COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 3.12.2002
SEC(2002) 1329

COMMISSION STAFF WORKING PAPER

Technical Annexes of the

Eighth Report on the Implementation of the Telecommunications Regulatory Package

{COM(2002)695 final}

ANNEX 1

MARKET OVERVIEW

TABLE OF CONTENTS

1 PLAYERS IN THE FIXED MARKET 7

1.1. LICENSING REGIMES IN THE MEMBER STATES 8
1.2. NUMBER OF FIXED TELECOMMUNICATIONS OPERATORS 10
1.3. INCUMBENTS MARKET SHARE ON FIXED TELEPHONY MARKET 17
1.4. SHARE OF PUBLIC OWNERSHIP IN INCUMBENT OPERATORS 20
1.5. ADMINISTRATIVE AND NUMBERING FEES FOR THE PROVISION OF PUBLIC VOICE TELEPHONY AND PUBLIC NETWORK SERVICES 21

2 CONSUMER'S CHOICE OF FIXED OPERATORS 27

2.1. PERCENTAGE OF SUBSCRIBERS WITH CHOICE OF OPERATORS FOR FIXED CALLS 27
2.2. PERCENTAGE OF SUBSCRIBERS ACTUALLY USING AN ALTERNATIVE PROVIDER OTHER THAN THE INCUMBENT 29
2.3. FACILITIES USED BY NEW ENTRANTS TO PROVIDE VOICE TELEPHONY 30

3 PUBLIC NETWORK INTERCONNECTION AND INTERCONNECTION CHARGES 33

3.1. FIXED-TO-FIXED INTERCONNECTION CHARGES 33
3.2. LEASED LINE INTERCONNECTION CHARGES 35
3.3. FIXED-TO-MOBILE INTERCONNECTION CHARGES 40

4 MOBILE MARKET 45

4.1. MOBILE PENETRATION 45
4.2. PLAYERS IN THE MOBILE MARKET 47
4.3. OPERATORS' MARKET SHARES 49
4.4. MOBILE BASKET 51

5 LOCAL ACCESS AND PRICING 55

5.1. BROADBAND ACCESS 55
5.2. PRICES FOR UNBUNDLED LOCAL LOOP 62

6 INTERNET SERVICES 67

6.1. INTERNET MARKET DATA 67
6.2. INTERNET ACCESS PRICING 69

7 PUBLIC VOICE TELEPHONY TARIFFS 71

7.1. CHARGING SYSTEM 72
7.2. MONTHLY RENTAL CHARGED BY THE INCUMBENT OPERATORS 74
7.3. AVERAGE MONTHLY EXPENDITURE (COMPOSITE CALL BASKET) 76
7.4. FIXED NATIONAL CALLS 78
7.5. TREND OF THE BASKET FOR FIXED NATIONAL CALLS (NATIONAL BASKET) 81
7.6. ALTERNATIVE NATIONAL OPERATORS 82
7.7. PRICE OF AN AVERAGE FIXED INTERNATIONAL CALL (INTERNATIONAL CALL BASKET) 84
7.8. PRICE OF CALLS TO EU, JAPAN, USA 86
7.9. ALTERNATIVE INTERNATIONAL OPERATORS 88

8 LEASED LINES RETAIL TARIFFS 91

8.1. INCUMBENTS' NATIONAL LEASED LINES 91
8.2. NATIONAL LEASED LINES PRICE TRENDS (1 AUGUST 1998 - 1 AUGUST 2002) 97
8.3. INTERNATIONAL LEASED LINES PRICES 98
8.4. INTERNATIONAL LEASED LINES PRICE TRENDS (1 AUGUST 1998 - 1 AUGUST 2002) 102

9 EXCHANGE RATES 103

9.1. EXCHANGE RATE USED IN SECTION 6 ON INTERNET, SECTION 7 ON PUBLIC VOICE TELEPHONY TARIFFS AND SECTION 8 ON LEASED LINE TARIFFS. 103
9.2. EXCHANGE RATE USED IN SECTION 1.5 ON ADMINISTRATIVE AND NUMBERING FEES 103
9.3. EXCHANGE RATE USED IN SECTION 3 ON INTERCONNECTION AND SECTION 5.2 ON PRICES FOR LOCAL LOOP 103

1 PLAYERS IN THE FIXED MARKET

This section analyses the situation of the market players in the fixed telecommunications market (voice telephony and network services): number of operators authorised to operate a network and to provide public fixed voice telephony, number of players actually active in the market, licence fees for fixed services, market shares and the public ownership in the incumbent operators.

Data are based on the replies to the European Commission questionnaire provided by the national regulatory authorities and gives the situation as at August 2002.

The following definitions apply:

- Public network operators are defined as operators that install, manage and operate a telecommunications transmission network to provide public telephony services or public network services[1] (i.e. provision of leased lines).
- Public fixed voice telephony is defined as a service available to the public for the direct transport on a commercial basis of real-time speech via the public switched network, such that any user can use equipment connected to a network termination point at a fixed location to communicate with another user of equipment connected to another termination point. Voice telephone could be provided on an own self-operated network or on a leased network.
- Public fixed voice telephony (not including the installation of the network): provision of national and international public voice telephony by service providers that operate, control and manage the transmission capacity which is leased from other operators. Simple call-back and calling card services and operators dealing only with marketing, billing, etc., are excluded. The definition of service provider may differ from that used in the national law of individual countries (in some countries non-self operated network operators engage exclusively in reselling activities).
- Public voice telephony on an own self-operated network (not including network services): provision of public fixed voice telephony over a network fully controlled, operated and (wholly or partially) owned by the operator, excluding the provision of network services.
- Local operators are operators authorised to offer telecommunications services only to users located in specific areas (to whom they provide local calls as well as long-distance and international calls through interconnection agreements with other operators).
- National operators are operators authorised to offer telecommunications services without any geographical restriction. They may provide all types of telephony services (local, long-distance and international calls) to users located throughout the national territory.

[1] Public fixed network services are defined as the conveyance of calls, messages and signals over a telecommunications network, including any necessary switching. They may be network interconnection services, which are provided to other network operators to enable calls and associated functions to be passed through interconnected networks, or basic retail network services, which are provided to customers such as end-users or service providers.

1.1. LICENSING REGIMES IN THE MEMBER STATES

A variety of different national licensing regimes can be identified across Member States: telecommunications operators[2] may have individual licences/authorisations or be subject to registration/notification procedures, or may effectively operate in the market without being subject to any individual licence or declaration procedure. Furthermore, depending on the national licensing regime, in order to provide a particular service, the operators may have to hold (and pay for) a number of different licences or may have to pay for a licence with a wider scope than they require (i.e. nation-wide), even if they do not make full use of it.

Table 1 shows the licensing regimes in the 15 Member States for the four main categories of fixed services. The first column indicates whether the national licence regime provides for geographical restriction on the licence (local or national). The rest of the table shows the type of licence (or licences) required for four types of telecommunications service (see above for the definitions): public fixed voice telephony (not including the installation of the network); operation of a public network and provision of network services (not including voice telephony); public voice telephony on a owned self-operated network (not including the provision of network services); public voice telephony and network services on a owned self-operated network.

In the Netherlands and Finland the licence regimes provide for a registration/notification system. In Sweden both individual licence and registration systems are applied[3]. The Danish licensing regime system does not even require a notification.

In Greece public voice telephony can be provided by way of both an individual licence and a general authorisation, but in the latter case operators are not allowed to use numbers[4].

The rest of the countries apply a system of individual licences. In the United Kingdom and Ireland a single fixed telecommunications licence exists, whatever the types of public service provided (voice telephony and/or public network)[5]. In Austria a single licence for voice telephony services exists, whether or not the operators self-operate a owned or a leased network. Belgium, Germany, Portugal and Sweden provide only two types of fixed licences (voice telephony services and public network), while the other countries also provide a single licence which combines several categories of more limited individual licences (i.e. public voice telephony on a owned self-operated network; public voice telephony and network services on an own self-operated network)[6].

---

[2] In the following, "operators" means both network operators and service providers; "authorised operators" means operators that have been granted an individual licence/authorisation or are subject to a declaration/notification procedure.

[3] According to the Swedish licensing regime, a notification is required for the provision (within a publicly available telecommunications network) of telecommunications services (fixed telephony, mobile services, leased lines, etc.) which require allocation of capacity from the telephony numbering plan. An individual licence is required for the provision of telecommunications services if the activity is considered to be of "considerable scope" with regard to the areas covered, the number of users or other comparable factors.

[4] Simple resellers do not need any licence or authorisation.

[5] In Ireland a separate licence for Public Network (basic licence) is also provided.

[6] But in any case the allocation of the two separate licences for voice telephony and for public networks gives the same right as the "combined" licence.

Table 1. Licensing regime for public fixed services

	Distinction between national and local licence/ registration	Type of fixed telecommunications services			
		Public fixed voice telephony services (not including the installation of the network)	*Operation of owned public network and provision of network services (not including voice telephony)*	*Public voice telephony over a owned self-operated network*	*Public voice telephony and network services over a owned self-operated network*
B	No	VT	NET	VT + NET	
DK	No	General Class Licence for Public Telecommunication Networks and Services (operators apply only for numbers)			
D	Yes	VT (class 4)	NET (class 3)	VT + NET (class 4 + class 3)	
EL	No	VT	NET	VT and NS on NET [7]	
E	Yes	VT (type A)	NET (type C1)	VT and NS on NET (type B1)	
F	Yes	VT (L34-1)	NET (L33-1)	VT and NS on NET (L34-1and L33-1)	
IRL	No	VT and NS onNET (General Licence) (NET[5] (Basic Licence))			
I	Yes	VT	NET	VTonNET	VT + NET (or VTonNET+NET)
L	No	VT (type C)	NET (type B)	VT and NS on NET (type A)	
NL	No	VT (registration)	NET (registration)	VT + NET (reg.)	
A	No[8]	VTonNET[9]	NET	VTonNET	VTonNET + NET
P	No	VT	NET	VT + NET	
FIN	Yes	VT (registr.)	NET (registr.)		
S	No	VT (lic./reg.)	NET (lic./reg.)	VT + NET (lic./reg.)	
UK	Yes	VT and NS on NET (PTO licence)			

Legend:

VT (Voice Telephony): individual licence/registration for providing public fixed voice telephony (not including the installation of the network)

NET (Network): individual licence/registration/notification for operation of a public network and for the provision of network services (not including voice telephony services)

VTonNET (Voice Telephony on Network): individual licence/registration/notification for providing public voice telephony on a owned self-operated network (not including network services)

VTandNSonNET (Voice Telephony and Network Services on Network): individual licence/registration/ notification for provision of public voice telephony and network services on a owned self-operated network

VT + NET; VTonNET + NET; VTandNSonNET + NET: both licences needed for provision of the services

[7] The Greek licensing regime provides for a list of 6 types of individual licence, among which those for public fixed networks and for public voice telephony. Moreover, at the request of the applicant, the NRA can issue a single licence which combines several categories of individual licence.

[8] The legal framework for the licensing regime in Austria does not distinguish between local and national coverage of licences, although operators can apply for a licence restricted in scope as to the network and/or the services provided.

[9] An individual licence is required for the provision of public voice telephony over a self-operated fixed telecommunication network. The network could either belong to the operators, or could be totally leased from a third-party network operator.

1.2. NUMBER OF FIXED TELECOMMUNICATIONS OPERATORS

This section shows the number of operators authorised to provide public fixed network services and public fixed voice telephony, as well as the number of operators effectively active in the market.

The figures include a great variety of operators: fixed network operators, service providers, cable modem access operators and operators with wireless local loop, mobile and satellite operators (for the fixed part of their networks and services).

Depending on the national licensing scheme, for some countries data for both local and national operators are given (see table 1). This does not mean that in the other countries all operators are national, but only that the licensing scheme does not require a licence limited as to its scope (in consequence all the operators have to pay for a national licence even if they are only local operators).

In the following charts, "national operator" means an operator that has been granted either a national licence/authorisation or a non-geographically limited licence under a licensing scheme which does not specify the geographic coverage.

The figure reflect the number of operators, rather than the number of licences. This is particularly true for the cable TV operators that operate their telecommunication licence through local licences granted to their local franchisees; in this case they have been considered as one single operator.

The number of local operators is not strictly comparable between Member States, since it varies considerably between countries depending on the division of the national territory into local areas.

Figures for Denmark may be incomplete due to the fact that there is neither a licensing requirement nor a central register of operators and their activities (operators only apply for numbers).

In Spain, the big increase from last year in the number of operators (46 local and 61 national in 2001) reflects the fact that many cable TV operators have transformed their provisional cable modem access concession into a B1 licence for provision of telecommunication services (voice telephony and network services) over a own network.

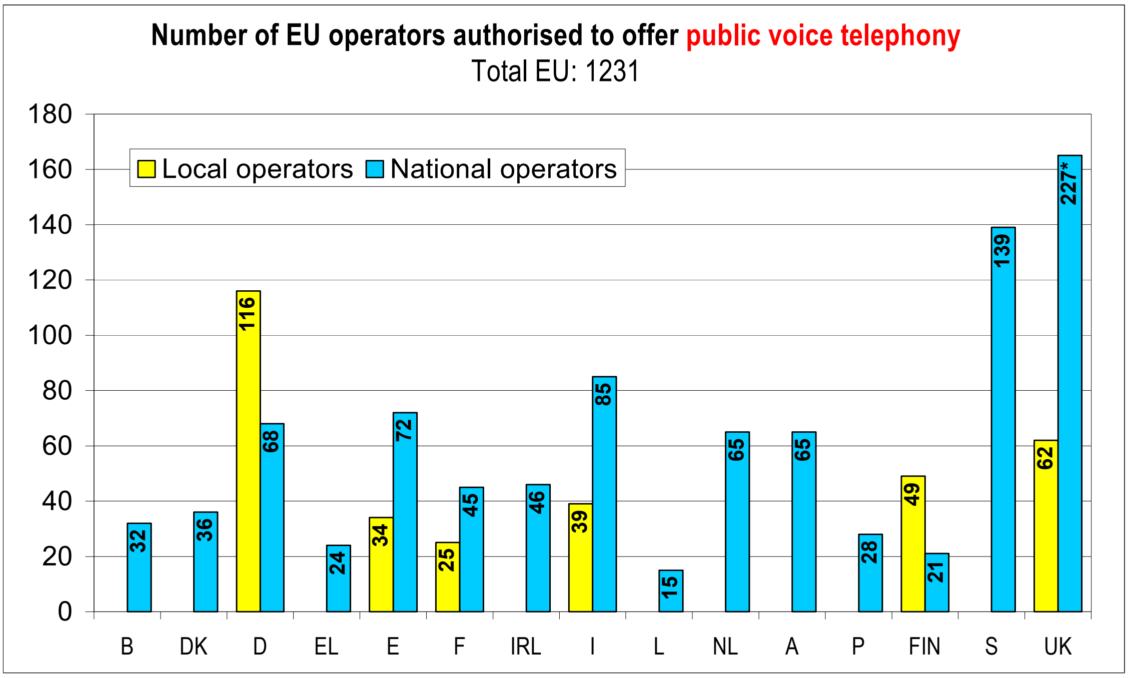
In Finland, 38 of the 48 regional operators are local incumbents and belong to the Finnet Group.

Data for Sweden include both licensed and notified operators.

In the United Kingdom, the 62 local cable franchise operators, owned by 2 companies, must hold (inter alia) a standard PTO licence for the provision of cable modem access services which, in turn, also gives the right to provide public voice telephony/network service. How many of these cable modem access operators are also providing public voice telephony/network services is unknown. From January 2001 the geographical restriction on cable companies ceased to exist and any cable licensee was free to operate outside the area laid down in its licence, but to maintain comparability with previous Reports we will continue to consider these operators as local. The big decrease in the number of local operators (cable modem access) for 2001 (134) and 2002 (62) is due to intensive merger activities in the market.

PUBLIC VOICE TELEPHONY SERVICES

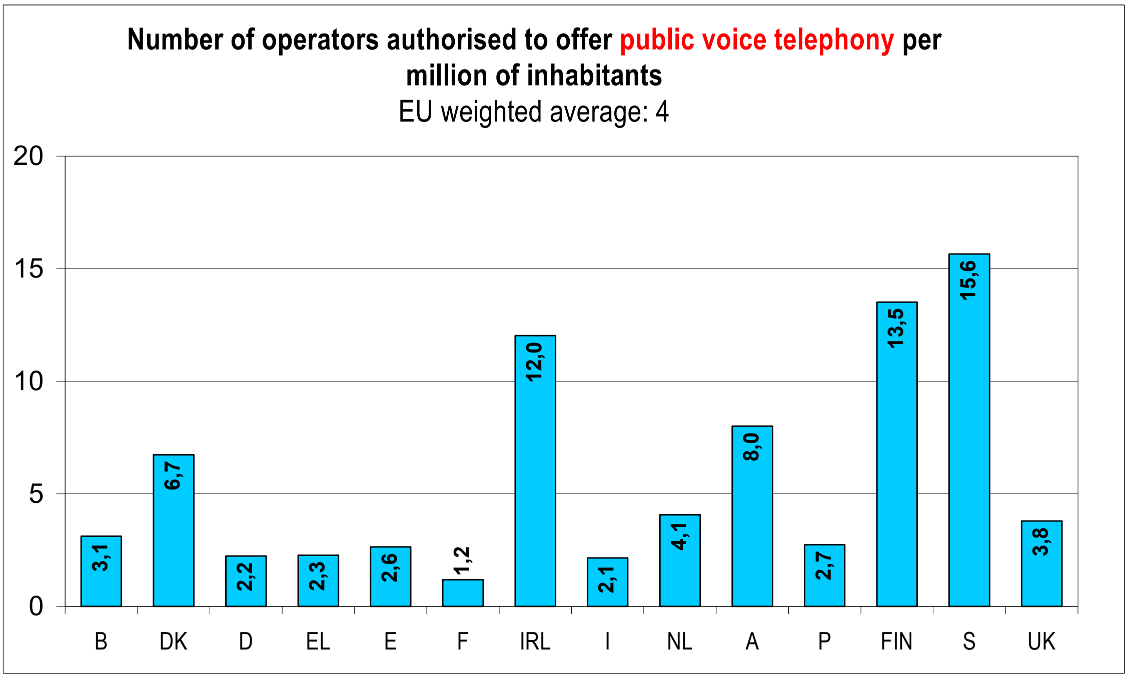
Chart 1



* Figure not to scale

- Due to the registration system, the number of operators authorised to provide public voice telephony figures for Denmark has been estimated using the number of operators that have been allocated geographical numbers and/or access codes. The estimated overall number of operators has declined from 48 in 2001 to 36 in 2002 due to extensive merging and cornering in the Danish telecommunications market. Moreover, the total number of operators has diminished due to a couple of bankruptcies among smaller operators.

Chart 2

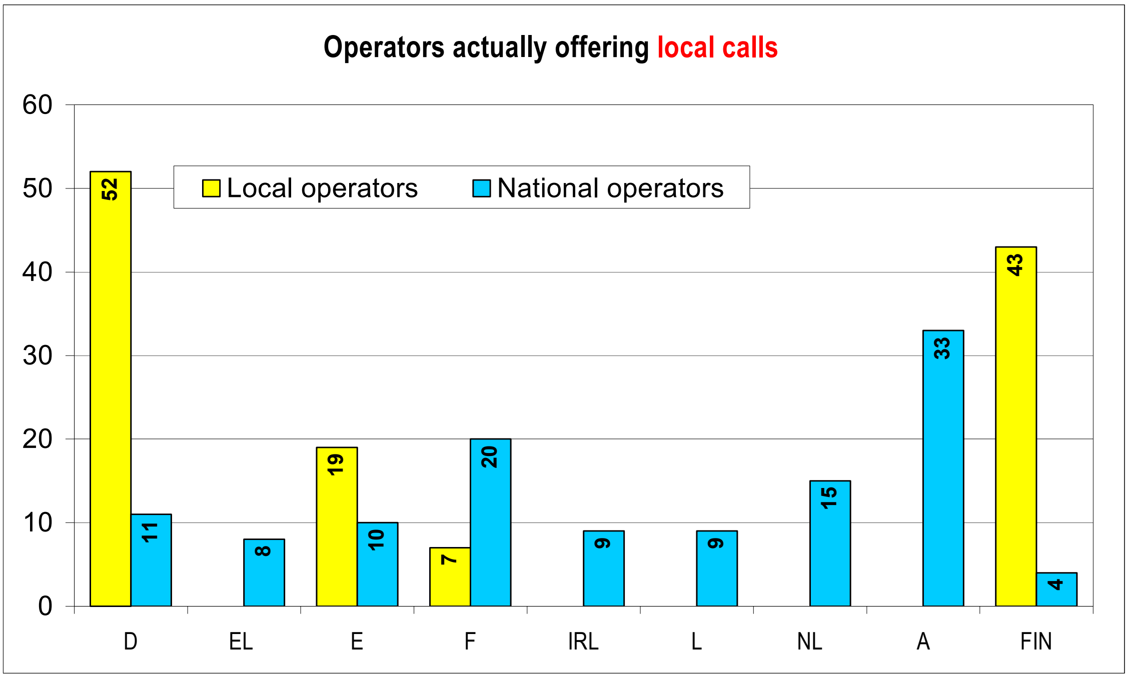


This indicator is not significant for Luxembourg, because of its peculiar characteristic in terms of low percentage of population in relation to the non-physical inhabitants.

The number of operators authorized to offer public fixed telecoms services indicates only the potential for competition in the market rather than the current level of competition. For this reason, where possible, an estimate is given of the number of operators actually active on the market. These figures do not show to what extent the operators are offering services. Many new entrants initially provide only services to business users in the main cities, even if they have a national license allowing them to offer all types of service throughout the country.

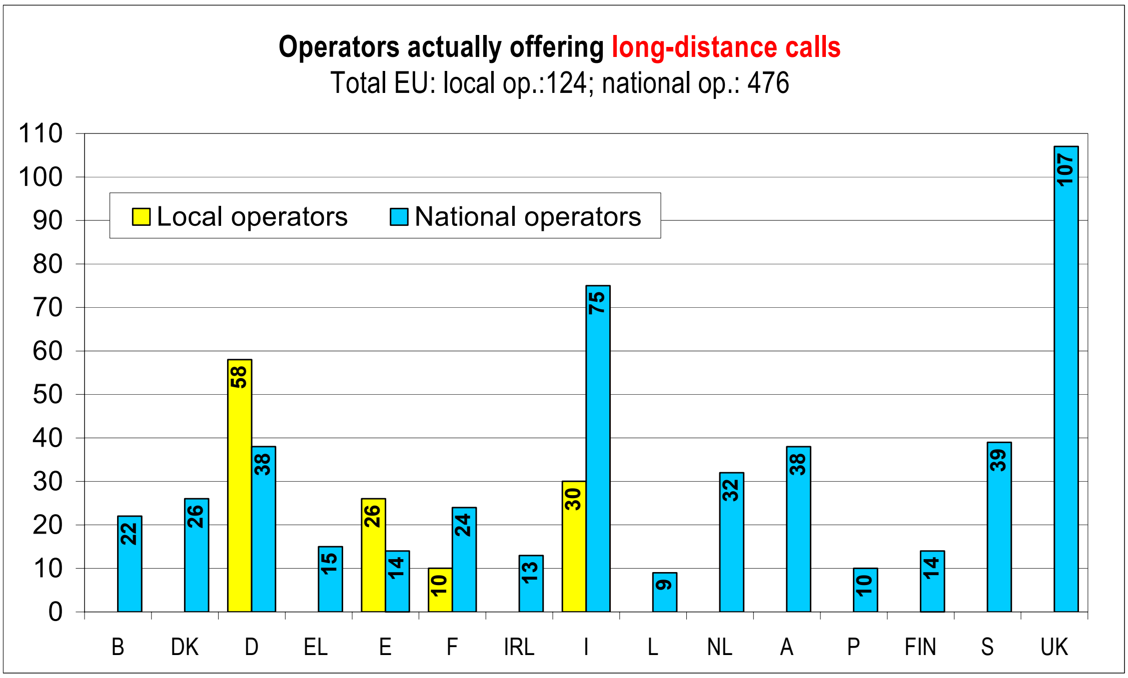
Figures in the following three charts should be read on a service by service bases (local, long-distance and international call markets) and not as country totals, since the same operator is usually authorized to offer more than one type of service.

Chart 3



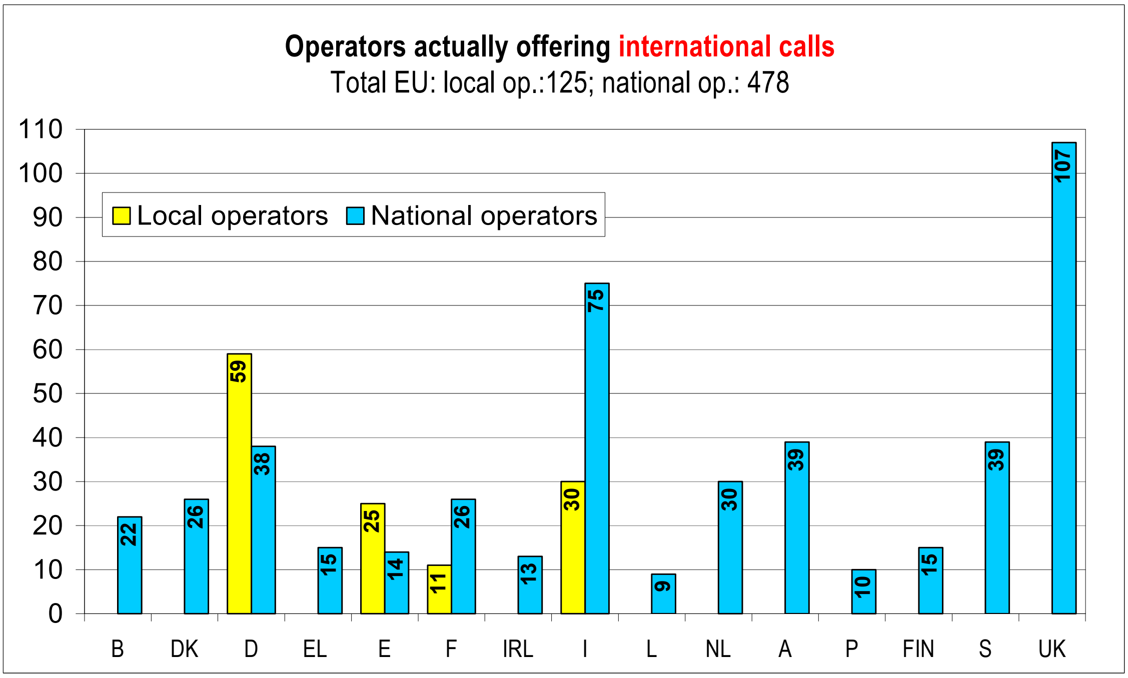
- Because of its small size, no distinction is made in Luxembourg between local and long-distance voice telephony services.
- B, DK, I, P, S and UK do not provide separate figure for the operators effectively providing local calls.

Chart 4



- Figure for Denmark should be considered as minimum.
- The figures for B, DK, I, P and S do not distinguish between the type of call provided (local, long-distance, international); the figure for the United Kingdom does not distinguish between local and national operators.

Chart 5



- Figure for Denmark should be considered as minimum.
- The figures for B, DK, I, P, S and the UK do not distinguish between the type of call provided (local, long-distance, international); the figure for the United Kingdom does not distinguish between local and national operators.

PUBLIC NETWORK

The following charts show the number of network operators with a public network licence and/or authorised to offer network services (conveyance of calls, messages and signals over a telecommunications network, including any necessary switching).

The distinction between local and national public network operators concerns the geographical scope of the network, while the provision of network services could be subject to a different geographical limitation. In the following, "local operators" means operators whose network does not cover the whole national territory (whatever the geographical scope of the service).

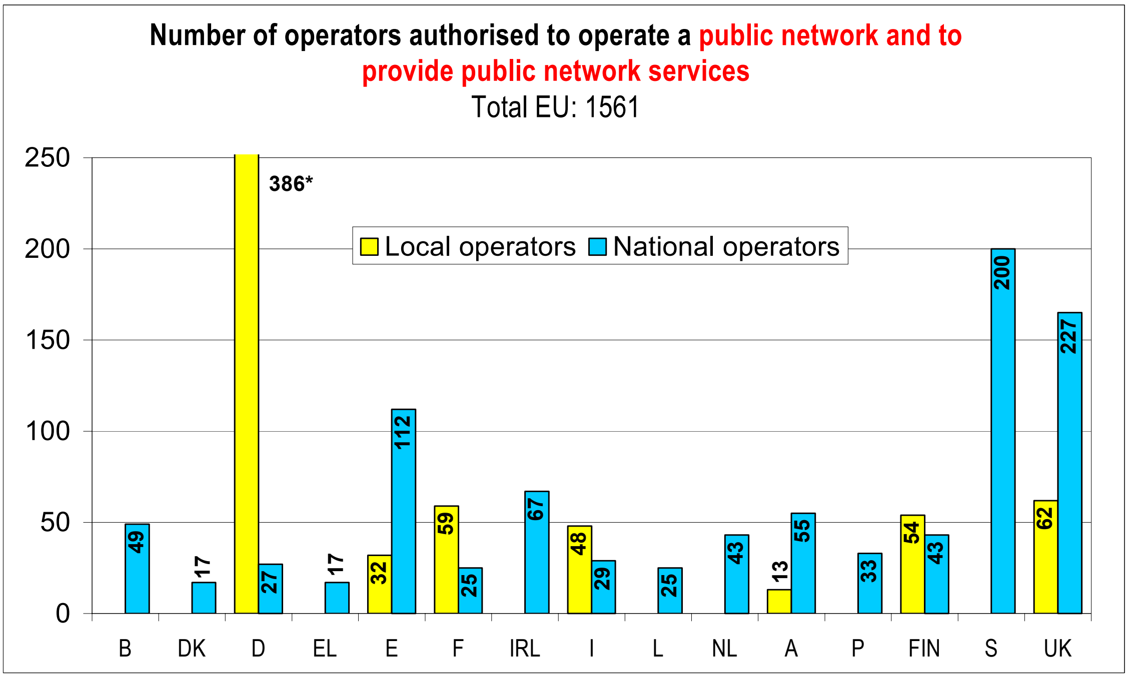
It should be noted that a licence to operate a local/regional public network does not necessarily imply the existence of local network access to customers ("the last mile". See local loop access section for more details).

Figure for Spain does not include 75 local cable modem access operators, that have transformed their provisional cable modem access concession into a definitive public network licence.

Data for Ireland include both basic and general licences.

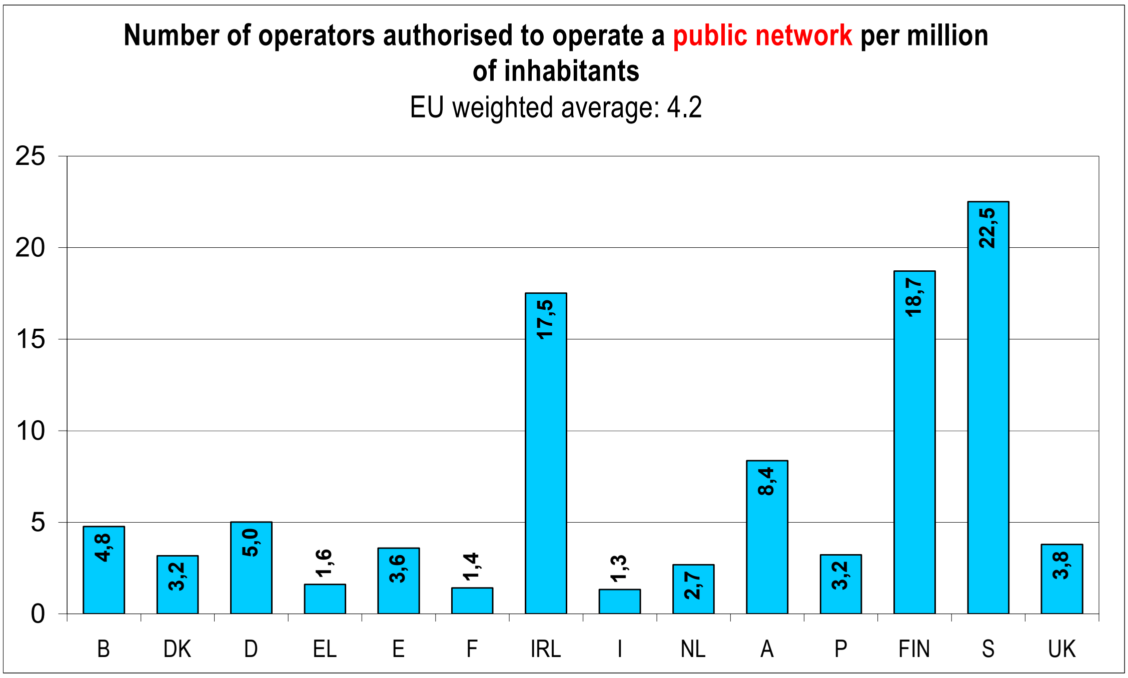
In the United Kingdom, the local operators refer to 62 local cable franchise operators, owned by 2 companies.

Chart 6



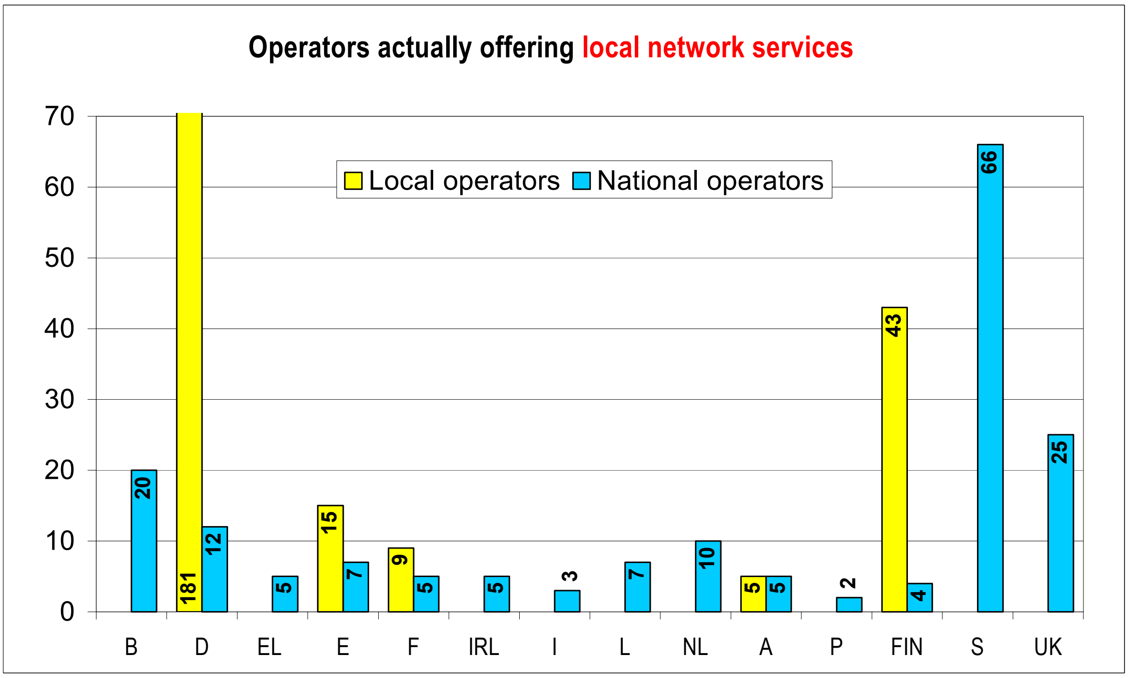
* Figure not to scale.

Chart 7



This indicator is not significant for Luxembourg, because of its peculiar characteristic in terms of percentage of population in relation to non-physical inhabitants.

Chart 8



- Value for Germany not to scale.
- Denmark does not provide separate figures for the operators effectively providing local network connections.

Chart 9

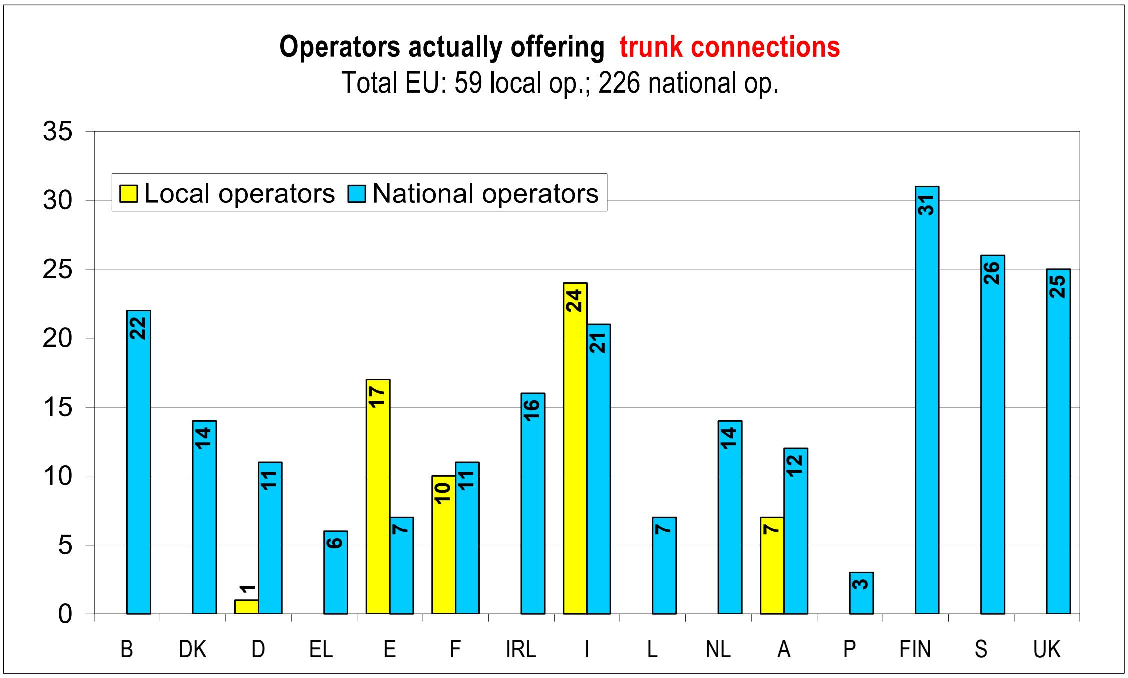
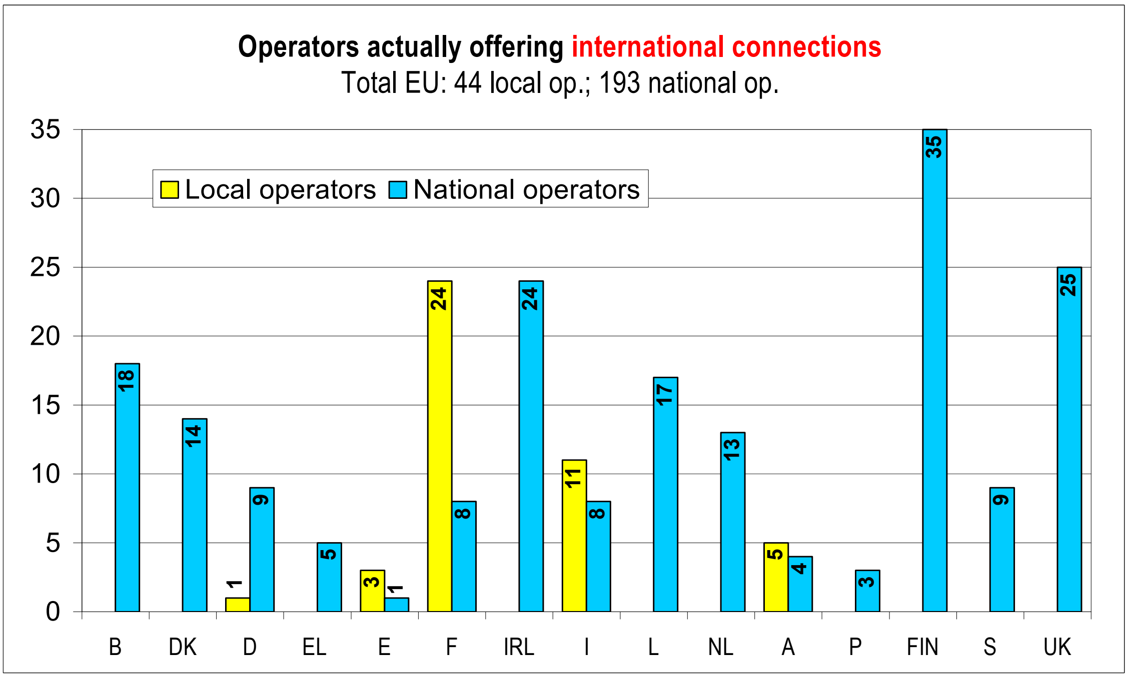


Chart 10

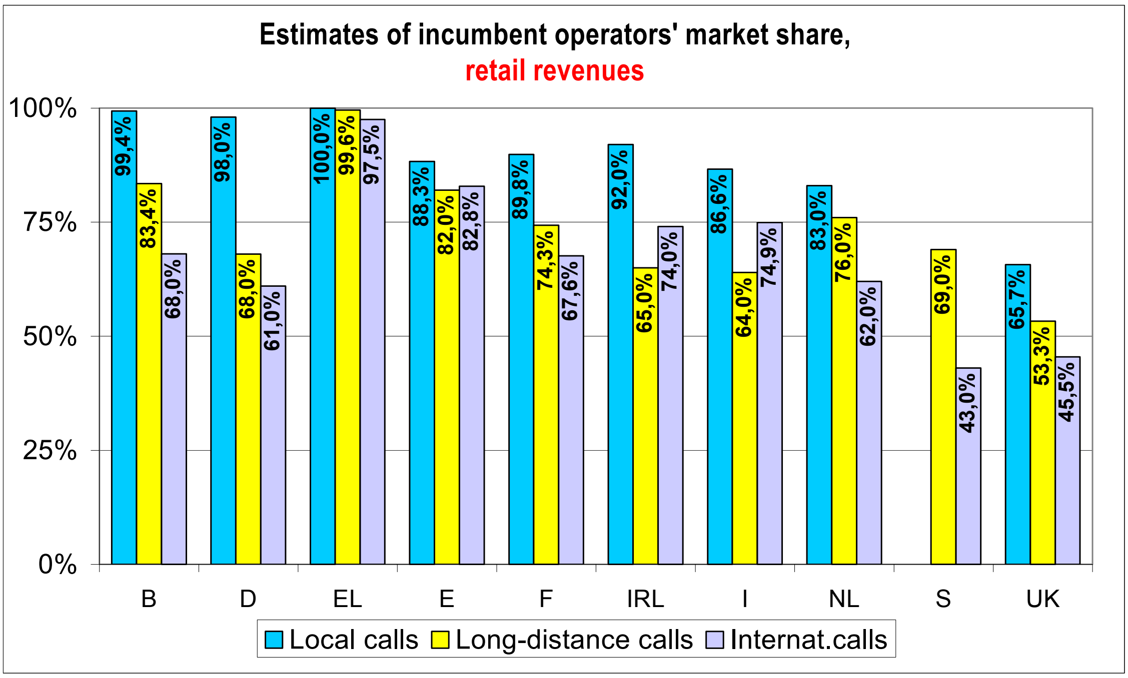


1.3. INCUMBENTS MARKET SHARE ON FIXED TELEPHONY MARKET

This section shows the incumbent's market share for telephony call market on the basis of retail revenues and outgoing traffic per minute. Unfortunately not all Member States collect both types of data, and differentiation between the various markets (local, long-distance, international) is not always available.

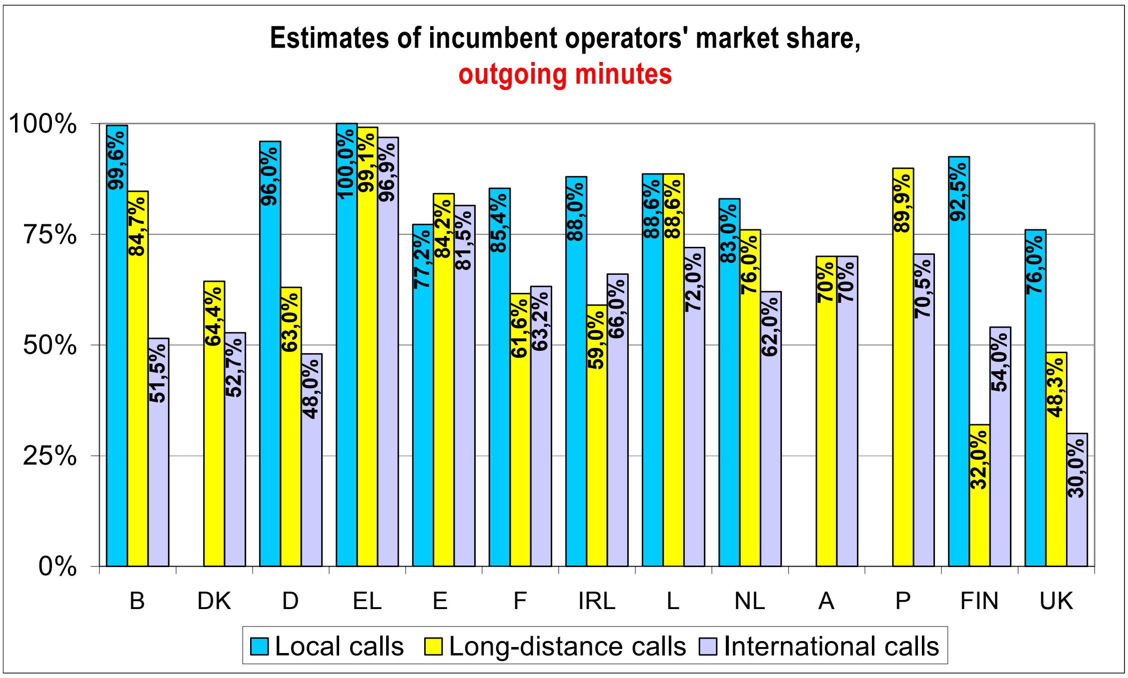
Figures have been provided by the national regulatory authorities and gives the situation as for December 2001.

Chart 11



- Local call market include both phone calls and calls to internet.
- In Belgium, market share for local calls includes local calls to internet only; market share for long-distance calls refers to "national phone calls", including both local phone calls and long-distance calls.
- Data for Sweden for local calls market share is not available separately. Market share for long-distance calls refers to the total national calls", including local phone calls, calls to internet and long-distance calls.
- Data for DK, I,L,P,FIN are not available.

Chart 12



- In Belgium, market share for local calls includes local calls to internet only; market share for long-distance calls refers to "national phone calls", including both local phone calls and long-distance calls.
- Market share for long-distance calls for Denmark and Portugal refer to the overall national calls", including local and long-distance phone calls, calls to internet and call to mobile.
- Because of its small size, no distinction is made in Luxembourg between the local and the long-distance call markets.
- Data for Austria come from the NRA's Decision in the SMP operators designation of 20.09.2002. Figure refer to the overall fixed voice telephony market, including local, long-distance and international phone calls, calls to internet and calls to mobile.
- Local calls market share for Finland refers to the combined share of the incumbents (Sonera, Elisa and Finnet). Market share for long-distance and international refers to Sonera only and do not include market share of Kakoverkko Ysi Oy and Finnet International Ab, that have been designated as SMP
- Local calls market share for DK, A and P are not available separately.

Chart 13

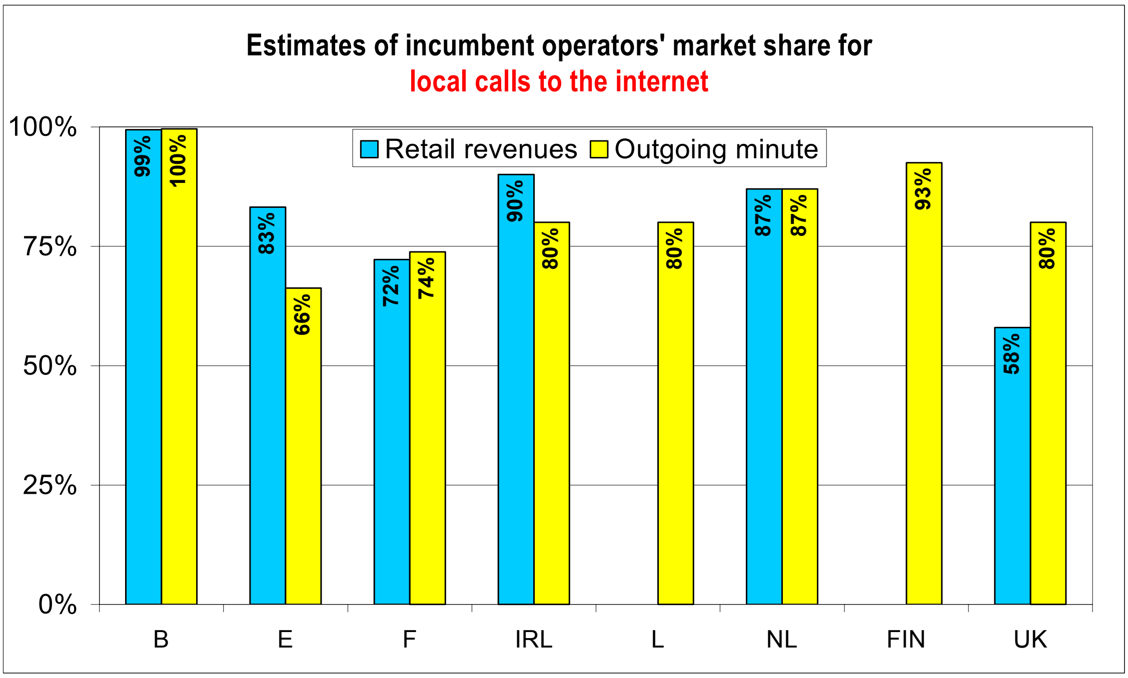
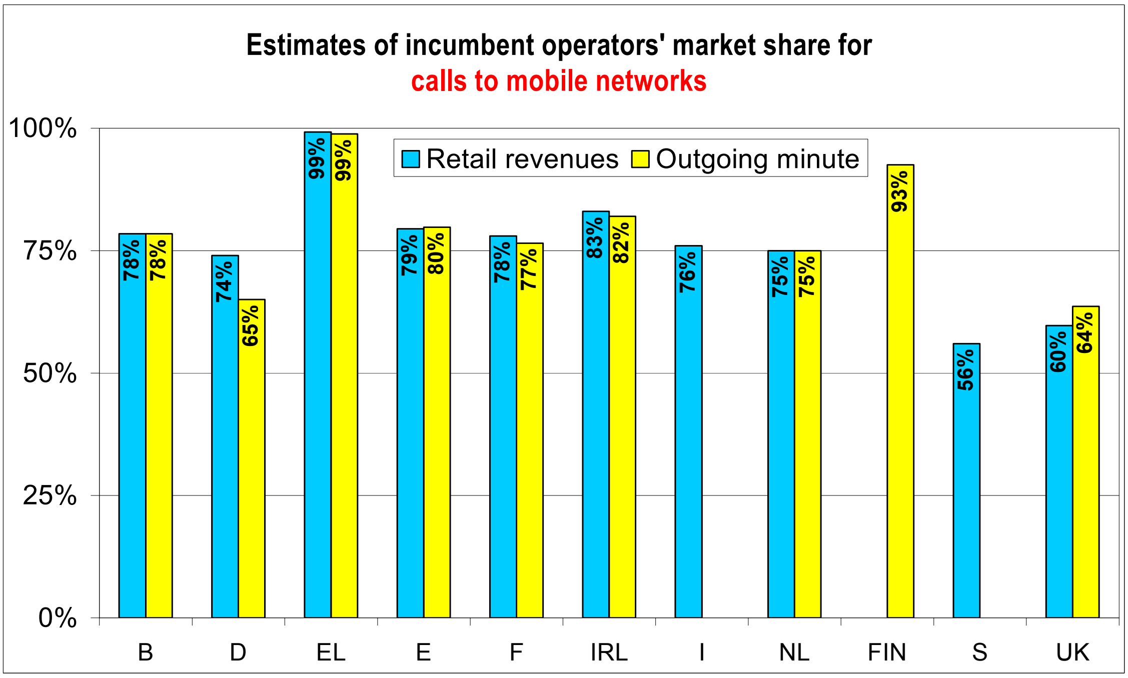


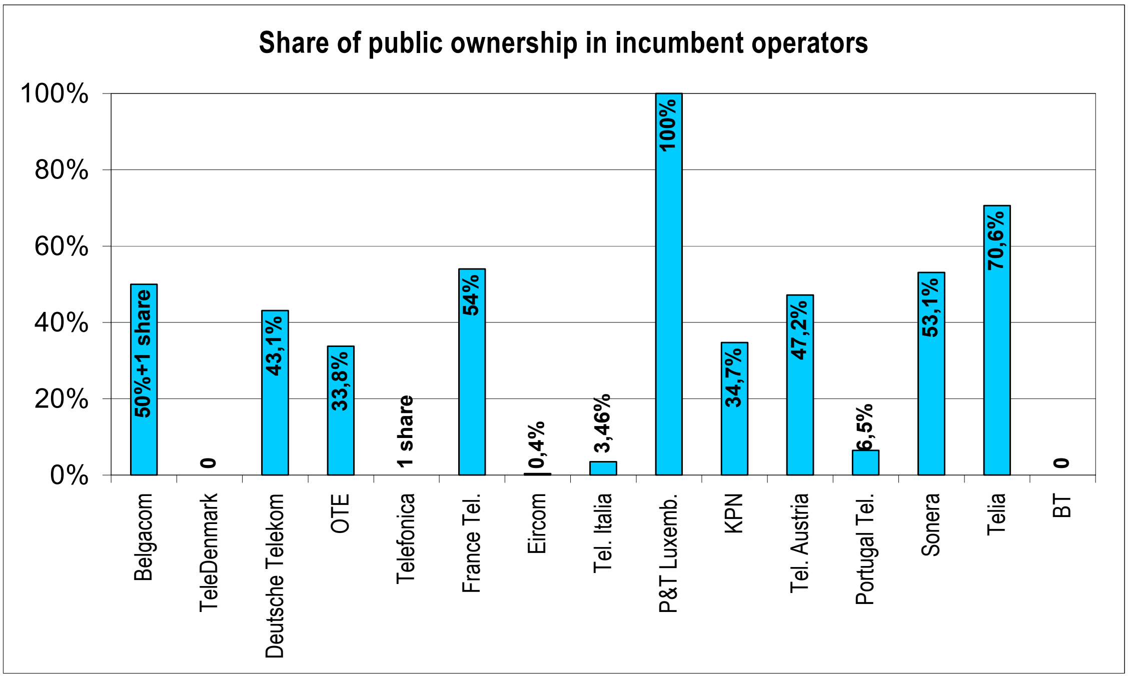
Chart 14



1.4. SHARE OF PUBLIC OWNERSHIP IN INCUMBENT OPERATORS

In order to provide a complete overview of the players in the EU telecommunications market, the following chart shows the degree of public ownership of the incumbent operators on the fixed market. Spain, Italy, Portugal and the Netherlands have a golden share in the incumbent operators, that gives the State special rights on strategic decisions.

Chart 15



1.5. ADMINISTRATIVE AND NUMBERING FEES FOR THE PROVISION OF PUBLIC VOICE TELEPHONY AND PUBLIC NETWORK SERVICES

This section provides data on Member States' administrative and numbering fees for public voice telephony and public network services licences. The data have been provided by the national regulatory authorities and give the position as at August 2002.

Administrative fees (table 2) are fees charged to cover the costs of examining an application for a licence, granting the relevant authorisation and verifying compliance with the terms and conditions set once the service or network is operational.

The categorisation of administrative fees is closely linked to the general licensing framework applicable in the individual countries. The categories of administrative fees will depend on whether market entry is subject to an individual licence or a notification under a general authorisation scheme (see table 1 for more details).

Numbering fees (table 3) are fees applied by many Member States which reflect the relative scarcity of numbering resources.

Table 3 sets out for each Member State the different kinds of fees charged for the following categories of numbers needed by each operator to provide public voice telephony services:

- standard telephone numbers (ITU-T Recommendation E.164) (for subscribers directly connected to the operator),
- carrier selection codes (to select the operator)
- signalling point codes[10] (for interconnection with other networks at national (NSPC) and international (ISPC) level).

Ireland, Austria, Sweden, Portugal and the United Kingdom do not charge for such numbers, although often the right to use numbers is implicitly included in the licensing fees.

[10] Signalling Point Codes (SPCs) are used in public telephone networks using CCITT Signalling System No 7 (SS7). SPCs are the addresses of the signalling points. Two types of SPC are usually individually assigned to network operators: International SPCs and National SPCs. ISPCs are used in international transit networks, e.g. to address networks which connect the various networks in a specific country or to identify the national gateways of the various networks.

1.5.1. ADMINISTRATIVE AND NUMBERING FEES FOR FIXED VOICE TELEPHONY

Table 2 **Administrative fees (August 2002, €)**

	Public voice telephony over a leased network (service providers)		**Operation of public fixed network and provision of network services over a own network** (not including voice services)		**Public voice telephony over a own self-operated network** (not including network services)		**Public voice telephony and network services over a own self-operated network**	
	Single payment	**Annual fee**	**Single payment**	**Annual fee**	**Single payment**	**Annual fee**	**Single payment**	**Annual fee**
B	Ind. Licence for VT		Ind. Licence for NET		Individual licence for VT + individual licence for NET			
	9 340	8 000 if SMP: 13 330	13 327	9 329 if SMP: 18 658	22 667	17 329 if SMP: 31 988	22 667	17 329 if SMP: 31 988
DK	0	0	0	0	0	0	0	0
D	Ind. Licence for VT (class 3)		Ind. Licence for NET (class 4)		Individual licence for VT + individual licence for NET			
	The regulation on licence fees is currently being reviewed by the government[i]							
EL	Ind. Licence for VT		Ind. Licence for NET		Individual licence for VT + individual licence for NET or individual licence for VT and NS on NET[ii]			
	0	% of turnover (from 0.5% to 0.025%; min 600)[iii]	0	% of turnover (from 0.5% to 0.025%. min 600)[iii]	0	% of relevant turnover (from 0.5% to 0.025%. min 600)[iii]	0	% of relevant turnover (from 0.5% to 0.025%. min 600)[iii]
E[iv]	Ind. licence for VT (type A)		Ind. licence for NET (type C1)		Ind. licence for VT and NS on NET (type B1)			
	0	0.15% of relevant turnover	0	0.15% of relevant turnover	0	0.15% of relevant turnover	0	0.15% of relevant turnover
F	Ind. licence for VT (L34-1)		Ind. licence for NET (L33-1)		Ind. licence for VT and NS on NET (L34-1 and L33-1)			
> 5 regions	38 112	15 224	266 785	133 392	304 897	152 449	304 897	152 449
≤ 5 regions	38 112	15 224	76 224	38 112	114 386	57 168	114 386	57 168
≤ 1 region	38 112	15 224	38 112	15 244	76 224	38 112	76 224	38 112
≤ 1 department	38 112	15 224	15 244	7 622	53356	26 678	53356	26 678
≤ 1 city of 100 000 inhabitants	38 112	15 224	7 622	3 811	45 734	22 867	45 734	22 867
If SMP	Not relevant	Not relevant	Double fees	Double fees	Double fees	Double fees	Double fees	Double fees

Table 2 Administrative fees (cont'd)

	Public voice telephony over a leased network (service providers)		Operation of public fixed network and provision of network services over a own network (not including voice services)		Public voice telephony over a own self-operated network (not including network services)		Public voice telephony and network services over a own self-operated network	
	Single payment	**Annual fee**	**Single payment**	**Annual fee**	**Single payment**	**Annual fee**	**Single payment**	**Annual fee**
IRL	Individual licence for VT and NS on NET (General licence)[v]							
	12 500	1 015 or 0.2% of turnover>635 000	12 500 (3 175 if basic licence)[vi]	1 015 or 0.2% of turnover>635 000	12 500	1 015 or 0.2% of turnover > 635 000	12 500	1 015 or 0.2% of turnover >635 000
I[vii]	Ind. licence for VT		Ind. licence for NET		Ind. licence for VTonNET		Ind. lic. for VT + ind. lic. for NET Or Ind. lic. VTonNET + ind. lic. NET	
Whole country	54 598	65 519	65 519	109 198	60 058	65 519	120 117[viii] (125 577)[ix]	174 716
≤ 10 million inh.	21 840	27 300	21 840	54 598	27 300	27 300	43 679 [viii] (49 139)[ix]	81 893
≤ 200 000 inh.	10 919	10 919	10 919	27 300	16 379	10 919	21 840 [viii] (27 300) [ix]	38 219
L	Ind licence for VT (type C)		Ind. licence for NET (type B)		Ind. licence for VT and NS on NET (type A)			
	620	37 184 plus % of turnover (min. 0.15% max. 0.30%)	6 197	12 394 plus % of turnover (min. 0.10% max. 0.25%)	7 436	49 578 plus % of turnover (min. 0.20% max. 0.35%)	7 436	49 578 plus % of turnover (min. 0.20% max. 0.35%)
NL	Registration for VT		Registration for NET		Registration for VT + Reg. for NET			
	363	1 985 if SMP: 1 933 205	363	4 590	363	4 590 if SMP: 2 173 775	363	4 590 if SMP: 2 173 775
A[x]	Ind. Licence for VTonNET[xi]		Ind. Licence for NET		Ind. Licence for VTonNET		Ind. lic. VTonNET + ind. lic. NET	
	0	0	5 087	0.14% of turnover	5 087	0.14% of turnover	10 174	0.14% of turnover
P	Individual licence for VT		Ind. Licence for NET		Individual licence for VT + individual licence for NET			
	9 976	9 976	9 976	9 976	19 952	19 952	19 952	19 952

Table 2 Administrative fees (cont'd)

	Public voice telephony over a leased network (service providers)		**Operation of public fixed network and provision of network services over a own network** (not including voice services)		**Public voice telephony over a own self-operated network** (not including network services)		**Public voice telephony and network services over a own self-operated network**	
	Single payment	**Annual fee**	**Single payment**	**Annual fee**	**Single payment**	**Annual fee**	**Single payment**	**Annual fee**
FIN	Registration for VT		Registration for NET		Registration for VT + Reg. for NET			
	0	0	0	0	0	0	0	0
S	Individual lic./reg. for VT		Individual lic./reg. for NET		Individual lic./reg. for VT + Individual lic./reg. for NET			
Notification[xii]	0	- 115 for turnover <573 160 - 4 012 for turnover >573 160	0	- 115 for turnover <573 160 - 4 012 for turnover > 573 160	0	- 115 for turnover < 573 160 - 4 012 for turnover >573 160	0	- 106 for turnover <317 511 for each relevant activity - 2 646 for turnover >317 511 for each relevant activity
Licence	11 463	- 1,57 ‰ of turnover (min. 5 732/area of licence) - SMP operator: extra 0.5‰ of voice telephony turnover (max 11 463 190)	11 463	- 1.57 of turnover (min. 5 732)	11 463	- 1,57 ‰ of turnover (min. 5 732/area of licence)) - SMP operator: extra 0.5‰ of voice telephony turnover (max 11 463 190)	22 928	- 1,57‰ of turnover (min. 100 000 SEK) for each relevant activity (min. 10 584) - SMP operator: extra 0.5‰ of voice telephony turnover (max 11 463 190)
UK	Individual licence for VT and NS on NET (PTO licence)							
	59 975	new entrants: 4 498 for the first two years, then 4 498 if turn. < 7 496 768 - % of turnover to a max 0.08% if turnover > 7 496 768	59 975	new entrants: 4 498 for the first two years, then 4 498 if turn. < 7 496 768 - % of turnover to a max 0.08% if turnover > 7 496 768	59 975	new entrants: 4 498 for the first two years, then 4 498 if turn. <7 496 768 - calculated % of turnover to a max 0.08% if turnover >7 496 768	59 975	new entrants: 4 498 for the first two years, then 4 498 if turn. <7 496 768 - calculated % of turnover to a max 0.08% if turnover >7 496 768

Legend:

VT (Voice Telephony): individual licence/registration for providing public fixed voice telephony (not including the installation of the network)

NET (Network): individual licence/registration/notification for operation of a public network and for the provision of network services (not including voice telephony)

VTonNET (Voice Telephony on Network): individual licence/registration/notification for providing public voice telephony on a owned self-operated network (not including network services)

VTandNSonNET (Voice Telephony and Network Services on Network): individual licence/registration/ notification for provision of public voice telephony and network services on a owned self-operated network

VT + NET; VTonNET + NET; VTandNSonNET + NET: both licences needed for provision of the services

[i] 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.

[ii] The Greek licensing regime provides for a list of 6 types of individual licence, among which those for public fixed networks and for public voice telephony. Moreover, at the request of the applicant, the NRA can issue a single licence which combines several categories of individual licence.

[iii] The fees are determined based on an interval function with respect of the turnover of the relevant activities, with a minimum of 600 Euro: 0.5% of turnover for the first 300 million euro, 0.2% for turnover between 300 and 600 million euro, 0.15% for turnover between 600 and 900 million euro, 0.1% for turnover between 900 and 1 200 Meuro, 0.05% for turnover between 1 200 and 1 500 million euro, 0.025% for turnover over 1 500 million euro.

[iv] According to the General Telecommunications Act, the exact amount of the annual fees (percentage value) will be fixed every year by Parliament, taking into account the need to cover the administrative costs of the licensing management and controls system. The annual fees cannot be higher than 2‰ . For 2001 the value set is 0.15%.

[v] In Ireland a separate licence for Public Network (basic licence) is also provided.

[vi] Holder of a general licence are permitted to operate a public network and provide voice telephony and network services. A basic licence is sufficient to operate a public network and provide network services.

[vii] Current fees are obtained adjusting original values provided by Ministerial Decree 05.02.1998 on the basis of inflation foreseen in the *Documento per la programmazione economica e finanziaria* on a year by year basis.

[viii] Corresponding to the combination of licences for provision of voice telephony and for provision of public network services.

[ix] Corresponding to the combination of licences for provision of voice telephony on a self-operated network and for provision of public network services.

[x] For all types of operator, an annual fee (depending on turnover and market share) is payable to contribute to the overall costs of the regulator. The annual percentage varies between 0.1% and 0.2% of turnover (in 1999 it was 0.12%, in 2000 it was 0.1%). The value for the year 2001 will be communicated in the second half of 2002.

[xi] An individual licence is required for the provision of public voice telephony over a self-operated fixed telecommunication network. The network could either belong to the operators, or could be totally leased from third-party network operator.

[xii] A licence is required if an operator’s activity is considered “significant” regarding the area of distribution, the number of users and similar factors. These operators typically have a market share of 10-15% (never less than 5%).

Table 3 Numbering fees (€)

(**S** = one-off fee; A = annual fee; where relevant: **S(r)/A(r)** = one-off/annual fee in case of allocation of a number that had been reserved before)

	B	**DK** [11]	**D**	**EL**	**E**	**FIN**	**F**	**I**	**L**	**NL**
Standard telephone numbers (E.164)	per block of 10 000 numbers **S:** 400 **A:** 134	per number (8-digit numbers) **A:** 0.2571	per block of 1 000 10-digit numbers **S:** 500.00 per block of 1 000 11-digit numbers **S:** 50.00	per number: **S:** 0.03 **A:** 0.025 **reservation**: **A:** 0.0125	per number **A:** 0.03	per number **A:** 0.34	per number **A:** 0.02 reservation **A: 0.01**	per number **A:** 0.0109296 reservation **A:** 0.0054648	per number part of a block of 10 000 numbers **S:** 0.12 **A:** 0.12 per number in amount < a block: **S** 61 97 + n*0.24 **A:** 61 97 + *0.24	per block of 1000 numbers. **reservation** **S:** 13.60 61 **A:** 1.60 **allocation** **S:** 13.60 **A:** 9.75
Carrier selection code	4 digits **S**: 1 333 **A**: 13 327	4 digits **A:** 2 570.97 5 digits **A:** 257.10	4 digits **S:** 500.00	4digit: **S:** 15 000 **A:** 15 000 5digit: **S:** 1 500 **A:** 1 500	per number **A:** 0.03 x a factor indicating the number of 9-digit numbers occupied in the numbering plan	**International** **A**: 3 digits 90 000 **A:** 4 digits 18 000 **A:** 5 digits 3 600 **Long distance** **A:** 3 digits 45 000 **A:** 4 digits 9 000 **A:** 5 digits 1 800	**reservation** **A:** 4 digits 20 000 **A:** 1 digit 200 000 **attribution** **A:** 4 digits 40 000 **A:**1 digit 400 000	**reservation** **A:** 4 digits 54 598 **A:**5 digits 27 300 26 976 **allocation** **A:** 4 digits 109 198 **A:** 5 digits 54 598	**S:** 1 239 **A:** 1 239	**reservation** **S** 450 **A:** 112.5 **allocation** **S:** 450 **A:** 225
International Signalling Point Codes (for international interconnection)	**S:** 400 **A:** 13 327	**A:** 25 709.71	**S:** 375			**A:** 1680			**S:** 991 **A:** 495	**reservation** **S:** 450 **A:** 112.5 **allocation** **S:** 450 **A:** 225
National Signalling Point Codes (for national interconnection)	**S:** 400 **A:** 0		**S:** 187.50			**A:** 0.7			**S:** 991 **A:** 495	per block of 8 numbers **reservation** **S:** 450 **A:** 112.5 **allocation** **S:** 450 **A:** 225

[11] Changes in numbering fees in DK are due to a change in the exchange rate to Euro.

2 CONSUMER'S CHOICE OF FIXED OPERATORS

This section analyses the fixed voice telephony market from the point of view of the consumers.

The following indicators have been considered: the percentage of subscribers with choice of operators and the percentage of subscribers actually using a provider other than the incumbent. The facilities used by the operators to provide public voice telephony services have also been included.

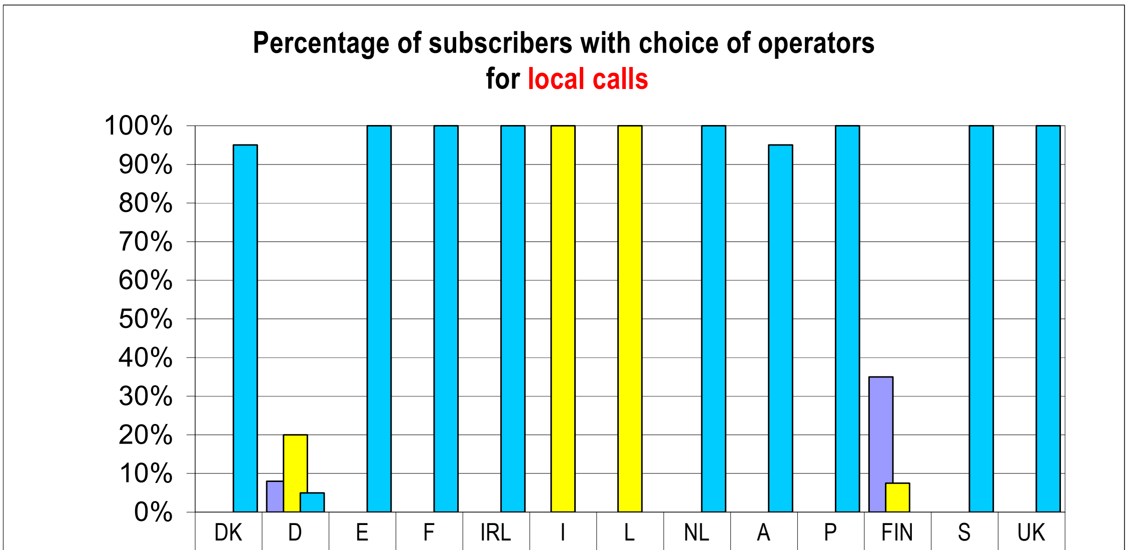
The data presented below has been provided by the national regulatory authorities and, unless otherwise indicated, reports the position at August 2002. Figures for countries not included in the charts are not available.

Figures are not comparable with those published in the 7th Implementation Report, since they are now based on the percentage of subscribers rather than population.

2.1. PERCENTAGE OF SUBSCRIBERS WITH CHOICE OF OPERATORS FOR FIXED CALLS

The following charts show the percentage of subscribers with choice of operators for local, long-distance and international calls and for direct access. The choice could be between only 2 operators, between 3 to 5 operators or more than five operators.

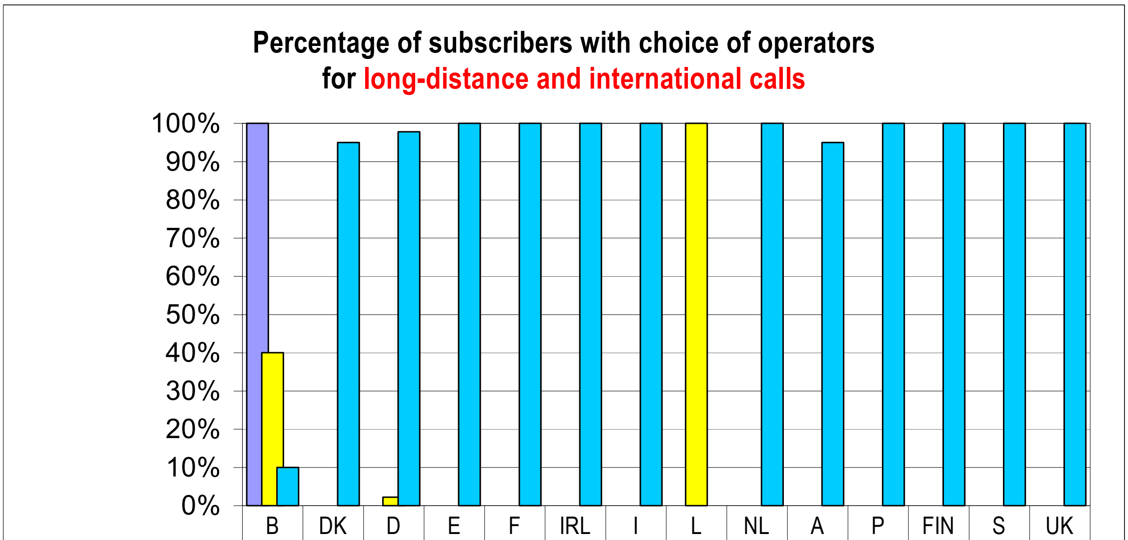
Chart 16



	DK	D	E	F	IRL	I	L	NL	A	P	FIN	S	UK
2 operators		8%									35%		
3-5 operators		20%				100%	100%				7,5%		
More than 5 op.	95%	5%	100%	100%	100%	0%	0%	100%	95%	100%	0%	100%	100%

- Data for Belgium and Greece are not available.
- Figure for Denmark should be considered as minimum.
- Figure for France refer to end of March 2002.
- Data for Italy for "more than 5 operators" are not available.

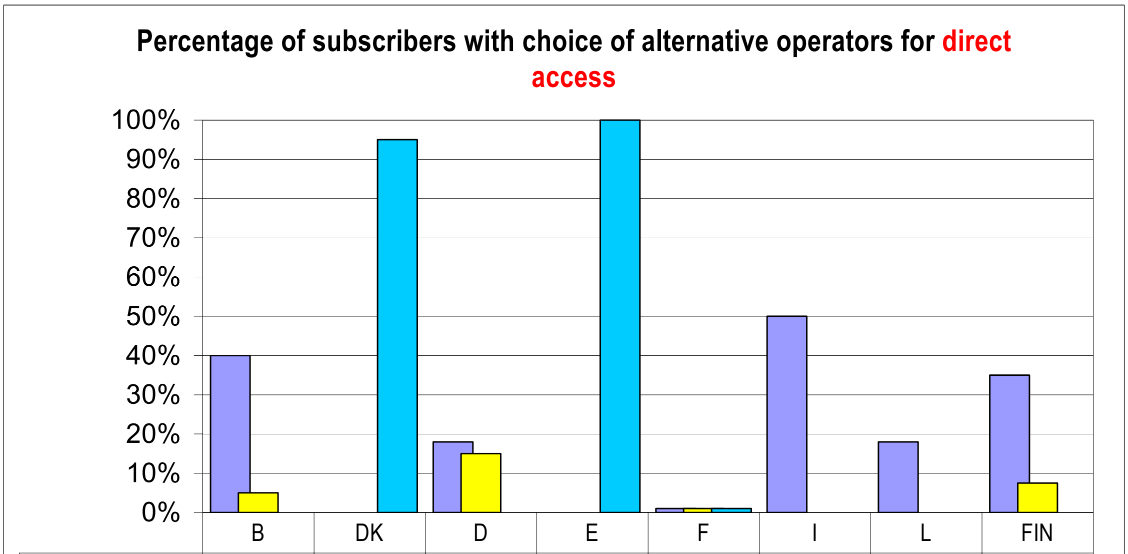
Chart 17



	B	DK	D	E	F	IRL	I	L	NL	A	P	FIN	S	UK
2 operators (21)	100%													
3-5 operators (22)	40%		2,2%					100%						
More than 5 op. (23)	10%	95%	97,8%	100%	100%	100%	100%	0%	100%	95%	100%	100%	100%	100%

- Figure for Denmark should be considered as minimum.
- Figure for Greece is not available.
- Figure for France refer to end of March 2002

Chart 18



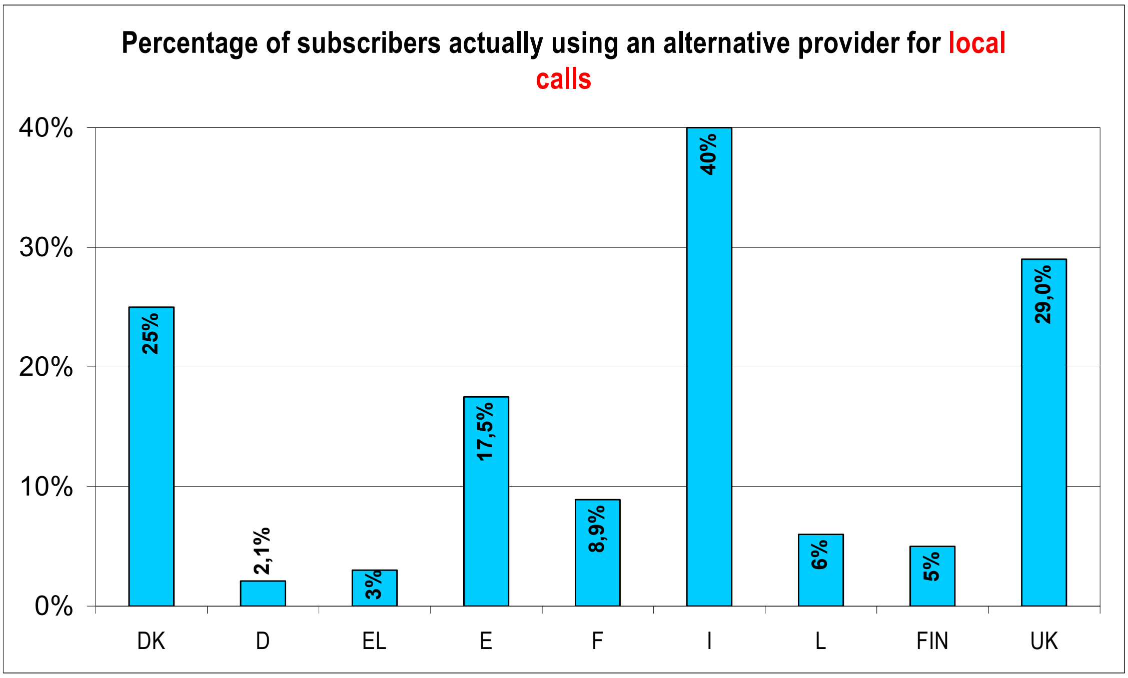
	B	DK	D	E	F	I	L	FIN
2 operators	40%		18%		1%	50%	18%	35%
3-5 operators	5%		15%		1%	0%	0%	7,5%
More than 5 op.	0%	95%	0%	100%	1%	0%	0%	0%

- Figure for Denmark, should be read as minimum.
- Figure for France should be read as maximum and refer to end March 2002.

2.2. PERCENTAGE OF SUBSCRIBERS ACTUALLY USING AN ALTERNATIVE PROVIDER OTHER THAN THE INCUMBENT

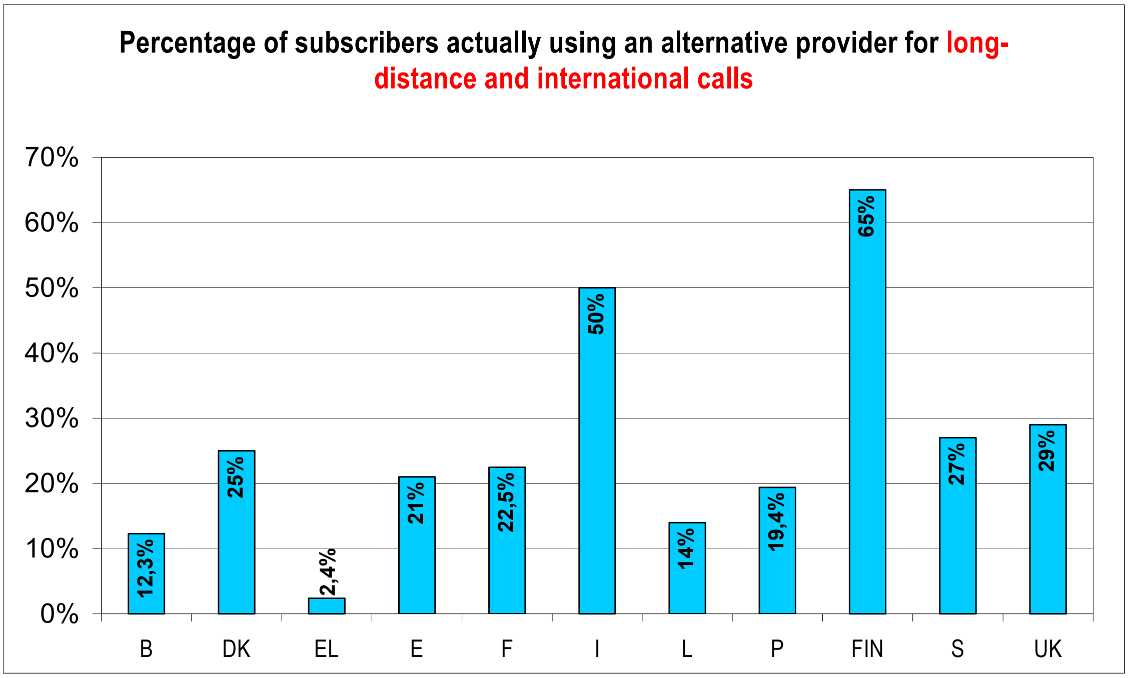
Unlike the previous indicators, that show the theoretic possibility of choice for the consumers, the following charts show the percentage of subscribers actually using an alternative provider for voice services.

Chart 19



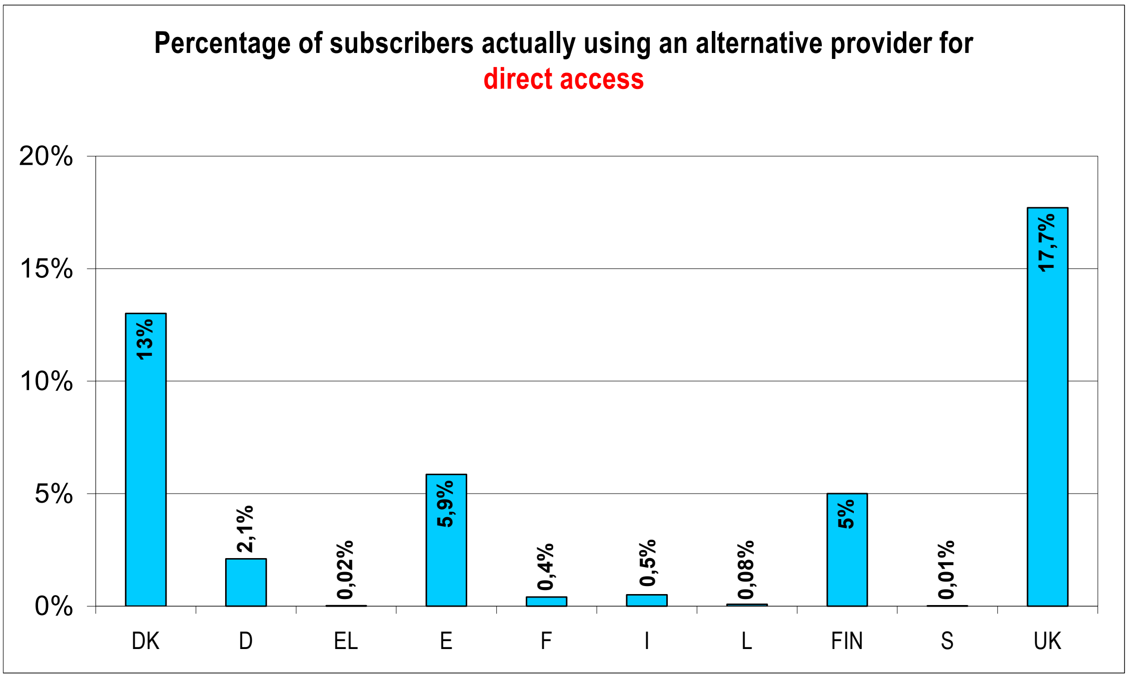
- Figure for Spain and France refer to subscribers using pre-selection and/or direct access only, and they should be considered as minimum
- Figure for Denmark should be considered as minimum.

Chart 20



- Figure for Denmark should be considered as minimum.
- Figure for Spain and France refer to subscribers using pre-selection and/or direct access only, and then should be considered as minimum

Chart 21



- Figure for Sweden should be considered as maximum.

2.3. FACILITIES USED BY NEW ENTRANTS TO PROVIDE VOICE TELEPHONY

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

The following charts show the estimated number of alternative operators using carrier selection, carrier pre-selection or direct access to provide voice telephony services to residential users.

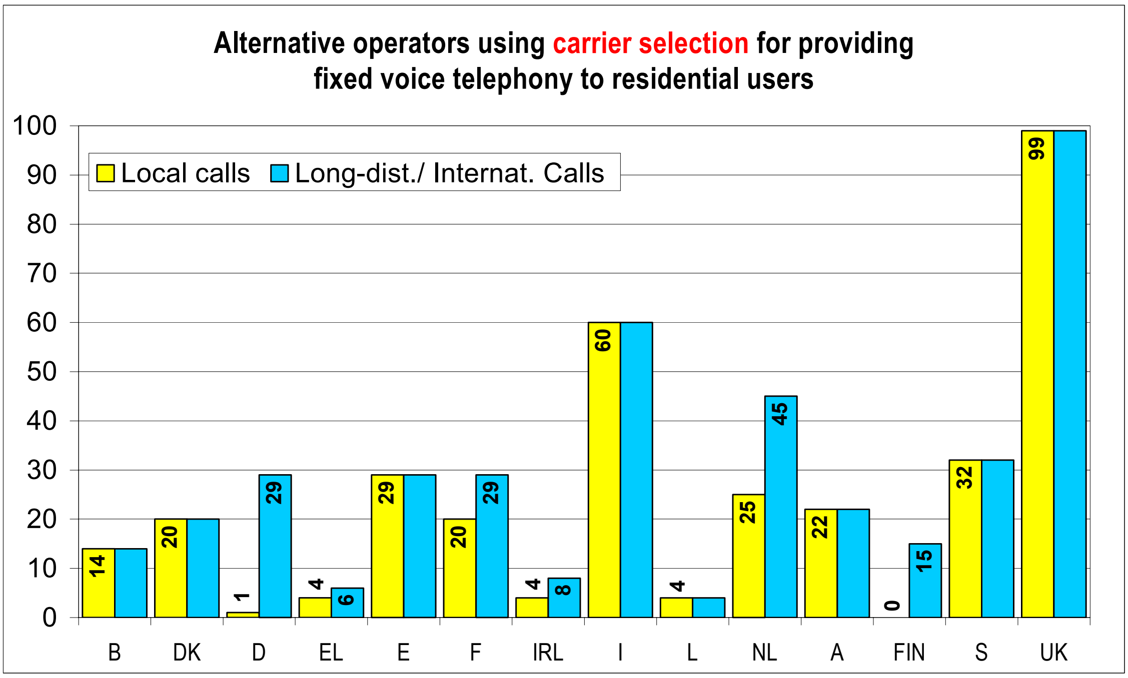
These figures are estimates provided by the national regulatory authorities and refer to July 2002. The charts should be read separately and not summed up as country totals, since most operators use more than one means of providing call services.

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, but legislation has been introduced recently. Furthermore, carrier pre-selection is not yet available in Greece, due to the deferment granted until 1 January 2003. 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.

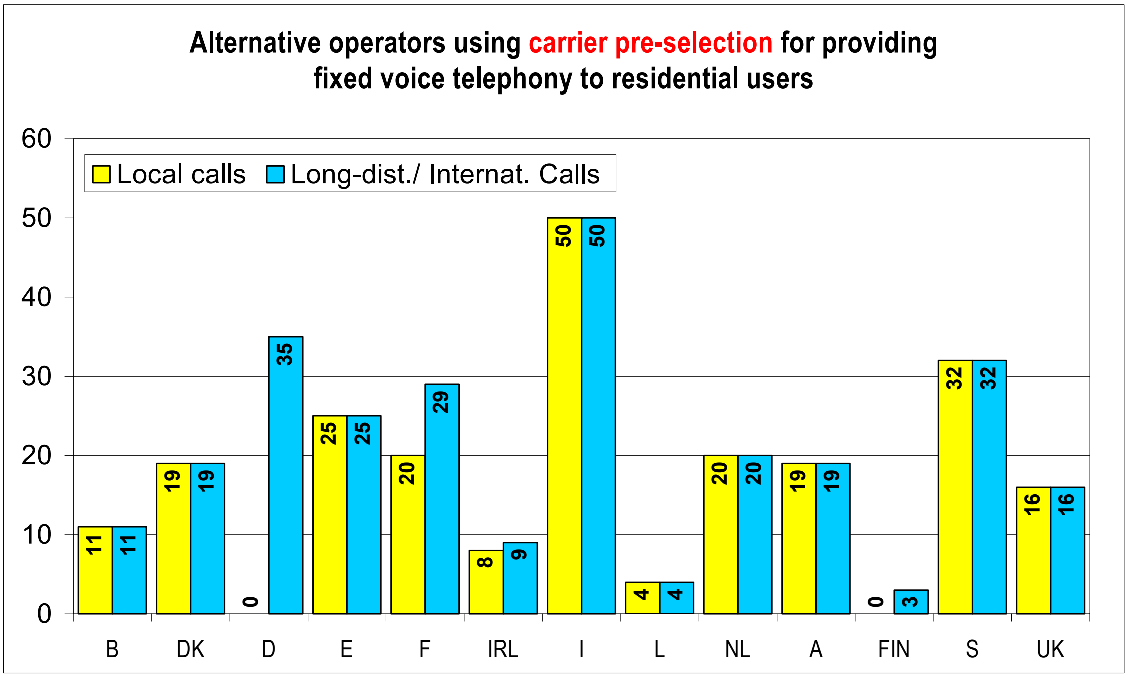
The information is not available for Portugal.

Chart 22



- Figure for Denmark should be considered as minimum.
- Data for France refer to May 2002.
- Figure for Ireland refers to August 2001.
- The United Kingdom estimate refer to residential and business users.

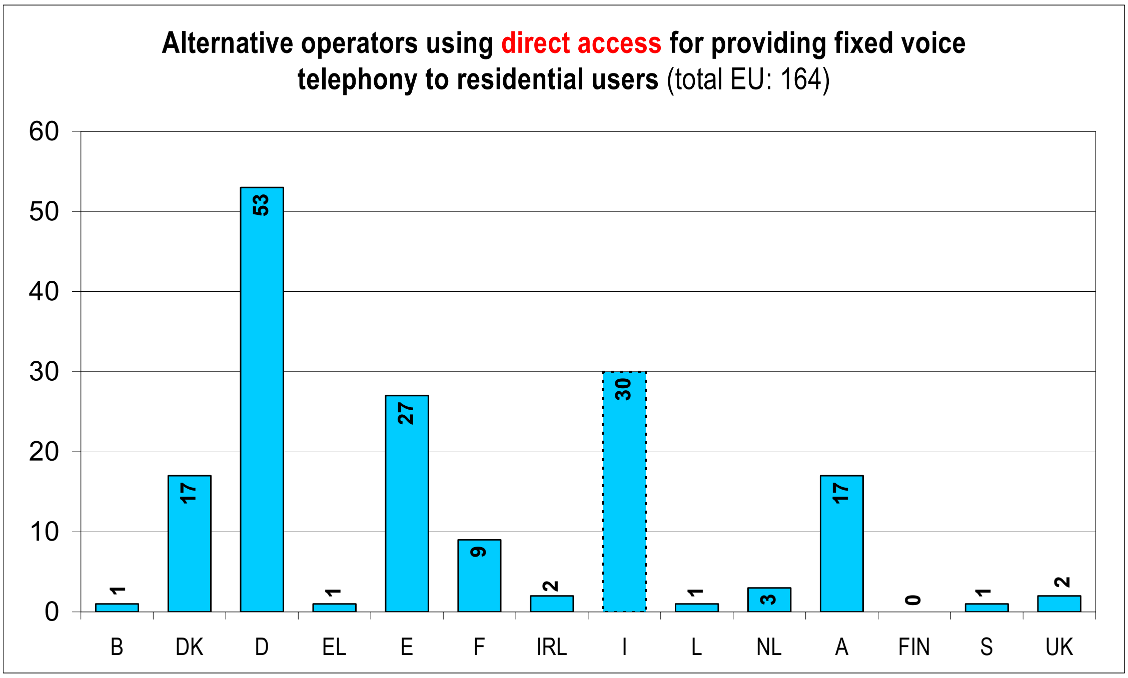
Chart 23



- Figure for Denmark should be considered as minimum.
- In Germany, carrier pre-selection for local calls is not available yet.
- In Greece, the carrier pre-selection for all types of calls is not available yet.
- Data for France refer to May 2002.

In the following chart, figures refer to all types of calls (local, long-distance and international).

Chart 24



- Figure for Denmark should be considered as minimum.
- Data for France refer to May 2002.
- Figure for Italy refers to the number of operators that signed a ULL contract with the incumbent, but not all of them are so far operational.
- Figure for the Netherlands refer to local call; data for long-distance/international call is 2.

3 PUBLIC NETWORK INTERCONNECTION AND INTERCONNECTION CHARGES

3.1. 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 the first three-minute call at peak rate.

The charts show the absolute value of the interconnection charges (in €-cents) as of 1 August 2002, in comparison to the value as at August 2001.

The figures may have been approved by the NRA or simply agreed between operators, where the legal framework does not require NRA approval.

Interconnection charges for Spain refers to a standard single transit, but a different charge is applied in Barcelona and Madrid (1,05 eurocents/minute)

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.

Charges for Netherlands apply from 1 Sept. 2002.

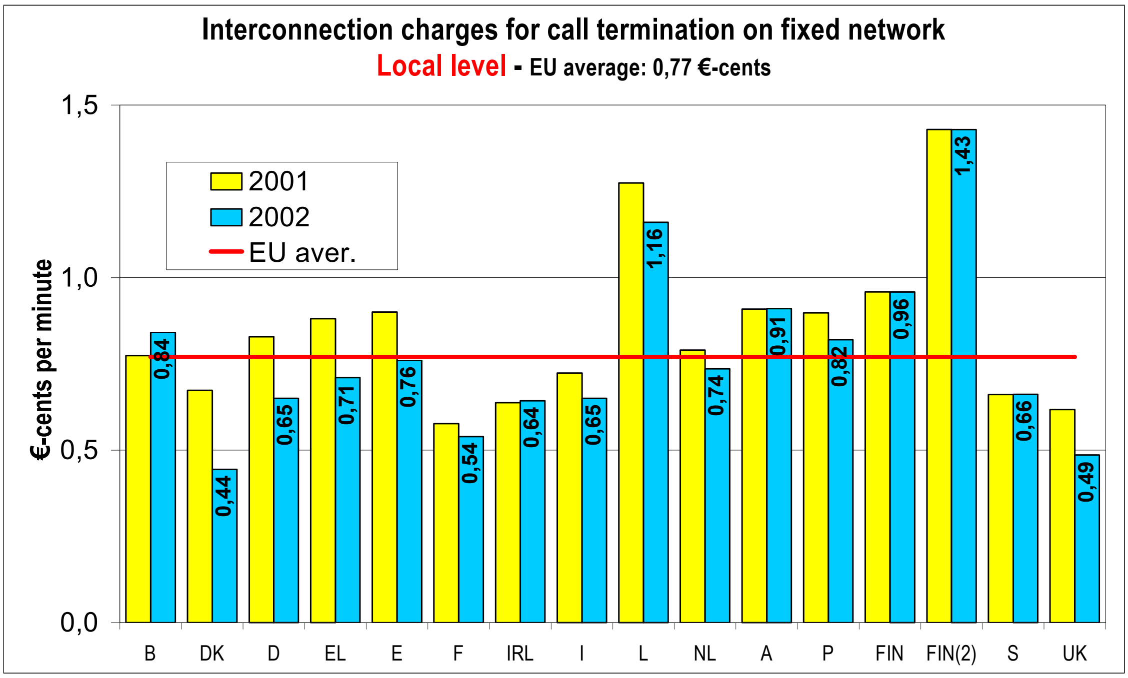
Figures for Austria are valid until 30.06.2002.

In Finland there are about 50 SMP operators who apply different interconnection charges. The charts refer to charges applied by the two major operators Sonera (FIN) and Elisa (FIN2).

Charge for Germany for single transit level is not comparable to last year, since the Regio50 and Regio200 zone rates have been unified in a unique single transit charge.

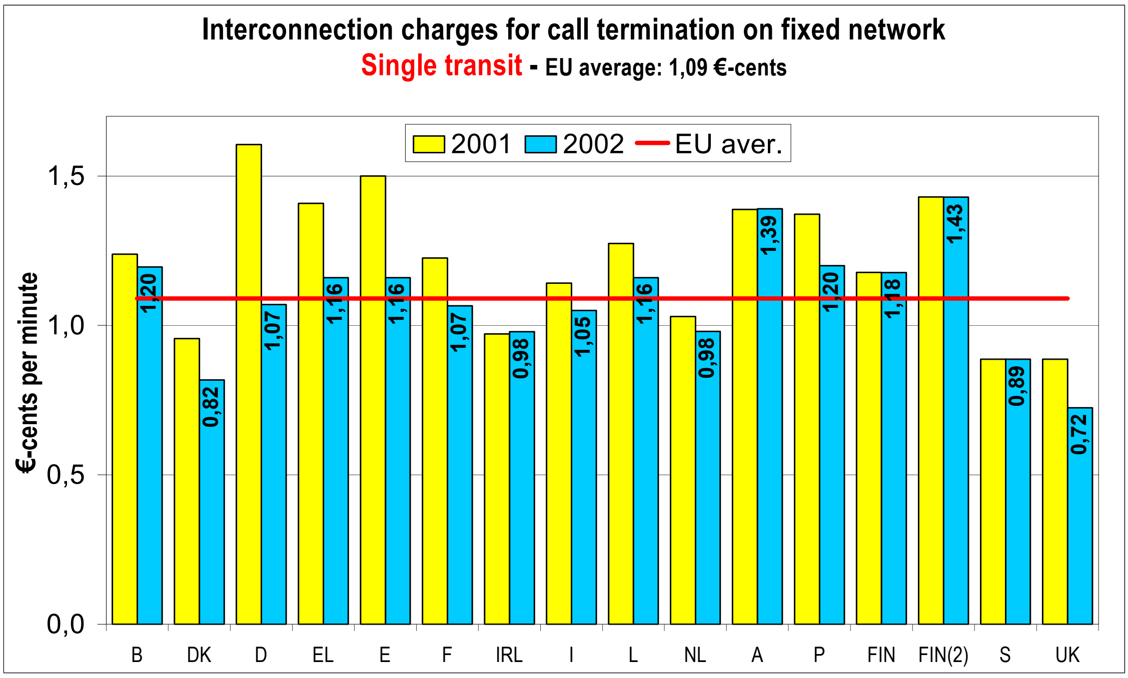
The EU average is a simple, rather than a weighted average.

Chart 25



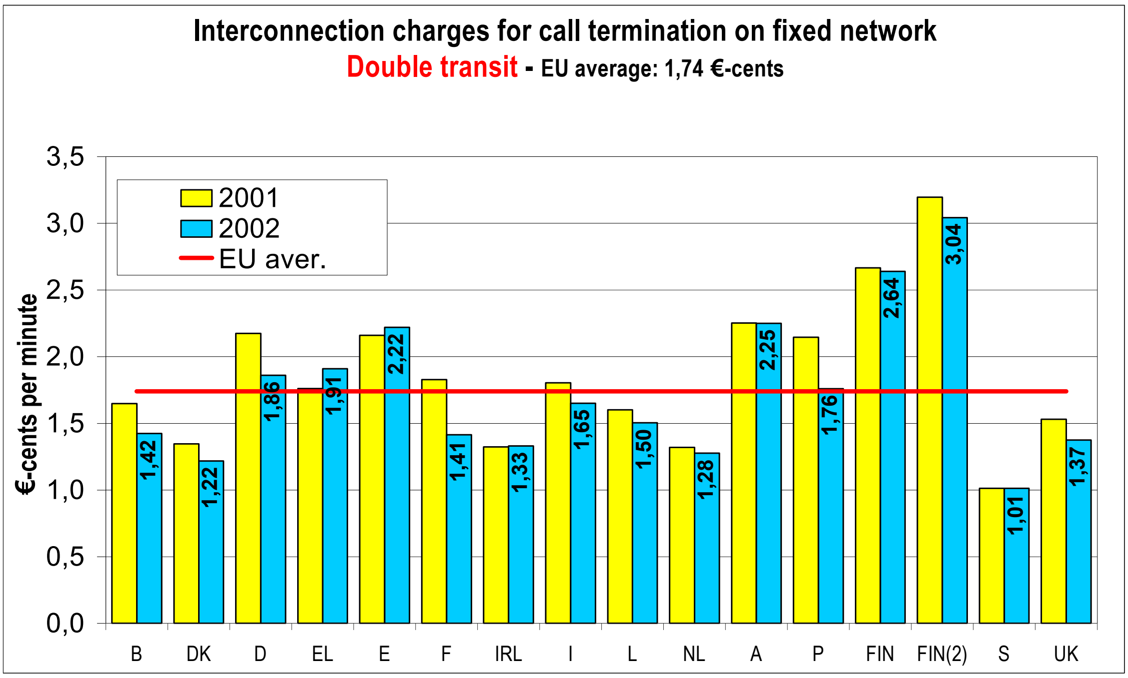
- In Luxembourg there is no distinction between local and long-distance domestic calls.

Chart 26



- Figure for Germany for the year 2001 is the simple average between the Regio50 and Regio200 zone rates.

Chart 27



- Data for the United Kingdom refers to a 100-200km connection length. For length less than 100 the interconnection charges at double level is 1,11184; and for more than 200km is 1,7832

3.2.LEASED LINE INTERCONNECTION CHARGES

This section shows the monthly rental and the one-off charges for short-distance leased lines (local ends, excluding VAT) up to 2 and 5 km provided by the incumbent operator to other interconnected operators. An estimate of the total average monthly rental cost (based on the total cost for the first year) is also presented.

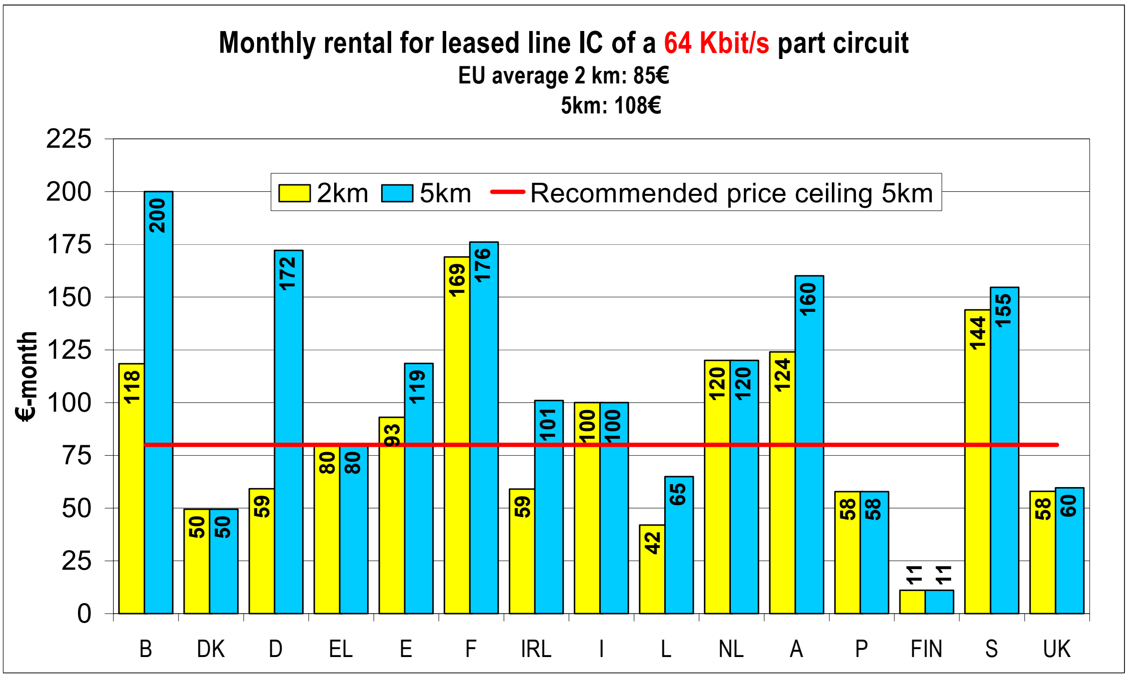
Deviations for the monthly rental from the "recommended price ceiling" set in Commission Recommendation 1999/3863 of 24 November 1999 are also shown. The recommended price ceilings are:

- € 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.

These figures have been provided by the national regulatory authorities through the questionnaire for the 8th Implementation Report and the replies to the ONP COM02-18 Document. Figures indicate the position in August 2002.

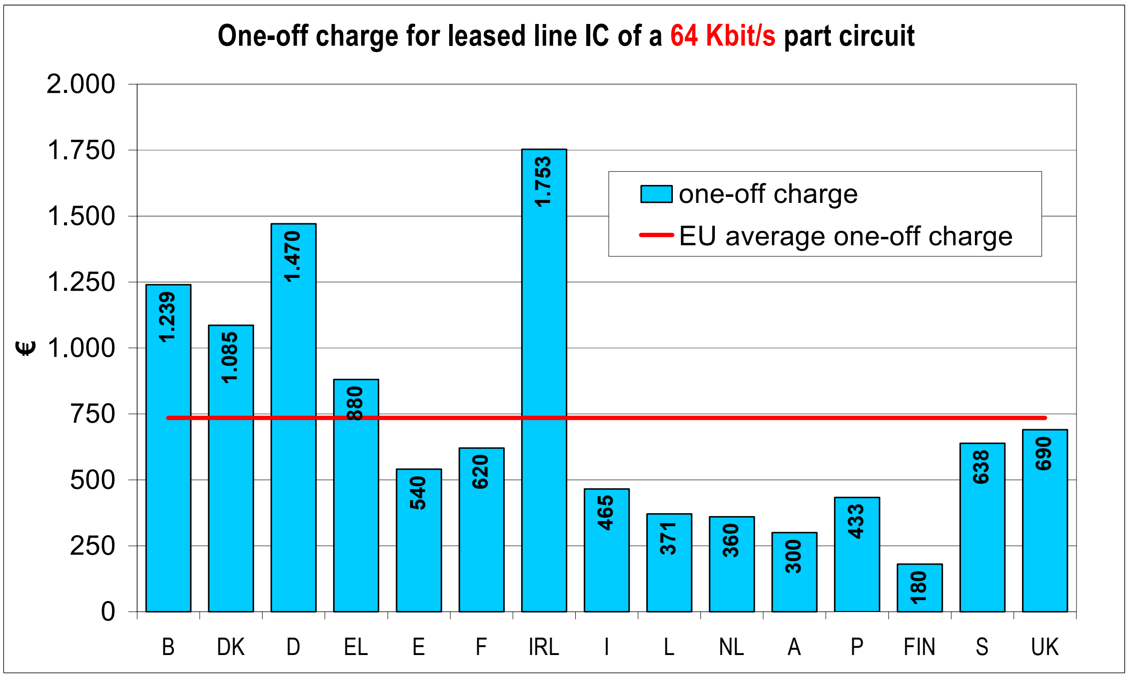
64 Kbit/s part circuit

Chart 28



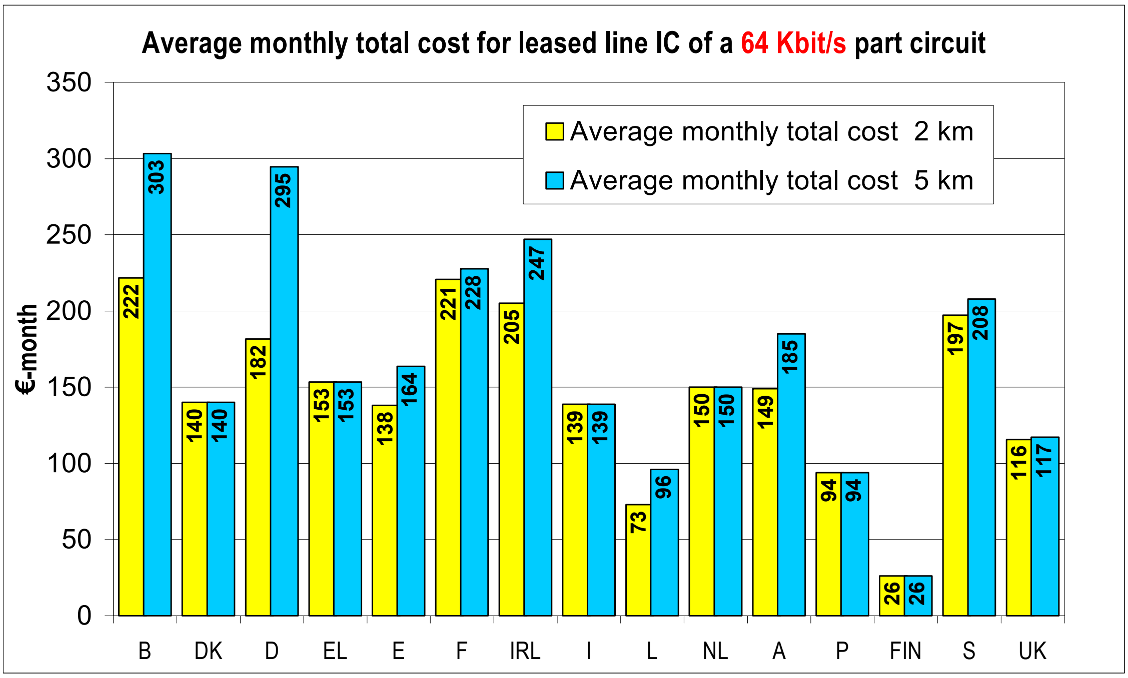
- Figure for Greece refer to August 2001.
- Figure for Denmark in force since October 2002.

Chart 29



- Figure for Denmark in force since October 2002.

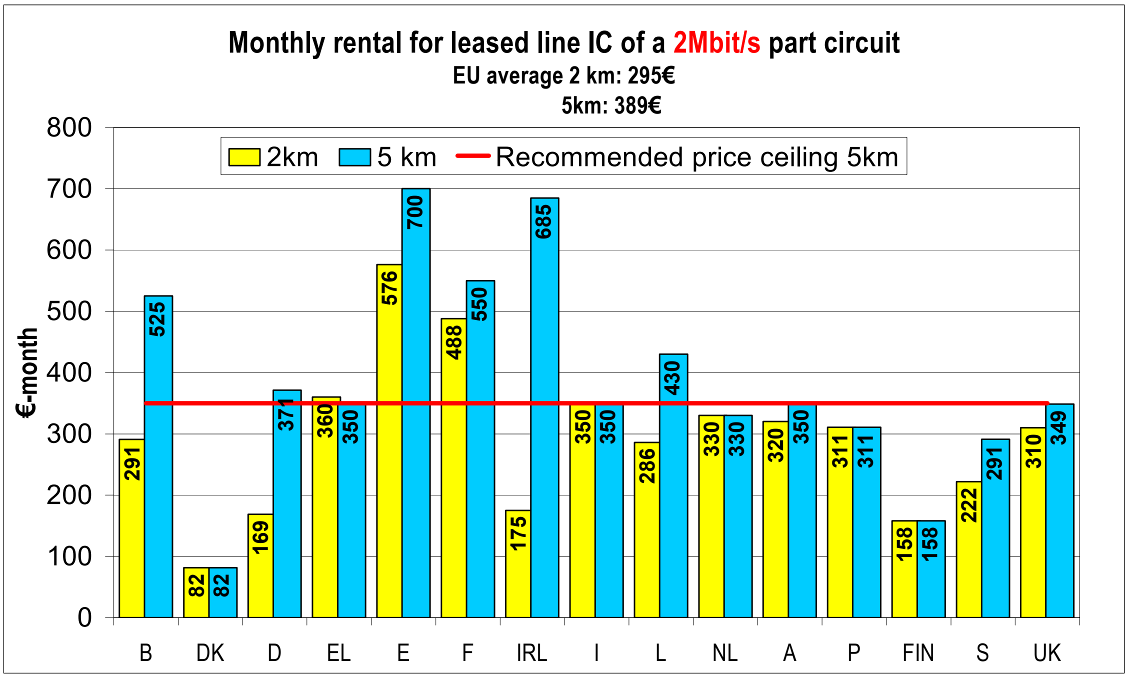
Chart 30



- Monthly rental for Greece refers to August 2001.
- Figure for Denmark in force since October 2002.

2 Mbit/s part circuit

Chart 31



- Figure for 2km for Greece refers to August 2001.
- Figure for Denmark in force since October 2002.

Chart 32

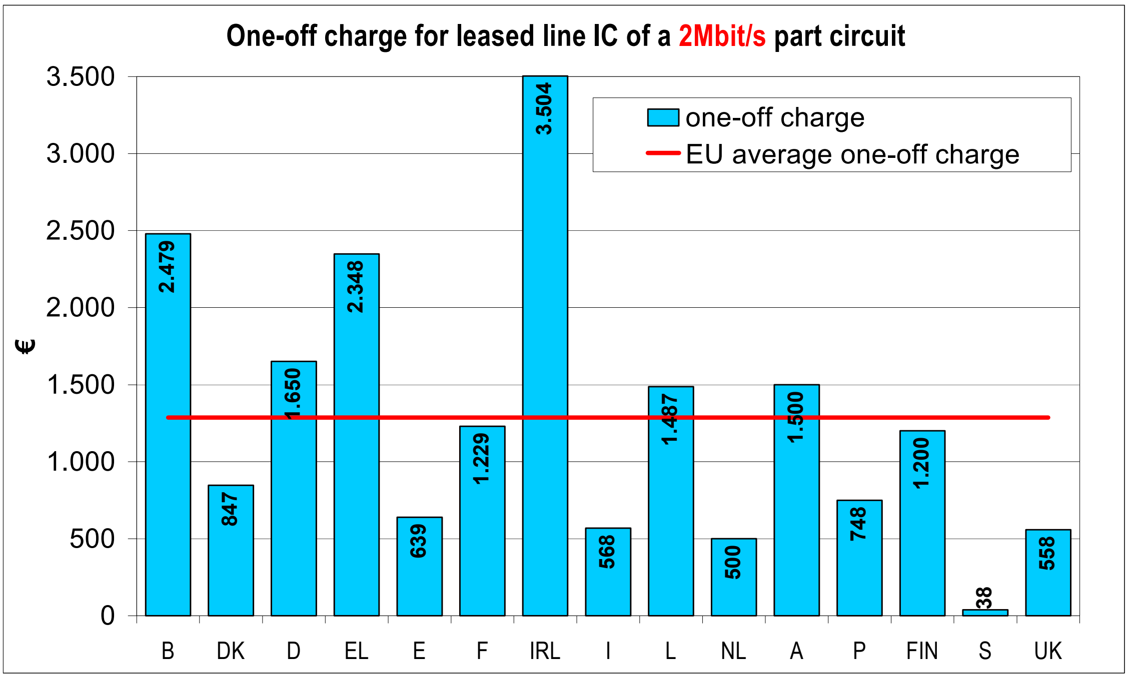
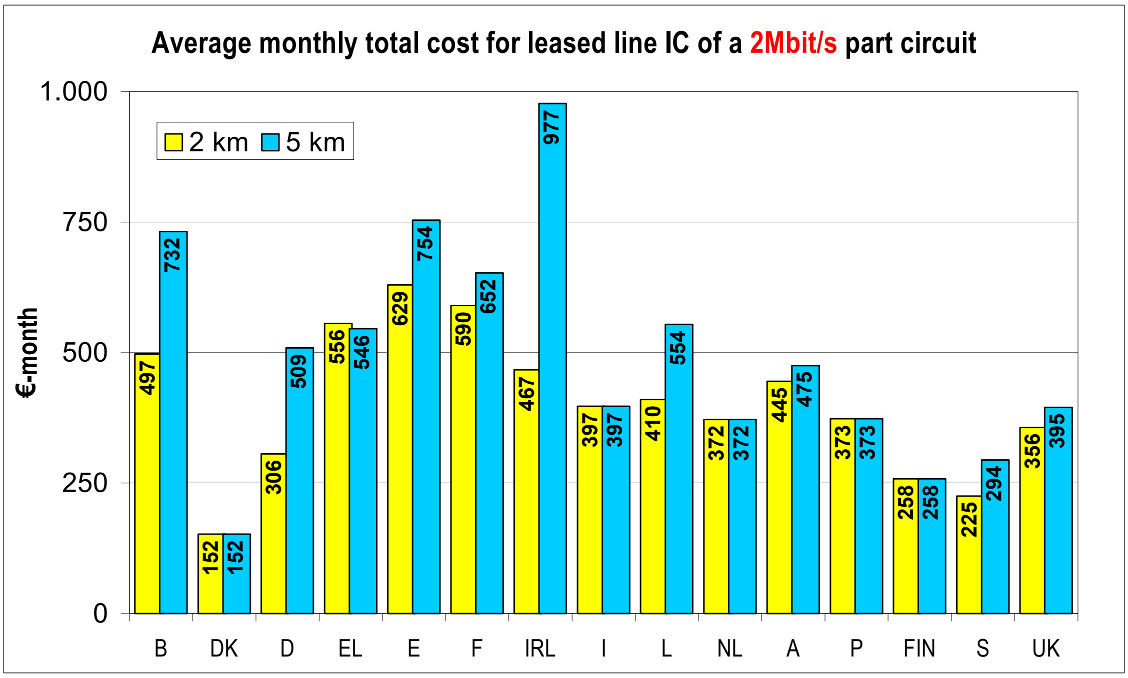


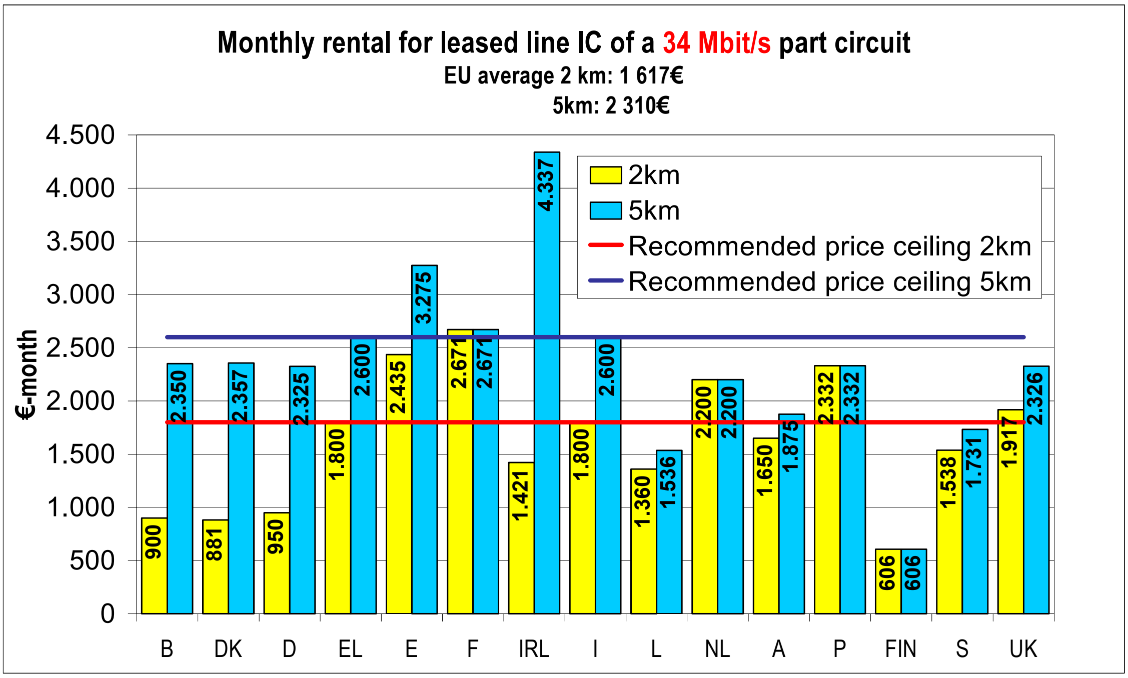
Chart 33



- Monthly rental for 2km for Greece refers to August 2001.

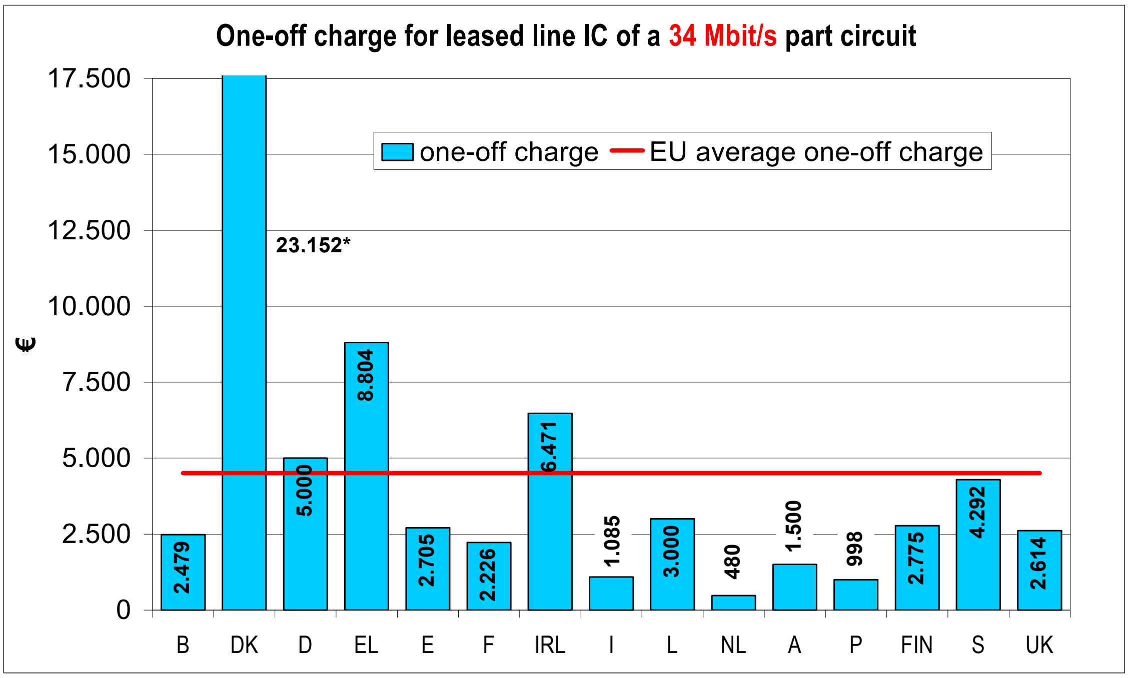
34 Mbit/s part circuit

Chart 34



- Figure for Denmark in force since October 2002.

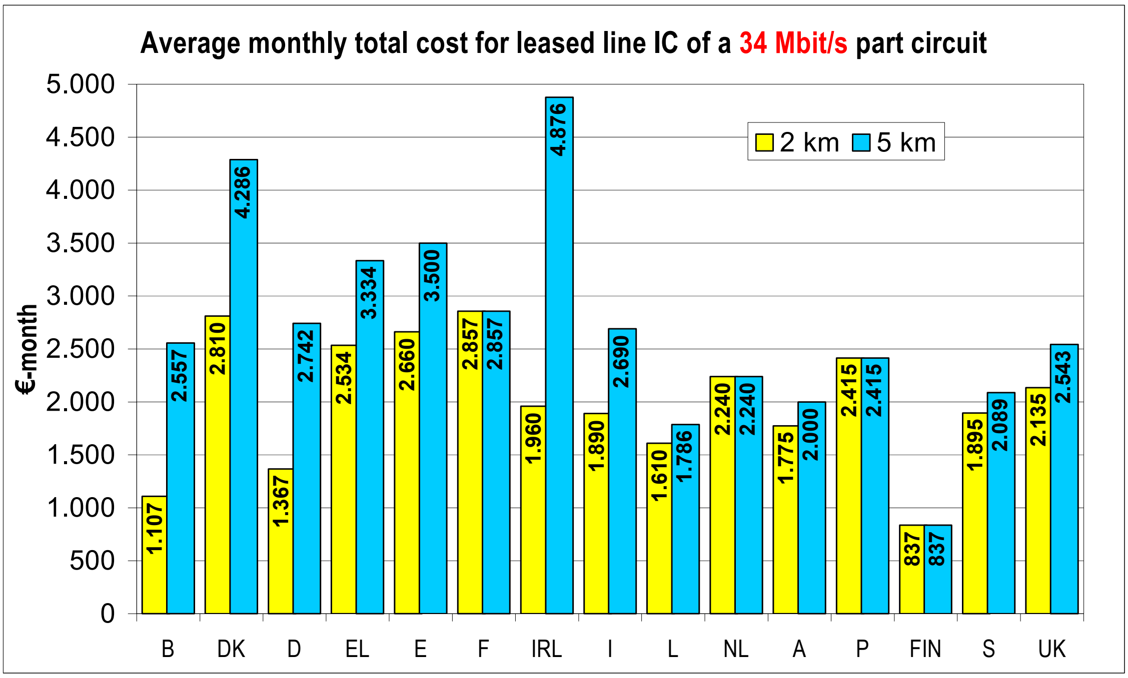
Chart 35



* Value not to scale

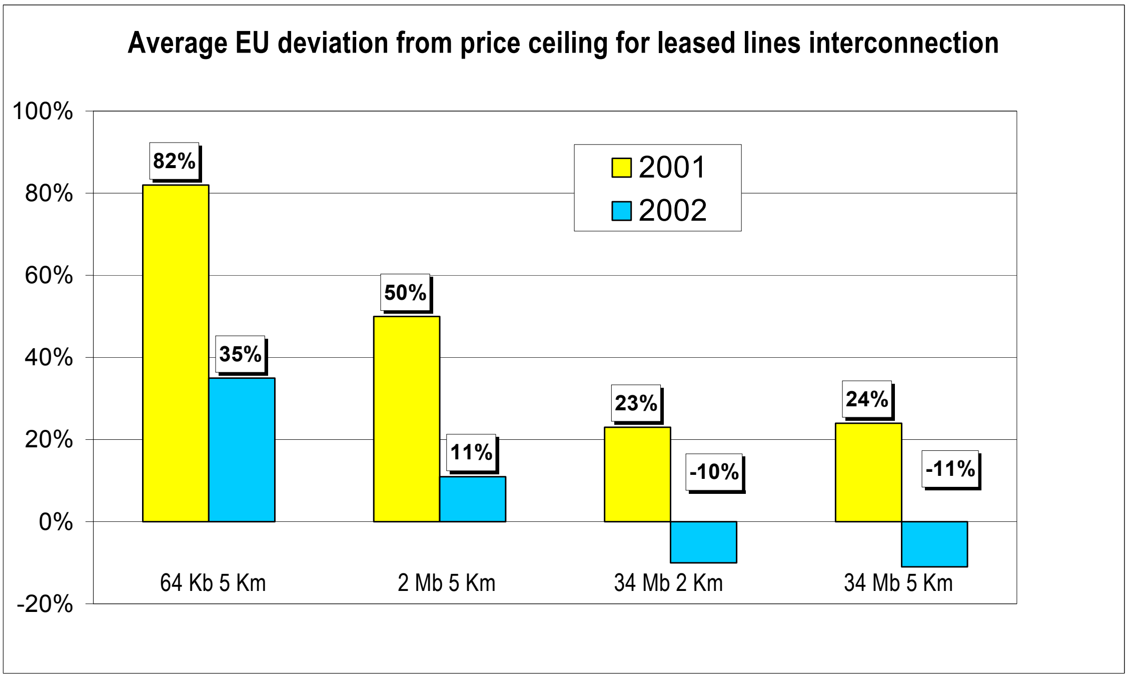
- Figure for Denmark in force since October 2002. One-off charge in the chart refers to 2km. One-off charge for 5 km is 55 458€.

Chart 36



- Figure for Denmark in force since October 2002.

Chart 37



3.3.FIXED-TO-MOBILE INTERCONNECTION CHARGES

This section shows the per-minute interconnection charges for fixed call termination on the networks of mobile operators. Charges are for calls originating in the same countries, except for Finland, where charges for mobile termination of international fixed calls are considered.

The charges are based on the first three-minute call at peak rate, except for Finland, where the average peak/off-peak rate set by the NRA has been shown. Different charges may apply for call termination on other mobile networks.

Except for Germany, the figures have been collected by the NRA, and give the position in August 2002. Data for Germany are not publicly disclosed by the NRA and the figure shown in the chart was provided by Cullen International.

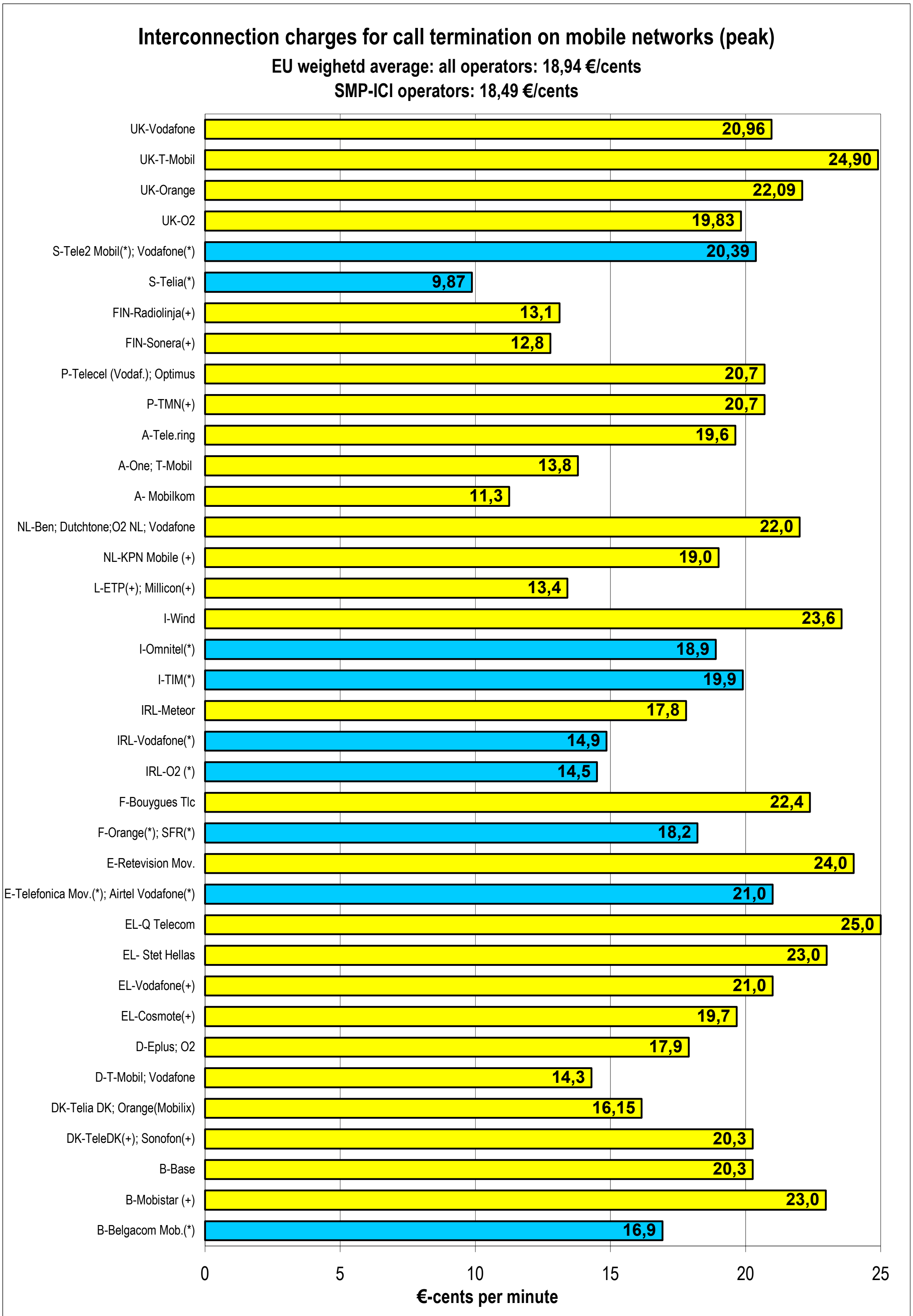
In the following chart figures are shown for a total of 12 operators with SMP in the national market for interconnection (Belgium, France, Ireland, Italy, Spain and Sweden). Figures for all the major mobile operators in each country are also shown (24 operators with SMP in the national mobile market). Denmark and Portugal applied to the non-SPM operators the same interconnection price as for the SMP operators in the mobile market.

In France, mobile-to-mobile interconnection charges are based on the "bill and keep" principle, so operators do not define termination charges.

Tariffs for Portugal are valid until 30.09.2002. Then, according to a NRA's decision they will be progressively reduced to 18.7 cents/min.

Data for Finland indicate the interconnection charges for an international fixed call to a mobile network (interconnection charges also apply to mobile-to-mobile calls). No mobile wholesale termination charges exist for call originating on national fixed network; instead, so-called “end-user” charges are levied.. The originating fixed operator charge a customer for a fixed network retail charge and for a mobile network retail charge (to be forward to the mobile operator). Both fixed and mobile operators determine the charges of their own segments. Example of fixed-to-mobile retail call charge (including VAT at peak rate) is 0,27€ for Sonera and 0,26€ for Radiolinja.

Chart 38



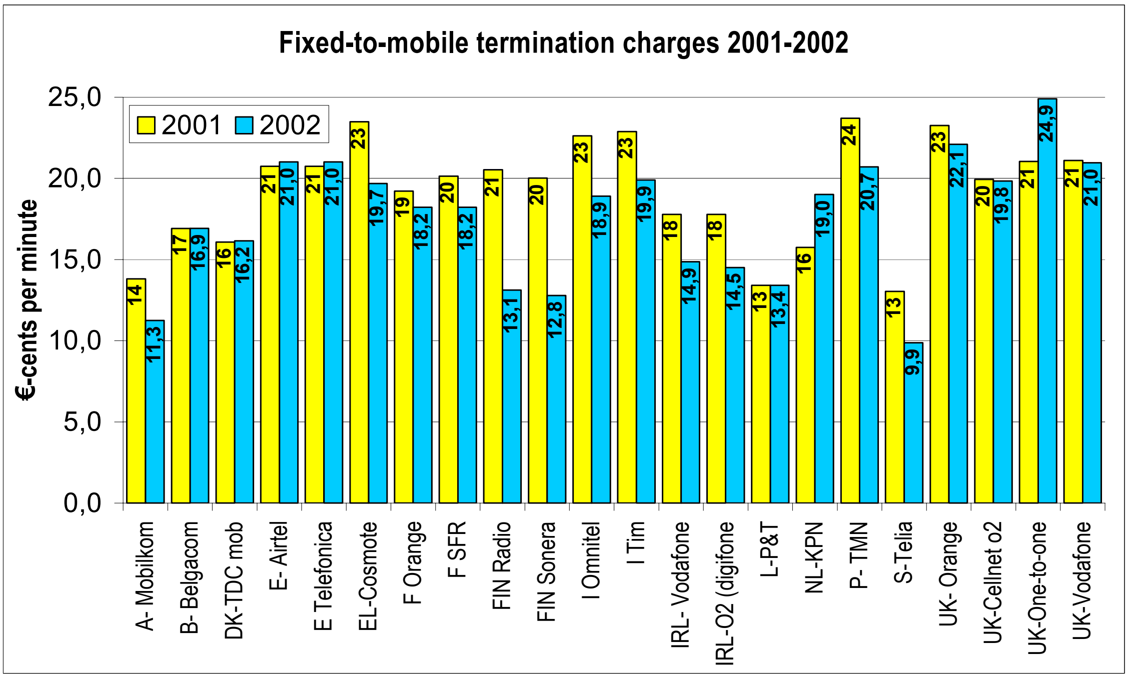
Legend:

(*) SMP operators in the national interconnection market
(+) SMP operators in the national mobile market

Charge for the SMP operator Telia in Sweden refers to a weighted peak/off-peak average rate, set out by the NRA. Charges for the other operators refer to a per minute peak rate. The SMP designation for Tele2 Mobil and Vodafone has not taken effect due to pending court proceedings.

The following chart shows the mobile termination charges for the year 2001 and 2002 for the main EU operators. EU weighted average trend is also shown.

Chart 39



4 MOBILE MARKET

4.1. MOBILE PENETRATION

The following charts estimate for each Member State the number of mobile subscribers and the penetration rate in 2002 for second generation mobile services (DCS-GSM). Growth in the penetration rate since August 2001 is also shown.

Subscriber figures are taken from FT Mobile Communications (August 2002) except for Germany, Austria and the Netherlands, where updated figures were provided by the respective NRAs. Data show the situation as at August 2002 and include both post-paid card and pre-paid 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), expressed in terms of % of total subscribers over population.

Figures for Italy, Spain, Sweden and Finland include analogue subscribers.

Chart 40

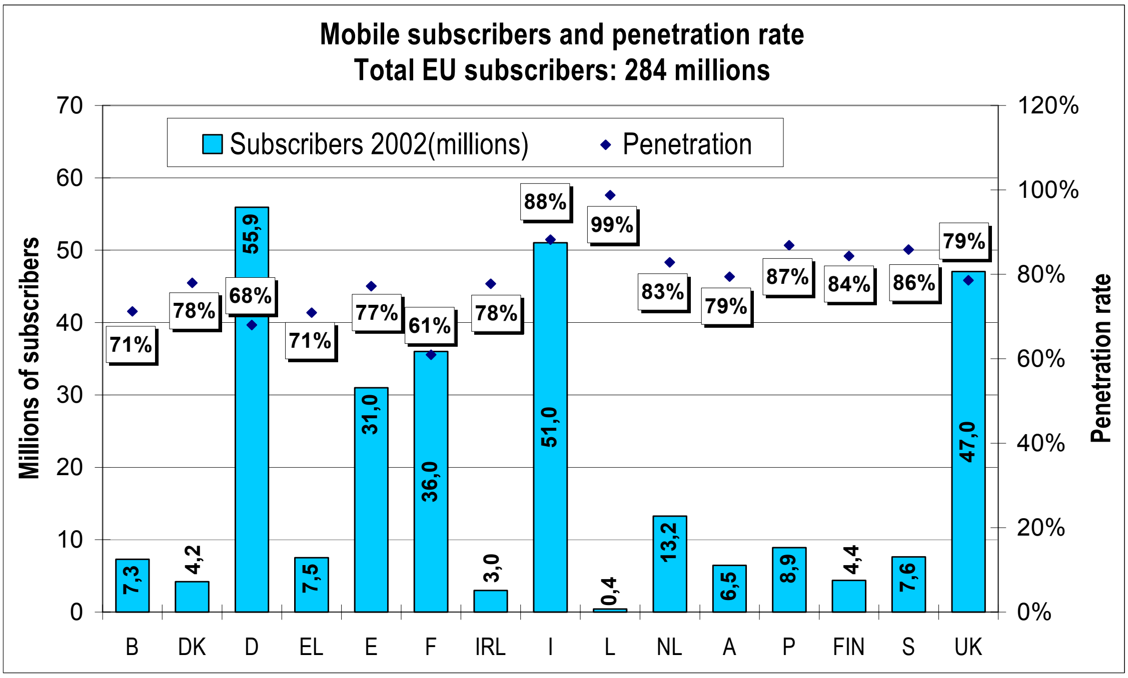
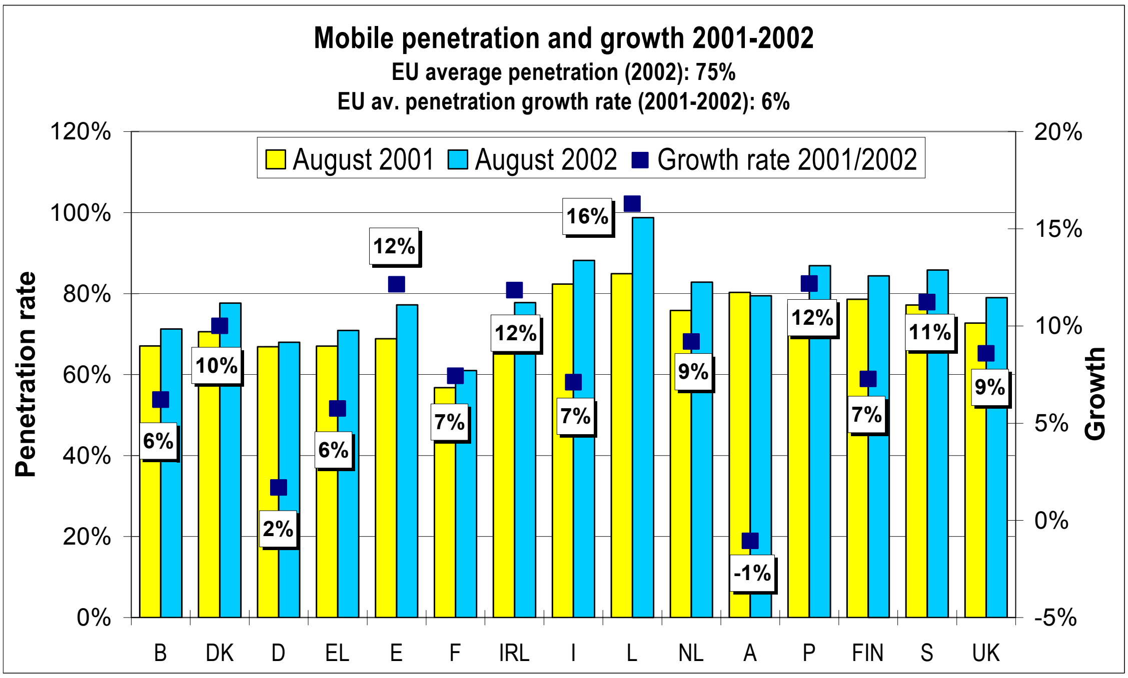


Chart 41



According to the Austrian NRA, the decline in the number of Austrian subscribers is due to a revision in the definition of active subscriber. Non-regular users are excluded from these figures.

Chart 42

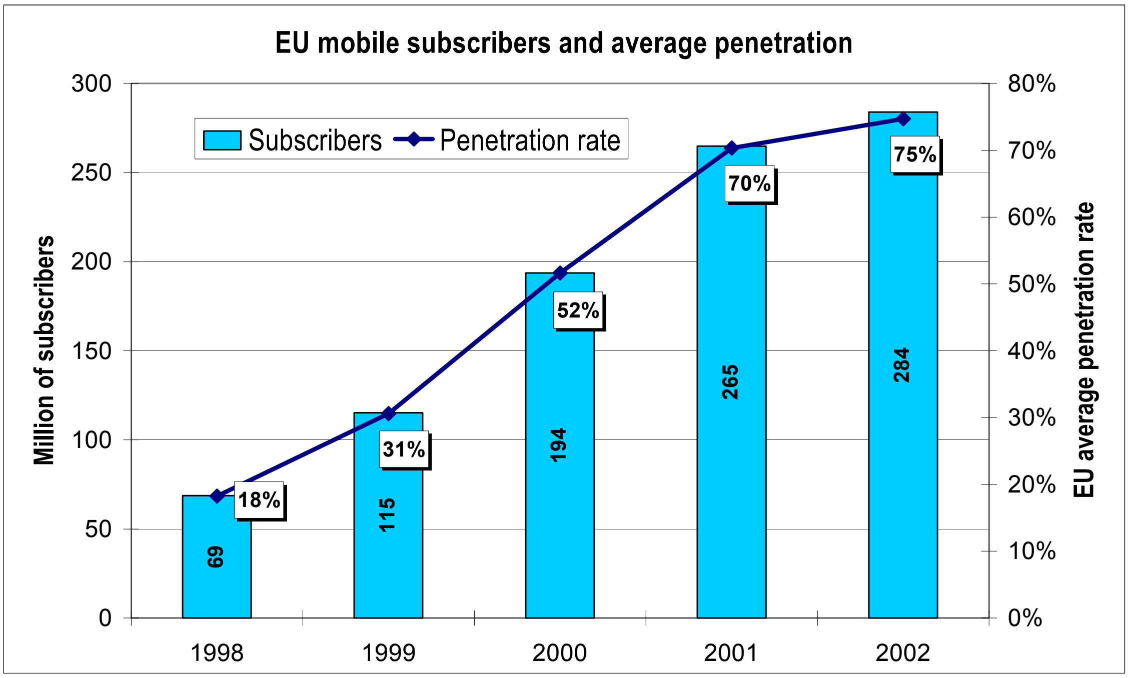
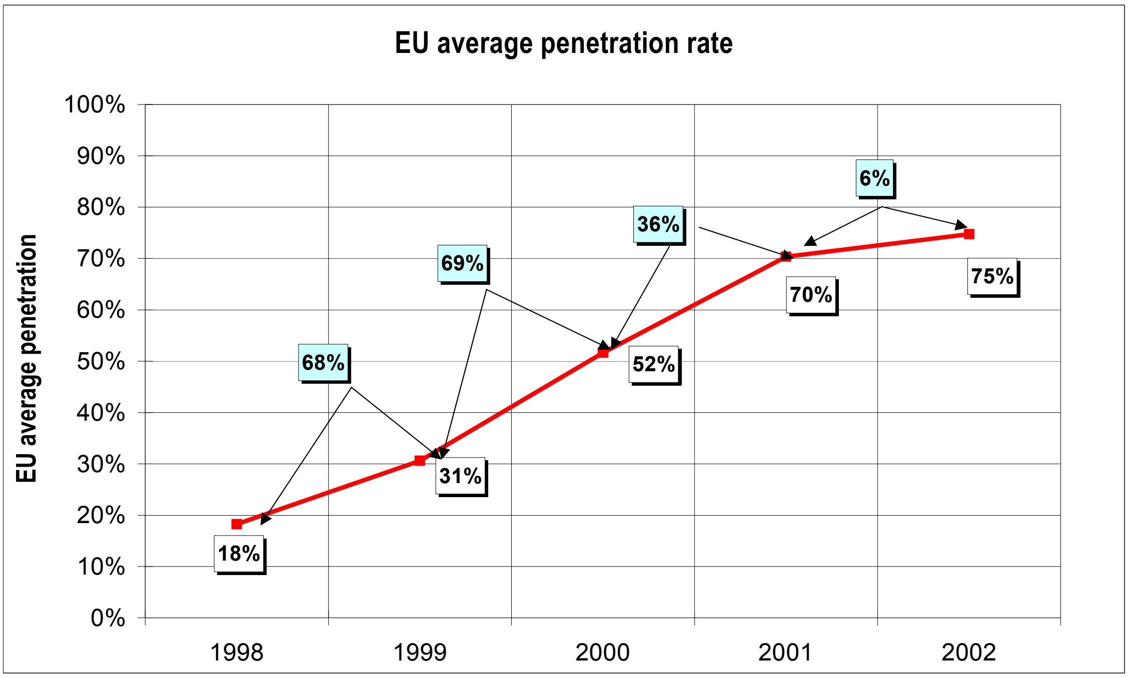


Chart 43



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

4.2. PLAYERS IN THE MOBILE MARKET

This section shows the number of mobile licences granted in each Member State for the provision of analogue, GSM 900, DCS 1800 and UMTS services.

The data on the number of licensed operators have been provided by the national regulatory authorities and indicate the position in October 2002.

Chart 44 shows the number of operators licensed to provide digital mobile services (second-generation) rather than the number of licences issued in each country. The number of operators indicates the real magnitude of the choice of operators for customers of digital mobile services, since very often operators have licences for both GSM 900 and DCS 1800. Mobile network operators have been identified as having only GSM 900 or only DCS 1800 frequencies, or both (in which case they have usually been granted a GSM 900 licence which has subsequently been extended to the DCS 1800 band).

Information on mobile service providers[12] has been included where available (without distinction between local and national coverage).

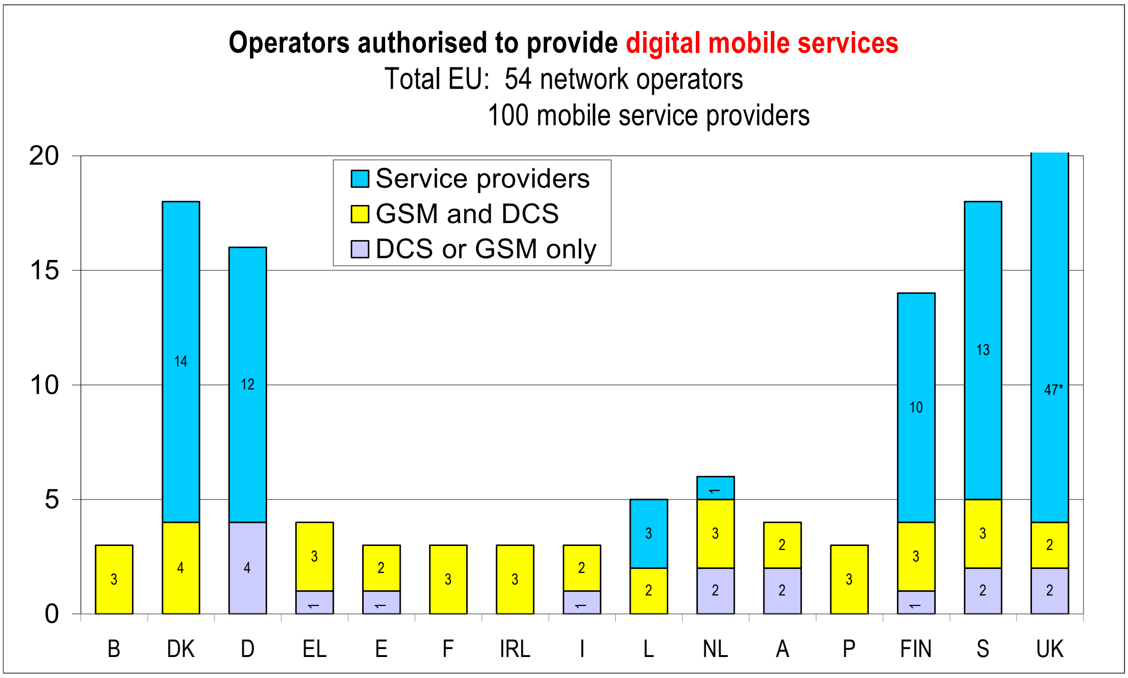
In Finland, 21 local telephone companies have been awarded licences to operate local DCS 1800 services, but spectrum has been allocated to two mobile operators, Radiolinja and Suomen 2G, in which those companies participate. Only 8 of these local companies are actually providing services. The figure does not include 1 local GSM operator belonging to the Finnet Group (Alands) and 1 local GSM and 2 local DCS operators not belonging to the Finnet group. Only 3 mobile service providers have started commercial operations.

Figure for France does not include 2 analogue, 6 GSM local and 6 DCS local licences granted to the subsidiaries of the licensed mobile operators for the overseas departments[13].

[12] Mobile service providers are defined as entities authorised to offer mobile service under their own brand name (dealing with marketing, billing, etc.), using a third party's mobile network.

Figures for Italy does not include the license of BLU since this has been withdrawn.

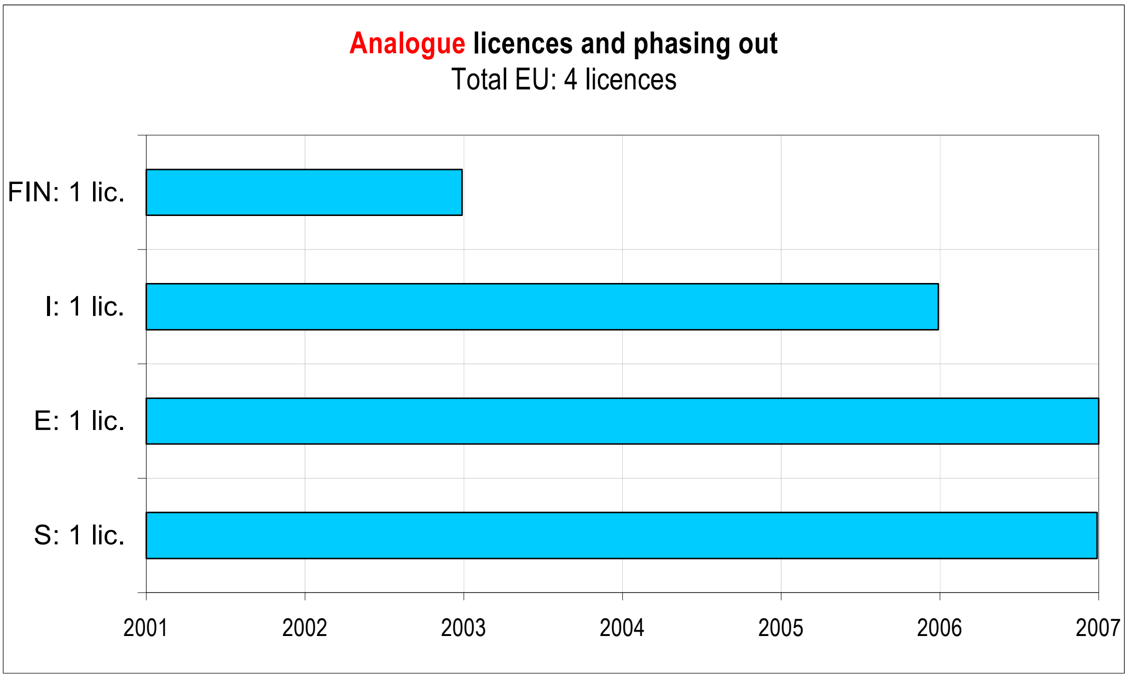
Chart 44



* Values not to scale

The following chart shows the number of analogue licences still active in Europe and the date on which the phasing-out of these networks is expected to be completed. All the analogue licences have been granted to the subsidiary of the incumbent fixed network operator.

Chart 45

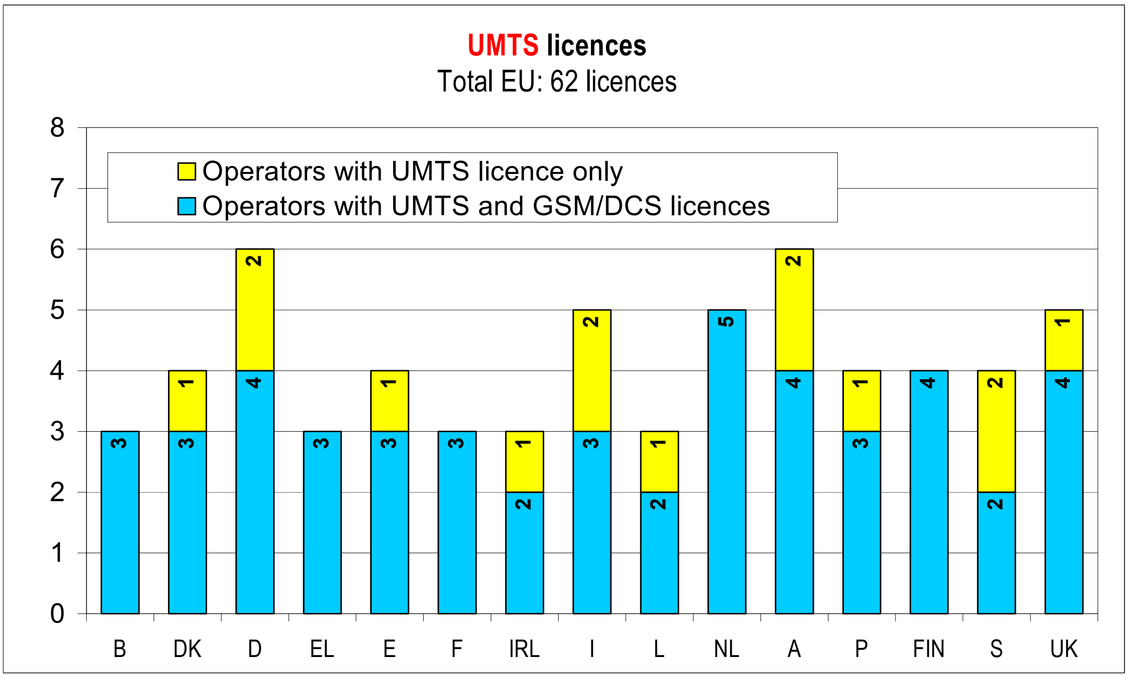


[13] Département de la Réunion, Antilles Françaises, Guyane; Île de Saint Martin et Saint Barthélémy)

Chart 46 shows the number of UMTS licences granted in Europe. The great majority of licences have been granted to players still active in the second generation market, and 14 licences have been granted to new entrants.

Figure for Finland does not include a local service provider.

Chart 46



4.3. OPERATORS' MARKET SHARES

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

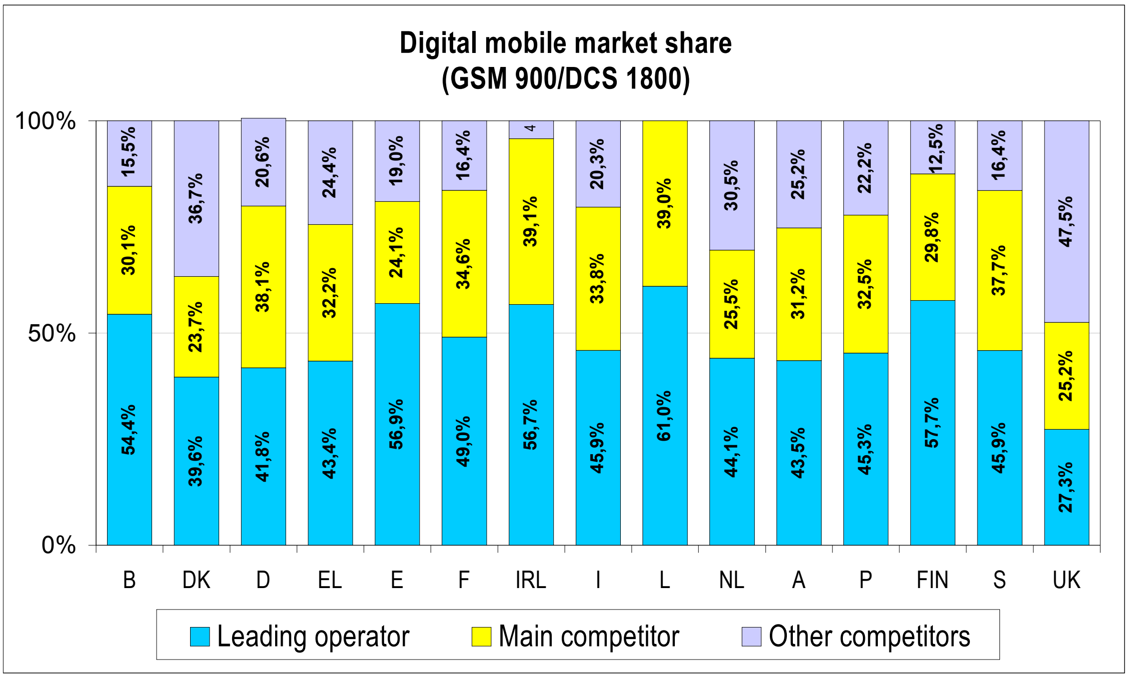
Since in four countries the incumbent's subsidiary is still providing the analogue service on the basis of a de jure or de facto monopoly, the operators' market shares have been calculated on two different relevant markets: the overall mobile market (including analogue, DCS 1800 and GSM 900 subscribers)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

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 2002. 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 the United Kingdom, the leading operator is a subsidiary of the incumbent fixed network operator.

Chart 47 shows the shares of the leading operator, of the main competitor and of the other competitors on the digital mobile market only (100%).

Chart 47



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 48

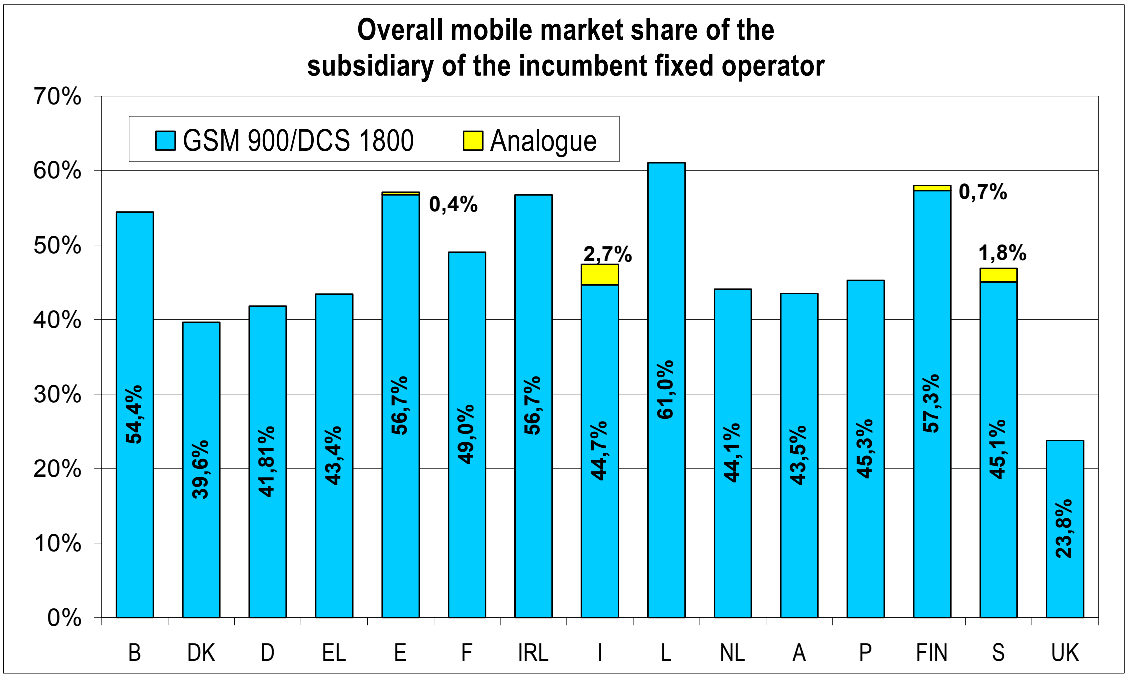
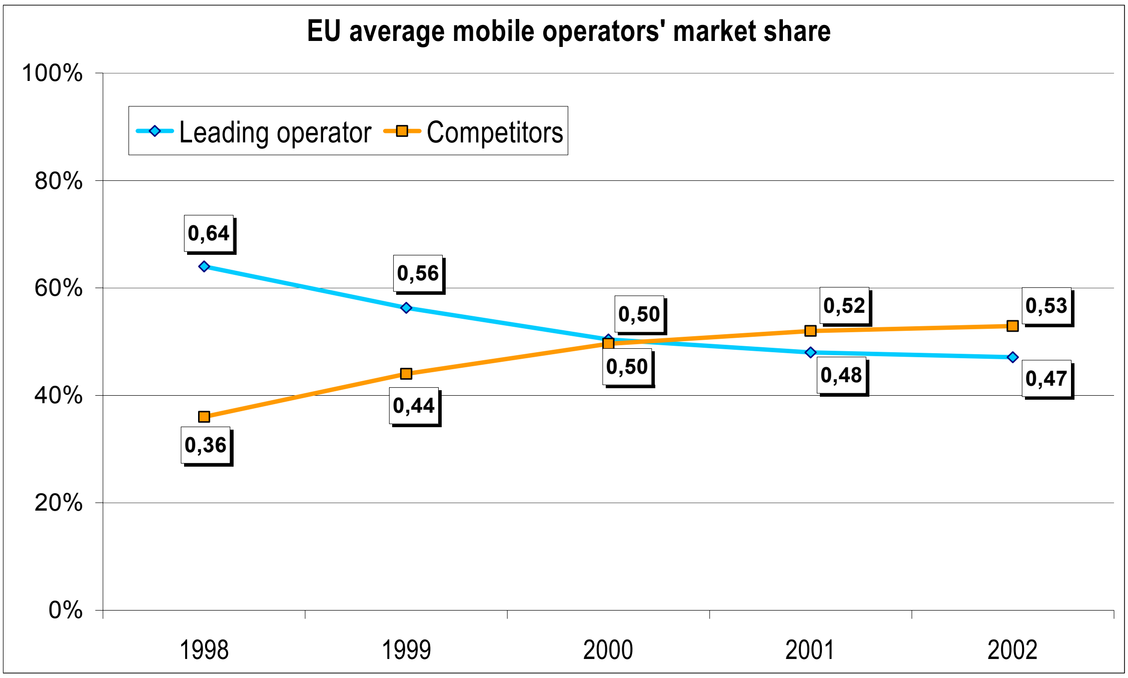


Chart 49



4.4. MOBILE BASKET

The analysis of national (as opposed to roaming) mobile services is based on the OECD baskets for GSM/DCS services, as provided by Total Research Teligen in the August 2002 T-Basket. Due to significant changes in usage patterns the OECD baskets have been redefined with effect from August 2002[14].

Since the results from the 'new' baskets are not finalised yet, the 'old' OECD baskets will be used in this section.[15]

The 'old' OECD baskets cover calls to local (70% of national calls) and distant (20% of national calls) fixed line phones, mobile phones in the same network (10% of national calls), and international calls.

All packages analysed are post-paid packages. The analysis is based on packages from the leading[16] operator in each country. Other providers may offer lower prices.

The low intensity basket will be typical for personal usage, with a weight towards afternoon and evening, and a lower number of calls (total 202 calls per year, of these 2 are international).

The high intensity basket is more typical for professional usage, with a heavy weight towards business hours, and far more calls than the low intensity basket (total 1272 calls per year, of these 72 are international).

The baskets cover all relevant charges, i.e. 1/5 of the activation charge, annual rental charges, and call charges as defined above.

---

[14] The 'new' baskets are not compatible with the "old" ones, in that they contain an SMS element, they include calls to several mobile networks, and they do not cover international calls. The new baskets will cover more than one operator per country, and a range of packages per operator. This means that the results from the new baskets will come out very different from the results obtained in previous years.

[15] A full description of the methodology can be found in the document 'OECD Telecommunications Basket definitions', June 2000, available at http://www.oecd.org/pdf/M00005000/M00005340.pdf

[16] In terms of number of subscribers.

The packages from each operator have been selected as appropriate for each of the two baskets, based on an analysis of the range of packages offered.

Several packages offer an amount of free calls, included in the package price. These free calls are subtracted from the usage charges.

Chart 50

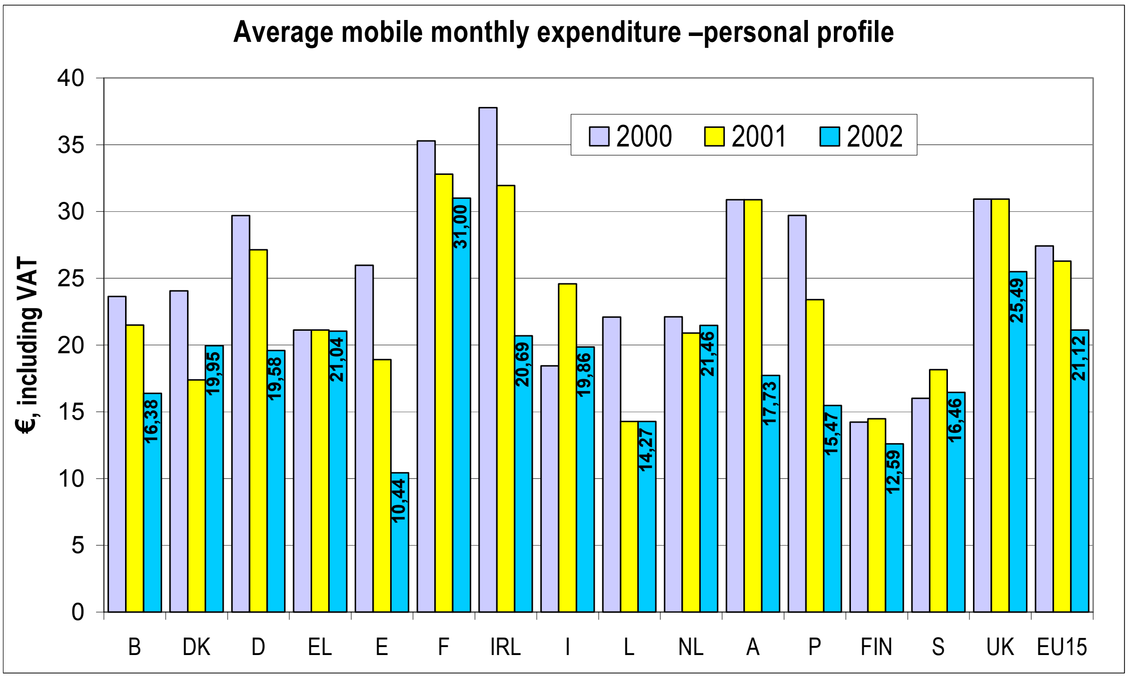


Chart 51

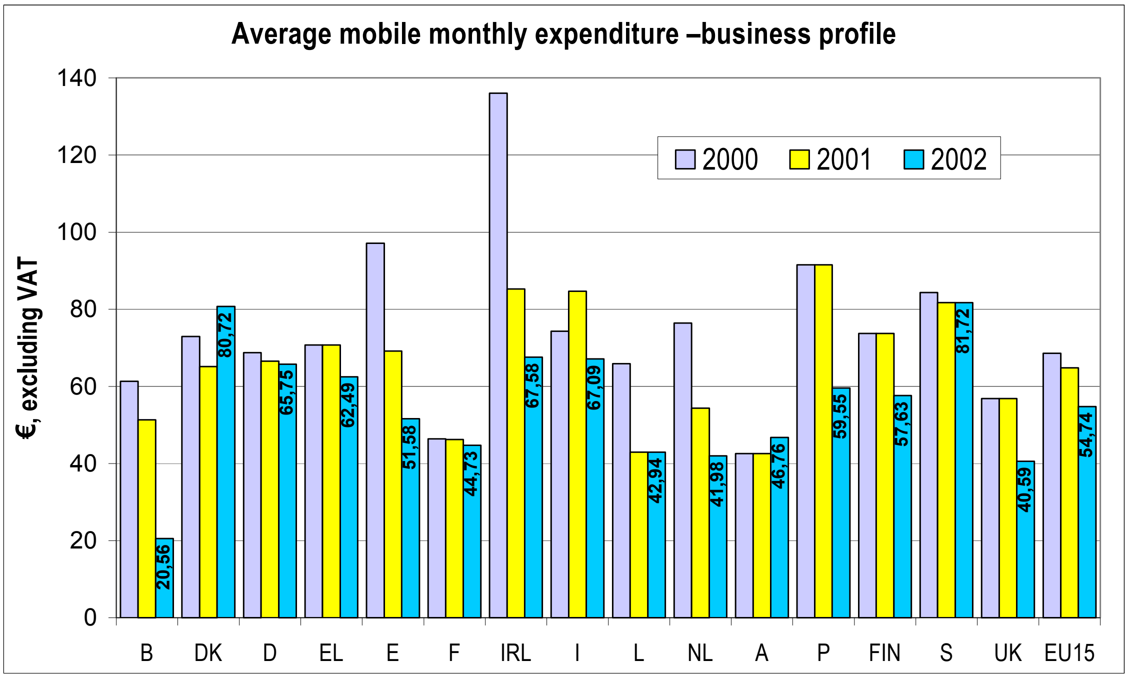


Chart 52

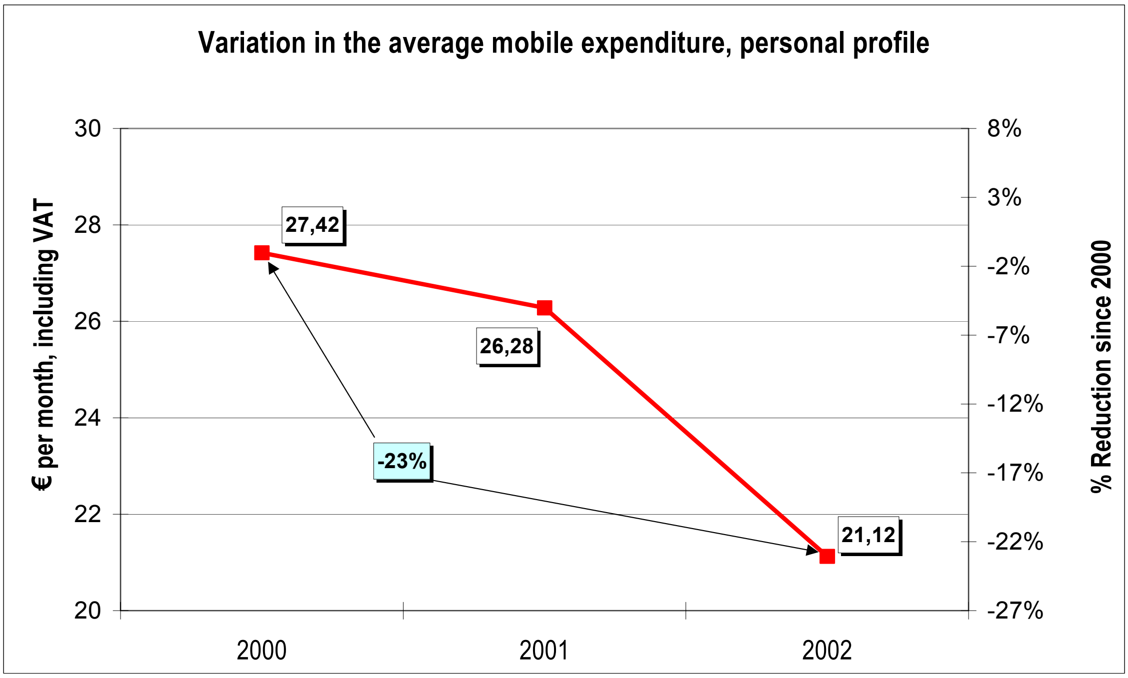
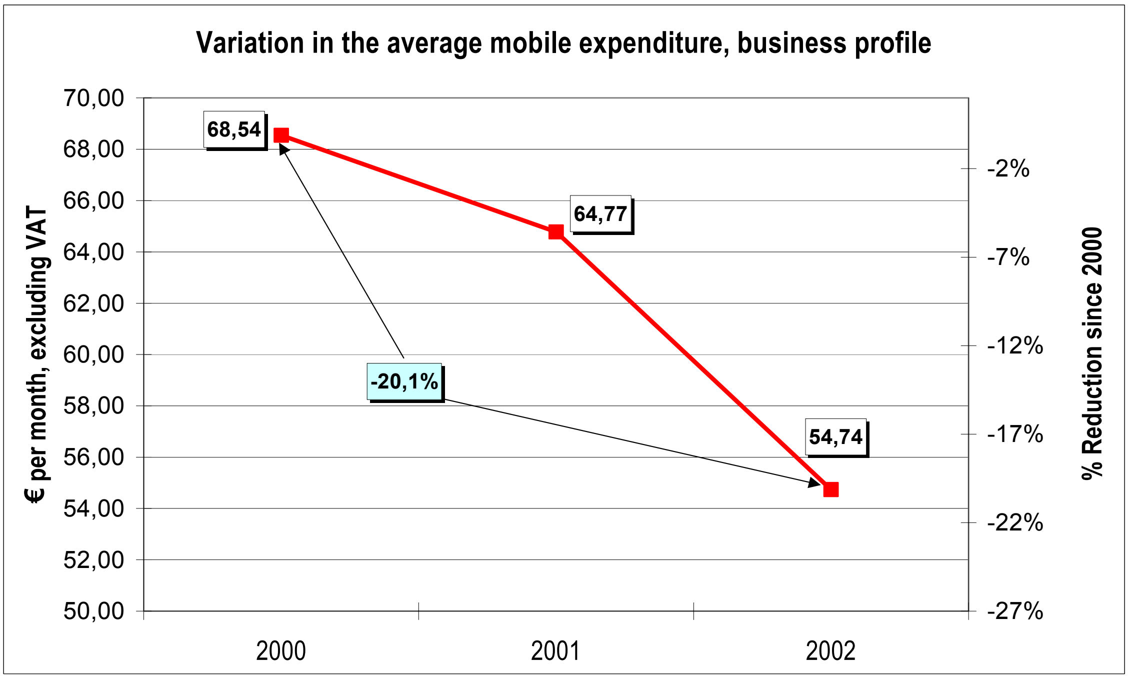


Chart 53



5 LOCAL ACCESS AND PRICING

5.1. BROADBAND ACCESS

This section provides data on the number and type of broadband lines supplied by both incumbent operators and new entrants in the EU. It also contains information on access lines provided by means of alternative technologies such as wireless access (WLL), satellite and cable modems.

Information have been collected from the national regulatory authorities though the ONP COM02-18 questionnaire on data for local broadband access. Given the rapid developments in this sector, it has been agreed with NRAs to update the ONP questionnaire data on a regular basis in January, July and October. Unless otherwise stated data below refer to the situation as at 1st October 2002.

For the collection of data the following concepts have been used:

- "New entrants" refers not only to alternative telecommunications operators, but also include the internet service providers (ISPs);
- In the case of full unbundling, the copper pair is rented to a third party for its exclusive use;
- As fully unbundled lines (ULL) supplied by incumbent to new entrants could in principle be used for services other than broadband the total number of ULL for access to internet will be lower than the total number of ULL;
- In the case of shared access, the incumbent continues to provide telephony service, while the new entrant deliver high speed data services over the same local loop;
- Bitstream access refers to the situation where the incumbent installs a high speed access link to the customer premises (e.g. by installing its preferred ADSL equipment and configuration in its local access network) and then makes this link available to third parties, to enable them to provide high speed services to customers. The incumbent may also provide transmission services to its competitors, to carry traffic to a "higher" level in the network hierarchy where new entrants may already have a broadband point of presence;
- In contrast to bitstream access, simple resale occurs where the new entrant receives and sells on to end-users - with no possibility of value-added features to the DSL part of the service - a product that is commercially similar to the DSL product provided by the incumbent to its own retail customers, irrespective of the ISP service that may be packaged with it;
- Retail broadband access refers to the access provided to the end users;
- Incumbents' DSL lines refers to the lines provided to end users by the incumbent, its subsidiaries or partners;
- Other means of accessing the internet indicates connections by means of satellite, fibre optic, powerline communications, etc;

5.1.1. Wholesale access

This section shows the availability of wholesale access supplied by incumbents to new entrants. Separate figures are provided for full unbundled lines, shared access and bitstream access (wholesale DSL lines.

Table 4 Number of agreements for full ULL, shared access, bitstream access and resale.

	N. of agreements on fully unbundled lines	N. of agreements on shared lines	N. of agreements Wholesale DSL lines supplied. Bitstream access	N. agreements Wholesale DSL lines supplied. Simple resale
B	7	4	4	12
DK	16	5	5	1
D	91	3	2	52
EL	2	0	0	0
E	6	6	38	n.a.
F	9	9	4	5
IRL	1	1	0	0
I	31	2	50	n.a.
L	n.a.	n.a.	n.a.	n.a.
NL	10	10	n.a.	n.a.
A	12	0	24	0
P	4	n.a.	4	n.a.
FIN	180	80	60	35
S	33	33	4	5
UK	53	5	309	0
Tot. EU	**455**	**158**	**504**	**110**

Chart 54

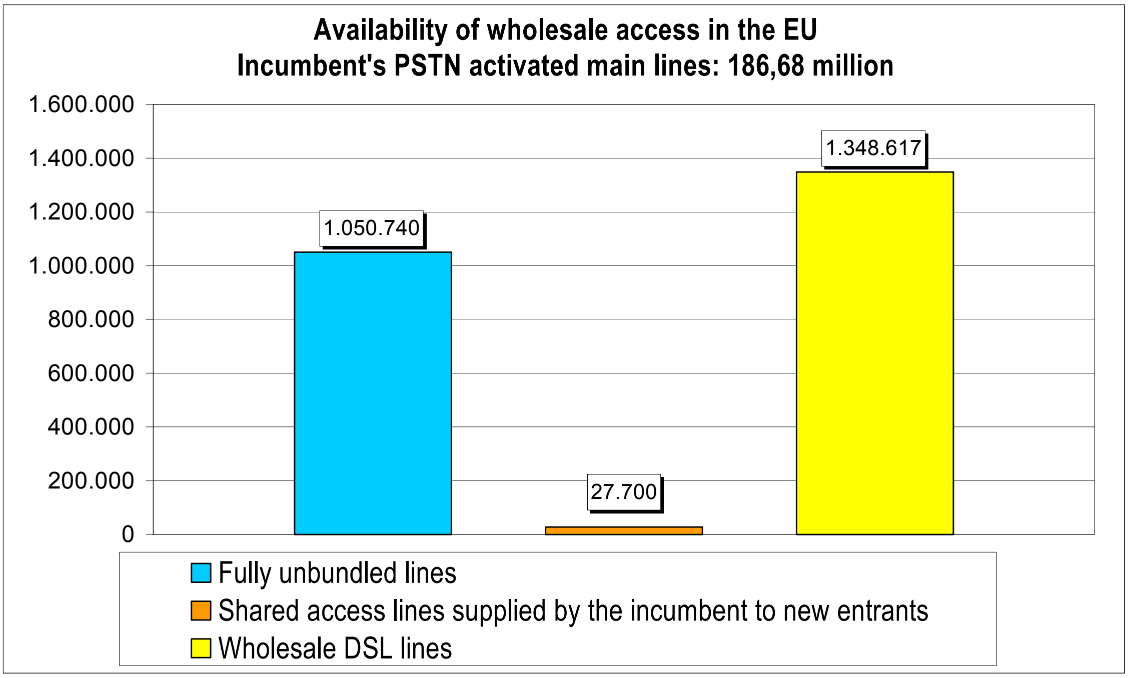


Chart 55

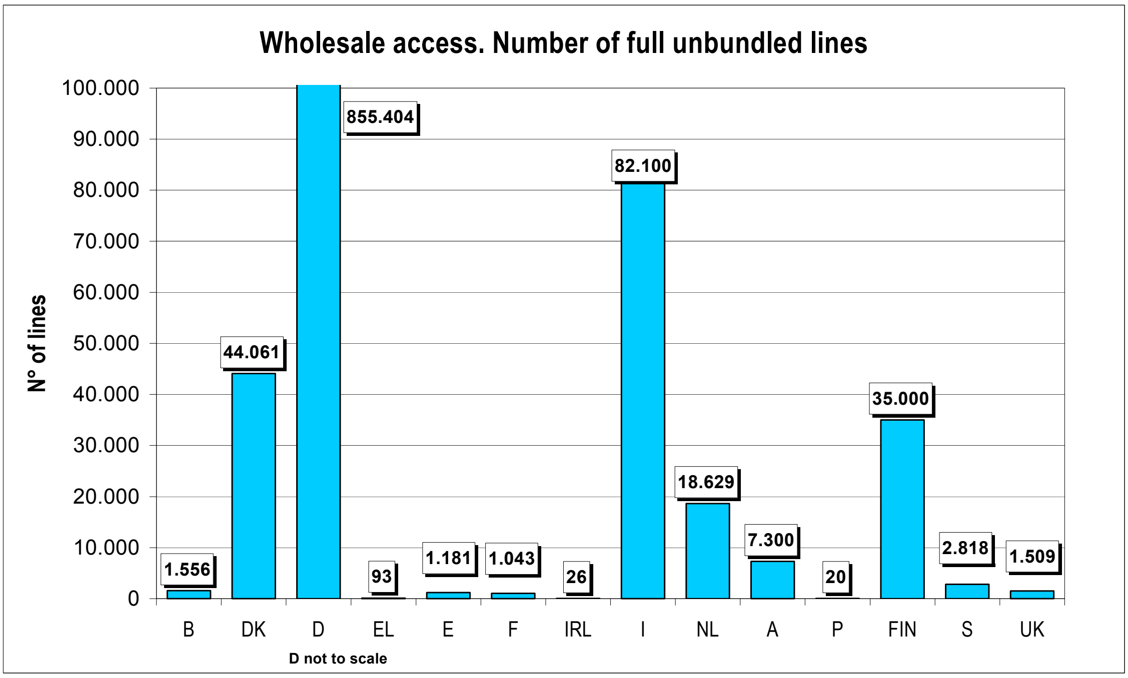


Chart 56

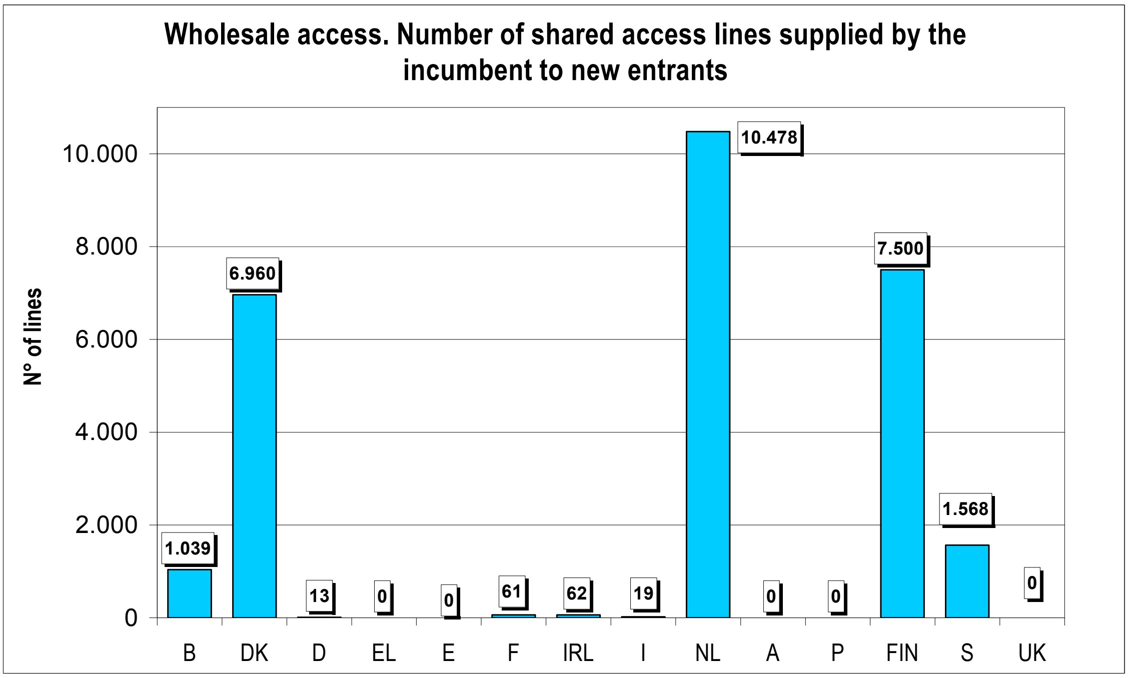
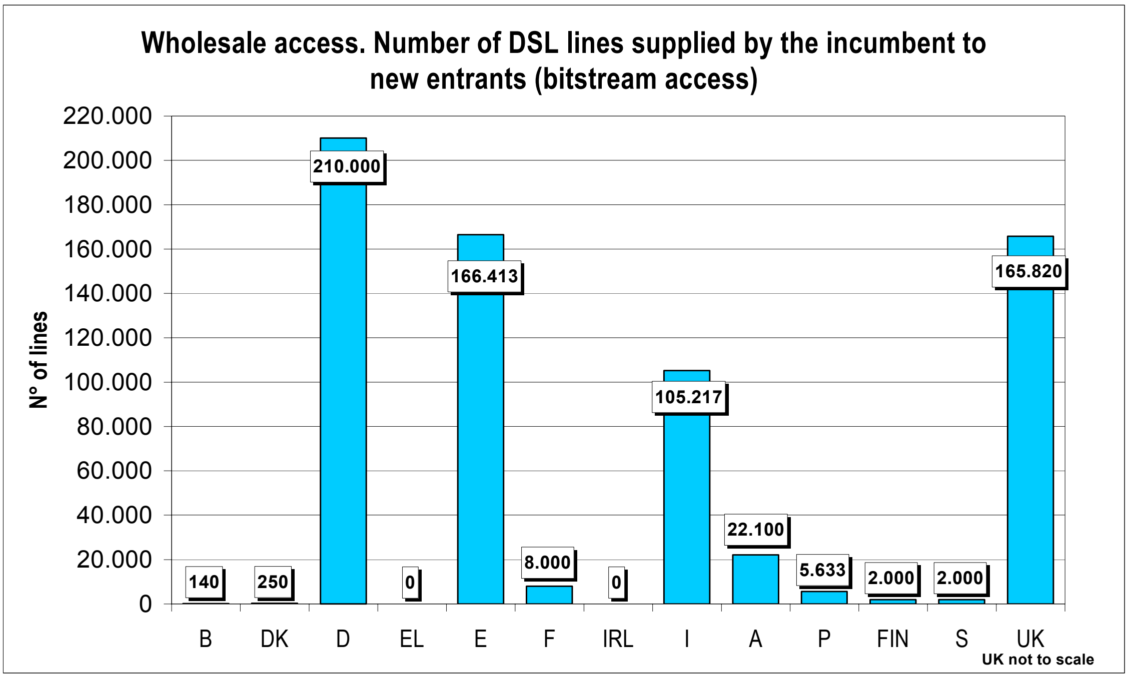


Chart 57



Wholesale access. Number of DSL lines supplied by the incumbent to new entrants (bitstream access)
N° of lines
220.000
200.000
180.000
160.000
140.000
120.000
100.000
80.000
60.000
40.000
20.000
0
140
250
210.000
0
166.413
8.000
0
105.217
22.100
5.633
2.000
2.000
165.820
B
DK
D
EL
E
F
IRL
I
A
P
FIN
S
UK
UK not to scale

5.1.2. Retail broadband access to internet

This section show the availability of broadband access to internet for end-users provided by incumbents (its subsidiary or partners) and by new entrants (alternative telecom operators or Internet Service Providers).

Internet broadband access can be provided through different means: DSL lines, wireless local loop (WLL), cable TV access (cable modem), dedicated leased lines and other access (like satellite, fibre optic powerline communications, etc..)

New entrants' DSL lines can be provided to end users by means of full unbundled, shared access, bitstream access or resale.

Chart 58 shows the total number of broadband access to internet for each Member States provided by both incumbents and new entrants and including all means of broadband connections.

Chart 58

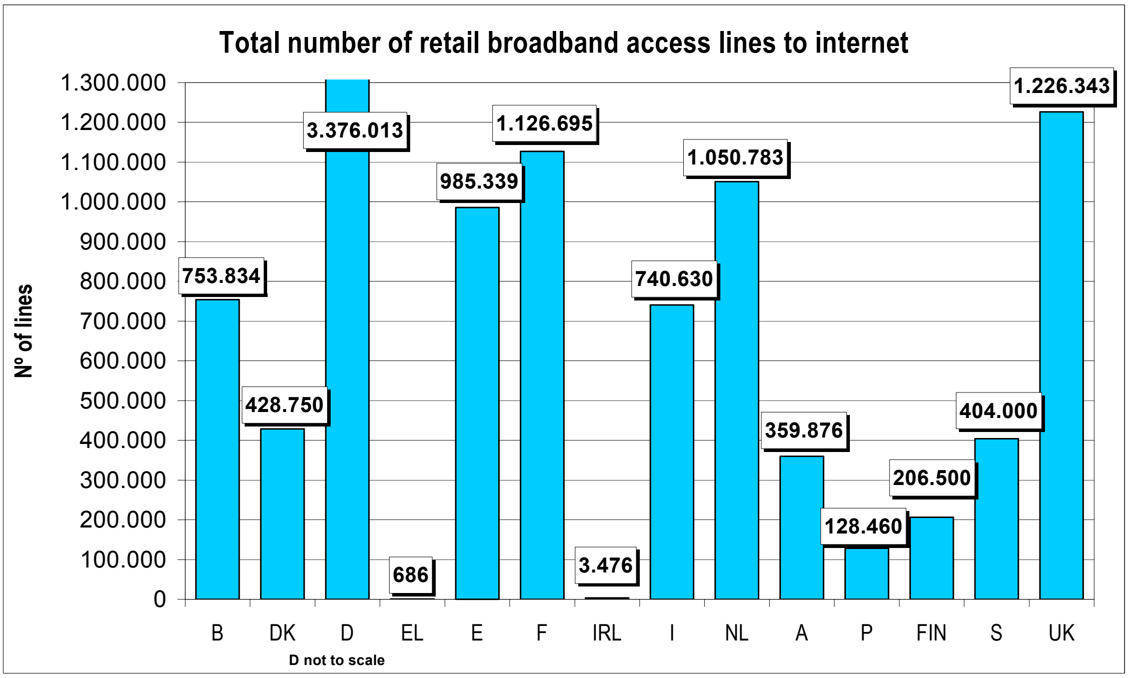


Chart 59

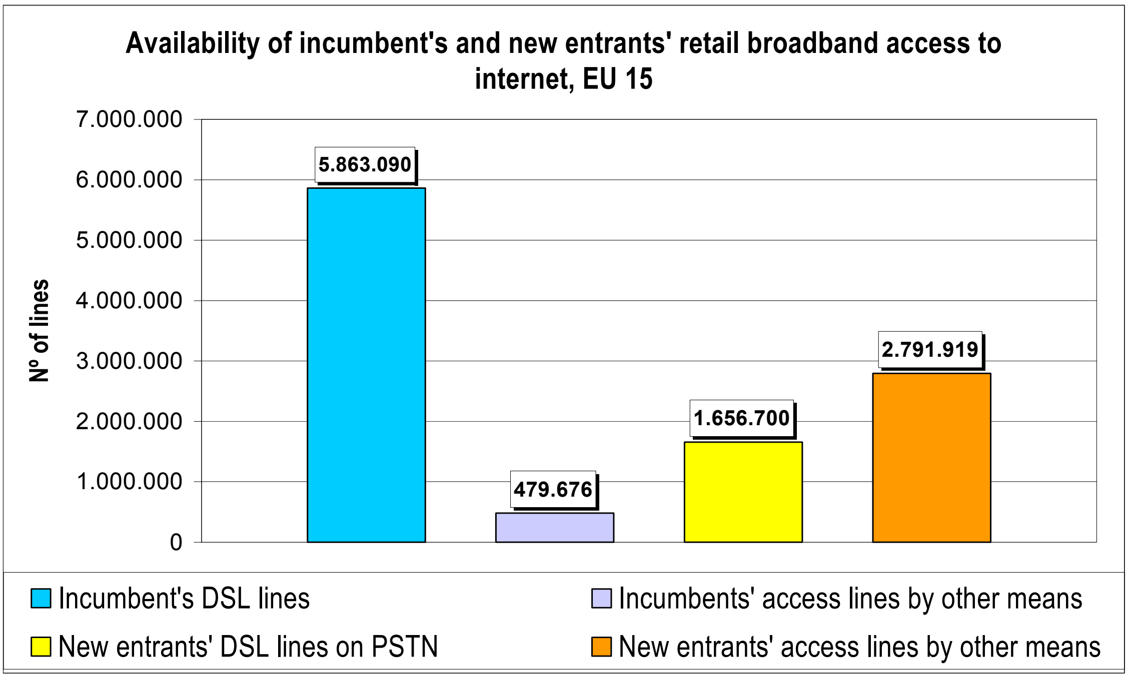


Chart 60

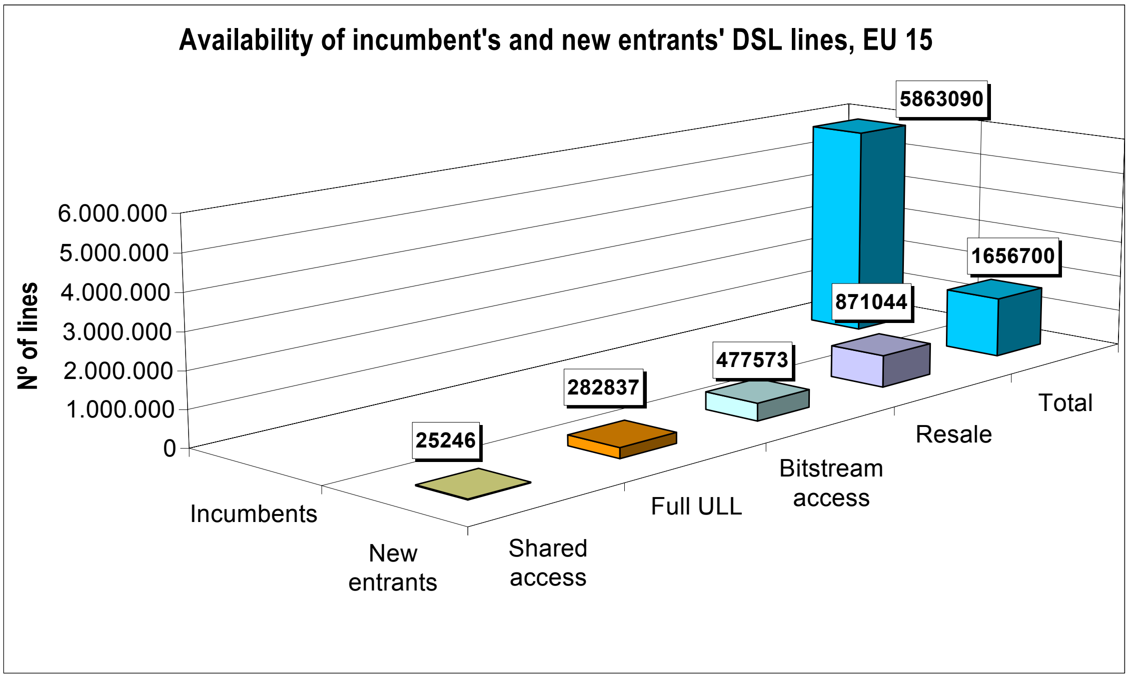


Chart 61

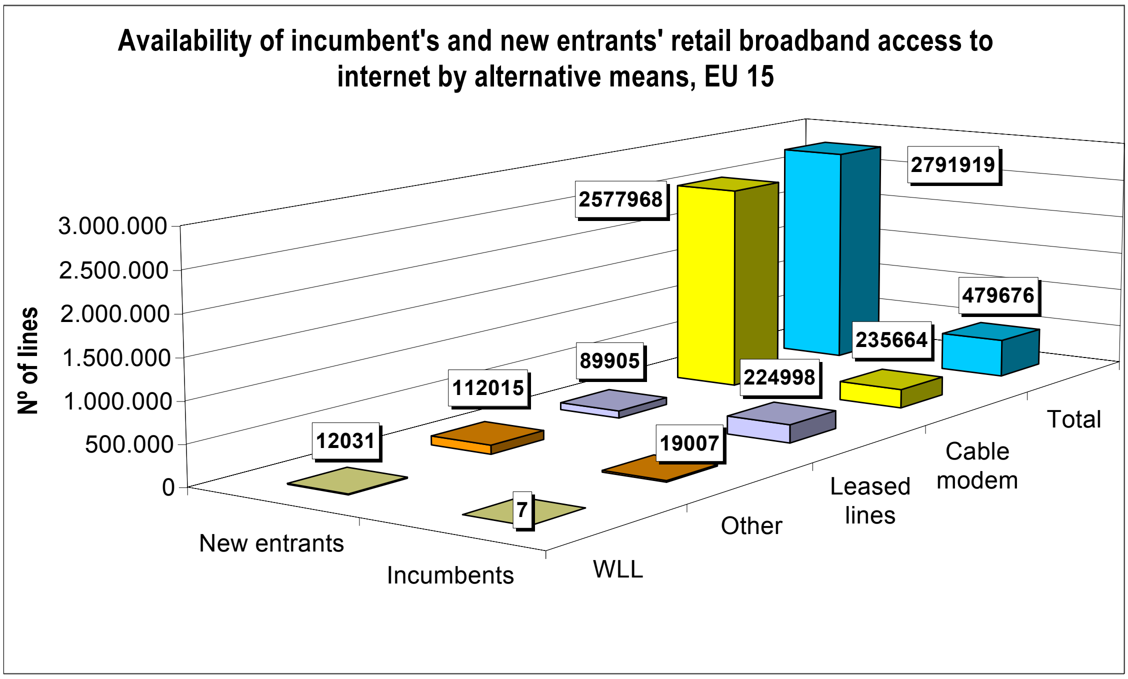

Availability of incumbent's and new entrants' retail broadband access to internet by alternative means, EU 15
Nº of lines
3.000.000
2.500.000
2.000.000
1.500.000
1.000.000
500.000
0
New entrants
Incumbents
WLL
Other
Leased lines
Cable modem
Total
12031
112015
89905
2577968
2791919
7
19007
224998
235664
479676

Chart 62

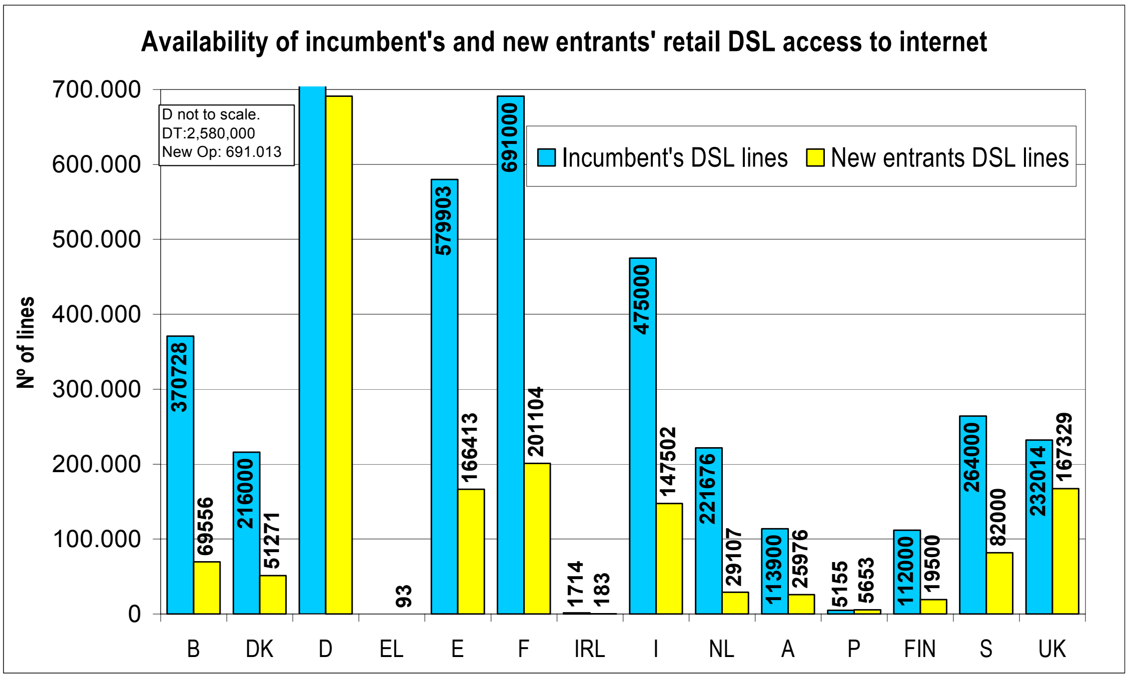
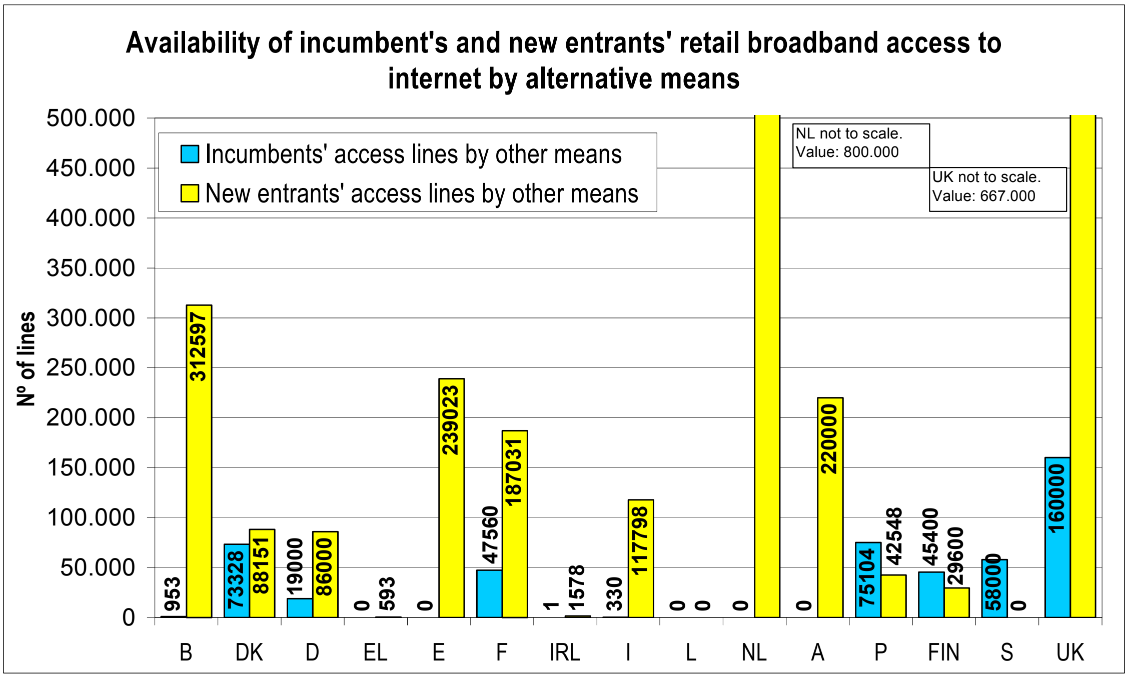


Chart 63



5.2.PRICES FOR UNBUNDLED LOCAL LOOP

This section show the charges per unbundled loop (monthly rental and connection) in case of full unbundled and shared access of the loop. Estimates of total average monthly rental cost (based on the total costs for the first year) is also presented.

In the following we assume that the loop is active and will be used to provide DSL services. In fact some Member States (Belgium, Luxembourg and Portugal) charge a different price for the loop, depending on if it is used for the voice telephony services or for DSL services. Furthermore, Belgium applied a different price for non-active loop and in some Member States charges are different in case of subsequent access.

5.2.1. PRICES FOR FULL UNBUNDLED LOCAL LOOP

In Belgium a supplementary fee of 28.29 for disconnection is also charged. It should be noted that a disconnection fee is not charged to the incumbent's own retail market.

Data for the connection fee in Germany refers to a unique payment option.

The connection charge for Italy, also includes the charges for the "verification/preparation of the copper line for the provision of ADSL service", that is always paid by the OLOs, except in the case of an existing customer changing from the incumbent to the OLO.

Data for Finland refer to a weighted average of 44 SMP operators providing ULL. Prices vary between 10 -31 € for the monthly rental and between 105 - 303 € for the connection fee.

Data for connection fee in Sweden refers to the first access. Charges for the following access is 85€.

Figure for the United Kingdom refer to an average based on determined price of 194€ per annum for the monthly rental and on a price of 140€ per annum for connection fee.

Chart 64

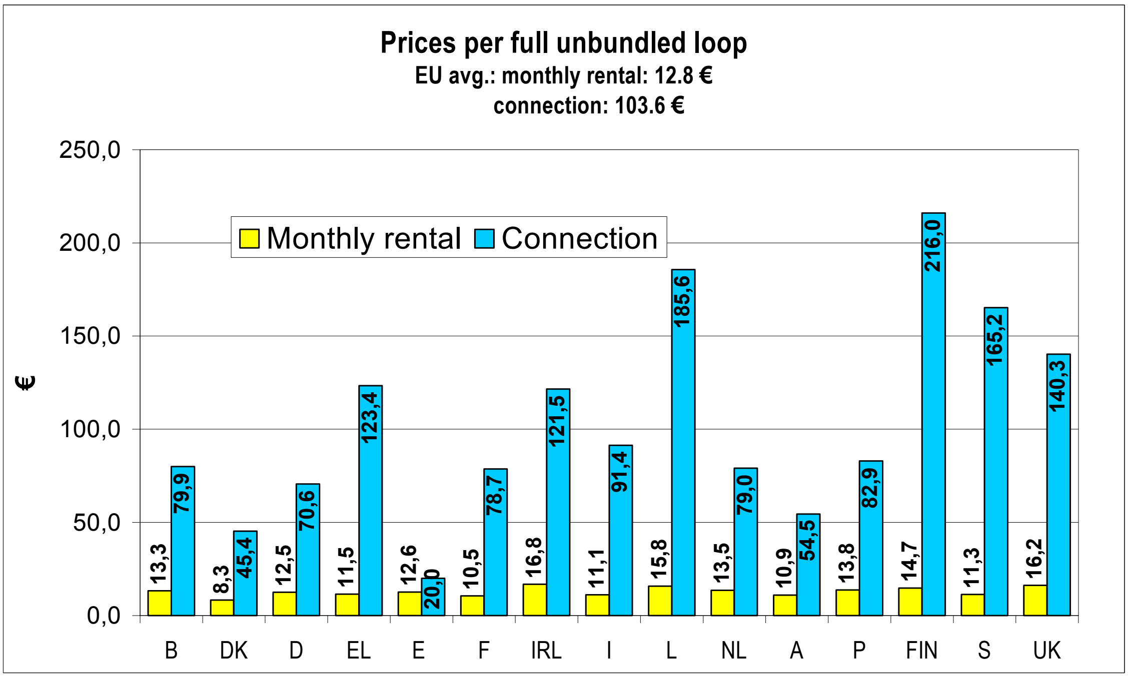
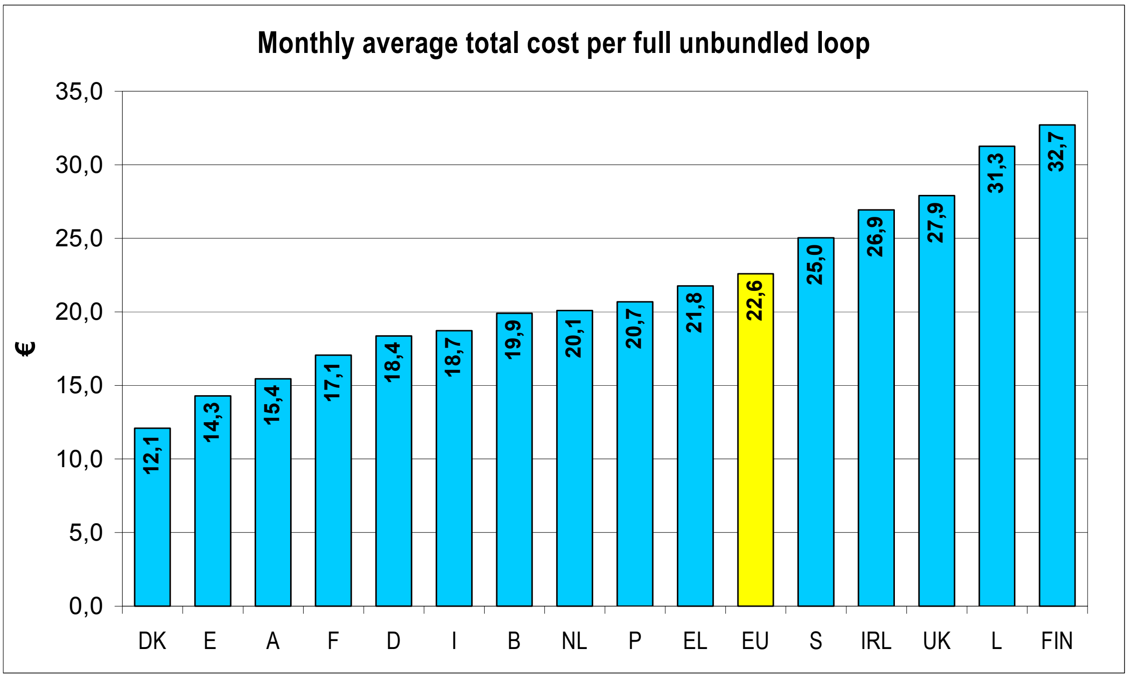


Chart 65



- Estimates are based on the total cost for the loop for the first year.

5.2.2. PRICES FOR SHARED ACCESS LOCAL LOOP

In Belgium a supplementary fee of 28.73€ for disconnection is also charged. It should be noted that a disconnection fee is not charged to the incumbent's own retail market.

Connection fee in Denmark decrease to 57€, when taking over an existing shared access connection.

Data for the connection fee in Germany refers to a unique payment option.

Data for Finland refer to a weighted average of 44 SMP operators providing shared access to local loop. According to the Telecom Market Act, monthly rental for shared access may add up to maximum half the price for full unbundling. Prices for connection fees vary between 57€ and 260€.

Data for Sweden for connection fee refers to the first access. Charges for the following access is 85€.

Data for the United Kingdom refer to an average based on determined price of 84€ per annum for the monthly rental and on a price of 186€ per annum for connection fee.

Chart 66

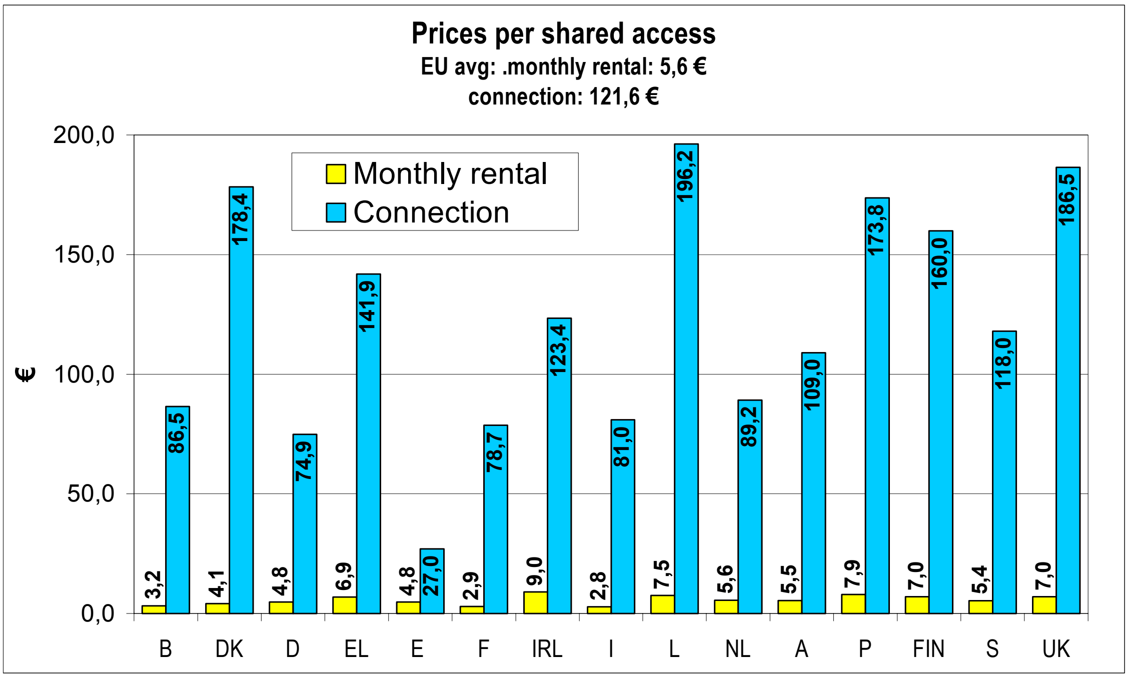
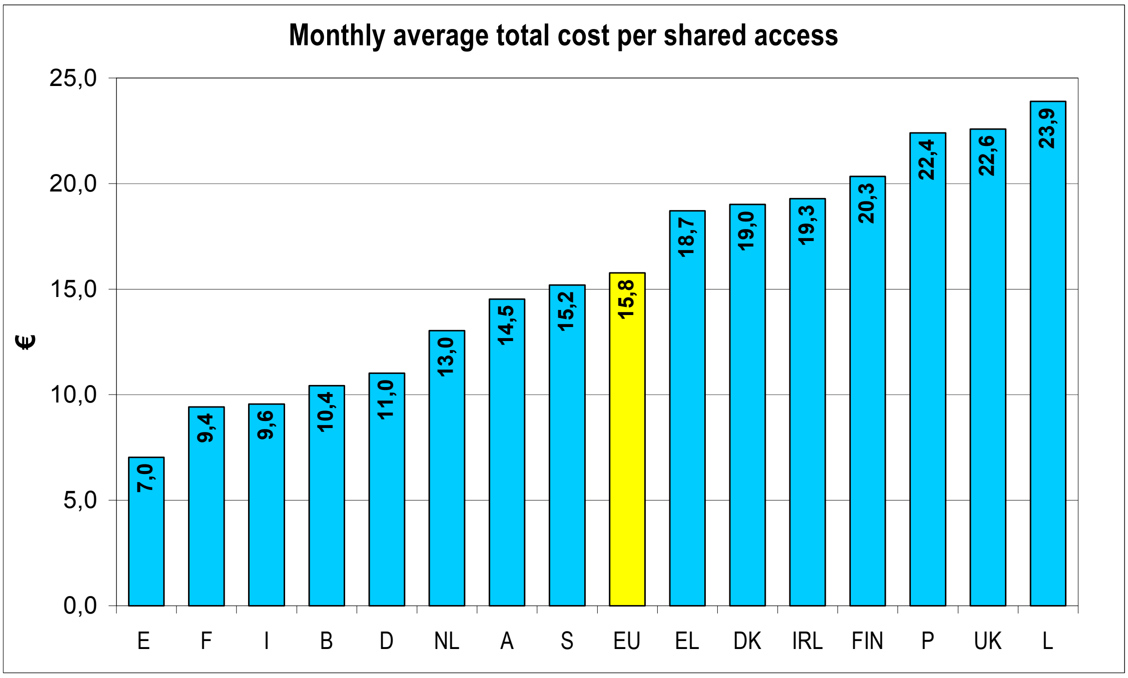


Chart 67



- Estimates are based on the total cost for the loop for the first year.

6 INTERNET SERVICES

6.1.INTERNET MARKET DATA

This section provides information about the penetration of the internet in European households as well as about the number of Internet Service Providers (ISPs).

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).

The source of the data on internet penetration is the Flash Eurobarometer 'Internet and the public at large' carried out for the Commission by EOS GALLUP Europe between May and June 2002.

A new survey will be carried out in November 2002 for which data will be available in December 2002.

The data on the number of ISPs and the availability of broadband access have been provided by the national regulatory authorities.

Chart 68

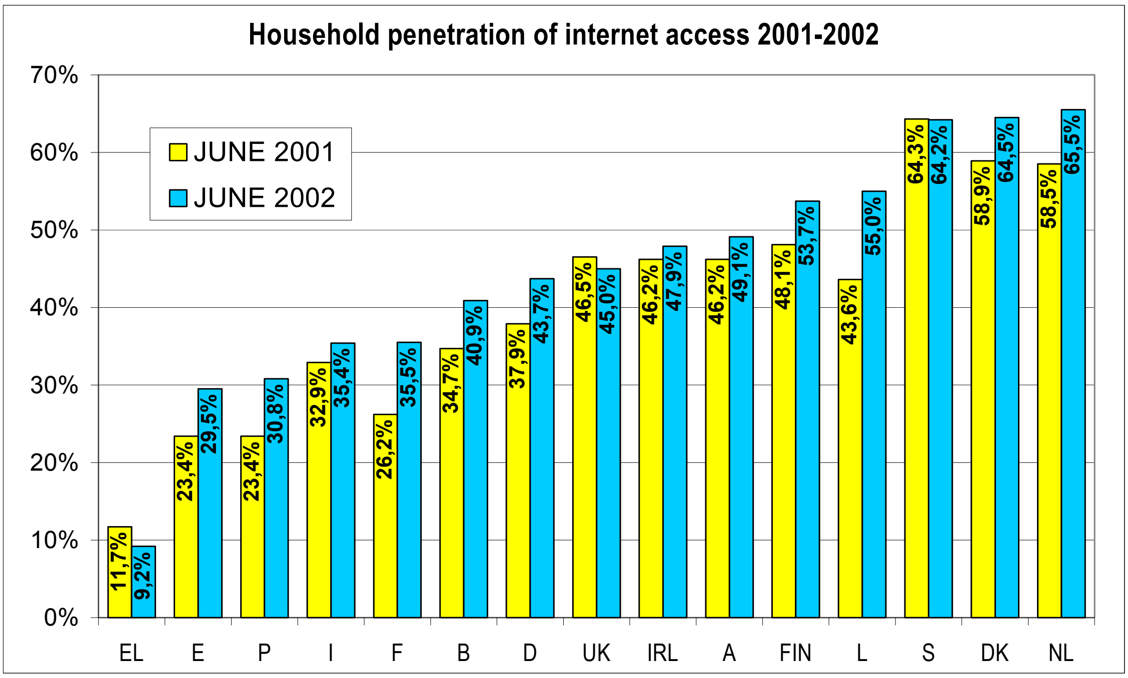


Chart 69

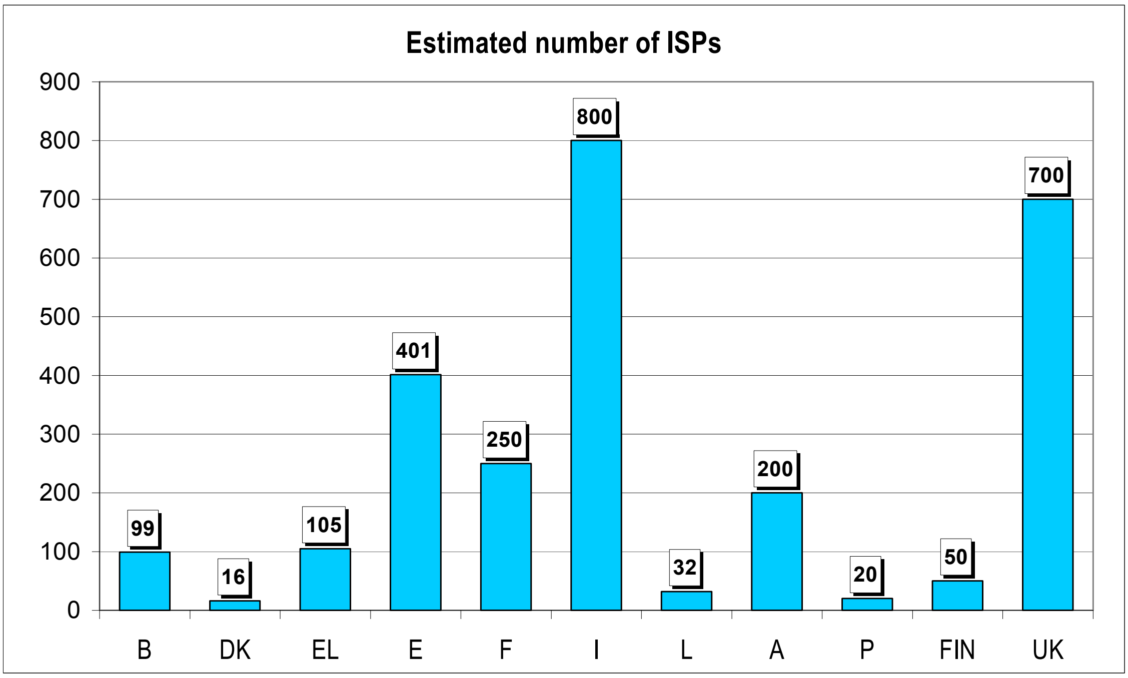
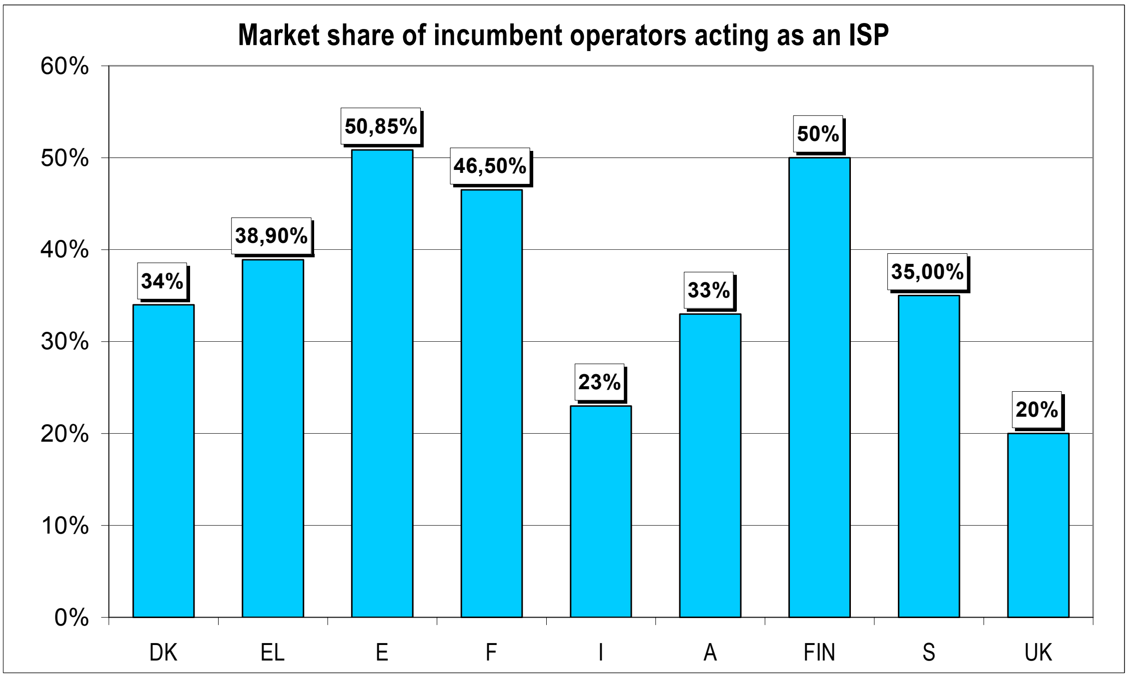
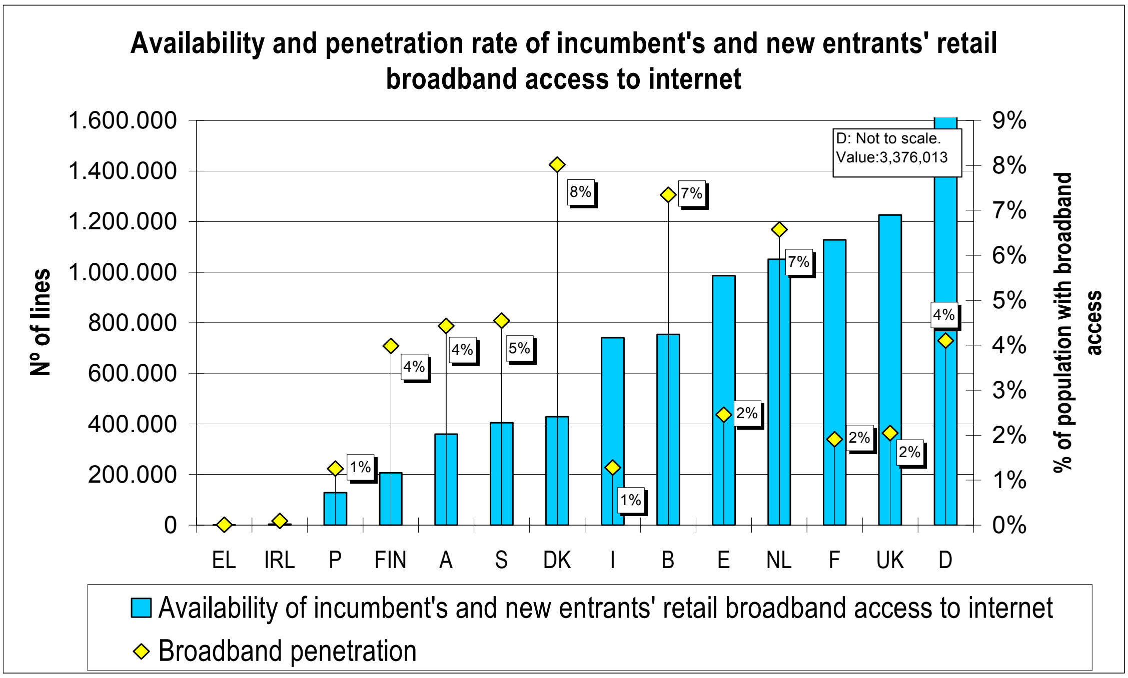


Chart 70



- Data for B, D, IRL, L, NL and P are not available.

Chart 71



6.2. INTERNET ACCESS PRICING

This section deals with the cost of internet usage for residential (20 hours off-peak time usage) and business (40 hours peak time usage of 40) 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 give the position as at 1 May 2002.

For each profile of usage, the following charts show the lowest prices of dial-up services to ISPs via a standard telephone line in each country. This has required the analysis of the telephony charges in the 15 countries, in addition to the actual ISP charges, in order to find the best overall option for the types of access described by the basket profiles..

The overall summary of the dial-up access information collected covers 92 different providers with 253 packages in the 15 countries.

The criteria for selecting the ISPs were that:

- The top 5 ISPs in each country should be covered;
- Fewer ISPs could be covered as long as the combined market share was at least 80%;
- If the top 5 ISPs had less than 50% of the market, additional ISPs should be covered up to around 80% combined market share.

The analysis of dial-up access includes:

- PSTN line rental charges for residential users. Any additional charges related to the selection of the most appropriate tariff package for internet access is also included. This may for example be a telephony charge related to a certain access option;
- PSTN call charges as applicable for internet access, either using the standard local call charges, or charges defined in special internet access tariffs. Additional discounts are also analysed in this context, where they may provide even lower access call charges, for example after a certain period of access time. It should be noted that with many ISP services there are no call charges, or different call charges from the carrier, as determined by the ISP;

- ISP monthly rental and/or connection charges for each ISP package. Most ISPs identify their packages for use by residential and/or business users;
- ISP charges related to usage. Such charges are normally given on a per hour basis, and are accumulated to the number of hours or minutes of usage per month. Any amount of inclusive time offered with the monthly rental charge is deducted from the actual usage. Many ISP services do not have such charges;

Many operators or ISPs will have special dial up tariffs for internet access, and these have been used where appropriate.

Chart 72

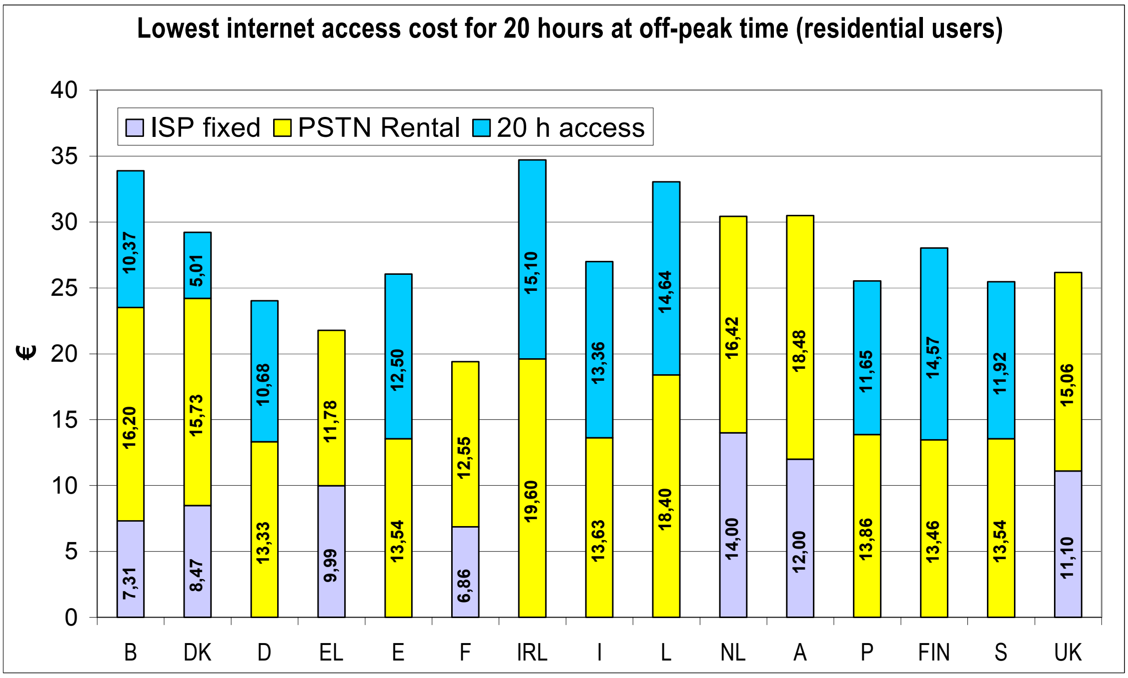
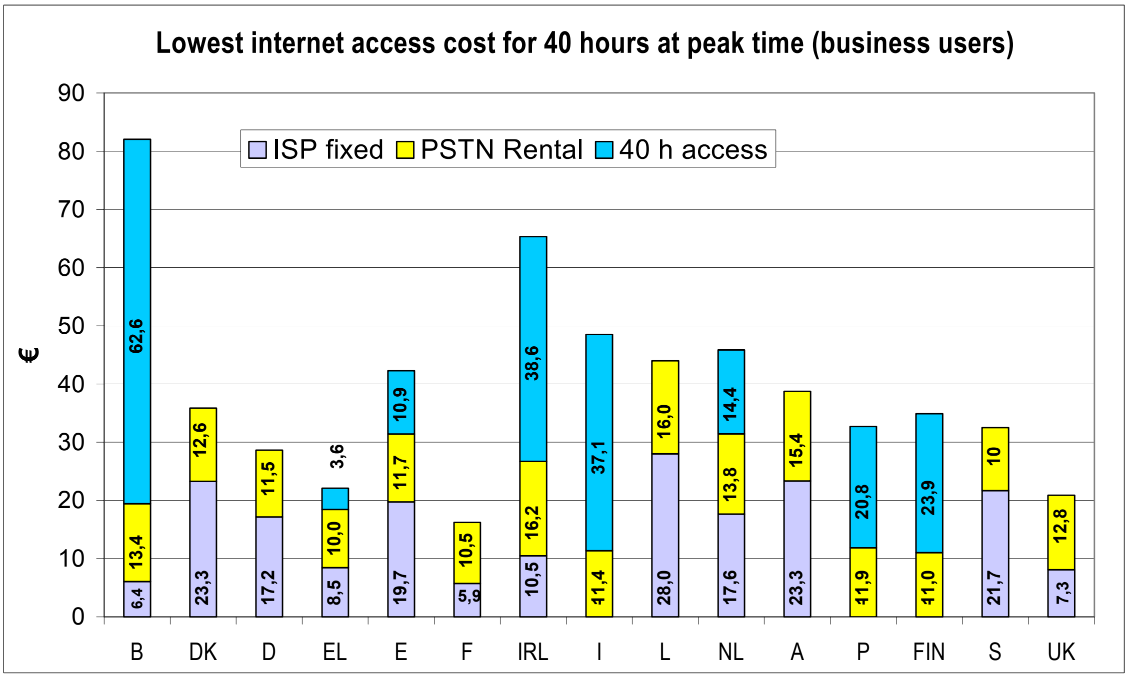


Chart 73



7 PUBLIC VOICE TELEPHONY 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[17] in August 2002. The price trend over the past four 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 calls (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-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 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.

- 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.

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)[18] and the prices for international calls are those charged by

[17] 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.

[18] 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.

AT&T. For Japan, the national call prices are those charged by NTT and the international call prices are those charged by KDD.

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

7.1. 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).

7.1.1. Initial charges

There are different types of charges applied at the beginning of a call, either alone or in combination. The charging method used for the remainder of the call may not depend on the type of initial charge used. The types of charges are:

Call set-up charge raised at the start of the call (when the call is answered). This charge does not offer any call time.

Initial charge that is used in the same way as call set-up, but in addition includes a certain number of seconds call time before normal time-based charging starts.

Unit charge does in effect work the same way as the initial charge. A full unit is charged at the beginning of the call, providing a certain number of seconds call time until the next unit is charged. Depending on the principle used by the operator (synchronous / asynchronous) the number of seconds call time in the first unit may be less than the specified unit duration.

Minimum charge is normally used with per second billing, to ensure the operator minimum revenue per call. If the call duration is short, the actual call charge may be less than the minimum charge. In such cases the minimum charge will be applied.

7.1.2. Charging system during the call

There are in principle 3 ways of charging calls. The fact that most operators tend to publish the duration charges on a per minute basis does not itself indicate which system is used. The 3 principles are:

Real time charging (also known as per second billing) allows the cost of the call to be calculated to the exact duration of the call (normally nearest second). Call set-up charge, initial charge or minimum charge may be applied to this structure, in addition to the duration charge.

Unit based charging uses a fixed price unit. The duration of this unit will vary with the destination of the call and time of day. Call duration will always be raised to a multiple of whole units, so the user will nearly always pay for more time than is used. Call set-up charge may be applied to this structure, but is relatively rare.

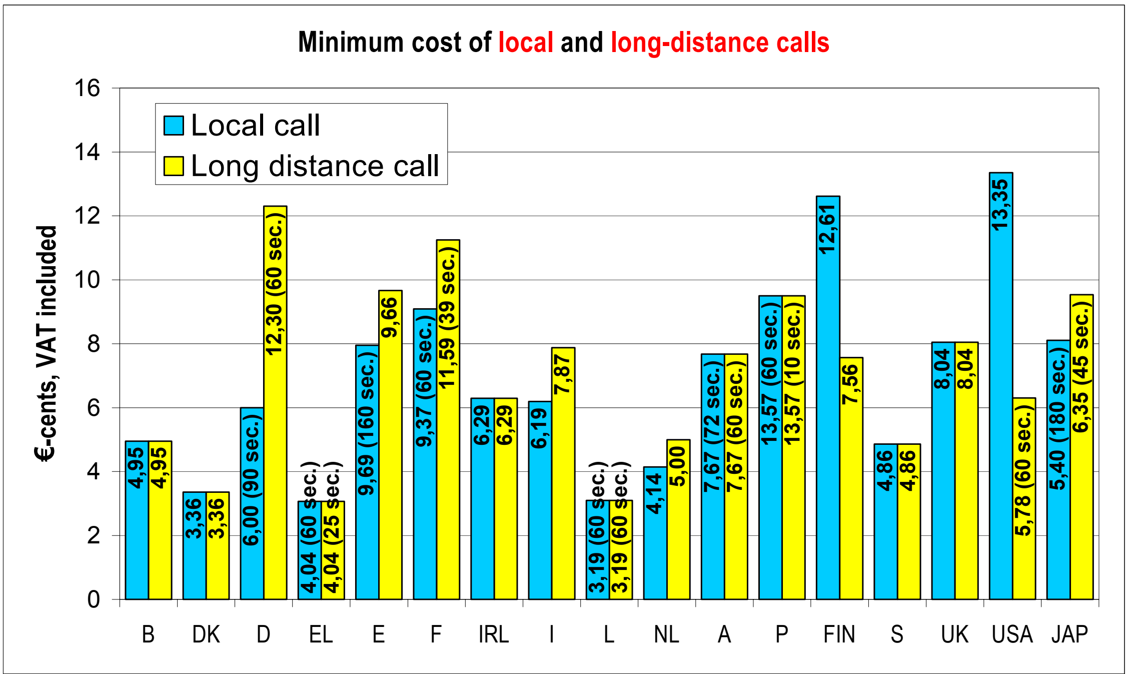
Fixed period charging uses a variable price, but fixed duration unit. The call is normally charged on a per minute basis, or per 6 seconds. The price for the period will vary with destination and time of day. The charged duration of the call will be raised to a multiple of whole periods. A call set-up charge or initial charge is often implemented in the form of a higher charge for the first minute or period. This initial charge may vary with destination and time of day.

In August 2001 only the incumbents in Greece, Luxembourg, Austria and Germany (for local and international calls[19]) still use a unit-based charging system. No changes are reported since the situation in August 2001.

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, 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 €, 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 74



19 National calls and calls to mobile are charged per minute rather than the normal unit.

Chart 75

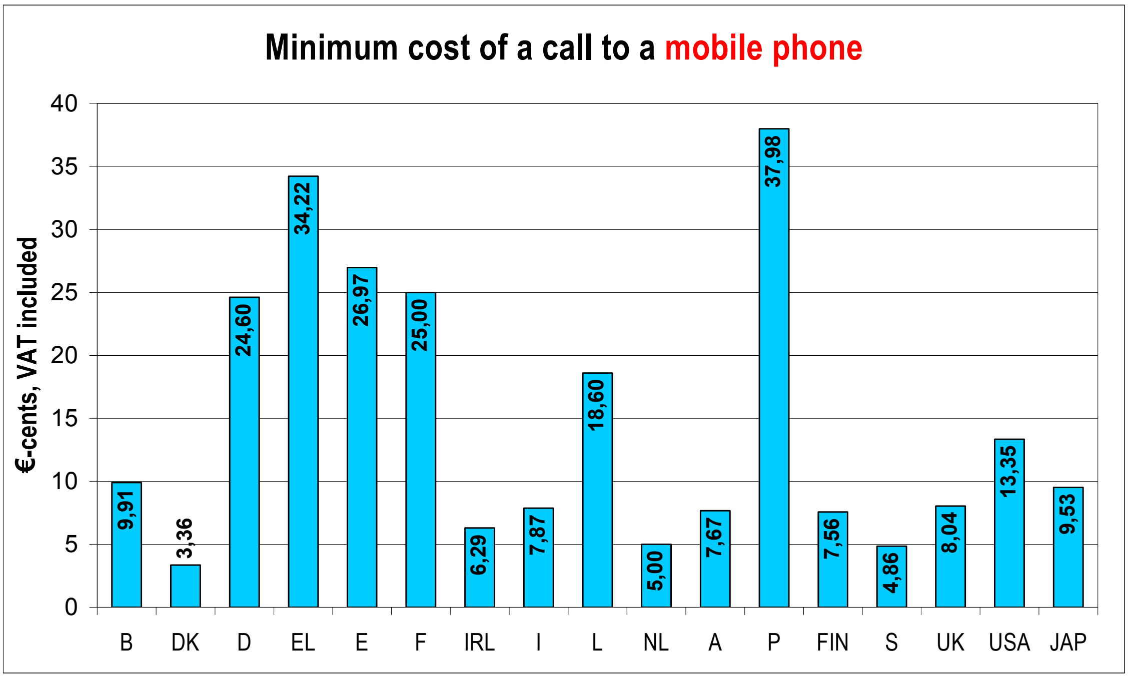
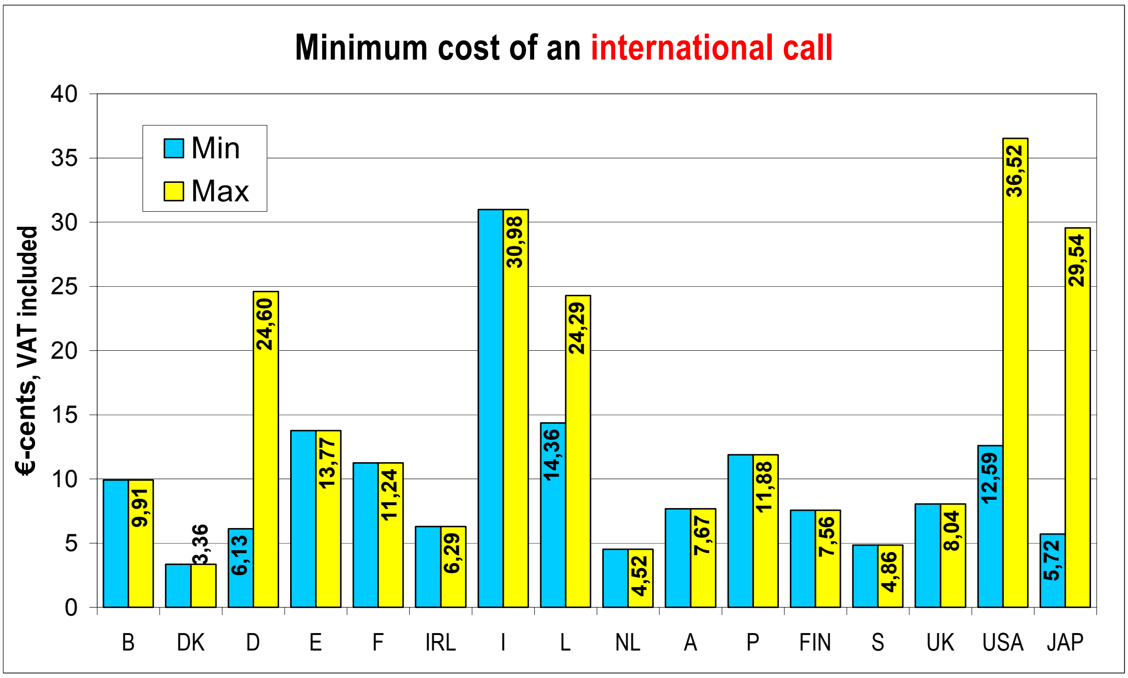


Chart 76



- Data for EL not available

7.2. 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 2002 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 €, 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, hence different charges. In the other countries the differences between the types of users are due only to the exclusion of VAT for business users.

Chart 77

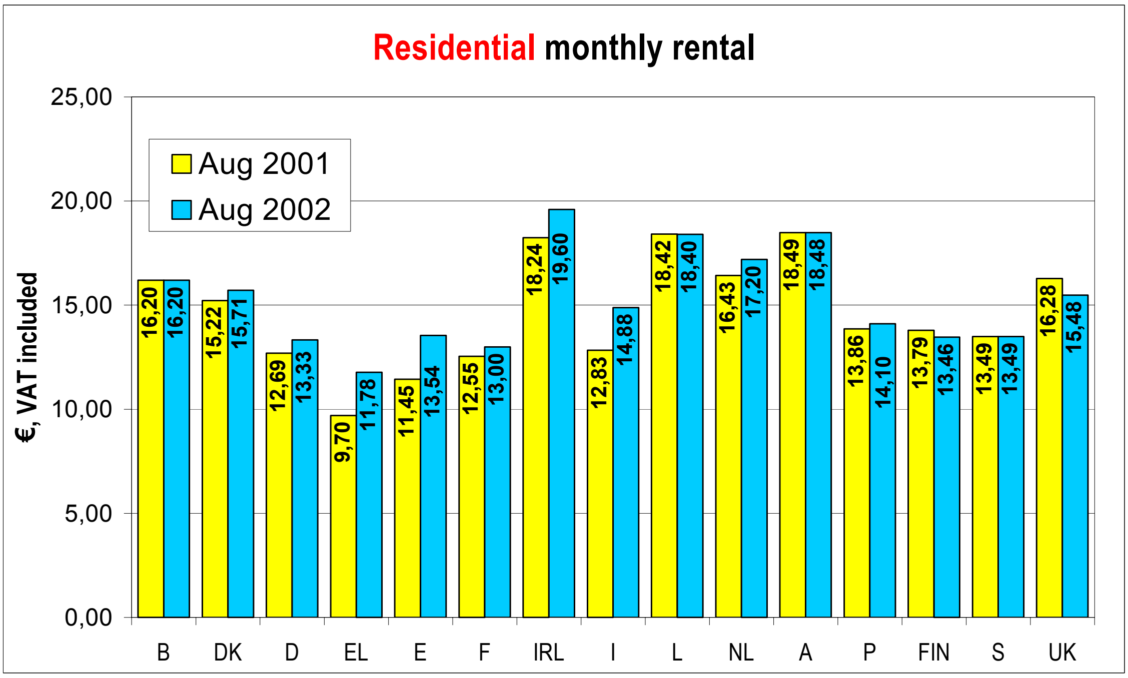
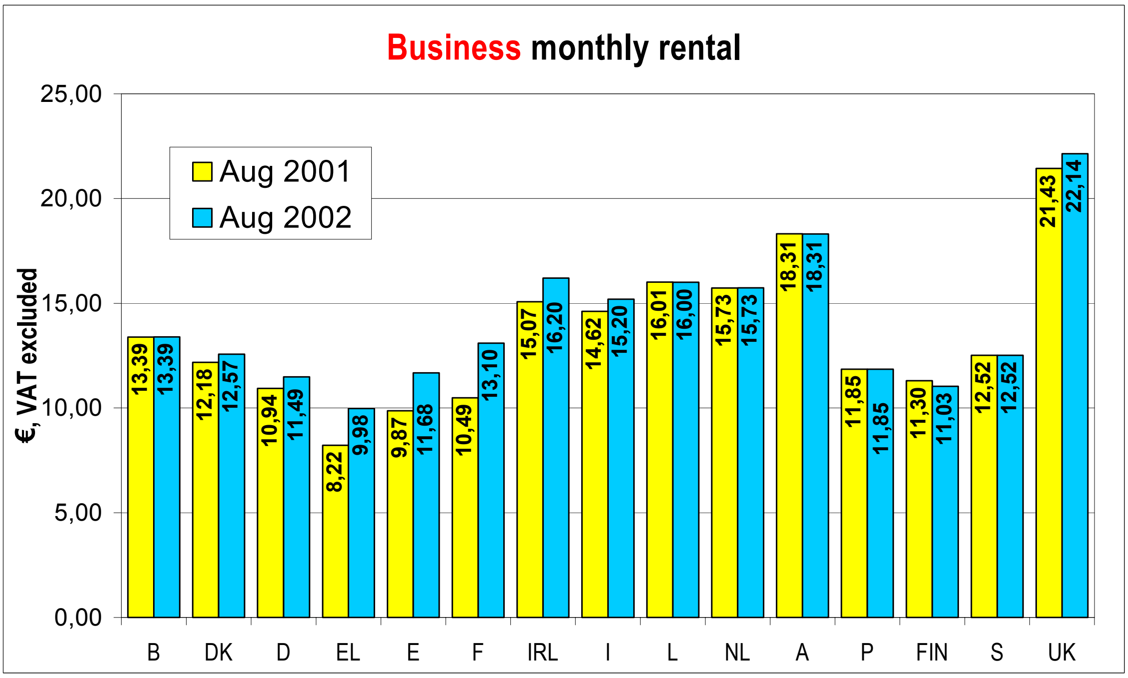


Chart 78



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

Chart 79

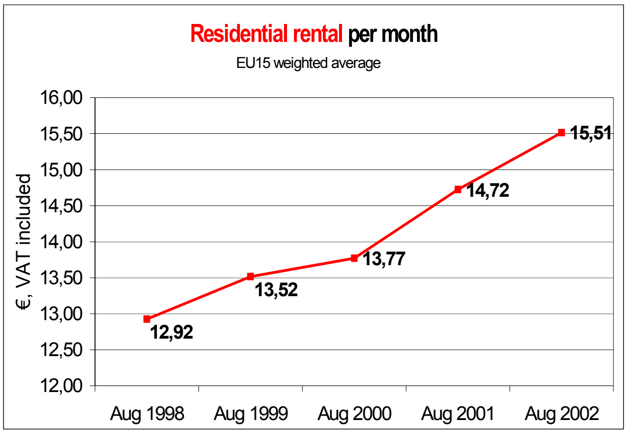
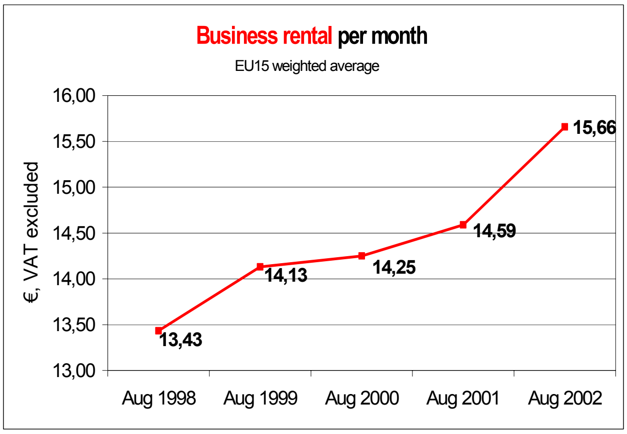


Chart 80



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[20].

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 2002, expressed in €, 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"[21], 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[22], plus 72 international calls[23]. The usage charges for national calls to fixed lines are calculated with a weighted distribution[24] over 14 distances from 3 to 490 km, at representative times of day (4 calls during the week and 2 during

---

[20] A full description of the methodology can be found in "Performance indicators for public telecommunications operators", ICCP Series No.2.2, OECD 1990.

[21] The revised OECD baskets were adopted in May 2000.

[22] Representing 10% of the number of calls to fixed lines.

[23] Representing 6% of the number of calls to fixed lines.

[24] A full description of the revision to the baskets and the weighted distribution (distances, time and day points and call duration) can be found in the document 'OECD Telecommunications Basket definitions', June 2000, available at http://www.oecd.org/pdf/M00005000/M00005340.pdf

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[22], plus 216 international calls[23]. The usage charges for national calls to fixed lines are calculated with a weighted distribution[24] 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 86% of the calls are within normal business hours; 64% are for distances below 10km; 12.5% are for distances above 100 km.

Chart 81

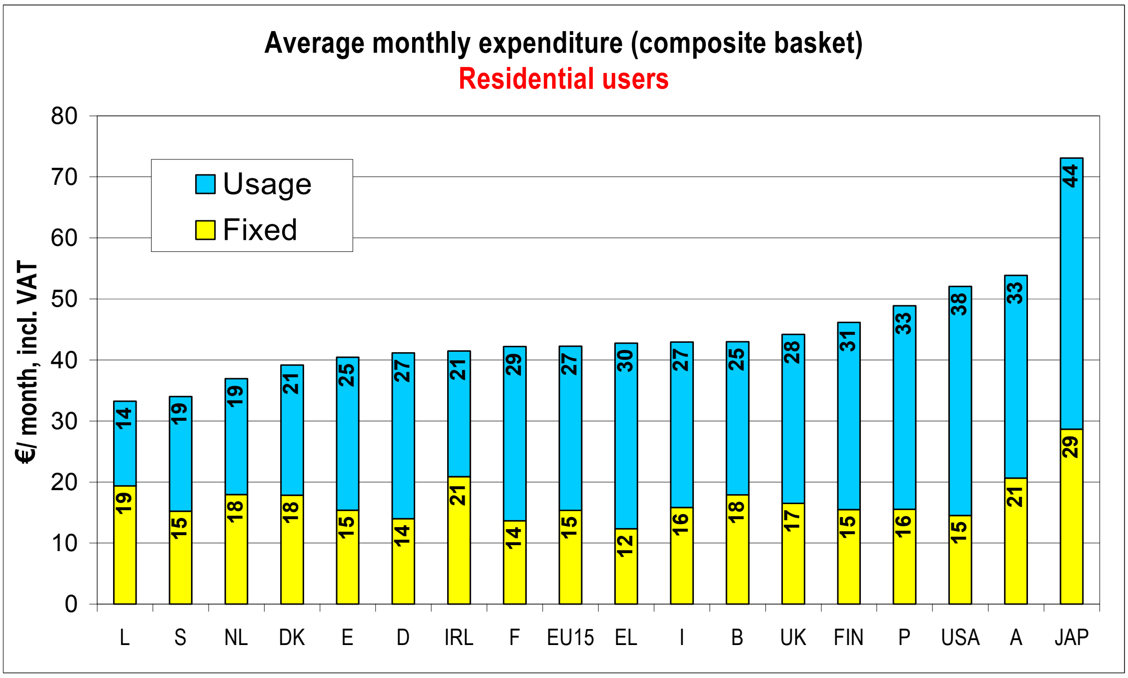
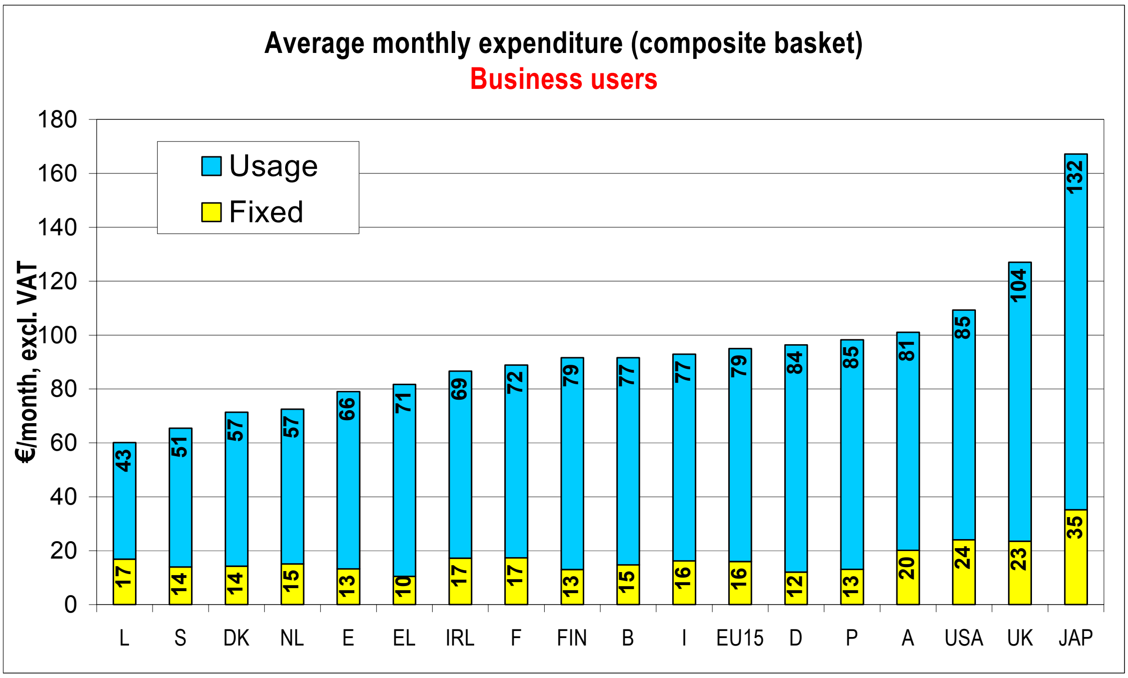


Chart 82



7.4. FIXED NATIONAL CALLS

7.4.1. 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. Any call set-up charges, minimum charges and/or call specific duration allowances have been taken into account.

Prices refer to peak hours (weekdays 11.00) and are expressed in € including VAT. Except where otherwise specified, the figures refer to August 2002.

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 national 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 different tariff packages exist (Austria and the Netherlands), the basic, residential package is selected. Otherwise the standard tariff is used. No discount packages are taken into account.

The EU average value is the average of the EU countries weighted according to population in 1999.

Chart 83

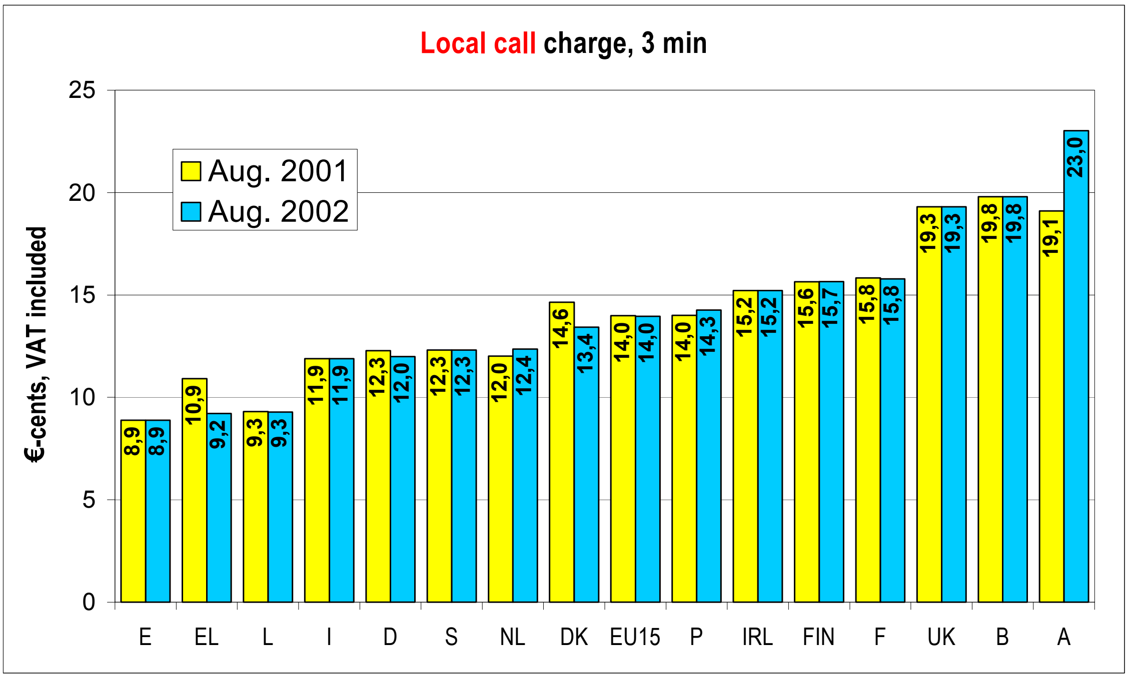


Chart 84

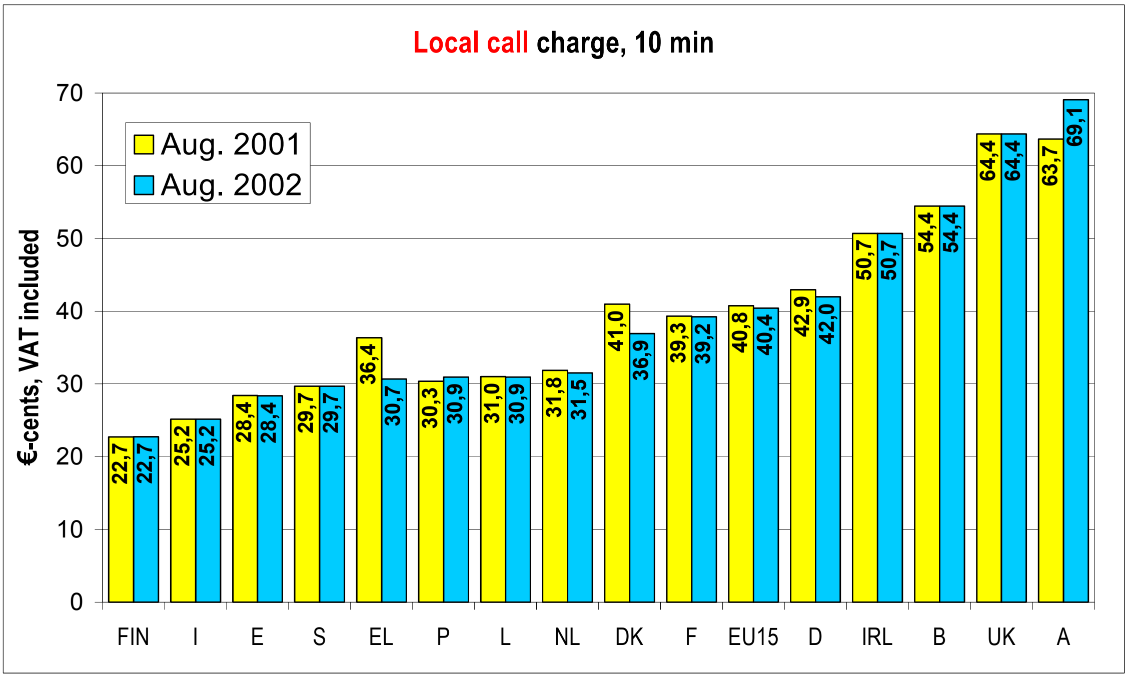


Chart 85

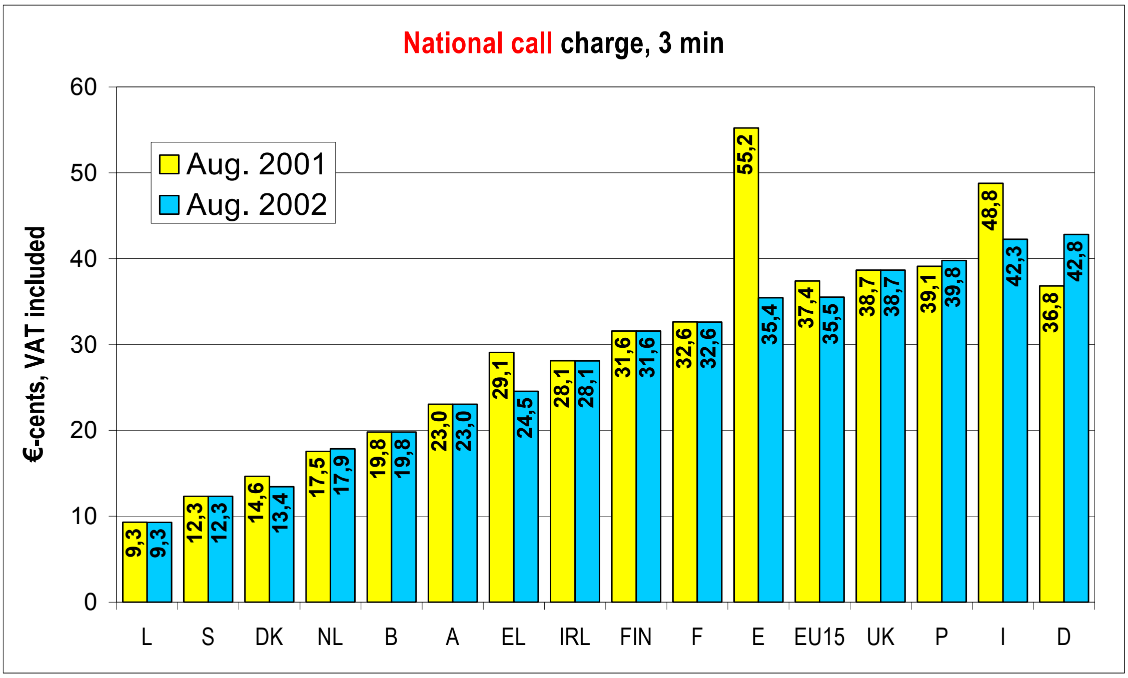


Chart 86

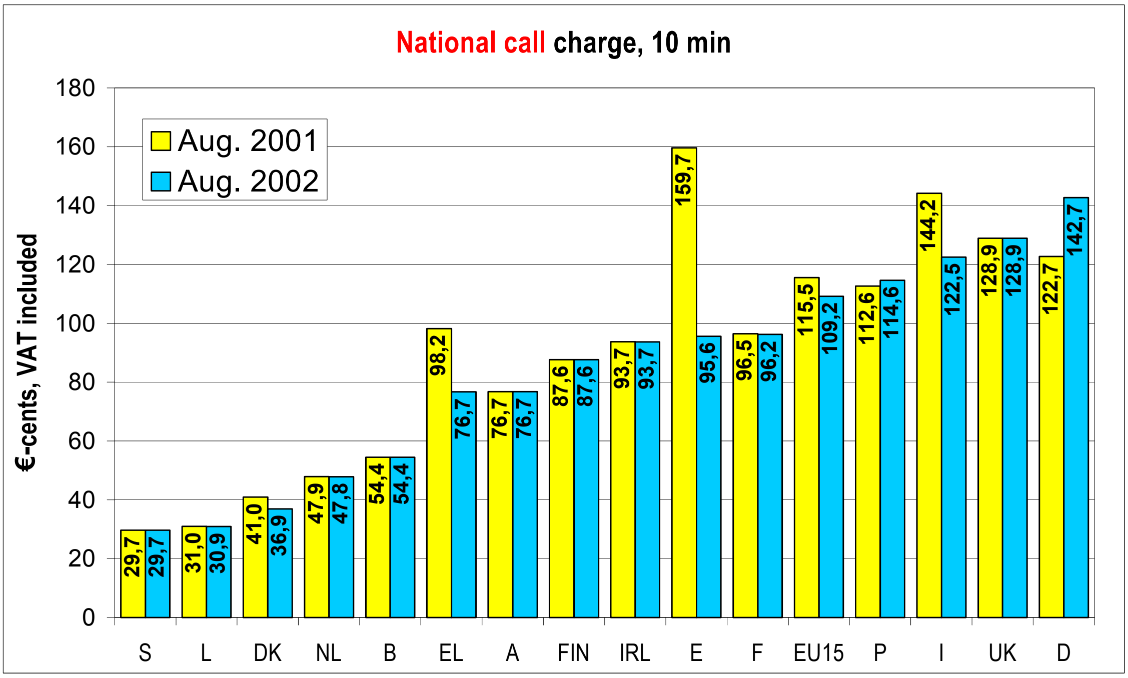


Chart87

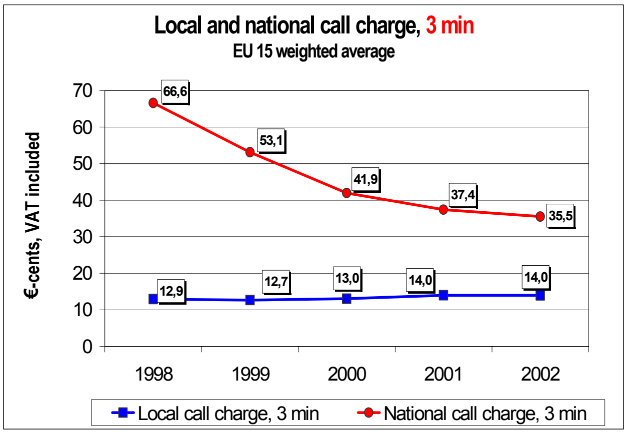
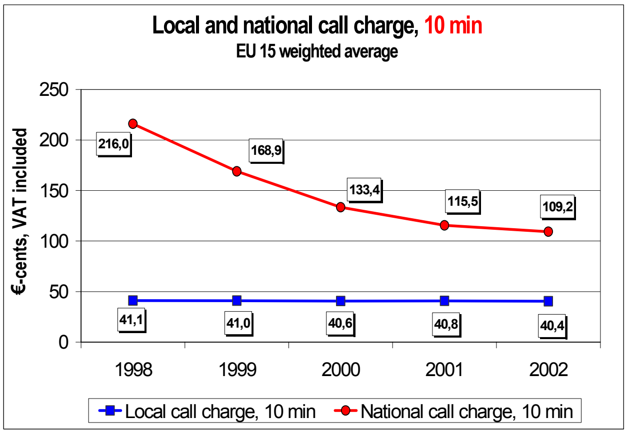


Chart88

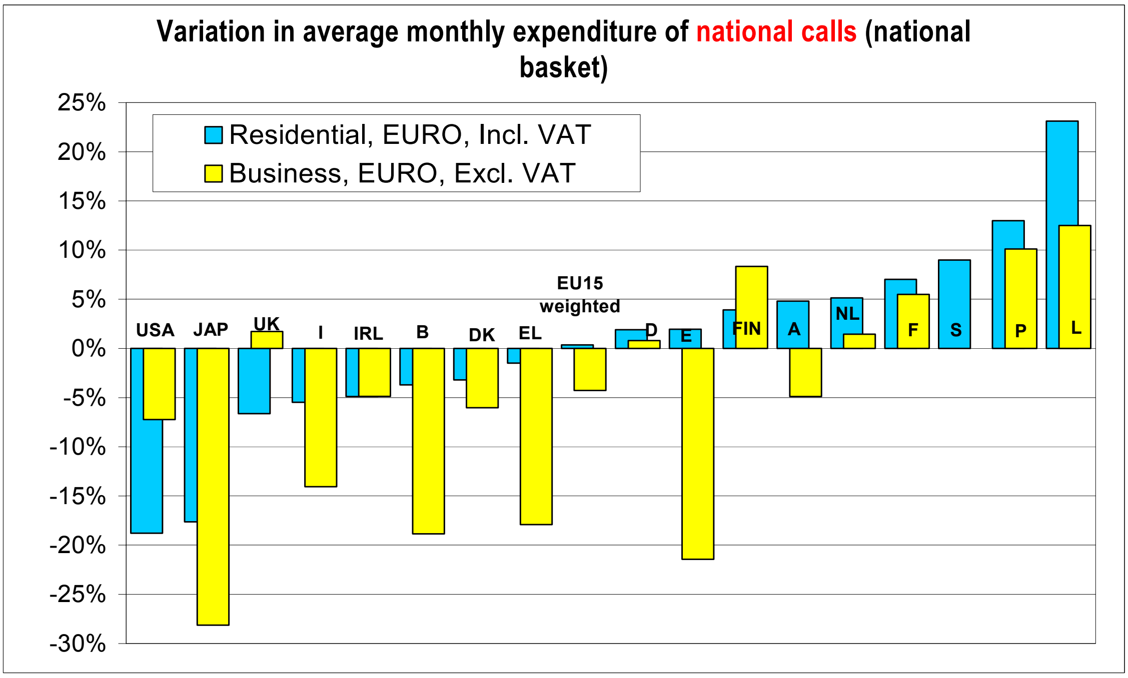


7.5. TREND OF THE BASKET FOR FIXED NATIONAL CALLS (NATIONAL BASKET)

The following charts show the variation of the monthly expenditure of residential and business users on fixed national calls between August 2001 and 2002 (in order to maintain consistency over time, the "old" OECD basket[25] is used, which, unlike the "composite", does not include international calls).

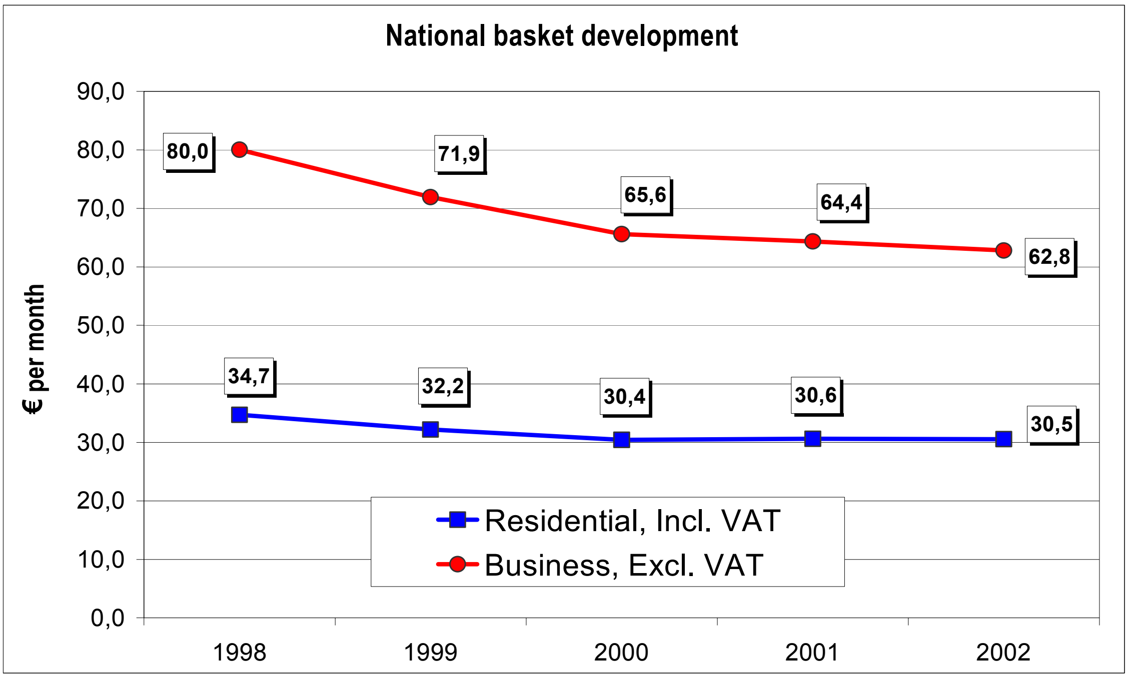
The variation in the international basket is shown in section 7.

Chart 89



[25] A full description of the methodology can be found in "Performance indicators for public telecommunications operators", ICCP Series No.2.2, OECD 1990.

Chart 90



7.6. ALTERNATIVE NATIONAL 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 the biggest competitor in each Member State.

Chart 91

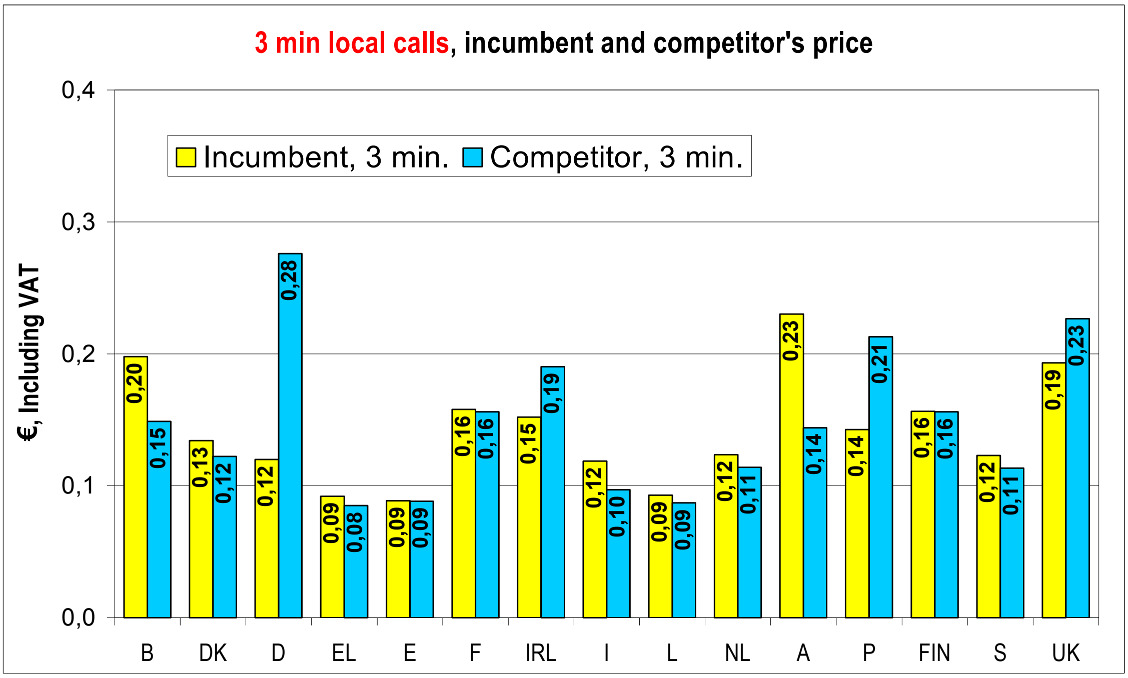


Chart 92

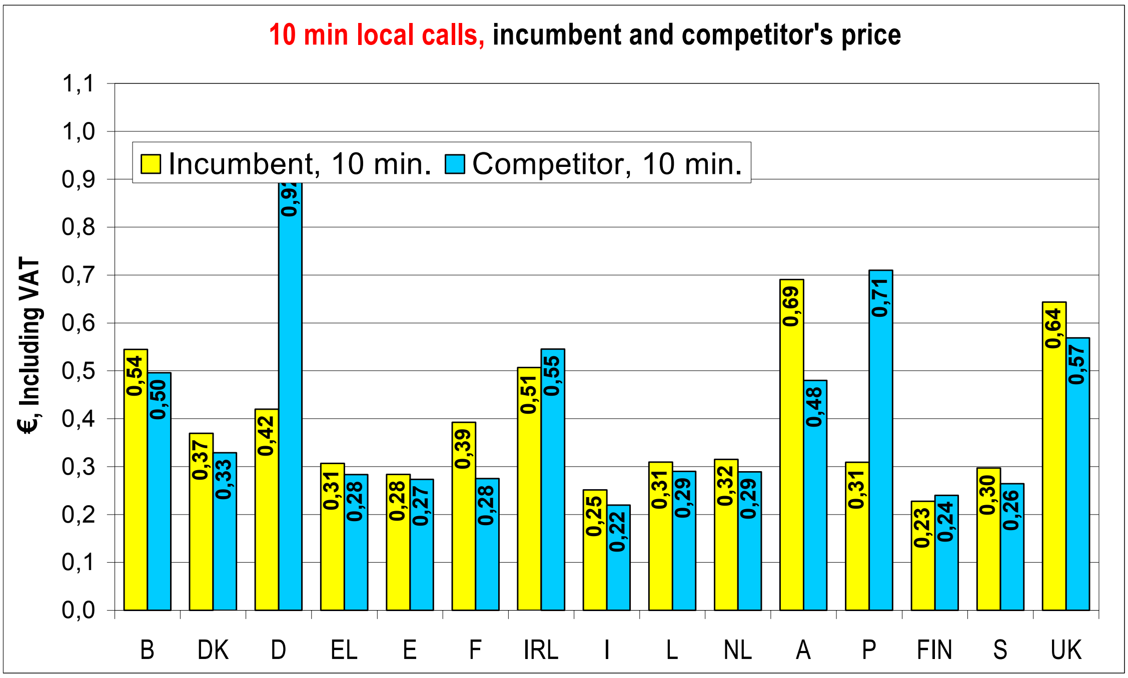


Chart 93

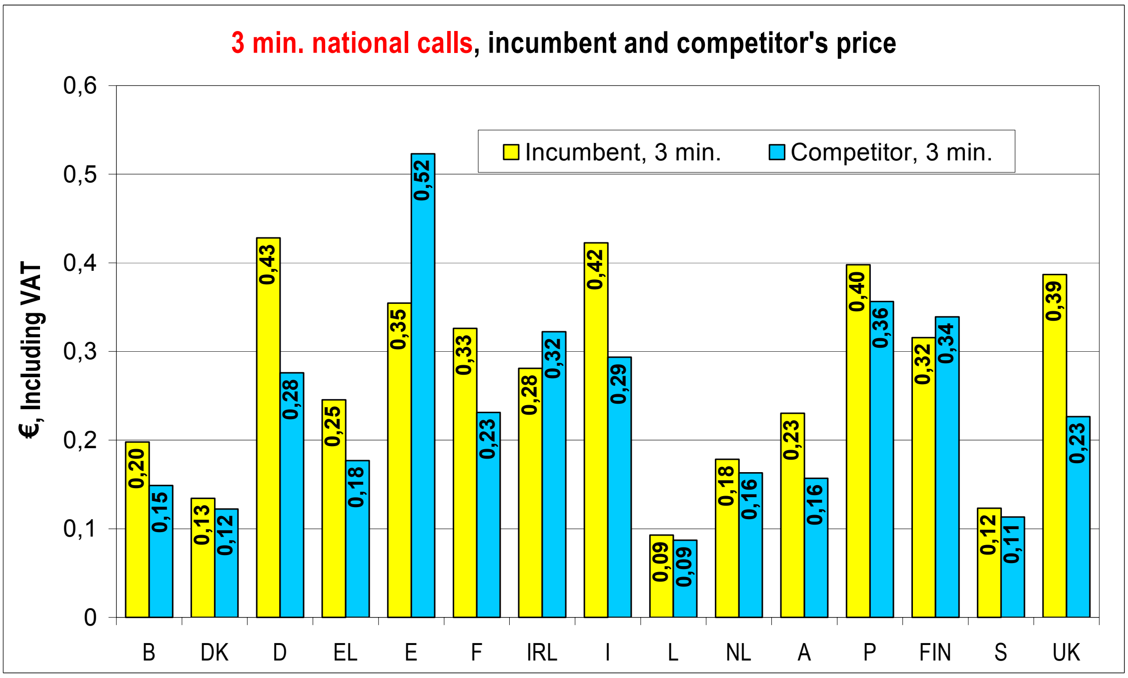
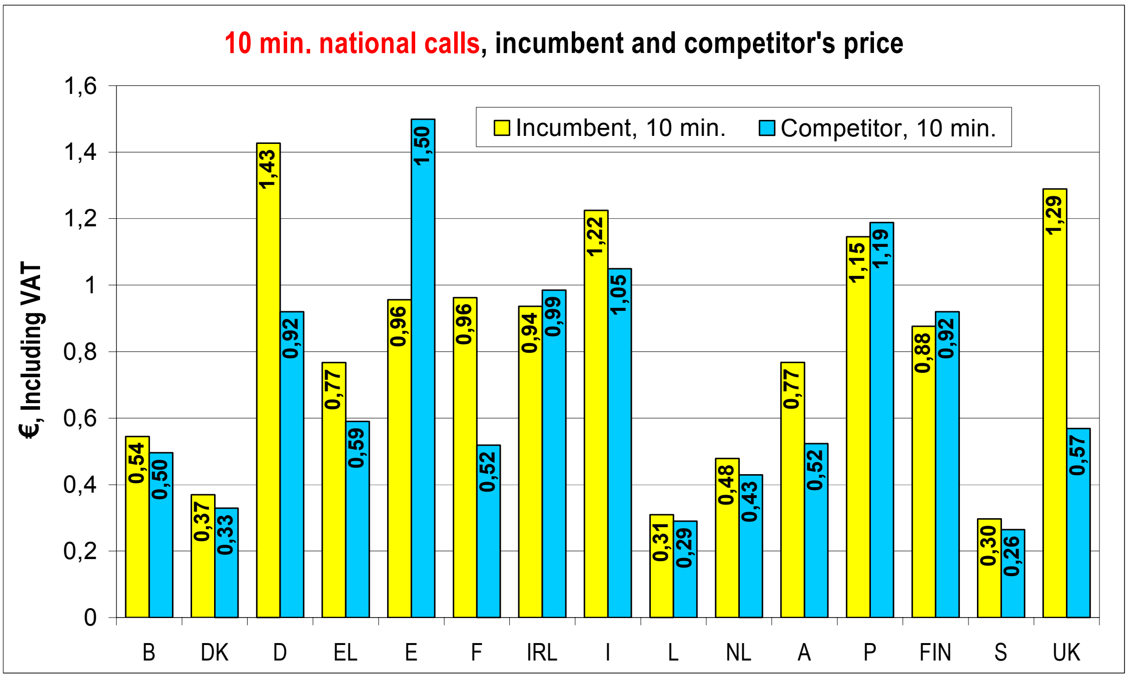


Chart 94



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 actual price of a 10-minute call to specified destinations (within Europe, to Japan and to the USA).

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

The basket of international calls for each country provides an estimate of the average cost of an international call.

For the basket comparison of international PSTN call charges, the OECD Traffic weight basket methodology is used. The basket[26] calculates **an average charge** for calls to all OECD destination countries.

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.

International call charges vary widely with the destination, and the basket results are based on a weighted average call charge. 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).

The EU average value is the average of the EU countries weighted according to population in 1999.

[26] A full description of the revision to the baskets and the weighted distribution (distances, time and day points and call duration) can be found in the document 'OECD Telecommunications Basket definitions', June 2000, available at http://www.oecd.org/pdf/M00005000/M00005340.pdf

Chart 95

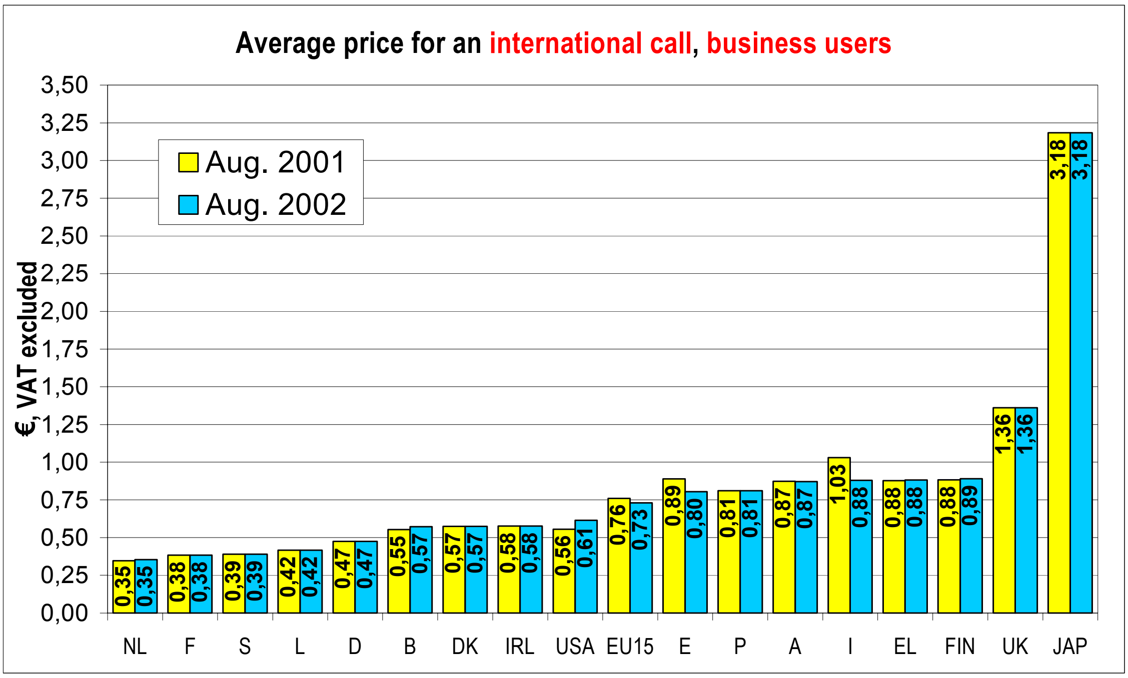


Chart 96

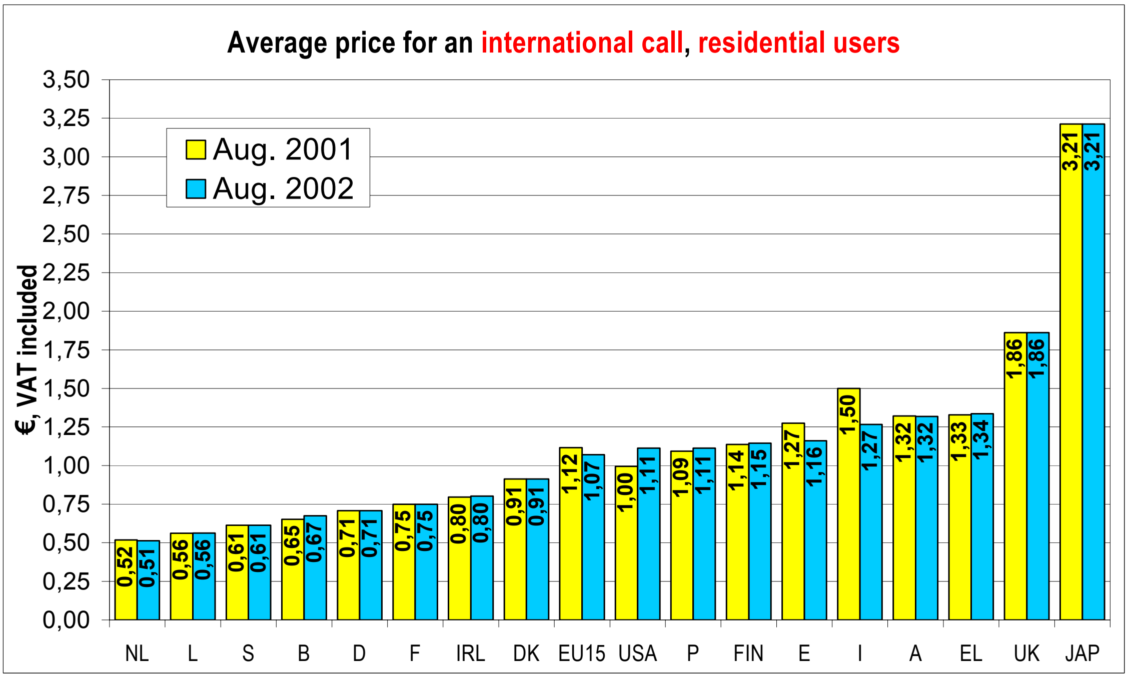
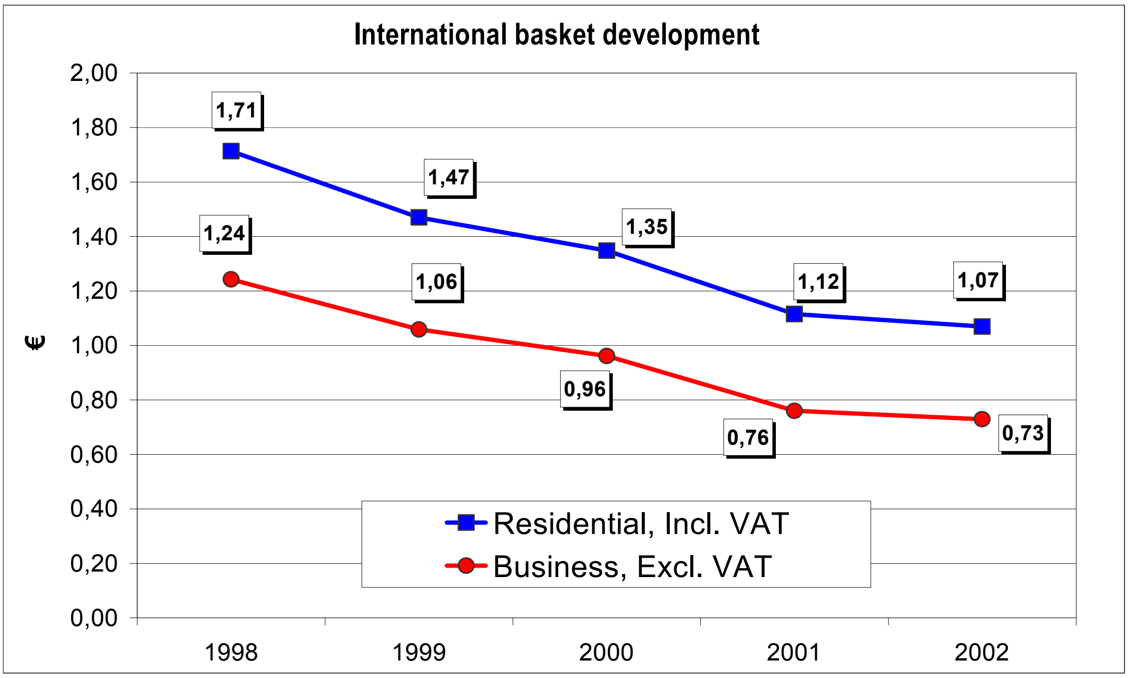


Chart 97



7.8. PRICE OF CALLS TO EU, JAPAN, 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[27] (near EU), more distant country[28] (far EU), Japan and the USA.

Figures are expressed in € at August 2002 values, including VAT, and they refer to the European incumbent operators and the EU weighted average.

[27] The neighbouring countries are defined as: France for Belgium (and *vice-versa*);, Germany and the United Kingdom; Sweden for Denmark and Finland; Italy for Greece (and *vice-versa*); Portugal for Spain (and *vice-versa*); the United Kingdom for Ireland, the USA and Japan; Germany for Luxembourg, the Netherlands and Austria.

[28] 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 98

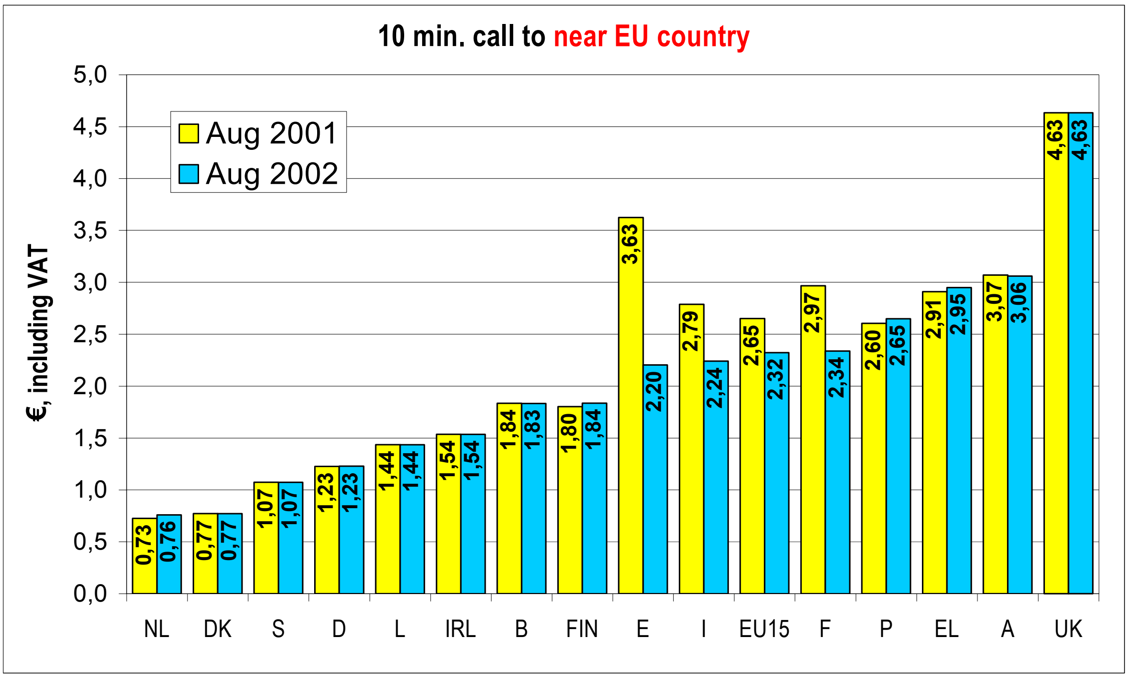


Chart 99

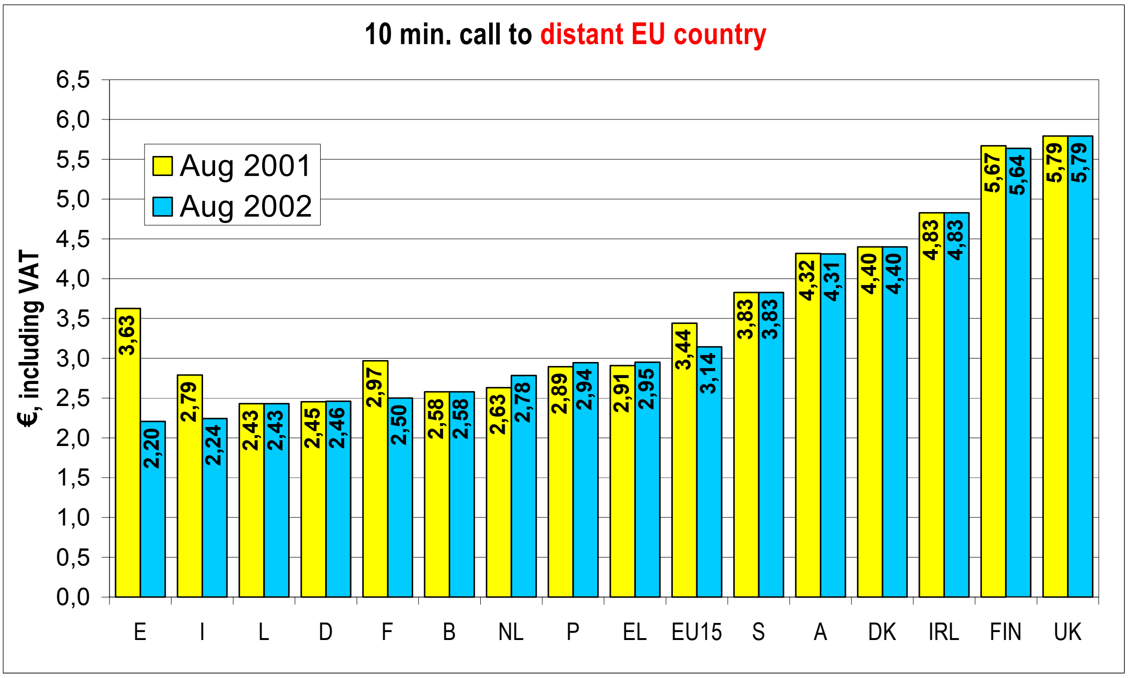


Chart 100

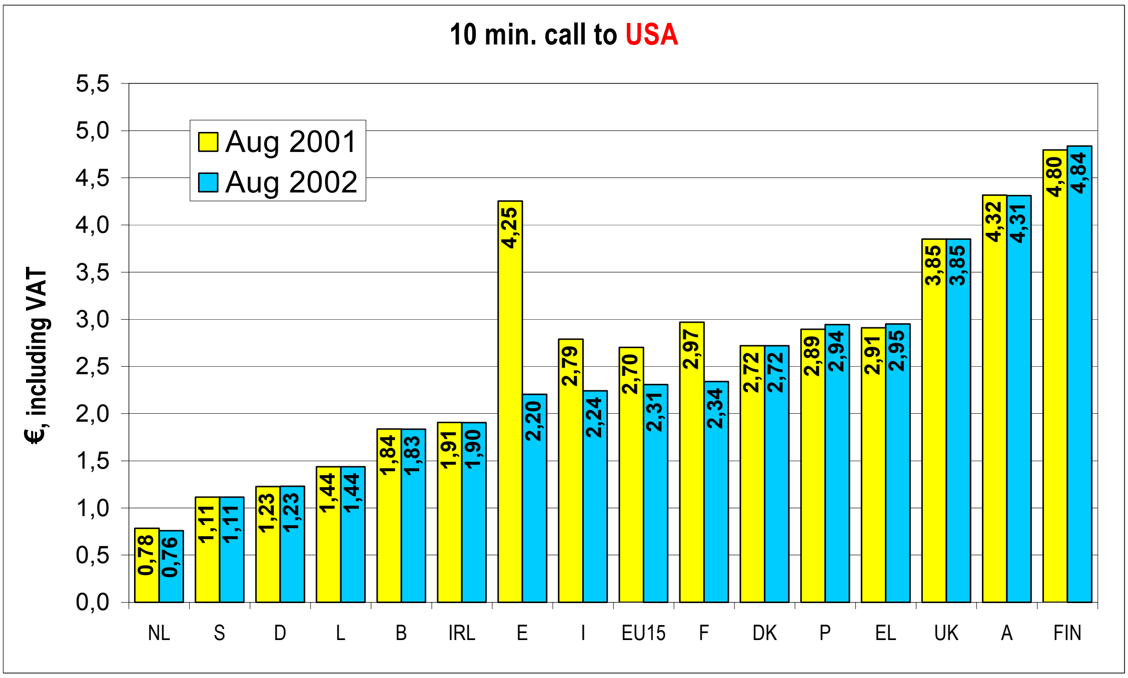
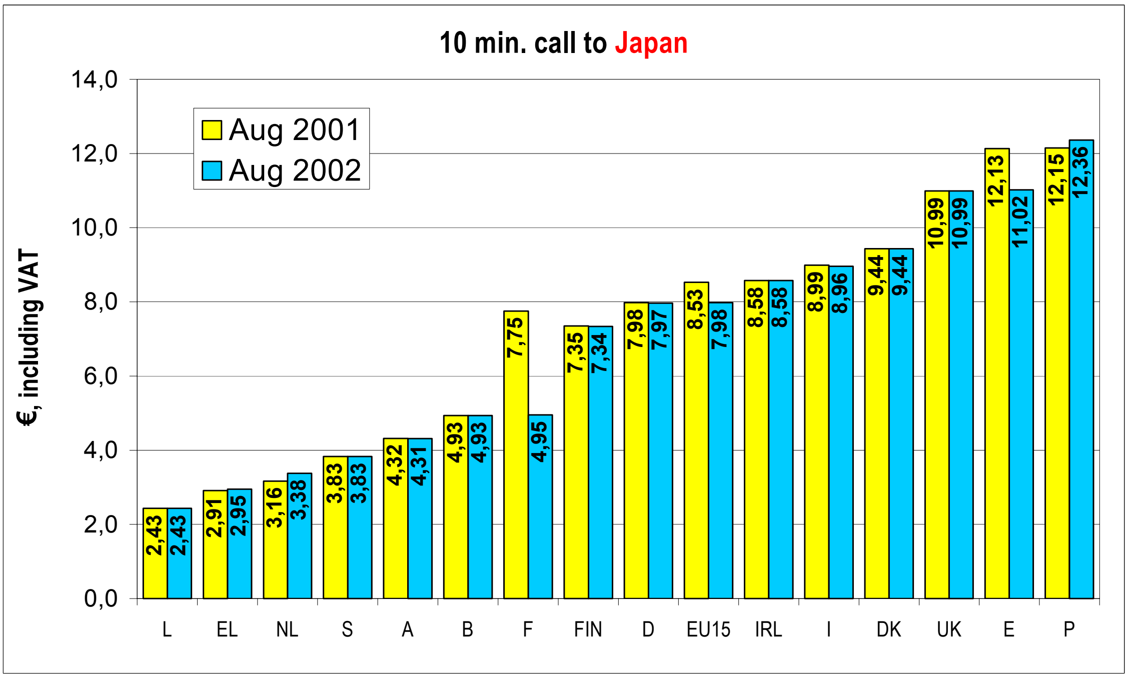


Chart 101



7.9. ALTERNATIVE INTERNATIONAL OPERATORS

The equivalent prices for competitor providers in the EU countries are shown in the charts below. One competitor per country has been analysed. The prices are shown for a 10 minute call, at peak time weekdays.

Prices include VAT and are applicable for August 2002.

Chart 102

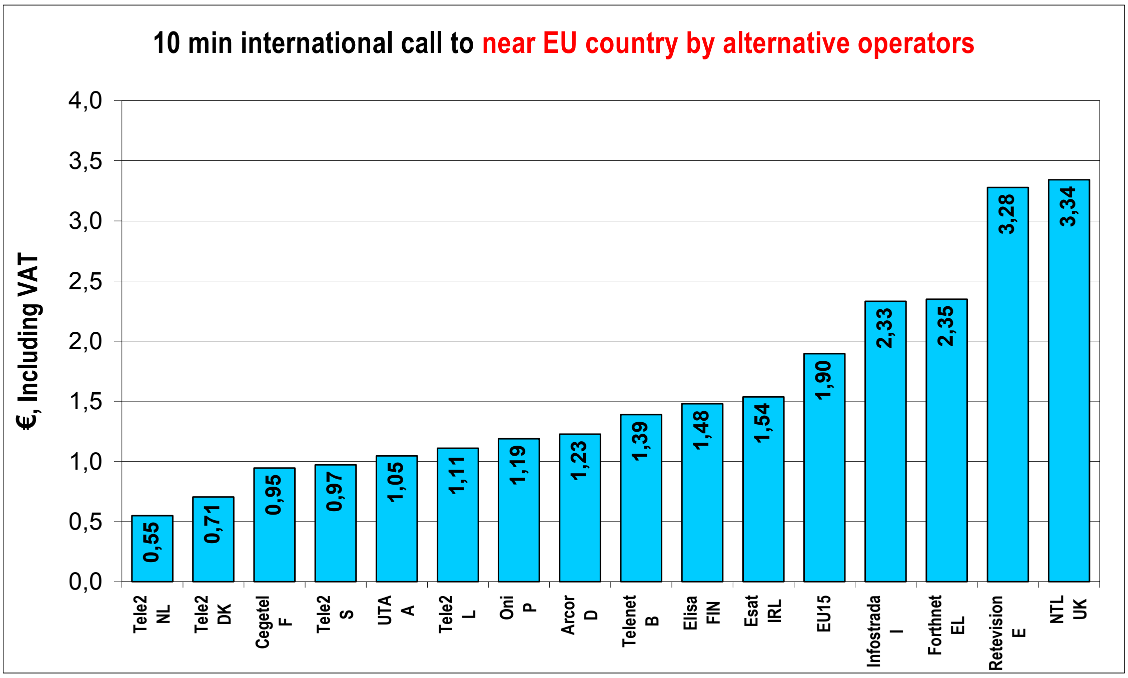


Chart 103

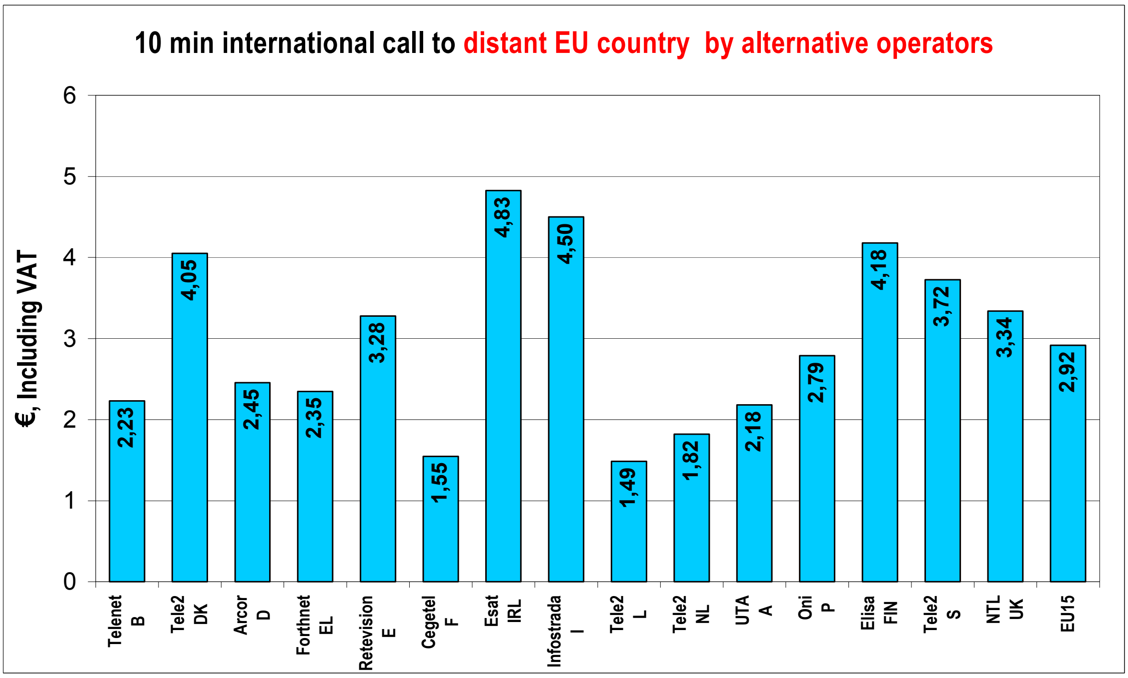


Chart 104

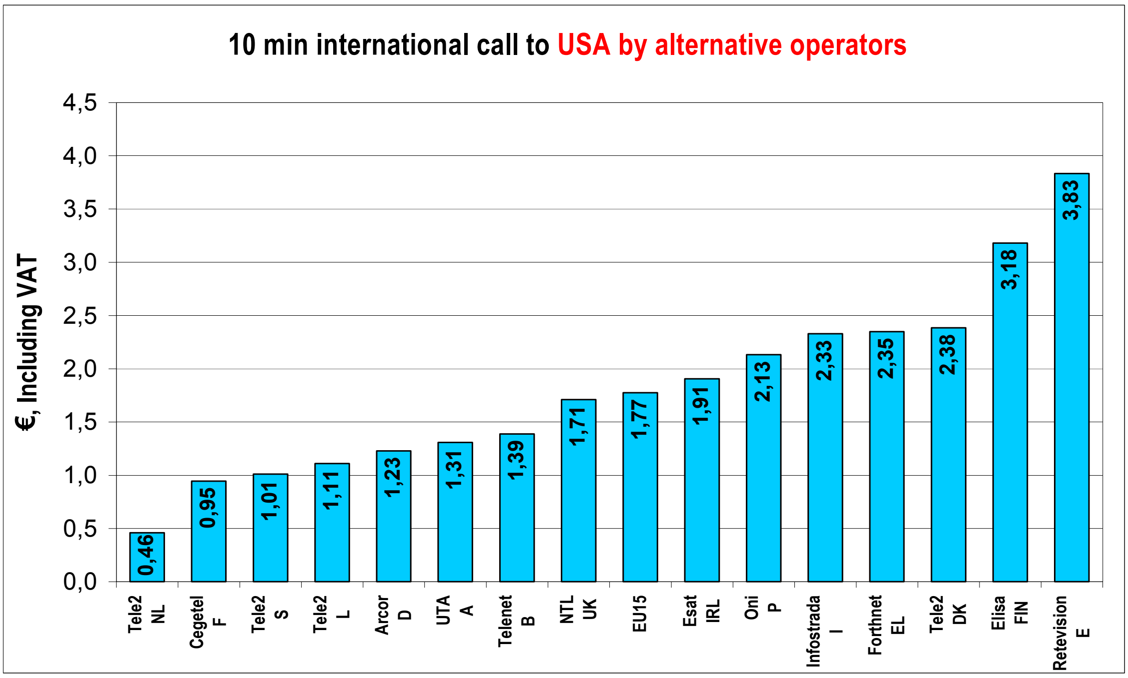
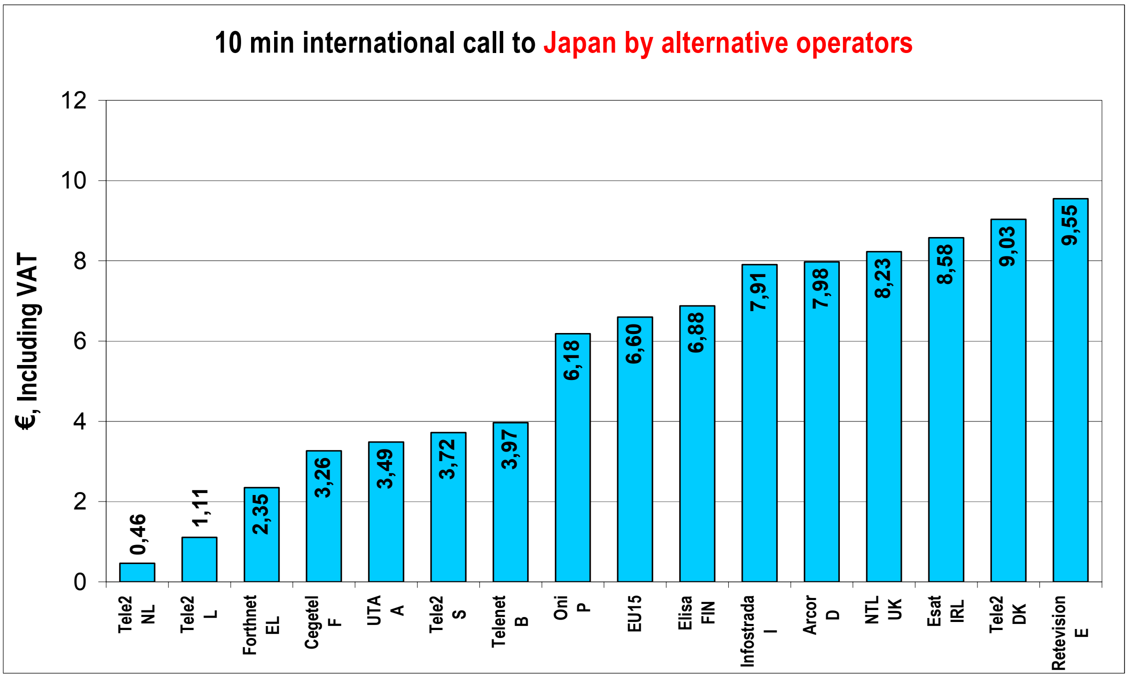


Chart 105



8 LEASED LINES RETAIL TARIFFS

This section contains an overview of prices charged by incumbent operators in each Member State for national and international leased line services as at 1 August 2002 to end users. Figures do not cover wholesale prices. Price developments are also analysed over the period August 1998-2002.

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

8.1. INCUMBENTS' NATIONAL LEASED LINES

National leased line data is provided from 1998 onwards. 2 distances are covered: 2 km (local circuits), and 200 km. Tariffs are taken from the incumbent operator in each country. Other operators may offer other prices.

In order to properly reflect the tariff structures used in some countries the circuits may be considered in one of two different ways, depending on tariff structure. The one to apply will differ from carrier to carrier. The principles used in this report for calculating the price of a full circuit are:

	1: When tariff specifies local tail prices separately, in addition to main circuit.		2: When tariff specifies a single price for the circuit, end to end, including local tails.	
	Local tail length	Main circuit length	Local tail length	Main circuit length
2 km circuit	1 km	0	0	2 km
200 km circuit	2 km	196 km	0	200 km

Note: The local tail length is per tail, i.e. there will be 2 such tails with each circuit.

Where several tariff options exist depending on type of location, the criteria for choice is as follows:

- 2 km circuits are always within a major city (usually the Capital)
- 200 km circuits are between a major city and a “minor” city

As the definitions vary between countries, the type of tariff option chosen will also vary. The countries where the price may vary with location or other non-distance related definitions, are: Belgium, France, Austria, Finland, Sweden and the UK.

Some operators apply termination charges per local end, without necessarily covering the local tail circuit within that charge.

4 types of circuits are covered: 64 kb/s, 2 Mb/s, 34 Mb/s and 155 Mbit/s. As not all carriers publish tariffs for all these bitrates and all years, there may be some gaps in the information, especially for higher bitrates.

Some carriers offer 2 Mb/s circuits as both structured and unstructured. In this analysis only unstructured circuits are included.

Also, some carriers offer different types of leased lines, often in the form of “basic circuits” and circuits in a managed network. Only “basic circuits” are included in this analysis, as the managed network services are not comparable between carriers.

Lately a few carriers have decided not to publish their prices for some or all types of leased lines. This makes it increasingly difficult to present a full overview of the prices in all 15 EU countries.

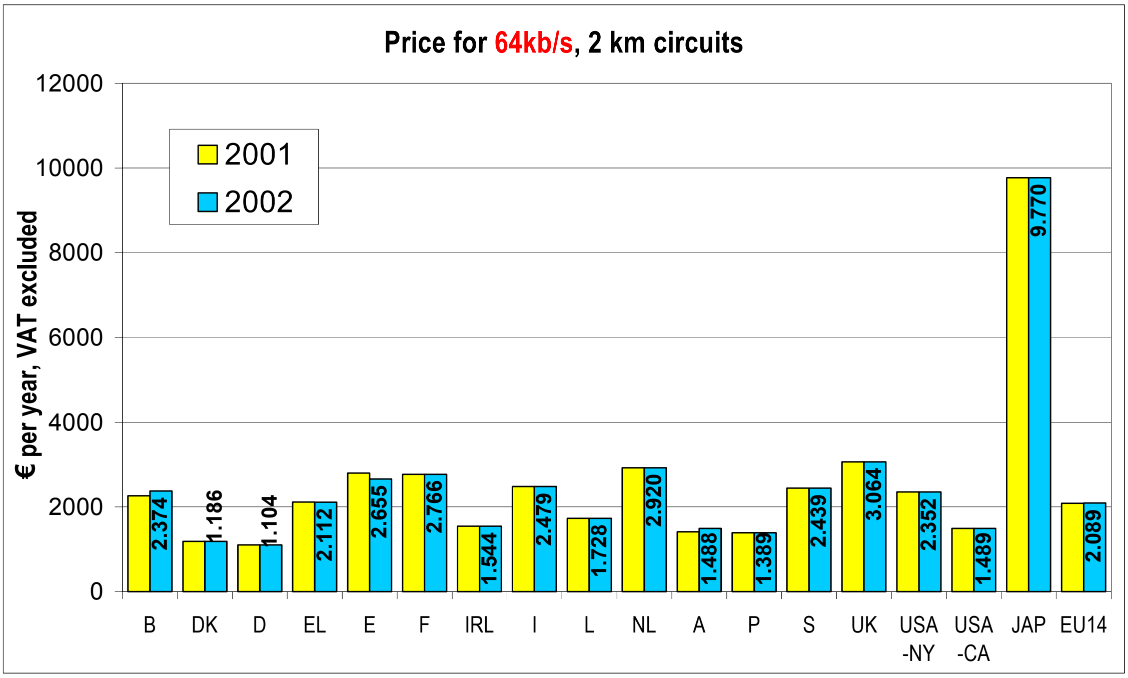
For the USA the prices of Verizon intra-LATA circuits for New York state have been used. The bitrates of leased lines offered in some countries may be different from the ones found in most EU member States. Some operators may offer 56 kb/s instead of 64 kb/s, 1.5 Mb/s instead of 2 Mb/s, 45 or 50 Mb/s instead of 34 Mb/s, and 140 or 150 Mb/s instead of 155 Mb/s. Prices shown in the tables and graphs in this section of the report have been adjusted according to the difference in capacity.

All prices are presented in EURO per month, excluding VAT.

National leased lines prices as at 1 August 2002.

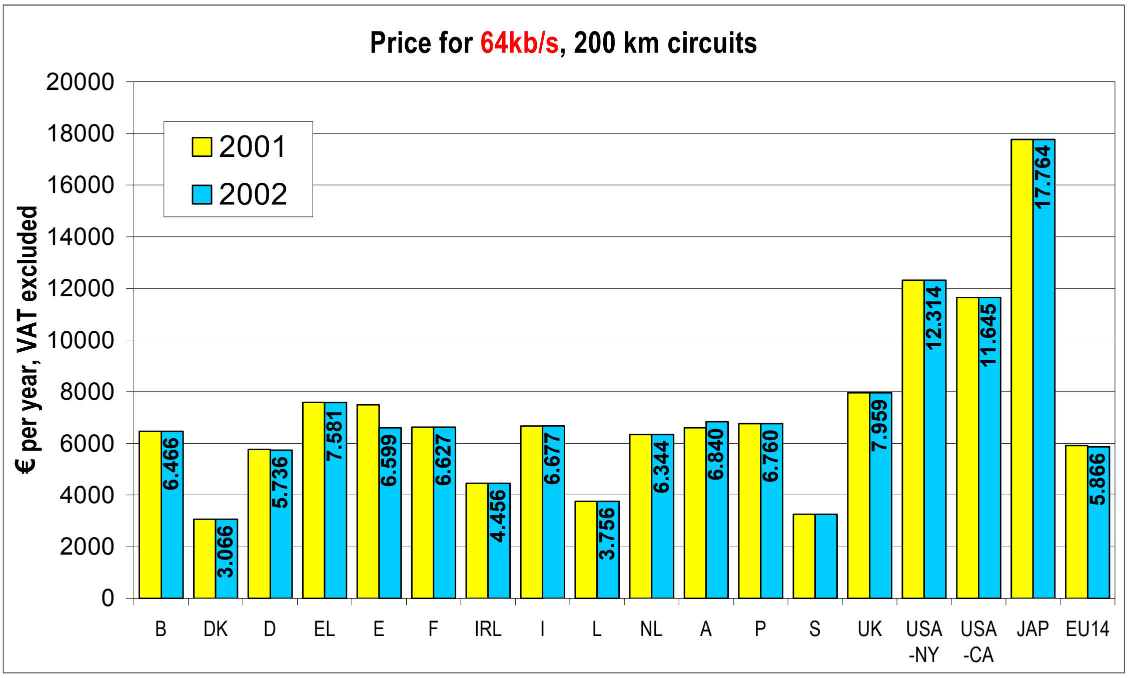
8.1.1. 64 Kbit/s

Chart 106



- Data for Finland not available.

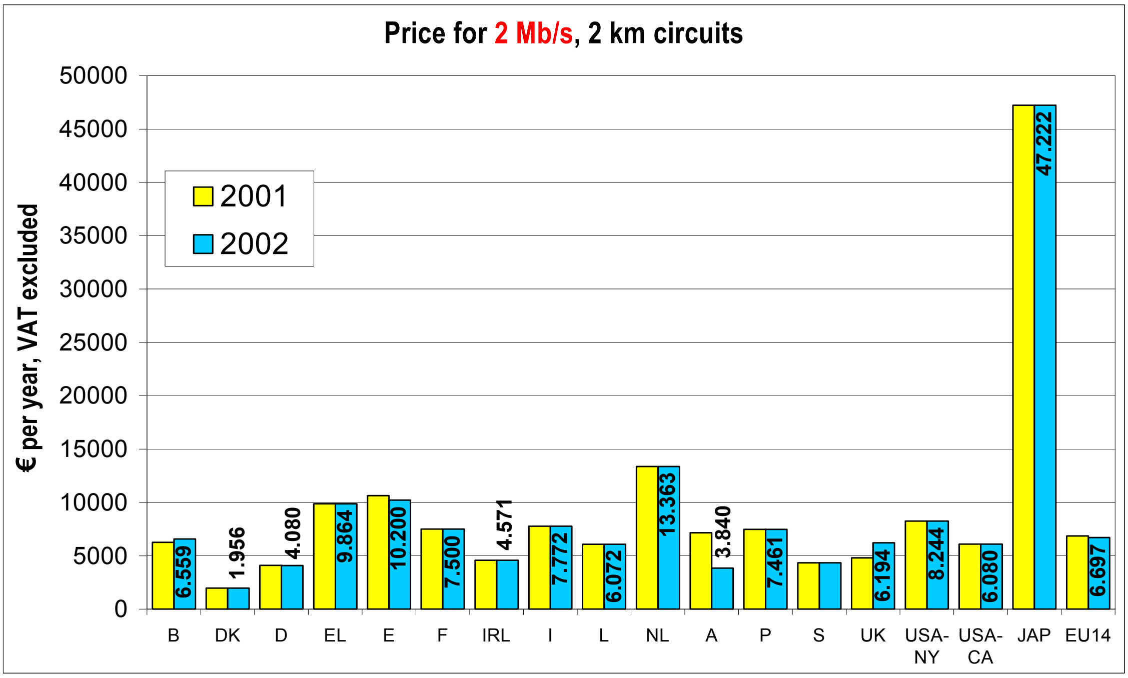
Chart 107



- Data for Finland not available.

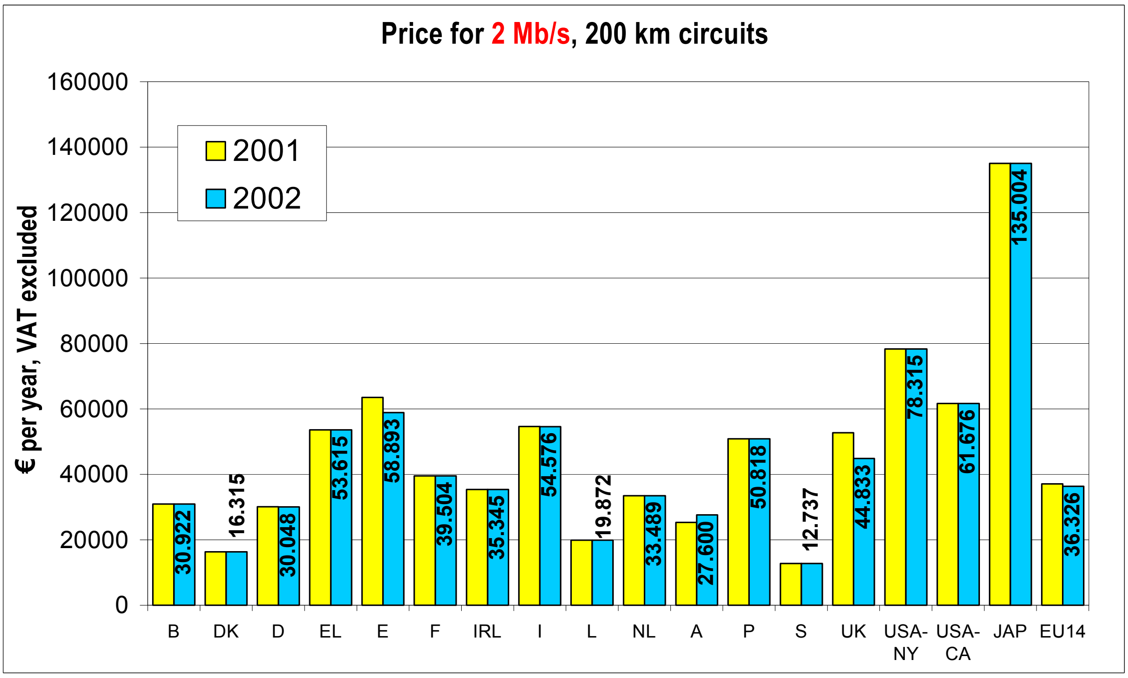
8.1.2. 2 Mbit/s

Chart 108



- Data for Finland not available.

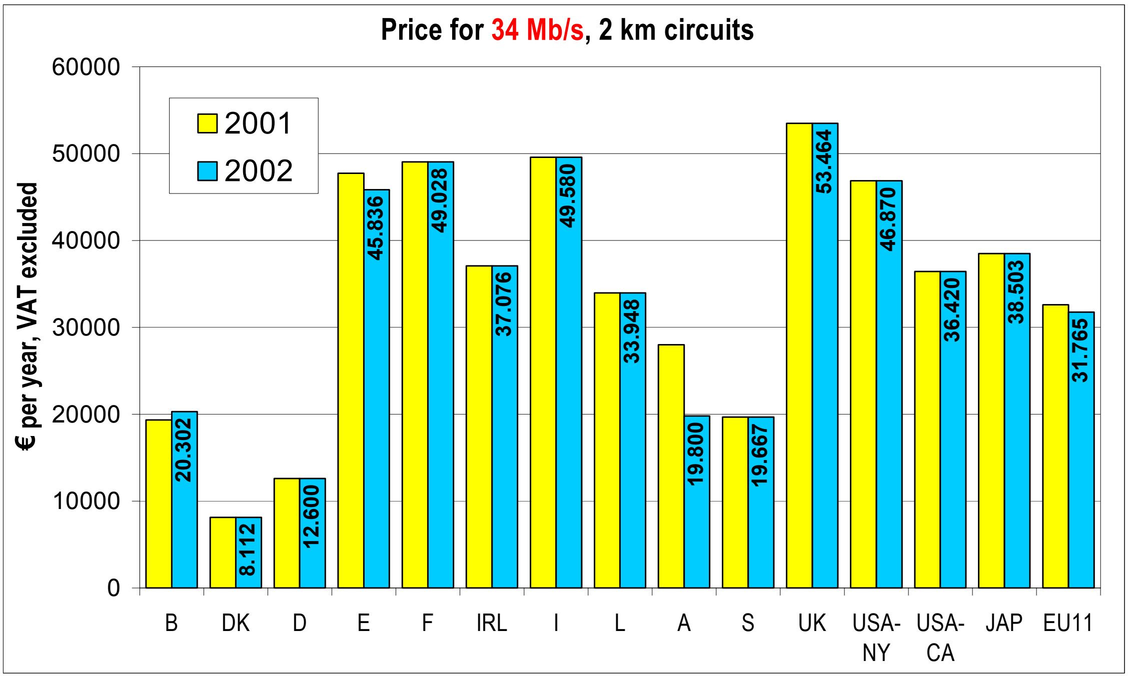
Chart 109



- Data for Finland not available.

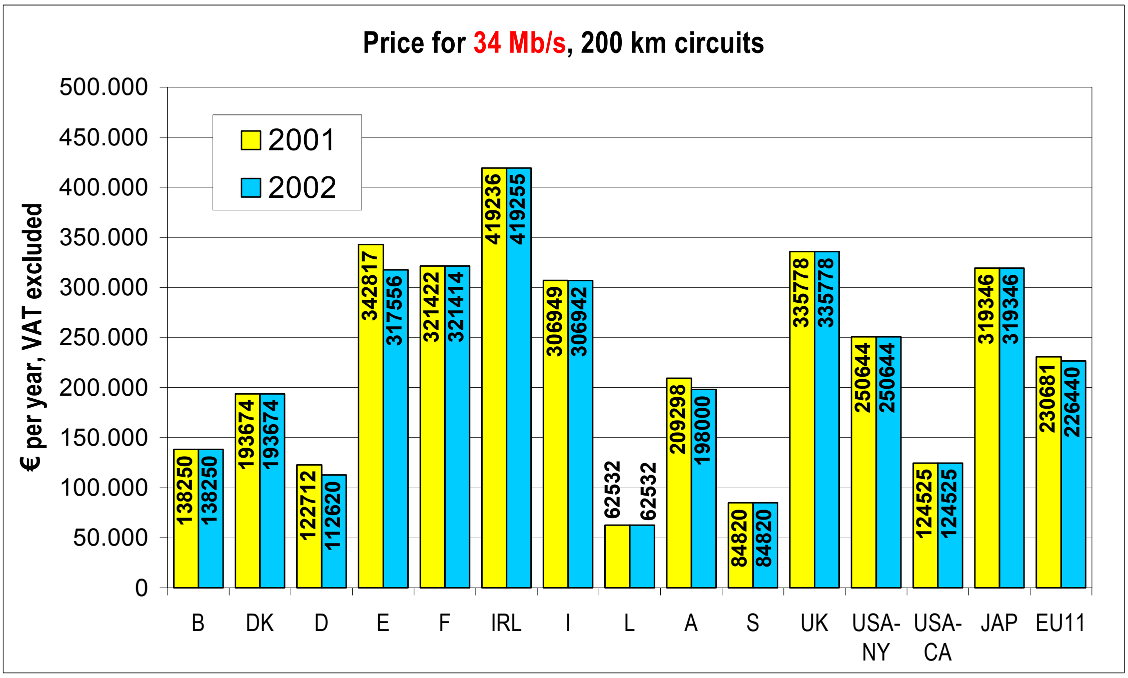
8.1.3. 34 Mbit/s

Chart 110



- Data for EL, NL, P and FIN not available.

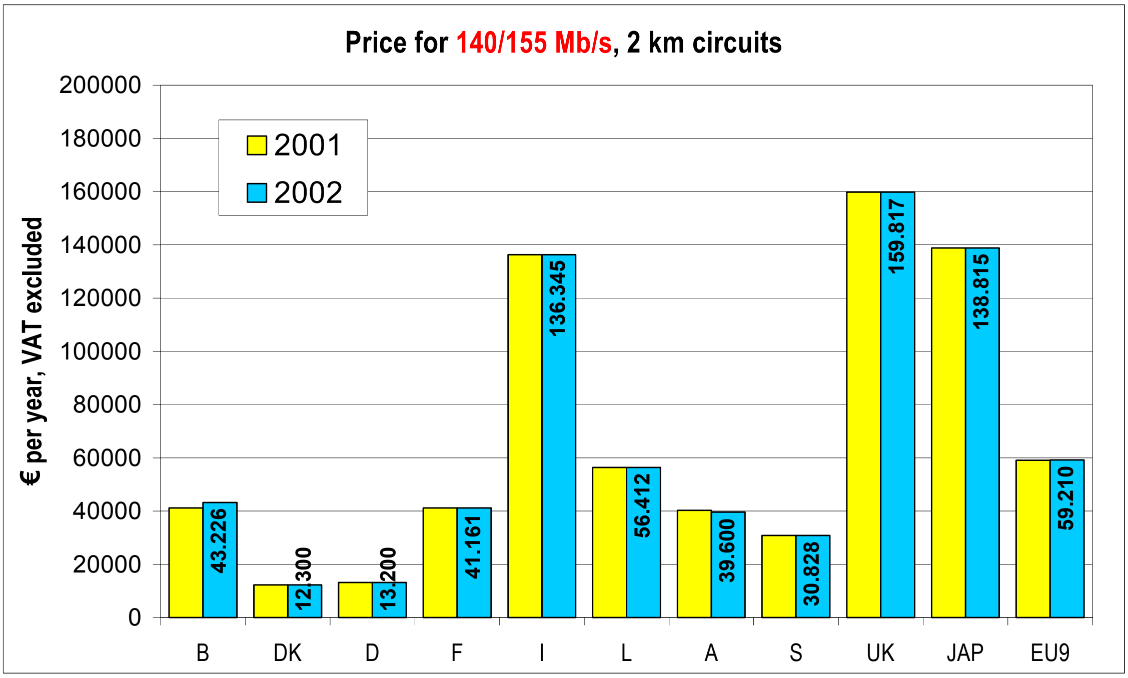
Chart 111



- Data for EL, NL, P and FIN not available.

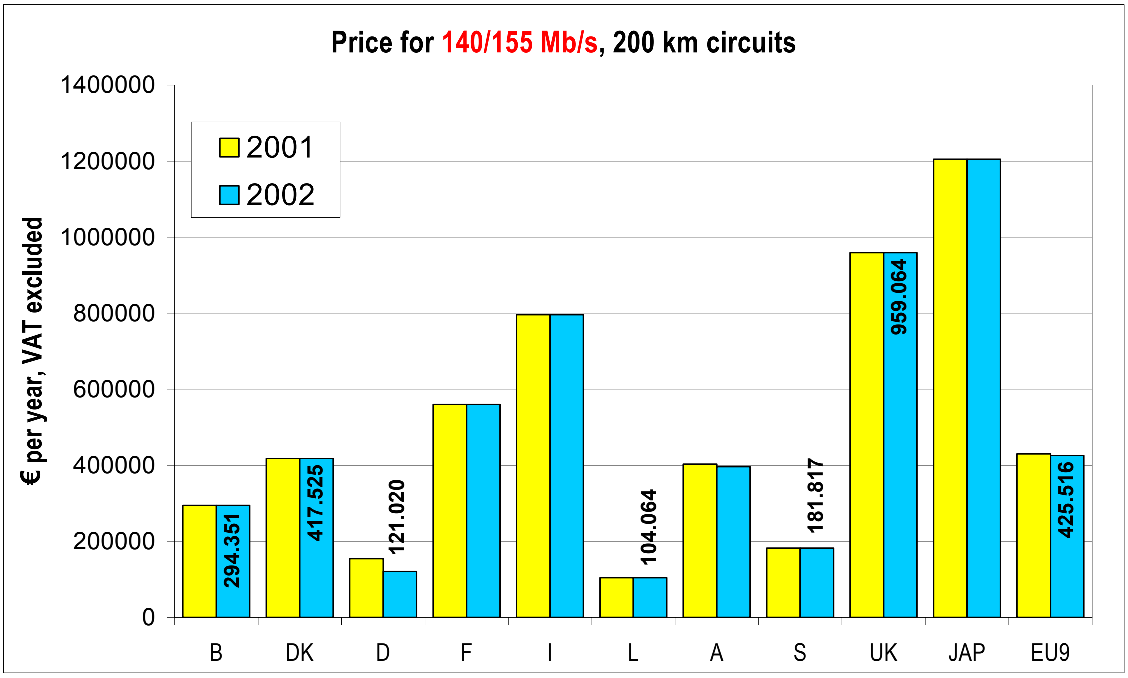
8.1.4. 155 Mbit/s

Chart 112



- Data for E, EL, IRL, NL, P and FIN not available.

Chart 113



Data for E, EL, IRL, NL, P and FIN not available.

8.2.NATIONAL LEASED LINES PRICE TRENDS (1 AUGUST 1998 - 1 AUGUST 2002)

Chart 114

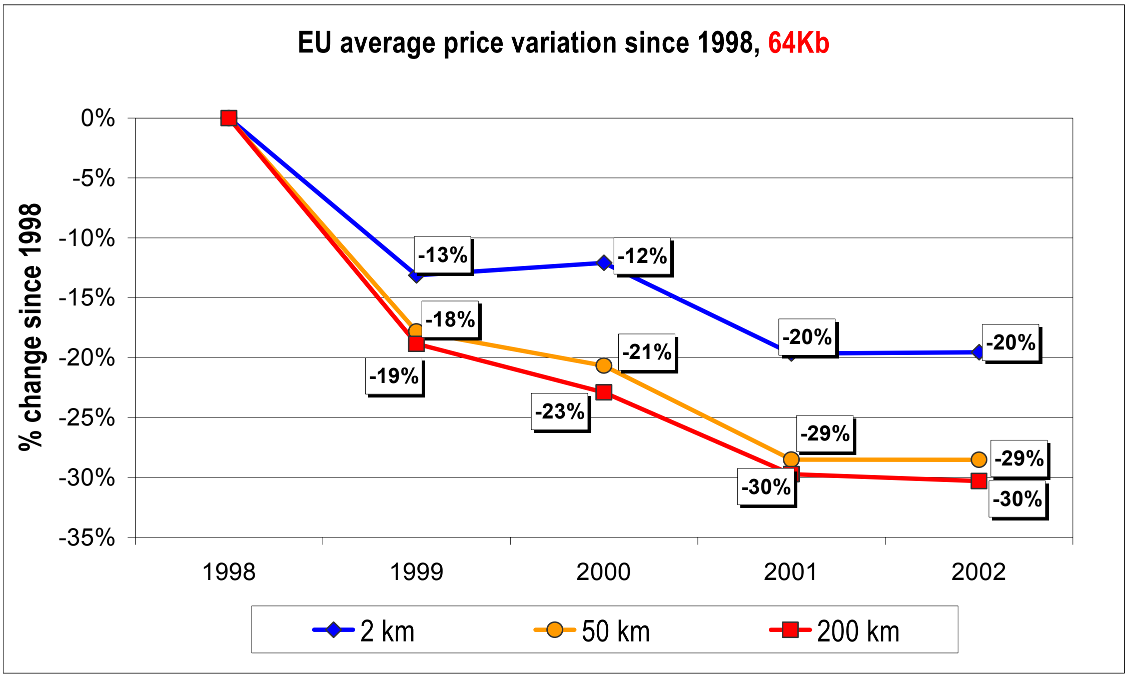


Chart 115

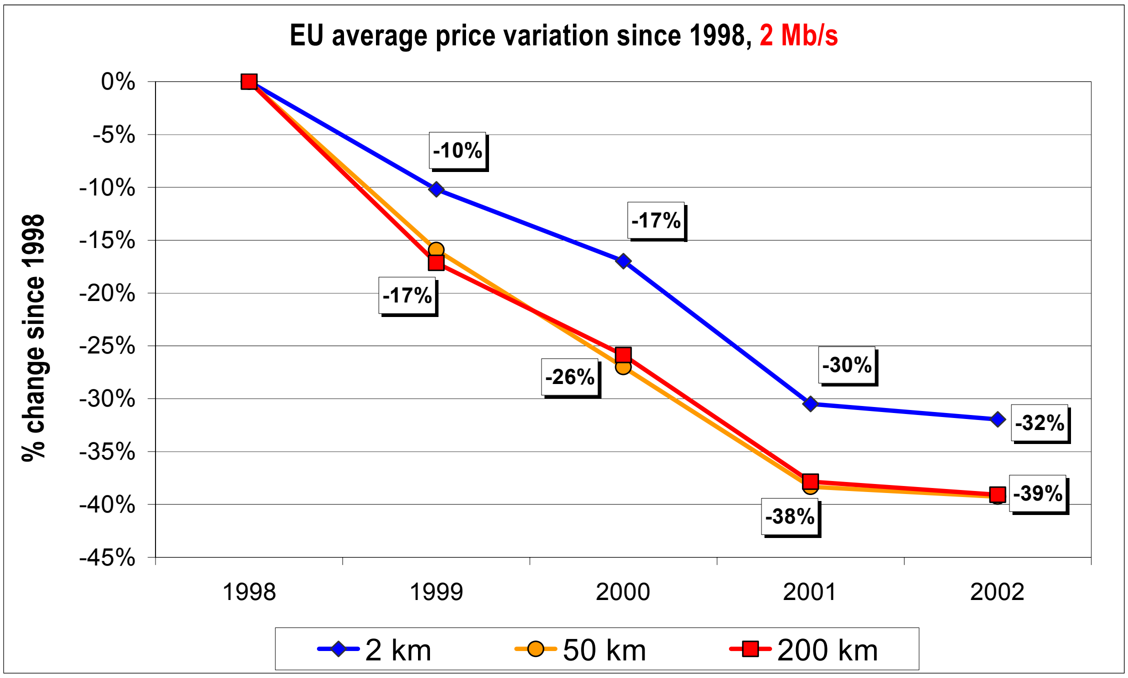
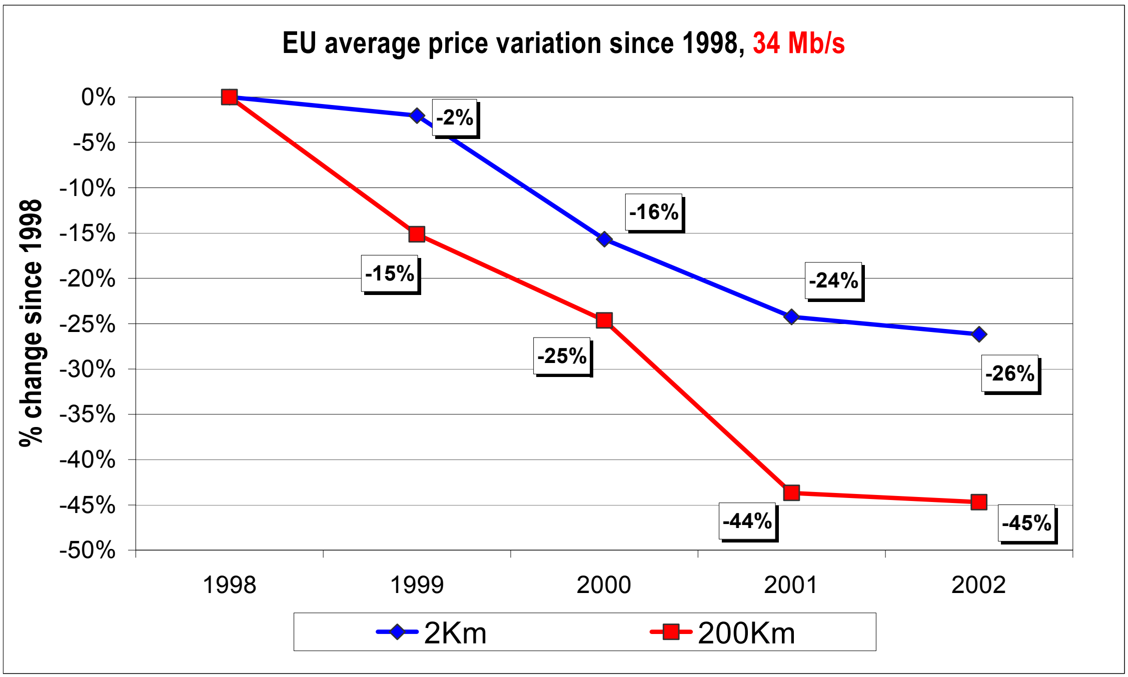


Chart 116



8.3. INTERNATIONAL LEASED LINES PRICES

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. An analysis of the price development over the period from August 1998 to August 2002 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.

Three 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.

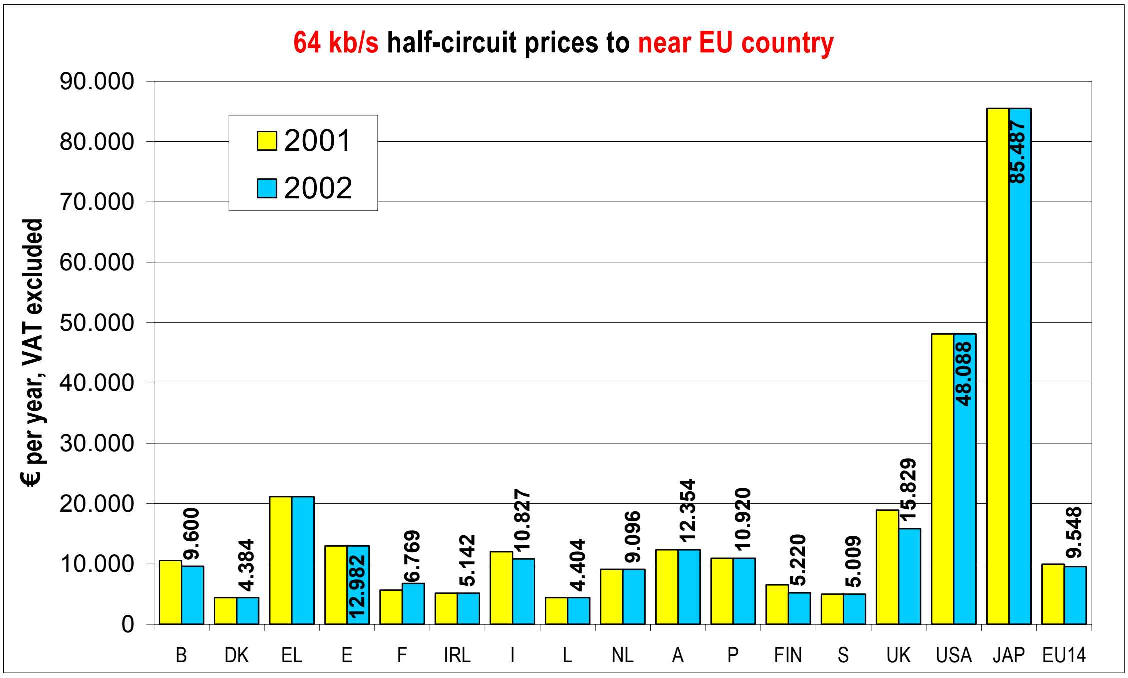
The data is presented with the following parameters:

- All charges in Euro per month
- Excluding VAT
- Germany is not included in the analysis because Deutsche Telekom does not publish prices for international half circuits.
- The years from 1998 are covered
- Variable / 1 year contract (shortest term available).
- AT&T prices are used for USA

Data refer to January for A, February for EL, F, I, NL and FI, April for B and DK, May for E, June for S and UK, and July for IRL, L, and P.

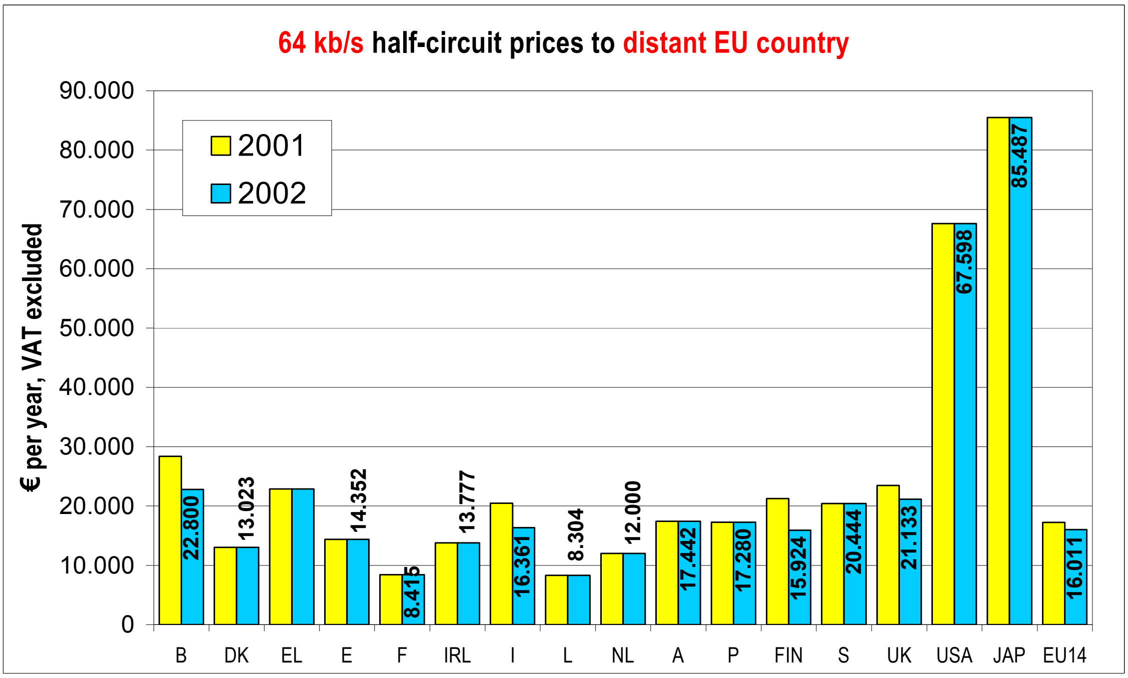
8.3.1. 64 Kbit/s

Chart 117



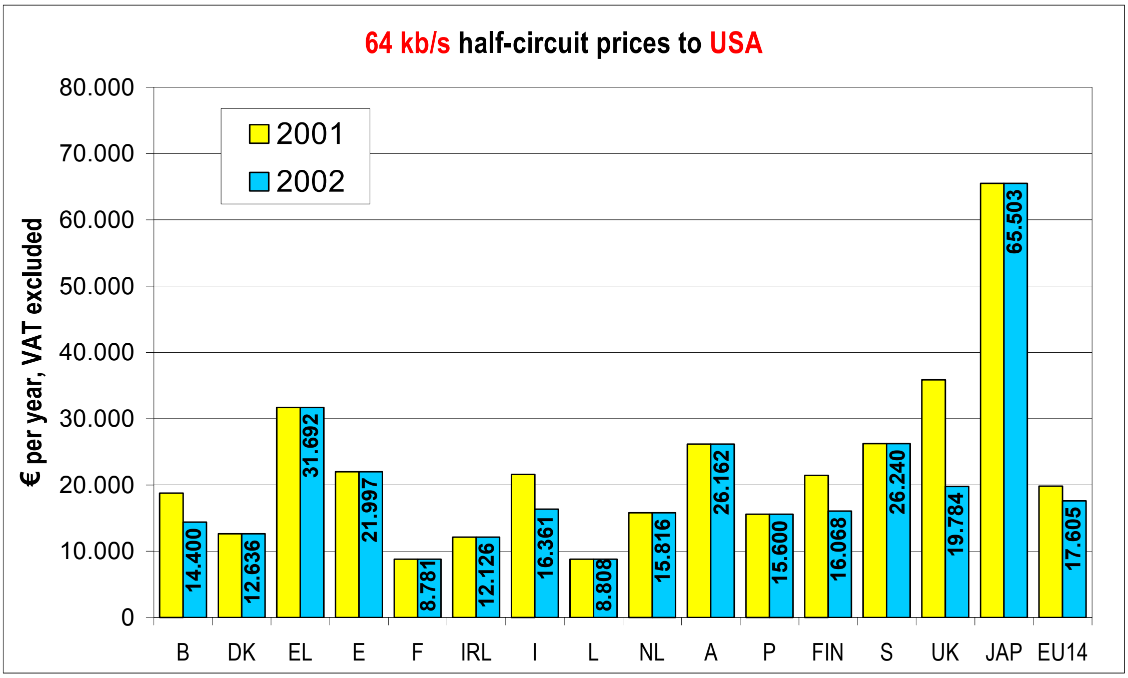
- Data for D not available.

Chart 118



- Data for D not available.

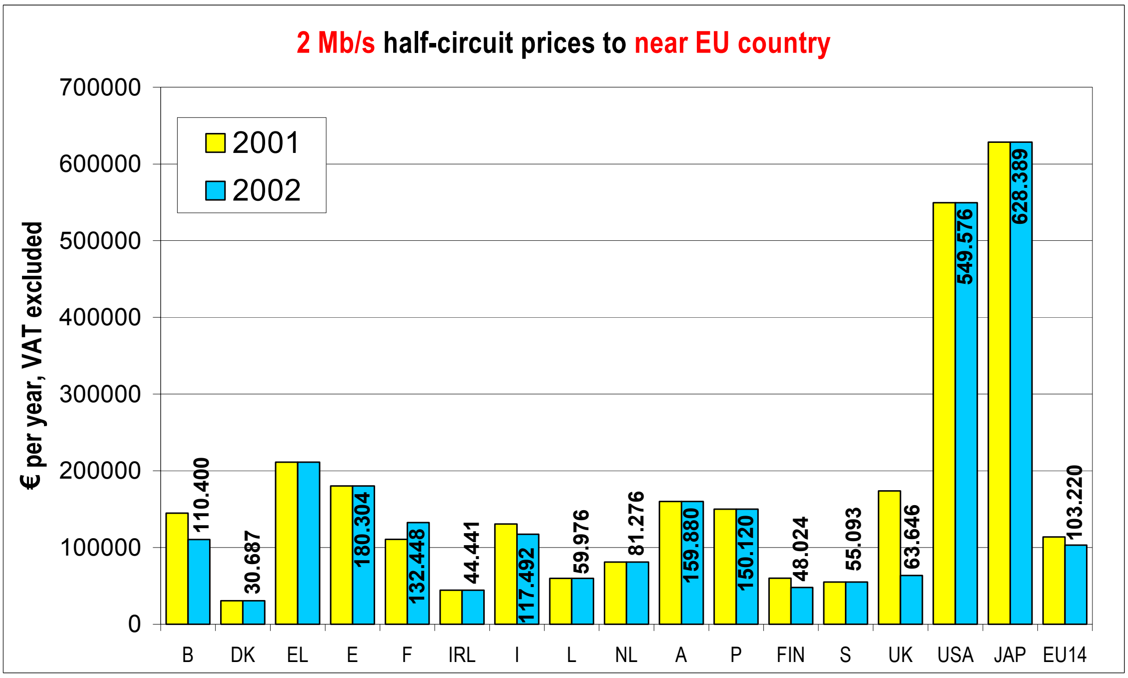
Chart 119



- Data for D not available.

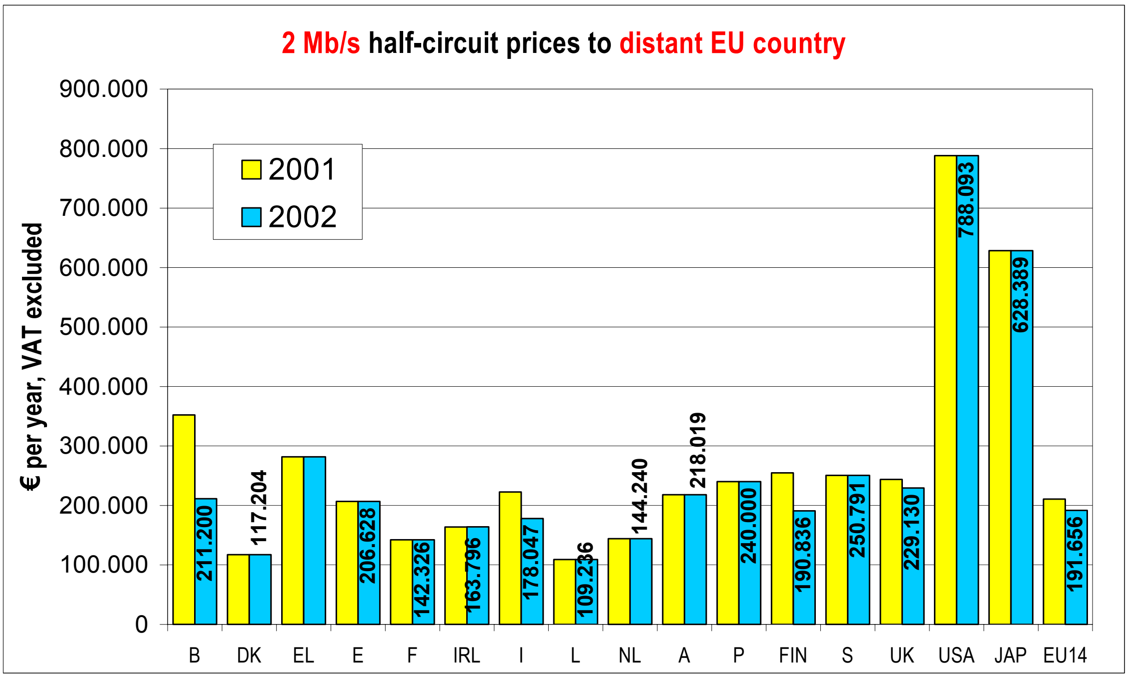
8.3.2. 2 Mbit/s

Chart 120



- Data for D not available.

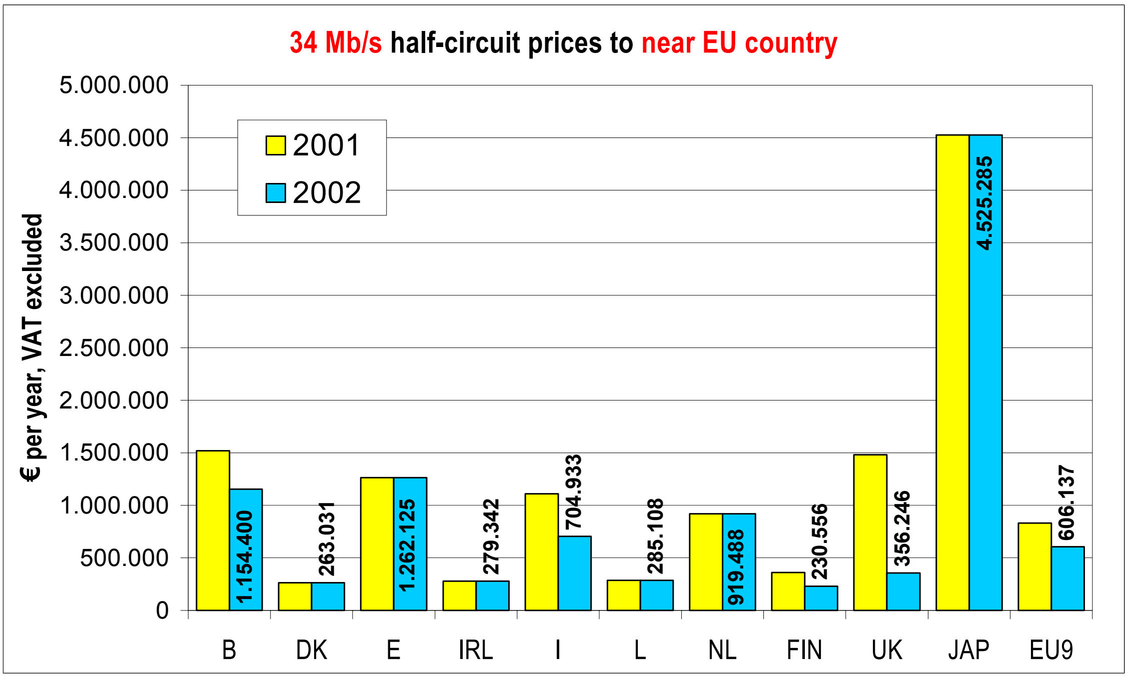
Chart 121



- Data for D not available.

8.3.3. 34 Mbit/s

Chart 122



- Data for D, EL, F, A, P and S not available.

8.4. INTERNATIONAL LEASED LINES PRICE TRENDS (1 AUGUST 1998 - 1 AUGUST 2002)

Chart 123

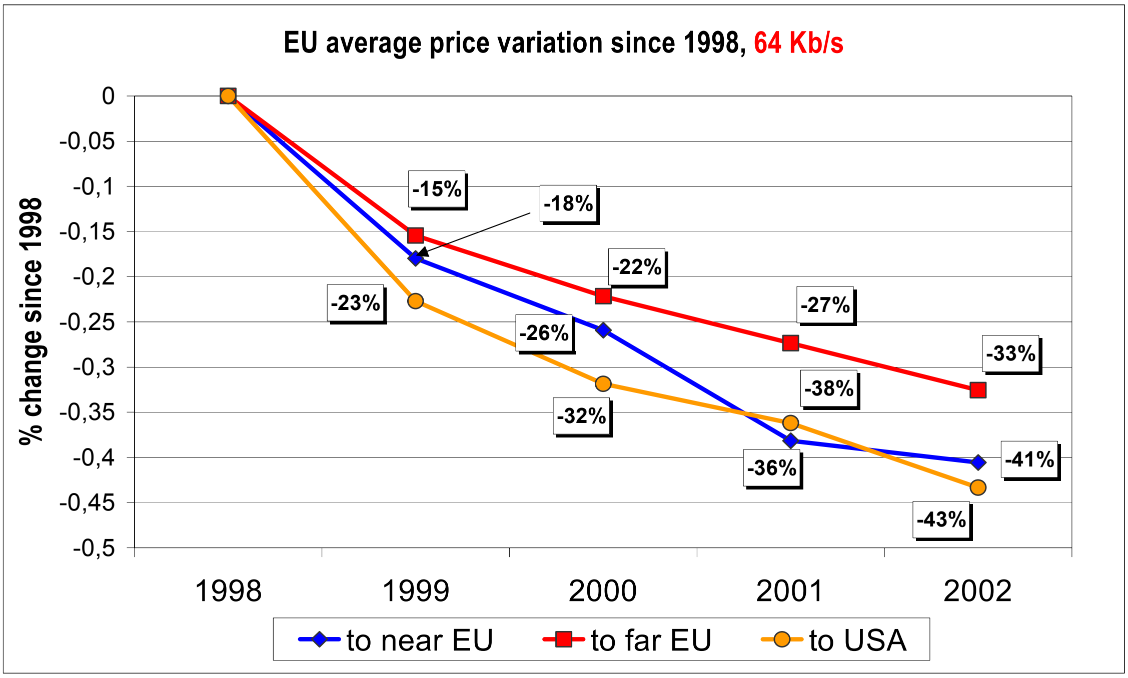
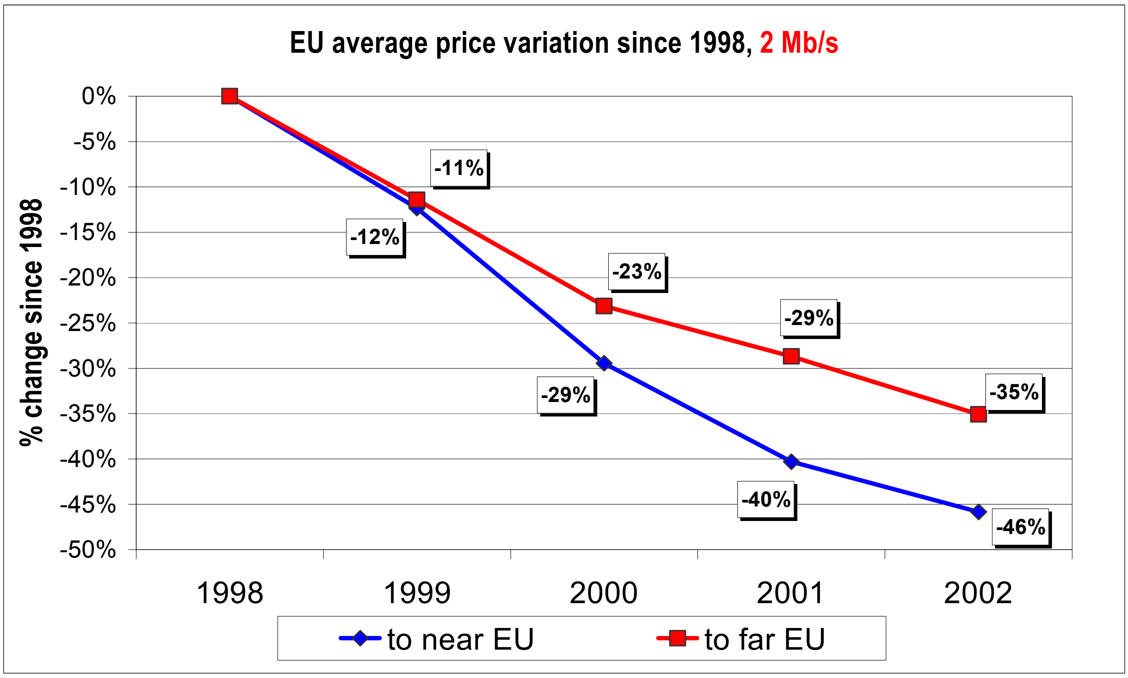


Chart 124



9 EXCHANGE RATES

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

9.1. EXCHANGE RATE USED IN SECTION 6 ON INTERNET, SECTION 7 ON PUBLIC VOICE TELEPHONY TARIFFS AND SECTION 8 ON LEASED LINE TARIFFS.

Table 5 Exchange rates, national currency to Euro

	Exchange rate to euro <= 2001	Exchange rate to euro => 2002
	EURO	EURO
Austria	0.07267283	1
Belgium	0.02478935	1
Denmark	0.13430931	0.13430931
Finland	0.16818878	1
France	0.15244832	1
Germany	0.51129972	1
Greece	0.0029347	1
Ireland	1.26968004	1
Italy	0.00051646	1
Japan	0.00925189	0.00925189
Luxembourg	0.02478935	1
Netherlands	0.45378228	1
Portugal	0.00498798	1
Spain	0.00601012	1
Sweden	0.10794124	0.10794124
UK	1.62999185	1.62999185
USA	1.14495077	1.14495077

9.2. EXCHANGE RATE USED IN SECTION 1.5 ON ADMINISTRATIVE AND NUMBERING FEES

The exchange rate to Euro used in section 1.5 on administrative and numbering fees are the same as in table 5, except for the following:

	EURO
Denmark	0.1346058
Sweden	0.1146319
UK	1.4993537

9.3. EXCHANGE RATE USED IN SECTION 3 ON INTERCONNECTION AND SECTION 5.2 ON PRICES FOR LOCAL LOOP

The exchange rate to Euro used in section 3 on interconnection and section 5.2 on price for local loop are the same in table 5, except for the following:

	EURO
Denmark	0.13460581
Sweden	0.10729038
UK	1.59387950