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from : Mr Bernhard ZEPTER, Deputy Secretary-General of the European  
Commission  
date of receipt : 11 January 2002  
to : Mr Javier SOLANA, Secretary-General/High Representative

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Subject : Commission Staff Working Paper : "Seventh Report on the Implementation of  
the Telecommunications Regulatory Package" (Annexes to COM(2001) 706  
final)

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Delegations will find attached Commission document SEC(2001) 1922.<sup>1</sup>

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Encl.: SEC(2001) 1922

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<sup>1</sup> This document was sent to the General Secretariat of the Council in English only.



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 26.11.2001  
SEC(2001) 1922

**COMMISSION STAFF WORKING PAPER**

**ANNEXES TO THE**

**Seventh report on the implementation of the telecommunications regulatory package**

{COM(2001)706 final}

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## Annex 1

### Telecommunications market data

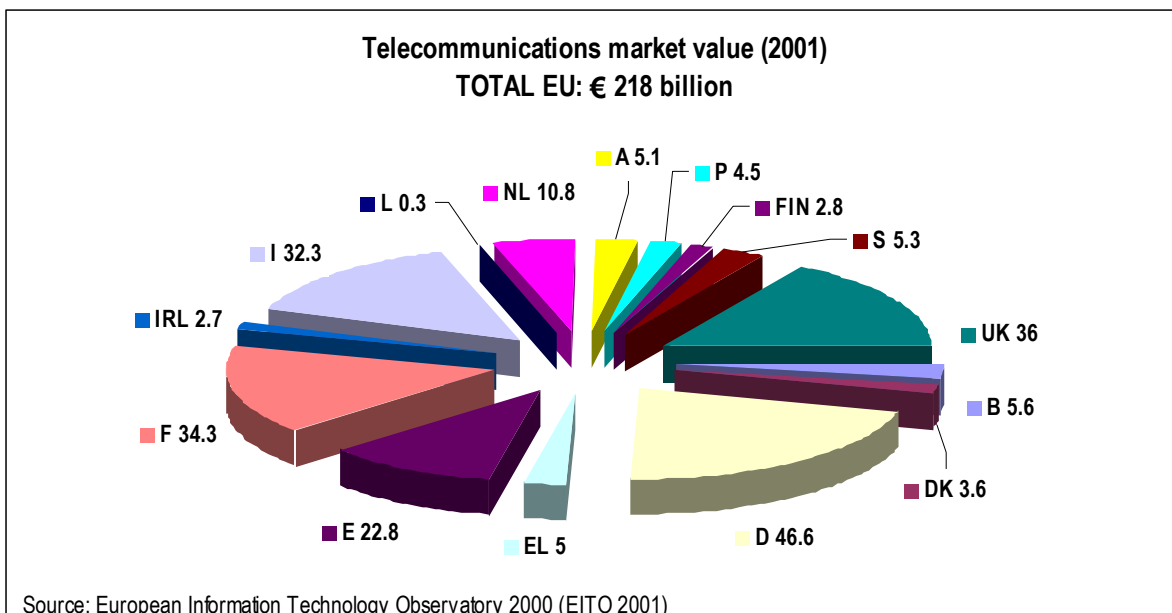
## 1.1 SIZE AND GROWTH OF EU TELECOMMUNICATIONS MARKET

This section provides estimates of the value of the EU telecommunications market and its breakdown into main segments (voice telephony, mobile services, switched data and leased line services).

Figures referring to 2001 are generally forecasts. Actual values calculated *ex post* might differ from those provided here.

Estimates of growth and penetration rates of mobile services and internet are provided in the sections on “Mobile services” and “Internet” respectively.

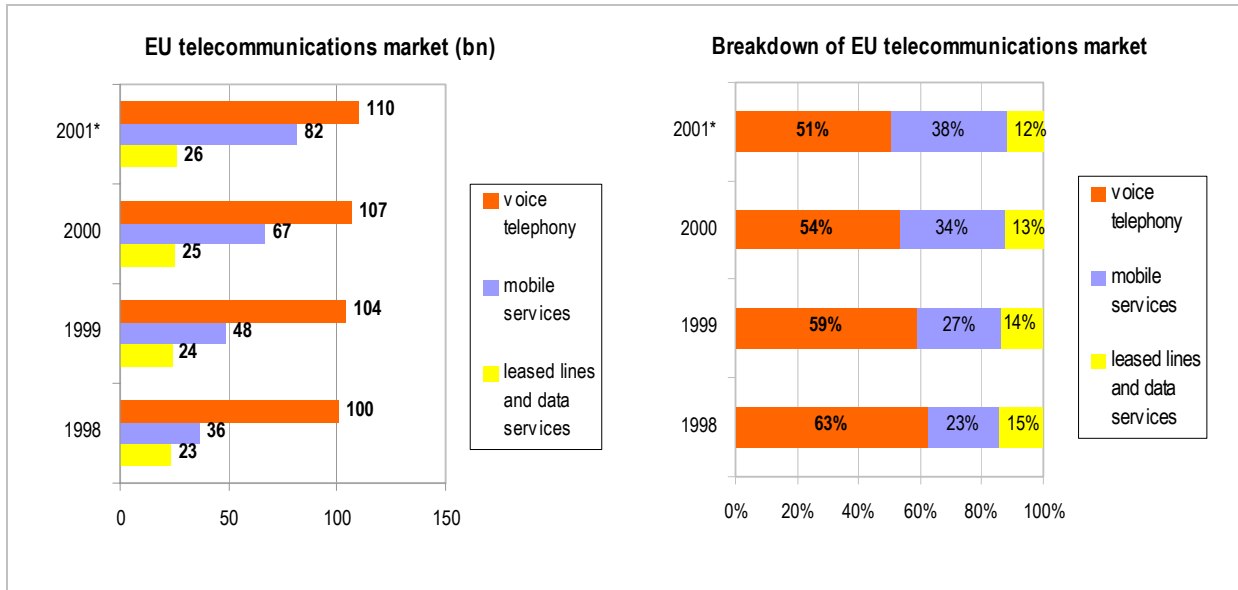
**Chart 1**



Estimates of 2001 revenues for public voice telephony (including home and business internet dial-up access), network (switched data and leased lines) and mobile telephone services.

EITO provides a combined estimate for Belgium and Luxembourg. The figures given in this and the following charts are estimates based on the relative numbers of fixed lines and mobile subscribers in each of the two countries.

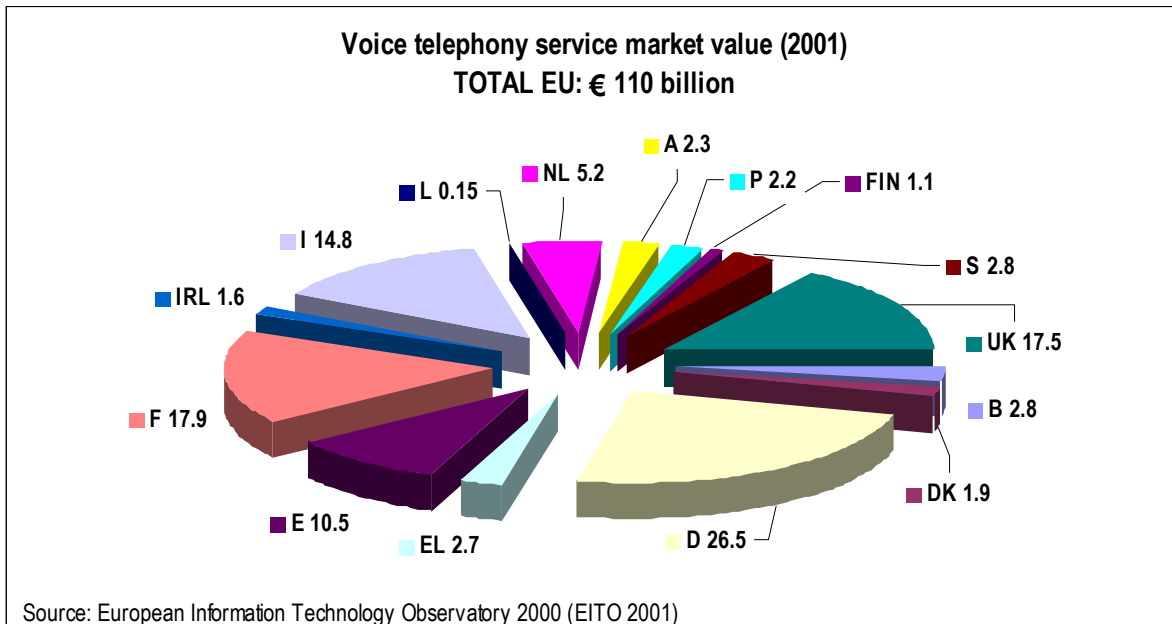
**Chart 2**



\* Estimates

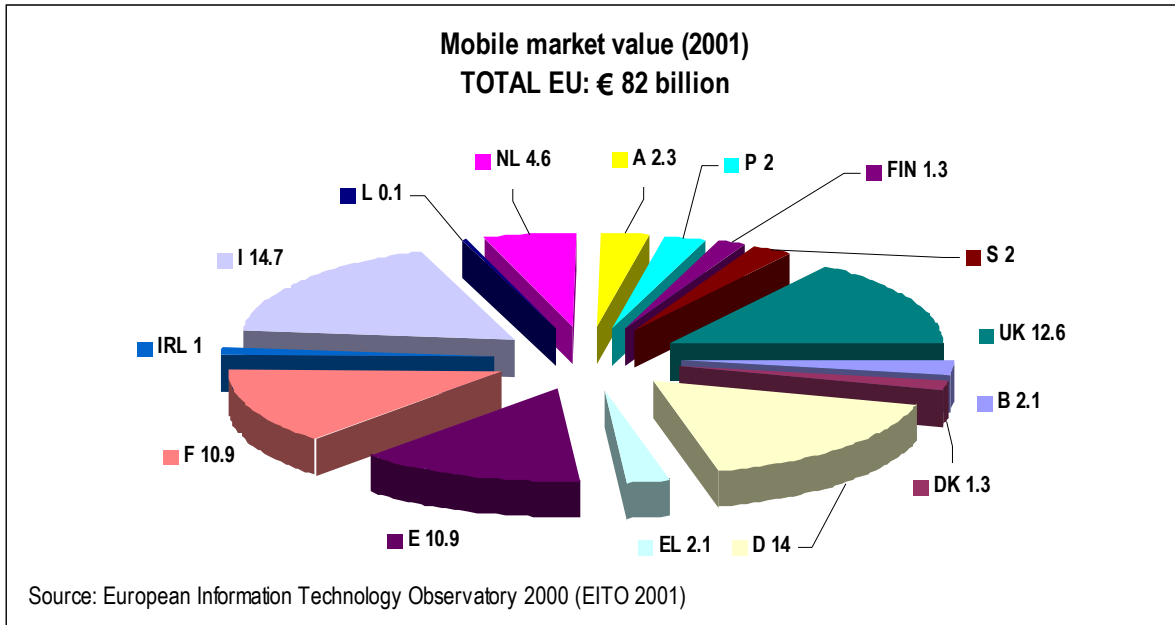
Evolution of EU telecommunications market and breakdown of estimated 2001 revenues for telecommunications services into main market segments.

**Chart 4**



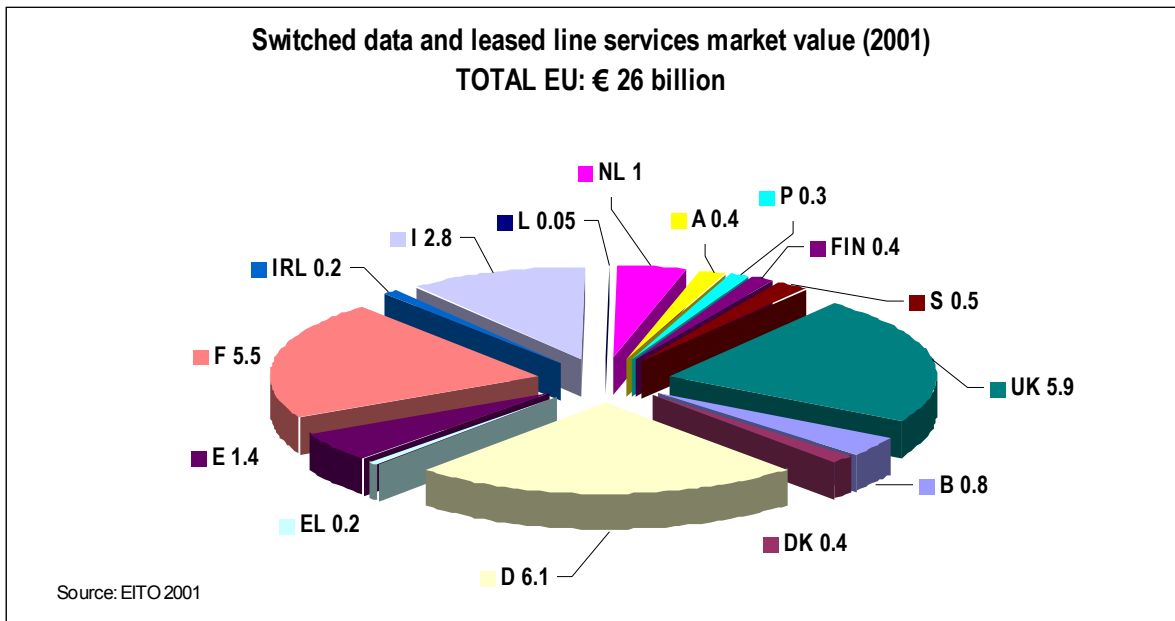
Estimates of 2001 revenues for public voice telephony.

**Chart 5**



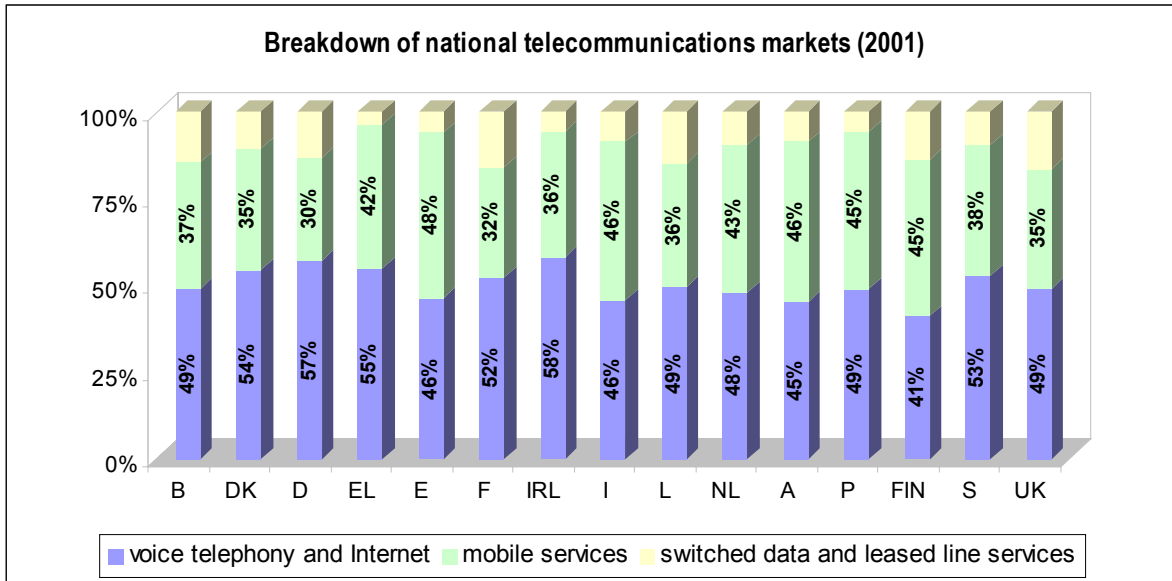
Estimates of 2001 revenues for mobile services.

**Chart 6**



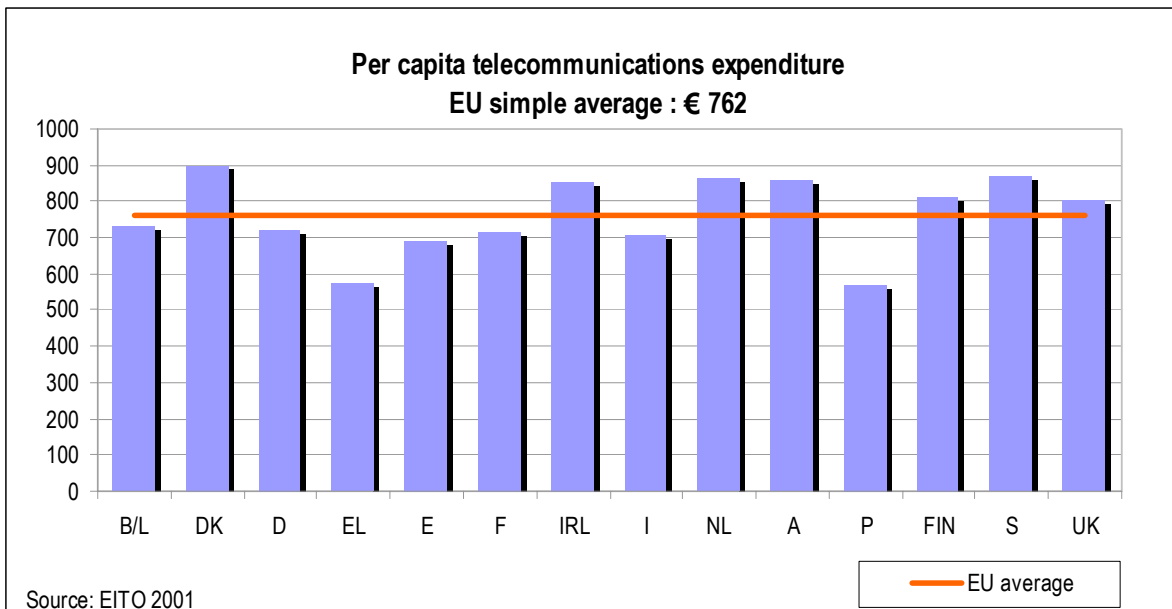
Estimates of 2001 revenues for switched data and leased line services.

**Chart 7**



Breakdown of estimated 2001 revenues for telecommunications services into main market segments for each Member State.

**Chart 8**

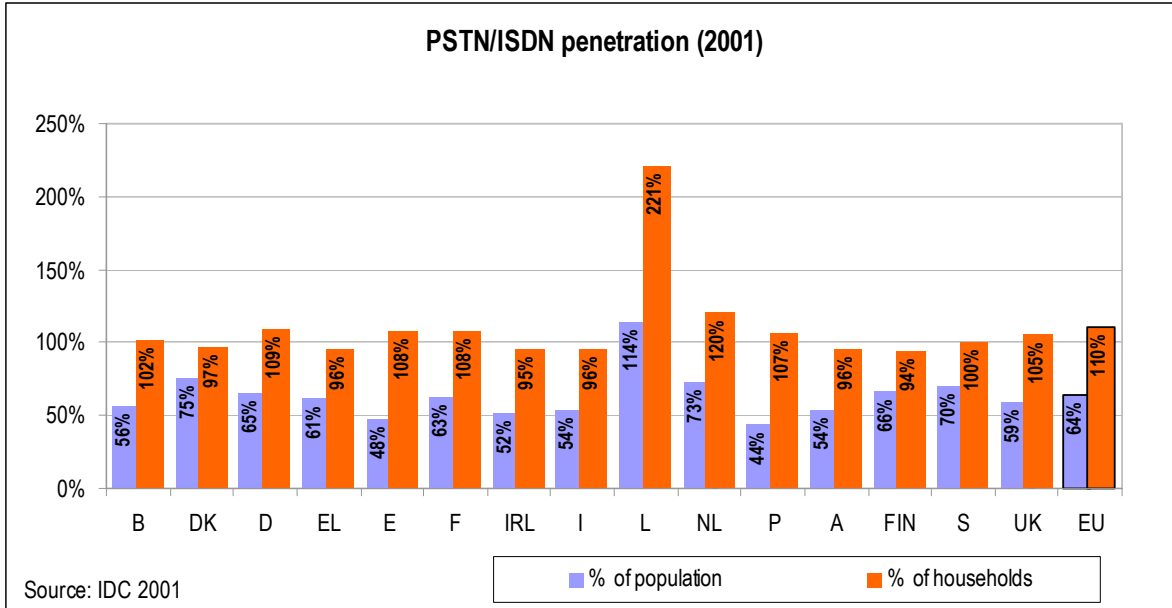


Per capita telecommunications expenditure in the EU in 2000.

The figures refer to expenditure on telecommunications network equipment, telecommunications terminals and telecommunications services (voice, mobile, data, leased lines and cable TV), according to definitions provided by EITO 2001.

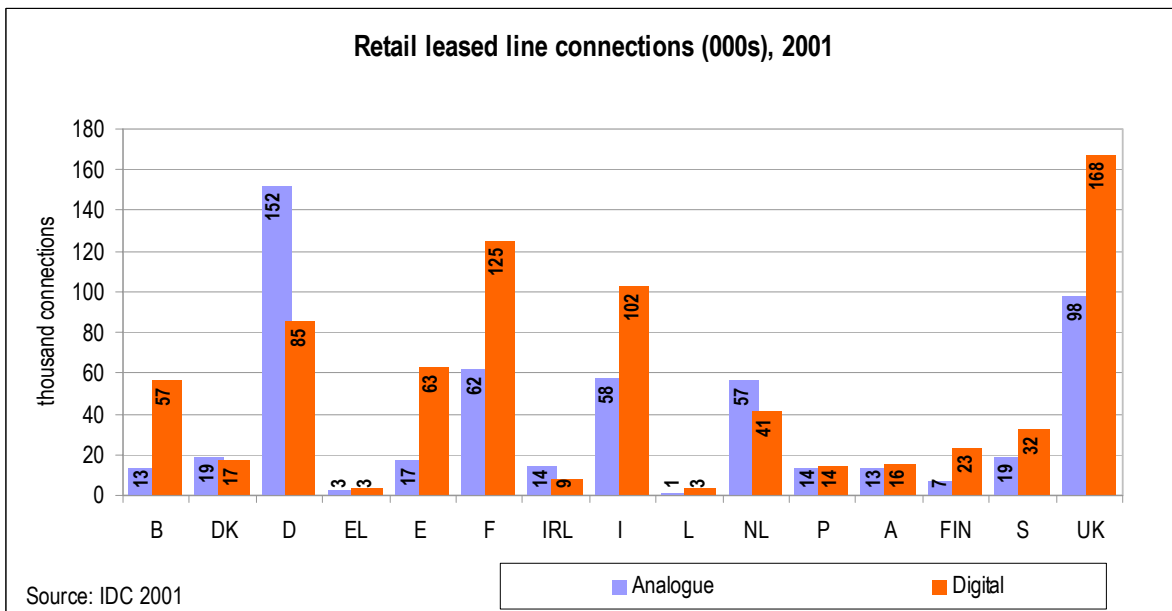


**Chart 9**



PSTN/ISDN population and household penetration in Member States. It is important to note that a significant proportion of Member State fixed penetration rates are due to ISDN channels. The household penetration rates exceed 100% for countries with high ISDN usage as well as use of more than one line per household.

**Chart 10**



Retail leased line connections by analogue and digital type. These are leased lines used by businesses either to carry voice or data traffic. Total leased lines are hitting a plateau or declining in more advanced countries, as analogue leased lines are decommissioned and users move to higher-bandwidth digital leased lines.

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## 1.2 VOICE TELEPHONY SERVICES

### 1. PUBLIC FIXED VOICE TELEPHONY

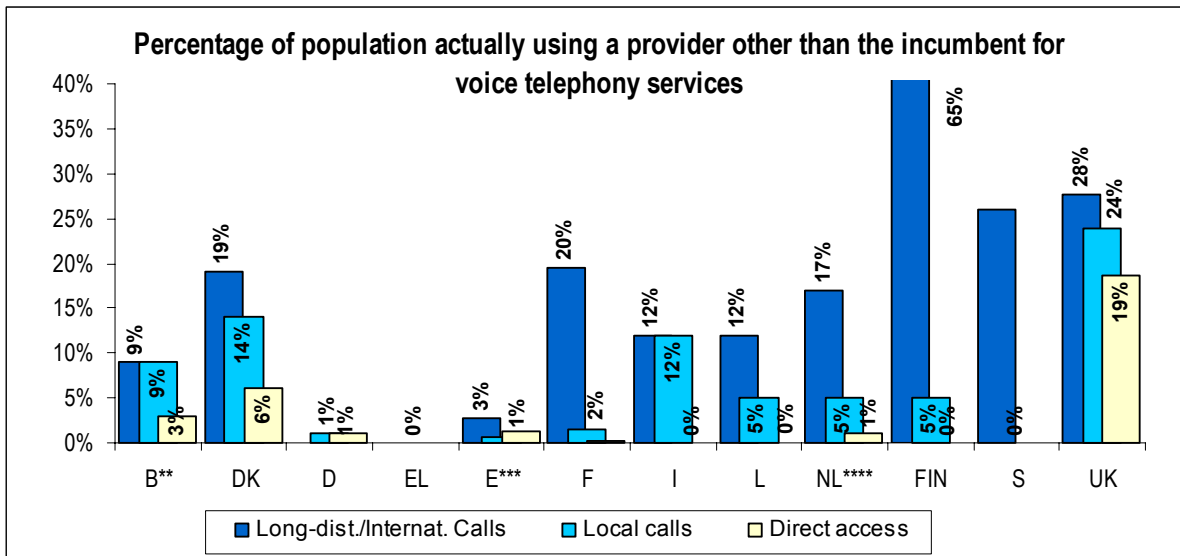
This section analyses the fixed voice telephony market, in terms of the percentage of the population with a choice of operators, the incumbent's market share, and the facilities used by the operators to provide public voice telephony services.

The data presented below has been provided by the national regulatory authorities and, unless otherwise indicated, reports the position in July 2001.

The following Chart provides NRAs' estimates of the percentage of population actually using a provider other than the incumbent for voice telephony services. Austria reports that call services are provided by alternative operators for 30% of total lines. Furthermore, in Austria 8% of the households in Vienna are directly connected by a provider other than the incumbent operator. Italy indicates that call services are provided by alternative operators for 21.5% of total lines.

No information is available for Ireland. No data is available for Germany, on long-distance and international calls, for Finland on direct access and for Portugal on local, long-distance and international calls. For the latter, the percentage of population actually using an alternative provider for direct access is zero.

**Chart 1**



\* Not to scale.

\*\* Percentage of residential customers.

\*\*\* Based on subscribers at the end of 2000.

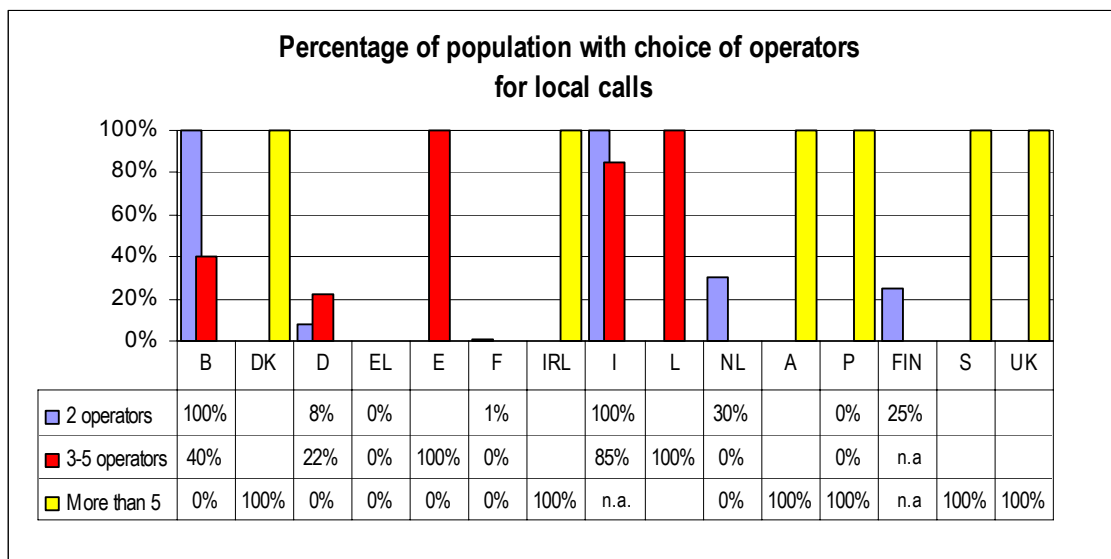
\*\*\*\* Figure for local calls and direct access should be regarded as maximum values.

It should be noted that in the case of Finland, the reference is to the percentage of population using providers other than Sonera for long-distance and international calls. However, other operators (notably Kaukoverkko Ysi Oy for long-distance calls and Oy Finnet International Ab for international calls) have been notified as operators with significant market power.

## 1.1. LOCAL CALL MARKETS

Chart 2 shows the estimated percentage of the population with a choice between 2 operators, 3 to 5 operators and more than 5 operators for local calls.

**Chart 2**



\* The figure for the United Kingdom refers to the overall call market (local, long-distance and international).

The following charts show the incumbent operators' share of the local call market estimated respectively on the basis of retail revenues and outgoing minutes of communications at the end of year 2000. For the Netherlands, the figures are those of the SMP investigation carried out in September 2000.

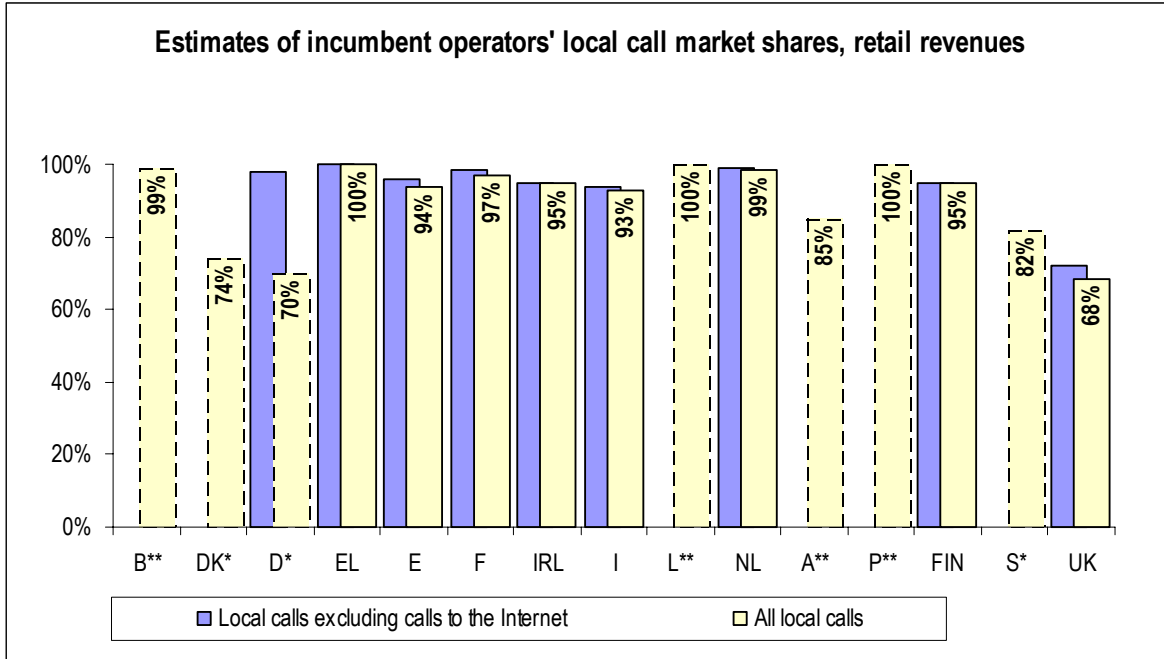
For Finland, the figures refer to the combined market share of the incumbents (Sonera, Elisa and Finnet group).

These figures are estimates provided by the NRAs, except for Belgium and Austria (in the case of market shares based on retail revenues only), that considers this information as confidential. The information on market shares on revenues is not available for Luxembourg and Portugal. In all these cases, estimates as of 1999 are indicated. These estimates are therefore expected to overestimate actual market shares of incumbent operators at the end of 2000. In addition, the Austrian figure for 1999 does not distinguish between local, long-distance and international calls.

The figures provided for Denmark, Germany and Sweden in Chart and Chart refer to both local and long-distance calls. Because of its small size, no distinction is made in Luxembourg between the local and long-distance call markets.

Estimates on the basis of outgoing minutes of communications of the incumbent operators share of local calls are not available for Belgium, Italy, Portugal and Sweden.

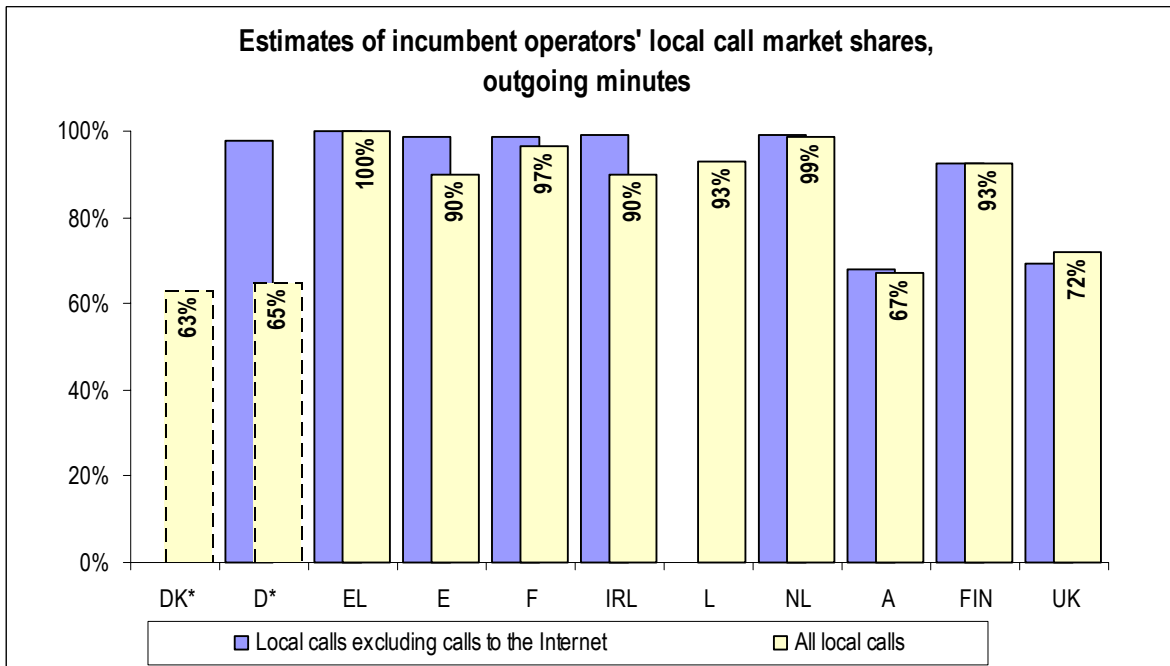
**Chart 3**



\* Figures refer to local and long-distance calls.

\*\* Estimates at the end of year 1999. In the case of Austria, the figure does not distinguish between local, long-distance and international calls.

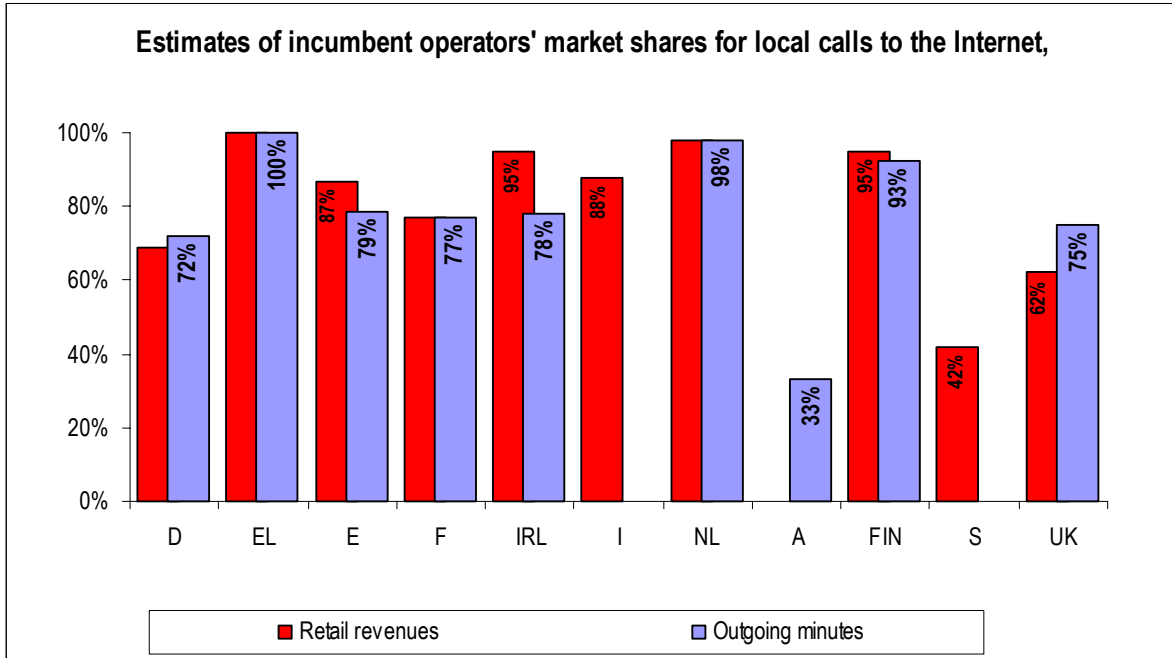
**Chart 4**



\* Figures refer to local and long-distance calls.

No estimate of the incumbent operator's share of calls to the internet is available for Denmark, Luxembourg and Portugal. In the case of Belgium, the figure is regarded as confidential.

**Chart 5**



## 1.2. LONG-DISTANCE AND INTERNATIONAL CALLS MARKETS

Chart indicates the estimated percentage of the population with a choice between 2 operators, 3 to 5 operators and more than 5 operators for long-distance and international calls.

**Chart 6**

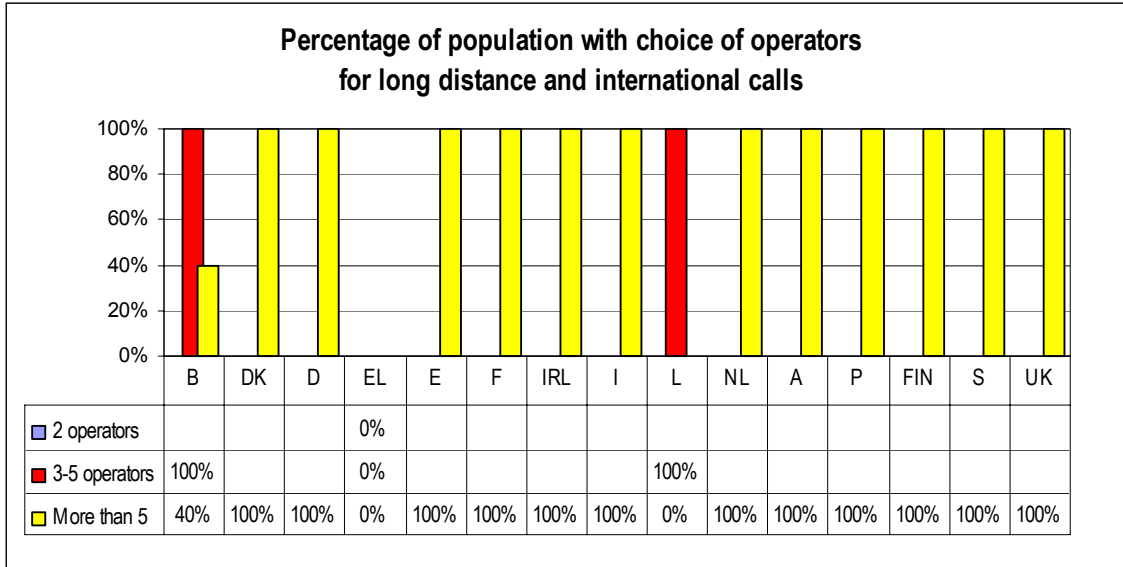
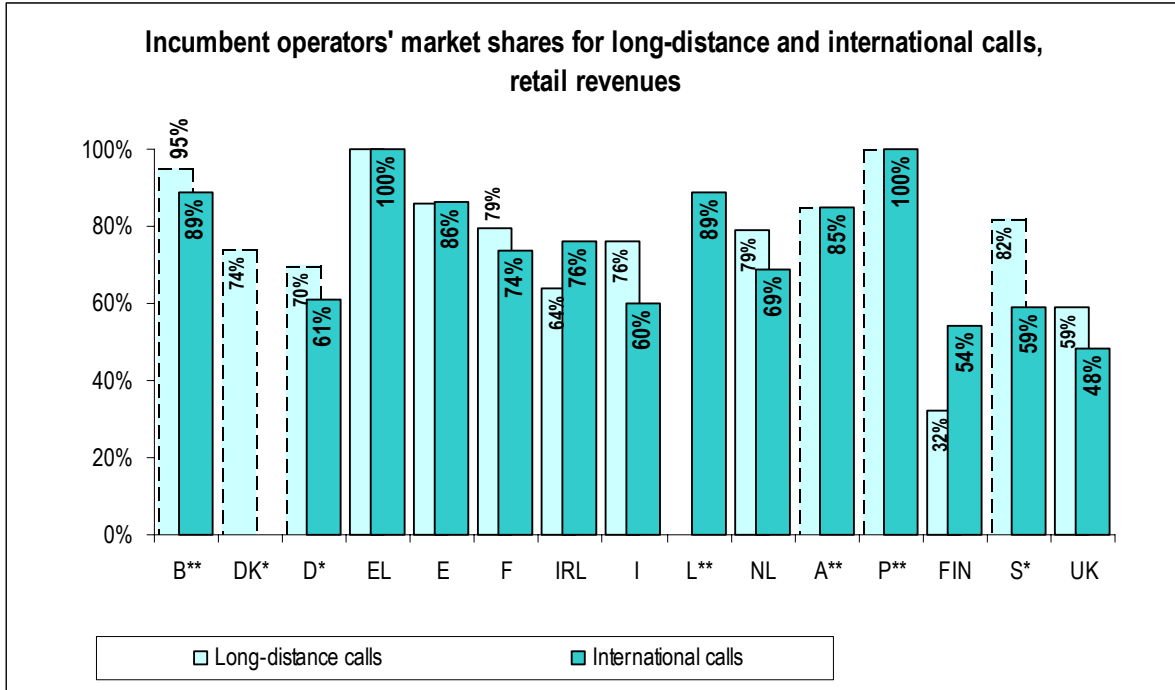


Chart 7, Chart 8 and Chart 9 show the incumbent operators' shares of the market for long-distance calls, international calls and calls to mobile networks estimated respectively on the basis of retail revenues and outgoing minutes of communications at the end of year 2000.

Belgium regards market share figures as confidential. The figures provided for Denmark and Germany in Chart 7 and Chart 8 refer to both local and long-distance calls.

For Finland, the figures on market shares for long-distance and international calls refer to the market share of Sonera only.

**Chart 7**

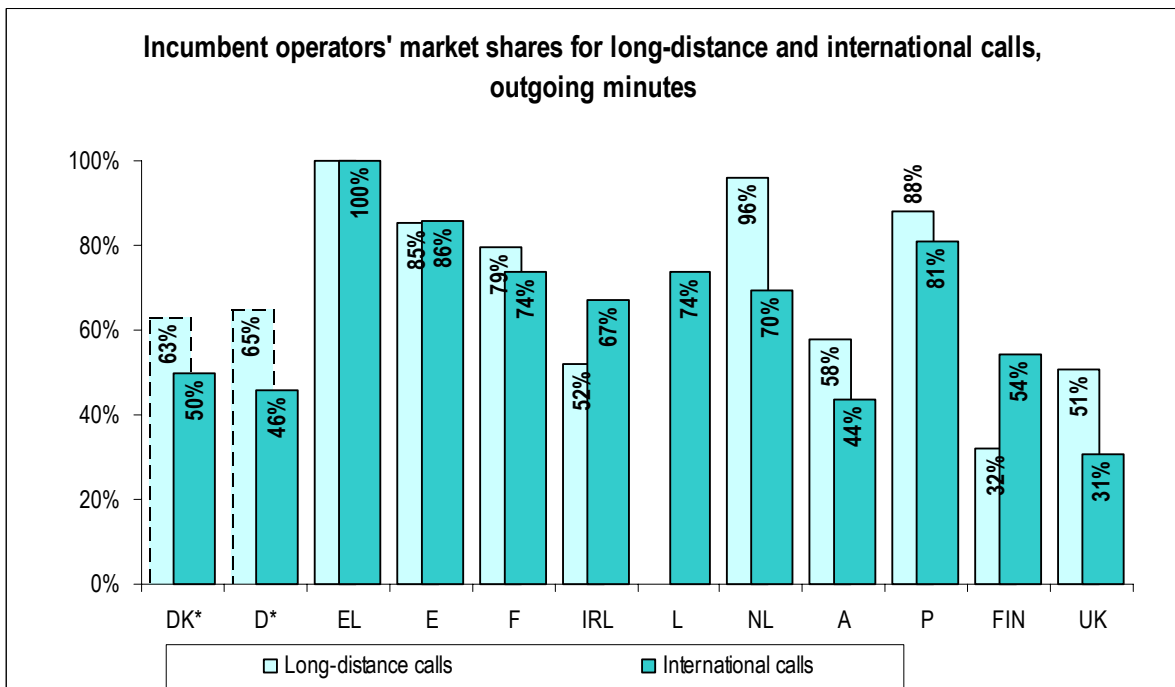


\* Figures refer to local and long-distance calls.

\*\* Estimates at the end of year 1999. In addition, in the case of Austria, the figure does not distinguish between local, long-distance and international.

The figure for Finland in Chart 7 and Chart 8 refer to Sonera only and do not include the market shares of Kaukoverkko Ysi Oy and Oy Finnet International Ab, that have recently been notified as operators with significant market power respectively for long-distance and international calls.

**Chart 8**

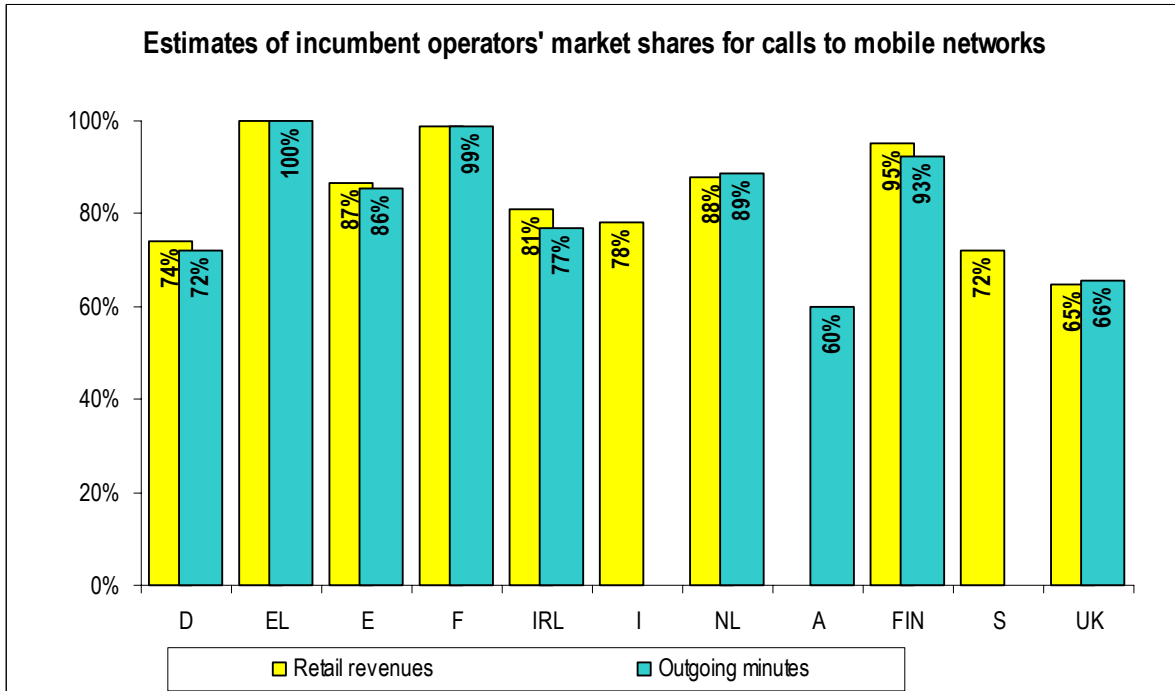


\* Estimates refer to local and long-distance calls.



No estimate of the incumbent operator's share of calls to a mobile network is available for Denmark and Portugal. In the case of Luxembourg, the minutes of calls to mobile networks are included in the minutes for local calls (see previous Chart 4). In Belgium, the figures are regarded as confidential.

**Chart 9**



### 1.3. FACILITIES USED BY NEW OPERATORS TO PROVIDE VOICE TELEPHONY TO RESIDENTIAL USERS

This section provides information on the facilities used by new operators to offer voice telephony, particularly to residential users.

Chart 10 show the number of new entrants that have been allocated an access code at 1 August 2001. The figure for Luxembourg also covers reserved codes.

Chart 11, Chart 12 and Chart 13 show the estimated number of alternative operators using carrier selection, carrier pre-selection or direct access to provide voice telephony services to residential users. These figures are estimates provided by the national regulatory authorities and refer to July 2001. The latter three charts should be read separately and not summed up as country totals, since most operators use more than one means of providing call services.

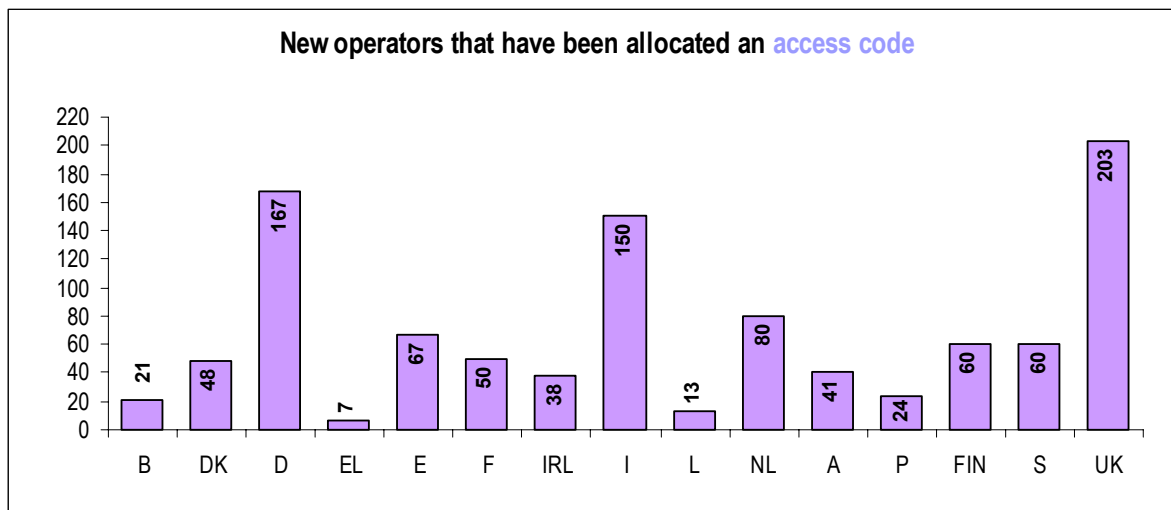
As indicated in the section on numbering, at the reference date used for these charts, carrier selection and pre-selection was not yet available for local calls in Germany, France and Finland. Furthermore, carrier pre-selection was not yet available in Greece. In the United Kingdom, carrier pre-selection for local calls is only available via “autodiallers”.

Because of its small size, no distinction is made in Luxembourg between local and long-distance calls.

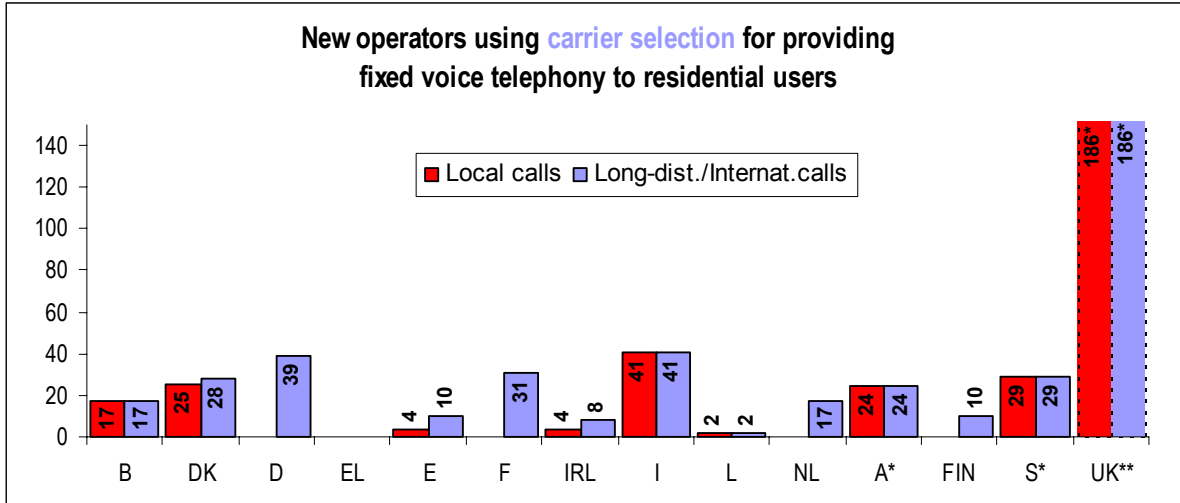
In the following charts, the figures for Austria should be regarded as minimum values.

The information is not available for Portugal.

**Chart 10**



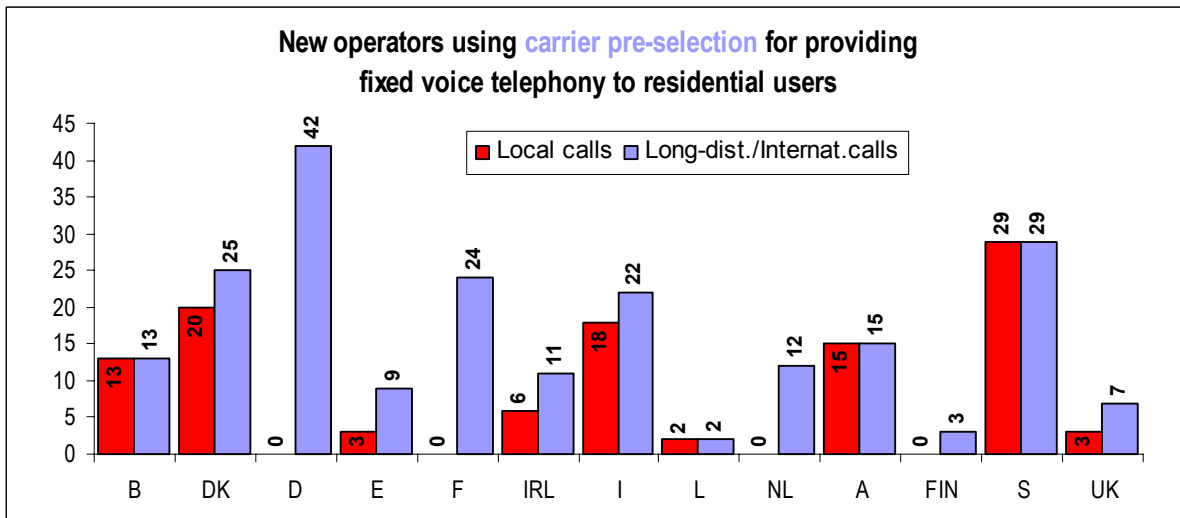
**Chart 11**



\* The figures for Austria and Sweden do not distinguish between the type of call.

\*\* The figures for the United Kingdom refer to the total number of PTOs providing services to both residential and business users and are not comparable to the figures in the Sixth Report. In addition, no distinction is made between actual provision of local and long-distance calls. The actual number of operators using carrier selection for providing services to residential users is likely to be lower.

**Chart 12**



\* The figures for Austria and Sweden do not distinguish between the type of call.

**Chart 13**

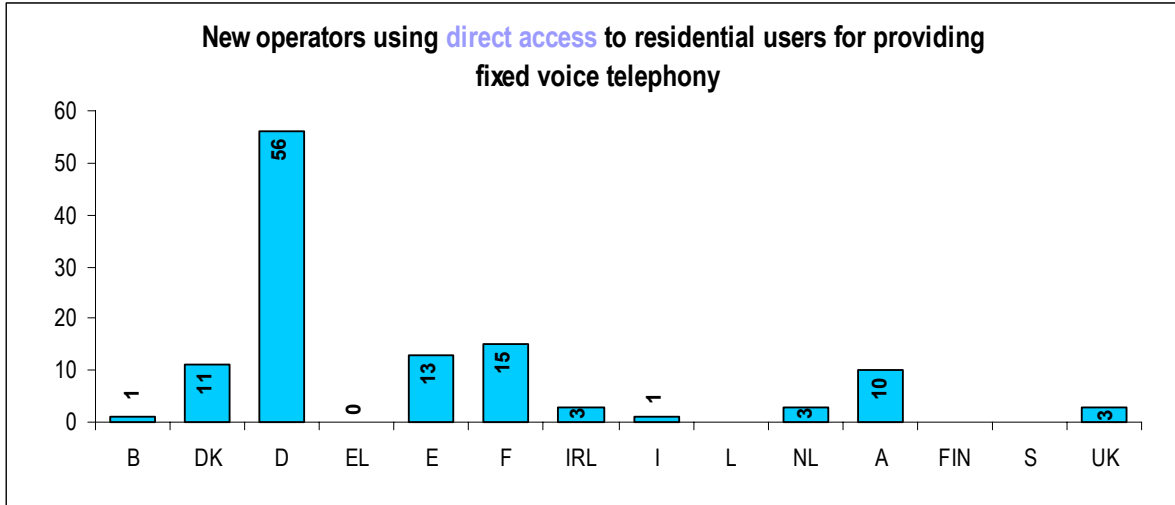
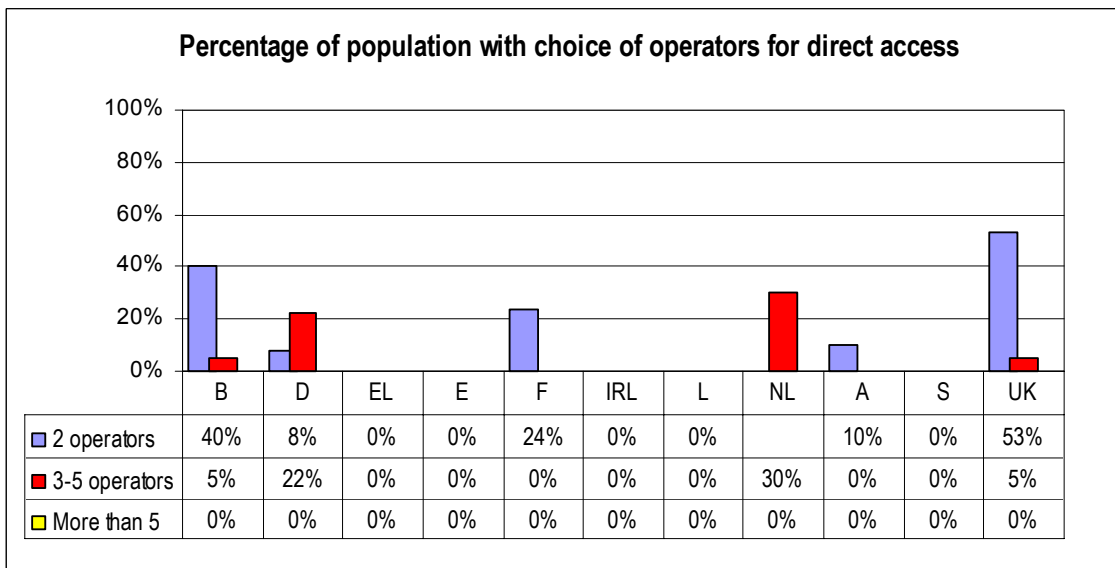


Chart 14 shows the estimated percentage of the population with a choice between 2 operators, 3 to 5 operators and more than 5 operators for direct access.

Data is not available for Denmark, Italy, Portugal and Finland.

**Chart 14**



## 1.3 TARIFFS

### INCUMBENTS' RETAIL TARIFFS FOR PUBLIC FIXED VOICE TELEPHONY

This section examines the charging system, the line rental charges and the main tariffs for public fixed voice telephony charged by the incumbent operators in each Member State<sup>2</sup> in August 2001. The price trend over the past three years is also analysed.

The incumbent operators still retain a large market share, but new entrants are increasingly gaining market shares by offering cheaper prices for certain types of call (usually long-distance or international) or destination. The prices charged by incumbents do not necessarily, therefore, represent the lowest prices available. A comparison between the rates charged by incumbents and alternative operators for a sample of countries is shown at the end of this section.

The figures and information are taken from a study carried out for the Commission by Total Research-Teligen. The data are collected from primary sources (i.e. directly from the incumbent operators).

Different sets of charges for fixed national voice telephony services are shown in the following sections:

- the minimum costs for different types of calls (local, long-distance, international calls and calls towards mobile networks), depending on the charging system adopted;
- the monthly rentals charged by incumbent operators;
- the charges for a composite basket of calls (local, long-distance, international fixed calls and calls to mobile), that gives an estimate of the average monthly spending by a typical "European business/residential user" for the whole range (national and international) of calls;
- the charges for a basket of national calls, that gives an estimate of the average monthly spending by a typical "European business/residential user" for fixed national calls;
- the price of some individual calls (3- and 10-minute local, long-distance and international calls) at peak time, inclusive of any initial charge. Furthermore, for incumbents which apply unit-based charging, the price of a whole unit is calculated.
- the basket of international calls for each country that indicates the average price of a single call from the originating country to all other OECD destinations. In addition, the price of individual calls to specific destinations are also shown.

For the various types of calls, a benchmark based on a comparison with US and Japan is also included. For the USA, the prices for national calls are those charged by Nynex/Bell Atlantic/Verizon (in New York city)<sup>3</sup> and the prices for international calls are those charged by AT&T. For Japan, the national call prices are those charged by NTT and the international call prices are those charged by KDD.

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<sup>2</sup> The incumbent operators considered are the following: Belgacom for Belgium, Tele Denmark for Denmark, Deutsche Telekom for Germany, OTE for Greece, Telefonica for Spain, France Telecom for France, Eircom for Ireland, Telecom Italia for Italy, P&T Luxembourg for Luxembourg, KPN for the Netherlands, Telekom Austria for Austria, Portugal Telecom for Portugal, Sonera for Finland, Telia for Sweden, British Telecom for the United Kingdom.

<sup>3</sup> The operator has changed name twice during the past five years. Prices for the same operator may vary depending on the specific user location in the area covered by the local operator. We have taken the prices for New York city.

The euro exchange rate expressed in terms of purchasing power parities (€-PPP) has been applied, in order to compare the retail price level between Member States in real terms, rather than nominal terms (see appendix for more details on € and €-PPP exchange rates). € and €-PPP exchange rates are used, referring to 2001, even for past years, in order to avoid showing changes in exchange rates. Price increases/decreases over time are in nominal rather than real terms (i.e. the effects of inflation are not excluded).

The EU average tariffs shown in the charts are weighted (by population of the Member States in 1999) average rather than simple averages.

## 1. CHARGING SYSTEM

The billing system for public voice telephony services usually comprises two components: an initial charge applied at the beginning of a call and a charge for the remainder of the call (that may not depend on the type of initial charge used).

### 1.1 INITIAL CHARGES

The initial charge can take the following two forms.

- **Call set-up charge** which applies as soon as the call is answered. This charge may include a number of seconds of call time before normal time-based charging starts (in this case it is also called *initial charge*). In some cases the call set-up charge applies only if the time-based charge for the call is less than the call set-up charge, to ensure that operators receive a minimum revenue per call (in this case it is also called *minimum charge*).
- **Unit charge**, which has the same effect as the initial charge. A full unit is charged at the beginning of the call, and includes a number of seconds of call time until the next unit is charged. Depending on the principle used by the operator (synchronous/asynchronous), the number of seconds of call time in the first unit may be less than the specified unit duration.

### 1.2 CHARGING SYSTEM DURING THE CALL

Operators currently use two main ways of charging calls: real time charging or unit-based charging. Both are used in conjunction with an initial charge (call set-up or minimum charge). Most operators publish duration charges on a per-minute basis, irrespective of the system used.

The two systems are:

- **Real time charging** (also known as per-second billing): the duration charge is directly proportionate to the exact duration of the call (normally to the nearest second). A call set-up charge may also apply.
- **Unit-based charging** uses a fixed price unit<sup>4</sup>. The duration of this unit varies according to the destination of the call and time of day. Call duration is always rounded up to a multiple of whole units, so the user will nearly always pay for more time than the time used. A call set-up charge may apply, but is relatively rare.

The real time charging method can be perceived as being more convenient for users, as it is the most transparent method (users only pay for what is actually used). However, there is no guarantee that this method will result in the lowest call charge: most incumbent operators have switched from

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<sup>4</sup> A variation of this method, used in the US, is **fixed period charging**, which uses a variable price, but fixed duration unit. The call is normally charged on a per-minute or per 6-seconds basis. The price for the period will vary according to destination and time of day. The charged duration of the call is rounded up to a multiple of whole periods. A call set-up or initial charge is often applied in the form of a higher charge for the first period. This initial charge may vary according to destination and time of day.

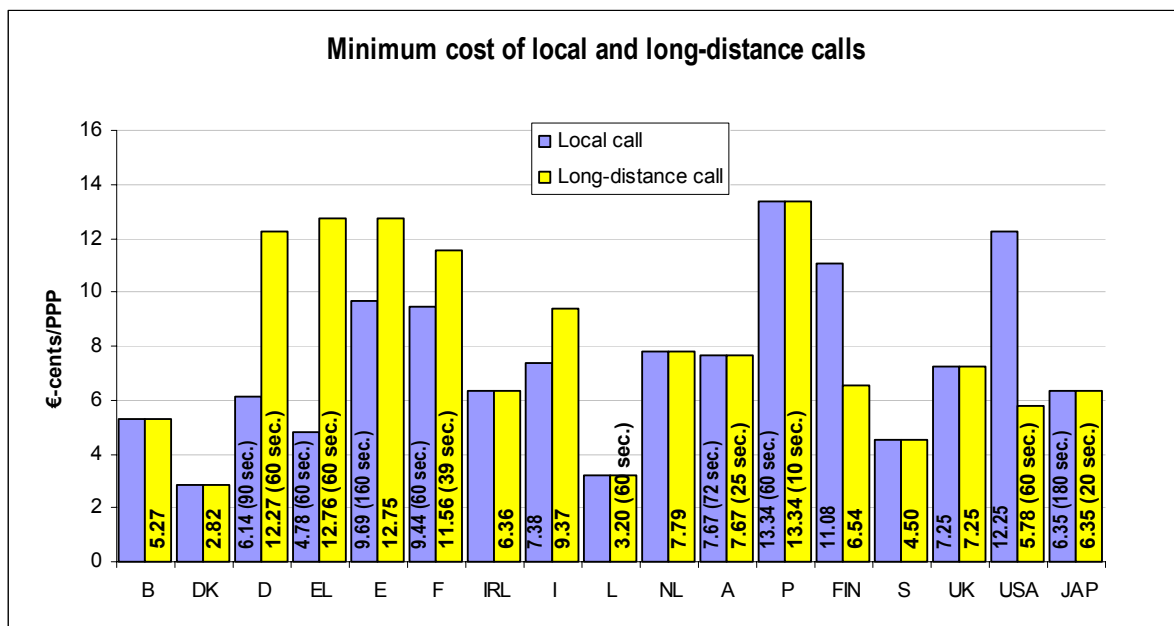
a unit-based system to real time charging, keeping the same average duration charge, but adding a (new) call set-up charge, resulting in a higher overall cost per call. This especially affects medium-length calls, depending on the price structure before and after the change.

In August 2001 only the incumbents in Greece, Luxembourg, Austria and Germany (for local and international calls<sup>5</sup>) still use a unit-based charging system. No changes are reported since the situation in August 2000.

Call set-up charges may vary according to the type of call (local, long-distance, international, calls to mobile), and for international calls according to destination. In the case of international calls (see Chart 3), the minimum cost of a call may change according to the destination.

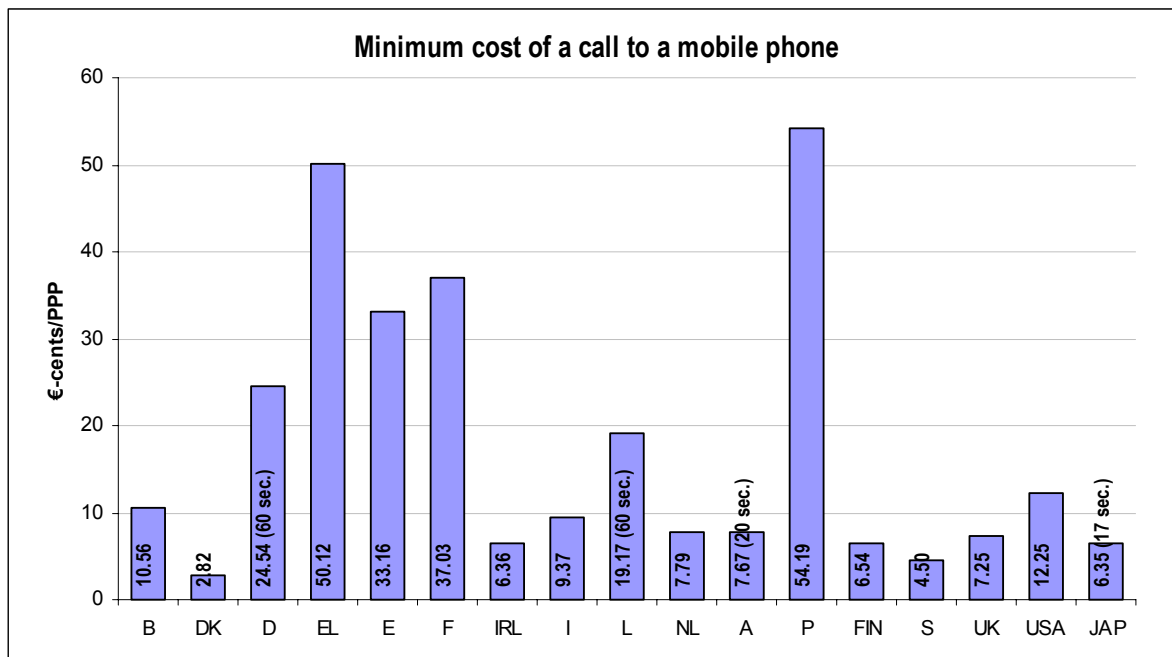
The following charts show the minimum cost, due to initial charges, for local, long-distance and international calls and calls to mobile charged by the incumbent operators. The free call time (i.e. the number of seconds of call time before normal time-based charging starts) is shown in brackets. Values are expressed in €-PPP, including VAT. It should be noted that while some operators apply identical set-up charges to local and long-distance calls, the free call times can vary, as is the case in Austria and Portugal.

**Chart 1**

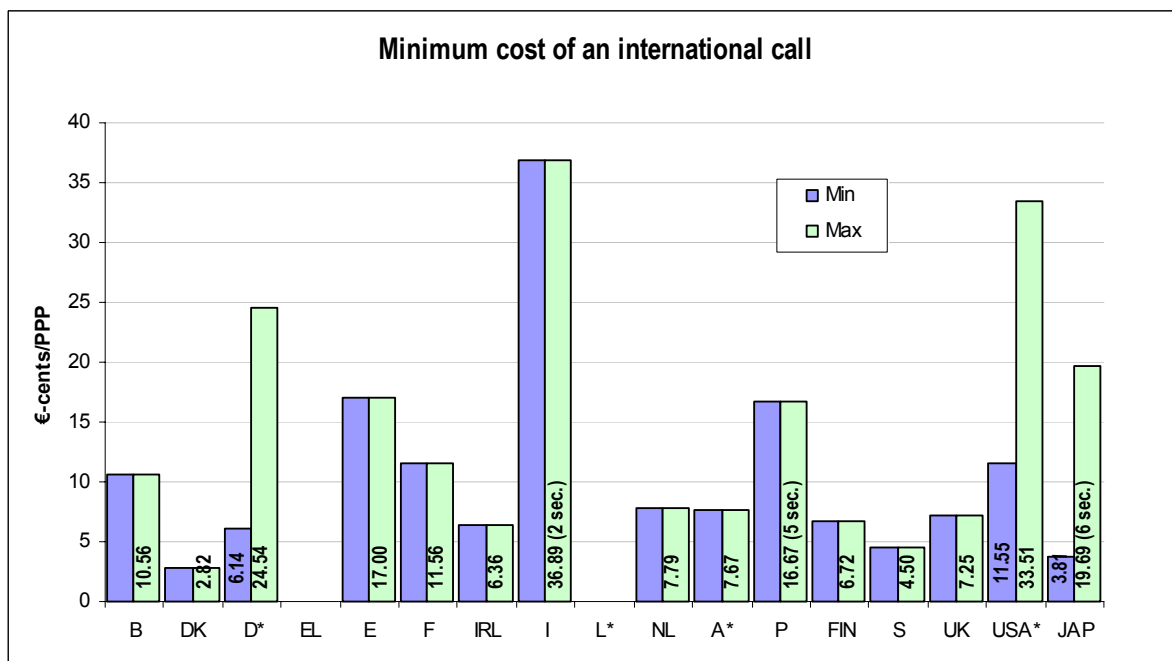


<sup>5</sup> National calls and calls to mobile are charged per minute rather than the normal unit.

**Chart 2**



**Chart 3**



\* In Germany, Luxembourg, Austria and USA, where unit based charging is used, the initial period covered by the first unit may change with the destination.

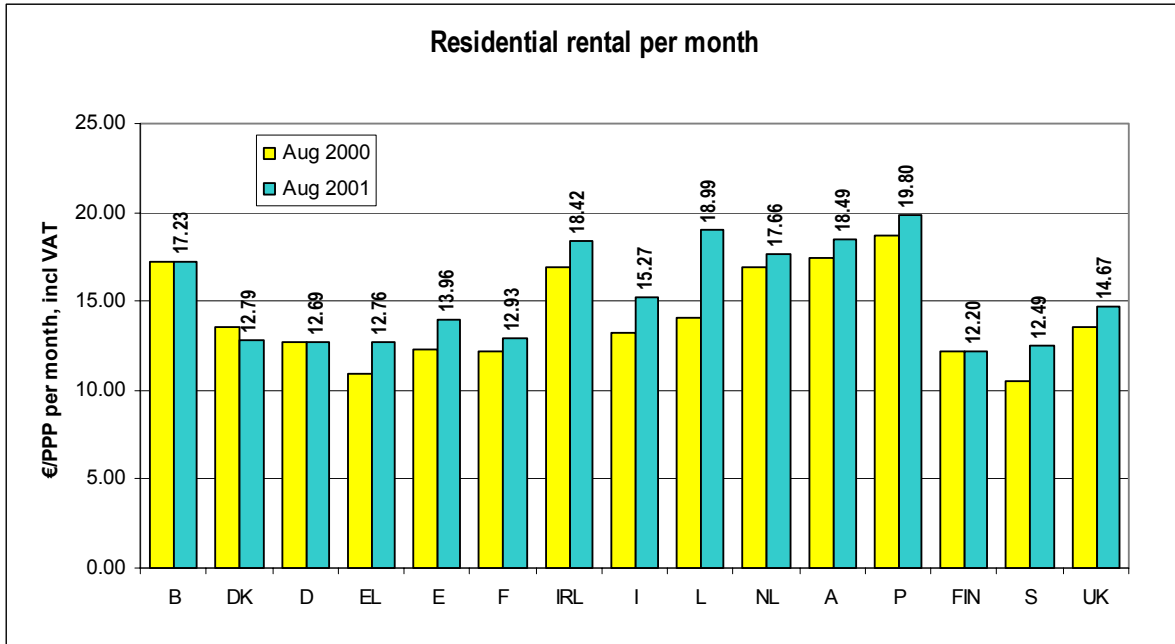
## 2. MONTHLY RENTAL CHARGED BY THE INCUMBENT OPERATORS

The following charts show the incumbent's monthly line rental charges for residential and business users in August 2001 and the variation in nominal terms in each country since August 1998. In order to reflect the real charges actually paid by users, values are expressed in €-PPP, including VAT for residential users and excluding VAT for business users.

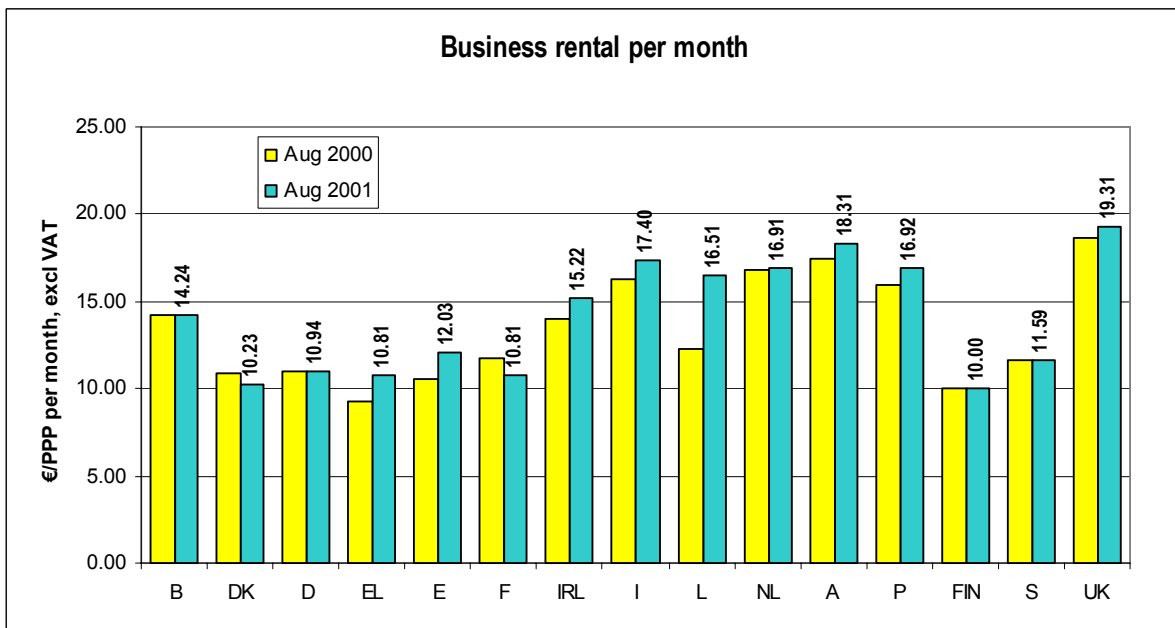


The incumbent operators in Italy, Sweden and the United Kingdom apply different monthly line rental charges for residential and business users. In the Netherlands and Austria two different packages have been chosen for residential and business users. In the other countries the differences between the types of users are due only to the exclusion of VAT for business users.

**Chart 4**

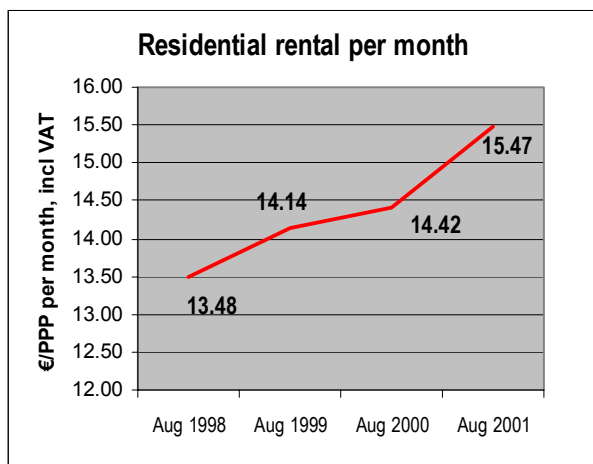


**Chart 5**

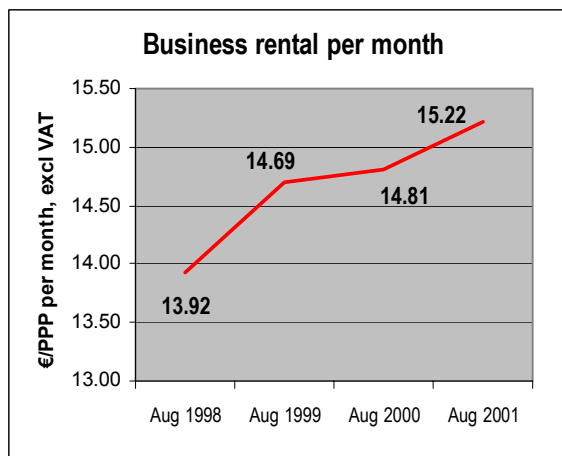


The following charts show the EU weighted average variation in nominal terms of the residential and business monthly line rental charge.

**Chart 6**



**Chart 7**



### 3. AVERAGE MONTHLY EXPENDITURE (composite call basket)

The figures presented in this section are intended to provide an estimate of the average monthly expenditure of a “standard” European consumer (business and residential). The Basket Methodology for Telecommunications Cost Comparison has been devised by the OECD and accepted in most countries as the most stable and neutral method of comparison<sup>6</sup>.

The user is assumed to have a contract for the provision of voice telephony services with the incumbent operator, and to use only this operator for all types of calls (local, long-distance, international, calls to mobile). Since consumers are making increasing use of call-by-call carrier selection, in particular for specific highly discounted types of calls (i.e. international and long-distance), the figures given below are purely indicative, and do not necessarily reflect the cheapest solution available.

The charts below show the average monthly expenditure for standard residential and business users as of August 2001, expressed in €-PPP, based on the standard tariffs charged by the incumbent operators (i.e. excluding any discount packages). This means that lower costs can be achieved if the user subscribes to one or more discounted packages.

The basket of calls used to estimate average monthly expenditure is the new “composite OECD basket”<sup>7</sup>, which includes not only fixed national calls (as did the old basket), but also fixed international calls and calls to mobile networks.

The OECD residential/business baskets are defined as follows (on an annual basis):

The fixed (i.e. non-recurring) charges include the annual line rental charge plus the charge for the installation of a new line (depreciated over 5 years). Fixed charges for residential users include VAT, while for business users VAT is excluded.

The usage charge for residential users refers to a basket of 1 200 national calls to fixed lines, plus 120 calls (with an average duration of 2 minutes) to mobile networks<sup>8</sup>, plus 72 international calls<sup>9</sup>.

<sup>6</sup> A full description of the methodology can be found in “Performance indicators for public telecommunications operators”, ICCP Series No.2.2, OECD 1990.

<sup>7</sup> The revised OECD baskets were adopted in May 2000.

<sup>8</sup> Representing 10% of the number of calls to fixed lines.

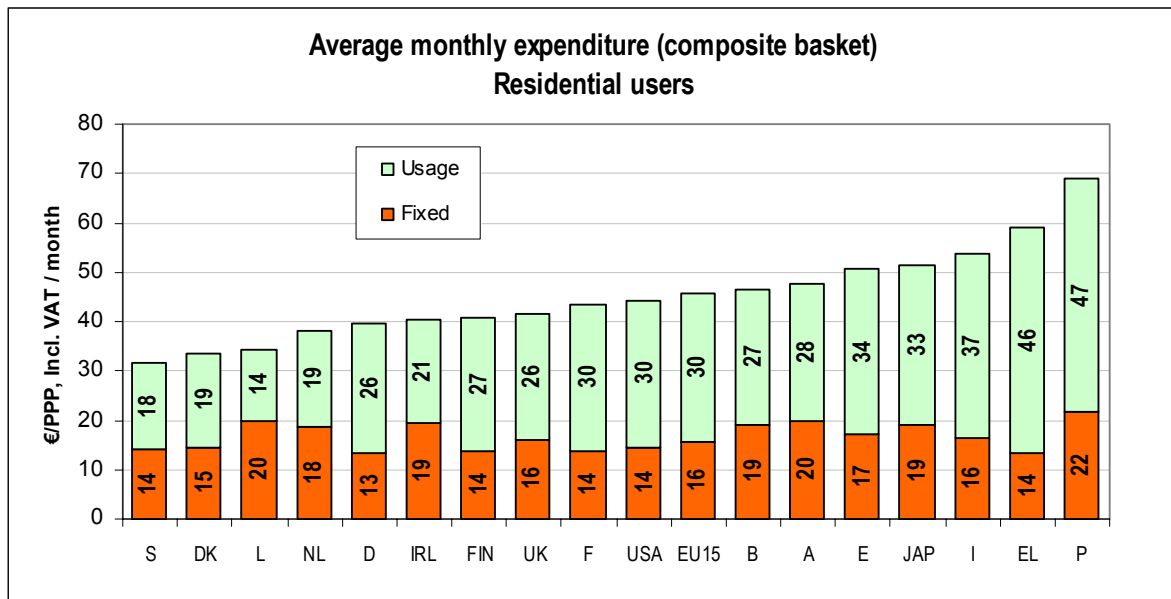
The usage charges for national calls to fixed lines are calculated with a weighted distribution over 14 distances from 3 to 490 km, at representative times of day (4 calls during the week and 2 during the weekend). The call duration varies from 2.5 to 7 minutes, depending on time and distance. The usage for residential users is weighted towards off-peak hours, and with typically long calls. Only 36% of the calls are within normal business hours; 64% are for distances below 10 km; 9% are for distances above 100 km.

The usage charge for business users refers to a basket of 3 600 national calls to fixed lines plus 360 calls (with an average call duration of 2 minutes) to mobile networks<sup>8</sup>, plus 216 international calls<sup>9</sup>. The usage charges for national calls to fixed lines are calculated with a weighted distribution over 14 distances from 3 to 490 km, at representative times of day (4 calls during the week and 2 during the weekend), and with a call duration of 3.5 minutes regardless of time of day and distance. The usage for business users is weighted towards business hours, and with typically short calls. Over 85% of the calls are within normal business hours; 64% are for distances below 10km; 12.5% are for distances above 100 km.

In the case of Luxembourg, local calls cover the entire country.

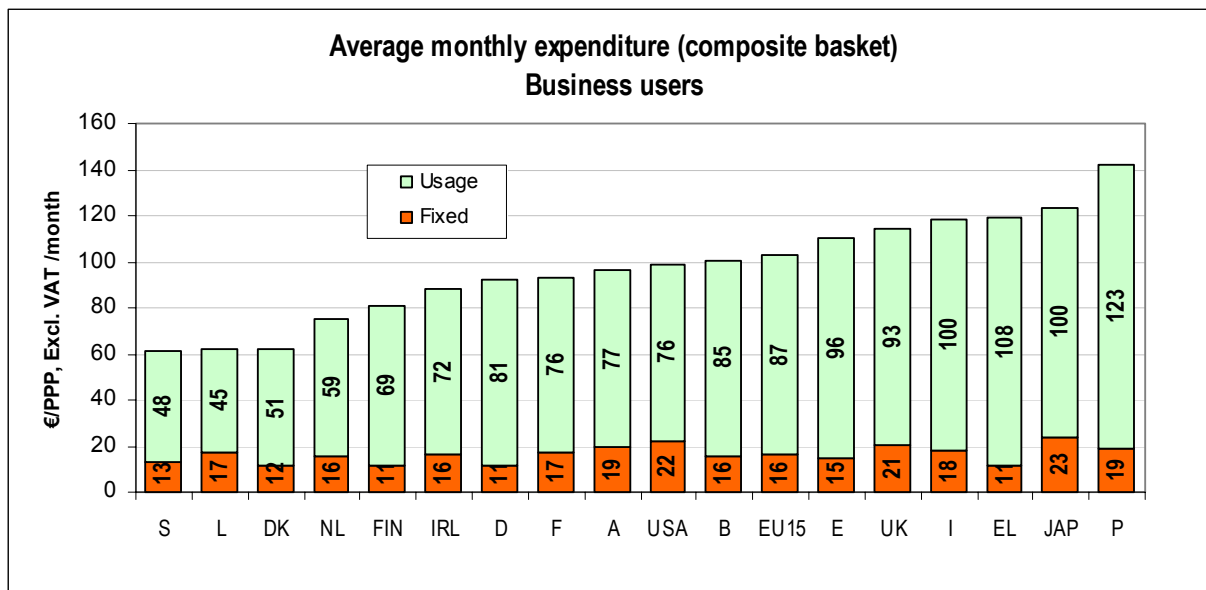
It is important to note that the exact figures are not directly comparable with those published in the Sixth report, due to differences in PPP values. The value of the baskets in August 2000, according to 2001 PPP, are those shown in the following charts.

**Chart 8**



<sup>9</sup> Representing 6% of the number of calls to fixed lines.

**Chart 9**



#### **4. FIXED NATIONAL CALLS**

##### **4.1. PRICES CHARGED BY THE INCUMBENT OPERATORS FOR INDIVIDUAL FIXED NATIONAL CALLS**

This section shows the prices charged by the incumbent operators for individual fixed calls (the same call prices apply to business and residential users). Where the incumbent operator uses a unit-based charging system, the price of calls of different duration and/or distances may in some cases be identical, where both calls are charged the same number of units.

Prices refer to peak hours (weekdays 11.00) and are expressed in €-PPP including VAT. Except where otherwise specified, the figures refer to August 2001.

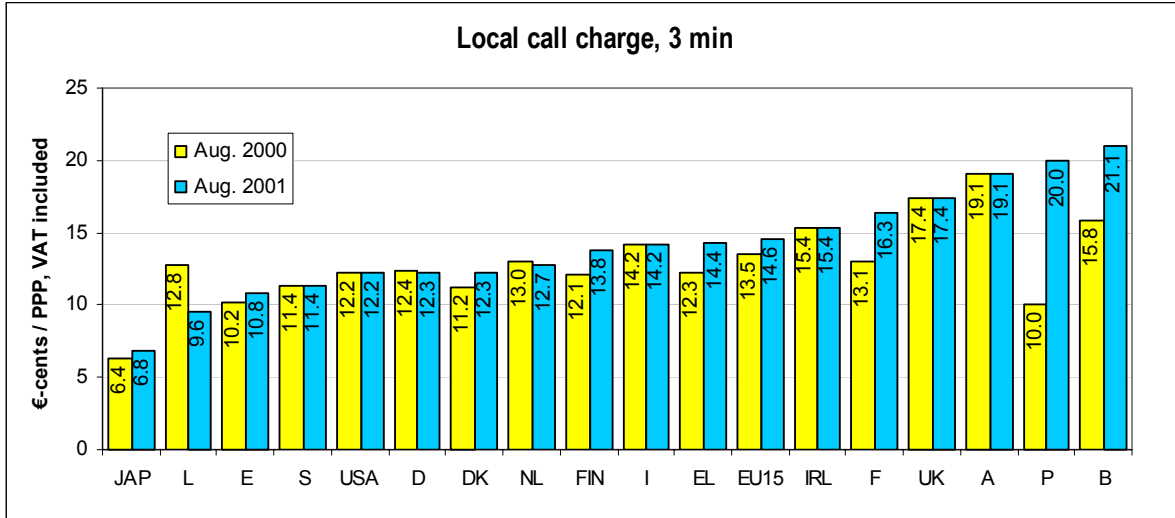
Prices are indicated for three-minute and 10-minute calls over two distances: 3 km (equivalent to a local call) and 200 km (equivalent to a long-distance call). In several countries the tariff changes at exactly one of these distances: in these cases, the rates for the lower distance band are used.

The price of a three-minute call is more affected by the magnitude of the call set-up charge than the price of a 10-minute call.

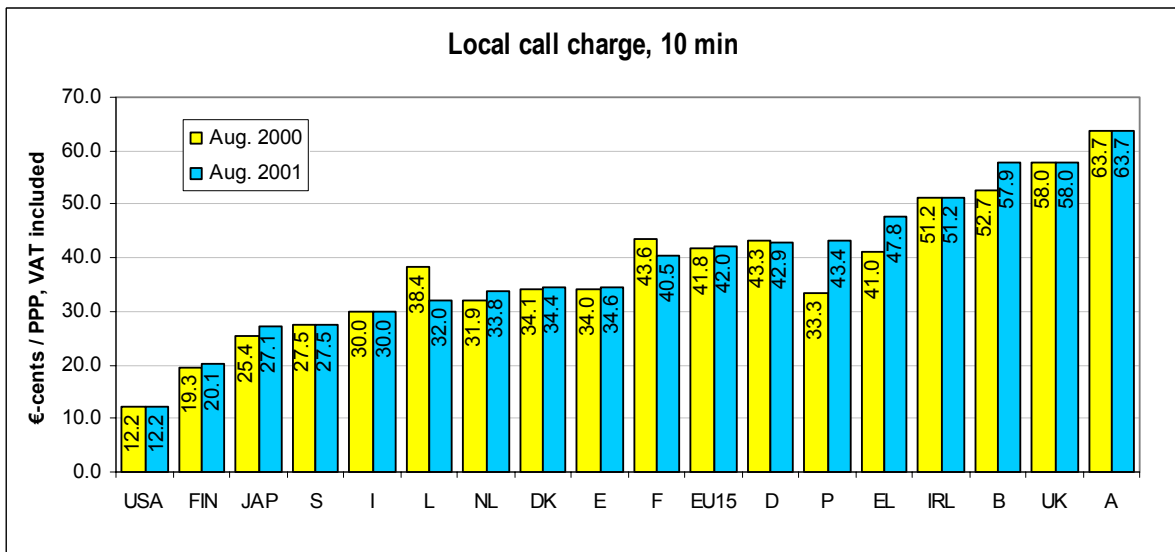
Where two or more tariff packages are available (i.e. Austria and the Netherlands), the prices refer to the basic residential package. In all other cases the prices refer to the standard tariff (cheaper tariffs may be available under discounted packages).

The EU average value is the average of the EU countries weighted according to population in 1999. The EU percentage variations 1998-2001 are calculated as a weighted average of the variations in the individual Member States, rather than as the variation in EU weighted average values.

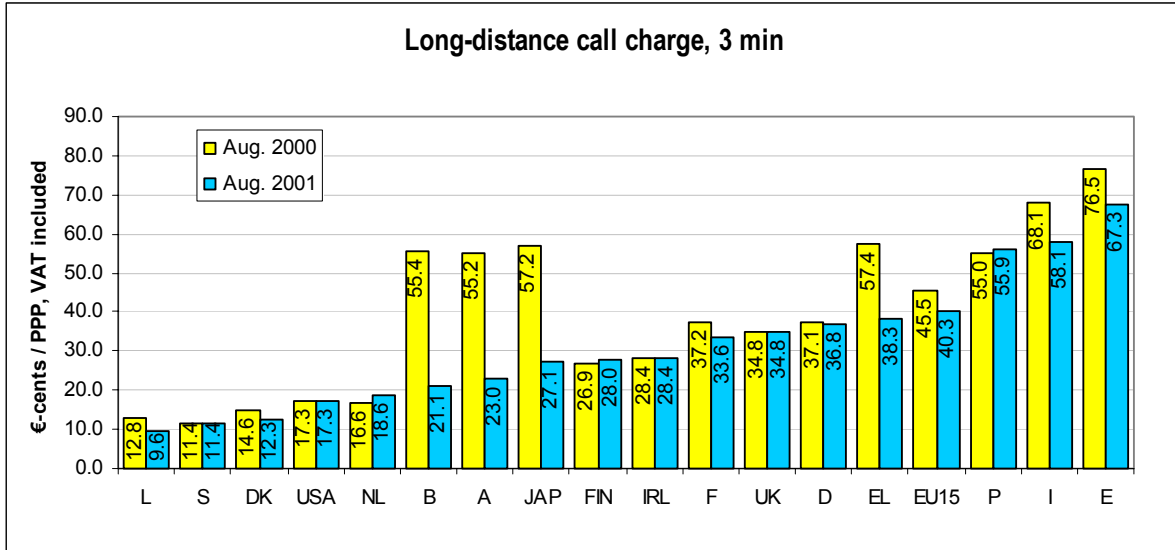
**Chart 10**



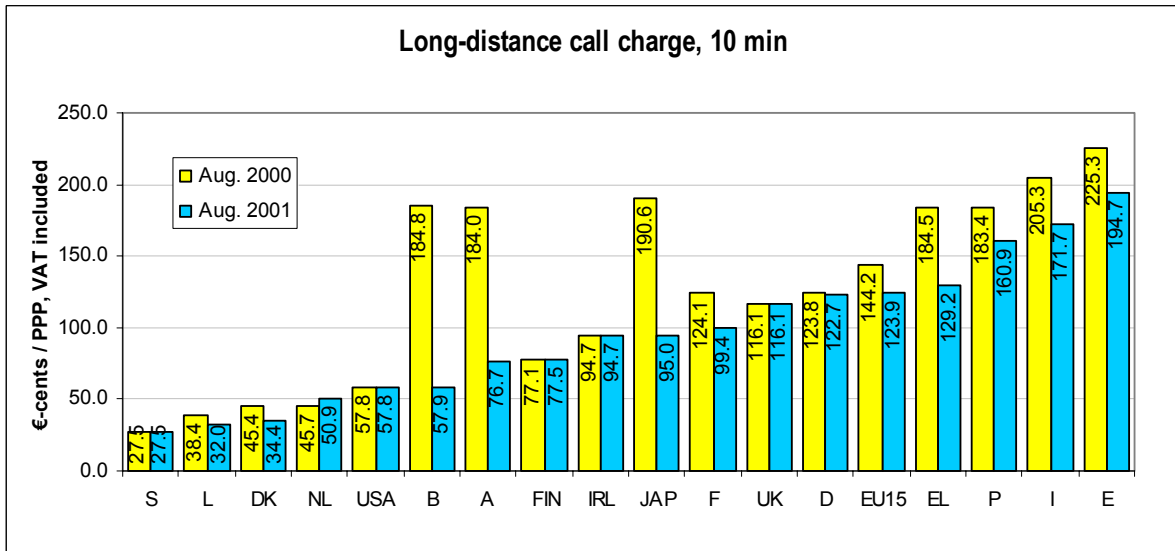
**Chart 11**



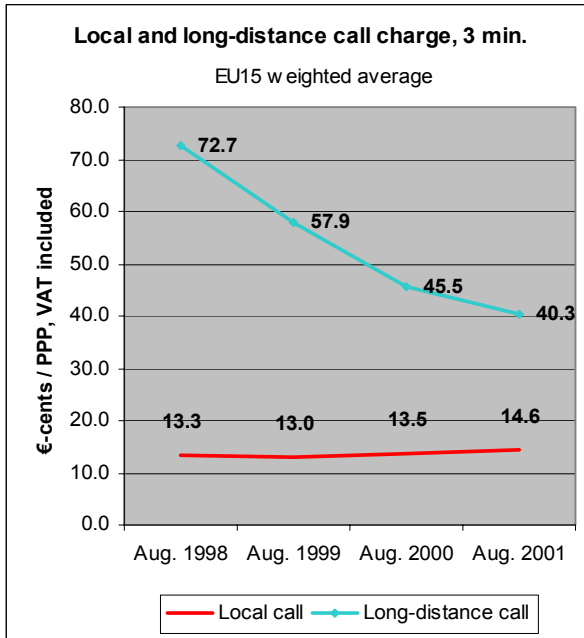
**Chart 12**



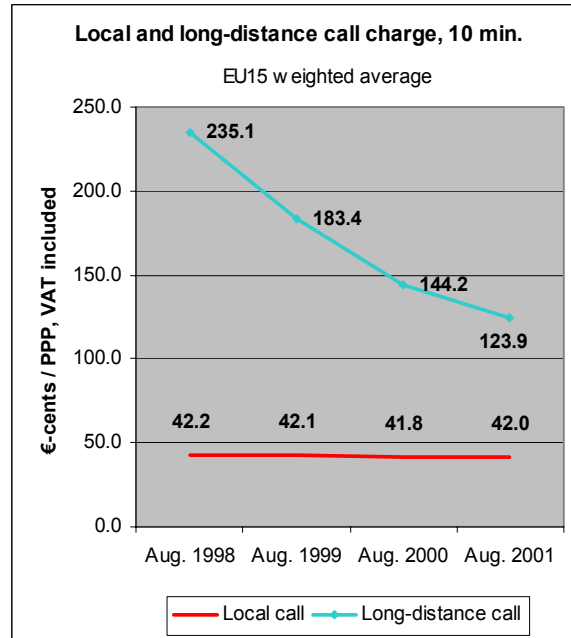
**Chart 13**



**Chart 14**



**Chart 15**

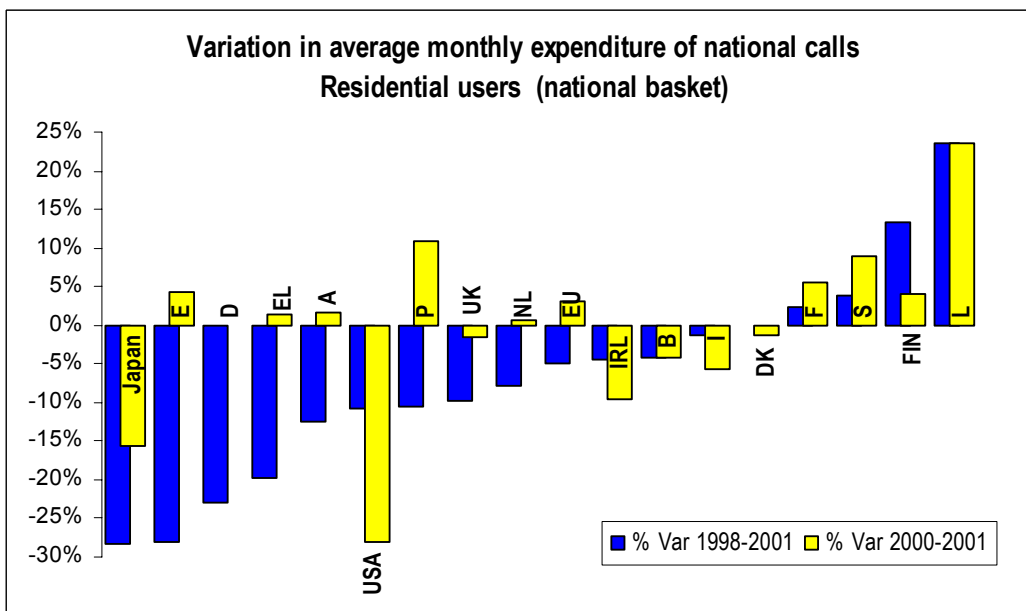


**4.2. TREND OF THE BASKET FOR FIXED NATIONAL CALLS (national basket)**

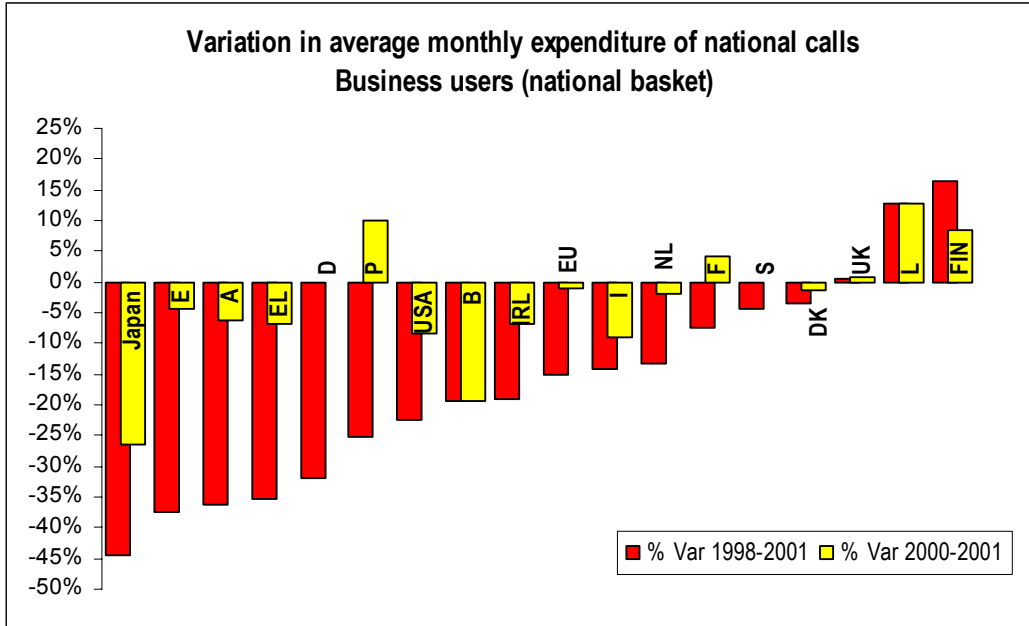
The following charts show the variation of the monthly expenditure of residential and business users on fixed national calls with respect to August 2001, last year (August 2000) and August 1998 (in order to maintain consistency over time, the “old” OECD basket is used, which, unlike the “composite”, does not include international calls).

The variation in the international basket is shown in section 5.

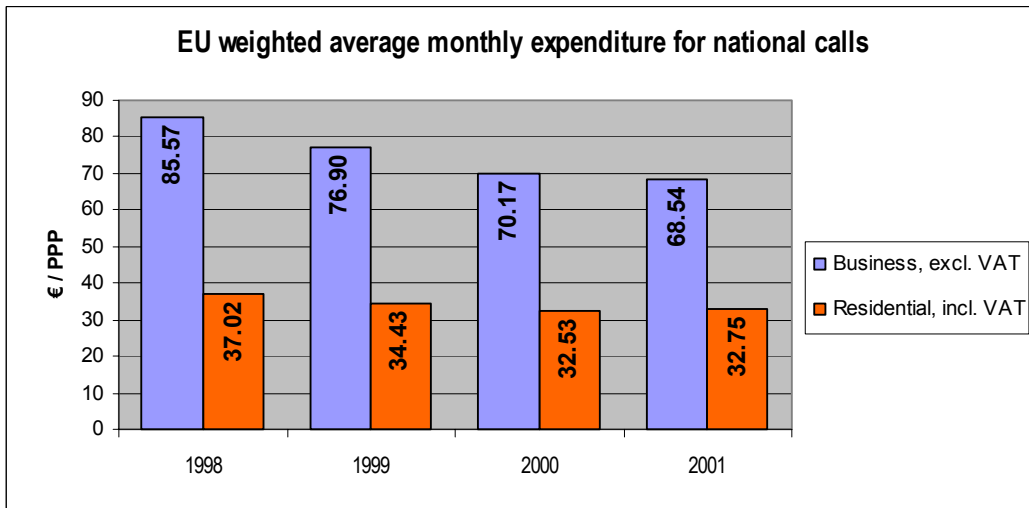
**Chart 16**



**Chart 17**



**Chart 18**



**5. FIXED INTERNATIONAL CALLS**

The following charts show the prices of the international call basket (an estimate of the average cost of an international call in each country) and the price of a 10-minute call to specified destinations (within Europe, to Japan and to the USA).



### 5.1.PRICE OF AN AVERAGE FIXED INTERNATIONAL CALL (international call basket)

The basket of international calls for each country indicates the weighted average price of a three-minute call during peak hours and a five-minute call during off-peak hours from the originating country to the other OECD countries. Traffic weighting is used, as defined by the OECD for the destination weighting, as per the revision in 2000. This method applies a weight to each destination based on the traffic volumes reported on that route (ITU statistics). Therefore, prices indicated in this section are not comparable to those in the Sixth report, which was constructed on the basis of the OECD zone weighting methodology.

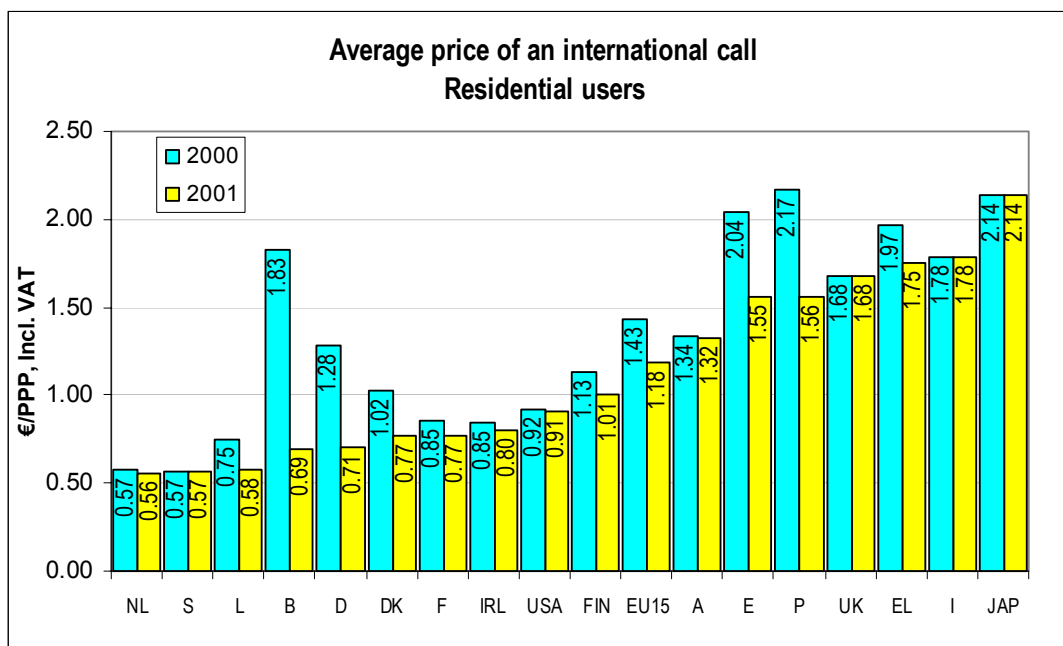
The prices refer to the standard tariff packages, and not to any cheaper tariffs which may be available under discounted packages. In Austria and the Netherlands specific packages have been chosen, as no “standard” tariffs exist.

The residential basket includes VAT. Call charges are weighted between peak and off-peak hours: 25% for peak hours and 75% for off-peak hours. The business basket excludes VAT. Call charges are weighted 75% for peak hours and 25% for off-peak hours. The average price of an international call is lower for business users than for residential users because of the heavier weighting given to three-minute peak-hour calls, which are on average cheaper than five-minute off-peak calls, and because VAT is excluded for business users but included for residential users.

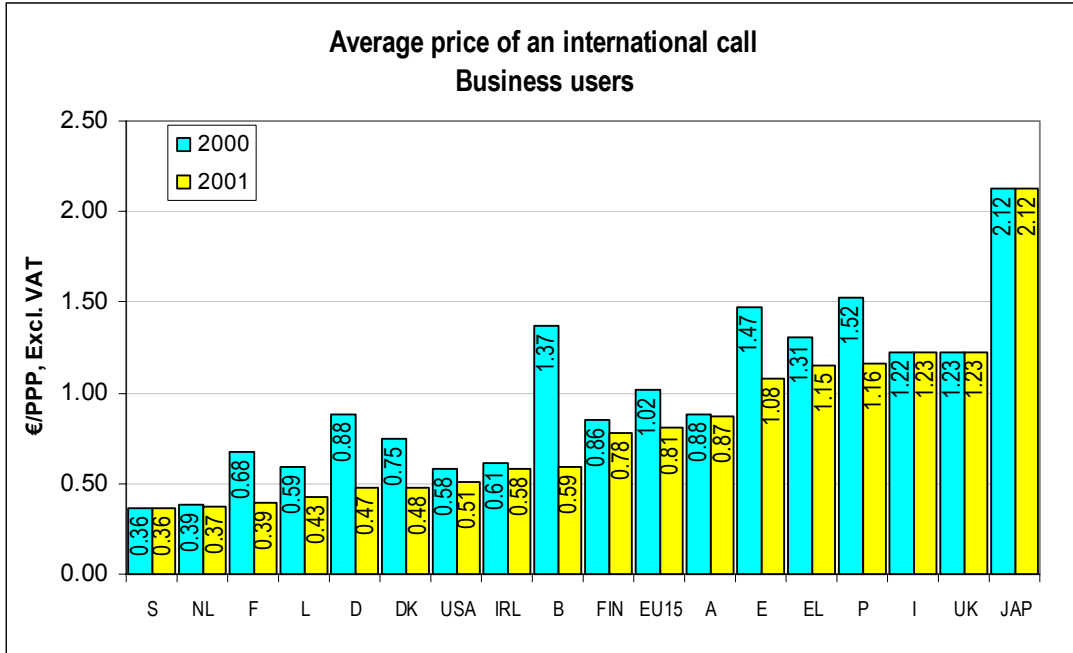
Values are expressed in €-PPP and give the position in August 2001.

The variations in nominal terms since August 1998 are also shown.

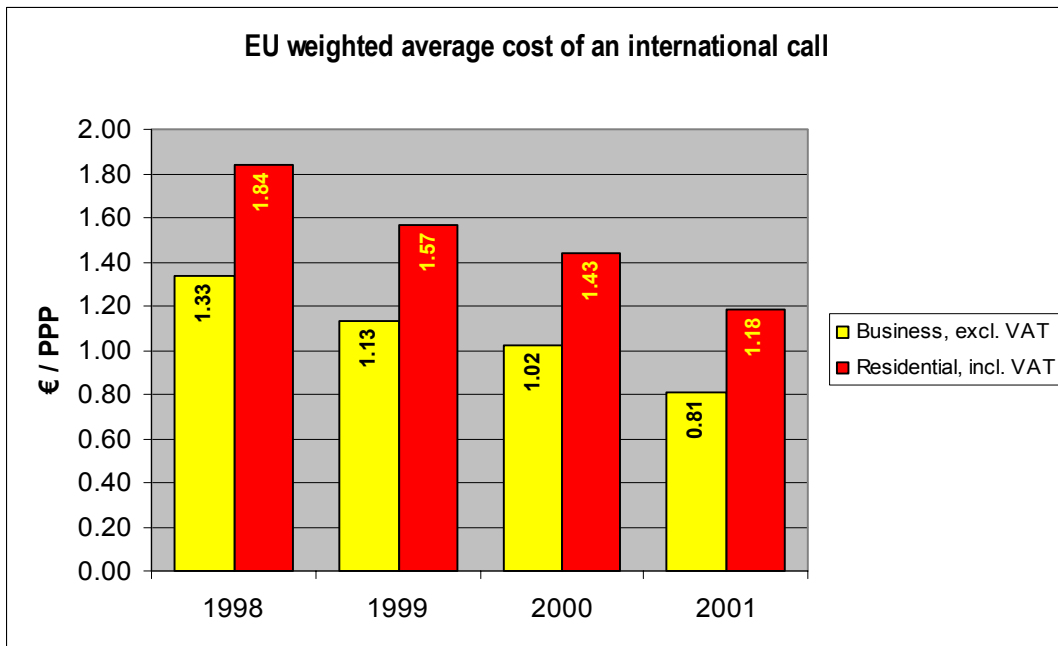
Chart 19



**Chart 20**



**Chart 21**



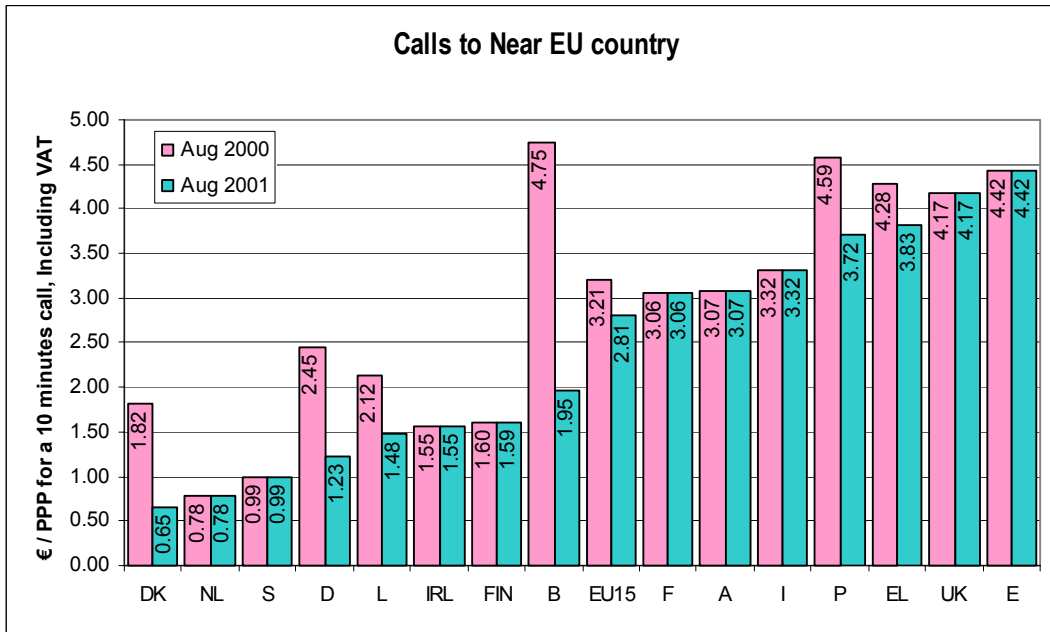
## 5.2. PRICES OF INDIVIDUAL INTERNATIONAL CALLS TO EUROPE, JAPAN AND THE USA

The following two charts show the prices of a 10-minute international call (including VAT) during peak hours (weekday 11.00) to four different destinations: neighbouring country<sup>10</sup> (near EU), more distance country<sup>11</sup> (far EU), Japan and the USA.

Figures are expressed in €-PPP at August 2001 values, including VAT; they refer to the European incumbent operators, the EU weighted average, KDD for Japan and AT&T for the USA.

Price variations since August 2000 are also indicated.

Chart 22



<sup>10</sup> The neighbouring countries are defined as: France for Belgium, Germany and the United Kingdom; Sweden for Denmark and Finland; Italy for Greece (and *viceversa*); Portugal for Spain (and *viceversa*); the United Kingdom for Ireland, the USA and Japan; Germany for Luxembourg, the Netherlands and Austria; Belgium for France.

<sup>11</sup> The more distant countries are defined as: Greece for Belgium, Denmark, Germany, France, Ireland, Luxembourg, the Netherlands, Austria, Finland, Sweden, the United Kingdom, the USA and Japan; Denmark for Greece, Spain, Italy and Portugal.

Chart 23

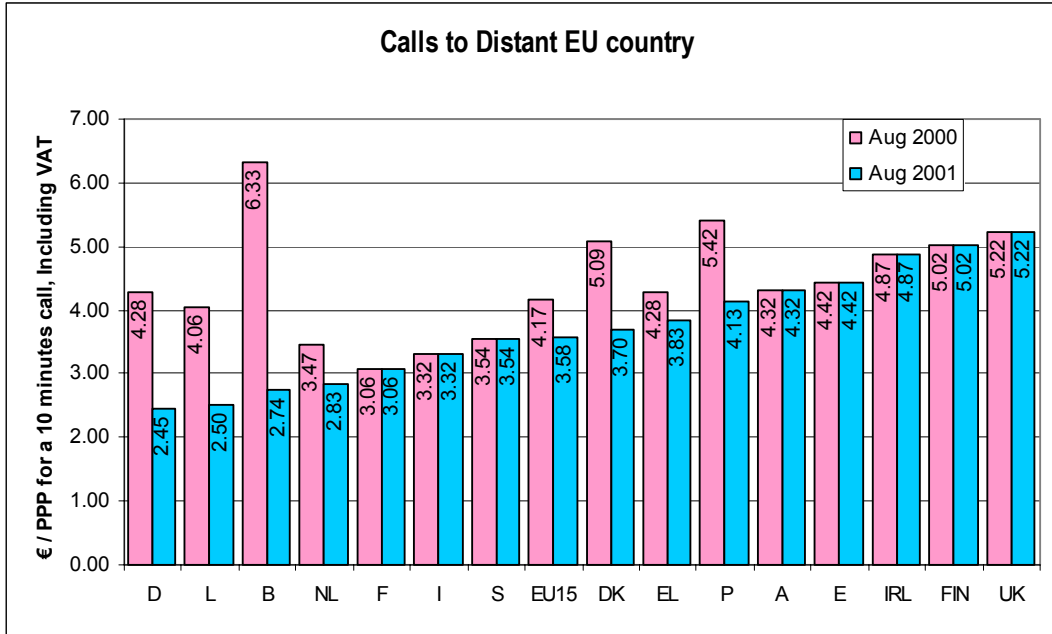
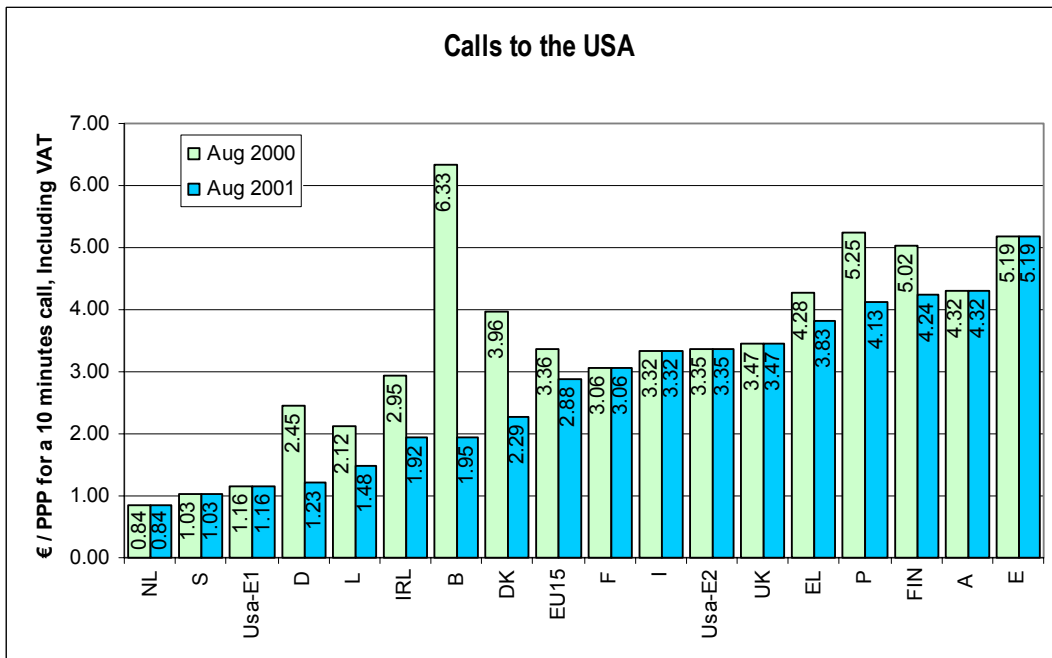
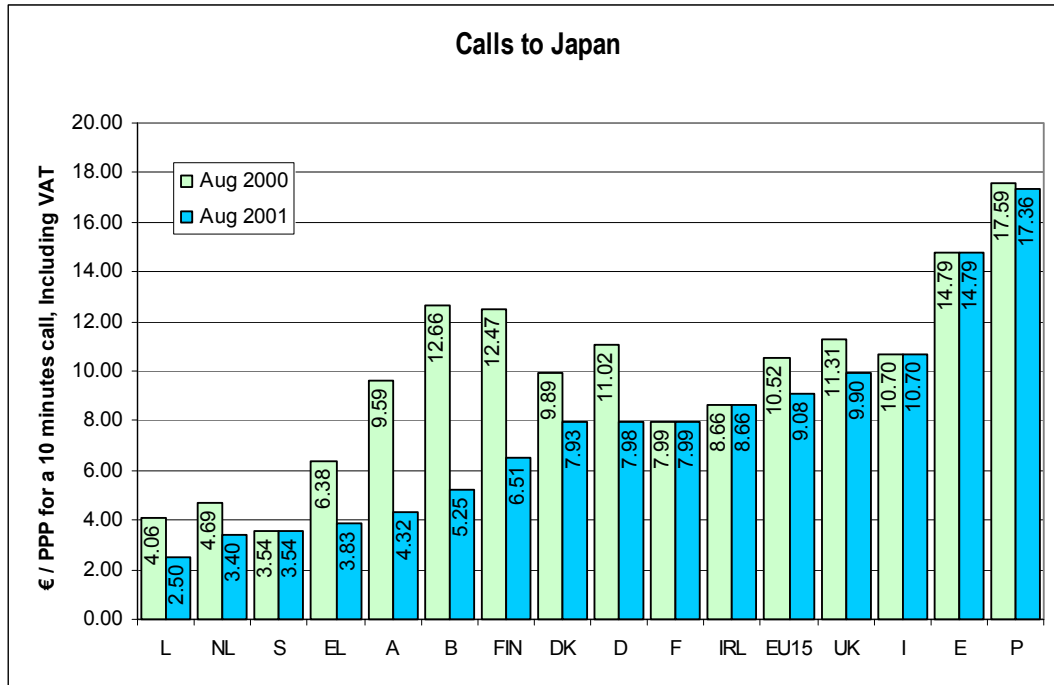


Chart 24



For comparative purposes, the chart also recalls the cost of a call from the USA respectively to a near (see "Usa-E1" in the chart) and a distant (see "Usa-2" in the chart) EU country.

Chart 25



## 6. COMPARISON BETWEEN THE PRICES CHARGED BY INCUMBENT AND ALTERNATIVE OPERATORS

This section compares the prices charged for public voice telephony services by the incumbent operators in a sample of EU Member States and by some of their main competitors. The information collected by Total Research-Teligen concerns exclusively Belgium, Germany, Spain, France, Sweden and the United Kingdom.

Since prices vary substantially across the countries, these tariffs are merely examples and are not necessarily typical (for example, many operators offer “free” local calls, depending on the tariff package chosen by the subscribers).

Prices include VAT and are applicable for August 2001.

Chart 26

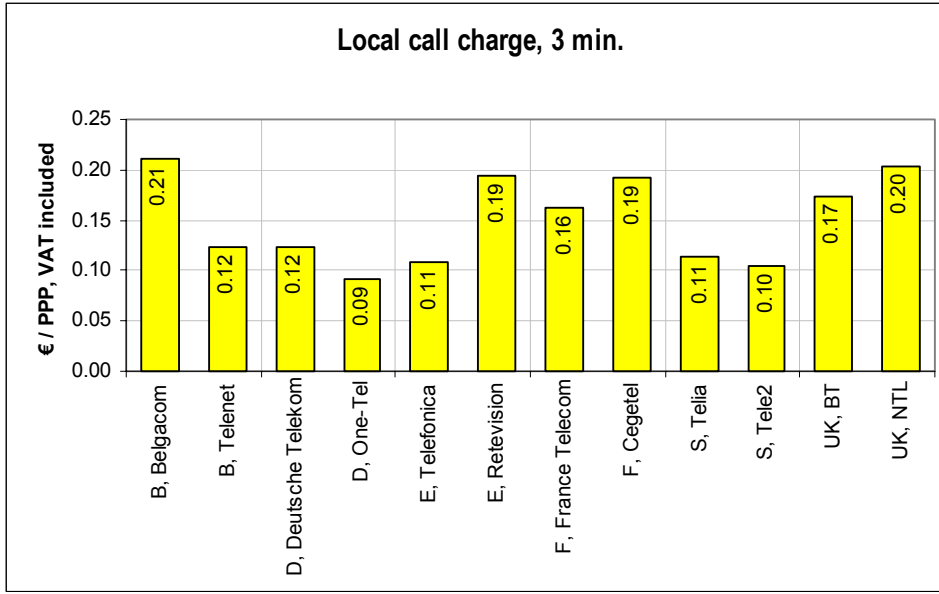
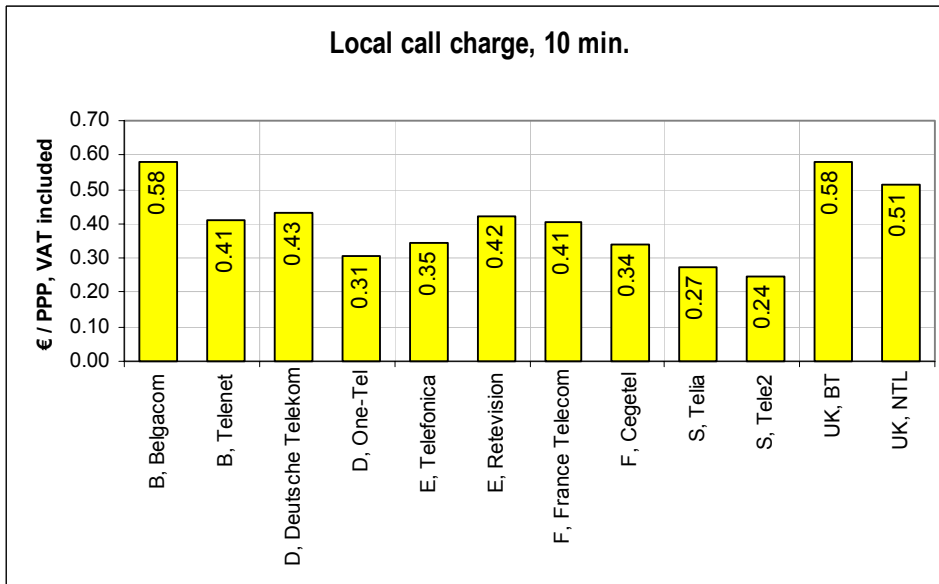
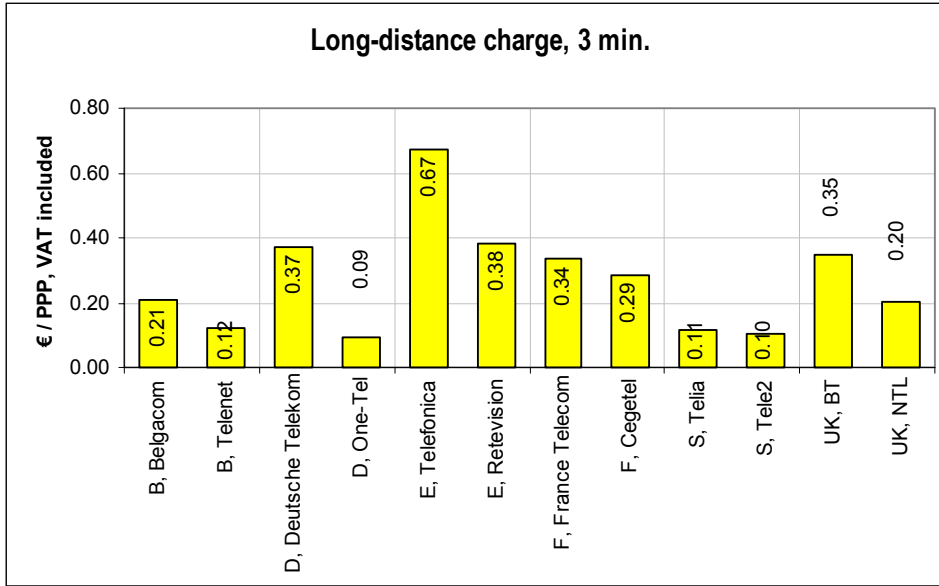


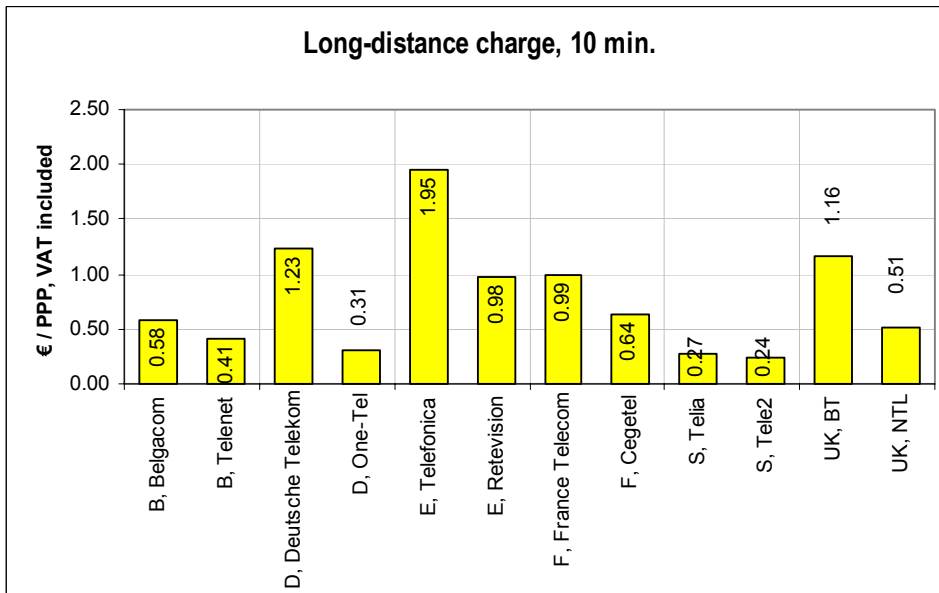
Chart 27



**Chart 28**



**Chart 29**



|

|



## 1.4 LEASED LINES

This section contains an overview of prices charged by incumbent operators in each Member State for national and international leased line services as of 1 August 2001. Price developments are also analysed over the period August 1998-2001.

The figures and the information are taken from a study carried out by Total Research-Teligen for the Commission. Data on standard retail prices charged by incumbent operators have been collected in each country.

### 1. INCUMBENTS' NATIONAL LEASED LINES

In the case of national leased line services, three distances are covered: 2 km (local circuits), 50 km and 200 km. 50 km and 200 km lines include a 2 km circuit tail at both ends. This means that the long distance part of the circuit will be 46 km and 196 km respectively, when local tail and main circuit prices are specified separately. When a single price, including local tails, is specified for the end to end circuit, tariffs for main circuits of respectively 2 km, 50 km and 200 km are considered.

The following types of digital circuit are considered: digital 64 Kbit/s, 2 Mbit/s, 34 Mbit/s and 155 Mbit/s. As not all carriers publish prices for all bitrates, information on all countries is not always available. This is especially the case for higher bitrates.

The following charts show the price levels and developments for various categories.

Where possible, comparisons are made between standard rates in the EU Member States, the USA and Japan.

The following should be noted:

- All charges are in euro per year, VAT excluded. See the “Appendix on exchange rates” for details on euro exchange rates used herein.
- When different prices apply according to geographical location of the leased line, standard prices chosen for this analysis are those for 2 km circuits wholly within a major city and for 50-200 km circuits connecting a major city to a “minor” city. In particular, the following tariffs are considered: for Belgium, “Level 1” tariffs; for Austria, the “City-Tariff”, starting from 2001; for Sweden and Finland, the Green tariffs; for the United Kingdom, the tariffs for 2 km circuits within the Central London Zone and for long distance circuits with one or both ends outside the Central London Zone; for France, in the case of 34 and 155 Mbit/s, the tariffs for circuits with one end in zone A, as defined by France Telecom.
- Finland is not included in the analysis of 64 Kbit/s circuits, because since 1998 Sonera does not publish the prices for full 64 Kbit/s services. Furthermore, since that year the company no longer published prices for 2 Mbit/s circuits.
- Prices refer to basic services and only unstructured circuits are considered for 2 Mbit/s services.
- Prices used are standard prices, excluding any discounts.
- The expression “EU average” refers to the simple, non-weighted average across EU countries.
- The EU average variation represents the simple, non-weighted average of national variations.

- For the USA, the prices of Nynex/Verizon (New York) and Pacific Bell (California) have been used. The prices refer to intra-LATA intra-State circuits. It should be noted that the bitrates of those services in the USA are different, so that 56 Kbit/s are taken instead of 64 Kbit/s, 1.5 Mbit/s instead of 2 Mbit/s and 43 Mbit/s instead of 34 Mbit/s. Prices have been adjusted according to the difference in capacity.

The tariffs are deemed to be in force as of 1 August 2001. The last changes in tariffs taken into account for operators in each of the Member States are the following:

|         |                        |              |          |
|---------|------------------------|--------------|----------|
| Austria | 01.06.00 <sup>12</sup> | Luxembourg   | 01.04.01 |
| Belgium | 01.07.01               | Netherlands  | 01.04.01 |
| Denmark | 01.01.01               | Portugal     | 01.07.99 |
| Finland | 00.01.00               | Spain        | 31.05.01 |
| France  | 01.03.01               | Sweden       | 01.04.00 |
| Germany | 09.04.01               | UK           | 01.12.00 |
| Greece  | 12.08.00               | USA, Verizon | 01.06.00 |
| Ireland | 01.07.00               | USA, PacBell | 14.11.00 |
| Italy   | 01.11.00               | Japan        | 01.10.00 |

---

<sup>12</sup> It should be noted that new tariffs will be applicable from 1 September 2001.

## 1.1. NATIONAL LEASED LINE PRICES AS OF 1 AUGUST 2001

### 1.1.1. 64 Kbit/s

Chart 1

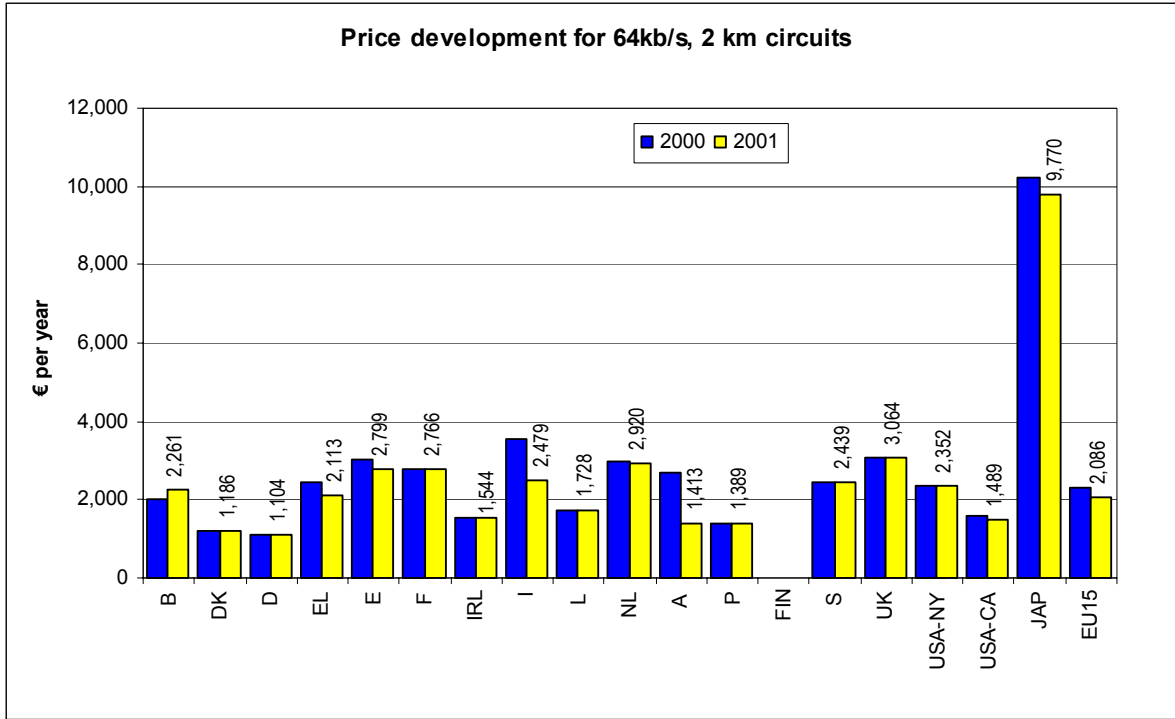
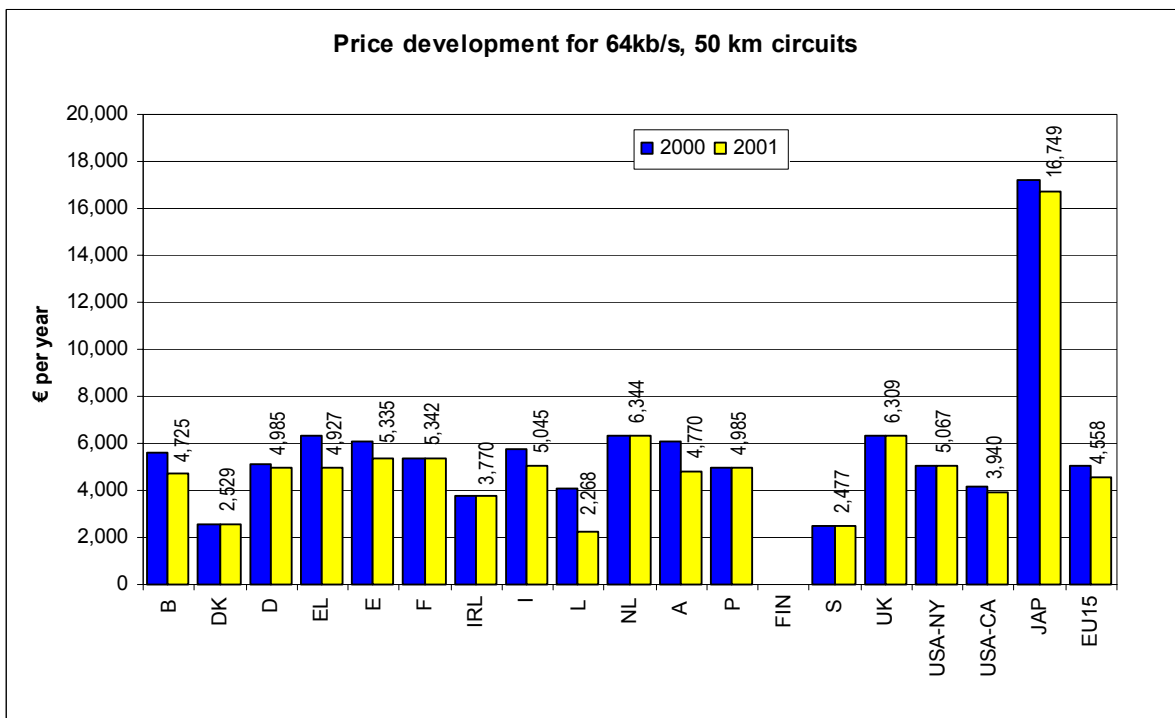
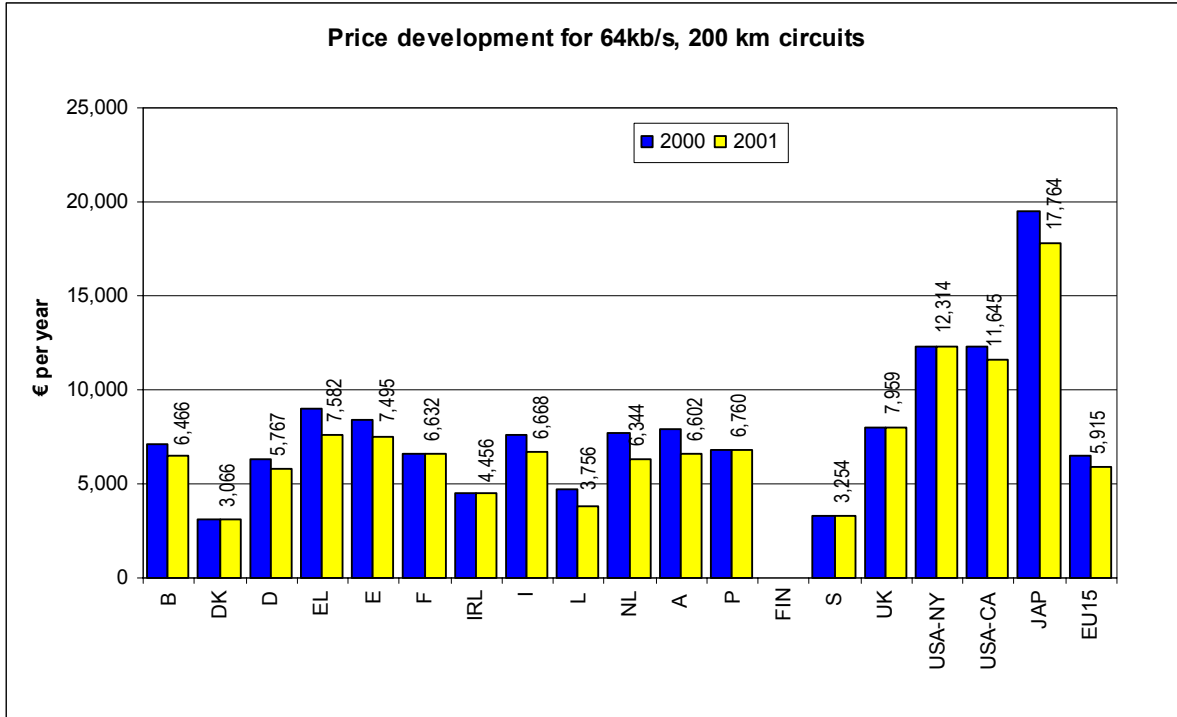


Chart 2

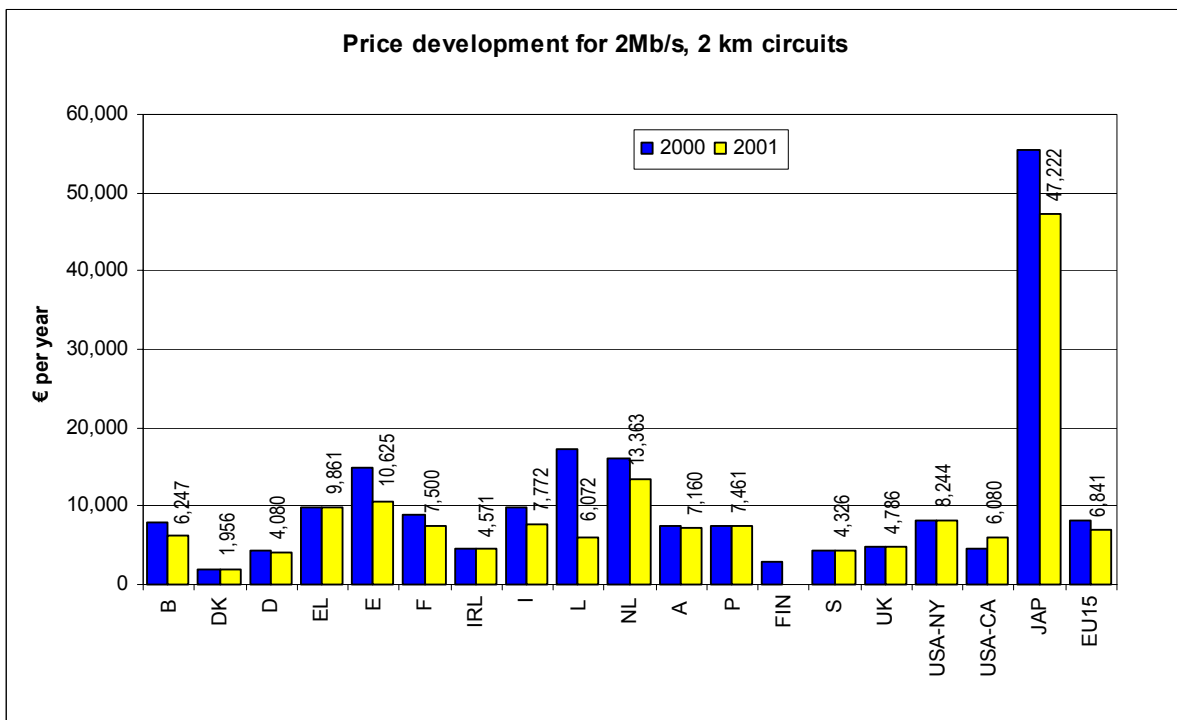


**Chart 3**

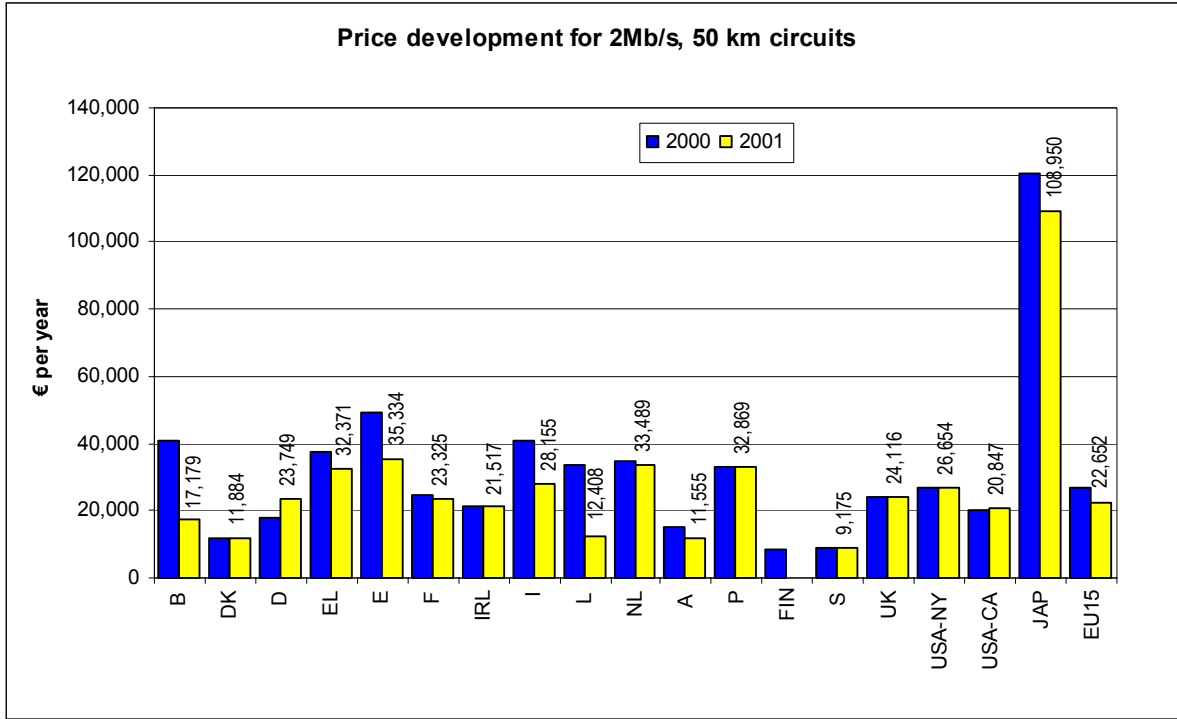


**1.1.2. 2 Mbit/s**

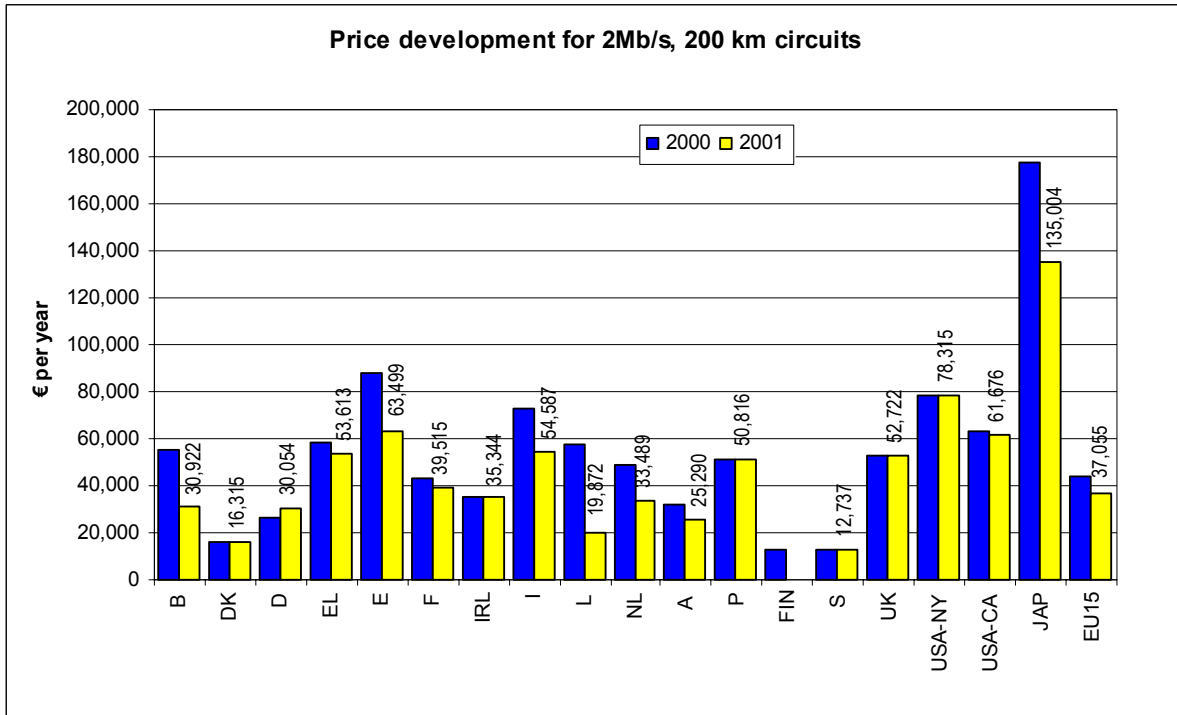
**Chart 4**



**Chart 5**



**Chart 6**



### 1.1.3. 34 Mbit/s

Chart 7

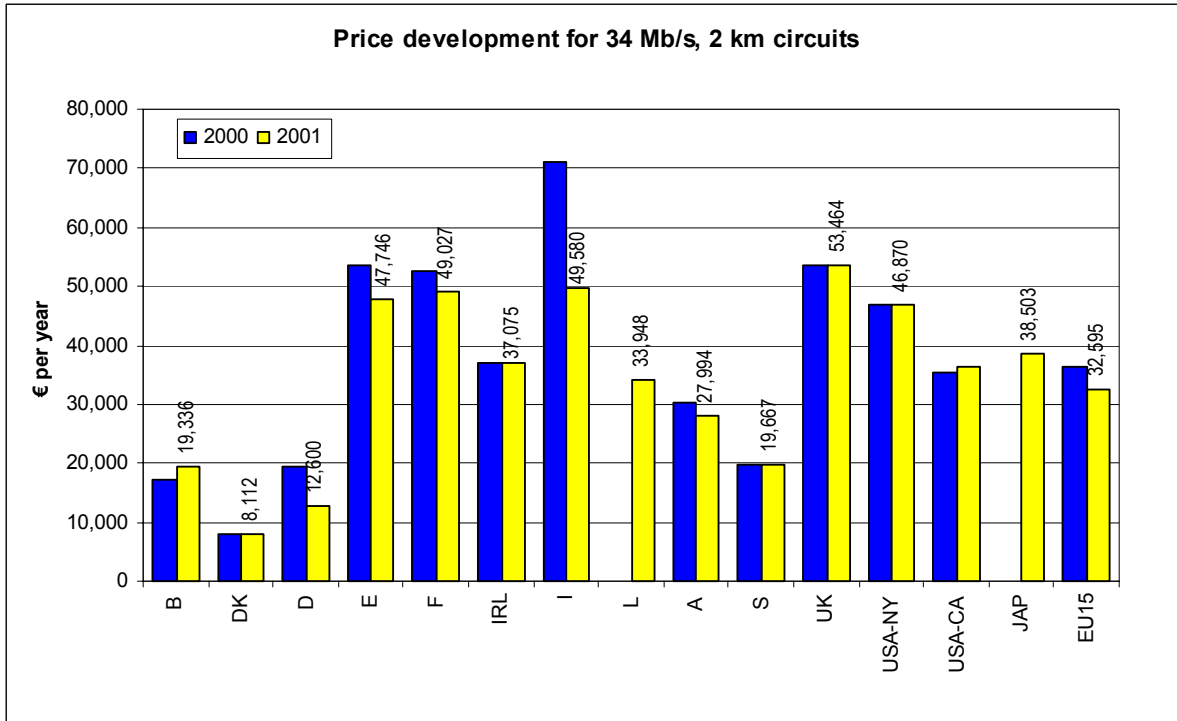
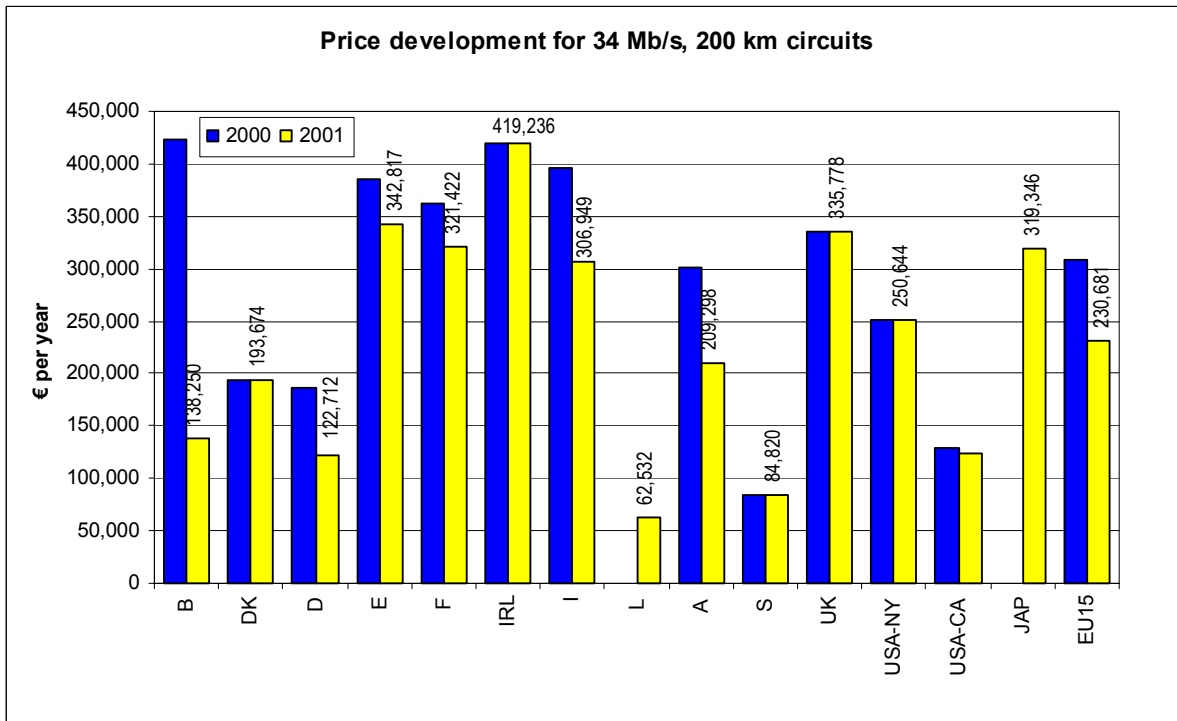
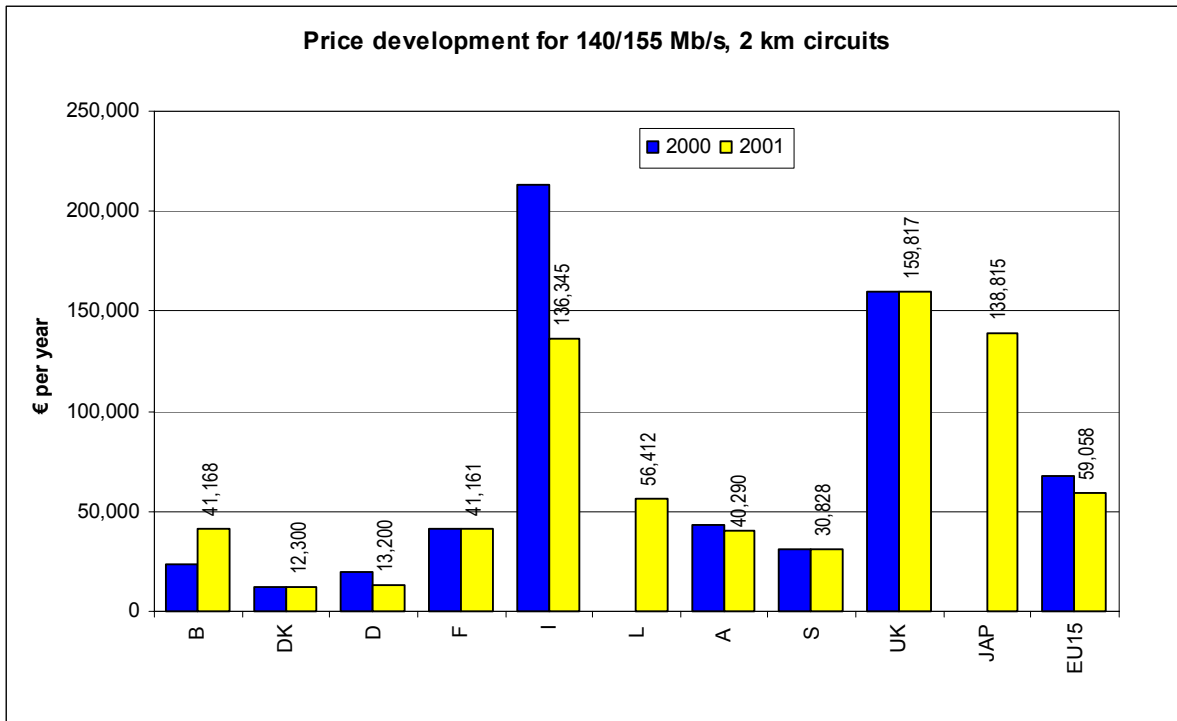


Chart 8

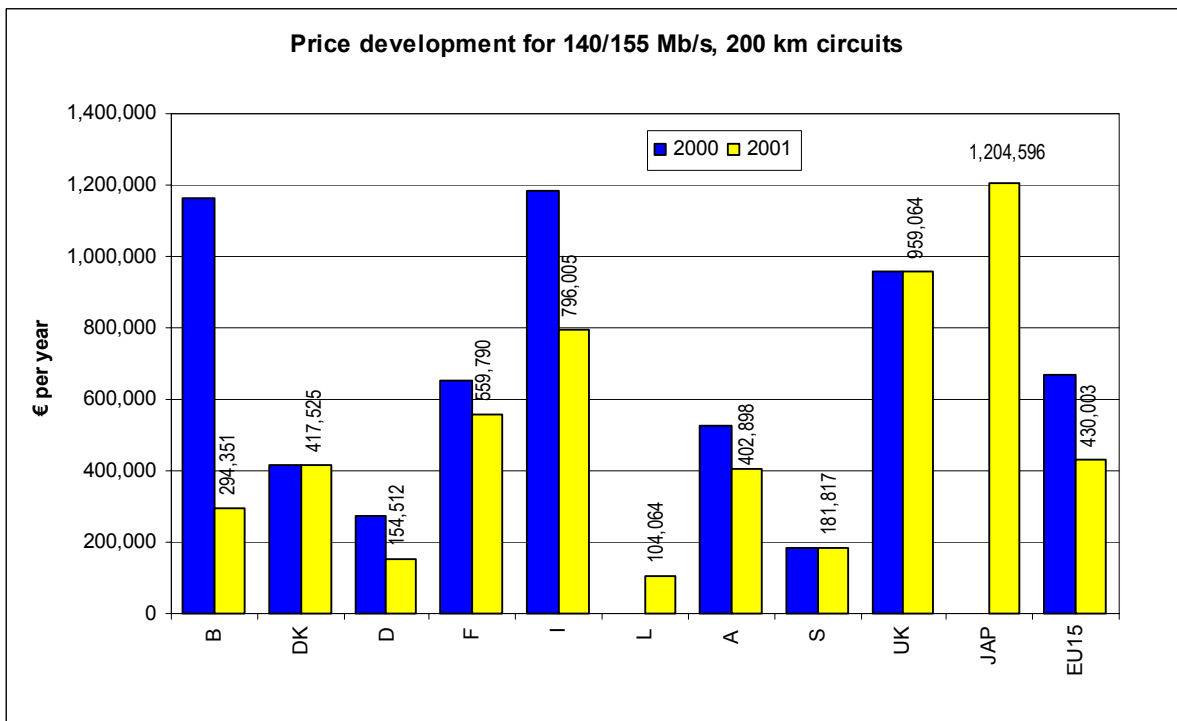


### 1.1.4. 155 Mbit/s

**Chart 9**



**Chart 10**



## 1.2. NATIONAL LEASED LINE PRICE TRENDS (1 AUGUST 1998- 1 AUGUST 2001)

Chart 11

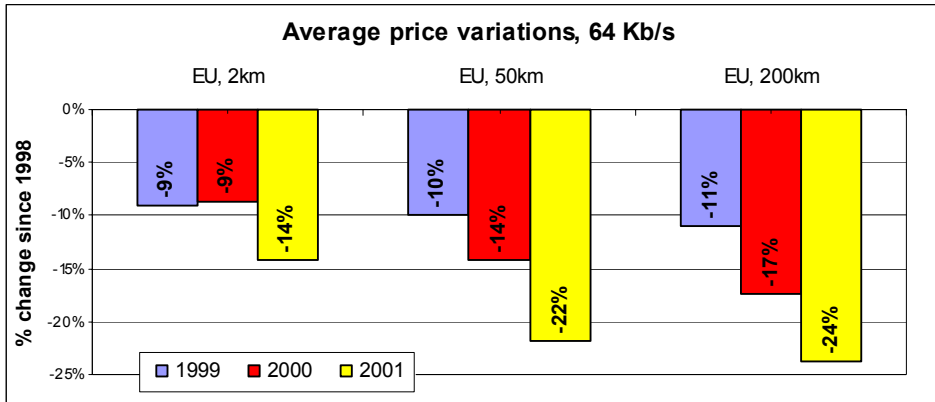


Chart 12

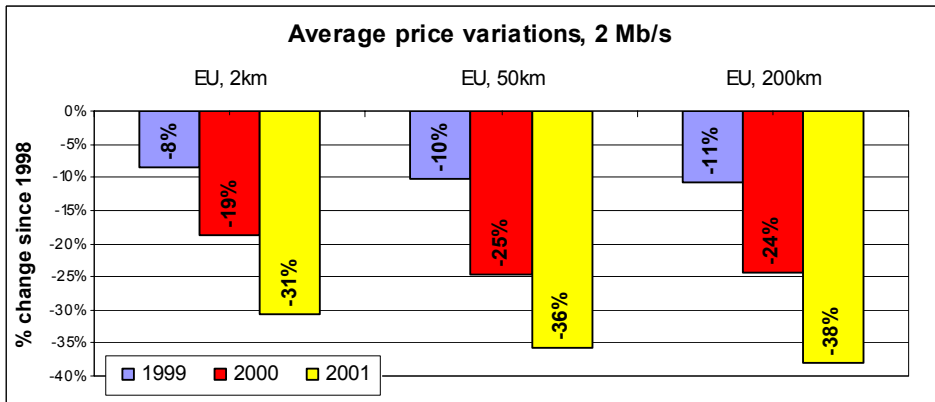
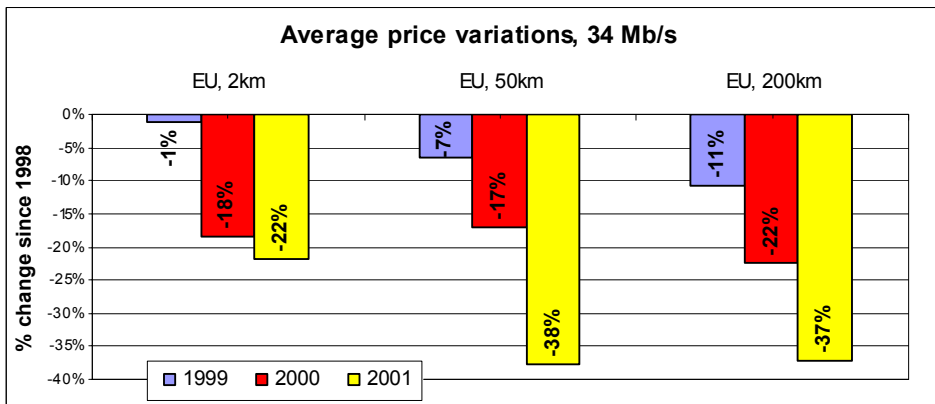


Chart 13





## 2. INCUMBENTS' INTERNATIONAL LEASED LINES

This section examines the standard retail prices (annual rental) for international leased line services (half-circuits in each country) charged by the incumbent operators in each Member State as of 1 August 2001. An analysis of the price development over the period from August 1998 to August 2001 is also included.

Three destinations are covered: international half circuits to the nearest EU country (hereafter “near EU”), to the most distant EU country (“far EU”) and to the USA. Near and far EU countries are defined in Table 1.

Furthermore, three (3) types of circuits are considered: digital 64 Kbit/s, 2 Mbit/s and 34 Mbit/s. Given that price information on 155 Mbit/s international lines is only available for a few member States, the analysis of these circuits is omitted.

**Table 1: Definition of destination countries.**

| <b>From:</b> | <b>Near EU</b> | <b>Far EU</b> |
|--------------|----------------|---------------|
| B            | F              | EL            |
| DK           | S              | EL            |
| D            | F              | EL            |
| EL           | I              | DK            |
| E            | P              | DK            |
| F            | B              | EL            |
| IRL          | UK             | EL            |
| I            | EL             | DK            |
| L            | D              | EL            |
| NL           | D              | EL            |
| A            | D              | EL            |
| P            | E              | DK            |
| FIN          | S              | EL            |
| S            | DK             | EL            |
| UK           | F              | EL            |
| USA          | UK             | EL            |
| Japan        | UK             | EL            |

The following should be noted:

- All charges are in euro per year, VAT excluded. See the “Appendix on exchange rates” for details on euro exchange rates used in this section.
- Germany is not included in the analysis because Deutsche Telekom does not publish prices for international half circuits.
- The expression “EU average” refers to the simple, non-weighted average across EU countries.

- The EU average variation represents variations of the non-weighted EU average.

The tariffs are those deemed to be in force as of 1 August 2001. The last changes in tariffs taken into account for operators in each Member States are indicated in Table 2.

**Table 2**

|             | <b>Last update</b>                            | <b>Confirmed</b> |
|-------------|---|------------------|
| Belgium     | 01.03.99                                      | 18.10.01         |
| Denmark     | 15.08.00                                      | 18.10.01         |
| Germany     | 01.01.00                                      | -                |
| Greece      | 01.03.99                                      | 01.01.01         |
| Spain       | 15.12.99                                      | 01.06.01         |
| France      | 01.01.00                                      | 18.10.01         |
| Ireland     | 21.04.00                                      | 24.07.00         |
| Italy       | 01.09.00                                      | 01.01.01         |
| Luxembourg  | 01.04.01                                      | 01.05.01         |
| Netherlands | 01.01.01                                      | 01.01.01         |
| Austria     | 01.07.99                                      | 18.10.01         |
| Portugal    | 01.07.99                                      | 01.07.01         |
| Finland     | 01.01.01                                      | 01.09.01         |
| Sweden      | 01.01.99                                      | 01.02.01         |
| UK          | 01.11.99                                      | 18.10.01         |
| USA         | Basic prices have not changed for a long time |                  |
| Japan       | 01.10.00                                      | 01.11.00         |

## 2.1. INTERNATIONAL LEASED LINE PRICES AS OF 1 AUGUST 2001

### 2.1.1. 64 Kbit/s

Chart 19

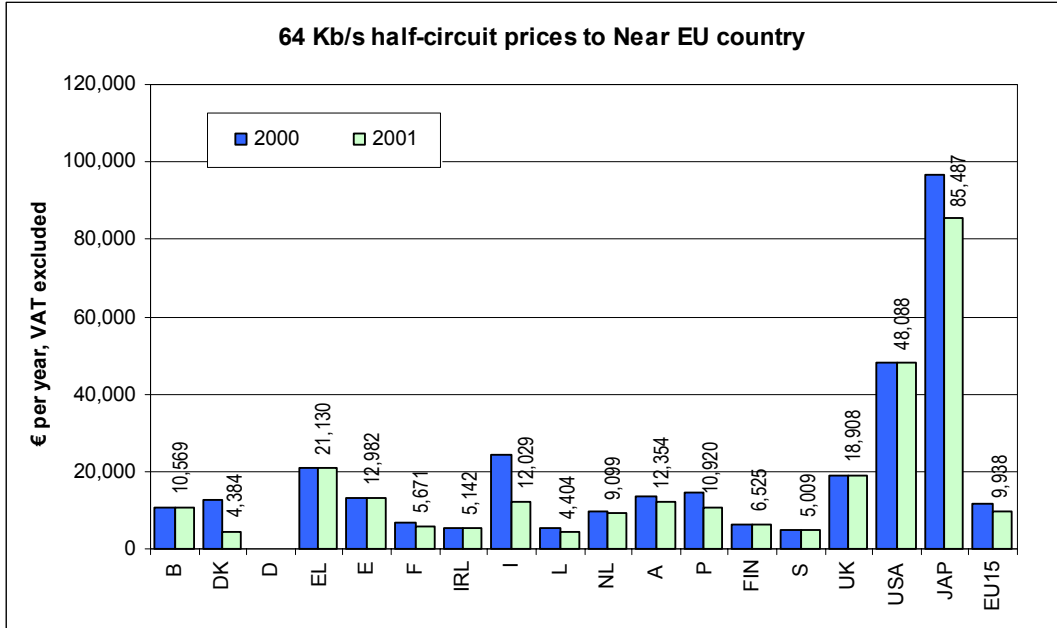
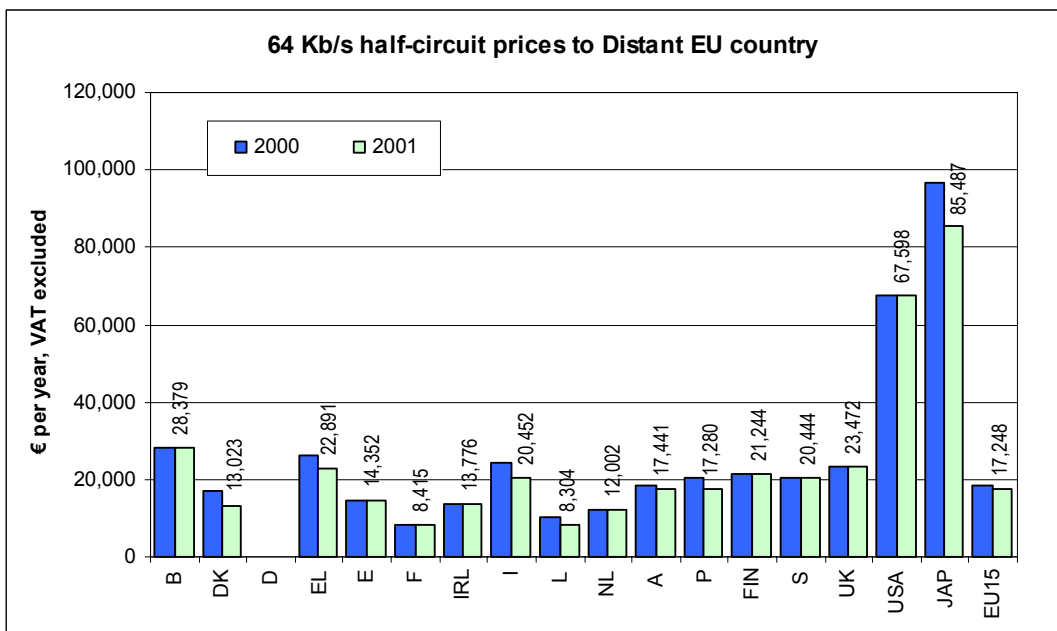
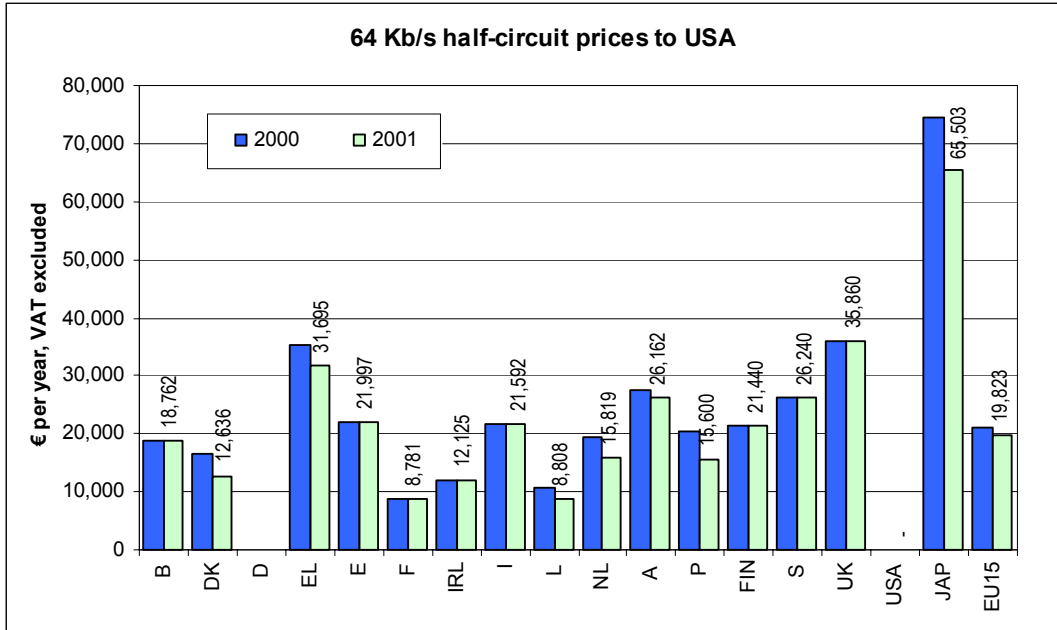


Chart 20



**Chart 21**



**2.1.2. 2 Mbit/s**

**Chart 22**

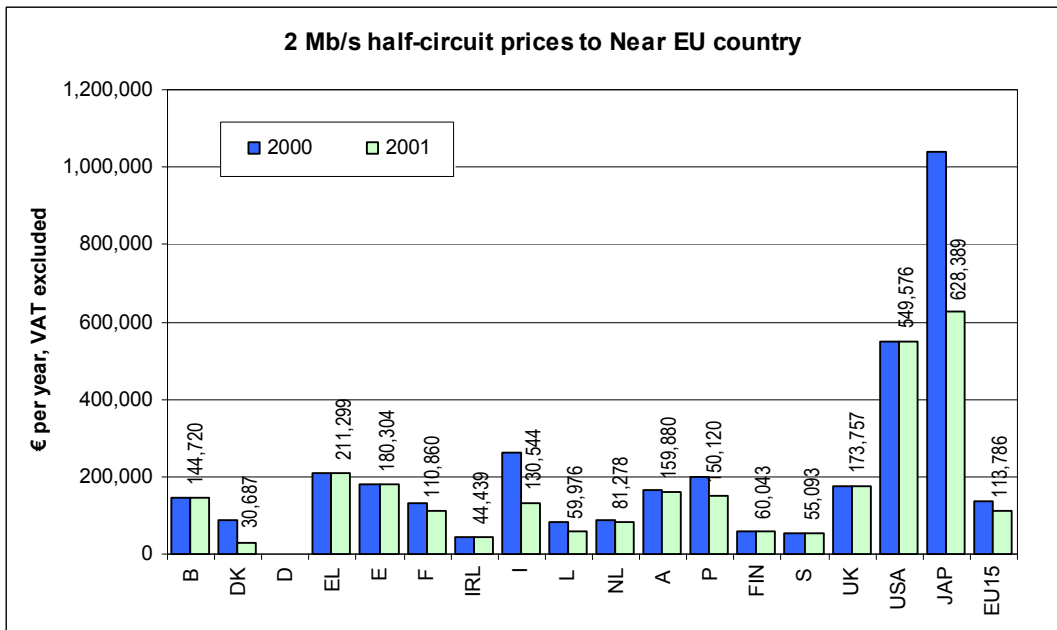


Chart 23

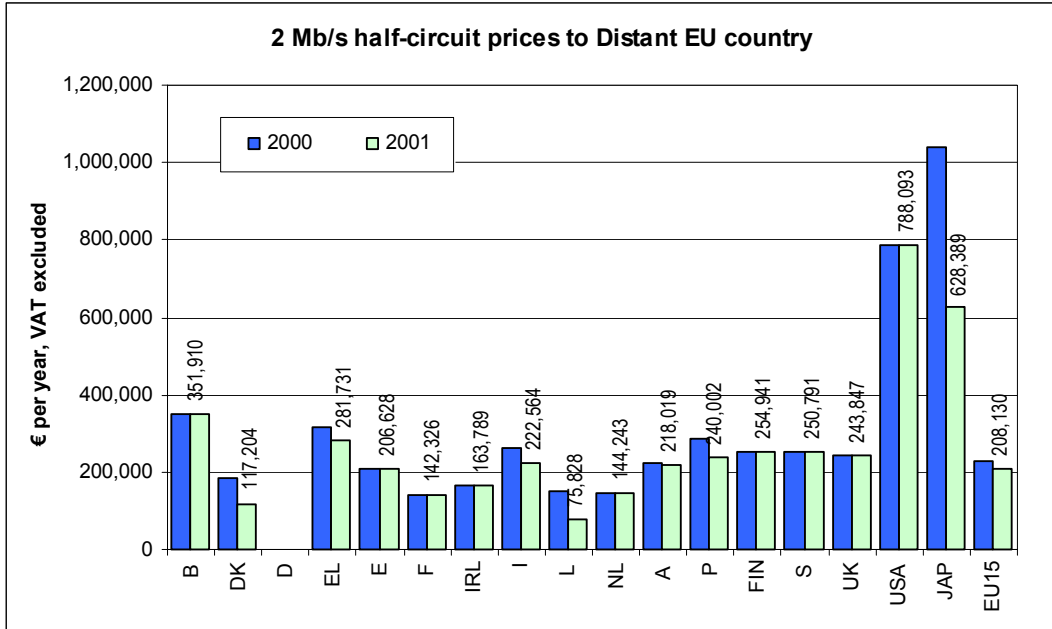
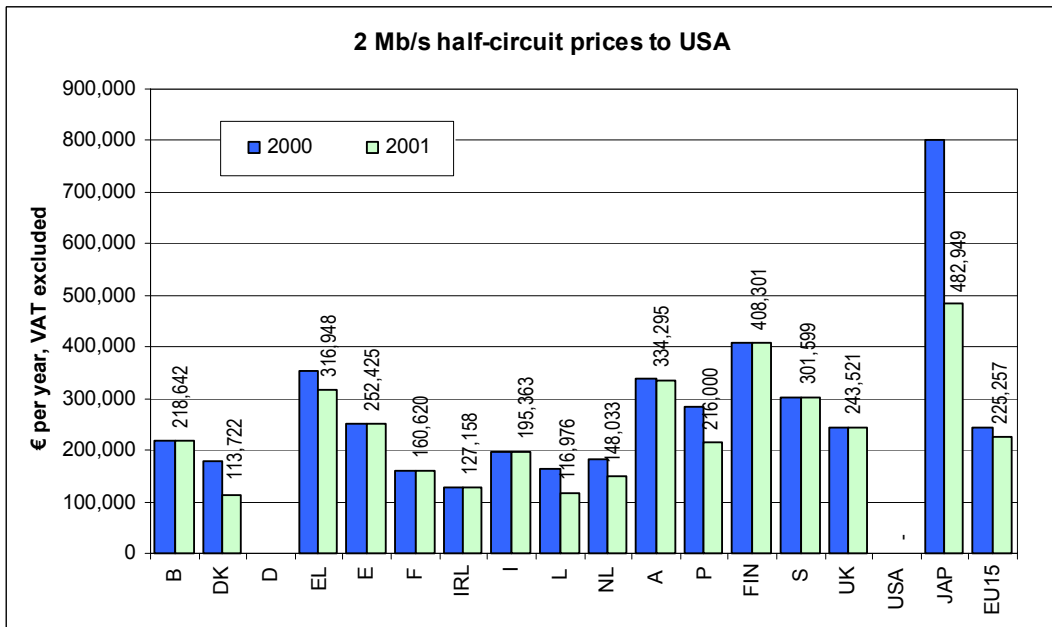


Chart 24



### 2.1.3. 34 Mbit/s

Chart 25

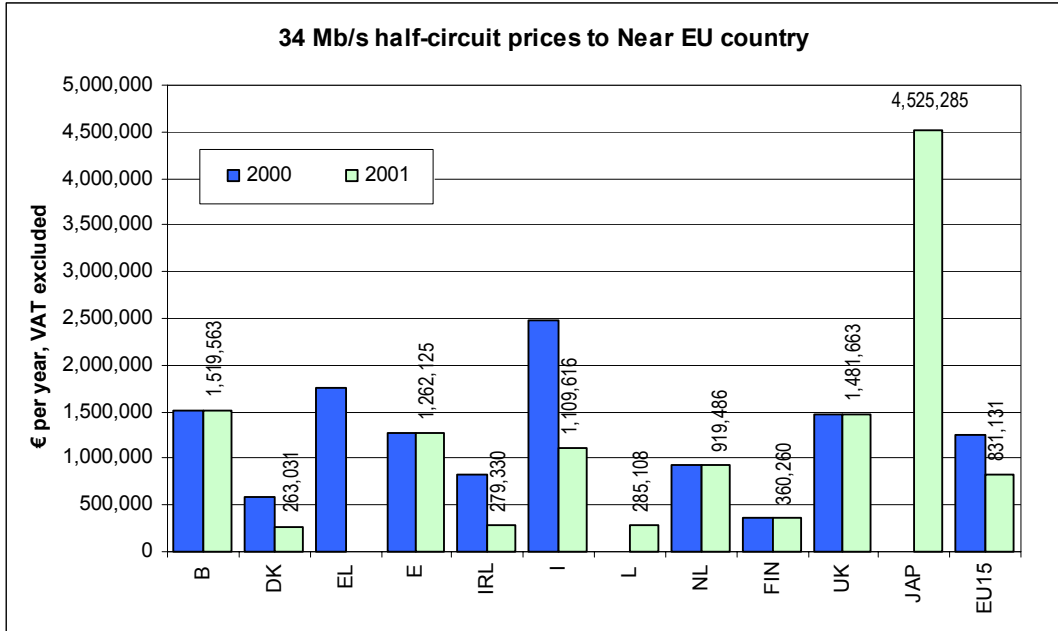
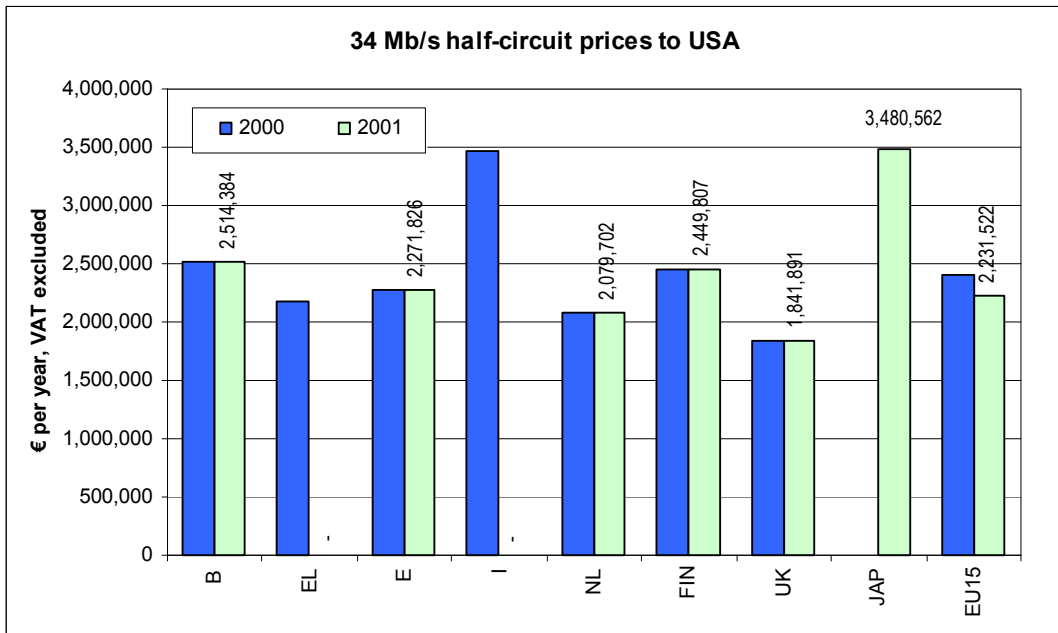


Chart 26



## 2.2. INTERNATIONAL LEASED LINE PRICE TRENDS (1 AUGUST 1998 - 1 AUGUST 2001)

Unlike section 1.2, the EU average variations below represent percentage changes of EU average.

Chart 27

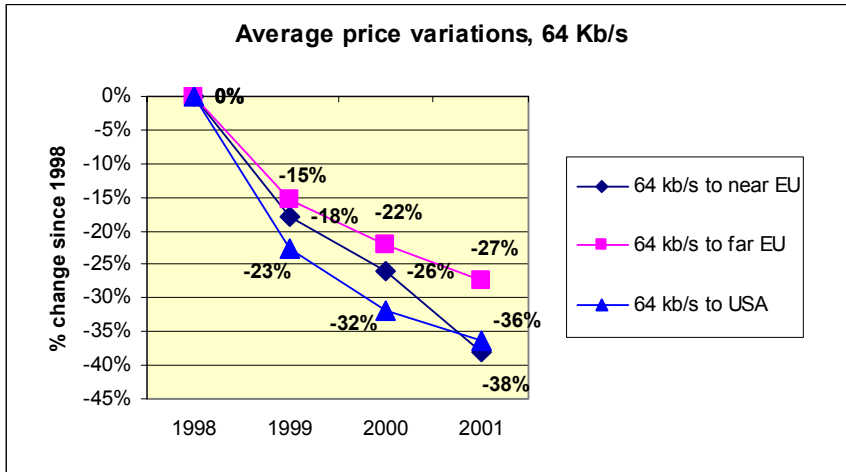


Chart 28

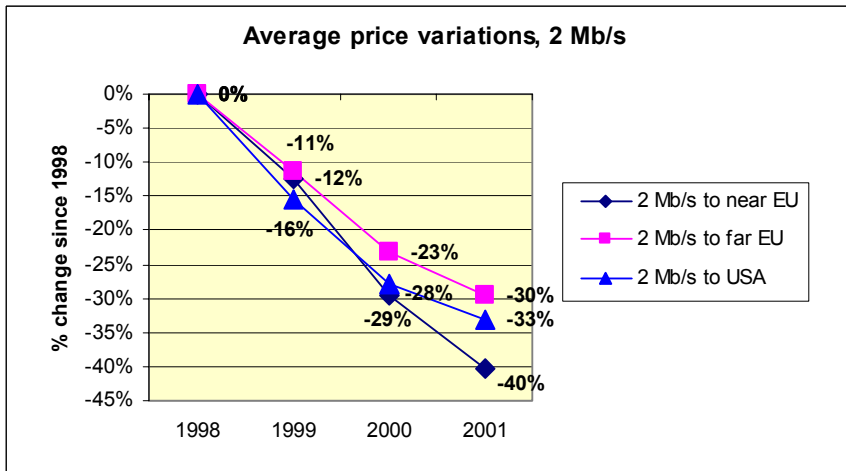
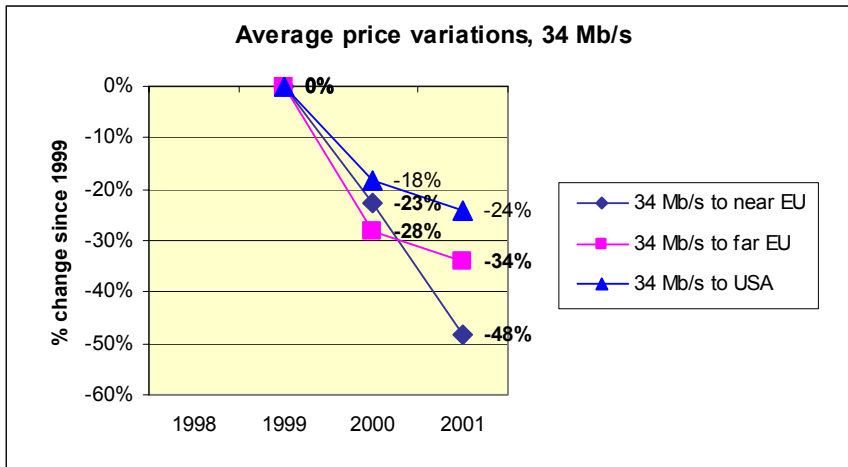


Chart 29





## 1.5 MOBILE SERVICES

### 1 MOBILE MARKET DATA

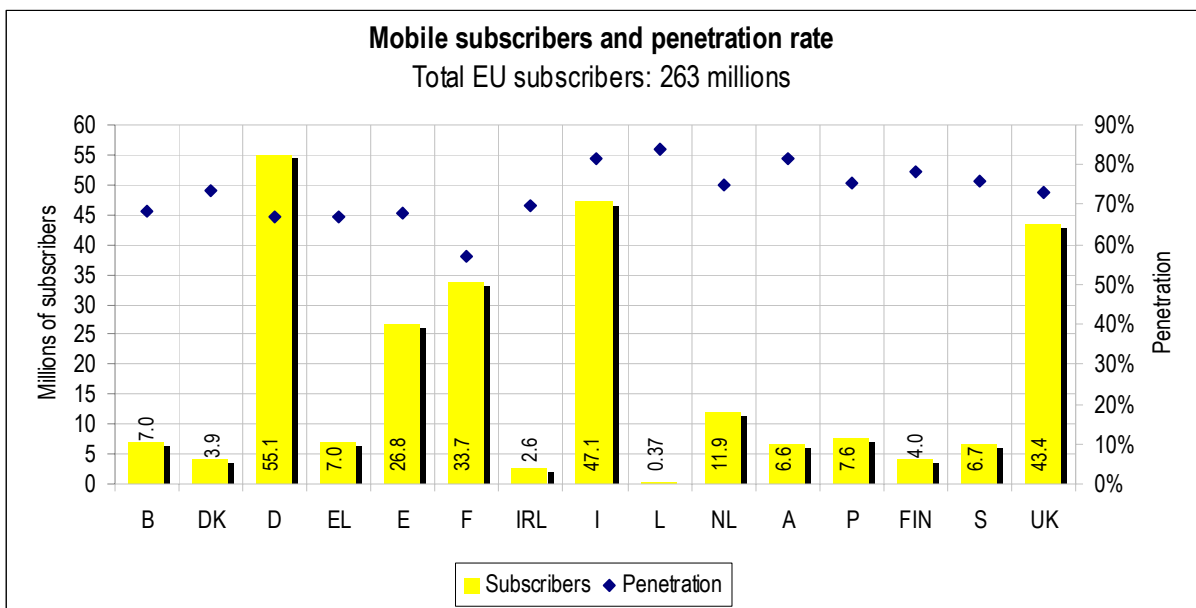
The following charts estimate for each Member State the number of mobile subscribers and the penetration rate in 2001, and the growth in the penetration rate since August 2000.

Subscribers figures are taken from FT Mobile Communications (August 2001) and include both analogue and digital (second-generation) mobile subscribers.

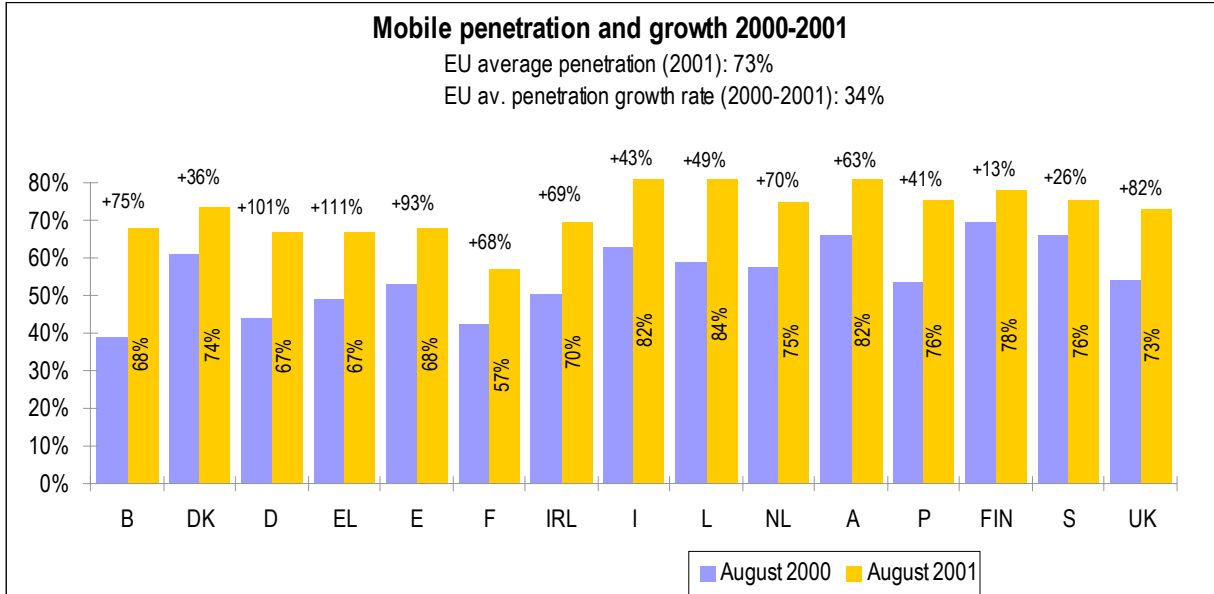
EU average is a simple, rather than a weighted, average.

The following chart shows the absolute number of mobile subscribers in each Member State (columns) and their penetration rate (dots).

**Chart 1**



**Chart 2**



**2 Operators’ market shares**

The following charts show the market shares, in terms of subscribers, of the main competitors in the mobile market.

Since in six - countries the incumbent’s subsidiary is still providing the analogue service on the basis of a de jure or de facto monopoly, the operators’ market shares have been calculated on two different relevant markets: the overall mobile market (including analogue, DCS 1800 and GSM 900 subscribers) and the digital market only (DCS 1800 and GSM 900).

The data concerning shares of the mobile market are based on estimates of the number of mobile subscribers, taken from FT Mobile Communications, and refer to August 2001. They have been compiled on the same basis in each country, and are therefore comparable. However, different figures might be obtained if the underlying raw data were collected/estimated on a different basis (number of subscribers, pre-paid card, minutes of conversation, etc.) or if a different method of calculation was used.

Apart from in the United Kingdom, the leading operator is a subsidiary of the incumbent fixed network operator.

**Chart 3**

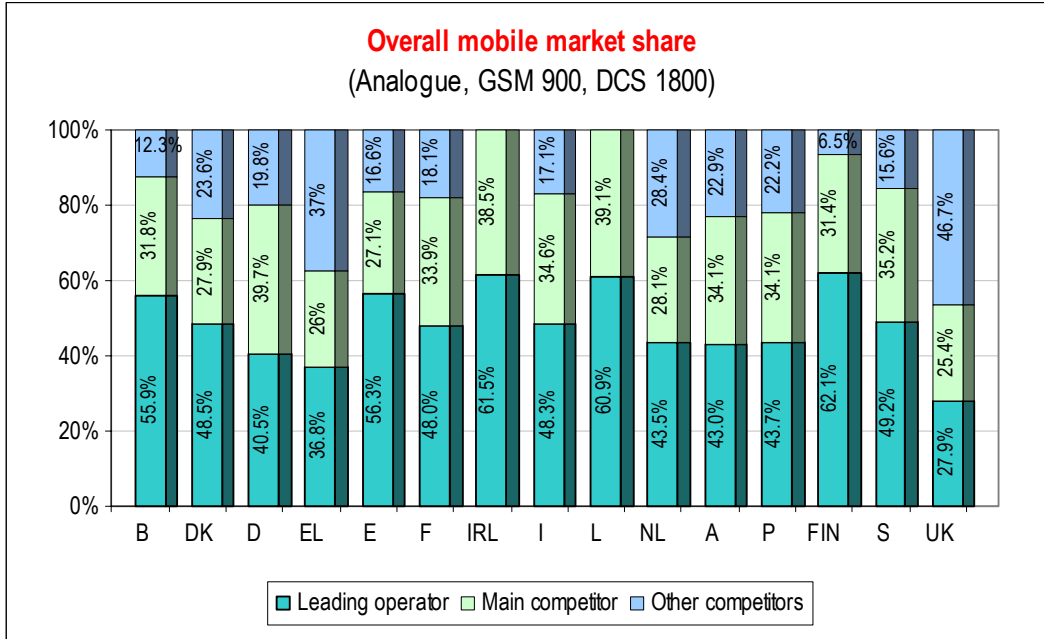
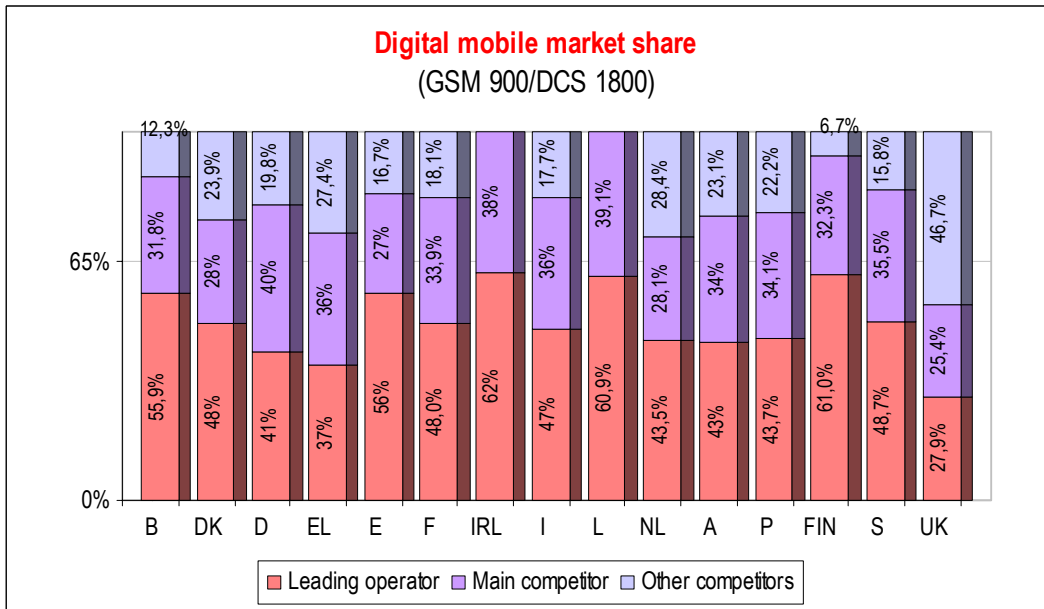


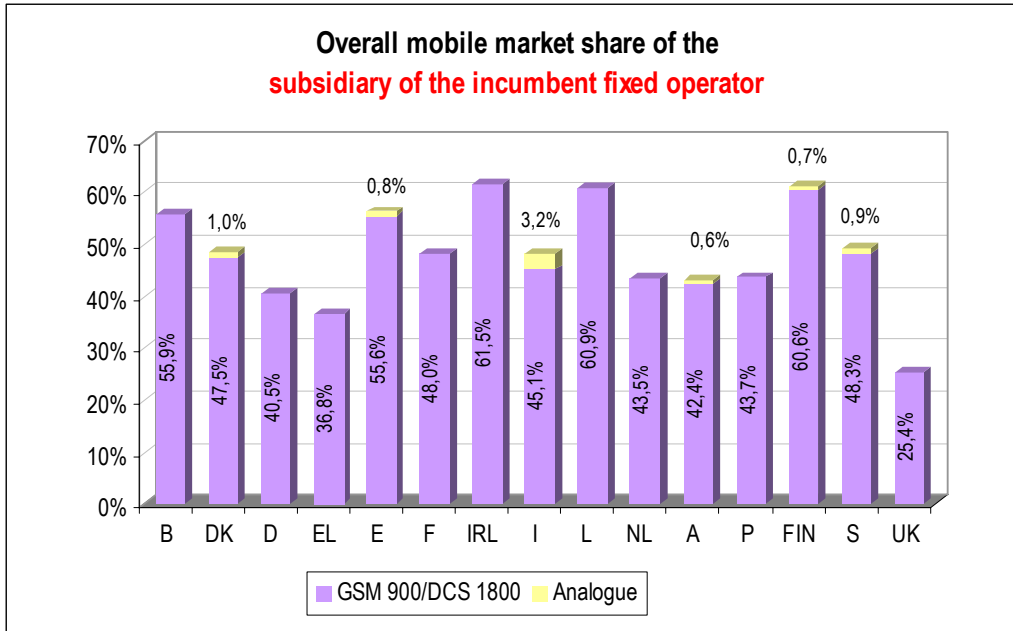
Chart 4 shows the shares of the leading operator, of the main competitor and of the other competitors on the digital mobile market only (100%). Comparison with the positions of the last year shows growing competition. It is worth noticing that in some countries (e.g. Greece and the United Kingdom) the identity of the leading operator has changed since last year.

**Chart 4**



The following chart shows the share of the overall mobile market held by the mobile subsidiary of the incumbent fixed operator. Where the incumbent still operates the analogue service, the shares of the overall mobile market of their analogue and digital services are indicated separately.

**Chart 5**



### 3 Frequency allocation and fees/charges paid by third generation mobile operators

Decision 128/1999/EC of the European Parliament and of the Council of 14 December 1998, on the co-ordinated introduction of a 3G mobile and wireless communication system (UMTS) in the Community requires Member States to take all actions necessary to allow the co-ordinated and progressive introduction of 3G mobile services in their territories. So far all but two Member States have issued 3G mobile licences. Table below summarises the current status of 3G mobile licensing in each Member State, while Table provides details on the coverage/roll-out obligations and deadlines for launch of services imposed on 3 G mobile operators and Table provides an overview of frequency allocation, administrative fees and spectrum charges paid by third generation operators.

The information in these tables and in the following charts is based on a study conducted for the European Commission by Aegis Systems Ltd and Connogue Ltd<sup>13</sup>

**Table 1: Status of 3G Mobile Licensing in EU Member States**

|     | Status of Licensing  | No. of Licences      | Licence Duration | Approach used                 |
|-----|--|----------------------|------------------|-------------------------------|
| B   | Complete, but the future of remaining band under study.            | 4 offered, 3 awarded | 20 years         | Auction                       |
| DK  | Complete (September 2001)  | 4                    | 20 years         | Auction                       |
| D   | Complete (Aug 2000)  | 6                    | 20 years         | Auction                       |
| EL  | Complete (July 2001)   | 4 offered, 3 awarded | 20 years         | Auction                       |
| E   | Complete (March 2000)  | 4                    | 30 years         | Beauty Contest                |
| F   | First round complete, further round expected                       | 4 offered, 2 awarded | 15 years[1]      | Beauty Contest                |
| IRL | Planned  | 4 likely             | 15 years[2]      | Beauty Contest                |
| I   | Complete (October 2000)  | 5                    | 15 years         | Hybrid Auction/Beauty Contest |
| L   | Planned  | 4                    | TBD              | Beauty Contest                |
| NL  | Complete (July 2000)   | 5                    | 16 years         | Auction                       |
| A   | Complete (November 2000)   | 6                    | 20 years         | Auction                       |
| P   | Complete (November 2000)   | 4                    | 15 years [3]     | Beauty Contest                |
| FIN | Complete (March 1999)<br>Åland licences granted in September 1999. | 4                    | 20 years         | Beauty Contest                |
| S   | Complete (December 2000)   | 4                    | 15 years         | Beauty Contest                |
| UK  | Complete (April 2000)  | 5                    | 25 years         | Auction                       |

Notes: [1] An extension of the licence duration to 20 years has been proposed.

[2] Applies to service licence. Spectrum licence is renewable annually, but there is a presumption that such renewal will take place for as long as the spectrum is required to comply with the obligations of the service licence, and be subject to the annual fee being paid when due.

[3] Applies to service licence. Spectrum licence is 5 years duration, but renewable until the service licence expires.

<sup>13</sup> *Administrative Fees and Spectrum Charges for Telecommunication services using Spectrum*, November 2001.

**Table 2: Roll-out obligations on 3G mobile operators in EU Member States**

|     | Coverage and roll-out obligations  | Deadline for launch of 3G services                                  |
|-----|--|---|
| B   | 30% population after 3 yrs, 40% population after 4 yrs, 50% population after 5 yrs, 85% population after 6 yrs, may be reviewed by Government.   | Yes: September 2002   |
| DK  | 30% population coverage by end of 2004, 80% population coverage by end of 2008   | No  |
| D   | 25% population by end 2003, 50% population by end 2005   | No  |
| EL  | 25% population by December 2003, 50% by December 2006  | Yes: 2003   |
| E   | Coverage for all Spanish cities with over 250,000 inhabitants by 1 June 2002   | Yes: postponed from August 2001 to 1 June 2002                      |
| F   | 2 years after launch: 25% population coverage for voice, 20% for 144 kbit/s packet data; 8 years after launch: 80% population coverage for voice, 60% for 144 kbit/s packet data   | Yes, in individual licences:<br>SFR March 2002;<br>Orange June 2002 |
| IRL | To be decided  | To be decided   |
| I   | Regional Capitals within 30 months and provincial capitals within extra 30 months  | No  |
| L   | To be decided  | To be decided   |
| NL  | By 1 Jan 2007, coverage at 144 kbit/s must be provided in built-up areas of all municipalities with over 25,000 inhabitants, on all main connecting arteries and through motorways to Belgium and Germany, and in and around the three main airports. This equates to roughly 60% of population. | No  |
| A   | 25% population by end 2003, 50% population by end 2005   | Yes: 2003   |
| P   | Minimum 20% population after 1 yr, 40% after 3 yrs, 60% after 5 yrs, but each operator has committed to higher figures as part of the tender process - these are included in individual licences.  | Yes: individual obligations postponed to 31 December 2002           |
| FIN | No coverage obligation   | Yes: 1 January 2002   |
| S   | 99.98 % population coverage by 31 December 2003  | Network capacity by 1 January 2002                                  |
| UK  | 80% UK population by 31 <sup>st</sup> December 2007  | No  |

Source: Aegis and European Commission

**Table 3: Level of 3G Mobile Fees and Charges in EU Member States**

|     | Network                    | Spectrum Licensed |          | Administrative Fees (€) |                                       | Spectrum Fees / Charges (€)                  |   |
|-----|----------------------------|-------------------|----------|-------------------------|---------------------------------------|--|---|
|     |                            | Paired            | Unpaired | Once-off                | Annual                                | Once-off                                     | Annual  |
| B   | Belgacom (Proximus)        | 2 x 15            | 5        | 12,500                  | 250,000                               | 150.2 M (auction)                            | 2,500,000 [5]   |
|     | Mobistar                   | 2 x 15            | 5        | 12,500                  | 250,000                               | 150.0 M (auction)                            | 2,500,000 [5]   |
|     | KPN Orange                 | 2 x 15            | 5        | 12,500                  | 250,000                               | 150.0 M (auction)                            | 2,500,000 [5]   |
| DK  | Hi3G Denmark               | 2 x 15            | 5        | 3.350,000               | 0                                     | 31,830,000 [6]                               | 9,778,818 [7]   |
|     | TDC Denmark Internat.      | 2 x 15            | 5        | 3.350,000               | 0                                     | 31,830,000 [6]                               | 9,778,818 [7]   |
|     | Telia Mobile AB            | 2 x 15            | 5        | 3.350,000               | 0                                     | 31,830,000 [6]                               | 9,778,818 [7]   |
|     | Orange A/S                 | 2 x 15            | 5        | 3.350,000               | 0                                     | 31,830,000 [6]                               | 9,778,818 [7]   |
| D   | T-Mobil                    | 2 x 10            | 5        | 0                       | 0                                     | 4,370,000,000                                | Cost based charge will apply from 3 years after licence issue.  |
|     | Mannesman                  | 2 x 10            | 5        | 0                       | 0                                     | 4,340,000,000                                |   |
|     | E-plus Hutchison           | 2 x 10            | 5        | 0                       | 0                                     | 4,310,000,000                                |   |
|     | Viag Interkom              | 2 x 10            | 0        | 0                       | 0                                     | 4,320,000,000                                |   |
|     | Mobilcom Multimedia        | 2 x 10            | 5        | 0                       | 0                                     | 8,430,000,000                                |   |
|     | Group 3G                   | 2 x 10            | 5        | 0                       | 0                                     | 4,330,000,000                                |   |
| EL  | Panafon                    | 2 x 20            | 5        | 0                       | Levy will apply from 2005             | 176,376,199                                  | 0   |
|     | Cosmote                    | 2 x 15            | 5        | 0                       |                                       | 161,411,701                                  | 0   |
|     | Stet Hellas                | 2 x 10            | 5        | 0                       |                                       | 146,735,169                                  | 0   |
| E   | Telefonica Moviles         | 2 x 15            | 5        | 0                       | Annual levy of 0.15% of turnover      | 129,220,000                                  | 162,980,000 [8]   |
|     | Airtel                     | 2 x 15            | 5        | 0                       |                                       | 129,220,000                                  | 162,980,000 [8]   |
|     | Amena                      | 2 x 15            | 5        | 0                       |                                       | 129,220,000                                  | 162,980,000 [8]   |
|     | Xfera                      | 2 x 15            | 5        | 0                       |                                       | 129,220,000                                  | 162,980,000 [8]   |
| F   | Itineris                   | 2 x 15            | 5        | 305,000                 | 152,500                               | 4,966 M, payable in stages over 15 years [9] |   |
|     | SFR                        | 2 x 15            | 5        | 305,000                 | 152,500                               | 4,966 M, payable in stages over 15 years [9] |   |
| IRL | Not yet licensed           |                   |          |                         |                                       |  |   |
| I   | Telecom Italia Mobile      | 2 x 10            | 5        | 56,810                  | 61,975                                | 2,442,000,000                                | 0   |
|     | Omnitel                    | 2 x 10            | 5        | 56,810                  | 61,975                                | 2,448,000,000                                | 0   |
|     | Wind                       | 2 x 10            | 5        | 56,810                  | 61,975                                | 2,427,000,000                                | 0   |
|     | Ipse                       | 2 x 15            | 5        | 56,810                  | 61,975                                | 2,427,000,000                                | 0   |
|     | Andala (now renamed "H3G") | 2 x 15            | 5        | 56,810                  | 61,975                                | 2,417,000,000                                | 0   |
| L   | Not yet licensed           |                   |          |                         |                                       |  |   |
| NL  | KPN Mobile                 | 2 x 15            | 5        | 363[1]                  | 356,670                               | 711,000,000                                  | 98,243  |
|     | Libertel                   | 2 x 14.6          | 5.6      | 0                       | 353,949                               | 713,800,000                                  | 98,243  |
|     | Telfort                    | 2 x 10            | 5        | 0                       | 353,949                               | 430,000,000                                  | 135,907   |
|     | Dutchtone                  | 2 x 10            | 5        | 0                       | 353,949                               | 435,600,000                                  | 145,907   |
|     | 3G-Blue                    | 2 x 10            | 5        | 0                       | 353,949                               | 395,000,000                                  | 98,243  |
| A   | Mobilkom Austria           | 2 x 10            | 10       | 7,267                   | Annual levy of 0.1 - 0.2% of turnover | 171,500,000                                  | 0   |
|     | Max Mobil                  | 2 x 10            | 10       | 7,267                   |                                       | 170,800,000                                  | 0   |
|     | Connect Austria (One)      | 2 x 10            | 0        | 7,267                   |                                       | 119,900,000                                  | 0   |
|     | Telefonica                 | 2 x 10            | 0        | 7,267                   |                                       | 117,700,000                                  | 0   |
|     | TeleRing                   | 2 x 10            | 0        | 7,267                   |                                       | 113,400,000                                  | 0   |
|     | Hutchison 3G               | 2 x 10            | 5        | 7,267                   |                                       | 138,800,000                                  | 0   |
| P   | TMN                        | 2 x 15            | 5        | 49,880                  | 9,976                                 | 99,760,000                                   | Currently based on number of base stations and mobile terminals |
|     | Telecel                    | 2 x 15            | 5        | 49,880                  | 9,976                                 | 99,760,000                                   |   |
|     | Optimus                    | 2 x 15            | 5        | 49,880                  | 9,976                                 | 99,760,000                                   |   |
|     | Oni-way                    | 2 x 15            | 5        | 49,880                  | 9,976                                 | 99,760,000                                   |   |
| FIN | Sonera [2]                 | 2 x 15            | 5        | 0                       | 0                                     | 0  | 1,592,640 [4]   |
|     | Radiolinja [2]             | 2 x 15            | 5        | 0                       | 0                                     | 0  | 1,592,640 [4]   |
|     | Telia Finland [2]          | 2 x 15            | 5        | 0                       | 0                                     | 0  | 1,592,640 [4]   |
|     | Suomen 3G [2]              | 2 x 15            | 5        | 0                       | 0                                     | 0  | 1,592,640 [4]   |
|     | Alands Mobiltelefon [3]    | 2 x 15            | 5        | 0                       | 0                                     | 0  |   |
|     | Tele1 Europe Ab [3]        | 2 x 15            | 5        | 0                       | 0                                     | 0  |   |
| S   | Europolitan                | 2 x 15            | 5        | 10,893                  | €5,447 plus 0.15% of turnover         | 0  | €17.43 per annum per base station                               |
|     | Tele2                      | 2 x 15            | 5        |                         |                                       | 0  |   |
|     | Hi3G Access                | 2 x 15            | 5        |                         |                                       | 0  |   |
|     | Orange Sverige             | 2 x 15            | 5        |                         |                                       | 0  |   |

|    | Network      | Spectrum Licensed |          | Administrative Fees (€) |  | Spectrum Fees / Charges (€) |        |
|----|--------------|-------------------|----------|-------------------------|--|-----------------------------|--------|
|    |              | Paired            | Unpaired | Once-off                | Annual                                 | Once-off                    | Annual |
| UK | BT Cellnet   | 2 x 10            | 5        | 0                       | Annual levy of up to 0.08% of turnover | 6,500,000,000               | 0      |
|    | One2one      | 2 x 10            | 5        | 0                       |  | 6,452,000,000               | 0      |
|    | Orange       | 2 x 10            | 5        | 0                       |  | 6,468,000,000               | 0      |
|    | Vodafone     | 2 x 15            | 0        | 0                       |  | 9,613,000,000               | 0      |
|    | Hutchison 3G | 2 x 15            | 5        | 62,800                  |  | 7,065,000,000               | 0      |

Notes: [1] Applies to operators with SMP  
[2] Covers all of Finland except Åland  
[3] Covers Åland only  
[4] Subject to reduction in the first five years  
[5] Maximum amount payable, actual amount is based on spectrum actually in use.  
[6] Initial 25% of auction bid  
[7] 10 annual instalments each comprising 7.5% of auction bid, plus €228,000 annual spectrum fee  
[8] The draft Budget Law for 2002 foresees an average reduction of 65% of the spectrum reservation charges for 3G mobile services.  
[9] The French Government has announced plans to reduce the 3G licence charge to € 619 and to charge a levy on 3G revenue, which is yet to be fixed.

### Comparative case studies on fees and charges

In the following, an attempt is made to compare the level of charges paid by third generation operators in the various Member States on the basis of hypothetical model networks. In Chart 6 the relevance of once-off and recurring payments are compared, whereas Chart 7 shows effective annual payments per subscriber for different penetration rates and in comparison with second generation services.

In order to carry out the comparisons, the following assumptions have been made concerning 3G networks:

- Amount of spectrum recommended by the UMTS Forum, i.e. 2 x 15 MHz paired plus 5 MHz unpaired.
- 28% market penetration for 3G mobiles services (based on UMTS Forum estimate for 2010).
- ARPU (average revenue per user) €27 / month for 3G mobile services, i.e. €324 per annum.
- Market share per operator 25% (based on four operators with equal shares)
- To support the higher data rates associated with 3G mobile services, it is assumed that one base station per 250 subscribers will be required .

The following assumptions have been made concerning the 2G network:

- Amount of spectrum: 2 x 10 MHz in the 900 band and 15 MHz paired in the 1800 band.
- The number of base stations for the dual band network here defined is assumed to be one per 1 333 subscribers.
- A market penetration of 60% throughout the EU.
- The presence of four competing operators in each Member State, each with a 25% share of the market.
- ARPU of €25.20 per month for personal use, €80.10 per month for business use. This reflects the increasing trend towards pre-pay tariffs with lower ARPU values.
- A subscriber base which is 75% personal users and 25% business users, consistent with the current typical market profile within the EU.

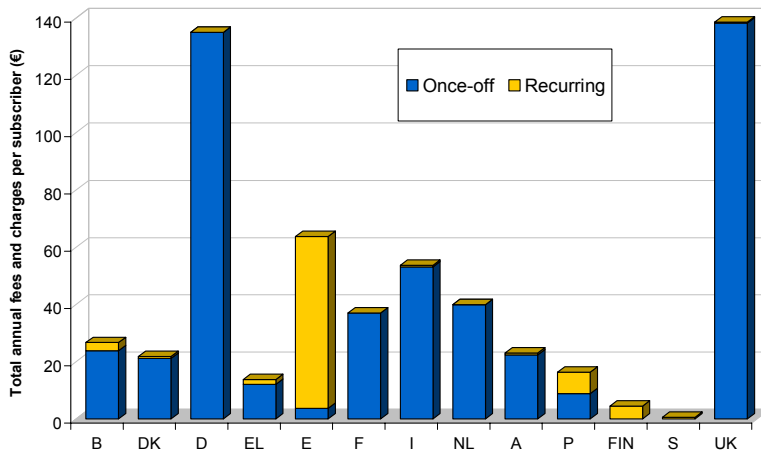
By applying the above parameters to each Member State, taking account of the actual population of the Member State, the number of subscribers, annual turnover and effective annual cost of fees and charges per subscriber can be deduced, for the assumed level of penetration and market share.



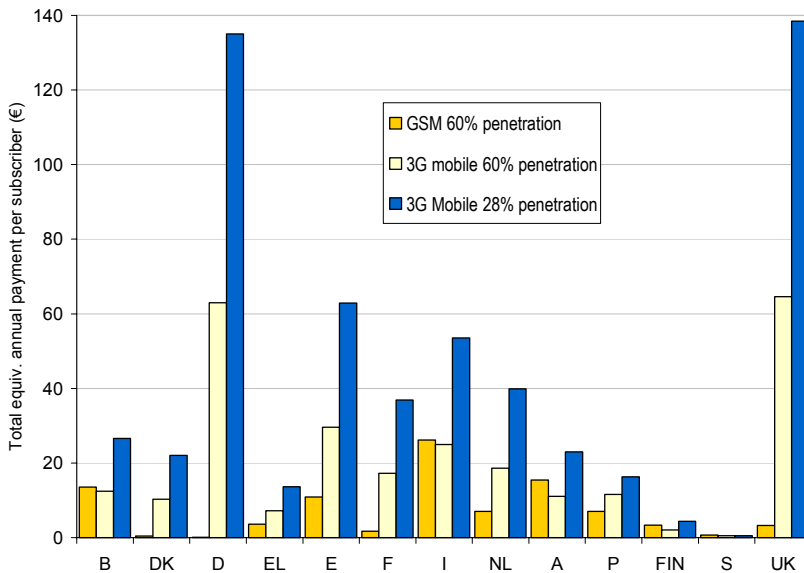
In those countries where auctions have been held and more than four operators have been licensed, the amount paid has been standardised by dividing the total amount bid for all the licences by four.

All once-off payments have been amortised over the life of the licence assuming a 5% finance charge and a 3% inflation rate, enabling an equivalent annualised rate to be determined. This is then added to any annual fee or charge levied by the NRA to provide a total effective annual payment, which is then divided by the number of subscribers.

**Chart 6: Comparison of once-off and recurring payments (in terms of equivalent effective annual payments) for reference 3G mobile networks (€ per annum per subscriber, assuming 28% penetration)<sup>14</sup>**



**Chart 7: Effective annual payment of fees and charges for reference 3G mobile network (with 28% and 60% penetration) and reference dual-band GSM network (with 60% penetration)<sup>14</sup>**



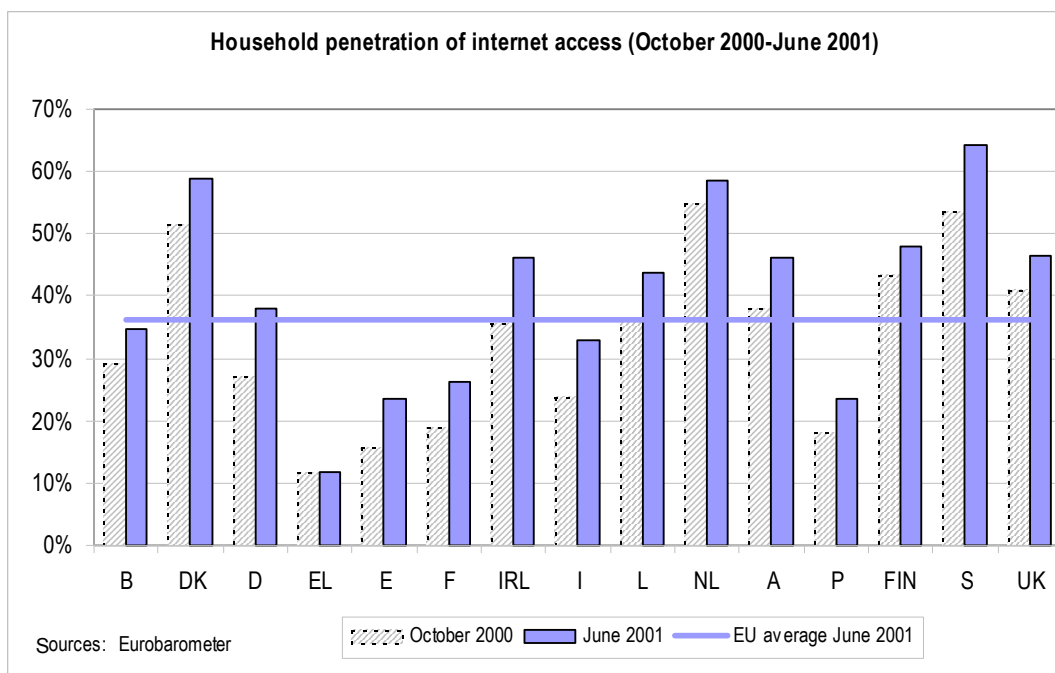
<sup>14</sup> The assumed level of annual spectrum charges for 3G mobile in Spain is based on the 2001 budget. Spectrum charges for France reflect the position prior to the changes proposed in October 2001.



1. INTERNET MARKET DATA

The following chart shows the percentage of households having internet access, irrespective of the technologies used: normal public switched telephone network (PSTN) or broadband access (DSL, cable modem, ISDN, WLL).

Chart 1

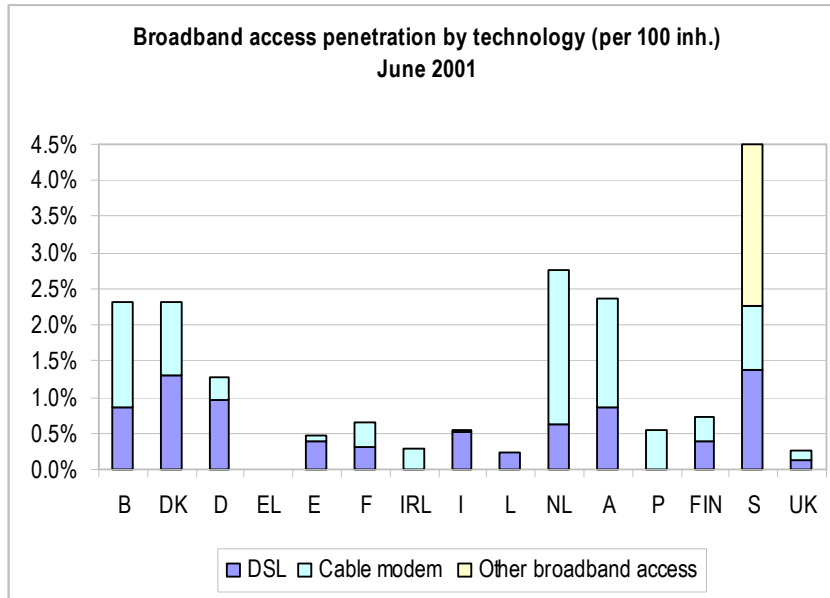


Standard dial-up is still by far the most popular means for households to access the internet in all Member States, with broadband technologies only just beginning to emerge (see the following charts). Current levels of penetration of broadband technologies are low, but figures show a rapid increase.

Of the broadband technologies now available, DSL overtook digital cable in 2001 in terms of penetration (see Chart 3), but neither of these access platforms has been available for very long: only 18% of the cable infrastructure is set up for two-way transmission, and DSL (usually ADSL) has only been commercially available since 2000 in most Member States.

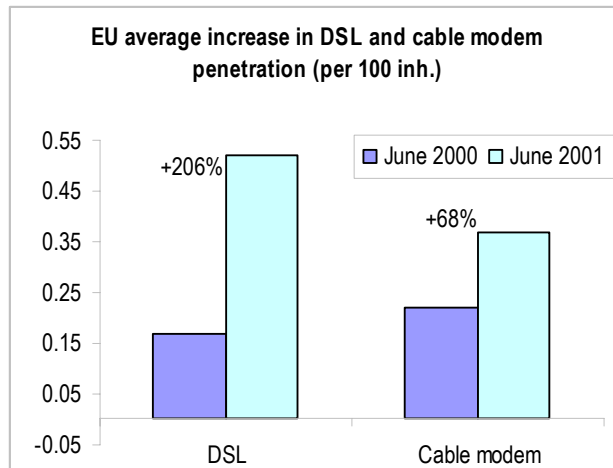
The following charts show broadband access penetration (per 100 inhabitants) for the Member State (split by technology) and the increase at EU level since June 2000. Figures are taken from the NRAs and OECD (cable modem, DSL access in 2000 and for some of the figures for 2001).

**Chart 2**



Sweden's other broadband access includes subscriber Ethernet LANs such as B2's high-speed fibre LAN service. Telia's LAN subscribers are reported under DSL. Cable data are for the two largest networks with smaller networks being included in the "other" category. Cable modems access for Germany refers to the year 2000.

**Chart 3**



## 2. INTERNET ACCESS PRICING (dial up)

This section deals with the cost of internet usage for residential (economy type usage) and business users (peak time usage) through dial up modems for access.

The figures and information are taken from a study carried out for the European Commission by Total Research-Teligen and inform us of the situation in August 2001.

The cost of such service will consist of four main elements:

- PSTN fixed charges: the monthly rental.
- PSTN usage charges<sup>15</sup>: the price for the local telephone calls to an Internet Service Provider (ISP) at 11:00 during weekdays for peak rate and at 20:00 during weekdays for off-peak rate.
- ISP fixed charges: the fixed price of internet access charged by the ISPs providing the cheapest internet charges
- ISP usage charge: the variable price (time-depending) of the internet connection charged by ISPs. If the usage charge is zero, it means that the access cost is embedded in the fixed price of the package.

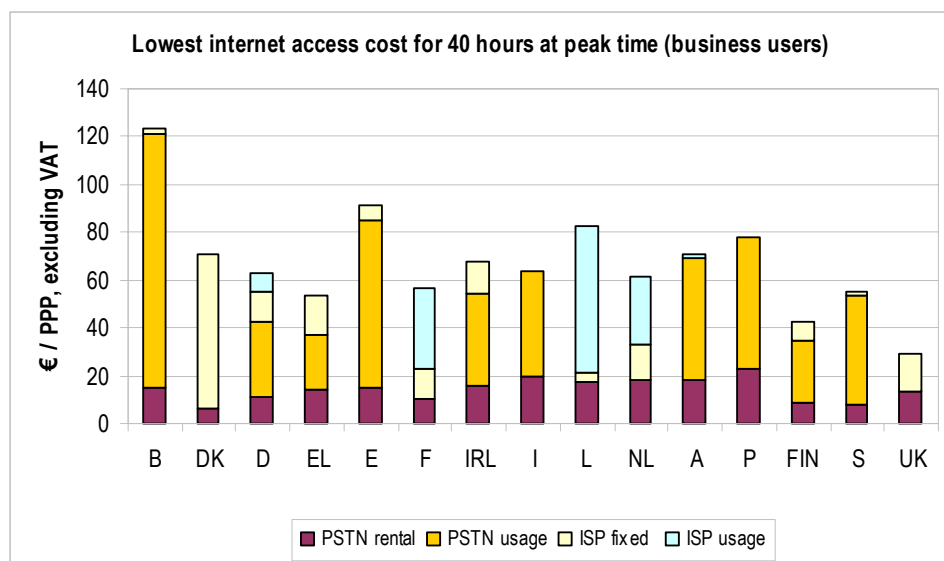
Operators in the Member States offer a great variety of internet packages: the four elements may be applied in any combination. Moreover, some packages are combined with regular local call PSTN charges, while other packages offer special charges, most often related to special access numbers.

157 internet packages in the 15 EU Member States have been analysed, including both incumbent and competitors' offerings. The two charts presented below show the best available package offered by any of the operators, for two consumer profiles in each country (business and residential):

- 40 calls of 1 hour per month, business usage, at peak time hours. (40 hours usage)
- 20 calls of 1 hour per month residential usage, at off peak hours. (20 hours usage)

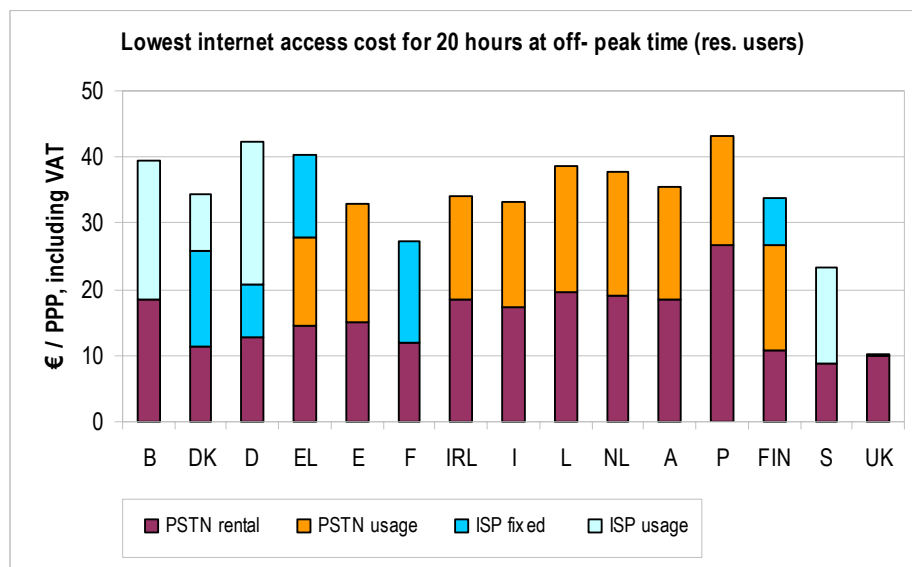
Special dial-up charges have been used for D, F, EL, L, A, P.

**Chart 4**



<sup>15</sup> The PSTN access usage price have been selected as far as published information allows. There may be instances where a lower PSTN usage charge tariff should have been used, but where such information was not found.

**Chart 5**



### 3. ADSL ACCESS PRICING FOR THE INCUMBENTS

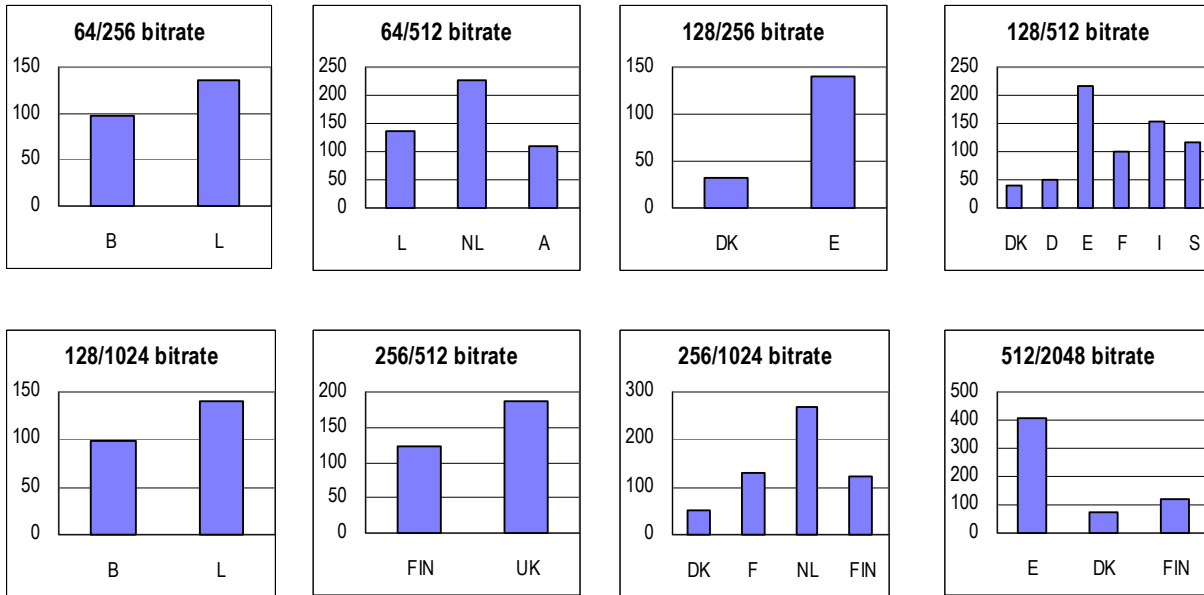
The xDSL technology is fast becoming popular as an economical way of having high speed internet access. For residential and small business users the ADSL service offers a variety of speeds (bitrates), and the advantage that no special lines need to be installed. A regular telephone line can serve as the basis for the service.

In order to encourage customers to pay a premium for increased bandwidth, operators appear to be targeting niche markets (such as early adopters and small businesses) with highly differentiated offers in terms of monthly rental, installation charge, length of contract and available bandwidth.

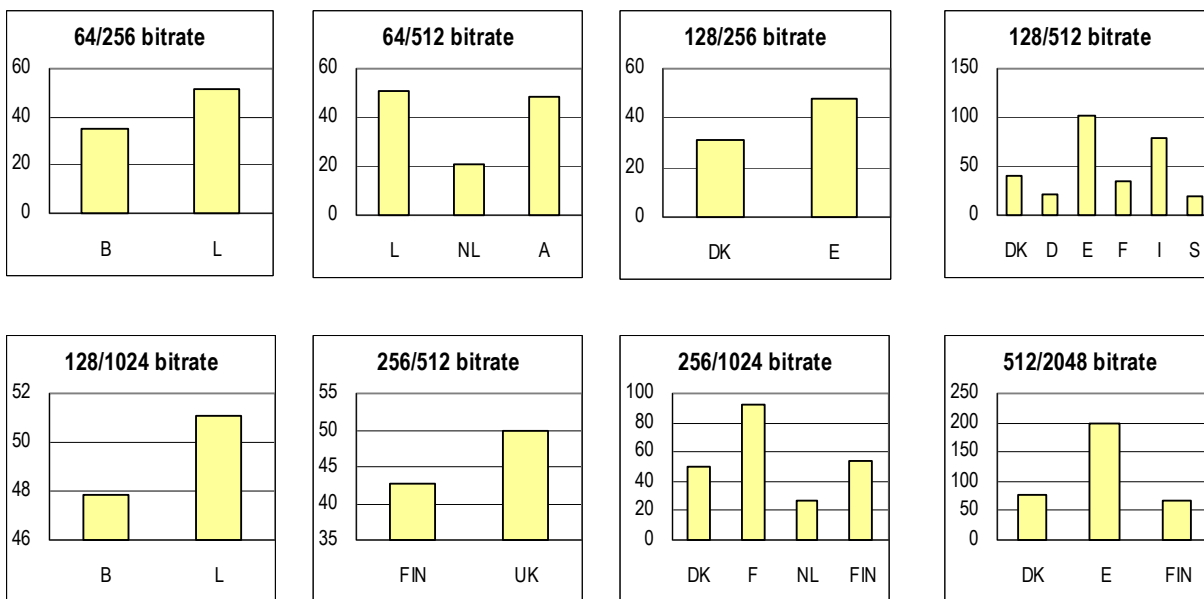
The charts below show the installation and monthly rental charges for ADSL services offered by incumbent operators in the EU Member States. At the moment, Greece and Ireland are not yet offering ADSL services, but a launch is expected in the near future. Portugal started its commercial ADSL offer at mid 2001 and there are no figures available.

In the following charts, the charges shown are for the ADSL service alone, and do not include any additional services like internet access. Charges related to the underlying telephone line are not included.

**Chart 6 INSTALLATION CHARGES FOR ADSL CHARGED BY THE INCUMBENTS (€ / PPP, August 2001)**

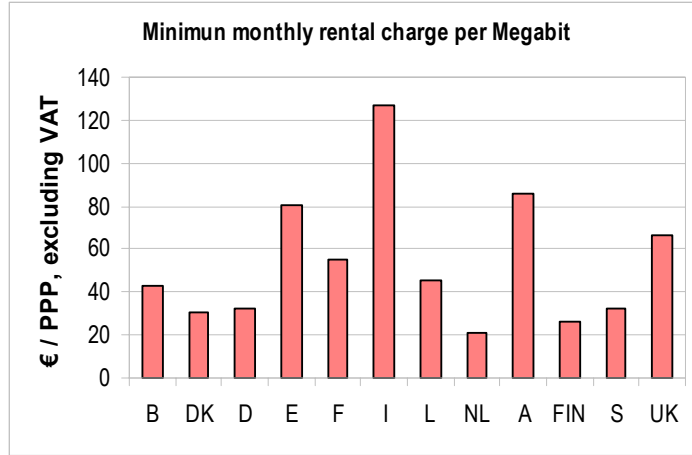


**Chart 7 MONTHLY USAGE CHARGES FOR ADSL CHARGED BY THE INCUMBENTS (€ / PPP, August 2001)**



The offerings from the different incumbents in the countries vary a lot, as the charts show. Different bitrate combinations are used, and it is difficult to make direct price comparisons. An attempt has been made to compare the price per Megabit of transfer capacity, assuming the sum of the two bitrates for up-link and down-link. The highest capacity offered in a country is then used as a basis, as this will produce the lowest price scenario. Lower bitrates will normally have a higher price per Megabit.

**Chart 8**





## Annex 2

### Regulatory Data, Including Implementation of the TV Signals Directive



## 2.1 LOCAL ACCESS

This section contains market data which provide insights on the degree of competition in the local access market. These data cover information on unbundling, such as the number of unbundled lines and the number of agreements concluded with the incumbent operators, wireless local loop licences granted and cable TV infrastructure.

The data are based on information provided by national regulatory authorities (NRAs) unless otherwise specified.

### 1. UNBUNDLING

Table 1 provides the date of publication or last update of reference unbundling offers (RUO) for full unbundling, shared access and collocation services at 1 August 2001. It should be noted that in the case of Italy a new RUO for full unbundling and collocation services has been presented on 7 September. Some of the RUOs referred to below are under examination of the competent NRA.

The following two charts show the number of fully unbundled lines and the percentage of main distribution frames (MDFs) for which collocation services are operational.

The charts provide a picture of the situation in July 2001, although it should be considered that this is an ongoing process, so that the exact numbers vary continuously .

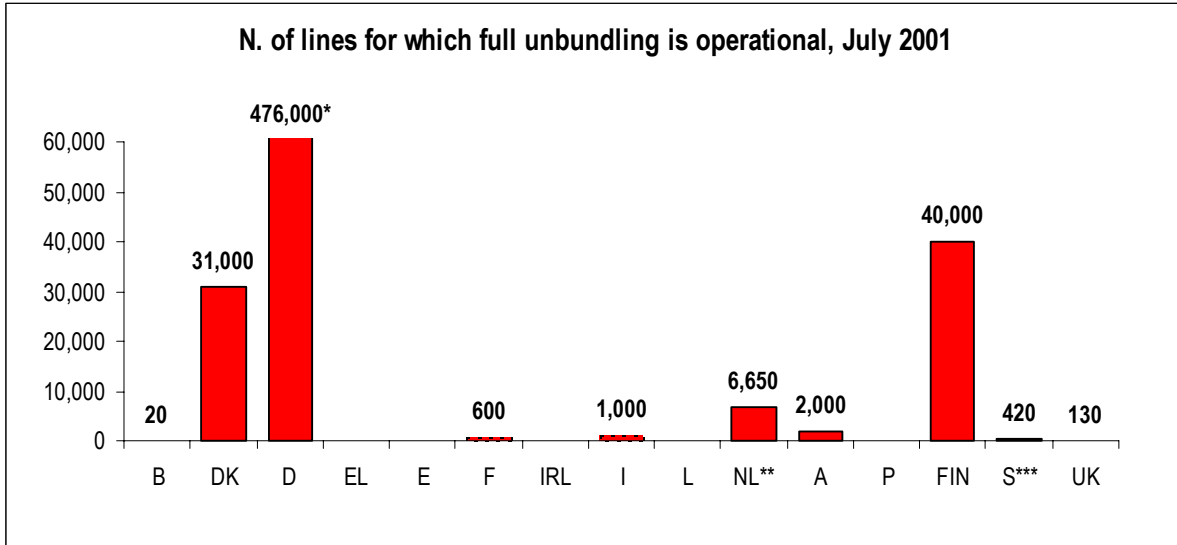
The number of lines referred to in the case of France and Italy are trial lines. However, at the end of September, both Member States present a positive number of actual fully unbundled lines of 1 000 in the case of Italy and about 10 lines in the case of France.

Those indicated for the United Kingdom are mostly trial lines. Field trials are also ongoing in Portugal. Figures for Austria should be considered minimum values.

**Table 1**

| <b>Date of last update of reference unbundling offers</b> |                             |                             |                             |
|---|-----------------------------|-----------------------------|-----------------------------|
|   | full unbundling             | shared access               | collocation                 |
| B   | 02.05.2001                  | 02.05.2001                  | 02.05.2001                  |
| DK  | 31.01.2001                  | 31.01.2001                  | 01.11.2000                  |
| D   | 11.04.2001                  | No RUO                      | 06.12.2000                  |
| EL  | 15.06.2001                  | No RUO                      | 15.06.2001                  |
| E   | 21.01.2001                  | 21.01.2001                  | 21.06.2001                  |
| F   | 16.07.2001                  | 16.07.2001                  | 16.07.2001                  |
| IRL   | 13.07.2001                  | 13.07.2001                  | 13.07.2001                  |
| I   | 05.01.2000                  | No RUO                      | 01.04.2001                  |
| L   | 24.07.2001                  | No RUO                      | 24.07.2001                  |
| NL  | 16.05.2001                  | 16.05.2001                  | 16.05.2001                  |
| A   | 10.07.2001                  | 10.07.2001                  | 10.07.2001                  |
| P   | 16.07.01                    | No RUO                      | 16.07.01                    |
| FIN   | 46 RUOs, all updated lately | 46 RUOs, all updated lately | 46 RUOs, all updated lately |
| S   | 15.03.2001                  | 15.03.2001                  | 15.03.2001                  |
| UK  | 31.12.2000                  | 31.12.2000                  | 04.07.2001                  |

**Chart 1**



\* Figure not to scale

\*\* At beginning of October.

\*\*\* At beginning of June.

**Chart 2**

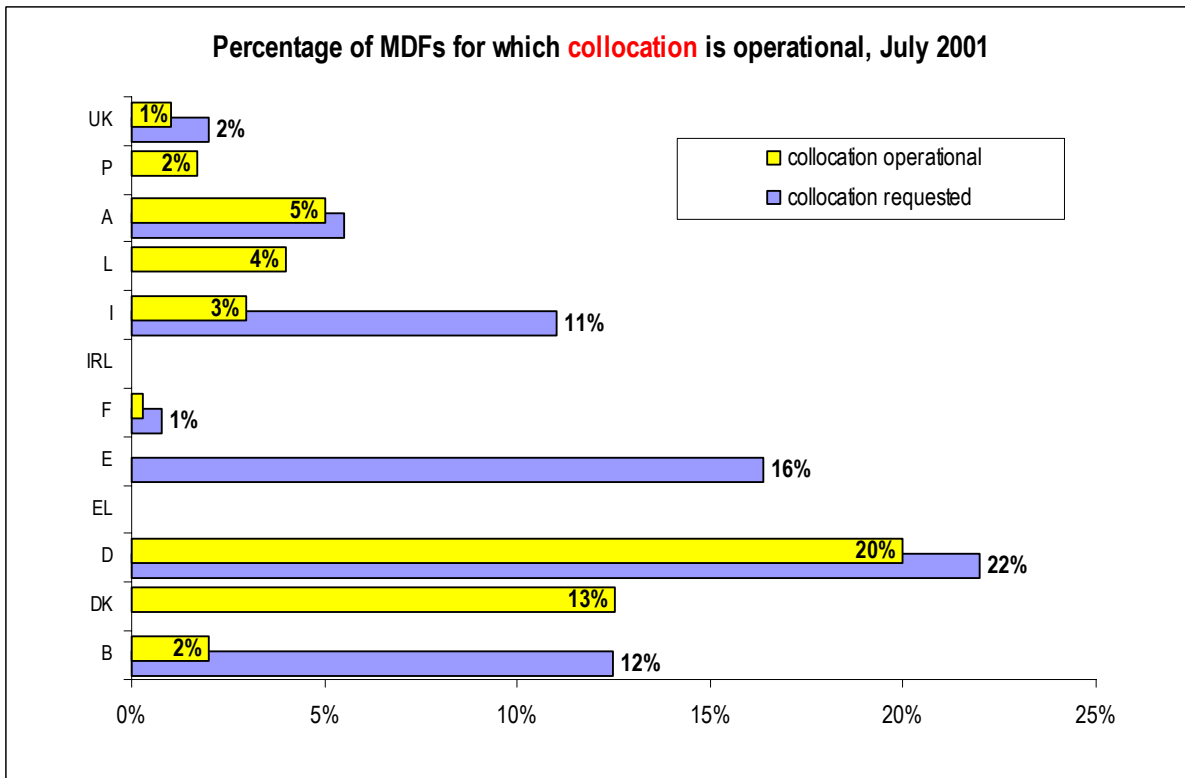
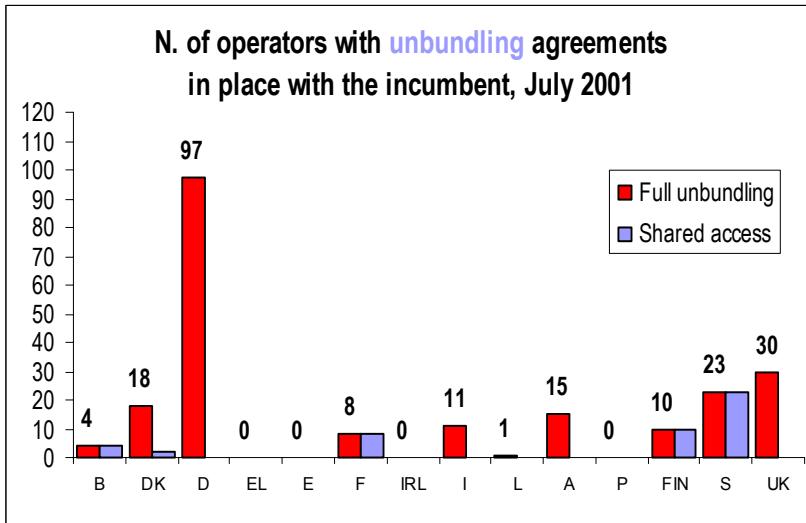


Chart 3 shows the number of new entrants with agreements concluded with incumbent operators for both full unbundling and shared access. In the case of France, the agreement has been concluded in the context of trials. The information is not available for the Netherlands.

Table 2 shows the number of shared access lines operational in July 2001. No figure is available for Denmark, while in the case of the Netherlands the record refers to the situation in October 2001.

**Chart 3**

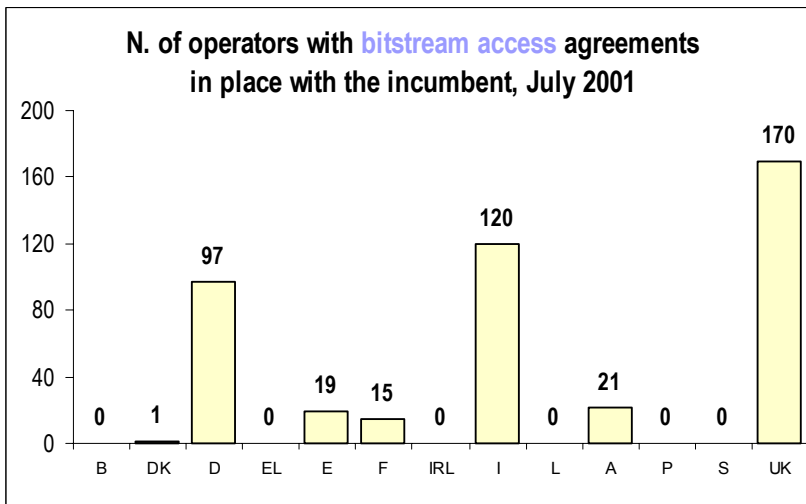


**Table 2**

|     |             |
|-----|-------------|
| B   | 20          |
| D   | 0           |
| EL  | 0           |
| E   | 0           |
| F   | 15 (trials) |
| IRL | 0           |
| I   | 0           |
| L   | 0           |
| NL  | 350         |
| A   | 0           |
| P   | 0           |
| FIN | 500         |
| S   | 17          |
| UK  | 0           |

Chart 4 shows the number of new entrants (including Internet service providers) with agreement with incumbent operators concerning bitstream access. No information is available for the Netherlands and Finland.

**Chart 4**

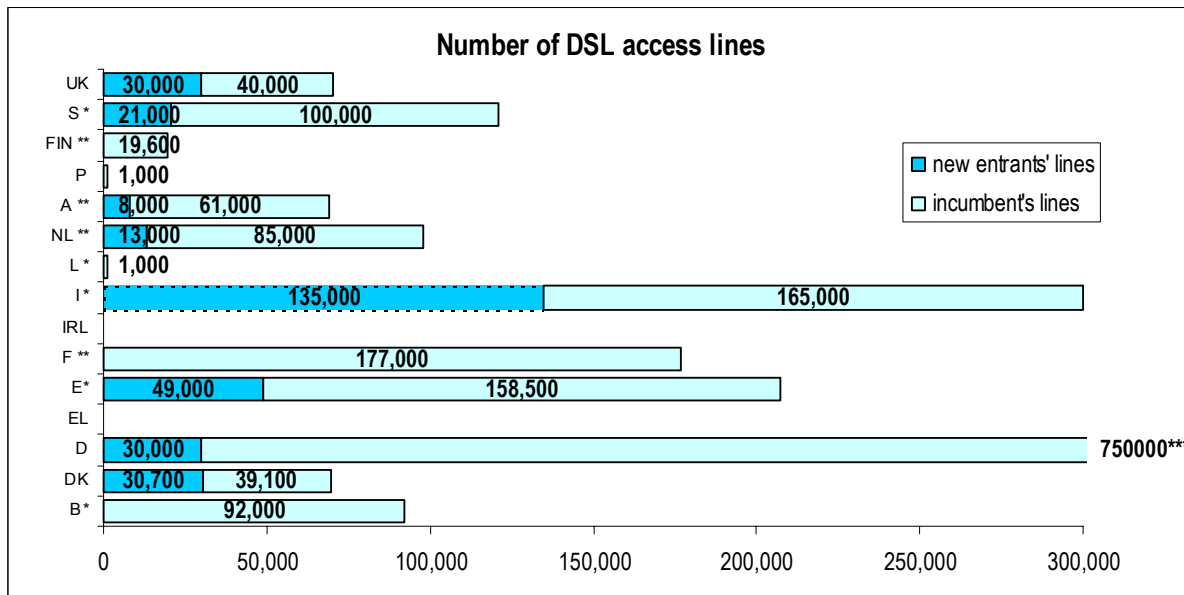


The following Chart 5 shows the number of DSL lines of incumbents and of new entrants. New entrants' DSL lines might be provided by means of bitstream access on the fixed lines of the incumbents or by alternative means (full unbundling, shared access, installation of new lines, etc.). The data in the chart are mostly based on information provided by the NRAs. The figures refer to the situation at 1 July 2001, unless otherwise stated.

In the case of Italy, the number of new entrants' lines refer to the number of wholesale DSL lines supplied by the incumbent. However, the number of retail DSL lines of the new entrants is significantly lower (estimated to 14 000) because wholesale lines are sold in lots.

In the case of Finland, the information on new entrants' lines is not available, whereas the figure on incumbent's lines refer to both Sonera and Elisa.

**Chart 5**



\* At 1 October.

\*\* At 1 June, source: OECD.

\*\*\*Figure not to scale.

## 2. WIRELESS LOCAL ACCESS

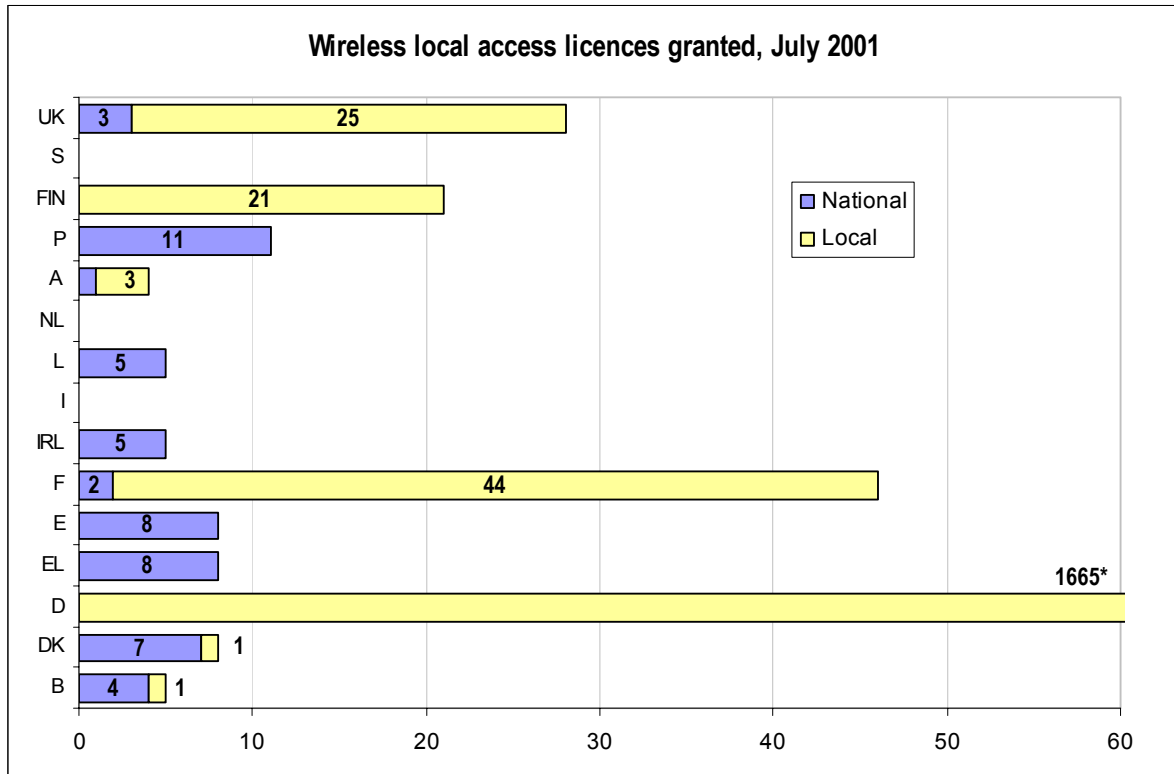
WLL services provide a radio based and relatively low cost alternative to the established copper loop for provision of fixed PSTN access to business and residential users. Whilst interest initially focussed on simple replication of the incumbent's narrow band loop, the emphasis has now shifted to the provision of broadband access to cater for high speed data applications such as Internet access and video on demand, at data rates up to 2 Mbit/s or beyond. At the time of writing all Member States except Italy, the Netherlands and Sweden have licensed WLL networks and all three of the latter have plans to license the services in the near future.

Chart summarises the number of WLL granted with reference to the geographical coverage of the licences. The licences concerned are of a different nature. The figures are based on information provided by the NRAs. The majority of licences have been granted to new entrants. However, in Belgium, Greece and Ireland incumbents have been granted 1 or 2 national licences, which correspond to 25% of the total of national licences granted. Local licences have been assigned to the incumbent in Finland and the United Kingdom.

The local licence granted in Denmark will expire in 2002. The figure for Spain includes two service licences granted to Retevision and UNI2. In the case of Ireland, a further licence had been granted to an operator who is no longer active in the market. In Austria, several regional licences have been

granted to the same operator, who then covers the whole national market. The remaining three local licences were all allocated to a second operator.

**Chart 6**



\* Figure not to scale.

Table 3 below provides details on the current status of WLL licensing in each Member State. The information in the table is based on a study conducted for the European Commission by Aegis Systems Ltd and Connogue Ltd<sup>16</sup>. In Table 3 narrowband and broadband licences are identified, although the distinction between the broadband and narrowband categories is becoming increasingly blurred. Broadband generally implies a potential data rate of 2 Mbits per second or above, whereas narrowband generally refers to voice services or data up to basic rate ISDN (144 kbit/s). Data rates between 144 Kbit/s and 2 Mbit/s are sometimes referred to as broadband and are in some cases being offered by WLL operators originally licensed as narrowband. In the table, these are normally regarded as broadband.

In order to allow for distinction between narrowband and broadband licences, dual-band licences are sometimes considered as separate licences, which accounts for apparent discrepancies (e.g. for Luxembourg and Ireland) with respect to the information provided in Chart 6. It should also be noted that, in the case of the United Kingdom, the table refers to the number of spectrum licences granted according to the Wireless Telegraphy Act, whereas in the previous chart the reference is to the number of licences granted on the basis of the Telecommunications Act.

<sup>16</sup> *Administrative Fees and Spectrum Charges for Telecommunication services using Spectrum*, November 2001.

**Table 3: Current status of WLL licensing in EU Member States**

|     | Current status of WLL licensing   | Licensing Procedure                       | National Licences                                   |           | Regional or localised licences                        |           | Future plans   |
|-----|---|---|---|-----------|---|-----------|--|
|     |   |   | Narrowband  | Broadband | Narrowband  | Broadband |  |
| B   | Licences issued in Feb 2001 in 3.5 GHz, 10 GHz and 26 GHz bands   | Beauty contest                            | 4 (no distinction between narrowband and broadband) |           | 1 (no distinction between narrowband and broadband)   |           | Further licences planned in 28 GHz (November 2001) and 40 GHz bands    |
| DK  | 10-year licences issued in Dec 2000 in 3.5 GHz and 26 GHz bands.  | Beauty contest                            | 3   | 4         | None  | None      | Further licences planned in 10 GHz and 28 GHz bands                    |
| D   | Licences issued in 2.5 GHz, 3.5 GHz and 26 GHz bands  | Beauty contest                            | None  | None      | 1,671 in total (breakdown by bandwidth not available) |           |  |
| EL  | Licences issued in December 2000  | Auction                                   | 3   | 5         | None  | None      |  |
| E   | 20-year licences issued in April 2000 in 3.5 GHz and 26 GHz bands   | Beauty contest                            | 3   | 3         | None  | None      |  |
| F   | 15-year licences issued in August 2000 in 3.5 GHz and 26 GHz band.  | Beauty contest                            | 2 (no distinction between narrowband and broadband) |           | None  | 44 [1]    | Further 3.5 GHz licence planned.                                       |
| IRL | 10-year licences issued in 2000 in 3.5 and 26 GHz bands   | Beauty contest                            | 3   | 4         | None  | None      | Further licences possible in 10 GHz, 26 GHz and 28 GHz bands           |
| I   | No licences yet issued  | Auction                                   | None  | None      | None  | None      | Licences planned for 26 GHz and 28 GHz bands                           |
| L   | Licences issued in 3.5 GHz and 26 GHz bands   | Beauty contest                            | 5 (no distinction between narrowband and broadband) |           | None  | None      |  |
| NL  | No licences yet issued  | To be decided                             | None  | None      | None  | None      | To be decided  |
| A   | 10-year licences issued in February 2001 in 26 GHz band   | Auction                                   | None  | 1         | None  | 3         | To be decided  |
| P   | 15-year licences issued in December 1999 in 3.5 GHz, 26 GHz and 28 GHz bands  | Beauty contest                            | 3   | 8         | None  | None      | None currently   |
| FIN | 3.5 GHz, 10 GHz and 26 GHz bands are designated for WLL   | First come, first served                  | None  | None      | 20 (no distinction between narrowband and broadband)  |           | Further regional licences available on a first come first served basis |
| S   | No licences yet issued  | Beauty contest                            | None  | None      | None  | None      | Licences planned in 3.5 GHz, 26 GHz and 28 GHz bands                   |
| UK  | 15-year licence issued in 28 GHz band in November 2000. In 2 GHz, 2.4 GHz and 10 GHz bands, licences awarded at various stages since 1994, annually renewable subject to payment of annual fees and roll out obligations. | Auction (28 GHz); Beauty contest (others) | 4   | None      | 5   | 16        | Further licences planned in 3.5 GHz, 10 GHz, 28 GHz and 40 GHz bands   |

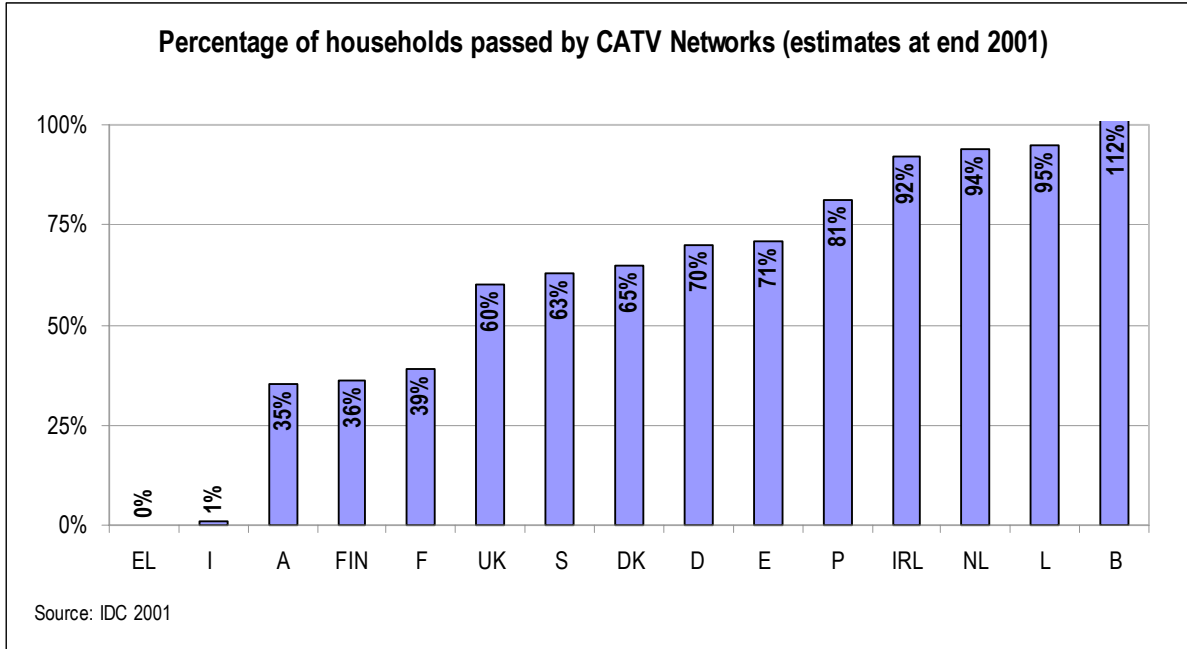
Notes: [1]: Aggregated among 5 operators.



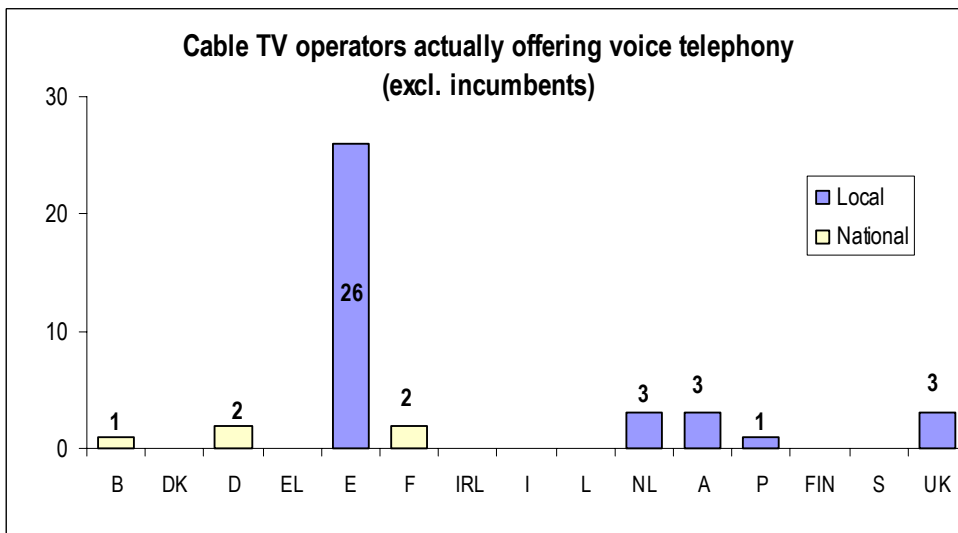
### 3. CABLE TV LOCAL INFRASTRUCTURE

This section provides information on the availability of cable TV local infrastructure and the extent to which this is used to provide voice telephony services. See the section on internet for further details on broadband connections.

**Chart 7**



**Chart 8**



|

|

## 2.2 INTERCONNECTION

### 1. NUMBER OF INTERCONNECTION AGREEMENTS

Table 1 shows the number of agreements in place for interconnection with the incumbent's fixed network and between mobile networks.

The figures have been provided by the national regulatory authorities and refer to August 2001.

The number of interconnection agreements in place in each country depends on the number of licensed/authorised operators for public networks and public voice telephony (local and national) and the content of the interconnection agreements (some countries have separate interconnection agreements for each service, while others have a global interconnection agreement). These figures are therefore not strictly comparable between Member States.

International interconnection agreements are excluded.

For the Netherlands, separate data for the different categories of interconnection are not available.

In Finland, the figure given for fixed-to-fixed interconnection agreements includes mobile-to-fixed interconnection agreements.

**Table 1 Number of interconnection agreements in place for call termination on fixed and mobile networks**

|                         | B  | DK  | D    | EL | E   | F  | IRL | I  | L | NL | A   | P  | FIN | S  | UK  |
|-------------------------|----|-----|------|----|-----|----|-----|----|---|----|-----|----|-----|----|-----|
| <b>Fixed-to-mobile</b>  | 11 | 7   | 5    | 3  | 45  | 19 | 2   | 31 | 6 | 91 | 127 | 20 | 184 | 26 | 5   |
| <b>Fixed-to-fixed</b>   | 21 | 141 | 98   | 1  | 112 | 72 | 14  | 75 | 6 |    | 416 | 31 |     | 75 | 239 |
| <b>Mobile-to-mobile</b> | 3  | 7   | n.a. | 3  | 3   | 0* | 1   | 7  | 1 |    | 9   | 1  | 3   | 6  | 6   |

\* French operators are interconnected, but apply "bill and keep" so do not define termination charges.

### 2. FIXED-TO-FIXED INTERCONNECTION CHARGES

The following charts show the per-minute interconnection charges for call termination on the incumbent's fixed network, based on a three-minute call at peak rate.

The charts show the absolute value of the interconnection charges (in €-cents) as of 1 August 2001, in comparison to the value as of August 2000.

The figures refer to the interconnection charges actually in place at 1 August 2001: these may have been approved by the NRA or simply agreed between operators, where the legal framework does not require NRA approval. However, in the case of the Netherlands these charges correspond to the charges set by OPTA in July 2001 and the NRA could not confirm that they were actually in place in August 2001. Furthermore, it worth mentioning that in Spain new interconnection rates have been published on 19 August and are considered applicable since this date, following renegotiations of existing agreements.

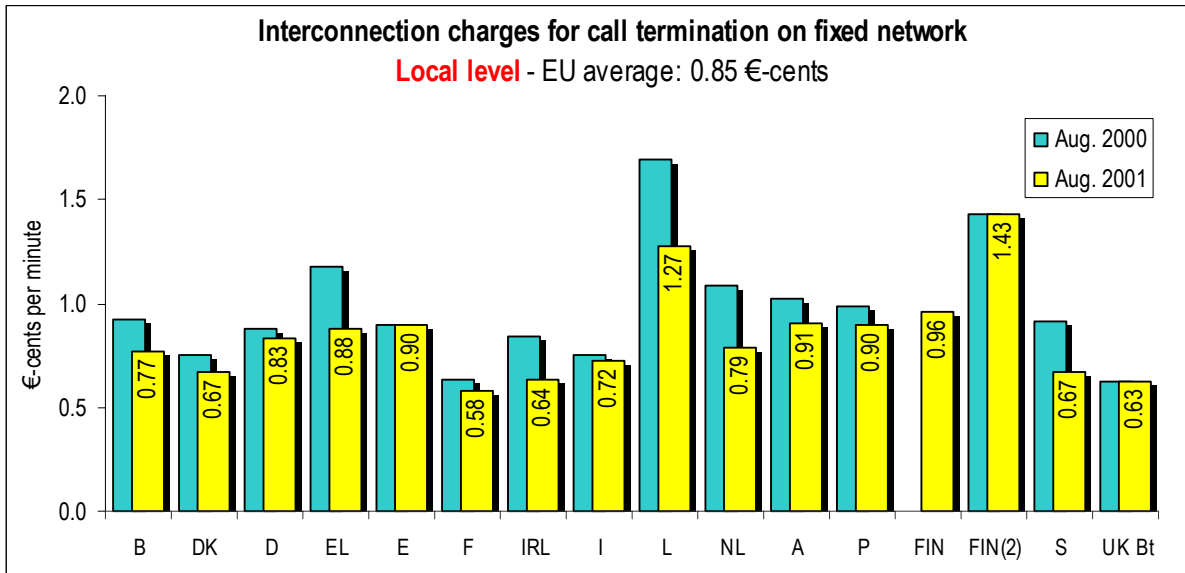
In Germany there is no 1:1 correlation between the four price zones, which are defined by distance, and the three bands of the former best practice recommendations (local, single and double transit), which are defined in technical terms.

In the case of France, in order to maintain consistency across Member States, the per minute charge indicated does not include the per minute charge related to the cost of the 2 Mbit/s port, which, however, according to ART, provides a better picture of the cost borne by the interconnecting party. By taking this additional charge into account, per minute charges would be €-cent 0.62, €-cent 1.26 and €-cent 1.76 respectively at local, single transit and double transit interconnection levels.

In Finland there are about 50 SMP operators that apply different charges. The charts refer to charges applied by the two major operators.

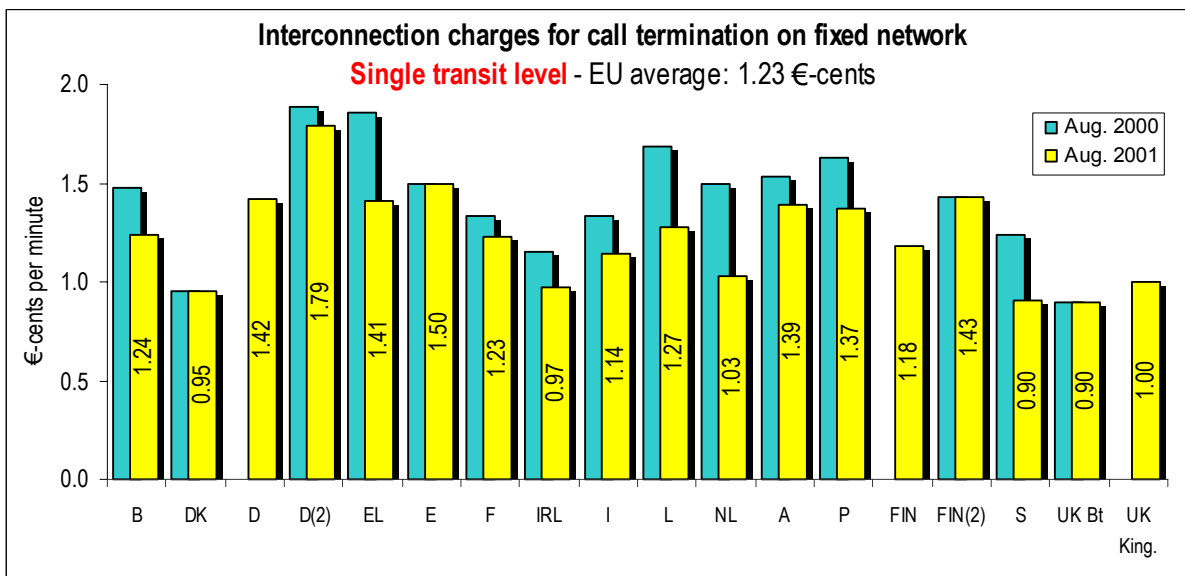
The EU average is a simple, rather than a weighted average.

**Chart 1**



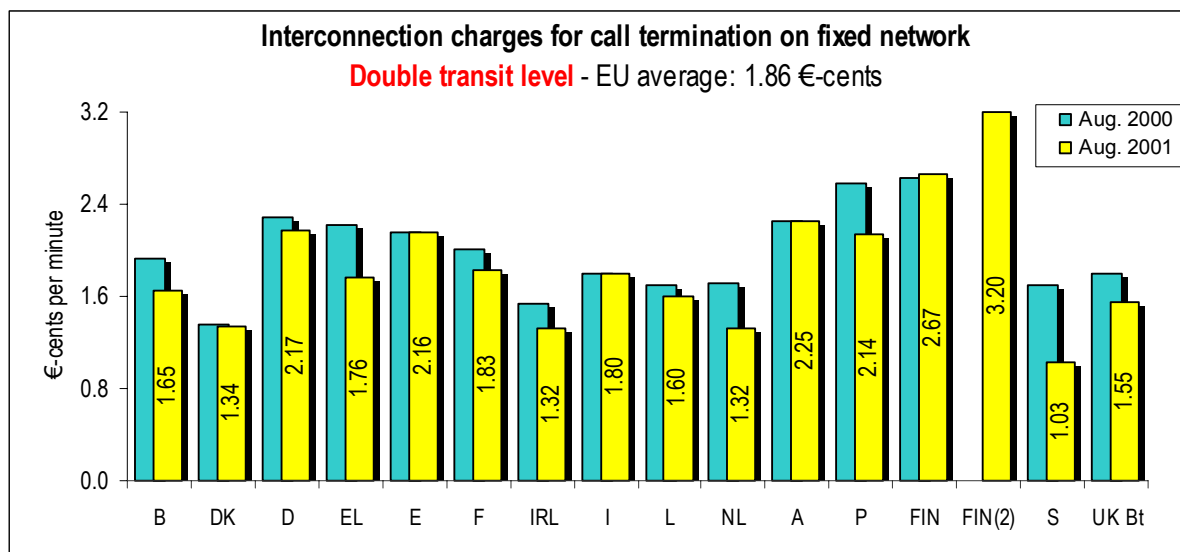
In Luxembourg there is no distinction between local and long-distance domestic calls.

**Chart 2**



D and D(2) refer respectively to Regio50 and Regio200 Zone rates. However, single transit interconnection is also established in the City Zone area, especially in large cities.

**Chart 3**



For D the reference is to National rates. However, double transit interconnection can also be established within the Regio200 Zone.

### 3. LEASED LINE INTERCONNECTION CHARGES

This section shows the monthly rental charges for short-distance leased lines (local ends) up to 2 and 5 km provided by the incumbent operator to other interconnected operators (excluding one-off connection fees).

Deviations from the “recommended price ceiling” set in Commission Recommendation 1999/3863 of 24 November 1999 are also shown. The recommended price ceilings are:

- € 80/month for a 64 Kbit/s leased line part circuit up to 5 km
- € 350/month for a 2 Mbit/s leased line part circuit up to 5 km;
- € 1 800/month for a 34 Mbit/s leased line part circuit up to 2 km;
- € 2 600/month for a 34 Mbit/s leased line part circuit up to 5 km.

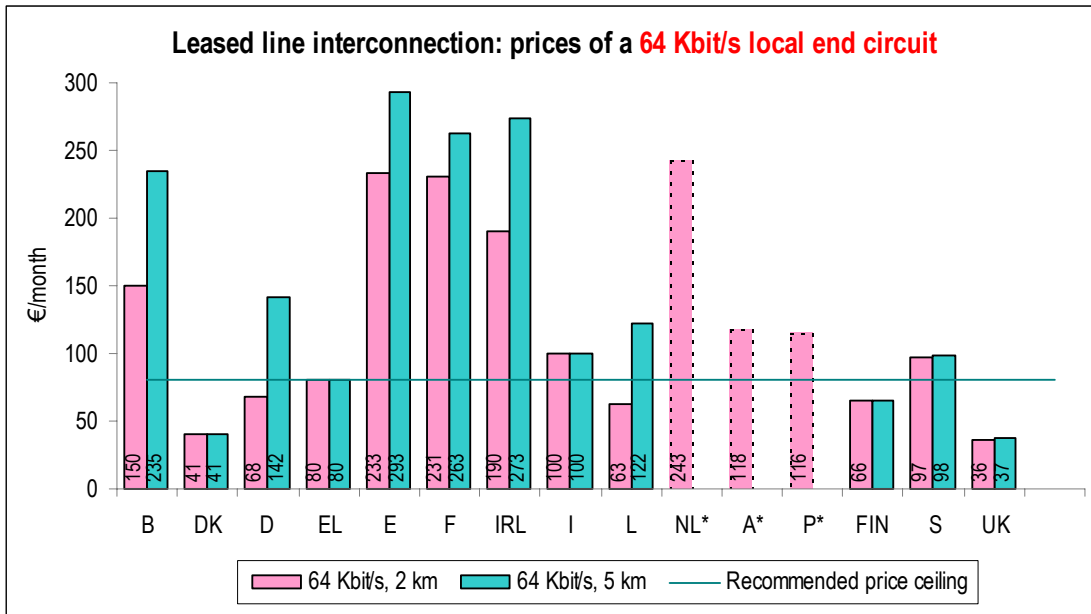
The following charts show the monthly rental prices charged by the incumbent operators for short-distance leased line interconnection circuits, excluding VAT.

These figures have been provided by the national regulatory authorities, apart from some categories of lines in the case of Luxembourg (for 34 Kbit/s 2 km circuits), the Netherlands (for 64 Kbit/s and 2 Mbit/s 2 km circuits), Austria and Portugal (for 64 Kbit/s 2 km circuits), for which rental prices have been estimated using retail prices provided by Total Research-Teligen<sup>17</sup>. Data indicate the position in August 2001.

The figures provided by Ireland are not fully comparable to the ones published in the Sixth Report, due to different underlying assumptions on location and type of interconnection. All other things being equal, 2001 charges are lower than last year.

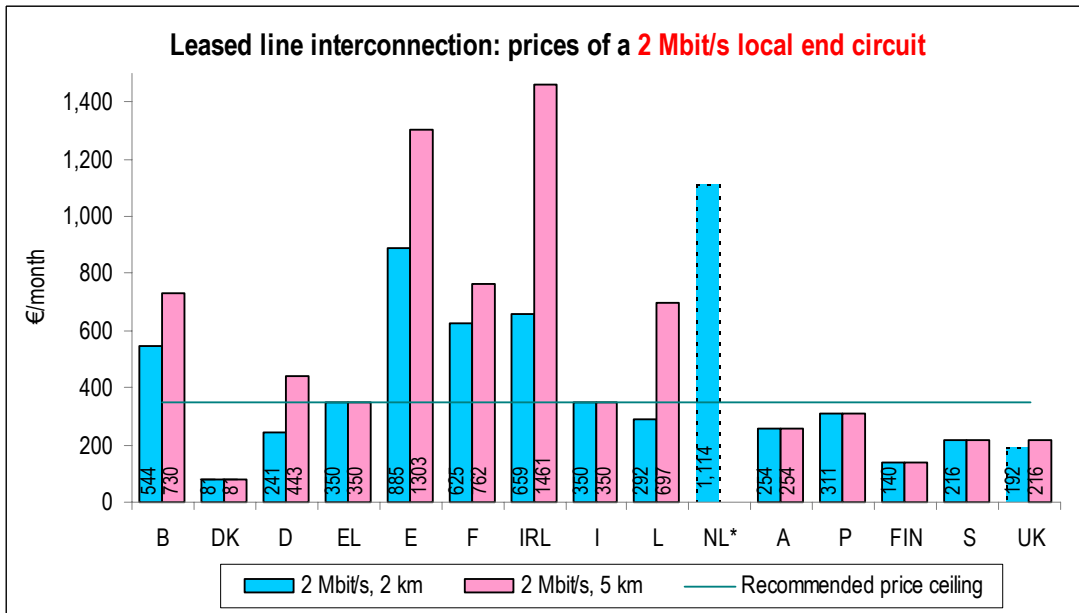
<sup>17</sup> See also leased lines section.

**Chart 4**



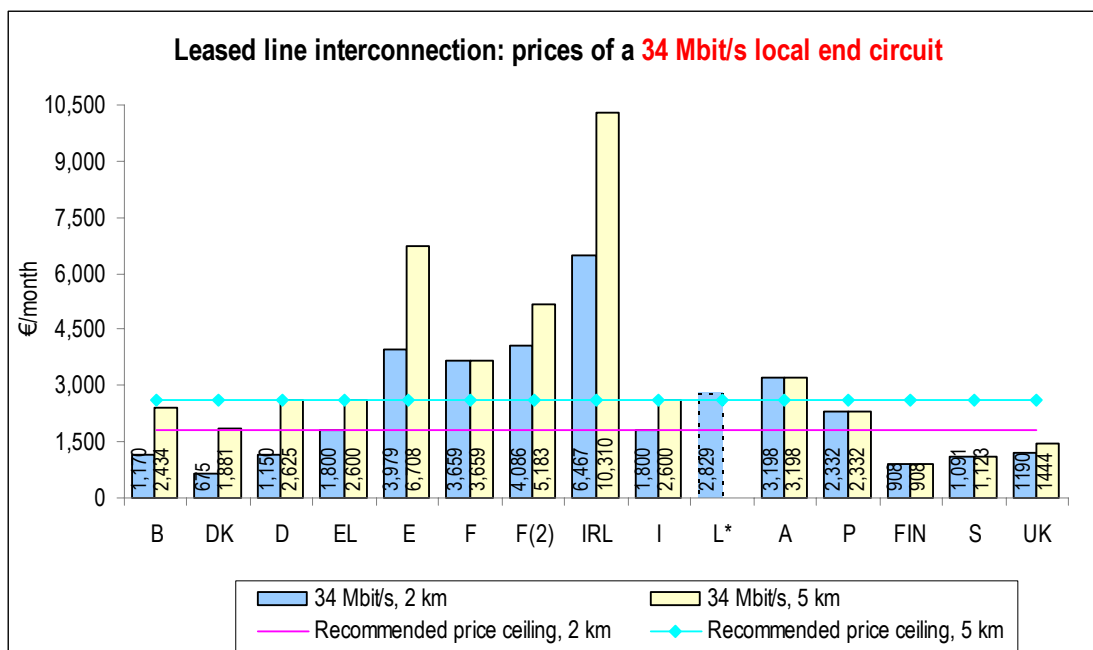
\* Retail prices. Source Total Research-Teligen.

**Chart 5**



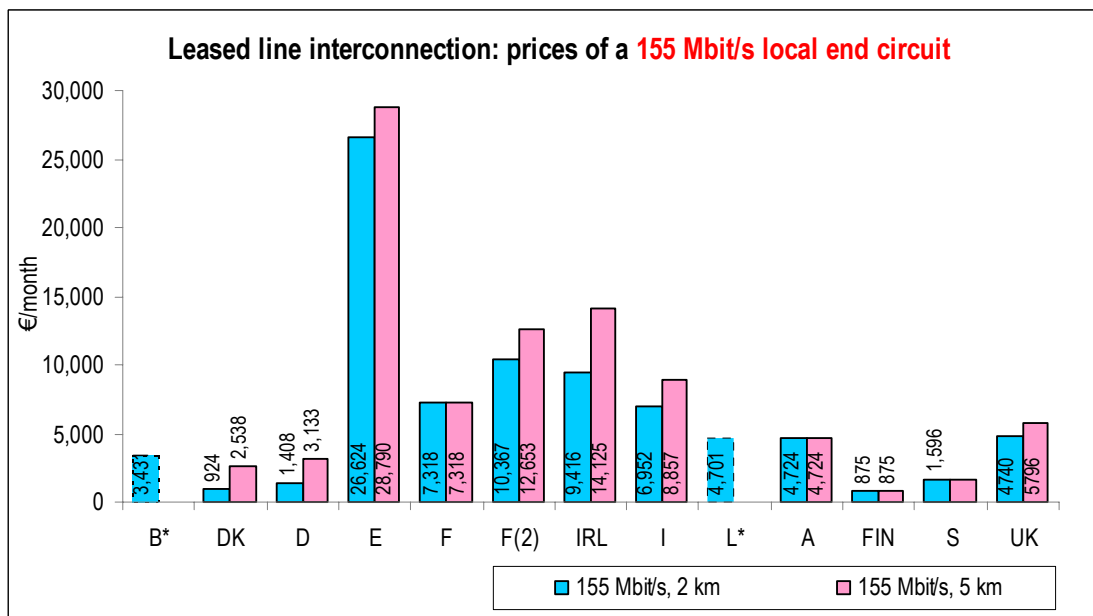
\* Retail prices. Source Total Research-Teligen.

**Chart 6**



\* Retail prices. Source Total Research-Teligen.  
 F refers to the price for a partial circuit within the Ile de France.  
 F(2) refers to the price for a partial circuit outside the Ile de France.

**Chart 7**



\* Retail prices. Source Total Research-Teligen.  
 F refers to the price for a partial circuit within the Ile de France.  
 F(2) refers to the price for a partial circuit outside the Ile de France.

#### 4. FIXED-TO-MOBILE INTERCONNECTION CHARGES

This section shows the per-minute interconnection charges for fixed call termination on the networks of mobile operators with significant market power (SMP) in the national market for interconnection. In those cases where there are no SMP operators, termination charges of the leading mobile operator are shown.

The charges are based on a three-minute call at peak rate. Different charges may apply for call termination on other mobile networks.

The figures have been collected by the NRA, except for Germany and the Netherlands. Figures for Germany are not publicly available; for the Netherlands, the interconnection charge has been estimated by the European Commission services on the basis of figures provided in August 2000. For all other Member States, the figures give the position in August 2001.

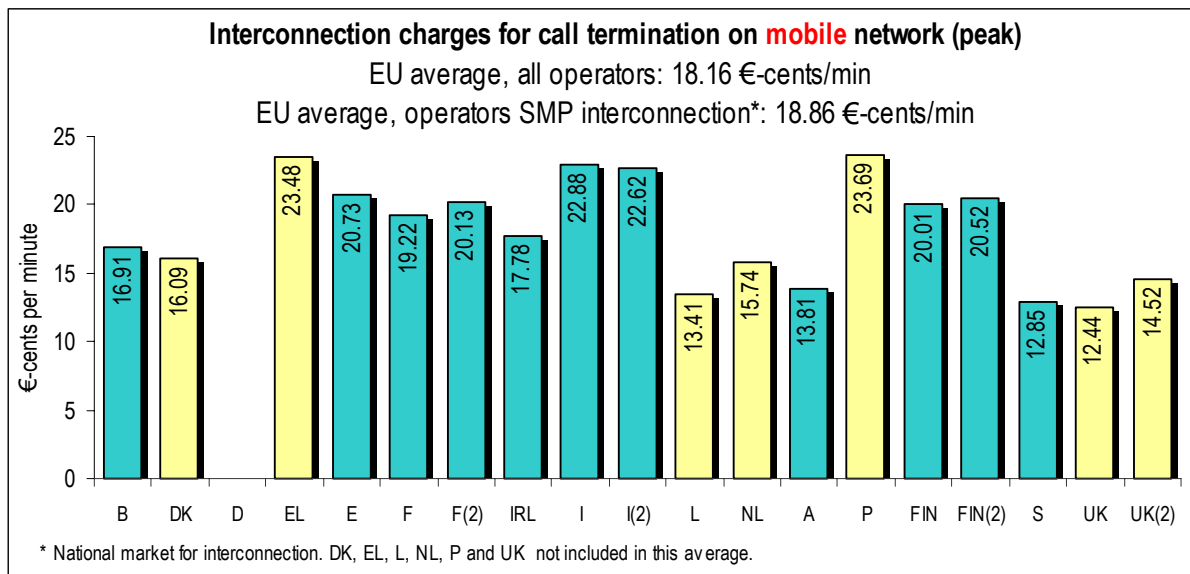
In France, Italy, Finland, Spain and Ireland two mobile operators have been notified as having SMP in the national market for interconnection. However, in Ireland and Spain the operators charge the same termination charges.

The following leading operators have been considered: TDC Mobil for Denmark, Cosmote for Greece, P&T for Luxembourg, TMN for Portugal, Sonera and Radiolinja for Finland. In the case of the United Kingdom, where Cellnet, Orange and Vodafone present very similar market shares the minimum (Cellnet) and the maximum (Orange) termination rates are shown.

The data for Finland indicate the interconnection charge for an international fixed call to a mobile network. They also apply to mobile-to-mobile calls.

The EU average is a simple average.

**Chart 8**



F and F(2) refer to FTM(Orange France) and to SFR.

I and I(2) refer to TIM and Omnitel.

FIN and FIN(2) refer to Sonera and Radiolinja.

UK and UK(2) refer to Cellnet and Orange. Vodafone's termination charge is comprised between the two.



## 2.3 IMPLEMENTATION OF DIRECTIVE 95/47/EC (THE TV SIGNALS DIRECTIVE)

### ***Reporting requirements***

Article 6 of Directive 95/47/EC provides that every two years the Commission shall examine the implementation of this Directive and the development of the market for digital television services throughout the European Union.

In 1999, the Commission published its first Report<sup>18</sup> under the Directive. One section of this document reported on the transposition of the main provisions of the Directive. Two other sections covered developments in the market, which was still at an early stage, and on technologies respectively.

For 2000-2001, the monitoring of the implementation of the Directive has been conducted in two main frameworks: firstly, in a Digital Broadcasting Expert Group created under the ONP Committee, which comprises experts from the Member States administrations and whose thrust is to share experiences as to the implementation of the Directive; secondly, in the context of the meetings organised with representatives from the national regulatory authorities and from industry in view of the preparation of this Report.

This section of the Report covers regulatory developments at the EU level, and in particular the main challenges facing regulators. The country chapters in Annex III include a section on the regulatory situation, with some market data, in each Member State. The annex to this section incorporates market and technological data.

### ***Transposition and implementation of the Directive***

Transposition has been slow in most Member States. The national transpositions of 95/47/EC are broadly convergent; however, they are adapted to the different national legal frameworks.

A third of the Member States have still not transposed all of the provisions of the Directive. The Commission has opened and pursued infringement proceedings, as appropriate. An argument that the Member States have frequently used is that there has been no need for the provision(s) that has (have) not been transposed, because the market for digital television has not really taken off as yet.

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<sup>18</sup> The Development of the Market for Digital Television in the European Union – Report in the context of Directive 95/47/EC of the European Parliament and of the Council of 24<sup>th</sup> October 1995 on the use of standards for the transmission of television signals – COM (1999)540.

In a number of Member States, in the context of the transposition of the Directive, rules and regulations have been adopted that do not fall under the scope of the Directive, but which constitute technical rules that are notifiable under Directive 98/34/EC<sup>19</sup> to allow the Commission to assess whether or not they constitute obstacles to the Treaty provisions on the free movement of goods.

With regard to actual implementation, around half of the Member States have stressed (in the Digital Broadcasting Expert Group) that they do not have much experience with the practical implementation of the Directive, mostly because of the limited market development and also due to a lack of complaints or cases referred to the national regulatory authorities.

In a number of Member States, the situation is expected to change however, as a function of the timing of the launch of digital terrestrial television (DTTV).

***Market developments***

National digital television (DTV) markets are at very different stages of development in different Member States. At the Community level, the DTV market has enjoyed a high growth rate since its beginning in 1996, and the number of digital households rose to over 18.5 million in 2000 from 10.4 million in 1999<sup>20</sup>. This represents 77% growth in one year. The number of digital households was 2 million at the end of 1997.

However, 90% of the market (in terms of digital television households) is represented by a few Member States (UK, France, Spain, Italy, and Germany). Overall, digital penetration remains low in most Member States; it stood at 12.4% on average in terms of households at the end of 2000.

Different broadcasting markets are and remain separated by language, cultural and other regulations imposed by the Member States, notably to ensure that specific public interest objectives are met.

***Pay-TV continues to drive the market***

Pay-TV services, in particular those delivered by satellite, have driven the development of digital television. In the most developed markets, market growth has been based mainly on an increase in the number of subscriptions to digital pay-TV services and on customers switching from analogue pay-TV offers to digital TV offers.

The pay-TV markets are characterised by strong concentration, and are controlled by analogue TV leaders and powerful companies. Incumbent telecommunications operators have also shown increasing interest in the cable and/or satellite markets.

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<sup>19</sup> Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations.

<sup>20</sup> Please see the market data annex.

There have been important transactions between the major players, and several interventions from the Community and national competition authorities under the competition rules (abuse of dominant position) and under the Merger Regulation.

***Digital terrestrial television***

The recent or imminent launch of DTTV services in a series of countries has been another significant feature in the last three years. The first DTTV services were launched in the EU at the end of 1998. These launches have been made with the support of the governments, but also under close regulatory control, as Member States go further in structuring the DTTV market than in the case of cable or satellite television.

Competing delivery mechanisms for digital TV services have drawn attention to the need that DTTV be launched and supported in a competition-neutral way.

***Cable TV***

The recent period has also seen an enhanced positioning of cable operators in the DTV market. According to some estimates<sup>21</sup>, over 80% of the cable connections have been up-graded to digital. Overall, there have been relatively few offers bundling TV services, voice telephony and Internet access. Interactive television is a nascent market, and technologies, standards and business models are still evolving.

***Interoperability***

The Directive, with its basic requirements regarding interoperability, has brought regulatory certainty to the first stages of development of the market by providing a measured balance between the objective of promoting investment in digital television (and “first mover” advantage) and competition.

***The Common Interface***

As mentioned in the 1999 Report, in some Member States the authorities have attempted to impose the Common Interface as the exclusive interoperability technique between conditional access services (CAS), but renounced these projects after the Commission opened infringement proceedings. Since that Report, one Member State (Austria) considered implementing this approach, but finally decided not to follow that course.

***The single, or universal decoder***

Both the Simulcrypt interoperability technique and the Common Interface are now recognised in all of the Member States. They continue to evolve, however.

In December 2000, the Steering Board of the Digital Video Broadcasting Group (DVB) agreed specifications to standardise some more Simulcrypt interfaces in order to ensure improved inter-working between different manufacturers’ products.

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<sup>21</sup> The figure mentioned is from a study commissioned by the Commission and conducted by IDATE.

Some national authorities and operators have expressed concern about the fact that while today, interoperability between CAS is mainly organised through Simulcrypt agreements, operators have been reluctant to conclude such agreements. They note that this leads to consumers being tied to individual providers' platforms, and to 'vertical markets', for example for receiver equipment like set-top boxes.

Consumers could be expected to benefit from greater use of open systems like the Multimedia Home Platform (for more details, see section "APIs and EPGs" below), and from the emergence of 'horizontal markets' where consumers could buy equipment able to receive services from different providers.

In some Member States, these concerns have been reflected in regulatory measures and/or debates concerning the implementation of a so-called "single" decoder (Italy) or "universal" decoder (Spain). For more details, see the relevant country chapters in Annex III.

***Industry-led  
national  
initiatives***

Similar concerns are also felt in other Member States, where the authorities have encouraged industry-led initiatives to achieve interoperability on a voluntary basis.

The Nordig consortium of broadcasters, which gathers key players from all the Nordic Member States, have specified MHP decoders for new customers from the end of 2002 and will phase out legacy systems by 2005.

In Germany, the open standards FUN-consortium created by ARD and ZDF has built up a population of 150 000 decoders. FUN will also migrate to MHP. In addition, in September 2001, in a joint statement the German broadcasters (ARD, ZDF, RTL, Kirch Gruppe and media authorities of the German Länder) formalised their commitment to migrate to MHP.

***APIs and EPGs***

Digital television is very dynamic. New technologies and associated facilities (such as Applications Programme Interfaces (APIs) and Electronic Programme Guides (EPGs)) are being continuously introduced. It takes time for interoperability to catch up with fast-moving technological developments. These new associated facilities are not covered by Directive 95/47/EC.

In respect of APIs, industry took the view that it would be impractical to develop interoperability techniques between the various APIs available when the market started. Instead, the DVB has developed a new architecture, the Multimedia Home Platform (MHP), which incorporates user requirements from both free-to-air operators and proprietary APIs, and migration paths from existing APIs. The MHP became an ETSI technical specification in May 2000.

Some Member States have adopted measures concerning APIs and EPGs. In practice, it appears that two approaches are followed, which are either to enforce standardisation measures, or to develop access rules and economic regulation based on commercial terms.

***Meetings with industry***

The Commission has organised a series of meetings with industry, which have revealed a wide range of views on MHP. Generally, pay-TV operators and CATV operators have stressed the uncertainty over the future direction of the market and technology, and expressed concerns over the cost of MHP and its lack of retroactive compatibility with the installed base of decoders<sup>22</sup>.

Free-to-air broadcasters and manufacturers have contended that standards facilitate the creation of content and are a key element for realising horizontal markets. Broadcasters with pay TV interests however underline the need for a return from existing technology investments. Generally, they support the implementation of the MHP over time, but oppose its imposition.

Manufacturers' opinions on this issue are very divided, notably between those producing decoders and those making integrated television sets.

The most widely represented view among industry is that the MHP is a positive development for the future, as long as it is not imposed. Mandating the MHP would risk undermining the co-operative DVB approach that led to MHP, as the latter was developed on the assumption that it would not be mandated through *ex ante* regulation. This suggests that a promotional approach would be appropriate for the implementation of the MHP.

***A voluntary migration towards the MHP across the Community***

Following the above meetings, an industry-led, non mandatory approach, to migration towards MHP across the single market is being followed, based on a European Memorandum of Understanding, to build upon and complement the work of national MHP implementation groups.

The Commission supports this process<sup>23</sup>.

***The new regulatory framework***

In the context of the review of the current Community regulatory framework for telecommunications, which was launched in 1999, the Commission has proposed to incorporate many provisions of Directive 95/47/EC in their entirety in the forthcoming converged framework for electronic communications.

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<sup>22</sup> Although migration paths exist in terms of software, many receivers in households lack the hardware resources (in terms of sufficient memory and processing power) to offer MHP applications.

<sup>23</sup> This appears in the so-called «Helsinki Declaration» that was issued following a high level meeting between senior officials of the European Broadcasting Union, and Mr Liikanen, Member of the European Commission in charge of Enterprise and the Information Society, on 17 August 2001.

The Commission's objective has also been to enhance the current provisions, and notably to propose a mechanism to allow them to be extended to other associated facilities such as APIs and EPGs.

The Directives in the new regulatory framework for electronic communications are currently subject to negotiation between the European Parliament and the Council, under the co-decision procedure. It is expected that they will be formally adopted in the next few months, and will be applied on the same day in all Member States some 15 months after the date of adoption.

Details of the Commission proposal and subsequent European Parliament and Council texts can be found at:

[http://europa.eu.int/information\\_society/topics/telecoms/regulatory/new\\_rf/index\\_en.htm](http://europa.eu.int/information_society/topics/telecoms/regulatory/new_rf/index_en.htm)

The purpose of this section is to address the requirement in Article 6 of Directive 95/47/EC on the use of standards for the transmission of television signals<sup>24</sup> that, every two years, “*the Commission shall examine (...) the market for digital television services throughout the European Union and submit a report*”. The last report was the subject of a separate Commission Communication in 1999<sup>25</sup>.

Accordingly, this section provides information on the evolution of the EU market for digital television (hereafter referred to as ‘DTV’) in terms of households (both in absolute figures and percentage of penetration) and revenues. Data are broken down by Member State and DTV delivery mechanism (cable, satellite and terrestrial).

As regards the time scope, several tables and charts provide information on the years 1996 to 2001 in order to show the evolution of the EU market for DTV since its start in 1996. This seems justified considering that DTV is included for the first time in the Commission’s report on the implementation of the telecommunications regulatory package. Figures for 2001 are forecasts. Some tables also provide forecasts up to 2005.

Unless otherwise specified, DTV market penetration figures are expressed as a percentage of the total number of total households, not of ‘TV households’. However, these two magnitudes are very close in all EU Member States, where almost every household receives TV services (analogue, digital or both)<sup>26</sup>.

DTV market data presented in this section cover both pay and free-to-air services, i.e. either received against payment of a subscription fee or not. In this regard, it is estimated that, in 2000, only 5% of DTV households received exclusively free-to-air services<sup>27</sup>. However, in many cases, DTV subscribers receive certain free-to-air channels in addition to pay channels.

Figures for cable TV do not correspond to networks upgraded for digital services, but to households actually receiving the service.

Data come from different sources, mainly *Strategy Analytics*, “*Interactive Digital Television – February 2001 Market Forecast*”; *IDATE*, “*Development of digital television in the EU*” – *European overview*”, and the *Digital Broadcasting Experts Group*.

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<sup>24</sup> OJ No L 281, 23. 11. 1995, p. 51.

<sup>25</sup> COM(1999) 540

<sup>26</sup> According to Eurostat, in 1998, on average, 97% of EU households had at least one TV set, and in no Member State this figure was lower than 90%. See *Eurostat*, “*Statistics in focus, theme 4 – 3/2001*”

<sup>27</sup> See *IDATE*, “*Development of digital television in the EU*” – *European overview*”. Available at [http://europa.eu.int/information\\_society/topics/telecoms/regulatory/studies/index\\_en.htm](http://europa.eu.int/information_society/topics/telecoms/regulatory/studies/index_en.htm)

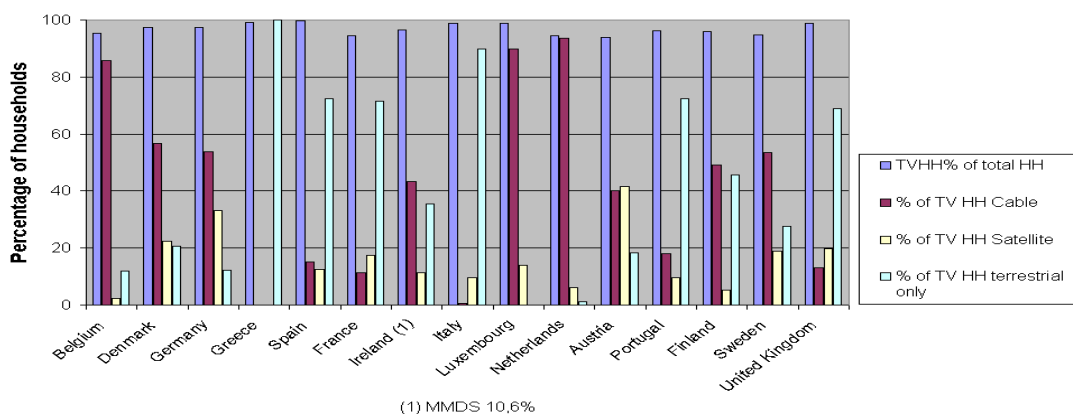
## 1. EU television market overview – analogue and digital tv

The starting positions of the Member States for the development of their digital TV markets differ widely, in terms of existing television infrastructure. Member States can be segmented into three groups according to the dominant analogue TV delivery mechanisms:

- Group 1 consists of multi-channel cable markets, i.e. Belgium, Netherlands and Luxembourg, where cable penetration is close to 100% of households;
- Group 2 consists of hybrid multi-channel markets, i.e. Germany, Denmark, Finland, Sweden, Ireland and Austria, where satellite and cable are well-established;
- Group 3 consists of other Member States where terrestrial has been the main television delivery mechanism, i.e. France, Greece, Italy, Portugal, Spain, UK.

In several Member States the introduction of pay-TV and free-to-air satellite services, initially in analogue, changed the TV landscape, notably reducing the proportion of terrestrial-only households. This trend has continued in digital markets, given the rapid and significant digitisation of satellite TV in comparison with cable and, especially, terrestrial TV. It should be noted that digital terrestrial television roll-out varies widely across Member States. Cable TV networks require upgrading in order to carry digital television.

**Chart 1: Total TV services (analogue and digital) in the EU, 1999 market penetration by EU Member State and TV delivery mechanism**



Source:

prepared by EC services from IDATE data

(1) In addition to cable TV networks, Ireland also has MMDS systems for the provision of multi-channel TV to rural areas.

‘HH’ stands for ‘households’. ‘EC services’ stands for ‘European Commission services’. The TV household percentage is established with reference to the total number of households in each country. The TV cable, satellite and terrestrial household percentages are established with reference to the total number of TV households in each country. This means that, for each Member State, the sum of the TV cable, satellite and terrestrial household percentages is 100%, and therefore higher than the total TV household percentage.



**Table 1: Total TV market (analogue and digital) in the EU (plus Norway and Switzerland), evolution and forecast**

| Market Forecast Reference Data         | 1995        | 1996        | 1997        | 1998        | 1999        | 2000        | 2001        | 2002        | 2003        | 2004        | 2005         |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Household Population (M)               | 150         | 151         | 151         | 152         | 153         | 154         | 155         | 156         | 157         | 158         | 159          |
| % with Cable TV *                      | 24%         | 26%         | 27%         | 28%         | 29%         | 30%         | 31%         | 32%         | 33%         | 34%         | 35%          |
| % with DTH Satellite *                 | 11%         | 12%         | 14%         | 16%         | 17%         | 18%         | 20%         | 22%         | 24%         | 25%         | 26%          |
| % with both (Dual-source)              | 1%          | 1%          | 1%          | 1%          | 1%          | 1%          | 2%          | 2%          | 2%          | 3%          | 3%           |
| <b>"Cable homes" (M)</b>               | <b>36.5</b> | <b>38.6</b> | <b>41.0</b> | <b>42.7</b> | <b>44.3</b> | <b>46.0</b> | <b>47.5</b> | <b>49.5</b> | <b>51.2</b> | <b>53.5</b> | <b>55.5</b>  |
| <b>"Satellite homes" (M)</b>           | <b>16.2</b> | <b>18.3</b> | <b>21.4</b> | <b>23.7</b> | <b>25.7</b> | <b>28.0</b> | <b>31.3</b> | <b>34.2</b> | <b>37.2</b> | <b>39.0</b> | <b>41.1</b>  |
| <b>"Dual-source homes" (M)</b>         | <b>0.9</b>  | <b>1.0</b>  | <b>1.1</b>  | <b>1.2</b>  | <b>1.7</b>  | <b>1.9</b>  | <b>2.4</b>  | <b>2.7</b>  | <b>3.4</b>  | <b>4.1</b>  | <b>4.4</b>   |
| <b>Total multichannel homes (M) **</b> | <b>53.7</b> | <b>57.9</b> | <b>63.5</b> | <b>67.6</b> | <b>71.7</b> | <b>75.9</b> | <b>81.2</b> | <b>86.4</b> | <b>91.8</b> | <b>96.6</b> | <b>101.0</b> |
| Total TV set population (M)            | 217         | 222         | 227         | 232         | 238         | 243         | 248         | 253         | 258         | 263         | 269          |
| Total TV Homes (M)                     | 140         | 143         | 145         | 147         | 149         | 150         | 152         | 153         | 154         | 155         | 156          |
| % with multichannel TV **              | 38%         | 41%         | 44%         | 46%         | 48%         | 50%         | 53%         | 57%         | 60%         | 62%         | 65%          |

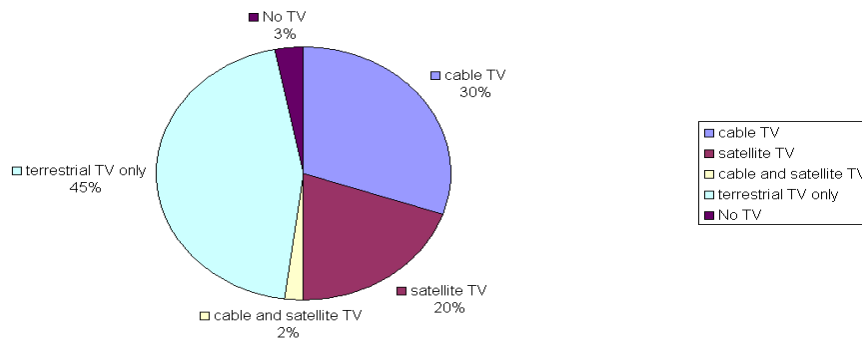
\* total – analogue and/or digital

\*\* excluding digital terrestrial

Source: Strategy Analytics, Feb 2001

Data in this table, also in some other tables and charts, include the EU plus Norway and Switzerland. However, the results shown can be considered as reflecting very closely the situation in the EU in regard of the relatively small population of Norway and Switzerland (around 2.1 and 3 million households respectively in 2001) in comparison to the total population of the EU (around 147 million households in 2001). In the case of Norway, according to *Strategy Analytics*, the average household penetration of digital TV in 2001 (19%) is very close to the average in the EU (18%). The figure for Switzerland is 7,5%. Figures for 2001 and onwards are forecasts. No separate figures for Luxembourg are available from Strategy Analytics.

**Chart 2: Total TV market (analogue and digital) in the EU (plus Norway and Switzerland) in 2001, breakdown by TV delivery mechanism**



Source: prepared by EC services from Strategy Analytics data

The percentage of households without TV (3%) refers to the EU situation in 1998. This figure comes from *Eurostat* (see reference in footnote above). The percentage of households receiving terrestrial TV only (45%) has been established as the difference between 100% and the addition of percentages for cable, satellite, cable and satellite, and the ‘no television’ share.

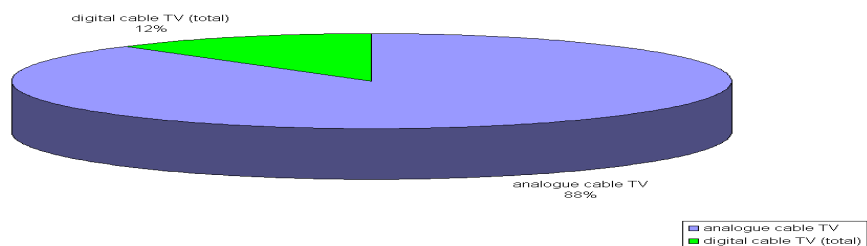
**Table 2: Digital TV households in the EU (plus Norway and Switzerland), and digital share of total TV market, evolution and forecast**

| Digital TV Ownership Analysis                | 1995       | 1996       | 1997       | 1998       | 1999        | 2000        | 2001        | 2002        | 2003        | 2004        | 2005        |
|--|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Satellite</b>                             |            |            |            |            |             |             |             |             |             |             |             |
| Net new households (M)                       | 0.0        | 0.4        | 1.5        | 2.3        | 4.2         | 6.0         | 4.9         | 4.8         | 4.2         | 4.1         | 3.6         |
| <b>Digital Satellite TV Households (M)</b>   | <b>0.0</b> | <b>0.4</b> | <b>1.9</b> | <b>4.1</b> | <b>8.3</b>  | <b>14.3</b> | <b>19.2</b> | <b>24.0</b> | <b>28.2</b> | <b>32.3</b> | <b>35.9</b> |
| Digital share of total satellite homes       | 0%         | 2%         | 8%         | 17%        | 30%         | 48%         | 57%         | 65%         | 70%         | 75%         | 79%         |
| <b>Cable</b>                                 |            |            |            |            |             |             |             |             |             |             |             |
| Net new households (M)                       | 0.0        | 0.0        | 0.1        | 0.7        | 0.9         | 1.5         | 2.9         | 4.7         | 5.5         | 6.2         | 6.3         |
| <b>Digital Cable TV Households (M)</b>       | <b>0.0</b> | <b>0.0</b> | <b>0.1</b> | <b>0.8</b> | <b>1.7</b>  | <b>3.2</b>  | <b>6.1</b>  | <b>10.7</b> | <b>16.3</b> | <b>22.5</b> | <b>28.8</b> |
| Digital share of total cable homes           | 0%         | 0%         | 0%         | 2%         | 4%          | 7%          | 12%         | 21%         | 30%         | 39%         | 48%         |
| <b>Terrestrial</b>                           |            |            |            |            |             |             |             |             |             |             |             |
| Net new households (M)                       | 0.0        | 0.0        | 0.0        | 0.0        | 0.5         | 0.7         | 0.9         | 1.3         | 1.7         | 2.0         | 1.7         |
| <b>Digital Terrestrial TV Households (M)</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.5</b>  | <b>1.3</b>  | <b>2.1</b>  | <b>3.5</b>  | <b>5.1</b>  | <b>7.1</b>  | <b>8.8</b>  |
| Digital share of total homes                 | 0%         | 0%         | 0%         | 0%         | 0%          | 1%          | 1%          | 2%          | 3%          | 5%          | 6%          |
| <b>Total Digital TV Households</b>           |            |            |            |            |             |             |             |             |             |             |             |
| <b>Net new households (M)</b>                | <b>0.0</b> | <b>0.4</b> | <b>1.6</b> | <b>3.0</b> | <b>5.6</b>  | <b>8.2</b>  | <b>8.7</b>  | <b>10.4</b> | <b>10.8</b> | <b>11.5</b> | <b>10.7</b> |
| No. Digital TV Services per Household        | 1.00       | 1.00       | 1.00       | 1.00       | 1.00        | 1.00        | 1.00        | 1.01        | 1.02        | 1.03        | 1.04        |
| <b>TOTAL DIGITAL TV HOUSEHOLDS (M) *</b>     | <b>0.0</b> | <b>0.4</b> | <b>2.0</b> | <b>5.0</b> | <b>10.5</b> | <b>18.7</b> | <b>27.4</b> | <b>37.8</b> | <b>48.7</b> | <b>60.1</b> | <b>70.8</b> |
| <b>Digital share of total households</b>     | <b>0%</b>  | <b>0%</b>  | <b>1%</b>  | <b>3%</b>  | <b>7%</b>   | <b>12%</b>  | <b>18%</b>  | <b>24%</b>  | <b>31%</b>  | <b>38%</b>  | <b>44%</b>  |

\* Households with at least one digital TV service

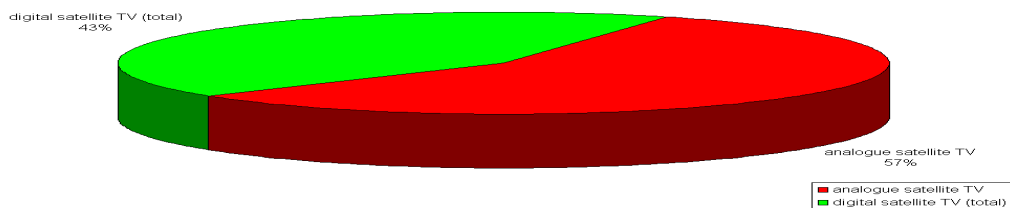
SOURCE: STRATEGY ANALYTICS, FEB 2001

**Chart 3: Cable TV in the EU (plus Norway and Switzerland), 2001 share of digital services**



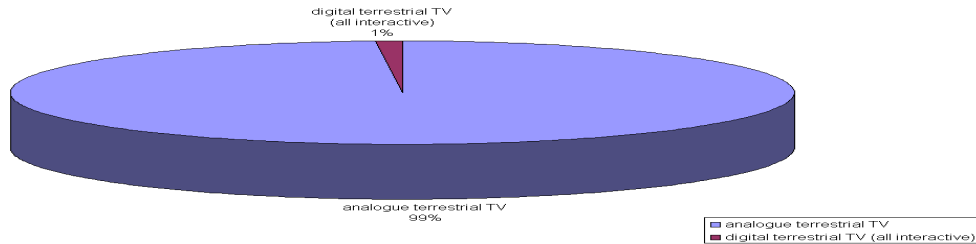
Source: prepared by EC service with data from Strategy Analytics

**Chart 4: Satellite TV in the EU (plus Norway and Switzerland), 2001 share of digital services**



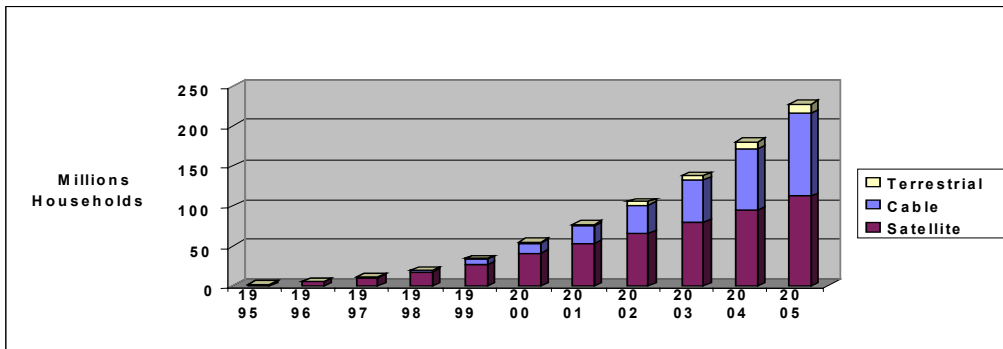
Source: prepared by EC services from Strategy Analytics data

**Chart 5: Terrestrial TV in the EU (plus Norway and Switzerland), 2001 share of digital services**



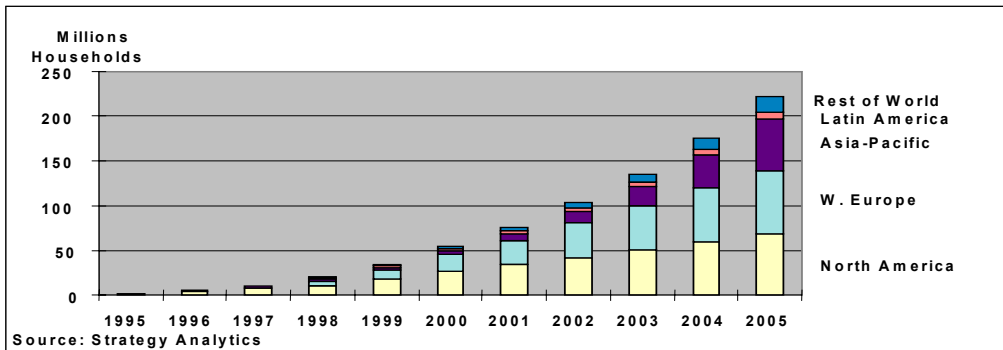
Source: prepared by EC services from Strategy Analytics data

**Chart 6: World-wide Digital TV Households by Platform**



Source: Strategy Analytics, Feb 2001

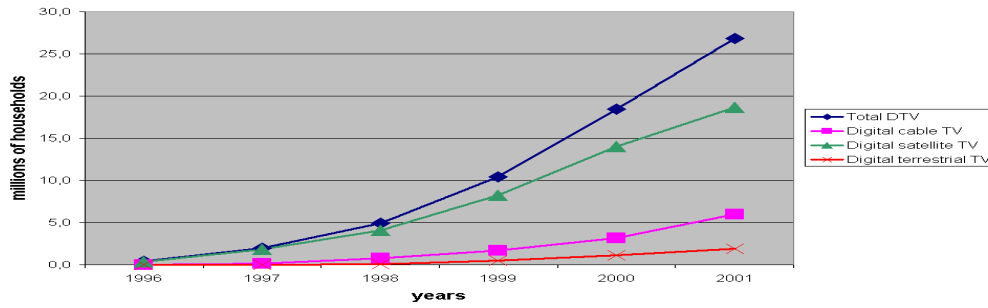
**Chart 7: Households Receiving Digital TV**



Source: Strategy Analytics

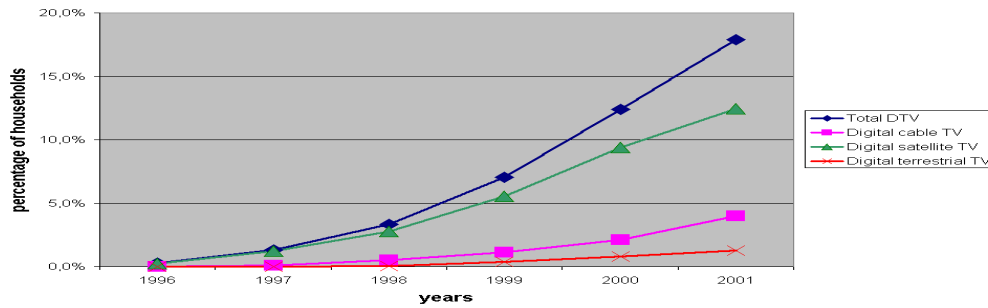
## 2. EU digital tv market, by delivery mechanisms and Member States

**Chart 8: Evolution of digital TV in the EU (million households)**



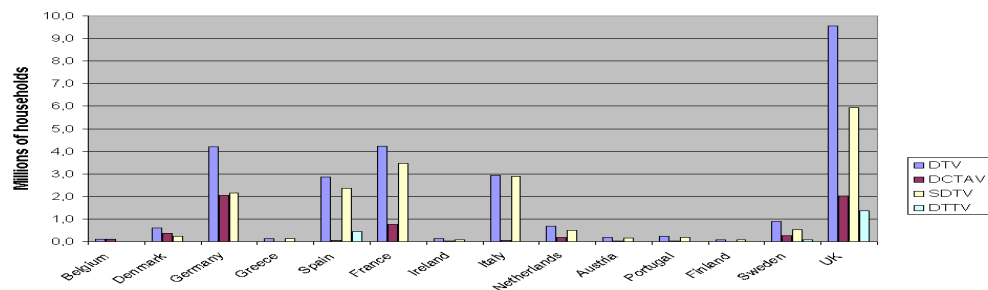
Source: prepared by EC services from Strategy Analytics data

**Chart 9: Evolution of digital TV in the EU (percentage of households)**



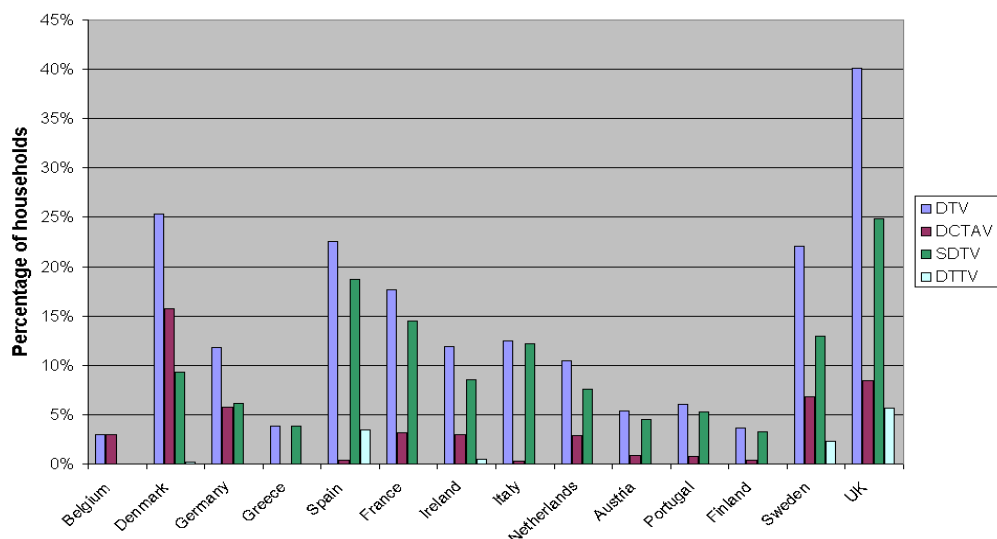
Source: prepared by EC services from Strategy Analytics data

**Chart 10: Digital TV EU households in 2001, by Member State and delivery mechanism (millions of households)**



Source: prepared by EC services from Strategy Analytics data

**Chart 11: Digital TV EU household penetration in 2001, by Member State and delivery mechanism (percentage of households)**



Source: prepared by EC services from Strategy Analytics data

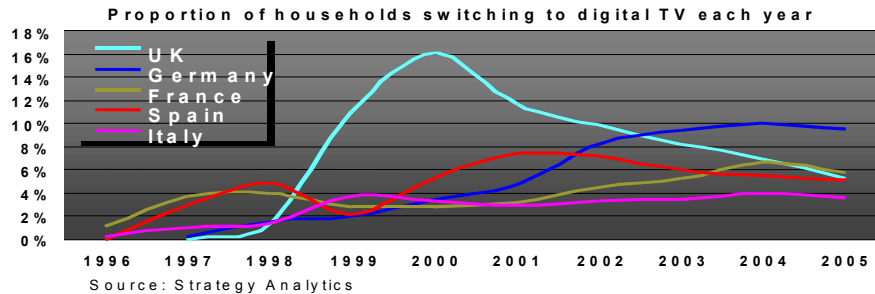
**Table 3: Evolution of total digital TV Households in EU Member States**

| Total digital TV Households  |             |             |             |             |             |             |              |             |              |              |              |              |
|--|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|--------------|--------------|--------------|--------------|
| Source: prepared by EC services from Strategy Analytics data                       |             |             |             |             |             |             |              |             |              |              |              |              |
| (in millions/ in % of digital households over total number of national households) |             |             |             |             |             |             |              |             |              |              |              |              |
|  | 1996        |             | 1997        |             | 1998        |             | 1999         |             | 2000         |              | 2001         |              |
|  | Digital HH  | %           | Digital HH  | %           | Digital HH  | %           | Digital HH   | %           | Digital HH   | %            | Digital HH   | %            |
| Belgium  | 0,00        | 0,0%        | 0,01        | 0,3%        | 0,02        | 0,5%        | 0,04         | 1,0%        | 0,07         | 1,8%         | 0,11         | 3,0%         |
| Denmark  | 0,00        | 0,0%        | 0,01        | 0,4%        | 0,07        | 2,9%        | 0,18         | 7,9%        | 0,33         | 13,6%        | 0,61         | 25,3%        |
| Germany  | 0,02        | 0,1%        | 0,08        | 0,2%        | 0,62        | 1,8%        | 1,30         | 3,7%        | 2,54         | 7,2%         | 4,20         | 11,8%        |
| Spain  | 0,00        | 0,0%        | 0,36        | 2,9%        | 0,96        | 7,7%        | 1,23         | 9,9%        | 1,91         | 15,1%        | 2,86         | 22,5%        |
| Greece   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00         | 0,0%        | 0,05         | 1,3%         | 0,14         | 3,9%         |
| France   | 0,26        | 1,1%        | 1,12        | 4,8%        | 2,06        | 8,8%        | 2,73         | 11,6%       | 3,41         | 14,4%        | 4,21         | 17,6%        |
| Ireland  | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,02         | 2,0%        | 0,06         | 5,9%         | 0,12         | 11,9%        |
| Italy  | 0,06        | 0,3%        | 0,29        | 1,3%        | 0,60        | 2,6%        | 1,46         | 6,3%        | 2,23         | 9,6%         | 2,94         | 12,5%        |
| Netherlands  | 0,05        | 0,8%        | 0,10        | 1,6%        | 0,18        | 2,7%        | 0,27         | 4,1%        | 0,43         | 6,5%         | 0,69         | 10,4%        |
| Austria  | 0,00        | 0,0%        | 0,01        | 0,3%        | 0,03        | 0,9%        | 0,05         | 1,4%        | 0,09         | 2,8%         | 0,19         | 5,3%         |
| Portugal   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,03        | 0,8%        | 0,07         | 1,9%        | 0,13         | 3,4%         | 0,22         | 6,1%         |
| Finland  | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,01        | 0,2%        | 0,02         | 0,9%        | 0,04         | 1,7%         | 0,08         | 3,7%         |
| Sweden   | 0,00        | 0,0%        | 0,01        | 0,1%        | 0,04        | 1,0%        | 0,14         | 3,6%        | 0,48         | 11,9%        | 0,88         | 22,0%        |
| UK   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,32        | 1,4%        | 2,90         | 12,4%       | 6,72         | 28,4%        | 9,55         | 40,1%        |
| <b>TOTAL EU</b>  | <b>0,39</b> | <b>0,3%</b> | <b>1,97</b> | <b>1,4%</b> | <b>4,89</b> | <b>3,4%</b> | <b>10,37</b> | <b>7,2%</b> | <b>18,38</b> | <b>12,6%</b> | <b>26,63</b> | <b>18,2%</b> |
| Japan  | 0,20        | 0,0%        | 0,50        | 1,0%        | 1,20        | 3,0%        | 1,90         | 5,0%        | 2,80         | 7,0%         | 4,40         | 10,0%        |
| USA  | 4,4         | 4,0%        | 6,9         | 7,0%        | 10,4        | 10,0%       | 16,5         | 16,0%       | 24,6         | 24,0%        | 31,8         | 31,8%        |

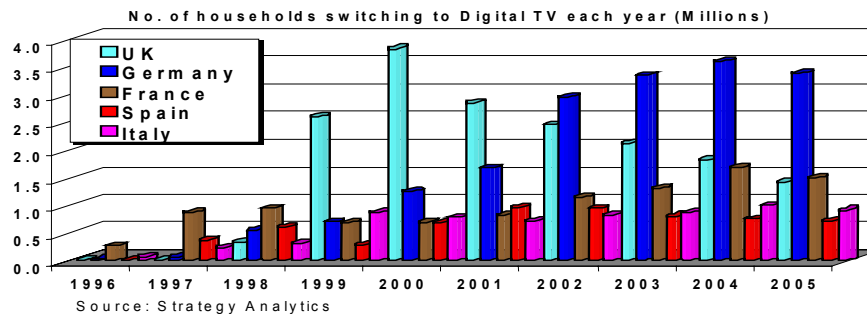
Abbreviations used: HH: households, DTV: digital television, DCATV: digital cable television, DSTV: digital satellite television, DTTV: digital terrestrial television.

In the above table the total EU digital household penetration is a weighted average that takes into account the number of households of the different Member States (Norway and Switzerland, which were included in the original data source, have been disregarded here). No figures are available from Strategy Analytics for Luxembourg. Figures for 2001 are forecasts.

**Chart 12: Digital Television Adoption Rates – Major European Union Markets**



**Chart 13: Digital Television Adoption Rates – Major European Union Markets**



**Table 4: Digital TV households in the EU in 2001, by Member State / delivery mechanism**

| Digital TV households in EU 2001, by delivery mechanism<br>(in millions/ in % of digital households over total number of national households) |              |              |              |             |             |              |              |             |             |
|---|--------------|--------------|--------------|-------------|-------------|--------------|--------------|-------------|-------------|
|   | Total DTV    |              |              | DCATV       |             | DSTV         |              | DTTV        |             |
|   | Total HH     | Digital HH   | % digital HH | Digital HH  | % digital   | Digital HH   | % digital    | Digital HH  | % digital   |
| Belgium   | 3,8          | 0,11         | 3,0%         | 0,11        | 3,0%        | 0,00         | 0,0%         | 0,00        | 0,0%        |
| Denmark   | 2,4          | 0,61         | 25,3%        | 0,38        | 15,8%       | 0,22         | 9,3%         | 0,01        | 0,2%        |
| Germany   | 34,7         | 4,20         | 11,8%        | 2,03        | 5,7%        | 2,16         | 6,1%         | 0,00        | 0,0%        |
| Spain   | 12,4         | 2,86         | 22,5%        | 0,05        | 0,4%        | 2,37         | 18,7%        | 0,44        | 3,5%        |
| Greece  | 3,6          | 0,14         | 3,9%         | 0,00        | 0,0%        | 0,14         | 3,9%         | 0,00        | 0,0%        |
| France  | 23,2         | 4,21         | 17,6%        | 0,75        | 3,1%        | 3,46         | 14,5%        | 0,00        | 0,0%        |
| Ireland   | 1,0          | 0,12         | 11,9%        | 0,03        | 2,9%        | 0,08         | 8,5%         | 0,00        | 0,5%        |
| Italy   | 22,8         | 2,94         | 12,5%        | 0,06        | 0,3%        | 2,87         | 12,2%        | 0,00        | 0,0%        |
| Netherlands   | 6,5          | 0,69         | 10,4%        | 0,19        | 2,9%        | 0,50         | 7,6%         | 0,00        | 0,0%        |
| Austria   | 3,3          | 0,19         | 5,3%         | 0,03        | 0,8%        | 0,16         | 4,5%         | 0,00        | 0,0%        |
| Portugal  | 3,5          | 0,22         | 6,1%         | 0,03        | 0,8%        | 0,20         | 5,3%         | 0,00        | 0,0%        |
| Finland   | 2,3          | 0,08         | 3,7%         | 0,01        | 0,4%        | 0,08         | 3,3%         | 0,00        | 0,0%        |
| Sweden  | 3,9          | 0,88         | 22,0%        | 0,27        | 6,8%        | 0,52         | 12,9%        | 0,09        | 2,3%        |
| UK  | 23,6         | 9,55         | 40,1%        | 2,02        | 8,5%        | 5,92         | 24,9%        | 1,35        | 5,7%        |
| <b>TOTAL EU</b>   | <b>143,7</b> | <b>26,63</b> | <b>18,3%</b> | <b>5,94</b> | <b>4,1%</b> | <b>18,54</b> | <b>12,6%</b> | <b>1,89</b> | <b>1,3%</b> |
| Japan   | 41,7         | 4,40         | 10,0%        | 0,00        | 0,0%        | 4,40         | 10,7%        | 0,00        | 0,0%        |
| USA   | 105,0        | 31,8         | 31,8%        | 13,60       | 13,5%       | 18,10        | 17,7%        | 0,10        | 0,1%        |

Source: prepared by EC services from Strategy Analytics data

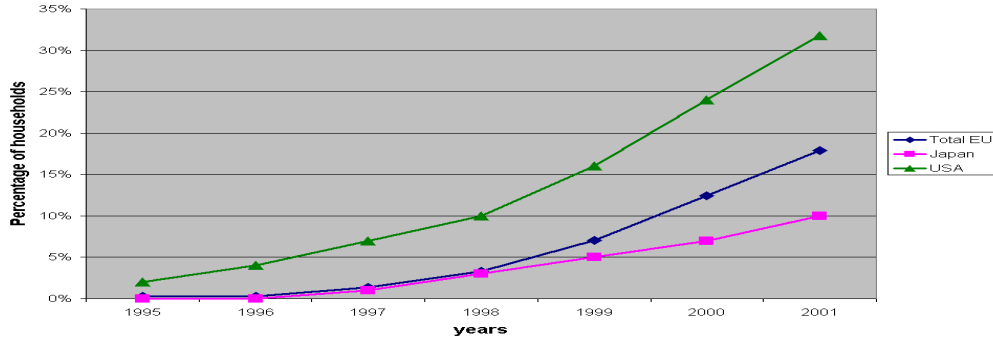
**Table 5: Evolution of digital TV households in the EU, by delivery mechanism and Member State**

| <b>Cable digital TV Households</b>   |             | Source: prepared by EC services from Strategy Analytics data |             |             |             |             |             |             |             |             |             |             |  |
|--|-------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|
| (in millions/ in % of digital households over total number of national households) |             |  |             |             |             |             |             |             |             |             |             |             |  |
|  | 1996        |  | 1997        |             | 1998        |             | 1999        |             | 2000        |             | 2001        |             |  |
|  | Digital HH  | %  | Digital HH  | %           | Digital HH  | %           | Digital HH  | %           | Digital HH  | %           | Digital HH  | %           |  |
| Belgium  | 0,00        | 0,0%   | 0,01        | 0,3%        | 0,02        | 0,5%        | 0,04        | 1,0%        | 0,07        | 1,8%        | 0,11        | 3,0%        |  |
| Denmark  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,05        | 2,0%        | 0,15        | 6,2%        | 0,24        | 10,0%       | 0,38        | 15,8%       |  |
| Germany  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,40        | 1,1%        | 0,79        | 2,2%        | 1,16        | 3,3%        | 2,03        | 5,7%        |  |
| Greece   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Spain  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,05        | 0,4%        |  |
| France   | 0,01        | 0,0%   | 0,07        | 0,3%        | 0,22        | 0,9%        | 0,36        | 1,5%        | 0,50        | 2,1%        | 0,75        | 3,1%        |  |
| Ireland  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,01        | 1,0%        | 0,03        | 2,9%        |  |
| Italy  | 0,01        | 0,0%   | 0,05        | 0,2%        | 0,07        | 0,3%        | 0,08        | 0,3%        | 0,07        | 0,3%        | 0,06        | 0,3%        |  |
| Netherlands  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,05        | 0,7%        | 0,19        | 2,9%        |  |
| Austria  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,03        | 0,8%        |  |
| Portugal   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,03        | 0,8%        |  |
| Finland  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,01        | 0,4%        |  |
| Sweden   | 0,00        | 0,0%   | 0,01        | 0,1%        | 0,03        | 0,8%        | 0,04        | 1,1%        | 0,14        | 3,5%        | 0,27        | 6,8%        |  |
| UK   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,20        | 0,8%        | 0,91        | 3,9%        | 2,02        | 8,5%        |  |
| <b>TOTAL EU</b>  | <b>0,02</b> | <b>0,0%</b>  | <b>0,14</b> | <b>0,1%</b> | <b>0,79</b> | <b>0,5%</b> | <b>1,66</b> | <b>1,1%</b> | <b>3,16</b> | <b>2,2%</b> | <b>5,94</b> | <b>4,1%</b> |  |
| Japan  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| USA  | 0,00        | 0,0%   | 0,30        | 0,3%        | 1,30        | 1,3%        | 5,00        | 4,9%        | 9,30        | 8,9%        | 13,60       | 13,0%       |  |

| <b>Satellite digital TV Households</b>   |             | Source: prepared by EC services from Strategy Analytics data |             |             |             |             |             |             |              |             |              |              |  |
|--|-------------|--|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|--------------|--------------|--|
| (in millions/ in % of digital households over total number of national households) |             |  |             |             |             |             |             |             |              |             |              |              |  |
|  | 1996        |  | 1997        |             | 1998        |             | 1999        |             | 2000         |             | 2001         |              |  |
|  | Digital HH  | %  | Digital HH  | %           | Digital HH  | %           | Digital HH  | %           | Digital HH   | %           | Digital HH   | %            |  |
| Belgium  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00         | 0,0%        | 0,00         | 0,0%         |  |
| Denmark  | 0,00        | 0,0%   | 0,01        | 0,4%        | 0,02        | 0,9%        | 0,04        | 1,7%        | 0,09         | 3,6%        | 0,22         | 9,3%         |  |
| Germany  | 0,02        | 0,1%   | 0,08        | 0,2%        | 0,22        | 0,6%        | 0,51        | 1,4%        | 1,37         | 3,9%        | 2,16         | 6,1%         |  |
| Greece   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,05         | 1,3%        | 0,14         | 3,9%         |  |
| Spain  | 0,00        | 0,0%   | 0,36        | 2,9%        | 0,96        | 7,7%        | 1,23        | 9,9%        | 1,76         | 13,9%       | 2,37         | 18,7%        |  |
| France   | 0,25        | 1,1%   | 1,05        | 4,5%        | 1,84        | 7,9%        | 2,36        | 10,1%       | 2,90         | 12,3%       | 3,46         | 14,5%        |  |
| Ireland  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,02        | 2,0%        | 0,05         | 4,9%        | 0,08         | 8,5%         |  |
| Italy  | 0,05        | 0,2%   | 0,24        | 1,0%        | 0,53        | 2,3%        | 1,38        | 6,0%        | 2,16         | 9,3%        | 2,87         | 12,2%        |  |
| Netherlands  | 0,05        | 0,8%   | 0,10        | 1,6%        | 0,18        | 2,7%        | 0,27        | 4,1%        | 0,38         | 5,8%        | 0,50         | 7,6%         |  |
| Austria  | 0,00        | 0,0%   | 0,01        | 0,3%        | 0,03        | 0,9%        | 0,05        | 1,4%        | 0,09         | 2,8%        | 0,16         | 4,5%         |  |
| Portugal   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,03        | 0,8%        | 0,07        | 1,9%        | 0,13         | 3,4%        | 0,20         | 5,3%         |  |
| Finland  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,01        | 0,2%        | 0,02        | 0,9%        | 0,04         | 1,7%        | 0,08         | 3,3%         |  |
| Sweden   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,01        | 0,3%        | 0,10        | 2,5%        | 0,29         | 7,3%        | 0,52         | 12,9%        |  |
| UK   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,28        | 1,2%        | 2,16        | 9,2%        | 4,72         | 20,0%       | 5,92         | 24,9%        |  |
| <b>TOTAL EU</b>  | <b>0,37</b> | <b>0,3%</b>  | <b>1,84</b> | <b>1,3%</b> | <b>4,07</b> | <b>2,8%</b> | <b>8,16</b> | <b>5,6%</b> | <b>13,94</b> | <b>9,6%</b> | <b>18,54</b> | <b>12,6%</b> |  |
| Japan  | 0,20        | 0,5%   | 0,50        | 1,2%        | 1,20        | 2,9%        | 1,90        | 4,6%        | 2,80         | 6,7%        | 4,40         | 10,6%        |  |
| USA  | 4,40        | 4,4%   | 6,60        | 6,5%        | 9,10        | 8,9%        | 11,50       | 11,2%       | 15,30        | 14,7%       | 18,10        | 17,2%        |  |

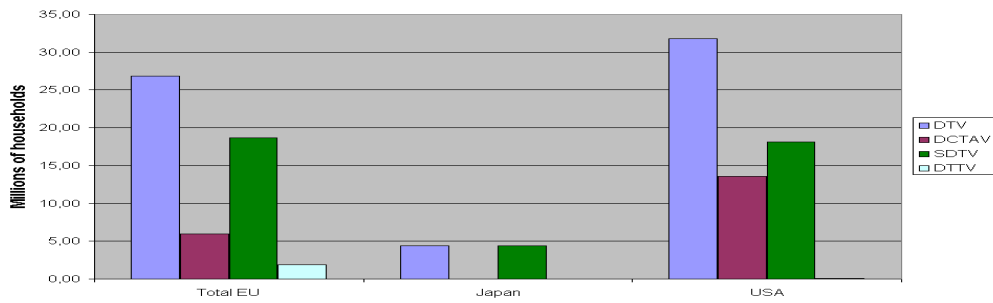
| <b>Terrestrial digital TV Households</b>   |             | Source: prepared by EC services from Strategy Analytics data |             |             |             |             |             |             |             |             |             |             |  |
|--|-------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|
| (in millions/ in % of digital households over total number of national households) |             |  |             |             |             |             |             |             |             |             |             |             |  |
|  | 1996        |  | 1997        |             | 1998        |             | 1999        |             | 2000        |             | 2001        |             |  |
|  | Digital HH  | %  | Digital HH  | %           | Digital HH  | %           | Digital HH  | %           | Digital HH  | %           | Digital HH  | %           |  |
| Belgium  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Denmark  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,01        | 0,2%        |  |
| Germany  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Greece   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Spain  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,15        | 1,2%        | 0,44        | 3,5%        |  |
| France   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Ireland  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Italy  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Netherlands  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Austria  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Portugal   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Finland  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| Sweden   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,1%        | 0,04        | 1,1%        | 0,09        | 2,3%        |  |
| UK   | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,04        | 0,2%        | 0,52        | 2,2%        | 0,97        | 4,1%        | 1,35        | 5,7%        |  |
| <b>TOTAL EU</b>  | <b>0,00</b> | <b>0,0%</b>  | <b>0,00</b> | <b>0,0%</b> | <b>0,04</b> | <b>0,0%</b> | <b>0,52</b> | <b>0,4%</b> | <b>1,16</b> | <b>0,8%</b> | <b>1,89</b> | <b>1,3%</b> |  |
| Japan  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        |  |
| USA  | 0,00        | 0,0%   | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,00        | 0,0%        | 0,10        | 0,1%        | 0,10        | 0,1%        |  |

**Chart 14: Evolution of digital TV household penetration, comparison EU-Japan-USA**



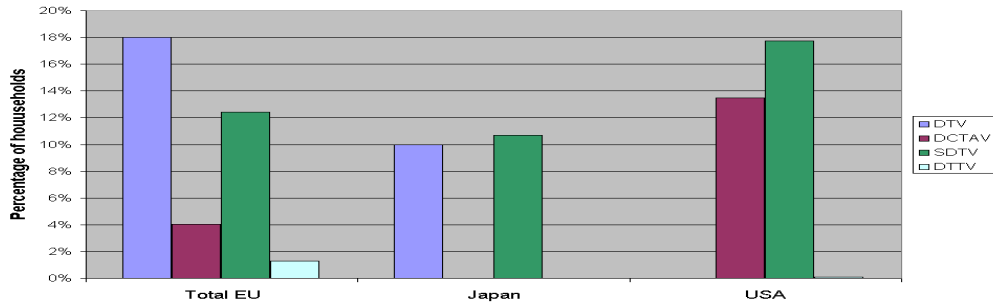
Source: prepared by EC services from Strategy Analytics data

**Chart 15: Digital TV households in 2001, comparison EU-Japan-USA**



Source: prepared by EC services from Strategy Analytics data

**Chart 16: Digital TV household penetration in 2001, comparison EU-Japan-USA**



Source: prepared by EC services from Strategy Analytics data

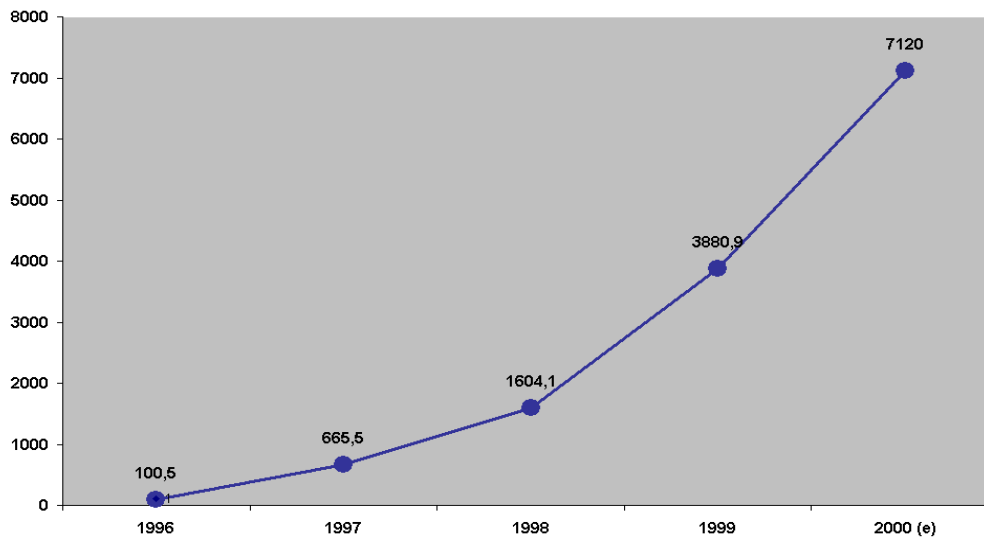


**Table 6: DTV revenues in 1999 in the E.U. (in M Euro)**

|                    | Digital TV subscription revenues | Total TV subscription revenues | DTV weight   |
|--------------------|----------------------------------|--------------------------------|--------------|
| Italy              | 326                              | 560                            | 58,1%        |
| Spain              | 430                              | 877                            | 49,0%        |
| United Kingdom     | 1647                             | 3670                           | 44,9%        |
| France             | 1099                             | 3018                           | 36,4%        |
| Belgium            | 14                               | 93                             | 14,7%        |
| Germany            | 290                              | 2750                           | 10,5%        |
| Netherlands        | 11                               | 106                            | 10,4%        |
| Ireland            | 25                               | 288                            | 8,7%         |
| Austria            | 14                               | 180                            | 7,7%         |
| Denmark            | 11                               | 223                            | 5,0%         |
| Greece             | 5                                | 125                            | 3,6%         |
| Finland            | 3                                | 75                             | 3,5%         |
| Sweden             | 8                                | 400                            | 1,9%         |
| <b>Total EU 15</b> | <b>3883</b>                      | <b>12497</b>                   | <b>31,1%</b> |

Source : IDATE

**Chart 17: Digital TV subscription revenues since 1996 (in M Euro)**



SOURCE: IDATE

**Table 7: Households with Interactive Digital TV in the EU (plus Norway and Switzerland)**

**Interactive Digital TV Households**

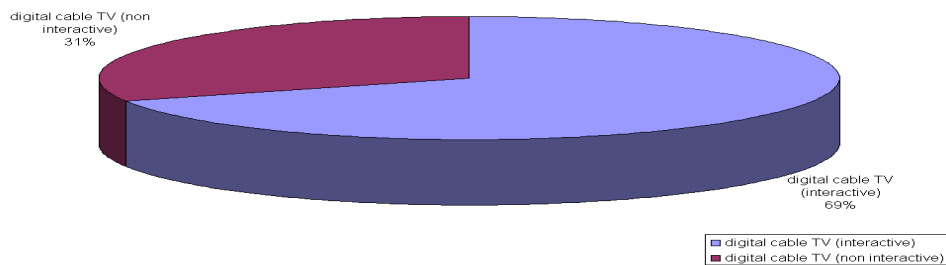
(owning at least one set-top box with middleware capable of supporting at least one of online shopping, interactive ads, information services, banking, games or Internet (email, web access))

|   | 1995       | 1996       | 1997       | 1998       | 1999       | 2000        | 2001        | 2002        | 2003        | 2004        | 2005        |
|---|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Cable</b>  |            |            |            |            |            |             |             |             |             |             |             |
| Digital Cable TV Households (M)                     | 0.0        | 0.0        | 0.1        | 0.8        | 1.7        | 3.2         | 6.1         | 10.7        | 16.3        | 22.5        | 28.8        |
| % Interactive capable                               |            | 50%        | 63%        | 40%        | 47%        | 61%         | 69%         | 74%         | 81%         | 89%         | 96%         |
| <b>No. of Interactive Digital TV Households (M)</b> | <b>0.0</b> | <b>0.0</b> | <b>0.1</b> | <b>0.3</b> | <b>0.8</b> | <b>2.0</b>  | <b>4.2</b>  | <b>7.9</b>  | <b>13.1</b> | <b>19.9</b> | <b>27.7</b> |
| <i>Growth Rate (%)</i>                              |            |            | 750%       | 272%       | 149%       | 149%        | 114%        | 89%         | 66%         | 51%         | 39%         |
| <b>Satellite</b>                                    |            |            |            |            |            |             |             |             |             |             |             |
| Digital Satellite TV Households (M)                 | 0.0        | 0.4        | 1.9        | 4.1        | 8.3        | 14.3        | 19.2        | 24.0        | 28.2        | 32.3        | 35.9        |
| % Interactive capable                               |            | 14%        | 39%        | 59%        | 86%        | 87%         | 90%         | 92%         | 95%         | 98%         | 100%        |
| <b>No. of Interactive Digital TV Households (M)</b> | <b>0.0</b> | <b>0.1</b> | <b>0.7</b> | <b>2.4</b> | <b>7.1</b> | <b>12.3</b> | <b>17.3</b> | <b>22.1</b> | <b>26.7</b> | <b>31.7</b> | <b>35.9</b> |
| <i>Growth Rate (%)</i>                              |            |            |            | 235%       | 193%       | 73%         | 40%         | 28%         | 21%         | 18%         | 13%         |
| <b>Terrestrial</b>                                  |            |            |            |            |            |             |             |             |             |             |             |
| Digital Terrestrial TV Households (M)               | 0.0        | 0.0        | 0.0        | 0.0        | 0.5        | 1.3         | 2.1         | 3.5         | 5.1         | 7.1         | 8.8         |
| % Interactive capable                               |            |            |            | 100%       | 100%       | 100%        | 100%        | 100%        | 100%        | 100%        | 100%        |
| <b>No. of Interactive Digital TV Households (M)</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.5</b> | <b>1.3</b>  | <b>2.1</b>  | <b>3.5</b>  | <b>5.1</b>  | <b>7.1</b>  | <b>8.8</b>  |
| <i>Growth Rate (%)</i>                              |            |            |            |            |            | 133%        | 68%         | 61%         | 49%         | 39%         | 24%         |
| <b>Total Interactive Digital TV Households</b>      | <b>0.0</b> | <b>0.1</b> | <b>0.8</b> | <b>2.8</b> | <b>8.5</b> | <b>15.6</b> | <b>23.6</b> | <b>32.9</b> | <b>43.3</b> | <b>55.4</b> | <b>69.7</b> |
| <i>Growth Rate (%)</i>                              |            |            |            | 244%       | 203%       | 84%         | 52%         | 39%         | 32%         | 28%         | 26%         |
| <b>iDTV Household Penetration</b>                   | <b>0%</b>  | <b>0%</b>  | <b>1%</b>  | <b>2%</b>  | <b>6%</b>  | <b>10%</b>  | <b>15%</b>  | <b>21%</b>  | <b>28%</b>  | <b>35%</b>  | <b>44%</b>  |

Analytics, Feb 2001

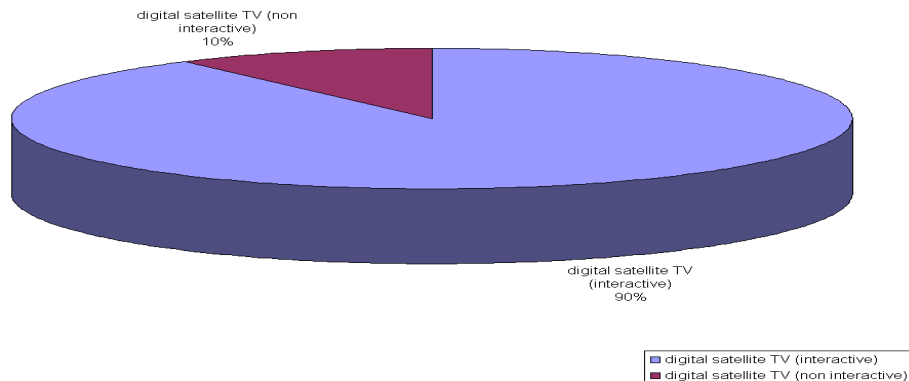
Source: Strategy

**Chart 18: Digital cable TV market in the EU (plus Norway and Switzerland), 2001 share of interactive services**



Source: prepared by EC services from Strategy Analytics data

**Chart 19: Digital satellite TV market in the EU (plus Norway and Switzerland), 2001 share of interactive services**



Source: prepared by EC services from Strategy Analytics data

### 3. Digital TV technology aspects

**Table 8: Main TV satellite systems in the EU (2000)**

| Satellite systems | Digital platforms                      | Countries mainly targeted   |
|-------------------|--|-----------------------------|
|                   | BskyB                                  | Great Britain, Ireland      |
|                   | Canal Satélite Digital                 | Spain                       |
|                   | Premiere world (DF1, Premiere Digital) | Germany, Austria            |
|                   | ZDF.vision, ARD Digital                |                             |
| SES- Astra        | ORF, TW1                               | Austria                     |
|                   | ABsat                                  | France, Belgium, Luxembourg |
|                   | Canalsatellite numérique               |                             |
|                   | CanalDigitaal                          | The Netherlands             |
|                   | Stream                                 |                             |
|                   | RAI                                    | Italy                       |
|                   | D+                                     |                             |
| Eutelsat          | Absat                                  | France, Belgium, Luxembourg |
|                   | TPS                                    |                             |
|                   | MSG                                    | Germany                     |
|                   | NOVA                                   | Greece                      |
| Hispasat          | Via Digital<br>TV Cabo                 | Spain<br>Portugal           |
| Thor              | Canal Digital AS                       | Finland, Denmark, Sweden    |
| Intelsat          | Canal Digital AS                       | Finland, Denmark, Sweden    |
| Source : IDATE    |  |                             |

**Table 9: Conditional access and API systems in Europe**

| Systems               | Designers          |
|-----------------------|--------------------|
| Viaccess              | France Télécom     |
| Mediaguard            | Seca               |
| BetaCrypt             | Beta-Research      |
| N/a                   | Irdeto             |
| Nagravision           | Kudelski           |
| Videoguard            | News Data System   |
| Conax CAS3            | Conax Telenor      |
| N/a                   | Telewest           |
| API in Europe         |                    |
| Systems               | Designers          |
| Open TV               | Open TV            |
| TVMediahighway        | Seca               |
| Power TV              | Scientific Atlanta |
| Liberate TV Navigator | Liberate           |
| Betanova              | Beta-Research      |

Source : IDATE

With regard to *Application Programme Interfaces (APIs)*, it should be noted that the *Multimedia and Hypermedia Experts Group (MHEG)*, an API standardised by ISO) is used by free-to-air digital terrestrial broadcasters in the UK.

Work on technical specifications of the *Multimedia Home Platform (MHP)* has continued and prototype decoders have been presented at the Berlin *IFA* broadcasting fair in August 2001. Industry agreements concluded in different Member States aim at the migration from proprietary standards to the MHP. Such a commitment to the MHP was made within *Nordig*, an organisation grouping several Scandinavian television and telecommunication companies, and in a joint declaration from German broadcasters in September 2001. Some national authorities have also indicated that MHP use should be encouraged. Finally, relevant industry players are currently working on a European Memorandum of Understanding for the promotion of the MHP.

## 2.4 REGULATORY ISSUES: SUPPLEMENTARY DATA

### 1. NATIONAL REGULATORY AUTHORITIES

▪ **Table 1: Financing and staff of the national regulatory authorities for telecommunications services (at 1 August 2001)**

|     | Operational budget for the year 2001<br>(millions of €) | Main sources for financing of the NRA's budget<br>for the year 2000 (%)  | Number of full-time staff*<br>(occupied posts) |                         |
|-----|---|--|--|-------------------------|
|     |   |  | Current<br>(1.8.2001)                          | Projected<br>(for 2002) |
| B   | 29.59   | 100% financed by the fees/charges paid by all licensed (fixed and mobile) operators, of which 79.8% form the incumbent/SMP operators (including fees from private radio licences)  | 34   | 42                      |
| DK  | 31 <sup>28</sup>  | 51% of the budget financed by market actors (of which 49% by incumbent/SMP operators); 10% by the state budget; 28% by frequencies fees and 10% by tendering fees (these two last categories of financing are due to cover one-off administrative costs for the UMTS tendering process)  | 159  | 162                     |
| D   | 144,5   | 100% financed by the state budget  | 1899   | N/A                     |
| EL  | 16  | 94% financed by the fees/charges paid by all licensed (fixed/mobile) operators, of which 83% from the incumbent/SMP operators; 6% of the budget comes from fines   | 50   | 141                     |
| E   | 13.46   | 98.6% financed by the fees/charges paid by all licensed (fixed/mobile) operators: of the following categories of services: 65% for the provision of wholesale and retail services; 32% for the provision of value added services; 0.87% for the provision of data transmission; 0.28% for the provision of cable services; 0.54% for authorizations and licences | 93   | 100                     |
| F   | 15.4  | 100% financed by the state budget  | 149  | 149                     |
| IRL | 23.58   | 28.5% financed by the fees/charges paid by all licensed (fixed/mobile) operators (16% from the incumbent/SMP operators); 58.5% financed by spectrum income; the remainder by radio licensing (3.6%); cable and MMDS licensing (8%) and bank interest (1.4%)  | 84   | 95                      |
| I   | 41.8  | 68.4% financed by the state budget; 17.5% by fees/charges paid by incumbent/SMP operators; 9.8% by fees/charges paid by all other licensed operators (including fees from audio-visual and publishing sectors); 4.2 by other sources   | 216  | 260                     |
| L   | 3 (for the year 2000)                                   | 44% financed by the fees/charges paid by all licensed (fixed/mobile) operators (20% from the incumbent/SMP operators); 58% financed by spectrum licensing  | 21   | N/A                     |
| NL  | 13.3  | 87.2% financed by the fees/charges paid by all licensed (fixed/mobile) operators (40.3% from the incumbent/SMP operators); 12.8% financed by the state budget  | 107  | 125                     |
| A   | 7.6   | 100% financed by the fees/charges paid by all licensed (fixed/mobile) operators, of which 90,73% from the incumbent/SMP operators  | 58   | 62                      |
| P   | 64.6  | 92,3% financed by the fees/charges paid by all licensed (fixed/mobile) operators, of which 58% from the proceeds resulting from the activities for which the operators have been notified as having SMP. The remainder 7,7% comes from approvals, homologations, laboratory tests and financial gains  | 402  | 410                     |
| FIN | 25  | 33% financed by the fees/charges paid by all licensed (fixed/mobile) operators, including frequencies fees (27% from the incumbent/SMP operators); 39% by TV licence fees; 14% from radio equipment licences; 4% from postal entities; 10% other (non operator) licence fees.  | 227  | 241                     |
| S   | 21.2  | 94,4% financed by fees/charges paid by all licensed (fixed/mobile) operators (23,4% from the incumbent/SMP operators). The remainder 5,6% is state funded.   | 195  | 210                     |
| UK  | 10.2  | 82% financed by fees/charges paid by all licensed (fixed/mobile) operators (72% from the incumbent/SMP operators); 16% by state budget and 2% by sales of publications and VAT received.   | 233  | 240                     |

\* Numbers in *italics* also include staff working on other matters than telecommunications (i.e. audio-visual, publishing, etc.).

<sup>28</sup> About 40% of this figure is represented by an extraordinary item related to the costs of organising the auction of UMTS frequencies (e.g. consultant fees).

## 2. TARIFFS

- Table 2: Fixed public voice telephony tariffs of SMP operators: rebalancing, regulation, period of public notice before the implementation of tariff changes, and report on the evolution of tariffs

|     | Tariff rebalancing completed | Type of regulation of end-user voice telephony tariffs of SMP operators | Period of public notice before the implementation of tariff changes by operators with SMP in the fixed public voice telephony market | Date and reference of publication of the last report on the evolution of tariffs   |
|-----|------------------------------|---|--|--|
| B   | No                           | Price cap   | Tariff increase: 15 days<br>Tariff decrease: 1 day   | 25 June 2001<br>www.ibpt.be/Telecoms/ServiceUniversel/rapport 2000.pdf   |
| DK  | Yes                          | Price cap   | 14 days on top of the notice of termination of contract <sup>29</sup>  | 15 June 2001, Tele Yearbook 2000<br>www.tst.dk   |
| D   | No <sup>30</sup>             | Price cap/NRA approval  | 1 month  | No 02 of 26.01.00, Notice 46/2000<br>No 04 of 23.02.00, Notice 124/2000<br>No 04 of 23.02.00, Notice 125/2000  |
| EL  | No <sup>31</sup>             | Ex ante approval by the NRA under ONP conditions                        | 45 days <sup>32</sup>  | None   |
| E   | Yes                          | Price cap   | Under price cap: 10 days<br>Under maximum tariff regime: 15 days   | 30 June 2001, CMT Annual report<br>(www.cmt.es)<br>A comparison of the prices of fixed operators is also available on the web site   |
| F   | Yes                          | Ex ante approval by the Ministry under ONP conditions                   | 8 days   | Report 2000: "Le service public des télécommunications", quarterly<br>Avis ART 01-475, 18 May 2001   |
| IRL | No <sup>33</sup>             | Price cap   | 21 days  | Price cap on eircom 2000 – D4/00 ODTR Document 01/20   |
| I   | Yes                          | Price cap/NRA approval  | 30 days  | 30 June 2001, AGCOM Annual report<br>(www.agcom.it)  |
| L   | No                           | Freely set by operator  | No period set  | None   |
| NL  | Yes                          | Price cap/price squeeze/NRA approval                                    | 2 weeks  | "Oordeel" 28 June 2001,<br>OPTA/EGM/2001/201632  |
| A   | Yes                          | Ex ante approval by the NRA under ONP conditions                        | 2 months   | A report on market evolution for the period 01.01.2000-31.03.2001 will be published in Q4/2001<br>A permanent comparison of the prices of all fixed operators is available at www.rtr.at |

<sup>29</sup> Except for tariff decreases.

<sup>30</sup> According to DT AG, its end-user tariffs have still not been fully rebalanced. However, the NRA is not preventing DT from eliminating any remaining access deficit by further rebalancing its end-user tariffs. Moreover, the NRA considers that the sole comparison between the basic monthly charge applied by DTAG for analogue connections and the charge for unbundled local loop access is not sufficient to prove the existence of anti-competitive price squeeze.

<sup>31</sup> Tariff rebalancing is nearly completed.

<sup>32</sup> Decision no. 210/4 of 28.02.2001.

<sup>33</sup> Eircom may increase local access rentals at the rate of up to CPI+2 each year during the period 2000-2003. There are currently several costing work streams in relation to access underway by OTDR and these should be finalised over the coming months and identify whether there is a need for further rebalancing.

|            | Tariff rebalancing completed | Type of regulation of end-user voice telephony tariffs of SMP operators | Period of public notice before the implementation of tariff changes by operators with SMP in the fixed public voice telephony market | Date and reference of publication of the last report on the evolution of tariffs  |
|------------|------------------------------|---|--|---|
| <b>P</b>   | No                           | Freely set by operator in respect of ONP conditions <sup>34</sup>       | 5 days   | In 1999 and 2000 ICP published press release on tariff changes occurred during those years                                  |
| <b>FIN</b> | Yes                          | Freely set by operator <sup>35</sup>                                    | No period set <sup>36</sup>  | A study of telecommunications prices in 2000 <sup>37</sup> can be requested to the Ministry of Transport and Communications |
| <b>S</b>   | No                           | Price cap   | No period set (in practice 1 month for tariff increase)  | June 2000   |
| <b>UK</b>  | No <sup>38</sup>             | Price cap   | 28 days (1 day when market determined as competitive)  | Several documents published up to 31 July 2001 <sup>39</sup>  |

<sup>34</sup> According to the price agreement concluded between the Directorate-general for Trade and Competition, ICP and Portugal Telecom concerning fixed telephony services provided as part of the Universal Service.

<sup>35</sup> Subject to the obligation of cost orientation for local calls.

<sup>36</sup> Users notified of tariff changes prior to entry into force.

<sup>37</sup> "Suomen telemaksujen hintataso vuonna 2000".

<sup>38</sup> Residential line rental income is not yet sufficient to cover fully allocated costs. However, the NRA believes that BT's residential line rental charge now covers the incremental cost of providing the line. There are no regulatory constraints preventing BT from further rebalancing of its tariffs.

<sup>39</sup> These include: an annual statistical note (last published in February 2001) on the median bill of BT's residential consumers; Oftel's Consultative Document "Competition in the provision of fixed telephony services", 31 July 2001, on the impact of price changes for different customer groups; International benchmarking reports for a range of services (last publication June 2001); 2000 Annual Report (published 11/07/01) showing change in BT retail prices subject to price controls. Furthermore, typical bills payable to residential consumers with different leading suppliers can be compared through a free, industry-funded website, endorsed by Oftel at [www.phonebills.org.uk](http://www.phonebills.org.uk).

### 3. COST ACCOUNTING

■ **Table 3: Current and planned cost methodologies for calculating interconnection charges**

|            | Cost accounting system actually in place for interconnection by SMP operators |   | Deadline for implementation of a system based on current costs |
|------------|---|---|--|
|            | Cost base   | Cost standard   |  |
| <b>B</b>   | Historic <sup>40</sup>  | FDC   | Implemented for network assets                                 |
| <b>DK</b>  | Historic and best practice  | FDC   | 31.12.2002 (LRAIC)   |
| <b>D</b>   | Forward looking   | LRAIC   | Implemented  |
| <b>EL</b>  | Tariffs based on best current practice  | Tariffs based on best current practice FDC                    | LRIC planned for 2002  |
| <b>E</b>   | Multi-standard  | Multi-standard  | Implemented (on 31.7.2001)                                     |
| <b>F</b>   | Historic  | FDC <sup>41</sup>   | LRIC planned for RIO 2002                                      |
| <b>IRL</b> | LRIC  | LRIC  | Implemented  |
| <b>I</b>   | Current   | FDC   | Implemented (on 1.1.2001)                                      |
| <b>L</b>   | Historic  | FDC   | In principle LRIC for RIO2001                                  |
| <b>NL</b>  | Current   | EDC for originating i/c<br>Bottom-up LRIC for terminating i/c | Implemented  |
| <b>A</b>   | Current   | FDC <sup>42</sup>   | Implemented  |
| <b>P</b>   | Historic  | FDC   | No deadline set  |
| <b>FIN</b> | Historic/Current <sup>69</sup>  | Company specific <sup>43</sup>                                | Ongoing implementation   |
| <b>S</b>   | Historic  | AIC   | No deadline set  |
| <b>UK</b>  | Forward looking/ current  | LRIC + FDC  | Implemented  |

Legend:

Cost base: historic, current, forward-looking

Cost standard: AIC: average incremental costs  
LRIC: long-run incremental costs  
LRAIC: long-run average incremental costs  
FDC: fully distributed costs  
EDC: embedded direct costs

<sup>40</sup> With regard to network assets, historic costs are converted into current costs.

<sup>41</sup> Fully allocated historic costs, with significant forward-looking elements.

<sup>42</sup> Telekom Austria uses the FDC top-down model; the NRA uses the forward-looking LRAIC bottom-up model.

<sup>43</sup> The NRA does not set interconnection charges for SMP organisations. Operators set their own prices. There are 50 SMP operators in Finland and their prices must be cost-based. Cost structures, prices and accounting systems vary between operators. The Ministry approved the operators' descriptions of their accounting systems on 11 February 1998. The NRA uses both FDC top down models based on historic costs and current costs methodology when evaluating the cost orientation of charges.

**Table 4: Verification of compliance with the cost accounting system**

|     | Verification of compliance with the CAS by a competent and independent body |                   |  | Statement concerning compliance                      |  |
|-----|---|-------------------|--|--|--|
|     | Voice telephony   | Interconnection   | Last accounts verified (accounting year) | Date of last publication                             | Reference in the national Official Journal or other  |
| B   | No  | Yes               | 1998 and 2000 <sup>44</sup>              | None   | -  |
| DK  | Yes   | Yes               | 1999 <sup>45</sup>                       | 14.03.2001 (VT)<br>06.03.2001 (IC)                   | <a href="http://www.tst.dk/dk/forbrugerforhold/onp.htm">http://www.tst.dk/dk/forbrugerforhold/onp.htm</a> (VT)<br><a href="http://www.tst.dk/dk/samtrafik/indberetning_om_tdk_s_forretni.htm">http://www.tst.dk/dk/samtrafik/indberetning_om_tdk_s_forretni.htm</a> (IC) |
| D   | Yes <sup>46</sup>   | Yes               | 2000                                     | End 1999 <sup>47</sup>                               | Activity report of REGTP <sup>47</sup>   |
| EL  | No <sup>48</sup>  | No <sup>48</sup>  | None                                     | None   | -  |
| E   | Yes   | Yes               | 2000 <sup>49</sup>                       | 22.02.2001   | N/A  |
| F   | Yes   | Yes               | 1999                                     | 15.06.2001<br>(year 1998)<br>4.7.2001<br>(year 1999) | Decision 01-564<br>Decision 01-664   |
| IRL | Yes   | Yes               | Year ended on 31.3.2000                  | 22.11.2000   | OTDR Document 01/11  |
| I   | Yes   | Yes               | 1998                                     | None <sup>50</sup>                                   | - 50   |
| L   | No  | No                | None                                     | None   | -  |
| NL  | Yes   | Yes               | 2000 <sup>51</sup>                       | 2001   | Decision OPTA/IBT/2000/202891, also at <a href="http://www.opta.nl">www.opta.nl</a>  |
| A   | Yes <sup>52</sup>   | Yes <sup>52</sup> | None                                     | 10.07.2001 <sup>52</sup>                             | RASR 4/01, <a href="http://www.rtr.at">www.rtr.at</a>  |
| P   | Yes   | Yes               | 1999                                     | 27.02.2001<br>(year 1998) <sup>53</sup>              | Diário da República n°49, III Series of 27.02.01   |
| FIN | No (but requested only for local calls) <sup>54</sup>                       | No                | -  | None   | -  |

<sup>44</sup> 1998 for accounting separation and 2000 for interconnection. Accounting separation is implemented and verified by BIPT.

<sup>45</sup> Further statements, concerning the compliance of TDC's accounts for the year 2000, were published in October 2001.

<sup>46</sup> Price cap requires an individual authorisation procedure.

<sup>47</sup> Next publication in the Official Journal of REGTP, probably end 2001. According to the administrative provisions on cost accounting - published in Official Journal 120/2001 - REGTP will publish annually in its Official Journal a general report on compliance with the provisions and thus on the further development of the cost accounting system. This report concludes with an observation as to whether the undertaking possesses a suitable cost accounting system.

<sup>48</sup> Underway for the first time.

<sup>49</sup> The verification for 2001 is ongoing.

<sup>50</sup> The statement concerning compliance for accounting year 1998 and the description of TI's accounting system have been published after 1 August 2001, see NRA's Decision no.402/01/CONS of 10 October 2001, available in the NRA's web-site ([www.agcom.it](http://www.agcom.it)). Moreover, the NRA considers that a statement concerning compliance has been published in July 1999 with regard to audit for accounting year 1997 (Decision no. 101/99 of 25 June 1999, published in the OJ n.155, 5 July 1999).

<sup>51</sup> However, no public accountant verification took place.

<sup>52</sup> Costing data is verified by the NRA, on the basis of experts' opinions, in the context of individual proceedings for approval of the incumbent's tariffs and interconnection dispute settlements. However, no verification is done on an annual basis.

<sup>53</sup> The statement of compliance concerning year 1998 does not cover interconnection. Publication concerning verification for year 1999 is expected soon.

<sup>54</sup> Finland does not require cost orientation for international or long-distance voice telephony calls, because it is considered to be effective competition on those markets, but does require this for local calls and interconnection. Verification of compliance may take place on an *ad hoc* basis and, at the present stage, verification is not performed systematically.



|           | Verification of compliance with the CAS by a competent and independent body |                 |  | Statement concerning compliance |  |
|-----------|---|-----------------|--|---------------------------------|--|
|           | Voice telephony   | Interconnection | Last accounts verified (accounting year) | Date of last publication        | Reference in the national Official Journal or other  |
| <b>S</b>  | Yes   | Yes             | 2000                                     | 2001                            | N/A  |
| <b>UK</b> | Yes   | Yes             | Year ended on 31.03.2000                 | 30.09.2000 <sup>55</sup>        | The audit report is contained in the regulatory accounts, formally known as "British Telecommunications plc: Current Cost Financial Statements for the Businesses and Activities 2000 and Restated 1999 Financial Statements". |

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<sup>55</sup> Next publication is due 30.09.01 for the year that ended on 31.03.01.

#### 4. NUMBERING

Table 5 shows the availability throughout the country of carrier selection and pre-selection facilities for different types of calls on 1 August 2001. For a full understanding of this table it should be noted that:

- Portugal has a derogation for the implementation of carrier pre-selection until end 2001, but has implemented all forms of number selection except calls to non-geographic numbers;
- Greece has a derogation for the implementation of carrier pre-selection until end 2002.

**Table 5: Availability of carrier selection and pre-selection by type of call**

|            | Local calls       |                   | Long-distance calls |          | International calls |          | Calls to mobile |                   | Calls to non geographic numbers |                   |
|------------|-------------------|-------------------|---------------------|----------|---------------------|----------|-----------------|-------------------|---------------------------------|-------------------|
|            | CS                | CPS               | CS                  | CPS      | CS                  | CPS      | CS              | CPS               | CS                              | CPS               |
| <b>B</b>   | Yes               | Yes               | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | Yes                             | Yes               |
| <b>DK</b>  | Yes               | Yes               | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | Yes                             | Yes               |
| <b>D</b>   | 01.01.03          | 01.01.03          | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | No                              | No <sup>56</sup>  |
| <b>EL</b>  | Yes               | 01.01.03          | Yes                 | 01.01.03 | Yes                 | 01.01.03 | Yes             | 01.01.03          | Yes                             | 01.01.03          |
| <b>E</b>   | Yes               | Yes               | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | Yes                             | Yes               |
| <b>F</b>   | No                | No                | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | No                              | No                |
| <b>IRL</b> | Yes               | Yes               | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | Yes                             | Yes               |
| <b>I</b>   | Yes               | Yes               | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | Yes                             | Yes               |
| <b>L</b>   | Yes               | Yes               | Not applicable      |          | Yes                 | Yes      | Yes             | Yes               | Yes                             | Yes               |
| <b>NL</b>  | Yes               | Yes <sup>57</sup> | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | No                              | No                |
| <b>A</b>   | Yes <sup>57</sup> | Yes               | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | No                              | No                |
| <b>P</b>   | Yes               | Yes               | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | No                              | No                |
| <b>FIN</b> | 01.09.01          | 01.09.01          | Yes                 | Yes      | Yes                 | Yes      | 01.09.01        | 01.09.01          | No                              | No                |
| <b>S</b>   | Yes               | Yes <sup>57</sup> | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes               | No                              | No                |
| <b>UK</b>  | Yes               | Yes <sup>58</sup> | Yes                 | Yes      | Yes                 | Yes      | Yes             | Yes <sup>58</sup> | Yes                             | Yes <sup>58</sup> |

Table 6 shows the availability of number portability (for users wishing to keep the same number when they change operator) on 1 August 2001. For a full understanding of this table it should be

<sup>56</sup> The facility was available until July 2000, then it was stopped on the basis of a multilateral agreement between operators (DT and new entrants) because it was considered to be network inefficient.

<sup>57</sup> However, the area code must be dialled.

<sup>58</sup> CPS is available from Kingston. BT has adopted an interim solution which allows carrier pre-selection using “autodiallers” from April 2000. Permanent carrier pre-selection (using switch software) will be implemented in December 2001 for local calls and calls to mobile and other non-geographic numbers.

noted that Portugal and Greece have been granted the same derogation periods as in the case of carrier pre-selection.

**Table 6: Availability of operator number portability by type of number**

|                              | B   | DK  | D   | EL | E   | F   | IRL | I   | L   | NL  | A                 | P   | FIN | S   | UK  |
|------------------------------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-------------------|-----|-----|-----|-----|
| Geographic                   | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes               | Yes | Yes | Yes | Yes |
| Non-geographic <sup>59</sup> | Yes | Yes | Yes | No | Yes | No  | Yes | Yes | No  | Yes | Yes <sup>60</sup> | Yes | Yes | Yes | Yes |

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<sup>59</sup> For example, emergency numbers, free-phone numbers, premium rate services, personal numbers. Mobile numbers are excluded.

<sup>60</sup> Except for numbers which do not conform to the Numbering Plan.

## 5. QUALITY OF SERVICE

Table 7 provides information on the type of regulation of quality of services for public voice telephony existing in different Member States.

The information is based on data provided by the national regulatory authorities. No information is available on Luxembourg.

**Table 7: Quality of service (QoS) for public fixed voice telephony (at 1 August 2001)**

| Member State | Does the NRA set QoS for:       |                        | Do SMP/US <sup>61</sup> operators measure QoS pursuant to the following standards? (yes/no) |                   |                              | Have measurements of QoS for year 2000 been published by |                                  | Date of latest publication and reference in the national Official Journal or other |
|--------------|---------------------------------|------------------------|---|-------------------|------------------------------|--|----------------------------------|--|
|              | SMP/US <sup>61</sup> operators? | Other fixed operators? | ETSI ETR 138  | ETSI EG 201       | Other                        | SMP/US <sup>61</sup> operator?                           | the NRA?                         |  |
| B            | Yes                             | No                     | Yes   | No                | N/A                          | N/A  | Yes                              | 25 June 2001<br>(www.ibpt.be/Telecom/ServiceUniversel/rapport2000.pdf)             |
| DK           | Yes                             | No                     | Yes   | Yes <sup>62</sup> | No                           | No   | No                               | None   |
| D            | Yes <sup>63</sup>               | No                     | No  | Yes <sup>64</sup> | Reg. 169/99 <sup>65</sup>    | N/A  | First publication by end of 2001 | None   |
| EL           | Yes                             | Yes                    | N/A   | Yes <sup>66</sup> | N/A                          | No   | No                               | None   |
| E            | Yes                             | No                     | Yes   | Yes <sup>66</sup> | No                           | No   | No                               | No   |
| F            | Yes                             | Yes                    | N/A   | N/A               | N/A                          | Yes  | No                               | N/A  |
| IRL          | No                              | No                     | Partially <sup>67</sup>   | N/A               | MLOP programme <sup>67</sup> | No   | First publication by end of 2001 | None   |
| I            | Yes                             | Yes                    | Yes   | Yes               | N/A                          | Yes  | No                               | Published by SMP operator in its semestrial report                                 |
| NL           | Yes                             | Yes                    | Yes <sup>68</sup>   | Yes <sup>68</sup> | No                           | No   | First publication by end of 2001 | None   |
| A            | Yes <sup>69</sup>               | Yes                    | Yes   | Yes               | No                           | No   | No <sup>70</sup>                 | www.rtr.at   |

<sup>61</sup> Operators having significant market power in the provision of fixed telephone networks and/or voice telephony services or having been designated in accordance with Article 5 of Directive 98/10/EC.

<sup>62</sup> The requirements of the Terms of reference for the provider of universal service obligations are being revised in conformity with ETSI EG 201.

<sup>63</sup> Under §2 of the Telecommunications Universal Service Order (TUDLV), the quality of voice telephony US is based on the standard of telephone service achieved on 31 December 1997. There is no quantifiable description or designation of these standards.

<sup>64</sup> ETSI EG 201 769 is applied for the first eight parameters of Annex III of the voice telephony Directive 98/10/EC. REGTP's Regulation 169/1999 provides for adaptation of ETSI EG 201 769 to the peculiarities of the services/network of national voice telephony service providers.

<sup>65</sup> The ninth parameter (billing accuracy) of Annex III of the voice telephony Directive 98/10/EC is measured on the basis of definitions provided in Regulation 9/1999.

<sup>66</sup> In the course of implementation.

<sup>67</sup> The Measuring Licence Operator programme establishes a framework for measuring the quality of service provided by fixed line telecommunications operators to their customers. ODTR's MLOP programme has set parameters which are partially based upon ETR 138.

<sup>68</sup> ETSI ETR 138 was implemented by end of 2000. ETSI EG 201 has been used since the beginning of 2001.

<sup>69</sup> Ordinances on Universal Service: BGBl. II N. 192/1999 and BGBl. II N. 173/2000.

| Member State | Does the NRA set QoS for:       |                        | Do SMP/US <sup>61</sup> operators measure QoS pursuant to the following standards? (yes/no) |                   |                   | Have measurements of QoS for year 2000 been published by |   | Date of latest publication and reference in the national Official Journal or other   |
|--------------|---------------------------------|------------------------|---|-------------------|-------------------|--|---|--|
|              | SMP/US <sup>61</sup> operators? | Other fixed operators? | ETSI ETR 138  | ETSI EG 201       | Other             | SMP/US <sup>61</sup> operator?                           | the NRA?  |  |
| <b>P</b>     | Yes                             | No <sup>71</sup>       | Yes   | N/A               | N/A               | Pending <sup>72</sup>                                    | No  | Not available  |
| <b>FIN</b>   | No                              | No                     | Yes <sup>68</sup>   | Yes <sup>68</sup> | N/A               | N/A  | Yes <sup>73</sup>                                 | Telecommunications statistics (Aug. 2001)  |
| <b>S</b>     | No                              | No                     | -   | -                 | -                 | No   | No  | None   |
| <b>UK</b>    | No                              | No                     | Partially <sup>74</sup>   | Yes <sup>74</sup> | Yes <sup>74</sup> | Yes  | Indirectly, through CPIs initiative <sup>75</sup> | SMP operators' indicators are available at www.Groupbt.com. Latest publication is for period Oct.00 – Mar. 01<br><br>CPIs are available at www.cpi.org.uk. Latest publication is for period Jul.- Dec.00 |

<sup>70</sup> The indicators have however been published after the 1 August 2001 and are available at: <http://www.rtr.at/WWW/RechtsDB.nsf/pages/UD-Leistungskennwerte>.

<sup>71</sup> According to Article 5 of Law-Decree 474/99, 8 November 1999, ICP can set indicators of quality of service, but not objectives of performance.

<sup>72</sup> According to point h) in Article 7 of the regulation of provision of fixed telephony services, it is Portugal Telecom's duty to publish the results of the above mentioned quality indicator. The authorities are waiting for the operator to comply with this measure.

<sup>73</sup> QoS indicators published by the Ministry represent the average of all operators. QoS measurements of individual operators can be requested by the operator concerned.

<sup>74</sup> Comparable Performance Indicators (see below) used ETR138 as a starting point. However, the parameters are tailored to reflect the demands of UK users on quality of service. Any deviation from ETR138/EG202 is a result of evidence based decision making in the interest of consumers and business users.

<sup>75</sup> Comparable Performance Indicators (CPIs) is a self-regulatory initiative. This initiative includes QoS measurements for 13 network operators in the UK, including the SMP operator.

## 6. DATA PROTECTION

The following tables provide information on data protection measures applied in EU Member States in relation to Directive 97/66/EC. Table 8 relates to unsolicited calls and e-mails referred to in Article 12. Table 9 and Table 10 relate to the implementation of Articles 6(2), 7, 10 and 11 of the Directive, on the maximum period for storage of billing data, subscribers' rights to receive non-itemised billing, the stopping of automatic call forwarding and the charge, if any, for subscribers to be omitted from the telephone directory.

The information is based on data provided by the national regulatory authorities. No information is available for Luxembourg.

**Table 8: Unsolicited calls and electronic mails**

| Member State | Is (informed <sup>76</sup> ) consent of the called party needed for: |                               | Requirements for consent <sup>77</sup> | Which institutions manage opt-out lists for e-mails?          | Is consultation of opt-out lists required prior to sending unsolicited e-mails? |
|--------------|--|-------------------------------|--|---|---|
|              | Unsolicited phone calls and faxes? (yes/no)                          | Unsolicited e-mails? (yes/no) |  |   |   |
| B            | Yes (faxes) <sup>78</sup>  | No                            | Not regulated                          | Not regulated   | Not regulated   |
| DK           | Yes  | Yes                           | Oral or Written (active)               | Not relevant <sup>79</sup>                                    | Not relevant  |
| D            | Yes <sup>80</sup>  | Yes <sup>80</sup>             | Oral, but also implied                 | Private associations or other private third parties           | No, consultation of opt-out lists is voluntary                                  |
| EL           | Yes  | Yes                           | Written (passive)                      | N.A.  | No  |
| E            | Yes  | No <sup>81</sup>              | Unequivocal consent                    | <u>Federación de Comercio Electrónico y Marketing Directo</u> | Yes   |
| F            | No <sup>82</sup>   | No                            | Not applicable                         | No <sup>82</sup>  | No <sup>82</sup>  |
| IRL          | No   | No                            | Not applicable                         | Irish Direct Marketing Association (IDMA) <sup>83</sup>       | No  |
| I            | Yes  | Yes                           | Written (active)                       | None  | No  |
| L            | No   | No                            | Not applicable                         | None  | N/A   |

<sup>76</sup> Consent given by the called party after being informed on the identity of the calling party and on the type of content to be provided.

<sup>77</sup> In this column, NRAs are requested to specify if the consent to be collected from the user is to be *written* or *oral* and, if written, to specify if consent can be *passive* (e.g. the user does not delete a pre-ticked box corresponding to the declaration of consent) or is to be *active* (e.g. the user must tick the box corresponding to the declaration of consent).

<sup>78</sup> In case of distance selling contracts.

<sup>79</sup> Denmark has adopted an opt-in model. The Danish Marketing Practices Act (section 6a, para. 1) requires that the customer, prior to receiving the "call using mail", has requested the call.

<sup>80</sup> Based on case law under unfair competition law. There is a principle of consent for unsolicited e-mails in case law, but it has not yet been confirmed by the highest court.

<sup>81</sup> However, draft legislation on Information Society and Electronic Commerce establishes the need for consent of the called party.

<sup>82</sup> It will be addressed by new legislation.

<sup>83</sup> Lists managed on their behalf by the DMA based in the US. The IDMA is affiliated to the DMA.

| Member State | Is (informed <sup>76</sup> ) consent of the called party needed for:   |                               | Requirements for consent <sup>77</sup>                 | Which institutions manage opt-out lists for e-mails?                                   | Is consultation of opt-out lists required prior to sending unsolicited e-mails? |
|--------------|--|-------------------------------|--|--|---|
|              | Unsolicited phone calls and faxes? (yes/no)  | Unsolicited e-mails? (yes/no) |  |  |   |
| NL           | Yes  | No                            | Not regulated  | DMSA Nederlandse Associatie voor Direct Marketing, Distance Selling en Sales Promotion | Self-regulation applies <sup>84</sup>   |
| A            | Yes  | Yes                           | Oral <sup>85</sup> or written (passive <sup>86</sup> ) | Not relevant <sup>87</sup>   | No, unsolicited e-mails are forbidden   |
| P            | Yes  | No <sup>88</sup>              | Written (active)                                       | Not available  | No <sup>88</sup>  |
| FIN          | Yes  | Yes                           | Oral or written <sup>89</sup>                          | Not relevant <sup>90</sup>   | No  |
| S            | Yes  | No                            | N/A  | N/A  | No  |
| UK           | No for unsolicited phone calls to individuals unless the subscriber has registered with the opt-out system.<br>Yes for sending unsolicited faxes to individuals.<br><br>No for corporate subscribers <sup>91</sup> . | No                            | Not regulated  | The direct Marketing Association manages a voluntary scheme                            | No  |

<sup>84</sup> Parties that adhered to the *Stichting Reclame Code* commit themselves to the application of codes of conduct concerning unsolicited mails and SMS.

<sup>85</sup> However, even oral consent must have been provided before the reception of the unsolicited call.

<sup>86</sup> The law does not explicitly require “active” consent, so therefore generally the inclusion of a declaration of consent in a document to be signed by the user (in such a way that the latter would have to delete the passage if he wishes to refuse consent) is accepted.

<sup>87</sup> Austria has adopted an opt-in model.

<sup>88</sup> However, the called party has the right to refuse, free of charge, the reception of direct marketing unsolicited calls.

<sup>89</sup> No specific form is prescribed by law for written consensus, which is normally passive.

<sup>90</sup> Finland has an “opt-in” model.

<sup>91</sup> Corporate subscribers are considered legitimate targets for telephone marketing. Registration with opt-out lists is foreseen only to prevent reception of unsolicited fax, in which case informed consent would be needed.

**Table 9: Data protection: storage of data and other provisions of the Data Protection Directive**

|            | Maximum period permitted for the storage of billing data                                    | Charge for subscribers to be omitted from the directory | Availability and cost of stopping automatic forwarding by a third party | Itemised billing                          |  |
|------------|---|---|---|---|--|
|            |   |   |   | Possibility to receive non-itemised bills | Number of digits from the called number deleted                |
| <b>B</b>   | Not specified in the law  | BEF 105   | Free of charge  | Yes                                       | No rules exist   |
| <b>DK</b>  | 5 years <sup>92</sup>   | Free of charge  | Free of charge  | Yes                                       | No deletion for private customers, two for business customers  |
| <b>D</b>   | 6 months after sending of bill  | Free of charge  | Free of charge, where technically possible                              | Yes                                       | Three last digits/complete itemisation on request              |
| <b>EL</b>  | 5 years   | GRD 330/month <sup>93</sup>                             | Free of charge  | Yes                                       | In general, no deletion  |
| <b>E</b>   | 5 years   | Free of charge  | Free of charge  | Yes                                       | Defined number <sup>94</sup>                                   |
| <b>F</b>   | Not specified in the law <sup>95</sup>  | FRF 15.26/month   | Available <sup>96</sup>   | Yes                                       | Last four  |
| <b>IRL</b> | N/A   | Free of charge  | N/A <sup>129</sup>  | Yes                                       | No deletion  |
| <b>I</b>   | 5 years <sup>97</sup>   | Free of charge  | N/A   | Yes                                       | Last three/complete itemisation in certain cases <sup>98</sup> |
| <b>L</b>   | Not specified in the law  | Free of charge  | Not available   | Yes                                       | Incumbent: no deletion; others: not defined                    |
| <b>NL</b>  | Not specified in the law <sup>99</sup>  | Free of charge  | Free of charge  | Yes                                       | No deletion  |
| <b>A</b>   | Company specific <sup>100</sup>   | Free of charge  | Not available   | Yes                                       | Company specific <sup>101</sup>                                |
| <b>P</b>   | 6 months  | Free of charge  | Free of charge  | Yes                                       | Four   |
| <b>FIN</b> | Min. 3 months after maturity date of the bill; max 3 years after bill has been paid in full | Free of charge  | Free of charge  | Yes                                       | Three last digits/complete itemisation in certain cases        |
| <b>S</b>   | 3 years <sup>102</sup>  | SEK 60 annual charge                                    | Free of charge  | Yes                                       | No deletion  |
| <b>UK</b>  | 6 years <sup>103</sup>  | Free of charge  | Free of charge  | Yes                                       | No deletion  |

<sup>92</sup> The end of the period during which the bill may be lawfully challenged or payment may be pursued.

<sup>93</sup> EETT is entitled to express its opinion on the level of the charge.

<sup>94</sup> To be specified in secondary legislation.

<sup>95</sup> But, for France Télécom, a maximum period of one year has been set by the Commission nationale de l'informatique et des libertés.

<sup>96</sup> Information given for France Télécom.

<sup>97</sup> According to Civil Code.

<sup>98</sup> If the subscriber needs to start a legal action.

<sup>99</sup> The forthcoming legislation regarding traffic and billing data states that the period for which the billing information may be stored is the period in which the bill can be lawfully challenged or the payment may be pursued.

<sup>100</sup> According to the conditions stipulated in the contracts with the operators.

<sup>101</sup> Legislation does not set the precise number of digits to be deleted, which could be two or more. Many companies, including Telekom Austria, delete the last three digits.

<sup>102</sup> Period within which the bill must be paid, or else it will be time-barred.

<sup>103</sup> Limitation period for contractual disputes.



**Table 10 : Data protection: calling line identification (CLI)**

|            | Availability and cost   |  | Availability and cost for the called subscriber to:                                 |   |   | Availability to and cost for the organisation dealing with emergency calls of overriding the elimination of the presentation of the CLI |
|------------|---|--|---|---|---|---|
|            | For the calling user to eliminate the presentation of the CLI on a per-call basis | For the subscriber to request the service provider to (temporarily) override the elimination of the presentation of the CLI <sup>104</sup> | Eliminate the presentation of the connected line identification to the calling user | Prevent the presentation of the CLI of incoming calls | To reject incoming calls where the presentation of the CLI has been eliminated by the calling user                          |   |
| <b>B</b>   | Free of charge  | Available  | Free of charge  | Free of charge for a reasonable use                   | Available   | Free of charge  |
| <b>DK</b>  | Free of charge  | Not available  | Free of charge  | Free of charge  | Free of charge  | Free of charge  |
| <b>D</b>   | Free of charge  | Available, cost not regulated  | Free of charge  | Free of charge  | Free of charge  | Free of charge  |
| <b>EL</b>  | Free of charge  | Not available <sup>105</sup>   | Free of charge  | Not available <sup>105</sup>                          | Not available <sup>105</sup>  | Free of charge  |
| <b>E</b>   | Free of charge  | Free of charge   | Free of charge  | Free of charge  | Free of charge  | Free of charge  |
| <b>F</b>   | Free of charge  | Not available <sup>106</sup>   | No connected line identification offered  | Available by default <sup>107</sup>                   | Not available   | Free of charge  |
| <b>IRL</b> | Free of charge  | Not available  | Free of charge  | Free of charge  | Not available   | Free of charge  |
| <b>I</b>   | Free of charge  | Available (€ 77.46 for 1-5 days, € 103.29 for 6-10 days, € 129.11 for 11-15 days, excluding tax)   | Free of charge  | Available (€ 1.29/month, excluding tax)               | Not available   | Not available <sup>108</sup>  |
| <b>L</b>   | Free of charge  | Not regulated  | Free of charge  | Not available   | Not available   | Free of charge  |
| <b>NL</b>  | Available, free of charge   | Not available  | Available for ISDN only (part of CLI service)                                       | Free of charge  | Not available   | Available<br>No standard tariff apply   |
| <b>A</b>   | Free of charge  | Available (€ 6.54 + € 0.73 per day + €1.45 per identification)   | Available: €6.54 (single payment)   | Free of charge  | Free of charge <sup>109</sup>   | Available: €4.36 (single payment)   |
| <b>P</b>   | Free of charge  | Not available <sup>110</sup>   | Free of charge  | Free of charge  | Not available   | Available   |
| <b>FIN</b> | Free of charge  | Free of charge <sup>111</sup>  | Free of charge  | Free of charge  | Available   | Available <sup>112</sup>  |
| <b>S</b>   | Free of charge  | SEK 500 + SEK 50 per tracing <sup>113</sup>  | Free of charge  | Free of charge  | Not available   | Available <sup>114</sup>  |
| <b>UK</b>  | Free of charge  | Available free of charge when malicious or nuisance calls are subject to formal investigation <sup>111</sup>                               | Provided free of charge on ISDN networks  | Available <sup>115</sup> , free of charge             | Available on analogue services (BT charges £ 9.99 a quarter, some other operators provide it free of charge) <sup>116</sup> | Free of charge  |

<sup>104</sup> For tracing malicious or nuisance calls.

<sup>105</sup> Facility mandated by the law, but not yet implemented.

<sup>106</sup> Regarding malicious and/or nuisance calls, France Télécom provides a service to its subscribers that allows these latter either to block so-called "secret calls" (i.e. calls for which the calling line identification is not presented) or to block calls marked with an "R" (i.e. calls from lines that are on a list established by the subscriber).

<sup>107</sup> France Télécom only offers CLI upon subscription.

<sup>108</sup> Not regulated.

<sup>109</sup> Available since 1<sup>st</sup> quarter of 2001.

<sup>110</sup> Although this facility is foreseen by the law, there is no information on its actual availability.

<sup>111</sup> Calling line identification available to law enforcement authorities.

<sup>112</sup> Override category available, but organisation pays installation costs.

<sup>113</sup> Malicious call identification is ordered for two weeks at a charge of SEK 500 including 5 successful tracings. Extra tracings: SEK 50 each.

<sup>114</sup> The charge is included in the general charge to the organisation dealing with emergency calls to receive information about subscribers from the operators.

<sup>115</sup> If specifically requested from service provider.

<sup>116</sup> Not available on digital services (GSM, ISDN) yet because appropriate technical standards (EN 300 356 V4) have just become available.

## 2.5 APPENDIX: EURO EXCHANGE RATES

This section explains the exchange rates used in Annexes I and II.

### 1. Exchange rate used in Annex 1.3 on public voice telephony tariffs, Annex 1.4 on leased line tariffs and Annex 1.6 on internet

Retail tariffs have been compared using the euro exchange rate expressed in terms of purchasing power parities (€-PPP), in order to compare retail prices between Member States in real terms.

PPPs are widely used by international organisations as an alternative to monetary exchange rates when making international economic comparisons. They are, in effect, “real” exchange rates, based on a comparison of the relative purchasing power of each country’s currency.

Purchasing power parities equate the purchasing power of different currencies. This means that a given sum of money, when converted into different currencies at the PPP rates, will buy the same basket of goods and services in all countries, thus eliminating differences in retail price levels between countries.

The €-PPP exchange rates listed below have been calculated using the OECD’s Comparative Price Levels information for April 2001. In order to make comparisons between European Member States more significant, the €-PPP has been set up using the Austrian schilling as the reference currency.

The use of €-PPP does not reflect differences in the underlying costs of providing services. The use of PPP should be limited to international comparisons.

**Table 1 Exchange rates August 2001, national currency to Euro**

|             | Exchange rate to euro |           |
|-------------|-----------------------|-----------|
|             | EURO                  | EURO PPP  |
| Belgium     | 0.0247894             | 0.0263717 |
| Denmark     | 0.1343093             | 0.112865  |
| Germany     | 0.5112997             | 0.5112997 |
| Greece      | 0.0029347             | 0.0038615 |
| Spain       | 0.0060101             | 0.0073294 |
| France      | 0.1524483             | 0.1571632 |
| Ireland     | 1.26968               | 1.2825051 |
| Italy       | 0.0005165             | 0.0006148 |
| Luxembourg  | 0.0247894             | 0.025556  |
| Netherlands | 0.4537823             | 0.4879379 |
| Austria     | 0.0726728             | 0.0726728 |
| Portugal    | 0.004988              | 0.0071257 |
| Finland     | 0.1681888             | 0.1488396 |
| Sweden      | 0.1079412             | 0.0999456 |
| UK          | 1.6299919             | 1.4684611 |
| USA         | 1.1449508             | 1.0504135 |
| Japan       | 0.0092519             | 0.0061679 |

**2. Exchange rates used in Annex 1.5 on mobile services and Annex 2.2 on interconnection**

The exchange rates used are the same as in Table 1, except for the following:

**Table 2 Exchange rates June 2001, national currency to Euro**

|                | <b>EURO</b> |
|----------------|-------------|
| Denmark        | 0.1340482   |
| Sweden         | 0.1089324   |
| United Kingdom | 1.6129032   |

## Annex 3

# Overview of implementation in the Member States

## 3.1 BELGIUM

### OVERVIEW

#### ***Regulatory framework***

New legislative measures have improved the situation in Belgium, notably in the area of licensing and interconnection. Since the last report there have been several regulatory developments with a positive effect on the market, and the NRA has, in a number of areas, continued to respond actively to developments in the market. The NRA has proved to be relatively efficient in particular in ensuring access to unbundled local loops. Belgium is one of the first Member States in which shared use is available on a commercial basis and actually used. A reference interconnection offer for bit-stream access has also been imposed. The NRA has also started to bring down the tariffs for fixed-to-mobile termination charged by the mobile arm of the incumbent, in line with its significant market power (SMP) designation on the national market for interconnection. Its termination rates are now the fourth lowest in the Community and a further reduction is announced for 2002.

One issue of concern is the lack of building permits for mobile network antennas. This could jeopardise the roll-out of 3G networks in Belgium. Another point to be solved is the non-compliance of local authorities and some other bodies with Belgian federal law, which states that rights of ways should not be subject to fees.

#### ***National regulatory authority***

The reform of the NRA in order to avoid a possible conflict of interest involving the Belgian Minister for Public Undertakings, who is head of the regulator and responsible for the Government's shareholding in the incumbent at the same time, is only progressing slowly.

To address this concern of conflicting responsibilities, the Minister issued a notice in March 2001 stating that he would not, as head of the NRA, use his power to amend formal positions submitted to him by his subordinates in the regulatory authority. Furthermore, the Belgian authorities have announced a bill which will set up a body inside the NRA, independent of the Minister, to deal with matters such as interconnection and local loop unbundling. However, it has yet to be clarified when this reform will enter into force.

There are a number of concerns on the part of market players, for example relating to the heavy procedures governing the interconnection chamber in the NRA, the lack of transparency and the lack of fast and efficient appeal procedures.

The NRA has been granted resources during 2001 for additional staff, who are in the process of being recruited.

#### ***Local access competition***

The NRA is relatively active in relation to local access competition, and has organised trilateral meetings to address practical difficulties. It has also ensured that tariffs must be strictly cost-oriented, making Belgium one of the cheapest Member States for unbundled lines. Operators are concerned that end-user tariffs are very low and that there is a risk of margin squeeze. The NRA has required all forms of collocation to be available. It also decreased the delivery time for (physical) collocation from six to two months and increased the number of deliveries per month. The NRA has acknowledged that Belgacom has used delaying tactics regarding the ADSL wholesale offer. According to new entrants, the new offer from Belgacom leaves no viable margins, and includes unjustified technical restrictions which do not allow them to differentiate their products from those of the incumbent.

**Leased lines** On 1 July 2001, Belgacom introduced a new tariff structure for its domestic leased lines retail offer, as well as amendments to its service level agreement. For the first time, Belgacom has used the principle of de-averaging of prices, whereby the country has been divided into zones of four different types in which prices for leased lines are differentiated; the NRA is reviewing this new tariff. This should have the effect of bringing prices more closely into line with the cost of providing the service.

Belgacom tariffs for international leased lines are above the EU average, especially for longer distances to other Member States. Following the hearing in September 2000, the Commission decided to open an ex officio case pursuant to Regulation 17/62 against Belgium and to examine further, inter alia, the reasons for high tariffs for these lines. New tariffs for international leased lines are expected.

**Tariffs** The Sixth report referred to allegations from entrants that Belgacom's interconnection tariffs are in some cases higher than its retail tariffs. Notwithstanding reductions in the Belgian reference interconnection offer (BRIO) for 2001, entrants continue to allege that negative margins persist, and request the application of an ex ante price squeeze test.

**Licensing / WLL** Mobile operators consider wireless local loop (WLL) as an alternative to leased lines to compete in the market, and have expressed their disappointment with the level of frequency fees, which have made WLL economically unattractive for such a purpose. The NRA has indicated that the tariffs will be substantially decreased. The new spectrum fees, which are posted on the regulator's website, have already been approved by the Ministry of Finance and will enter into force soon.

**Rights of way** Conflicts between Federal and regional legislation and competence have still not been resolved. While federal law continues to prohibit the imposition of fees for rights of way, the Flemish Region and other entities (municipalities, national airport, the national railway company SNCB/NMBS) charge an annual fee per meter of cable in the ground.

As a consequence of the bypassing of federal law by these authorities, operators are confronted with rules and procedures varying from one municipality to the other, sometimes even with near abuse of power by local authorities. A large number of delays in laying down infrastructure have been reported, and operators complain that it is difficult to take business decisions with such uncertainty regarding time-scale and costs.

## NATIONAL REGULATORY AUTHORITY

The Sixth report noted the fear of entrants regarding the conflicting responsibilities of the Minister of Telecommunications. Besides being the head of the NRA, he is also responsible for the State's majority shareholding in the incumbent operator Belgacom (as well as being in charge of the privatisation of Belgacom). Alternative operators have indicated the possibility of conflict over past years.

To address this concern, the Minister issued in March 2001 a notice stating that he would, as head of the NRA, not use his powers to amend formal positions submitted by his staff in the regulatory authority. The Belgian authorities further announced a bill which will set up a body inside the NRA, independent of the Minister, to deal with matters such as interconnection and local loop unbundling. These plans have been welcomed by the market players. It is nevertheless not yet clear when the reform will enter into force. It is not envisaged to give the NRA the competence to apply competition rules.

Market players complain that the NRA is not pro-active enough on critical files, such as the implementation of the 'collecting model' for internet dial-up. The NRA replied that the Courts have dealt with this issue. It reminded them about its power to issue a warning to the incumbent and to impose a fine in case of non-compliance. It has used this power to speed up the unbundling of the network.

Entrants also complain about the heavy procedure of the interconnection chamber of the NRA and the subsequent lack of powers to enforce decisions upon the incumbent, which dissuades them from filing dispute resolution requests. The NRA stated that it also intervenes on the basis of informal complaints. The NRA acknowledged that the procedures of the interconnection chamber are heavy but that the cases submitted require a thorough analysis of the costs of Belgacom. Decisions are taken within six months. Decisions of the Interconnection chamber can be appealed to the Council of State. Operators complained in this regard about the lack of efficient and quick appeal procedures.

In 2001 the NRA was granted six additional senior staff, which are being recruited. However, more specialists, in particular for regulatory tasks, are requested by the regulator. In addition, the planned reform of the NRA will make recruitment procedures easier. Another issue is that its budget for outside consultants was only slightly increased in 2000, while the issues to consider, for example how to monitor possible price squeezes and the analysis of cost models, became increasingly complex.

## LICENSING

As regards Wireless local loop (WLL) the Sixth report noted that the actual licensing had been delayed because of legislative changes on antenna site sharing. The procedure for awarding wireless local loop (WLL) licences was concluded in July 2001. Four licences with national coverage were awarded initially and a fifth licence, without national coverage, has subsequently been awarded to the only interested player for such a licence, a regional public company. One of the licences was awarded to Belgacom. Of the other three licensees with national coverage, one operator no longer exists and another transferred its licence as it no longer intends to operate in Belgium. A second licensing procedure was initiated in September 2001 for the frequency ranges 27.5-29.5 GHz. The NRA received two applications. The licences should be granted by 15 December 2001.

Mobile operators see WLL as an alternative for leased lines. They express their disappointment with the level of frequency fees, which made WLL economically unattractive for such purpose. The NRA mentioned that the tariffs will be substantially decreased. The new spectrum fees, which are on the website of the regulator, have already been approved by the Ministry of Finance and should enter into force by January 1 2002.

The Sixth report noted that it was not clear whether the 3G systems will be operational by 2002, due to the late licensing procedure. The Belgian 3G auction was completed on 15 March 2001. Three licences were issued to the current 2G operators. No operator applied for the fourth available 3G licence. The NRA stated that there was no decision yet to start a new selection procedure for the remaining licence nor to re-examine coverage obligations and the licence fee. This lack of transparency is criticised by licence holders who consider that certainty about the number of competitors in the market is an important element to establish their business plan. The licensed operators fear they will not be able to roll out their networks given the stop on building permits to set up antennas. Full network sharing as such is not foreseen in the national legislation: the Programme Law of 2 January 2001 amending the 1991 Telecom law only establishes a right to site sharing; all antenna sites based on GSM, wireless local loops, radio messaging and UMTS technologies are concerned (although in practice this requirement is limited to pylons and masts); the owner of a site must receive compensation based on its costs (i.e. cost-plus approach). Currently 2G operators are co-operating with a view to site sharing: a common database on sites has

been set up and the other operators are consulted before construction of new sites. In the event of operators' failure to agree, disputes can be lodged to the Chamber for Interconnection of the NRA. However, mobile operators complain that currently they cannot even set up a single new site, given that no building permits are issued to them.

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| <p style="text-align: center;"><b>LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE<br/>REGULATION ON LOCAL LOOP UNBUNDLING AND BITSTREAM ACCESS</b></p> |
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The Sixth report noted that Belgacom on 24 August 2000 announced that it would offer access to its local loop in the last quarter of 2000. Belgacom provided its RUO on 27 December 2000. On 28 February 2001, the NRA issued an opinion stating that the RUO did not comply with the regulation on an important number of points and amending it on a certain number of points.

In September 2001, 10 full unbundled lines were operational, while 65 sites were available for collocation. Entrants relate the slow take up to the fact that sufficient guarantees are not provided regarding quality of lines, and that the service level agreement does not cover the provisioning of these lines. They claim that Belgacom needs 10 working days to provision copper lines to its competitors, while it provides ADSL within 5 working days to its own customers. Belgacom mentioned the low demand. In September 2001 only 40 orders were placed. The alternative carriers state that any effective large scale marketing and, hence, ordering of copper lines is prevented until sufficient geographical coverage is achieved via provisioning of collocation.

The NRA is very active on this dossier, and has organised trilateral meetings to address the practical difficulties. It has also ensured that the tariffs are strictly cost-oriented, making Belgium one of the cheapest countries for unbundled lines. Operators mention that the end-user tariffs of the incumbent are also very low and that there is a risk of margin squeeze.

Shared access, which had to be available and legally compliant as of the beginning of January 2001, has also been implemented; in September 2001, seven (7) lines were used for shared access.

In its opinion of 28 February 2001 the NRA required that all forms of collocation should be available. It also decreased the delivery time for (physical) collocation from six to two months and increased the number of deliveries per month. In July 2001 the NRA supplemented its advice of February requiring Belgacom also to provide co-mingling (placing of racks by the alternative operator in the same room as Belgacom racks). The entrants acknowledge the recent improvement of the situation and the efforts of Belgacom. Entrants nevertheless still have reservations regarding the cost of collocation and have been asking for months that Belgacom submit detailed quotations to allow verification of the high up front payments that had to be made to trigger the start of the works, and, since the Co-Mingling Supplement of 27 July, that Belgacom apply the specific financial conditions provided therein to migrate orders (for collocation in separate rooms failing any other alternative at the time of ordering) to the cheaper solution of co-mingling.

The Sixth report noted that Belgacom has had an ADSL retail offer since April 1999 and that it made a wholesale offer only in March 2000. Entrants found this wholesale offer unacceptable for different reasons, e.g. the narrow definition of bitstream access (covering only ADSL products). The NRA acknowledged that Belgacom used delaying tactics and early 2001 it initiated a procedure against Belgacom to compel it to submit a reference offer (called BROBA). According to the entrants, the subsequent offer of Belgacom left no viable margins and included unjustified technical restrictions, allowing no product differentiation. On 31 August 2001 the NRA issued a binding opinion (which is immediately applicable) amending the BROBA and reviewed the tariffs to avoid price squeezes. The cable operators expressed their fears that the tariff decreases imposed would take away the incentive to invest in alternative infrastructure. The Internet Service Providers (ISPs) complained that there was no room left for independent service providers given the advantages granted to (vertically integrated) operators.

The NRA is further investigating the conditions applied by Belgacom for backhaul services to its bitstream access service (in the meantime the prices for backhaul have been approved by the NRA).



## TARIFFS

The Sixth report noted that entrants dislike the price cap mechanism for retail tariffs, which gives too much flexibility to adapt the tariffs to competitive pressure. The price cap system has not been altered. It does not allow IBPT/BIPT to control or approve ex-ante the retail prices of Belgacom, and thus there is no ex-ante check for a price squeeze. If Belgacom decreases its retail tariffs, it only needs to submit the new prices one day before entry into force.

The Sixth report mentioned allegations from entrants that Belgacom's interconnect tariffs are in some cases higher than its retail tariffs. Notwithstanding reductions in the BRIO 2001, entrants continue to allege that negative margins still exist and ask for an "ex-ante" price squeeze test in line with the test applied by the Netherlands NRA, OPTA.

The NRA initiated a consultation on price squeeze in February 2001. Belgacom argues that the model envisaged is not in line with the Commission approach discussed in the ONP Committee in July. Belgacom considers that the analysis should compare globally upstream costs and revenues. The NRA proposed to develop an analysis of the draft set-up charges and call duration charges in order to decide whether or not there is a price squeeze (following the method in the Netherlands).

The NRA stated that while it had not yet the power to apply, as such, a price squeeze test for the ex-ante approval of retail prices, it already used it as an element in its examination of the cost-orientation of interconnection tariffs and the prohibition of cross-subsidies in current law.

## COST ACCOUNTING

The Sixth report noted that in October 2000 Belgacom Mobile S.A. (Proximus) was designated as an operator with significant market power in the interconnection market. The NRA has verified the cost accounting system used by Belgacom. It has also taken interim steps to lower the fixed-to-mobile tariffs in February 2001 (decrease about 12%) and October 2001 (decrease of 10.5%). The NRA did however not address the issue of Belgacom's mobile call origination rates (in particular for 0800 calls), which were not decreased accordingly.

In its opinion of 25 July 2001, the NRA acknowledged that it interprets the obligation of cost-orientation with reference to the practice in other Member States. It considers that cost-orientation must in any case be implemented gradually taking into account its effect on the market. A further tariff adaptation will be implemented in 2002. Belgacom Mobile complains that alternative fixed operators do not pass on the tariff reductions to their customers.

Belgacom's retention rates for fixed-to-mobile calls remain significantly higher than its equivalent termination rates. The NRA is currently having discussions with Belgacom in order to review those retention rates.

The Sixth report noted that entrants emphasised that the cost accounting model applied by the NRA had major deficiencies. The NRA still applies the same top down cost accounting model. The cost accounting system used is adapted annually. Information regarding the model is available on their web site. A consultation regarding a future bottom up LRIC model was initiated in May 2001. The development of the new model, which should lead to more insight in how tariffs are calculated, should be finalized by December 2001, but the NRA will still apply the old model for the BRIO 2002.

Entrants regret the delays and the lack of transparency. They ask that the model not only be used to compute the cost of call origination and termination, but also of leased circuits and other interconnection services. They also ask to see the specific cost accounting data provided by Belgacom to understand how the NRA has arrived to its conclusions. The NRA has confirmed that information, which is not confidential, would be provided to market players. Entrants claimed that this was still not the case at the closing date of the report.

No statement has yet been published confirming the verification requested by the directives, as regards compliance with the cost accounting models.

### LEASED LINES

The Sixth report noted that the tariffs for Belgacom's leased lines were above the EU average. On 1 July 2001 Belgacom introduced a new tariff structure for its domestic leased lines (retail offer) as well as amendments to its service level agreement. For the first time Belgacom has used the principle of de-averaging of prices, which means that the prices for leased lines in urban areas decrease and the prices in rural areas increase. The NRA has started to analyse the cost-orientation of leased line tariffs. The NRA subsequently started a detailed review of the cost structure of the leased line product of Belgacom. The NRA is also, on the basis of demand and supply data, analysing whether there are different markets and on which markets Belgacom has significant market power. The new tariffs, however, neither approved or amended, entered into force on 1 July 2001.

Entrants asked that interconnection tariffs be reviewed in parallel to ensure coherency. The NRA confirmed that since the new tariff structure for leased lines will affect the half link offer, the prices in BRIO 2001 will also have to be adjusted from 1 July 2001. Belgacom complained that entrants in this regard were making an unintended use of its half-link product. These latter are intended to provide a link between a point of interconnection of the entrant to the Belgacom network and the premises of a final user (tail end) and they are provided with a substantial discount to retail tariffs. Entrants order multiple half links to establish their trunk network and compete with the retail leased line offer of Belgacom, reducing their own investments. Entrants reply that if both half-link and retail products were offered at cost-oriented prices, Belgacom would not have to restrict the usage of half-links. The NRA has not yet taken a position on this question.

Belgacom tariffs for international leased lines are above EU average, especially for longer distances to other EU countries (for example in 2000 for 2 Mbits near EU (to France) : +7% ; for 2 Mbits distant EU (to Greece) : +53%, source Teligen). Following the hearing in September 2000, the Commission decided to open five (5) ex officio cases (one of them concerning Belgium) and further examined the reasons for the high tariffs.

Belgacom announced new tariffs for international leased lines, including substantial tariff cuts. The tariffs were nevertheless maintained pending the outcome of the NRA's review of its new domestic tariffs.

### RIGHTS OF WAY

The Sixth report noted that the situation regarding rights of way for some operators is the major bottleneck in Belgium. It noted also that the Flemish Region introduced a rights of way permit and was collecting fees. The conflict between the Federal and the regional legislation (and competence) has not been solved in the meantime. While federal law still outlaws fees for rights of way, the Flemish Region and other entities (municipalities, national airport, SNCF/NMBS) invoice an annual fee per running meter of cable in the ground. This applies not only to telecoms but also to energy companies and others (former "nutsbedrijven").

As a consequence of the bypassing of federal law by these authorities, operators are confronted with rules and procedures varying from one municipality to the other, and sometimes local authorities are considered to be near to abusing their powers. It appears that some authorities impose unrelated conditions to the granting of rights of way, such as the re-laying of complete pedestrian paths, improving pavement etc. Many delays in laying down infrastructure have been reported and operators complain that it is difficult to make business decisions with such uncertainty as regards time-scale and costs.

The NRA and the Minister have no formal competence to intervene. In some individual cases there have been talks at informal level with local and regional authorities. The situation has not improved since the supervision of the local authorities was transferred to the Regions.

The Sixth report noted that it was becoming increasingly difficult to obtain building permits for infrastructure for mobile telephony (permits can be refused for environmental or health reasons) and antennas are also subject to municipal taxes. The situation has worsened. According to mobile operators the roll out of infrastructure for mobile telephony has almost come to a complete standstill as hardly any building permit is granted: the length of the procedure between the submission of a building permit application to the competent authority and the granting of the permit to mobile operators may be as long as 30 months. A Royal decree of 29 April 2001 fixes health standards to be matched by antennas, which are actually four times stricter than the ones recommended by the WHO/ICNIRP. However, the regional authorities still refuse to grant permits given the lack of procedures to monitor compliance with these health standards. There are negotiations underway between IBPT/BIPT and federal and regional authorities aiming at the adoption of a *protocol*. The NRA hopes this will break the deadlock and ensure the applicability in practice of the legal framework on health issues and the building permit award procedure. It could also give more legal certainty to the public authorities in the granting of building permits to mobile operators. However, timing for adoption of this *protocol* is still undetermined.

As regards the taxes levied by local authorities since 1996 (especially in southern Belgium) on antennas of mobile operators, no progress has been achieved. The tax is being contested at the Council of State, but there is no indication on when the latter will rule on the appeals.

#### **SERVICES OF GENERAL INTEREST**

A cable operator has complained that for the time being cable companies cannot participate in the programme of the Belgian government subsidising ADSL internet access for schools. The NRA stated that it was a political decision and that it forwarded "ex post" an opinion to the Minister to propose alternative solutions to avoid favouring ADSL access technology to the disadvantage of broadband access via cable.

#### **DIRECTIVE 95/47/EC**

Cable reception remains by far the dominant means of reception in Belgium, with 93% of homes subscribing to a cable television (CATV) network and 3% to satellite television. Some 80% of cable connections have been upgraded for digital transmission. However, only some 6% of TV households are digital households, all of them being subscribers to premium pay TV packages. Cable operators' basic service offers (consisting of multi-channel analogue TV) are not yet available in digital form.

There is a large supply of analogue basic channels, and premium pay TV is therefore harder to sell to subscribers than in other Member States. The market is characterised by the dominant position of the cable network operators in their respective local markets, and what could be called a "utility" cable distribution model. Regulation prohibits the tiering of services, targeting different customer segments, and there are also price controls.

Despite the above-mentioned structure of the market, which may be considered as not being particularly favourable for a rapid and wide deployment of the premium pay business model for digital television (DTV), some studies<sup>117</sup> suggest that the acceptance of premium pay DTV services is growing in Belgian households, with almost a quarter of subscribers to pay TV services having opted for digital services. It appears that customers are ready to pay a premium for these services.

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<sup>117</sup> "Development of Digital TV in Europe, 2000 Report", study commissioned by the European Commission services and carried out by IDATE.

In the Flemish Community, “Canal + Vlaanderen” offers a group of pay TV digital services via cable. The Flemish digital services have approximately 32 000 subscribers. In the French speaking Community, digital pay-TV services over the cable are offered by Canal + Belgique (“Canal + numérique”) and by an association between Canal + and the cable-operators of Wallonia called « Le Bouquet ». There are some 40 000 subscribers to Canal + and “Le Bouquet”.

The Commission’s 1999 Report on the development of the market for digital television noted that the development of DTV in Belgium had been delayed by the difficulties of Canal + in obtaining access to CATV networks, which led to lengthy legal proceedings. Since then, some access agreements have been concluded.

The different Communities in Belgium are competent for broadcasting. They are thus competent to transpose the major part of the Directive. Regarding the execution of this Directive, there has been no case regarding the application of the legislation on digital television and conditional access. The only access disputes known to the regulators are those referred to above regarding access to the underlying networks, but the issue is not strictly covered by the provisions of Directive 95/47/EC.

Regarding digital terrestrial television (DTTV), a research project « Digital Home Platform » has been launched in the Flemish Community. It gathers representatives from the Flemish government, the public broadcasters VRT and Belgacom. Through (at least) one DVB-T transmitter in the Antwerp region, new interactive services and applications are planned to be put on air in the second half of 2001/beginning of 2002 and will service approximately one hundred households in the region. The project focuses on technology, the development of new applications and the acceptance of users.

In the French speaking Community, DTTV has not yet started as a regular service. A trial transmission of the public service broadcaster’s programmes (RTBF) is running in Brussels. There are discussions to extend it to Canal + Belgique and RTL-Tvi’s programmes.

## 3.2 DENMARK

### 7. overview

#### ***Market and Regulatory framework***

The telecommunications market is expected to grow by around 6.2% this year, to approximately €3.6 billion. The greater part of this growth is in mobile services, which show an estimated increase of 16.8% in revenues over last year, compared with growth of 1% in fixed voice telephony and 1.6% in leased lines and switched interconnection. Danish *per capita* expenditure on telecommunications (including cable TV) was the highest in the EU in 2000, standing at an estimated € 901, showing growth of 10% over the previous year. The percentage of households having access to Internet reached 59% as at June 2001, up from approximately 52% in October 2000.

With its light regulatory regime, involving individual licences only for mobile networks and frequencies, Denmark offers few procedural barriers to market entry. The Government has also gone further in a number of areas than the minimum requirements of the Community regulatory package, such as by establishing a general right to national roaming and access for mobile virtual network operators (MVNO), introducing mobile number portability and requiring introduction of number portability between fixed and mobile networks next year.

#### ***National regulatory authority***

The improved effectiveness of the National Telecom Agency (NTA) has been commented on by market players, particularly in its role in mediating between parties to a dispute, such as in the cases of the pricing of access to the raw copper and of carrier pre-selection. Its willingness to give informal guidance has also contributed to the relatively low number of formal complaint procedures.

#### ***Interconnection***

NTA has ordered significant reductions in interconnection prices over recent months on the basis of best practice. Its most recent best practice decisions have been upheld on appeal, although the incumbent continues to question the continued appropriateness of this form of price regulation. The risk of a price squeeze between interconnection prices and competitive retail prices was tackled by a change in the law in November 2000, enabling the NTA to ensure that reductions in retail prices are mirrored by proportionate reductions in interconnection rates. Interconnection prices will be set on the basis of a LRAIC cost accounting system from 1 January 2003.

#### ***Local access competition***

The legal framework for local loop unbundling is now largely in place. As a result there has been significant growth in the number of fully unbundled lines over the last year. Figures indicate approximately 40,000 local loops unbundled by 1 October 2001. Standard offers for full unbundling and shared access have been published, with commercial agreements also concluded (18 for full unbundling and 3 for shared access), although the NTA is still examining the pricing of shared access. The incumbent, TDC, is also obliged to publish a standard offer for bitstream access by February 2002. NTA figures show a total of 69,740 ADSL subscriptions in place at 1 July 2001, up from 2,800 in mid-2000. Two major competitors to the incumbent are already established in this market, with others recently arrived or due to launch services. Nonetheless, TDC increased its share of the ADSL market from 37% to 56% in the year to July 2001.

Wireless local loop services are due to be launched over the coming months, following the award of licences to five operators at the end of 2000.

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| <b><i>Consumers / Users</i></b>        | The consumer's need for transparency in an increasingly complex market has been addressed through a number of initiatives by the Danish authorities. These include an interactive comparative price guide on the internet and a widely-distributed quarterly consumer price pamphlet. The NTA has also launched a project to develop an interactive internet-based facility for measuring and comparing the quality of internet connections. A call-based charge information facility was introduced in July 2001, indicating the cost of a call to a particular number.  |
| <b><i>Mobile services</i></b>          | The continued growth in the Danish mobile sector is evidenced by the penetration rate, which grew to about 74% at 1 August 2001 from around 61% a year earlier. The 3G licensing process was completed in September 2001 with the grant of four licences following a sealed bid auction. The resulting licence charges were (at about €127 million) almost twice the level of the reserve price. The successful bidders included one new entrant. Roll-out conditions require 30% of the population to be covered by end 2004 and 80% by end 2008. The legal scope for network infrastructure sharing by licensed network operators, which was clearly defined before the auction, is considered by some operators to be more limited than in some Member States. Danish law provides for national roaming and MVNO access (on commercial terms). |
| <b><i>Mobile termination rates</i></b> | The absence of strong competitive pressure in the market for mobile termination remains an issue. Since no mobile network operator has been designated as having SMP on the national market for interconnection, there is no requirement for cost-orientation of these charges.   |
| <b><i>Cost accounting systems</i></b>  | A LRAIC cost accounting system is being developed for setting interconnection prices from 1 January 2003, involving a top-down costing model by the incumbent and a bottom-up model by new entrants. The two will then be consolidated into a definitive model by the Danish authorities.   |
| <b><i>Leased lines</i></b>             | While prices for leased lines in Denmark are below the EU average and among the cheapest in the EU, there are some concerns over delivery periods for some categories. An industry-wide agreement on delivery conditions for transmission capacity reflects the presence of other players than the incumbent in this market.  |
| <b><i>Numbering</i></b>                | Mobile number portability was introduced on 1 July 2001 and a deadline of April 2002 has been set for introduction of portability between fixed and mobile networks. Although early signs are that mobile number portability is proving to be popular, operators have concerns over the practical implications of number portability between fixed and mobile networks, deriving from the significant differences between prices for terminating calls on fixed and mobile networks.  |

## **8. NATIONAL REGULATORY AUTHORITY**

The general situation concerning dispute resolution and appeals procedures seems to have improved significantly following the entry into force of the new consolidated Telecommunications Act in July 2000. There appear to be no major obstacles to the resolution of disputes within a reasonable time frame. The ability for the NTA to act early and on an informal basis, thus obviating the need for formal complaint procedures, has been commented on favourably by market players.

The legislative framework provides mechanisms for both formal dispute/complaint procedures before the NTA and for the NTA to act as a mediator between the parties. It is also worth noting in this

context the existence of an “Interconnection Forum”, under the aegis of the NTA, within which operators can discuss interconnection issues on a regular basis.

There is also provision in the framework for interim or “fast track” decisions to be taken by the NTA, for example where a request for interconnection is of a type covered by an existing interconnection agreement with another party.

The incumbent TDC (formerly TeleDanmark) has, however, pointed to the lack of equivalently effective means of recourse in some other Member States, as far as its international activities are concerned. TDC also argues that the absence of suspensory effect of appeals against decisions of the NTA places a unilateral burden on it as the SMP operator. On the other hand, against this consideration should be weighed the advantages of ensuring that the effectiveness of regulatory decisions is not impeded by delays caused by appeal procedures. Furthermore, the NTA points out that it can suspend the effect of a decision pending appeal where its execution could otherwise cause irreversible damage.

Co-operation between the NTA and the Competition Authority works well in practice and is formalised in a number of areas.

However, some overlap of responsibilities seems to exist in the area of consumer protection, where the NTA has certain powers under the Telecommunications (notably in relation to billing complaints), while the Consumer Complaints Board has jurisdiction where general consumer protection laws apply. The dividing line between the competences of the two agencies is therefore not always clear in individual cases. The Danish authorities have indicated that this is an area where adjustments may be considered. One option under consideration is the creation of a sectoral consumer complaints board to be managed by the market players themselves.

Some operators have commented on the increasing burden of compliance with consumer protection regulation in the telecoms field, and pointed to the risk this may pose to the development of new, innovative services, for example in the 3G market.

The political agreement of 8 September 1999, which forms the basis for the present telecoms legislation in Denmark, recognised the objective of a gradual shift from sector-specific regulation towards the application of general competition rules, leaving specific legislation to safeguard only the universal service obligation and access to scarce resources etc. The agreement also envisaged a regular report by the Minister of Information Technology and Research on the state of competition in the communications network, which would form the basis of decisions as to where sectoral regulation could be removed. The NTA is currently conducting an extensive market analysis as input to this year’s report, which is expected to be presented to Parliament in December.

Understandably, different interested parties hold different opinions on the appropriateness of rolling back sectoral regulation at this stage, depending on their appreciation of the effectiveness and sustainability of competition on the market.

## **9. LICENSING**

Given the light licensing regime in Denmark, under which individual licences are only required for mobile communications networks and the use of frequencies, there are no concerns to report under this heading. Issues relating to specific licensing procedures are referred to where appropriate in other sections (Local Access Competition and Mobile Services/frequencies).

## **10. INTERCONNECTION**

On 7 December 2000 the NTA decided, on the basis of a 3-country “best practice” analysis (UK, Sweden, Norway), on a 5% reduction in TDC’s prices for local interconnection with effect from 1 January 2001. On 21 December 2000 the NTA made a further decision, this time on the basis of a single country comparison (Norway), reducing TDC’s prices for (a) establishing and operating regional interconnection points and (b) for 2Mbit/s capacity, by 40% and 25% respectively, with effect from 15 January 2001.

TDC appealed against the one-country comparison best practice decisions. On 28 April 2001 the Telecommunications Complaints Board upheld both of the NTA’s decisions, although they did refer to the potential risks of divergence from the cost-orientation principle established by EU law resulting from prolonged use of the best practice model. Interconnection tariffs are due to be set by reference to an LRAIC cost accounting system from 1 January 2003.

TDC oppose the continued use of best practice, particularly the one-country model, arguing it does not adequately take account of the overall situation in the different markets and makes future planning difficult. New entrants, on the other hand, support the use of best practice and argue that it works effectively.

TDC also question the continued need for the Danish regulation on the pricing of service provision (resale) agreements, given the development of alternative access options and because they argue it acts as a disincentive for investment in infrastructure. The regulation gives the NTA the power to set prices on the basis of a retail minus 21% formula if it finds that the percentage actually offered by TDC on the product in question hampers competition. The NTA has not yet exercised this power, mainly because TDC has chosen to apply a retail minus 21 % formula to most products.

As regards the overall conditions for interconnection in Denmark, new entrants expressed some concerns about what they perceived to be a lack of symmetry in interconnection agreements between the obligations of those requesting interconnection from the incumbent and the obligations of the incumbent itself. However, to date this issue has not been taken up formally with the NTA. In this regard the NTA has also pointed out that in several cases it has demanded that TDC delete items from TDC’s standard offer dealing with interconnection services offered by the interconnecting operator. Thus, they argue, non-SMP operators are free to set their own charges for termination etc., so that the level of symmetry can be decided by the operators themselves. Furthermore, they state that Danish legislation explicitly provides that the point of interconnection to TDC’s network can always be chosen by the requesting operator itself.

On 1 November 2000 TDC notified 6 new standard offers covering the following separate areas: exchange of traffic, raw copper (full LLU), dark fibre, collocation, transmission services, and resale in the fixed network area. The NTA has indicated it is satisfied that their contents conform with the requirements of the interconnection legislation.

However, a new Executive Order on Standard Offers in the Interconnection Field, including provisions regarding carrier pre-selection, calls to premium services and bitstream access, came into effect on 6 October 2001. TDC’s standard offers are being revised to reflect the new requirements.

## **11. LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE REGULATION ON LOCAL LOOP UNBUNDLING AND BITSTREAM ACCESS**

As mentioned in the 6<sup>th</sup> Report, full LLU has been available in Denmark as a matter of law from 1 July 1998. Although some practical problems arose in its implementation, these appear to have been



largely resolved, partially as a result of a successful mediation procedure before the NTA. A revised standard offer for full LLU (raw copper) was published on 31 January 2001.

Certain adjustments were made to the standard offer for raw copper as a result of the NTA's assessment of its conformity with the Regulation and the NTA now considers that it is in conformity. However, one outstanding issue, which is still subject to discussion, is a provision which allows TDC to take back a subscriber line in the event that it is needed in order to fulfil the incumbent's universal service obligations.

There are now 18 operators in Denmark with agreements for full unbundled access to TDC's subscriber lines, and latest figures indicate that there were approximately 40,000 fully unbundled lines at 1 October 2001. The price for full LLU remains at DKK 740 per annum, which is the lowest in the EU.

Shared access, on the other hand, has been slower to develop. TDC published a standard offer for shared access on 31 January 2001, which is subject to ongoing assessment by the NTA. Discussions between the NTA and TDC led to a reduction in the annual subscription charge for shared access from 555 DKK to 370 DKK with effect from 1 August 2001. There are now three agreements for shared access in place. The NTA has not received any formal complaints or requests for mediation on shared access.

TDC offers its own DSL products by way of bitstream access, and as a notified SMP operators is obliged to offer equivalent access to third parties under non-discriminatory conditions. However, it does not appear that this option has yet been taken up in large volumes by competitors. There are to date three agreements in place for bitstream access, two of which are on a trial basis, but with the ability to deliver a product to the customer.

The new Executive Order on Standard Offers in the Interconnection Field, which came into force on 6 October 2001, includes a new requirement for TDC to publish a "standard offer" on bitstream access by February 2002.

The right to collocation has existed in parallel with the right to lease the raw copper since 1998. A standard offer on collocation was first published in April 1999 and last updated on 1 November 2000. The current standard offer applies to shared access as well as full LLU. The arrangements for collocation developed in Denmark include elements of "co-mingling".

The wireless local loop also forms an important element in the Danish Government's strategy of stimulating a variety of competitive alternatives for broadband access to the "Network Society".

In December 2000, the National Telecom Agency awarded a total of seven wireless local loop licences to five operators, following a public tender (beauty contest). These comprised three licences in the 3.5 GHz frequency band and four licences in the 26 GHz frequency band. Licensees are committed to rolling out their networks over a 10-year period. The precise roll-out commitments of each operator in their licences are not made public.

One licensee has announced that it expects to be able to cover 95% of private customers with its wireless local loop services at speeds from 256 kbit/s up to about 4 Mbit/s before the end of 2001.

The wireless local loop licences are seen by some alternative operators as offering for the first time a real opportunity to provide their customers with a full range of combined telecommunications services independently of the incumbent fixed network operator. However, it is too early to assess how the demand for these services will develop over the coming months. The general market and financial conditions in the sector will clearly be an influencing factor.

## 12. UNIVERSAL SERVICE/CONSUMERS/USERS

A number of initiatives have been taken in Denmark over the last year in the area of consumer protection and information which may well offer useful models for other Member States.

In December 2000 the NTA launched an interactive price guide ([www.teleprisguide.dk](http://www.teleprisguide.dk)), which enables private consumers to compare the prices of about 25 different telecommunications companies offering a total of about 200 different types of subscription. The price guide is updated on an ongoing basis, thus giving a current picture of the cheapest offers in the market. It has proved to be popular, with about 600-700 users per day. The NTA also publishes a quarterly price pamphlet entitled "Hallo hallo – Ved du hvad det koster?" ("Hello, hello – Do you know what it costs?"), which includes special price related issues not included in the price guide on the web.

In addition, the NTA launched, in early 2001, a project which is intended to provide an interactive guide for consumers to the quality of service levels achieved by internet access providers. The guide will provide a comparison of the subscription content in a number of specific areas; a facility allowing the interactive measurement of the speed of a consumer's own internet connection; and a system for carrying out a number of systematic measurements of the speed and availability of the internet connections offered. The first two elements are due to be launched in December 2001.

In addition, a requirement was introduced from 1 July 2001, in parallel with the introduction of number portability for mobile numbers, for telecom operators to provide a facility whereby callers can be informed of the cost of calls to a given telephone number. It will be particularly relevant when number portability between fixed and mobile numbers is introduced, which is scheduled for 1 April 2000.

Following a best practice assessment of the quality of service for the universal service carried out in 2000, the NTA has requested TDC, the universal service provider, to provide it with a proposal for revising the existing quality of service requirements in the USO terms.

As previously reported, a price cap mechanism exists under which maximum prices for USO services are set by the NTA. However, a new Executive Order on USO Services was adopted in November 2000 which gives the NTA power to ensure that falls in real end-user prices do not exceed the fall in real prices for interconnection during the same period. This is to ensure that reductions in end-user prices of the incumbent do not create a "price squeeze" effect for other competitive operators by reducing their profit margins between the interconnection charges they have to pay and competitive retail prices. The operation of this provision resulted in a decision by the NTA on 30 April 2001 confirming the 4 % fall in retail prices required for 2002. This was based on a calculation of the realised fall in interconnection charges that had taken place between 31 March 2000 and 31 March 2001.

The Danish authorities have stated that they believe that once the planned changes in retail prices have taken place, tariff rebalancing for USO services will have been completed in Denmark. This conclusion is based on TDC's cost documentation, which the NTA believes shows a reasonable accordance between the price structure and the underlying costs. Some new entrants have expressed concern over the competitive impact of the changes due to take effect on 1 January 2002, which involve an increase in TDC's quarterly subscription price and a reduction in its per minute price. The NTA has stressed, however, that both it and the competition authority have investigated the basis for these changes very carefully.

The incumbent TDC has argued that price regulation is no longer necessary or appropriate in the Danish market, and should be removed. The Danish authorities have acknowledged that the phasing out of this sort of price regulation may well be possible in the future if competitive conditions allow. It may therefore be the first example of the shift away from sectoral regulation towards the

application of general competition rules, which underlies the new Danish regulatory framework. They intend to carry out an analysis of the scope for this sort of action in time for the 2002/203 session of the Folketing (Danish Parliament).

### **13. MOBILE SERVICES / FREQUENCIES**

The new Telecommunications Act, which came into force in July 2000, broadened the obligation on mobile network licence holders to give access to national roaming. Prior to July 2000 this obligation only applied to national roaming agreements with other mobile network licensees. The new Telecommunication Act broadened this obligation to encompass service providers, including MVNOs. Pricing issues are not explicitly covered by regulation but left to commercial negotiation. However, access and pricing for national roaming must be based on objective, transparent and non-discriminatory terms.

So far there does not seem to have been a widespread demand for these facilities in the Danish mobile market, but this could of course develop with market conditions. One MVNO agreement has been entered into, while in addition there are two roaming agreements in place.

In view of the availability of MVNO access and national roaming in their home market, a number of interested parties in the Danish market, including the NTA, TDC and the user group, have advocated that a Community-wide approach to this issue should be developed in order to ensure pan-European services.

On 20 September 2001 the NTA announced the result of the Danish 3G auction process which began on 5 September 2001. Unlike most previous 3G auctions (which were multiple-round ascending auctions), the Danish authorities opted for a sealed bid auction, with the lowest winning bid determining the level of the licence charges for all four successful applicants. Possible advantages seen in this mechanism were that it alleviates the problem of the 'winner's curse', as the final price is determined by the lowest of the winning bids; that it reduces the potential for co-ordinated bidding, thanks to its anonymous nature; and that it may facilitate new entry.

There were five bidders for the four licences on offer. All four winning bidders opted for the UMTS standard. The price for each licence was just under DKK 950 million, (approx. €127 million). This was almost twice the level of the reserve price, which was set at DKK 500 million (approx. €67 million). 25% of the licence price was to be paid up front, with the remaining 75% to be paid in 10 equal annual instalments over the ensuing 10 years. Each licence was assigned 2x15 MHz + 5 MHz (unpaired) and is for a duration of 20 years.

Roll-out conditions require that 30% of the population be covered by 2004 and 80% by 2008. There are no separate territorial coverage requirements, nor has a legal deadline been set for launch of 3G services.

It is to be noted that one of the existing 2G licensees did not receive a 3G licence.

The legislative basis for the 3G auction was provided by Act No. 1266 of 20 December 2000, with the detailed auction rules being implemented in Executive Order No. 513 of 6 June 2001. A specific legislative basis was required, as the Danish regulatory framework has previously contemplated the granting of licences for mobile networks by way of beauty contest rather than auction. There was a significant degree of concern from operators before the auction regarding the complexity of the auction rules, particularly those governing associated or connected bidders, with some concern being expressed that applicants might fall foul of the rules without even realising it. However, in the end no such problems appear to have arisen, and in general market players expressed satisfaction with the professionalism and efficiency with which the auction was run by the NTA.

As regards the issue of network infrastructure sharing between mobile operators, the Danish authorities have stated that: “The fundamental principle behind network sharing in Denmark is that holders of licences to establish and operate mobile networks should have full control of their own network. Basically, licence holders should therefore own and operate their own networks. It is possible to share transmission/backbone, sites, masts and buildings (cf. the Masts Act), including power supply, monitoring systems, etc. However, the requirement for full control of the network will basically prevent operators from sharing elements of the core network or radio access network, including antennas.”

Furthermore, the Danish Competition Authority has also given guidance, in a memorandum issued in conjunction with the Information Memorandum for the 3G auction, on the factors it would take into account when determining whether to permit individual agreements between operators to share infrastructure elements, in the light of the likely benefit to consumers. These include: whether co-operation relates only to the provision of the network capacity and not to the services; the proportion of consumers in the relevant market covered by the agreement; the market position of the 3G licensees involved; whether the agreement includes provisions that imply direct or indirect co-ordination of other behaviour on the part of the 3G licensees; and the number of networks in the rural areas resulting from the proposed co-operation.

Mobile operators have indicated concern that the approach to facilities sharing adopted in Denmark is somewhat stricter than that in some other Member States. The Danish authorities have pointed out, on the other hand, that they reconsidered the scope for network infrastructure sharing in the context of the 3G licensing process and concluded, in the light of their assessment of competition on the mobile market, that the introduction of further network sharing than that permitted under existing Danish legislation would have a negative impact on competition. Consequently they retained the existing legal position applicable to mobile networks, and restated it clearly before the 3G auction took place.

In Denmark, shared use of masts is regulated by the Act on the Establishment and Joint Utilisation of Masts for Radiocommunications Purposes etc. of 1999. This is designed to facilitate mast sharing and is considered to work well in practice.

As regards 2G mobile networks, the NTA issued a further four licences over the last 12 month period. In December 2000 a further two licences were issued in the 1800 MHz band and in January 2001 a further two 900 MHz licences were issued. In each case this was done by way of comparative selection procedures (beauty contest) rather than auction. As a result of these licences, all four licensed 2G operators in Denmark now have licences in the 900 MHz and the 1800 MHz bands.

Demand for mobile services continues to grow in Denmark, with the mobile penetration rate standing at about 74% at August 2001, up from around 61% a year earlier.

It is expected that the analogue services (NMT 900 and NMT 450) will be phased out by March 2002. At the end of 2000 there are about 55,000 subscribers remaining on the analogue networks.

#### **14. TARIFFS**

As regards mobile tariffs, the Danish authorities have indicated that the increase in the number of mobile operators in Denmark over recent years had given rise to an increased targeting of pricing packages towards specific customer groups. This allows customers to save money by choosing a product most suited to their needs. They also indicate that mobile tariffs have come down over the last year or so, by up to 47 % in the case of some product packages.

TDC argues that when assessing the development of tariffs and making comparisons it is no longer sufficient just to focus on the incumbent's prices, given the competitive structure of the Danish market.

No mobile network operator has SMP in the national market for interconnection, as measured by the NTA under the Danish legislation. Thus, apart from the fact that the retail price cap set by the NTA in relation to TDC's universal service provision includes calls to mobile networks, there is no specific regulation of mobile call termination prices in Denmark. Since no mobile operator has been designated as having SMP in the national market for interconnection, there is no cost-orientation requirement imposed on mobile operators. Representatives of user groups have expressed disappointment in the absence of such an SMP designation by the Danish authorities.

Likewise the obligation of non-discrimination which applies to the interconnection tariffs of the two mobile network operators with SMP status in the mobile market does not apply to their retail tariffs. Consequently the prices subscribers pay for calls terminating on their own network and those paid by subscribers of other mobile or fixed networks for a call to the same number can often differ markedly. The latter can be significantly more expensive than the former, since significant discounts are often given to a mobile network operator's own subscribers.

The differences between mobile termination rates and fixed termination rates are also particularly topical in Denmark in the light of the anticipated introduction of number portability between fixed and mobile networks due in April of next year, since it will not be possible to identify from a telephone number alone whether the call will terminate on a fixed or a mobile network. The NTA points out that it has already assigned operators mobile numbers in several number series, so that even today customers may not necessarily know whether they are calling a mobile number or a fixed line number. For this issue see also the section below on Numbering.

## **15. COST ACCOUNTING**

As reported in 6th Implementation Report, the political agreement of September 1999 on telecommunications policy aims decided that interconnection prices should be set by reference to a LRAIC cost accounting system by the end of 2002. The new telecommunications law which entered into force on 1 July 2000 provided for this accounting model to be developed on the basis of two parallel cost analyses: a top-down analysis carried out by TDC as the designated SMP operator and a bottom-up analysis by the operators requesting interconnection. The final model is to be determined by the NTA on the basis of a consolidated balancing of the two separate analyses.

Work is now well under way on developing these models. The NTA has laid down criteria and minimum requirements for these two analyses in three reference model papers. The top-down analysis is to be based on TDC's existing cost structure, in which only outdated technical solutions are replaced with optimal technology. The bottom-up analysis will be based on what it will cost to produce the interconnection products in question in a network with an ideal configuration, based on the newest technological solutions. In both models, however, the analysis should start from the basic geographical network architecture as it exists up to and including the relevant exchanges in the network.

The timetable envisages that these cost analyses should be submitted to the NTA by 1 November 2001. Both sides have indicated that they are on track to meet this deadline.

Once the consolidated pricing method has been established by the NTA on the basis of the two alternatives, the final LRAIC model will be set out in subsidiary legislation, on the basis of which the NTA will make a decision on interconnection prices no later than 31 December 2002. However, if prices for local loop unbundling would, under the LRAIC system, be higher than existing prices,

then prices will initially be set on the basis of the book value of assets (historic costs) and adjusted gradually towards a LRAIC price determined on the basis of current costs.

It is generally acknowledged by all sides that this exercise is an extremely complex and demanding one, both in terms of time, expertise and resources. The particular concerns that have been raised include the following: that detailed and commercially sensitive information is required to be provided by TDC to the other operators in order to develop the bottom-up model; that it is necessary for the alternative operators to devise a common model despite varying interests and situations; that there is limited expertise available among the operators on this subject; that it places a particular burden of innovation on the new entrants; and that the NTA's role in the determination of the final model requires it to be impartial and therefore limits its ability to participate in the development of the alternative models in the initial phase.

As regards TDC's existing cost accounting systems, in March 2001 the NTA published statements concerning the compliance of the incumbent TDC's cost accounting systems, in relation to its 1998 and 1999 cost accounts, with the relevant requirements of the Voice Telephony Directive and the Interconnection Directive. Further statements, concerning the compliance of TDC's accounts for the year 2000, were published in October 2001.

## **16. LEASED LINES**

Prices for leased lines in Denmark, whether national or international, are below the EU average and generally some of the cheapest within the EU.

However, the Commission's report on performance in the supply of leased lines in 2000 indicates that there are still some problems in delivery times for certain types of leased lines in Denmark. For example the delivery period for 64 Kbit/s national leased lines is 2 months, which represents a deterioration since 1999.

On the other hand the draft report indicates some significant improvements in repair times for some leased lines since 1999. For example, repair times for ordinary voice quality bandwidth analogue leased lines are down from 30 hours to 5 hours, while for 64 Kbit/s digital lines, repair times are down from 17 hours in 1999 to 3 hours in 2000.

It is worth noting here that the Danish telecom operators have themselves, within the framework of the Telecommunications Industry Association, developed an industry agreement on the delivery of leased lines ("Codex for Delivery of Transmission Capacity"). This has been cleared by the Competition Authority and is revised on a six-monthly basis.

While acknowledging that prices for leased lines in Denmark are low, some market players have expressed concern that the regulatory treatment of leased lines in Denmark, under which they are included as an interconnection product subject to the requirement of non-discrimination, makes their pricing in the wholesale and retail markets subject to the same rules and therefore gives rise to the danger of a margin squeeze on new entrants. They also argue that the underlying cost differences between the retail and the wholesale markets are not fully reflected in this pricing system, and that the application of bulk discounts in the wholesale market makes it difficult for smaller new entrants to compete.

The NTA point out that according to investigations carried out by the NTA and the NCA, any tariff differences as well as the discount schemes reflect the underlying cost structures.

## **17. NUMBERING**

Call-by-call carrier selection and carrier pre-selection have proved to be very popular in Denmark, as can be seen from the number of registrations for the use of carrier select codes (prefixes) as at 1 July 2001. These stood at a total of 2,852,503, of which the number of registrations for using carrier pre-selection was 793,822. This represents an increase of over 17% in total registrations and of over 9% for carrier pre-selection registrations in the six months since 31 December 2000.

The price for carrier pre-selection was reduced from DKK 72 to DKK 45 following a successful mediation exercise carried out by the NTA in January-February 2001.

The Danish authorities have adopted a four-stage approach to number portability in Denmark. On 15 October 1999 geographically limited number portability on the fixed network (including ISDN) was introduced. Then the geographical limitation on fixed number portability was removed with effect from 1 January 2001, followed by the introduction of mobile number portability on 1 July 2001. The process is due to be completed with the introduction of number portability between fixed and mobile networks on 1 April 2002.

To date number portability within fixed networks has proved to be a success. By 1 July 2001 more than 168,000 fixed-network telephone numbers had been ported. Number portability in Denmark is based on a solution employing IN and a centralised database (known as Operators Clearing House (OCH), from which telecom operators can obtain access to information about the location of subscriber numbers on payment of a charge.

Some technical difficulties were experienced in the planned introduction of mobile and fixed-mobile number portability, with the effective implementation date being postponed from 1 January 2001 to 1 July 2001 for mobile number portability and 1 April 2002 for full number portability respectively. However, early indications are that demand for mobile portability is also proving to be strong.

Operators are continuing to express concerns, on the other hand, about the practical implications of the introduction of “full” number portability from April of next year, particularly with regard to the significant cost differences between calling fixed and mobile networks. To address this issue a “charge information facility” was established from 1 July 2001 (in parallel with the introduction of mobile number portability), whereby consumers can find out how much it costs to call a particular number by dialling their telecoms operator. However, this facility is unlikely to provide a complete solution, notably with regard to callers from abroad. The Danish authorities have indicated they expect the legal deadline for implementation of number portability between fixed and mobile networks to be met.

## **18. RIGHTS OF WAY**

As mentioned in the 6<sup>th</sup> Report, the Act on the Establishment and Joint Utilisation of Masts for Radiocommunications Purposes etc, which came into force in April 1999, provides a regulatory framework for site and mast sharing in Denmark, and enables local authorities to order shared use of masts and other high structures for radiocommunications purposes. In pursuance of the Act, the NTA maintains a database containing an overview of future coverage plans and extends at least two years ahead.

No major problems have been reported in relation to the agreements between operators on mast sharing. Indeed, this is an area where a consensual approach by the Danish mobile operators themselves is seen to have produced beneficial effects for all concerned.

However, there are calls by the industry for the development of a form of “Information package” to guide local authorities in their approach to mast siting, in view of the varying approaches possible and the increased need for masts in the 3G environment. The Ministry has indicated this request may be addressed in the context of a revision of the applicable legislation next year.

As noted in previous Implementation Reports, there is no legislative provision in Danish law to require operators to share cable ducts, and no legal requirement for local authorities to co-ordinate the laying of cables by different operators. However, this is also an area in which a consensual approach on the part of the industry itself, under the auspices of the Danish Telecommunications Industry Association, is developing an agreed *modus operandi* in consultation with local authorities which would appear to have obviated the need for legislative action.

## **19. DATA PROTECTION**

Market players and other interest groups raised no particular concerns regarding data protection issues.

A new Executive Order No. 1169 of 15 December 2000 on the Provision of Telecommunications Networks and Telecommunications Services, covering a number of the requirements of Directive 97/66/EC, replaced the previous Executive Order of the same name and came into force on 1 February 2001.

## **20. INTERNET**

The Danish authorities have continued actively to promote their policy of “several pipes to the home”, encouraging the development of Internet access and other high speed and broadband communications facilities by means of a range of infrastructure platforms. The most important alternative infrastructures are the fixed telecommunications network (ADSL), cable TV networks (cable modems) and the wireless local loop (licences for which were granted to five operators in December 2000).

ADSL roll-out has increased significantly over the last year, from about 2,800 subscribers in mid-2000 to a total of 69,740 by 1 July 2001. The Danish authorities estimate that at 30 June 2001 the ADSL market was divided between the incumbent (with 56% of the market - up from 37% at the end of 2000) and two main competitors (with 22% and 19% respectively), with a recent entrant having a small market share.

An NTA publication in June 2001 reported that TDC expected it would be possible by 1 July 2002 for 95% of all fixed network subscribers in Denmark to receive ADSL at rates of 256 kbits/s, 90% at 512 kbit/s and 70% at 2 Mbit/s.

Internet access is also being offered by an increasing number of local cable TV operators as well as by both of the two large commercial operators. These operators are actively upgrading their networks and from data collected by the NTA it is expected that cable modems will be available to over 70% of connected households by mid-2002.

Voice telephony is currently not being provided over cable TV networks, although trials are under way and it is expected that services will be launched before the end of 2001.

The percentage of households having access to internet reached 59% in June 2001, up from approximately 52% in October 2000.



## **21. DIRECTIVE 95/47/EC**

While the Ministry of Information Technology and Research is responsible for the elaboration of regulation in the field covered by the Directive, it is the National Telecom Agency that is responsible for supervision and enforcement of the national implementing legislation (Act on Standards for Transmission of TV Signals etc. and its accompanying subsidiary regulations). There have been no changes in the applicable regulatory framework since the Commission's 1999 Report on Digital Television in the European Union.

No complaints have been submitted to the NTA or the Commission in relation to the implementation in Denmark of the provisions of Directive 95/47/EC.

The Danish authorities indicated in September 2001 that the two main operators of digital cable TV networks in Denmark had approximately 800,000 and 600,000 subscribers respectively (including both analogue and digital subscribers). In addition to those two operators, there are a large number of smaller local cable TV operators owned by users or local municipalities.

The two main cable TV operators in Denmark are among those companies which have signed up to a (voluntary) agreement governing interoperability within the framework of the NorDig organisation, a co-operative organisation consisting of Nordic television and telecom companies. The main purpose of this agreement is to provide for the migration from proprietary platforms for data and interactive services to the MHP (Multimedia Home Platform) API standard. The agreement also provides minimum requirements on conditional access.

There are two digital satellite TV operators in Denmark: Canal Digital and Viasat, whose services include both free-to-air programmes and pay-TV programmes.

Digital TV penetration (all platforms) has been estimated at 6% for the year 2000 (IDATE).

Digital terrestrial television is not yet available on a commercial basis in Denmark, although trials have been ongoing since November 1998. No date has yet been announced for analogue turn-off.

### 3.3 GERMANY

#### 22. overview

##### *Market*

Since the last reporting period, a substantial number of new operators have entered the market for offering long distance and international voice telephony (39 new operators by using call by call selection; 45 new operators by using pre-selection). There are now 183 operators (including Deutsche Telekom; 6<sup>th</sup> report: 175) licensed to offer voice telephony: 67 (6<sup>th</sup> report: 57) are licensed to offer voice telephony nationwide and 116 (6<sup>th</sup> report: 114) are licensed to operate within a geographically limited area. There is also a remarkable increase in licences to operate infrastructure, in particular for geographically limited licences, and there are now 358 operators licensed to operate public transmission lines (6<sup>th</sup> report: 268): 23 operators (6<sup>th</sup> report: 19) have a national licence and 335 (6<sup>th</sup> report: 248) have a geographically limited licence.

However, the incumbent's market share (based on turnover as on 31 December 2000) is still high in all market segments: 70% for long distance calls, 61% for international calls and 69% for calls to the internet. The incumbent still has an almost monopolistic position for local calls of 98% of the market share. The incumbent also still provides the substantial part of fixed local access and only 632.000 lines, i.e. 1,6%, are offered by alternative operators (against 39.6 Mio lines of the incumbent).

Competition is developing favourably in the local access market. Indeed, the percentage of the population which can be reached by local network operators (so called city carriers) has now increased from about 1/4 to 1/3 of the population. Furthermore, a substantial number of agreements for access to the local loop has been concluded and there are now 100 agreements concluded (6<sup>th</sup> report: 87).

There is a wide selection of possible alternative local access networks. It is expected that since the incumbent, DT, has sold almost its entire TV cable network to new entrants, local access may be developed via broadband cable. However, deployment of the wireless local loop and power-line technology is in its starting phase, while most of the broadband cable requires upgrading for telecommunications.

A critical evolution appears to have taken place as regards one of the most innovative and fast developing emerging markets, which is the market for high speed services. Indeed, the incumbent has currently installed about 1,2 Million DSL lines, while new entrants have installed only a fraction of this number.

|   |  |
|---|--|
| <b><i>National<br/>Regulatory<br/>Authority</i></b> | Since the last reporting period, the following regulatory measures should be noted: decision of the NRA (Reg TP) of 12 October 2001 setting the conditions for the element-based charging as from 1 January 2002, the set of decisions of RegTP of 30 March 2001 setting further rules for unbundling, including shared access and decision of RegTP of 9 October 2001 setting the conditions for delivery of leased lines. With respect to supervision of the incumbent's cost accounting system, RegTP has published administrative rules aimed to enforce the incumbent's establishment of a suitable cost accounting system reflecting cost in all areas. The regulatory authority also specified the details for facility sharing for the six operators having been awarded third-generation mobile licences. |
| <b><i>Licensing</i></b>                             | Problems with licence fees appear to be on their way to being resolved by legislative action.  |
| <b><i>Interconnection</i></b>                       | After a period of uncertainty in the market, the above-mentioned decision of RegTP of 12 October 2001 appears to set a system for interconnection charging that corresponds to market needs. However, certain non-tariff conditions have still to be negotiated or decided by RegTP.   |
| <b><i>Unbundling,<br/>shared access</i></b>         | Full unbundling appears to have been successful, with 549 167 unbundled lines (status as of 30 September 2001) out of a total of 39.6 million and a constant increase of the ordering of lines from DT.<br><br>In its decision of 30 March 2001 RegTP ordered DT to submit a binding offer for shared access by 30 May 2001. However, in the absence of the conditions for provision of shared access being determined, shared access is currently not offered.  |
| <b><i>High speed<br/>internet access</i></b>        | The incumbent has offered ADSL to business users since April 1999 and to residential users since July 1999. However, due to the absence of a wholesale offer from DT on shared access or bitstream access and DT's aggressive pricing strategies for retail high speed services, new entrants cannot currently offer their own, tailor-made DSL services to their clients. A slight improvement on the related market foreclosure might arise from the fact that, from mid October 2001, the incumbent is required to resell DSL and has started negotiating with new entrants.<br><br>DT's pricing strategies for DSL have also reportedly caused problems for alternative access technologies, in particular wireless local loop.  |
| <b><i>Universal<br/>service,<br/>consumers</i></b>  | The German consumer framework, together with measures taken by RegTP to ensure the preservation of consumers' rights, is generally efficient and broadly welcomed. Concerns by consumer groups relate to transparency and supervision of general contract conditions, enforcement of itemised billing, and consumers' lack of awareness of RegTP's powers to deal with consumer complaints.  |
| <b><i>Third<br/>generation</i></b>                  | In an auction in August 2000, six operators were awarded a 3G licence, four of them having already obtained a 2G licence. A framework for facility sharing was specified by RegTP in June 2001.  |

- Tariffs** A price cap procedure applies to voice telephony tariffs, which does not fully guarantee cost orientation of all SMP operators' retail tariffs. New entrants have major concerns about the bundling of the incumbent's retail long distance and local offers in such a way as to eject them from the long distance market while they are not in a position to offer local calls due to the absence of local pre-selection.
- New entrants also expressed concern about the absence of a coherent approach to pricing structures, in particular as regards decisions regulating wholesale and retail tariffs, which has created market entry barriers and distorted competition between new entrants.
- Leased lines** A major concern by new entrants is overlong delays in the delivery of leased lines, in particular for the roll-out of DSL. It is not yet clear whether a recent decision by RegTP (9 October 2001) will provide a remedy.
- Numbering** Pre-selection is offered by DT for almost all calls except local calls. This appears to result in virtual market foreclosure of the local voice telephony market, as 70% of the population have no prospect of choosing an alternative operator.

### **23. National regulatory authority**

Previous reports noted concern of new entrants at the absence of powers of RegTP to set interconnection conditions on its own initiative. The German Telecommunications Act does not specify whether the procedure for abuse of a dominant position grants the necessary powers to the NRA to intervene on its own initiative in interconnection negotiations, set conditions for interconnection, and/or set deadlines for the conclusion of negotiations. In its judgement of 25 April 2001, the Highest Administrative Court (Bundesverwaltungsgericht *BverwG*) stated that RegTP has the powers to intervene on its own initiative, on the basis of the procedure laid down for abuse of a dominant position, and to set the conditions for interconnection and local loop unbundling. Indeed, the procedure for abuse of a dominant position would apply without regard to whether the issue were also covered by other procedures, in particular by dispute settlement procedures applicable for interconnection.

Operators point out that RegTP uses its powers to intervene on its own initiative, within the procedure laid down, to prevent abuse of a dominant position, in too restricted a way. Decisions are only made with a view to establishing horizontally-applicable conditions. However, there was a need to establish conditions within specific issues filed by individual operators.

RegTP can impose penalties under the general administrative law in the event that operators do not comply with the decision. These penalties however must be proportionate in relation to the overall penalties for all sectors. The German TKG also empowers RegTP to enforce its own decisions by imposing penalties and/or to prohibit the activity of the operator under defined circumstances.

New entrants take the view that the German framework does not provide for sufficient legal tools to allow RegTP to enforce implementation of its decisions and that the amount of penalties that can be fixed is not a sufficient incentive to comply with the decision. In addition, they claim these limited powers have been used in too restricted a way, i.e. RegTP has failed to set penalties (delivery of collocation and leased lines) and used its powers in too cautious a way (enforcement of shared access). There are no alternative ways for new entrants to seek enforcement of RegTP's decisions.

New entrants also point out the necessity to ensure enforcement by other means than penalties, in particular by setting amounts for overall damages and by linking retail tariff authorisation to implementation of decisions aimed to allow opening up of the market.

The German framework basically provides two means for the protection of confidentiality of documentation submitted. These means are particularly relevant as regards the incumbent's cost accounting data. The Ministry of Economics and Technology may decide which parts of the

documentation third parties shall have access to, or the Court dealing with the case has the possibility to limit access to confidential documentation, i.e. parties are not allowed to consult the confidential parts of the documents provided (in camera procedure).

The respective Courts however do not use the second opportunity and, therefore, the Ministry of Economics and Technology is currently examining the confidentiality of a large amount of documentation filed to RegTP. During this process, RegTP cannot hand over this documentation to the Courts. As a consequence, there is still a high number of Court proceedings blocked by confidentiality rules (about 20).

New entrants also complain that, although under the German Telecommunications Law appeals to courts do not normally lead to suspension, implementation of RegTP's decisions is frequently delayed by DT's appeals. Indeed, due to the overload of work, the Courts are not in a position to decide on suspension within a short delay.

New entrants feel that RegTP, although it has a high number of staff, is lacking necessary human resources. They underline that all regulatory decisions are made at the level of the Ruling Chambers at the request of the parties, and that only a minor part of the staff of RegTP is qualified for and involved in the regulatory tasks carried out by the Ruling Chambers. The incumbent has expressed concern that RegTP does not have sufficient resources to continuously follow market developments and to ensure market analysis, with a view to deciding on SMP.

Consumer groups feel that RegTP is not sufficiently staffed to deal with all consumer complaints.

RegTP also takes the view that issues are increasingly complex and that, therefore, RegTP is in need of an increased number of qualified staff. It however outlines that the difficulties concern not only public resources but also the recruitment of qualified staff.

Under the Telecommunication Act, RegTP has the exclusive competence for taking measures to prevent abuse of a dominant position in the telecommunications sector. The Federal Office of Competition is systematically consulted by RegTP.

However, the views of the Competition Authority are binding for RegTP only with regard to defining significant market power.

New entrants criticise the fact that in a series of decisions that are important for competition to take off in certain market segments – for example for pricing of DSL and for introduction of local carrier pre-selection– RegTP has a different view than the one proposed by the Competition Authority. RegTP points out that where it has taken a different line in its decisions than the line proposed, it has evaluated the positions of the Federal Office of Competition in detail.

Consumer groups have reiterated their appreciation of the overall proactive policy of the regulatory authority for establishing a consistent policy in the interest of residential customers and for dealing with complaints. However, they have criticised that a great number of users' concerns are not being dealt with by RegTP due to the lack of information to users on the possibility to file complaints. As a result, operators resolve most complaints themselves, while user rights are not always being preserved. RegTP points out that it takes all measures within its powers to increase the awareness of its competence for handling consumer complaints. However, it already deals with a very high number of complaints every year (80 000/year).

Business user groups have expressed concern about the responsiveness of RegTP and the lack of transparency as to where they should address their concern. They also criticise the fact that certain issues have not been treated at all by RegTP, and that RegTP has only intervened in less than half of the complaints filed and frequently does not react in any way to requests and complaints made.

## 24. Licensing

The 5<sup>th</sup> and 6<sup>th</sup> Reports noted concern on licensing fees. In its judgement of 19 September 2001, the Highest Administrative Court (the Bundesverwaltungsgericht, BVerwG) annulled the regulation on licence fees on the basis that it does not reflect the principle that licence fees should only cover administrative costs. The regulation on licence fees is currently being reviewed by the government.

Pending the previous proceedings in national courts, operators have been charged licence fees and have been granted suspension of the payment at their request. Since the judgement of the BVerwG, licence fees are not charged and licences are issued under the provision that licence fees will be fixed on the basis of the forthcoming regulation.

## 25. Interconnection

As set out above, the Highest Administrative Court (the Bundesverwaltungsgericht *BverwG*) stated in its judgement of 25 April 2001 that RegTP has the powers to intervene on its own initiative, on the basis of the procedure laid down for abuse of a dominant position, and also to set conditions for interconnection and local loop unbundling. RegTP has not, however, until now set the conditions of the RIO on its own initiative (without a dispute settlement procedure on the issue).

As set out in previous reports new entrants point out that the regulatory authority does not supervise the incumbent's reference interconnection offer in advance, but decides on certain principles to be observed within the establishment of the *Grundangebot* (= *set of individual decisions declared to be applicable to all contracts*) on a case by case basis. They consider it necessary for the market needs that the regulatory authority intervenes at an earlier stage to monitor the RIO and to set the basic principles. The incumbent is not satisfied with the fact that the RIO cannot be submitted to RegTP for approval and that only concluded agreements can be subject to approval.

Operators with a right and an obligation to interconnect are all public telecommunications network operators, the definition of which is not clear under the German legal framework. Administrative rules of 17 October 2001 published by RegTP in its OJ now make clear that all operators, as set out under the Interconnection Directive, have a right to interconnect.

There is still concern that RegTP, in a series of decisions, has authorised DT to impose up to 23 further interconnection points once a certain capacity of traffic (48.8 Erlang)<sup>118</sup> routed into a given interconnection point is exceeded ("*migration obligation*"). RegTP has declared the migration obligation to be part of the content of the *Grundangebot*.

The German interconnection tariffs are based on a distance-based system comprising four levels, while the EU benchmarking for interconnection tariffs is element-based (Element Based Charging - EBC) and comprises three levels. It is therefore difficult to compare the German interconnection tariffs with the EU best practice benchmark. However, while cities do not appear to pose a problem for operators, certain long distance tariffs are considered to be relatively high.

On 12 October 2001, RegTP set interconnection tariffs applicable as from 1 January 2002. The decisions marked the transition from a distance-based system for charging interconnection, comprising four levels, to an element-based system (EBC), comprising three levels. The interconnection tariffs are well within the EU benchmarking for interconnection tariffs for local and single transit, while they are at the upper edge for double transit.

The decision of 12 October 2001 in substance reiterates the principles already set in a decision of 8 September 2000, which provided for the introduction of the EBC system as from 1 June 2001. It appears that the decision has removed a major concern of new entrants, in particular the fact that the model proposed by DT contains four charge bands and far too many local interconnection points. However, a legal challenge to technical aspects of the system has led to a prolongation of the

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<sup>118</sup> Erlang: A measure of telecoms traffic. 1 Erlang corresponds to a circuit carrying one call for one hour.

distance-based system for charging interconnection until the end of the year. New entrants generally welcome the forthcoming interconnection tariffs. DT takes the view that the structure at the basis of the EBC charging did not correspond to that of its own network. It furthermore points out that its current network structure is fully efficient if taking into account the forthcoming increase of internet traffic.

No data could be collected as regards interconnection charges for fixed call termination on the networks of mobile operators. RegTP does not supervise mobile termination rates. Indeed, no mobile operator has been notified as having significant market power.

The German Telecommunications Act provides for powers of the RegTP to resolve interconnection disputes. The Higher Administrative Court for the Land North Rhine Westphalia stated in its decision of 3 May 2001 that interconnection charges cannot be set within interconnection disputes, but only at the request of the operator having significant market power. The powers of the regulatory authority to set the requisite conditions of an interconnection agreement will be limited if a decision in this regard is necessary to resolve the dispute effectively. Following the judgement of the Highest Administrative Court (the Bundesverwaltungsgericht, *BverwG*) of 25 April 2001 mentioned above, it remains unclear whether RegTP has the powers to set interconnection charges on its own initiative within the procedure for abuse of a dominant position. New entrants have expressed concern that the limiting of the powers of RegTP to decide on interconnection fees only on request of the operator would leave the timing of decisions on tariffs at the discretion of the operator subject to tariff authorisation. The market however needs decisions on interconnection tariffs well in advance of their application.

New entrants also criticise that RegTP gives increased credibility to concluded interconnection agreements, using the argument of market acceptance (“Marktnähe”). RegTP relied, inter alia, on the argument of market acceptance as regards the transitional system for charging interconnection between 1 March until 1 December 2001. DT imposed further securities that were considered as unacceptable by some new entrants, since the conditions for security had not been sufficiently specified. RegTP points out that it had examined and revised those conditions within the dispute settlement procedure with respect to whether they are evidently abusive; however, a more detailed examination (beyond evidence) of conditions with respect to whether they are abusive is not feasible within the dispute settlement procedure – which indeed is subject to precise time-limits – but only within the procedure for abuse of a dominant position.

## **26. Local access competition, including implementation of the Regulation on local loop unbundling and bitstream access**

The incumbent has offered unbundled access to the local loop since 1 January 1998. This currently only covers rental of the fully unbundled raw copper line from the main distribution frame into the customer’s premises. There are now about 549 167 fully unbundled lines of a total of 39.6 million local access lines (status as of 30 September 2001).

A part of DT’s lines from the main distribution frame to the cable distribution frame (Kabelverteilerstelle) is fibre (so called OPAL lines), while the lines from the cable distribution frame into the customer’s premises (sub-loops) are copper. The regulation on local loop unbundling requires offering of unbundling of the copper sub-loops. However, DT does not currently offer rental of the copper-part of those OPAL-lines (sub-loops).

However, new entrants point out that unbundling at the level of the cable distribution frame is of interest for the provision of V-DSL(DSL capable of transporting video), as this requires a short transmission path to the end-customer. They have filed complaints to RegTP to obtain access to sub-loops and intend to request access to DT’s sub-loops on the basis of the awaited decision. RegTP is currently examining this issue as part of the package to ensure implementation of the unbundling Regulation.

In its decision of 30 March 2001 RegTP ordered DT to submit a binding offer for shared access as part of the RUO by 30 May 2001, and provided for a test phase of three months with a view to starting commercial line sharing on 1 September 2001. Although under the German Telecommunications Law appeals to courts do not normally lead to suspension, implementation of RegTP's decision was in this case delayed by DT's appeals. The decision of the Higher Court of Münster of 23 August 2001 confirmed that RegTP's decision on shared access cannot be suspended and must be applied by DT immediately. Since 27 August 2001, the incumbent has been negotiating conditions for shared access with new entrants. It has also filed a request for tariff authorisation to RegTP for shared access comprising 5/6 of the price for full unbundling.

New entrants criticise the lack of coherence of the tariff proposed if compared to other offers of DT for access; in particular, the level proposed for shared access would be twice as high as DT's level for access to DSL offered to users.

The incumbent has offered ADSL to business users since April 1999 (T-ATM-DSL, T-Interconnect Classic, T-Intraconnect), which includes guaranteed bandwidth, and, since 1 July 1999 to residential users (T-DSL).

New entrants point out that no bitstream offer is currently made by DT for new entrants. Indeed, new entrants cannot interconnect at ATM switches, nor at the DSLAMs. In its decision of 8 May 2001, RegTP stated that DT is not under an obligation to offer competitors interconnection of its ATM network with DT's ATM network with an objective to route DT's ATM-DSL traffic directly into its network.

In its decision of 30 March 2001, RegTP requested DT to submit an offer for resale of DSL to its competitors. Although, under the German Telecommunications Law, appeals to courts do not normally lead to suspension, implementation of RegTP's decision was in this case delayed by DT's appeals. The decision of 9 October 2001 of the Higher Administrative Court (Oberverwaltungsgericht (OVG) Münster) on resale of DSL confirms that RegTP's decision on resale of DSL cannot be suspended and must be applied by DT immediately. However, the terms of resale have still to be negotiated. RegTP takes the view that the resale offer must be taken for a bitstream wholesale offer.

Finally, new entrants have major concerns with regard to the conditions under which DT was allowed to market its own DSL access. New entrants point out that a further element impeding market entry of new entrants in the DSL-market is DT's under-pricing of its DSL-service. In its decision of 30 March 2001, RegTP considered that some variants of the DSL-offer of DT were below cost. However, RegTP did not oppose the pricing since a predatory effect had not been proven. New entrants point out that the fact that price-dumping by the incumbent for DSL was accepted by the regulatory authority in its decision of 30 March 2001 has destroyed the business plans of wireless local loop operators and cable operators. As a consequence of the lack of a concept to develop competition on the basis of a coherent system for setting wholesale and retail tariffs, all alternative infrastructure operators face virtually prohibitive market entry barriers and/or have been ejected from the market.

RegTP points out that not all DSL variants are below costs. The overall package of DT's pricing of DSL was not found to be anti-competitive but was shaped to overcome the difficulties of market entry.

As a result, despite the perspective of resale being offered in the future, new entrants are not in a position to offer their own, tailor-made DSL services to their clients. New entrants expressed major concern that, given the absence of a wholesale offer for bitstream access and shared access, an adverse development has already taken place in the German market as regards fast internet access. It appears that the incumbent now provides 98% of the DSL connections.

New entrants also point out that, for reasons of interference, the copper lines to the customer's premises are only viable for DSL if not more than 1/10 of the lines are used for DSL. This already



now leads to a “full cable” situation, where DT cannot satisfy the demand of its clients. In the event there were a wholesale offer in the future, there would be a high probability that the cable would then be saturated, and that therefore further market entry would be prevented for technical reasons.

RegTP points out that corresponding to its decisions of 30 March 2001 the authorisation of DSL pricing by DT was tied up with the introduction of shared access and the resale offer for DSL, and that it considered the overall package to be sufficient to provide for the necessary market entry conditions.

New entrants point out that DT’s own clients can obtain the information as regards the DSL capacity of local loop unbundling lines in an easily accessible way (online, by phone and on demand at any point of sale of DT) and free of charge, while DT denies new entrants access to this information service. Indeed, new entrants must request this information by fax and against a payment. RegTP points out that the information provided to customers and to new entrants is not the same. The information provided to new entrants is a regulated service called “preliminary request”, and covers further information (technical qualities) and, in any event, the information DT’s customers would get. DT is of the view that customers ask for this information only up to a certain capacity, while most carriers request information for higher bitstream. New entrants however consider it to be discriminatory that the information provided to customers (lower bitstream) is not provided to new entrants by the same means (on line, by phone). As an example, the information for DSL-capacity in the lower range must, according to the unbundling agreement, be required by fax and be provided by DT within six working days.

As regards the information on the situation of OPAL-lines, new entrants and business user groups point out that DT does not provide information as to whether the local loop lines are fibre (OPAL) or copper. Due to the absence of information by DT, carriers could not obtain an overview as to the location of lines with DSL capacity. As the DSL capacity of local loop lines constitutes an important element of the decision on whether an area is suitable for the operator, the lack of information on the situation of OPAL-lines would impede the establishment of investment plans. Carriers addressed the issue to RegTP in December 2000, but the RegTP did not take action. DT maintains that, following an agreement, new entrants are provided all the information there is on the situation of OPAL-lines.

New entrants have also expressed concern that DT’s ordering system for unbundling technically is unnecessarily cumbersome (fax). In its decision of 20 March 2001, RegTP requested DT to offer competitors access to an electronic interface to access its information systems on local loop lines and to order unbundling as from 31 March 2002.

RegTP set the time limits for the provision of collocation in its decision of 7 June 2000: DT must submit an offer for a collocation room within 20 days; if the order is for a new collocation room, delivery must take place within 16 weeks; if the order means an enlargement of an existing collocation room, delivery must take place within seven (7) weeks. RegTP points out that these time-limits have been exceeded only in exceptional cases since the end of June 2001. New entrants consider that timely delivery of all collocation rooms is crucial; in particular, lack of timely provisioning only of a fraction of collocation rooms can prevent them from offering the entire service. They furthermore reiterate their concern at the limited possibilities for seeking compensation for damages caused by exceeding delivery periods.

## **27. Universal Service/consumers/users**

As previously, there is no system for financing of universal service. Accordingly, there is no market entry barrier linked to universal service.

User groups reiterated concern already reported in the 6<sup>th</sup> implementation report, regarding lack of enforcement of operators’ obligation to provide itemised billing free of charge. In particular, enforcement of the obligation as regards operators which do not apply the standard form decided by

the regulatory authority for itemised billing, still requires Court proceedings initiated by the user groups – which is time-consuming and often too late to provide effective protection to consumers.

User groups also point out that a major problem for consumers currently is their difficulties to understand the prices of operators and service providers. A lot of their efforts therefore were made to promote price transparency for consumers. In particular there is a problem as regards price transparency for international mobile tariffs and roaming tariffs.

User Groups have expressed concern about the lack of access to the general conditions to their contracts as operators only publish them in the OJ of the regulatory authority. The general conditions are only available at the subsidiaries, but not at the sales points. Therefore, consumers can only get information about general conditions in big-sized cities, or by buying the whole JO of RegTP. Professional users would welcome it if the OJ were published on the internet. This would substantially contribute to resolving their concern at the lack of information on general conditions. Consumer groups are of the opinion that the full content of standard conditions should be brought to the attention of the consumer at the moment of contracting. Internet providers should be obliged to publish their general conditions on the internet. DT points out that it will communicate all modifications of the general conditions on the bill as from January 2002.

The conditions for providing directory services are still a matter of concern for new entrants. Indeed, the Competition Authority decided in 1998 on a ceiling that new entrants had to pay to DT for providing information on its subscribers on the basis of cost-orientation. This ceiling still applies. New entrants still consider the amount to be excessive and question the method for breaking down the ceiling for charging for different types of receivers of the information. They also consider that the conditions set by the Competition Office are outdated, as new technologies that are more cost efficient are now available to provide the data. In addition, DT provides directory information to subscribers online free of charge while they have to pay for the information. New entrants perceive this as a discrimination and have filed a request to the Competition Authority to re-examine the issue.

## **28. Mobile services / frequencies**

As set out in the 6<sup>th</sup> report, the phasing-out of analogue mobile services is due to be completed by the end of 2001.

As also set out in the 6<sup>th</sup> report, none of the mobile operators has been designated as having SMP and, therefore, no mobile operator must grant access. However, network operators, including mobile, must supply their offerings in such a way as to allow service providers to market the offerings in their own name and on their own account.

The details of the 3G licensing procedure in Germany are set out in the decision of the regulatory authority (RegTP) of 10 May 1999 and in two decisions of 18 February 2000. As a result of an auction in August 2000, there was a relatively high number of six successful bidders. Each bidder won an equivalent amount of spectrum for a similar amount of approximately €8,5Bn.

The licensing conditions provide for an obligation of coverage of 25% of the territory before the end of 2003 and 50% before the end of 2005. Every operator must ensure that it keeps control over the management of its own network (so called "*Netzfunktionsherrschaft*"). On the other hand, the licensing conditions make facility-sharing mandatory under certain circumstances. In order to reduce the costs of roll-out of the network, operators have asked the regulatory authority to clarify the conditions under which they can cooperate for the roll-out of the network, including sharing of infrastructure. In its decision of 5 June 2001, RegTP specified the details for facility sharing, setting out that the running of core network must be self-managed, while the other elements of the network, such as antennae and masts, can be shared. 3G operators did not express any concern with the rules determined by RegTP.

## **29. Tariffs**

Rebalancing can only be achieved if cost-orientation is ensured separately with respect to certain elements of the tariff structure, i.e. the monthly subscription fee and local, national and international per minute tariffs. According to DT, its monthly voice telephony line rental charge for the PSTN (DM 21.39 = 10.94 Euro) is currently below cost.

Approval of voice telephony tariffs of the SMP operator takes place on the basis of a price-cap procedure, the conditions of which were set by decision of the former Ministry of Post and Telecommunications on 17 December 1997 and which will be applicable until 31 December 2001. It does not allow for assessment of local per minute tariffs and the subscription fee separately, but covers them together in one basket. RegTP is currently examining the revision of the price-cap procedure and has published, on its web-site, the decision it intends to adopt as regards the price cap procedure applicable as from 1 January 2002, which should allow DT to take further steps with respect to rebalancing.

New entrants have reiterated concern with respect to the incumbent operator's offers of bundled packages, in particular with the XXL tariff. RegTP has authorised the ISDN-XXL offer since April 2000.

New entrants are of the view that this offer means bundling of long distance and local services in a way that ejects them from the long distance market.

RegTP takes the view that anti-competitive effects of the offer could not be confirmed. In order to allow RegTP to examine the possible anti-competitive effects of the offer, DT was ordered to report regularly on the development of the use of the offer.

In addition, in its decision of 30 March 2001, RegTP ordered DT to offer new entrants resale of local voice telephony. In its decision of 9 October 2001, the higher administrative court (Oberverwaltungsgericht (OVG) Münster) confirmed that DT has to implement the decision of RegTP immediately. However, DT has not yet fully implemented the decision of RegTP and a contract with new entrants on the basis of DT's offer for resale of local voice telephony has not yet been concluded. Furthermore, although resale of local voice telephony by DT will improve the possibilities of new entrants to bundle offers, a resale offer cannot substitute local pre-selection. Indeed the resale offer is very much shaped according to the pricing of DT, and does not necessarily reflect costs. For those reasons, new entrants' possibilities for offering their own tailor-made bundled offers will remain limited.

Until 31 October 2001, the offer was authorised with DT's requirement on subscribers of the XXL tariff to exclude pre-selection. New entrants considered that this would allow DT to bind clients on a long-term basis and contribute to increasing the importance of the market entry barrier created in the long distance market. In its decision of 20 September 2001 RegTP denied DT the possibility of suppressing pre-selection as market data provided by the new entrants had shown that suppression of pre-selection was not compensated by a broader use of call by call.

## **30. Cost accounting**

The German framework did not clearly state an obligation of operators having SMP to establish a suitable cost-accounting system with regard to voice telephony, leased lines and interconnection tariffs. This uncertainty has been removed by RegTP, which has publicised administrative rules (Communication No 120/2001, JO 5/2001), stating inter alia that RegTP is bound to authorise tariffs on the basis of cost accounting data submitted, and that in principle it will not base its decisions on the prices prevailing in comparable markets. The administrative rules furthermore state the obligation of RegTP to publish annually a statement of compliance.

RegTP has, as part of the tariff authorisation procedure, closely supervised the incumbent's cost-accounting system and issued, in its annual reports, statements of compliance, where it also pointed

out to what extent the incumbent's cost accounting system still shows certain gaps. Within each tariff authorisation procedure, the regulatory authority requires the incumbent operator to submit its total costs, the specific costs for the service to be authorised (leased lines, interconnection, local loop) and the relationship between them. As a result, RegTP was in general able to calculate the applicable tariffs itself on the basis of the cost accounting data available, together with a detailed bottom-up cost accounting model.

### **31. Leased Lines**

The Telecommunications Act (TKG) requires tariffs for leased lines of SMP operators to be cost-oriented. On 15 June 2001 RegTP set the tariffs to be valid until 31 July 2002 for leased lines on the basis of the cost accounting data submitted by the incumbent operator. The tariffs of the operator having significant market power for national provision of all types of leased lines (short and long-distance, low and high-speed) are currently well below the EU average. A number of new entrants are of the view that the leased lines tariffs currently have been set too low to allow them to compete. Tariffs for international leased lines are not regulated.

New entrants expressed concern about long delays for delivery of leased lines of more than 12 months. They also suspect DT of discriminating against them and underlined the importance of timely provisioning of leased lines for the roll-out of DSL. New entrants also criticised the fact that the delivery periods in contracts were not enforceable as the 80% delivery target is not sufficiently transparent to be enforced in the courts. Furthermore, the contracts excluded liability.

In its decision of 9 October, RegTP set binding time-limits for delivery of leased lines: eight weeks in the event that no works must be carried out, four months in the event of minor works and six months in the event of substantial work. New entrants welcomed the decision in principle. However, concern was also expressed that, in the event of minor works, the setting of a shorter period would have been appropriate. They furthermore criticise the fact that the definition of "minor works" leads to application of the six month period in almost all situations, even though in practice the works could be carried out within a shorter period (3 months). In addition, the six month period would only apply within the technical and operational possibilities, which would offer DT an insufficiently defined exemption. New entrants also expressed concern that, in the absence of penalties ordered by RegTP, DT will still delay provisioning of leased lines. RegTP points out that the decision has set precise and enforceable time-limits for delivery of leased lines. It takes the view that, in the absence of experience with the effect of the decision on the practice of time-limits for delivery of leased lines, the drawing of a conclusion on the appropriateness of the parameters set or its absence would, at the current stage, be premature.

User groups point out that only leased lines offered to carriers will be covered by the new conditions set by RegTP in its decision of 9 October 2001. However, most leased lines are delivered on the basis of DT's contracts for users, which do not contain general specific delivery periods.

### **32. Numbering**

As set out in the 6<sup>th</sup> Report, geographic and non-geographic number portability for all geographic numbers within the same area of a trunk code of a fixed network and non-geographic number portability for non-geographic numbers must be provided by all carriers. Currently no fee can be charged to the user or to the new carrier.

Mobile number portability must be introduced as from 1 November 2002. User groups criticise the fact that RegTP at several occasions has suspended the mobile operators' obligation to provide non-geographic number portability.

New entrants also expressed concern that there is no data base for number portability (see billing of premium services).

Carrier selection for long distance calls, international calls and calls to mobile is offered by DT. Call-by-call carrier selection and carrier selection for local calls are currently not offered by DT although the Numbering Directive mandates this facility.

In its decision of 1 August 2001, RegTP stated that the TKG does not cover pre-selection for local calls and therefore rejected the request of a new entrant to offer, as part of the interconnection agreement, local carrier pre-selection. This facility however is vital to open up the local market, which is currently almost fully dominated by the incumbent (96%), and to bring down local per minute tariffs. Furthermore, 70% of the population in Germany have no prospect of choosing an alternative operator for local calls and, therefore, competition from city carriers is not likely to bring local per minute tariffs down.

The German authorities are committed to adopting the legislation mandating local carrier selection and pre-selection within 2002.

Certain new entrants point out that it is unlikely that the technical parameters for call-by-call carrier selection and carrier pre-selection for local calls will be established by the technical working group AKNN, as this would require a unanimous vote of about 80 carriers, which currently do not agree on introduction of this facility. They therefore underline that RegTP must mandate the technical parameters itself in a detailed manner to ensure introduction of this facility. RegTP however points out that it is not in a position to establish the technical specification.

Concern of new entrants as to the cumbersome way in which the incumbent operator manages requests for pre-selection is still valid. In particular, new entrants criticise the fact that the ordering is done by fax and that confirmation of the order is sent to the customer but not to the selected operator, making it impossible to check for errors.

### **33. Rights of Way**

Generally, operators do not encounter major problems for granting rights of way. However, although it had been clarified by the Courts that local authorities cannot charge fees for the granting of rights of way, certain communes have charged such a fee. The German framework also provides that communes cannot grant rights of way once they have a participation in enterprises offering telecommunications services. Certain communes however claimed competence to grant rights in this situation, but the request was not accepted by the Courts.

### **34. Data Protection**

The institutional arrangements for ensuring implementation of the Data Protection Directive were set out in the 6<sup>th</sup> Report. No change has occurred since.

Operators must put in place the technical means to ensure the security of their networks with respect to data protection. Network security have been specified in the guidelines of the former Ministry of Posts and Telecommunications as predecessor of Reg TP (Bekanntmachung des Katalogs von Sicherheitsanforderungen gemäss § 87 des TKG vom 5.9.1997). Operators expressed concern that the requirements on network security are too severe and extensive, and those guidelines are under revision as under the previous reporting period. Currently they still apply.

Confidentiality is protected as a basic individual constitutional right (*Grundrecht*). In addition, the Telecommunications Act provides for secrecy of communications and a prohibition on phone tapping, the breach of which is sanctioned by criminal law. Confidentiality can be limited for the purposes of criminal law enforcement, on the basis of the law on limitation of secrecy of posts and telecommunications, and for police enforcement purposes.

Telecommunications operators may process data for the purposes of advertising, customer consultation or market research only with the consent of the subscriber. As regards data collected before 1 August 1996 (date of entry into force of the TKG), consent is deemed to have been given if the subscriber has been adequately informed but has not made use of his right of objection. The Telecommunications Law (§ 89(10) TKG) provides that consent must be given explicitly and, in principle, in writing.

Under the new Data Protection Regulation, data must be erased without undue delay by the service provider not later than the day following termination of the call, with the exception of the necessity of data for further call set-up or legitimate processing. After termination of the call, the data necessary for billing purposes must be established without undue delay.

Operators can keep traffic data necessary for billing purposes for a maximum of six months after dispatch of the bill and only traffic data in which the last three digits of the destination number have been deleted. This period replaced the period of 80 days under the former Data Protection Regulation (TDSV) of 12 July 1996, which was considered to be too short to allow for billing procedures to be completed between operators in good time. If, prior to expiry of the above-mentioned six-months time-limit, the customer has disputed the amount billed, the traffic data may be stored until such time as the dispute has been definitely settled. Experience with the new framework has not yet been reported.

As set out in the 6<sup>th</sup> Report, subscribers have the possibility of receiving non-itemised bills; stopping automatic call forwarding by a third party to the subscriber's terminal; and requesting to be omitted from the directory free of charge.

As outlined in the 6<sup>th</sup> Report, the former Data Protection Regulation did not address the issue of calling line identification in an entirely satisfactory way. The new Data Protection Regulation that entered into force on 21 December 2000 provides for further rules with respect to calling line and connected line identification, in line with the Telecommunications Data Protection Directive (97/66/CE).

The framework on unsolicited calls has been specified by the Courts on the basis of the law on unlawful competition (§ 1 UWG). Following this case law, unsolicited automated calls and manual calls for commercial purposes are treated in the same way, i.e. they are prohibited, except if the called party has given its explicit or conclusive consent. Unsolicited calls to commercial partners can be made if the calling party can presume, on the basis of the proven circumstances, that the called party is interested in receiving such a call and that the call corresponds to the supposed consent of the called party.

## INTERNET

37,9% of households were connected to the internet in June 2001. ADSL roll-out has increased significantly to a total of approximately 1.2 million in October 2001. About 260 000 TV cable lines were used for internet access and/or voice telephony.

Fast internet access is almost dominated by the incumbent (98% of the DSL connections are provided by the incumbent). The most important alternative infrastructures are the fixed telecommunications network (ADSL) rolled out by new entrants, cable TV networks (cable modems) and the wireless local loop. Since the incumbent, DT, has sold almost its entire TV cable network, it is expected that all new entrants will provide inter alia internet access via cable.

Since 1 June 2000, T-Online had offered subscribers a flat rate for internet access at 79 DM/month but scrapped this offer as of 1 March 2001. In November 2000, RegTP ordered DT to offer competitors a flat rate for internet access, to prevent the creation of any price-squeeze. DT made an offer to competitors in November 2000, at 4 800 DM/month for 30 subscribers connecting at the

same time. New entrants criticised this offer on the ground that only operators rolling out their network could use this flat rate. DT challenged the decision of RegTP in the Courts. On 15 March 2001, the Higher Court of Administration of Münster (the Oberverwaltungsgericht Münster, OVG) decided, in a preliminary procedure, that DT is no longer bound to offer flat rate, as the danger of a price-squeeze was now removed. However, DT maintained its offer for competitors.

### **35. DIRECTIVE 95/47/ec**

In Germany, digital TV penetration remains relatively low (7.6% to 8% following different studies; EU average: 12%). Only one operator offers, via its own TV network, digital pay TV. Two regions (Länder Niedersachsen and Berlin) have launched pilot projects. Penetration with digital decoders to receive digital satellite TV is also insignificant.

However, although digital TV appears not to be broadly developed in Germany, there is a high potential of development of the market, as 90% of the German TV cable network has been upgraded to support digital TV and TV cable penetration is fairly high, 56 % (20 million) of the households. Following the sale of DT's TV cable network completed in June 2001, the German cable market has been fully restructured. There are now three cable operators in the market, which have regrouped DT's nine regional networks. Reportedly, all new entrants will provide internet access, multimedia services and telecommunications services. There is also a potential for digital satellite TV to develop as 35% of households are connected to satellite reception (via an individual or collective dish).

The regulation of transmission of TV signals falls under the competence of both the federal and the regional (Länder) authorities. As a consequence, RegTP has been granted the competence to implement the law on transmission of TV signals (Fernsehsignalübertragungsgesetz), and each of the "Länder" (the regional institutes for media, Landesmedienanstalten) has adopted similar legislation.

In practice, the regional institutes for media handle all implementation issues. One of the objectives of these institutions is to determine the contents which must be carried by cable. Cable operators expressed concern, that this would severely affect the possibilities of marketing their own product and often lead to a "full cable".

The authorities (RegTP and the regional institutes for media) have received no complaints or requests for dispute settlement regarding the Directive.

The CAS system currently used in German cable networks is the D-box. Up to now the D-box has been based on Simulcrypt, where the user of a set-top box has only one CAS and must replace it to receive other programmes than the ones provided through the CAS (unlike Multicrypt, where the set top box includes a common interface to which the user can connect different CASs). The cable operators' association points out that, due to the recent adoption of the rules of the regional institutes for media, there is no clarity as to whether the common interface should be currently used. In September 2001, in a joint statement, the German broadcasters (ARD, ZDF, RTL, Kirch Gruppe and media authorities of the German Länder) formalised their commitment to migrate to MHP (Multimedia Home Platform – Digital Video Broadcasting Project to devise specifications for a home network architecture and a next-generation open set top box using a standardised application).

## 3.4 GREECE

### OVERVIEW

***Market and regulatory framework***

The Greek telecommunications market was fully liberalised on 1 January 2001. Fixed penetration level (PSTN/ISDN lines) in 2001 is estimated at up to 61% of the population, with the average for the EU ranging between 62% and 66%. The adoption of the new Telecommunications Law in 2000 and the transfer of powers from the Ministry of Transport and Communications to the Εθνική Επιτροπή Τηλεπικοινωνιών και Ταχυδρομείων, the EETT, the national regulatory authority, is considered by the industry as bringing clarity and legal certainty. Measures have been taken by the EETT to address licensing, interconnection, local loop unbundling, the introduction of 3G and a new numbering plan and the approval of a cost accounting system for leased lines. Other problems remain, in particular in relation to the cost of leased lines, interconnection issues, shared access in unbundling the local loop and the provision of bitstream services to promote broadband internet services.

***Interconnection, publication of RIO, inter-connection tariffs***

A number of licences for the provision of voice telephony services and all pending applications for individual licences have been granted. However, OTE continues to dominate the fixed telephony market and consumers still have no alternative choice for fixed voice telephony. The main reason is that interconnection agreements have been signed only recently despite early requests by licence holders. The reference interconnection offer covering the provision of fixed voice telephony was only published in February 2001 despite the publication of interconnection tariffs by the EETT six months before liberalisation. Tariffs are based on best current practice in the absence of an FL-LRAIC model to ensure cost-orientation. Nine interconnection agreements have been concluded between OTE and other licensed operators, prompted only by the submission of a formal complaint to the EETT by other licensed operators. OTE has appealed against the EETT's decision approving RIO 2001, although the latter is still effective since there is no court order suspending its application.

***Local access competition***

The reference unbundling offer (RUO) providing for full access has been published and approved by the EETT. The incumbent reports that it has agreed to provide full unbundled access in 76 local loops with distant collocation. The RUO for shared access is not yet published. No retail bitstream access is currently offered by OTE, which is only engaged in a field trial on a non-commercial basis. Three narrowband and five broadband wireless local loop licences have been granted to six bidders through an auction, four of which are new entrants, for operations to start by end of 2001.

***Consumers***

Regarding consumer issues, GSM operators were forced to eliminate abusive terms from their contracts with their customers as a result of a legal proceeding brought by a consumer association.



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| <b><i>Third generation and fixed wireless services</i></b> | Mobile penetration rate is estimated at up to 68%. Six licences for the provision of third generation services have been granted through an auction. Further frequencies have also been auctioned for the provision of second generation services. A new entrant is among the successful bidders.   |
| <b><i>Frequencies</i></b>                                  | Two decisions have been adopted by the EETT concerning the assignment of radio frequencies for microwave links and the updating of the radio spectrum fees policy. While past concerns relating to approval of base stations persist, a number of approvals have been granted by the EETT. The approval procedure is complex because of environmental concerns by the public and because different bodies are involved. The situation is expected to be further aggravated with the deployment of 3G networks. However, legislation to simplify procedures is expected. |
| <b><i>Numbering</i></b>                                    | Regulations providing for a national numbering plan have been adopted by the EETT. There are concerns regarding the level of fees imposed for the allocation and use of numbers. Greece is the only Member State which is not providing number portability for fixed voice telephony services.  |
| <b><i>Leased lines</i></b>                                 | Prices for leased lines continue to be high in comparison to other Member States, despite the reductions made by the incumbent. The EETT has approved a cost accounting system for leased lines. At present, there is no evidence that OTE's prices are cost-oriented, and the EETT has established an independent monitoring exercise. Results of this enquiry are expected by the end of 2001.  |

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| <b>NATIONAL REGULATORY AUTHORITY</b> |
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Since the 6<sup>th</sup> Report, the new Telecommunications Law (2867/2000) has been adopted, which provides, inter alia, for the transfer of all regulatory powers from the Ministry of Transport and Communications to the EETT. The Ministry continues to be responsible for policy making and the drafting of legislation. At the same time, it is reported that more staff have been recruited and currently the number of staff has been increased to 55 employees.

All operators welcome the transfer of powers to the EETT. They also recognise the efforts of the EETT to regulate the market efficiently. However, reportedly some operators feel that there is still room for improvement. In this context the incumbent (OTE) has reported to the Commission that it considers that the performance of the EETT needs to be further improved pointing out that EETT's interventions need to be based on sufficient market analysis in order to be beneficial to the market. This allegation is refuted by the EETT that suggests regulatory decisions should be based on market data submitted also by market players although, in certain circumstances, the incumbent has been reluctant to provide such data at the request of the EETT. Another operator is concerned that the EETT does not have sufficient resources to perform its tasks adequately and that there is no administrative body designated for reviewing the decisions of the NRA. Regarding staff, it seems further recruitment is under way. All EETT decisions are subject to judicial review. EETT decisions remain effective unless there is a court order suspending them until a definitive ruling is made. It has been reported however that a number of operators would rather see another body responsible for appeals against decisions of the EETT in addition to the courts of law to avoid time-consuming proceedings. Such a requirement is not laid down by the current Community framework. Nevertheless, it seems that, in relation to disputes between operators or operators and users, the Ministry is planning to introduce a new arbitration procedure to be carried out by external arbitrators within the EETT.

Contradictory views have been expressed in relation to the level of pro-activity of EETT. One operator has expressed concern that the EETT in most cases takes action only following a specific

complaint, while others have concerns about over-regulation if the EETT increases its regulatory intervention on its own initiative.

## LICENSING

The power of granting licences was previously exercised by the Ministry of Transport and Communications. By law 2867/2000 this power, with a small exception, has been transferred to the EETT. Secondary legislation providing for the procedures for granting licences has been adopted. Under the new law and regulations the new licensing regime is much lighter than the previous one, the procedures have been further simplified and time limits are stricter. It seems that, following such transfer and the adoption of the regulations, the situation has improved dramatically and all applications for licences filed as required by law have been granted. Since the 6<sup>th</sup> Report 26 individual licences have been granted and another six licences have been awarded for the operation of 3G and 2G networks. In addition, 59 general authorisations have been granted while 184 already registered companies (under a general authorisation) have declared the provision of additional services. It is reported that licences for 3G could be even lighter if they do not repeat requirements that are already provided under telecommunications laws. Concerns have also been reported in relation to the granting of approvals for base stations and antennae. Such concerns were also set out in the 6<sup>th</sup> Report although significant improvements have taken place since the transfer of the licensing power, and a large number of pending applications has already been granted. However, it seems that further efforts need to be made since operators complain that the procedures for granting of an approval are complex and time-consuming, especially in the light of the involvement of three bodies in addition to the EETT and, in particular, of the National Committee for Atomic Energy, the Civil Aviation Authority and the Urban Planning Authorities.

## INTERCONNECTION

A new Reference Interconnection Offer (RIO) was approved by the EETT only in February 2001 following several discussions with OTE on the final draft of the RIO. The failure of OTE to submit an early version of the RIO in an acceptable form resulted in delays for those operators wishing to interconnect with the network of OTE to provide voice telephony services. This is the first RIO since full liberalisation, which also covers voice telephony services. It seems that despite relevant requests by operators, OTE has resisted applying the 2001 RIO and has served legal proceedings against the decision of the EETT approving the RIO. In the meantime, operators filed a complaint with the EETT against OTE for not signing interconnection agreements based on the RIO 2001. The EETT has held a hearing to investigate the matter under normal procedures and a determination is expected to be issued. At present the RIO is effective despite the legal proceeding, since no court order on the suspension of the EETT's decision has been taken out. OTE has reported that it has satisfied all requests for interconnection and that it recently signed nine interconnection agreements with operators based on the RIO 2001. OTE expects the agreements to be amended accordingly if there is a court ruling in its favour. The EETT is at present reviewing the agreements to verify their validity, especially of the clauses on retrospective application.

In the RIO 2001 interconnection charges are set based on the Commission's Recommendation on best current practice, thereby introducing significant reductions from the previous rates. The approved call origination and termination charges were set at cent 0.88, 1.41 and 1.76 for local, single transit and double transit traffic respectively at peak hours. For transit traffic charges were set at cent 0.75 and 1.16 for single and double transit respectively at peak hours.

Concerns are reported in relation to the provision of interconnection points. In particular, OTE does not recognise an obligation to provide operators with access to any technically feasible interconnection point selected by the operator according to its business plan. However, currently OTE offers interconnection points on request. In particular, interconnection can occur at any of OTE's 11 regional interconnection switching centres. In this case, a single transit charge is applied for traffic originating or terminating within the switching centre's corresponding region, or a double transit charge is applied for traffic originating from/terminating in another regional switching centre. Interconnection may also occur at any of OTE's 204 local interconnection switching centres. However, this type of interconnection refers only to traffic originating or terminating in the particular local area. In this case, a local interconnection charge is applied.

Concern is also reported that GSM operators do not provide call termination in their networks to alternative operators and that they require very high interconnection rates, including to the incumbent. The incumbent claims that such practices distort competition since, according to the mobile operators' licences, the mobile operators have the exclusive right to determine the charges from fixed to mobile networks.

The EETT is planning to review call termination charges in mobile networks. OTE is the only operator designated as having significant market power. In a recent study on SMP the EETT concluded that no mobile operator has significant market power in the national market for interconnection.

The 6<sup>th</sup> Report found that there were delays in the provision of facility-sharing by the incumbent to mobile operators. An operator reported that it had made several requests for collocation/facility-sharing but only a few were met. The incumbent reported that it has made a firm decision to provide facility sharing/collocation rights to all operators making such requests. A concern was also expressed that the incumbent's mobile subsidiary (Cosmote) might enjoy more favourable treatment by making use of its parent company's sites. Cosmote refutes these allegations.

### **LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE REGULATION ON LOCAL LOOP UNBUNDLING AND BITSTREAM ACCESS**

The EETT conducted a consultation in relation to LLU and in May 2001 issued its decision approving OTE's reference unbundling offer (RUO) concerning full access to the local loop. Costing and pricing principles for LLU were set by decision of the EETT in March 2001. Time limits have been set requiring the incumbent to respond to a request for access within a certain timeframe and, in case of refusal, obliging it to provide full justification to the requesting party. OTE has reported that it has satisfied two requests made to it for full access and two agreements have been concluded between OTE and beneficiaries for the provision of 76 local loops with distant collocation. The EETT has informed the Commission that, to date, no refusals by OTE to provide the requested services have been reported to it by any operator. Regarding shared access there is no RUO published by OTE and approved by the EETT. At the request of the EETT, OTE submitted the second part of the RUO to the EETT for the provision of shared access, which is currently under consideration.

Bitstream access is mandated in Greece by the provisions of the Presidential Decree transposing the Voice Telephony Directive. The law provides for equal access rights for third parties. The incumbent is therefore obliged to offer the same service to requesting access operators as it does for its own operations. In relation to provision of bitstream access services, it is reported that the incumbent has not yet introduced (retail) ADSL services of its own. It is also reported that the incumbent in December 2000 started a field trial of ADSL in four of its switching centres in two major cities. The field trial was, according to OTE, of a rather limited scope and only a small number of end users (a total of 202, 56 of which are OTE employees) participated in the trial.

Following an auction, in December 2000, the EETT granted three narrowband and five broadband wireless local loop licences to six operators, of which four licences were granted to new entrants. According to the EETT, most of the licensees have already started preparations to launch services before the end of 2001.

### **UNIVERSAL SERVICE/CONSUMERS/USERS**

No change has been reported regarding the provision of universal service since the 6<sup>th</sup> Report. The new Telecommunications Law stipulates that OTE will be the universal service provider until the end of 2001. The EETT is expected to make a determination on the provision of USO based on the results of a study completed under the auspices of the Ministry of Transport and Communications. It is reported that a public consultation is in progress on the specific requirements of the provision of universal service, i.e. its scope, costing methodology and designation of operators as universal service providers.

A number of consumer associations are active in Greece but none deals specifically with telecommunications services. During 2001 a significant decision of the Supreme Court was issued as a result of legal proceedings served by a consumer association (EKPIOIZO) in particular against a GSM operator due to certain clauses in the contract with its subscribers which the Supreme Court found abusive. These gave the mobile operator the right to modify its tariffs, at the same time tying the subscriber for a certain period of time. Subscribers who considered they could not afford such tariff modifications were not allowed to release themselves from the contract unless they suffered economic losses such as paying the monthly rental for the remaining minimum period of time (six months).

## MOBILE SERVICES / FREQUENCIES

The 6<sup>th</sup> Report stated that the division of responsibilities between the Ministry and the EETT had been a source of problems for frequency allocation and management. Following the adoption of the Telecommunications Law 2867/2000, the EETT became responsible for the management of radio frequencies, taking over all relevant responsibilities previously exercised by the Ministry. In previous Reports concerns were also raised about the provision of microwave links and the need to improve the efficiency of their management. The EETT has issued two Decisions, one referring to the assignment of radio frequencies and another determining the fees for their assignment and use, and which were adopted to improve the situation in regard of management of radio frequencies for microwave links, and to provide for a coherent licensing regime and update the radio spectrum fees policy. In order to resolve the problem in practical terms, the EETT reports that it is currently processing a long list of pending applications for fixed microwave links and its target is to reduce the time required for processing an application to less than four weeks. According to the EETT, processing of old applications is expected to be finalised by the end of 2001. At the same time, the EETT reports that it will continue updating the National Frequency Registry in co-operation with operators using such frequencies. Since the beginning of this year, the EETT has issued 360 licences for base station antennae used for mobile communications.

Regarding frequency fees, operators are concerned about the fees imposed for the allocation of other than 3G and 2G frequencies, which they consider high, and the annual fees, which are calculated as a percentage of their turnover. EETT considers that such fees reflect the administrative costs incurred. On the other hand, the question whether a licence issued to a specific operator provides for the use of certain microwave links, which EETT does not accept, is still outstanding. The same operator also complains that the incumbent's subsidiary does not have a licence with a detailed description of rights and obligations.

Developments have also been reported in the licensing of third (3G) and second generation (2G) mobile communications services. The EETT has made available all spectrum for the provision of 3G services through an auction. Through the same auction it has also made spectrum available for 2G services. Following the auction, three licences for the use of 3G-spectrum were granted to the three mobile operators already established and 2G licences were granted to three operators, out of which one is a new entrant. No licensee, including existing GSM and DCS operators, was allowed to acquire more than 30 MHz of radio spectrum. In addition, the EETT reported that successful 2G and 3G licensees may apply for fixed point-to-point microwave links to support and facilitate the provision of mobile communications services. As already stated, the EETT has implemented a rapid procedure for the handling of such applications.

Operators have reported that the lack of an enforcement mechanism for unauthorised use of frequencies has effects on the development of established operators' microwave and GSM networks. To solve this problem the EETT is preparing an invitation to tender for an integrated spectrum monitoring and management system, which is expected to be launched by mid-December and installed by mid-July 2003.

A public consultation has been launched for the introduction of TETRA services. The EETT intends to complete the licensing process by March 2002.

## TARIFFS

There is no price regulation of any form in Greece apart from the requirement that SMP operators, and in principle OTE, shall announce their proposed new or modified tariffs 45 days prior to their application, and the obligation to provide the EETT with sufficient evidence regarding the cost-orientation of their tariffs. Failure to provide such information could result in the EETT's refusal to approval the proposed tariffs as well as in the levying of penalties, following a hearing process. On the other hand, non SMP operators have an obligation to announce their new or modified tariffs 30 days prior to their application (7 days if all proposed tariffs show reductions).

The 6<sup>th</sup> Report stated that, according to the incumbent, by the end of 2000 its tariffs would be substantially rebalanced. The EETT has reported to the Commission that it has required OTE to complete tariff rebalancing for fixed voice telephony, which is still under way, by the end of October 2001. The deadline for the rebalancing period was imposed by the EETT as soon as it came to the conclusion that the retail tariffs submitted to it by OTE in early 2001 were not cost-oriented, despite the fact that their rebalancing over the years has resulted in a gradual increase in rental charges and local calls and a decrease in long distance and international tariffs. OTE states that it has taken significant steps to rebalance. The most important step was made in March 2000, when long distance and international tariffs were reduced substantially. It seems however that OTE is concerned about the social implications if tariff re-balancing is not made progressively, especially in the light of its universal service obligations that have prompted OTE to apply very low monthly rentals. OTE's concern is related to the request by EETT to provide fully rebalanced tariffs by the end of October, a date that OTE considers very early.

Regarding mobile telephony, tariffs of mobile to fixed and mobile to mobile traffic have decreased over the years, in contrast with tariffs for fixed to mobile traffic, which have not changed significantly, although a certain decrease was reported between the incumbent and its mobile subsidiary (from 110 GDR to 98 GDR per minute).

## **COST ACCOUNTING**

According to the EETT, at present, OTE applies the fully distributed cost methodology with historic costs (FDC-HC) for cost allocation and accounting of all its services. The EETT has requested OTE to apply, prior to the end of 2001, the FL-LRAIC methodology to determine charges for the provision of interconnection services and unbundled access to the local loop. At present, and until the time that the FL-LRAIC model applies, OTE's prices are based on the best current practice for the determination of interconnection rates and the FDC-HC methodology for the costing of the LLU services.

In April 2001, the EETT published a Regulation regarding the principles of costing and pricing to be applied for interconnection, leased lines and unbundled access to the local loop.

As far as compliance with the cost accounting system is concerned, and in accordance with the requirements of the Voice Telephony Directive, an audit of OTE's compliance with the approved (by the EETT) cost-accounting system has been initiated as well as of the cost-orientation of its tariffs. As soon as the audit is completed the EETT is expected to issue a statement of compliance.

## **LEASED LINES**

The 6<sup>th</sup> Report found that leased line tariffs in Greece were among the highest in the EU. The EETT has taken measures to address the problem and in particular has approved a cost accounting system to be applied by OTE to ensure cost-orientation. The EETT has also adopted a regulation on principles of costing and pricing and has assigned an independent auditor to review the prices of OTE and verify that they are cost-oriented and that OTE is applying the cost-accounting system. In June 2001, OTE filed new charges with further reductions. It seems that, despite the decrease, prices for 2 km, 50 km and 200 km, 2Mbit/s, 34 Mbit/s and 155 Mbit/s lines continue high compared to those in other Member States. OTE bears the burden of proving that its leased line prices are cost-oriented. It is reported however that OTE has declined to submit relevant data to the EETT proving cost-orientation. EETT held a hearing to investigate the matter and a determination is expected. To date OTE has not applied the new charges. An operator reported that OTE charges alternative operators retail prices instead of wholesale prices and treats its subsidiaries in a more favourable manner. According to the same operator this would imply price squeeze. Regarding delivery time, it is reported that it can range from 2 to 12 months.

## **NUMBERING**

Following the new Telecommunications Law, the EETT adopted a number of regulations providing for a national numbering plan and its management. The 5<sup>th</sup> and 6<sup>th</sup> Reports highlighted the lack of such a plan and the deficiencies caused by it in meeting market demands for numbers. The adoption of the plan and secondary legislation mark a significant improvement from the past. Following a public consultation with the industry the new numbering scheme was adopted providing for the introduction of a 10-digit closed numbering scheme. Its introduction is expected to be finalised in October 2002. According to the EETT, the plan is expected to ensure the availability of numbering space for end users, facilitate the introduction of new services and expansion of those already provided, and further increase competition in the sector. The new regulation on management of numbers provides for non-discriminatory and transparent allocation of numbers and for allocation and reservation fees. It is reported that the industry considers such developments satisfactory. However, some operators consider the fees imposed for the allocation and use of numbers high (an allocation fee of €0.03 and an annual fee of €0.025 is charged per geographical or mobile number).

Under the new regulation providing for short codes, carrier selection codes consist of 4-5 digits. So far, carrier selection codes have been allocated to seven licensed operators in the light of full liberalisation of the markets. Number portability is expected to be implemented by 1 January 2003, which means that Greece will make use of the derogation period provided under the relevant Directive. Greece is the only Member State in the EU which has not yet introduced number portability. Operators complain that the lack of number portability does not facilitate the

introduction of competition in voice telephony, and there are subsequent losses for users who are reluctant to change service provider unless they can keep their number.

### **RIGHTS OF WAY**

The 6<sup>th</sup> Report found that there was no clear framework in certain cases for the provision of rights of way. Rights of way are now dealt with by the new Telecommunications Law 2867/2000, giving any licensed telecommunications operator who wishes to provide telecommunications networks the right to apply for a permission to access either public land and/or public facilities. Such access can only be refused on the basis of the existence of an alternative which is less onerous than the one applied for. As a general rule however, the responsible authority may not refuse to grant such rights but may only set the conditions for such granting unless there is a significant reason related either to the protection of the environment or public health or archaeological sites. In the latter case the refusal needs to be sufficiently justified.

The new Law also requires that the responsible authority respond to an operator's application within twelve weeks from receipt of the application. If no answer is provided within the prescribed time frame, rights of way are considered as being granted automatically.

The same concerns remain as those referred to in the 6<sup>th</sup> Report in relation to undersea rights of way, in particular in the absence of a cooperation framework between the incumbent and the operators to define the requirements of direct interconnection by mobile operators to international fibre optic cables landing stations in Greece owned by the incumbent. OTE claims that no operator has made a request. It seems also that operators would favour the adoption of specific guidelines on methods for setting fees for rights of way to lift any uncertainty on such determinations, since each local authority is entitled to set fees at its own discretion. It seems however that the EETT considers that such concerns are only hypothetical since, so far, there has been no precedent justifying them.

### **DATA PROTECTION**

The Telecommunications Data Protection Directive has been fully transposed into Greek legislation. Most tasks for supervising the implementation of the provisions of the directive are exercised by an independent body, the Data Protection Authority, which has the overall responsibility of supervising the application of the data protection legislation including telecommunications. Certain responsibilities regarding the processing of personal data and the protection of privacy in the telecommunications sector are exercised by the EETT in co-operation with the Data Protection Authority. So far, the Data Protection Authority has considered some cases and made recommendations on issues such as itemised billing as regards the number of digits to be shown on a telephone bill, on consent requirements, on the limitation of the amount of personal data requested for obtaining a subscription to a mobile service to the minimum level and on setting requirements on confidentiality of calls. Operators have also taken several steps to fight fraud in relation to telecommunications services. It is reported that an initiative between the three mobile operators and the incumbent has taken place and that the Greek Telecom Fraud Prevention Forum (EFTA) has been formed to promote closer co-operation among operators in dealing with fraud cases to protect both their business interests and their customers.

In Greece no itemised billing is offered free of charge by OTE at present. According to OTE the service will be offered as soon as the development of the new billing system is completed.

### **INTERNET**

Household internet penetration is estimated up at 11.7%. According to the ISP subsidiary of the incumbent the overall low penetration rate is the result of a number of factors related to the content or the cost of PCs. According to the EETT over 180 internet service providers operate in Greece and the cost of service for end users is quite low, especially at off-peak hours. Although no flat rate access is currently offered, neither the incumbent nor the EETT consider that this directly affects the level of penetration.

### **DIRECTIVE 95/47/EC**

The TV Signals Directive has been transposed into Greek legislation.

The digital TV market is not very developed in Greece. It seems no significant demand for access to transmission of digital programmes exists. At present there is only one operator providing subscription digital satellite services. The licence for the provision of such services was granted in 1999. Under the current regulatory regime introduced in 1998, an agreement with the Greek State needs to be signed before the service is launched. A second licence has been granted to another

operator, who is about to start operating a digital platform for transmission of radio and TV programmes in digital free access programmes. It seems there is not much interest in providing digital terrestrial transmission programmes considering its cost effectiveness and level of national coverage. There is no indication that the conditional access system currently used creates access problems for potential operators.

No formal complaints or requests for intervention have been received by the Greek Authorities responsible for regulating the sector, i.e. the Ministry of Transport and Communications (technical aspects), Ministry of Press and Media (for granting licences) and the EETT (for allocation of frequencies).

## 3.5 SPAIN

### OVERVIEW

#### *Market*

In 2000, the Spanish telecommunications market experienced a second year of growth following liberalisation in December 1998, with the operating revenue of the main operators (telecommunications, audiovisual, internet) increasing by 18%<sup>119</sup>.

As compared with 1999, total investment increased by 65%, most of which is represented by investments in fixed telephony. Even though traffic in the fixed network increased by 28%, the turnover of the fixed operators remained slightly below the level of 1999. This reflects the fierce price competition that has been taking place in the sector.

The mobile penetration rate reached 62% in 2000, 24 percentage points more than in 1999, and is now higher than fixed telephony penetration. However, investment in the mobile sector has decreased by half, from 99% in 1999 to 45%.

#### *Regulatory framework*

The regulatory environment is perceived by market players as being complex, notably due to the number of authorities regulating and supervising the sector and insufficient coordination between them. Operators are concerned that the authorities intervene significantly in the retail market. The new entrants believe the authorities should shift their focus from the level of end-user prices to the conditions and competition on the wholesale market.

In recent months, the Spanish regulator has taken several important, and in some cases quite forceful, measures to safeguard competition in the market, which are welcomed by the new entrants. These include, for example, the modification of the reference interconnection offer for 2001, the Provisional Measure of 21 June 2001 regarding the collocation conditions for local loop unbundling and the rejection of the incumbent operator's estimates of the net cost of universal service provision in 1998 and 1999.

However, market players are concerned that many uncertainties prevail. The increases in the spectrum reservation charges effected by the Budget Law for 2001 and the incumbent operator's ADSL roll-out strategy are depicted by operators as particularly critical and topical issues.

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<sup>119</sup> The figures quoted in this Section are taken from the CMT's Annual Report for 2000.



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| <b><i>Interconnection and tariff rebalancing</i></b>        | <p>New entrants continue to express concern about a price squeeze between the incumbent's interconnection charges and its retail tariffs and the discounts applied thereto. The reference interconnection offer (RIO) for 2001 introduces a weighted average reduction of 26% of the interconnection charges, and is generally welcomed by new entrants.</p> <p>Entrants consider that price squeeze effects are aggravated by the way tariff rebalancing is conducted. Under the price cap regime, increases in the line rental charge must be offset by large decreases in call tariffs, especially for long distance communications. Entrants note that these decreases and the lack of proportional reductions in the incumbent's interconnection charges make entry tougher in this segment. They also claim that Telefónica's per minute local call tariffs are among the cheapest in the EU and are not cost oriented.</p>  |
| <b><i>Licensing</i></b>                                     | <p>The process of converting licences granted prior to the 1998 General Telecommunications Act, in particular for the main operators, has still not been completed.</p>  |
| <b><i>Local loop unbundling</i></b>                         | <p>The incumbent still has a market share of 92% of fixed telephony, with entrants capturing just 3% in 2000. By the beginning of October 2001, only a handful of local loops had been unbundled. The regulator has intervened to expedite the process; while this has allowed progress on collocation, a series of other issues remains to be resolved, including the use of DSL technologies in the incumbent's loops.</p>   |
| <b><i>ADSL market</i></b>                                   | <p>New entrants are concerned about the incumbent's aggressive ADSL roll-out strategy. Since 1999, Telefónica has been offering an ADSL wholesale product, and new entrants have expressed concern about a price squeeze between the wholesale prices and the incumbent's subsidiaries' retail prices. From August 2001, Telefónica itself has been authorised to launch a retail service, and new entrants consider that the accompanying measures adopted by the regulator (in particular the revision of the wholesale prices) are insufficient to ensure effective competition in this market.</p>   |
| <b><i>Universal service</i></b>                             | <p>The regulator has rejected the incumbent's estimates of the net cost of the provision of universal service in 1998 and 1999. According to Telefónica, this net cost amounted to €1.15 billion in 1999. New entrants remain concerned, however, about the results of the ongoing evaluation of this cost for 2000, as any funding mechanism involving a levy on entrants would reduce their competitiveness.</p>   |
| <b><i>3G roll-out, increase of the spectrum charges</i></b> | <p>The mobile operators regard the end of 2000 and 2001 as a period of uncertainty in the mobile sector. Following a comprehensive consultation of the sector, the Spanish authorities officially postponed the 3G launch date from August 2001 to June 2002.</p> <p>The Spanish Budget Law for 2001 increased the level of the annually payable spectrum reservation charges. The increase is particularly large for mobile operators, and 3G licensees in particular, with charges increased more than thirty-fold as compared with the licence specifications for the latter. Taking into account the magnitude of these increases and the heavy investment commitments made in the context of the 3G beauty contest, these operators stress that their business plans are seriously affected.</p> <p>The 2002 Budget Law proposed by the administration provides for an average reduction of 65% of the spectrum reservation charges over 2001, and the introduction of more stability and predictability in that these charges may not increase by more than 5% on an annual basis until 2006. Operators find these reductions insufficient and stress that the authorities should ensure the stability and</p> |

predictability of the level of the charges for the whole duration of the relevant licences.

The authorities have followed a forward-looking approach in a number of initiatives to encourage competition in the mobile sector that go beyond the current minimum requirements of the Community framework (mobile number portability, mobile carrier pre-selection for international calls, the licensing of mobile virtual network operators).

***Leased lines*** Entrants have expressed concern about the high prices of leased lines and about unsatisfactory contractual conditions, in particular as concerns partial leased lines. The RIO for 2001 brings some improvements to the situation.

***Numbering*** Despite several interventions by the regulator to expedite and facilitate the implementation of carrier pre-selection, problems in obtaining these facilities in practice continue to be reported. The regulator has also had to intervene to resolve certain disputes regarding fixed number portability.

***Rights of way*** Obtaining rights of way is perceived by operators as an increasingly critical problem. The telecommunications authorities have made efforts, which are welcomed by the market players, to attempt to resolve these problems.

## NATIONAL REGULATORY AUTHORITY

As noted in the 6<sup>th</sup> Report, the Ministry of Economic Affairs is responsible for tariffs. The Telecommunications Market Commission (Comisión del Mercado de las Telecomunicaciones, CMT) is administratively attached to the Ministry of Economic Affairs, but is independent from it. It is responsible for safeguarding competition in the market and for relations between operators (e.g. interconnection, including dispute resolution, cost accounting and local loop unbundling). The Secretariat of State for Telecommunications and the Information Society, which forms part of the Ministry of Science and Technology, is responsible for regulation, spectrum management, activities relating to the information society, external relations and supervision of telecommunications operators. The Government's Executive Committee for Economic Affairs is also involved in the fixing of the prices of the dominant operator.

The operators note that in addition to the above main authorities, other administrations and institutions, such as the anti-trust authorities and the Ministry of Public Works are also involved, at different degrees, in the regulation of the sector.

Market players are concerned about the number of authorities participating in the regulatory process and its supervision. They consider that the distribution of responsibilities is complex and call for more coordination between the authorities. The new entrants and consumers' organisations also regret that the powers of the CMT have been reduced in favour of the Ministries.

The new entrants consider that the authorities are intervening significantly in the retail market (e.g. where price plans and flat rate tariff schemes have been implemented by legislation) and that, instead of this, they should concentrate on optimising the conditions and the competition on the wholesale market. The incumbent operator also stresses the high degree of intervention and control by the regulatory authorities and refers to the number of measures (e.g. discount plans) that it has proposed and which are awaiting the authorities' decision.

Both the incumbent operator and the new entrants are particularly concerned about regulatory uncertainty, which they attribute in part to the intrinsic characteristics of the telecommunications market (dynamic, fast evolving sector) and in part to certain regulatory decisions taken during the last quarter of 2000 and in 2001.

Market players are also concerned about the long time it takes for the telecommunications regulatory authority to resolve complaints and disputes, and about protracted anti-trust proceedings. The new entrants wish for efficient communication channels between them and the authorities, which would allow for more transparency and predictability.

## LICENSING

The 6<sup>th</sup> Report noted that the process of converting licences granted prior to the 1998 General Telecommunications Act was to be completed by the end of 2000, except as regards Telefónica's fixed telephony licence. However, due to the complexity of the procedure for converting licences, which involves hearing the various market players to ensure that the rights of all parties are ensured and obtaining the opinion of the Council of State, the process has still not been completed.

The following main licences are still to be converted: Telefónica of Spain, Telefónica Cable and the licences of the mobile operators (Telefónica Móviles, Airtel-Vodafone and Amena). The Spanish authorities expect that the licence of Telefónica Cable can be converted in the last trimester of 2001 and that of Telefónica of Spain during the first trimester of 2002.

Both the incumbent operator and the new entrants consider that the delays in the licence conversion process create legal uncertainty. New entrants also fear that the incumbent operator will be allowed to keep certain historic (and anti-competitive) rights in areas such as the localisation of interconnection points and routings.

Operators also claim that the conditions for new licences are not comparable to those applicable under the previous licences, because they entail less important investment obligations, and that this results in discrimination as against the established licensees.

The new entrants refer in particular to the stringent investment and other obligations dating from the previous (non-liberalised) concession regime to which cable operators are still bound following the conversion of their licences, and to uncertainties around the licence that Telefónica Cable will obtain. The latter has requested that, with the transformation of its authorisation, its obligation to set up a cable network be eliminated and it be permitted to provide services (telephony, television and internet) in an integrated way using ADSL technology over the metallic pair that is already installed. The concerns of the new entrants in this regard are strengthened by the authorities' recent decision to allow Telefónica to launch a retail ADSL service (for more details, see "Local access competition" below).

Some operators have expressed concern about the level of the licence fees in Spain, which are expressed as a percentage of the operators' gross operating revenue. They note that this system results in high fees for operators with important sales, and wonder whether they are proportionate to the administrative costs that they are supposed to cover.

The Spanish authorities have prepared a draft Regulation that creates a new type of a licence (A2) for mobile virtual network operators (for details, see "Mobile services/Frequencies" below).

## INTERCONNECTION

The reference interconnection offer (RIO) of May 2000 was amended by an Order of 31 October 2000 of the Government's Executive Committee for Economic Affairs, which established a new level of local (metropolitan) interconnection, introduced discounts per volume up to 15% of the incumbent's nominal RIO prices for local interconnection and mandated flat interconnection rates to enable other operators to offer flat-rate internet services at off peak times.

The new entrants claim that the RIO for 2000 (and the modifications introduced by the above Order) was hardly used as a reference point for the interconnection agreements bilaterally negotiated with the incumbent. Many of them have preferred to use the RIO for 1998 as their

reference point due to the complexity of the above-mentioned measures, the heaviness of new interconnection negotiations, the unattractiveness of the RIO 2000 prices and of the fees that Telefónica accepted to pay to the new entrants for call termination on the latter's networks.

On 9 August 2001, the CMT approved the reference interconnection offer for 2001. This is the first time it has been able to review the RIO based on an analysis of the incumbent's cost accounts established on the basis of current costs. The RIO for 2001 introduces a decrease of 26% (on a weighted average) of the interconnection charges as compared with the RIO for 2000. Also, a new capacity based interconnection service and prices associated therewith are established in parallel with per minute charging, with the aim that new entrants have more flexibility in setting their end-user tariffs and be able to compete more effectively with the incumbent operator.

The RIO for 2001 also contains a number of other novelties, which the new entrants welcome, such as the consolidation of the metropolitan interconnection level, the provision of local interconnection for service providers, the sharing of interconnection infrastructure, the possibility to resell access and termination interconnection traffic in certain circumstances, and a series of improvements concerning leased lines (for more details, see "Leased lines" below).

The new entrants are keen to benefit from this improved offer, and welcome the provision in the RIO that the new prices no longer need to be bilaterally negotiated with the incumbent operator, but are automatically applicable upon a written request submitted to the latter. However, they are concerned about the interconnection prices that Telefónica will be willing to pay to them (especially for call termination in their networks): they fear that the prices that it will pay to new entrants be set at the same level as the interconnection charges that the incumbent itself is authorised to levy under the new RIO. In this regard, concern is expressed about some recent decisions by the CMT that have imposed such reciprocal terms.

They also note that only the economic conditions are included in the RIO for 2001, and that all remaining issues still remain to be resolved in bilateral negotiations. They therefore call on the regulator to resolve disputes expeditiously and to take proactive measures to ensure a rapid application of the new RIO.

Despite their general satisfaction with the new RIO, the new entrants continue to express concern about several price plans launched by the incumbent operator, which they consider predatory, and about the price squeeze resulting from the combination of these plans and discounts applied to the incumbent's retail tariffs (in particular outside the price cap) and the level of the interconnection charges. They stress that the price reductions introduced by the RIO for 2001, which has been scrutinised by the NRA based on the incumbent's current costs accounts, demonstrate that so far, they have been paying interconnection charges that have not been in line with the incumbent operator's costs.

Telefónica considers that the interconnection prices under the RIO for 2000 left margins for the new entrants, some of which (e.g. long distance and international calls) were as high as 60%-70%. It has appealed against the decision of the regulator adopting the RIO for 2001 on the grounds that the prices and other elements included therein force it to provide services on a non-cost oriented basis (i.e. at prices that do not cover the underlying costs). It claims that the average weighted reduction of 26% in the interconnection charges reflects nominal price variations, but if one looks at all of the elements included in the new RIO, the price reductions are in the order of 40% on average. It also notes that if fixed costs are taken into account, per minute interconnection charges in Spain are among the lowest in the EU.

The authorities stress that when preparing the RIO for 2001, care has been taken to adapt the incumbent's interconnection charges to the company's cost accounts and to the EC benchmark. Regarding the price squeeze, they note that the CMT is always consulted on the discount schemes and that in any event, whenever discounts applicable to the incumbent's end-user tariffs have been authorised, the authorities have ensured that new entrants be in a position to retaliate these

measures. Also, they recall that Telefónica's tariffs are subject to a price cap, and that if there are modifications to the nominal prices to which the discounts apply, then the discount rates must be adjusted so that the final price to the user does not change.

Both the incumbent and some new entrants are rather cautious about the new interconnection model based on capacity. Some operators note that flat-rate schemes depart from the principle of cost orientation.

#### **LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE REGULATION ON LOCAL LOOP UNBUNDLING AND BITSTREAM ACCESS**

At the end of 2000, the Spanish authorities scrutinised Telefónica's proposal for a reference local loop unbundling offer, and made a series of changes to it, including to its pricing elements. The prices for totally unbundled access have been set at €13 per month and the price of shared access at €6.5/month for 2001. These prices are to decrease in 2002 and 2003, to €12.3 and €3.5 per month respectively in 2003. The rates for indirect (bitstream) access range from €23.4 to €93.4 per month.

Telefónica published its reference unbundling offer (RUO) in January 2001. From this point, new entrants were invited to submit requests for collocating equipment in its exchanges. Based on these requests, an iterative process started whereby Telefónica established the prices for collocation. However, as operators dropped out of the process, the prices had to be adjusted for the remaining operators and increased considerably. No concrete progress was made until the end of May, at which point Telefónica proposed measures to speed up the process and decrease certain prices.

However, the CMT did not find these proposals sufficient, and adopted a Precautionary Measure on 21 June 2001. According to this Measure, collocation room must be adjusted to demand in each exchange, and a reserve of 50% must be provided for further extensions and new demands. For requests for collocation space below 20m<sup>2</sup>, no separate collocation room needs to be built ("housing"). The Precautionary Measure established detailed collocation procedures with reduced deadlines and a standard price list based on average costs. Significant price reductions regarding both the one-off construction costs and the monthly collocation prices were mandated. The Measure also established the procedures, conditions and prices relating to visits and access of the other licensed operators' personnel in Telefónica's exchanges, notably to verify the collocation space available.

Telefónica has appealed against the collocation prices established in the Precautionary Measure. It considers that they do not cover underlying costs. It is also concerned that the "housing" option entails security risks.

Following this Precautionary Measure, some progress in the collocation negotiations has been achieved. However, by the beginning of October 2001, only a handful (3-5) local loops had been unbundled, and a series of critical issues remain open. These concern, for example, the prices for the lease of the loop and its upper band and the technologies, in particular DSL, which can be used on the incumbent's local loops and the economic conditions therefor.

Regarding the first mentioned issue, the schedules adopted by the Spanish government for tariff rebalancing and regarding the price of the fully unbundled loop respectively result in a situation where the price of the latter is significantly above the price of the monthly line rental charge of the incumbent operator.

As regards the second issue, a field test was carried out from April 2001 to the end of August 2001 in an exchange in Madrid to resolve the issue of the terms of the usage of xDSL technologies in Telefónica's local loops. According to the CMT, it should result in a Loop Management Plan incorporating less restrictive conditions than those that are currently included in the RUO.

While concrete progress regarding local loop unbundling is awaited, the new entrants are particularly concerned about the fact that Telefónica is attempting to profit from its established infrastructure and control of essential facilities by rolling out ADSL at an increasing pace and scale.

Contrary to many incumbent operators in the EU, Telefónica has not been offering any retail ADSL product, even though its subsidiaries Telefónica Data and Terra have offered such retail services.

Since March 1999, Telefónica has been obliged to offer a wholesale ADSL product. Nineteen companies have contracted this offer, fifteen of which have active clients. In the beginning of August 2001, Telefónica had some 200 000 active ADSL lines in its network, all of which were operated by third parties (given that the company did not have any retail offer). Most of the lines were operated by Telefónica Data.

In March 2001, Telefónica requested that it be authorised to offer an ADSL retail service. Certain operators objected to this, and asked the authorities to review the request in conjunction with the conditions applicable to the incumbent's wholesale offering. This request was made against the background that the new entrants also claimed that there was a price squeeze between the incumbent's wholesale prices and the incumbent's subsidiaries' retail prices (that are not regulated).

The Government's Executive Committee for Economic Affairs adopted the prices of Telefónica's retail ADSL offer on 3 August 2001. This measure was preceded by a Precautionary Measure of the CMT that was issued on 5 July 2001 (and amended on 26 July 2001) introducing a series of changes to the conditions under which Telefónica offers its ADSL wholesale service. The regulator established maximum rates for the wholesale prices whose level is obtained by multiplying the retail price by a certain coefficient so as to allow the new entrants to benefit from reasonable margins to commercialise their own ADSL services and compete with Telefónica.

Under the terms of the Precautionary Measure, Telefónica is also obliged to allow other operators to connect to a distant access point, i.e. chose the exchange at which they want to be connected in each of the 109 areas in which Spain is divided. Until now, it has only been possible to connect at a single pre-determined exchange in each of these areas.

The new entrants consider that the margins provided for by the Precautionary Measure, as amended on 26 July 2001, are not sufficient for them to effectively compete with Telefónica. Some new entrants also point out that Telefónica of Spain, Telefónica Data and Terra jointly dominate the market, and that the Precautionary Measure adopted by the regulator overlooks this aspect.

The incumbent operator, on its part, rejects the system of "guaranteed margins" to the new entrants established by the Precautionary Measure and the automatic "passing over" of efficiency improvements in its retail service to the conditions applicable under the wholesale product.

Eight operators have been licensed to provide fixed wireless access. Seven of the nine licences granted are operational, and it is expected that operations under the remaining two will start soon. The new entrants stress that the situation of these operators has been critical, notably due to the increases in the spectrum reservation charges effected by the Budget Law for 2001. These operators have stressed that the increases in the spectrum charges do not respect the principle of technological neutrality and obstruct local access competition, because the increase in the charges discriminates them as compared with Telefónica who controls the fixed access market and does not need frequencies to provide its services. The draft Budget Law for 2002 foresees a reduction of approximately 90% in the spectrum reservation charges levied on these operators as compared with 2001. The situation of these operators has also been made difficult due to difficulties in obtaining rights of way (for more details, see "Rights of way" below).

Cable operators, which are bound by substantial investment commitments under their licences, are also suffering from difficulties in obtaining rights of way as they try to deploy new infrastructure. They stress that the situation affects the viability of their business plans.

#### **UNIVERSAL SERVICE/CONSUMERS/USERS**

Telefónica is required to provide universal service until 2005. On 19 July 2001, the CMT issued a decision regarding the net cost of universal service in Spain. The regulator rejected Telefónica's

estimates of this cost for the years 1998 and 1999 (which the company had submitted in April 2000), and ruled that the company had not suffered from any competitive disadvantage.

Regarding the evaluation of the net cost of universal service in 2000, Telefónica will have to analyse the results of its operation in each “telephone area” and the regulator’s determination contains instructions as to how to calculate the net cost of universal service in non profitable areas and as concerns disabled users and users with special needs.

Telefónica has appealed against this Decision, notably because it refutes the CMT’s arguments around the absence of a competitive disadvantage based on the evolution of the company’s market shares. According to Telefónica’s estimates, the yearly net cost for providing universal service has been in the order of EUR1.15 billion in 1999.

Two draft Regulations have been prepared that aim to complete the regulation applicable to universal service in Spain. One of them concerns the prices of the services that are part of the universal service requirements. The other regulation addresses issues such as the maximum deadlines regarding the provision of a connection to the network, the continuity of the fixed public telephone service, the offer of public pay phones, the access to the fixed public telephone network by disabled users and users with special social needs, and the affordability of universal service.

Also, two draft Ministerial Orders have been prepared that regulate the opening to effective competition of the directory services and that will allow operators and providers of directory services to access fixed and mobile subscriber data through special short numbers.

The Spanish authorities continue to examine what would be the most appropriate way to replace the TRAC (Telefonía Rural de Acceso Celular), an analogue rural telephony service, which has some 250 000 customers. The TRAC does not allow data transmission rates superior to 2400 Bit/s, and its inability to provide efficient internet access is the subject matter of numerous consumer complaints. Its replacement will require significant investments, and co-financing from the Community’s Structural Funds has been requested to this effect. As a general principle, and taking into account the possible public co-financing, the new entrants stress that the services that will replace the TRAC (which is currently operated by Telefónica) should be submitted to competitive tendering.

A department within the State Secretariat for Telecommunications and Information Society is responsible for handling complaints from end-users. It must ensure the enforcement of the relevant legislation within a deadline of three months. Another procedure for handling complaints also exists: the Consumer Arbitration Panels (Juntas Arbitrales de Consumo) constitute, according to the consumers’ organisations, an easily accessible (both in terms of price and availability at the local and regional levels) dispute resolution procedure.

The consumers’ organisations consulted in the preparation of this Report expressed satisfaction with the strict rules governing the quality of voice telephony, but regret the delays in the collection, and the reticence of operators as concerns the submission of the relevant data. Other areas where a satisfactory situation and/or progress are noted concern, for example, the level of itemisation of operators’ bills and the continuity of public fixed telephone service.

On the other hand, they expressed concern about the effects of the tariff rebalancing process in terms of increased line rental charges, the effects of electromagnetic emissions on human health, the high mobile and fixed-to-mobile charges, the handling of unsolicited calls for direct marketing purposes, and the segmentation of the digital television services market.

## **MOBILE SERVICES / FREQUENCIES**

The end of 2000 and 2001 are regarded by the mobile operators as a period of uncertainty in the mobile sector. Obviously, there are market developments that are not specific to Spain and that are felt in all Member States, in particular the delays encountered in the development of third generation mobile services (3G). The operators however draw a parallel between the slowing down

of the growth of the Spanish mobile market and some regulatory decisions adopted and/or announced in the last year.

The Spanish authorities organised a wide public consultation in April 2001 to collect the views of the stakeholders regarding 3G. As a result of the consultation, the authorities postponed the official 3G launch date from 1 August 2001 to 1 June 2002. Some operators question the viability of this new date, because they are not convinced that the market will be ready by then. They are also concerned about the fact that there will be an uncoordinated launch of services across the Member States, which may favour some operators as against others.

The Spanish authorities consider that the introduction of 3G should be facilitated by the deployment of 2,5G/GPRS. Taking into account the existing GSM operators' need to have access to more frequencies to be able to offer such advanced services, the authorities decided to postpone the award of two additional DCS 1800 licences, which they had contemplated at the end of 2000, and made some additional frequencies available to the mobile operators in July 2001. It should be noted the authorities' plans to award two more 2G licences raised serious concerns among the existing 2G operators, because they feared that the new licensees would be given part of the frequencies that were assigned to them in their 1998 licences.

The 2G licensees are currently launching GPRS/2,5G commercial offers throughout the country. They stress that the use of GPRS technology will lead to increases in the traffic on 2G networks, and that the authorities should give them the entire DCS1800 band reserved in their 1998 licences.

National 3G-2G roaming is guaranteed by the obligation for operators that hold a GSM licence to provide national roaming to operators who obtain a third generation mobile licence. Regarding 2G-2G roaming, when the third Spanish mobile operator (Retevisión) has completed the deployment of its network, 2G-2G roaming will no longer be possible and each operator will have exclusive control of its own network.

There are no obstacles to infrastructure sharing in the legislation. The operators note, however, that infrastructure sharing has proved difficult in practice, and that clarifications are required from the authorities as to the extent to which it is permissible without breaching the licence conditions.

When the 3G licences were awarded through a beauty contest, each of the licensees paid a once-off amount of approximately EUR130 million. Some EUR5 million were paid in terms of spectrum reservation charges, which are payable on an annual basis. The operators claim that due to the award procedure used in Spain, they have more investment commitments and guarantees than operators in other Member States (e.g. a commitment to cover 90% of the population by 2005). The Spanish Budget Law for 2001 substantially increased the spectrum reservation charges that are levied on all of the operators using radio frequencies. The largest increases concerned the mobile operators, and the 3G licensees in particular. The charges that the 3G licensees have to pay in 2001 are more than thirty times higher than the charges for 2000 set in the licence specifications. Taking into account the magnitude of these increases and the heavy investment commitments made, the operators stress that their business plans are seriously affected.

The operators claim that such increases in the spectrum reservation charges could not be foreseen and that they create legal uncertainty notably due to the fact that henceforward, these charges will be reviewed in the annual budget laws. They also note that the increases penalise the most new and innovative technologies. The new entrants also consider that the retroactive increases in the charges distort competition as between the operators, because the latter are not in the same position, financially and otherwise, to assume this increased charge.

The Spanish authorities stress that according to the telecommunications law, the spectrum reservation charges must reflect the market value of spectrum. They point out that the changes effected by the Budget Law for 2001 concern the level of the charge, but they do not change the structural elements of the charge or the general principle governing it: the law foresees that the charge be modified as a function of changes in the market value of radio spectrum, and the



increases effected in the Budget Law for 2001 duly took account of the increased market value of spectrum, as reflected by the proceeds of the 3G auctions in the UK and Germany.

The draft Budget Law for 2002, as proposed by the administration, foresees an average reduction of 65% of the spectrum reservation charges as compared with 2001 and the introduction of more stability and predictability into the system in that the charges could not increase by more than 5% on an annual basis until 2006. Operators find these reductions insufficient and stress that the authorities should commit to ensure the stability and predictability of the level of the charges for the whole duration of the relevant licences. They also question the methodology used in the draft Budget Law 2002 for setting the new level of the charges.

The Spanish authorities have followed a forward-looking approach in a number of initiatives to encourage competition in the mobile sector that go beyond the current minimum requirements of the Community framework. Mobile number portability is obligatory and an obligation has also been imposed on mobile operators with SMP to implement carrier pre-selection for international calls from 1 December 2000.

Telefónica is concerned about the strictness of the obligations imposed on the mobile operators. It is not convinced that there is a genuine need for the above-mentioned numbering facilities in the market, and questions their cost/benefit ratio. It also stresses that there is double regulation regarding mobile termination prices in that mobile operators with SMP must comply with the cost orientation requirement, but at the same time, its fixed to mobile calls are subject to a price cap. The following price decreases are foreseen in this framework: 13% in 2001 and 13% in 2002.

The new entrants, on their part, consider that the mobile termination prices are excessive and expect them to decrease substantially after the CMT has scrutinised the cost accounts of mobile operators with SMP.

With the objective of increasing competition in the mobile market, the Spanish authorities have prepared a draft Regulation that creates a new category of licence for mobile virtual network operators (MVNOs). Established mobile operators consider that the draft provisions do not make it sufficiently clear that the MVNOs' access to the networks of the network operators should strictly be based on commercial negotiations. They also refer to the lack of harmonisation at the EC level of the rules applicable to MVNOs, and stress the importance of fair competition conditions as between the Member States. Pending the adoption of this Regulation, re-selling of mobile services is allowed under a provisional authorisation.

## TARIFFS

At the end of July 2000, the Government's Executive Committee for Economic Affairs adopted an agreement establishing a new price framework for the services provided by Telefónica. Under this framework, certain prices are regulated by a price cap, others are subject to maximum rates, and others need to obtain the explicit approval of the competent authorities (on a case by case basis). This framework was amended by the Order of 10 May 2001, which establishes a new regulatory framework for prices and new efficiency factors for fixed telephony service and fixed to mobile call services in each of the years from 2001 until end of 2003.

These measures allow for more flexible procedures for modifying the prices of the incumbent's tariffs by implementing the principle of "administrative silence", which entails that if the authorities do not take a position on the incumbent's proposals within a specified time frame (e.g. 15 days for regulated tariffs and discounts of less than 15% to the tariffs of long distance communications, and two months for proposals regarding internet access calls, service packages and discount plans of above 15%), Telefónica can implement the modifications.

There is a pending infringement proceeding launched by the Commission in 1998 regarding the absence of rebalancing of the incumbent's tariffs and, more specifically, the lack of cost orientation of the line rental, which may raise competition problems in the context of local loop unbundling.

The Spanish authorities consider that the measures adopted in May 2001 complete the tariff rebalancing process in Spain.

The new entrants note that the regulatory framework for Telefónica's tariffs allows for a high degree of freedom in the setting of call charges. They claim that there is a price squeeze between the incumbent's retail tariffs and interconnection charges, and that this is aggravated by the way the tariff rebalancing process is conducted in Spain. The new entrants note that given the stringent price cap imposed by the regulatory framework (inflation -9% in 2001 for a basket of services ranging from line rental to local and long distance calls), increases in the line rental charge must be offset by important decreases in call tariffs, especially for long distance communications. They consider that the combination of these decreases and the lack of proportional reductions in the incumbent's interconnection charges make the conditions for competition tougher for them in this segment of the market. They also claim that Telefónica's per minute local call tariffs are among the cheapest in the EU and that they are not cost oriented, and therefore call for increases in these tariffs.

### **COST ACCOUNTING**

The principles, criteria and conditions for the development of the cost-accounting systems of SMP operators were laid down in July 1999. Decree Law 7/2000 of 23 June 2000 established an obligation on SMP operators to present their cost accounts by 31 July of each year, in accordance with the criteria adopted by the authorities. Telefónica presented its 1999 cost accounts based on historic and current costs on 31 July 2000 and 30 September 2000 respectively.

On 22 February 2001, the CMT issued a decision regarding the verification of the cost accounts of Telefónica and approved them with certain changes (e.g. regarding depreciation plans). The regulator considered that they met the above-mentioned requirements and criteria to a reasonable extent. The changes mandated are to be implemented in subsequent reporting periods.

This year, Telefónica submitted its accounts for 2000 already on 11 June 2001 so as to avoid a situation in which the regulator would have set the RIO 2001 prices without any cost references.

Telefónica Móviles and Airtel-Vodafone have been designated as having significant market power in the mobile telephony market and the national market for interconnection. These operators presented their cost accounts to the regulator at the end of April 2001. The CMT is working on a model that is expected to be finalised by the end of this year.

### **LEASED LINES**

According to data received in the context of the preparation of this report, the monthly rental charge levied in Spain for leased short-distance (interconnection) lines deviate significantly from the Commission's recommended price ceiling as concerns 2 Mbit/s, 64 Kbit/s and 34 Mbit/s 2 km and 5 km lines. Also, the prices of national leased lines (be it for 64 kb/s, 2Mbit/s or 34 Mb/s, and for all distances) continue to be above the EU average. Regarding international leased lines, the prices to near EU countries and to the USA tend to be above EU average, while the prices of the lines to distant EU countries tend to be below EU average.

National leased lines are subject to a price cap. National leased lines are expected to decrease, as concerns analogue lines, by 16% in 2001 and 2002, and by 7% in 2003, while digital lines are to decrease by 7.5% in 2001 and 2002 and by 4% in 2003. International leased lines are subject to maximum prices. According to the incumbent operator, the prices of international digital circuits have decreased by 25% in 1999 and it is estimated that they will decrease another 20% in 2001 (as concerns 2 Mbit/s and 34 Mbit/s lines).

The new entrants continue to complain about the prices of leased lines, in particular interconnection half circuits, which are among the highest in the EU. They also complain about the fact that there has been no wholesale offer for the provision of half circuits, and that operators have been forced to contract half circuits under the same conditions as end-users. In addition, they have stressed that the service level agreement (SLA) offered by Telefónica is unsatisfactory. Still according to the new

entrants, the incumbent operator engages in anti-competitive practices, e.g. by offering fidelity discounts to its end customers and by servicing its end-users more rapidly than it services competing operators.

The reference interconnection offer (RIO) for 2001 brings some improvements to the situation. It includes a wholesale offer for half circuits, and leased line interconnection is extended to 34Mbit/s and 155Mbit/s lines. The SLA is improved: delivery and repair terms are set, and penalties are established in case of breach of these terms. Service availability and quality levels are also introduced, as is the possibility for interconnection in both Telefónica's and other operators' premises. Reporting obligations are imposed on the incumbent operator. The RIO establishes provisional prices that will be applicable until the final prices are set, based on an analysis, by the CMT, of the prices applied by incumbent operators in other Member States.

The new entrants welcome these developments, but also note that some of the prices for interconnection half circuits included in the RIO are higher than the existing prices. They call on the regulator not to set the final prices as a function of the average price level in the EU, but as a function of best practice.

Following its leased lines sector enquiry, at the end of 2000, the Commission opened an *ex officio* procedure to investigate the competitive provision of international leased lines in Spain. As a first step, the Commission verified the extent to which national authorities in Spain would be ready to take the lead in this investigation under national regulation and/or competition law. Meetings were held with the Spanish authorities in which the CMT indicated that it would deal with the problem. Thereafter, the CMT has taken steps to meet the Commission's concerns. Firstly, it effected the above-mentioned changes to the RIO. Secondly, it has launched a thorough review of the Spanish leased line markets and an investigation of allegedly discriminatory behaviour on part of Telefónica. The results of the leased line file opened by the CMT are expected to be available by the end of this year.

## NUMBERING

Spain had a deferment until 1 December 2000 to implement carrier pre-selection. National measures were adopted to implement these facilities gradually ahead of this deadline, but delays were encountered in the process, and local (metropolitan) carrier pre-selection has only been effectively available from mid-February 2001. By the end of September 2001, some 1 260 000 numbers had been pre-selected.

The CMT has intervened several times to expedite and facilitate the introduction of these facilities. In July 2000, it established a queuing system to manage the backlog of requests. In late 2000, it issued a Circular which established a provisional abridged mechanism allowing pre-selected long distance carriers to include metropolitan calls in the carrier pre-selection services to their customers through a simplified administrative procedure based on tacit customer consent. Another Circular issued in June 2001 revises and consolidates this Circular and another Circular from 1999, thereby uniting in one legal instrument the various carrier pre-selection formulae available.

New entrants remain concerned about difficulties in implementing carrier pre-selection in practice. They note that the introductions of local carrier pre-selection has encountered technical difficulties, which delay provisioning, and that the activation periods for long distance pre-selection have exceeded the five day-limit established in regulation. They also claim that up to a third of the requests for carrier pre-selection are rejected by the incumbent on the grounds that the customer data presented by the pre-selected operator does not match the data that is in the incumbent's possession, and that the incumbent operator has been attempting to recover customers that have decided to preselect another operator. A complaint was lodged with the CMT to denounce these recovery practices, but was rejected on the grounds that there was not sufficient evidence.

Fixed number portability has been implemented by devising an intelligent network solution, which is based on a “reference entity” that houses a centralised database of ported numbers. This system was validated in October 2000, and the first commercial offers of portability were launched in February-March 2001. By September 2001, some 80 000 fixed numbers had been ported. Some 193 000 mobile numbers have also been ported.

In April 2001, at the request of a group of operators, the CMT made a determination regarding the different retributions in the context of fixed number portability. It established that the costs relating to the operation of the “reference entity” are to be divided between operators on a proportional basis. The one-off (lump sum) charge for an individual port is borne by the pre-selected operator. As a general rule, the costs related to the establishment and transport of the call do not give rise to any economic compensation of the incumbent operator. Telefónica has appealed against this decision.

In the beginning of July 2001, a complaint was lodged with the regulator regarding the number of number portability requests that the incumbent processes on a daily basis. In April 2001, the quota had reached 800 daily ports, but the new entrants considered this insufficient, while Telefónica claimed that the system did not allow it to extend this quota. In September 2001, the CMT introduced two formulae (ordinary and extraordinary) setting the quota to be applied in each case, and set the level of the compensation to be applied in case a request is cancelled or where all attempts to resolve the issue between the parties have been exhausted.

## RIGHTS OF WAY

Obtaining rights of way is considered by the Spanish market players as a critical problem: there are major differences in the numerous regulations affecting rights of way in different regions and localities, which create confusion and substantial administrative work, and different financial conditions are also set. Operators note that this situation generates operational obstacles and financial losses.

One particular and growing problem has been the campaigns that depict the effects of human health of the electromagnetic radiation emitted by operators' antennae. Installation works have been paralysed and, in some places, antennae have even had to be removed. The operators stress the negative consequences of these obstacles in terms of service quality and network coverage.

The operators are concerned that the problems owe to the fact that there are several bodies involved in the regulation and control of the telecommunications sector at the central level, that there is a lack of coordination between central, regional and local administrations and a general lack of coordination between urban planning and telecommunications legislation.

They however welcome the NRA's efforts to improve the situation. The NRA has, for example, been investigating the content of municipal orders and regulations affecting rights of way with a view to avoid the imposition of conditions contrary to the General Law on Telecommunications and Royal Decree 1736/1998, which regulate rights of way in Spain. Several municipal measures have already been appealed against on these grounds. Following complaints submitted by operators, the NRA has also intervened on an ad hoc basis vis à vis other levels of administration to enforce the operators' rights under the telecommunications legislation.

The General Law on Telecommunications foresees the possibility that operators share infrastructure. To this effect, there is a special procedure, which is governed by the principles of transparency and non discrimination. A draft Ministerial Order of general scope has been prepared to further develop this procedure. The regulator has to arbitrate disputes in this area.

The operators have found the procedures for shared occupancy of the public domain to be slow and complex, notably due to the fact that administrations are not bound by any deadlines and operators are allowed to withdraw from or adhere to procedures under way at any stage of the process.

Another Regulation has recently been adopted regarding rights of way, exposure limits and restrictions on electromagnetic emissions. It implements the Recommendation of the Council of the European Union of 12 July 2001. Market players call for an EC framework directive in this area.

#### **DATA PROTECTION**

The State Secretariat for Telecommunications and the Information Society is responsible for the supervision of the obligations put on the telecommunications operators in this area. It coordinates its activities with the “Agencia de Protección de Datos”, an independent data protection authority.

Market players have expressed concern that Spanish legislation is more strict and restrictive than Directives 95/46/EC and 97/66/EC, and that there is some confusion among operators, in particular mobile operators, as to the precise rules that apply to them and how these rules should be implemented

An “opt-in regime” applies to unsolicited calls used for direct marketing purposes using automated calling systems without human intervention. There are also “Robinson lists” for direct marketing using means other than those mentioned above, which are managed by the Federation for Electronic Commerce and Direct Marketing.

#### **INTERNET**

There are some 3.2 million subscribers to internet access services, which is 44% more than in 1999. The Telefónica companies, Retevisión and Wanadoo represented respectively 31%, 15% and 12% of the total revenue from internet services in 2000<sup>120</sup>. According to Telefónica, its competitors have concentrated their market strategy during 2000 on the internet and have reached 30% of this market. As a result, it considers that it has lost 12.2 percentage points of telephone traffic in one year.

Decree-Law 7/2000 of 23 June 2000 introduced flat-rate internet access via the fixed telephony network. By Order of 31 October 2000, a flat-rate interconnection charge for internet access was mandated. The new entrants consider that there is a price squeeze between the incumbent operator’s flat-rate internet retail tariff and the flat rate interconnection charge. According to data provided by the incumbent operator to the regulator, there were some 550 000 subscribers to the flat rate internet service in August 2001, of which some 292 000 were Telefónica’s customers.

In October 2000, the regulator assigned a specific range of numbers (908 for non flat rates and 909 for flat rates) to be used for internet access services. This is welcomed by the operators, as the numbers allow to immediately identify calls directed to the internet and route traffic accordingly.

#### **DIRECTIVE 95/47/EC**

The turnover of the Spanish audiovisual industry grew by 8% in 2000, much of which resulted from an important increase (29%) in the number of the subscribers to pay television services, which now reaches nearly 3 million.

Digital television (DTV) penetration is in the order of 16%, which is above EU average. DTV has mainly been developing on the basis of pay TV services delivered via satellite. The two satellite platforms (Canal Satélite Digital and Via Digital) had a combined 1.6-1.9 million subscribers in the middle of 2001.

Regarding digital terrestrial television (DTTV), a beauty contest for three multiplexes was organised in January 1999, and the licence was given to Quiero TV. The company has some 250 000 subscribers (and a 0.4% market share of the pay-TV market), but nearly universal coverage. Most existing analogue broadcasters were excluded from the contest, but the national analogue broadcasters (TVE and the three private broadcasters Antena 3, Telecinco and Sogecable) are supposed to start broadcasting in digital no later than April 2002. Two new licensees (Net TV and

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<sup>120</sup> The figures quoted here are taken from the CMT’s Annual Report for 2000.

Vevo TV) are expected to start operating a free-to-air programme by June 2002. The planning for DTTV is that an 80% coverage of households should be achieved by June 2002.

There are three main cable television operators/groupings of cable television operators (Telefónica Cable, the AOC/Auna Group and Ono), which have a combined 300 000-350 000 customers. Cable operators have a share of 1.9% of the pay-TV market. The roll-out of digital cable television has been slow, and the cable operators' situation remains uncertain due to the competition exerted by both satellite and DTTV services and by the incumbent operator's ADSL roll-out.

The national legislation specifies that operators must use decoders that are immediately and automatically interoperable. This can be achieved through the technical characteristics of the decoders (Multicrypt) or through a Simulcrypt agreement between the parties. At the request of an operator, the CMT can set the legal, technical and economic conditions relating to the agreement where the decoders are not open from a technical point of view and the operators cannot reach an agreement. These conditions must be fair, reasonable and non discriminatory.

Canal Satélite Digital is using decoders with embedded conditional access systems that require that the Simulcrypt interoperability procedure be implemented, based on a commercial agreement, to allow its decoders to be used by other operators. However, no such agreements have been concluded so far. Via Digital, Quiero TV, Madritel and Euskaltel have implemented a Multicrypt module in their decoders.

In the spring of 2001, the CMT organised a public consultation on the shared use of decoders. The consultation document notes that the DTV markets are vertically integrated and that customers are "locked" in particular pay-TV platforms, because proprietary decoders do not allow access to alternative platforms. The document raises the question as to whether interoperable decoders giving access to all TV platforms would increase horizontal competition, and seeks the consulted parties' views on the usefulness of regulatory intervention to ensure the right of consumers to access all offers available on the market. One option tabled is the imposition of a "universal decoder", with prescriptions adopted regarding all elements susceptible of shared use (conditional access systems, applications programme interfaces, navigation tools, return channels, etc.).

The regulator has not yet drawn any final conclusions from this consultation.

In the context of the preparation of this Report, market players have stressed that the conditions for sharing decoders should be freely agreed between the parties. A working group has been set up within the ANIEL industry association to look into these issues. In this context, an agreement has been reached among terrestrial and satellite operators, which will soon be published, regarding the voluntary implementation of the MHP standard.

Cable operators have not participated in these discussions. They consider that the market and the technologies are not yet stable, and that there is no single solution for cable, satellite and terrestrial platforms. For this same reason, and taking into account the investments made (sunk costs), they also reject any attempt by the regulator to mandate a compulsory sharing of decoders, since they consider that this would introduce delays in the launching of new services by new entrants.

## 3.6 FRANCE

### OVERVIEW

#### ***Market and regulatory framework***

In 2000, positive regulatory developments contributed to significant growth in all sectors, particularly in mobile and data communications. By the end of 2000 there were 104 licensed operators who contributed to 14% growth in turnover in the telecommunications sector from the previous year, and turnover now represents 2.3% of French GDP.

Growth has continued in 2001 at a slightly lower level, with annual turnover at the end of the first quarter of 2001 up 2.9% on the twelve months ending December 2000. The growth in fixed telephony and associated services has slowed, and the number of fixed operators has remained at the same level as last year, in part due to consolidation in the market. Other sectors continued their healthy growth into the first quarter of 2001, especially internet access and data communications. The mobile sector has continued to grow very impressively into the third quarter with market penetration, at nearly 58%, coming close to the EU average, and with the number of mobile lines (34.6 million) now exceeding the number of fixed lines.

Despite these positive developments and the efforts of the NRA over the last year, only 1% of the French population has a choice of provider of local access services, and new entrants have not been able to benefit from the attempts by the regulator to open up markets. Most of the growth in high-speed internet access has been accomplished by the incumbent, France Télécom (FT), especially in ADSL services. When added to the failure to introduce local call pre-selection, this means that there is little foothold in the market for operators wishing to compete with FT on a full range of services.

After years of delay, France took a major step in July 2001 towards completing the transposition of the EU telecommunications regulatory framework into French law. A small number of implementation measures must now be adopted.

#### ***National regulatory authority***

Over the last year, France has witnessed an increasingly vigorous approach by the regulator, ART, to interconnection and local access issues. This has included regular interventions and, where necessary, sanction procedures in regard to local access and ADSL. The ART has also approved a new cost accounting system for the different regulated tariffs. There have been continuing criticisms about certain aspects of the ART's approach to dispute resolution, but the real problem appears to be the number of appeals against ART decisions and the lack of power to enforce decisions or implement sanctions where these are not respected.

#### ***Interconnection***

One indicator of the difficulties faced by ART is the date of adoption and publication of the incumbent's reference interconnection offer. RIO 2001 was published in October of the preceding year but the same timetable was not respected for RIO 2002, and new entrants highlight ART's inability to impose modifications to the incumbent's offer. There have been problems in implementing certain elements of RIO 2001, such as local call pre-selection and FRIACO, but ART has at least been willing to signal its commitment to these services by including them in the offer.

#### ***Local access***

The introduction last year of the Decree on Unbundling, together with the firm

***and ADSL***

commitment of the ART to its responsibilities in implementing the EU Regulation, showed the determination of the French authorities to introduce a fundamental change in the French market. The delays encountered in regard to unbundling and competition in ADSL services, however, demonstrate the limitations to the effectiveness of NRA involvement in the absence of clear and effective enforcement procedures. At the end of October 2001 there are still no unbundled lines, and while five contracts for collocation have been signed, new entrants complain of a whole series of problems with the tariffs and technical conditions for unbundling applied by FT. At the same time, FT has continued to develop its retail ADSL offer and has fought a long rearguard action against modifying its wholesale tariffs for ADSL. Until very recently, this has effectively prevented other operators from competing on the ADSL market, and appears to have pre-empted any interest in developing shared access.

Some of the operators awarded wireless local loop licences last year have encountered financial problems leading to changes in structure and delays in network roll-out, but roll-out is nevertheless continuing in the larger population centres, and some services are commercially launched. Depending on the economic outlook, this should allow WLL to act as a viable alternate for local access in France next year.

***Leased lines***

There are concerns in the related sector of short distance leased lines, and in particular tail circuits, where both tariff and supply conditions are a key factor in determining the capacity of new operators to compete in broadband and value-added services.

***Mobile telephony***

In mobile telephony, market penetration and traffic have continued to grow impressively. By the end of September 2001, the penetration rate for mobile was 57.6% of the population, which brings France closer to the EU average and means for the first time that the number of active mobile lines exceeds the number of fixed lines.

There were major concerns about the failure to attract more than two applicants for the award of 3G mobile licences. The authorities have taken radical action to remedy the situation by announcing a reduction of the licence fee from €4.95bn to €619m and introducing instead a charge related to annual turnover; the licence duration has also been extended to 20 years. The authorities have announced that they will shortly be launching a second call for applications to allocate the two remaining licences. There appears to be a general consensus that roll-out of 3G will not start until 2003 at the earliest, in part because of equipment shortages.

***Tariffs***

There have been problems in the mobile sector with regard to tariffs, with continuing difficulties in bringing about fixed to mobile call termination rates that are perceived as equitable by new entrants. The new FT cost-accounting system is in place, and it is hoped that the data will now be fully used in drawing up regulated tariffs. New entrants are dissatisfied with the shared responsibilities between ART and the Ministry for setting tariffs, particularly where decisions on retail tariffs can undermine pricing policy in the interconnection sector.

***Consumers and users***

A number of the problems referred to above – the failure to introduce local call pre-selection, call termination rates for calls to mobile, as well as the costs to alternative operators of short distance leased lines from France Telecom – are clearly reflected in the choice and tariff conditions available to consumers. France has one of the lowest ratios of operators per head of population in the EU, while FT's virtual monopoly on bitstream access means that the number of ADSL lines is lower than in any of the other large Member States. There are still some problems with unfair



contract clauses, particularly in mobile.

### **36. National regulatory authority**

Over the last year, an increasingly vigorous approach has been adopted by the regulatory authorities to interconnection and local access issues, with a view to increasing competition and lowering barriers to entry. This has included regular interventions and, where necessary, sanction procedures in regard to local access, although some frustration is expressed by new entrants at the apparent inability to make intervention count in relation to France Télécom in both the market for unbundled local access as well as for ADSL services.

This has led to criticisms of certain specific aspects of the ART's approach to dispute resolution, and the fact that significant energy has to be devoted to motivating applications and decisions alike. The real problem appears to be the necessary emphasis placed on procedure and the motivation of a decision in order to ensure that it is fully substantiated and is not unduly exposed to appeal on procedural grounds. Nevertheless these requirements can have the effect of delaying intervention and inhibiting the rapid enforcement of sanctions in case of non-respect of ART decisions. The ART has pointed out that these procedures have not resulted in substantial breaches of the deadlines set down in French law, and holds the view that the number of cases presented to it is an indication that the procedures are considered appropriate by new entrants.

As reflected in previous implementation reports, until now the ART has not had the power to intervene on its own initiative in interconnection negotiations. Instead the ART has only been able to intervene at the formal request of one party and only after negotiations have demonstrably failed - putting a burden on new entrants to justify the need for regulatory intervention and delaying an effective resolution of disputes. While EU policy is to give a priority to commercial negotiations, new entrants point out that this situation has given rise to considerable delays before the ART can address the real issues that are blocking effective interconnection.

As part of the recent package of transposition measures French legislation regarding the ART's powers has now been brought into conformity with the EU requirements, and the ART may in theory intervene on its own initiative. For this to become effective, however, the ART would need to modify its rules of procedure, to allow greater freedom of action to apply, so that the more restrictive procedures used heretofore for interconnection do not affect the ART's role in relation to unbundling.

This appears to be necessary as, in order to be able to make a strong case to the ART and to avoid having a subsequent ART decision appealed, new entrants are inhibited from signing an agreement with FT. This can add to the delays in market opening, and has been a particularly salient feature in the delays in bringing competition to the ADSL market. Otherwise new operators may be forced to accept conditions that they do not consider to be economically justifiable in order to proceed, although a procedure for requiring interim measures exists that should allow new entrants to proceed in the market while awaiting the outcome of the ART's investigation.

New entrants also placed great emphasis on the need for the ART to be able to ensure effective implementation of its decisions in good time, citing the example of unbundling where certain elements of ART decisions have not been respected by FT.

### **37. Licensing**

In the Sixth Report the Commission noted the apparently onerous nature of some procedures that relate to an existing authorisation. While larger operators have come to accept the licence application procedures, they are still unhappy with certain features such as the difficulty in changing the titular name of a licence and the fact that it is impossible to transfer a licence between companies in a

business group. The French authorities point out that there are considerable variations in the time required in changing the name of a licence-holder or taking account of significant changes in the shareholding of a licensed operator, depending on the circumstances. A more serious issue appears to be the position of small and regional operators who, on top of the proportionately higher licence costs for a regional licence, feel overburdened by the requirements for extending or adapting regional network licences. While much of the information required is already available to them, the ART points out that the turn around for such applications is often much quicker than the statutory time limits in national and EU law.

### **38. Interconnection**

One indicator of the difficulties being faced by the ART is the timing and adoption of the annual reference interconnection offer. The 2001 catalogue was published at the end of October 2000, but in 2001 the ART was not able to maintain the same timetable for RIO 2002.

This reflects the inability of the ART to modify the reference offer unilaterally. However, the ART has in the past returned FT's proposals with an indication that the draft RIO cannot be approved unless certain elements are amended, although this can lead to delays in the procedure, or it has made its approval subject to certain conditions. New entrants are still critical of the procedures followed in drawing up the reference offer, particularly the fact that they are not consulted or informed of the later stages of negotiations between FT and the ART.

One example of the latter arose with third-party billing, the service of billing of end users by FT on behalf of service providers whose customers use the FT local network to connect to their services (call centres etc.). It was included in RIO 2000 but never utilised by other operators because of problems with FT's insistence on a maximum charge that can be applied to customers by service operators and because of ethical problems. The ART made its approval of the revised terms of the 2001 interconnection offer subject to several conditions, but the issue quickly gave rise to further dispute, with the ART being called on to intervene on a breakdown in negotiations only weeks after the new offer came into effect. In May 2001, the ART ruled on this case by setting a tariff that now appears acceptable to most new entrants, but removed the obligation on FT to offer debt recovery to operators using the service. FT was also obliged to place its own downstream services on a separate page of the bill together with those of other service providers. FT appealed this decision, but the Court of Appeal refused their request for a delay in implementation. While the reference offer as amended by the ART ruling was to be implemented in September, these developments mean that third party billing has effectively been delayed as an interconnection-related service for two years.

Another important interconnection issue is the development of fixed or capacity-based internet access (known as FRIACO), which should help in the further development of competitive internet access services. In anticipation of RIO 2002, FRIACO was supposed to be operational from September 2001, but new entrants have disputed the tariffs and technical conditions that were to be applied, and the fact that pay as you go customers are not covered. The situation has been complicated by a public commentary suggesting what the retail tariff should be, which new entrants believe would not be possible in light of the tariff to be charged to them by FT. They feel that FT's 2001 tariff reflects great uncertainty as to the correct cost factors to be taken into account, but doubt whether the service will be of interest to users (or to service providers) if they were to apply a retail tariff based on the real cost to them. FT have proposed a new tariff for 2002, one that they state is based on the costs identified in the new LRIC accounting model developed by FT and the ART.

There is some nervousness among new entrants about the proposal under consideration to use the new cost-accounting system to move to a system of price caps for interconnection. The French authorities have indicated that no decision has been reached on this issue.

### **39. Local access competition, including implementation of the regulation on local loop unbundling and bitstream access**

The introduction by the French government last year of a Decree on Unbundling, together with the firm commitment of the ART to its responsibilities in implementing the EU Regulation, marked a concerted effort by the French authorities to launch competition in local access in 2001. However, despite their efforts there have been serious delays in regard to unbundling and competition in ADSL services. By the end of October, only a few lines have been unbundled and there have been no examples of shared access. Experience over the last year has demonstrated the limitations to the effectiveness of ART involvement in the absence of clear and effective sanction procedures. This is because, despite a series of interventions by the ART and four versions of the reference offer from FT, there have been repeated problems with the tariffs and the technical implementation of unbundling. These problems are clearly the most preoccupying obstacle to developing competition and fulfilling the objectives of e-Europe to which the French authorities have firmly committed themselves.

New entrants perceive FT to be systematically delaying the availability of unbundling and seeking to render it commercially non-viable for other operators, and accuse FT of discrimination. As a result of this situation, while 39 operators expressed a firm interest in unbundling in the course of tests in 2000, by the middle of 2001 only nine operators remained as potential candidates for unbundling. And of these, only five have deemed it appropriate to sign an unbundling contract to allow the actual process of unbundling to go forward. The process is even more discouraging for small and regional operators, who are effectively excluded from the unbundling market because of the cost and onerous nature of the collocation conditions, despite the fact that they could provide a motor for business generation in niche markets and target areas where none of the major operators have expressed an interest.

The ART points out that it has acted positively to introduce unbundling but that the same difficulties are being experienced in other Member States. At the end of October 2001, 83 collocation sites have been made available to the operators in response to their orders, and new entrants were beginning to install and test equipment.

Initial delays were caused by FT's failure to provide the information necessary for new entrants to assess whether they should make applications for collocation at individual sites and attention then shifted to the technical elements of its unbundled offer. The French authorities acted quickly to address these delays, first by issuing an injunction forcing FT to release the necessary collocation information in a timely manner, and then to force FT to revise its reference offer and to set tariffs which are comparable to the EU average established so far. FT amended its offer, but it failed to comply fully with the ART's decisions, concerning the once-off unbundling fee and the laying of cable to a distant collocation site, which it appealed. There are also still problems with the information necessary to determine the local switch corresponding to an individual customer, and the reference offer does not include the tariffs or access conditions necessary for the unbundling of a sub-local loop.

On 5 April the ART intervened for a third time to force FT to comply fully with its earlier decisions – within one week and under threat of financial sanction – and to modify certain parts of the new elements that FT had introduced into its revised offer. FT appealed the ART's decisions to the Conseil d'Etat but it was obliged to comply with them in the meantime, and the appeal was subsequently rejected. On 12 June the ART intervened again to oblige FT to comply fully with its earlier decisions.

Most recently, following this series of ART decisions, on 16 July FT published a revised reference offer, the fourth. The technical conditions applied to implement collocation still appear to new entrants to be a major obstacle to effective unbundling, in particular the requirement by France Télécom that the collocation room have separate and independent access. At the ART's request, however, the offer included alternative solutions where a collocation room was too expensive

including, theoretically, virtual collocation. The size of the collocation rooms is itself controversial, reflecting perhaps the optimism of the telecommunications markets over a year ago, and represents a high cost to individual operators where only one or two apply for facilities at an exchange. This cost may represent a sizeable barrier to entry and deter potential access seekers.

The ART have made considerable efforts to validate the conditions required by FT. Other operators are nevertheless unhappy that the underlying approach appears to have been to placate FT by accepting their proposed technical solutions and then trying to ensure that the main tariffs are equitable, rather than imposing a solution that would have made unbundling more viable for alternative operators. They have expressed the view that tariffs for fully unbundled lines, and for shared access do not allow for sustainable competition, and represent a flagrant price squeeze that acts as a strong disincentive to entering the market.

There are other problems that present themselves to operators trying to complete negotiations for collocation – not least the length of time taken to provide technical information concerning the collocation sites and to prepare the switches for collocation. FT have pointed out that while the operators that have signed agreements have made requests for collocation relating to 1% of their switches, but that these switches cover 16% of the total fixed lines in France and that collocation will be delivered before the end of the year.

Other difficulties in the view of new operators include the standard contract drawn up by FT, which contains conditions that are not part of the reference offer but which have a significant impact on the costs for the other operator, such as the level of risk to be insured by the new entrant in case of collocation or the laying of cable. The contract also contains a confidentiality clause that appears to go beyond the requirements of commercial confidentiality and means that the necessary transparency in the delivery of unbundling is hard to achieve.

At the same time, FT has continued to develop its retail ADSL offer and has fought a long rearguard action against modifying its wholesale and operator tariffs for ADSL. Until very recently, this has effectively prevented other operators from competing on the ADSL market, and appears to have preempted any interest in developing shared access. FT has developed a significant first mover advantage in the DSL market, with over 200,000 retail clients, and the offer from its subsidiary, Wandao, which bundles internet access and an ADSL line has proved an efficient tool to attract customers. Three other operators have now signed contracts to offer DSL services, and alternative offers are now beginning to appear on the market.

However, new entrants still express major reservations about the tariffs offered to them by FT for ADSL services. FT have a full array of tariff offers, including Netissimo for private and business customers, and IP and ATM products for other operators, but new entrants claim that France Télécom has constantly played on the interaction between the retail and various wholesale or resale prices to undermine the business models of its competitors. Furthermore, in June FT requested approval for a series of reductions for its retail offers and the IP/ADSL offer to internet service providers (ISPs), which other operators claimed would make it even harder to join the market other than as resellers of FT's service. The ART gave a favourable opinion on these proposals, on the condition that there be similar reductions in the Connect ATM offer to other operators. France Télécom complied with these conditions, and the tariffs were approved by the Ministry in July 2001. Shortly afterwards, FT requested approval of a promotional offer for the same services, to which the ART gave its support on condition that it be postponed, but this condition was not attached to the Ministry's approval of the offer.

As evidenced by this series of decisions, new entrants have been critical of the capacity of the ART to intervene effectively in this issue, which is effectively the only recourse in this developing market as proceedings taken by a new entrant to the French competition authority have lasted over a year and a half and have yet to come to a conclusion. Furthermore, the direct involvement of the Ministry in

approving retail tariffs, including promotional tariffs, which have a direct bearing on the market conditions encountered by operators availing of the interconnection offer for DSL, means that new entrants fear that further measures may not be sufficient to break the FT hold on the DSL market or to ensure a more effective roll-out of unbundling.

In December 2000, the French authorities allocated six remaining regional licences for wireless local loop, moving quickly to allocate those licences that were turned down by winners of the original selection procedure for 2 national and 44 regional licences. In the course of 2001 operators have been slowly developing their networks, with the first commercial services offered in a few large cities in May. It appears that roll-out has been affected by the economic downturn, and there has already been some financial problems in the sector, but over 20 large urban areas are now covered or partly covered.

#### **40. Universal Service/consumers/users**

There was some expectation two years ago among operators that the universal service fund would reduce significantly as the contribution to the access deficit was to disappear. While the provisional estimates for 2002 are not yet available, new entrants fear that there will be a major increase next year after several years of reductions in the total cost. They want the scope of the universal service to be reduced, including its geographical scope, and express their continued opposition to the method of cost calculation, which the Commission has also questioned. They are also concerned that the opening up of each new market brings an increase in the universal service cost due to the current method of calculation. Finally, they consider the current method of funding simply prolongs an inefficient offering from FT, and would prefer to see the introduction of the principle of pay or play to ensure that the universal service is provided at the lowest cost possible.

There is a clear obligation in the Voice Telephony Directive for a directory of all numbers, the universal directory, to be provided. This in turn depends on the existence of a database of all numbers. As yet, no such directory exists in France, as no universal database has been developed due to disputes between operators. French law has only recently been brought into line with EU requirements, but a decree must now be implemented to set up the necessary database. The French government recently launched a public consultation on the issue, and the directory will not be available before 2002. It is only when these problems are overcome that operators can assess the viability of entering this service market, and the introduction of a non-discriminatory allocation of access numbers to such services will be crucial.

A number of the problems experienced in regard to the telecommunications framework in France - the failure to introduce local call pre-selection, call termination rates for calls to mobile, as well as the costs to alternative operators of short distance leased lines from France Télécom - are clearly reflected in the choice and tariff conditions available to consumers. France has the lowest ratio of operators per head of population in the EU, and France Télécom's virtual monopoly on bitstream access has resulted in a situation where France has a lower number of DSL lines than in other large EU Member States (257,000, or 0.6% of the total number of lines). Consumer organisations report that there are still problems with abusive contract clauses, particularly in the mobile telephony sector, partly because of delays in transposition of Community legislation concerning the transparency of contract conditions.

#### **41. Mobile services / frequencies**

In mobile telephony, market penetration and traffic have continued to grow impressively. By the end of September 2001, the penetration rate for mobile was 57.6% of the population, which brings France closer to the EU average and means for the first time that the number of active mobile lines (34.6 million) exceeds the number of fixed lines in France. This continued healthy growth has also had an

impact on the interconnection market. All three mobile operators have benefited, but it is noteworthy that Orange (FTM) has maintained its 48% of market share.

An enquiry by the ART suggested that there are significant difficulties with regards to the territorial coverage of the three GSM networks, even in some areas of relatively dense population, to the extent that the effective coverage of the national territory was considerably lower than previously believed. The ART has now agreed with the association of French *départements* to co-operate in a much more systematic investigation of effective coverage.

The original beauty contest to attribute four third generation mobile licences in France, although coming soon after the auctions in the UK and Germany, failed to attract more than two applicants, largely it is felt because of the level of the licence fee. Added to the technical problems linked to 3G handsets and services, other operators have cast doubts on whether a competitive 3G market will be able to open in France quickly, adding a new dimension to the problems being encountered in developing broadband services. The French authorities have, however, taken radical action to remedy the situation by announcing a reduction of the original licence fee of €4.95bn to €619bn and proposing to introduce instead a charge related to annual turnover, and an extension of the licence duration to 20 years. The authorities have announced that they will shortly be launching a second call for applications to allocate the two remaining licences. Unfortunately, it appears that rollout of 3G will not take place until 2003 at the earliest, in part due to unavailability of equipment and services.

#### **42. Tariffs & Cost Accounting**

There is continuing evidence that the price for line rental does not cover the underlying costs, and that the process of tariff rebalancing as provided for under Community law has yet to be completed.

Together with the ART, FT has completed a major project in drawing up a new cost accounting system for use in cost allocation for the different regulated tariffs and for determining cost orientation. The ART has certified the 1998 and 1999 accounts of FT using this new methodology, but the challenge is now to complete the move to a full Long-Run Average Cost (LRAIC) system, and to ensure that the resulting data is used in the determination of regulated tariffs, especially interconnection and leased lines. New entrants are understandably anxious for the move to full LRIC accounting as quickly as possible.

There are continuing difficulties in bringing about fixed to mobile call termination rates that are perceived as equitable by new entrants to the fixed telephony market. In December 2000, in the context of a dispute between operators, the ART ruled that FTM (Orange) should apply cost orientation to its call termination rate, and should reduce this in the first instance by 20%. The second SMP operator in the market quickly followed suit. The termination rate applied by the two SMP operators in the national interconnection market to fixed network operators is still controversial, particularly as - in the context of the introduction of carrier pre-selection for fixed to mobile calls - the authorities had called for a further reduction within a year.

In May 2001, the ART issued guidelines concerning the tariff conditions to be applied by these SMP operators, and confirmed that they were obliged to apply cost orientation to the call termination tariffs. A further reduction is awaited although nothing has been announced so far.

A separate issue concerns the retention rate that should be applied by France Télécom on calls terminating on the network of the third, non-SMP, mobile operator. The ART feels that the retention rate applied by France Télécom to calls terminating on this network are comparable to those applied to the other mobile operators, and expects the introduction of carrier preselection for this type of calls to naturally lead to a lowering of the retention charge. Furthermore, there are growing problems of price undercutting, with discount schemes for large business users of FT, in association with a discount package for mobile use.

### **43. Leased Lines**

In July 2001, the ART issued a recommendation on the tariff and supply conditions for the provision of leased lines as a mandatory interconnection service. In this document, the ART recognises that effective competition in France is restricted to long distance high-speed lines, and that other operators find themselves obliged to use FT's retail offer at local level. This is because it is ultimately cheaper to do so than assembling a connection from the leased line and short tail connection offers that pass through the FT exchange network, and the ART has clearly stated that the tariffs of this current system rendered it economically inefficient.

The reason for the ART's intervention was because of the importance of leased line provision in determining the capacity of new operators to compete in broadband and value-added services. Leased lines are proving to be an essential element in allowing new entrants to complete their networks and to connect with clients' premises particularly where the client is spread over a number of sites, as a great number of their clients cannot be linked directly from end to end on the alternative operators network.

The ART concluded that FT, having significant market power (SMP) in the leased lines market, must provide a leased line service allowing other operators to link their POP with client sites without experiencing the handicaps linked to the costs inherent in the topology of FT's network. In accordance with the requirements of the EU regulatory framework, and drawing on the Commission Recommendation from 1999, the ART states that the tariff for this service is to be cost-oriented and must be billed on a straight line distance from client to POP.

In the meantime, there are conflicting signals from the market and from the data provided by operators concerning the tariffs applicable for leased lines in France, and in some geographic areas (due to competition with other networks) France appears to be one of the most favourable markets in the EU. However, these tariffs are not homogeneous, and some specific categories of lines are creating problems, particularly short distance lines 2Mb which are the crucial element for other network operators and service providers alike. Market data available to the Commission across a series of leased line tariffs shows France to have the third highest offering in the EU, with tariffs well above the EU average or those arising from the Commission's recommendation.

In any event, leased lines above 2Mb/s have to be negotiated commercially with France Télécom as part of the latter's retail offer, and there is little guarantee as yet that tariffs are oriented towards cost. The completion of the new cost accounting system in FT should allow for greater transparency and control of leased line tariffs in the future.

In February 2001, FT reduced several of its key leased line tariffs, at a time of growing competition and excess supply of fibre network. These tariffs have been referred to the ART, while implementation of the ART's guidelines is also awaited. In June 2001, FT also changed its general sales and supply conditions for leased lines, including the removal of the penalty clause, which new entrants believe is unfairly to FT's advantage as it removes any element of sanction if FT is late in delivering or re-establishing a line and contributes to an effect of uncertainty in client relations.

While the market data shows that France is in the average of EU Member States as regards supply time for leased lines, new entrants claim that there are problems in regard to delivery time and quality particularly since FT modified its supply conditions.

### **44. Numbering**

The extension of the carrier pre-selection facility to local calls has been further delayed in France, and will not now be in place until early next year. Following the delays reported last year, the 2001 RIO contained a commitment to implement CPS for local calls in the fourth quarter of this year, but this

was effectively postponed by the subsequent stipulation that it would take place by 31 December 2001 “at the latest”.

In May, the ART had launched a public consultation on the practical conditions for introducing CPS, and in July adopted a decision defining these conditions in the light of the consultation. The ART’s decision focuses on the technical aspects of the removal of the local sorting zone (the “ZLT”) - within which it had previously not been possible for users to pre-select an operator other than FT - and on the procedures to be followed by operators to inform customers and for gaining their consent for CPS to be implemented on their line for local calls. There is a disagreement between FT and new entrants concerning the technical procedures for the hand-over of clients. The ART decided that clients who have already opted for CPS on long-distance and mobile calls should be automatically switched over to the other operator from FT for local calls, as long as the client has been informed twice in advance of the date of operation of this new service as well as the tariffs and conditions that will apply. There is as yet no guarantee that the conditions for effective implementation are in place, although the ART’s decision was approved by the Ministry on 26 September.

There have been serious problems in implementing the portability of non-geographic numbers at a fixed location. Portability for freephone access numbers was finally introduced in July, using a manual system, and the authorities and operators are now concentrating on other 0800-type numbers. However, much of the initiative is being left to operators themselves, and the date for full implementation of this obligation is not clear, nor is it clear how soon after initial implementation that the full range of value-added number will be covered.

#### **45. Rights of way**

Mobile operators are reporting increasing difficulties with regard to obtaining permission from local authorities for the erection of masts and antennae because of growing concerns about the potential health hazards associated with electromagnetic emissions. More generally, while reporting very varied experiences, telecommunications operators are encountering greater difficulties in gaining rights of way for digging trenches or installing infrastructure, and have reported certain experiences of pricing by local authorities for access to existing conduits or sewerage systems, for example, that appear to be aimed at discouraging the construction of more networks.

While these difficulties are being experienced by all operators, the situation creates a potentially discriminatory effect with regards to France Télécom’s position as the historical incumbent who previously enjoyed utility rights of way, and whose conduits were in many cases paid for or subsidised by the local authorities.

Although they were the first to actually provide alternative local access services, cable network operators are nevertheless in even greater difficulty with regard to rights of way, as French legislation requires individual permission from local authorities for construction of cable infrastructure, while the price charged to cable operators for right of way on the public domain is not controlled as it is for telecommunications operators.

In July, French law was modified to make it easier for local authorities to participate in the construction of high-speed telecommunications networks. In a change from previous policy, not only were the barriers to their participation removed, the government subsequently announced financial measures to encourage the involvement of local authorities in the development of high-speed networks where these are not being provided commercially. These funds will also be used in the provision of mobile antennae in areas where mobile coverage has not been accomplished. The details have yet to be notified to the Commission, but even in the context of the economic and regional development policy being pursued, this raises potential competition issues. While the existence of such “passive” networks may facilitate the development of coverage by alternative operators there is a



potential conflict of interest with the regulatory power exercised by local authorities in regard to rights of way.

#### **46. Data Protection**

As part of the package of transposition measures adopted into law in July 2001, France has now introduced a significant part of the measures required to meet its obligations to transpose the Data Protection Directive. However, an important Decree is still awaited, and only then can a proper assessment be made of the extent to which the Directive is actually being applied correctly in France. There is a further political debate under way on this issue, in the context of the discussions in the National Assembly on the draft law on the Information Society.

#### **47. Internet**

The importance of the development of internet access and internet related services is reflected in the preoccupation of operators with unbundling and DSL access [see above], as well as a renewed focus on the leased lines market. Over the last year there has been a significant growth in the volume (162%) and value (109%) of internet access, with over 5 million domestic subscribers by the end of 2000.

At the same time there have been a rapid evolution in the type and tariff structure of access offered by the market, with a growing number of ISPs offering fixed-rate subscriptions (“forfaits”) comprising access and a set number of hours of connection using an indirect interconnection model that allows them to control the billing of the service. However, as noted in the section on “Interconnection” there were delays in introducing the fixed-rate internet access model known as FRIACO since it was first requested by new entrants in the context of interconnection negotiations, which will now allow for unlimited access based on capacity-based pricing.

#### **48. directive 95/47/ec**

Most of Directive 1995/47/EC has been now transposed, with some technical details remaining to be transposed by Arrêté. The transposition measures cover commercial agreements, access to existing decoders and, when conditional access agreements are concluded, access to associated facilities such as EPGs and interactive, which goes beyond the provisions of the current Directive. There has been little practical implementation of these provisions except for one simulcrypt agreement.

Digital terrestrial television will soon be launched in France. Technical measures have been approved, covering issues related to the signal (e.g. provisions concerning numbering and parental control) and to receivers (minimum obligations imposed, e.g. on the display of available services, languages and subtitles).

These measures regarding DTTV are stricter than for other TV delivery systems, requiring for example interoperability between free-to-air and pay-TV platforms. The authorities require, as a condition for the authorisation of programmes and services, that FTA broadcasts can be received on both FTA and pay TV platforms which, according to the French authorities is permitted under Directive 95/47/EC. This specific treatment for DTTV is justified in the view of the French authorities by the fact that it aims at universal coverage, not just users of cable or satellite.

The standardised digital socket for IDTVs has not been made compulsory in France but this situation is expected to be remedied by the last Arrêté transposing the Directive.

There are three TV broadcasters in France that have each developed a different conditional access system and who subsidise their own decoders.

Cable operators were the first to provide alternative local access to domestic users, and account for the first geographic numbers to be ported in France. However, they are becoming increasingly frustrated

with the differences in treatment between themselves and telecommunications network operators, particularly in terms of the more onerous authorisation regime to which they are subject, as well as the cap on the population coverage of any one network. Compared to telecommunications operators, they are subject to greater control from local authorities and have to pay higher rates for right of way when rolling out infrastructure. Just as technological convergence has allowed the development of alternative local access systems and greater local competition, cable operators feel that they have been discriminated against in the 2000 Audiovisual Law which, although dealing with a sphere of activity outside of the telecommunications domain, imposes restrictions on cable operators that prevents them from developing their role in the telecommunications market.

## 3.7 IRELAND

### OVERVIEW

#### ***Market developments***

Since the 6<sup>th</sup> Report there have been further developments in all telecommunications markets in Ireland. The telecommunications sector now represents 3% of Irish GDP. The share of new entrants in the fixed market has increased to 21%. The overall number of licensed operators has risen to over 80, 47 of which are active. In the fixed line market, according to the Office of the Director of Telecommunications Regulation (ODTR), the market share of new entrants has increased up to 21%. In the mobile sector, penetration has continued to increase and is currently estimated at 73% of the population, while the third mobile operator has started operations. Mobile lines account for 59% of total access paths. Household Internet penetration in Ireland is estimated at 46.2% while the ODTR has taken several steps to support dial-up internet access through the introduction of new access codes.

#### ***National Regulatory Authority***

Important changes are expected to be introduced through the adoption of new legislation during 2002. The government has decided to establish a new body, the Commission for Communications Regulation, to respond to the evolution of telecommunications markets into which the ODTR will be transferred.

#### ***Local loop unbundling***

Despite the considerable efforts of the ODTR to put in place the regulatory measures required for local loop unbundling (LLU), uptake has been slow and competition in the last mile has not developed. Many delays have been experienced in the provision of a wholesale ADSL product by the incumbent and the launch date of the product was moved to September 2001. There have also been substantial delays in the provision of pricing information by the incumbent and it seems that an initial review by the ODTR raised concerns about the cost orientation of rates offered by the incumbent. ODTR accordingly requested the incumbent to delay the launch of its retail product.

No local loops have been unbundled in Ireland to date. There appears in particular to be disagreement between the incumbent and the regulator on pricing. The incumbent promised to apply interim prices set by ODTR, which it has appealed. The incumbent seems to consider that there is no real demand from entrants, although several have registered interest. Collocation also seems to be problematic and it is reported that the collocation offerings of Eircom are not satisfactory to entrants.

#### ***Mobile frequencies***

Ireland is lagging behind in the roll-out of third generation services. Although ODTR has taken several steps to provide for a selection procedure for the granting of licences, this has not yet taken place. It seems that there is still no agreement between ODTR and the relevant Ministry on the level of fees to be requested from bidders. Ireland will therefore have difficulty in implementing the UMTS Decision under which licensing arrangements must be in place to permit services to be rolled out from 1 January 2002.

- Numbering** Both geographic and non-geographic number portability have been established in Ireland. However, the volume of geographic number portability has been very low, reflecting the early stages of network access competition, because of the high cost of provision for entrants.
- Full mobile number portability is planned for the fourth quarter of 2002 to promote competition and solve some number shortage issues. Mobile operators are concerned with the costs involved.
- Contradictory views have been expressed about the development of the carrier pre-selection (CPS) market. ODTR seems to consider the introduction of CPS a success, despite low usage.
- Leased lines** The provision of leased lines continues to be a concern for entrants as regards both delivery time and prices. In 2000, Ireland had some of the longest EU provisioning periods, with a delivery time up to three (3) months for ordinary and/or special quality analogue and four (4) months for 64 Kbit/s and 2 Mbit/s lines. It is reported that only 50% of leased lines were delivered within service level agreement time-scales. Entrants report significant loss of revenue as a result. The penalties imposed by ODTR have not so far been effective; the ODTR has introduced service level agreements by way of corrective action. A full cost and price review is also expected to be carried out by ODTR.
- Consumers** Consumer protection has been at the centre of certain regulatory interventions of the ODTR. Qualitative measures of operators' performance have also been introduced.

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| <b>NATIONAL REGULATORY AUTHORITY</b> |
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New legislation on the operation of the ODTR is expected to be adopted during 2002. In particular, the government plans to introduce major changes by establishing a Commission - the Commission for Communications Regulation - into which the current Office of the Director of Telecommunications Regulation would be transferred, to oversee further deregulation. The scope of the new Commission's powers in the exercise of its functions is expected to be broader than that of the ODTR. Its powers to enforce its decisions will be improved by increasing the maximum fines that a court may impose following a conviction on indictment, although in the case of summary prosecution, the existing level of fines (£1 500) for conviction of summary offences is retained in the proposed bill. Whether that is sufficient to deter operators who can gain far more by non-compliance or delay is not clear. In addition, the new Bill will guarantee continued transparency and accountability to the Oireachtas and the public, and strengthening the arrangements for formal co-operation between the Commission and the Competition Authority in areas of common concern. It also provides for the effective management, allocation, assignment and use of radio spectrum and numbers.

The industry is pressing for early enactment of new legislation and is particularly looking forward to increased enforcement powers and objectives for the ODTR to be set down in legislation.

Other licensed operators (OLOs) complained that the ODTR's consultation process provides too little time for responses and that the ODTR rarely changes its mind as a result of a consultation. The ODTR reports that it evaluates all responses carefully and takes them into account before it reaches a decision. In order to ensure transparency the ODTR makes all responses (other than elements provided in confidence) available for inspection by any interested party. The ODTR must balance the requirement for speedy resolution of issues with the need to allow sufficient time for respondents to respond.

On the other hand, OLOs complain that the ODTR does not adhere to the time-scales of the dispute resolution process. However, the ODTR points out that it resolves the vast majority of disputes in an average of 13 weeks and has never exceeded the six month limit set in the Interconnection Directive. They also complain that Eircom has no incentive to comply with ODTR's directions, since the fines which can be imposed on it by the courts are relatively low. They say that the ODTR seems reluctant to oblige Eircom to apply its directions when Eircom resists to do so, although they have not produced evidence of this. Eircom considers that the timescales for responding to disputes is too limited, and that the ODTR has more time to make a decision. So far, according to Eircom, the implementation of ODTR's decisions has favoured OLOs.

OLOs believe that Eircom takes legal action against ODTR's decisions as a matter of strategy. Although ODTR's decisions are not automatically suspended, operators complain they cannot build their business plans with confidence pending such proceedings. Until now, all ODTR's decisions (17) which have been legally challenged have been sustained by the courts. At present, the most important telecommunications cases pending against the ODTR are the ones relating to LLU and RIO pricing.

## LICENSING

Apart from 3G licensing no major concerns have been reported in relation to licensing since the 6<sup>th</sup> Report.

Further improvements in the existing licensing procedure for radio licensing are expected to be introduced with the development of an automated licensing application system via e-mail and possibly electronic payment on line. This would further simplify the licensing procedure by facilitating the submission of applications.

So far, a high number of both basic and general licences has been issued. 37 basic licences have been issued (a basic licence does not cover voice telephony and services involving numbers) of which 23 are already operational, and 46 general licences have been issued of which 24 are operational (for the provision of networks and services including voice telephony).

The third GSM Network Operator (Meteor), licensed in June 2000, became operational in February 2001.

## INTERCONNECTION

Based on the results of a review covering the year 2000, the ODTR recently announced its third determination of operators with Significant Market Power in the Irish telecommunications market. The last review of SMP designations was in 1999. According to the new determination, Eircom is designated as an SMP in the fixed public telecommunications networks and services and leased lines services markets, Eircell & ESAT Digifone in the market for public mobile telecommunications networks and services, and Eircell & ESAT Digifone in the national market for interconnection. These last designations require the mobile operators to offer cost based interconnection charges.

The fact that Eircom is no longer designated as having SMP in the national market for interconnection has not affected the obligations it used to have as an SMP operator, since Eircom is designated as SMP in the market for leased lines and the market for fixed network and services.

In the fixed market there are currently seventeen interconnect agreements concluded between the incumbent and OLOs and all operators are required to deliver an acceptable quality of service. The latest version of the RIO was published in June 2001.

Interconnection rates have recently been revised, which resulted in a decrease of these rates. These new rates follow from the ODTR's decision on interconnect matters published in April this year and apply to the periods of 12/99 to 03/00, 04/00 to 03/01 and 04/01 onwards.

According to the incumbent, the charges for competitors using Eircom's network were reduced by 64% since the liberalisation of the market in 1998, putting them at the lowest level in the EU – a scale of reduction that is unprecedented, since the Irish market was liberalised later than most of the other Member States. It is claimed by the incumbent that under the existing regulatory regime interconnection rates are set below what can be achieved by an efficient operator since they reflect the rates of a theoretically efficient operator that could never exist in practice. ODTR disagrees that this is the case – the prices are based on a bottom – up model prepared by Eircom and a top-down model prepared by the ODTR with the advice of an industry committee. It cannot comment further as the matter is under judicial review.

Following a determination by the ODTR in April 2001, two-part charging was introduced on 1 October by Eircom, subject to the ODTR being satisfied that the billing system would provide transparent data for OLOs. OLOs are concerned that the calculation of NTC rates is transparent and non-discriminatory.

In the context of mobile telecommunications in Ireland, the ODTR plans to issue a consultation paper seeking the opinions of interested parties as to mobile accounting separation and costing methodologies for call termination interconnection services on mobile telecommunication networks.

Regarding mobile access, the ODTR has conducted a consultation procedure on access in the mobile market and, in particular, concerning the issue of new players entering the mobile market by gaining access to the networks of existing mobile operators. Conclusions were drawn as regards specific forms of access, including airtime resellers, indirect access providers and mobile virtual network providers. For airtime resale, the ODTR concluded that it is a commercial issue for the operators concerned and that regulatory action is not required. However, resellers are free to negotiate commercial terms with mobile operators. On indirect access, the ODTR concluded that third parties must negotiate interconnection agreements with mobile network operators. In case such negotiations fail, the ODTR will on a case by case basis consider taking action within its powers. All mobile operators with SMP on the mobile market are obliged to negotiate interconnection with appropriately qualified organisations, and operators designated as having SMP on the national market for interconnection are obliged to apply cost oriented rates to interconnection. Similar provisions apply also for mobile virtual network operators (MVNOs) since they also require interconnection, although a form of roaming might be necessary since MVNOs must have access to the mobile network air interface.

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| <b>LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE<br/>REGULATION ON LOCAL LOOP UNBUNDLING AND BITSTREAM ACCESS</b> |
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The ODTR has taken a number of steps to pave the way to the introduction of LLU. In May 2000, the ODTR issued Decision Notice D6/00, which set up industry working groups to implement a wholesale bitstream ADSL product and complete preparatory work on full and shared LLU in the light of the proposed LLU EU Regulation.

Bitstream access was originally planned for April 2001 but was delayed to September 2001 due to Eircom's review of its equipment supplier. Trials have been completed; however, the launch has been delayed due to the ODTR's concern over Eircom's pricing proposals. Eircom only recently submitted pricing proposals to the ODTR following substantial delays. Eircom is obliged to ensure that its prices for bitstream are cost oriented and respond to a number of issues raised by the ODTR. However, an operator expressed concern about wholesale prices being unacceptably high, especially in view of Eircom's proposals for its retail offerings, which would imply that Eircom provides a different product to its retail arm and/or additional facilities than the product/facilities made available to OLOs. On the other hand, Eircom seems concerned that the ODTR does not

guarantee that Eircom's ADSL investment will be properly remunerated by allowing it to have reasonable and stable wholesale prices in the market. The ODTR continues to review wholesale and retail prices with Eircom and has instructed Eircom not to launch the product until 21 days after it has satisfied the ODTR that its pricing proposals are compliant with the principles of cost orientation and do not lead to a margin squeeze.

The Reference Offer for both fully unbundled access and shared access to local loops and related facilities (such as collocation) was published by Eircom on 1 January 2001. Yet it was not complete or fully compliant and the ODTR issued a number of directions to Eircom removing collocation restrictions, and governing the provision of information. In April 2001, the ODTR set interim prices for LLU and related services. The interim prices were set based on benchmarking of prices from other European operators and review and analysis of efficient operator costs. The price for a fully unbundled line has been set at €13.53 and a shared line is €6.765.

Eircom has served legal proceedings on the ODTR but has stated that it will comply with the interim prices pending the proceedings. Eircom does not seem to agree with the ODTR's use of benchmarks to set the absolute price level for a new service and considers that the current interim prices are below cost and that they are not sustainable. According to OLOs there are still certain offending provisions in the RUO which the ODTR has to direct Eircom to remove. OLOs are concerned that despite the fact that the ODTR has been aware of these flaws for over 8 months it has yet to direct Eircom to remove the offending provisions from the RUO (e.g. shared line access will not be available where a customer is availing itself of a bitstream service). The ODTR reported that it has directed Eircom that these restrictions are inappropriate, and Eircom has accepted this fact. A workplan for resolution of these areas has started.

Separately, negotiations on items such as a portakabin solution have also been taking place. It is reported that the collocation sites offered by the incumbent are not satisfactory for OLOs who argue that such offers amount to an effective refusal to supply these sites. It seems that the ODTR has directed the OLOs to engage in further negotiations with Eircom and is making an effort to facilitate negotiations. The ODTR confirmed that progress has been made and one agreement has now been signed.

To date no local loop has been unbundled in Ireland. Currently, several operators are registered as beneficiaries for the provision of LLU by Eircom. The SLA penalty regime under the Access Reference Offer is currently in effect. Some operators seem to be concerned that the resources devoted by the ODTR to LLU did not match the importance of LLU to new entrants, because, according to them, the ODTR considered that designation of further resources to the project was not justified with regard to the industry's lack of interest and the fact that only one operator was informally pursuing LLU under the Regulation. The ODTR refutes these allegations stating that it has set LLU as a top priority. On the other hand, it seems Eircom considers that expectations were exaggerated and resulted in focus on implementation issues rather than strategic benefits. It seems though that OLOs were not willing to invest in this area until the ODTR forced Eircom to unbundle the local loop, i.e. until at least one operator is successful in obtaining full LLU and bitstream access in Ireland on a commercially acceptable basis.

Regarding licensing of wireless local loop (WLL), four broadband and two narrow-band licences were issued in 2000. All licensees have started operations in 2000/2001. One of the licensees went into liquidation earlier this year and its licence was reoffered to the market. While interest was expressed, suggestions for changes were made and these are under review.

OLOs do not like the fact that the ODTR has been monitoring compliance with WLL licences, believing there to be no non-compliances and that this is a waste of resources. The ODTR reported that a number of licensees have come to milestone dates and is monitoring them in line with its normal practice.

ODTR is awaiting information from Eircom and if it is proven that there is a burden which is deemed to be unfair, ODTR will set up a funding mechanism.

The ODTR has taken several measures in order to ensure greater protection for telecommunications consumers. In particular, it has introduced a qualitative measure, the Measuring Licence Operator Performance, and introduced a minimum set of criteria that must be introduced by telecommunications operators in their Codes of Practice for the Handling of Consumer Complaints by Telecommunications Operators. Through the first measure, the ODTR expects to assess an operator's performance towards its customers by obliging the operator to report on several issues (service provision, fault management, consumer complaints and billing). However, some operators complain that the ODTR failed to take their views into full account when forming the programme. The ODTR also experienced difficulties in collecting relevant information from operators for the implementation of the programme. All operators, except one, were found non-compliant. OLOs claim that the information sought is extensive and that it is extremely time-consuming for operators to put it together.

In response the ODTR states that the MLOP Programme will be a major benefit to consumers. Preparations for this Programme started by way of consultation in 1999 and the parameters were agreed by the operators as far back as January 2000. The ODTR believes that operators have therefore had a significant amount of time to put systems / processes in place to capture the data.

Through the second measure the ODTR is trying to improve the handling of consumer complaints by individual operators through a new Code of Practice, which would require a minimum set of criteria for handling complaints. Consumers will also have better information on procedural aspects of the filing of a complaint or operators' policies on disconnection. However, OLOs seem resistant to the adoption of such a code claiming that it still has adverse effects on the market, in particular that by specifying a minimum level operators would gravitate towards this. ODTR's response is that it is only a minimum level and operators are free to adopt standards of complaint handling in excess of the minimum.

## **MOBILE SERVICES / FREQUENCIES**

Since July 2000, the ODTR has taken several steps to grant third generation (3G) licences. Following a consultation procedure the ODTR concluded that it would favour the issuing of four licences through a comparative selection process ("beauty contest"). In particular, two types of licences will be offered, one class A and three class B, with different rights and obligations in relation to coverage requirements, access and roaming conditions.

No 3G licences have been granted so far. Under national legislation, the ODTR is required to seek the consent of the Minister for Finance to fees for the 3G licences, which was done by the ODTR in December 2000. However, no consent has yet been obtained and the question of appropriate spectrum access charges is a matter of ongoing discussion between the ODTR and the Minister for Finance. There is currently no information on the timing of the competition procedure. A concern was expressed that the main reference point for the level of licence fees appears to be the experience in other EU markets, while the conditions proposed to be associated with the licences are not equally considered. The current dispute between the NRA and the Department of Finance, unless resolved, is likely to leave Ireland behind the other EU Member States in the provision of 3G mobile telephony.

The ODTR has conducted a consultation procedure on spectrum management. It has concluded to publish, on a regular basis, a strategy for the use of the radio spectrum to promote a dialogue between industry and users on developing strategies on the use of frequencies. The Table of Frequency Allocations was revised in 2001 to reflect the changes taking place in the radio environment.

## **TARIFFS**



According to the ODTR, rebalancing has been taking place through the price cap, which allows Eircom to increase prices by CPI+2% each year. It seems though that Eircom requests the removal of price caps because it considers that it brings no incentive for Eircom and OLOs to invest in access network and distorts the market.

A substantial increase in charges for directory enquiry (DQ) calls was also introduced by Eircom. This service was previously provided free of charge by Eircom. At present there are several players in this market although it is in the early stages of development.

Overall, in 2000, Eircom reduced charges for all services under the price cap by 15.49%. Under the price cap they were obliged to achieve a 4.6% reduction in 2000 (CPI 3.4%-8%).

## **COST ACCOUNTING**

The ODTR completed the development of a core network bottom-up LRIC model in 2000 along with participants from the telecommunications industry. In the same year the incumbent, Eircom, also completed its top down LRIC model. In June 2001, the ODTR set LRIC-based interconnect rates following a detailed comparison of the results from both models. According to the ODTR these rates placed Ireland at the top end of the EU's best rates. The industry itself appears to have contradictory views. On one hand, it seems that OLOs are concerned with ODTR's approach to consider the cost components of any wholesale/interconnect price to be commercially confidential. On the other hand, the incumbent claims that it would be impossible for any company to introduce efficiencies to match the ODTR LRIC timetable as demanded of Eircom since December 1998. It also claims that the ODTR's reductions bear no direct relationship to Eircom's actual costs and assume an efficient operator with latest technology. The ODTR is of the opinion that there is a high degree of transparency and openness in all processes. The model was developed with substantial consultation and involvement of the industry and an industry working group provided the ODTR with advice. In addition, a comparison was carried out of the bottom-up model developed by the ODTR and the top-down model used by the incumbent.

Regarding LLU, the ODTR considers that LRIC pricing is appropriate, but there is a need for historic pricing in the transition period.

## **LEASED LINES**

Concerns were set out in the 5<sup>th</sup> and 6<sup>th</sup> Reports on the provision of leased lines, in particular regarding the time required for their delivery by Eircom. It seems that the OLOs' main difficulty was the delay in provisioning of circuits and the inadequate provision of information by Eircom throughout the delivery process. The ODTR has taken a range of initiatives and has intervened in order to promote an appropriate level of delivery of leased lines by Eircom. At the centre of its efforts was the introduction of a Service Level Agreement (SLA) regime, which later was revised in order to address these problems more effectively. The new SLA provides for the introduction of new timeframes, broadening of the scope of SLA, introduction of an uncapped penalty regime forcing Eircom to pay compensation to the OLOs for every day of delay (for every day Eircom is late in delivering, the OLO is credited with the equivalent of a day's rental for the particular cost), establishment of an industry forum and the introduction of sub-processes in the delivery chain so that OLOs are informed throughout the delivery process. It is also provided that penalties due to OLOs should be automatically paid by Eircom without OLOs having to initiate the penalty payment request.

The standard provisioning time-scales (for standard orders), as set by the current SLA, provide for delivery within 22 to 26 days for sub 2Mbit and 2 Mbit leased lines respectively. Non-standard orders (e.g. where infrastructure is required or where higher capacity leased lines are required) do not have a defined SLA delivery timeframe, but Eircom has provided a forecaste delivery date against which the SLA delivery process and any applicable penalty payments can be measured. As reported in the 2000 Annual Report on performance in the supply of leased lines, the delivery time

in 2000 in Ireland was up to three months for the delivery of ordinary and/or special quality analogue leased lines and four months for the delivery of 64 Kbit/s lines and 2 Mbit/s lines. Ireland and two other Member States had the longest delivery time in the EU in 2000 although significant improvements were reported in the repair times. OLOs believe that serious corrective action is required immediately due to the significant loss of revenue that Eircom's performance has caused OLOs, which OLOs believe cannot be compensated by any penalties received. The increased penalties have had little impact on Eircom's overall delivery performance and OLOs say that Eircom's performance has got significantly worse. OLOs have reported that only 50% of the leased lines were delivered within SLA time-scales. OLOs believe that further enforcement is required by the ODTR as the penalty regime has not brought the benefits which were originally envisaged. The ODTR points out that while poor delivery of leased lines is still a major issue there are now signs of improved delivery, which has been acknowledged by the OLOs. In support of this argument, the ODTR cites the average delivery time for standard leased lines and non-standard leased lines, published on Eircom's web-site, which is 21 and 36 days respectively.

ODTR is of the opinion that, as a result of benchmarking, it has one of the most, if not the most, prescriptive SLA regimes in Europe. As regards the penalties, it should be noted that there have been significant delays in getting payments due from Eircom. Recently, Eircom and the ODTR have approached the problem on a more managed basis and Eircom, in consultation with individual OLOs, is reducing orders on a mutually agreed and planned basis. The programme for payment of penalties is also in place and is being actively monitored by ODTR.

ODTR is reviewing the current SLA to encourage the delivery of services by Eircom to OLOs in line with market needs. In addition, the ODTR has set up detailed monitoring arrangements with weekly reports from Eircom to ensure that Eircom complies with the delivery targets set out in the SLA by the end of 2001. Following an intervention from the ODTR, Eircom has now commenced publication of leased line average delivery time information on a monthly basis. The ODTR is carrying out an audit of Eircom's leased line delivery to identify whether its processes and systems are capable of achieving the targets set out under the SLA regime. The audit is expected to be completed by mid November 2001. The absence of effective enforcement powers is a particularly important drawback in the matter of leased lines.

OLOs have also reported that the delivery of interconnection circuits is problematic, despite the ODTR's introduction of an uncapped penalty SLA regime.

ODTR reported that it has not received any complaints regarding the delivery of interconnect circuits for at least six months. According to the ODTR, OLOs have been reporting that interconnect delivery is operating smoothly.

In terms of pricing, according to OLOs, Eircom's leased line offer for OLOs consists of a wholesale offer, which is simply Eircom's retail price discounted by 8%. This price is considered too high by OLOs.

The ODTR is carrying out a full cost and price review of leased lines. The review will be carried out in the context of the requirement that an SMP operator in the leased lines market, in which currently only the incumbent is designated as such, has to demonstrate that leased lines tariffs follow the basic principles of cost orientation and transparency.

## NUMBERING

The ODTR recently announced changes in the national numbering scheme in order to satisfy all demands and simplify the existing numbering scheme. Some operators are holding large quantities of spare numbers in excess of what is reasonable for the efficient provision of service to new customers, and it seems that the numbering changes will affect less than 10% of the numbers.

Non-geographic number portability was introduced in Ireland for all fixed networks on 1 January 2000 and is now firmly established. Geographic number portability (GNP) was mandated from 1 July 2000 and has been established since November 2000.

Operator-initiated GNP was mandated from 1 July 2000, with the incumbent required to offer porting to any OLO who could offer it on a reciprocal basis. No OLO chose to do so, but all operators met the target for November 2000 for customer-initiated porting.

GNP takes the form of operator portability, though location portability can occur within defined minimum numbering areas, mostly corresponding to the reach of local switches. A concern was expressed by OLOs on the development of number portability in Ireland. OLOs consider that the growth of GNP has been inhibited and only 300 geographic numbers have been ported from the incumbent to date. They claim that the reason for this slow take up is the very high charges implemented by the incumbent, which affect the commercial attractiveness of the service. Currently the ODTR designates the charges as interim charges, but OLOs do not expect that they will be significantly reduced in the future. The ODTR considers that current charges for GNP reflect an entirely manual process. Although operators participating in GNP had originally planned to have a fully automated order processing system in place, they finally postponed this development due to the cost of such a system relative to the number of projected ports.

According to the ODTR, the relatively low GNP volumes, which it estimates at 1 600 at end August 2001, mainly reflect the early stages of infrastructure development, with low numbers of OLO directly connected customers. OLOs are currently competing using CPS for the SME/residential market and offering direct connections mainly to corporate customers. The ODTR considers that high volumes of geographic number portings will not happen until the development of competing infrastructure is substantially advanced. The availability of unbundled local loops could significantly accelerate this process. The volume of non-geographic number portings (estimated at 3 700 at end August 2001) reflects a significant proportion of the total non-geographic numbers in use.

Regarding mobile number portability (MNP), Ireland currently employs a system of subscriber number portability (SMNP) whereby a customer who changes operator can retain the subscriber part of his/her number. Full MNP is expected to be introduced by the fourth quarter of 2002 with the agreement of all three mobile operators. The ODTR expects that full MNP will enhance competition, facilitate especially for business customers, who are now more reliant on their mobile numbers, and solve some number shortage issues created by the existing system. It seems, however, that mobile operators prefer to continue with the existing scheme of subscriber MNP instead of full MNP, which they consider as better in low population countries. The ODTR remains of the view that SMNP does not offer all of the advantages of full MNP and makes inefficient use of the numbering resource, potentially forcing costly number changes.

CPS was introduced in Ireland on the 1 January 2000 for three call types (international, national and all calls). According to the ODTR, the number of CPS users has increased to over 160 000 business and residential subscriber lines by the end of March 2001. OLOs claim that they continue to experience difficulties with the CPS process although efforts were made to address these concerns through industry meetings of the CPS Committee. The ODTR points out that the same basic processes defined in late 1999 are being used to provide CPS now, and that they are sound. As with any product, processes are continually being refined and the industry meets regularly to discuss and agree changes. A specific concern was reported that Eircom is engaged in retail price squeeze, which makes the CPS market volatile and affects competition. OLOs consider the usage of CPS as low, less than 10% of all fixed lines, attributed to several reasons, including the fact that the CPS product was not fully complete when launched and that there is no confidence in the quality of the CPS product. The ODTR confirmed that CPS uptake has slowed down in 2001, but this is inevitable since the growth rate in 2000 was unsustainable. In addition, the incumbent has an

effective win-back campaign and the ODTR believes that the OLOs could market CPS more aggressively. Concerns about the quality of CPS calls are currently being investigated by the ODTR. A concern was also expressed that there are a number of OLOs engaging in 'slamming' or unfair sales practices, which has not been proved. However, the ODTR indicates that the measures introduced to prevent 'slamming' have generally been very effective and the number of genuine incidents is not significant. OLOs recognise that the ODTR has been supportive in facilitating further development to date. However, according to them the length of time that has been given to the incumbent to complete important actions and to respond to issues raised is so long that progress has been very slow. The ODTR has been meeting with the incumbent to ensure a timely resolution of outstanding issues, but stresses that these centre on process enhancements. CPS prices were reduced substantially at the beginning of 2001 and are reviewed annually.

#### **RIGHTS OF WAY**

The Communications Bill is expected to provide for rights of way and in particular for access to public highways for the establishment of networks and for facility-sharing by operators. The consent of a local authority will be required before a road is opened. In relation to facility-sharing, the powers of the ODTR have increased, although it remains a matter for commercial negotiation. Penalties and appropriate enforcement are also envisaged where facility-sharing is not offered. However, OLOs claim that the Bill does not cover wireless infrastructure. The Bill is expected to resolve problems experienced by OLOs, such as the lack of a uniform approach by local authorities, which, according to them, increases the cost of establishment of a network.

#### **DATA PROTECTION**

The Telecommunications Data Protection Directive is not yet transposed into Irish law.

However, it is reported that there are certain procedures in place in advance of the transposition and, in particular, that there are provisions concerning confidentiality of communications; provisions related to the processing of traffic data stored for billing purposes, which may only be further processed with the consent of the subscriber; provisions on the omission of subscribers from directories free of charge; provisions allowing subscribers to request non-itemised bills (recently the ODTR defined the minimum level of itemised billing that should be made available at no additional charge to consumers as provided by the relevant Directive on the provision of voice telephony services); and provisions allowing subscribers to avail themselves of calling-line identification or eliminate its presentation.

#### **INTERNET**

Household internet penetration in Ireland is estimated at 46.2%..

The ODTR has taken several steps to support dial-up internet access and in particular it has opened two new non-geographic codes for use in accessing internet service providers (ISPs) in March 2001. The 1892 code can provide identification of Pay-As-You-Go internet traffic, while the 1893 code identifies flat-rate traffic. These codes join the pre-existing code 1891, which for some time has been used to provide access at rates below local call costs. The ODTR is currently conducting a consultation on the future development of internet in Ireland, in particular regarding transmission issues. A provision for up to 20% of the capacity to be used for internet was also made in the ODTR's paper on the licence framework for digital terrestrial television (DTT).

It seems Eircom does not favour regulation of emerging new broadband services while it considers that its plans to introduce high speed internet access DSL services have been affected by a wholesale pricing uncertainty.

## **DIRECTIVE 95/47/EC**

The Digital TV Directive was transposed into Irish Law by Statutory Instrument (S.I.) 262 of 1998. In accordance with the S.I. both the ODTR and the Director for Consumer Affairs have responsibilities for the implementation of the directive.

The market for digital television is at an early stage of development. The licence framework for digital terrestrial television (DTTV) was developed following public consultation by the ODTR. For the provision of DTTV, the ODTR has to issue a Digital Multiplex Licence and a DTTV licence to those companies designated by the Minister of Arts, Heritage, Gaeltacht and the Islands to receive such licences. The ODTR recently issued a consultation paper in order to assess the level of interest in the provision of services on a regional or local basis.

At present, there are two operators providing digital cable TV services in the Irish market, in their respective licence areas. Both of them have been rapidly upgrading their cable networks to provide digital services, one of them (Chorus) had previously launched the provision of digital TV service by means of MMDS and the other (NTL) was expected to start operations by end of September 2001. Both operators are continuing providing telephony and internet services to their customers. According to the ODTR it was estimated that digital TV services would be available to over a quarter of the households in Ireland by the end of September.

There is also an operator marketing digital satellite TV services (BskyB). It is reported that it has about 140 000 direct to home subscribers in Ireland.

## 3.8 ITALY

### OVERVIEW

#### *Market and regulatory framework*

The Italian telecommunications market experienced growth of approximately 8.5% in terms of value over the last year, and by October 2001 there were 232 licensed operators contributing to this growth. The main driver was the mobile sector, the largest in Europe in terms of revenue, and the highest in Europe (except for Luxembourg) in terms of penetration rate, the latter being 82% in August 2001. This is reflected by the fact that mobile and fixed telephony services have equal shares of the total telecommunications market.

The regulator has been active in a number of areas, notably local access, including access to the incumbent's (TI's) wholesale DSL service. A number of interventions have simplified administrative procedures or improved effective implementation, removing bottlenecks for new entrants in the voice telephony market. Consequently, TI's market share in the fixed telephony market has been decreasing progressively since last year. Telecom Italia's (TI) share of this market stood at about 60% at the end of 2000, compared with 68% a year earlier. TI's share of the long-distance call market was 76% at the end of 2000, down from 93% in 1999. As regards the local calls market, TI's market share was estimated at 93% at the end of last year, compared to approximately 100% one year earlier. Furthermore, 34% of households had access to the internet at the end of June 2001.

There has been progress in rebalancing tariffs towards costs, with regard to the updating of the licensing regime and in the pricing of leased lines. The notification of national transposition measures for two directives completed the transposition of the ONP regulatory framework, while Directive 1999/64/EC has not been transposed yet into national law.

#### *National regulatory authority*

The distribution of tasks between the NRA (AGCOM) and the Ministry of Communications as regards licensing is not entirely clear following the adoption of legislation. Overall, market players were positive on the regulatory approach of the NRA, but criticised it for the slowness in making decisions, which contrasts with the needs of players, although this has been counterbalanced by a larger use of public consultations and increased access to documents. Other concerns have been expressed in regard to the enforcement of NRA decisions and the transparency of internal procedures.

***Interconnection*** The NRA has exercised its powers to extend the number of services included in the reference interconnection offer and to change the economic conditions of many services. The level of interconnection charges remains below the EU average, notably at local level, although the costs of some services have increased in the offer published in September by TI. There is major concern with delays in the publication of the reference interconnection offer and in TI's reluctance to implement NRA decisions. This situation does not seem to guarantee a sufficient level of certainty for entrants' business plans. Mobile termination rates are still among the highest in the EU, and they are the cause of disagreement between fixed operators and users on the one hand and mobile operators on the other.

***Competition in local access*** There is now a well-established regulatory regime for local loop unbundling and collocation. Shared access is not yet on offer and market demand appears low. The NRA has concentrated its activity on the definition of regulatory and procedural conditions for collocation requiring changes to TI's initial unbundled offer. The overall process should provide access to 1 500 sites by the end of 2001, representing, potentially, over 50% of TI's customers. TI delivered the first 367 sites in August 2001; about 1 000 lines were actually unbundled by mid-October although the new entrants are still subject to delays in the effective delivery of sites by TI or complain about collocation costs. Moreover, the timing of the auction to grant licences for the provision of wireless local loop (WLL) services remain uncertain.

Although wholesale ADSL has been available since the beginning of 2000, access to xDSL services did not have an easy start. Problems encountered by the new entrants have been confirmed by the severity of the intervention by the national competition authority against the abuse of TI's dominant position, and by intense disputes over some regulatory measures. Six months later, the situation seems satisfactory. Thanks to the introduction of a wholesale offer for all xDSL services, new entrants have a considerable number of wholesale bit stream access lines, although TI has been able to gain a significant market share of the retail market. However, the new entrants consider that the increase in the economic conditions in the offer of TI of September 2001 might raise entry costs, leaving significant control of the new entrants total costs to TI.

***Frequencies and 3G roll-out*** The growth and size of the mobile sector has created problems for operators in terms of quality of service and network capacity. Intervention by the Ministry and the authority has been helpful in reducing problems of frequency scarcity in the 2G band. However, the ratio of customers per MHz remains high and is potentially not sufficient to cope with future demand.

The 3G licensing process, which culminated in the issue of five licences in January 2001, brought two new entrants into the mobile market. While no major regulatory concerns are reported, the prospects for the commencement of services remain uncertain, in particular as a result of strict limits imposed on electromagnetic emissions and the availability of equipment.

***Tariffs and cost accounting*** There have been improvements in the rebalancing of tariffs toward costs since last year and in the adoption of a cost accounting system for interconnection based on current costs. However, delays in the verification of TI's accounting system will not assist in following up new entrants' concerns regarding compliance by TI with cost orientation and non-discrimination principles, as well as progress in rebalancing retail tariffs. On the positive side, the NRA is finalising a complex regulatory package to include specific measures for improving compliance with these principles. The NRA published in October 2001 the statement concerning

compliance for the 1998 accounting year.

- Leased lines*** There is still little competition in the leased lines segment, especially in the case of short distance lines where TI is still dominant. However, prices have decreased significantly over the last year, following intervention by the regulator. From the regulatory point of view the introduction of a wholesale offer for leased lines, following a decision by the regulator in October, represents a positive and innovative development, in particular in regard to pricing. Nonetheless, provisioning and delivery times appear to be unsatisfactory in many cases.
- Numbering*** Carrier pre-selection has proved to be popular in Italy with about 2 million pre-selected numbers already activated. According to the timetable set by the NRA, mobile number portability should be available from May 2002. A general improvement in the field of numbering can be reported.
- Rights of way*** Obtaining rights of way is still a bottleneck to the development of alternative networks, representing an obstacle to infrastructure competition. There is no widespread cable TV network, and wireless local loop (WLL) services are not yet available. Operators consider that there is scope for a policy initiative, which could clarify the relations between operators and the municipalities as regards the deployment of telecommunications networks.
- Although the regulatory measures set with regard to site and mast sharing are part of a pro-competitive approach by the regulator, their effective implementation has been held up by the strict limits on electromagnetic emissions.
- Telecoms tax*** Operators have expressed concerns on the levy on turnover of all telecommunications operators. Some operators have challenged the relevant law, considering that the levy is contrary to Community law.

## NATIONAL REGULATORY AUTHORITY

The NRA has been energetic and pro-active in many important areas, such as interconnection, unbundling of the local loop, and implementation of carrier pre-selection. Despite the fact that delays are reported in the internal assessment and decision-making process, the NRA's decisions have been effective in opening the markets to competition and in lowering the barriers to entry.

Since the setting up of the NRA, some its functions have been carried out with the support of the Ministry of Communications. Progress can be noted since the NRA has increased its staff and is fully operational. However, some laws adopted in the first half of 2001 have increased market players' uncertainty concerning the division of tasks between the two bodies. The Italian authorities contend that distribution of tasks is defined by the Law of August 2001 concerning the organisation of the Government and of the Ministries. This Law confirmed the Ministry's regulatory tasks, including the that of granting individual licences and authorisations transferred to this body by the provisions of Law no.66 of March 2001. Operators consider that the continual modification of the division of tasks has increased the confusion, in particular with regard to licensing, where it is not entirely clear which body is in charge of monitoring the operators' compliance with the licence conditions.

Some improvements can be reported in relation to the NRA's procedures. Key achievements are the procedure concerning public hearings and the large use of public consultations in all relevant matters, the Decision relating to access to the NRA's documents, and the regulation concerning disputes between operators. Italian operators have expressed concerns as regards the lack of transparency and the duration of the decision-making process and the lack of internal procedural rules. As a consequence, the status of proceedings is unknown, deadlines are postponed and proceedings are very long. Moreover, other licensed operators (OLOs) claim that measures for the



monitoring of TI's behaviour and for imposing sanctions are not timely. The NRA considers that the correctness of the formal proceedings, the identification of possible abuse, the effectiveness of the regulatory measure adopted and the speed of the intervention are all equally important values that the NRA aims to ensure in all its interventions.

The NRA is more active in its role as mediator than it used to be in the past. Between May and June 2001, the NRA reported that it had dealt with eight cases concerning disputes between operators. Five of these cases resulted in an agreement between the parties. Three cases have yet to be settled. With regard to the right of appeal, operators claim that unless the Regional Administrative Court (TAR) grants an injunction suspending the disputed measure, the time taken to reach a final decision could be too long. The NRA reports that between 1 January 2000 and 30 April 2001, 42 appeals were filed with TAR, with only one suspension granted to a NRA measure. TAR has passed judgement in only three cases, and in each case TAR dismissed the appeal. According to the NRA, these results confirm the formal and substantial validity of its Decisions.

## LICENSING

The number of individual licences and authorisations continues to grow in Italy. The Ministry of Communications reports that 232 individual licences had been issued at the end of September 2001. More than 100 operators offer public voice telephony at national level, and more than 40 operators on a regional basis. About thirty-four operators have a national network licence and about 25 have a regional network licence only. The licensing regime for UMTS licensing has been fully adopted and the five licences were issued on 10 January 2001.

From a regulatory point of view, Italy has progressed significantly in the revision of the licensing system. No concerns are reported regarding the procedures for the granting of licences. Old concessions have been brought in line with the current licensing regime, in particular the concessions held by the two main mobile operators and by TI. TI's concessions have been changed into four individual licences covering maritime services, coastal network services, satellite communications and voice telephony services over its own network. TIM's old concession has been changed into two individual licences covering the provision of GSM and TACS mobile network and services. Moreover, in March 2001 the NRA completed the revision of the licensing regime for satellite network services outside the protected bands.

The few questions that remain open concern the licensing regime for private use communications and wireless local loop (WLL) services. In this respect, in December 2000, the NRA defined some elements of the WLL licensing regime, which have been supplemented by the pro-competitive measures of October 2001. However, concerns have been expressed by operators as to the uncertainty of the relevant licensing conditions and the timing of the auction. On 14 September 2001, the Italian Government adopted the "Regulation in the field of individual licenses and general authorisations for private use telecommunications services". Furthermore, it is working on a Regulation on the fees to be paid by the relevant operators. The Italian Government plans to bring into force the two Regulations on 1 January 2002. These Regulations will allow the Italian Ministry to license private operators and end a legal vacuum that has lasted for four years.

Finally, operators have expressed concerns on the levy on turnover of all telecommunications operators. Some operators have challenged the relevant law, considering that the levy is contrary to Community law.

## INTERCONNECTION

In general terms, the regulatory regime regarding interconnection remains characterised by low barriers to entry, and the NRA is determined to widen TI's reference interconnection offer (RIO). A

total of 108 interconnection agreements were in place on 1 August 2001 (fixed-to-fixed: 75; fixed-to-mobile: 31; mobile-to-mobile: 7) as compared to 67 in 2000.

The process of revision of the RIO 2000 lasted about one year from the last modification that took place only in August 2001, after intense discussions between the NRA and the market players. The delays increased the difficulties of new entrants and of the NRA who found that, despite months of negotiations, the catalogue did not fully correspond to the arrangements set in previous regulatory measures. The NRA therefore reports that it started a proceeding which could lead to sanctions on TI for non-compliance. According to new entrants, the August Decision of the NRA can be seen positively, even if the delays in the implementation of the NRA's measures caused difficulties with business plans. As a result of increasing competition in some outgoing international calls (notably calls to the EU and North America), regulatory measures on interconnection charges have been lifted in the course of 2001.

One positive development is that the RIO 2001 has been priced at current costs. The publication of the catalogue has suffered a long delay: originally planned for November 2000, it was then postponed. TI considers that the delay is due to the shift from a system based on current costs in the absence of the NRA's implementation guidelines. Following the publication of the RIO 2001 in September 2001, with effect from 1 January 2001, interconnection charges for switched traffic at peak time decreased moderately (-3% at local level, -14% at metropolitan level, steady at national level), counterbalanced by some increases of charges for off-peak traffic and for other services (transit services, CPS configuration costs, etc.). In total, charges decreased 3%, and remain just below the EU average (15% below the EU average at local level). Operators indicated that in other Member States the shift to current costs brought a decrease of a larger magnitude. The RIO 2001 is being assessed by the NRA; a public consultation is expected to be completed by mid-November 2001.

An important aspect discussed in the course of 2001 regards the setting of regulatory conditions to ensure effective application of the principle of non discrimination. As already reported in the 6<sup>th</sup> Report, new entrants alleged that TI had different prices for internal and external use of the same resources. The NRA has completed an inquiry ascertaining TI's anti-competitive behaviour, but no sanction has been inflicted given TI's appeal before the Regional Administrative Court. In parallel, in April 2001, the national competition authority imposed a penalty of € 59.4 million on TI for abuse of its dominant position in the xDSL market. The grounds for the NCA finding included *inter alia* TI discriminatory practices. With a view to tackling this issue, the NRA has started a complex proceeding aiming to define the regulatory conditions to ensure the effective application of the principle of non-discrimination. This "package" is yet to be finalised and could include the introduction of price tests to evaluate TI's retail offers and the use of interim interconnection charges.

In the first part of 2001, the mobile operators notified with SMP in the national interconnection market reduced the termination rates to a maximum average of € 0.178 per minute (-4.2 %), below the upper benchmark set by the NRA. New entrants in the fixed market claim that retail prices for on-net calls are much lower than termination rates of calls coming from fixed networks. Moreover, in their view the Italian mobile termination rates are higher than those of most EU countries. Users have complained about the failure to observe the principle of cost-orientation. Flat rate offers for fixed-to-fixed calls are 10 times lower than a call from fixed-to-mobile. The mobile operators consider that the competitive model set by the NRA has been delivering positive results since the main operators have reduced their termination tariffs. However, they consider that the fixed operators have not used the reduction on mobile termination to reduce the prices for their customers, preferring to increase their margins, and that TI has maintained its retention intact.

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| <b>LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE<br/>REGULATION ON LOCAL LOOP UNBUNDLING AND BITSREAM ACCESS</b> |
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Significant progress can be reported since last year in the implementation of local loop unbundling, which became effectively operational between August and September 2001 following the general regulatory measures and the testing phase referred to in the 6<sup>th</sup> Report. The NRA has concentrated its activity on the definition of regulatory and procedural conditions for collocation (Decision of 6 December 2000), integrating earlier interventions which reduced the economic conditions included in TI's initial unbundled offer.

The overall process, planned over three rounds, will provide access to about 1 500 sites out of approximately 10 000 of TI's main distribution frames by 31 December 2001. By October 2001, three rounds of the procedure for allocating sites were completed, with 1 300 sites selected by the new entrants; 584 sites were examined in the first round (January – March 2001); 540 in the second (May – July 2001). In the third round the new entrants favoured the extension of the collocation space obtained in the first two rounds rather than getting access to new sites. The number of operators that participated in the three rounds was 69 in total. In August 2001, TI delivered the first 367 sites (out of 466 planned in the first round) and so far approximately 1 000 unbundled lines have been activated (including those delivered in the test phase). The rate of sites available from the feasibility studies is quite high: about 89% of the sites requested, the geographical distribution quite balanced. It is estimated that at the end of the process, about 16m lines could potentially be subject to competitive offers (55% of TI's customers). New entrants report delays in the delivery of the remaining sites or sites effectively delivered that present problems. However, it seems that part of the delay in the delivery of the remaining sites is due to delays in obtaining the building authorisations requested by the local authorities from TI. The NRA indicates that it is assessing the effective status of delivery to the new entrants, with a view to preventing possible cases of discrimination.

In regard to the economic conditions, TI published the new unbundled offer in September 2001. Prices for the different services have increased: the monthly rental of 1.3% for the copper loop, about 13% for ADSL, and 19% for the fibre. Significant increases are reported for several collocation-related services (electricity, waterconditioning, etc.) and the set-up costs. Concerns have been expressed by the Italian operators regarding these increases. The price of the unbundled loops is higher than TI's price for line rental for residential service only (not for business services), especially after TI increased the price of unbundled loops, indicating the possibility of a price squeeze. However, the NRA considers that it has the opportunity to require changes to TI's offer, and opened a public consultation to get the view of market players on the new RUO.

The monitoring activity of the NRA during the implementation process resulted in the adoption of new regulatory measures (such as the possibility of reselling unbundled services on a wholesale basis, or the setting of the number of daily orders – 10 000 – to be met by TI), reducing the number of difficulties faced in the initial phase and introducing more flexibility in the system. However, some difficulties are still being experienced, for example in the provision of information to third parties (site maps, feasibility studies, availability of sub-loops, etc.), which was initially reported as being imprecise or delayed, and as regards the level of collocation costs.

Shared access is currently not included in TI's RUO and there is no agreement in place for this form of access. In July 2001, the NRA launched a public consultation, which was concluded in mid-September 2001, with a view to setting the related conditions for access to this service. There is no major demand; only two operators have shown interest and have started discussing testing and economic conditions with TI.

Several developments can be reported with regard to the provision of xDSL services, an issue which has been characterised by intense discussions between the NRA and the NCA and the market players. Despite the fact that operators have contested the lack of coherence of some specific aspects of the measures adopted by the regulator as explained below, the introduction of a wholesale offer has been substantially successful, given that the number of new entrants to bitstream access lines is roughly comparable (135 000) to the incumbent's retail lines (165 000) and

given the number of agreements signed by the new entrants with the incumbent operator (120). Nevertheless, TI has been able to take a first-mover advantage and gain a large market share in the retail market. In December 2000 precise regulatory measures were taken including the obligation for TI to issue a wholesale offer for xDSL services with a 30% discount on the price in the retail market; a flat rate offer for the same services; and authorisation for TI to start offering services for which there is an approved retail offer. In February 2001 the OLOs contested that TI's retail offer had been approved in the absence of a wholesale offer for a specific service (flat rate HDSL). The NRA considered that it was necessary to analyse the impact on substitutable products (leased lines). This assessment has now been completed and the introduction of a wholesale offer for HDSL will be mandated in the next few months, together with a revision of the wholesale offer for ADSL, set at the beginning of 2000. It is important to recall that in April 2001 the NCA imposed a fine of € 59.4m on the basis, *inter alia*, of TI's abuse of its dominant position in the xDSL market.

As regards WLL licensing, the main aspects of the procedure for the allocation of frequencies for point-multipoint broadband radio networks were set in December 2000, complemented by asymmetric measures in October 2001. The Ministry, which is responsible for the management of the tender and the assignment of the frequencies, has said that the date for the auction is yet to be fixed. Operators are concerned about the uncertainty on the delay regarding WLL licensing ( call for tender, conditions, etc). TI will not be allowed to provide WLL services to end-users for four years (the NCA suggested a delay of five years, reduced by the NRA). TI contests this solution in a new market and in consideration of the fact that in some Member States the incumbents have been allowed to provide WLL services from the beginning.

## UNIVERSAL SERVICE/CONSUMERS/USERS

In 2000 the NRA decided to set up a cost-sharing mechanism. Some operators that are obliged to contribute to the fund for the year of 1999 have appealed to the Regional Administrative Court against specific aspects of the NRA decision, such as the transparency of the procedure.

The procedure for the calculation of the net cost for the financial year 2000 is being completed. At the end of March 2001, TI provided its net cost estimate for the financial year 2000. An external auditor assessed TI's estimation of the net cost, completing its evaluation after the summer. It is expected that the amount to be shared should be of the same magnitude as the net cost shared for the financial year 1999 (€ 62 m). In October 2001, the NRA made available a summary of the auditor's evaluation of TI's costs to the operators contributing to the fund. Moreover, these operators had the possibility to express their view in a restricted hearing before the NRA adopts its Decision on the cost calculation.

In summer 2001 the NRA launched a public consultation concerning the introduction of competitive provision of universal service. Interested parties were asked to comment on which services the "pay" or "play" mechanism should apply to and which features the mechanism should have (duration, regional coverage, criteria to selected bidders, etc.). On the one hand, the operators consider that the present mechanism is not transparent and implies high administrative costs related to the calculation and verification of net cost. On the other hand, the operators support the implementation of competitive mechanisms which would allow other operators than TI to supply the universal service. TI considers that in a competitive environment with rebalanced tariffs covering the underlying costs, the scope of USO should be limited to low income categories and isolated rural areas.

In August 2001 the NRA set the operational guidelines for the implementation of the tariffs scheme for the provision of voice telephony services to disabled users and users with special social needs. This measure integrated the Decision of June 2000, which defined the potential beneficiaries of the targeted tariff scheme. These measures are expected to become operational by the end of the year, after the implementation of a database by INPS (the body in charge of social security).

The NRA has dealt with some other aspects related to the provision of universal service to users and subscribers. As regards the provision of directory services, in July 2001 the NRA modified the economic conditions of TI service ("12") set in 1992, increasing it by about one third. Also in July, the NRA defined the quantitative and qualitative criteria for the distribution of public payphones in the national territory, to be implemented in a period of one year from the adoption of the present measure. Finally, in August the NRA launched a public consultation concerning the arrangements for the provision of a general directory service.

## MOBILE SERVICES / FREQUENCIES

Some improvements can be reported as regards problems of frequency scarcity in the 2G band, following the allocation of 15 MHz in the 1800 band in December 2000. The allocation was decided by the NRA and the Ministry of Communications as a temporary measure, following the requests of the two leading mobile operators, whose needs were particularly urgent. The additional frequencies for the fourth mobile operator have yet to be freed by the Ministry of Defence. Despite the fact that this allocation has improved the quality of service, as reported both by the operators and the NRA, the ratio of customers per MHz remains significantly high. The main mobile operators underline that part of the frequencies (2 x 5 MHz) in the 1800 band is still occupied by the Ministry of Defence, which appears reluctant to free them. The need for additional frequencies in the 2G band might become more urgent with the introduction of GPRS and roaming obligations.

The Ministry of Communication reports that freeing of further 2x20 MHz frequencies in the 1800 band is being discussed with the Ministry of Defence. Moreover, the Ministry is assessing the possible refarming of the frequencies occupied by the CT1 systems, while the NRA is monitoring the actual traffic data of TACS systems which could lead to vacation of additional band.

There are no concerns regarding the analogue switch-off given the deadline set by national law (2005) and the fact that the number of subscribers is decreasing steadily (about 2.1m in July 2001, against 2.9m in June 2000). The introduction of mobile number portability is likely to accelerate the process. However, some operators have expressed concerns as regards the efficiency of the use of the analogue band, which has a much lower ratio of customers per MHz than the band allocated for digital systems and have highlighted the need to reform the band currently allocated for analogue systems. Moreover, the analogue band is occupied by the incumbent's mobile subsidiary only.

As regards national roaming, the NRA has set regulatory measures as a temporary pro-competitive measure to foster the market entry of the new entrants in the 2G and 3G markets. However, it has taken the features of commercial service subject to the competitive offers of the established network operators.

Five licences for third generation mobile telephony have been issued in Italy, including two new entrants in the mobile market. One of the existing 2G operators withdrew from the auction and does not have a 3G licence. The duration of the licences is 15 years, with possible renewal. The assignment procedure was based on a hybrid mechanism, including an auction in which participation was offered to operators who had passed the pre-qualification phase. The auction was completed in November 2000. The NRA issued the licences in January 2001, assigning the frequencies on the same date. The total amount paid for the five licences is € 12.16 billion. As regards 3G frequencies, the Ministry reports that these are being vacated by the public broadcaster RAI and other private broadcasters. Mobile operators are experiencing network roll-out difficulties due to the late development of technology, and they have also expressed some concerns regarding the strict limits on electromagnetic emissions imposed at national level by the relevant Decree. In their view, the licence duration should be extended from 15 to 20 years.

## TARIFFS

Between 2000 and 2001 the average price of international calls did not change. However, the price of a three-minute call fell by about 15%, although remaining significantly more expensive than the EU average, while local charges for both three-minute and ten-minute calls remained steady in the same period. However, local call charges remain cheaper than the EU average, notably about 30% in the case of ten-minute calls. From 2000 to 2001, the average monthly expenditure for a composite basket of national and international calls of both residential and business users decreased by about 5%, confirming the decrease in real terms of the total bill of an average consumer. In absolute terms, the average monthly expenditure is at €54 for residential users and €119 for business users, slightly more than 15% above the EU average for both residential and business users.

Following the concerns expressed by the Commission in relation to the effective completion of tariff rebalancing in Italy, the NRA modified the sub-cap concerning set-up costs and the line rental in December 2000. This sub-cap is now set at 6% + inflation (up from 1% + inflation). As a result of this modification, the line rental for residential users is now set at €10.69 per month, and €14.62 per month for business users. TI considers that both the methodology used for the calculation of the access deficit and the interventions planned by the NRA for the period 2001-2002 will allow a substantial rebalancing.

The issue of TI's discount policy is addressed in a proceeding before the NRA, following a complaint filed by the OLOs in the course of 2000 including, *inter alia*, the offer of fixed voice

telephony services to public administration. The NRA reports that the issue has been submitted to the Council of State for advice on the relationship between the obligation for cost orientation provided by Community legislation in the field of telecoms and law in the field of public procurement. In general terms, TI has expressed the view that the obligation for cost orientation in certain retail markets should be relaxed given the rigid application of *ex ante* rules in the provision of access services and interconnection (i.e. intermediate goods).

The same Decision referred to above concerning the revision of the sub-cap reduced the period for TI to communicate new offers to the NRA from 90 to 30 days. New entrants, especially the mobile operators, expressed the view that this obligation on operators without SMP is disproportionate and therefore should be repealed.

## **COST ACCOUNTING**

The NRA's activity in respect to control and supervision of TI's cost accounting remains an area of concern. An independent auditor carried out the audit for fiscal years 1997 and 1998. Some progress can be reported in view of the publication of the statement concerning compliance as regards accounting year 1998, together with a description of TI's cost accounting system. However, the audit for the fiscal year 1999 has not been carried out yet.

There are however some positive developments with respect to the implementation of a cost accounting system. The RIO 2001 was based on current costs for the first time. With regard to mobile operators, in the course of 2000 the NRA adopted a methodology based on current costs for mobile termination. This was intended as an intermediate step in the implementation of the LRIC methodology. The mobile operators with significant market power have provided the regulator the accounting data for 1999.

With regard to the drafting of accounting policy, the operators have lamented the absence of specific guidelines, which were due to be published at the end of last year. TI claim that the situation is very uncertain in view of the lack of a precise methodology. The OLOs consider that a structural *ex-ante* mechanism could prevent TI from squeezing prices and ensure compliance with the principle of non-discrimination. The NRA has reported that a complex and innovative regulatory package is being finalised, aiming at ensuring compliance with the principle of non discrimination and transparency in the cost of TI's intermediate services (leased lines, interconnection, access network, etc.). The improvement of regulatory accounting is an essential part of this package.

## **LEASED LINES**

A positive development concerns the introduction of a wholesale offer for leased lines, following the adoption of a NRA Decision in October 2001, which defined the broad aspects of the wholesale offer. TI's wholesale offer will be based on a retail minus approach and will cover all types of leased lines offered by TI. The wholesale offer will be available to both licensed operators and ISPs and should contribute to solving the concerns referred to below with regard to the pricing of national leased lines on the retail market.

On the one hand prices for national leased lines have decreased significantly since last year for all kinds of lines, capacity and distance ranges. On the other, prices for national leased lines on the retail market are still more expensive than the EU average and the decrease has been lower than the average price reduction at EU level. Data for July 2001 indicate a significant reduction of national half circuits for all distances (2km, 50 km, and over 200 km), in particular affecting half circuits of less than 2km where the decrease is about 30% for most capacities. Despite this positive trend, retail tariffs remain above the EU average for all kinds of national leased lines (50% in the case of 34

Mbit/s lines for most distances, although data are not available for all 15 Member states). With regard to short distance leased line part circuits (less than 5km), these are in line with the price ceiling set at EU level. However, concerns have been expressed regarding the non-compliance of the incumbent's offer with regard to the SLA and other cost elements.

With regard to international leased lines, the situation appears to have improved substantially since last year, and a better situation can be reported. Data for July 2001 indicate a substantial reduction for leased lines to near EU countries (-50% for 64 kbit/s, 2 Mbit/ lines and 34 Mbit/s), while leased lines tariffs to the USA and Japan for 64 kbit/s, 2 Mbit/ lines have remained unchanged since last year. Tariffs remain above the EU average for most kinds of leased lines, although sometimes for less than 10%, while tariffs for some leased lines to the USA and Japan are below the EU average. In the context of the Commission's investigation of leased lines tariffs, in October 2001, TI presented a new offer for some international half-circuits including a price reduction. The offer is being assessed by the regulator.

There appears to be a mixed picture concerning the delivery period and the provisioning process. Although TI is subject to a new SLA, which was approved by the NRA in October 2000, the Italian operators have expressed concerns at the delivery times, especially as regards circuits of lower capacity, and TI's failure to pay penalties for late delivery. The NRA has opened an inquiry, which is expected to be finalised in March 2002.

## NUMBERING

During the course of last year, the NRA made several decisions in order to foster the implementation of carrier pre-selection (CPS). These decisions concern, *inter alia*, the procedures and the ordering process, which have been simplified; the number of daily orders increased in May 2001 from 12 000 to 20 000. This service is available for all kinds of calls; it is currently offered by 18 operators for local calls to residential and business customers, and by 22 operators for long distance and international calls.

The Italian operators have expressed some concerns with regard to TI's order refusal, which in their view are not objectively justified, and the fact that TI has never been sanctioned for the non-compliance with the SLA. However, CPS has proved to be popular in Italy with about 2 million pre-selected numbers already activated, confirming the substantial effectiveness of the regulatory framework. Moreover, in August 2001, the NRA revised the SLA of both CPS and number portability (NP), reducing the maximum delivery period and repair times and revising the penalties in case of non-fulfilment of the provisioning terms.

With regard to NP, the service has been operational for both geographic and non geographic numbers since last year. Portability of geographic numbers is not widely used pending the introduction of local loop unbundling: at the end of June 2001, about 3 000 numbers had been activated. Operators have expressed some concerns in regard to the absence of technical specifications for the portability of non geographical numbers. The NRA's Decision of August 2001 should improve the NP provisioning process.

In general terms, significant progress can be reported with regard to the whole numbering area: in the first months of 2001 the management of the numbering data base was transferred to the Ministry; short codes originally allocated to the incumbent have been withdrawn with a view to ensuring the fair and efficient use of numbering resources. Finally, there are no longer concerns as regards the scarcity of geographical numbers, the efficiency of number allocation, or procedures for number allocation.

According to the timetable set by the regulator in June 2001, obile NP (MNP) will be operational from 30 April 2002 covering also MNP from 2G to 3G, while an initial phase is planned to start in autumn 2001. While MNP is strongly supported by the third and fourth 2G operators and the new



entrants in the 3G market, one of the main operators claims that the service cannot be implemented technically within the deadline laid down and that the technical solution chosen by the NRA is not efficient. It therefore appealed against the introduction of MNP. The main concern of the new entrants concerns the definition of efficient procedures and the costs thereof. The mobile subsidiary of the incumbent stressed that the introduction of MNP should take place simultaneously for all operators.

The Italian Audiotex providers have expressed concerns regarding access to 144 numbers and the 164, 899 and 892 short codes. As regards the 144 numbers, they are still subject to a heavy authorisation procedure. As regards the 164, 899 and 892 numbers the NRA intends to verify the conditions of provision by the licensed operators to which these numbers were assigned.

## **RIGHTS OF WAY**

Operators are still confronted with difficulties in building new telecommunications networks. Concerns have been expressed by the OLOs concerning the lack of a common policy which would prevent possible abuses of power by local authorities (sometimes the authorities request additional payment in the form of civil infrastructures or ducts) or the restriction of rights to a single company (an operator with which the municipality is associated). Digging authorizations are often granted after a long delay. According to the OLOs, guidelines should be issued to improve the situation and foster the development of alternative infrastructures.

As regards the sharing of TI's civil infrastructure, OLOs' request the issuance of specific guidelines. Under the licence conditions attached to TI's licence, the NRA should have drafted a specific regulation by March 2001. Within the framework of the merger TI-SEAT-TMC, TI is required to give other operators access to its civil infrastructures, with a view to allowing the deployment by OLOs of fibre networks for the supply of broadband services. It seems that only one contract has been signed for access to its civil infrastructures so far. TI considers that the difficulties encountered by the OLOs in digging, often created by the local authorities, should not imply the granting of access to TI's civil infrastructures.

The NRA contends that most of the powers are allocated at local level. The NRA acknowledges the need to clarify the relations between operators and the municipalities as regards the deployment of telecoms networks (a public consultation took place in January 2001). Two drafts regulations are being finalised. The first one concerns digging obligations, the second one the deployment of backbone networks. A third regulation, concerning the sharing of TI's civil infrastructure, will be drafted at a later stage.

The Italian authorities have set regulatory measures aiming to foster site and mast sharing with regard to new entrants in the 2G and 3G markets. In practice, mobile operators have expressed concerns because of the strict limits imposed by national and regional legislation on electromagnetic emissions, which hinder the effective implementation of site and mast sharing. It appears that some Regions have set stricter limits within their territory. The Ministry reported that following the entry into force of the Framework Law of February 2001 on the protection of exposure to electrical and electromagnetic emissions, Regions are no longer allowed to set limits below those set by the Ministry of the Environment in September 1998. New entrants in the 3G market have reported difficult negotiations with the SMP operators with regard to site sharing. Moreover, operators claim the legislation does not provide precise indications when the emission limits are reached or when there is no space left in a given site.

## **DATA PROTECTION**

The provisions of the Telecommunications Data Protection Directive were substantially transposed by Decree No.171 of 13 May 1998. However, there are concerns regarding the transposition of some specific provisions of the Directive in regard of emergency calls and information to the public on the different facilities related to calling line identification. As regards Article 5 of the Directive, no national transposition measure has been notified to the Commission.

Concerns have been expressed by the Italian operators concerning itemised billing. In their view, the national law is too restrictive since it provides for the automatic deletion of the last three digits in itemised bills. The Data Protection Authority considers this issue should be assessed taking into account the effective availability of alternative arrangements for payment. In this respect, the Authority has carried out an investigation confirming the availability of alternative payment methods.

## **INTERNET**

Since last year internet penetration has continued to increase. internet access per 100 households reached 34% at the end of June 2001, up from approximately 24% in October 2000. There are currently more than 800 internet service providers (ISPs), 50 of which operate at national level. The incumbent offers internet services via its subsidiary, which is controlled by the provider of directory services. The ISP related to the incumbent has a market share of 28% of total connections to internet, and 88% in terms of dial-up calls.

Several operators offer unmetered tariff packages for a fixed monthly fee, alongside cheaper pay-as-you-go prices. With regard to the introduction of a wholesale unmetered access service (Flat-Rate Internet Access Call Origination – FRIACO), in November 2000 the NRA already provided for the introduction in the RIO of flat rate interconnection charges in case TI offered services at flat rates on the retail market. In August 2001 the NRA launched a public consultation with a view to setting the regulatory conditions for the provision of an offer based on the FRIACO model. The consultation was concluded in mid-October 2001 and a Decision is expected by autumn 2001. At present, there is no FRIACO offer.

ISPs claim that part of the regulatory regime is mainly addressed to voice telephony operators, while they have stressed the lack of measures (other than on the retail market) for data communications services and ISPs, such as in the case of leased lines and interconnection circuits. The NRA considers that several measures that could foster ISP activity have been adopted in the course of 2001, such as the wholesale offer for xDSL services, the wholesale offer for leased lines, and the possibility to resell ULL services.

## **DIRECTIVE 95/47/EC**

While the Ministry of Communications is responsible for the drafting of primary legislation in the field covered by the Directive, the NRA is responsible for supervision and enforcement of the national implementing legislation. The Directive has been substantially transposed by Decree no.191 of 17 May 1999 as amended. The NRA's Decision of April 2000 on the definition of common standards for pay TV decoders completed the transposition of the Directive pursuant to Law no.78 of 29 March 1999. This law set a threshold of 60% for the exploitation of football rights by a single provider and required the use of a single set-top box (STB) with a view to allowing pay TV users to access the offerings of both pay TV operators by means of a single decoder, instead of two separate ones.

The enforcement of the NRA's measure has been long and difficult (the NRA sanctioned the parties for failure to implement it), despite the fact that the definition of the related technical and licensing aspects was left to the parties that chose simulcrypt. A consumer association filed a complaint to the

Regional Court since the single STB was not implemented. However, on 26 August 2001 the single STB became finally operational, via a single smart card. The pay TV operators have expressed concerns at the implementation of the single STB. In their view the implementation of the single STB involved significant licensing costs for the use of the competitor's CAS technology and other additional costs related to the provision of customer care and billing services. Moreover, according to the pay TV operators, the single STB does not cover interactive services (such as pay-per-view) and therefore hinders their introduction in the market. Finally, the practical implementation of the single STB requires the exchange of some data of customer profiles between the pay TV operators, though some of these data are confidential. However, according to the agreement reached by the two pay TV operators, only a minimal amount of data is exchanged between the two parties. The NRA indicated that the legislation referred to above will be modified by June 2002, taking into account the outcome of the testing phase of digital terrestrial television in Italy.

There are currently two digital satellite TV operators (Stream and Tele +) reaching an estimated 2.5m subscribers in total in July 2001 (both analogue and digital), representing about 13% of Italian households. Cable TV is very limited and the cable network originally built up by TI reaches an estimated 0.08m customers. However, few telecommunications operators are investing heavily in cable networks with a view to targeting the business market and some specific "niches" in the residential, especially in the north of the country where one of them has started to provide video-on-demand alongside broadband telecommunications services.

The two digital satellite TV operators announced a merger in July 2001. The merger is currently being assessed by the Italian competition authority and is expected to be concluded in autumn 2001. Preliminary indications show certain concerns in the relevant markets (pay TV, TV rights, interactive TV services, etc.).

Digital terrestrial television is not yet available. In March 2001 the Parliament approved a law concerning the transition to digital broadcasting, setting the analogue switch-off at the end of 2006. The same Law includes some asymmetric measures requiring the holders of more than one national licence for TV broadcasting on terrestrial frequencies to reserve 40% of their transmission capacity to other subjects. In July 2001 the NRA submitted to public consultation a draft regulation on the implementation measures, covering *inter alia* the licensing regime for interested parties, i.e. content providers, service providers and network TV operators. Licences will be issued by the Ministry. The NRA is expected to draft the plan for frequency allocation by the end of 2001.

## 3.9 LUXEMBOURG

### 49. OVERVIEW

#### *Market*

Market data indicate an increase in competition in voice telephony services. New entrants have gained a market share of 26% in international voice telephony, and about 7% in local/national voice telephony communications (on a per minute basis). Given the small size of the Luxembourg market and the restricted possibilities for new entrants to create added value by rolling out infrastructure, it is particularly remarkable that new entrants have acquired a relatively large overall market share of 7% in national voice telephony.

Since autumn 2000, three alternative operators have started offering national voice telephony and eight operators (including the incumbent) are now offering this service. One alternative operator has since started offering international voice telephony and there are now ten operators (including the incumbent) offering this service. National public network services are offered by seven operators (6<sup>th</sup> report: six) and international public network services by fourteen operators (6<sup>th</sup> report: thirteen). Reportedly, the introduction of pre-selection allows the entire population to choose, for their national (local) and international calls, between three operators (the incumbent and two alternative operators). Competition in the international voice telephony market has led to substantial tariff decreases. Operators, including the incumbent, also welcome competition on international connections, which has substantially decreased international interconnection termination charges.

Since autumn 2000, one more fixed-to-fixed interconnection agreement has been concluded. Currently, six fixed-to-fixed, one fixed-to-mobile (which is part of a fixed-to-fixed agreement) and one mobile-to-mobile interconnection agreement have been concluded.

As previously, fixed access is almost entirely provided by the incumbent operator. No CATV operator is using its networks to offer telecommunications services. As unbundling is being set up, no alternative operator yet offers local access via unbundling. Two of the five operators that have been granted a national WLL licence now offer local access services via wireless local loop frequencies for business customers.

As previously, there are two operators offering mobile services, one of them being the incumbent. The mobile penetration rate reached 41% at the end of 2000.

Competition in the leased lines market appears to have developed only in urban areas.

50% of households are connected to the internet. A series of operators offer internet access, including access at flat rates. However, figures on the market share of the incumbent as an ISP could not be collected. The success of the incumbent's offers for fast internet access (ADSL), marketed since October 2000, is limited. There is no alternative broadband offer on the market.

***National regulatory authority***

Since December 2000 Luxembourg appears to have made further substantial progress towards opening up its market to allow the development of competition. During the first half of 2001 it has adopted legislation (licensing, interconnection, consumer issues, tariffs, and rights of way) to create conformity of almost all of its legislation with the EU legislation.

The law of 17 July 2001 modifying the Telecommunication Law now grants the NRA (ILR) the powers to intervene, on its own initiative, in all interconnection issues and to resolve interconnection disputes.

The ILR has addressed a series of requests by new entrants to create favourable market entry conditions: reduction of interconnection charges, creation of additional regional interconnection points, and collocation for interconnection. The RUO has been approved by the ILR and operators are in the process of negotiating unbundling agreements. In addition, pre-selection has been operational since December 2000 following the ILR's decisions taken during the first half of 2000.

However, the ILR has not been in a position to supervise the incumbent's retail tariffs nor to resolve interconnection disputes by binding decisions until recently, and there is still concern about market entry barriers due to insufficient monitoring of the incumbent's tariff structure and high interconnection tariffs.

***Licensing***

Concern as regards the delay of six weeks for granting licences has been removed by the regulation of 23 February 2001 modifying the regulation on licensing procedures.

***Interconnection***

Conditions for interconnection have improved progressively. New entrants have however expressed concern at the tariff squeeze between the incumbent's retail tariffs and interconnection tariffs.

***Local access competition***

Fixed local access is still dominated by the incumbent. There are limited prospects that competition will come from alternative infrastructure, in particular broadband cable and power-line. Full unbundling is not yet operational and an offer for shared access has not yet been approved by ILR. However, wireless local loop access appears to be developing well for business users.

***Third generation mobile***

The licensing regime to award 3G licences has not yet been adopted and it is unlikely that it will be in place to allow roll-out of services from 2002. Operators interested in the award of a 3G licence have major concerns over the granting of rights of way.

***Tariffs***

The incumbent, EPT, has restructured its tariffs and they are now more likely to reflect costs. No assessment with regard to cost-orientation has however yet been carried out by ILR due to the previous absence of the necessary legislation.

***Cost accounting***

The concerns as regards the obligation of operators having significant market power (SMP) to observe cost-orientation and the establishment of a suitable cost accounting system for user tariffs and leased lines and a series of consumer and user rights have almost been removed by the adoption of the regulation of 18 April 2001 modifying the regulations on fixed networks fixed networks and services and on services.

EPT and ILR are in the process of establishing the principles for a suitable cost accounting system, which however has not yet been finalised.

***Numbering***

Carrier pre-selection has been operational since December 2000 following ILR's decision during the first half of 2000. It now applies for international and national calls separately. Pre-selection has had a decisive impact on competition. Although the conditions set by ILR for number portability appear to be adequate, the facility

has not had any notable success.

**Rights of way** Backlogs in granting rights of way still constitute a major market entry barrier. Concern over the granting of rights of way has been partially addressed in the regulation of 8 June 2001 on the conditions of use of public land (roads and rail).

## **50. NATIONAL REGULATORY AUTHORITY**

In previous reports the NRA's lack of powers was noted. Concern about insufficient empowerment as regards interconnection issues has been addressed by the law of 17 July 2001 modifying the Telecommunication Law which granted ILR the powers to intervene, on its own initiative, in all interconnection issues and to resolve interconnection disputes. The Regulation of 18 April 2001 modifying the regulations on fixed network, fixed networks and services and on services appears to have addressed most concerns as to the lack of powers of the ILR with regard to the SMP operators' supervision of cost-orientation and the cost accounting system for user tariffs and leased lines tariffs.

New entrants are of the view that the ILR is not sufficiently responsive to their comments, in particular with regard to the establishment of the RIO and the RUO. The incumbent is of the view that the ILR does not sufficiently take account of its relatively small size if compared to other European operators. In particular, the ILR has imposed tariffs for LLU in comparison to other (large incumbents) without taking into account the demonstrated higher costs of EPT (in relation to its small size).

New entrants have also expressed concern whether the ILR is sufficiently staffed to carry out examination of the incumbent's cost accounting system. The ILR has announced that it will rely on an external auditor to carry out the assessment.

As noted in the Sixth Report, under the law of 7 November 1996 on administrative organisation, operators can appeal to the administrative courts against ILR decisions. This right of appeal appears to cover decisions of the ILR adopted as part of the dispute settlement procedure for interconnection and does not lead to suspension of the contested decision during the procedure. The appeal procedure before the administrative courts is subject to strict time-tables.

## **51. LICENSING**

As noted in the Fifth and Sixth Reports, in practice licences are granted in good time. The Regulation of 23 February 2001 modifying the regulation on licensing procedures has brought the national legislation into line with the limits provided for in the Licensing Directive.

With the entry into force of the decree on radio paging of 10 March 2001, all licensing conditions have now been determined and published.

Operators have pointed out that collection of licence fees has led to an over-compensation of the costs of the ILR.

## **52. INTERCONNECTION**

In its Decision 00/41 of 27 December 2000 the ILR authorised the incumbent to publish its assessed 2001 reference interconnection offer. The 2000 interconnection offer (Catalogue d'interconnexion de l'Entreprise des Postes et Télécommunications) provided for interconnection at national level only. Following the request of new entrants for interconnection at local level, the interconnection offer of EPT now provides for five POIs, two POIs at national level and three POIs at regional level.

Interconnection at the level of regional POIs is only possible for limited purposes. In particular, as has been pointed out by new entrants and confirmed by EPT, interconnection at regional POIs does

not allow for the provision of value added services. Furthermore, new entrants have pointed out that EPT does not allow wireless equipment (microwave dishes on the roof of EPT's buildings) to be used by new entrants for interconnection, although it offers this facility to itself.

Although the 2001 interconnection offer contains the provision of collocation, new entrants point out that EPT does not currently offer physical collocation. The incumbent points out that physical collocation until recently has not been offered due to capacity constraints. However, physical collocation is offered at all national and regional POIs. New entrants may also choose in-span collocation (operator-sited collocation).

The 2001 regional interconnection tariffs exceed EU best practice for local tandem, while the national interconnection tariff falls within EU best practice for single transit.

New entrants have reiterated concern expressed in the Sixth Report that the national interconnection tariff, including the call set-up charge, exceeds the incumbent's retail tariff and constitutes a price squeeze. The incumbent operator points out that there is still a margin, taking into account the effective duration of calls and the average of the two levels for the interconnection tariff if compared to one single national retail tariff. The ILR is of the view that EPT's recent tariff restructuring of its retail tariffs (as from 1 July 2001) is one of the reasons for concern by new entrants. The ILR is committed to ensuring that new entrants are in a position to provide a competitive offering in the market; it is currently examining the issue, in particular with regard to ensuring cost-orientation of forthcoming interconnection tariffs and retail tariffs.

New entrants have also expressed concern as to the incumbent's interconnection tariffs for terminating international calls, which they consider to be anti-competitive.

No changes have occurred since last year as to the notification of operators having significant market power.

In previous reports concern has been expressed regarding insufficient empowerment of the NRA. The ILR has now been granted all powers to implement the Interconnection Directive. The Law of 17 July 2001 modifying the Telecommunication Law grants the ILR the powers to intervene, on its own initiative, to set time-limits within which negotiations on interconnection and/or LLU are to be completed, to lay down specific conditions to be observed by one or more parties to such an agreement, including financial conditions, and to require changes in interconnection agreements already concluded. Furthermore, it obliges the ILR to decide in interconnection disputes within three months.

### **53. LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE REGULATION ON LOCA LOOP UNBUNDLING AND BITSTREAM ACCESS**

The market for fixed local access is still fully dominated by the incumbent; however, new entrants offer wireless local loop access to business users.

All frequencies for WWL have been assigned to five operators. One operator currently offers data transmission to businesses via wireless local loop and confirms that the conditions for providing the service are suitable. However, it appears to be a problem to obtain collocation from the incumbent.

No CATV network operators currently offer data transmission services.

One operator is testing the viability of power-line communication for data transmission.

On 28 June 2001 the ILR approved EPT's reference unbundling offer. The ILR has set two different tariffs for the monthly rental for the fully unbundled local loop, one for use of the local loop for voice telephony only and one for the use of broadband also, both levels being below the incumbent's subscription fee to allow for market entry. New entrants are of the view that the price set is too high to allow new operators to enter the market. They also criticise the fact that unbundling is not offered in such a way as to allow for connecting leased lines or microwave

equipment. The incumbent operator is of the view that the LLU tariffs have been set below costs. ILR points out that the LLU tariffs were calculated on information on costs and infrastructure provided by the incumbent operator.

The LLU tariffs approved by the ILR are both situated below the incumbent's monthly subscription fee of €16.01.

Negotiations on LLU have started and one operator has concluded an agreement. Provision of unbundled local loops are expected to be operational without delay. Conditions for shared access are in the process of being established. EPT has requested the ILR to approve a monthly charge of €7.54. New entrants have expressed concern that the absence of an offer on shared access prevents them from offering high speed internet access.

The RUO contains details on collocation. As yet there are no reports of delivery of collocation.

EPT offers, inter alia, internet access at a week-end flat rate. New entrants are of the view that this offer is below cost. They also point out that no flat rate interconnection access (FRIACO) is offered to competitors.

New entrants have also expressed concern about bundled offers of EPT and a subsidiary, packaging internet subscription, DSL and voice telephony, and the fact that they cannot compete against the bundling (ISPs) or are forced also to offer voice telephony (operators).

New entrants have also pointed out that internet access for schools (the offer "Restena" which is free internet access for subscribers working for an educational institution) is used in an extensive way to create an obstacle to compete for internet access.

Since October 2000 EPT has marketed a DSL offer for users (LuxDSL). There are about 1000 ADSL lines actually in service. There are no other flat-rate offers for broad-band access on the market. EPT has been negotiating different offers with ISPs for several months to allow them to offer DSL directly to clients at IP access level. EPT has apparently concluded one agreement with a subsidiary.

EPT does not offer network operators bitstream access (wholesale ADSL). EPT has reported that, following a request from the ILR, a technical description of a possible wholesale offer was submitted to ILR to grant access to ATM traffic at the level of the DSLAM, to allow new entrants to market their own DSL offer. The ILR is currently examining the technical conditions.

#### **54. UNIVERSAL SERVICE/CONSUMERS/USERS**

A series of user rights is now transposed into national legislation by regulation of 18 April 2000, in particular information to users on standard conditions and to SMP operators on cost-orientation for user tariffs, independence of tariffs from applications, sufficient unbundling of user tariffs, implementation of tariff changes only after an appropriate public notice period, provision of contracts to users and their basic elements, cost-accounting, and prohibition of discriminatory discounts.

The directory service is provided by a single operator (EDITUS), which is a subsidiary of the incumbent. Previous reports have noted concern by new entrants that EDITUS had requested them to pay for being listed in the directory. However, new entrants consider that EDITUS should pay them for providing information on their clients. Following the intervention of the ILR in March 2001, the conditions have been improved, but new entrants consider that they are still not satisfactory (no fee, but publicity in EDITUS).

#### **55. MOBILE SERVICES / FREQUENCIES**

The frequency allocation, allocation and assignment plan (regulation of 10 March 2001) was published in the Official Journal on 12 July 2001.



The necessary framework to award third generation (3G) licences has not yet been adopted. On 18 May 2000 the Government decided on the principles for the award of third-generation licences. A draft regulation for the award of 3G licences has been submitted to the State Council (Conseil d'Etat) and is expected to be adopted before end 2001. Operators have not expressed concern with the delay in the adoption of the regulation. On the other hand, they are very worried about the timely award of rights of way (see below).

The Government's decision of 18 May 2000 and the draft regulation for the award of 3G licences currently submitted to the State Council provides for the award of four licences with comparative bidding on the basis of predefined quality criteria. Operators appear to be satisfied with the principles laid down.

Operators are generally satisfied that there is no obligation to offer roaming (between 3G networks) and no specific obligation on 2G or 3G operators to grant mobile virtual network operators access to their networks.

The draft regulation allows for sharing of antennae and imposes sharing of at least 20% of the masts. There is no prohibition on further sharing of masts. Operators have expressed concern that the construction of four networks is excessive given the small size of the country. The incumbent operator is of the view that facility sharing should not only be allowed for antennae, but also for networks, with the result that only one or two networks would be constructed.

As set out in the Sixth Report, all WLL frequencies have been assigned to five operators.

## **56. TARIFFS**

On 1 July 2001 EPT restructured its retail tariffs for voice telephony. EPT has made substantial steps towards rebalancing and cost orientation by increasing its subscription fee to €6.94 (280 LUF) on 1 July 1997, to €11.90 (480 LUF) on 1 July 1999, and to €16 (646 LUF) on 1 July 2001. It appears that the subscription fee has now moved to a level where it is more likely to reflect costs. This was intended to comply with modifications under the regulation of 18 April 2001 and to ensure that a sufficient margin would be left between the subscription fee and the offer for competitors for access to the unbundled local loop.

Simultaneously, EPT has restructured its tariff system by charging on a per minute basis (1.25 LUF/min), instead of 5 LUF for the first 4 minutes as previously. However, due to the previous absence of a legal framework, the ILR has not examined the incumbent's retail tariffs as to whether they are balanced and cost-oriented. Indeed, cost-orientation for voice telephony tariffs of SMP operators was imposed only recently by a regulation of 18 April 2001.

EPT is of the view that further tariff modifications might be necessary to ensure full balance. New entrants are of the view that the per minute tariffs are too low, in particular if compared to interconnection tariffs, and remove the users' incentive for pre-selection (see under interconnection). The ILR points out that forthcoming examination of cost orientation should eliminate the concerns regarding price squeeze of retail tariffs in relation to both interconnection tariffs and tariffs for access to the local loop.

## **57. COST ACCOUNTING**

The obligation to establish a suitable cost-accounting system for interconnection was imposed on SMP operators by the Telecommunications Law of 21 March 1997. The obligation to establish a suitable cost-accounting system for leased lines and voice telephony was introduced recently by a regulation of 18 April 2001. However, a description of the incumbent's cost accounting system for

interconnection was submitted by EPT to the ILR only on 6 April 2000. It is reportedly based on LRIC and average costs, and also applies to voice telephony and leased lines.

As the obligation to establish a suitable cost-accounting system for leased lines and voice telephony was introduced only recently (by regulation of 18 April 2001), the issue has not been addressed by ILR.

No proof has been provided that the cost model has been applied by the ILR to supervise interconnection tariffs, voice telephony tariffs, and leased lines tariffs and no statement of compliance of the incumbent's cost accounting system has been issued yet. The new legislation also provides for publication of a statement of compliance of the incumbent's cost accounting system, and it is expected to be issued in the annual report for 2001. The ILR will rely on an external auditor to carry out the assessment of the guidelines for regulatory cost accounting.

## **58. LEASED LINES**

The recently-adopted legislation (regulation of 18 April 2001) refers to the obligation of cost-orientation of SMP operators. EPT has reduced its tariffs for leased lines as from 1 April 2001. Tariffs for most types of leased lines are below the EU average. As regards the most frequently-used type of leased line, 2 Mbit/s 2 km circuits, prices have decreased substantially since 2000 and are slightly below the EU average. The incumbent operator points out that the prices of leased lines applicable since 1 April 2001 are 25% lower than the previous prices. The decrease is due to the move from analogue to digital lines.

New entrants have reiterated concern that the incumbent operator grants major business customers discounts of up to two thirds of the published standard tariffs for leased lines, and that these discounted tariffs are not published or monitored by the regulator. In particular, the 2 Mbit/s-lines have been subject to discounts ranging around 70%. This has led to a decrease of tariffs for internet access, but it has also destroyed the possibilities for alternative data transmission, in particular via WLL. EPT is of the view that the discounts are justified on the basis of the volumes offered and that they correspond to costs. It has communicated its discounts to the ILR and will publish them before the end of the year.

No concern is expressed as regards delivery of leased lines. For example, in the second half of 2000 the delivery period for 2 Mbit/s digital unstructured leased lines was reportedly 20 days.

## **59. NUMBERING**

Carrier pre-selection (CPS) was required to be available from 1 July 2000 for all calls (international and national together), and since 1 July 2001 separately for national and international calls. It was quickly and extensively used by customers, and approximately 20% of subscribers currently use pre-selection.

New entrants have criticised the fact that the ordering procedure for pre-selection is too heavy and unnecessarily bureaucratic, in particular because of EPT's refusal of requests due to insignificant errors. EPT argues that the procedures for ordering pre-selection have been worked out together with operators and the ILR and that they were broadly accepted by all. It provides for treatment of the requests within five days for at least 95% of the orders. New entrants are also concerned that they have to communicate the name of the subscriber wishing to obtain pre-selection to EPT. EPT however does not ensure separation of the units dealing with marketing of its retail offers from the unit dealing with pre-selection. This grants EPT the opportunity to apply winning-back practices. New entrants believe that the current ordering procedure must be revised.

Number portability was introduced as from 1 July 2000. Although the conditions do not appear to be dissuasive (no fee for the client and a 580 LUF = €14.38 one-off fee charged to the competitor for the installation), only three numbers have been transferred.

## **60. RIGHTS OF WAY**

Under the national regulatory framework, rights of way over public land must be granted free of charge.

Luxembourg has adopted a regulation of 8 June 2001 on the conditions of use of public roads and railways, defining the content of the right of access to public land and setting out the procedure for filing a request to the competent authorities. Under the regulation, the infrastructure manager (gestionnaire du réseau) has been mandated to grant rights of way. However, this does not always resolve the problem of lack of transparency in regard to powers for granting rights of way. There is therefore still concern about the lack of co-ordination of the authorities involved in the granting of rights of way. No experience with the application of the regulation has been reported yet.

New entrants have pointed out that the digging requirements are excessive; in particular they are required to dig four meters deep and to build in such a way as to allow further operators to install their cables. The latter requirement very much appears to favour sharing of trenches, which Member States are required to encourage.

Operators reiterated concern as regards difficulties in constructing masts for 3G networks. Three types of permits for construction are necessary: first the environmental enquiry procedure ('commodo-incommodo') (Loi du 10 juin 1999 relative aux établissements classés), the details of which were set out in the Sixth Report. The requirements on facility sharing add to the difficulty of complying with this procedure as facility sharing increases the level of emissions (from 6-8V/m to 10-v/m, the commodo-incommodo procedure applying from 3V/m). Second, a construction authorisation is necessary on the basis of the town and country plan (plan d'aménagement du territoire), which dates from 1930 and does not foresee masts for mobile. The problem is highlighted by the fact that one 2G mast had to be withdrawn as it was not foreseen in the territory plan. Construction of masts was exclusively allowed in business areas that account for 5% of the territory only. This means that a 3G network – which necessarily requires masts in all areas – could not be constructed at all. Third, an authorisation from the communes is necessary, but has not been granted.

## **61. DATA PROTECTION**

The legislation transposing the EU framework with respect to data protection in the telecommunications sector has not been adopted. A regulation is currently under draft.

There are major gaps in the protection of privacy. As the legislation in place obliges operators to store traffic data for 10 years, operators cannot restrict storage of data. This obligation is also part of the interconnection agreements between new entrants and EPT. There are no measures in place to protect users against unsolicited calls and mails for direct marketing purposes.

Operators have also to ensure the establishment of complex systems for interception for law enforcement purposes at their expense. Introduction of an obligation to store traffic data for law enforcement is under discussion.

## **62. directive 95/47/ec**

Luxembourg transposed the TV Signals Directive by regulation of 23 May 1997. The ILR is dealing with the dispute settlement under the Directive. The ILR has received no complaints or requests for dispute settlement regarding this Directive.

Luxembourg has a cable TV (CATV) penetration rate of more than 90%. However, the digital TV market appears not to be broadly developed, possibly due to the fact that Luxembourg is awash with free-to-air programs. (Analogue) TV programmes are generally transmitted free of charge. Subscription generally only takes place directly with neighbouring operators. One operator is offering digital TV, transmitting foreign pay TV or free TV channels. Foreign digital offers are not available. There is an increasing number of digital satellite receivers for the reception of free TV channels.

## 3.10 THE NETHERLANDS

### OVERVIEW

#### *Market and regulatory framework*

The previous Report noted the emergence of strong competition in the retail market for voice telephony, a rapid increase in the number of internet connections and greater investment activity in the local market largely driven by the internet. The Report concluded that despite remaining problems, particularly concerning the delivery of leased lines, market entrants were positive regarding the prospect of competitive development in the market and OPTA's regulatory approach.

The strong competition in the retail market for voice telephony, increase in the number of internet connections and investment activity in the local market described in the last report have slowed down in the Netherlands. In particular, market entrants are less optimistic regarding the prospect for the development of competition in the market since last year, and complain that OPTA's regulatory approach is a principal reason for this.

Local access competition in the Netherlands is the major concern. According to the authorities, a problem was that Regulation 2887/2000 could not be enforced since OPTA did not have the necessary powers for this task. The deficit in regulatory powers for ULL has been overcome by an amendment to the Telecommunications Act (Tw) of 15 September 2001. Another criticism focused on the weak legal tools provided to OPTA and the lack of support from – and communication with – the Ministry. The deficit in regulatory powers can be overcome by the amendment to the national telecommunications law which could clarify the responsibilities of OPTA and the Ministry. The government intends to integrate OPTA into the competition authority, NMa, as part of a general policy of concentrating sector-specific supervision in the hands of a single authority. However, that integration is not to occur before 2005 at the earliest, and depends inter alia on a prior evaluation of the performance of the NMa, a review of the Netherlands Competition Act, the adoption of a law granting the NMa independent status, and an evaluation of the NMa model: a combination of general and sector-specific competition supervision.

The main criticism of the entrants is focused on the weak legal tools currently provided to OPTA and the lack of support from – and communication with – the Ministry. The delay in the envisaged integration of OPTA into the competition authority is also creating new uncertainty.

***National regulatory authority***

The evaluation of OPTA's role as the telecommunications regulator is ongoing. The Netherlands government favours OPTA becoming a separate chamber within the national competition authority in four years' time. That position has yet to be discussed in Parliament. Regulatory tasks will remain divided between the Ministry and OPTA. New entrants criticise in particular the conflict of interest arising from the fact the government retains a 35% stake in the incumbent, KPN, and effectively controls the regulator at the same time – with the same Ministry responsible for ownership and regulatory functions.

Most market players are critical of OPTA's lack of speed and responsiveness. Dispute resolution procedures are considered as being too lengthy to be truly effective.

***Interconnection***

Entrants complain that the current procedures regarding KPN's interconnection offer do not provide them with adequate certainty. The current reference offer is under discussion with OPTA. The entrants consider that OPTA has acted too slowly and was too complacent in the face of KPN delaying tactics. They request availability of the whole range of interconnect and special access services, both wholesale and resale, and favour transparency regarding tariffs for all aspects of the service.

***Local access competition***

Local access competition in the Netherlands remains a problem. Whereas full unbundled access became available in June 2000, about 125,000 lines were unbundled in September 2001. However, the vast majority of this number was unbundled to KPN's data communications branch and only 21,500 have been unbundled to entrants, who complain about a large number of delivery problems. Entrants blame the behaviour of the incumbent and the slow reaction of the regulator for this situation. Furthermore, KPN has allegedly used its dominance to impose antiquated ordering procedures and abusive advance payments followed by lengthy and poor quality deliveries of collocation and backhaul facilities, while OPTA has been impeded by insufficient transparency.

In September 2001 there was still no offer of shared lines in the Netherlands. So far at least four companies appear to have expressed their interest.

***Leased lines***

Despite the existence of a cost accounting system, entrants state that leased line tariffs are extremely high and doubt they are cost oriented. OPTA will start a consultation for a possible leased line price cap system in 2001. Delivery times for leased lines have been a big problem for many years, and OPTA has only recently started to tackle this issue. It has issued guidelines, and although there is now a consensus among market players that delivery times have improved, further efforts are still necessary. Delivery times still substantially exceed the 25 working days set in the OPTA guidelines.

***Mobile services***

The procedure for licensing wireless local loop has still not taken place, although a request for expressions of interest was published at the end of June 2001. New entrant operators point out that WLL could increase competition in the local loop and blame the Government for not meeting demand by new entrants. In the meantime, several companies seem to

have lost interest, partly due to their deteriorating financial situation.

In July 2000, five UMTS licences were awarded through an auction that involved six bidders. The five licensees are in effect the incumbent GSM operators. One of the applicants withdrew from the auction. To support the development of networks, mobile operators have been investigating with the government and OPTA to reduce network costs by means of network sharing. In June 2001, OPTA, the Ministry and the competition authority issued joint guidelines on this issue.

***Mobile  
termination rates***

The excessive mobile call termination tariffs of mobile operators in the Netherlands affect the competitive market position of fixed network operators and have resulted in higher prices for end-users of fixed-to-mobile calls. New entrants in the fixed market also complain that integrated fixed-mobile operators still make bundled offers to business customers which cannot be matched by fixed operators who cannot provide discounts on fixed to mobile termination charges.

OPTA is still considering designating operators with significant market power (SMP) on the national market for interconnection. Fixed entrants request that the SMP designation(s) be accompanied by the obligation to lower the mobile termination tariffs of the SMP operators with immediate effect, together with parallel action regarding non SMP operators.

***FRIACO***

OPTA determined in November 2000 that a flat rate interconnect offer should be made available by the incumbent but limited to ISDN end-users. In September 2001 a market consultation was started to extend the offer. Entrants would like this ISDN restriction to be lifted in order to make FRIACO services actually available to the public.

## NATIONAL REGULATORY AUTHORITY

An evaluation of OPTA as the independent telecommunications (and post) regulator was under way at the time of the Sixth Report. In fact, OPTA's position as an independent regulator has been a topic for discussion since its establishment in 1997. Parliament at that time debated at length the need for a specific regulator for telecommunications in view of the simultaneous establishment of the national competition authority, NMa, as a separate body within the Ministry of Economic Affairs, an integral part of the government that is a shareholder of KPN. As the degree of NMa's independence was uncertain, OPTA was established in August 1997 in compliance with the European legislative framework. It was agreed that the work and the effectiveness and efficiency of OPTA would be subject to review every four years. Although the conclusion of the first review in August 2001 was in favour of OPTA's performance, the Netherlands Government subsequently issued its position that OPTA was to become a separate chamber within the national competition authority in four years' time. That position must still be discussed in Parliament. One source of criticism of the government's position stems from the argument that an NMa-integrated OPTA, that introduces a competition law approach in sector-specific legislation, was needed at the time of the entry into force of the new Directives in 2002. New entrants have pleaded for a continuation of ex ante monitoring of KPN and the extension of sector specific powers. The integration of OPTA into NMa is criticised by new entrants because they feel that it could lead to a decrease effectiveness. Another criticism relates to the fact that the Netherlands Government will not review the relationship between the Ministry and OPTA. Market entrants consider such a review useful given the obvious issue of rivalry regarding powers. The regulatory tasks will remain divided between the Ministry (the Ministry of Transport, Public Works and Water Management, Directorate-General for Telecommunications and Post, DGTP) and OPTA. The former has competenc in the drafting of legislation, international co-operation, managing of frequencies, numbering and the issuance of mobile licences; OPTA will remain in charge of monitoring licence conditions, designating SMP operators and dealing with disputes between operators. (The number of staff cannot be compared; the Ministry has many more tasks which fall outside the scope of OPTA). The issue of human resources is likely to remain a concern for OPTA. OPTA's staff has in the meantime increased to 125.

Because of the State shareholding in KPN (35%), it is questioned whether the Ministry should play the large role it currently does, for instance regarding licensing of frequencies. The Netherlands government has decided that management of the public holding on the one hand and policy issues on the other should in principle be separated. In future, all government holdings will be managed by the Ministry of Finance strictly on the basis of shareholders' interests. Policy issues will be dealt with by the Ministry in question, i.e. the Ministry of Transport for the communications sector.

Most new entrants (especially the fixed operators) perceive OPTA as being slow to act. In particular, it takes increasingly longer for OPTA to decide on appeals, even though it has indicated that it is increasing the speed and the transparency of procedures. According to OPTA the reason is that the number of appeals has increased. According to Netherlands administrative law, appeals have to be lodge first to the body that issued the initial decision before they can go to the courts.



## LICENSING / MOBILE SERVICE

The Sixth Report mentioned that following a court decision concerning a small part of the relevant spectrum, the procedure to issue wireless local loop licences had to be delayed. Since then, the licensing procedure for wireless local loop licences has still not taken place, although a request for expressions of interest was published at the end of June 2001. It is seen by new entrant operators as a major missed opportunity to increase competition in the local loop. In the meantime, several companies seem to have lost interest, partly due to their financial situation.

Notwithstanding the reduced interest, the Government is still in favour of an auction, because there are different frequency lots, one more interesting than the other. The auction should take place mid 2002.

In July 2000, five UMTS licences were awarded through an auction. The five licensees are basically the incumbent GSM operators. One of the applicants withdrew from the auction but lodged a complaint with the Commission against the auction procedure. The matter was investigated in detail in a study made by the University of Rotterdam and commissioned by the Dutch Parliament. In September 2001 OPTA, the competition authority and the Ministry issued guidelines on network infrastructure sharing. They involve no change in the licence conditions of the 3G operators.

Consumer organisations regret that the funds raised via the 3G auction were not ploughed back into the telecommunications sector.

## INTERCONNECTION

In July 2000 the Commission of OPTA published a decision with regard to its assessment of KPN's reference interconnection offer for 2000 ("RIO 2000.1.1"). This assessment was based on criteria laid down in the Telecommunications Act, taking into account the principles of transparency, non-discrimination and cost-orientation. KPN was to complement and/or adapt the RIO based on the outcome of the assessment. In September 2000 KPN published a new reference offer ("RO 2000.2.0"), which OPTA assessed as to possible incompatibilities with the Telecommunications Act. This amended offer did not include all 42 missing items which were identified in OPTA's July 2000 decision.

In March 2001 OPTA focussed on three items for which KPN had to provide an offer, namely the provision of general collocation with regard to interconnection, leased line interconnection and local access, and threatened KPN with penalties. KPN provided these offers, which were subsequently reviewed by OPTA. A decision has been made by OPTA regarding collocation. OPTA is now working on the assessment of the interconnection leased line offer and the offer on 'local access' (which focuses on interconnection at the local level).

With regard to the other items not included in the amended reference offer, KPN has still to adjust its RIO in order for the incompatibility with the Telecommunications Act to be removed. These items are subject to further investigation by OPTA and to further discussions with KPN. They are also being discussed in the Forum for interconnection and special access. KPN provides updates of its RIO on a regular basis, the last published at the end of July 2001.

Entrants complain that the current procedures as performed do not give them much certainty and actually lead to the signing of any private law agreement with KPN in order to benefit from interconnection services. They consider that OPTA has acted too slowly and has been too complacent with the delays of KPN.

For a number of years there has been too little capacity within KPN to respond to all interconnection requests. OPTA has induced KPN to invest to deal with expected future requests. It

appears, however, that ordered capacity has not always been used. KPN has made some adjustments in its reference offer in order to make the forecasting procedure more flexible. OPTA is examining KPN's forecasting and delivery procedure as included in KPN's reference offer. In its decision of July 2000, with regard to KPN's reference offer, OPTA stated that KPN has to include the possibility of mutual penalties in relation to the delivery and sale of the requested capacity.

KPN and Libertel-Vodafone have SMP on the mobile market at the moment. This involves a non-discrimination obligation and a duty to offer special network access. They must also offer direct interconnection to other operators. KPN mobile has published an interconnection offer. However, given the financial conditions which favours KPN carrier services because of its traffic volume (premium transit discount scheme), there is still no other direct interconnection with the KPN mobile network except between KPN fixed and KPN mobile.

OPTA is investigating the SMP designation on the national market for interconnection, which involves cost orientation. Fixed operators indicate that this designation should already have been made, taking into account the market shares on the interconnection market. OPTA is nevertheless of the opinion that it first has to consider carefully all elements in order to come to a well-balanced decision.

In the meantime new entrants in the fixed market complain that integrated fixed-mobile operators still make bundled offers to business customers, which cannot be matched by fixed operators who are not provided with discounts on the fixed to mobile termination charges. The OT 2000 public tender of the Dutch Government is quoted as an example. In November 1999, an entrant filed a complaint with the Commission against KPN and Libertel. The investigation in this case is still pending.

In June 2000 KPN mobile decreased its fixed to mobile termination rates. Given that the other mobile operators did not follow this trend, KPN mobile increased the tariffs again after four months, but kept them 17 % lower than those of its competitors. KPN mobile has recently filed a request for dispute resolution with OPTA regarding one of the other mobile operators (non SMP) charging significantly higher termination rates because KPN mobile feels the principle of reciprocity should apply as should the principle of reasonable tariffs. OPTA has not yet ruled on this appeal.

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| <p><b>LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE<br/>REGULATION ON LOCAL LOOP UNBUNDLING AND BITSTREAM ACCESS</b></p> |
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The Sixth Report noted that OPTA at the end of 1997 decided to make full local loop unbundling mandatory and that in the course of 1999 and 2000 new entrants and KPN agreed on a timetable for the introduction of the service. Fully unbundled access became available in June 2000. Fewer than 7 000 lines have been unbundled to entrants, who complain about a large number of delivery problems.

OPTA was designated only in September 2001 as the NRA in charge of executing the EU Regulation on unbundled access to the local loop; from 31 December 2000 until mid September 2001 OPTA was competent, except for penalties, on the basis of transitional law of the Netherlands Government and Parliament. Market players complain that in the meantime they faced legal uncertainty and financial problems. A number of interested operators stepped out of this market. OPTA argues that in the meantime it has used its powers in the framework of special access. It ruled on a dispute and ordered KPN to provide its costs for collocation space, and evaluated the reference offer that KPN had published in May 2001. This led to a decision in June 2001. However, since OPTA was not yet designated as the NRA in charge of executing the EU Regulation, the decision could not be enforced in practice.

The incumbent operator is blamed by new entrant operators for significantly delaying the introduction of full unbundled access. For instance, ordering procedures were initially very

cumbersome (only by fax and only in the mornings) and there is no or limited access to information systems, in particular as regards the quality of the lines. In addition, KPN's reference unbundling offer is not in line with the EU Regulation and an SLA is also lacking. In particular, there is no automatic compensation in case of failure of timely delivery of the unbundled lines.

Subsequent to OPTA's decision on KPN's reference offer dated May 2001, KPN published a new unbundling offer in mid-September 2001, claiming that it had taken most of OPTA's comments into account. OPTA is examining whether this unbundling offer is now compliant with the Regulation.

KPN's new reference offer also contains an offer for shared lines. Other licensed operators (OLOs) indicate that because shared access has not been provided by KPN, they had to request a second line (at high costs) from KPN. They argue that KPN is in fact providing shared access to itself and they have lodged a complaint to OPTA to request non-discriminatory treatment. It is as yet unclear whether the last unbundling offer sufficiently covers shared access provisions, although KPN claims it does and that shared access was already available on a limited number of locations (as a pilot) and would be generally available from September onwards. One of the OLOs has filed a dispute with OPTA, requesting another form of shared access than the option KPN is currently offering. The decision in this dispute is pending.

It is not clear whether there is much demand for shared access in the Netherlands: at least four companies appear to have shown their interest.

There has been a KPN retail (A)DSL offer since June/July 2000. At the same time a wholesale offer was introduced. According to entrants, the wholesale offer is more expensive than the retail Xstream offer. KPN argues that the two offers cannot be compared, since the wholesale offer provides for connection at the exchange.

At the end of 2000 OPTA published guidelines on collocation, including tariffs. The collocation costs are said to be higher in the Netherlands than in other Member States. In August 2001 OPTA ruled on the collocation prices in some detail (in a dispute resolution procedure). KPN must provide evidence of the cost of collocation elements, e.g. on the basis of the invoices it has paid.

Entrants consider that KPN markets its Xstream service below cost, inter alia as a result of discounts. It is claimed it does not include the marketing and distribution costs of the service in its price. OPTA has not yet taken a position on retail bitstream tariffs.

## TARIFFS

In February 2001, OPTA and the competition authority jointly issued price squeeze guidelines. They cover the margin on four of KPN's interconnection tariffs: the tariffs for local and national interconnection, the retention on calls to mobile and the call origination tariffs to internet (06760 numbers). The guidelines set floors below which KPN may not go with its retail tariffs. Following the publication of the new RIO tariffs in July, KPN was invited on the basis of the price squeeze test to review its retail tariffs to maintain the spread of the new interconnection tariffs. The price squeeze test assesses separately the spread on the set-up charge and on the call charges. As a consequence, retail tariffs for short calls have become more expensive, medium-length calls have remained neutral, and long calls have become cheaper.

KPN does not agree with the approach in the guidelines. It argues that a price squeeze test may not be computed element by element but only per relevant market.

KPN's retail tariffs must, in addition to the new price squeeze test, also comply with a price cap system. OPTA has three weeks to check whether or not the new tariffs fall within the price cap.

KPN has to submit all proposed changes in tariffs for regulated services to OPTA. If the tariff proposal is not acceptable the Commission indicates that it will take legal action if KPN introduces the tariff anyway. If the tariff proposal is acceptable the Commission will indicate that it has no objection to the introduction of the new tariff on the basis of cost orientation but will not take a formal decision.

OPTA does have means to control the retail tariffs on the basis of Article 35 of the BOHT (Decision on ONP leased lines and telephony). OPTA announced a review by mid 2002 on the future of the price cap.

### **COST ACCOUNTING**

In the Netherlands, two cost accounting systems are in operation: a BULRIC model (bottom-up LRIC system) for the calculation of the terminating charges and a top down originating model based on EDC (embedded direct costs) for call origination charges. OPTA justifies this differentiated approach by the fact that KPN controls a bottleneck facility for the termination of calls to its subscribers, whereas other operators can compete on the provision of call origination. In principle, EDC allows KPN to recover actual costs on origination. At the same time, this cost model fosters the roll out of alternative infrastructures. Some entrants and internet service providers (ISPs) consider it however too early to apply a differentiation in cost accounting systems, as they consider originating access to be a bottleneck facility also. In addition, they argue that EDC is not transparent and does not provide certainty, since the rates vary from year to year as a consequence of the variation in the costs of KPN, on which entrants have no information. OPTA is aware of the uncertainty created by the annual variation resulting from the application of EDC. It will investigate a multi-annual approach to avoid these annual variations. Results should be available by 1 July 2002.

The introduction of BULRIC for termination charges has led to a decrease of 20-30% in national and regional terminating (interconnection) tariffs, and of just below 10% for local calls.

### **LEASED LINES**

The Sixth Report mentioned that a cost accounting system - in place and approved since 1997 - had been approved again. Entrants nevertheless state that leased lines tariffs are still high and doubt that they are be cost oriented. OPTA currently uses rate of return regulation, but is considering price cap regulation in order to stimulate more efficient behaviour on the part of KPN. OPTA conducted a consultation on leased line price cap regulation from July until September 2001. Most of the parties which reacted to the consultation urged OPTA to prioritise work on an interconnecting leased line offer over work on a (retail) price cap system.

Because KPN market share for leased lines above 2 Mbit/s is between 10 and 20%, OPTA removed the SMP designation on leased lines above 2 Mbit/s (decision of March 2001). One entrant criticises this OPTA decision. It considers that in large geographic areas of the Netherlands there is still no alternative to KPN for such circuits.

Delivery times for leased lines have been a big problem for many years. OPTA has started to tackle this issue from the end of 2000. It issued guidelines for the delivery of leased lines based on benchmarking, including fines (to be paid by KPN) in case of non-compliant delivery. 64 kbit/s, 2 Mbit/s and analogue lines are included in the guidelines as these are the lines for which KPN has been designated as having SMP.

There is now a general consensus among market players that delivery times have substantially improved. OPTA agrees with the entrants that further efforts are still necessary. 95% of delivery times still exceed the 25 working days set out in the guidelines.

Another difficulty for new entrants is that KPN still has no proper wholesale leased line (interconnection) offer. OPTA had obliged KPN to include an offer of interconnecting leased lines in its RIO 2000. KPN challenged this obligation. The court referred the case back. In the meantime, OPTA has not yet ensured the publication of such an offer. A draft was made public in May, but there is still no real wholesale product on the market. The prices envisaged are the same as the prices for retail products. Entrants claim that retail leased lines are priced cheaper than the equivalent two interconnection segments. OPTA intends to examine KPN's offer and will assess it as to possible price squeezes. It intends to enforce a cost-oriented wholesale offer before the end of the year.

## NUMBERING

The Sixth Report noted that CPS for local calls was available but that for local calls subscribers to the KPN network had to dial the regional code to be directed through the pre-selected operator. Without the dialling of the regional code, the call is handled by KPN. OPTA said that in the past there was no interest for CPS for local calls because of the existence of a price squeeze. Operators have since then requested KPN to implement CPS for local calls and OPTA in the meantime has taken measures to eliminate the price squeeze. OPTA is at present looking into the possibilities of speeding up the process and has announced a round table on the issue.

Entrants also reported that, due to the technical system of KPN (which is customer-controlled), about 40% of the CPS orders do not lead to a CPS activation. Entrants report that this number is higher for larger users. An entrant has filed a dispute with OPTA in which it asks OPTA to force KPN to offer an operator-controlled system. In March 2001 OPTA decided in a ruling that KPN is obliged to offer an operator-controlled system and an interim solution to the entrant. Since then OPTA has been forced to take measures to enforce its decision. Entrants regret that KPN's technical system is not part of a service level agreement.

## INTERNET

In November 2000 OPTA ruled on a dispute between an entrant and KPN regarding the provision of FRIACO as special network access. OPTA ordered KPN to offer FRIACO under the condition that KPN would only offer a limited number of ports and that it should only be offered to ISDN subscribers. OPTA accepted KPN's argument that FRIACO could take up too much network capacity, leading to congestion and problems with network integrity. These conditions, which originally had to apply only until 1 July 2001, have been extended pending a public consultation launched by OPTA. The latter seeks the opinion of market players on the technical arguments invoked by KPN. OPTA intends to arrive at a final position before the end of the year.

OPTA has been perceived as lacking pro-activity in this dispute. This is due to the fact that it treated FRIACO as special network access, as a consequence of which OPTA can only require KPN to provide FRIACO if it judges that the request is reasonable. The reasonableness of a request is in principle judged by OPTA on a case by case basis. New entrants estimate in this regard that their request was reasonable and fear that OPTA has set a dangerous precedent by accepting too easily KPN's argument about network elements that might be vulnerable to increased demand. In the future KPN could use such essential requirements again to reject reasonable requests. KPN appears in this context to give a wide interpretation to the concept of network integrity, taking into account the level of the investment needed and the risk that, due to lower demand than expected, the relevant investment would become a stranded cost.

The Netherlands Government has favoured a special data network for years for internet traffic, inter alia to solve the interconnection capacity congestion problems on the public switched telephone network. However, the use of the dedicated KPN data network (accessed via 06760 numbers) seems not to have convinced market players. Entrants fear becoming captives of KPN if they make use of

this data network given that KPN considers that data networks do not fall within the scope of the regulated networks and, hence, that the tariffs are likely to go up.

In addition, ISPs highlight that the usage of the data network means the end of the so-called “kick-back fees”, which until now accrue to ISPs. KPN on the other hand welcomes this development, which will bring down the unregulated termination fees on the entrants' networks. These fees are higher than those of KPN and are increasing.

Following requests from the Parliament, the Government has prepared a bill regarding access to broadcasting networks, both for TV programmes and for internet access.

In order to be able to take this into account, the Bill provides that OPTA will first have to determine the relevant market to decide whether the cable operators have significant market power. In the spring the national competition authority and OPTA implemented a public consultation to determine the relevant markets as regards internet access. The conclusions of this market analysis will be published before the end of the year. Cable operators complain that the proposed legislation gives them little incentive to upgrade their cable network infrastructure.

## DIRECTIVE 95/47/EC

The Netherlands has a very high cable television penetration rate (approximately 93% of TV households). The availability of a multitude of free-to-air channels in the basic cable subscription has made pay TV less interesting than in some other Member States. Digital television (DTV) penetration remains low.

Digital cable TV services are offered by the major cable companies. Dutch language digital TV programmes are offered via Astra by Canal Digital, which offers pay TV programmes and the major public and commercial programmes. These offers continue to grow steadily. All satellite TV services are digital and have a market share of approximately 4% of Dutch households.

Regarding digital terrestrial television, at the end of 2000 earlier plans to auction the frequencies for commercial DVB-T were abandoned, and a decision was made to hold a beauty contest. By the end of September 2001, after an open tender, the Digitenne Consortium emerged as the only applicant for the commercial licence for DVB-T. In accordance with the Dutch Telecommunications Act, in such circumstances a beauty contest cannot be held, and the licence is granted to the only applicant, provided that the latter meets certain formal and material minimum requirements.

In addition to this commercial licence (for four multiplexes), the public broadcasting company NOS will be awarded a licence for one multiplex. Both licences are expected to be issued in December 2001. Transmissions are expected to start within six months after the issuing of the licences in a region around Amsterdam, and to be gradually extended to the so-called Randstad area and to the rest of the country.

All remaining provisions of Directive 95/47/EC relating in particular to conditional access, have been transposed through a bill that has recently been accepted by Parliament. Final preparations for the Ministerial Order based on it are being made. The Netherlands authorities have indicated that despite the lack of formal transposition, the provisions of the Directive on conditional access are being applied in practice.

No simulcrypt agreements have been concluded between operators. Common interface modules are available from the providers of digital satellite TV, and set-top boxes with the common interface socket are available on the market. The members of the Digitenne consortium have decided to use an open standard based on EuroMHEG for their API and to migrate as soon as possible to the DVB MHP. The Netherlands government is in favour of the use of open platforms for data and interactive services, like MHP (Multimedia Home Platform).

As mentioned in the Commission's Report of 1999 on the development of DTV in the European Union, pay TV operators have encountered problems in accessing CATV networks. Since then, Canal + has negotiated access to certain cable networks (e.g. to UPC's and Casema's networks).

Until now, cable operators have enjoyed a de facto monopoly in analogue broadcasting. This has prompted the Netherlands authorities to take measures to encourage infrastructure competition, and also to enhance competition on the cable networks themselves. Among these measures are the development of the above-mentioned DVB-T project, and two industry consultations, on access to cable networks and service segmentation respectively. The NMa, together with OPTA, has established a framework for conflict resolution concerning access to cable between the cable operators and the channel providers, which is inspired by ONP principles (e.g. cost orientation) and aims at the equal treatment of channel providers. In addition, preparations are being made for a bill regarding access to CATV networks by programme providers.

## 3.11 AUSTRIA

### 63. OVERVIEW

#### ***Market and regulatory framework***

The Austrian telecommunications market grew by 14.4% in 2000. Mobile services continue to be a market driver, with a penetration rate of nearly 82% by the end of June 2001. Roll-out of ADSL in Austria has been one of the fastest in the EU, and the penetration rate is one of the highest in Europe. There has been a significant decrease in the incumbent's market share in fixed voice telephony, and its tariffs have also decreased. More than 24 alternative operators are actually offering local call services, either by carrier selection or carrier pre-selection; and more than ten operators are offering direct access to their users. State ownership in the incumbent fell to 47,8% due to further privatisation.

The NRA has continued to play a very active role, and its restructuring has apparently had no negative impact on the continuity of its regulatory policy. A new body of the regulatory authority (RTR-GmbH) will deal with both telecommunications and broadcasting.

Incorporation of the provisions of the Telecommunications Routes Act into the Telecommunications Act, in order to harmonise the rules, has not yet taken place. The Telecommunication Act still needs to be harmonised with the Data Protection Act 2000.

#### ***Enforcement and appeal mechanisms***

The initial intention to introduce a constitutional amendment to allow effective fines to be imposed on operators abusing their significant market power, and to establish an Independent Federal Communication Senate, has failed. Effective enforcement of legal obligations and the NRA's decisions thus remains one of the key regulatory issues which still needs to be addressed. Procedures to penalise non-compliance with legal obligations appear to be lengthy and cumbersome and the efficiency of enforcement measures needs to be improved. As previously reported, all market players express concern about a suitable mechanism to appeal against decisions taken by the NRA. Due to the lack of explicit transitional provisions, it remains unclear whether the Administrative Court has jurisdiction for the complaints which were already pending on 1 June 2000. Consequently, some of the NRA's most important decisions, e.g. related to licensing, determination of SMP operators and fixing interconnection arrangements are still lacking in legal certainty.

#### ***Fixed to mobile interconnection charges***

After the NRA's intervention in fixed-mobile tariffs by regulating charges either on the basis of cost-orientation (for SMPs) or "appropriateness" (for non-SMPs), prices have fallen significantly and became some of the lowest in the EU. Having recently informed the Commission that mobile network operators would no longer be designated as having significant market power in either the interconnection or mobile markets, the NRA determined new and different interconnection charges for *Mobilkom Austria* and *max.mobil* on the basis only of "appropriateness" early in November.

#### ***Local access competition***

The local access market, including high speed bitstream access and internet access services, is currently dominated by the incumbent, although full unbundling is now starting to take off. New entrants are concerned that the incumbent has successfully



delayed competition in this field. A first reference unbundling offer presented by the incumbent did not include shared access; the tariffs for shared use still do not appear to be cost-oriented. An auction for wireless local loop attracted only two bidders, after a first attempt had to be cancelled due to legal action taken by the incumbent concerning the procedure.

***Consumer issues***

There have been a large number of complaints about billing issues and quality of service. Whereas some alternative network operators provide itemised billing free of charge, the incumbent offers itemised details only subject to a charge. The Ministry, however, has signalled willingness to review the legal framework. Amendment of the existing universal service ordinance in relation to quality of service indicators is expected by the end of 2001.

***3G roll-out***

Although 3G operators must offer coverage of 25% of the population from 31 December 2003 under their licence conditions, roll-out of 3G services is expected to start only late in 2002. For the roll-out, operators are concerned by constraints imposed by regional authorities and lack of efficient frequency management by the telecommunications authorities. New entrants in 3G feel discriminated against in comparison with 2G operators, and are concerned that preparing for an auction process for remaining frequency may give the possibility to start ahead to their 3G competitors who can use their 2G spectrum. Market players have furthermore asked for more legal certainty as to the use of infrastructure sharing.

***Tariffs and cost accounting***

Cost orientation of the incumbent's tariffs continues to be questioned by competitors, and concerns have been raised about specific new tariffs, as well as the discounts offered by the incumbent. Despite an order from the NRA, the incumbent (TA) failed to submit its 'winter tariff' for approval, and sanction proceedings are still pending. As regards the incumbent's discount practices, the NRA has started investigations in two cases, which are still pending. Entrants continue to question the transparency and coherence of the incumbent's cost accounting system which, in their view, might mask a possible price-squeeze.

***Leased lines***

According to entrants, there is no competition on the leased lines market; in their view, the incumbent abuses its dominant position by discriminating between other operators and its own subsidiaries. Charges for international leased lines have never been submitted for approval, despite a request from the NRA. Administrative proceedings, started in May 2000, have not yet resulted in any binding legal decision.

***Numbering***

Non-compliance of some numbers/number ranges with the numbering plan remains the main source of outstanding problems in this area. This concerns number ranges for access to internet as well as the completion of the implementation of number portability.

## **64. NATIONAL REGULATORY AUTHORITY**

As of 1 April 2001 the KommAustria Act established a new Communications Authority ("KommAustria") which, contrary to the initial government proposal, is exclusively competent for the regulation of broadcasting, but not for the telecommunications market. Thus, the constitution and tasks of the existing Telekom-Control Commission, which is the main decision-making body of the NRA, remained unchanged, except that action against abusive behaviour by SMP operators (a task formerly dealt with by the Telekom-Control GmbH), by that date, was added to its responsibilities.

The Telecom-Control GmbH, having been the main operational body of the Austrian NRA for more than three years, however, formally ceased to exist on 31 March 2001 and became part of a new regulatory authority for telecommunications and broadcasting (Rundfunk & Telekom Regulierungs-GmbH – RTR-GmbH), established under the same KommAustria Act. Consequently, from 1 April 2001 RTR-GmbH assumed Telekom-Control GmbH's previous responsibilities in the telecommunications sector (e.g. numbering issues and administrative assistance to the Telecom-Control Commission; monitoring of e-signature issues; conciliation procedure for consumers and users), but furthermore serves as the operating arm of the KommAustria. It is also responsible for dispute settlements under the TV Signals Directive and for setting up and operating a competence centre to deal with questions of the convergence of the media and telecommunications in particular.

The initial draft of the KommAustria Act intended to establish (a body of) the NRA also as a specific competition authority in the field of media and telecommunications, and included a constitutional amendment in order to allow effective fines to be imposed on providers abusing their significant market power (up to €1 Million or, in any case, up to 10% of the operator's turnover in the market concerned). Constitutional amendment was also intended in order to establish an Independent Federal Communication Senate as an ordinary appeal body. However, these provisions have not been adopted.

The NRA continued to play an active role between November 2000 and March 2001, auctioning six licences for 3G mobile services and two for wireless local loop, approving the incumbent's new tariff scheme and widening the scope for unbundling. The restructuring of the NRA apparently had no impact on the continuity of its regulatory policy as demonstrated by a series of important decisions taken since 1 April 2001, such as the imposition of inclusion of shared access into the incumbent's RUO, the review of the determination of SMP operators, the establishment of new interconnection tariffs for 2001 and the publication of a statement of compliance of the incumbent's cost accounting system.

Since abusive behaviour by the incumbent (Telekom Austria) is frequently reported by new entrants (e.g. related to special price reductions, implementation of carrier pre-selection, roll-out of ADSL services, collocation issues, cutting off leased lines, shared access), effective enforcement of legal obligations and the NRA's decisions remains one of the key regulatory issues which still needs to be addressed.

While responsibility for measures against discrimination by the incumbent against other operators has been exercised by the Telekom-Control Kommission since the last amendment of the Telecommunications Act, procedures to sanction non-compliance with legal obligations remain within the responsibility of the regional telecommunications offices ("Fernmeldebüros"); given that out of some 20 procedures initiated by the NRA during the last three years, so far only one has led to a final finding of non-compliance (with nine appeals pending), this mechanism appears to be lengthy and cumbersome.

For reasons of constitutional law, the maximum fine to be imposed for non-compliance with the obligations under the Telecommunications Act is ATS 500 000,-- (€38 000). In case of severe and repeated infringements, the NRA has to withdraw the licence of the operator concerned. The national administrative authorities announced a further amendment of the Telecommunications Act in order to improve efficiency of enforcement measures.

Apart from dispute settlement and cases related to monitoring of abusive behaviour of SMP operators, which lies within the responsibility of the Telekom-Control Commission, competitors may refer a case to the Commercial Court or the cartel courts. In principle, the courts apply general competition law. The regulatory authorities do not have any rights of application or assistance under general competition law, nor do the currently planned proposals for its amendment provide for any such rights or assistance. New entrants complain about the length of the procedures.

As reported previously, all market players continuously express concern about a suitable mechanism to appeal against decisions taken by the NRA. Since the regulatory authorities started to exercise their powers under the Telecommunications Act in 1998, complaints have been lodged against their decisions in more than 80 cases.

Whereas the Administrative Court, by amendment of the Telecommunications Act, has had explicit jurisdiction to deal with such complaints since 1 June 2000 only, the first findings of the Court in substance were issued on 6 September 2001. In this judgement concerning portability for non-geographic numbers, the Administrative Court confirms the NRA's powers to regulate the provision of number portability, and declares the method of FL-LRAIC applied by the NRA in order to calculate cost-oriented interconnection tariffs as being legal.

Due to the lack of explicit transitional provisions, it remains unclear, however, whether the Administrative Court has jurisdiction for the complaints which were already pending on 1 June 2000. The Court has suspended the proceedings in more than 40 such cases, awaiting the outcome of a request for a preliminary ruling by the European Court of Justice.

Although, so far, both the Constitutional and the Administrative Court have always denied suspensory effect of a complaint filed against decisions of the NRA, some of the NRA's most important decisions, e.g. related to licensing, determination of SMP operators and fixing interconnection arrangements, are still lacking in legal certainty.

## **65. LICENSING**

No matters of concern have been reported with regard to licensing.

Since the last report, the number of licensees for the provision of public fixed voice telephony and/or public network services increased from 51 to 62 by 1 July 2001, all of which except three were actually offering services. More than 24 alternative operators are actually offering local call services, either by carrier selection or carrier pre-selection; more than ten operators are offering direct access to their users.

## **66. INTERCONNECTION**

The incumbent's RIO has been updated with effect from 1 February 2001. Of the 552 interconnection agreements in force on 1 August 2001, 416 were concluded between fixed network operators, 127 were concluded between fixed and mobile network operators and the remaining 9 agreements involve mobile network operators only.

In its decisions of 22 June 2001, the NRA completed a number of dispute settlement procedures redefining fixed network interconnection charges between *Telekom Austria* (TA) and alternative network operators (IC charges 2001). The new interconnection charges are effective as of 1 April 2001, and run until 30 June 2002.

As with the NRA's decisions in the past, the interconnection charges are based on peak and off-peak times, and the principle of reciprocity applies. By cutting the charges at peak times both at local (-11%) and at single tandem (-9%) level, the difference between peak and off-peak tariffs has been reduced. Interconnection charges for national termination and origination (double tandem) remained unchanged.

On interconnection between fixed and mobile telecommunications networks, the NRA informed the Commission of its decision of 18 June 2001, according to which TA only has been designated as having significant market power in the interconnection market. Consequently, *Mobilkom Austria*, the incumbent's mobile subsidiary, no longer needs to apply the principle of cost-orientation. Tariffs for call termination from fixed to mobile have been highly disputed. The NRA's decision of 5 November 2001 finally determined new interconnection charges for *Mobilkom Austria* and *max.mobil*, on the basis of "appropriate" prices. Termination charges for *Mobilkom Austria* were

furthermore reduced to a rate of ATS 1.71 (cent 12.4) for the period of 1 August 2001 until 31 March 2002 and to ATS 1.55 (cent 11.25) from 1 April 2002 until 31 December 2002, while termination to the network of *max.mobil* continues to be fixed at a rate of ATS 1.90 (cent 13.8) until end of 2002.

From 1998 to the end of October 2001, the NRA has dealt with some 80 interconnection dispute settlement proceedings. The Telecommunications Act has fixed the maximum time for a dispute settlement to six weeks; a prolongation up to ten weeks is possible. In a number of cases, this deadline has not been respected by the NRA, since situations of fact arise which are both technically and financially complex. However, the six months deadline stipulated in the Interconnection Directive was not respected in only eight cases.

## **67. LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE REGULATION ON LOCAL LOOP UNBUNDLING AND BITSTREAM ACCESS**

Agreements on full unbundling with some 15 operators were in place on 1 July 2001; full unbundling was operational for 2 856 lines by end of September 2001.

According to the last implementation report, new entrants had complained that the incumbent discriminated between operators with regard to the provision of collocation facilities and that the monthly fee for LLU fixed by the NRA would create a price squeeze for alternative providers.

As a result of several dispute settlement proceedings, the NRA's rulings of 12 March 2001 introduced partial unbundling ("sub-loop unbundling"), collocation area limits of 22 m<sup>2</sup> maximum, step by step reductions in monthly charges – from formerly ATS 170.00 (€12.35) to ATS 160.00 (€11.63) until 31 December 2001 and ATS 150.00 (€10.90) from 1 January 2002 by using an analytical bottom-up cost estimating model based on the FL-LRAIC approach – and penalties in case the incumbent overruns deadlines.

The rulings apply indefinitely, but the charges only until 30 September 2002. The unbundling partner can use any transmission systems used by the incumbent and its associated companies on the subscriber lines assigned to it, and use them to provide voice telephony services, leased line and data services, especially for multi-media broadband and fast internet services. The level of the monthly charges does not depend on how the unbundled subscriber lines are used.

Collocation is available at any of the incumbent's main distribution sites. The ruling, however, does not allow for "open collocation" outside the incumbent's premises. Setting up of collocation areas is charged for at cost. Collocation rentals are governed by local or prevailing market rental levels for commercial premises, using the rental level guides issued by the Federal guild of real estate and asset trustees, in its current version at any time.

According to the NRA, there were no dispute settlement proceedings pending at the end of September 2001.

As notified SMP operator, *Telekom Austria* (TA) has been required to provide for a RUO in compliance with the unbundling Regulation since beginning of 2001.

The first RUO presented by the incumbent was not in line with several NRA rulings on unbundling and did not include the minimum components listed in the regulation (particularly shared access, but also details of locations for access and subscriber lines, the incumbent's locations, collocation facilities at locations, security measures, security requirements, collocation inspections, access to business support and information systems, standard terms and conditions of contract, including compensation, prices and pricing formulae). As the incumbent thus had failed to comply with these requirements, the NRA, by decision of 18 June 2001, ordered TA to amend its RUO before 10 July 2001 accordingly.

TA presented a revised RUO including shared access, which was published on the incumbent's website on 10 July 2001. One unbundling agreement including shared access has been concluded so

far. Although no application for a dispute settlement had been launched, the NRA again ordered TA to modify its RUO in September 2001, mainly because the tariffs for shared use do not appear to be cost-oriented (and exclusion of voice telephony is not appropriate).

In September 2000, five frequency bands in the 26 GHz range designated for WLL were put out to auction. Since this was intended to promote competition at the 'last mile' stage, their use was restricted to end user lines. However, the auction attracted only two bidders. One applicant was allocated frequencies for all regions in Austria in February 2001, and the other was allocated frequencies only for some areas. The remaining frequencies were not allocated. Preparations are currently being made for a further auction for the non-allocated frequencies, which is scheduled for the second half of 2001. In this case, the frequency of the 26 GHz bandwidth can also be used for connecting mobile phone-system base stations.

Roll-out of ADSL in Austria has been one of the fastest within the EU. In November 1999, the incumbent had launched an offer for an ADSL-based internet access service for its own end users, which, at that time however, could only use TA's subsidiary ("*Jet2web*") as their internet service provider (ISP). Following the intervention of the NRA, and negotiations between the Austrian Association of Internet Service Providers (ISPA) and the incumbent, agreement on a standard wholesale product was finally reached in March 2000. This ADSL package is available to all ISPs (including alternative network operators) on a non-discriminatory basis, but excludes ISPs offering voice telephony over IP.

With an increase of 50 000 new users in 2001 only, according to the incumbent, 80 000 of its clients have already opted for ADSL. Approximately 60 000 lines were operational by 1 July 2001.

Agreements for high speed bitstream access were in place with 21 alternative operators by 1 July 2001, thus operating some 8 000 of the incumbent's lines.

At the same time, three local cable TV operators were actually offering high speed and voice access over more than 30 000 lines.

## **68. UNIVERSAL SERVICE/CONSUMERS/USERS**

*Telekom Austria* (TA), the universal service provider, so far has not made any request for compensation of costs incurred.

According to the Telephone Charges Subsidy Act (FeZG), which came into force on 1 January 2001, any licensed fixed and mobile network operator can offer social tariffs, and those eligible can choose their own operator themselves. Under this new system, operators commit themselves by contract with the Federation to offer those eligible a line without standing charges and free telephone calls on the fixed network in their regional area during business hours for not less than one hour. The Federation refunds ATS 190 per month for each eligible person. The FeZG provides for up to ATS 750 million p.a. for such refunds. Responsibility for acknowledging entitlement and making refunds to operators rests with the *Gebühren-Inkasso Service GmbH* (GIS). Applicants can appeal against GIS decisions to the BMVIT.

By end of October 2001, TA and *max.mobil* (as a mobile operator) were actually offering social tariffs for those entitled. Contracts have been signed with a further mobile operator (*ONE*); negotiations are under way with other operators.

A common directory of subscribers is provided both on paper and in electronic form, on a commercial basis, by a subsidiary of the incumbent (*Herold*). However, the directory appears to be incomplete since some alternative operators object to the incumbent's charges for collecting the subscriber data which is then transferred into the directory. The NRA is monitoring ongoing negotiations. Private directory services also exist.

In June 2001, TA submitted its annual report on service quality for 2000 to the NRA. The indicators achieved in 2000 and those for 1999 are published on the regulator's website. These figures are based on ETSI standard ETR 138.

Some alternative network operators (such as *UTA Telekom* and *Tele2*) provide itemised billing free of charge in Austria. The basic form of accounts provided by the incumbent without extra charge are broken down by tariff areas, listing regional calls, inter-regional calls and international calls separately. International calls in turn are broken down by different tariff zones. Calls to mobile phone networks are also broken down by operator, with added value and online services shown separately. Each section shows the number of calls, the number of charge units involved in those calls and the costs in each case. Itemised details are only available subject to charge according to the incumbent's general terms and conditions as approved by the NRA.

The Ministry (BMVIT) argues that the system in place enables subscribers to check their charges carefully and meet the objectives of the Directive, as the plausibility of accounts can be verified from the basic form as easily presented. Individual consumers as well as consumers' associations, however, contest this view. The Ministry signalled willingness to review the legal framework for the basic form of itemised billing in order to meet consumers' needs.

Consumer complaints relating to telecommunications services are handled by the NRA (RTR GmbH) within a special arbitration proceeding. In case of its failure, the complainant may still pursue matters via the ordinary courts. Until the end of 2000, 2 179 complaints had been received under the Telecommunications Act. According to the NRA's Annual Report for 2000, published on its website in September 2001, complaints have continuously and significantly increased; until the end of August 2001 another 903 complaints had been filed. Most of these complaints were about billing issues and quality of services. Special problems relate to added value services and passive charges for mobile calls abroad.

## **69. MOBILE SERVICES / frequencies**

According to the incumbent, the mobile penetration rate reached 81.8% end of July 2001; the market share of the incumbent's subsidiary *Mobilkom* has come down to 43%. Whereas two mobile operators had a market share significantly above 25% by 1 July 2001, the NRA notified the Commission that no operators are any longer designated as having SMP in the market for public mobile telephony.

There are currently four 2G operators operating mobile services on their own national network, two of them using DCS 1800 and the other two using both GSM 900 and DCS 1800 spectrum. To date there are no MVNOs in Austria.

An auction, for as yet unallocated frequency ranges to the extent of 2x22.2 MHz for GSM 1800, was opened in December 2000. The four existing GSM operators as well as applicants with no GSM networks were admitted to the award procedures. The frequencies were allocated to three of the existing GSM operators in May 2001. Apart from a small range of 2x2.2 MHz, for which none of the applicants applied, the total frequency range available for GSM 1800 has now been allocated to operators.

Austria has implemented all three ERC Decisions relating to UMTS frequency bands and harmonised use. Six licensees for 3G-services resulted from the auction in November 2000, two of which are new entrants to the mobile market.

Under their licence conditions, each 3G-operator must offer a coverage of 25% of the population from 31 December 2003 and of 50% of the population from 31 December 2005. Carrier services must be offered at a data rate of not less than 144 kbit/s. Operators must achieve the level of coverage through their own network. An operator is considered as having its own network if the main network components on the core network side (Switch, VLR, HLR) and the main mobile network elements (RNC, Node B) are operated by the licence holders themselves. Antennas and

associated cables may be used jointly with other licensees. Market players have asked for more legal certainty as to the use of infrastructure sharing. The NRA prepares for clarifications of the licensing conditions by end of November 2001.

The Telecommunications Act imposes obligations on the joint use of antenna masts (mast sharing). Reasonable cash payments must be made to the obliged party for joint use, covering the costs of installation, including costs of acquisition, and the operating costs of the jointly used systems. If the parties cannot agree, the NRA can be called in and will then decide on the joint arrangements for use.

In accordance with the Telecommunications Act, licences include roaming obligations on 3G licensees who also hold licences to provide 2G mobile phone services. The coverage, which has to be achieved to acquire roaming rights at national level, has been set at 20% of the population. The services to be offered as part of national roaming have also been defined. These include GSM Bearer Services (including GPRS), GSM tele-services and GSM Supplementary Services, where the requested party itself offers the services to its customers. The services provided to a roaming partner must be of the same quality as those provided on one's own network. 3G operators may enter into roaming agreements for national 3G-3G roaming under private law.

Roll-out of 3G services is expected to start in 2002. For the roll-out, operators are concerned by two major obstacles: constraints imposed by regional authorities and lack of efficient frequency management by the telecommunications authorities.

Planning permission and planning procedures for erecting antenna masts is entirely a matter for the *Länder*. Legislation concerned includes planning regulations, countryside and nature conservancy law and local planning design standards. Procedures appear to be complex and could delay the roll-out of 3G networks.

Delays are particularly concerned, since people in Austria are increasingly concerned about radiation. A petition to establish lower radiation limits than those imposed in the operator's licence conditions (which are based on the EU Council Recommendation of 12 July 1999 on limiting popular exposure to electromagnetic fields in the range from 0 Hz to 300 GHz) has been broadly supported by municipalities and politicians, amongst others the vice-chancellor and the Minister for Health. Secondary legislation on radiation limits, requested by alternative operators, has not been adopted. In practice, lower limits ( $<1\text{mW/m}^2$ ) appear to be subject to private agreements ("Salzburg model") in at least three *Länder* (Salzburg, Kärnten, Oberösterreich).

3G new entrants complained about the difficulty in accessing spectrum needed for point-to-point connection of base stations. They allege that, unlike new entrant 3G licensees, 2G operators who successfully bid for a 3G licence can use spectrum for their 3G network roll out which has in the past de facto been reserved and assigned to them in the context of their 2G operations. For the assignment of such frequency, the telecommunications office ("Fernmeldebüro") appears to be in charge under current law. 3G new entrants are concerned that the intention now is to provide for an auction procedure for the remaining frequency and they feel discriminated against in comparison with 2G operators, who did not have to pay any auction fees, and they are also concerned that preparing for an auction process may take several months, thereby giving their 3G competitors, who can use their 2G spectrum, a head start.

Since the number of users of the incumbent's analogue D-net has significantly decreased during the last year (from about 200 000 to 90 000), *Mobilkom* has recently announced a definite phase-out of the analogue system by end of February 2002 (instead of 2004 as previously expected).

## **70. TARIFFS**

According to the incumbent, its tariffs for fixed voice telephony have furthermore decreased by 17% on average between end of June 2000 and 2001.

Pursuant to the Telecommunications Act, both fixed voice telephony and mobile telephony operators have to notify their tariffs to the NRA. *Telekom Austria* (TA), as being the only SMP operator in the fixed voice telephony market, is required to submit new tariff schemes and subsequent substantial modifications of its tariffs to the NRA for approval, in order to ensure their compliance with the principle of cost-orientation. The time limit for approval of tariffs by the NRA is, in principle, eight weeks; in case the NRA fails to deliver a decision in time, the tariffs concerned are deemed to be approved.

Concerns were raised by alternative operators mainly with regard to the incumbent's new 'TikTak' tariffs, the so called 'winter tariff' and the discounts offered in practice.

The major changes in TA's tariff structure over the last year concern the introduction of second-based tariff models (i.e. second by second billing from the first half or full minute), complementing the existing pulse-based tariffs. For the first time, the incumbent's initial application in November 2000 had been rejected by the NRA on the grounds that the charges applied were not cost-oriented. Following modifications, the NRA finally approved this new 'TikTak' tariff on 29 January 2001.

On 22 November 2000, TA announced a 'short advertising campaign' to the NRA, the 'winter tariff'. The NRA's reaction was, first, to investigate possible abuse of SMP by discrimination against other network operators by terminating or originating calls within TA at prices lower than those under interconnection agreements or arrangements, and, second, to request TA to apply for approval of the 'winter tariff' in compliance with the Telecommunications Act. On 22 December 2000 the NRA obliged TA to report detailed traffic data, on a weekly basis until the 'winter tariff' campaign ended. Monitoring average call times during the time window covered by the 'winter tariff' (from 1.12.2000 to 28.2.2001) showed nothing but a slight increase in average call times. As the charges were pulse-based, the effective charge per minute was slightly above the usual rates. Although the NRA has ordered it to do so, TA failed to submit its 'winter tariff' for approval. The NRA therefore reported the matter to the authority in charge of sanctions, the Telecommunications office ("Fernmeldebüro"). Proceedings are still pending although they were expected to be completed in the first instance over the summer of 2001.

TA currently applies its general discount provisions, which were approved by the NRA on 14 January 1999, discounts agreed with the Federation ("Bundesrabatt") and discount provisions for carrier routes (leased lines).

The Federal discount has never been subjected to an approval by the NRA, as TA has never applied for one; nor have these discount agreements ever been submitted, although the NRA repeatedly has requested this. As a result of the incumbent's discount practice, any tariff models which TA submitted for approval has only been approved by the NRA, subject to the condition that TA only applies the discounts approved by the NRA and to the condition that the discounts allowed must not lead to the relevant tariff options not covering their costs. Monitoring the incumbent's discount practice, the NRA, in two cases, has also started investigations, with regard to a possible abuse of SMP by discrimination, which are still pending.

According to the information available, only some alternative operators are offering flat rate tariffs for specific hours of the day/week at present.

## **71. COST ACCOUNTING**

The legal obligation for the NRA to publish an annual statement of compliance with the provisions of the ONP directives on the cost accounting system operated by an SMP operator was introduced into national law on 1 June 2000.

On 10 July 2001, the NRA stated that the incumbent was operating a cost accounting system in compliance with the ONP directives, which allows that costs and cost components are attributed to all services and service components, and that audits may be held retrospectively. According to the same finding, costs for line cards, however, were not yet dealt with in compliance with the



Commission's Recommendation on cost accounting of 1998. This statement, as well as the description of the cost accounting system (version BETA), are available on the NRA's website.

The NRA's decision does not contain any reference to absolute value of data performed as being audited or verified on an annual basis. The NRA argues that within each single proceeding instigated by the NRA for approval of the incumbent's retail tariffs and also within a large number of interconnection dispute settlement proceedings, all aspects of the incumbent's cost accounting were examined in detail by way of opinions, the results of which were subjected to further plausibility checks which involved comparing them with a bottom-up cost model of the NRA. Alternative operators continue to question transparency and coherence of the incumbent's cost accounting system which, in their view, might cause price-squeeze.

## **72. LEASED LINES**

According to the alternative operators, there is no competition on the Austrian leased lines market; in their view, the incumbent abuses its dominant position by discriminating against other operators than its own subsidiaries *Datakom* and *Jet2Web*.

The NRA informed the Commission of its decision of 18 June 2001, according to which *Telekom Austria* (TA) has been designated as having significant market power in the market for the provision of leased lines services by means of a fixed network. According to its own information, TA has a 65% share of the market for data communications.

On 3 April 2000, the NRA approved charges for the incumbent's national leased lines, which applied from 30 April 2000 until 30 August 2001. On 1 June 2001 the NRA again approved new charges for the incumbent's national leased lines, which now apply from 1 September 2001, with a significant reduction in the charges for digital transmission paths at 2 Mbit/s. This reduction in charges also applies to the joining links required for interconnection.

Charges for international leased lines have not been approved so far as they have never been submitted for approval, although the NRA has requested that this shall be done. The matter was reported to the telecommunications office ("Fernmeldebüro") in a letter of 10 May 2000. The administrative prosecution proceedings have not resulted in any binding legal decision as yet.

Discount provisions for leased lines date back to 1996, and were approved by the Ministry (Supreme Telecommunications Authority). This covers all charges for leased lines. A gradual discount is granted on sales of more than ATS 10 millions; above ATS 50 millions, discounts are negotiated individually, but the Ministry's decision requires that they be published. Telekom Austria has been informed that this duty to disclose discounts now applies to the NRA (RTR-GmbH).

## **73. NUMBERING**

Carrier pre-selection (CPS) has become a remarkable success in Austria. By end of September 2001, more than 600 000 of *Telekom Austria's* clients were using CPS according to the incumbent. More than 15 alternative operators are actually offering local call services by CPS. At the same time number portability has been requested in 2 448 cases.

The numbering plan of December 1997 has still not been fully implemented. Non-compliance of some numbers/number ranges with the numbering plan rests the main source of outstanding problems in this area.

Number ranges (0)71891 and 194 for access to the internet used by the incumbent's ISP (*194-11*, *Jet2Web Internet Services*), but also by other ISPs, are not provided for under the current numbering ordinance (NVO). Due to a decision made by the NRA, online highways in compliance with the numbering regime exist in the (0)804 range, where ISPs bill end users under a separate agreement between end users and ISPs. A call number highway similar to (0)71891 and 194, which

is expected to be in the (0)814 range, is intended to be introduced shortly. In this range, the source networks will determine the end user tariffs and a termination charge will be payable to the network operator (to which the ISP is connected).

*Telekom Austria* (TA) still uses some of its historical call number ranges. In several cases, the NRA has rejected number portability of numbers which do not comply with the numbering plan in place.

#### **74. RIGHTS OF WAY**

According to the last Report, alternative operators have reported increasing problems with local authorities, in particular regarding delays for digging permits and digging restrictions.

The Telecommunications Act explicitly allows licence holders to use public land for installing telecommunications lines free of charge and without any particular authorisation being required. 'Public lands' include roads, pavements and public places in particular. The authorities concerned (Federation, *Länder* and local authorities) can only impose charges where the legal foundations for such charges already existed as of 1 August 1997. Apparently no such charges are actually imposed in Vienna and other major cities.

The Telecommunications Act does not prevent claims being made for restitution of the former state, damages or the costs incurred in order to comply with safety requirements for the working sites, provided those claims do not exceed the costs actually incurred.

In practice operators appear to pay for use under voluntary contractual agreements with the public law authorities involved in order to avoid delays; co-digging obligations also exist in some municipalities. In a number of cases BMVIT has been requested for a clarification.

Incorporation of the provisions of the Telecommunications Route Act in the Telecommunications Act, in order to harmonise the rules, has not yet taken place.

#### **75. DATA PROTECTION**

According to the Data Protection Commission, established under the Data Protection Act 2000, there have been few complaints in this field since 1.1.2000. These complaints concern problems involved in verifying what kind of data being stored by operators and subsequent requests to delete data. In a number of cases, applications were related to credit rating data originating from private credit rating agencies. There have frequently been cases where credit rating agencies failed to meet registration obligations. Such cases are liable to administrative penalties (fines up to €10 000), and the Data Protection Commission can order companies to desist from using such data further without registration.

The Telecommunication Act still needs to be harmonised with the Data Protection Act 2000, a draft for amendment is expected to be sent out for consultation soon.

New entrants were still concerned about the costs of measures for law enforcement purposes. According to the Telecommunications Act, operators are obliged, on the basis of an ordinance issued, to provide all the equipment required to supervise telecommunications traffic in accordance with the provisions of the Code of Criminal Procedure (StPO). This obligation does not justify any claim for compensation. A draft ordinance is currently the subject of a consultation launched on 26 September 2001.

#### **76. INTERNET**

There are still more than 200 ISPs. Market penetration for online services reached 46.2% in June 2001. According to its own information, the incumbent's share of the internet services market has increased from 26% to 39% between end of June 2000 and 2001. The incumbent's internet subsidiary is *Jet2Web Internet Service GmbH*.

Alternative providers continue to complain that the incumbent virtually has a monopoly as regards internet access services.

#### **77. directive 95/47/ec**

The TV Signals Directive was transposed into national law by the Federal law on the use of television signal standards in July 2000. After the Commission had delivered a detailed opinion pursuant to Directive 98/34/EC, the Commission was formally informed that a draft bill for the introduction of a mandatory common interface for decoders marketed from 1 June 2001 would not be pursued.

Under the KommAustria Act, responsibility for dispute resolution in the field of application of the TV Signals Directive has been transferred to the NRA (RTR-GmbH) from 1 April 2001; no disputes have been referred to the NRA to date.

RTR-GmbH is also responsible for setting up and operating a competence centre to deal with questions of the convergence of the media and telecommunications in particular.

Under the Private Television Act (PrTV-G), which entered into force on 1 August 2001, a “Digital Platform Austria” has been established as a working group in order to support the regulatory authority (KommAustria) in preparing a concept for digitalisation of broadcasting in Austria, which should start before 2003.

Digital TV penetration has been estimated at 5.3% for the year 2001.

Apart from the national public broadcaster *ORF*, digital television in Austria is operated mainly by pay TV providers at present. The Austrian pay TV market is largely dependent on developments in the German market. German pay TV programmes are also marketed in Austria, especially *Premiere* with around 100 000 subscribers (as of July 2001), most of whom receive programmes via satellite. In principle, acceptance of pay TV in Austria is very low, because (as in Germany) over 80% of households already have around 30 free German language TV channels via cable or satellite.

Since August 2000, *ORF* has also been broadcasting its TV programmes digitally via satellite (ORF-digital), the decoder used being the *Kirch* Group’s d-box, and the encryption procedure used being betacrypt. The d-box is marketed by a number of manufacturers and importers in Austria, who offer a range of options for acquiring a d-box, to buy or hire, for example.

*UPC Telekabel* introduced a digital TV offer in Vienna in September 2001.

## 3.12 PORTUGAL

### 78. OVERVIEW

#### ***Market and regulatory framework***

The Portuguese telecommunications market has been fully liberalised since January 2000, with 20 network operators and 13 service operators currently offering fixed telephony services to customers. The level of competition has steadily increased to reach 19% for international calls and 12% for long-distance calls in only a year.

A reform of the NRA (ICP) is envisaged, principally to reinforce its powers and independence vis-à-vis the government. According to the draft legislation, ICP would be able to apply competition law to the sector, in cooperation with the Competition Directorate General. The members of ICP's board would be appointed for a fixed term of five years. The new status of the regulator is expected to be approved in 2002.

The reform of ICP is well perceived by all market players except the incumbent (PT), in particular in reinforcing independence. Some new entrants criticise the fact that the Ministry for Social Infrastructure has an indirect role in Portugal Telecom, due to its co-responsibility with the Ministry of Finance for the Portuguese State's shareholding in PT.

#### ***Licensing regime***

Some wireless local loop and 3G operators appear to be having difficulties in fulfilling their licence conditions as far as network roll-out is concerned, and would like to see licence terms relaxed. ICP has announced a deferment of 3G roll-out as a result.

#### ***Tariffs and interconnection***

The interconnection regime has been improved since the publication of the 6<sup>th</sup> Report, although the publication of PT's reference interconnection offer (RIO) only took place in February 2001. PT's new interconnection prices have decreased significantly and are now in line with the EU average. The interconnection structure of PT's network, which was seen as a barrier to entry in the previous implementation report, has not yet evolved. This change should take place in the beginning of 2002.

The problem of "off-net"/"on-net" calls (calls to the incumbent's network and to another network) has been solved by the action of the regulator. The implementation of ICP's decision has, however, been slow.

Mobile termination rates are still among the highest in the EU. ICP is conducting negotiations to reduce them, although mobile operators are reluctant to change their tariff structure. For the regulator, mobile telephony should not be subsidised by fixed-to-mobile calls.

ICP made a decision in June 2001 to permit flat rate internet access call origination for calls to the internet. The ruling was well received by new entrants, even if they consider it does not solve all outstanding issues. However, in the view of PT the decision places an unfair burden on it and discriminates in favour of its competitors. For the first time, PT has gone to court against a ruling by the regulator.

#### ***Local access***

The market situation in Portugal clearly shows a very low level of competition in local access. Wireless local loop has not developed significantly in practice and is unlikely to do so in the near future, due to the financing difficulties of the operators

concerned. PT's competitors have mainly focussed on the development of their long-distance infrastructure.

Local loop unbundling is not yet available on a commercial basis, even though PT's reference unbundling offer (RUO) was published in July 2001. Technical trials are being conducted under the supervision of ICP, which has set up dedicated teams to ensure operational problems are solved in due time. It is probable that LLU will not be widely available before 2002. New entrants welcome ICP's proactive attitude, but would like to see penalties imposed on PT if it fails to deliver lines according to the timing laid down.

***3G roll-out***

Four 3G licences were granted, including one to a new entrant in the mobile market, in December 2000, after a beauty contest procedure which was not the subject of appeal. Changes in financial markets as well as the unavailability of equipment have led to a delay in the launch of 3G by a year, i.e. until 1 January 2003, in accordance with the licensing framework in Portugal.

ICP announced in August 2001 that it would investigate the possibility of allowing access for mobile virtual network operators (MVNO) if the 3G technology was introduced later than expected.

***Tariffs and cost accounting***

PT's tariffs are still established according to a convention between it and the regulator. The regulator has had to intervene on some occasions regarding PT's tariffs, when it had evidence they were below costs. The cost-accounting system should be improved through the adoption of a new costing model to replace the current cost model used at present.

***Leased lines***

Leased lines is still the market segment with the weakest level of competition. New entrants continue to complain about high prices, poor quality of service and long delivery times. They consider that the cost accounting system for leased lines is inadequate because it is based only on historical data. They also indicate that PT still holds a de facto monopoly on interconnection leased lines due to the lack of definition of conditions for access to local exchanges. The absence of end-to-end competition is clearly seen as a threat by new entrants (including mobile operators) for their network deployment.

In turn, the lack of competition in the leased lines market acts as a negative factor on the development of internet service providers, who rely heavily on leased lines.

***Rights of Way***

There is a concern that new entrants have to pay for rights of way to local authorities whereas Portugal Telecom is, according to the law, exempted from all such payments. The matter is under investigation by ICP. New entrants have already protested against this discrimination which could, according to them, act as deterrent to the extension of their network coverage.

|                                      |
|--------------------------------------|
| <b>NATIONAL REGULATORY AUTHORITY</b> |
|--------------------------------------|

According to the Telecommunications Act, Government is to be assisted in its responsibilities in the field of communications by the ICP. It is a public institute endowed with legal personality, with administrative and financial autonomy and its own resources. ICP employs about 400 staff, which is regarded by the sector as not being sufficient. ICP acknowledges it has to face shortages of expert staff, and would be keen on recruiting more employees.

ICP is a financially autonomous body which reports to the Ministro do Equipamento Social (Minister for Social Infrastructure). Without prejudice to the powers of the Council of Ministers and the Minister for Finance, the Minister for Social Infrastructure exercises his powers within the framework of the State's holding in various companies, including Portugal Telecom. Some market

players have expressed doubts about the actual independence of the regulatory system, especially as the Minister of Social Infrastructure is also involved to some extent in Portugal Telecom, the incumbent operator. The remaining holding of the Portuguese State in Portugal Telecom stands at 6.63004% (through Caixa Geral de Depósitos 4.7%, Parpublica 1.93% and the State 0.00004%). The preferred share, which the Portuguese State still holds in PT, might also, according to new entrants, be a threat to the Ministry's neutral position.

According to the Portuguese authorities however, this has never had an influence on the regulation of telecommunications in the country. The effective separation between the Portuguese regulator and the incumbent (the Ministry of Social Infrastructure is responsible for ICP and is also involved in the appointment of State representatives to the management of Portugal Telecom) is not a problem. The incumbent's board is appointed by the assembly of shareholders, whereas ICP's management team is appointed by the Council of Ministers on the proposal of the Minister for Social Infrastructure.

ICP decisions are subject to appeal only to the courts in accordance with the general appeals provisions of Portuguese law. While exercising its attributions, ICP is autonomous in its decision making, and needs in theory no "ex ante" or "ex post" approval by the Government. It is worth noting that the appeals process has not been criticised by market players in Portugal.

ICP is involved in the definition of the Portuguese telecommunications policy, through its advisory role to the Government. It is also responsible for the regulation of the market, as well as for spectrum management and licensing.

The statute of the ICP is currently under revision by the Portuguese government. This project would have three major consequences:

- Update ICP's current statute, which is 12 years old;
- Enlarge the scope of powers and responsibilities in the hands of the regulator. ICP would be involved in the application of Competition Law on communications through coordination with the Portuguese Direcção Geral do Comércio e da Concorrência (DG for Commerce and Competition). ICP would however have a reporting obligation to Parliament two or three times a year.
- Name the board of directors for five years. Directors could not be revoked unless they had committed a criminal offence.

The government is also considering the effects convergence should have on regulation, including the creation of a single regulator for telecommunications and audiovisual. A Task Force will be set up to prepare a White Paper, which will mark the launch of a consultation period starting no later than mid-February 2002.

New entrants generally complain that ICP's decisions are slow to enter into force. For instance, it took almost a year for the customers of other licensed operators (OLOs) to be included in the universal service directory managed by PT. Five decisions on so-called 'off-net' calls did not have effect until several months after they were made. The regulator does not contest this, but insists on the fact that slow implementation only affects a minority of decisions and that it has sufficient legal means to enforce its rulings. ICP's decisions can be appealed and challenged in court. In only one case (internet tariffs) has the incumbent operator chosen to go to court.

## LICENSING

An individual licence must be obtained to provide public voice telephony services, to set up and operate public telecommunications networks and to provide services using radio frequencies.

The conditions imposed on operators concern, inter alia, network security and integrity; interoperability; efficient use of the radio spectrum; and compliance with the principle of non-discrimination. The market does not seem to regard the licensing system established by these provisions as a barrier to market entry. No complaints have been received about the time taken to grant licences. The current licensing regime is quite light (25 days on average to grant a licence), so that a transition towards the new framework should not be difficult.

41 licences to operate a telecommunications network have been awarded in Portugal so far; 20 operators are commercially active. Some operators do not offer a service to third parties, although they have built a network.

30 companies have a licence to offer the telephone service to the public, out of which 13 are currently active.

## INTERCONNECTION

A Decree-Law of 1998 provides the legal basis for interconnection between public telecommunications networks, as well as the general principles applicable to the national numbering plan, and the powers of the regulator. This Decree-Law also sets operators' obligations as regards interconnection together with the definition and publication of the reference interconnection offer (RIO).

Three operators were declared as having significant market power following a deliberation on 3 August 2000: PT (domestic interconnection, fixed telephone networks and/or services, leased lines); TMN, mobile subsidiary of PT, and Telecel-Vodafone (mobile telephone networks and services).

A set of decisions, related to the contents of agreements to be signed between Portugal Telecom and the interested parties, was approved on 7 July 2000. It applies to prices and conditions applicable for access for clients of OLOs to special services provided by Portugal Telecom as well as to access for clients of PT to special services of OLOs (emergency numbers, freephone numbers, etc).

Some of the rules adopted determined the need to make alterations to the RIO 2000 and were included in the final version of RIO 2001. ICP, by its resolution of 19 January 2001, decided the introduction of alterations to the RIO 2001 within a period of 10 days. PT Comunicações (PTC) published its RIO 2001 on 14 February 2001.

The 6<sup>th</sup> Report mentioned that the interconnection structure of PT's network, and in particular the high number of points of interconnection (POIs), was seen by new entrants as a barrier to entry. Amongst the alterations to the RIO 2001, ICP required PTC to submit a proposal, within four months, to revise the interconnect structure and the list of PoIs. This aims at enhancing interconnection terms between operators. Currently, PT is reviewing the structure of its network, which was originally the result of a merger of two different networks (Lisbon+Porto/Rest of the country). The new interconnection structure will be included in the RIO 2002.

Interconnection charges for call termination on the fixed network dropped quite significantly from 2000 to 2001: 9.6% (local), 15.9% (single transit) and 16.8% (double transit). Portugal's interconnection tariffs are now in line with the EU average. OLOs no longer complain about the high level interconnection tariffs.

As a whole, Portugal's mobile tariffs are competitive, as calls from mobile to fixed telephones are relatively cheap. Fixed to mobile termination charges remain however among the highest in the EU, despite ICP's intervention in 2000. New discussions, which might lead to a 20% to 25% cut in termination rates, are under way between the ICP and mobile operators. Mobile operators on the one hand explain that these cuts would have a negative impact on their business development and insist that the overall prices are in line with the European average. ICP on the other hand believes mobile termination prices do not reflect cost and sees a necessity to have a tariff "rebalancing" between mobile-to-fixed and fixed-to-mobile calls.

At one time, “on-net” and “off-net” calls (i.e. calls to PT’s network and to OLO’s networks) were tariffed differently : it was up to three times more expensive to call a competitor’s subscriber. This was due to the fact that operators had chosen different rates of interconnection leading to different prices, creating a lack of transparency for the consumers. ICP made four consecutive decisions from September 2000 onwards to solve the matter, but changes were slow to implement. A satisfactory solution was found, as PT customers are now being refunded for the extra amount they were unduly charged, with retroactive effect.

### **LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE REGULATION ON LOCAL LOOP UNBUNDLING AND BITSTREAM ACCESS**

A public consultation on local access competition was launched in July 2000. Portugal Telecom’s local network was opened to new operators of the telecommunications services to the public from 1 January 2001 for test and trial procedures. A proposal for modifications of PT’s RUO was issued in May 2001, followed by ICP’s final decision on LLU on 28 June 2001. This decision, which implied a modification of PT’s RUO, fixed in particular prices for the connection fee, narrowband services and broadband services.

It was also decided that PT would have to grant access to all copper local loops. Other operators will not be subject to PT’s prior approval in order to install equipment in its exchanges.

The operators themselves will inform consumers of the availability of the direct access services they provide as they finish installing their equipment. Consumers will still, however, be able to use indirect access services (codes 10 xy and carrier pre-selection).

Cable operators do not really provide an alternative at the local level. The largest cable operator is a subsidiary of the incumbent, and only one other company offers voice telephony and data services. It had about 1 500 lines at the end of 2000.

As in other Member States, the actual take-up of LLU appears to be very slow in Portugal, despite ICP’s decision of June 2001. The Portuguese authorities stated the indicative calendar they had thought about had to be brought forward by six months. In the meanwhile, intensive work was carried out. In particular, ICP created a task force that was charged with checking the technical and operational conditions applied to physical coinstallation in designated sites. ICP expects to see significant progress in 2002, with a comprehensive multimedia offer including Terrestrial Digital Television or high bandwidth internet.

PT claims that the process of introducing LLU is in essence slow to implement. It points at the publication of its RUO on 16 July 2001 as well as at tests going in two centres for a total of 30 lines. As a whole, 16 centres are available as of end of September 2001.

New entrants regret the delays in implementing the Regulation, which were partly attributed to the incumbent’s delaying of the presentation of its RUO. They also object to the fact that PT was able to reject physical collocation without having to provide an alternative. From now on, new entrants would like to see penalties included in PT’s RUO in the case of a failure to deliver unbundled lines on time. They also request a clear timing for the opening of new exchanges. At the moment, about 2 000 retail DSL lines have been opened, which are almost all provided by PT.

New entrants observed that PT’s Internet Service Provider (ISP) had a comprehensive retail offer the day after PT’s wholesale offer was made available to other ISPs. They think PT’s subsidiary might have had access to some information before its competitors. The delivery period requested by PT from OLOs was 45 days; it seems that PT’s ISP (named Telepac) had its offer in place before that period ended.



On 29 December 1999, eleven wireless local loop licences were granted. According to the general conditions established on those licences, operators had eighteen months to launch the commercial provision of the service. ICP was able to determine at the end of June 2001 which operators were in fact offering WLL “services”. At that date, three out of eleven WLL operators had not fulfilled their licence conditions regarding the roll-out of their networks, and their licences could theoretically be revoked.

Despite early granting of WLL licences, this technology has not made a real impact on the market: WLL operators had opened 1 200 lines at the end of 2000. FWA operators think the investments necessary make WLL an alternative for high value customers. They claim they have problems accessing customers’ premises. This might be due to the fact that owners can refuse installation of terminal stations as well as the imposition of rents. New entrants also ask for extension of WLL to the provision of leased lines for GSM transmission.

### **UNIVERSAL SERVICE/CONSUMERS/USERS**

The universal service provider is Portugal Telecom. The Portuguese legislation gives the possibility to finance universal service by telecommunications operators’ contributions to a fund, and fixes the components of the universal service.

It also contains provisions on the calculation of the net cost of the universal service and pricing. PT has recently submitted to ICP its estimate of the net costs of Universal Service Obligation (USO) incurred from 1996-1999, which is around €150 million per year. PT claims it should be compensated for complying with the USO. This issue is currently being analysed by ICP, which thinks Universal Service accounts should only be examined after the market was fully liberalised (1 January 2000).

ICP has signed a cooperation agreement with the Portuguese Consumer Protection Association (DECO) for a series of public surveys of the impact of liberalisation and electronic services on consumers. ICP has also signed agreements with the Ministry of Employment, the National Institute for Statistics and the Ministry of Science and Technology.

The Consumers’ Institute is the body responsible for Portuguese consumer protection. It has powers of arbitration and mediation of its own, without prejudice to the competences of ICP.

A public consultation on public payphones was opened by ICP on 12 March 2001.

### **MOBILE SERVICES / FREQUENCIES**

The three Portuguese mobile operators all operate a GSM network. They had 7.2 million customers on 30 June 2001. The penetration rate is above the EU average.

On 19 December 2000, the Minister for Social Infrastructure announced the results of the call for tenders for the four licences of national scope for the international mobile telecommunications systems (IMT2000/UMTS) launched on 1 August 2000.

Four licences were granted to the existing mobile operators and a new entrant in the UMTS market.

It is worth noting that, compared to other countries, the tender of UMTS licences in Portugal did not give rise to any dispute.

In October 2001, the Ministry of Social Equipment granted a one-year additional period to operators due to the lack of availability of equipment, which was considered a case of *force majeure*. UMTS networks are now expected to open in January 2003. In order to take into account the new context, ICP had allowed for infrastructure sharing, provided it is limited in time and does not harm competition. In particular, sharing of the core network and frequencies is not permitted. In

August 2001, ICP announced it would investigate the possibility of introducing Mobile Virtual Network Operators (MVNO) if the UMTS technology was introduced later than expected. ICP announced it would probably reject a request from the new entrant for the allocation of GSM 1800 frequencies.

In order to monitor the implementation of the specific projects contributing to the development of the information society presented by the entities to be licensed, a working group was created. It is composed as follows: a representative of ICP chairing the group; two representatives of the technical secretariat of the Inter-ministerial Commission for the Information Society; one representative from each UMTS operator.

ICP approved and published the new ICP Frequency Allocation Table. This Table is now updated and includes the decisions taken by the ITU World Radiocommunications Conference (WRC 2000) held in May/June last year.

## TARIFFS

PT's new tariffing system for fixed telephony was approved by the regulator on 6 February 2001. It has an overall impact of  $-2.8\%$  on prices. Tariffs are now deemed to be geographically rebalanced in Portugal, although the incumbent operator claims the contrary.

There has been one case of predatory pricing, due to the fact that PT had changed its retail prices before lowering its interconnection prices for international outgoing traffic. After the intervention of ICP, things went back to normal. PT now has to inform other operators about changes in accounting rates.

The new entrants complained about a tariff from PT's subsidiary dedicated to business customers (PT Prime), which was offering calls to mobiles at €0.30, below the termination fee. PT Prime claimed that this tariff was a promotion and the offer was subsequently withdrawn after a few months. There has been another case of possible predatory pricing regarding off-peak calls to Mozambique and São Tomé, with PT's retail prices lower than short range marginal cost. In both cases, the regulator's action prompted changes in PT's rates.

## COST ACCOUNTING

The Portuguese authorities have notified the national measures transposing the relevant Articles of the Leased Lines Directive, the Interconnection Directive, and the New Voice Telephony Directive. The Portuguese provisions require operators who have been designated as having significant market power in certain markets to implement an adequate cost-accounting system for the relevant price systems. This obligation currently applies to Portugal Telecom.

The auditing process has taken place for 1999, and has begun for 2000. PT's cost-accounting system covers all services directly provided by PT, including interconnection, voice telephony and leased lines. It is still based on historic costs, but ICP is planning to use additionally a Hybrid Cost Proxy Model (HPCM), which it has developed.

This new costing model should enable ICP to have a clearer idea of PT's cost structure and to detect possible price squeezes quicker than before, among other functionalities.

## LEASED LINES

On the leased lines market, two operators started competing with Portugal Telecom (PT) - ONI and Cabovisão - mainly on long-distance lines. Both these new entrants still have a small market share, and mainly provide transmission capacity to other operators (fixed operators, ISPs). Mobile operators are relying on their own lines as well as on lines rented from fixed operators. As a whole, PT's market share for commercial leased lines is still close to 100%. Moreover new entrants are not able to propose end to end connections. Competition has yet to make an impact on the market.

Other companies, which signed agreements with local authorities or utilities for the use of rights of way, developed new dark fibre or other line capacities (REN, Refer, Telecom/Net Rail, Metropolitan, Brisatel, EDP/Transgas). However, these new capacities are likely to remain small.

PT's prices are subject to a price cap, which was set up in 1997, prior to the current regulatory framework. Previous price decreases are due to PT's efficiency improvements and action of the regulator. However, prices are still above EU average, but regulatory intervention could take place by the end of the year. PT applies discounts for large customers, which range typically from 28% to 46% (for mobile operators, which purchase large numbers of leased lines).

New entrants continue to complain about the high prices, poor quality of service and long delivery times for leased lines. They consider that the cost accounting system for leased lines is inadequate because it is based only on historical data by now. They also indicate that PT still holds a de facto monopoly on termination leased lines due to the lack of definition of conditions for access to exchanges. ICP says however that the conditions for access to exchanges are set out in the RIO.

It also seems that PT is still in a de facto monopolistic position on landing stations and backhaul services, even though, according to ICP, competition has started on access to international transmission.

A study was commissioned on the leased lines market, in advance of increased demand linked with 3G mobile telephony. PT stated it was willing to commit to a level of quality of service provided it was given orders three to six months in advance.

## **NUMBERING**

Carrier selection for fixed-to-mobile calls was introduced from 1 October 2000. Carrier selection and carrier pre-selection were introduced from 1 January 2001 for local and regional calls.

New entrants claim that there was a three-month delay in the implementation of CPS due to technical constraints invoked by PT. A temporary solution, using autodiallers, had been introduced between July 2000 and January 2001. They also claim that a ruling of ICP in December 2000 led to legal uncertainty. This decision apparently led to limitation of the market for indirect access operators. New entrants are also concerned by the confidentiality of information between PT's departments ("Chinese walls"). PT claims, on the contrary, that competitors have been guilty of illegal commercial practices towards its customers.

Fixed number portability was launched on 1 July 2001. Mobile number portability is scheduled to be introduced at the same time as UMTS, which should be in the beginning of 2003.

ICP came to a decision on the regulatory issues of fixed number portability in June 2001. The operators think it is, to a certain extent, in conflict with a previous decision made in April. New entrants also complain that PT announced it would only be able to port 1000 numbers per day on average, even though ICP requested the number of ported numbers to grow with actual demand.

## **RIGHTS OF WAY**

The Portuguese regulatory framework encourages facility sharing for environmental or cultural heritage reasons. The 3G tender of 2000 also provided a legal basis for facility sharing, followed by the ICP deliberation of October 2001 on the new conditions applicable to 3G licences.

Wireless local loop operators request similar rights of way to those applicable to fixed operators and claim that easy installation of antennas is essential for their development. ICP makes clear that it has no control over local authorities and therefore can do little to help WLL operators in this matter.

There is also a concern that new entrants have to pay rights of way to local authorities whereas Portugal Telecom is, according to the law, exempt from all such payments. The question was brought to the Commission's attention after a draft regulation of the Lisbon City Council, which imposed rights of way on new operators only. ICP announced it would investigate the matter within a short time frame. It also pointed to the fact that other public facility providers (electricity, gas, roads, etc) did not have to pay rights of way either. It was going to enquire how to encourage these utilities to enter into the telecommunications market and compete in the infrastructure market. It suggested that the current licensing conditions could dissuade them from applying for telecommunications licences. In any case, ICP did not accept that the difference in treatment would

constitute a major barrier to entry, since Portugal Telecom had a number of public service obligations that entrants did not have.

## **DATA PROTECTION**

The general and telecom-specific Directives were transposed into Portuguese law in 1998. According to ICP, the Portuguese provisions transposing the Telecommunications Data Protection Directive contain all the guarantees provided for in the Directive.

PT customers have a one-month period during which they can complain to PT after receiving a bill or experiencing problems in service delivery. If PT does not give a satisfactory answer, the customer can then request ICP's intervention. Billing data are stored for six months by PT and all other operators.

The independent body in charge of data protection is the Comissão Nacional de Protecção de Dados (CNPD).

## **INTERNET**

ICP decided to impose changes in PT's internet offer, to be included within a Reference Internet Access Offer Proposal, on 21 February 2001. These changes were intended to reinforce competition at the level of ISPs. The maximum wholesale prices for the flat-rate internet connections were €9.98 during the off-peak period and €19.95 for unlimited access : in both cases, these rates apply to local calls. For single transit, maximum prices for the flat-rate internet connections were €13.47 off-peak and €25.44 for unlimited access. The off-peak period applicable to the internet was extended from 6pm until 9am.

The new model, which is based on payment at the point of call origination, integrates all internet traffic under an interconnection regime. The new model also brings lower prices for internet access connections, compared to prices charged for voice traffic. ISPs are now responsible for defining the price to be charged to the end consumer for internet access via the fixed telephone network. The ISPs will subsequently pay an origination fee to the direct access operator.

Portugal Telecom had to publish its internet access reference offer (IARO) before 1 March 2001.

Following the lack of results of the negotiations between PT and competitive ISPs, ICP made a decision on 25 June 2001 in which it stated its intention to:

- ensure proper conclusion of negotiations, under the terms of the resolution of 21/02/2001, and that the maximum price of 1.6 PTE (excl. VAT) per call applicable to the billing service provided by PT (metered offers and off-peak calls in non metered offers) includes the charging service.
- assess the need to intervene in regard of agreements/contracts already signed.

The decision sets an additional period to the transitional phase, which will last until 31/10/2001. However, the ISPs are free to use the new regime at any time before that deadline.

This decision was criticised and challenged in court by PT on the following grounds: discrimination in favour of ISPs; absence of justification; billing/collecting system imposed without a legal basis; financial burden imposed on PT.

New entrants welcome this decision but point to issues that are still to be solved: billing and collecting costs; circuits used for interconnection (which are regarded by PT as customer leased lines and not interconnection circuits); technological migration issues (ISDN to SS7 technologies).

## **DIRECTIVE 95/47/EC**

There are at present three public television channels. Two of them use Portugal Telecom's broadcasting infrastructure; another has its own transmission network. The incumbent's tariffs are supervised by the NRA and the competition authority (DGCC) and are required to be cost oriented.

The public tender for the granting of a licence for the Digital Terrestrial Television (DTT) network operator, was launched on 7 April 2001.

An Evaluation Committee has been appointed by the sector Ministry for the analysis of the proposals presented by the applicants of this public tender. The criteria for the analysis, based on the Call for Tender Regulations, were published. Applications were presented by two companies and accepted by the Evaluation Committee in charge of selecting the winner and making a proposal to the government.

The licence was granted on 17 August 2001, and formally issued on 9 October 2001.

Digital cable services are just starting in some areas. The largest cable-operator is a subsidiary of the incumbent telecommunications operator. There are currently 1 026 000 subscribers for analogue cable TV services. Satellite digital pay-TV services are only provided by one operator to customers not covered by its cable network.

Two Administrative rules of September 1998 started the transposition process of Directive 95/47. A draft Decree-Law proposed by ICP to the Government in order to complete transposition was approved by the Council of Ministers on 13 September 2001.

The Portuguese authorities indicate they have not received any complaint or request for dispute settlement regarding this Directive.

## 3.13 FINLAND

### OVERVIEW

#### *Market*

The Finnish telecommunications market continued to grow in 2000, with turnover in the sector increasing by 15% over 1999. Mobile communications experienced the highest growth rate.

The Finnish market remains segmented, with some fifty SMP operators, most of which are medium-to-small local telephone companies. Due to the segmentation and structure of the market, the number of new entrants is rather limited.

The Elisa Corporation has left the Finnet Group. It can therefore be said that there are now three main actors in the Finnish telecommunications market, namely Sonera fixed and mobile, Finnet (and mobile network operator 2G and service operator DNA) and Elisa with its mobile arm Radiolinja.

In the spring of 2001 the board of Sonera was completely replaced and no longer includes any representative of the Ministry of Transport and Communications. As the owner of 53% of Sonera's shares, the Ministry continues to be represented in the general (shareholders') meeting.

#### *Regulatory framework*

Finland has a light regulatory regime as compared with other Member States, and the hands-off approach generally followed by the Finnish authorities places greater emphasis on market forces than detailed regulation to ensure an efficient communications market.

Even though full local loop unbundling was mandated in 1997, the local telecommunications markets remain firmly in the hands of local telephone companies. Also, there has not, at least as yet, been any significant take-up of shared access to the local loop. Finally, some facilities that play an important role in increasing competition on the market, such as carrier pre-selection and number portability, are not functioning to the new entrants' satisfaction.

In view of the above, the new entrants continue to express concern about the lightness of the Finnish authorities' regulatory approach, in particular in relation to interconnection, numbering and pricing issues. In these areas, the new entrants, and in particular non-vertically integrated operators, continue to encounter significant market entry barriers.

On the other hand, the new entrants consider that the light licensing regime has promoted a competitive environment, in which operators have been free to operate and test new products and services. Market players have also expressed satisfaction with the 3G licensing process.

***Recent regulatory action***

The main changes to the telecommunications legislation effected since the 6<sup>th</sup> Report are the introduction of national roaming between second generation and third generation mobile networks and of shared access to the local loop. Also, carrier pre-selection for local calls and calls to mobile networks was mandated in March 2001.

A new Act on the (electronic) communications market has been prepared, which constitutes the first stage of a wider reform of the legislation relating to telecommunications and digital radio and television broadcasting with a view to take account of convergence. This Act is expected to be adopted by July 2002. It will be followed by a second round of legislation that will transpose the forthcoming EC Directives on electronic communications.

In recent months the authorities have clearly adopted more of a hands-on approach than in previous years. This is welcomed by the new entrants. Long lasting investigations of some SMP-operators' interconnection charges have been completed. New investigations have also been started on the NRA's own initiative. Also, more detailed provisions regarding, for example, the verification of compliance with the cost accounting systems of SMP operators and the publication of a statement concerning compliance, will be incorporated into the forthcoming Act on the (electronic) communications market, and measures have been taken to implement these provisions prior to this Act being adopted.

***Interconnection***

Regarding interconnection, the new entrants note that interconnection charges are high as compared with retail tariffs, and that there is a price squeeze, in particular regarding local level interconnection for internet traffic. Due to the light regulatory approach that has prevailed so far, in particular regarding the verification of the cost accounts of SMP operators, the cost orientation of the interconnection charges of all SMP operators remains to be demonstrated.

The new entrants also note that because of the difference in bargaining power between them and the SMP operators, the terms of interconnection imposed on them are unfavourable as compared with the interconnection terms between the SMP operators themselves.

Also, the system whereby some interconnection charges are treated as end-user prices continues to be criticised by the new entrants, who stress that they should be able to buy call origination and termination at wholesale prices from any fixed and mobile operator.

Finally, the new entrants regret that FRIACO is not available, and also the absence of publicly available bitstream access. They note that where wholesale DSL offers are available, they are offered on the same terms to alternative operators as to retail customers, which results in a price squeeze.

***Local loop unbundling***

Regarding local loop unbundling, uncertainties still prevail regarding its pricing. In May 2001, the Competition Council imposed fines on three operators for discriminatory and excessive pricing of the local loop and abuse of dominant position. Two of these cases are now before the Supreme Administrative Court.

***ADSL roll-out***

Even though Finland has consistently ranked among the EU countries with the highest use of internet (with 48% of households having internet access), there has not yet been any major roll-out of ADSL. The prices of these services are still quite high, but this has not prevented demand from increasing substantially.

***Numbering***

The take-up of carrier pre-selection has been limited due to the associated one-off and call origination charges. Similar price problems are encountered with number



portability. These are also related to the technical solution implemented to route calls. As a result, the take-up of this facility has remained low.

## NATIONAL REGULATORY AUTHORITY

Concerns expressed by the new entrants in the past regarding the absence of ex-ante detailed regulation and efficient implementation of existing rules remain.

As highlighted in previous Implementation Reports, Finland has a light regulatory regime as compared with other Member States, and the hands-off approach generally followed by Finnish authorities places greater emphasis on market forces than detailed regulation to ensure an effective communications market. The authorities justify this by the early liberalisation of the market and the degree of competition achieved.

However, the Finnish market remains very segmented, with some fifty SMP-operators, most of which are medium- to small-sized local telephone companies. Where most types of communications are subject to competition, and even though full local loop unbundling was mandated in 1997, the local communications market remains firmly in the hands of local telephone companies.

It has been difficult for the new entrants to win market shares from these operators. Due to the segmentation of the Finnish market and its structure (small population, geographical position, sparsely populated areas), these new entrants are rather few (mostly national ISPs), and European and global telecommunications operators have not shown much interest in this market.

The new entrants argue that the absence of detailed regulation in certain areas, particularly in relation to interconnection, pricing and cost accounting issues, perpetuates a lack of transparency and accountability on the part of the incumbent operators. They further claim that the decision of the authorities not to apply certain rules (e.g. the obligation on cost orientation regarding certain voice telephony tariffs) is not based on a comprehensive, publicly available market analysis (for more details, see “Tariffs” below).

In the last ten to twelve months, there has been an increase of the proactive activity of the Finnish authorities. This is welcomed by the new entrants, but some incumbent operators have expressed concern that the NRA is intervening too much in what they consider as business decisions. Some of these operators claim that the NRA is not equipped to make such decisions, and that these latter should therefore be left for operators to negotiate with each other (for more details, see “Interconnection” below).

Both the new entrants and the incumbent operators consider that the procedures for appealing against the NRA’s decisions are too protracted, especially regarding key issues around the cost orientation of SMP-operators’ interconnection charges. This does not provide for real-time, market-adjusted decisions, and is particularly detrimental for the new entrants.

The Finnish competition authorities have made some important decisions in the last year, for example regarding the pricing of the fully unbundled local loop. Given that they consider that in many regards, the competition authorities have more “teeth” than the NRA, the new entrants feel compelled to apply to both these authorities and to the NRA, which duplicates work and draws on resources.

In the beginning of September 2001, the Finnish NRA was renamed the “Finnish Communications Regulatory Authority” (FICORA). This reflects an increase in its responsibilities. In particular, it is now the authority responsible for electronic commerce and the protection of data in telecommunications. In the summer of 2001, a new section responsible for economic supervision was set up, and the number of staff dealing with the supervision of tariffs was reinforced.

## LICENSING

Under the light Finnish licensing regime, individual licences are only required for the provision of network services on public mobile networks.

The new entrants are pleased that this regime has promoted a competitive environment, in which operators have been free to operate and test new services and applications. Minimal regulatory intervention and non-discriminatory frequency allocation are seen by the new entrants as having contributed to the emergence of new technologies.

In January 2000 the Ministry granted a third national GSM 900 licence to “Suomen 2G”, which started its operations in February 2001. It has no service activities. Its network is used by DNA Finland, a new service operator, and Wireless Maingate that only engages in machine-to-machine business. With the emergence of this operator, which is owned by local companies of the Finnet group, virtually all of these latter companies have given up their regional GSM 1800 networks.

## INTERCONNECTION

Interconnection has traditionally been the issue that has prompted most critical comments on the part of the Finnish new entrants.

New entrants have criticised the fact that Finland had not transposed the provision of the Interconnection Directive providing that the NRA must take steps to resolve interconnection disputes within six months of the request of either party to the dispute, and that interconnection dispute settlement procedures are intolerably long. The NRA contends that it has been able to respect the six-month deadline in most of its proceedings (five proceedings out of the nine proceedings handled since 1998). This deadline will be incorporated into the new Act on the electronic communications market. Also, by administrative order of May 2001, the NRA has been instructed to respect the six-month deadline.

The new entrants note that the absence of ex-ante regulation and systematic monitoring of compliance with the EC rules has created a non-transparent situation. Consequently, they call for the NRA to take more of a hands-on approach. They claim that interconnection prices are high as compared with retail tariffs, and that there is a price squeeze, in particular for local level interconnection internet traffic. In this context, they also claim that incumbents artificially increase the network costs as compared with the costs relating to service provision. Moreover, local level interconnection is not publicly available.

In January 2001 the NRA, after having received a complaint from Telia already in 1998, issued a decision establishing that the interconnection charges of Elisa were not cost oriented. This led Elisa to lower its interconnection charges by 20% on average (but the NRA is still scrutinising their cost orientation) and also prompted the NRA to ask all of the local telephone companies with SMP to submit their cost accounts for a similar verification of cost orientation. This verification is on-going.

In April 2001, the NRA divulged the results of its investigation of Sonera’s (mobile) interconnection charges, which were also found not to be cost oriented. Even though Sonera has appealed against this decision, it has reduced its access charges by some 12% and termination charges by 20% (these are average figures). The NRA is also investigating the interconnection charges of the second mobile operator with SMP, Radiolinja. This investigation has not yet been completed, but in the meantime, Radiolinja has reduced its termination charges by around 20%.

The NRA contends that the decisions concerning Elisa’s and Sonera’s interconnection charges show that the authorities have the means required to intervene on the market in case a problem is spotted.

Incumbent operators are concerned about the NRA’s increasing scrutiny of the cost orientation of interconnection charges. They note that one should avoid a situation where the NRA more or less fixes the prices and the profit margins of a company; compliance with best practice should suffice.

New entrants claim that they are being discriminated against in that even though incumbent operators orderly publish reference interconnection offers (RIO), there are cases of discrimination, for example as concerns the termination fees that incumbent operators are willing to pay to new entrants, which are lower than those paid to other incumbent operators. A decision concerning such discrimination was made by the Competition Office in June 2001.

It is not clear whether this is an isolated case, but due to the difference in bargaining power between the incumbent operators and the new entrants, it cannot be excluded that such discriminatory practices exist on a wider scale. The new entrants claim that they are being discriminated against not only as concerns the above-mentioned termination fees, but also in that incumbent operators and those operators that established themselves on the market in 1994-1997 benefit from more favourable terms for carrier pre-selection and billing arrangements.

As noted in the 6<sup>th</sup> Report, some interconnection charges have traditionally been treated as end-user prices (charged to the user) rather than charged to the operator seeking interconnection. The new entrants find this system suitable for an emerging market, but consider that it should be replaced by wholesale interconnection charges and ex-ante regulation.

The new entrants are particularly concerned that the absence of an obligation of SMP mobile operators to offer fixed operators an interconnection tariff for call termination on mobile networks (as opposed to charging an end-user price) is a major barrier to competition. They further claim that the end-user price system perpetuates high mobile call charges, as the mobile operators have no incentive to reduce the end-user charges that will ultimately be paid by the customers of the fixed operators, which originate the calls. Overall, service providers stress that they should be able to buy call origination and termination at wholesale interconnection prices from any fixed and mobile operator.

The Finnish authorities defend the merits of the end-user charge regime, saying that it is sound in that each operator only prices that part of the service that it actually provides, and that consumers benefit from this transparency. They also note that the argument that mobile operators have no incentive to reduce prices is not valid, given that in many households, there is both a fixed and mobile telephone connection and that users look for packages allowing for as affordable fixed to mobile communications as possible.

It seems legitimate to conclude, however, that in certain circumstances, no wholesale interconnection market/tariffs are available in Finland. Also, the cost orientation of the interconnection charges (when treated as end-user charges) of SMP-operators is an open question, because, as a general rule, end-user charges are not regulated.

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| <p><b>LOCAL ACCESS COMPETITION, INCLUDING IMPLEMENTATION OF THE REGULATION ON LOCAL LOOP UNBUNDLING AND BITSTREAM ACCESS</b></p> |
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Full unbundling of the local loop has been available as a matter of law since June 1997. There are some 40 000 fully unbundled loops, of which 15 000 are used for xDSL services. The major difference between the Finnish regime regarding local loop unbundling and the EC Regulation is that the last mentioned concerns the right of competitors to access the incumbent's local loops, whereas, under the Finnish legislation, this right is granted to "anybody", which could in principle even be a private individual (e.g. a subscriber leasing his/her loop).

Also, the obligation to provide access to the local loop is not restricted to operators with SMP. The Finnish authorities claim that due to Finnish market structure, this difference with regard to the EC Regulation has no implications in practice. They also argue that the right of a user to have broadband access to the internet must not depend on the fact as to whether the operator has significant market power or not.

New entrants argue that the price of leasing the local loop is one of the main factors impeding the development of competition in the local telecommunications market. In May 2001, the Competition Council imposed heavy fines on three operators (Elisa, Turku Telephone Company and the Telephone Company of the Salo Region) for discriminatory and excessive pricing of the local loop and abuse of dominant position. Following the appeals of Turku Telephone Company and the Telephone Company of the Salo Region, these cases are now before the Supreme Administrative Court.

In August 2001, the Supreme Administrative Court ruled on Elisa's appeal against an earlier decision by FICORA regarding excessive pricing of the local loop. This ruling was largely in line with FICORA's decision. The Supreme Administrative Court confirmed FICORA's wide discretionary powers in relation to the enforcement of the principle of cost orientation. However, as the Court considered that some of the methods used to evaluate the capital base (to determine a reasonable return on capital) lacked clarity, it returned the case in its entirety to FICORA.

Until the EC Regulation was adopted, there was no legal requirement for shared access to the local loop. Amendments to the Finnish Telecommunications Market Act effected in 2001 provide for the regulation of shared access. It provides that the price for shared access should not normally be more than 50% of the price for full LLU (subject to appeal on a case-by-case basis). The authorities have intervened in a number of cases, where the prices requested by an operator were above 50% of the price of the fully unbundled loop. It is estimated that some 500-1000 loops are in shared use. The new entrants consider that the shared access procedures are not sufficiently organised.

No problems regarding collocation have been reported to the Commission, even though there have been, in the past, some cases of refusal of access on the grounds that there is no collocation room. Some operators have expressed concern that the right under the Telecommunications Market Act for the incumbent to refuse access on the grounds that it requires the transmission capacity or collocation room requested for its own use or its reasonably foreseeable future needs may hinder the development of this market. The NRA contends that the right granted to the incumbent to reserve capacity is based on a constitutional right, and the NRA has the powers to intervene, should there be abuses.

There are some 35 000 xDSL lines in Finland. The prices of xDSL services have been high. Demand has been high however, and supply is increasing, so it is expected that prices will gradually decrease. Cable television operators are expected to increasingly contribute to broadband local access competition (for more details, see "Directive 95/47/EC" below).

There is no specific legislation mandating bitstream access in Finland, and bitstream access is not publicly available. The new entrants stress that where wholesale DSL offers are available, they are offered on the same terms to the alternative operators as to retail customers (i.e. there is some form of re-selling), with the resulting price squeeze. New entrants call for these facilities to be made available as soon as possible so as to increase competition in the xDSL services market.

#### **UNIVERSAL SERVICE/CONSUMERS/USERS**

No universal funding mechanism has been set up.

Consumer price regulation is not applied by the authorities in Finland, with the exception of the requirement of cost orientation of end-user tariffs for local telecommunications services provided via fixed public networks of less than 2 Mb/s. The consumer ombudsman has general responsibility for monitoring end-user prices and dealing with complaints, but has no direct powers over tariff issues, which fall within the competence of the TAC.

Main issues raised by the consumers' and users' organisations in the context of the preparation of this Report concern the lack of price competition in mobile services, problems relating to complex and/or incorrect billing (in particular of mobile communications), the high prices of numbering

facilities, various forms of anti-competitive tying of customers (e.g. the competition authorities have looked at a case regarding leased lines, where various discounts related to the contract duration were at stake). The consumers' and users' organisations also note that the "Robinson"-register set up regarding direct telephone marketing has not worked very well in practice.

## MOBILE SERVICES / FREQUENCIES

Finland was the first country to issue third generation (3G) licences (March 1999), by means of a beauty contest licensing procedure, with spectrum fees limited to covering administrative costs. Both incumbents and new entrants have expressed satisfaction with this procedure and with the light licensing regime applicable in Finland in general.

The licence conditions provide for the launch of 3G services by 1 January 2002. No operator has requested a postponement of this deadline. Nor have the authorities decided or announced any formal postponement thereof. The 3G licences do not include any deadlines regarding coverage; the authorities rely on market forces in this regard.

The NRA monitors the development on the market, including the construction of the networks on a six-monthly basis. The authorities expect that 3G networks will be in place by 1 January 2002 "to some extent", but there are no hand-sets available. As soon as the latter are available, pilot projects can be launched.

The authorities follow a pragmatic approach in that roll-out will be based on market conditions (availability of terminals etc), and the licensees will not be penalised for delays for which they are not responsible. Mobile operators are satisfied with this policy.

Regarding GPRS/2,5G, the networks are ready and operators eagerly await the availability of hand-sets. The new entrants note that access to mobile networks and interconnection between GPRS and internet-based data networks will be an important challenge for the regulator and the authorities in the coming months. They welcome the study that has been carried out by the authorities regarding the shared use of SIM-cards, allowing the inclusion of the ID-cards of all service providers, which should promote competition.

Amendments recently effected to the Telecommunications Market Act provide for mandatory national roaming between 3G and 2G networks. Mandatory roaming arises only after 6 months of unsuccessful commercial negotiations and once the network of the 3G operator requesting roaming covers at least 20% of the inhabitants of its own licence area. In sparsely populated areas (less than 5 inhabitants/square Km) the statutory roaming obligation will be unlimited in time.

While the new entrants welcome these new provisions, Sonera is critical of them. Sonera is particularly concerned that it will remain indefinitely responsible for those sparsely populated areas in Finland where the other operators have no incentive to build infrastructure. It has also raised concerns as to the provision in the Telecommunications Market Act according to which an operator requesting roaming only needs to compensate the operator whose network is used for the costs arising from the necessity to build additional transmission capacity in case the traffic that it brings represents more than 10% of the traffic (in a given area) of the operator granting the roaming.

There is no statutory obligation of national roaming between GSM 900 and DCS 1800 networks in Finland. Access to the networks of those operators that have national coverage has been provided for on the basis of service provider agreements (e.g. Telia's access to Radiolinja's GSM 900 network and RSL COM's access to Sonera's network). This has been criticised and appealed by the new entrants.

A new service operator "DNA Finland", which uses the network of Suomen 2G, started commercial operations in the beginning of February 2001, and has attracted a relatively large customer base in a short time. Prior to its arrival, Sonera and Radiolinja still had a market share of 62% and 30% respectively, while Telia had 4% and other operators another 4% of the total subscriber base.

The NRA is optimistic about the invigorating effect of the arrival of this new mobile operator, which is expected to become a major national player since its shareholders are the Finnish local operators that are gathered under the umbrella of the Finnet Group. Most new entrants also welcome the positive effects that the entry into the market of DNA Finland has already had. The latter's call termination and origination prices (0.70 FIM) compare favourably with those of the incumbent operators (1.50-1.60 FIM).

According to the Finnish legislation, free antennae places on masts must be leased to competitors in case another mast cannot be constructed for environmental, town planning or other reasons. Some 60% of new antennae are placed on masts that are in shared use (for more details, see "Rights of way" below).

## TARIFFS

As noted in the 6<sup>th</sup> Report, tariff rebalancing is less of an issue in Finland than in some other Member States, owing to the fact that the market has historically been segmented between local network operators and long-distance and international operators.

According to information received from the Finnish regulators, some 25 local SMP-companies still offer price reductions to their shareholder-customers. These reductions have been prohibited, some fines have been imposed and the competition authorities keep monitoring the situation.

The cost orientation of tariffs in general remains to be fully demonstrated, given the lack of transparency in the cost accounting systems of the SMP operators and the lack of detailed common rules on cost orientation. New entrants also note that there is a price squeeze between incumbent operators' interconnection charges and retail tariffs (see "Interconnection" above), and regret that the authorities have not exercised any ex-ante control of retail prices.

The specific cost orientation requirements of Article 17 of the New Voice Telephony Directive are not applied by national legislation as regards the activities of SMP operators in the markets for international and long-distance voice telephony respectively, on the grounds that effective competition exists on those markets.

Some new entrants have expressed, in general terms, the opinion that the market has not reached such a degree of effective competition that regulation can be reduced to a minimum or rolled back. They further note that if regulation is reduced, a justification of this approach must be provided. In this regard, they regret that the authorities have produced no comprehensive market analysis (e.g. on the operators' market shares, the evolution of wholesale and end-user prices and the products offered on the market) that would be publicly available.

The cost orientation requirement is applied to SMP operators as concerns end-user tariffs for local telecommunications services provided via fixed public networks of less than 2 Mb/s (i.e. mostly residential customers). However, no systematic verification of compliance with these requirements, which would encompass all of the local SMP-operators, has been made so far. The NRA claims that due to the big number of local telephone companies with SMP, some of which are very small, this exercise would be impracticable (for more details, see "Cost accounting" below).

In the beginning of 2001, Elisa announced that it would increase its local voice telephony tariffs. This raised public protests. Many commentators attributed the announced increases to the expiry of a (national) provision that established that the end-user prices of communications originating on an operator's local telecommunications network and directed to another telecommunications area should not exceed 60% of the end-user price for a local call. Consequently, these commentators called for more ex-ante regulation.

After the above-mentioned protests, and after the NRA issued its decision establishing that Elisa's interconnection charges were not cost oriented (for more details, see "Interconnection" above), the

NRA announced that it would also verify Elisa's local telephone tariffs. This investigation is ongoing.

According to the study "The level of the telecommunications tariffs in Finland in 2000", the prices of international communications have decreased by 6.1% and the prices of mobile calls by 3.4%. Long distance call prices have increased by 3.3% (these prices are made of the local network (interconnection) prices, which have increased, and of the long-distance call part itself, whose price has remained at the same level as in the previous reporting period). Local call tariffs have increased by 7.4%. The monthly line rental charges have increased by 4.5%.

## **COST ACCOUNTING**

Until now, no systematic independent verification of compliance with the cost accounting systems has been conducted and no annual certificate concerning compliance has been published. The new entrants have pointed out that the absence of clear cost accounting rules and procedures and of systematic verification of compliance result in a situation where there are no guarantees as to the cost orientation of SMP-operators' retail and interconnection tariffs.

This year however the NRA will verify the SMP-operators' cost accounts for 2000 regarding the interconnection charges and the tariffs for local communications. Statements concerning compliance will be published by the end of 2001. The authorities have also committed to undertake these verifications for the 2001 accounts, and this obligation of annual verification and publication of a statement concerning compliance will be incorporated into the new Act on the (electronic) communications market.

According to the EC regulatory framework, the cost accounting systems must be suitable for implementation of the requirements of transparency, cost orientation and sufficient level of unbundling. Thus the verification that the cost accounts of SMP-operators are compliant with the cost accounting systems should ultimately allow the regulator to establish the extent to which these requirements are met.

Even though the Finnish NRA will be verifying the cost accounts of relevant operators, it remains to be seen if it will be able to establish whether these requirements are met. This is due to the fact that, under the Finnish legislation, SMP operators are free to determine for themselves the accounting methodology they wish to use. Many of them still use historic cost accounts. The descriptions of the cost accounting systems adopted by SMP operators were approved in February 1998, but they are not detailed and they have not been updated since then.

The NRA recognises that the cost accounting systems of some operators lack precision, and has indicated that it would consider whether there is a need to instruct operators to amend such cost accounting systems. This decision will be taken in the light of the verification of the SMP-operators' cost accounts.

Until now, the NRA has not considered it practicable to design a general minimum format that would have to be followed by the incumbent operators. However, representatives of the Finnet Group which gathers all of the local incumbent operators, have indicated that they would welcome such action by the regulator, because the cost accounting obligations are very heavy on small local operators.

## **LEASED LINES**

No concerns have been expressed by operators regarding the prices or the provisioning of leased lines in Finland, and no complaint has been received by the NRA in this regard.

## NUMBERING

Numbering is, in addition to interconnection and local loop unbundling, the area where Finnish new entrants would wish to see more proactive measures on the part of the regulator to ensure efficient conditions of competition.

In the context of the preparation of the 6<sup>th</sup> Report, new entrants argued that the absence of carrier pre-selection for local calls and for calls to mobile was restricting competition in the two largest segments of the market, local calls and mobile calls. Carrier pre-selection for local calls and calls to mobile networks was mandated by the Finnish regulator in March of 2001, to be technically available from September 2001. The NRA was reluctant to implement these facilities mandated by the EC framework, arguing that they would not have any major effect on competition due to the structure of the Finnish market, and because routing calls through alternative operators would only increase costs. This view is shared by the local incumbent operators who stress that tariffs for local calls are already cost oriented and that there is therefore no incentive for new entry into this segment of the market.

When consulted by the NRA on the draft provisions implementing carrier pre-selection for local calls and calls to mobile networks, the new entrants noted that the system of end-user charges restricts the attractiveness of these facilities, given that when, for example, fixed to mobile calls are concerned, the charge (and the associated revenue) for originating these calls is very low as compared with the end-user charge levied for terminating them.

The take-up of these newly available facilities will depend on the price conditions applicable. Traditionally, the regulator has been reluctant to intervene in this area to verify compliance with the cost orientation principle. Yet the one-off charges relating to carrier pre-selection can be very high and oscillate as widely as between 50 FIM to 350 FIM, the average price being in the order of 200 FIM. The authorities note that these differences reflect the different networks and cost structures of the SMP-operators.

The new entrants claim that carrier pre-selection for local calls and call to mobile will not be interesting due to the excessive prices for both the facility and for interconnection (call origination). They say that it is practically impossible to launch voice competition together with dial-up internet through this facility.

ISPs also criticise the fact that there are no third party agreements available as in some other countries, which means that they cannot use alternative operators to carry traffic, but that carrier pre-selection has to be arranged for bilaterally with each of the nearly fifty SMP-operators.

The introduction of carrier pre-selection for local calls and calls to mobile networks was accompanied by the adoption of a new system of operator prefixes. While new operator prefixes will be implemented, the old shorter prefixes will remain valid. Some new entrants have asked that they be phased out over a maximum period of six months so that all operators could compete with each other from a “fresh ground” as if it were. The regulator has not foreseen such phase-out. It believes that also small operators have obtained market “niches” by advertising their prefixes, and would suffer if they had to start marketing new prefixes.

The take-up of number portability remains low. Only some 15 000 numbers have been ported. The new entrants claim that this is due to the high, non cost oriented charges levied, and to the technical solution implemented to route calls through the incumbent operators’ networks. They have called for a DNS Master Database to be set up. Overall, they stress the importance of number portability for voice over the internet and fixed-mobile-internet convergence.

The 6<sup>th</sup> Implementation Report noted that the Finnish regulator was investigating the cost-orientation of number portability charges. This investigation has still not been completed, but



according to the NRA, preliminary findings suggest that there have not been any major departures from the principle of cost orientation.

## **RIGHTS OF WAY**

As mentioned in the 6<sup>th</sup> Report, although under Finnish telecommunications law digging rights should be granted free of charge, in some cases municipalities and other state bodies have been claiming compensation following an amendment of the construction law in 1999.

Since the last reporting period, no complaints concerning rights of way have been submitted to the NRA or to the Ministry of Transport and Communications. These authorities have had discussions, at a general level, with the environmental and local authorities concerning issues such as the coordination of construction works. The authorities have not encountered any particular difficulties in this context.

The new entrants recognise that there is a lot of sharing of antennae places, but note that the prices are very high, and that due to this, they face the dilemma as to whether to share masts or to build own masts. As to the building of new masts, new entrants claim that obtaining the required permits is not unproblematic.

Some operators foresee that obtaining rights of way will be an increasing problem with 2,5G and 3G, given that for the latter, the frequency level will be the double of GSM, which means that there is a need for a four-fold multiplication of mast density.

## **DATA PROTECTION**

No concerns regarding data protection have been raised by the market players. FICORA has been designated as the authority responsible for the protection of personal data in telecommunications.

According to the authorities, unsolicited communications have not been a significant problem in Finland. Regarding natural persons, an “opt-in” regime has been mandated by the Data Protection Act as concerns automated systems (e-mail, SMS, fax and “speech machines”). For classical telemarketing, an “opt-out” regime is applied: the Direct Marketing Association of Finland maintains a voluntary register to this effect. Legal persons are subject to an “opt-out” regime. Observance of these rules is supervised by the Data Protection Ombudsman.

The consumers’ and users’ organisations consider that the “Robinson”-register set up regarding direct telephone marketing has not worked very well in practice.

## INTERNET

According to the authorities' estimates, in February of 2001, there were some 620 000 internet subscriptions in Finland, and the operators had the following market shares: Sonera 31%, Jippii 20%, Kolumbus 13%, Nettiportti 6%, and others (e.g. MTV3, SurfEU) 30%.

Many operators have launched flat-rate internet access services. These are not regulated. internet service providers regret the absence of a FRIACO model.

The demand for DSL services has been larger than the offer available. The prices of these connections have been relatively high, but are expected to decrease gradually as the roll-out of these services continues and cable TV increases competitive pressure.

## DIRECTIVE 95/47/EC

The authorities have received no complaints or requests for dispute settlement regarding this Directive.

Digital broadcasting is only starting in Finland. Until August 2001, digital broadcasts were only available through satellite, with some 80 000 households subscribing to satellite TV services. The main service provider is Canal Digital, which has some 40 000 customers and started its activities in autumn 1998.

Licences for digital TV services were awarded in June 1999. One of the criteria for the allocation of capacity was that no single actor should gain full control over a multiplex, with the exception of YLE (Finnish Broadcasting Company). In August/September 2001, digital terrestrial television (DTTV) was launched in Finland. Twelve channels were made available through three multiplexes. The aim was that 50% of the population be covered from the launch date and 70% by the end of 2001. After analogue switch-off (foreseen for 2006), it is expected that there will be more than seven multiplexes as a total.

From 1999, Digita OY, a subsidiary of YLE, caters for the transmission part of the terrestrial broadcasting network. Concerns have been raised regarding the prices it levies for access to its network, in the respect that some market players consider that these prices are excessive and discriminate in favour of YLE. Also, given that YLE is one of the main content providers of DTTV and that Digita is responsible for the implementation and maintenance of the digital terrestrial network, there is clear vertical ownership of content and infrastructure provision.

In December 2000, YLE sold 49% of Digita's shares to TDF (Télédiffusion de France S.A), a subsidiary of France Télécom. The European Commission cleared the acquisition on 26 June 2001. In accordance with the terms of the contract, YLE is entitled to sell its remaining shareholding in Digita (51%) in one or several lots, and TDF undertakes to buy them. The entitlement to sell the shares commences two years after the approval of the contract and ends on 31 January 2005.

It is also expected that a series of cable television operators will soon be launching digital pay-TV offers. So far, no digital cable services have been available in Finland, though 40% of households have analogue cable television. The main actors are HTV (Helsinki Television Limited), Sonera and the Finnet group. There has been progress recently regarding the up-grade of the networks to two-way (duplex) operation. A significant part of the population lives in areas (rural, peripheral) where it is difficult to connect to cable-TV networks in economical terms. Actors in the sector attribute the slowness of the launching of digital cable offerings to general cost-benefit arguments and to the unavailability of set-top box standards, specially for two way communication with return path within the cable network.

No technical/access agreement has been concluded between Canal Digital and Digita or the cable operators. Due to the late development of digital television, interoperability has not been a major issue so far. When granting the licences for digital television, the State Council recommended that the licensees adopt a single-card-system. This recommendation was not legally binding. It appears that the recommendation will be implemented by digital terrestrial television operators, but cable operators are implementing their own systems. In both cases, the conditional access systems implemented will however be based on the Conax systems. For the Application Programme Interface for DTTV, operators have chosen the specifications of the DVB Multimedia Home Platform (MHP) under the industry-led (voluntary) Nordig consortium agreement.

## 3.14 SWEDEN

### OVERVIEW

|   |   |
|---|---|
| <b><i>Market developments</i></b>         | <p>In July 2001 279 operators on the Swedish market (registered or holding licences) offered telecommunications services or network capacity, which indicates a relative ease of entry into the Swedish telecommunications market.</p> <p>The rollout of broadband with the capacity to reach every Swedish household (partially financed by the State) is ongoing, although there has been slightly less interest than in the beginning. This will probably have a positive effect on the internet penetration, which is already high (the percentage of households with internet access is 65%).</p>  |
| <b><i>NRA</i></b>                         | <p>The independence and autonomy of the Swedish National Regulatory Authority (PTS) is underpinned by the Swedish Constitution, and the NRA has the requisite powers under EC law. There are currently proposals to further reinforce PTS' powers (extending PTS' current powers to mediate and make decisions in certain disputes, such as interconnection disputes, to all disputes regarding the application of the Act). This proposal, if enacted, might prove an alternative to an often slow and costly appeal procedure through the Courts.</p> <p>The Swedish licensing regime is very light, with many general authorisations and relatively few individual licences. Market players consider that the licence conditions are reasonable and not too onerous.</p> <p>The incumbent's cost-accounting system allows PTS to verify the cost-orientation of retail tariffs and interconnection charges. PTS is currently verifying the cost-orientation of line rental charges, due to a proposed increase in these charges, and has also on several occasions, after examination of the most recent cost-accounting information from Telia, required the incumbent to lower its interconnection charges.</p> <p>Pricing and delivery of leased lines does not appear to be a concern, and no formal complaints/disputes have been filed with any authority.</p> |
| <b><i>Competition in local access</i></b> | <p>The incumbent's market share is high for local calls and long-distance calls (82%, on the basis of retail revenues, by July 2001), and there are few alternatives to the local access provided by the incumbent. The rollout of local loop unbundling appears to have been problematic. The incumbent offers fully unbundled lines and shared lines, although there has been little uptake. It would appear that this is related to the prices of fully unbundled lines, which are not considered to allow for fair competition to develop, in particular when compared with retail prices. The prices for shared access were only recently agreed upon between the incumbent and PTS. Subloops are not yet on offer.</p> <p>It would appear that Telia has managed to get a significant first-mover advantage in the retail ADSL-market, connecting a great number of clients quickly. This is of concern to other market players since Telia only started to offer their wholesale ADSL service to other operators on 1 September 2001. In addition, prices for ADSL are not considered to allow for fair competition, and one of PTS' priorities is to control that the ADSL prices are cost-oriented.</p>  |

Wireless local loop licensing (for the 24.5-29 GHz-band) is ongoing, and was scheduled to be finished on 1 October 2001, although there have been certain delays. The aim is now to have licences by the end of January 2002 at the latest. There are currently five applicants for four licences.

***Competition in the mobile market***

Competition in the mobile market is considered by PTS to be insufficient, with few market players, relatively high retail prices, similar service offers and often high interconnection charges. The incumbent's market share for calls to mobile was 72% (on the basis of retail revenues) by July 2001. A number of initiatives have therefore been made to increase competition, and more initiatives are yet to come. At least one more GSM licence will also be issued as soon as possible, and PTS has decided not to let current licensees apply for the GSM licence, in order to increase the competition in the mobile market.

Certain amendments to the Act entered into force in 2000, firstly, introducing an obligation for mobile network operators to provide access to their mobile network capacity on market terms if there is spare capacity, and, secondly, introducing obligations regarding national roaming, whereby certain mobile operators are obliged to give access to their network to a new mobile operator with a network licence where this operator does not have coverage. Many market players consider, however, that these amendments have not had a great effect on the competition in the mobile market. There are a few service providers present on the Swedish market, although most of the service provider agreements in existence appear to have been concluded before the amendment entered into force. It would appear that there are difficulties in concluding service provision agreements with mobile network operators, and that the terms of such agreements are not always very advantageous for the service providers, in particular as regards pricing.

***Third generation mobile roll-out***

PTS granted in December 2000 through a "beauty contest" four licences to provide network capacity for third generation mobile, to Tele 2, HI3G, Orange and Europolitan/Vodafone (it is noteworthy that Telia was not granted any licence). Two network sharing consortia have been formed in the area of third generation mobile: Tele 2/Telia, and Europolitan/HI3G (which also has a preliminary agreement with Orange). The network sharing agreement with Tele 2 would allow Telia to enter the third generation mobile market, despite not having a licence. There are potential advantages with network sharing, such as lower costs, but some concerns have been raised, regarding potential difficulties for service providers to conclude agreements under fair and reasonable conditions, and the potential risk of reduced competition at the service provision level between the parties to a network sharing agreement.

Rollout of third generation mobile appears to be on schedule despite some problems related to availability of terminals and financing. There appear to be some problems related to building permissions, and market players consider the processing of requests for building permissions a potential bottleneck. In addition, there appear to be some problems related to installation of masts, since some housing associations are concerned about potential health risks.

***Number portability/CPS:***

Number portability for fixed telephony was introduced in July 1999, but only around four hundred numbers have been ported, which is considered to be related to the pricing.

Carrier pre-selection (CPS) was introduced in September 1999, and despite a certain confusion and insufficient intervention by PTS in the initial stages of the reform the uptake has been relatively good (in the autumn of 2000 more than 50%

of the households had made an active choice of operator, and more or less half of these had chosen another operator than the incumbent; and 29 operators now offer voice telephony using CPS, for local, long-distance or international calls). There are, however, still some outstanding problems. Currently a customer has to dial the area code in order to get the pre-selected operators (otherwise the call is routed via the incumbent). Legislation, according to which the customer's calls is routed to the pre-selected operator even if no area code is dialled, has recently been adopted, but only enters into force in February 2002. In addition, some practical problems related to the ordering process are still outstanding.

## **79. NATIONAL REGULATORY AUTHORITY AND APPEALS**

As described in the Sixth Report, the national regulatory authority (*Post- och Telestyrelsen* - PTS) is a government agency reporting to the Ministry of Industry, Employment and Communications. It has a staff of 195, and is financed mainly by frequency and licence fees. The Government appoints the Director General, for renewable six-year terms.

As noted in the Sixth Report, the Ministry is responsible for the State holding in the incumbent - which, following its flotation in June 2000, has been reduced to 70% of the voting rights - but it is not directly involved in the incumbent's management. The Ministry is also responsible for regulatory affairs, although different Ministers perform the two tasks. The market relies on inter alia the Swedish constitution to safeguard autonomy and independence of all State authorities - including PTS - which prohibits any interference by Ministries in the day-to-day activities of the authorities. In addition, the Government's influence on the activities of PTS or any other authorities is brought to bear collectively by means of primary and secondary legislation. In other words, no single Ministry is in a position to influence the work and agenda of PTS.

The independence of PTS plays an important role in the agency's work in the telecommunication market. One way of achieving independence is through the structure of financing. PTS is financed mainly through licence-fees. The system gives PTS the possibility to plan its activities in the long term.

The fees are set to cover the agency's expenses for the activities that are specified in the different legal Acts. The costs relate to licensing and notification issues and general costs necessary for the functioning of the market, such as frequency and number administration and harmonisation.

As regards PTS' independence vis á-vis the market there are a number of Acts generally applicable to government agencies, including PTS. The constitution stipulates that all government agencies must act impartially and objectively. In the Administrative Procedures Act there are rules regarding handling of matters as well as of disqualification. There are rules in the penal code concerning bribery and corruption. Furthermore, there are rules concerning insider trading.

One example of PTS' independence in practice is that Telia (in which the state holds a 70 % interest) was not granted a licence to provide network capacity for third generation mobile.

According to secondary legislation, PTS must co-operate with the Consumer and Competition Authorities on consumer affairs and competition matters, and initiate a reciprocal and regular exchange of information. Most new entrants claim that the Competition Authority is fairly knowledgeable but sometimes slow to make decisions.

In the past, some new entrants have perceived PTS to be insufficiently pro-active and sometimes slow to take decisions, in particular as regards interconnection disputes, even though it has all the requisite powers under the EU Directives. PTS refutes the allegations regarding lack of pro-activity, citing examples of recent initiatives taken, such as several proposed amendments to the Act,

regarding national roaming and provision of network capacity in mobile networks. In addition, it has adopted decisions regarding Telia's rates for the termination of calls on its mobile networks during 1999, 2000 and 2001.

However, PTS has pointed out that it would prefer to have stronger decision-making powers, since, according to PTS, sufficient decision-making powers are necessary in order to properly control the telecommunications market. Although current PTS powers are in compliance with the EC Directives, there is a recent proposal that PTS' current powers to mediate and make decisions in *certain* disputes according to the Telecommunications Act (for example in interconnection disputes) shall be strengthened and cover *all* disputes regarding application of the Telecommunications Act. Possible advantages are speed of resolution, greater possibility for PTS to intervene to avoid for example market distortions, possibility to have more cases dealt with by PTS, which has expertise in the telecommunications field, and not by courts without specialist knowledge. Possible disadvantages are too much discretionary powers to PTS, and a too heavy case-load for PTS, which might decrease the speed of resolution.

The above proposal is of particular importance given the fact that many decisions made by PTS are appealed to the Regional Courts (inter alia important economic decisions on fees for carrier pre-selection and on interconnection charges, as well as decisions to award third generation mobile licences). The appealed decisions can be confirmed or eliminated, and the content of the decisions can also be changed partially or completely. This is most often a slow and costly process, and PTS considers that this increases the insecurity of what rules and conditions apply to market players and indirectly limits their ability to act, and therefore does not benefit development of competition in the telecommunications market. It is also not evident that the Regional Court always has sufficient telecommunications knowledge required to solve certain cases brought to it. Although it is important to safeguard everybody's right to appeal, there might in some instances be alternatives to court proceedings where disputes are solved more quickly and efficiently, while at the same time safeguarding the interests of the parties. Almost every decision that PTS has made requiring the operator with SMP on the interconnection market to lower its mobile termination charges (in 1999, 2000, 2001) has been appealed. The appeals regarding 2000 and 2001 are still outstanding.

## **80. LICENSING**

The Sixth report concluded that Sweden's licensing scheme is very light, with priority given to general authorisations (declarations), individual licences being required only in certain specific cases. No concerns have been expressed about Sweden's licensing scheme.

The Sixth Report noted that licence fees, which are reviewed annually, have decreased in the last few years (down from 1.52% of turnover in 1994), and licence fees are still not seen as a deterrent to market entry.

The licence conditions imposed are still relatively few, and they are listed both in the Telecommunications Act and in each individual licence (itself a public document). No operator has expressed concerns about the licence conditions.

## **81. Interconnection**

Many operators still consider, as mentioned in the Sixth Report, that, given the incumbent's dominance, PTS does not intervene sufficiently in interconnection negotiations and interconnection disputes, despite having the requisite powers under EC law. This, it is suggested, makes it difficult for new entrants to conclude interconnection agreements with the incumbent on reasonable terms. However, PTS is also concerned that interconnection negotiations are so protracted. PTS tries to

facilitate the negotiations, and often becomes directly involved at some stage. Increasingly PTS determines the conditions that are to prevail between disputing parties.

Many new entrants are still concerned about the lack of transparency of the incumbent's interconnection charges, and continue to call for the incumbent to publish its cost allocation (allowing scrutiny as to whether interconnection charges are based on costs, or whether cross-subsidisation occurs). PTS maintains that it obtains copies of all interconnection agreements to which the incumbent is a party, and compares them and the RIO with the relevant cost accounting information, inter alia to verify that interconnection charges are cost-oriented.

As the incumbent has significant market power (SMP) on the Swedish interconnection market, all its interconnection charges should be cost-oriented (including calls to mobile). PTS has on several occasions intervened in the setting of the SMP operators' mobile interconnection charges. PTS has required Telia to lower the mobile interconnection charges on three occasions. Following an investigation of the incumbent's costs, on 10 May 1999 PTS required it to lower its average mobile interconnection charges by around 20% from 15 June 1999 (from 2.75 SEK to 1.89 SEK/minute).

After further examination of the most recent cost-accounting information, on 31 May 2000 PTS required the incumbent to lower the mobile interconnection charges further from 1 July 2000 (down to SEK 1.13/minute on average, which PTS considered to be a cost-oriented interconnection charge). The incumbent appealed against this decision, and the court considered that the charge should be 1.18 SEK/minute. Telia has appealed the decision to the Administrative Court of appeals. The case is still outstanding.

On 29 May 2001 PTS required the incumbent to lower the mobile interconnection charges to 0.98 SEK/minute). Telia also appealed against this last decision, and the court decided on "inhibition" (that the proposed new interconnection charges could not be applied until the Court has made its decision). The court case is still outstanding, and the current price is therefore 1.18 SEK/minute.

The interconnection charges that other mobile operators charge are not subject to control by PTS. Calls to the new entrant's network do not have to follow the rules on cost orientation, since it does not have SMP, and market prices apply instead. PTS does not set the market price, but assesses whether the level of compensation demanded by the new entrant is reasonable. In August 2000 PTS decided, in an interconnection dispute between the incumbent and a large new entrant, that the new entrant's compensation was unreasonable, and considered that a reasonable compensation would be 10% higher than the cost-oriented price, which PTS had determined to be SEK 1.13 per minute (as described above), i.e. SEK 1.24 per minute. (The highest price that the new entrant could charge is therefore, according to PTS' decision, limited to the incumbent's cost-oriented price + 10 %). This PTS decision is appealed to the Regional Court and the case is not yet closed.

## **82. Local access competition, including implementation of the regulation on local loop unbundling and bitstream access**

As mentioned in the Sixth Report, competition in the local access market is still considered to be insufficient. The incumbent's market share is still high for local calls and long-distance calls (82 %, on the basis of retail revenues, by July 2001).

In March 2000 Telia voluntarily offered other operators access to the local loop. There appears to be a low uptake of local loop unbundling, with few fully unbundled lines and shared lines in existence and no sub-loops on offer yet. There are concerns that the prices for local loop unbundling does not allow for fair competition, and there is also some concerns about the difficulty to request access to the raw copper in another way than what is on offer through the special packages offered by Telia.



Telia offers fully unbundled lines and shared access in specific product packages. *Fully unbundled lines* have been offered by Telia's wholesale arm since March 2000, but no significant volume of agreements has been reached (according to PTS there are only three fully unbundled lines). Most market players consider that the high price for fully unbundled lines is the biggest obstacle, but some also point to the fact that it is difficult to request access to the raw copper in another way than the specific service packages offered by Telia. New entrants claim that the prices for fully unbundled lines do not allow for competition when compared with retail prices. Telia, on the other hand, claims that there are no price squeezes and that their retail and wholesale prices have been adapted to allow for a reasonable profit margin for new entrants. PTS' priorities include control of pricing for local loop unbundling. However, PTS has had difficulties in getting relevant cost information from Telia. PTS received relevant information only in June 2001 despite the fact that it had made several formal requests long before that point in time. Despite the big interest for fully unbundled lines only one formal complaint has been filed with PTS, regarding terms and conditions for local loop unbundling. *Shared access* is included in Telia's Reference Offer since March 2001, but no significant volumes of agreements have been reached. *Subloops* are not yet provided by Telia, but according to Telia they will be introduced by the end of the autumn 2001.

There is concern over Telia's first-mover advantage in the ADSL field. Telia has started to launch its retail ADSL services massively and a great number of clients are being connected very quickly. This is of concern to other market players since until recently Telia did not offer wholesale ADSL to other operators (Telia only started to offer their wholesale ADSL service to other operators on 1 September 2001). Market players consider that Telia has been able to get such a massive first-mover advantage that it will be very difficult for others to compete. In addition, prices for ADSL are not considered to allow for fair competition, and one of PTS' priorities is to control that the ADSL prices are cost-oriented.

In Sweden 2 million households have cable TV, and cable TV is being developed to become an alternative way to reach customers.

Wireless local loop licences were due to be awarded by 1 October 2001, but due to delays the aim is now to issue the licences by the end of January 2002 at the latest. The objective is to issue four licences in the 24.5-29 GHz-band. There are currently five applicants. Many operators consider this type of access to be an alternative to access to the fixed network, and a number of operators have been carrying out trials for the last two years.

### **83. Universal service/consumers/users**

As mentioned in the Sixth Report, the incumbent still does not receive any contributions from other operators for the cost of providing universal service, due to the low cost of universal service provision. At present Sweden has no plans to introduce a financing scheme, although the situation might change, for example if the competitive situation changes or the cost of providing universal service increases.

Consumers have the possibility of complaining about, for example, phone bills to the Consumer Authority and to PTS. Although PTS does not have any formal obligation to deal with complaints from the public, it accepts such complaints since they are an important source of information and can cause PTS to take action in the context of its general supervisory tasks. PTS can order an operator to take certain measures, and also has the right to impose fines.

Also in 2000 there were a number of complaints regarding carrier pre-selection (CPS). There are several complaints from consumers who have been connected to a pre-selected operator without their knowledge (often through telemarketing) and who then have to cancel the order themselves. PTS currently deals with several such cases, inter alia at the request of Telia, and also plans to start an investigation into how well operators follow the guidelines on the ordering of CPS set by PTS.

As mentioned in the Sixth Report, competition in the field of directory services and directory enquiry services is considered unsatisfactory. According to the Act, operators must provide information about their subscribers for numbering information and directory purposes. There are, however, several points which are not clear with regard to the form in which the information should be provided, the degree of value added, pricing etc. EC legislation requires operators to provide the information in a fair, cost-oriented and non-discriminatory manner, but there appear to be no corresponding provisions in Swedish legislation. A number of operators are concerned about the conditions for access to relevant information, which is important in order to provide directory services and directory enquiry services, and a number of complaints have been lodged with the relevant authorities. Complaints have been lodged with PTS regarding the conditions of access to the incumbent's subscriber information, which were considered unreasonable. PTS mediated unsuccessfully during 1999. In September 1999 the Government asked PTS to investigate the lack of a common directory and directory enquiry service for fixed and mobile subscribers, which is a requirement under EC law, but which does not exist in Sweden. The results of the study were finalised in September 2000. There is currently draft legislation under way in the field of directory enquiry services, inter alia containing precise rules on what information has to be given out to other operators, for the purpose of numbering/directory enquiry services.

#### **84. Mobile services/Frequencies**

As noted in the Sixth Report, competition on the mobile market is not considered sufficient, with relatively high end user prices, similar service offers, relatively few players, and often high interconnection prices. A recent Report by PTS, the Consumer Authority and the Competition Authority concludes that the competition in the mobile market is insufficient, echoing earlier Reports on the mobile market by these authorities. Several measures have already been taken to increase competition, such as amendments to the Act entering into force in 2000 requiring mobile network operators to give access to network capacity to others under certain conditions, and a national roaming requirement for GSM operators also having a third generation mobile licence. PTS has also on several occasions (in 1999, 2000 and 2001) required Telia to lower its interconnection charges for calls to mobile, although Telia has appealed against most of these decisions. As further measures to enhance competition PTS plans to issue an additional GSM licence, since frequencies in the 900 MHz-band recently has been liberated due to the closing down of Telia's analogue system.

As mentioned above, various amendments to the Act entered into force in 2000 in order to increase competition in the mobile market. One amendment introduced an obligation for mobile network operators to provide access to their mobile network capacity on market terms (but non-discriminatory with regard to the conditions applied to their own businesses), if there is spare capacity. The intention was to allow other market players to offer mobile services without having their own network, since there is only a limited amount of frequencies.

Many operators consider that the amendment is too weak to have more than a limited effect on the competition in the mobile market. There are inter alia not very many agreements between service providers and network operators and most of these agreements had been concluded before the legal requirement entered into force. Some new entrants also claim that there are great difficulties in concluding such agreements, and that most agreements have been concluded with niche players who do not compete directly with the network operator, and that the conditions offered to the service providers do not allow for fair competition. There is concern with regard to the interpretation of "spare capacity", which is considered to quite often be used as an excuse for not providing access to some service providers, and the fact that access has to be provided on market terms, which makes it difficult to conclude agreements with network operators on conditions allowing for fair competition (since new entrants often have less negotiating power than the mobile operators). PTS is currently looking into the issue of "spare capacity", since some operators claim

that there is limited capacity available, in which case the operator would not be obliged to provide access to its network for service providers.

Further legal changes entering into force in 2000 concern national roaming. Certain mobile operators would be obliged to give access to their networks to a new mobile operator with a network licence, where this operator does not have coverage. Access should be on market terms, but the right to roaming is limited to seven years after establishment. Some operators consider that also this amendment is too weak to have any real effect on the market, since the rules only favour a new mobile operator who does not have any network of its own.

Following a decision by the incumbent, the whole analogue NMT 900 system ceased to occupy the 900 MHz band by the end of 2000. The closure of the analogue system allowed PTS to consider granting further GSM licences in the 900- MHz-band.

Sweden awarded four licences for third-generation mobile telephony through a beauty contest, in December 2000, to Orange, Europolitan, Tele 2 and HI3G Access. The criteria for selecting operators relate to financial strength, technical plans, business, market and investment plans, mobile telecommunications know-how, and plans for coverage of the UMTS network. The UMTS licensees each got  $2 \times 15 \text{ MHz} + 5 \text{ MHz}$ . Telia did not receive a licence, and (like Telenordia and Reach Out Mobile) appealed to the Regional Court, but its appeal failed.

According to the licence conditions of the third generation mobile licences operators shall offer network capacity by 1 January 2002, and by 31 December 2003 the networks shall be fully developed (meaning a minimum coverage of at least 8 860 000 people in Sweden, which corresponds to 99.98 % of the Swedish population on 31 December 1999). Licensees have a possibility to make agreements about, inter alia, national roaming in other networks in the relevant frequency bands, in order to achieve the required coverage. The licensees shall however ensure that at least 30 % of the required population coverage is covered by own infrastructure.

There are two network sharing consortia in Sweden: *3G Infrastructure Services*, which is owned by Europolitan and HI3G Access (which in its turn consists of Hutchison Whampoa and Investor). The consortia has an "intention agreement" with Orange. The second consortia, "*Swedish UMTS-Net*", is owned by Tele 2 and Telia. There appear to be some advantages with network sharing, such as lower costs etc, but there are also some risks, such as potential difficulties for service providers/MVNOs to conclude agreements under reasonable conditions, or reduced competition at the service level between the parties to the network sharing agreement. The parties in the consortia stress that they are completely independent in the service provision, and can for example conclude service agreements with any service provider that they like. Telia does not hold a 3G licence but will contribute with current infrastructure, such as masts and base stations, and the alliance with Tele 2 is a way for Telia to enter the third generation mobile market despite not having a licence. It is not clear exactly what rules for access to the network will apply to this consortia since one of the parties (Telia) does not hold a licence, and therefore does not have to fulfil the licence conditions for 3G licences. Telia does not for example have to fulfil the requirement of 30 % own coverage. Both consortia are being assessed by the Swedish Competition Authority.

It is understood that the roll-out of third generation mobile is proceeding according to schedule. However, future sector problems, for example financing problems, possible delays in delivery of terminals and possible insufficient number of available terminals, might cause delays also in Sweden.

## **85. Tariffs**

PTS has decided that Telia has significant market power (SMP) on the markets for fixed voice telephony (and according to EC law its voice telephony tariffs should therefore be cost-oriented).

According to the Telecommunications Act Telia's line rental charges should be cost-oriented, and PTS has a duty to verify that this is the case.

A price cap previously prevented the incumbent from increasing fixed fees such as installation and line rental charges more than the change in the retail price index, but it was lifted in 2000. Line rental charges can therefore now be set freely by the incumbent, (provided that they follow the principles of cost-orientation). There is not a set period for tariff changes, but in practice a period of one month applies for tariff increases.

PTS is currently investigating a proposed tariff increase in Telia's line rental, in order to verify that line rental charges are cost-oriented also after the proposed tariff increase. PTS points out that Telia has given substantial cost-accounting information to PTS, in order to allow verification of cost-orientation, and its aim was to conclude the examination of Telia's accounts by 1 November 2001. Information about the result of the examination will be published. If the proposed increase in line rental charges is not based on costs, PTS will require an adjustment of the line rental charges.

## **86. Cost accounting**

As mentioned in the Sixth Report, new entrants still have concerns about the lack of transparency of accounting information (required for verifying accounting separation, cost orientation of end-user tariffs, and non-discriminatory pricing), which they consider a factor that makes it difficult to assess the cost structure and the degree to which end-user tariffs have been re-balanced.

In relation to non-discriminatory pricing, many operators are still calling for the incumbent to be required to provide and publish relevant accounting information, with, as a minimum, its cost allocation and cost allocation principles, to show that cross-subsidisation does not occur.

PTS requires the incumbent to provide relevant economic information regularly, which it then uses for its own ongoing surveillance duties. Based on the findings of its regular monitoring of the incumbent's accounting information, PTS inter alia publishes an annual report on the deficiencies in the incumbent's accounting system and the proposed remedies. It also draws up a more comprehensive report, which is not published since it contains commercially sensitive information. PTS also verifies the incumbent's internal transfer prices in order to verify that the non-discrimination principle is followed, and that no cross-subsidisation occurs. PTS maintains that it fulfils the requirement of a description of the incumbent's cost-accounting system including the main categories under which costs are grouped and the rules for cost allocation is publicly available, although all this is not provided in a single document.

The cost-accounting system of Telia allows PTS to verify cost-orientation of tariffs and interconnection charges. As described above, PTS is currently, after having examined the most recent cost-accounting information from Telia, verifying the cost-orientation of proposed new line rental charges,, and has also, after having examined Telia's accounts, requested the incumbent to lower its mobile interconnection charges on several occasions.

## **87. Leased lines**

There appear to be very few problems related to pricing and delivery of leased lines.

No complaints have been made to PTS or the Competition Authority regarding delivery of leased lines. As regards pricing for leased lines, previously some new entrants expressed concern about the high price of the incumbent's 'Digital X-line' (a high-capacity end line out to the customers), but no formal complaints have been lodged yet. Leased line pricing is not a matter of priority for PTS,

since there are very few leased lines disputes in general and no disputes or complaints filed with any authority regarding the prices for leased lines.

## **88. Numbering**

PTS is responsible for the allocation of numbers, and all operators are granted number capacity on equal terms and conditions. Two numbering plans have been created and published by PTS since 1993, one each for the telephony and public data networks.

Operators have in the past criticised PTS for failing to set proper guidelines and to intervene in the implementation of carrier pre-selection (CPS), resulting in a lack of clear rules up to the day when CPS entered into force. PTS has admitted that it should have given more detailed guidance. An independent study criticised the way in which CPS was implemented, saying that PTS should have been more active in the years leading up to the introduction of CPS, so that the industry would have known what rules and guidelines to follow. The study also mentioned that some of the problems were exacerbated by the fact that legislation regarding CPS only entered into force in July 2000 (two months before implementation), which limited the scope for PTS to act. Some operators say that PTS was proactive in the final stages of the reform, mediating and adopting secondary legislation relating to CPS. Most problems have now been settled, although there are still some outstanding problems in relation to the ordering, inter alia with some clients being signed up as having changed operator without being aware of it (often through telemarketing companies).

It would appear that the take-up of the service has been good, and it is thought to have contributed to lower retail tariffs and to increase the number of operators (there are currently 29 operators offering voice telephony to households through CPS). In the autumn of 2000 more than 50 % of the households had made an active choice of operator, and more or less half of these had chosen another operator than the incumbent.

CPS is available for long-distance national calls, international calls and calls to mobile. It is also available for local calls, but only if the area code is dialled, otherwise the call is routed via the incumbent's network. This solution, which was chosen due to technical constraints in the network switches, leads to the pre-selected operator losing a certain amount of calls within the same area code, and also causes confusion for the users. New legislation, which appears to be in compliance with EC rules, has been adopted, but will only enter into force in February 2002. According to the new legislation all local calls will be routed to the pre-selected operator, even if the area code is not dialled.

As regards costs for CPS, the Act requires operators to base the fees that they charge each other on costs related to the day-to-day operation of CPS, and not on the costs of the investments necessary to make CPS technically possible. In practice this rule applies only to the incumbent. The fee for CPS was SEK 35 for national or international calls, and SEK 67 for both types of call. In May 2000 PTS required the incumbent to reduce the CPS fee to SEK 9.25 for either national or international calls and SEK 15.20 for both types of call. The incumbent has the right to compensation for operational costs only (the costs of processing orders), but PTS considered that it tried to recover other general costs as well. The incumbent appealed against the PTS decision in June 2000, and the case is still outstanding.

The introduction of number portability for fixed telephony services (including ISDN), premium-rate calls and free-phone services began on 1 July 1999 and was completed in December 1999, using onward-routing technology. There has been very little take-up of the service: only 400 numbers have been ported.

Many operators claim that the low take-up is partly related to the fee for porting numbers, which they consider to be very high. The operator from which the number is ported has the right to compensation for current costs related to the hand-over of the number, and to compensation for increased traffic costs. Operators have had difficulties in reaching agreement about the economic conditions, and PTS proposed an amendment to the Act regarding the principles of compensation for number portability, in 2000. Previously the donor operator (often the incumbent) could recover additional traffic-related costs, but PTS considered that this provided no incentive for cost-efficient routing solutions. In June 2000 PTS therefore proposed to amend the Act so that the donor operator and the call originating operator should divide the additional traffic costs equally.

There was previously a dispute between a new entrant and the incumbent relating to remuneration for number portability. The incumbent requested, as part of the dispute, that PTS make a decision regarding the level of compensation for administrative costs for handling orders for number portability. PTS decided in May 2000 on what fees should apply for administration of number portability, and the incumbent thereby had to lower its fees.

Mobile number portability was introduced in September 2001. Before the introduction of mobile number portability there was controversy on the establishment of a reference data base, which now has been created by operators (in use since August 2001). It is too early to gauge the effects of this reform, although there appear to be some concern among consumers that the information they are given is insufficient. One fear regarding mobile number portability is that it will be more difficult to find out the price of a phone call, since it will no longer be possible to recognize, from a number, if one is calling the same mobile network, for example, and that therefore the call would be cheaper than calling another mobile network.

## **89. Rights of way**

Facility sharing is not compulsory, but rights of way/access to property may be granted through individual agreements or under the Right of Way Act (applicable to both public and private entities). The incumbent also provides collocation, although not at its main switching facility, for technical reasons.

In Stockholm, Stokab (owned by Stockholm municipality), having an agreement with the City of Stockholm, is the sole company authorised to dig new tunnels and lay fibre in the ground. Certain operators have had the impression that this restricts competition. However, the Competition Authority has looked at the competitive situation and not found any reasons to interfere, and Stokab is required to give access to anyone requesting it on non-discriminatory terms.

It appears there are problems with building permissions for the roll-out of third generation mobile networks, since there will be a great number of requests for building permissions, and the processing of these requests is considered a bottleneck. Some housing associations also appear unwilling to put up masts in apartment buildings, due to possible health risks. Work appears to be ongoing concerning mast-sharing, but it also appears that higher masts would be needed in order to allow for mast-sharing, which might cause problems for air-traffic.

## **90. Data protection**

As mentioned in the Sixth Report, most operators still state that they have no concerns with respect to data protection. EC rules on, for example, storage of traffic data, deletion of certain data etc., are considered fair and not too far-reaching, and are easy to follow.

PTS is the authority responsible for the enforcement of data protection in the telecommunications sector, and follows developments in the security of electronic information handling.

Sweden has transposed the Telecommunications Data Protection Directive (Directive 97/66/EC), including Article 5, for which the deadline for transposition is 24 October 2000. The Swedish legislation states that anyone who provides, within a publicly available network, telecommunications services or network capacity, must ensure that their activities fulfil reasonable requirements on reliability and technical security. In case of a particular risk of a breach of the security of the network, subscribers must be informed concerning such risk and any possible remedies, including the costs involved.

As regards data processing, the Swedish legislation states that anyone who has access to data regarding a particular telecommunications message must erase or make anonymous such data at the end of the call or when the message has reached its destination. Data which are necessary for subscriber billing or payment of interconnection charges may be processed until the outstanding payment is made or until the end of the period during which the bill may be lawfully challenged or payment may be pursued. Data may be used for marketing the service provider's own telecommunications services if the subscriber has given his consent.

## **91. Internet**

There are currently just above a hundred ISPs operating on the Swedish market, ten of which have large-scale operations. Internet penetration is high (the percentage of households with internet access is 65 %). In 2000 the incumbent had a market share of around 30 %.

PTS' report of May 2000 concluded that there is a certain risk for development of local monopolies for broadband access in blocks of flats. PTS has identified what action to take to prevent this development, and has also initiated action in some areas.

The Telecommunications Act does not give PTS the possibility to demand an introduction of FRIACO (Flat Rate Internet Access Call Origination) on a wholesale basis. PTS has currently not received any formal request to introduce compulsory FRIACO, but considers to carry out a study of needs, possibilities and costs of introducing FRIACO.

There are a few operators currently offering flat rate internet access to consumers, and some operators offer subscription-free internet access.

There has been a very lively debate in Sweden about the construction and financing of a fibre broadband network capable of reaching every Swedish municipal centre at an acceptable cost for the users, and the promotion of local/regional and access broadband networks to every Swedish home. The Government will also support local broadband infrastructure and access to broadband networks in rural areas. The recent Government Bill on IT policy sets out plans to extend the Swedish National Grid backbone to all municipal centres in Sweden on strictly commercial terms, and to add fibre to the grid. The whole fibre network has to be open to any operator who wishes to purchase capacity. The backbone should be up and running within two years at an estimated cost of SEK 2.5bn. Government funding will be provided for the establishment of regional networks between municipal centres and access networks, with priority given for regional and policy reasons where the market cannot be expected to meet the need for such links within the next five years. The Government will grant SEK 2.625m for the construction of the regional network. The Government has also reserved SEK 3.2bn for the construction of local loops. This money will be used partly for municipalities supporting the construction of local loops where there is no market provision, and partly for tax relief for subscribers who install broadband access, in order to encourage access to high-capacity networks. The roll-out of the broadband network capable of reaching every Swedish household is ongoing, although there has been slightly less interest than in the beginning, partially related to financial difficulties of some key players (such as some operators). Also, certain municipalities have not been able to build out networks, due to financing problems, and the government has therefore decided on extra subsidies under certain circumstances (in particular municipalities with extra low population density).

As mentioned in the Sixth Report, PTS has determined that under certain circumstances internet traffic falls under the Telecommunications Act. Voice over IP will under certain circumstances be considered as voice telephony, and ISPs that fulfil the criteria for telephony service are required to register (declare) with PTS and will have the same rights and obligations as other registered operators. Also, ISPs that provide network capacity or mobile access will have to register with PTS. The rules on interconnection in the Act also apply to ISPs under certain circumstances. An ISP with an activity of significant scope (roughly 5-15% market share) has an obligation to interconnect on market terms with other registered operators.

## **92. DIRECTIVE 95/47/EC**

Directive 95/47/EC appears to be substantially transposed in Sweden, and no major problems appear to have occurred. No formal complaints or disputes have been filed with the national regulatory authorities involved in the implementation of the Directive, and no cases are currently being dealt with (or has been dealt with) by the Courts. The Directive has been transposed into Swedish legislation through the Act on TV standards, the Decree on TV standards, and Directions on TV Standards. Article 4b (on cost-efficient trans-control) has been relatively difficult for some market players to implement. Legal provisions on this exist in current legislation, giving the Radio and TV Authority the possibility to issue further Directions. No such Directions have, however, been issued by the authority.

The Radio and TV Authority is responsible for monitoring the implementation of the Directive. The Government issues the licences for digital terrestrial TV on the basis of a proposal from the Radio and TV Authority. Also the Consumer Authority is able to handle potential disputes regarding the implementation of the Directive.

There are four major operators on the Swedish Digital TV market, present on three platforms, with a total number of around 500 000 subscribers. This number is expected to rise to 1 million by the end of 2001, 1.5 million by the end of 2002, 1.75 million by the end of 2003, and 2 million by the end of 2004.

The four current operators are divided into the three platforms as follows: DVB-T: Teracom AB/Boxer AB (state-owned), with 50 000 subscribers (in January 2001); DVB-C: com hem AB (Telia), with 100 000 subscribers, in January 2001; and DVB-S: Canal Digital AB, with 150 000 subscribers, and Viasat AB, with 200 000 subscribers in January 2001.

Further roll-out of the terrestrial network is planned, and the government has commissioned the national regulatory authority to allocate frequencies for another two (2) multiplexes.

Swedish companies are among those companies which have signed up to a (voluntary) agreement governing interoperability within the framework of the NorDig organisation, a co-operative organisation consisting of Nordic television and telecom companies. The main purpose of this agreement is to provide for the migration from proprietary platforms for data and interactive services to the DVB Multimedia Home Platform (MHP) API standard. The agreement also provides minimum requirements on conditional access. In March 2001 there was an agreement about a transition to DVB-MHP at the latest in 2005.



## 3.15 UNITED KINGDOM

### OVERVIEW

#### *Market developments*

In July 2001 there were 311 Public Telecommunications Operators (PTOs) providing international and domestic telecommunications services, 544 International Simple Voice Resale Operators, and 16 satellite operators in the UK, indicating relative ease of entry into the UK telecommunications market.

The incumbent's market share (by revenue) has continued to decline for many important voice telephony markets. By 31 December 2000 the incumbent's market share for local calls was 68.2% (down from 73.4% at the end of 1999/beginning of 2000); its market share for long-distance calls was 58.9% (down from 65.0% in 1999/2000), and its market share for international calls was 48.3% (down from 49.4% in 1999/2000).

Overall market revenues expanded by 13% in the year preceding March 2001, due mainly to increased demand for mobile and internet services.

The UK internet market continues to enjoy rapid expansion. In June 2001 around 46.5% of UK households had access to internet, while OFTEL's latest estimates show 60% of small businesses were connected as at May 2001. This would mean that the UK is behind Scandinavia in terms of penetration, but ahead of France and Germany and the European average. internet traffic now accounts for over a third of all call minutes originating in the PSTN.

Mobile penetration, which over the past few years has increased substantially, has continued to increase. In October 2000 the number of mobile subscribers passed the number of fixed lines for the first time, and by March 2001 there were over 43 million mobile subscribers. 15% of residential consumers now consider mobile handsets to be their main method of telephony.

#### *NRA*

OFTEL is independent from telecommunications operators, and has the requisite powers under EC law. There have been some concerns regarding slow dispute resolution, but OFTEL has in the past year issued stricter guidelines concerning resolution of interconnection disputes, and the objective is now to issue a final determination within six months. Staff turnover, although still an issue for some new entrants, appears to have decreased over the past year.

OFTEL has in the last twelve months carried out a series of major reviews of key sectors of the telecommunications market, investigating whether competition is effective and what level of regulation would be appropriate: 1) the mobile market as a whole, 2) the mobile call termination market, 3) the leased lines market. A number of measures have been proposed, in accordance with the findings of the reviews, such as a price cap on the mobile call termination charges of all four mobile operators.

The plans for the establishment of a single Regulatory Authority, the Office of Communications (OFCOM), which will administer a single regulatory framework encompassing telecommunications, broadcasting and radio communications, are advancing. OFCOM, which will become operational in 2003, will undertake the work of OFTEL, the Independent Television

Commission (ITC), the Radio communications Agency (RA), the Radio Authority and the Broadcasting Standards Commission (BSC), and will administer sector regulation (both economic and consumer protection) and content regulation.

***FRIACO/  
Internet***

OFTEL is continuing to encourage unmetered internet access. In May 2000 it required BT to offer FRIACO (Flat Rate Internet Access Call Origination), from its local exchanges. OFTEL then made a second Direction in February 2001, requiring BT to provide FRIACO from its single tandem exchanges (so called ST FRIACO – Single Tandem FRIACO). A staged process was developed to limit the amount of unmetered traffic at the single tandem exchanges in the short term, moving to unlimited access by early 2003.

It would appear that the introduction of FRIACO has increased the availability of retail flat rate tariff packages, and thereby has had a positive effect on internet use. Over a third of households connected to the internet now use some form of flat rate dial-up access, and the increased availability of unmetered internet access packages appears to have encouraged greater internet use. Market research from May 2001 shows that households now spend on average 8 hours per week online, compared to 6 hours a week a year earlier.

***Third  
generation  
mobile roll-out***

The UK has allocated five third generation mobile licences through an auctioning procedure, which ended in April 2000, with licences being granted to the four incumbents and a new entrant.

Rollout of third generation mobile appears to be according to schedule. It seems there are some problems related to building permissions, in particular in Scotland, and market players consider the processing of requests for building permissions a potential bottleneck.

***Competition in  
the mobile  
market***

OFTEL issued in September 2001 the conclusions of its review of the state of competition in the broad mobile market, concluding that the broad mobile market is not yet effectively competitive, but that competition appears to be developing.

Concerns have been expressed regarding SIM lock practices, in particular the pricing for unlocking the phone, the complicated and long unlocking procedure, as well as the poor quality of information to customers on these matters. OFTEL's review of the mobile market included SIM lock practices, and concluded that the widespread practice of SIM locking hinders consumers' ability to switch provider. OFTEL also considers that customer information seemed poor.

In parallel with the conclusions of the mobile market review, OFTEL issued the conclusions of its specific review of competition for calls to mobile phones. Following findings by the Monopolies and Mergers Commission (now the Competition Commission), there is currently a price control consisting of wholesale mobile termination charges levied by Vodafone and BT Cellnet, which will expire at the end of March 2002. The conclusion of the review was that current competitive pressure is not sufficient and that controls on charges for termination of calls on the four main mobile networks therefore are justified for the next four years.

***Competition in  
local access***

It seems there have been problems in the roll-out of DSL services in the UK, new entrants requesting OFTEL to resolve a dispute with BT concerning the provision of certain interconnection DSL products, two own-initiative investigations by OFTEL, and at least two complaints having been lodged with the NRA.

Also the rollout of local loop unbundling (LLU) appears to have been problematic, with a number of practical problems (such as problems with the ordering process; terms and conditions of collocation; BT's service level). A great number of complaints and disputes have been lodged, and OFTEL has also issued a great number of Directions and Determinations and carried out investigations. The incumbent offers fully unbundled lines, shared access, and sub-loops, although there has been little uptake for fully unbundled lines and no uptake at all for shared access and sub-loops. The low uptake of local loop unbundling is, however, not necessarily only related to the above practical problems, but could (at least partially) be attributed also to other factors (such as a worsening financing climate).

In the UK, DSL and unbundled local loops are, however, not the only means of providing local access, and a number of cable TV operators provide telecommunications services. The variety of means of providing local access is illustrated by the fact that the incumbent's market share for local calls is lower than in many other Member States, and shows a declining trend (by 31 December 2000 the incumbent's market share for local calls was 68.2%).

### ***Leased Lines***

In August 2000, following a review of the leased lines market, OFTEL published a consultation document, which tentatively concluded that the market for national leased lines was not yet effectively competitive (particularly in the wholesale market). BT launched partial private circuits ("short tail" leased lines) in August 2001, following OFTEL's intervention under the Interconnection Directive, although some issues remain unsolved, including aspects of pricing and service level agreements, and have been referred to OFTEL for determination under the Interconnection Directive.

Concerns have been expressed about the slow delivery of leased lines, and this is often considered worse than high prices since the effect is loss of the confidence of clients.

A Statement by OFTEL is expected by the end of 2001, setting out OFTEL's final conclusions about the state of effective competition in the leased lines market, and whether price controls are necessary. OFTEL states that it will also look at for example performance in provisioning of leased lines as well as pricing.

## **93. NATIONAL REGULATORY AUTHORITY and appeals**

The Sixth Report concluded that OFTEL is regarded by many other NRAs as the benchmark for an independent, efficient, competent and proactive regulatory authority. OFTEL currently has the powers prescribed under the EC Telecommunications Directives, enacted in the UK through powers in the Telecommunications Act in 1984. In addition, since new competition legislation came into force in March 2000, it has had important powers in the competition field (OFTEL then became the competition authority for telecommunications, concurrently with the Office of Fair Trading, OFT).

OFTEL has in the past year carried out a series of major reviews of key sectors of the telecommunications market, investigating whether competition is effective and what level of regulation would be appropriate: 1) the mobile market as a whole, 2) the mobile call termination market, 3) the leased lines market. A number of measures have been proposed in accordance with the findings of the reviews, such as a price cap on the mobile call termination charges of all four mobile operators. OFTEL has also already consulted on major reviews of the international voice telephony and the dial-up internet access markets.

OFTEL is considered to be somewhat understaffed by many new entrants and consumer organisations and there is also concern regarding OFTEL's staff turnover. OFTEL acknowledges that 1999 was a year of high turnover (45% at the key level of project managers and competition caseworkers). However, there has been improvement since, and OFTEL's overall staff turnover went down to 27% in 2000 and, based on the mid-year forecast, will be further reduced to 16% in 2001. Measures, such as permanent contracts for all staff who were on fixed term contracts, are in place to increase staff retention and, with effect from 1 August 2001, the introduction of a market related pay scheme as well as increased annual leave allowances for all staff.

It has been alleged by some new entrants that dispute resolution (but also other decision-making) is slow and that many cases and complaints increasingly result in a "non-decision" (OFTEL keeping the case under review, i.e. deciding to evaluate the issue further in some months when more information might be available, rather than issuing a Decision immediately). This is considered to delay the process and make it difficult to appeal (since there is no decision to appeal against). However, OFTEL points out that its dispute resolution processes do not provide for a delay or a non-decision in the manner described and cases would only be delayed for such reasons on the specific request of the party originally making the dispute resolution request. OFTEL states that, for other cases, the fact of keeping a matter under review is a way of being proactive, since the alternative would otherwise be to close a case immediately, due to lack of information. Keeping it under review gives the authority a chance to examine the matter further once more information is available.

There is also a feeling that OFTEL often hesitates between acting under the Competition Act or under the Telecommunications Act, which further slows down the process. OFTEL considers there is no ground for such sentiments. It points out that the same time-scales apply to complaints dealt with under either statute, and observes that its practice is to pursue any issue of legal basis for the action simultaneously with the substantive consideration of the complaint, thereby avoiding any delay.

Some new entrants claimed in the past that OFTEL does not always comply with the six-month limit set by EC legislation for the resolution of interconnection disputes. In February 2001 OFTEL introduced stricter internal rules to speed up its dispute resolution (the target for interconnection disputes is now to issue a final Determination within six months of receipt of the request, and not only a draft Determination). OFTEL states that this target was achieved in most of the six interconnection cases resolved in 2000 and for seven of the eight cases received in the first four months of 2001 (the eighth has been slightly delayed because of dependence on the outcome of other interconnection disputes but will be completed before the end of the year). Operators acknowledge that OFTEL's recent introduction of stricter internal rules, improvements may have been made in relation to interconnection disputes. Certain new entrants also feel that when OFTEL considers a dispute referred to it and tries to determine whether or not there is "undue discrimination", it expects new entrants to prove harmful effects on current competition rather than potential competition, which is difficult. OFTEL however considers this to be a mistaken view, and that it is actually prepared to take into account the impact of a given discriminatory situation on both current and likely future - i.e. potential - competition, where there are firm grounds for doing so. Some new entrants claim that the possibilities for appeal on the merits of the case are small, although OFTEL maintains that, with the recently introduced appeal mechanism, there is a possibility to appeal on the merits of the case. As noted in the Sixth Report, a wider form of judicial review, allowing appeals against the procedure by which and the findings of fact on which the decision was based, has recently been introduced for matters covered by the Licensing Directive and the Interconnection Directive. The appeals mechanism (in Section 46B of the Telecommunications Act) also allows an appeal by a third party. One operator has already made such an appeal (against the Director General's Determination relating to Interim Carrier Pre-selection). Furthermore, OFTEL decisions under the Competition Act 1998 are subject to appeal to the Competition Commission. A decision of the Competition Commission is in turn subject to

appeal, on a point of law, to the Court of Appeal, and from there to the House of Lords. Other OFTEL decisions are subject to judicial review on usual UK administrative legal grounds.

Since the Sixth Report, the UK Government has issued the White Paper *A New Future for Communications* with plans to establish a new Office of Communications (OFCOM) as a single Regulatory Authority for the communications sector. The aim is to create OFCOM by the end of 2003. OFCOM will deliver a coherent regulatory framework for the increasingly convergent communications industries. An entirely new body will undertake sector regulation (both economic and consumer protection) and content regulation, and replace existing regulators in these areas (OFTEL, the Independent Television Commission (ITC), the Radio communications Agency (RA), the Radio Authority and the Broadcasting Standards Commission (BSC)).

A short Office of Communications Bill which is now before Parliament and gives the Government power to appoint an OFCOM Board, is expected to come into force in early 2002. The Board will have no regulatory powers and its sole duty will be to set up the new organisation. A draft of the main legislation that will include provision for OFCOM's regulatory powers and duties is expected in 2002. Meanwhile, the existing regulatory agencies are already collaborating closely in planning and preparing for OFCOM. In October 2001 they published the results of a consultancy scoping study, with a recommended high level structure template for OFCOM, suggested design criteria for the organisation and a transition plan covering the period until end 2003. They will continue with this planning work until the OFCOM Board is in place and then work with the new Board to ensure a smooth transition.

## **94. LICENSING**

As mentioned in the Sixth Report, the UK licensing scheme is relatively light with many general authorisations (class licences) and licence conditions in compliance with EC law. A simplified licence modification procedure has recently been introduced. There are no fees for general authorisations, and new entrants do not perceive the fees for individual licences (based on costs) to be an obstacle.

## **95. interconnection**

The Sixth Report concluded that, in general, operators considered that the incumbent's interconnection charges complied with the cost-orientation requirement, and that its cost accounting system was in accordance with Community law. BT's regulatory accounts are independently audited and published annually. It is for the incumbent to demonstrate that interconnection charges are cost-oriented. The regulatory accounts include detailed cost information agreed between the Director General and BT. Those accounts are supported by publicly available documents on policy, procedure and methodology.

There is currently a control of wholesale mobile termination charges levied by Vodafone and BT Cellnet, following findings by the Monopolies and Mergers Commission (now the Competition Commission) that the charges were excessive and not subject to sufficient competitive constraints and therefore against the public interest. The current control, which will expire by the end of March 2002, consists of charge caps of Retail Price Index (RPI) minus 9% on the wholesale charges made by BT Cellnet and Vodafone for terminating calls from fixed lines on their mobile networks. Similarly, the MMC considered the level of BT's retention — added to termination charges in reaching the retail price — and found it excessive in relation to costs. OFTEL therefore required BT to reduce the retention to cost-oriented levels.

In parallel with the conclusions of the mobile market review, OFTEL issued the conclusions of its specific review of competition for calls to mobile phones. The review considered *inter alia* whether the market for call termination is competitive, whether there should be a further period of charge control and, if so, in relation to which operators. OFTEL concluded that current competitive pressure is not sufficient; that the appropriate market definition is a separate market for call termination on each of the four operators' networks, that current termination charges are still above costs and that controls on charges for termination of calls on the **four** main mobile operators therefore are justified. OFTEL believes that a charge control of RPI minus 12 % each year for the next four years until March 2006 is appropriate, and proposes to amend the licences of all four mobile operators (BT Cellnet, One2one, Orange and Vodafone) accordingly. Calls using third generation mobile infrastructure are excluded. OFTEL intends to conduct a review of the controls after two years in accordance with the requirements of the new EC Directives currently being negotiated, which, on present plans, will coincide with the next review of the broad mobile sector.

## **96. LOCAL ACCESS COMPETITION INCLUDING IMPLEMENTATION OF THE REGULATION ON LOCAL LOOP UNBUNDLING AND BITSREAM ACCESS**

Competition on the local market is increasing, *inter alia* from cable TV operators who also provide telecommunications services over their networks. There are currently three cable TV operators who also offer voice telephony. The incumbent's share of the local call telephony market continued to decline last year (down from 80.9% in 1998 and 73.4% at the end of 1999/beginning of 2000 to 68.2 % by 31 December 2000, by revenue).

As noted in the Sixth Report, OFTEL has been monitoring BT's ADSL trials and roll-out since it announced its plans in July 1999, in order to ensure that BT meets its legal obligations, such as no

undue discrimination between its own service providers and other operators and service providers, and that wholesale products are made available to other operators and service providers on non-discriminatory terms and conditions. Since the Sixth Report, BT has proceeded with its ADSL roll-out. According to information from OFTEL, by September 2001 BT had upgraded around 1 000 exchanges serving over 60 % of households (including 13 million homes and 1.7 million businesses).

At the time of the Sixth Report, industry groups had lodged a number of complaints about BT's wholesale ADSL service (regarding pricing; other terms and conditions; and various other aspects). Many operators were also concerned about the time it took to receive wholesale ADSL, partly due to the slow processing of orders, at a time when it was asserted that BT was able to take first mover advantage by offering its own retail service.

Under its licence BT must offer wholesale access products to competing service providers on the same terms as to its own service provider business, and OFTEL would be able to take enforcement action if there were any evidence that BT were in breach of its licence conditions or of the Competition Act.

It would appear that the rollout of DSL services in the UK is still problematic. New entrants have requested OFTEL to resolve a dispute with BT concerning the provision of certain interconnection DSL products, and various complaints have been lodged with the NRA.

One complaint concerns a possible margin squeeze. In June 2000 new entrants alleged that the price of BT Openworld's entry-level (retail) prices was insufficient to cover its costs, and that it must therefore have been benefiting from cross-subsidies. New entrants even claimed that the wholesale price was higher than the retail price. OFTEL examined the case and decided that, on the evidence available to it at the time, the price was not implausible because of the revenue BT expected to gain from e-commerce and advertising. When OFTEL made its decision, it also committed itself to a review in July 2001. The review is under way and will be concluded shortly.

Another complaint concerns unreasonable terms and conditions for wholesale ADSL, and, in particular, the absence of a service level agreement. BT has recently published revised terms and conditions and draft service level agreements, proposed by BT to be guaranteed by the end of the year. OFTEL is investigating whether any enforcement action is required in this area and intends to conclude its investigation before the end of 2001.

In September 2000 OFTEL was requested to resolve a dispute with BT regarding the provision of certain interconnection DSL products. In March 2001 OFTEL published a Direction requiring BT to negotiate with operators who had requested an interconnection product that would enable them to make use of their own networks and thereby make cost savings. The negotiation period expired without the parties having agreed on all the disputed points. The matter has now been referred to OFTEL and a final Determination will be published by the end of 2001.

OFTEL has also conducted two investigations on its own initiative. One investigation is related to "rate-adaptation" (a technological advance that enables the reach of DSL to be extended from approximately 3.5 km to approximately 5.5 km from an enabled exchange). OFTEL is examining whether BT is in breach of any of its legal obligations by introducing this enhancement in relation to some DSL products and not to others. The other own-initiative investigation is in relation to BT's indicative launch prices of its new DSL wholesale products, due to be launched in November 2001, which are significantly lower than the trial prices. OFTEL is investigating whether these price cuts are anti-competitive or not.

The introduction of local loop unbundling also appears to have been difficult with a number of practical problems, such as the ordering process, terms and conditions for collocation and BT's service level. OFTEL has resolved the majority of complaints and disputes referred to it. In the past 18 months, OFTEL has published over 30 documents on LLU, 10 of which make final Directions or Determinations.

In June 2001 OFTEL concluded its investigation into alleged undue discrimination between LLU and BT's ADSL roll-out, concluding that there was no evidence of a breach by BT of its regulatory obligations. OFTEL has however taken a number of steps to address issues raised in the investigation, such as a Direction on co-mingling. OFTEL is also proposing a number of steps to ensure accounting transparency of the services that BT provides to itself.

There appears to be a relatively low take-up of local loop unbundling. The first commercial service using unbundled local loops was launched in April 2001. There are currently 30 operators with an agreement for full unbundling in place with the incumbent, though most of these are currently inactive. A total of 137 of the incumbent's lines have been unbundled (most of which are trial lines). There are no shared access agreements in place with the incumbent, nor any agreements for the provision of subloops. The incumbent maintains, in this respect, that there has been no request for shared access or subloops.

The requirement for BT to unbundle the local loop has been inserted in BT's licence through a licence condition which came into effect on 8 August 2000. The licence condition also set out the collocation products that BT must offer and the conditions applying to the supply of collocation products and unbundled local loops, how prices would be set and how disputes could be resolved (it gives the Director General of Telecommunications the power to resolve any issues on which BT and the other operators are unable to agree). In December 2000 BT updated its Reference Offer for unbundled lines and issued two new Reference Offers for shared access and sub-loop unbundling in accordance with the EC Regulation.

As regards pricing, OFTEL has determined key charges, in particular the connection charge and monthly rental of *fully unbundled loops* (December 2000). It has also issued a Determination for corresponding charges for *shared access* (October 2001). In June 2001 OFTEL announced measures reducing operators' installation costs and clarifying BT's provision of facilities. OFTEL has also investigated the costs associated with collocation, which has led to reductions in BT's charges for certain facilities for physical and distant collocation.

Originally a large demand for collocation was expected, and the "Bow Wave" management process was devised in order to determine the order in which BT had to prepare sites for collocation purposes, and also dealt with the allocation of space in cases where there were constraints. In total 741 sites were selected. The Bow Wave process was later suspended since the demand for collocation dropped, and BT confirmed that it could deal with the lower level of demand for collocation on a "business as usual" basis. The first collocation facilities at trial sites were operational in early 2001. Over 100 orders for physical collocation under business as usual had been placed by October 2001. No site has so far been found to be unsuitable for physical collocation. In August 2001 OFTEL announced that it would set the service levels that BT must offer to other operators requesting unbundled local loops and the compensation BT must pay if it fails to achieve those levels. OFTEL is also monitoring the introduction of an automated ordering system for unbundled local loops, due to be operational by November 2001.

In the autumn of 2001 OFTEL will publish a Consultation Document on backhaul services that are used to connect to LLU installations. It will consider whether BT ought to be required to provide certain types of backhaul circuits, and, if so, whether they should be provided at cost-oriented prices.

Regarding pricing, OFTEL has made a Determination on the wholesale price for full unbundled access (fully unbundled access: €16.20 per month; shared access: €7.04 per month) and has also set charges for the cables that connect the loops in exchanges to operators' equipment. The UK Radio communications Agency carried out an auction for 28GHz broadband wireless local loop licences in November 2000. Forty-two licences were offered - three in each of fourteen regions - and sixteen were awarded: three in each of four regions - Greater London, Greater Manchester, West Midlands and Northern Ireland - and a further four licences were awarded in northern England and Scotland. The Government announced in February 2001 proposals for awarding the unsold licences.



## 97. UNIVERSAL SERVICE/CONSUMERS/USERS

BT and Kingston currently have a universal service obligation (USO) under the terms of their licences. OFTEL's position has always been that the costs and benefits of providing universal service are closely matched. In August 2001 OFTEL published a Statement of its Universal Service Policy. The aim is to ensure that the universal service continues to meet the requirements of the Voice Telephony Directive, inter alia in terms of affordability. After examining the costs and benefits of providing universal service the Statement concludes that the burden does not represent an unfair burden at this stage. A number of further actions are outlined in the Statement, inter alia an OFTEL-led initiative to bring together representatives of operators and consumers on disconnections. OFTEL will also monitor and publish data on higher bandwidth services and review the effectiveness of BT's low-cost schemes for users on low incomes and with special needs. OFTEL will also consider its policy for assessing the net cost of USO as part of its review of the retail market.

As described in the Sixth Report, the Director General has a statutory duty under the Telecommunications Act to consider all representations (including consumer complaints about bills) that do not appear to be frivolous. OFTEL's Consumer Representation Section and the Northern Ireland Advisory Committees on Telecommunications perform this duty on the Director General's behalf.

Concerns regarding SIM lock practices (i.e. the practice of locking the handset to the SIM card) have been raised by consumer organisations, regarding in particular the poor quality of information to customers on these matters (e.g. lack of information to consumers that they cannot simply unlock the SIM card and exchange it for another when going abroad for example, and lack of information on procedures for unlocking SIM cards). There have also been concerns about high costs for unlocking SIM cards, and the complicated and often long procedures for unlocking the handset. It is considered that this might constitute barriers to switching operator etc.

OFTEL's statement on competition in the mobile sector of September 2001 concluded that the practice of SIM locking represents a barrier to switching provider, and that this could have an adverse impact on the future competitiveness of the mobile sector. OFTEL had some concerns about low customer awareness of SIM locking practices, poor advice to customers (confirmed in a "mystery shopping" exercise), charges made for unlocking phones and time-scales before handsets can be unlocked. OFTEL's existing guidelines are that SIM locking may be a legitimate practice where, for example, a handset subsidy needs to be protected, but that phones should be unlocked when subsidies are recouped and that charges for unlocking should be closely related to the actual cost of unlocking the phone.

The mobile review conclusions on SIM locking mean that existing guidelines may be amended or replaced, with the aim of removing or reducing the practice of SIM locking in the UK. OFTEL has begun with a co-regulatory approach, seeking to achieve its objective through consensus with mobile operators rather than recourse to formal regulation.

In July 2001 OFTEL published a Statement outlining its proposals for the establishment of an independent Telecommunications Ombudsman. The Ombudsman scheme is designed to be voluntary and to cover both mobile and fixed operators, and is intended to provide a one-stop shop for fair and efficient dispute resolution between members and complainants. The aim is to have a scheme in place in the first half of 2002. OFTEL has welcomed the support for this initiative from industry and consumer groups but made it clear that it will take statutory measures to improve dispute resolution if current implementation plans are not put in place.

OFTEL continues to work with the industry and consumer groups to help raise awareness among consumers of their rights and opportunities in the telecommunications market. OFTEL has inter alia endorsed an independent bill comparison service and continues to support the Comparable Performance Indicators publication, which provides consumers with information on the quality of

service of fixed line telecommunications companies. OFTEL also chairs the Small Business Taskforce aimed at improving the information available to small businesses about telecommunications services and products. In 2000 a task-force initiative led to the launch of an independent advice web-site, which was updated in July 2001, following further input from the taskforce.

## **98. MOBILE SERVICES / frequencies**

New service providers have begun to enter the UK mobile market, and consumers now have the choice of four GSM networks and a range of service providers (both independent and tied to network operators).

The Sixth Report noted that part of the 900 MHz band, which the GSM Directive specifies should be exclusively occupied by GSM according to commercial demand, was still occupied by an analogue system, but that the analogue system was due to be phased out by 2005 at the latest. However, given the decreasing number of customers using the analogue system, these networks are now expected to close shortly.

The UK has allocated five third generation (3G) mobile licences under the Wireless Telegraphy Act by means of an auction, which ended on 27 April 2000, with licences being granted to the four incumbents (BT Cellnet, Vodafone, Orange, One2One) and a new entrant (Hutchison). The auctioned licences cover the 1900-1980 MHz and 2110-2170 MHz bands.

The 3G licences contain an obligation to roll out a 3G network covering an area where at least 80% of the UK population live by 31 December 2007. OFTEL expects that competition will ensure a rapid roll-out of 3G mobile networks, but should an operator fail to roll out a network, the roll-out obligation provides a backstop legal mechanism for revoking the licence.

Two existing second generation (2G) mobile operators, Vodafone and BT Cellnet, agreed to a modification to their Telecommunications Act licences to incorporate a roaming condition, which was triggered when they won a 3G licence. The condition provides for the Director General of Telecommunications to determine a roaming agreement if the parties cannot reach agreement through commercial negotiation. Before the roaming condition is triggered, a new entrant must build out its network to cover 20% of the UK population, and any mandated roaming agreement will last only until 2009. Roaming will enable new entrants to offer 2G services and coverage on a comparable basis to incumbent operators while they roll out their own 3G networks. There is, at present, no mandatory national roaming between 2G mobile operators.

It appears that the roll-out of 3G mobile networks is according to schedule, and that financing is in place to achieve it. However, health and environmental concerns seem to make it difficult for operators to obtain necessary planning permissions, which impacts on their rollout. In particular, there is a very strict planning regime in Scotland which might jeopardise the ability to roll out 3G networks there. There is a condition that 80% of the population must be covered by 31 December 2007, but since this represents only 10% of geographic coverage in the UK it appears unlikely that the need to obtain planning permission will prevent the operators from meeting their roll out obligations.

There are certain concerns about possible network sharing arrangements and that these might restrict competition in services, although it is recognised that it might also result in cost savings that could be passed on to consumers. In May 2001 OFTEL issued an information note on 3G mobile infrastructure sharing, noting the Director General's obligation to encourage infrastructure sharing under the Interconnection Directive. The Statement considers the competition issues that might arise from any infrastructure-sharing arrangement, noting that there might be consumer benefits in terms of faster roll-out or reduced prices, but that there might also be reduced competition in areas such as coverage. OFTEL's view is that any network-sharing arrangement would be covered by UK chapter I competition prohibitions (based on EC Treaty Article 81), and some arrangements could

fall under the EC Merger Regulation. It should be noted that other arrangements may also fall under Regulation 17/62, which implements Article 81. OFTEL's note indicates that it would have no difficulty in principle to agree to a compliant proposal that brings net consumer benefits.

In June 2001 BT Cellnet and One2One announced agreement in principle to an infrastructure sharing arrangement. OFTEL is currently awaiting details to consider any competition issues arising from it.

## **99. TARIFFS**

The Sixth Report noted that tariff re-balancing had been completed, but OFTEL currently states that line rental income is not yet sufficient to cover *fully allocated costs*. However, OFTEL believes that BT's residential line rental charge now covers the *incremental cost* of providing the line.

OFTEL is currently examining the need for further retail price controls on BT. OFTEL's review of 2000 concluded that BT continues to have market power in the provision of residential telephony services, but recognised that if competition were to increase further over the next four years, continuing the controls for the full period could stifle competition in the longer term. OFTEL therefore extended the existing price controls for a further year, but is currently undertaking a full assessment of the need for further retail price controls or other policy measures to consolidate and intensify competition at the retail level.

On the network side OFTEL believes that operators are still reliant on BT to provide connection to, and conveyance over, its network, and announced in February 2001 that network charge controls would continue. These charges were set at rates ranging from RPI minus 13 % to RPI minus 7.5 % for a further four years from October 2001.

## **100. COST ACCOUNTING**

BT has implemented accounting separation (between interconnection and other activities), and its cost accounting system is generally seen as complying with Community law. It is one of the few Member States to have in place a cost-accounting system for interconnection for SMP operators based on forward-looking/current cost (with Long Run Incremental Costs (LRIC) and Fully Distributed Costs (FDC) as cost standard). All BT's accounts are subject to an independent auditor's report and are published in accordance with accounting policies and procedures agreed with OFTEL.

## **101. LEASED LINES**

Some concerns have been expressed about the slow delivery of leased lines. This is often considered worse than high prices since customers can lose confidence in the services offered. OFTEL notes these concerns, but points out that the Commission's latest 2000 Report on Leased Lines Performance shows that the UK performs well compared to other Member States, with delivery times always listed in the top three of all comparative tables. It will nevertheless continue to monitor performance and take corrective action where appropriate.

In November 1999 OFTEL launched a review of the state of competition in the market for national leased lines, prompted by concern about the lack of competition, particularly in the wholesale market. The preliminary conclusions of the review, published in August 2000, were that the market for wholesale terminating segments (lines linking a customer's premises to an operator's trunk network) was not effectively competitive and would not become so in the foreseeable future. The market for retail leased lines was also considered not to be effectively competitive, and OFTEL did not expect it to become so until the lack of effective competition in the market for wholesale terminating segments was remedied.

In the summer of 2000 OFTEL received a request from an operator to require BT to provide wholesale partial private circuits (PPCs) under the Interconnection Directive. This raised issues similar to those in the consultation document. OFTEL issued a Determination, requiring BT to provide PPCs on non-discriminatory terms and at a cost-oriented price and setting a deadline within which BT and other operators should complete negotiations on the provision of wholesale PPCs at all digital bandwidths. OFTEL published its final Determination on 29 March 2001, allowing eight weeks from that date for BT to complete negotiations and a further six weeks to have products available. The negotiations continued right until BT launched PPCs on 1 August 2001. Some issues ranging from specific product requirements (in particular absence of the same product portfolio at wholesale level as at retail level) to aspects of pricing (in particular high one-off fees) and service level agreements, as well as burdensome forecasting requirements, remain unsolved and have been referred to OFTEL for Determination under the Interconnection Directive.

OFTEL will take into account the outcome of the requests for Determination in concluding its competition analysis of the leased lines market. A final Statement will be published in early 2002, setting out OFTEL's conclusions about the extent of competition, and whether there is a need for price controls. OFTEL states that it will continue to monitor the leased lines market closely, looking at performance in *provisioning* of leased lines as well as *pricing*.

In the meantime, wholesale PPCs are now available and, to date, some two thirds (approximately 40 000) of BT's installed base of retail private circuits have been migrated to PPCs. OFTEL indicates that it is possible for some operators using PPCs to make savings in excess of 30% compared to retail prices.

## **102. NUMBERING**

As stated in the Sixth Report, OFTEL has been responsible for managing and allocating numbers since 1994. Any operator, including service providers operating under class licences, may apply to OFTEL for numbers, and operators may also obtain numbers by way of sub-allocation from an individually licensed operator

As noted in the Sixth Report, BT has offered carrier selection, on a call-by-call basis, since 1986, and by July 2001, 204 operators had been issued carrier selection codes. Kingston Communications made CPS available from 1 January 2000. The European Commission granted the UK a deferment of its obligation to require BT to introduce CPS until 1 April 2000. The intention was that by 1 April interim CPS using autodiallers would be available. In March 2000 OFTEL made a Determination on the cost recovery of interim CPS, splitting the costs equally between BT and other operators, to ensure that this deadline was met and to provide sufficient incentive to provide interim CPS. BT appealed against the Determination to the High Court. In August 2000 the High Court ruled in favour of OFTEL on four of the five counts put forward by BT, but ruled that the March Determination should have been based on the costs of "dumb diallers" rather than remotely reprogrammable autodiallers. OFTEL revised its Determination accordingly, whilst ensuring that a significant margin remained to encourage take-up of interim CPS.

Operators have now placed orders for payments for around 500 000 interim CPS autodiallers and four operators are currently using interim CPS to offer the "all calls" option (national, international and local calls and calls to mobile, premium rate, specially tariffed, personal and paging numbers). Since December 2000 permanent (switch-based) CPS is also available for national and international calls, and in July 2001 seven operators were using permanent CPS to offer national and international calls. It is intended that permanent CPS will be available for all calls (including local calls and mobile) by December 2001. The uptake of interim CPS, with 500 000 autodiallers, appears quite successful, whereas the introduction of permanent CPS appears to have a more limited effect initially. It is expected that, once permanent CPS for all calls is available at the end of 2001, operators and consumers will be more interested.

Concerns have, however, been expressed about the exclusion of directory enquiry calls from the “all calls” option for CPS unless a carrier selection code was dialled first. OFTEL has stated that the reason for not including directory enquiry services in the “all calls” option was in order not to pre-empt a consultation it has been carrying out on the future of access codes for directory enquiry services. In September 2001 OFTEL issued a Statement on competition in directory enquiry services, setting out its proposals for liberalisation of directory enquiry services with the aim of enabling market entry for a wide range of service providers behind the 118XX code, thereby allowing a broader choice for consumers. OFTEL is now proposing further consultations on the inclusion of directory enquiry calls within the CPS "all calls" option as part of the transition to the new directory enquiry arrangements set out in its Statement of September 2001.

As noted in the Sixth Report, the UK implemented geographic fixed-line number portability in 1996, and non-geographic fixed-line number portability in 1997. More than a million geographic numbers have been ported since 1996 and more than 100 000 non-geographic numbers since 1997. Mobile number portability has been offered since January 1999, and since then over a million customers have ported their numbers when changing operator, and the trend is increasing. Subscriber-driven fixed-line number portability has been offered since January 2000.

OFTEL monitors the progress of fixed number portability mainly through quarterly surveys (residential and SMEs) of switching behaviour and porting. In the summer of 2001 over half of those switching fixed suppliers ported their numbers. Of those who did not, there are indications that a significant number of customers were informed that they could not port their numbers. Therefore in July 2001 OFTEL published a Statement of compliance highlighting areas of concerns. OFTEL has also published a consultation on revisions to the Number Portability Functional Specification, which covers the scope and technical arrangements for UK portability. In October 2001 OFTEL issued a Consultation Document on new charges for BT's fixed portability services (both geographic and non-geographic numbers), based on LRIC.

In the case of mobile number portability OFTEL also monitors performance using quarterly switching surveys. The proportion of porting of mobile numbers is much lower than for fixed numbers; just over 10% of those who switch. Process issues seemed to be the main barrier, whereby customers appeared to be told that they could not port. As a result OFTEL commissioned an exercise to identify what information customers were receiving when approaching mobile suppliers regarding porting. The exercise showed that the quality of advice on the process for mobile number portability was very poor. OFTEL asked mobile operators to review their practices in the light of this worrying finding. In October 2001 the operators put in place a new electronic porting process, which will reduce the time taken for customers to port numbers from around 25 days to 5 days.

### **103. RIGHTS OF WAY**

Telecommunications in the UK have (for most apparatus in most areas of the land) “fast track access” for planning consents from local authorities. The Telecommunications Code (schedule II to the Telecommunications Act 1984) applies to operators constructing their own systems on the grant of their licence. This gives them rights and obligations connected with installation and maintenance of their equipment on public and private land. These rights are equal for all designated operators. Depending on the apparatus installed requirements vary from notification to the local authority to the requirement for full planning permission.

Operators do not currently pay to operate on the highway, although penalty charges for over-lengthy work is being introduced.

All operators are encouraged to collocate or share installations wherever possible and appropriate. This is particularly true of mobile operators who often use masts to install their network equipment. As part of its response to a government consultation on planning, the mobile industry agreed to

improve the process for the sharing of masts between themselves and others, such as broadcasters, who also use masts for the installation of infrastructure.

The Sixth Report concluded that the legislation on access to public and private land did not appear to pose any major problems; that the Code Powers (which give operators the right to install facilities with the owner's agreement) appeared to be working well; and that OFTEL actively encouraged the sharing of facilities, especially masts and ducts, but only when passing into or across private land or in restricted situations such as bridges.

#### **104. DATA PROTECTION**

As noted in the Sixth Report, the Information Commissioner (previously known as the Data Protection Commissioner) has responsibility for enforcement of both general data protection enactments and those specific to the telecommunications sector. OFTEL also has certain responsibilities in relation to data protection in the telecommunications sector.

The UK transposed the Telecommunications Data Protection Directive (Directive 97/66/EC) in a number of stages. Most provisions (including those on unsolicited direct marketing by phone and fax) were transposed under the Telecommunications (Data Protection and Privacy) Regulations 1999, which replaced earlier interim Regulations, and came into force in March 2000. The final stage related to Article 5, which was transposed under Part 1 of the Regulation of Investigatory Powers Act, which came into force in October 2000. In the UK, the provisions on interception of communications for the purposes of providing evidence of a commercial transaction or other business communication have been transposed through the Lawful Business Practice Regulations 2000, which came into effect on 24 October 2000.

As regards security, the UK regulations require service providers to take the appropriate technical and organisational measures to protect the security of their services, if necessary in conjunction with the relevant network provider. Service providers are only required to take measures that are proportionate to the risks involved, taking into account technological and cost factors. Concerning the processing of traffic data, the UK regulations provide that personal data in respect of traffic handled by the telecommunications network provider/service provider, which is processed to secure the connection of a call, must be erased upon termination of the call, except where needed for billing and certain other specified purposes. For the purposes of subscriber billing and interconnection payments, data may be processed until the expiry of the period during which legal proceedings may be brought in respect of payments due. Data may be processed by the telecommunications service provider for the purposes of marketing its own services only if the subscriber has given his consent.

#### **105. INTERNET**

Internet penetration is relatively high, with 46.5% of households connected to the internet (most of them having a PSTN dial-up internet connection). Internet traffic now accounts for over a third of all call minutes originating on the PSTN. There are currently more than 400 internet service providers (ISPs). The incumbent offers internet services via BT Click and BT Internet. However, unlike most other Member States, the ISPs related to the incumbent do not have a particularly strong market position, only around 15 % of the overall market, in terms of residential subscribers.

40% of internet homes currently use unmetered (flat-rate) packages. OFTEL considers that the increased availability of unmetered (flat-rate) access packages has encouraged greater internet use. Market research from May 2001 showed that households then spent on average 8 hours per week on-line, compared with 6 hours a week a year earlier.

In July 2001 OFTEL published a Consultation Document on the level of competition in dial-up narrowband internet access. The document set out OFTEL's initial conclusions about the state of competition in three markets: dial-up narrowband retail internet access, wholesale call-origination

and wholesale internet call termination. OFTEL's initial conclusions are that competition is already effective in the retail and wholesale internet call termination markets. While wholesale call-origination is not yet effectively competitive, there is already regulation in place to address this in the form of a cap on BT's charges and the FRIACO (Flat Rate Internet Access Call Origination) Directions. OFTEL's final Statement on the dial-up internet access market will be published in early 2002.

As noted in the Sixth Report, in March 2000 BT presented an unmetered tariff package, SurfTime, which it intended to offer to the public from 1 June 2000, and in the Spring of 2000 a similar offering came from NTL. Both packages include unmetered access options for a fixed monthly fee, alongside cheaper pay-as-you-go prices. OFTEL was concerned that similar products should be rapidly offered on the wholesale market to ensure customer benefit and effective competition. Following a complaint, in May 2000 OFTEL made a Determination requiring BT to make available a wholesale unmetered internet access service (FRIACO) to enable other operators to offer their own unmetered internet access products and compete effectively with SurfTime. BT was required to provide FRIACO at the local exchange level. The Determination was made in response to a complaint from an operator who had approached BT with a proposal for a wholesale unmetered interconnection product. Since June 2000 BT has complied with the Direction and has offered the DLE FRIACO product from the local exchange, although some new entrants consider it quite expensive but have not informed OFTEL about their concern. In February 2001 OFTEL made a new Determination requiring BT to provide FRIACO at the trunk exchange level (ST FRIACO - singel tandem FRIACO). In order to avoid overloading BT's trunk network special measures will apply for a period of time (until January 2003), limiting the amount of traffic that BT is required to carry.

#### **106. directive 95/47/Ec**

OFTEL is responsible for verifying the implementation of Directive 95/47/EC, and the ITC (Independent Television Commission) is responsible for licensing and regulating commercial television in the UK.

Directive 95/47/EC has been transposed through the Advanced Television Services Regulations 1996, which were revised in 1999, and the Conditional Access Class Licences of August 1999 (which is a general authorisation in EC terminology and is issued under the Telecommunications Act 1984). The Regulations allow interested parties to take grievances directly to Court or to OFTEL, but so far no interested party has done either.

The Conditional Access Class Licence can also cover access to Electronic Programme Guide (EPG), and in certain instances OFTEL and the ITC co-regulate EPGs. OFTEL and the ITC have handled one formal complaint concerning the application of BSkyB's EPG listing criteria. OFTEL has not received any formal complaints regarding conditional access pricing, but has, however, closely monitored negotiations between conditional access providers and Pay Per View Broadcasters and Public Service Broadcasters. In October 2001, OFTEL published a Consultation Document setting out proposals on its future policy regarding conditional access pricing.

In the UK an "Access Control" regime applies, which allows OFTEL to regulate those services which control end-users' access to certain other digital services, inter alia interactive services. The regime consists, in addition to the Access Control Class Licence, of a market power trigger. In this context in June 2000 BSkyB was deemed to be "Regulated Supplier" of Access Control Services (on the satellite platform). There are four market players on the current Digital TV market: BSkyB 5.3 million subscribers (in June 2001), ITV Digital 1 217 000 subscribers (in September 2001), NTL 1 000 000 subscribers (in August 2001 and Telewest 564 000 subscribers (in June 2001). Recent OFTEL figures indicate that over a third of UK households now have access to digital television. ITV Digital, BSkyB, NTL and Telewest utilise different conditional access systems, but consumer switching costs are minimised by set-top boxes being given away for free to consumers.

ITV Digital was required (under its ITC licence) to produce a Conditional Access Module (CAM), but volunteered to do so anyway. BSkyB has not yet produced any Conditional Access Module (CAM), and has no intention of doing so, currently.

No simulcrypt arrangements have been struck.

As regards IDTV “standardised socket”, following work by OFTEL and the ITC, UK Regulations were revised in June 1999, to confirm that IDTV “standardised socket” was Common Interface.





## Annex 4

List of operators, associations and organisations involved in the preparation and hearings for the seventh report

|                       |  |   |   |
|-----------------------|--|---|---|
| <b><u>BELGIUM</u></b> | <b>Belgacom</b><br><b>BELTUG</b><br><b>ISPA Belgium</b><br><b>Test-Achats</b>  |   |   |
|                       | <b>Platform Telecom</b><br><b>Operators &amp; Service Providers:</b><br>A.S.T.R.I.D<br>Brutele S.C.<br>B-Telecom<br>BT Ignite<br>Cable & Wireless Global Belgium<br>Codenet  | Colt Telecom<br>Global Crossing België<br>Global One Communications nv/sa<br>Interoute Belgium<br>KPN Belgium nv<br>KPN Orange Belgium<br>KPN Ram Mobile Data Belgium<br>Level 3 Communications | Mobistar<br>Mobistar Affiliate nv (Debitel)<br>RSL COM Belgium<br>Telenet Operaties<br>UPC Belgium<br>Ventelo Belgium<br>Versatel Telecom Belgium<br>Worldcom Belux |
| <b><u>DENMARK</u></b> | <b>COLT Telecom</b><br><b>Danish Consumer Council (Forbrugerrådet)</b><br><b>Danish Telecommunication Industries Association</b><br><b>Dansk Dataforening (User Group)</b><br><b>INTUG</b><br><b>Motorola</b><br><b>Orange</b><br><b>Sonofon</b><br><b>TDC</b><br><b>Tele2</b><br><b>Telia Denmark</b><br><b>WorldCom Telecommunications</b> |   |   |

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| <b><u>GERMANY</u></b> | <b>Deutsche Telekom AG</b><br><b>Tele2</b><br><b>AgV, Arbeitsgemeinschaft der Verbraucherverbände (AgV)</b>   |  |   |
|                       | <b>ANGA, Verband Privater Kabelnetzbetreiber e.V.</b><br>antennen electronic braun<br>Antennen Electronic Ing. R. Plückhahn<br><a href="#">ANTEC Betriebsgesellschaft für Kommunikationsanlagen</a><br>Antennen Elektroniksysteme<br>Elektrotechnik Schmidt<br>Antennentechnik Weser-Ems<br>Bayerische Antennenberatung<br>bk-tel Breitband- und Telekommunikationssysteme<br>BNMG Brandenburgische Netz- und Media-Service<br>Bollhorn<br><a href="#">Bosch Telecom</a><br><a href="#">Brandenburgische Kabel- und Antennenvertriebsgesellschaft</a><br>Brockmeyer & Co. KG<br>BTV Jena<br><a href="#">Cablecom Holding</a><br>Citykom Münster<br><a href="#">Concepta Kommunikationstechnik</a><br>Digitale Telekabel<br><a href="#">DiTRA Gesellschaft für Kabelnetze und Telekommunikation</a><br>E. Erbach Telekommunikations<br>Elektro Schwarzkopf Service + Anlagenbau<br>Elektro Wienholt + Horstmann<br><a href="#">EWT Communications</a><br><a href="#">ewt elektro- und nachrichtentechnik gmbh</a><br>Fernseh-Elektornik Heinloth<br>Gemeinde Finsing | Gesellschaft für Rundfunkversorgung<br><a href="#">GELSEN-NET Kommunikationsgesellschaft</a><br>Hohenstein-Ernstthaler-Kabelservice-<br>Holtschneider - Mietantennen & Co. KG<br>isis Multimedia Net & Co. KG<br>Kabel Plus Gesellschaft für Kabel- und Satellitenfernsehen<br>Kabel-Service-Bad Doberan<br>Kabelcom Rheinessen<br><a href="#">KABELCOM Braunschweig</a><br>Kabel-TV Medien-Service-Gesellschaft<br>Kabelprofi Gesellschaft zur Vermarktung von Kabelnetzen<br><a href="#">KEVAG Telekom</a><br><a href="#">KfGW-Kabelfernsehen für Groß-Gerau Weiterstadt- &amp; Co. KG</a><br><a href="#">KFS Kabelfernsehen Stuttgart</a><br>KK Kabelnetz Kiel & Co. KG<br><a href="#">KMG Kabel-Fernsehen Hannover</a><br>KOMRO Gesellschaft für Telekommunikation<br>KRW TelNet<br>Telekommunikationsdienstleistung en<br>KSG Kabel-Service-Gesellschaft des Handwerks<br>Lehmensiek<br>LKG Lausitzer<br>Kabelbetriebsgesellschaft<br>Magdeburg City-Com<br><a href="#">Marienfeld MultiMedia</a><br><a href="#">Martens Antennen- und Kabelanlagen Gesellschaft</a><br>MediaRent<br>MKS MediaKom Service | Möller-Antennenvermietung-<br>Rötgesbüttel<br><a href="#">NEFkom Telekommunikation &amp; Co. KG</a><br>NetCologne Gesellschaft für Telekommunikation<br><a href="#">Neuberger Nachrichten- und Antennentechnik</a><br><a href="#">Neubrandenburger Medianet KFA</a><br>Neumeier, Hegmann & Co.<br>Ost Telekommunikations<br>PentaKom Penta Kommunikations Systeme<br>Pieper & Partner<br>Radio-, Fernseh- und Computertechnik<br><a href="#">RFT radio-television Brandenburg</a><br><a href="#">RKS TELECOM Südwest</a><br>SAT-Direkt<br>Schneider Antennenvermietung<br>Sumpman Elektrotechnik<br><a href="#">Tele Columbus</a><br>Telekabel Nord<br>TeleNEC Telekommunikation<br>Neustadt & Co. KG<br>Thiele Kommunikationstechnik<br><a href="#">tss telekabel service süd</a><br><a href="#">URBANA Telekommunikation</a><br><a href="#">URBANA Teleunion Rostock &amp; Co.</a><br><a href="#">Sachse Kabelservice</a><br><a href="#">Uwe Rehnig B-A-K</a><br><a href="#">ÜWU Mediendienste</a><br>Ver.Di neue Medien<br>Vogtländische Kommunikations- und Entwicklungs<br>Wärme- und Dienstleistungsgesellschaft<br>wilhelm.tel<br>Gerhard Ziegelmeier jun. |
|                       | <b>BREKO, Bundesverband der regionalen und lokalen Telekommunikationsgesellschaften</b><br>Accom<br>Alcatel SEL<br>AugustaKom<br>BCC<br>BerliKomm<br>BITel<br>BreisNet<br>Broadnet<br>Citykom Münster<br>CNE<br>DeTeWe<br>Deutsche LANDTEL<br>DOKOM<br>Energis-ISION  | ENKom<br>EWE TEL<br>FirstMark Hamcom<br>HEAG<br>HL komm<br>Hannoversche<br>Telekommunikations-und<br>Netzgesellschaft<br>Hannovers Telefon Partner<br>ISIS<br>jetz!<br>KEVAG<br>KielNET<br>KomTel<br>LEWTELNet<br>Magdeburg-City-Com<br>MAINZ-KOM<br>MEOCOM<br>MK-Net  | M"net<br>NEFkom NetCologne<br>Netcom<br>nordCom<br>osnatel<br>PANDATEL<br>pulsaar<br>Siemens AG<br>3T<br>TeleBeL<br>TeleNEC<br>Téleos<br>Teliko<br>Telsis<br>TMR<br>WiCOM<br>WOBKOM<br>wücom  |
|                       | <b>EuroIspa Telecom e.V.</b>  |  |   |

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|----------------------|---|--|---|
|                      | <b>VATM (Verband der Anbieter von Telekommunikations- und Mehrwertdiensten)</b><br><a href="#">AOL Deutschland GmbH</a><br><a href="#">Arcor AG &amp; Co.</a><br><a href="#">Atlantic Telecom GmbH</a><br><a href="#">Broadnet Deutschland GmbH</a><br><a href="#">BT Telecom Deutschland GmbH</a><br><a href="#">Cable &amp; Wireless Deutschland GmbH</a><br><a href="#">Carrier 1 AG</a><br><a href="#">COLT Telecom GmbH</a><br><a href="#">Completel GmbH</a><br><a href="#">Conos AG</a><br><a href="#">debitel AG</a><br><a href="#">D Plus Telecommunications GmbH</a><br><a href="#">Drillisch AG</a><br><a href="#">E-Plus Mobilfunk GmbH &amp; Co KG</a><br><a href="#">Energis GmbH</a><br><a href="#">envia.tel GmbH</a><br><a href="#">European Telecommunication Holding E.T.H. AG</a><br><a href="#">EWE TEL GmbH</a> | <a href="#">HanseNet Telekommunikation GmbH</a><br><a href="#">Hermes Europe Railtel</a><br><a href="#">Hutchison Telecom GmbH</a><br><a href="#">Interoute Telecom Deutschland GmbH</a><br><a href="#">isis Multimedia Net GmbH</a><br><a href="#">KKF.net AG</a><br><a href="#">Level 3 Communications GmbH</a><br><a href="#">Lycos Europe GmbH</a><br><a href="#">MCI WorldCom Deutschland GmbH</a><br><a href="#">mcn tele.com AG</a><br><a href="#">mediaWays GmbH Internet Services</a><br><a href="#">MobilCom AG</a><br><a href="#">Netcologne GmbH</a><br><a href="#">net mobile AG</a><br><a href="#">NETZTEL Plus AG</a><br><a href="#">Nextra Deutschland GmbH &amp; Co. KG</a> | <a href="#">One.Tel GmbH</a><br><a href="#">QSC AG</a><br><a href="#">Quam Group 3G UMTS GmbH</a><br><a href="#">riodata GmbH</a><br><a href="#">RSL.COM Deutschland GmbH</a><br><a href="#">STAR 21 NETWORKS</a><br><a href="#">Aktiengesellschaft</a><br><a href="#">Talkline GmbH</a><br><a href="#">Talkline Infodienste GmbH</a><br><a href="#">Tangens GmbH</a><br><a href="#">Telegate AG</a><br><a href="#">Teleglobe GmbH</a><br><a href="#">Telia Telekommunikations GmbH (tesion)) Kommunikationsnetze</a><br><a href="#">Südwest GmbH &amp; Co. KG</a><br><a href="#">Tropolys GmbH</a><br><a href="#">Ventelo Deutschland GmbH</a><br><a href="#">Versatel Deutschland GmbH &amp; Co KG</a><br><a href="#">Viatel GmbH</a><br><a href="#">Victorvox AG</a> |
| <b><u>GREECE</u></b> | <b>Cosmote Mobile Telecommunications</b><br><b>Ergodata</b><br><b>Exonet</b><br><b>Forthnet</b><br><b>Grape Hellas</b><br><b>Greek Telecom</b><br><b>Lannet</b><br><b>NetMed</b><br><b>OTE</b><br><b>Panafon</b><br><b>Quest Wireless</b><br><b>Silk Route Holding</b><br><b>Starcom</b><br><b>STET Hellas</b><br><b>Tycon</b>  |  |   |
| <b><u>SPAIN</u></b>  | <b>ANIEL (Asociación Nacional de Industrias Electrónicas y de Telecomunicaciones):</b><br><a href="#">Abrared</a> ,<br><a href="#">Airtel Movil</a><br>Atos ODS Origin<br>Alarcos Telecomunicaciones<br><a href="#">Cable &amp; Wireless</a><br>(Menta) Cable i Televisio de Catalunya,<br><a href="#">Correos Telecom</a> .  | Difusio Digital Societat de Telecomunicacions<br>Ebony Spain<br><a href="#">Euskaltel</a> ,<br><a href="#">Global Crossing</a> España<br><a href="#">Hispasat</a><br><a href="#">Infoglobal</a> ,<br>Jazz Telecom<br><a href="#">KPNqwest España</a> ,<br>Lleida Networks Serveis<br>Telematics<br><a href="#">Madritel</a>  | R. <a href="#">Cable y Telecoms Galicia</a> ,<br>Red Electrica Telecom.<br>Retevision I<br>Retevision Movil<br>Skypoint<br>Supercable Andalucia<br>Teledesic Communication Spain<br>Telefonica Data<br>Telefonica Cable<br>Telefonica España<br>Telefonica Moviles<br>Telefonica Sistemas<br>Telia Iberia   |
|                      | <b>ASTEL (Asociación de Empresas Operadoras y de Servicios de Telecomunicaciones):</b><br>Airtel Móvil,<br>Amena- Retevisión Móvil,<br>ALO Comunicaciones<br>Al-pi (Catalana de Comunicaciones)<br>ATT Global Network Services<br>AVIRON Router   | AXS Telecom España,<br>BT Telecomunicaciones,<br>Cableuropa,-ONO<br>Cable & Wireless<br>Capcom International,<br>Colt Telecom España.<br>Comunitel Global ,<br>Grupo Comytel (Imadile,)<br>Euskaltel,<br>FaciliCom International,<br>FirstMark   | Global-One,<br>GTS<br>Interoute Telecomunicaciones<br>Jazztel,LCR Telecom (Grupo Primus)<br>Lince Comunicaciones, UNI2<br>Madritel Comunicaciones,<br>Priority Telecom,.<br>Retevisión,<br>SITA-EQUANT<br>TeleChoice España,.<br>Viatel Global Communications,  |
|                      | <b>Telefónica</b>   |  |   |

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| <b><u>FRANCE</u></b>  | <b>AFORS (Assoc. Française des Opérateurs Réseaux et Services de Télécommunications):</b><br>9 Telecom Réseau<br>AT&T<br>Bouygues Telecom<br>British Telecom (BT)<br>Cable & Wireless<br>Carrier 1<br>Cegetel<br>Colt<br>Completel, Easynet | Free Telecom<br>FirstMark Communications France<br>E-Bone<br>Global Crossing<br>Kaptech<br>Kertel<br>LD Com<br>Liberty Surf Telecom<br>NC Numéricable | Noos<br>Omnicom<br>SFR<br>Siris<br>SRR<br>Télécom Développement<br>Telia<br>UPC France<br>WorldCom          |
|                       | <b>AFORM (Assoc. Française des Opérateurs Réseaux Multiservices) :</b><br>EST Videocommunication<br>FirstMark Communications France   | France Telecomcable NC<br>Numericable<br>NOOS<br>NTL France<br>SCGS   | UEM<br>UPC France<br>Valvision<br>Vialis<br>World Satellite Guadelope                                       |
|                       | <b>AFA (Assoc. des Fournisseurs d'Accès et de Services Internet)</b><br>6e Sense<br>9 Telecom<br>AOL France<br>Business-Village<br>Chello France<br>Club-Internet<br>Colt   | Free<br>Freesbee<br>Infonie<br>Isdnet InterPC<br>Jet Multimedia<br>Kertel<br>Libertysurf<br>Lokace<br>Magic Online<br>Multimania                      | Nomade.FR<br>Noos<br>Respublica.FR<br>Voila<br>Wanadoo<br>WorldCom<br>World Online France<br>Yahoo ! France |
|                       | <b>France Telecom<br/>Tele2<br/>IS Production<br/>UFC Que Choisir</b>   |   |   |
| <b><u>IRELAND</u></b> | <b>ALTO (Assoc. of Licensed Telecommunications Operators):</b><br>Cable & Wireless<br>Chorus<br>COLT  | Conduit<br>Esat Telecom<br>Fusion (formerly OCEAN)<br>GTS<br>Interoute  | Meteor<br>Nevada (formerly Stentor)<br>NTL<br>Swiftcall<br>Worldcom   |
|                       | <b>Eircom<br/>IBEC (Telecoms &amp; Internet Federation)<br/>Eircell<br/>Esat Digifone<br/>Irish Internet Assoc.</b>   |   |   |

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|--------------------------|--|
| <b><u>ITALY</u></b>      | <b>Adriacom</b><br><b>AIIP (Associazione Italiana Internet Providers)</b><br><b>Albacom</b><br><b>ANUIT (Associazione Nazionale Utenti Italiani di Telecomunicazioni)</b><br><b>Atlanet</b><br><b>Blixer</b><br><b>BLU</b><br><b>Cable &amp; Wireless Italy</b><br><b>Colt</b><br><b>e-Biscom</b><br><b>Edisontel</b><br><b>e-planet</b><br><b>Fastweb</b><br><b>Global One</b><br><b>H3G</b><br><b>Infostrada</b><br><b>ISPE 2000</b><br><b>Kpn Qwest Italia</b><br><b>Lombardiacom</b><br><b>MCI WorldCom</b><br><b>Netchemya</b><br><b>Netscalibur</b><br><b>Nodalis</b><br><b>Noicom</b><br><b>Omnitel – Vodafone</b><br><b>Peppercom</b><br><b>Serenacom</b><br><b>Stream</b><br><b>Telcom 3</b><br><b>Tele+</b><br><b>Telecom Italia</b><br><b>Telespazio</b><br><b>Teti</b><br><b>Tibercom</b><br><b>TIM</b><br><b>Tiscali</b><br><b>Wind</b> |
| <b><u>LUXEMBOURG</u></b> | <b>BT-Ignite</b><br><b>Cegecom</b><br><b>Codenet</b><br><b>EPT Lux</b><br><b>HappyCom</b><br><b>Luxembourg Online</b><br><b>Tele2/ Tango</b><br><b>WorldCom</b>  |

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| <p><b><u>THE</u></b><br/><b><u>NETHERLANDS</u></b></p>   | <p><b>ACT</b><br/><b>Atlantic Telecom</b><br/><b>BBNED</b><br/><b>Ebone</b><br/><b>KPN</b><br/><b>Libertel</b><br/><b>NLIP</b><br/><b>Novaxess</b><br/><b>Priority Telecom</b><br/><b>Telfort</b><br/><b>Vecai</b><br/><b>Versatel</b></p>  |  |  |  |  |  |
| <p><b><u>AUSTRIA</u></b></p>   | <p><b>Arbeiterkammer</b><br/><b>ISPA Austria</b><br/><b>Telecom Austria</b><br/><b>Wirtschaftskammer Österreich</b></p> <table border="1" data-bbox="409 695 1344 968"> <tr> <td data-bbox="409 695 716 968"> <p><b>VAT (Verband Alternativer Telekomnetzbetreiber):</b><br/>3G Mobile Telecommunications Callino GmbH<br/>Colt Telecom Austria GmbH<br/>Connect Austria<br/>Gesellschaft für Telekommunikation GmbH<br/>EconoPhone GmbH<br/>eTel Austria AG</p> </td> <td data-bbox="722 695 1029 968"> <p>European Telecom International<br/>AG Global One<br/>Telekommunikationsdienste GmbH<br/>Hutchinson 3G Austria GmbH<br/>Kabelfunk Rundfunk-<br/>Vermittlungsanlagen AG<br/>LIWEST Kabelmedien GmbH<br/>master-talk Austria Telekom<br/>Service GmbH</p> </td> <td data-bbox="1036 695 1344 968"> <p>max.mobil. Telekommunikation Service GmbH<br/>MCI WorldCom Austria GmbH<br/>Tele2 Telecommunication Services GmbH<br/>Telekabel Wien GmbH<br/>tele.ring Telekom Service GmbH<br/>UTA Telekom AG</p> </td> </tr> </table>   |  |  | <p><b>VAT (Verband Alternativer Telekomnetzbetreiber):</b><br/>3G Mobile Telecommunications Callino GmbH<br/>Colt Telecom Austria GmbH<br/>Connect Austria<br/>Gesellschaft für Telekommunikation GmbH<br/>EconoPhone GmbH<br/>eTel Austria AG</p> | <p>European Telecom International<br/>AG Global One<br/>Telekommunikationsdienste GmbH<br/>Hutchinson 3G Austria GmbH<br/>Kabelfunk Rundfunk-<br/>Vermittlungsanlagen AG<br/>LIWEST Kabelmedien GmbH<br/>master-talk Austria Telekom<br/>Service GmbH</p>  | <p>max.mobil. Telekommunikation Service GmbH<br/>MCI WorldCom Austria GmbH<br/>Tele2 Telecommunication Services GmbH<br/>Telekabel Wien GmbH<br/>tele.ring Telekom Service GmbH<br/>UTA Telekom AG</p>   |
| <p><b>VAT (Verband Alternativer Telekomnetzbetreiber):</b><br/>3G Mobile Telecommunications Callino GmbH<br/>Colt Telecom Austria GmbH<br/>Connect Austria<br/>Gesellschaft für Telekommunikation GmbH<br/>EconoPhone GmbH<br/>eTel Austria AG</p> | <p>European Telecom International<br/>AG Global One<br/>Telekommunikationsdienste GmbH<br/>Hutchinson 3G Austria GmbH<br/>Kabelfunk Rundfunk-<br/>Vermittlungsanlagen AG<br/>LIWEST Kabelmedien GmbH<br/>master-talk Austria Telekom<br/>Service GmbH</p>   | <p>max.mobil. Telekommunikation Service GmbH<br/>MCI WorldCom Austria GmbH<br/>Tele2 Telecommunication Services GmbH<br/>Telekabel Wien GmbH<br/>tele.ring Telekom Service GmbH<br/>UTA Telekom AG</p>   |  |  |  |  |
| <p><b><u>PORTUGAL</u></b></p>  | <p><b>APRITEL (Assoc. dos Operadores Privados de Telecomunicações):</b><br/>Cabovisão, Televisão por Cabo, S.A.<br/>CATVP - TV Cabo Portugal, S.A.<br/>Eastécnica- Electrónica e Técnica, Lda.<br/>HLC, Telecomunicações e Multimédia, S.A.<br/>Interoute, Comunicações Digitais, S.A.<br/>JazzTel Portugal, Serviços de Telecomunicações, S.A</p> <table border="1" data-bbox="409 976 1344 1312"> <tr> <td data-bbox="409 976 716 1312"> <p><b>Portugal Telecom</b></p> </td> <td data-bbox="722 976 1029 1312"> <p>Maxitel, Serviços de Gestão de Telecomunicações, S.A.<br/>Onitelem- Infocomunicações, S.A.<br/>Optimus Telecomunicações, S.A.<br/>PT-Prime, Soluções Empresariais de Telecomunicações e Sistemas, S.A.<br/>Repart- Sistemas de Comunicações de Recursos Partilhados, S.A<br/>SITA- Société Internationale de Telecommunications Aeronautiques</p> </td> <td data-bbox="1036 976 1344 1312"> <p>Sonae, Rede de Dados, S.A.<br/>Telecel, Comunicações Pessoais, S.A.<br/>Telepac, Comunicações Interactivas, S.A.<br/>Televoz, Consultadoria em Difusão, S.A.<br/>Teleweb, Comunicações Interactivas, S.A.<br/>TMN, Telecomunicações Móveis Nacionais, S.A</p> </td> </tr> </table> |  |  | <p><b>Portugal Telecom</b></p>   | <p>Maxitel, Serviços de Gestão de Telecomunicações, S.A.<br/>Onitelem- Infocomunicações, S.A.<br/>Optimus Telecomunicações, S.A.<br/>PT-Prime, Soluções Empresariais de Telecomunicações e Sistemas, S.A.<br/>Repart- Sistemas de Comunicações de Recursos Partilhados, S.A<br/>SITA- Société Internationale de Telecommunications Aeronautiques</p> | <p>Sonae, Rede de Dados, S.A.<br/>Telecel, Comunicações Pessoais, S.A.<br/>Telepac, Comunicações Interactivas, S.A.<br/>Televoz, Consultadoria em Difusão, S.A.<br/>Teleweb, Comunicações Interactivas, S.A.<br/>TMN, Telecomunicações Móveis Nacionais, S.A</p> |
| <p><b>Portugal Telecom</b></p>   | <p>Maxitel, Serviços de Gestão de Telecomunicações, S.A.<br/>Onitelem- Infocomunicações, S.A.<br/>Optimus Telecomunicações, S.A.<br/>PT-Prime, Soluções Empresariais de Telecomunicações e Sistemas, S.A.<br/>Repart- Sistemas de Comunicações de Recursos Partilhados, S.A<br/>SITA- Société Internationale de Telecommunications Aeronautiques</p>  | <p>Sonae, Rede de Dados, S.A.<br/>Telecel, Comunicações Pessoais, S.A.<br/>Telepac, Comunicações Interactivas, S.A.<br/>Televoz, Consultadoria em Difusão, S.A.<br/>Teleweb, Comunicações Interactivas, S.A.<br/>TMN, Telecomunicações Móveis Nacionais, S.A</p> |  |  |  |  |
| <p><b><u>FINLAND</u></b></p>   | <table border="1" data-bbox="409 1354 1344 1627"> <tr> <td data-bbox="409 1354 716 1627"> <p><b>FiCom (The Finnish Federation for Communications and Teleinformatics)</b><br/>Alcatel<br/>Alma media<br/>Digita<br/>Elisa<br/>Finnnet<br/>H.P. invernt<br/>Innovative ideas</p> </td> <td data-bbox="722 1354 1029 1627"> <p>Finnnet liitto<br/>Jippii !!<br/>KPN Qwest KSP<br/>Ericsson<br/>Lounet<br/>NS<br/>NK cables<br/>Omnitele<br/>Raittelia<br/>Reiniko<br/>Riihimänen Puhelin</p> </td> <td data-bbox="1036 1354 1344 1627"> <p>RSLCOM<br/>Scando Siemens<br/>Sito konsult<br/>Sonera<br/>Son Networks<br/>Soon communications<br/>Posti<br/>Telenordia<br/>Telia mobile<br/>Tikka com<br/>VK</p> </td> </tr> </table> <p><b><u><a href="#">KK – Kuluttajat-Konsumenterna ry</a></u></b><br/><b><u><a href="#">Radiolinja</a></u></b><br/><b><u><a href="#">SK - Suomen Kuluttajaliitto, Kuluttajavirasto</a></u></b><br/><b>Sonera</b><br/><b>Tele2</b><br/><b>Telia Finland</b></p>  |  |  | <p><b>FiCom (The Finnish Federation for Communications and Teleinformatics)</b><br/>Alcatel<br/>Alma media<br/>Digita<br/>Elisa<br/>Finnnet<br/>H.P. invernt<br/>Innovative ideas</p>  | <p>Finnnet liitto<br/>Jippii !!<br/>KPN Qwest KSP<br/>Ericsson<br/>Lounet<br/>NS<br/>NK cables<br/>Omnitele<br/>Raittelia<br/>Reiniko<br/>Riihimänen Puhelin</p>   | <p>RSLCOM<br/>Scando Siemens<br/>Sito konsult<br/>Sonera<br/>Son Networks<br/>Soon communications<br/>Posti<br/>Telenordia<br/>Telia mobile<br/>Tikka com<br/>VK</p>   |
| <p><b>FiCom (The Finnish Federation for Communications and Teleinformatics)</b><br/>Alcatel<br/>Alma media<br/>Digita<br/>Elisa<br/>Finnnet<br/>H.P. invernt<br/>Innovative ideas</p>  | <p>Finnnet liitto<br/>Jippii !!<br/>KPN Qwest KSP<br/>Ericsson<br/>Lounet<br/>NS<br/>NK cables<br/>Omnitele<br/>Raittelia<br/>Reiniko<br/>Riihimänen Puhelin</p>  | <p>RSLCOM<br/>Scando Siemens<br/>Sito konsult<br/>Sonera<br/>Son Networks<br/>Soon communications<br/>Posti<br/>Telenordia<br/>Telia mobile<br/>Tikka com<br/>VK</p>   |  |  |  |  |



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|---------------|--|---|---|
|               | <b>TheFinnet Group</b><br><a href="#">Alajärven Puhelinosuuskunta</a><br><a href="#">Dna Finland Ab</a><br><a href="#">Ålands Telefonandelslag</a><br><a href="#">Etelä-Satakunnan Puhelin</a><br><a href="#">Eurajoen Teleosuuskunta</a><br><a href="#">Finnet-Media</a><br><a href="#">Forssan Seudun Puhelin</a><br><a href="#">Hämeen Puhelin</a><br><a href="#">Härkätien Puhelin</a><br><a href="#">Huittisten Puhelin</a><br><a href="#">Iisalmen Puhelin</a><br><a href="#">Ikaalisten-Parkanon Puhelin</a><br><a href="#">Osakeyhtiö</a><br><a href="#">Kajaanin Puhelinosuuskunta</a><br><a href="#">Kankaanpään Puhelin</a> | <a href="#">Karis Telefon</a><br><a href="#">Fjärrnätet Nian</a><br><a href="#">Keikyän Puhelinosuuskunta</a><br><a href="#">Kimito Telefonaktiebolag</a><br><a href="#">Gamllakarleby Telefon</a><br><a href="#">Kuopion Puhelin</a><br><a href="#">Kymen Puhelin</a><br><a href="#">Laitilan Puhelinosuuskunta</a><br><a href="#">Lännen Puhelin</a><br><a href="#">Länsilinkki</a><br><a href="#">Lojo Telefon</a><br><a href="#">Lovisa Telefonandelslag</a><br><a href="#">Marichamns Telefon</a><br><a href="#">Mikkelin Puhelin</a><br><a href="#">Nettiportti</a><br><a href="#">Outokummun Puhelin</a> | <a href="#">Päijät-Hämeen Puhelin</a><br><a href="#">Pargas Telefon</a><br><a href="#">Jakobstadsnejdens Telefon</a><br><a href="#">Pohjanmaan Puhelinosuuskunta</a><br><a href="#">Pohjois-Hämeen Puhelin</a><br><a href="#">Salon Seudun Puhelin</a><br><a href="#">Satakunnan Puhelin</a><br><a href="#">Savonlinnan Puhelin</a><br><a href="#">Finska 2 G</a><br><a href="#">Finska 3 G</a><br><a href="#">Suomen 3ktv</a><br><a href="#">Telekarelia</a><br><a href="#">Telepohja</a><br><a href="#">Uusi Oulun Puhelin</a><br><a href="#">Vaasan Lännen Puhelin</a><br><a href="#">Vakka-Suomen Puhelin</a> |
| <b>SWEDEN</b> | <b>Retea AB</b><br><b>Svenska IT-företagens Organisation, SITO</b><br><b>Tele2 Sverige AB</b><br><b>Telia AB</b>   |   |   |
| <b>UK</b>     | <b>BT</b><br><b>Consumers' Association</b><br><b>ISAP (Internet Service Providers Assoc.)</b>  |   |   |
|               | <b>OLOG (Other Licensed Operators Group)</b><br>COLT;<br>Cable & Wireless;<br>Easynet;<br>Energis;<br>EON Communications Ltd<br>Fibernet Group PLC<br>GTS;   | Global Crossing<br>Global One;<br>Hutchinson 3G<br>Kingston Group;<br>Level 3;<br>Your Communication;<br>ntl;<br>One2One;<br>Orange;  | Redstone<br>Thus;<br>Telewest;<br>Telia;<br>Telinco;<br>Telstra;<br>Vodafone and<br>World online<br>Worldcom;   |
|               | <b>ACSP (Assoc. of Communicaiton Service Providers):</b><br>Affinity Wireless Internet<br><a href="#">Centrica Telecom</a><br>CKX Telecom<br><a href="#">DIALnet plc</a>   | Direct Marketing Association<br>INMS<br><a href="#">ISPA</a><br><a href="#">London Internet Exchange</a><br><a href="#">NOA</a><br><a href="#">Powergen</a><br><a href="#">Project Telecommunications Plc</a>   | <a href="#">Reuters Ltd</a><br>RSL.COM<br>Spitfire Technology Group<br><a href="#">Thus Demon Internet</a><br>Video Networks Ltd<br>Wavetech<br><a href="#">World Online</a>  |

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| <b>PAN EUROPEAN ORGANISATIONS</b> |   |
|                                   | <b>BEUC (Bureau Européen des Unions de Consommateurs)</b>                       |
|                                   | <b>ECCA (European Cable Communications Association)</b>                         |
|                                   | <b>ECCO (European Competitive Carriers' Organisation)</b>                       |
|                                   | <b>ECTA (European Competitive Telecommunications Assoc.)</b>                    |
|                                   | <b>EICTA (European Information Communication Technology Association)</b>        |
|                                   | <b>ETNO (European Public Telecommunications Network Operators' Association)</b> |
|                                   | <b>EuroIspsa (European Internet Services Providers Association)</b>             |
|                                   | <b>INTUG (International Telecommunications Users Group)</b>                     |