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Prices of Mobile Calls in 2007. International Comparison

Abstract

The research consists of two parts, comparisons of GSM price baskets and 3G user costs.

GSM: The research examines the development of mobile call prices in 18 European countries from March 2006 to March 2007. The comparison has been made yearly with the help of a price basket since 2001.

The average GSM basket price has decreased by 1 % during the research period in all countries in the research. In March 2007 the most inexpensive GSM price basket was still found in Finland, although the costs of the Finnish basket have increased 12 % during the year. The comparison showed that other inexpensive countries in terms of the price basket were Luxembourg and Sweden. The most expensive price basket was found in France.

The basket prices of bigger countries are noticeably higher than those of the most inexpensive countries. There are big differences between price-levels: the most inexpensive pirce basket is only about 40 % of the most expensive one. The average basket prices in all countries have decreased by 28 % between 2001 and 2007.

3G: This study covers the 3G services of Finland and nine other European countries' operators in April 2007. One operator has been chosen from each country which represents well the country's 3G subscription situation.

The 3G study looks at different consumer service packages which include a mobile subscription, calls, text messages, mobile data transfer and the mobile terminal. The subject of the investigation is monthly costs in euros including taxes. The user profile based on the price comparison describes the way in which an active household user uses a mobile phone.

The most inexpensive 3G service entities were found in Germany, Finland, Sweden and Italy. When using a weighted average of all the subscriptions in all the countries as a standard of comparison, the averages costs of an active user were found to be 94 euros a month. About 27% or 26 euros goes to mobile data transfer and the remaining 73% to talking, text messages and the mobile terminal.

Keywords

call charges, post-paid, pre-paid, price basket, SMS, 3G subscriptions, service package, mobile data transfer

Miscellaneous

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PART 1: Price basket comparison of GSM subscriptions

1 Introduction of the study

This study of the prices of mobile calls includes two different parts. The first one concentrates on the price baskets of traditional GSM subscriptions in 18 European countries. The second part includes the user costs of 3G services in 10 certain countries in Europe.

The first GSM part follows the analysis decided in 2002 and second part shows 3G service packages in some countries.

All the interpretations are made by the writers of the study, especially concerning the user costs of 3G subscriptions, because the situation changes quickly.

1.1 Introduction of the part concerning GSM subscriptions

The first part concentrates on the GSM prices of mobile calls and text messages (SMS in the report) within EU15-countries and in Iceland, Norway and Switzerland. The preliminary work of gathering the price information was done during March 2007.

The study concentrates only on network operators. Virtual and service operators are excluded from this study.

The GSM price basket used in this comparison does not display individual operators' prices. The basket is calculated from all individual countries' operators and therefore represents mean prices for each country. The weighted value for each operator is calculated by the market share. Therefore operators, which have bigger market share, represent bigger value within the country specific price baskets. The mobile phone subscriber connections included in this GSM study are post-paid connections with low price.

As the market share of pre-paid[1] subscriptions is considerably high in some EU-countries, this study also compares the most significant operators' pricing between the post-paid and pre-paid subscriptions.

The price baskets from previous years 2001-2006 have acted as a basic model for this study. Consequently the time series is extensive and the data is comparable with each year.

[1] A connection, where talking time is purchased and payed in advance.

2 Focus of the GSM study

2.1 Target countries and operators

The focus of this study is on the EU15-countries prior to the expansion of EU in May 2004. Iceland, Norway and Switzerland are also included in this study. The study includes each of those operators, whose market share is at least four per cent (4%) in their market area. This study concentrates only on network operators. Virtual and service operators' (MVNO[2]) price information is excluded from this study.

In the beginning of the year 2007 there were a total of 420 million 2G and 3G generation mobile phone subscriptions in those countries, which were included in this study. Appendix 2 shows the countries as well as the operators and the amount of subscriptions in each individual country.

3G operators' services were excluded from GSM study, due to the reason of varying development of the number of 3G subscriptions in each country. The estimation[3] is that by the spring 2007 there were a total of 100 million subscriptions globally, based on WDCMA -technology (70 million in March 2006). Approximately a half of these were located in Europe.

2.2 Target services included in GSM report

This study contains basic GSM pricing of mobile networks:

- calls
- SMS messages (SMS[4])
- subscription

The call prices are examined from the consumers' point of view and the evaluation includes the cheapest connections. Subscription price campaigns and discounts are excluded from the study.

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[2]MVNO= Mobile Virtual Network Operator.
[3] UMTS Forum.
[4] SMS= Short Message Service.

The prices of pre-paid subscriptions are collected only from the biggest operators in each country and they are compared to market situation in Sweden and Finland.

Information about operators' services and pricing are based on www-pages. These addresses can be found from appendix 1. Different GSM connections of the operators can be found from appendix 3. The report includes price information about 55 operators.

3 GSM price basket and its structure

3.1 Definition of the price basket

The GSM price basket used in this study is defined by a group representing different operators. This group was defined by the Ministry of Transport and Communications Finland in the year 2002.[5]

The study concentrates on consumer subscriptions, prices of mobile calls and SMS. Quantity of calls is 150 minutes per month and the length of each call is 3 minutes. 25 SMS messages are sent per month.

The calls are assumed to be divided between daytime, evenings and weekends: 35% of calls are made during daytime and in the evenings and night-times 65%. All the calls are assumed to be domestic calls.

In the basic model of price basket there is a definition, whereby operators with major market shares have a bigger share in domestic calls compared to the operators holding smaller market shares.

The price basket weights the direction of mobile calls by the market share. Operators' internal call quantity is operators' market share added by 15%.

SMS text messages are also included in the price basket. Their quantity is set to 25 messages per month and they are assumed to be oriented in the same way as the calls are oriented. On-net internal SMS quantity is operator's market share added by 15%.

Price basket includes either monthly subscription fees or subscriptions' service packet fees. If some operator's monthly fee contains call time, it is noticed to the appropriate extent within the price basket. The same procedure is done with SMS.

GSM price baskets are constructed for each country separately. Each individual country specific price basket consists of different operators so, that operators' weighted value is

[5] Prices for digital mobile phones, Ministry of Transport and Communications Finland 33/2002.

defined by their market share. The cheapest subscription is selected from each individual operator which is suitable for the assumptions described earlier.

The price baskets are shown in euros, including taxes.

Table 1. The structure of GSM price basket used in this study

Price basket	
<u>Cost factors</u>	
The cheapest subscription connection for households	
Total amount of calls 150 minutes, including 50 calls, 3 minutes per call	
SMS, 25 messages per month	
Monthly subscription fee	
The bill is printed to paper	
All prices include taxes	
<u>Direction of calls</u>	
Mobile networks	75%, which means 112.5 minutes
Within mobile operator’s internal network	15% plus own market share
To other networks	rest of the calls
Fixed network	25%, which means 37.5 minutes
<u>Time of calls</u>	
Daytime, weekdays	35% of calls
Other times	65% of calls

3.2 Choice of GSM mobile subscriptions

Mobile subscriptions which have been chosen to the study are considered to be standard types in each country. Specific new service supply and campaign prices are excluded from the study which includes prices of 55 mobile operators in 18 countries. Mobile markets are in constant development within the countries included in this study and competition changes the service supply. During 2006-2007 17 operators have changed their GSM subscription types.

The GSM pricing strategies have still become simplier compared to the year 2006. Increasingly more and more operators are pricing their subscriptions with flat fees, where all calls cost the same.

More and more countries apply packet-pricing method. In this system a fixed monthly charge includes certain amount of call minutes as well as a certain number of text messages. In 2007 about 60% of the operators used packet-pricing methods. Setup cost (starting fee) was used by 18 operators (appendix 3).

Analyzing the Finnish domestic market situation gives a good perspective on the development of mobile markets. In Finland, the subscriptions supply has still changed a lot from the year 2006. Using the mobile comparison counters in Internet pages[6] one can produce a figure of Finnish mobile subscription supply in March 2007, shown in appendix 4. The criteria used in this calculation were based on the starting values of price baskets in 2007.

It can be seen from appendix 4 that there were a total of 29 different GSM subscription options in March 2007 (48 in 2006). The price range is also significant. The subscriptions included in the Finnish GSM price basket in 2007 are marked in the figure, as well as the subscriptions from 2004 and 2005.

3.3 The meaning of the GSM price basket

Price basket used in this study is defined as an average expense of a household user. By weighting the subscriptions of different operators (in the countries which are chosen for this study) to one price basket per each country it is possible to understand the cost level of mobile calls in each case.

One has to recognize that basket calculus works only as an expense indicator, which measures the situation at a certain moment, in this study in March 2007.

The GSM basket calculus profile has been determined already in the year 2002 and considerable changes for example in usage of calls and SMS have occurred all the time.

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[6] www.vaihtovirta.fi.

In addition, the using habits of mobile phone customers also vary significantly from country to country. However, the time series from 2001-2006 support the usage of this certain kind of price basket in order to achieve comparable information.

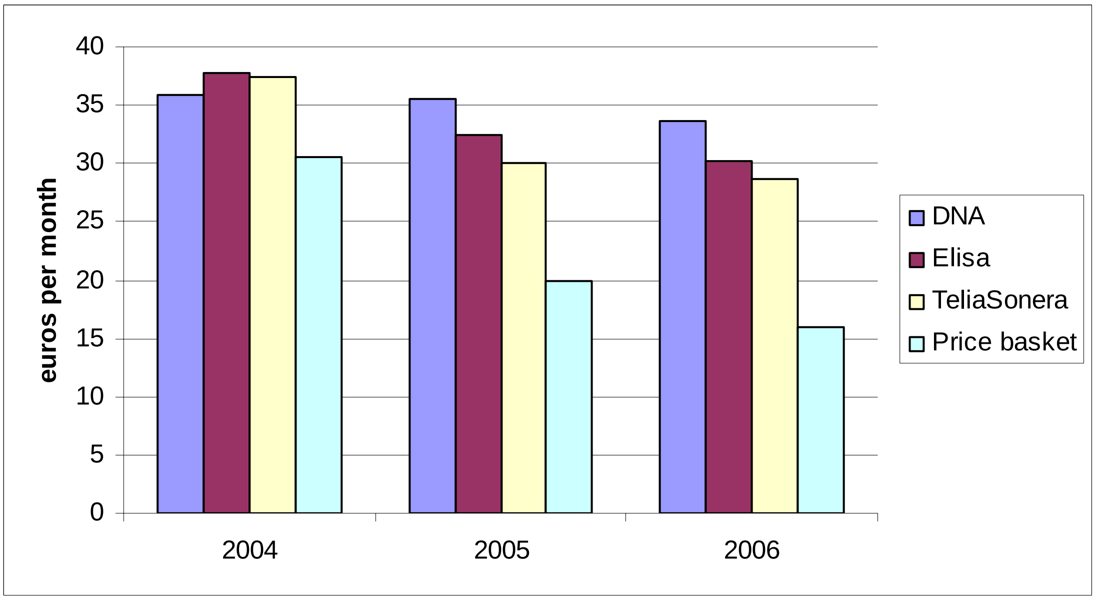
From the operator's point of view, the price basket only describes the development of the mobile business in an indicative way. The behaviour of customers, subscription selection as well as the market situation will solve the actual billing level of mobile business.

If Finnish operators' price baskets and ARPU[7] in 2004-2006 are put side by side, the magnitude can be seen (Figure 1). ARPU figures include also income from terminating traffic. ARPU:s from the year 2007 are available when operators publish their financial statements.

Table 2. Finnish GSM price baskets 2004-2007 and operators' ARPU in 2004-2006[8]

	ARPU, euros per month			Price basket, euros per month			
	2004	2005	2006	2004	2005	2006	2007
DNA	35.9	35.5	33.7	30.6	19.9	15.9	17.7
Elisa	37.8	32.5	30.2				
TeliaSonera	37.5	30.1	28.7				

Figure 1. Finnish GSM price baskets and operators' ARPU in 2004-2006



[7] ARPU= Average Return Per User.
[8] Annual reports of the operators and announcements.

4 Information about mobile markets

4.1 Information about countries involved in the study

Table 3 contains information about mobile subscriptions of each country, description about population density and description of GNP corrected with purchasing power parity.[9]

The number of 2G and 3G mobile subscriptions in Europe was 420 million and the growth of the previous year was about 10%. Germany's and Italy's mobile markets are the most significant in this study. Finland has about 1.3% from the total amount of subscriptions included in the study. When compared to Nordic countries, Finland's share is about 20% of the total subscriber base in Finland, Sweden, Norway, Denmark and Iceland.

The population density is the lowest in Finland, Norway, Sweden and Iceland. The lowest GNP figures are in Southern European countries.

Table 3. Information about European mobile markets in 4Q 2006

Country	Subscriptions, millions	Population density in 2006, inhabitants/km2	GNP 2006, 1000 euros/inhabitant
Germany	81.4	231	27
Italy	78.2	193	24
Great Britain	70.3	250	30
France	49.8	111	27
Spain	46.2	80	22
Netherlands	15.9	397	31
Greece	12.0	81	17
Portugal	11.8	115	14
Sweden	10.5	20	32
Belgium	9.5	340	28
Austria	9.5	98	29
Switzerland	7.5	182	40
Denmark	5.8	126	39
Finland	**5.5**	**16**	**30**
Norway	4.9	14	54
Ireland	4.6	58	40
Luxembourg	0.7	183	65
Iceland	0.3	3	40
Total	424		

[9] Mobile Communications Europe, March 20, 2007 and Statistics Finland.

In 2006 altogether 56 operators were included in the study, in 2007 the number was 55. The Austrian Tele.ring is not any more in the list, because it is a subsdiary of T-mobile Austrian. Q-telecom in Greece has finished to offer post-paid subscriptions and VOXmobile from Luxembourg is a new operator in the list.

Changes in the market shares in different countries are usually minimal. The biggest relative change has occurred in Finland due to the merger of Elisa and Saunalahti.

4.2 3G network development in the years 2006-2007

The increase in 3G networks has continued during the last year. In the first quarter of 2007 it was estimated that the number of subscriptions based on WDCMA-technology was 100 million (70 million a year before) and about 50% of the amount is in Europe.[10] The share of 3G subscriptions of all mobile subscribers in the GSM study was about 12%.

Table 4 contains information about 3G subscriptions in different countries in 4Q 2006.[11] Countries with the biggest market shares were Italy, Portugal and Sweden. Numbers in Finland are still quite modest.

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[10] UMTS Forum, December 29, 2006.
[11] Source: Mobile Communications Europe, March 20, 2007.

Table 4. Information about 3G subscriptions in 4Q 2006

Country[12]	Mobile subscriptions, million	3G subscriptions, million	Market share of 3G subscriptions, %
Austria	10	1.2	13
Belgium	10	0.1	1
Denmark	6	0.4	7
Finland	**6**	**0.6**	**12**
France	50	5.0	10
Germany	81	6.1	7
Great Britain	70	7.6	11
Greece	12	0.5	4
Iceland	0	0.0	0
Ireland	5	0.5	11
Italy	78	17.9	23
Luxembourg	1	0.1	8
Netherlands	16	1	7
Norway	5	0.6	12
Portugal	12	2.2	19
Spain	46	3.5	8
Sweden	11	1.7	16
Switzerland	8	0.5	7
Total	424	50	12

[12] Source: Mobile Communications Europe, March 20, 2007.

5 Price basket of GSM post-paid subscriptions 2007

5.1 Price basket in 2007

GSM price baskets include set-up costs.

Table 5. GSM price baskets in 2007, euros/month

Country	Price basket 2007	Price basket 2006	Change-%
Austria 1)	28.2	37.0	-23.9
Denmark	23.4	22.6	3.7
Finland	**17.7**	**15.9**	**11.7**
France	46.3	43.3	6.9
Germany	44.3	46.8	-5.3
Greece	30.8	31.3	-1.8
Iceland	34.7	33.0	5.1
Ireland	39.5	41.6	-5.0
Italy	32.1	34.4	-6.8
Belgium	36.8	36.7	0.5
Great Britain	45.2	43.4	4.2
Luxembourg	17.9	21.2	-15.5
Netherlands	24.3	30.0	-19.0
Norway	37.4	39.3	-4.8
Portugal	27.3	29.2	-6.3
Spain	35.9	33.0	8.8
Sweden	18.1	18.1	0.2
Switzerland	41.9	41.8	0.2
Weighted mean	37.9	38.3	-1.1

1) The definition of the price basket of Austria has changed in 2006.

Table 5 describes the weighted mean of the GSM price baskets of mobile subscriptions in the countries involved in this survey. This figure has decreased by 1%. The highest country-specific price decreases have taken place in Netherlands and Luxembourg.

The price basket of Finland has increased by 12% when compared to the year 2006, due to the set-up costs. The results of the study confirm that the price level has increased in nine countries. One has to recognize that there are significant differences in prices between countries compared because the cheapest price basket is about 40% of the most expensive one.

Table 6. GSM price baskets in 2007 from the cheapest country to the most expensive one

Country	Price basket 2007	Price basket 2006
Finland	**17.7**	**15.9**
Luxembourg	17.9	21.2
Sweden	18.1	18.1
Denmark	23.4	22.6
Netherlands	24.3	30.0
Portugal	27.3	29.2
Austria 1)	28.2	37.0
Greece	30.8	31.3
Italy	32.1	34.4
Iceland	34.7	33.0
Spain	35.9	33.0
Belgium	36.8	36.7
Norway	37.4	39.3
Ireland	39.5	41.6
Switzerland	41.9	41.8
Germany	44.3	46.8
Great Britain	45.2	43.4
France	46.3	43.3

1) The definition of the price basket of Austria has changed in 2006.

As shown in table 6, Finland is the cheapest GSM country as well as in 2005 and 2006. Other cheap mobile countries besides Finland are Luxembourg and Sweden.

5.2 Evaluation of the development

The Ministry of Transport and Communications Finland has made international comparisons concerning mobile call prices since 2001 and that is why changes in the figures can be evaluated by extensive time series. In time series, the information from 2001 to 2003 is made comparable by estimating the set-up cost's meaning with the price baskets of those countries where the set-up cost is included.

Table 7. Development of GSM price baskets in 2001-2007, euros/month

Country	2001	2005	2006	2007	Change-%, 2001-2007
Austria	46.2	36.8	31.0	28.2	-39
Belgium	43.8	42.1	36.7	36.8	-16
Denmark	41.8	22.5	22.6	23.4	-44
Finland	**33.2**	**19.9**	**15.9**	**17.7**	**-47**
France	43.0	39.7	43.3	46.3	8
Germany	63.0	48.3	46.8	44.3	-30
Great Britain	67.3	44.1	43.4	45.2	-33
Greece	51.1	26.4	31.3	30.8	-40
Iceland	32.5	32.9	33.0	34.7	7
Ireland	55.8	46.9	41.6	39.5	-29
Italy	45.1	36.8	34.4	32.1	-29
Luxembourg	30.0	21.2	21.2	17.9	-40
Netherlands	48.9	34.5	30.0	24.3	-50
Norway	52.4	38.3	39.3	37.4	-29
Portugal	51.8	33.3	29.2	27.3	-47
Spain	41.0	33.8	33.0	35.9	-12
Sweden	48.1	30.5	18.1	18.1	-62
Switzerland	59.7	56.5	41.8	41.9	-30
Weighted mean	52.4	39.5	38.3	37.9	-28

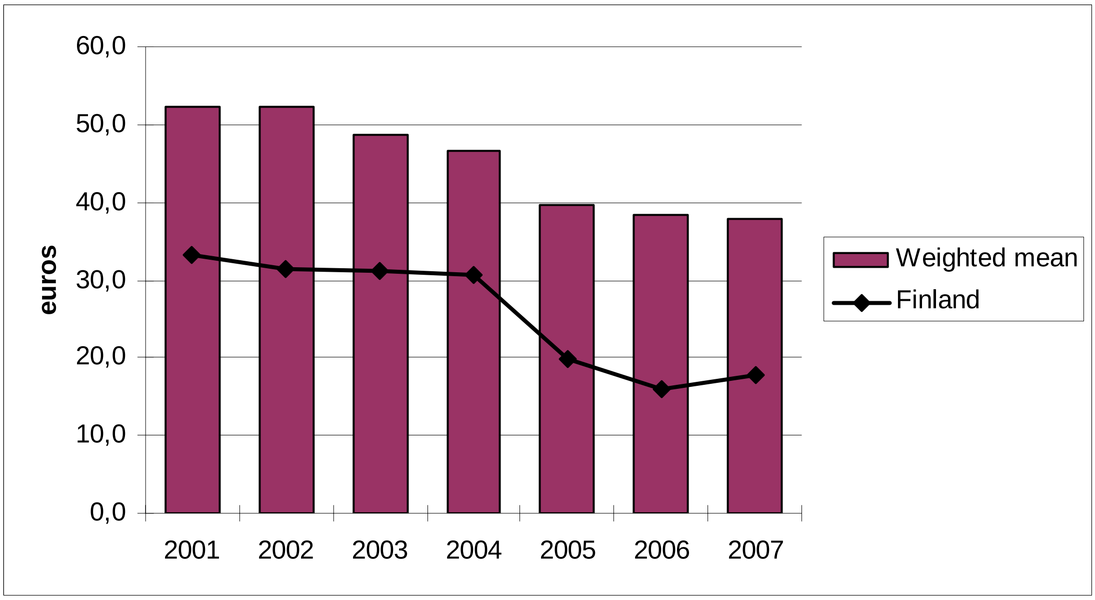
The results of the study show that the decrease in prices, which has been a fact in many years in Europe, has slowed down and the prices have partly begun to increase.

The weighted average of all price baskets has decreased by 1.1% from 2006 to 2007.

When contemplating the years between 2001 and 2007, it can be seen that the most significant changes have occurred in Sweden, Netherlands, Finland and Portugal.

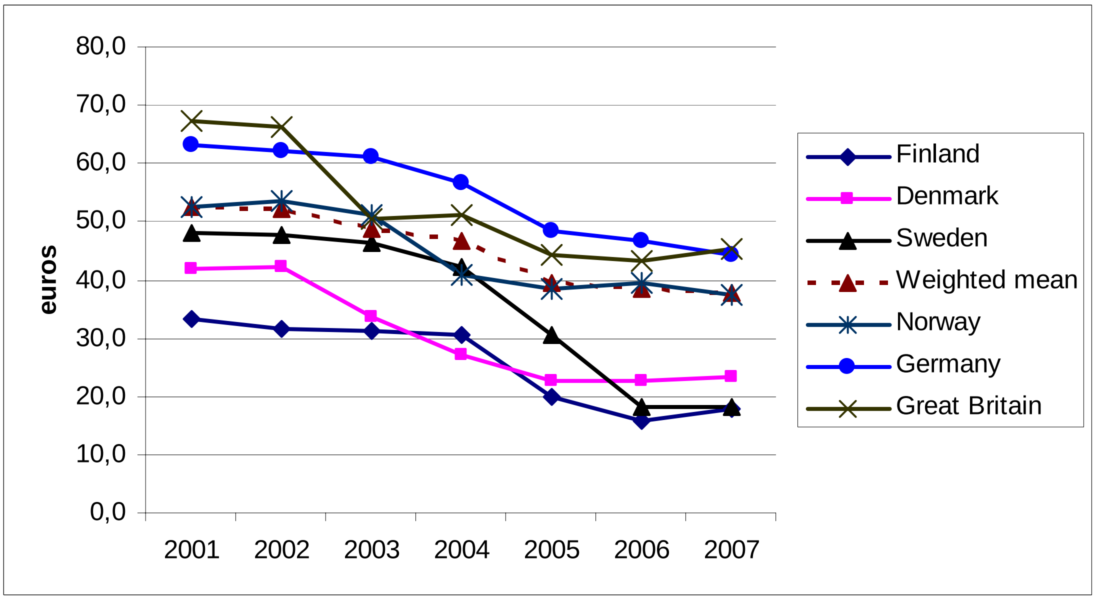
The weighted average of all price baskets has decreased by 28% from 2001 to 2007 which means 4% per year. Prices in Finland have decreased by 7% per year.

Figure 2. Finnish GSM price basket and weighted mean in countries included in the study in 2001-2007



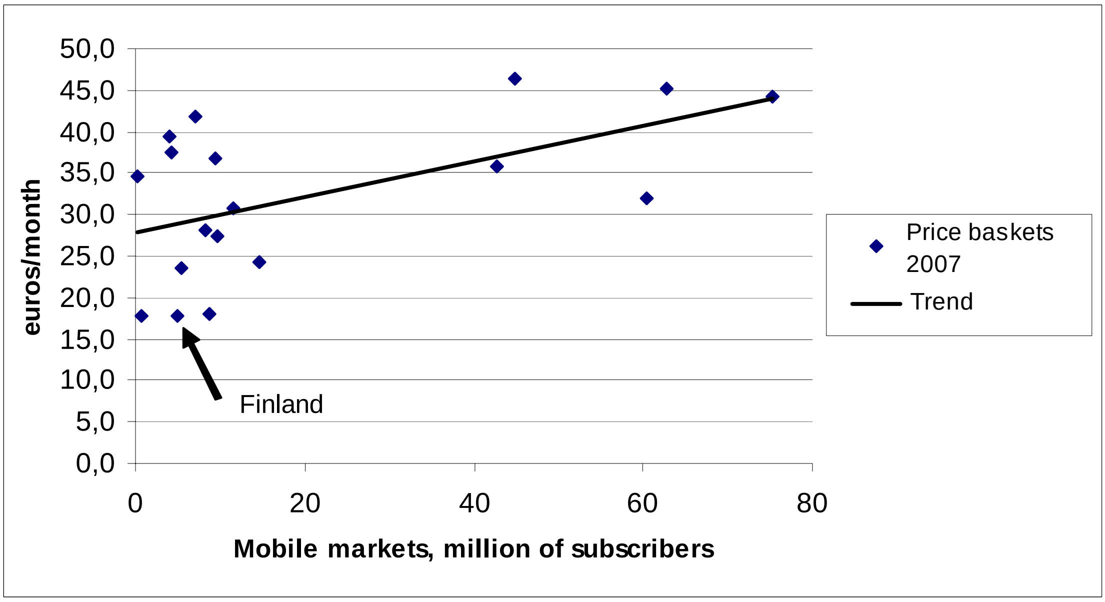
When comparing the price basket in Finland with the weighted mean of all countries one can see in figure 2, that the decrease from 2001 to 2006 has stopped and in 2007 a change upwards has occurred.

Figure 3. Development of GSM price baskets in 2001-2007 in certain countries



In figure 3 the development in the Nordic countries is compared to major mobile countries like Germany and the UK as well as to the weighted mean of all countries. The price baskets show partly a change upwards after a continuing decrease during many previous years. In this group Finland is still the cheapest in 2007 and the figure shows that price level in Nordic countries is low.

Figure 4. GSM price baskets in 2007 and the size of mobile markets



The figure 4 describes the level of price baskets in proportion to the county's mobile markets. The result can be explained so, that the price competition in big mobile countries is more even and more controllable than in less significant mobile markets. In smaller markets the basket deviation is significant. Finland holds the lowest point in the figure.

Figure 5. GSM price baskets in 2007 and the density of population

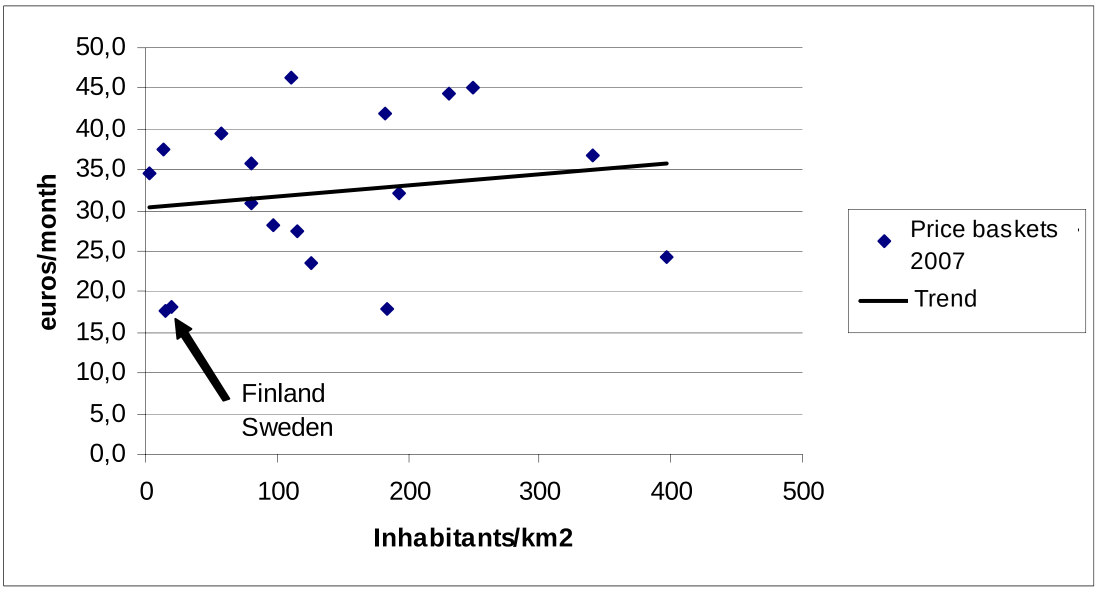
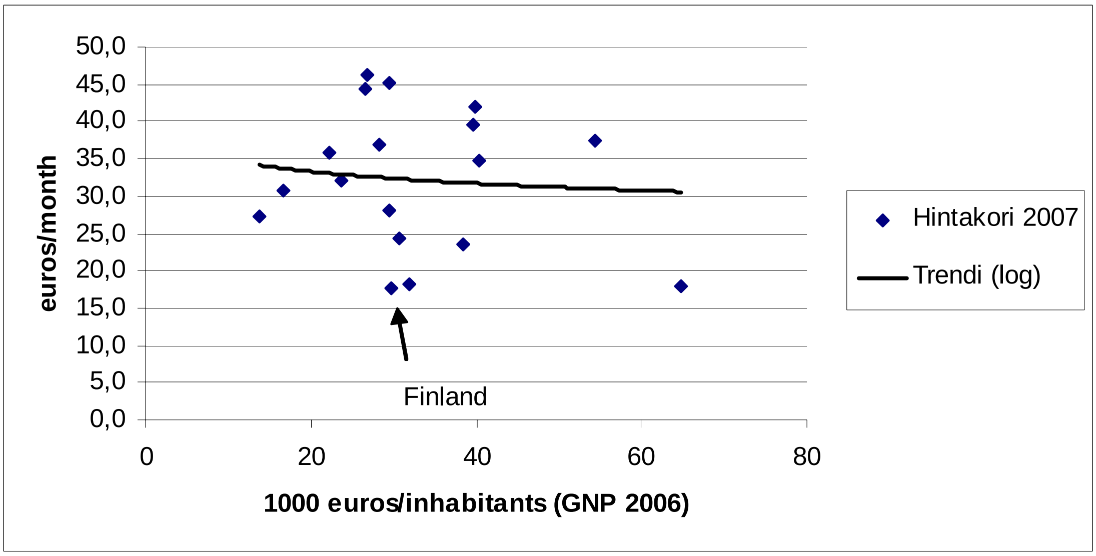


Figure 5 represents the connection between the price baskets and the density of population. In countries where the density of population and the mobile market are more significant, the price baskets are more expensive. However, the correlation between these factors is not tough.

Figure 6. GSM price baskets in 2007 and GNP per inhabitant



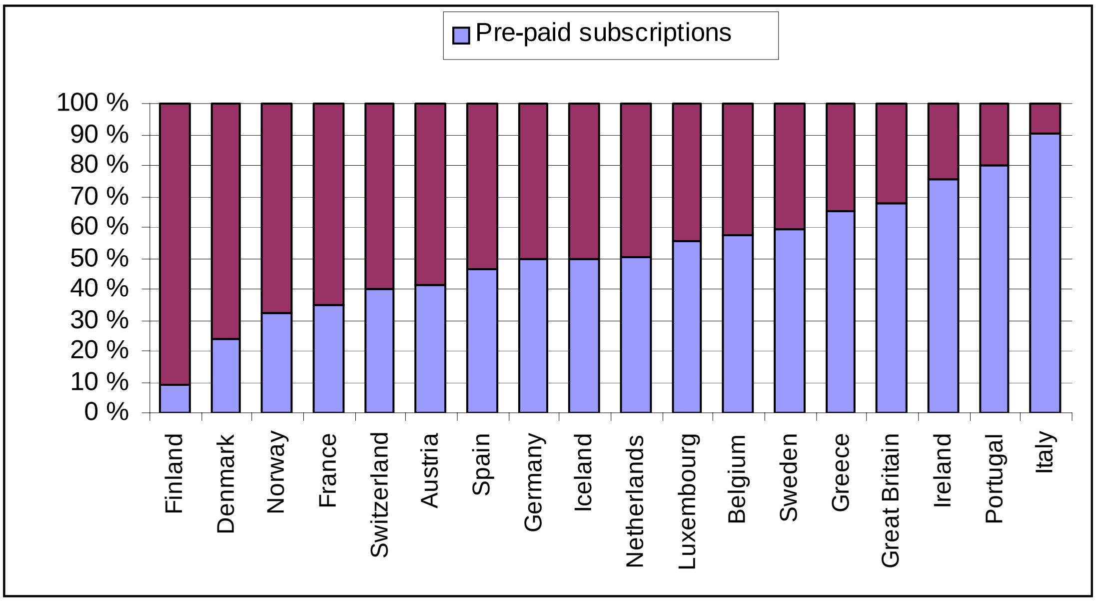
When the price basket of each country and the GNP per capita are shown, the situation can be seen in figure 6. Finland, Luxembourg and Sweden can be identified with the help of cheap baskets in the figure. Values of price baskets do not strongly depend on the level of GNP.

6 Examination of pre-paid subscriptions

6.1 Pre-paid subscriptions in certain countries

The situation of pre-paid subscriptions above all in Southern Europe seems to be on a firm basis. In figure 7 a description of the statue of pre-paid situation based on the information in appendix 5 can be found.[13] It must be noticed that in countries with tough competition such as Finland, the proportion of pre-paid subscriptions is low when compared to the mean of other countries involved in the study. However, the statistics on pre-paid subscriptions are not as reliable as they are in post-paid.

Figure 7. The proportion of pre-paid subscriptions to the total number of subscriptions in the beginning of 2007



6.2 Price level of pre-paid subscriptions

The operators' pre-paid prices differ significantly in different countries. It can be seen that pre-paid subscriptions are favoured in certain countries and by certain operators because of the market situation, distribution process and because of user experience. In many countries price differences between pre-paid and post-paid alternatives are almost non-existent, which partly explains the popularity of pre-paid -subscriptions.

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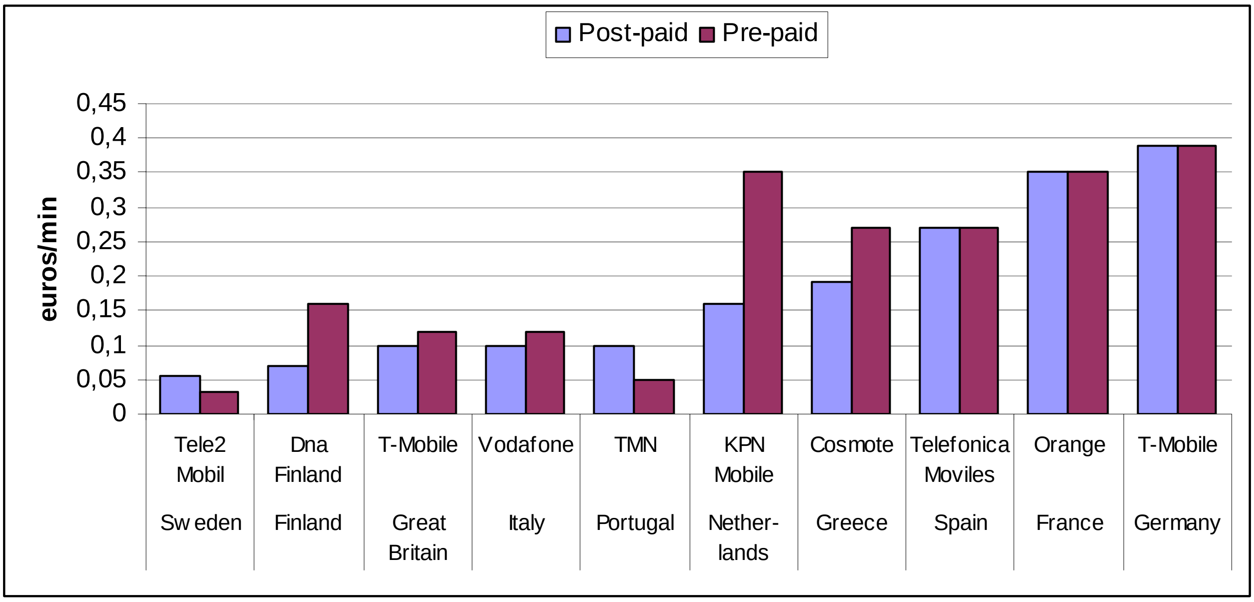
[13] Mobile Communications Europe, February 20, 2007.

Loading call time and buying rights of use can nowadays be done via web or cash dispenser besides the traditional methods. An example of an operator with aggressive pricing methods is Swedish Tele2 and its Kontant -subscription.

To describe the situation, information about the most significant operators' pre-paid prices of those countries with population over 10 million has been collected in figure 8. This figure also consists of information about the price level of Finland and Sweden although subscription number of these two countries is not above the criteria. All the prices included in the figure are on-net prices.

Figure 8. Price comparison of calls of pre-paid and post-paid subscriptions in the beginning of 2007, on-net calls in daytime



7 Conclusion of the part concerning GSM subscriptions

The study contains information on GSM mobile call prices in 18 European countries from 2001 to 2007. The country specific GSM price basket contains a definition which describes the costs of private household users, when selecting the cheapest post-paid subscription. Information contains data on basic services of mobile operators, such as prices of calls, SMS and monthly fees.

The study shows that a common decrease in GSM price baskets has finished and it seeks direction. The development has not been solid. In some countries the price baskets have still decreased and in the others they have clearly begun to increase.

In March 2007 the cheapest GSM price basket was still in Finland. The cost to the user in Finland has increased by 12% when compared to the price of the previous year. The reason to the increase is that two subscription types in the study include start-up costs. Elisa and Sonera have taken start-up costs in use in the beginning of 2007.

Luxembourg is the second cheapest before Sweden. Weighted mean of subscriptions of all countries has decreased by 1% compared to the year 2006. Price basket of the cheapest country (Finland) is 40% of the price of the most expensive one (France).

When the time series in 2001-2007 are examined, it can be seen that the basket prices of bigger countries are remarkably higher than those of smaller countries. The decrease in prices has been less significant in big countries than in smaller mobile telecommunications markets.

The study also contains information on pre-paid subscriptions and these subscriptions have been compared to the situation of post-paid subscriptions. Especially in Southern European countries pre-paid subscriptions are more common than post-paid ones.

Appendix 1. The www-pages of operators included in the GSM study

Netherlands	KPN Mobile	www.kpn.com
	Vodafone	www.vodafone.nl
	T-Mobile	www.t-mobile.nl
	Orange	www.orange.nl
Belgium	Belcacom Mobile	www.proximus.be
	Mobistar	www.mobistar.be
	Base	www.base.be
Great Britain	T-Mobile	www.t-mobile.co.uk
	O2	www.o2.co.uk
	Orange	www.orange.co.uk
	Vodafone	www.vodafone.co.uk
Spain	Telefonica Moviles	www.movistar.es
	Vodafone	www.vodafone.es
	Amena	www.amena.es
Ireland	Vodafone	www.vodafone.ie
	O2	www.o2.ie
	Meteor Communication	www.meteor.ie
Iceland	Iceland Telecom/Siminn	www.siminn.is
	Og Vodafone	www.vodafone.is
Italy	TIM	www.privati.tim.it
	Vodafone	www.vodafon.it
	Wind	www.wind.it
Austria	Mobilkom	www.a1.net
	T-Mobile	www.t-mobile.at
	Connect/One	www.one.at
Greece	Cosmote	www.cosmote.gr
	Vodafone-Panafon	www.vodafone.gr
	TIM Hellas	www.tim.com.gr

Luxembourg	P&T Luxembourg	www.mobilux.lu
	Tele2	www.en.tango.lu
	VOXmobile	www.vox.lu
Norway	Telenor Mobil	www.telenormobil.no
	NetCom	www.netcom.no
Portugal	TMN	www.tmn.pt
	Vodafone	www.vodafone.pt
	Optimus	www.optimus.pt
France	Orange	www.orange.fr
	SFR	www.sfr.fr
	Bouygues Telecom	www.bouyguestelecom.fr
Sweden	TeliaSonera	www.telia.se
	Tele2	www.tele2.se
	Vodafone	www.vodafone.se
Germany	T-Mobile	www.t-mobile.de
	Vodafone	www.vodafone.de
	E-Plus	www.eplus.de
	O2	www.o2online.de
Finland	TeliaSonera	www.sonera.fi
	Elisa	www.elisa.fi
	DNA Finland	www.dnafinland.fi
Switzerland	Swisscom Mobile	www.swisscom-mobile.ch
	TDC Sunrise	www.mobile.sunrise.ch
	Orange	www.orange.ch
Denmark	TDC Mobile	www.tdcmobil.dk
	Sonofon	www.sonofon.dk
	Telia	www.teliamobile.dk

Appendix 2. List and information of countries and 2G operators included in the GSM study in 4Q 2006

Country	Subscriptions, million 1)	Operator	Operators' subscriptions, million	Operators' market share, %
Netherlands	14.7	KPN Mobile	7.3	49.7
		Vodafone	2.9	19.7
		T-Mobile	2.4	16.3
		Orange	2.1	14.3
Belgium	9.4	Belcacom Mobile	4.1	43.6
		Mobistar	3.2	34.0
		Base	2.1	22.3
Great Britain	62.7	T-Mobile	16.8	26.8
		O2	18.2	29.0
		Orange	14.5	23.1
		Vodafone	13.2	21.1
Spain	42.7	Telefonica Moviles	20.4	47.8
		Vodafone	11.5	26.9
		Amena	10.8	25.3
Ireland	4.1	Vodafone	1.7	41.5
		O2	1.6	39.0
		Meteor Communication	0.8	19.5
Iceland	0.3	Iceland Telecom/Siminn	0.2	66.7
		Og Vodafone	0.1	33.3
Italy	60.3	TIM	28.1	46.6
		Vodafone	18.9	31.3
		Wind	13.3	22.1
Austria	8.3	Mobilkom	3.2	38.6
		T-Mobile	3.2	38.6
		Connect/One	1.9	22.9
Greece	11.5	Cosmote	5.1	44.3
		Vodafone-Panafon	3.7	32.2
		TIM Hellas	2.7	23.5
Luxembourg	0.6	P&T Luxemburg	0.3	50.0
		Tele2	0.2	33.3
		VOXmobile	0.1	16.7
Norway	4.3	Telenor Mobil	2.9	67.4
		NetCom	1.4	32.6
Portugal	9.6	TMN	4.6	47.9
		Vodafone	3.3	34.4
		Optimus	1.7	17.7
France	44.8	Orange	20.9	46.7
		SFR	15.2	33.9
		Bouygues Telecom	8.7	19.4
Sweden	8.8	TeliaSonera	4.3	48.9
		Tele2	3.2	36.4
		Vodafone	1.3	14.8
Germany	75.3	T-Mobile	29.4	39.0
		Vodafone	24.2	32.1
		E-Plus	11.4	15.1
		O2	10.3	13.7
Finland	4.9	TeliaSonera	2.1	42.9
		Elisa	1.9	38.8
		DNA Finland	0.9	18.4
Switzerland	7	Swisscom Mobile	4.4	62.9
		TDC Sunrise	1.3	18.6
		Orange	1.3	18.6
Denmark	5.4	TDC Mobile	2.7	50.0
		Sonofon	1.6	29.6
		Telia	1.1	20.4
Total	375		375	

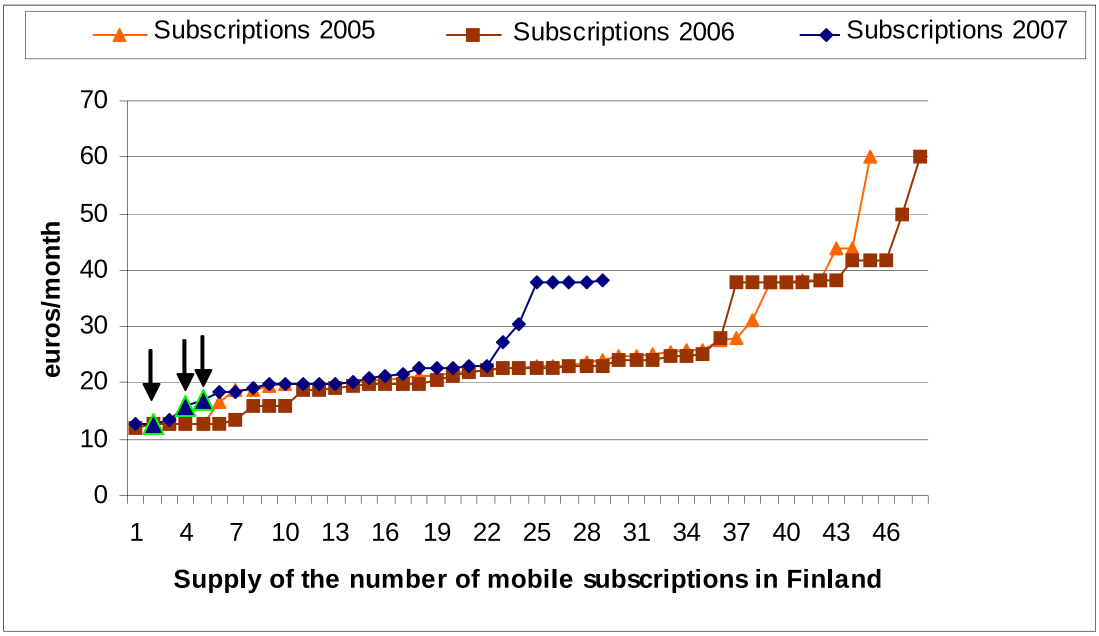
1) Source: Mobile Communications Europe, March 20, 2007.

Appendix 3. GSM operators and subscriptions included in the study

Country	Operator	Chosen subscription 1)	Packet-pricing 2)	Starting fee 3)
Netherlands	KPN Mobile	Abonnement 25	x	
	Vodafone	Vodafone 150	x	
	T-Mobile	Relax 150	x	
	Orange	Abonnement 20		x
Belgium	Belcacom Mobile	Smile anytime	x	
	Mobistar	Mobistar max	x	
	Base	Base 3	x	x
Great Britain	T-Mobile	U-fix 20	x	
	O2	Anytime 25	x	
	Orange	Dolphin	x	
	Vodafone	Anytime 150	x	
Spain	Telefonica Moviles	Eleccion Tarde		x
	Vodafone	Universal 25	x	x
	Amena	Tarifa plana	x	x
Ireland	Vodafone	Perfect fit 100	x	
	O2	Active life 150	x	
	Meteor Communication	Anytime plus		
Iceland	Iceland Telecom/Siminn	Bestur 160	x	
	Og Vodafone	Simply		
Italy	TIM	Valore		x
	Vodafone	Unica		x
	Wind	Wind 10		x
Austria	Mobilkom	Easy 10		
	T-Mobile	Relax 100	x	
	Connect/One	One Plus 20	x	
Greece	Cosmote	Cosmote 120	x	
	Vodafone-Panafon	Vodafone 100	x	
	TIM Hellas	TIM 120	x	
Luxembourg	P&T Luxemburg	Cool		
	Tele2	twist	x	
	VOXmobile	Vox life		
Norway	Telenor Mobil	Fri 120	x	x
	NetCom	Activ Talk		x
Portugal	TMN	Plano best	x	
	Vodafone	Plano	x	
	Optimus	Total		
France	Orange	Classique	x	
	SFR	ESSENTIEL	x	
	Bouygues Telecom	Exprima	x	
Sweden	TeliaSonera	Till alla		x
	Tele2	Knock out	x	x
	Vodafone	Abonnemang 99	x	x
Germany	T-Mobile	Relax 100	x	
	Vodafone	Vodafone 100	x	
	E-Plus	Time&More 100	x	
	O2	Active 100	x	
Finland	TeliaSonera	Netto		x
	Elisa	Aito		x
	DNA Finland	Onni		
Switzerland	Swisscom Mobile	Swiss liberty		
	TDC Sunrise	minute 120	x	
	Orange	Optima 100	x	
Denmark	TDC Mobile	MobilExtra 100	x	x
	Sonofon	Debillos		x
	Telia	Telia Go		x

1) Connection chosen is the one, which fills out the criteria of cheapest connection.
2) Monthly subscription fee includes calls, SMS text messages or the fee is compensated in billing.
3) Prices when starting a call.

Appendix 4. An example of Finnish GSM subscription supply in March 2005-2007



Usage per month: 150 minutes, 50 calls, 25 SMS.

Subscriptions of the Finnish price basket are presented in the marked area (▲and arrows). Alternatives shown in the figure include also different kinds of more expensive packet prices, which are ment to heavier use than the chosen criteria represents.

(Source: www.vaihtovirta.fi, March 2007.)

Appendix 5. The number of pre-paid subscriptions in the target countries

Country	2G mobile subscribtions, million 4Q 2006 1)	Share of pre-paid in each country, %	Operator	Share of pre-paid in each operator 3Q 2006, % 2)	Included in the pre-paid price comparison	Subscription type
Netherlands	14.7	50	KPN Mobile	52	x	KPN Pre-paid
			Vodafone	46		
			T-Mobile	44		
			Orange	60		
Belgium	9.4	57	Belcacom Mobile	55		
			Mobistar	52		
			Base	72		
Great Britain	62.7	67	T-Mobile	78	x	Everyone
			O2	68		
			Orange	68		
			Vodafone	54		
Spain	42.7	46	Telefonica Moviles	44	x	Tarjeta total
			Vodafone	46		
			Amena	51		
Ireland	4.1	76	Vodafone	76		
			O2	69		
			Meteor Communication	88		
Iceland	0.3	50	Iceland Telecom/Siminn	50		
			Og Vodafone	50		
Italy	60.3	90	TIM	87		
			Vodafone	92	x	Easy day
			Wind	95		
Austria	8.3	41	Mobilkom	40		
			T-Mobile	38		
			Connect/One	50		
Greece	11.5	65	Cosmote	64	x	Cost control 20
			Vodafone-Panafon	61		
			TIM Hellas	62		
Luxembourg	0.6	56	P&T Luxemburg	61		
			Tele2	50		
			VOXmobile	50		
Norway	4.3	32	Telenor Mobil	33		
			NetCom	29		
Portugal	9.6	80	TMN	80	x	Perto
			Vodafone	80		
			Optimus	80		
France	44.8	35	Orange	36	x	La mobicarte
			SFR	35		
			Bouygues Telecom	28		
Sweden	8.8	59	TeliaSonera	56		
			Tele2	76	x	Kontant
			Vodafone	35		
Germany	75.3	50	T-Mobile	51	x	Xtra Tarife
			Vodafone	49		
			E-Plus	47		
			O2	50		
Finland	4.9	9	TeliaSonera	4		
			Elisa	9		
			DNA Finland	22	x	Dna pre-paid
Switzerland	7	40	Swisscom Mobile	39		
			TDC Sunrise	46		
			Orange	38		
Denmark	5.4	24	TDC Mobile	19		
			Sonofon	31		
			Telia	27		

1) Source: Mobile Communications Europe, March 20, 2007.
2) Source: Mobile Communications Europe, February 20, 2007.

PART 2: User costs of 3G services

8 Introduction of the part concerning 3G subscriptions

The importance of 3G user prices will increase when the number of connections becomes higher.

This 3G part of the study includes 3G services in Europe in April 2007. The focus is on Finland and in 9 other European countries. One operator from each country has been selected to the study and these operators represent well the country's 3G subscription situation.

The 3G study looks at different consumer service packages which include mobile subscription, calls, text messages, mobile data transfer and the mobile terminal. The subject of the investigation is monthly costs in euros including taxes.

The prices are collected in April 2007. The user profile based on the price comparison describes the way in which an active household user uses a 3G mobile phone.

The result is an indicator which shows, as an example the level of the costs in each country.

All the interpretations are made by the writers of the study.

9 Focus of the 3G study

9.1 Target countries

In the beginning of the year 2007 there were a total of 420 million 2G and 3G mobile phone subscriptions in Europe. Table 8 includes information about mobile subscriptions in each country. Italy, Portugal and Sweden have the highest 3G market shares. The 3G market share of all mobile connections is 12 %.

Table 8. Mobile subscriptions in Europe in 4Q2006

Country	Subscriptions, million	3G subscriptions, million	Market share of 3G subscriptions, %	Target countries
Belgium	10	0.1	1	x
Great Britain	70	7.6	11	x
Spain	46	3.5	8	x
Italy	78	17.9	23	x
Norway	5	0.6	12	x
France	50	5.0	10	x
Sweden	11	1.7	16	x
Germany	81	6.1	7	x
Finland	**6**	**0.6**	**12**	**x**
Denmark	6	0.4	7	x
Netherlands	16	1.2	7	
Ireland	5	0.5	11	
Iceland	0	0.0	0	
Austria	10	1.2	13	
Greece	12	0.5	4	
Luxembourg	1	0.1	8	
Portugal	12	2.2	19	
Switzerland	8	0.5	7	
Total	424	50	12	

Source: Mobile Communications Europe, March 20, 2007.

Ten target countries of the 3G study are:

- Belgium
- Great Britain
- Spain
- Italy
- Norway
- France
- Sweden
- Germany
- **Finland**
- Denmark

The market share of 3G connections in ten selected countries is 88 % of all European countries.

9.2 3G operators in Europe

The market situation of 3G subscriptions in each country is shown in appendix 6. One significant 3G operator has been selected from each country and it acts as an example of the country's price level. It is supposed that every certain operator represents each country in a proper way.

Ten operators included in the study have 30 % market share of the total number of 3G subscriptions in Europe.

10 Prices and definition of the price comparison

The study concentrates on 3G consumer service packages in different countries and the packages include a mobile subscription, calls, text messages, mobile data transfer and a mobile terminal. The subject of the investigation is monthly costs in euros including taxes.

The user profile of the price comparison in the study describes the way in which an active household user uses a mobile phone. The result is an indicator as an example of the price level of the country.

The price information was collected in April 2007. The interpretation of the price lists has been done from the price information collected from www-pages.

Table 9. The definition of the price comparison

Mobile subscription	
Calls to mobile networks	Total 500 minutes, 150, á 3.3 minutes/month
SMS:s to mobile networks	100 per month
Data transfer	50 Mt/month
Mobile terminal	Nokia N73 or equal
Prices of service packages	
Period of agreement 24 months	
One time prices changed to monthly prices	
Prices include taxes	

Summary of the operators' price structures is shown in appendix 8. Most of the operators have 3G service packages, which include calls, SMS and a mobile terminal. Mobile transfer prices are set separately.

There was only one operator, whose service package with mobile terminal and calls could not be identified. Two operators had Nokia N70 terminal.

11 3G price comparison 2007

Table 10 includes results of the price comparison. The table shows monthly costs of an active 3G user in different countries in April 2007. It shows also a weighted mean of the monthly user costs.

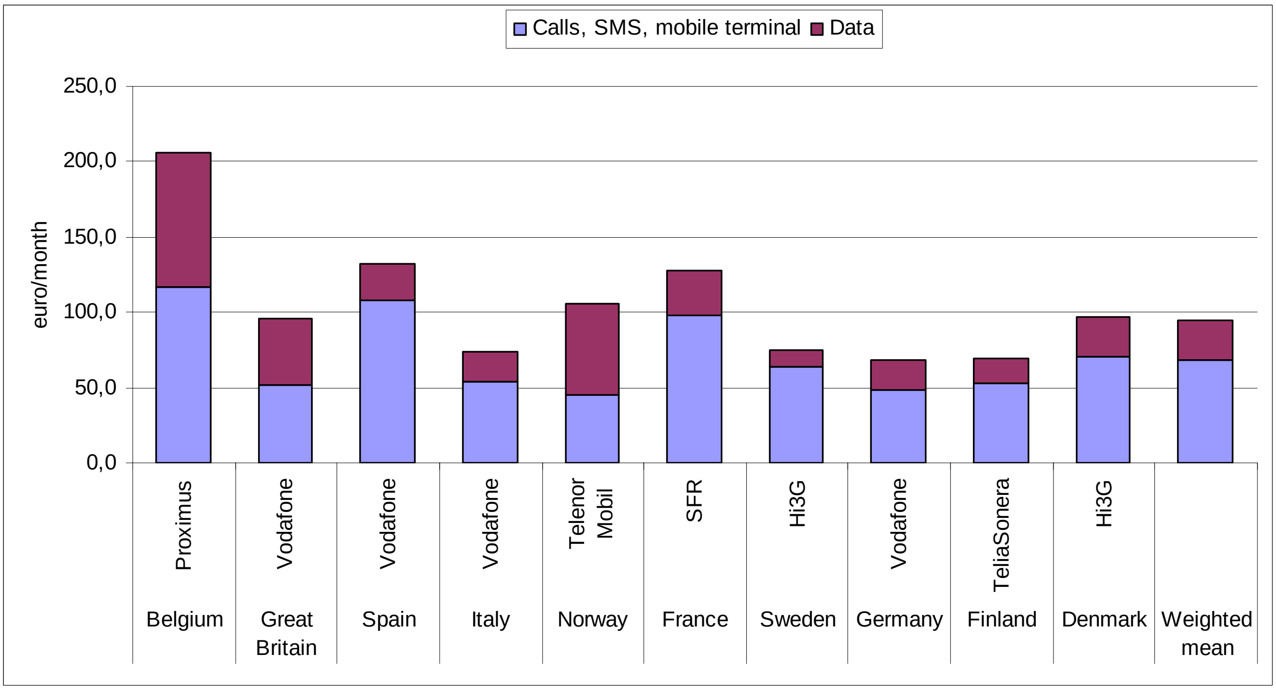
Table 10. Price comparison of 3G user costs in April 2007

Country	Operator	Calls, SMS, mobile terminal, euro/month	Data, euro/month	3G user costs, euro/month
Belgium	Proximus	116.6	89.0	205.5
Denmark	Hi3G	71.0	25.9	96.8
Finland	**TeliaSonera**	**53.4**	**15.9**	**69.3**
France	SFR	97.6	30.0	127.6
Germany	Vodafone	48.3	20.2	68.5
Great Britain	Vodafone	51.5	44.1	95.6
Italy	Vodafone	54.0	20.0	74.0
Norway	Telenor Mobil	45.2	60.0	105.2
Spain	Vodafone	107.5	25.0	132.5
Sweden	Hi3G	63.7	10.9	74.6
Weighted mean		68.5	25.9	94.4

12 Evaluation of the results

Figure 9 shows the results of the 3G user cost comparison. The deviation of the costs is really significant. The reason for the deviation of the results is that the costs of mobile transfer differ much depending of the operator.

Figure 9. Price comparison of 3G user costs in April 2007



Germany, Finland, Sweden and Italy have the cheapest 3G service packages. The most expensive costs are in Belgium but one has to remember that the development of 3G network has just begun.

Average costs

When one thinks of the weighted mean, it can be seen from the table 11 that the average costs of an active 3G user are 94 euros per month. The total amount includes 27 percent (26 euros) data transfer and the rest 73 % goes to calls, SMS and the terminal.

Table 11. Monthly costs of and average 3G user

	User costs, euros/month
Calls, SMS, terminal	68
Mobile data	26
Total	94

Operators ARPU and 3G user costs

Table 12 shows ARPU in 2006 and the results of the price comparison.[14] It can be seen that an active 3G user brings much more money to the operator than an ordinary GSM customer. It must be noticed too, that table 12 doesn’t include the incoming traffic which 3G customers generate to the operator.

Table 12. 3G user costs and ARPU in 2006

Country	Operator	ARPU 3Q2006, euros/month	Costs of 3G user, euros/month	ARPU, percent of the 3G costs, %
Belgium	Proximus	41.9	205.5	20.4
Denmark	Hi3G	no data	96.8	
Finland	TeliaSonera	29.5	69.3	42.6
France	SFR	38.6	127.6	30.2
Germany	Vodafone	22.4	68.5	32.7
Great Britain	Vodafone	36.2	95.8	37.9
Italy	Vodafone	27.1	74.0	36.6
Norway	Telenor Mobil	40.2	105.2	38.2
Spain	Vodafone	36.4	132.5	27.5
Sweden	Hi3G	no data	74.6	

GSM price basket and 3G user costs by country

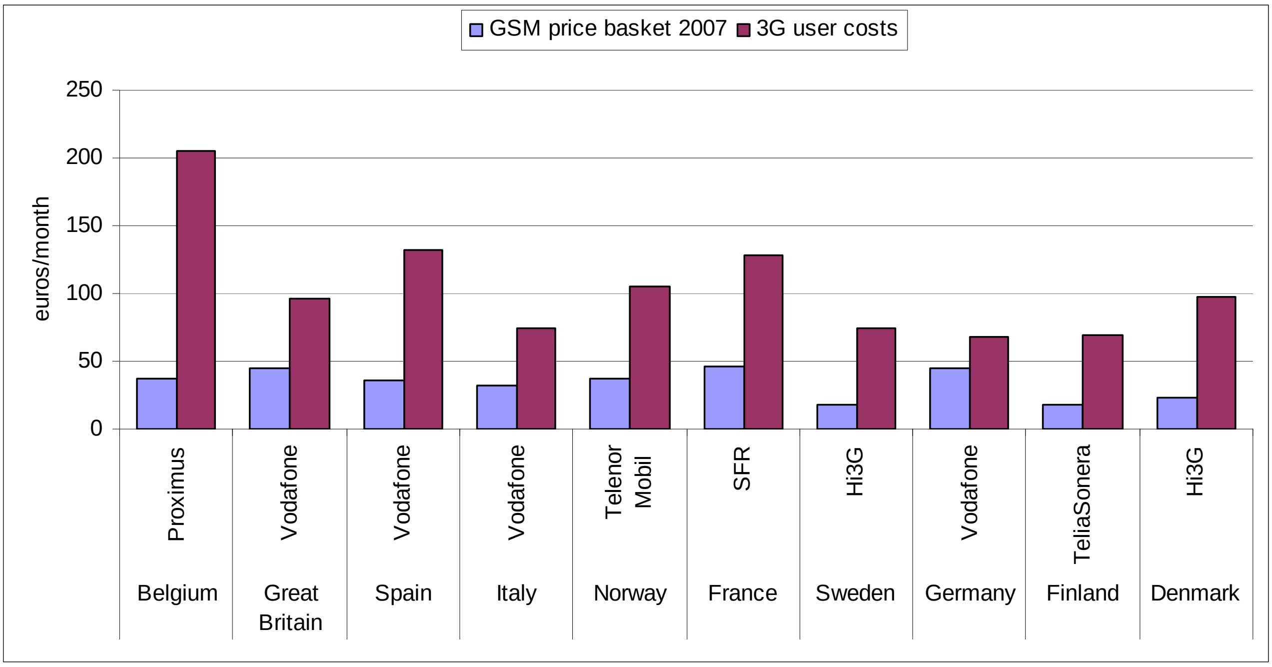
If one compares the GSM price basket in March 2007 to the user costs of 3G service packages one can notice, that the cost differences are remarkable. The costs of an active 3G user is 3-4 times higher than the costs of a ”conservative” GSM user.

[14] Mobile Communications Europe, January 23, 2007.

Table 13. 3G user costs and GSM price baskets by country in 2007

Country	Operator	GSM price basket in March 2007, euros/month	3G user costs in April 2007, euros/month
Belgium	Proximus	36.8	205.5
Denmark	Hi3G	23.4	96.8
Finland	**TeliaSonera**	**17.7**	**69.3**
France	SFR	46.3	127.6
Germany	Vodafone	44.3	68.5
Great Britain	Vodafone	45.2	95.6
Italy	Vodafone	32.1	74.0
Norway	Telenor Mobil	37.4	105.2
Spain	Vodafone	35.9	132.5
Sweden	Hi3G	18.1	74.6

Figure 10. Operators' 3G user costs and GSM price baskets in 2007



13 Conclusion of the part concerning 3G subscriptions

This part of the study concentrates on the European operators’ user costs of 3G services in April 2007.

One operator of every country has been selected to the comparison and this operator represents well the country’s 3G situation. The ten operators’ market share is 30 % of all 3G subscriptions in Europe.

The study investigates 3G service packages offered to the household consumers and they include mobile subscription, calls, SMS, mobile transfer and a terminal. The monthly costs include taxes. The price comparison is based on an active household user and the customer’s way to use the mobile phone.

The cheapest 3G service packages are in Germany, Finland, Sweden and Italy. When one concentrates on the weighted mean of the results, it can be seen that the monthly costs of and active 3G user are 94 euros. 27 % of it goes to data transfer and the rest 73 % goes to calls, SMS and terminal.

The prices are from April 2007.

14 Sources of the whole study

Finnet Association

Ministry of Transport and Communications Finland 30/2001: Prices for digital mobile phones – international comparison

Ministry of Transport and Communications Finland B40/2001: Consumer prices for digital mobile phones – international comparison, September 2001

Ministry of Transport and Communications Finland 33/2002: Prices for digital mobile phones – international comparison

Ministry of Transport and Communications Finland 32/2003: Prices for digital mobile phones – international comparison

Ministry of Transport and Communications Finland 41/2004: Mobile phone prices – international comparison

Ministry of Transport and Communications Finland 34/2005: Mobile service markets in Finland 2004

Ministry of Transport and Communications Finland 51/2005: Prices of mobile calls in 2005. International comparison

Ministry of Transport and Communications Finland 30/2006: Prices of mobile calls in 2006. International comparison

Mobile Communications Europe, December 5, 2006

Mobile Communications Europe, January 23, 2007

Mobile Communications Europe, February 20, 2007

Mobile Communications Europe, March 20, 2007

Operators' www-pages, fact sheets and annual reports

Statistics Finland

UMTS Forum

www.vaihtovirta.fi

Appendix 6. The countries included in the 3G study and 3G operators in 4Q 2006

Country	3G subscriptions, million	Operator	Operators' 3G subsriptions, million	Target countries
Netherlands	1.18	KPN Mobile	0.5	
		Vodafone	0.6	
		T-Mobile	0.08	
		Orange	0	
Belgium	0.1	Belgacom Mobile	0.1	x
		Mobistar	0	
		Base	0	
Great Britain	7.6	T-Mobile	0.4	
		O2	1	
		Orange	0.8	
		Vodafone	1.5	x
		Hi3G	3.9	
Spain	3.5	Telefonica Moviles	0.9	
		Vodafone	2.3	x
		Amena	0.3	
Ireland	0.5	Vodafone	0.4	
		O2	0	
		Hi3G	0.1	
Iceland	0	Iceland Telecom/Siminn	0	
		Og Vodafone	0	
Italy	17.9	TIM	4.5	
		Vodafone	4.5	x
		Wind	1.5	
		Hi3G	7.4	
Austria	1.2	Mobilkom	0.4	
		T-Mobile	0.2	
		Connect	0.2	
		Hi3G	0.4	
Greece	0.5	Cosmote	0.1	
		Panafon	0.3	
		Stet Hellas	0.1	
Luxembourg	0.05	P&T Luxemburg	0.03	
		Tele2	0.01	
		VOXmobile	0.01	
Norway	0.6	Telenor Mobil	0.4	x
		NetCom	0.2	
Portugal	2.2	TMN	1	
		Vodafone	0.9	
		Optimus	0.3	
France	5	Orange	2.3	
		SFR	2.7	x
		Bouygues Telecom	0	
Sweden	1.7	TeliaSonera	0.4	
		Tele2	0.4	
		Vodafone	0.4	
		Hi3G	0.5	x
Germany	6.1	T-Mobile	1.6	
		Vodafone	3.3	x
		E-Plus	0.4	
		O2	0.8	
Finland	0.64	TeliaSonera	0.31	x
		Elisa	0.26	
		DNA Finland	0.07	
Switzerland	0.5	Swisscom Mobile	0.3	
		TDC	0.1	
		Orange	0.1	
Denmark	0.4	TDC Mobile	0.1	
		Sonofon	0.1	
		Telia	0	
		Hi3G	0.2	x

Source: Mobile Communication Europe, March 20, 2007.

Appendix 7. Mobile operators and www-pages included in the 3G study

Country	Operator	www-pages
Belgium	Belgacom Mobile	www.proximus.be
Great Britain	Vodafone	www.vodafone.co.uk
Spain	Vodafone	www.vodafone.es
Italy	Vodafone	www.vodafon.it
Norway	Telenor Mobil	www.telenormobil.no
France	SFR	www.sfr.fr
Sweden	Hi3G	www.tre.se
Germany	Vodafone	www.vodafone.de
Finland	TeliaSonera	www.sonera.fi
Denmark	Hi3G	www.3.dk

Appendix 8. The services of 3G operators included in the study

Country	Operator	Services	Includes mobile terminal	Remark
Belgium 1)	Proximus	Smile 75		
		Bundle of 10 Mbit		
		Nokia N73	no	Buying
Great Britain	Vodafone	Pay monthly 300 min		
		Text 600		
		Nokia N73	yes	
Spain	Vodafone	Plan 25		
		Tarifa datos professional		
		Nokia N70	yes	Nokia N70
Italy	Vodafone	No problem 1000		
		Vodafone Broadband L		
		Nokia N73	yes	
Norway	Telenor Mobil	Fri 120		
		Opptil 50 megabyte		
		Nokia N73	yes	
France	SFR	Essentiel		
		Option modem 3G		
		Nokia N70	yes	Nokia N70
Sweden	Hi3G	3Kombo friends		
		3Bredband 0,384 Mbit/s		
		Nokia N73	yes	
Germany	Vodafone	Superflat		
		WebConnect L		
		Nokia N73	yes	
Finland	TeliaSonera	Parempi päivä		
		100 Mt/kk		
		Nokia N73	yes	
Denmark	Hi3G	3Boost399		
		Mobil Bredband 512		
		Nokia N73	yes	

1) Purchase price changed to monthly prices.