in such cases the normal local call charges are applied.

Some operators offer discount packages aimed at Internet usage. In Denmark for example it is possible to use the "Favorit Internet" package, which provides reduced rates after 60 minutes of call time (per call). In other countries the "Friends and Family" type of packages can also include an Internet access number, providing a reduced rate for these calls. Such packages have not been included in the comparisons shown, as the effects of these will be individual to each user.

Table 7.1 Dial up costs using PSTN

	Cost of 400 local PSTN call hours	
	Peak 11:00	Economy 20:00
B, Local	998	510
B, Internet	736	370
DK	721	257
D, Local	846	508
D, Internet	317	317
EL, Local	634	634
EL, Internet	148	148
E	579	253
F, Business	767	441
F, Residential	693	390
IRL, Local	1006	253
IRL, Internet	387	192
I	371	224
L, local	647	345
L, Internet	647	323
NL	529	294
AUT, Local	1206	614
AUT, Internet	724	256
P, Local	383	199
P, Internet	359	171
FIN	293	293
SWE	527	272
UK, Local	1315	493
UK, g4	666	333
UK, g5	333	200

Notes

Costs in euro, excluding VAT.

Minor exchange rate variations for Denmark, Greece, Sweden and the UK affect the results

400 calls of 1 hour each is assumed

This table shows the PSTN call costs with the incumbent telecom operator. No ISP usage is included.

Several countries (e.g. Denmark) offer special access codes (free-phone or premium rate numbers) for access to the ISP. The use of such numbers may in some cases be combined with special discount packages. Free-phone numbers used to access the ISP will normally be combined with special ISP package rates.

“Friends and Family” type packages may in some countries also include an ISP number, providing reduced rates for ISP calls. The effects of such discounts have not been included in the comparison above, as they will be individual to each user.

7.2. ISP prices

The following table has been constructed through a survey of the most important Internet Service Providers in each EU country. In order to produce reasonably comparable costs for the different packages, the following elements are included:

1. One third of any nonrecurring charge, i.e. depreciated over 3 years

-
2. Annual rental (i.e. for 1 year) for the package in question
 3. Any additional usage charges (normally given on a per hour basis) based on a total of 400 hours of usage in one year. This may not be applicable for all packages.

Please note: The usage charges mentioned here are related to the ISP, not the telecoms operator. These are charges paid for the time using the ISP services, beyond any included allowance. Not all ISPs have such additional usage charges.

The 400 hours is a general assumption of usage, which for businesses will mean slightly less than 2 hours peak time on-line usage per working day, and for residential users would mean 8 hours of usage (at off-peak hours) per week. The purpose of this traffic volume is not to suggest any specific usage profiles, but simply to produce ISP cost figures that are combinable with the call costs in the preceding section.

Packages are selected to be high user packages, with dial up modem access, with either unlimited access, or included hours close to the 400 hour volume. Most ISPs offer a range of packages, and not all of those can be represented here. Please see Appendix A for a full listing.

Warning: *A direct comparison of the cost of Internet packages is very difficult, as the services included with each package vary a lot. This relates for example to amount of web-space (for web pages) and number of email addresses included in the package. It is difficult to obtain consistent information to satisfy a strict comparison.*

Costs are given in euro, excluding VAT. Some of the packages appear in both the Business and Residential list, as they are offered to both customer groups.

A few of the entries have no cost assigned to them. These are “Free” services where the ISP normally generates revenue from either advertisements or from access call charges.

A number of so-called free internet services are included. These are normally based on one of two principles:

- Call charges paid to the telecoms operator will also cover the ISP costs.
- Charges paid to the ISP, either a fixed monthly charges, or on a per minute basis, will cover a free-phone number for access in addition to the ISP costs.

In order to show the real costs for such services the dial up charges as listed in table 7.1 are included in the following comparison, where relevant. The local call charges, or special Internet access charges, provided by the incumbents are used for this purpose. *As it is not always clear from the ISP which call charges should be used, only those ISPs stating the use of special Internet access charges are assigned such charges.*

It is also worth noting that hardly any ISPs have non-recurring connection or registration charges any more, especially in the residential market.

78 ISPs are covered across the 15 EU Member Countries, with a total of 187 dial up packages. Of these, 106 are relevant for business users, and 135 are relevant for residential users (some packages are relevant for both).

Table 7.2 Annual ISP costs for Business user packages (in euro excluding VAT)

Business, peak time usage								
			ISP charges				Including access cost	
			euro, excl. VAT					
Country	Provider	Package	Connect	Annual	400 h usage	Total	400h access	Total cost
AUT	Atnet	jet2web	0	182	0	182	724	906
AUT	INS	Netrunner Light	6	131	0	137	724	861
AUT	INS	Netrunner Business	48	174	0	223	724	947
AUT	INS	Netrunner	6	218	0	224	724	948
AUT	Netway	UTA Biznet	0	0	0	0	724	724
AUT	Simon Media	Server Paket	43	87	0	131	724	854
B	Eunet	MiniLan < 6 users	50	840	0	890	998	1888
B	Eunet	FullLan > 6 users	74	1237	0	1311	998	2309
B	Planet Internet	GoPlanet	0	0	0	0	998	998
B	Planet Internet	Planet Premium	0	491	0	491	998	1489
B	UUnet	Office Standard	0	295	0	295	998	1293
B	UUnet	Office Advanced	0	617	0	617	998	1615
D	Jippi	powerOkaynet	0	52	201	253	846	1099
D	Jippi	call Okaynet	0	0	307	307	846	1153
D	Jippi	my Okaynet	0	95	317	412	846	1258
D	Planet Intercom	Planet-Intercom premium Max	0	0	0	0	529	529
D	Planet Intercom	Planet-Intercom by call	0	0	0	0	603	603
D	T-Online	T-Online 30	0	153	31	184	317	501
D	T-Online	T-Online 60	0	291	0	291	317	608
D	T-Online	Eco	0	42	317	360	317	677
D	T-Online	T-Online 90	0	418	0	418	317	735
D	T-Online	Pro	0	105	317	423	317	740
D	T-Online	T-Online 120	0	524	0	524	317	841
D	Uunet	UUdial Office	14	502	529	1045	0	1045
D	Worldonline	Worldonline	0	0	0	0	846	846
DK	Danish Internet Adgang	Business 1	100	155	0	256	721	976
DK	Danish Internet Adgang	Business 2	156	289	0	446	721	1166
DK	Danish Internet Adgang	Business 3	100	383	0	484	721	1204
DK	Danish Internet Adgang	Business 4	156	517	0	673	721	1394
DK	Micronet	Firma	0	107	0	107	721	827
DK	Tele Danmark Internet	NetTid 30	0	257	53	309	721	1030
DK	Tele Danmark Internet	NetTid 80	0	386	0	386	721	1106

DK	Tele Danmark Internet	NetTid 20	0	192	231	423	721	1144
DK	Tele Danmark Internet	NetTid 10	0	128	441	569	721	1289
DK	Telepartner	Euro 909S	0	332	0	332	721	1052

Business, peak time usage (cont)

Country	Provider	Package	ISP charges				Including access cost	
			euro, excl. VAT				400h access	Total cost
			Connect	Annual	400 h usage	Total		
E	Arrakis	Professional	0	90	0	90	579	669
E	Jet Internet	Premium	0	60	0	60	579	638
E	Redestb	Iddeo Plus	0	150	0	150	579	729
E	Terra	Familiar	0	60	0	60	579	638
EL	Enternet	Enter Office Pro	0	326	0	326	148	474
EL	Forthnet	Dial up ISDN	0	270	0	270	148	418
EL	Hellas Online	i-Connect Power	8	284	0	292	148	440
EL	OTEnet	Dial up	0	154	0	154	148	302
EL	Pgcom	1 year PPP	0	177	0	177	148	325
F	AOL	Forfait Fidelite	0	83	0	83	767	851
F	AOL	Forfait Liberte	0	144	0	144	767	911
F	AOL	Forfait Limite	0	53	903	956	767	1724
F	Club Internet	Forfait 97F - 20H	0	147	267	414	0	414
F	Club Internet	Forfait 67F - 10H	0	102	467	569	0	569
F	Club Internet	Forfait 47F - 5H	0	71	567	639	0	639
F	Club Internet	Sans Abonnement	0	0	667	667	0	667
F	Club Internet	Formule Illimitee	0	117	0	117	767	884
F	Easynet	Numeris	0	82	0	82	767	850
F	Wanadoo	Pro	0	81	0	81	767	849
F	Worldnet	Economique	0	151	0	151	767	919
F	Worldnet	EcoPro	0	274	0	274	767	1042
FIN	Kolumbus	Kolumbus 1+	0	162	0	162	293	455
FIN	Surfnet	Connect	0	11	0	11	293	304
I	Calcol Informatica	Internet Business	0	253	0	253	371	625
I	Calcol Informatica	Internet PSTN	0	62	294	356	371	728
I	Tinet	Professional Premium	0	129	0	129	371	500
I	Tinet	Ricaricabile Premium	0	26	191	216	371	588
I	Tiscali Free net	LAN aziendale	0	0	0	0	371	371
IRL	Eircom net	Dial up	0	152	0	152	387	539
IRL	Eircom net	Premium	0	152	0	152	387	539
IRL	Ireland On-Line	Gold	0	126	0	126	1006	1132
IRL	Ireland On-Line	No-Limits	0	252	0	252	1006	1257
L	ConneXion Interway	Access Entreprises	15	595	0	610	647	1257

L	Luxembourg Online	Internet Gratuit	0	0	0	0	647	647
L	Luxembourg Online	Internet Professional	0	71	455	526	647	1173

Business, peak time usage (cont)

Business, peak time usage (cont)								
			ISP charges				Including access cost	
			euro, excl. VAT					
Country	Provider	Package	Connect	Annual	400 h usage	Total	400h access	Total cost
L	P&T Luxembourg	Identified Access	2	50	0	53	647	700
L	Telephonie	Dial up	0	213	0	213	647	860
L	Visual Online	Time based	0	0	0	0	647	647
L	Visual Online	Dial up	0	108	0	108	647	755
NL	Demon	Standard	0	116	0	116	529	645
NL	Demon	Office	11	218	0	229	529	759
NL	KPN Het Net	Standard	0	139	0	139	529	669
NL	KPN Het Net	Instap	0	60	612	672	529	1201
NL	UUnet	Business Class Entry	3	163	0	166	529	696
NL	XS4all		4	139	0	143	529	672
NL	XS4all	Business Mail	0	215	0	215	529	745
P	EUnet	Dial EUNET Light	24	358	0	382	359	741
P	IP Global	Conta IP Office 5	0	179	0	179	359	538
P	Telepac	Net Sapo	0	0	0	0	359	359
P	Telepac	Netpac	10	0	192	202	359	561
P	Telepac	Assinatura	0	239	24	263	359	622
P	Telepac	Net Number	0	0	1376	1376	0	1376
SWE	AOL	Unlimited dial up	0	264	0	264	527	790
SWE	AOL	Standard Dial up	0	77	1177	1254	527	1781
SWE	Tele2	Tele2Internet	0	27	0	27	527	553
SWE	Telia	Telia Internet ISDN Duo	23	230	0	253	527	779
SWE	Wineasy	Dial up	0	29	0	29	527	556
UK	AOL	Flat Rate	0	248	0	248	1315	1563
UK	BT Internet	ClickForBusiness Access	0	0	0	0	666	666
UK	BT Internet	ClickForBusiness Connect Lite	0	83	0	83	666	749
UK	BT Internet	Connect2Business	0	198	0	198	666	865
UK	Cable Internet	Standard	0	69	0	69	1315	1384
UK	Compuserve	Flat Rate	0	124	0	124	1315	1439
UK	Compuserve	Standard	0	115	913	1027	1315	2343
UK	Demon	Business Dial	135	1164	0	1299	1315	2615
UK	FreeServe	AnyTime	0	215	0	215	0	215

UK	FreeServe	No Ties	0	0	0	0	1315	1315
UK	FreeServe	HomeTime	0	148	0	148	1315	1464
UK	Microsoft Network	Free Web	0	0	0	0	1315	1315
UK	Microsoft Network	Annual Pass	0	206	0	206	1315	1522
UK	Microsoft Network	Hourly Pass	0	82	977	1059	1315	2374

Notes to Business ISPs

Costs in euro, excluding VAT.

400 hours of ISP usage at peak hours (11:00) is assumed, including any PSTN usage.

No assessment of the suitability of the packages to the “usage profile” has been done. Packages that seem awfully expensive may be more suitable for a different type of usage.

Packages in bold are examples of so-called “free” packages where the ISP will get a share of the access call charges.

Table 7.3 Annual ISP costs for Residential user packages (in euro excluding VAT)

Residential, economy time usage								
Country	Provider	Package	ISP charges				Including access cost	
			Connect	Annual	400 h usage	Total	400h access	Total cost
euro, excl. VAT								
AUT	Atnet	jet2web	0	182	0	182	256	437
AUT	INS	Netrunner Light	6	131	0	137	256	393
AUT	INS	Netrunner	6	218	0	224	256	480
AUT	Netway	UTA 1002 EasyInternet	0	0	0	0	256	256
AUT	Netway	UTA Fun4you	0	40	0	40	256	296
AUT	Simon Media	Unlimited Economy	0	140	0	140	256	395
B	Eunet	PersonalEUnet	8	161	0	169	510	680
B	Online Internet	Online Blue	0	133	0	133	510	643
B	Online Internet	Online Yellow	0	164	0	164	510	674
B	Online Internet	Online Green	0	82	225	307	510	817
B	Planet Internet	GoPlanet	0	0	0	0	510	510
B	Planet Internet	Planet Premium	0	491	0	491	510	1002
B	Skynet	Net Comfort	0	61	0	61	370	432
B	Skynet	Net Addict 1 year	0	102	0	102	370	473
B	Skynet	Net Addict	0	122	0	122	370	492
B	UUnet	Club	0	61	0	61	510	572
B	UUnet	Pro	0	154	0	154	510	664
D	AOL	Start	0	89	635	724	592	1316
D	AOL	Classic	0	52	635	687	825	1512
D	Arcor Mannesmann	Online Sunny 3	0	52	0	52	508	560
D	Arcor Mannesmann	Nexgo	0	0	0	0	614	614
D	Arcor Mannesmann	Online Sunny 12.5	0	158	0	158	508	666
D	Jippi	powerOkaynet	0	52	201	253	508	761
D	Jippi	call Okaynet	0	0	307	307	508	814
D	Jippi	my Okaynet	0	95	317	412	508	920
D	Planet Intercom	Planet-Intercom premium Max	0	0	0	0	529	529
D	Planet Intercom	Planet-Intercom by call	0	0	0	0	603	603
D	T-Online	T-Online 30	0	153	31	184	317	501
D	T-Online	T-Online 60	0	291	0	291	317	608
D	T-Online	Eco	0	42	317	360	317	677
D	T-Online	T-Online 90	0	418	0	418	317	735
D	T-Online	Pro	0	105	317	423	317	740

D	T-Online	T-Online 120	0	524	0	524	317	841
D	Uunet	Uudial Solo	5	79	529	613	0	613

Residential, economy time usage (cont)

Country	Provider	Package	ISP charges				Including access cost	
			euro, excl. VAT					
			Connect	Annual	400 h usage	Total	400h access	Total cost
D	Worldonline	Worldonline	0	0	0	0	508	508
DK	Danish Internet Adgang	Standard+	0	75	0	75	516	591
DK	Danish Internet Adgang	Standard	0	43	0	43	993	1036
DK	Danish Internet Adgang	Basic	0	0	0	0	1122	1122
DK	Tele Danmark Internet	NetBasis	0	0	0	0	257	257
DK	Tele Danmark Internet	Opasia	0	63	0	63	257	321
E	Arrakis	Standard	0	60	0	60	253	314
E	Redestb	Iddeo Okio	0	48	0	48	253	302
E	Redestb	Iddeo Plus	0	90	0	90	253	344
E	Terra	Gratis	0	0	0	0	253	253
E	Terra	Familiar	0	60	0	60	253	313
EL	Compulink	e-Free Plus	0	147	0	147	148	295
EL	Enternet	Enter Dialup	0	157	0	157	148	305
EL	Fastnet	Dial up	0	237	0	237	148	384
EL	Forthnet	Dial up	0	164	0	164	148	311
EL	Hellas Online	i-Connect	5	178	0	183	148	331
EL	OTEnet	Dial up	0	154	0	154	148	302
EL	Pgcom	6 month PPP	0	102	0	102	148	250
F	AOL	Forfait Fidelite	0	83	0	83	441	524
F	AOL	Forfait Liberte	0	144	0	144	441	585
F	AOL	Forfait Limite	0	53	903	956	441	1397
F	Club Internet	Forfait 97F - 20H	0	147	267	414	0	414
F	Club Internet	Formule Illimitee	0	117	0	117	441	557
F	Club Internet	Forfait 67F - 10H	0	102	467	569	0	569
F	Club Internet	Forfait 47F - 5H	0	71	567	639	0	639
F	Club Internet	Sans Abonnement	0	0	667	667	0	667
F	Easynet	Dial up	0	82	0	82	390	473
F	Wanadoo	Integrales 30H	0	225	91	316	0	316
F	Wanadoo	Illimite	0	114	0	114	390	504
F	Wanadoo	Integrales 15H	0	149	501	649	0	649
F	Wanadoo	Integrales 10H	0	103	637	740	0	740
F	Wanadoo	Integrales 3H	0	58	828	886	0	886
F	Wanadoo	6 heures	0	68	622	690	390	1081

F	Worldnet	Economique	0	151	0	151	390	542
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Residential, economy time usage (cont)

Country	Provider	Package	ISP charges				Including access cost	
			euro, excl. VAT				400h access	Total cost
			Connect	Annual	400 h usage	Total		
FIN	EUnet	Personal Eunet	0	246	0	246	293	539
FIN	Kolumbus	Kolumbus 1	0	81	0	81	293	374
FIN	Sonera iNet	Internet Fun	0	81	0	81	293	374
FIN	Sonera iNet	Internet Active	0	164	0	164	293	456
FIN	Surfnet	Privatperson	7	81	0	88	293	381
I	Calcol Informatica	Internet Home	0	145	0	145	224	368
I	Dadanet	Dada Family	0	124	0	124	224	348
I	Infostrada	Libero	0	0	0	0	224	224
I	Infostrada	H-Net	0	62	0	62	224	286
I	Tinet	ClubNet	0	0	0	0	224	224
I	Tiscali Free net	Singolo Utente	0	0	0	0	224	224
IRL	Cablenet	Dial up	0	126	0	126	253	379
IRL	Eircom net	Go further for free	0	0	0	0	192	192
IRL	Eircom net	Dial up	0	152	0	152	192	344
IRL	Indigo	GoFree	0	0	0	0	253	253
IRL	Ireland On-Line	No-Limits	0	252	0	252	0	252
IRL	Ireland On-Line	Free	0	0	0	0	253	253
IRL	Ireland On-Line	Gold	0	126	0	126	253	379
IRL	Ocean Free	Free	0	0	0	0	253	253
IRL	Unison	Free	0	0	0	0	253	253
L	ConneXion Interway	Access Individuals	0	123	0	123	323	447
L	Global Media Systems	Private Account	0	169	0	169	323	492
L	Luxembourg Online	Internet Gratuit	0	0	0	0	323	323
L	Luxembourg Online	Internet Professional	0	71	455	526	323	850
L	P&T Luxembourg	Identified Access	2	50	0	53	323	376
L	Telephonie	Dial up	0	213	0	213	323	537
L	Visual Online	Time based	0	0	0	0	323	323
L	Visual Online	Dial up	0	108	0	108	323	431
NL	Demon	Standard	0	116	0	116	294	410
NL	KPN Het Net	Private	0	0	0	0	294	294
NL	Planet Internet	PlusPakket	0	46	0	46	294	340

Residential, economy time usage (cont)

Country	Provider	Package	ISP charges				Including access cost	
			euro, excl. VAT				400h access	Total cost
			Connect	Annual	400 h usage	Total		
NL	Planet Internet	BasicPakket	0	23	340	363	294	657
NL	UUnet	Max	3	139	0	142	294	436
NL	UUnet	Regular	3	81	216	300	294	595
NL	UUnet	Lite	3	35	290	328	294	622
NL	World Online	Lite	0	19	0	19	294	314
NL	World Online	Jaar	0	35	0	35	294	329
NL	XS4all		4	139	0	143	294	437
P	EUnet	Personal EUNET FF	3	150	0	153	171	324
P	IP Global	Conta IP Home	0	115	0	115	171	286
P	Telepac	Net Sapo	0	0	0	0	171	171
P	Telepac	Netpac	10	0	192	202	171	372
P	Telepac	Assinatura	0	239	24	263	171	434
P	Telepac	Net Number	0	0	1376	1376	0	1376
SWE	AOL	Unlimited dial up	0	264	0	264	272	535
SWE	AOL	Standard Dial up	0	77	1177	1254	272	1526
SWE	Telenordia	Telenordia Student	0	23	0	23	272	295
SWE	Telenordia	Telenordia Internet	0	23	0	23	272	295
SWE	Telia	Telia Internet Surf	0	0	272	272	0	272
SWE	Telia	Telia Internet 020	0	27	0	27	272	298
SWE	Wineasy	Dial up	0	29	0	29	272	301
UK	AOL	Flat Rate	0	248	0	248	493	741
UK	BT Internet	SurfTime Eve&WE	0	99	0	99	0	99
UK	BT Internet	SurfTime Anytime	0	330	0	330	0	330
UK	Cable Internet	TheMail	0	0	0	0	493	493
UK	Compuserve	Flat Rate	0	124	0	124	493	617
UK	Compuserve	Standard	0	115	913	1027	493	1521
UK	Demon	Premiere Connect	0	293	0	293	0	293
UK	Demon	Premiere Connect Plus	0	524	0	524	0	524
UK	Demon	Standard Dial up	0	194	0	194	493	687
UK	FreeServe	HomeTime	0	148	0	148	0	148
UK	FreeServe	AnyTime	0	215	0	215	0	215
UK	FreeServe	No Ties	0	0	0	0	493	493
UK	Microsoft Network	Free Web	0	0	0	0	493	493

UK	Microsoft Network	Annual Pass	0	206	0	206	493	700
UK	Microsoft Network	Hourly Pass	0	82	977	1059	493	1552
UK	NTL World	Dial Up (ntl phone only)	0	0	0	0	0	0

Notes to Residential ISPs

Costs in euro, excluding VAT.

400 hours of ISP usage at off-peak hours is assumed, including any PSTN usage.

No assessment of the suitability of the packages to the “usage profile” has been done. Packages that seem awfully expensive may be more suitable for a different type of usage.

Packages in bold are examples of so-called “free” packages where the ISP will get a share of the access call charges.

Packages where both the “400h usage” and the “400h access” columns are zero are effectively flat rate packages where off-peak usage is untimed. Please see appendix A of this report for more details.

7.3. Prices for ADSL services

ADSL services are now offered in most of the EU Member States. Information from the operators is still a bit sketchy, but enough price information is emerging to put together a sensible price comparison.

In most cases the user will incur these costs:

- An existing PSTN or ISDN line must be in place, or a new one installed
- A connection charge is paid for the ADSL service. This normally also includes the cost of the ADSL modem
- A recurring rental charge (e.g. per month) for the ADSL service. This may or may not include the cost of the PSTN/ISDN line.

The ADSL service may be offered by the telecom operator owning the local access network (normally the incumbent operator). But in many countries there are a range of resellers, normally the ISPs, who also offer the ADSL service. In such cases the ADSL service may be offered as part of a package including Internet access and other services. *This study reflects prices for ADSL services as offered by the incumbent operators, without any additional services.*

The tables below show the prices for connection and monthly rental of ADSL services at different bitrates. They also indicate which bitrates are offered in the different countries.

Table 7.4 Connection charges for ADSL

	Bitrate	64/256	64/512	128/256	128/512	128/1024	256/512	256/1024	512/2048
B	Belgacom	92.22	-	-	-	92.22	-	-	-
DK	Tele Danmark	-	-	46.78	60.19	-	-	73.59	113.81
D	Deutsche Telekom	-	-	-	51.57	-	-	-	-
EL	-	-	-	-	-	-	-	-	-
E	Terra	-	-	114.61	177.72	-	-	-	330.98
F	France Telecom	-	-	-	97.97	-	-	150.92	-
IRL	Eircom	-	-	-	-	-	-	-	-
I	Telecom Italia	-	-	-	129.11	-	-	-	-
L	P&T	162.00	162.00	-	-	162.00	-	-	-
NL	KPN	-	209.73	-	-	-	-	247.86	-
AUT	Telekom	-	109.01	-	-	-	-	-	-
P	-	-	-	-	-	-	-	-	-
FIN	Sonera	-	-	-	-	-	137.86	137.86	137.86
SWE	Telia	-	-	-	136.26	-	-	-	-
UK	BT	-	-	-	-	-	208.25	-	-

Note: All prices are in euro, excluding VAT

Table 7.5 Monthly rental charges for ADSL

	Bitrate	64/256	64/512	128/256	128/512	128/1024	256/512	256/1024	512/2048
B	Belgacom	26.63	-	-	-	32.78	-	-	-
DK	Tele Danmark	-	-	46.78	60.19	-	-	73.59	113.81
D	Deutsche Telekom	-	-	-	20.40	-	-	-	-
EL	-	-	-	-	-	-	-	-	-
E	Terra	-	-	39.07	84.12	-	-	-	164.24
F	France Telecom	-	-	-	33.50	-	-	106.71	-
IRL	Eircom	-	-	-	-	-	-	-	-
I	Telecom Italia	-	-	-	77.47	-	-	-	-
L	P&T	31.21	47.37	-	-	84.04	-	-	-
NL	KPN	-	19.07	-	-	-	-	24.79	-
AUT	Telekom	-	48.39	-	-	-	-	-	-
P	-	-	-	-	-	-	-	-	-
FIN	Sonera	-	-	-	-	-	48.25	61.35	75.13
SWE	Telia	-	-	-	23.09	-	-	-	-
UK	BT	-	-	-	-	-	55.52	-	-

Note: All prices are in euro, excluding VAT

Notes about ADSL coverage:

B	No info on coverage
DK	No info on coverage
D	No info on coverage
EL	No info on ADSL service
E	No info on coverage
F	No info on coverage
IRL	Expected launch in the autumn of 2001
I	No info on coverage
L	No info on ADSL service
NL	No info on coverage
AUT	Expected to cover entire Austria by end of 2001
P	No info on ADSL service
FIN	No info on coverage
SWE	Full country coverage of broadband, including ADSL
UK	50% of UK households had access to ADSL by March 2001

In order to assess the price levels across the 15 countries the monthly rental has been normalised to price per Mbit/s, using the lowest price available. This will normally mean the price for the highest bitrate offered.

Table 7.6 Best of the normalised prices, price per Mb/s

B	29.14
DK	45.52
D	32.63
EL	-
E	65.70
F	53.60
IRL	-
I	123.95
L	74.70
NL	19.83
AUT	86.02
P	-
FIN	30.05
SWE	36.95
UK	74.03

Note: All prices are in euro, excluding VAT

7.4. Special prices or arrangements for Schools and Libraries

7.4.1. Belgium

Skynet Discount for Schools

Skynet offers annual subscription to Net Addict and Net Customer packages at a discounted rate to schools. Schools pay the full amount for 12 months, and receive 15 months of service. Net Addict costs BEF 4,990.00 annually while Net Comfort costs BEF2,990.00 annually. For details of services and price comparison, please see section A.2.1.1.

7.4.2. Denmark

Tele Danmark Internet does not provide any special Internet packages for schools, colleges or libraries.

7.4.3. Germany

Schulen ans Netz (Deutsche Telekom & BMbF)

On 18th April 1996 a joint initiative of the Federal Ministry of Education, Science, Research and Technology (BMbF) and Deutsche Telekom was launched which set itself the initial aim of connecting 10,000 schools to the Network of networks within three years, i.e. by mid-1999. Deutsche Telekom provided a total of DM 36 million for the project; the Federal Ministry of Education, Science, Research and Technology (BMbF) contributed DM 23 million.

“Schools OnLine” quickly became a success, and the two sponsors increased its funding with an additional DM 100 million: Deutsche Telekom contributed an extra DM 60 million, and the BMbF provided an additional DM 40 million. This funding was used during 1999 to connect all schools in Germany to the Net in the following years. The organisers plan to gain additional sponsors to support the project.

Thanks to support from numerous sponsors, the first year of the project (1996/97) showed “Schools Online” to be a clear success. Initially, around 3,500 schools were supported in the project’s start-up and model areas for one year. In the second year (1997/98) 2,700 projects were added. Between 1998/99, 2000 more schools came aboard, bringing the total (at August 1998) to about 8,500 schools. By the end of 1999, 14,500 schools were connected to the Internet.

The support provides different types of technical equipment for schools: Primary schools receive an Internet access, a fully equipped multimedia computer and prepaid online time. In secondary schools, existing LAN environments are connected to the Net via servers and routers and upgraded with multimedia workstations. InfoSCHUL projects (usage of electronic & multimedia information sources in schools) -supported by the BMbF receive funding of DM 20,000 each.

T-Online

In the context of the “Schulen ans Netz” scheme, Deutsche Telekom provides free Internet access to schools, via T-Online. Details of each offer are dependent on the requirements of each school.

AOL & Bertlesmann

AOL also supports the “Schulen ans Netz” scheme and offers a free account with unlimited Internet access to selected schools. With access via AOL, schools are charged at 3.9 Pfenning per minute (which includes the telephone dial-up charge). There are no monthly fees and no connection charges.

Compuserve

For the “Schulen ans Netz” scheme, Compuserve offers 10,000 free Internet accesses.

7.4.4. Greece

OTEnet

Schools

There is no subscription package specifically aimed at schools, but all OTEnet single user dial-up subscriptions held by schools, up to a maximum of ten, are eligible for a 10% discount on subscription charges. If a school orders eleven or more access packages at once, the subscription charges on each account are reduced by 20%.

Libraries

There is no OTEnet discount for Internet access in libraries.

7.4.5. Spain

Telefonica

In July 1998, Telefonica signed an agreement with the Spanish Ministry of Education to give free Internet access to some 6 million pupils in 20,000 state-run and private schools across Spain. This was followed in September 1998 by a three year agreement between Telefonica and Madrid’s local government to provide free access and reduced usage tariffs to schools in the region. This amounts to a flat monthly tariff, including unlimited access and usage, of Pts 10,000 for modem access, and Pts 17,000 for basic ISDN access.

7.4.6. France

Wanadoo

Offre pour les écoles, collèges et lycées

France Telecom offers Internet access at a reduced rate to schools, libraries and local authorities through its service provider, Wanadoo. For a flat annual charge of FFR 495 per single connection (including VAT), these institutions receive unlimited Internet access. Telephone usage charges are billed separately. This scheme was launched in June 1998.

Offre pour les enseignants et documentalistes

Teachers and librarians also qualify for reduced Internet access rates at home, subject to proof of profession. This consists of 2 month's free access, and two basic (Illimitée) subscriptions for the price of one.

7.4.7. Ireland

Eircom

During 1998, Eircom launched its "Information Age" initiative, which aimed to have at least one multi-media PC connected to the Internet in every state supported primary and secondary school in Ireland. This goal was achieved by March 1999, with each of the 4,100 schools equipped by Telecom Eireann as follows:

- a free multi-media PC
- a telephone or data line free of rental charges for two years
- free Internet access for two years
- a usage (local calls) credit of one hour of every school day for two years, up to a maximum of 183 days per year

Phase 2 of the Information Age project began in mid 1999, with the focus on technology applications, ensuring that all schools benefit from the implementation of basic IT equipment. This involves identifying 'best practice' and developing applications with schools and the community.

In November 1999, the Department of Education & Science launched the "Schools Integration Project" (SIP), titled 'Learning Together - Startech' in Baltimore, West Cork. SIP, which is partly sponsored by Eircom, is one of the major initiatives of the Department of Education & Science's "IT2000" Program. The aim of this program is to develop the whole area of Information and Communication Technology (ICT) in schools.

'Learning Together - Startech' initially consisted of a network of 17 rural schools spread throughout remote areas of West Cork, and is developing links between schools with a view to using video conferencing in the primary school curriculum. Provisions are still in progress for supporting this service on a national-scale network.

Ireland On-Line

Ireland On-Line offers one free dial up account to schools and also provides a standard account to libraries which amounts to the value of IRP 125.00 plus VAT per year. Each library which participates in the IOL-Connect Scheme receives three free months of Internet access, courtesy of Ireland On-Line. Each library receives an additional free month for every account generated from the library. In return, the library must have Ireland On-Line application forms available to the public. If a member of the public subscribes to Ireland On-Line with this application form, the library receives a free month in addition to the initial three free months.

7.4.8. Italy

TIN

TIN offers its Sempre, Affari and Ricaricabile packages at a 10% discount to school teachers at their home address.

Formula Urbana and Formula Internet tariffs are no longer available to new subscribers as of August 2000. Tariffs for new services offered to schools are currently unavailable due to revising.

Libraries

TIN does not offer any discounts for Internet access in libraries.

7.4.9. Luxembourg

Restena

In 1988, The Luxembourg government constructed a network specifically for schools, other educational/research institutions and government offices. Named Restena, this network gives free Internet access to all Luxembourg schools, universities and libraries. Teachers and students are also eligible for free connection and access to Restena at their home addresses. However, all users are still liable for usage charges via P&T Luxembourg.

7.4.10. Netherlands

Kennisnet is implemented by The Dutch Ministry of Education, Culture and Science in all schools (primary, secondary, adult and vocational education). The project consists of a large intranet for students and teachers, protected by a firewall, which gives access to the Internet and all other schools connected to the network.

The pilot scheme for Kennisnet began in November 1998 with 450 schools, and as of January 2000, the network is available to all primary, secondary and adult education schools in the Netherlands (about 12,000 in total). The Ministry of Education, Culture and Science pays the cost of developing, maintaining and connecting the schools to the network. Schools are not obliged to use the network, and are free to choose any other provider.

7.4.11. Austria

Netway

On 10 March 1997, an agreement was signed by the Internet service provider Netway to provide free Internet access for 20 school hours per week to all Austrian schools. Schools must supply their own PC, modem and telephone connection, and are liable for all usage charges (local rate calls to Netway server number). Netway also provides three free e-mail addresses per school, and free installation software.

7.4.12. Portugal

Telepac

Since 1997, Telepac has offered a special package for Internet access to schools in Portugal. For an allowance of 200 hours of Internet access per month, a flat annual fee of Esc 12,000 is charged (excluding VAT). If the limit of 200 hours is exceeded during any month, access is suspended from the remainder of the month.

7.4.13. Finland

Sonera iNet does not offer any special package or discount for Internet access in schools and libraries. However, in co-operation with the Finnish government and local municipalities, Sonera participates in a number of regional "Information Highway" projects. The most recent of these was initiated in the South Karelia region during January 1999. With funding split between local municipalities, the Finnish government and the European Union, Sonera is building an IP network covering the whole region, which provides schools, libraries and universities in the area with access to the Internet.

7.4.14. Sweden

Telia - Pro-Lane

Telia offers 10% discount on monthly charges to schools which are connected to the ITiS project, with no additional connection charge. The offer is marketed under the name Pro-Lane. Telia also offers special rates to any library which is connected to the ITiS Project. Where schools and libraries are not connected to the ITiS Project, then evaluation is on an individual basis.

The ITiS Project (Information Technology in Schools) was launched in 1999, and offers state grants to improve Internet access in all schools. This includes the provision of multimedia computers to all schools, an e-mail address for every pupil and teacher and IT training for 60,000 teachers. By December 1999, initial investment in ITiS had reached SEK 1.5 billion.

7.4.15. United Kingdom

British Telecom

Schools Internet Caller

Under this scheme, British Telecom offers Internet access and usage between 0800 and 1800, Monday to Friday at a flat annual rate to all schools. To qualify for the scheme, schools must use the server number of one of 21 participating Internet service providers which have agreed to participate in this scheme. PSTN connections via a modem are charged at an annual fee of £445 (excluding VAT), while schools with ISDN access are charged at flat rate of £790 per year (excluding VAT). Calls made to other server numbers or outside the timebands shown above are charged at normal rates.

Schools Internet Caller (Primary)

During 1999, British Telecom launched a new version of the Schools Internet Caller service targeted specifically at primary and middle schools. The lower priced service, called Schools Internet Caller Primary, gives eligible schools access to online services, such as the Internet, for up to 15 hours per week during term time, for £290 a year (standard telephone line), or £450 per year (ISDN2e line). All prices exclude VAT.

By the end of 1999, more than 13,500 schools had signed up to the original Schools Internet Caller service. The new Schools Internet Caller (Primary) service was created specifically to meet the needs of primary and middle schools, which often have fewer pupils than secondary schools, and therefore make more occasional use of online services.

Schools Internet Caller is available to all schools in the UK, with Schools Internet Caller (Primary) only being available to primary and middle schools. Both services allow schools to choose any participating online or Internet Service Provider, and the price for the ISDN2e service includes connection.

Talk21e

Talk21e is a free web-based email service, tailored specifically to meet the needs of school children and teachers. There are a series of security levels available, controlled by individual schools, which ensure that children are protected from receiving unsuitable information.

As talk21e is web-based, children and teachers can use their email at school, at home or anywhere they have Internet access. The service includes:

- a range of e-mail services, enabling users to incorporate attachments such as drawings, photographs, video clips and sound files

-
- a personal e-mail address
 - a mailbox size of 10Mb for teachers and 5Mb for children
 - a private electronic address book
 - a group mailing facility allowing teachers to send messages to 50 addresses simultaneously and children to 20 addresses

AOL

AOL UK Schools Programme

Under this scheme, primary schools are offered one single user account free of charge, while secondary schools are offered two. Requests for an additional account are considered for special projects. Each account consists of five screen names/ email addresses, 10MB of web space and comprehensive technical support (freephone helpdesk). Also included is a guide to creating and publishing web pages, interactive revision guides and a homework area.

Terms and conditions are as follows:

- The account belongs to the whole school and is used as a resource for the whole school. This also means that the Master Email address must have part of the school's name in it, (or relate to the school name) and not the name of an individual.
- Students must have access to the account. At least one of the subsidiary account names must be allocated for that purpose.
- The school takes full responsibility for the security of the account and ensures that it is only accessed from the UK.

Online access is via an 0845 number which is charged at local call rates. Schools will be charged for this by the telephone supplier, and not by AOL UK.

People's Network

During 1999, the UK government announced that GBP 270 million of money generated by the National Lottery would be invested in a 'People's Network' during 2000. This scheme aimed to ensure that every one of Britain's 4,160 public libraries is connected to each other and to the Internet. It is anticipated that the smallest libraries will have 3 or 4 public computer terminals, while larger libraries could have at least 40. The government expects the scheme to cost £730 million over 6 years and the project is on-going.