Finnish Communications Regulatory Authority

Market review 3 /2009

Price level of telecommunications services in Finland 2008

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1. SUMMARY

Price level of telecommunications services in Finland 2008' is a survey conducted by the Finnish Communications Regulatory Authority (FICORA) on changes in telecom services price level between 2008 and 2007. The survey covers key telecom services used by Finnish households. Unit prices of various telecom services were calculated by dividing the amount of money spent on a specific service by the volume of the service in question, such as call minutes. This calculation method ensures that unit prices represent the actual amounts paid by households for various telecom services.

Households spent approximately EUR 1.5 billion on telecom services in 2008, showing an increase of about five per cent from 2007. The survey covers around 95 per cent of the telecom services used by households. The smallest telecommunications operators were excluded from the survey.

The survey showed that, overall, nominal telecom prices rose by approximately two per cent from 2007. Nominal prices of voice services rose by some two per cent and data transmission services by about one per cent. Meanwhile, the respective real price levels fell by two to three per cent, in other words the prices of telecom services rose at a slower pace than other consumer prices.

Mobile voice and messaging services accounted for more than 60 per cent of the total amount households spent on telecom services. The nominal prices of these services fell by about three per cent while those of other services included in the survey rose, particularly the price per minute of fixed network voice services.

The biggest change in the distribution of services consumed occurred in data transmission services in the mobile network and in fixed network voice services. In the mobile network, the share of data transmission services doubled from about two per cent in 2007 to more than four per cent in 2008. By contrast, the share of fixed network voice services shrank from around 15 per cent to 12 per cent.

2. INTRODUCTION

The ‘Price level of telecommunications services in Finland 2008’ report reviews the price level trend in services used by households during 2008 in proportion to the 2007 price level. This is the first survey conducted by the Finnish Communications Regulatory Authority (FICORA) on the price level of telecommunications services. It follows previous, similar surveys conducted by the Ministry of Transport and Communications.

The following chapters under Introduction present the background material and indexes used in the survey, and the method used to calculate the indexes. Chapter three compares the development of the telecommunications industry with the general development trend in Finland’s national economy. It also provides a review of households’ disposable incomes and their telecommunications expenses. The chapter ends by listing the companies providing telecommunications services in Finland. Chapters four and five deal with indexes and price developments in 2008, with chapter four focusing on the development of voice service prices and chapter five on data transmission service prices. Chapter six discusses price developments in telecommunications services as a whole.

2.1 Background and scope of the survey

The aim of the survey of telecommunications service price levels was to study the price level of telecommunications services used by Finnish households and price trends compared to previous years. Key telecommunications services used by households were included, while telecommunications services used by corporate customers were excluded, as were telecommunications services used by Finnish consumers abroad. For the purposes of the survey, extensive background material containing key figures such as revenues and the number of subscriptions was collected from telecommunications operators.

The price indexes calculated for the survey reflect the development of prices actually paid by consumers rather than those appearing on telecommunications operators' price lists. Consequently, the survey does not reveal the price development of individual operators but the general price development of particular services. The indexes used in the survey also cover the impact of different special offers on the prices paid by consumers for telecommunications services. Price information collected from public sources was also used.

This is the first survey to be conducted by FICORA on the price level of telecommunications services in Finland and it is based on similar, previous studies conducted by the Ministry of Transport and Communications. The Ministry of Transport and Communications published the last ‘Price level of Finnish telecommunications charges’ study in 2008, on price levels and price developments in 2007. The Ministry of Transport and Communications has been publishing reports on the price level of telecommunications services since 1992.

Wherever possible, the price indexes calculated for this survey are compared to those previously published by the Ministry of Transport and Communications. Comparable telecommunications services include mobile voice services and the prices of mobile and fixed network voice services in their entirety. The comparison is shown in Chapter 6.2.

2.2 Background material used in the survey

For the purpose of the survey, extensive service-specific background material was collected containing the number of subscriptions and volume of use per telecommunications operator, as well as revenue data. The material was divided into the following service groups: fixed network voice services, fixed network broadband services, mobile messaging services, mobile multimedia services, mobile voice services, mobile broadband, and other mobile data transmission services. Based on the number of subscriptions, the background material covers at least 90 per cent of the total offering for each service in Finland.

In addition to data requested from telecommunications operators, the public price lists of telecom operators were studied to obtain the retail prices of fixed and wireless broadband subscriptions. Regional price information for broadband subscriptions was collected from ten provinces. This price information was gathered based on a standardised address, thereby being compiled on the basis of ten areas selected by postal address. As a rule, price information was collected from the price lists of three telecom operators in each area. It was then divided into five speed categories, based on which the transmission speed of each broadband subscription is twice that of the previous category. The price comparison was conducted using the broadband subscriptions with the lowest monthly fees that met the minimum speed requirements for each category. Broadband price information collected from public sources will be discussed in paragraph 5.3.

2.3 The indexes used in the survey, and their calculation

A total of seven indexes were calculated for this survey. These indexes are split into three levels. The highest level features the overall telecommunications service price level index. At the next level down, we have the voice and messaging service price level index and the data transmission service price level index. The lowest level features the fixed network voice service, mobile voice service, fixed network data transmission service and mobile data transmission service price indexes. In all cases, the highest-level price index has been calculated based on starting values, in other words unit price per service and weight per service.

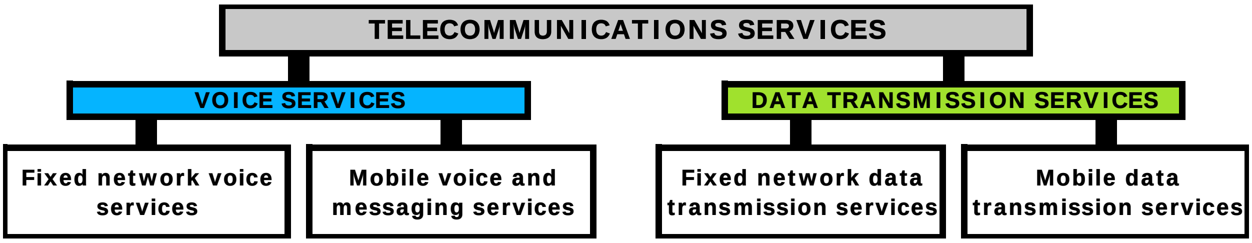

Diagram 1: Telecom services grouping used in the survey

The Törnqvist price index[1] was used to calculate the indexes. This price index is a theoretical calculation model used to describe the price changes at a specific time and for certain commodities in relation to the price level at a pre-determined base time.

For the Törnqvist price index, unit prices per service were calculated by dividing a telecom operator's combined revenues for a particular service by the volume of use, such as call minutes, for that service. In other words, a so-called monopoly was formed for the calculation of unit prices per service and a unit price for the related telecom service was calculated.

In fixed network and mobile voice services, the unit price is based on the price per minute. This includes all call charges such as monthly fees, call charges and activation fees. In text messaging (SMS) and multimedia services (MMS), the unit price is based on the price per message, which includes all costs such as message charge and any monthly fees. In fixed network data transmission services and mobile broadband services, the price used is the monthly subscription fee. The unit price of other mobile data transmission services is based on the unit price per user. In the case of these data transmission services, unit prices

[1] The index is also known as the Divisia-Törnqvist price index or the Divisia price index.

include all fees and charges involved in the service, such as activation fees, monthly fees and charges per service.

In the calculation of indexes, the index values per service were weighted based on the overall revenue per service at the base time. The purpose of weighting is to take account of the financial significance of various services provided to consumers. In the price indexes calculated for various services, prices of services generating higher revenue are given more weight. For example, when calculating the overall index for telecommunications services, the prices of mobile network services are given more weight than those of fixed network services, because revenue from mobile network services are higher than those from fixed network services.

To calculate the indexes, so-called chain indexing was used, in other words price level comparisons are made between consecutive calculation times. The period between calculation times is one calendar year. In the survey, the price development for 2008 is compared to that for 2007. Therefore, 2007 is assigned a price index value of 100 for all indexes calculated.

2.4 The Törnqvist price index

Price indexes are used to depict the change in prices by a certain point in time, in relation to a certain base time. The simplest price index is one which compares average prices for two periods. Indexes do not provide an absolute value for changes in real price levels, but enable the formation of a sufficiently accurate picture of price level development. For the purposes of this survey, the Törnqvist price index was selected, which can be presented as follows[2]:

$$P^T(p^1, x^1, p^0, x^0) = \prod_{n=1}^{N} (p_n^1 / p_n^0)^{(s_n^0 + s_n^1)/2} ,$$

where p_n^t is the price of the product n, x_n^t is the quantity of product n, and s_n^t is the weight of product n at a time t, when $t = \{0,1\}$ and $n = 1,...,N$. Weight is generally defined so that $s_n^t = p_n^t x_n^t / p^t x^t$, when $n = 1,...,N$, and $\sum_{n=1}^{N} s_n^t = 1$.

2.5 Calculated indexes in relation to general price development

In addition to price indexes calculated using nominal prices, the real price level of telecom services, and the price trend, were calculated. The real price level describes the relationship between telecom service prices and the general price level and its development. Price calculation was based on the consumer price index published by Statistics Finland. To calculate real price levels, each sub or total index calculated for the survey was divided by the value of the consumer price index. The point of reference used in the survey is the consumer price trend in 2008 in relation to the price trend in 2007. In 2008, consumer prices rose by four per cent on average from 2007 prices.

[2] Balk, Bert M. (2008): Price and Quantity Index Numbers: Models for Measuring Aggregate Change and Difference, Cambridge University Press.

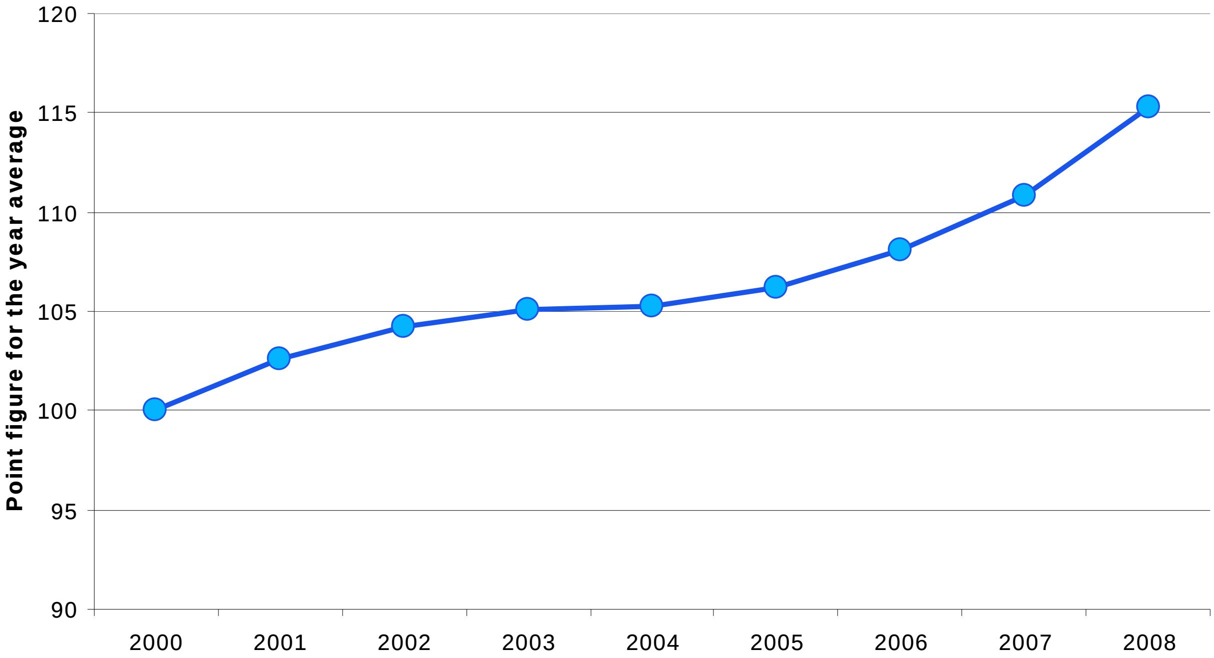

Diagram 2: Consumer price index in 2000 – 2008 (Year 2000 = 100, Source: Statistics Finland).

3. GENERAL ECONOMIC DEVELOPMENT AND TELECOMMUNICATIONS SERVICES

The financial performance of telecommunications companies in 2007 and 2008 was highly stable and the global economic downturn experienced in the second half of 2008 did not materially affect the financial position of Finnish telecom companies. Companies saw relatively stable turnover trends and profitability. The global economic downturn was primarily reflected in the stock markets, where the share prices of Finnish telecom companies slided at the end of 2008, following the global share price trend.

In the data transmission markets, the emergence of mobile broadband services in late 2007 caused the most significant change in consumer behaviour. Consumers were quick to adopt this new service, and by the end of 2008, as many as half a million mobile broadband subscriptions had been sold in Finland. The expansion of the 3G network and the growing popularity of 3G devices also contributed to the increase in mobile data transmission services. Meanwhile, the number of fixed broadband subscriptions took a slight downward turn in 2008. By the end of that year, there were some 1.5 million fixed broadband subscriptions in Finland. As a proportion of that from total data transmission services, turnover from mobile network data transmission services rose from 10 per cent to around 17 per cent during 2008.

Competition for customers in the mobile voice services markets was fierce in 2008, with mobile communications operators offering customers various voice service benefits and package deals in marketing campaigns. Meanwhile, fixed network voice services continued to decline in significance, which translated particularly into fewer call minutes during 2008.

3.1 National economic trends

Finland's national economy showed sustained growth from the beginning of the 2000s until the second half of 2008, when the global economic recession began to impact on Finland's national economy. Evaluating the national balance of supply and demand quarterly, a turning point can be seen in Finland's economic trends in the third quarter of 2008. Of the key supply components, gross domestic product and import began to slide. However, gross domestic product for the full year maintained a one per cent growth rate, fuelled by positive economic growth in the first half.

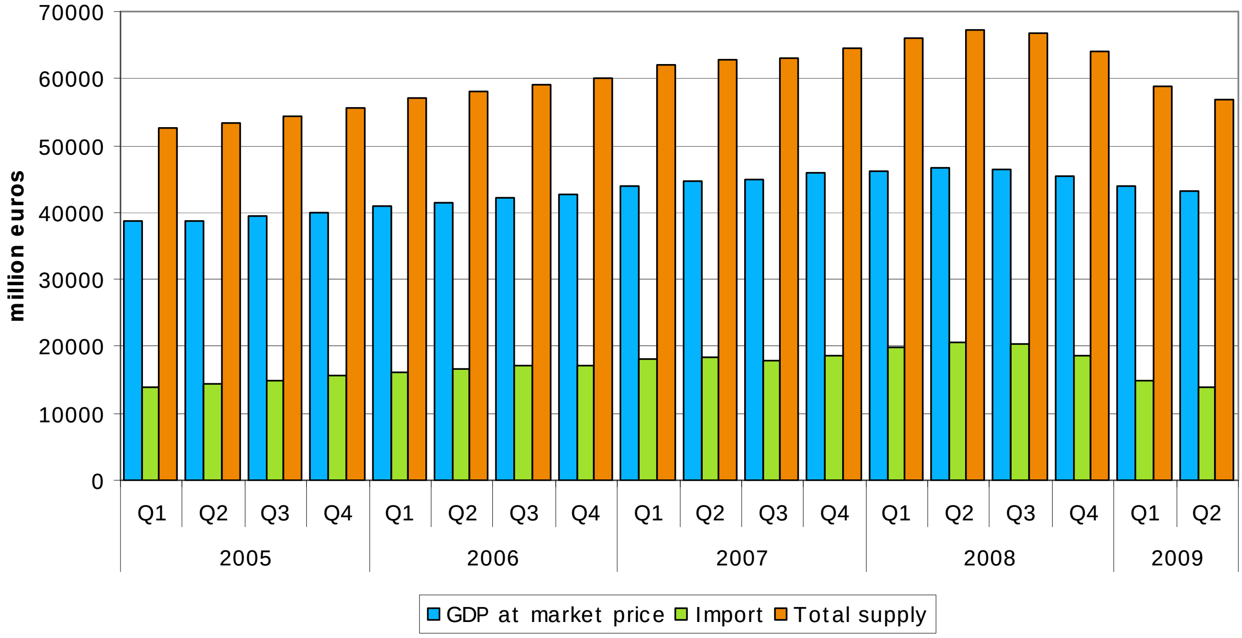

Diagram 3: Finland's balance of resources and expenditure, quarterly supply as of 2005 (Source: Statistics Finland, quarterly accounts).

Of the four key demand components, exports, or foreign demand, fell in a similar way to imports on the supply side. Other key demand components – private demand, public demand and investments – remained almost unchanged. From the telecommunications services perspective, private demand is the key component, generating the lion's share of telecom companies' turnover. Private demand comprises both household and corporate demand, which has been almost unaffected by the general economic recession, as evidenced by the strong balance sheets of telecom companies.

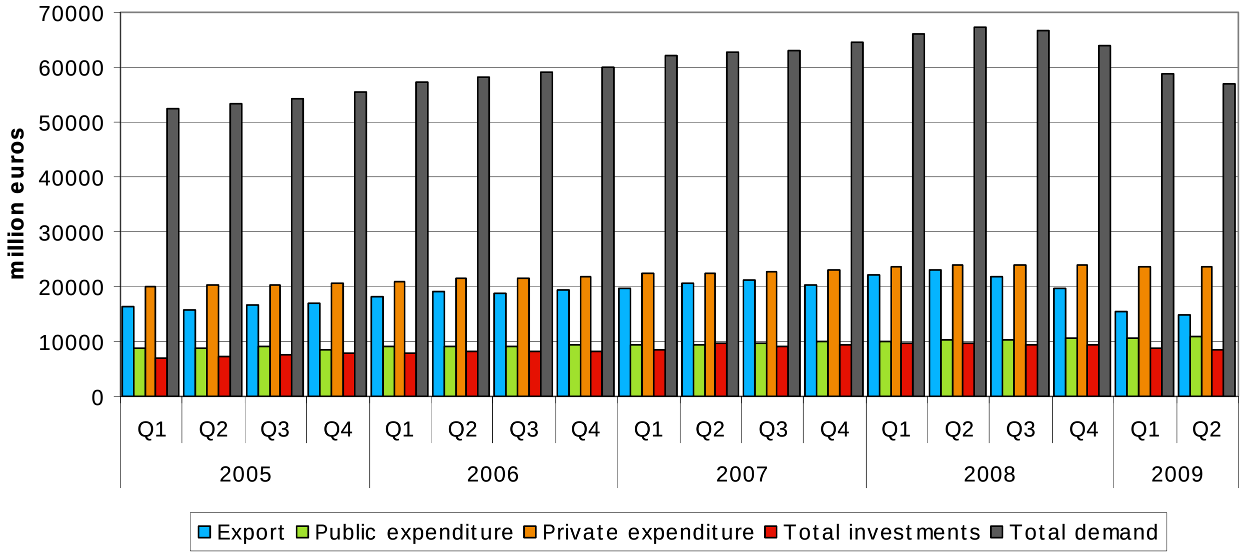

Diagram 4: Finland's balance of resources and expenditure, quarterly demand as of 2005 (Source: Statistics Finland, quarterly accounts).

Of the key industries generating gross domestic product, changes in the transport, warehousing and telecommunications sector –have been minor in comparison to the industry sector, which experienced a rapid decline in value when the global recession began. Thus, from the perspective of telecommunications services, the national economic trend has been fairly stable, since supply and demand focus largely on the domestic markets and because the related products and services bear more resemblance to daily consumer goods than durables. The effects of the recession on telecommunications services have been slight compared to the industrial sector, where the majority of production is exported and products are by and large durables.

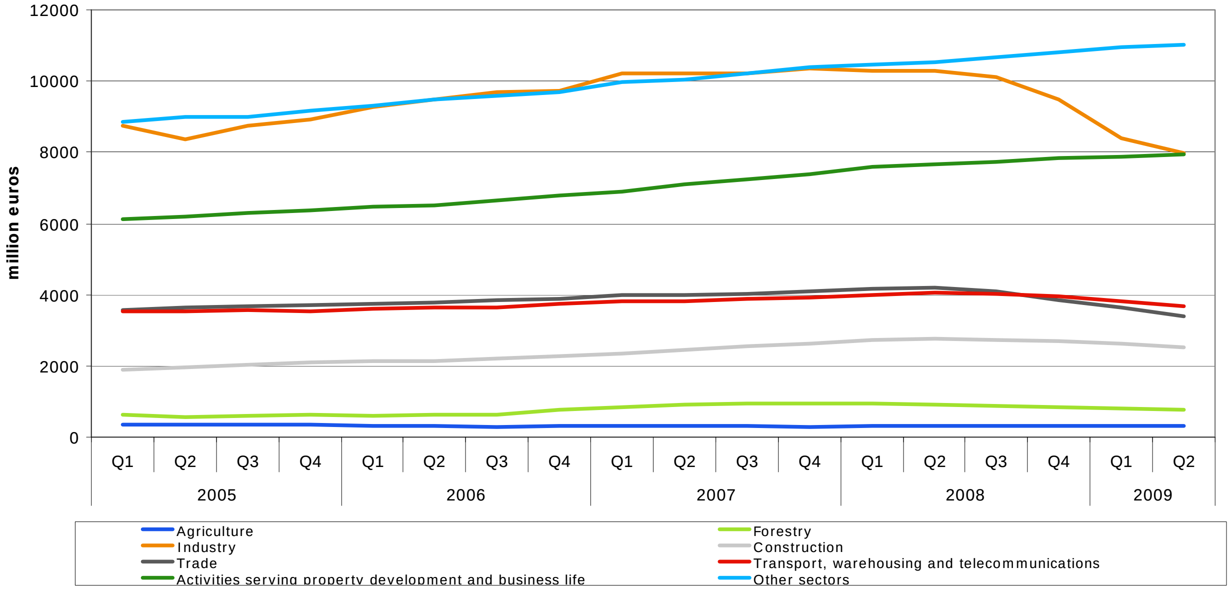

Diagram 5: Sectoral value increases by quarter as of 2005 (Source: Statistics Finland, quarterly accounts).

From the perspective of telecommunications service use, the lack of major changes in the disposable income of households has also been important. The real income of households grew by two per cent in 2008. Households have been spending a little under three per cent on telecommunications over the last few years. According to the latest information provided by Statistics Finland, households' annual telecommunications expenditure amounted to 856 euro in 2006. Even though, in percentage terms, telecommunications have represented a smaller proportion of household spending in the last three years, the amount of money spent has changed little.

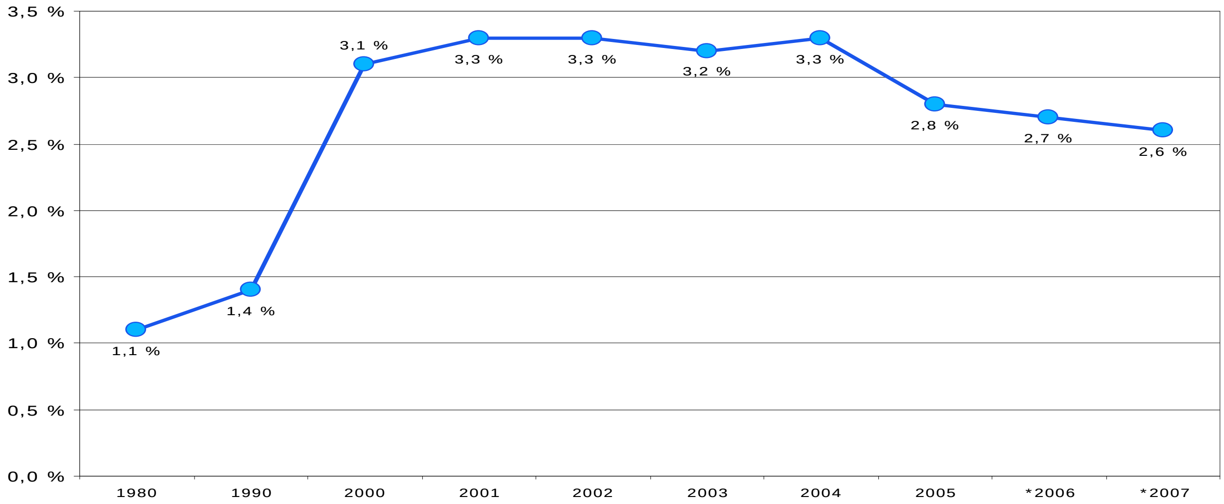

Diagram 6: The proportion of telecommunications expenses of total household spending (Source: Statistics Finland, national accounts).

3.2 Telecom operators and telecom service provision

In terms of turnover, the three biggest telecom operators in Finland are TeliaSonera Finland Oyj (TeliaSonera), Elisa Oyj (Elisa) and DNA Oy (DNA). They are also the only operators to offer households mobile and fixed network services with wide geographic coverage, largely over their own communications networks. In addition to these, around 25 regional telecom operators in Finland have formed the Finnet group, each of these companies owning a regional fixed network in their respective operating regions. Companies in the Finnet group do not have their own mobile network, but many offer retail mobile services as a service provider within the mobile operators' networks. Major players that own their own fixed network also include AinaCom Oy and TDC Oy (TDC), both of which offer mobile services.

Broadband services which are available nearly everywhere in Finland are primarily provided by TeliaSonera, Elisa and DNA. These three telecom operators also run a geographically extensive backbone network, a necessity when providing nationwide services. Telecom operators in the Finnet group also have access to a geographically extensive backbone network.

The DNA Group's becoming as a national telecommunications group was the most significant business reorganisation in the Finnish telecom operator environment in 2007 and 2008. DNA was formed from the nationwide business operations of Finnet Oy and the teleoperator businesses of Päijät-Hämeen Puhelin Oyj, Oulun Puhelin Oyj, Lännen Puhelin Oy, KPY Palvelut Oy and Satakunnan Puhelin Oy, all previously part of the Finnet group. The business of Lohjan Puhelin Oy was acquired through a share acquisition in May 2007.

Around ten major mobile network operators or service operators in Finland provide mobile services to household customers. The largest telecom operators providing mobile services, and running their own mobile network, are DNA, Elisa and TeliaSonera, as well as Elisa's and TeliaSonera's service operators Saunalahti and Tele Finland. These companies account for 98 per cent of all mobile phone subscriptions. All operators offering mobile services provide voice, messaging and data transmission services. Seven of these also provide mobile broadband services. Players offering their customers also mobile broadband services together with fixed broadband services, but no mobile voice services, have also entered the market.

In total, over 70 telecom or service operators in Finland offer households telephone or broadband services over a fixed network, the majority offering both voice and broadband services. Fixed network services with nationwide coverage are offered by Finland’s biggest telecom operators; DNA, Elisa and TeliaSonera, and (primarily within their own regions) operators in the Finnet group. Through its partners, TDC also provides fixed broadband services in major cities. Wireless broadband services are provided over mobile networks and over Digita’s @450 network, regional Wimax networks and WLAN networks. Broadband connections provided using the @450 network, Wimax and WLAN technologies are classified as fixed broadband services because the connections currently offered using these technologies are, from the user’s perspective, tied to a specific location even when based on wireless network technology. Annex 1 lists telecom operators included in the survey that offer mobile and/or fixed network services.

4. PRICE LEVEL DEVELOPMENT IN VOICE SERVICES

The price level index for voice services in 2008 was 102.1, indicating that the price level of voice services rose by about two per cent from 2007. Proportionate to the general increase in consumer prices, the real price level of voice services fell by about two per cent, which means the price level of voice services lagged behind the rise in general consumer prices. The voice services price index includes mobile network voice and messaging services and fixed network voice services offered to household customers. This index was calculated from the starting values of mobile network voice and messaging services and fixed network voice services. The average prices formulated were the per-minute prices of mobile and fixed network voice services and the per-message prices of SMS and MMS services.

The increase in voice service prices can be attributed to the marked increase in the price level of fixed network voice services, even though its weighting in the index was considerably lower than that of mobile voice and messaging services. So great was the 25 per cent increase in the price of fixed network voice services that it offset the approximately three per cent decrease in mobile voice and messaging service prices.

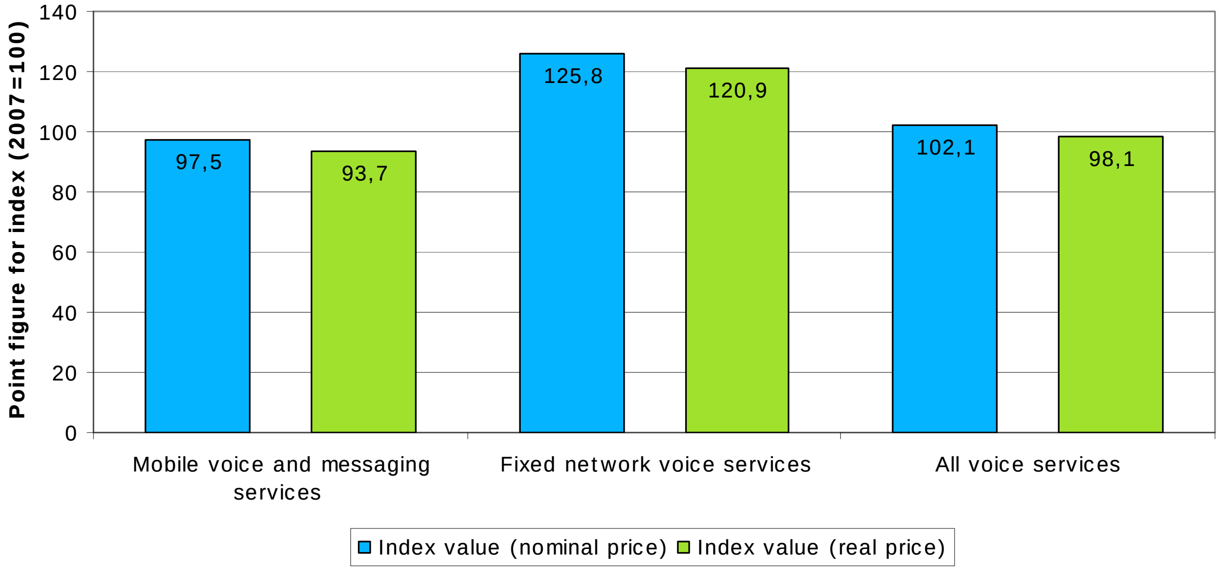

Diagram 7: Price development in voice services in 2008 in relation to 2007.

In Finland, the number of mobile phone subscriptions was more than 6.8 million and the number of fixed network subscriptions fewer than 1.7 million by the end of 2008. More than 5.2 million mobile phone subscriptions and 0.9 million fixed network subscriptions were used by households. In the corresponding period in 2007, the number of mobile phone subscriptions was around 6.1 million and the number of fixed network subscriptions more than 1.7 million.

The number of call minutes in mobile networks grew by about seven per cent in 2008, to over 14 billion minutes from 2007. Correspondingly, call minutes in the fixed network decreased by as much as one quarter, to about four billion minutes. In 2008, households accounted for almost three quarters of all call minutes in the mobile network. In the fixed network, households accounted for some three fifths of all call minutes.

Mobile voice and messaging services carry a considerable weight in the total index, accounting for around 60 per cent of the total turnover generated by all services in 2008. In this respect, there were no major changes compared with 2007. Fixed network voice services represented about 12 per cent of the total turnover generated by all services, showing a decrease of three per cent from 2007.

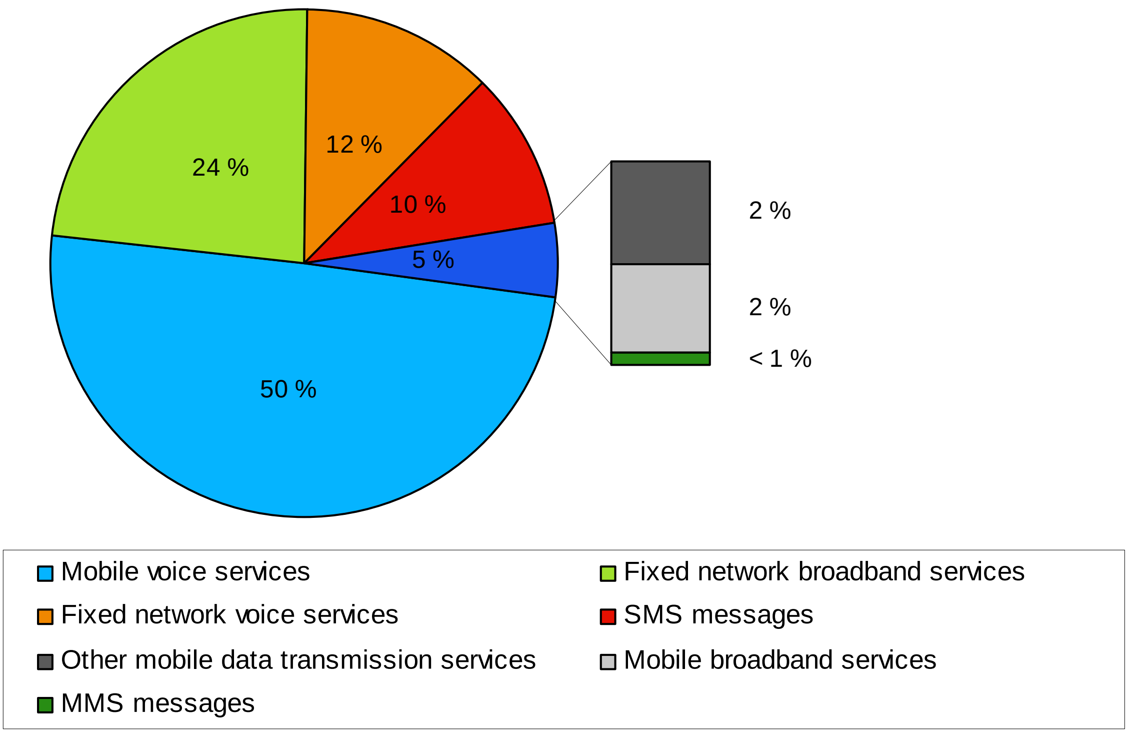

Diagram 8: Breakdown of telecom operators' turnover by service provided to households in 2008.

Of the overall voice services provided, mobile voice and messaging services accounted for some 83 per cent of the turnover from voice services, and fixed network voice services for about 17 per cent.

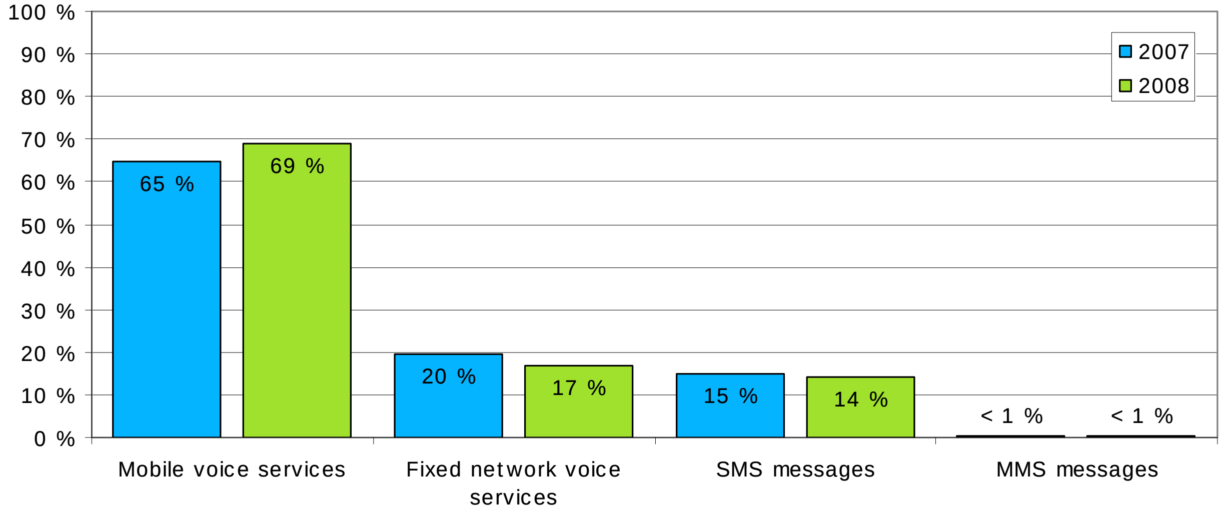

Diagram 9: Breakdown of telecom operators' turnover by voice and messaging services provided to households.

4.1 Mobile voice and messaging services

The price index for mobile voice and messaging services in 2008 was 97.5, indicating that the price of voice and messaging services fell by about three per cent from 2007. In proportion to the rise in general consumer prices, the real price of these services fell by about six per cent. Messaging services consist of text message (SMS) and multimedia services (MMS). In 2008 an average of around 16 euro per month was spent per subscription on mobile voice and messaging services.

Mobile voice services represented a little under 50 per cent of the combined turnover of all telecom services. Correspondingly, SMS and MMS services accounted for a total of around ten per cent of turnover. It is worth pointing out that mobile messaging services' share of the total telecom services turnover in 2008 was almost as great as the proportion of fixed network voice services. Of the combined turnover generated by mobile voice and messaging services, voice services accounted for about 83 per cent and messaging services for about 17 per cent.

4.2 Fixed network voice services

The price level index for fixed network voice services in 2008 was 125.8, indicating that the price of fixed network voice services rose by about 25 per cent from 2007. Considering the rise in the general price level, this constitutes a real-term price rise in fixed network voice services of around 20 per cent. A factor contributing to this price increase was the rapid decrease in the use of fixed network voice services. The number of fixed network subscriptions owned by household customers decreased by some ten per cent between 2007 and 2008, while call minutes decreased by around 30 per cent. The unit price per minute rises, because the monthly fee for the subscription is divided between fewer minutes than previously. The monthly fee for fixed network voice services was relatively high compared with the monthly fee for mobile voice services.

The amount of money households spent per subscription did not change much from 2007, even though the per-minute price rose. Approximately 17 euros per month[3] was spent on each fixed network subscription in 2008. An examination by region and telecom operator reveals rather significant differences in revenue per subscription and the decrease in call minutes.

Fixed network voice services include all fixed network voice service costs such as activation and monthly fees, calls and service calls. Fixed network voice services' proportion of the combined turnover generated by telecom services dropped from almost 15 per cent in 2007, to around 12 per cent in 2008.

[3] Unlike other calculations in the survey, this monthly sum accounts for only around 80 per cent of the fixed network subscriptions.

5. PRICE LEVEL DEVELOPMENT IN DATA TRANSMISSION SERVICES

The nominal price level of data transmission services rose by about one per cent in 2008 from the 2007 price level, resulting in a price index of 101.1 for data transmission services. In proportion to the price level of other consumer goods, the real price level was down by about three per cent, indicating a smaller increase in data transmission service prices than the general increase in the prices of consumer goods.

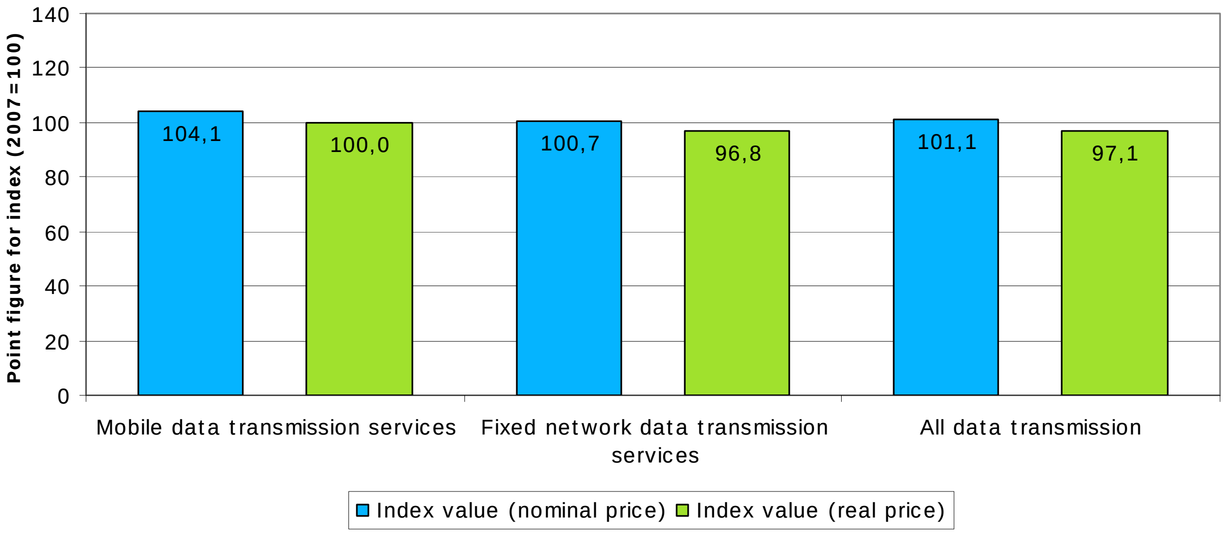

Diagram 10: Price development in data transmission services in 2008 in proportion to 2007.

The price index of data transmission services calculated for the survey is based on the mobile network and fixed network data transmission services offered to household customers. Mobile data transmission services are further divided into mobile broadband services and other mobile data transmission services. The starting values for data transmission service price indexes, or average prices, were calculated by dividing the telecom operators' revenues received from household customers by the number of subscriptions used by such customers, excluding other mobile network data transmission services. Income from other mobile data transmission services was divided by the number of data transmission service users. The resulting average prices were the price-per-subscription for fixed network data transmission services and mobile broadband services, and a price-per-user for mobile data transmission services. These values were used to calculate the price indexes for data transmission services.

Background material on mobile broadband services collected for 2007 does not enable a sufficiently accurate assessment of price development. Therefore, when the proportion of mobile broadband services was calculated, it was assumed that prices had remained unchanged in 2007 and 2008. To some extent, the fact that mobile broadband services were taken into account in the price index calculated for data transmission services balances the price level calculated for such services. Excluding mobile broadband services from the price index for data transmission services would raise the nominal and real price level by about a tenth of a per cent. More information is given in Chapter 5.1 on how account was taken of mobile broadband services in the calculation of indexes.

The rise in overall data transmission service prices was affected largely by the rise in the price level of mobile data transmission services. This price increase could be largely attributed to growth in consumption. The price rise in fixed network data transmission services was very moderate in comparison.

At the end of 2008, the total number of fixed and mobile broadband subscriptions in Finland was almost 2.1 million compared with 1.9 million a year earlier. Households held approximately 1.5 million of these subscriptions. In addition, 1.7 million mobile phone subscriptions used mobile data transmission services other than mobile broadband services.

Fixed network services accounted for about 84 per cent of the total turnover generated by data transmission services, and mobile data transmission services for about 15 per cent. Fixed network data transmission services' proportion of the total turnover from data transmission services declined by some eight per cent, although income from household spending on all data transmission services grew. In mobile broadband services in particular, the growth in income outperformed other data transmission services.

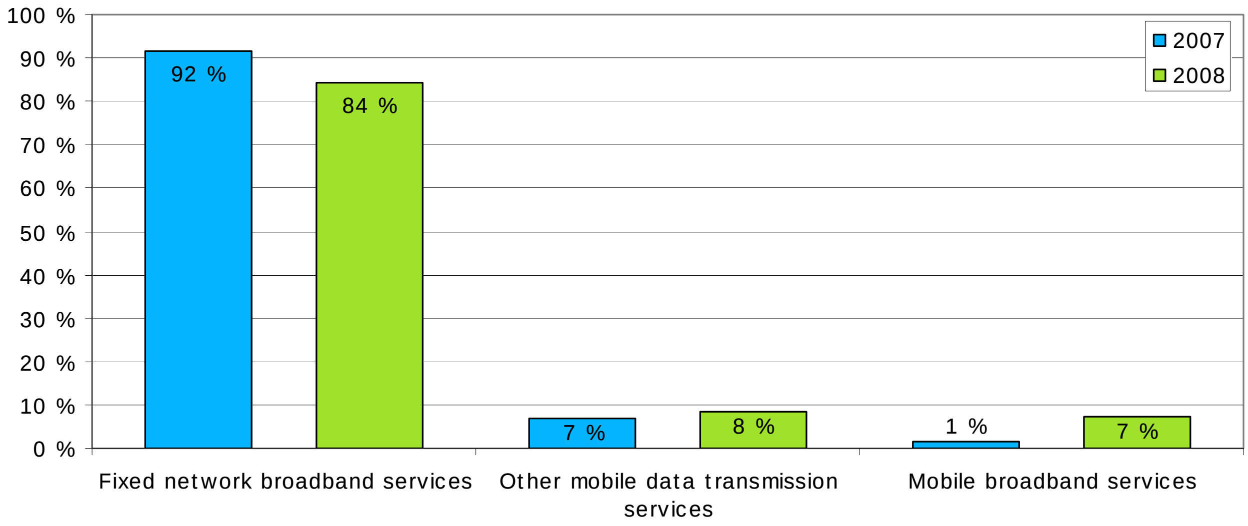

Diagram 11: Breakdown of telecom operators' turnover by data transmission services provided to households.

5.1 Mobile data transmission services

The nominal price of mobile data transmission service rose by about four per cent in 2008, resulting in a price index of 104.1. In terms of real price levels, this means that prices remained at the 2007 level. This increase in prices can be primarily attributed to growing personal use of other data transmission services.

The price index for mobile network data transmission services consists of two data transmission services: mobile broadband services and other mobile data transmission services. Since extensive mobile broadband service provision to consumers did not begin until in the closing months of 2007, the background material collected from telecom operators does not enable the sufficiently accurate calculation of changes in the prices of these services. However, the significance of mobile broadband services expressed in turnover and volume of use grew dramatically during the course of 2008. Excluding these services from the calculated indexes would result in an unreliable picture of data transmission service price developments. For the calculation of indexes, the prices of mobile broadband services were standardised: in other words it was assumed that the prices had remained unchanged in 2007 and 2008, thereby not affecting index calculation. Meanwhile, the 2008 price level can be reliably assessed since mobile broadband services have been available throughout the year. As a result, the 2008 price level can be set as the starting value for the following year when examining the price index change. In 2008, an average of around 14 euro per month was spent on mobile broadband services per subscription.

Other mobile data transmission services have been priced differently, for example based on megabytes, minutes or days. Data transmission services are also offered as service packages, with a monthly fee that includes a certain number of megabytes, minutes or days. If the customer exceeds this specified monthly limit, he or she pays a pre-announced unit price for the service. Due to inconsistent pricing methods, it is impossible to define a unit of measurement to which service prices could be proportioned. Therefore, the unit of measurement selected for the survey was a household customer using the service. This enables the calculation of the average spend per user on other data transmission services. However, price proportioned to the number of users is highly susceptible to changes in consumer behaviour. Consequently, the base prices of products included in mobile data transmission services have not necessarily changed; instead, the per-subscription use of services involving a fee has grown, which has contributed to the increase in data transmission service prices. The impact of other mobile data transmission services on the total index is about two tenths of a per cent at most. Users of other mobile data transmission services spent approximately two and a half euro per month on these services.

Mobile broadband services cover subscriptions involving a fixed monthly fee, with an unlimited monthly data transmission volume and a minimum theoretical speed of 144 Kbps. At the end of 2008, there were about 480,000 mobile broadband subscriptions in Finland compared with about 105,000 a year earlier. For the purposes of this survey, it was not possible to calculate mobile broadband service price developments with sufficient accuracy. However, mobile broadband services have been taken into account in the data transmission service index, with a standardised price for mobile broadband services and an assigned index value of 100. Other mobile data transmission services include all other services involved in data transfer, such as fixed-price services with a limited data transmission volume.

5.2 Fixed network data transmission services

In 2008, the nominal prices of fixed network data transmission services grew by approximately one per cent. The price index for fixed network data transmission services was 100.7. However, in terms of real price levels there was an approximately three per cent fall in prices, indicating that the prices of fixed network data transmission services rose more moderately than other consumer prices. However, the price index fails to give a direct indication of the price development of different speed broadband subscriptions. It is possible that in 2008 subscriptions with a speed of 2 MBps were sold at the same price as those with a speed of 1 MBps in 2007. Connection speeds have changed considerably: in 2007, only 30 per cent of subscriptions featured a connection speed of 2 MBps or higher, while in 2008 as many as 60 per cent of subscriptions did. More information on the prices of broadband connections of various speeds is provided in Chapter 5.3.

In 2008, the average spent on a fixed network broadband connection was a little under 26 euro per month. This sum is very close to the average price of a 1 MBps connection calculated from the list prices. When comparing these prices, it should be borne in mind that the material used for the calculation of the index has a greater geographical coverage than the material calculated from price lists, taking also account of any activation fees and possible discounts.

At the end of 2008, there were approximately 1.6 million fixed network broadband subscriptions in Finland. This figure includes wireless solutions in a fixed location. Compared with the situation at the end of 2007, the number of subscriptions has change little.

Fixed network data transmission services only include broadband services offered to household customers. In the calculation of indexes, account has been taken of the monthly fees, installation and connection charges and other subscription maintenance related fees paid by households. However, when calculating the index no account has been taken of information security services such as antivirus software unless these have been automatically included in the monthly subscription fee.

5.3 Broadband service list price monitoring

FICORA monitors the price level of broadband services by collecting list prices for the speed categories available in each province at a specific time. Since the speed categories available depend on the region, operator and the technology used, price specification is based on the minimum speed required. For the minimum speed definition, the speed required in each category is twice that of the previous category. In other words, the table indicates the amount a consumer can be expected, on average, to pay for a broadband connection when a specific transmission speed is required, and how much this price would change if the consumer wanted a connection that was twice as fast. The speed categories are as follows:

1) 256 Kbps and higher
2) 512 Kbps and higher
3) 1 Mbps and higher
4) 2 Mbps and higher
5) 4 Mbps and higher
6) 8 Mbps and higher
7) 16 Mbps and higher

Price development monitoring involved DNA, Elisa, TeliaSonera and the largest local telecom operators. The most inexpensive broadband connection meeting the minimum speed requirement in each category was selected for each region. The offered speed may also exceed the specified limit. No price information has been gathered on fixed network broadband connections representing the first two speed categories, or on mobile broadband connections representing the latter two speed categories, since such services are not extensively available.

The average price in each region was calculated by weighting the price offered by the so-called traditional telecom operator in that region, using twice the weighting of the two other telecom operators selected for the region. This market share estimate (50-25-25) is not based on the actual number of subscriptions in individual regions, but does provide a more accurate picture of the situation at national level than a non-weighted average.

Fixed network broadband connection							
City	256K	512K	1M	2M	4M	8M	16M
Helsinki	Data not collected		22,90 €	26,90 €	29,65 €	33,65 €	40,90 €
Porvoo			28,90 €	40,90 €	47,98 €	47,98 €	49,98 €
Turku			25,43 €	33,95 €	38,93 €	38,93 €	49,23 €
Pori			28,90 €	35,40 €	38,65 €	38,65 €	48,65 €
Hämeenlinna			21,30 €	32,90 €	39,90 €	39,90 €	49,68 €
Tampere			22,15 €	34,40 €	32,90 €	32,90 €	40,40 €
Lahti			25,55 €	33,15 €	38,15 €	38,15 €	47,70 €
Kotka			25,90 €	36,65 €	37,18 €	39,68 €	48,65 €
Lappeenranta			29,93 €	39,90 €	46,98 €	46,98 €	49,98 €
Mikkeli			24,78 €	30,53 €	37,68 €	38,68 €	47,48 €
Kuopio			32,70 €	38,40 €	48,48 €	48,48 €	49,98 €
Joensuu			26,65 €	28,15 €	29,65 €	34,90 €	39,93 €
Jyväskylä			22,15 €	26,90 €	26,90 €	32,90 €	39,15 €
Seinäjoki			33,90 €	39,90 €	44,00 €	45,00 €	49,98 €
Vaasa			26,15 €	36,68 €	37,43 €	37,43 €	46,15 €
Kokkola			32,90 €	40,90 €	45,93 €	45,93 €	51,43 €
Oulu			32,20 €	38,95 €	43,98 €	43,98 €	49,48 €
Kajaani			31,95 €	36,45 €	41,98 €	43,98 €	45,48 €
Rovaniemi			30,20 €	42,98 €	45,48 €	45,48 €	52,18 €
Maarianhamina			36,53 €	38,28 €	38,28 €	38,28 €	47,05 €
Weighted average			25,94 €	33,03 €	36,41 €	38,12 €	45,14 €

Mobile broadband connection							
Region	256K	512K	1M	2M	4M	8M	16M
Finland	11,53 €	14,87 €	19,83 €	31,50 €	35,00 €	Data not collected	

Table 1: List prices of broadband subscriptions by province and by speed category in April 2009.

The list prices of fixed network broadband connections show that the price gap between provincial centres is widest for the slowest connections. Weighted for population levels, the average price of a 1 MBps or higher fixed broadband connection obtained from provincial centres was around 26 euro. The average monthly cost of a 2 MBps connection was 33 euro. Although the price did not increase significantly in the next two categories, in the 16 MBps speed category the average price was more than 45 euro per month.

Meanwhile, the monthly cost of a 1 MBps mobile broadband connection was just under 20 euro. Taking the maximum data transmission speed alone, mobile broadband connections in the speed categories 1 MBps, 2 MBps and 4 MBps were less expensive than the corresponding fixed network broadband connections.

6. PRICE LEVEL DEVELOPMENT IN TELECOMMUNICATIONS SERVICES

Households spent just over EUR 1.5 billion on telecom services included in the survey in 2008, showing an increase of about five per cent from 2007. The survey does not include the smallest telecom operators, entailing the exclusion of less than five per cent of household customers from the survey.

Service	Proportion (%)	
	2007	2008
Mobile voice services	48	50
Fixed network broadband services	23	24
Fixed network voice services	15	12
SMS messages	11	10
Other mobile data transmission services	2	2
Mobile broadband services	< 1	2
MMS messages	< 1	< 1

Table 2: Proportion of total turnover of the telecom services included in the survey.

Mobile calls accounted for approximately half of the money households spent on telecom services. The greatest change in the distribution of services consumed occurred in data transmission services in the mobile network and in fixed network voice services. The share of data transmission services in the mobile network doubled from about two per cent to more than four per cent. Considering the significant growth in data transmission volumes, this trend can be expected to continue. By contrast, the share of fixed network voice services shrank from around 15 per cent to 12 per cent following the sustained decrease in call minutes in the fixed network.

6.1 Telecommunications service price level development between 2007 and 2008

The price level of telecommunications services rose by about two per cent in 2008, resulting in a price index of 101.8 compared to the 2007 price level. Adjusted for the general rise in price level, telecom service price level fell by around two per cent compared with 2007.

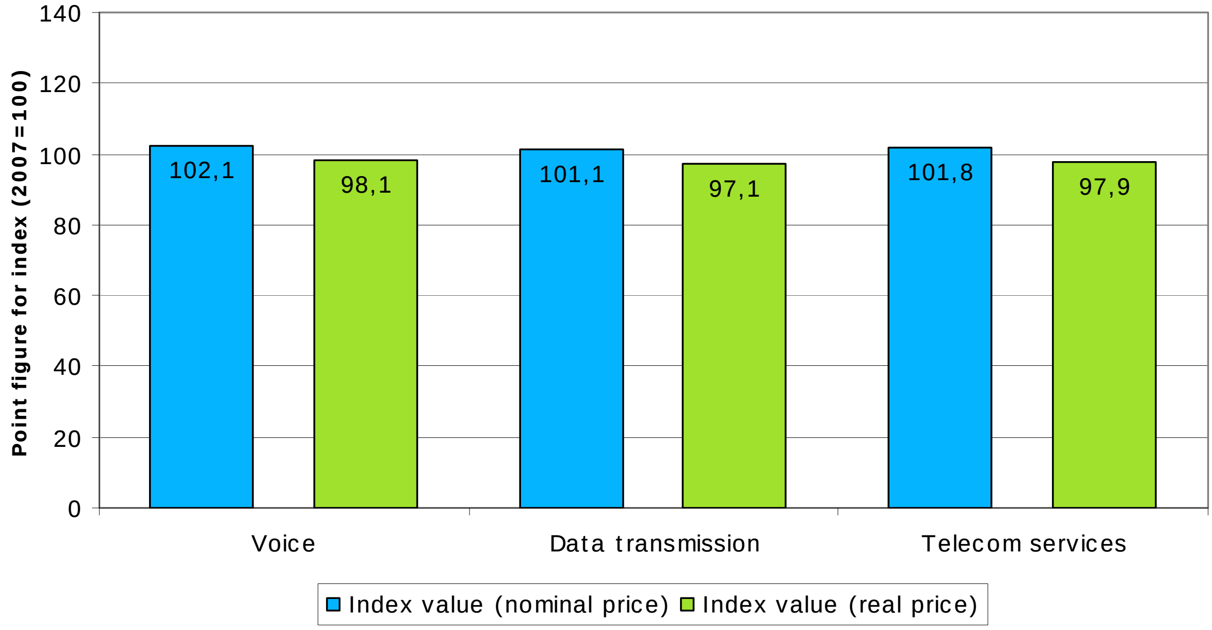

Diagram 12: Key components of the telecom service price level indexes in 2008

Among key components of the total index, the price indexes of voice and data transmission services are very close to the total index. Of individual services, only the nominal price index for mobile voice and messaging services decreased from 2007. The price index for fixed network voice services showed most growth from 2007.

Price indexes (2007=100)	Point figure
Telecommunications services	**101,8**
Voice services	**102,1**
Fixed network voice services	125,8
Mobile voice and messaging services	97,5
Data transmission services	**101,1**
Fixed network data transmission services	100,7
Mobile data transmission services	104,1

Table 3: Price indexes by type of service in proportion to the 2007 price level (2007 = 100).

6.2 Comparison of results with those of previous years

Telecommunications service price indexes enable a comparison of the development of voice service prices against the previous index on voice services published by the Ministry of Transport and Communications. Similarly, mobile voice and messaging services can be compared to the previous index published by the Ministry of Transport and Communications (MINTC).

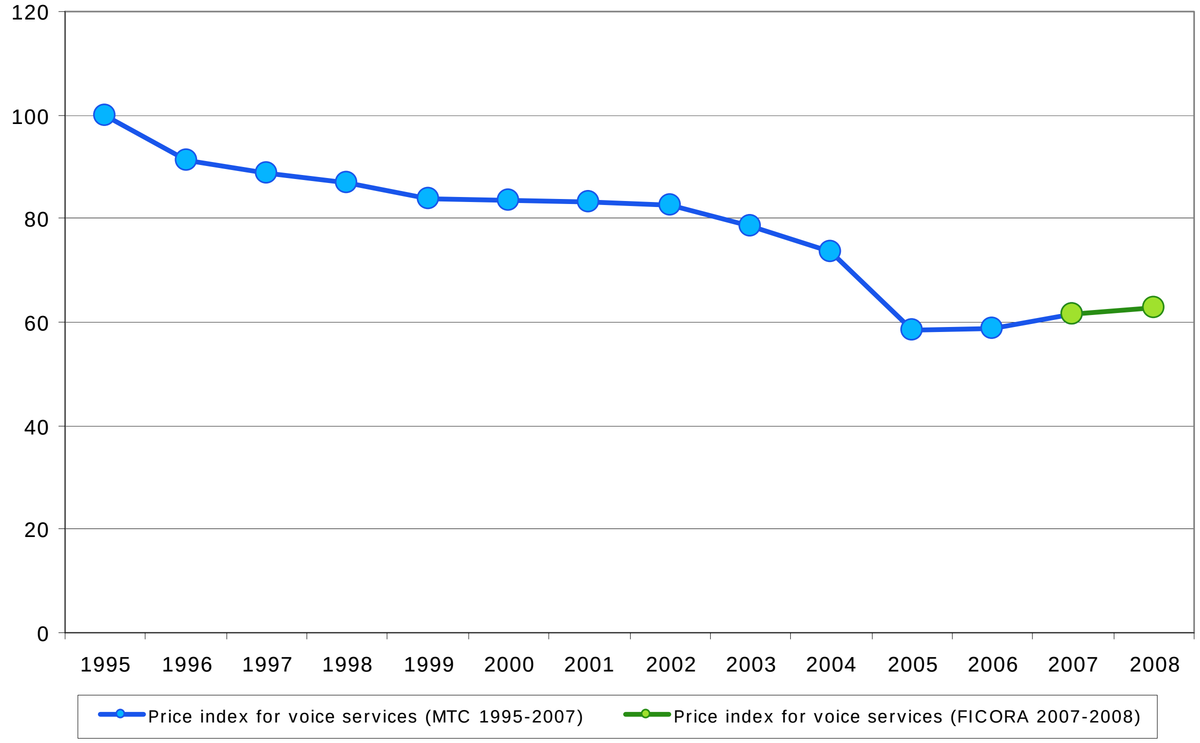

Diagram 13: Voice service price index compared to the previous index published by MINTC.

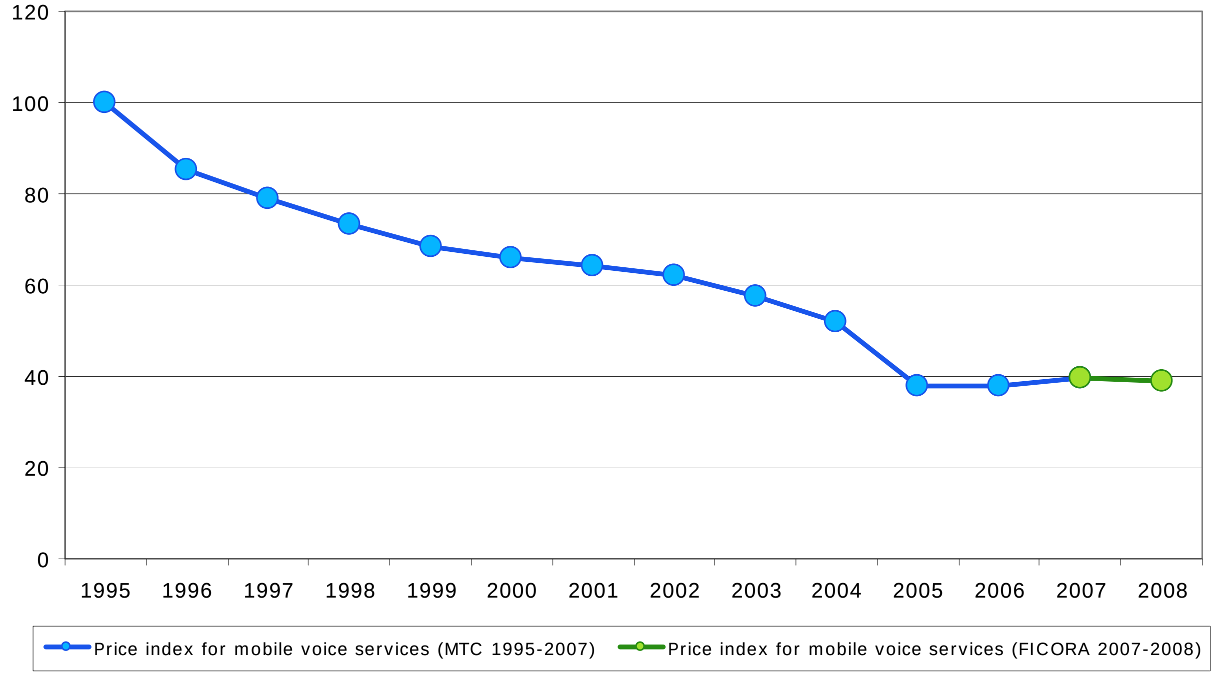

Diagram 14: Mobile voice service price index compared to the previous index published by MINTC.

By and large, it is fair to say that the indexes for voice services in 2008 follow the trend of the last few years and there have been no dramatic changes compared with the previous nominal price indexes for fixed and mobile voice services published by the Ministry of Transport and Communications.

ANNEX 1.

Telecom operators included in the survey by type of service		
Mobile services	Fixed network services	
	Broadband services	Voice services
DNA Oy	Aina Group	Aina Group
Elisa Corporation	DNA Oy	DNA Oy
TeliaSonera Finland Oyj	Elisa Corporation	Elisa Corporation
	Forssan Seudun Puhelin Oy	Forssan Seudun Puhelin Oy
	Pietarsaaren Seudun Puhelin Oy	Pietarsaaren Seudun Puhelin Oy
	Kainuun Puhelinosuuskunta	Kainuun Puhelinosuuskunta
	Kokkolan Puhelin Oy	Kokkolan Puhelin Oy
	Kymen Puhelin Oy	Kymen Puhelin Oy
	Mikkelin Puhelin Oy	Mikkelin Puhelin Oy
	Pohjanmaan Puhelin Oy	Pohjanmaan Puhelin Oy
	Pohjois-Hämeen Puhelin Oy	Pohjois-Hämeen Puhelin Oy
	Salon Seudun Puhelin Oy	Salon Seudun Puhelin Oy
	Savonlinnan Puhelin Oy	Savonlinnan Puhelin Oy
	Welho (SW Television Oy)	Telekarelia Oy
	Tampereen Puhelin Oy	TeliaSonera Finland Oyj
	Telekarelia Oy	Vaasan Läänin Puhelin Oy
	TeliaSonera Finland Oyj	Etelä-Satakunnan Puhelin Oy
	Vaasan Läänin Puhelin Oy	Ikaalisten-Parkanon Puhelin Oy
		Loviisan Puhelin Oy
		Mariehamns Telefon Ab
		Vakka-Suomen Puhelin Oy
		Ålands Telefonandelslag Ab

Table: The telecom operators included in the survey by type of service.

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