POST- OG TELETILSYNET
Norwegian Post and
Telecommunications Authority

The Norwegian Telecommunications Market

The year to 30th June 2004

Published 27 September 2004

-First Half Year 2004

The Norwegian Telecommunications Market
First Half Year 2004

1. INTRODUCTION

This is the fourth half-year report from the Norwegian Post and Telecommunications Authority (NPT) on the Norwegian telecommunications market. The half-year report has a more restricted scope than the annual report. The aim of this report is to show the most important trends in the telecommunications market.

2. OPERATORS SCENE AND REGULATION

2.1 Important events in the telecommunications market during the first half of 2004.

IP Telephony
The first commercial offerings of IP telephony on the residential market were launched in 2004. Providers of IP telephony can be divided into two main groups, broadband providers who offer IP telephony on their own broadband access facilities and the independent operators who offer IP telephony to ‘all’ broadband customers regardless of which broadband provider the customer has. In addition there is a range of free solutions for telephony over the internet. Examples of such services are MSN Messenger and Skype. These solutions can only be used through a PC and the user is not given an ‘ordinary’ telephone number as a user of these services. The free services require the end-user to be logged on while the telephone service is being used.

NPT has registered the following operators as active providers of IP telephony as at 30 June 2004:

Actitel
Austevoll Kraftlag
HardangerNettAS
Haugaland Kraft AS
Lyse Tele AS
Salten Bredbånd
Sandefjord bredband KF
Svorka Aksess AS
Telio AS
Trollfjord Bredbånd AS

In addition NPT is aware that other providers have started up or plan to start up since July.

Broadband
The energy industry is investing in broadband. The energy companies are local, so to provide national coverage a number of companies have decided to work together. The industry has formalised its cooperation in the Bredbåndsalliansen (the ‘Broadband Alliance’). In addition work is going on to create a broadband exchange on the pattern of the Power Exchange. Here transport capacity would be sold and bought between the operators.

Both demand and supply for broadband subscriptions is increasing rapidly. At the end of June 2004 NPT had registered 116 active broadband operators. This is 39 more operators than at the end of 2003. Prices are continually being forced down and, as at 30 June, 23 out of every 100 households had broadband subscriptions.

During the course of the first half of 2004 Catch has bought up the broadband operator BlueCom, and Telenor is trying to buy Tiscali.

UMTS
No commercial UMTS (Universal Mobile Telecommunications System) services have been launched.
Telenor has not opened access to the UMTS network for end-users. Instead the company has announced that it will do this by the end of the year.
NetCom has not opened access for UMTS either. NetCom has announced that it will offer UMTS from March 2005.
3 (Tre) has not started developing UMTS in Norway and it is not clear when they will launch services.

2.2 Important NPT undertakings in the first half of 2004

Telepriser.no
During June there were almost 66,000 hits at telepriser.no. This is the highest number of hits per month registered since the website was launched in August 2002. A new version of "telepriser" was introduced on 23 June this year and interest in the site was particularly strong in the last week of June. During the holiday month of July the number of visitors was 46,042. This is also much higher than for a 'normal' month.

Working party for the establishment of a new Brukerklagenemnd (User Complaints Board)
Since autumn 2003 NPT has been participating in a working party with the Ministry of Transport and Communications (SD), the Ministry of Children and Family Affairs, the Consumer Council of Norway and the Telecommunications Complaints Board concerning the establishment of a new user complaints board. The User Complaints Board is to replace the Telecommunications Complaints Board. The User Complaints Board is to ensure that users have the opportunity to complain about providers' services in: fixed line telephony, mobile telephony, internet access, transmission capacity, directory enquiries, telephone directories, public pay telephones and services to users with special needs. The User Complaints Board is to deal with complaints concerning: quality, invoicing and inadequate service offerings. The User Complaints Board is secondary, so a user must first complain to the provider and if this does not lead to a solution, the user may complain to the Board. Private users and companies with a staff of up to 10 may complain to the User Complaints Board.

Guideline case handling time limits for complaints
The Transport and Communications Committee has asked SD to prepare guideline case handling time limits for the various complaint bodies to achieve reduction in the time taken to deal with cases. SD established a working party consisting of representatives from SD and NPT. In its work the working party has considered the requirements of proper case handling against the need for a rapid decision in complaint cases. The party

will put forward proposals that a guideline time limit be established for handling complaint cases from when NPT receives the complaint to when SD makes a final decision. In addition rules will be proposed for time limit breaks in special cases, and that the parties are notified of those cases where there is a risk that the limit will be significantly exceeded.

Registration of pre-paid cards
In a letter dated 28 January 2004, NPT clarified the duty on all providers of mobile telephone services to register all end-users, including pre-paid card customers. The providers were invited to report whether they were carrying out such registration, or to put forward plans for how quickly registration could be implemented. On the basis of the reports received and subsequent dialogue with several of the providers, on 25 August 2004 NPT conducted a meeting with the providers of mobile telephone services and representatives from Økokrim (the Norwegian National Authority for Investigation and Prosecution of Economic and Environmental Crime), the Oslo Police and the Norwegian Police Directorate to discuss how the end-user registration requirement could best be implemented. On the basis of the matters put forward at the meeting NPT is currently working on preparing requirements for implementation of the registration obligation. NPT aims inter alia to set firm time limits by which the providers are to register all new and existing customers.

Requirements for the use of written authorisation
The requirements of the Ecom Regulations for written authorisation for re-selling subscriptions, § 2-2, carrying out carrier pre-selection, § 3-3, and number portability, § 3-6, came into force on 1 June 2004.
The rules will improve legal protection for consumers in a market in which to a considerable extent the telecommunications companies' telephone sellers have established new customer relationships against the wishes of the customers. NPT has created guidelines to be met for an authorisation to be regarded as a written authorisation in accordance with the Ecom Regulations. There are requirements for content, for how it may be given and for how the operators are to document agreements concluded. NPT accepts the use of SMS and email in addition to physical writing and facsimile.

Domain names
Following consultation and assessment by NPT, Norid and Norpol in December 2003 it was decided to allow registration of domain names in the .no domains with the necessary letters for the official Norwegian written languages, i.e. the special characters used in Bokmål, Nynorsk, Nordsamisk, Sørsamisk and Lulesamisk, a total of 23 new characters, including æ, ø and å. At the same time it was decided to raise the ceiling for registration per organisation from 15 to 20 domain names. Norid started to accept applications for domain names with the new characters on 9 February 2004. A draw was carried out under NPT's aegis between applicants asking for the same domain name, following the model used during liberalisation in 2001. The draw was carried out on 16 February 2004. During the period 9 - 16 February over 30,000 applications came in. The most sought-after domain names were båt.no, øl.no and vær.no.

3. SUBSCRIPTIONS

3.1 Fixed telephony

Figure 1 shows the development in subscriptions for fixed line telephones (PSTN, ISDN, telephony using cable TV and IP telephony). Since 1996 there has been a fall in the number of subscriptions. The drop in PSTN subscriptions was particularly sharp earlier but has decreased somewhat since 2001. For the first half of 2004 there is also a reduction in ISDN subscriptions. Altogether there were almost 81,000 fewer subscriptions in July 2004 than in July 2003.

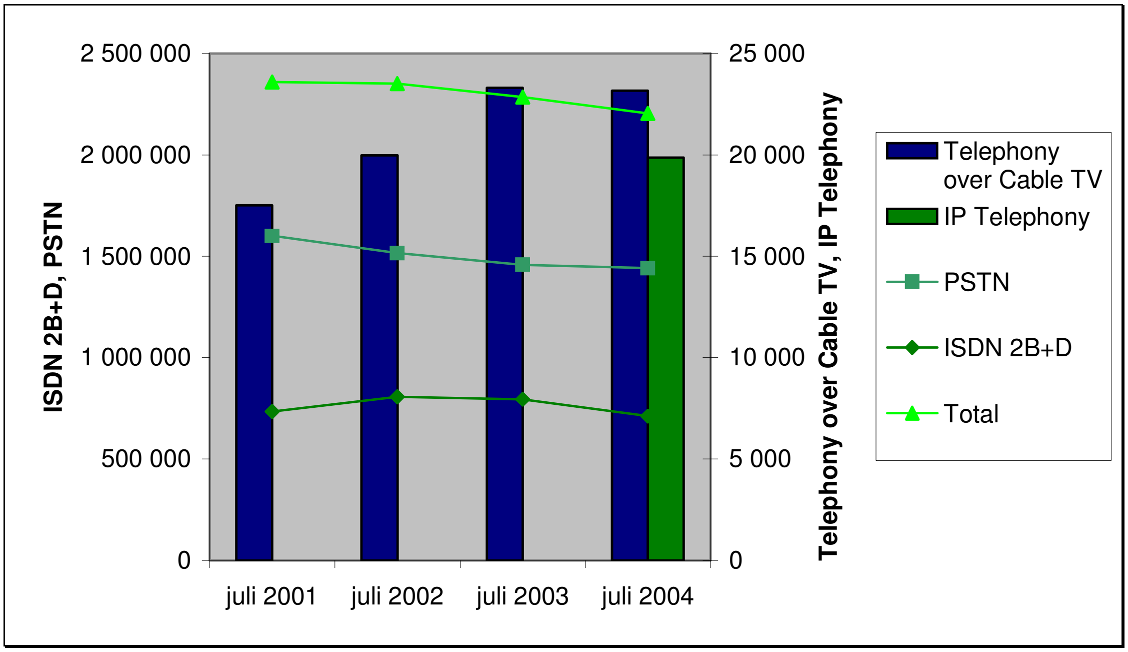

Figure 1. The number of subscriptions for fixed telephony

In addition to PSTN and ISDN, as at 30 June 2004 there were 23,155 telephony subscriptions via cable TV and 19,858 subscriptions based on IP telephony. IP telephony was launched during the first half of 2004 and is already outstripping subscriptions via cable TV.

Table 1 shows that the number of telephone subscriptions has fallen since 2001 and there has been a major reduction during the last two periods. In total about 15 out of every 100 households was without a fixed line telephone at the end of June 2004.

Penetration of fixed telephony	**July 2001**	**July 2002**	**July 2003**	**July 2004**
Subscriptions per 100 inhabitants	52.3	52.0	50.3	48.4
Subscriptions per 100 households	91.6	90.0	87.8	84.8

Table 1 Distribution of fixed telephony measured against the number of inhabitants.

Carrier selection using a prefix and carrier pre-selection were introduced in 1998 and 1999 respectively. Carrier selection makes it possible for operators without subscription networks to offer fixed telephony. Many customers chose to change provider, but in the second half of 2001 the number of subscriptions with carrier selection fell. Enitel was one of the operators with carrier pre-selection. The company went bankrupt in the autumn of 2001. Much of the decline was caused by Enitel's bankruptcy. In July 2001 carrier pre-selection made up as much as 24.5 per cent of all subscriptions for fixed line telephones, whilst the proportion one year later was only 19 per cent.

Telenor launched resale of subscriptions in 2003. Resale means that Telenor sells via dealers. As at 30 June 2004, 246,026 (12.2 per cent) of PSTN and ISDN subscriptions were invoiced to end users by companies other than Telenor. The figure below shows that a total of 25.3 per cent of all fixed telephony subscribers are customers of companies other than Telenor. Of these 12.2 per cent had both carrier pre-selection and resold subscriptions, 1 per cent had IP telephony, 1 per cent had telephony via cable TV and 11.2 per cent had only carrier pre-selection.

The reasons why ever more users choose alternatives other than Telenor may be the continuous growth in operators, better visibility of end-user prices through for example the telepriser.no service, as well as greater price competition than hitherto. Over the last half year the number of fixed network subscriptions was reduced by 3.5 per cent, whilst the number of customers with companies other than Telenor grew by 2.6 per cent.

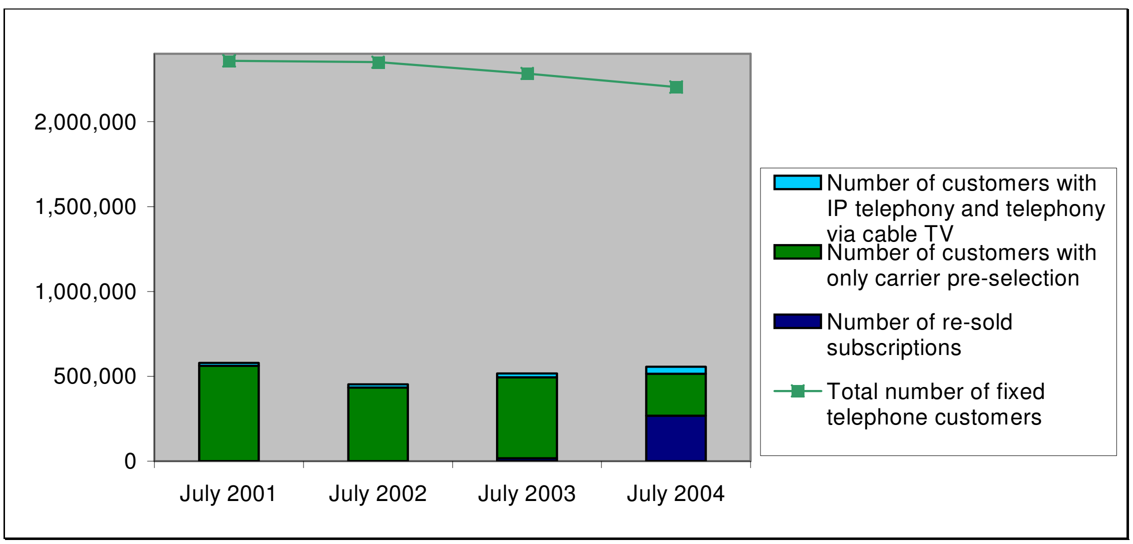

Figure 2. Subscriptions with carrier pre-selection in relation to the total number of subscriptions.

3.2 Mobile telephony

During the first half of 2002 the growth in pre-paid cards and mobile telephone subscriptions was 8.1 per cent compared to the first half of 2001, whilst during the same period of the following year it went down to 6.3 per cent. Somewhat surprisingly the growth rate increased to 9.3 per cent for the first half of 2004. Post-paid subscriptions provided almost the whole of this growth.

Over the last half year the proportion of pre-paid cards dropped from 44 to 41 per cent. Part of the reason for this may have been the arrival of offers of subscriptions without standing monthly fees. Additionally, these subscriptions have lower call and SMS prices than pre-paid cards. Such subscriptions obviously appeal to a large proportion of the pre-paid card segment.

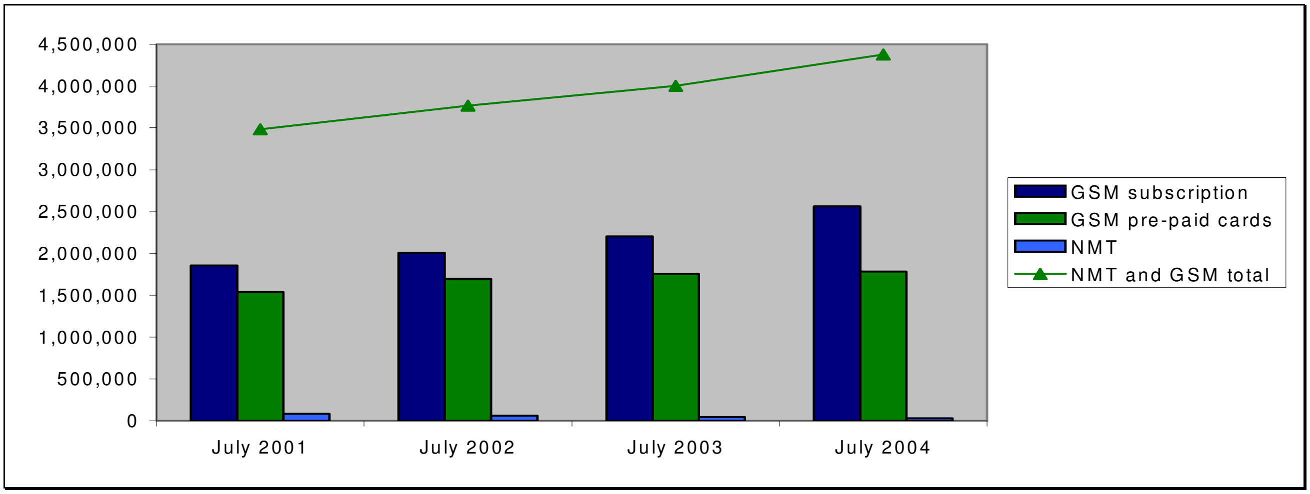

Figure 3. The number of mobile telephone subscriptions, pre-paid cards, and NMT subscriptions

Figure 3 shows that the total number of mobile telephone subscriptions (pre-paid cards and post-paid subscriptions) in Norway is now 4.376 million, or 96 per 100 inhabitants as Table 2 shows. Of these subscriptions 73,063 are used for alarms, control systems and other non-voice call applications. Furthermore some subscribers have two or more mobile telephone subscriptions (according to Norsk Gallup more than 10 per cent have two or more subscriptions). The actual distribution is therefore somewhat lower than 96 per cent.

	July 2001	July 2002	July 2003	July 2004
Subscriptions per 100 inhabitants	77	83	88	96

Table 2. Distribution of mobile telephones in relation to the number of inhabitants

3.3 Leased lines (transmission capacity)

Leased lines have a wide range of applications, such as, for example:
- Connection of local networks for operations with geographically separate locations
- Data transmission for points of sale with payment terminals
- Transmission of broadcasting signals
- Production of public telephony services, the internet, data services and value-added services

The number of leased lines has fallen since 2001. From 2002 the number of digital connections has also been reduced. The reason for this is probably that more companies have chosen to go over to xDSL subscriptions instead of leased lines.

In some circumstances there is no need for the high service quality that leased lines provide. xDSL is much cheaper than leased lines, and SHDSL, like leased lines, provides the same speed in each direction. The reduction in leased lines is greatest for speeds below 2 Mbits/s. This is the speed range that xDSL covers.

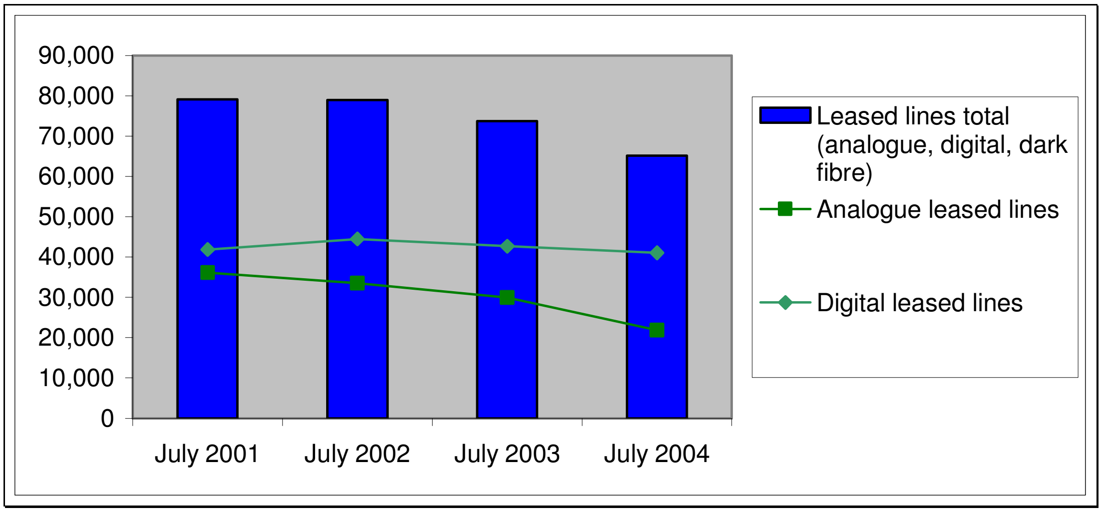

Figure 4 Leased lines, quantity

In Table 3 all leased lines for the first half of 2004 are shown distributed according to capacity, sales and the telecommunications sector's purchase of capacity. The difference between 'provision of leased lines' and 'the telecommunications sector's leasing of transmission capacity' constitutes direct provision of capacity to business customers outside the telecommunications sector.

	1. Supplies of transmission capacity	2. Telecommunications sector's leasing of transmission capacity
Telephone type 3.1 kHz	21,869	324
Under 64 kbit/s	1,497	34
64 kbit/s	3,089	2,173
Over 64 kbit/s, under 2 Mbit/s	18,546	8,698
2 Mbit/s (2048 kbit/s)	14,297	4,875
Over 2 Mbit/s, under 34 Mbit/s	1,927	133
34 Mbit/s	781	372
Over 34 Mbit/s, under 140 Mbit/s	442	84
140/155 Mbit/s	436	216
Over 155 Mbit/s	28	9
Dark fibre	2,220	220
Total	**65,132**	**17,138**

Table 3. The number of sold and bought analogue and digital leased lines, all connection lengths

3.4 Broadband

The most used types of internet connection besides dial-up connections are:

- xDSL (mainly ADSL)
- Internet via cable TV (cable modem)
- Fixed access
- Radio access
- Broadband over fibre-optics

In total there were just under 517,000 broadband subscriptions at the end of June 2004. This is an increase of 239,000 compared to the previous year.

xDSL was launched towards the end of 2000 and is the type of broadband that has grown the most in volume. At the end of the first half of 2004 there was a total of 413,272 xDSL subscriptions, a growth of 200,000 since the same period in 2003. 8 out of 10 broadband subscriptions are now on xDSL.

Internet via cable TV is provided mainly by UPC and Telenor. This is a service that has been offered since 2000 and had strong growth up until the launch of xDSL. However cable TV networks with broadband capacity are less widespread geographically than xDSL. As at 1 July there was a total of 80,497 broadband subscriptions based on cable TV, an increase of 16,225 since the first half of 2003.

Another broadband option is fixed access vis leased lines. This is a relatively expensive service that is aimed at the business market. However there are also private customers with this type of fixed access. As at 1 July 2004, 2,222 fixed access facilities were registered.

During the first half of 2004 the number of broadband access facilities provided through fibre-optics and radio has increased. At the end of June 11,827 customers had broadband through fibre-optics and 9,013 customers had broadband through radio access. In addition 419 public WLAN zones (IP zones) were reported.

At the end of the first half of 2003 there were 810,479 internet subscriptions with dial-up internet. Of these 416,500 had what are known as free subscriptions without a fixed monthly charge and 393,979 had paid subscriptions.

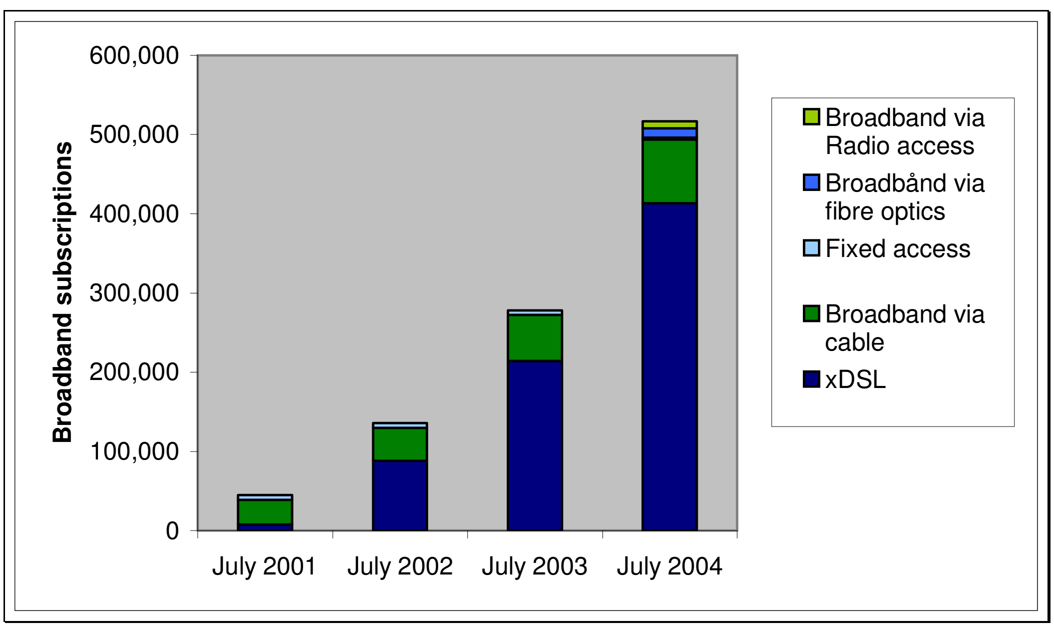

Figure 5 Broadband subscriptions, fixed access, xDSL and connection via cable TV network

In the residential market 466,200 broadband subscriptions are reported. This means that about 23 out of each 100 Norwegian households had broadband as at 1 July 2004 (see Table 4).

	July 2002	July 2003	July 2004
Broadband subscriptions per 100 households	6.2	12.7	23.3

Table 4. Distribution of broadband

4. TRAFFIC

For fixed line telephones, traffic is almost invariably time-metered traffic. In mobile telephony there is also considerable SMS traffic, which is charged per message. The traffic figures for fixed telephony and mobile telephony include dial-up internet and voice calls.

4.1 Fixed telephony

Figure 6 shows that time-metered traffic from the fixed network has been falling since 2001. There may be several reasons for the fall. There has been a significant migration from dial-up internet to broadband. Such subscriptions do not have time-metering. The mobile telephone may have replaced some of the fixed-line telephone traffic. Message services and services such as GPRS may also have replaced some of the traffic.

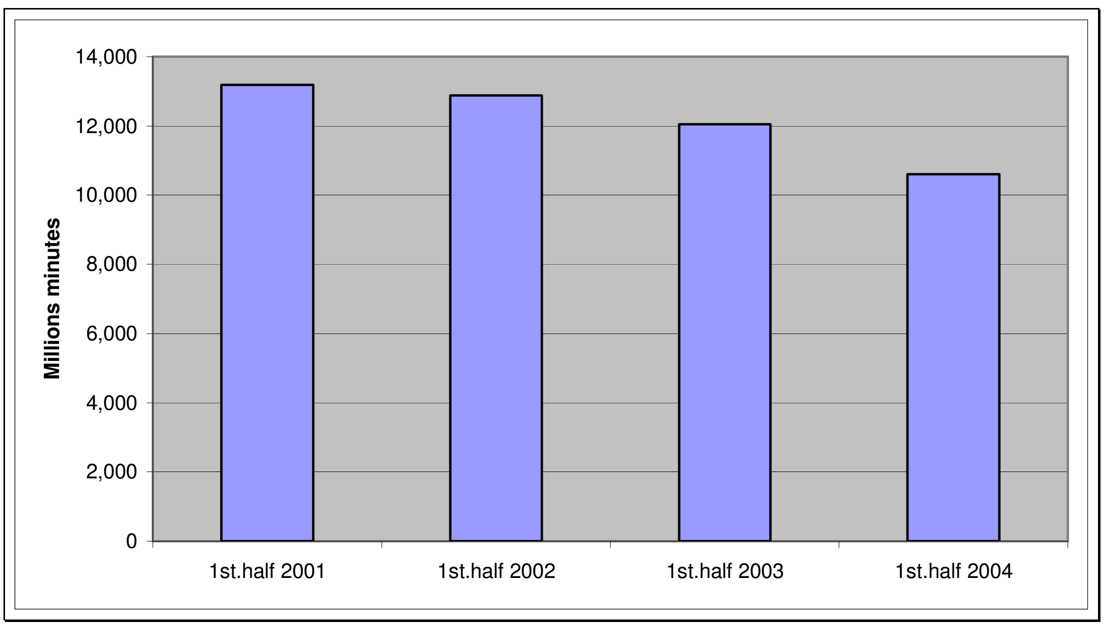

Figure 6. Traffic volume from fixed-line telephones

Figure 7 shows that the traffic from fixed networks to fixed networks and from fixed networks to mobile networks and internationally decreased both for the residential and business markets during the first half of 2004. Previously the traffic to mobile telephones and internationally has increased.

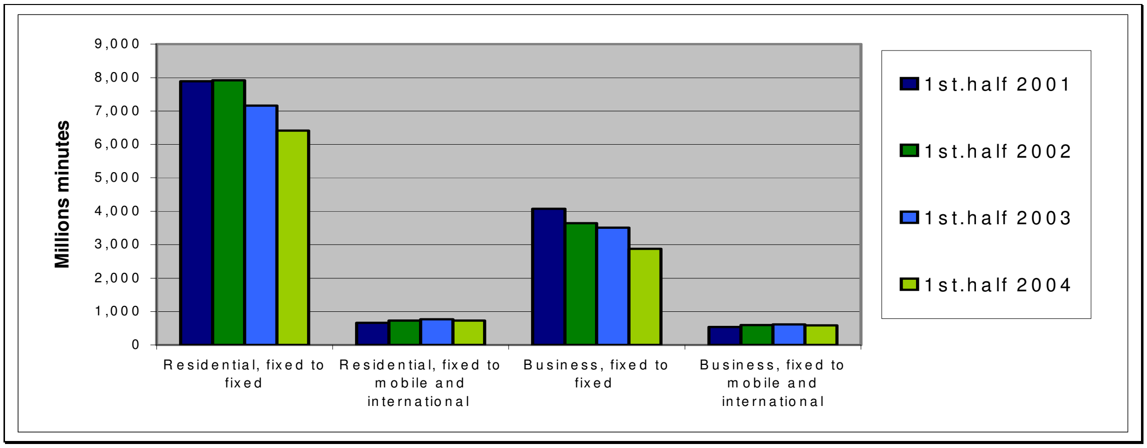

Figure 7. Traffic from fixed networks to fixed networks, mobile networks and internationally. Residential and business markets

4.2 Mobile telephony

During the first half of 2004, mobile originated traffic has increased by 19 per cent in comparison to the first half of 2003. For comparison, growth from the first half of 2002 to the first half of 2003 was 14 per cent. 66 per cent of the mobile telephone traffic terminates in mobile networks.

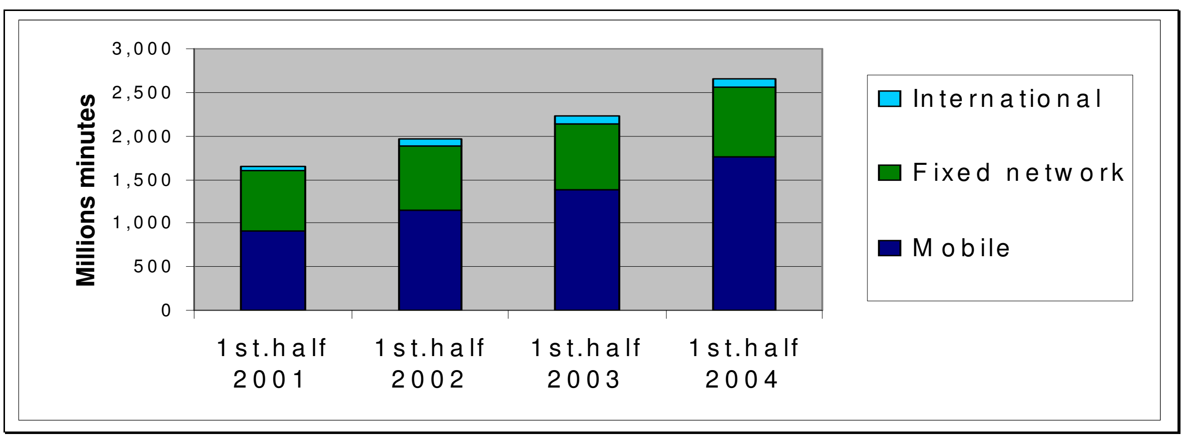

Figure 8. Traffic from mobile telephones to fixed networks, mobile telephones and internationally.

Figure 9 shows the development of SMS, commercial content messages (ringing tones, logos, SMS chat etc.) and MMS. MMS was launched in the first half of 2003.

Commercial content messages represent an ever increasing proportion of message traffic. During the first half of 2004 content messages represented 15 per cent of messages, almost double the figure for the same period in 2003. The price of an SMS varies from NOK 0.44 to NOK 0.69 depending on the type of subscription. The price of a content message may be from NOK 3 to NOK 30, depending upon which service is used or bought. The increased use of content services gives the operators and the content suppliers higher revenues than ordinary SMS traffic.

In total mobile telephone customers sent 28 per cent more messages (commercial content messages and SMS) during the first half of 2004 than the first half of 2003. SMS usage alone increased by 16 per cent, whilst the number of content messages increased by 160 per cent.

In total Norwegian mobile telephone customers sent 1.7 billion SMS messages and 312 million content messages during the first half of 2004. The same figures for the first half of 2003 were 1.47 billion and 120 million respectively. Mobile telephone customers also sent 26 million MMS during the first half of 2004, compared with 1.6 million during the first half of 2003.

On average Norwegian mobile telephone customers sent 82 messages per month, of which 68 were SMS, 13 were content messages and 1 was an MMS. In total this was 13 more messages than in the first half of 2003.

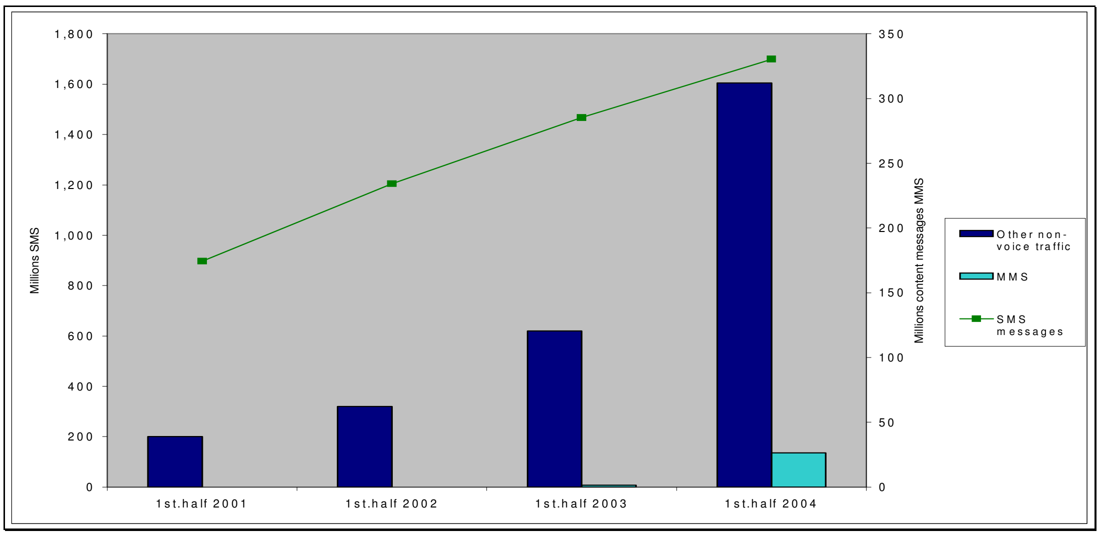

Figure 9. SMS and MMS from mobile telephones

4.3 Total traffic

Mobile telephone traffic represents a relatively small part of the total time-metered traffic but it is growing rapidly. During the first half of 2002 mobile telephone originated traffic represented 13.2 per cent of the total traffic from fixed and mobile telephones, whilst in the first half of 2003 it represented 15.6 per cent. For the first half of 2004 mobile telephone originated traffic represented 20 per cent of total traffic.

Mobile telephone originated traffic helped to increase total traffic (fixed networks and mobile) somewhat from the first half of 2001 to the first half of 2002. Since then however the fall in fixed network traffic has been so great that the mobile telephone traffic has not made up for the reduction. Despite a 19 per cent increase in mobile telephone originated traffic, total traffic fell by 7 per cent compared to the first half of 2003. In comparison the reduction from the first half of 2002 to the first half of 2003 was 4 per cent.

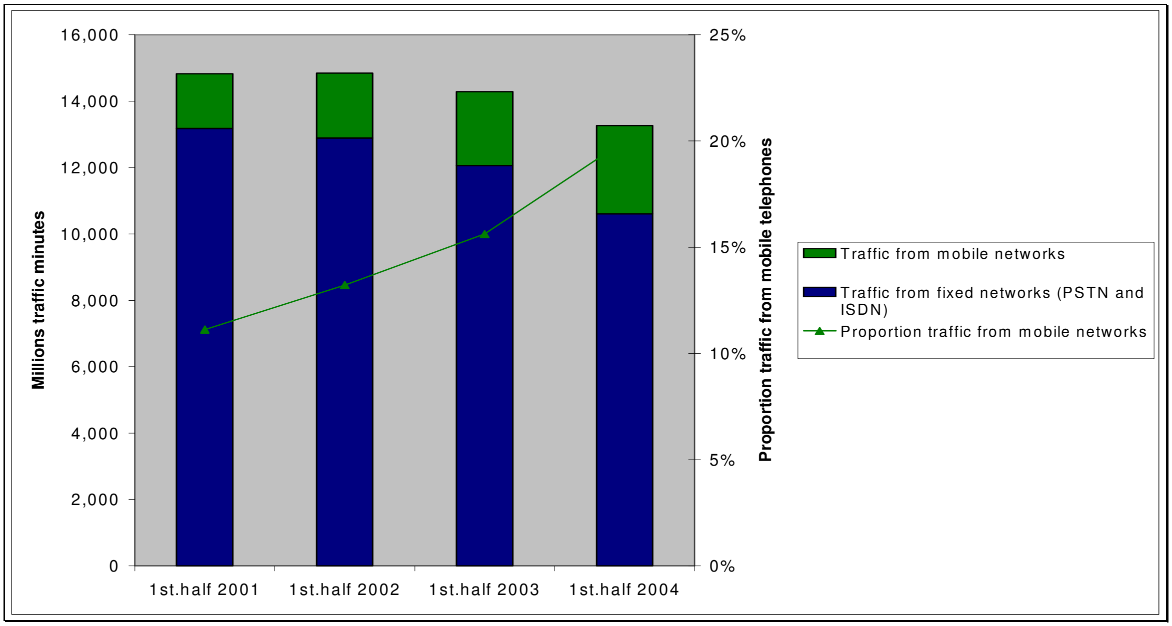

Figure 10. Total traffic volume from fixed networks and mobile networks

5. TURNOVER

5.1 Fixed telephony

Figure 11 shows the turnover for fixed line telephones distributed by traffic routings and subscriptions. In total, turnover fell by five per cent from NOK 6.051 billion to NOK 5.715 billion from the first half of 2003 to the first half of 2004. The figure below shows that it is mainly traffic between fixed telephones domestically that has contributed to the drop.

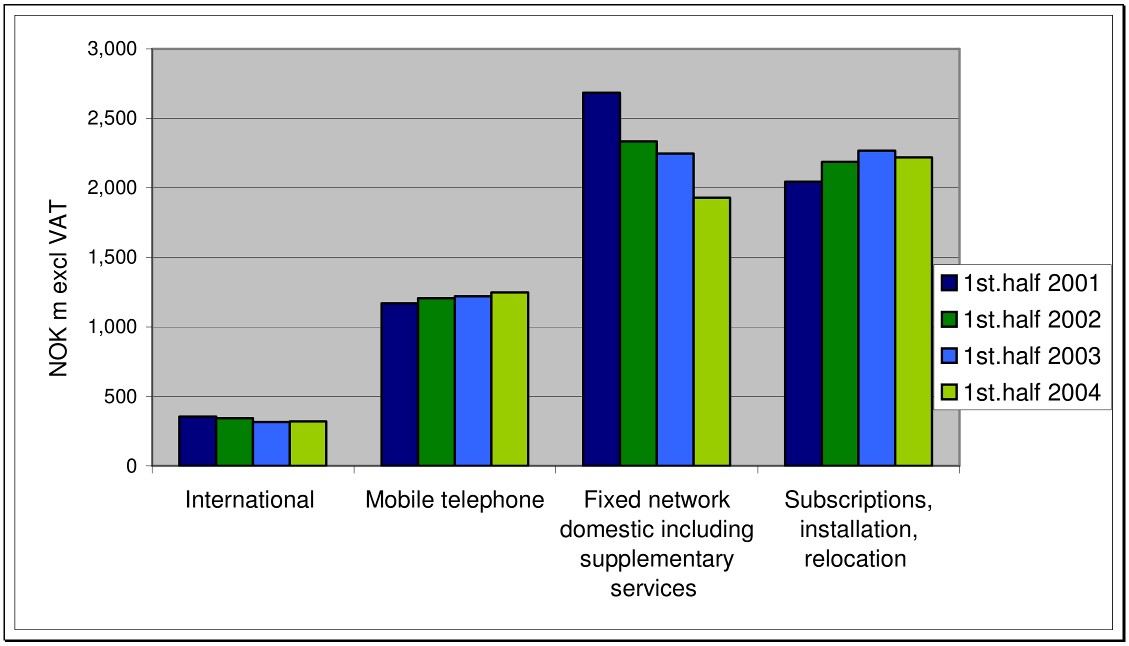

Figure 11. Turnover for fixed telephony for different traffic routings, subscriptions and supplementary services.

The total turnover for fixed telephony fell by 5 per cent compared to the first half of 2003. The fall in turnover is a result of a reduction in revenues from both residential and business customers. Revenues from corporate customers were reduced by NOK 159 million and the turnover from residential customers was reduced by NOK 176 million.

NOK m. excl. VAT	1st.half 2001	1st.half 2002	1st.half 2003	1st.half 2004
Business market	2265	2197	2079	1920
Residential market	3986	3872	3971	3795
Total	**6,251**	**6,069**	**6,051**	**5,715**

Table 5. Turnover for telephony in the residential and business markets

5.2 Mobile telephony

Recent years have been characterized by major growth in turnover from mobile telephony. In total, revenues from traffic, subscriptions, SMS and supplementary services increased by 8.4 per cent during the first half of 2004 compared with the same period in 2003. Growth was greatest for time-metered traffic, which increased by 13 per cent. Despite a continuing strong increase in SMS traffic, SMS revenues fell by 12 per cent compared to the first half of 2003. This was a result of price reductions.

Turnover on mobile services increased by NOK 462 million compared to the first half of 2003. Of this, revenues from SMS have gone from 19 to 15 per cent from the first half of 2003 to the first half of 2004, whilst revenues from voice traffic have increased from 56 to 59 per cent during the same period.

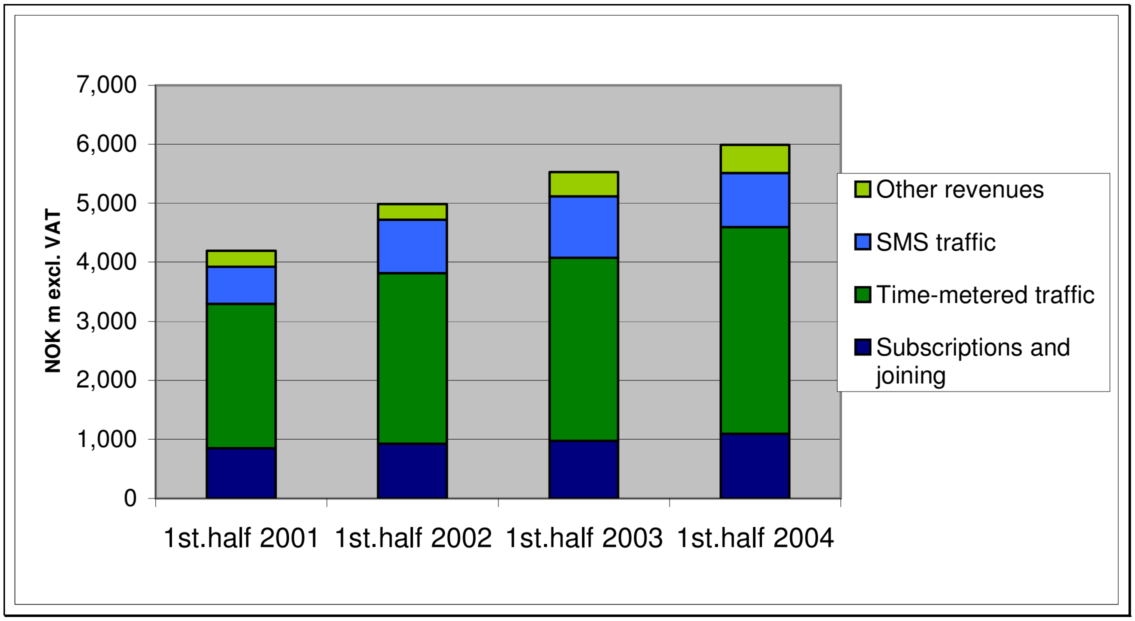

Figure 12. Turnover for mobile telephony and SMS

5.3 Leased lines (transmission capacity)

The total turnover value for transmission capacity was NOK 783 million for the first half of 2004. This is a fall of NOK 36 million from the first half of 2003. The whole reduction is for digital links with speeds of less than 2 Mbit/s and analogue links. For speeds in excess of 2 Mbit/s turnover increased by NOK 24 million.

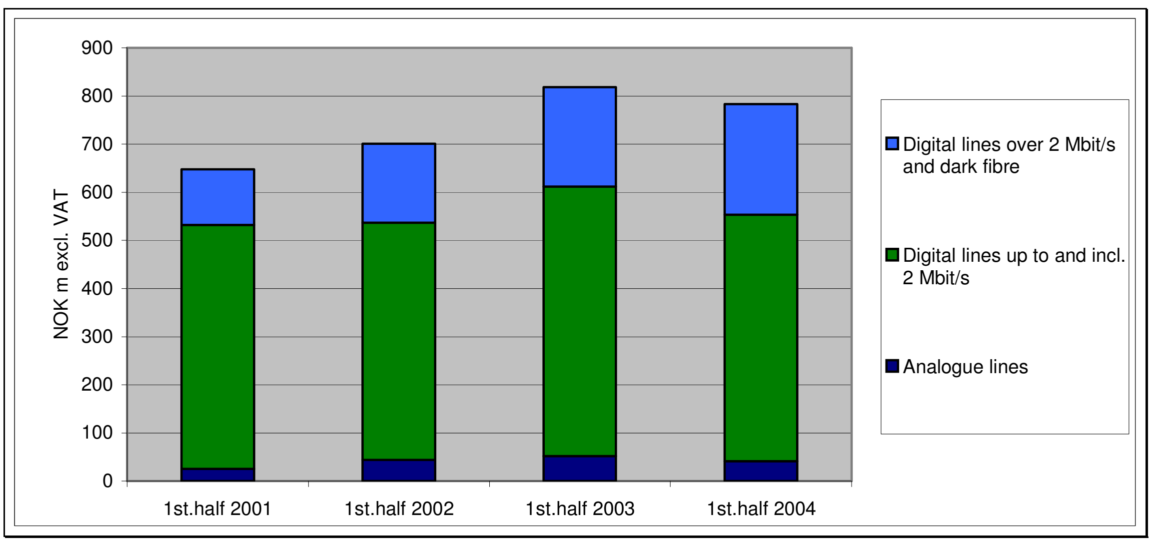

Figure 13. Turnover of transmission capacity

Table 6 is probably not entirely complete because of under-reporting of purchasing. The table shows that there is significant leasing of capacity within the sector. We consider the figures for the sale of transmission capacity to be reliable.

1,000 NOK, excl. VAT	Sale of capacity	Purchase of capacity
Telephone type 3.1 kHz	36,906	800
Other analogue	4,706	0
<64 kbit/s	8,840	135
64 kbit/s	29,544	17,084
>64 kbit/s, <2 Mbit/s	201,782	104,447
2 Mbit/s (2048 kbit/s)	271,342	78,210
34 Mbit/s	57,949	20,064
140/155 Mbit/s	61,021	26,526
Over 155 Mbit/s	9,434	9,109
Other over 2 Mbit/s	57,265	23,562
Dark fibre	44,544	13,036
Total	**783,332**	**292,973**

Table 6. Sales of transmission capacity

5.4 Internet

In total, turnover of internet subscriptions was NOK 1.481 billion for the first half of 2004. Of this, broadband services represented NOK 1.346 billion, whilst dial-up internet represented NOK 135 million.

Broadband revenues increased by NOK 583 million from the first half of 2003. 70 per cent (NOK 1,040 million) of this broadband turnover came from xDSL. During the first half of 2003 xDSL represented 58 per cent of total broadband revenues.

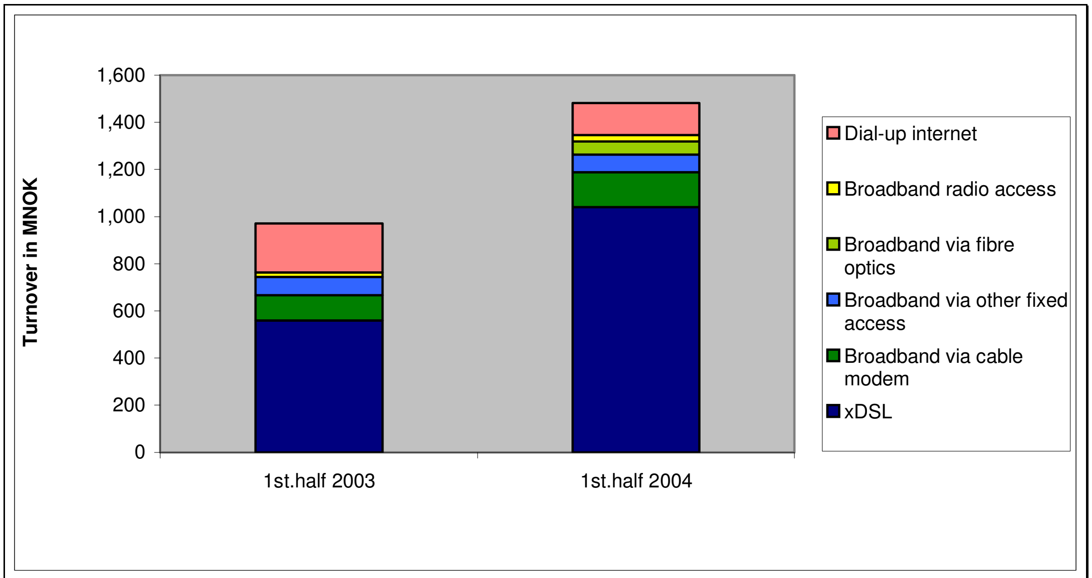

Figure 14. Turnover of internet services, NOK million excl. VAT.[1]

5.5 Total turnover in the telecommunications sector

Table 7 shows the development of turnover in fixed telephony, mobile telephony, leased lines and internet access. Data services do not form part of the information that NPT collects for the half-year statistics and are therefore omitted here.

Total turnover has increased by 3.6 per cent since the first half of 2003. For comparison, the increase from the first half of 2002 to the first half of 2003 was 6.2 per cent. Turnover for fixed telephony and leased lines has gone down by 5.5 and 4.3 per cent respectively. Turnover for internet access has increased by 40 per cent, whilst turnover from mobile telephony has increased by 8.4 per cent.

Table 7 also shows that turnover from mobile telephony is now greater than for fixed telephony. For the first half of 2004 turnover from mobile telephony made up 43 per cent of the total turnover, whilst fixed telephony represented 41 per cent. Turnover from internet access has gone up from 7 to 10 per cent, whilst turnover from leased lines made up 6 per cent of the combined turnover both for the first half of 2003 and the first half of 2004.

[1] Revenues for dial-up internet comprise the actual subscription price. For broadband the revenues comprise subscription and set-up revenues.

	1st.half 2002	1st.half 2003	1st.half 2004
Fixed telephony	6,069	6,051	5,715
Mobile telephony	4,988	5,529	5,991
Leased lines	701	819	783
Internet	827	970	1,481
Total	12,585	13,368	13,970

Table 7. Total turnover for telephony, leased lines and internet, NOK 1000 excl. VAT.

6. MARKET SHARES

6.1 Fixed telephony

Figure 15 shows Telenor's shares of traffic and turnover in a total traffic market of NOK 3.258 billion in the first half of 2004. The total turnover was NOK 5.715 billion.

Part of the reason why Telenor's share of total turnover has fallen is because increasingly its competitors invoice the customers for subscriptions themselves.

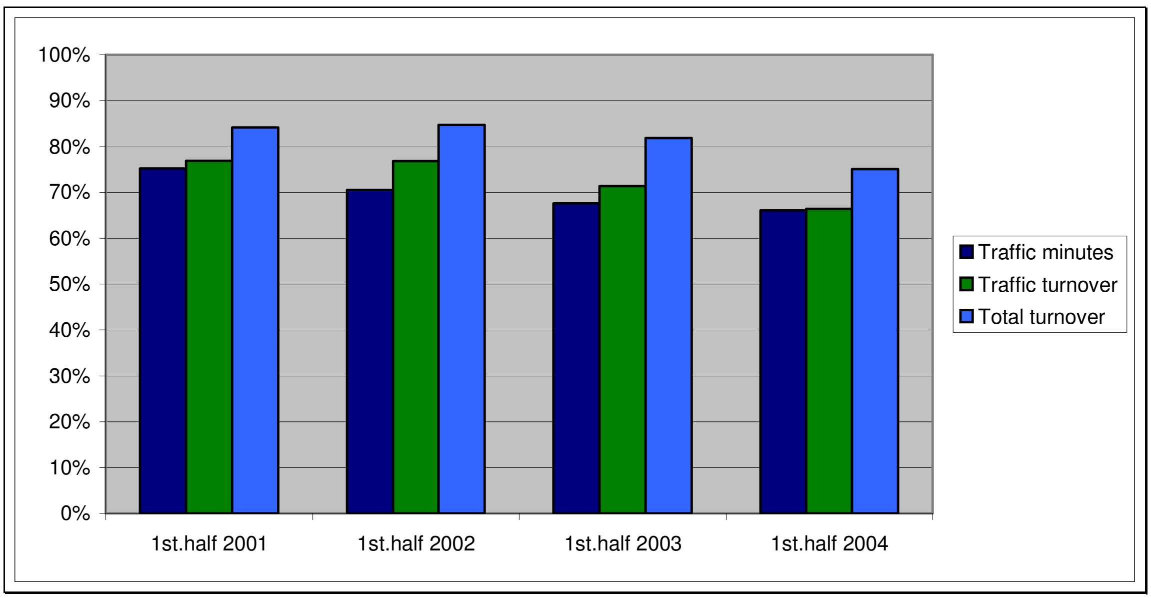

Figure 15. Telenor's market share of traffic and turnover

Table 8 shows the operators' shares of traffic and turnover. Telenor and Tele2 continue to lose shares to the smaller operators. Fix Telecom is the operator with the greatest growth in its market share.

	Traffic			Turnover		
	1st.half 2002	1st.half 2003	1st.half 2004	1st.half 2002	1st.half 2003	1st.half 2004
Telenor	70.6 %	67.6 %	66.0 %	76.9 %	71.4 %	66.4 %
Tele2	17.1 %	16.8 %	15.4 %	10.9 %	12.1 %	11.8 %
Ventelo	3.0 %	3.4 %	4.2 %	3.5 %	4.2 %	5.2 %
Fix Telecom	-	1.4 %	2.1 %	-	1.6 %	3.4 %
TDC	1.0 %	1.4 %	1.8 %	1.7 %	1.8 %	2.9 %
Other	8.4 %	10.8 %	12.5 %	7.1 %	10.5 %	13.7 %

Table 8. The operators' shares of traffic and traffic turnover

6.2 Mobile telephony

Telenor and NetCom have their own mobile networks. In addition there is a range of service suppliers who re-sell subscriptions and traffic based on Telenor's and NetCom's mobile networks. These do not have their own infrastructure or their own base stations, and they buy network services from the network operators.

Figure 16 shows the development of market shares for the two network operators and the smaller service providers. The figure shows that both NetCom and Telenor Mobil are losing share to the smaller challengers.

Telenor and NetCom had a combined share of 88 per cent of the subscriptions at the first half of 2003. Earlier this had been at 89 per cent, but for the first half of 2004 it went down to 84 per cent.

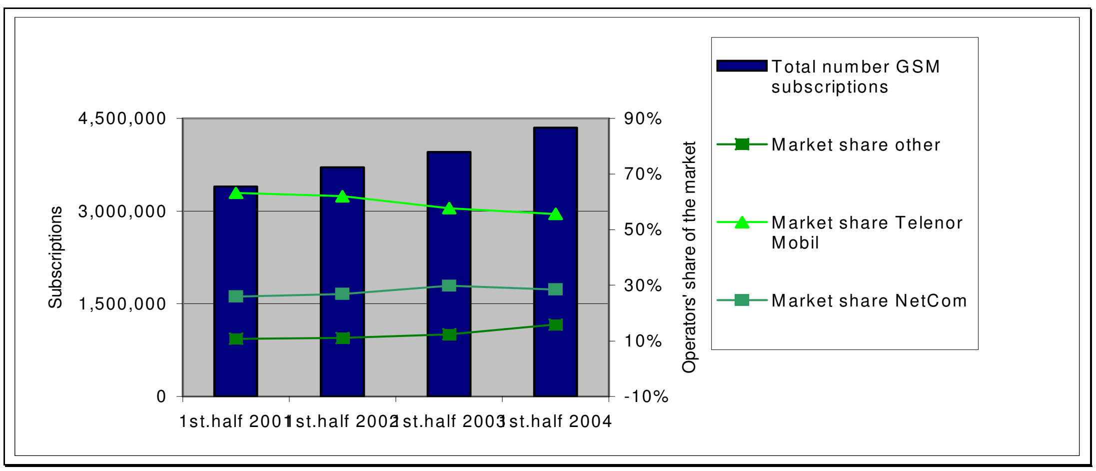

Figure 16. Telenor Mobil's and NetCom's subscribers in the end-user market, market shares in the end-user market.

Table 9 shows the providers' shares of the end-user market for the first half of 2004.

	Telenor	NetCom	Sense	Tele2	Chess	Other	Total
Subscriptions	55.7 %	28.5 %	5.9 %	3.9 %	2.7 %	3.5 %	100.0 %
Traffic minutes	59.9 %	25.1 %	3.5 %	3.4 %	3.3 %	4.7 %	100.0 %
SMS messages	54.8 %	28.3 %	5.2 %	3.7 %	4.9 %	3.1 %	100.0 %
Revenues	54.4 %	29.0 %	5.0 %	3.9 %	3.1 %	4.6 %	100.0 %

Table 9. Market shares in the end-user market for mobile telephony in the first half of 2004

6.3 Leased lines (transmission capacity)

Telenor has a virtual monopoly in the sale of analogue leased lines. Telenor's share of the market in digital leased lines has previously been dropping, both for speeds of less than 2 Mbit/s and over 2 Mbit/s. However, for the first half of 2004 Telenor has increased its shares of both of these markets.

Telenor's biggest competitors include BaneTele, Song, Tele Danmark, BKK and Utfors.

	1st.half 2001	1st.half 2002	1st.half 2003	1st.half 2004
Analogue lines	100%	100%	100%	91%
Digital lines up to/incl 2 Mbit/s	83%	78%	61%	68%
Digital lines over 2 Mbit/s and dark fibre	36%	35%	32%	33%
Total	75%	70%	56%	58%

Table 10. Telenor's share of the market for leased lines

6.4 Internet

Telenor is still the biggest in the ISP market. Telenor's turnover figures include dial-up internet, xDSL, cable modem and WLAN. The figures from Tele2 include dial-up internet and xDSL. NextGenTel provides only xDSL, whilst UPC provides broadband through cable TV. BlueCom, Tiscali and Tele2 re-sell xDSL for Telenor, whilst NextGenTel and UPC are expanding themselves.

Figure 17 below shows the operators' shares of the total broadband customers. Catch has bought out BlueCom, but this is not taken into account in the figure.

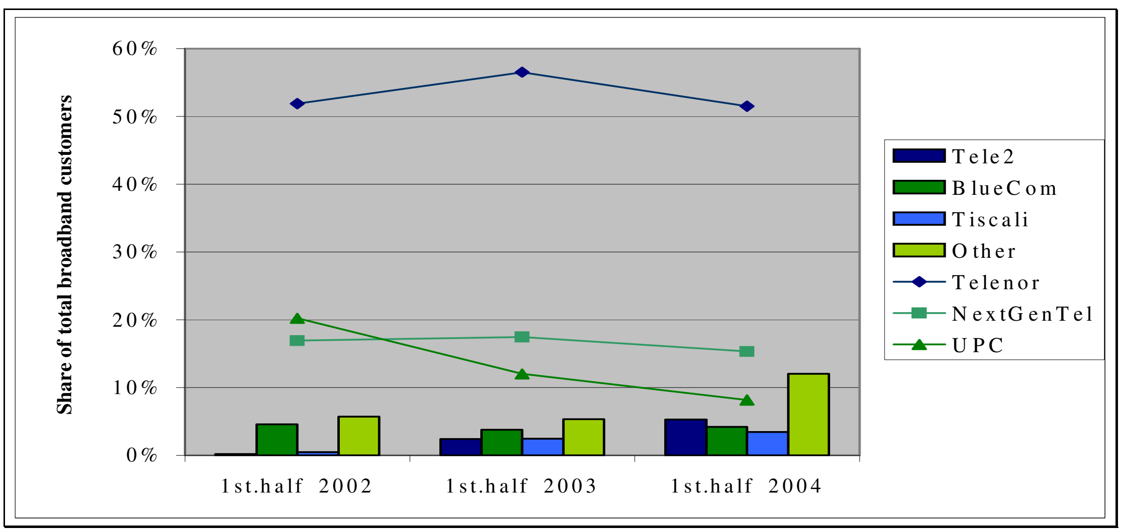

Figure 17. The operators' shares of the total broadband customers

7. INTERNATIONAL COMPARISONS

The comparisons we have made are based on what are known as OECD baskets, which are meant to represent a given use of telephones or mobile telephones, with a certain number of calls/call minutes to domestic fixed networks, to mobile telephones and abroad. In the comparisons below the price for this combination of a number of calls and minutes is given in USD inclusive of VAT (exclusive of VAT for the business market). They are corrected for differences in purchasing power (PPP - Purchasing Power Parity) and termed USD/PPP. Prices for leased lines apply to three types but are otherwise calculated in USD, corrected for differences in purchasing power

7.1 Fixed telephony

Figures 18 and 19 depict what fixed telephony costs for residential and business customers respectively. Compared to May 2003, Norway remains in eighth place in the ranking for the residential market. In the business market Norway has gone from second place to sixth place.

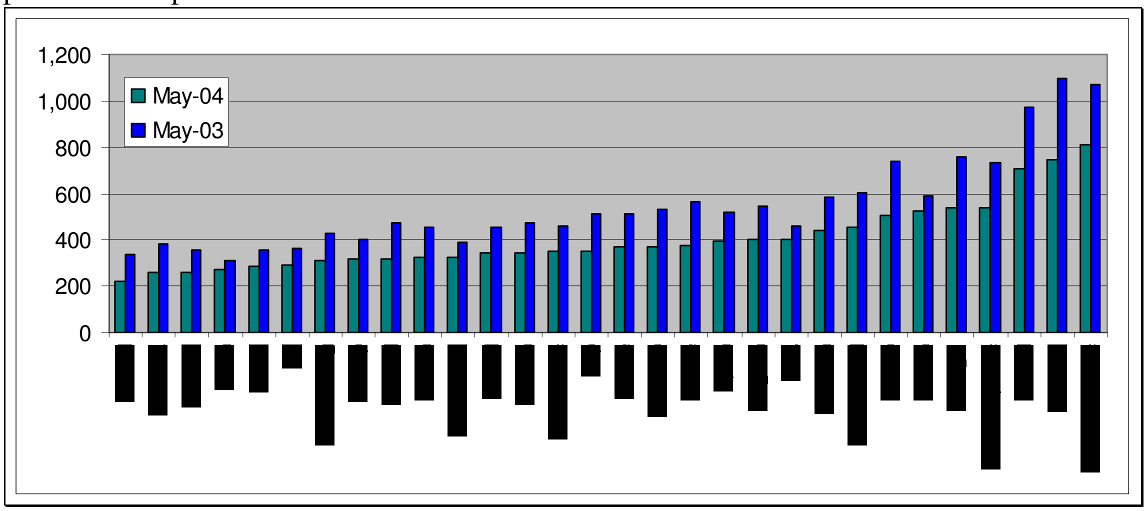

Figure 18. Annual costs of fixed telephony for residential customers in OECD countries, including VAT, May 2003 and May 2004 in USD, adjusted for differences in purchasing power.

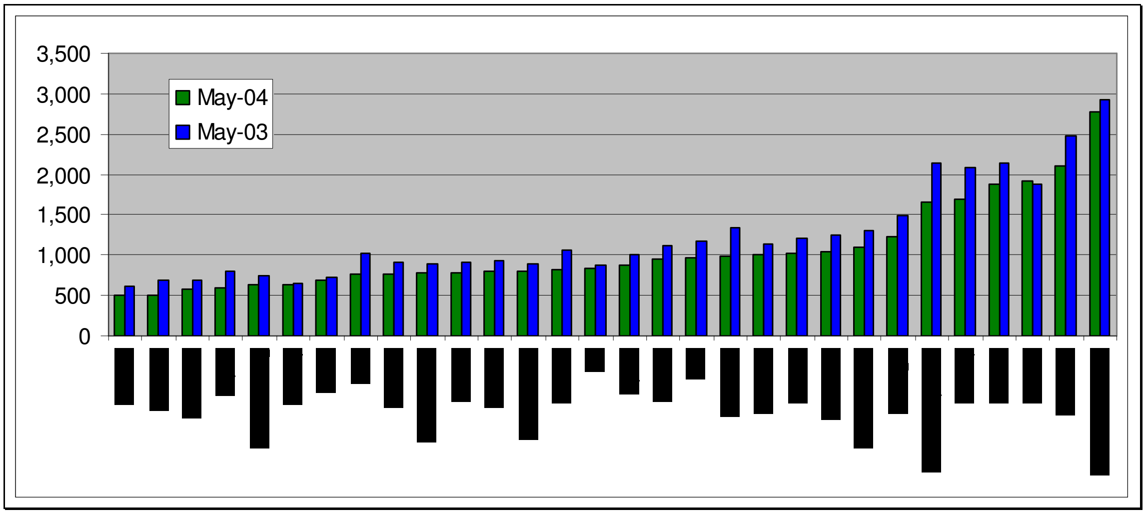

Figure 19. Annual costs for fixed telephony for business customers in OECD countries, excluding VAT, May 2003 and May 2004 in USD, adjusted for differences in purchasing power.

7.2 Mobile telephony

Since August 2002 the OECD has used different definitions from those used previously. There are also different types of subscription from those used previously. Previously Teligen used the categories 'residential' [private] and 'business', whilst now the terms used are 'light use', 'average use' and 'heavy use'. Both pre-paid cards and post-paid subscriptions are included. There can be several operators and several subscriptions for each country. In the overviews below the cheapest subscription for each country has been selected.

For the light use category Norway goes from seventh to tenth place. For the average use category Norway goes from eighth to ninth place, whilst for the heavy use category Norway goes from fifth to eighth place.

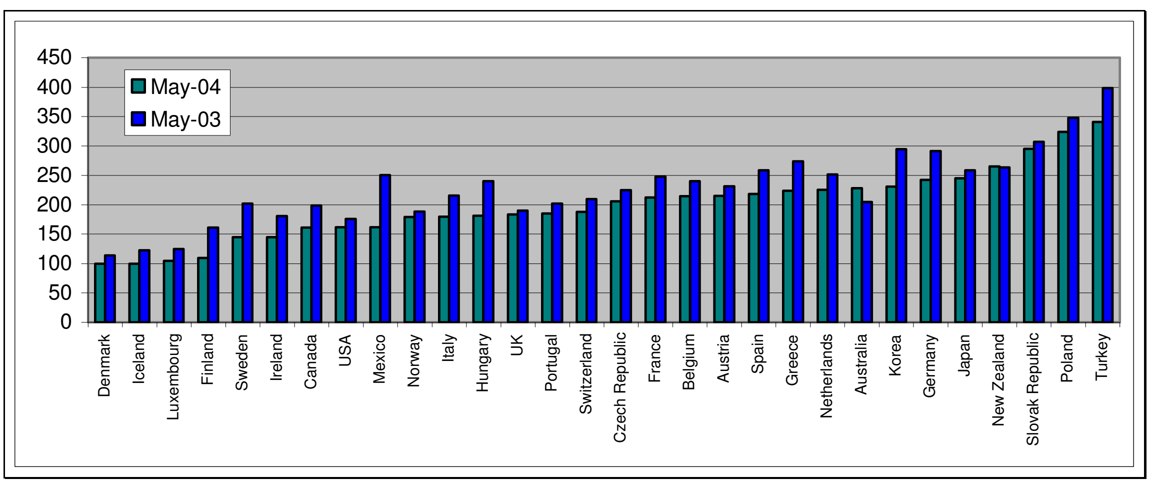

Figure 20. Annual costs of mobile telephony for customers with light use in OECD countries, including VAT, and the OECD average May 2003 and May 2004 in USD, adjusted for differences in purchasing power.

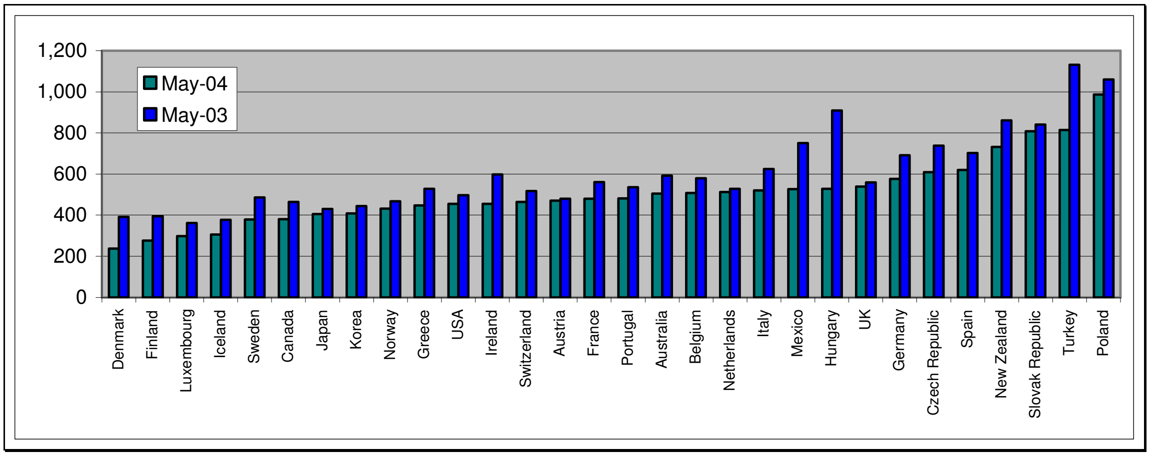

Figure 21. Annual costs of mobile telephony for customers with average use in OECD countries, including VAT, and the OECD average May 2003 and May 2004 in USD, adjusted for differences in purchasing power.

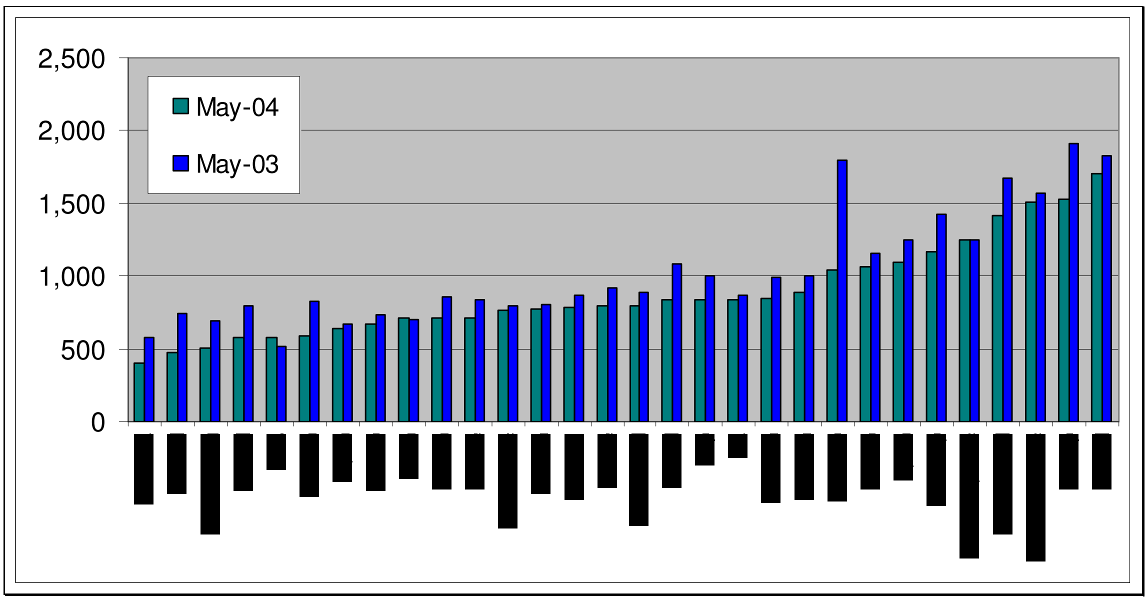

Figure 22. Annual costs of mobile telephony for customers with heavy use in OECD countries, including VAT, and the OECD average May 2003 and May 2004 in USD, adjusted for differences in purchasing power.

7.3 Leased lines (transmission capacity)

For leased lines the OECD basket represents national links at 64 kbit/s, two Mbit/s and analogue two-way M1020. All lines have a length of two kilometres. Norway was ranked third both in May 2003 and in May 2004.

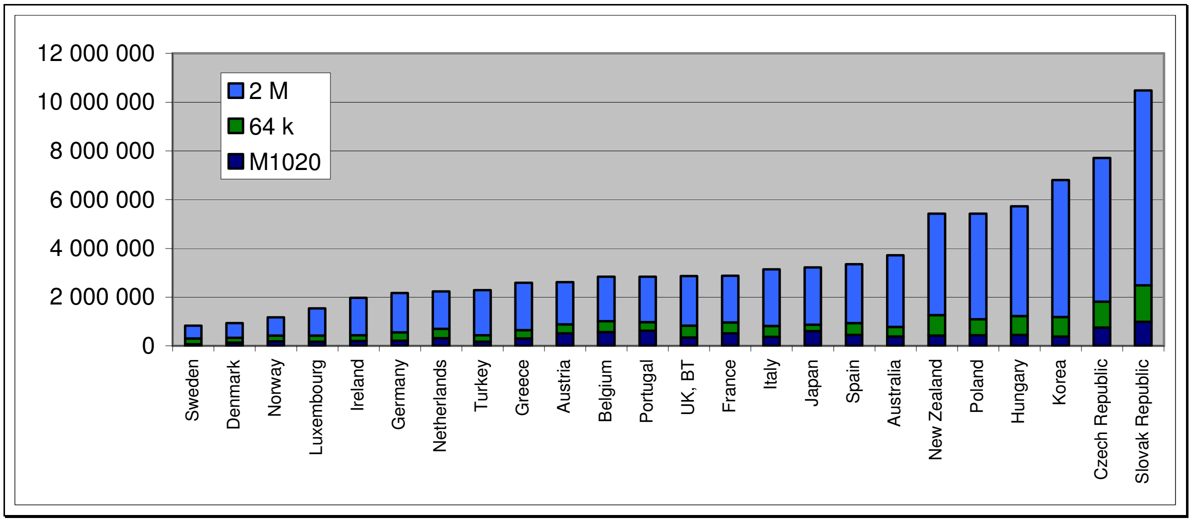

Figure 23. Annual costs of leased lines in OECD countries, excluding VAT, measured May 2003 in USD, adjusted for differences in purchasing power.

APPENDIX 1: OPERATIONAL PROVIDERS OF TELECOMMUNICATIONS SERVICES AS AT 30 JUNE 2004

At the end of June 2004 there were 144 active operators in the fixed telephony, mobile telephony, internet and leased lines areas. By comparison, at the end of 2003 there were 101 operators. It is particularly the internet area that has seen the most new providers. At the end of June 2004 NPT registered 116 internet providers, an increase of 39 operators in the last six months. NPT is also aware that a large number of operators are in the start-up phase.

The providers are shown in the overview on the next page.

	Fixed telephony	Mobile telephony	Internet	Leased lines		Fixed telephony	Mobile telephony	Internet	Leased lines	
ACN Norge AS	x	x			Modum Kabel-TV AS			x		
Actitel	x				Monet				x	
ADCom Data AS			x	x	MTU Link / EXO AS			x		
ADSL.no			x		Multinet AS			x		
Agder Breiband AS			x		NEAS Bredbånd	x		x		
Agder Telenett AS			x		NetCom GSM AS	x	x			
Austevoll Kraftlag BA	x		x		NetNet	x	x			
Axiti ASA	x	x	x	x	NetPower			x	x	
Ballangen Energi AS			x		Network Solutions Norway			x		
BaneTele			x	x	NextGenTel AS			x		
Bergen Nett og Media AS			x	x	Nord Troms Kraftlag			x		
BKK Bredbånd			x	x	Nordlysnett			x		
BlueCom			x	x	Nord-Trøndelag Energiverk Bredbånd			x	x	
Bredbåndsfabrikken	x		x		NorKom TV AS			x		
Brednett Solør AS			x		Norsk Familie Økonomi	x				
Brikken AS			x	x	Numedal Aksess AS			x	x	
Broadnet Norge AS			x	x	Online 4U AS			x		
Braathe AS			x		PC Support			x		
BS Mobil					PgOne	x	x			
Bykle Breiband			x		Port It ASA	x				
Catch Communications AS			x	x	Powertech Information Systems AS			x		
Chello AS /UPC Norge	x		x		Priority Telecom Norway AS	x		x	x	
Chess Communications AS		x			Prodoc Drift AS			x		
Combitel Networks AS	x	x	x		Radio Tele			x		
Company Solutions			x		Rbnet AS			x		
Consorte Group AS	x				Ringnett			x	x	
Dalane Breiband			x		Rælingen Kommune			x	x	
Danskerud Kabelnett			x		Salten Bredbånd AS	x		x		
Dataguard AS			x		Samnett AS			x	x	
Direct Connect AS			x		Sandefjord Bredbånd	x		x		
Easynet AS			x		Sea Norge	x				
Eidsiva Energi			x		Sense Communications		x			
Elektron AS / Nittedalsnettet			x		Sico Data AS			x		
Ella kommunikasjon AS			x	x	Skjellin Data AS			x		
ElTele Nord AS			x	x	Smartcall ASA	x		x		
Enivest AS			x		Sola Bredbånd			x	x	
Equant Norway AS	x		x	x	Song Networks AS	x		x	x	
Finmark Kabelservice AS			x		SSC Networks			x		
Finnmark Bredbånd AS			x		Start Network			x		
Firstmile			x		Sund Bredbånd AS			x		
Fix Telecom	x				Svorka Aksess	x		x		
Fjellnett AS			x		Symfonika AS	x	x			
FLINK.no			x		Sørfoldnett KF			x		
Freewave			x		Talkmore		x			
GaulaNett AS			x	x	TDC Norge AS / Tele Danmark AS	x		x	x	
Gigafib AS			x	x	Tele2 Norge AS	x	x	x		
Global Crossing					TeleGlobe Norge			x		
Halden.Net / Sarpsborg.Net			x		Teleman Nordang AS	x				
HardangerNett AS	x		x		Telenor AS	x	x	x	x	
Haugaland Kraft	x		x	x	Teletopia		x			
HemneNett as			x	x	Telinet Tele AS	x				
Hesbynett AS			x		Telio	x				
Hipercom			x	x	Tinncom	x	x	x		
Hålogaland Kraft			x	x	Tiscali			x		
iAksess AS			x		Totalnett AS			x	x	
Infonet Telecom AS			x		Trollfjord Bredbånd	x		x		
Infonett Røros AS			x		Tussa Telit			x		
IP Tele	x				Tussa24	x				
IqTele	x				Universal Telecom	x				
IT Connect			x	x	Utfors AS	x		x	x	
Jæren Kabelnett			x		Varanger Kraft AS			x		
Jølster Breiband			x		Ventelo Norge AS	x	x	x		
Kabel-tv AS Stjørdal			x		Viafon Norden	x				
Kragerø Energi			x	x	Vitnett			x		
Krøderen Elektro AS			x		WAN Norge AS			x	x	
Kvam Data AS			x		Webconnect / Vålernettet			x		
Kvamnet			x		Whitebird New Media AS			x		
Loqal			x		Worldcom AS/ MCI Worldcom					
Los As			x		You Communication AS		x			
Lyse Tele	x	x	x		Zet			x		
MCI Worldcom AS			x		Østlandsnett AS			x		
meg@sat AS			x	x	Årdalsnett			x		
					Active operators as at 30/6/2004	**42**	**17**	**116**	**36**	