

# **RTR** Telecom Monitor

COMPLETE EDITION 2006

# Contents

<b>Preface</b>	<b>3</b>
<b>1. General information</b>	<b>4</b>
<b>2. Fixed-link communications</b>	<b>5</b>
2.1. Retail revenues from access services	5
2.2. Retail revenues from carrier services	6
2.3. Number of fixed-link lines	7
2.4. Revenues from termination	7
2.5. Number of geographical numbers	8
2.6. Location-independent fixed-link telephone numbers and numbers for convergent services	9
2.7. Service numbers	10
2.8. Number porting	11
<b>3. Leased lines</b>	<b>12</b>
3.1. Number of domestic retail leased lines	12
3.2. Revenues from domestic retail leased lines	13
3.3. Revenues from domestic wholesale leased lines	13
<b>4. Mobile communications</b>	<b>15</b>
4.1. Total revenues from mobile communications	15
4.2. Call minutes on the retail market	16
4.3. Number of text messages	17
4.4. Number of SIM cards in use	18
4.5. Number of subscriber numbers in use	18
4.6. Number of mobile numbers ported	19
<b>5. Comparisons of fixed-link and mobile networks</b>	<b>20</b>
<b>6. Broadband</b>	<b>22</b>
6.1. Number of retail broadband connections	23
6.2. Number of wholesale broadband connections	24
6.3. Revenues from broadband connections	25
<b>7. Business indicators</b>	<b>26</b>
7.1. Investments	26
7.2. Number of employees	27

## Preface

With the first complete edition of the Telecom Monitor, RTR is pursuing its objective of providing the interested public with a periodic report of the most essential statistics and trends on Austria's communications markets. The main objective of this publication is to give the reader a compact, periodic description of quantitative indicators pertaining to communications. As a result, in designing the Telecom Monitor we have placed great emphasis on the temporal continuity and stability of the underlying data models. Overall, this new periodical report serves as a complement to RTR's extensive reporting activities for the sake of enhancing transparency, as previously established publications such as the Communications Report, newsletters and our specialist publication series focus specifically on qualitative information (i.e. text-oriented descriptions) in addition to market data.

This report also serves to fulfill the legal requirements of Art. 7 Par 2 of the Communications Survey Ordinance (KEV), which requires RTR to compile and publish (at least on the Internet) predefined statistics based on the data supplied by operators.

From this point onward, the Telecom Monitor will be published in two different forms:

- a quarterly, data-oriented report presenting key figures and content in a strictly defined format
- a complete annual edition (published toward the end of the year) in which specific areas are described in greater detail and which also makes it possible to address topics not fully covered in the quarterly reports.

We hope that our first full edition of the Telecom Monitor will make a valuable contribution to clarifying the rapid and dynamic developments in the communications industry as well as arousing your interest in future editions.

Vienna, December 2006

Georg Serentschy  
CEO Telecommunications

# 1. General information

This publication is structured according to the market definitions in the Telecommunications Markets Ordinance of 2003 (TKMVO 2003). As in the Communications Report and our market analysis procedures, we have placed great emphasis on depicting the horizontal and vertical interrelationships between individual markets as effectively as possible. At the same time, the requirements of the Communications Survey Ordinance (KEV) played an even more important role than the aforementioned market definitions in our selection of the topics covered. Therefore, this publication also regularly reports data on the retail mobile communications market, which is not actually regarded as relevant in the context of ex ante regulation as effective competition prevails on that market. The inclusion of statistics on personnel and investments in the telecommunications sector is not only intended to account for the growing importance of the sector to the overall economy, but also to point out the growth stimuli generated by this sector.

RTR has selected an early start date for the reporting period in order to allow meaningful statements on market developments, even in the first edition. Data is presented in aggregate form (Art. 1 KEV) in order to ensure that it is not possible to make inferences regarding the figures provided by individual operators.

In order to minimize data collection efforts for the operators, RTR selected a sample on the basis of Art. 4 Par. 1 KEV. According to the data available – which is based on a full survey of the last market analysis in each case (Art. 37 TKG 2003) – this provides a sufficiently representative picture of market conditions. Each sample is selected in such a way that it covers approximately 90% of the respective market. RTR then uses this sample as a basis for extrapolations regarding the overall population.

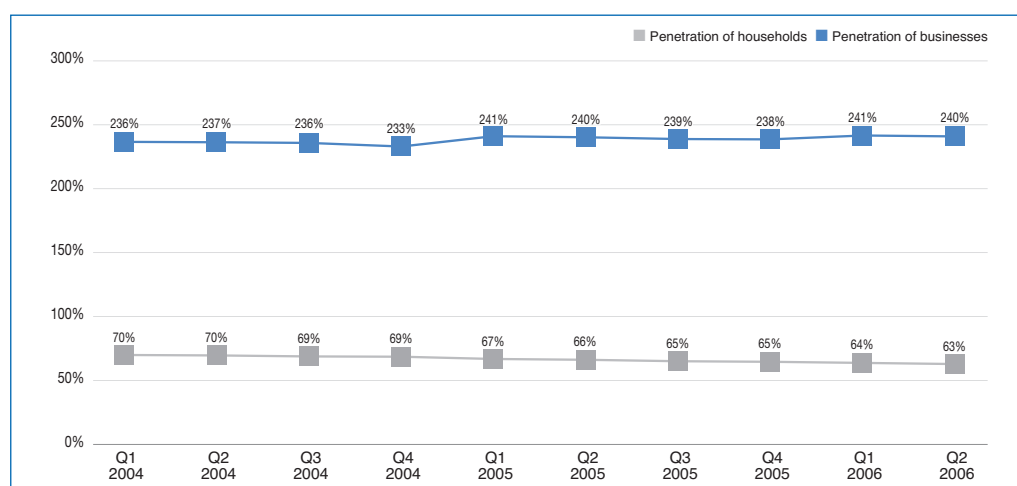
Deviations in data compared to previously published quarterly figures (such as those in the Communications Report) can be attributed to later corrections in data submitted by certain operators and to changes in the overall population (based on current operator surveys).

As for the structure of this report, selected statistics are depicted in charts based on quarterly data and also described in text form for each area.

In this context, Art. 7 Par. 2 KEV mentions the following specific areas: fixed-link telephony, mobile telephony, leased lines, broadband access, unbundling, ported telephone numbers and business indicators. Not all of the statistics in the section on business indicators are available on a quarterly basis. Accordingly, these figures are published once per year (during Q3) and primarily derived from company reports. Based on ongoing developments, other special topics are also envisaged. Such topics differ from the standardized descriptions in the level of detail and scope of data provided, as well as more extensive descriptions.

The figures shown in the sections below are collected on a quarterly basis. They represent totals for each quarter in the case of flow values (e.g., revenues), while the level at the end of each quarter is shown in the case of stock values (e.g., number of subscriber lines).

## 2. Fixed-link communications



**Figure 1: Fixed-link penetration**

Figure 1 compares the fixed-link penetration rates among households and businesses. The far higher penetration rate in businesses compared to households can be explained by the fact that businesses must have at least one fixed-link line in order to be reachable. In addition, many medium-sized and large enterprises also have more than one telephone line. This also manifests itself in the relatively constant penetration rate among businesses up to Q3 2005. The stable trend in the business sector's penetration rate is confirmed by the data from Q2 2006. In households, the fixed-link penetration rate shows a slightly declining trend.

The growing trend toward substitution by using mobile telephony has been decelerated or cushioned by the increase in residential broadband xDSL lines. Due to increasing demand for broadband services, this (slightly declining) trend can be expected to decelerate further in households in the future.

### 2.1. Retail revenues from access services

Retail revenues arising from access services include the base fees charged for public voice telephony services as well as charges for setting up subscriber lines. Base fees refer to revenues which are earned periodically and do not depend on the actual use of the subscriber line; they also include revenues from "bonus packages". These figures do not include billing revenues such as payment reminder charges, fees for the use of credit transfer slips, etc., or fees for broadband services (Internet). Setup fees for subscriber lines include those revenues earned from the setup, transfer and cancellation of subscriber lines for voice telephony. This figure also includes the administrative expenses and installation time charged to the customer.

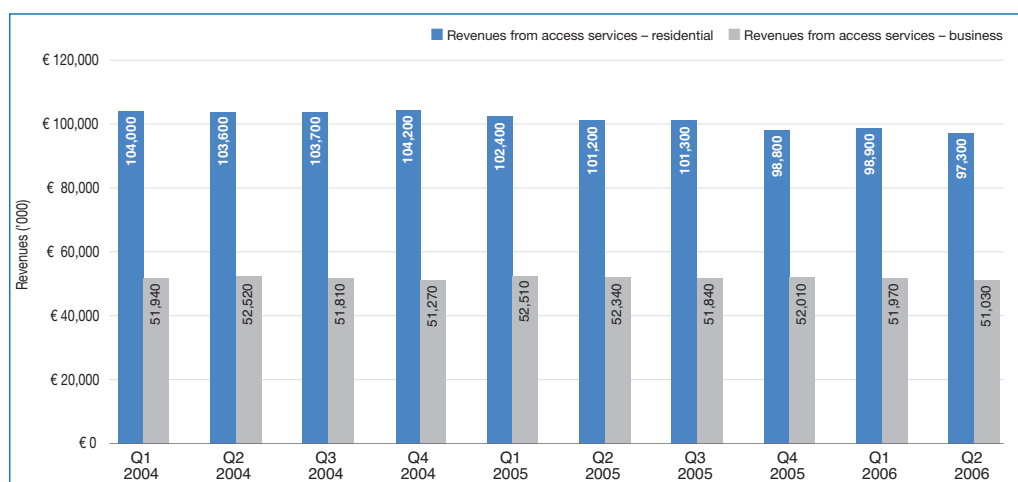


Figure 2: Revenues from access services

Figure 2 provides a breakdown of revenues into residential and business customers. The criteria used to differentiate residential and business customers are based on the definitions in Article 1 of the Austrian Consumer Protection Act (KSchG). Over the reporting period, revenues from access services dropped only slightly in the residential and business segments.



## 2.2. Retail revenues from carrier services

The retail revenues from carrier services shown in Figure 3 depend on the number of call minutes used (i.e., the quantity of traffic generated). The revenues shown include retail fees charged by operators for calls to the domestic fixed-link network (on-net and off-net), domestic mobile networks, international destinations, online services (dialup Internet) and service numbers (in the (0)800, (0)810, (0)820, (0)900, (0)930, etc. ranges and directory assistance). The corresponding wholesale revenues (cf. Section 4.4) are not included.

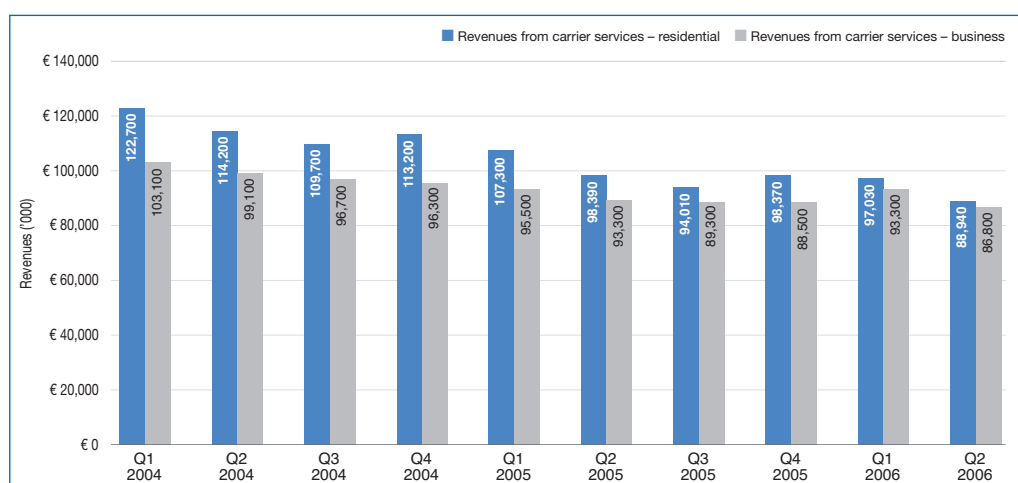


Figure 3: Revenues from carrier services

The general trend in revenues from call charges is slightly declining among residential and business customers alike. Among other things, this can be attributed to decreasing rates due to increasingly strong competition arising from the mobile sector.

In addition, the trend toward substitution using broadband services (Voice over Internet – Vol) is slowly but surely manifesting itself for certain call destinations (e.g., international calls).

If we compare the aggregate revenues from carrier services in the two customer segments for the year 2005 with the figures from the previous year, revenues declined by 13.4% in the residential customer segment and by 7.2% in the business customer segment. In the first half of 2006, these decreases only came to 9.6% for residential customers and 4.6% for business customers.

### 2.3. Number of fixed-link lines

Figure 4 indicates the overall number of fixed-link lines without accounting for the underlying infrastructure (e.g., [own] copper-wire pairs, coaxial cable, leased lines, fiber optics). These figures assign equal weight to POTS (plain old telephone service), ISDN and multi-ISDN lines.

While the number of subscriber lines has remained relatively stable among business customers, a slight decline can be observed among residential customers. Weighting according to line type – POTS (one call at a time), ISDN (two calls simultaneously) and multi-ISDN (up to three simultaneous calls) – would actually reveal a slightly positive trend among business customers, while the corresponding depiction of revenues (Figure 2) would show a slightly decreasing development.

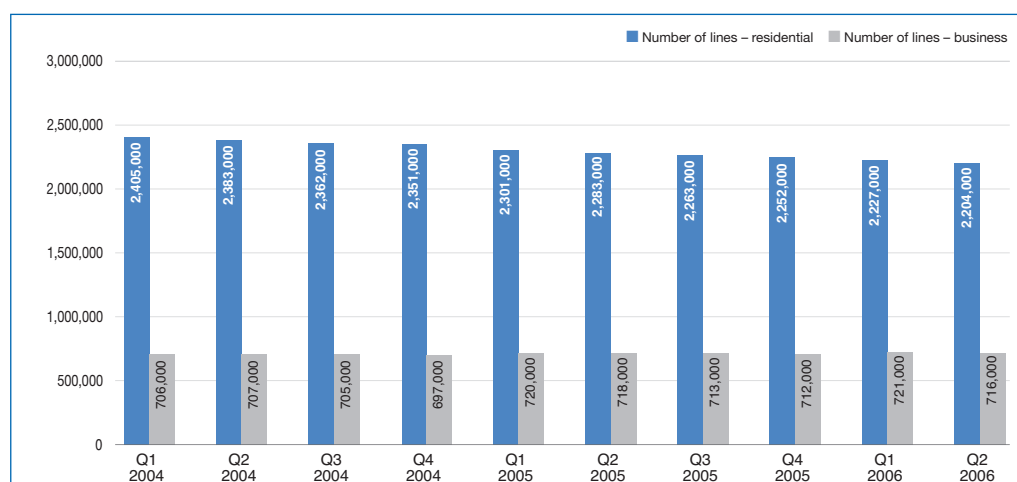


Figure 4: Number of fixed-link lines

### 2.4. Revenues from termination

Termination refers to the service of delivering calls in a telecommunications network. Revenues are earned in this area when a network operator routes a call from an external network to a subscriber connected to its own network. The service of termination is not provided for (or charged to) retail customers, but for other network operators at the wholesale

level. Figure 5 provides an overview of revenues from fixed-link termination services in Austria.

Termination revenues are subject to fairly high seasonal fluctuations. One striking development here is the increase in termination revenues to approximately EUR 18.2 million in Q4 2005. In Q3 2005, these revenues had reached their lowest level (about EUR 15.4 million) since 2004. Revenues from termination in the first half of 2006 were roughly equal to those earned during the same period in the previous year.

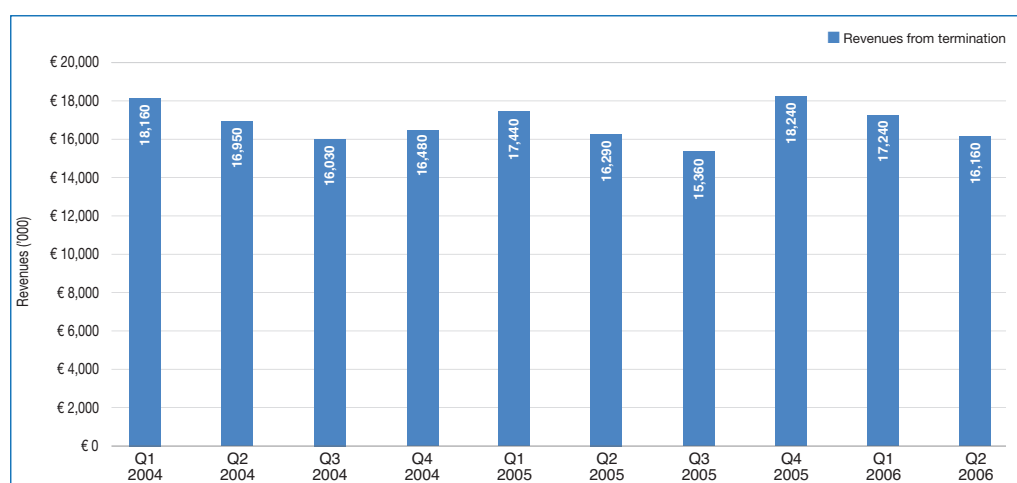


Figure 5: Revenues from termination

## 2.5. Number of geographical numbers

Geographical numbers are domestic telephone numbers which support the addressing of fixed physical network termination points (generally fixed-link lines) assigned to local networks, as well as the provision of public telephone services in fixed-link networks. As one line can be assigned multiple numbers, the number of geographical numbers is not identical to the number of fixed-link subscriber lines. Figure 6 shows the number of geographical

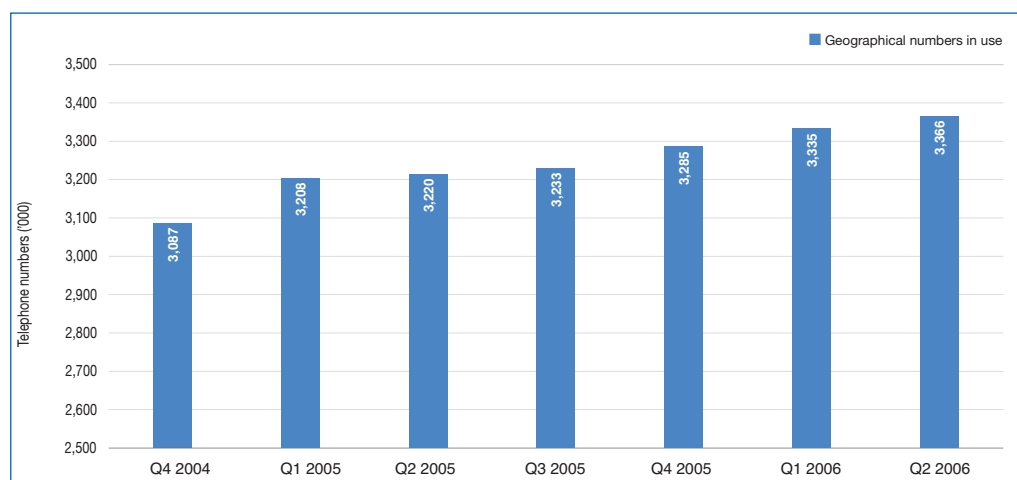


Figure 6: Geographical numbers in use



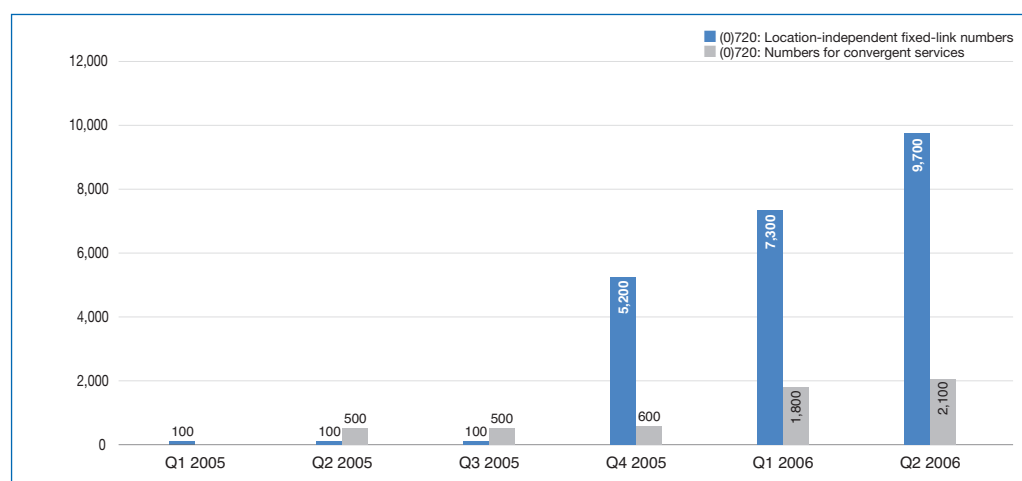
numbers in use on the basis of quarterly data. Due to an adjustment in the data model, a consistent time series is only available from Q4 2004 onward.

In contrast to the number of fixed-link lines, a slight increase can be observed in this context.

## 2.6. Location-independent fixed-link telephone numbers and numbers for convergent services

Location-independent fixed-link telephone numbers in the (0)720 range refer to domestic numbers which serve to address subscribers in connection with telephone services which enable subscribers to retain their telephone number regardless of location. Services offered in addition to public telephone services are permitted in this range.

The (0)780 number range is dedicated to innovative services, which may go far beyond mere voice communications and are realized using the ENUM system. ENUM makes it possible to map unique Internet domain names to telephone numbers; the retail customer can store a wide variety of contact information (e.g., e-mail addresses, fax numbers, SIP addresses) under such domains. This makes it possible to reach customers via telephone numbers on the Internet without requiring a "detour" through the telephone network. An ENUM entry is compulsory for each number in the (0)780 range.



**Figure 7: Location-independent fixed-link telephone numbers and numbers for convergent services**

As shown in Figure 7, the use of location-independent fixed-link telephone numbers and numbers for convergent services has increased sharply in the last year. This can be attributed mainly to the use of these numbers in connection with VoIP services.

These location-independent fixed-link telephone numbers were only introduced in the Communication Parameters, Fees and Value-Added Services Ordinance (KEM-V) in mid-2004. As a result, initial data on the use of these numbers has only been available since Q1 2005.



## 2.7. Service numbers

As regards service numbers, this section provides an overview of the use of toll-free services, services with regulated maximum prices and value-added services without price regulations. The charts below cover the following number ranges:

- (0)800 toll-free numbers
- (0)810 max. EUR 0.10 per minute or text message (SMS)
- (0)820 max. EUR 0.20 per minute or text message
- (0)821 max. EUR 0.20 per call or text message
- (0)828 text messages only; "standard" text message charges
- (0)900 max. EUR 3.64 per minute or max. EUR 10 per text message; erotic hotlines can not be offered in this number range
- (0)930 max. EUR 3.64 per minute or max. EUR 10 per text message; erotic hotlines.

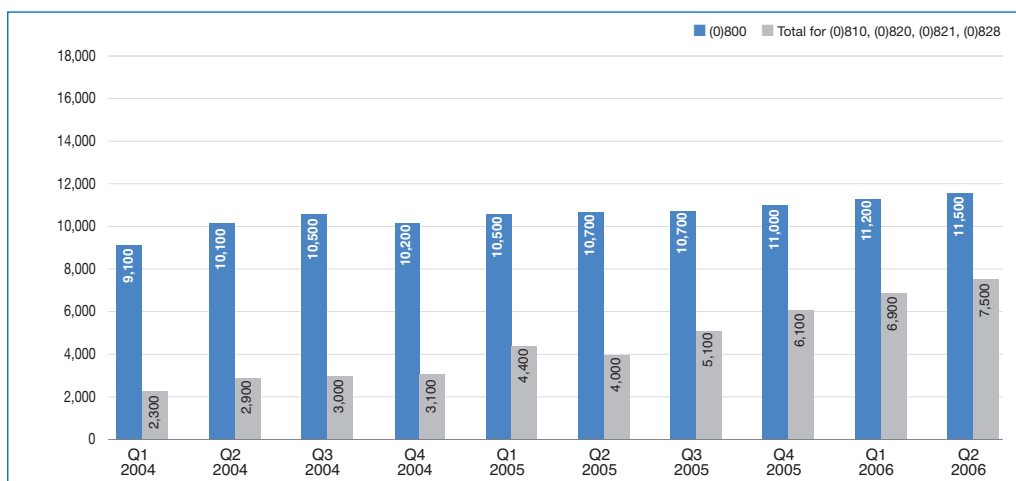


Figure 8: Service numbers in use: (0)800, (0)810, (0)820, (0)821, (0)828

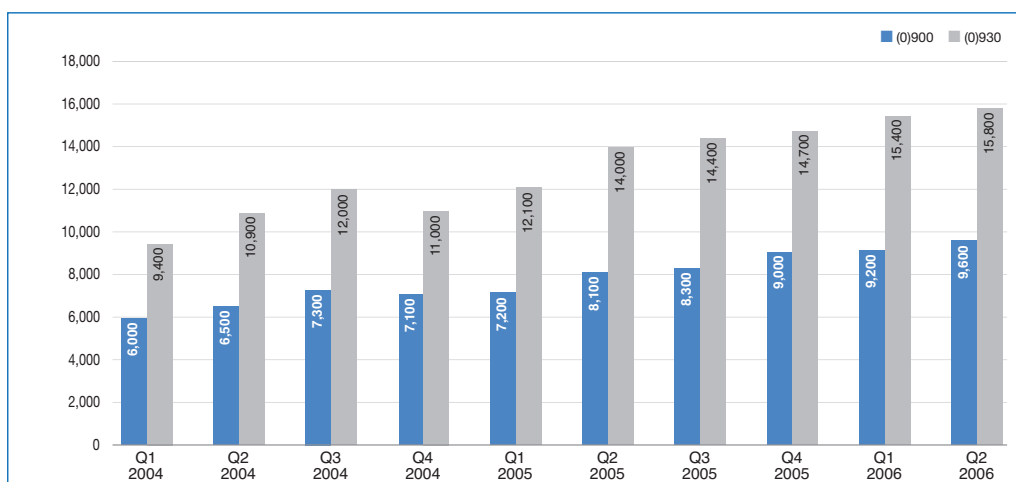
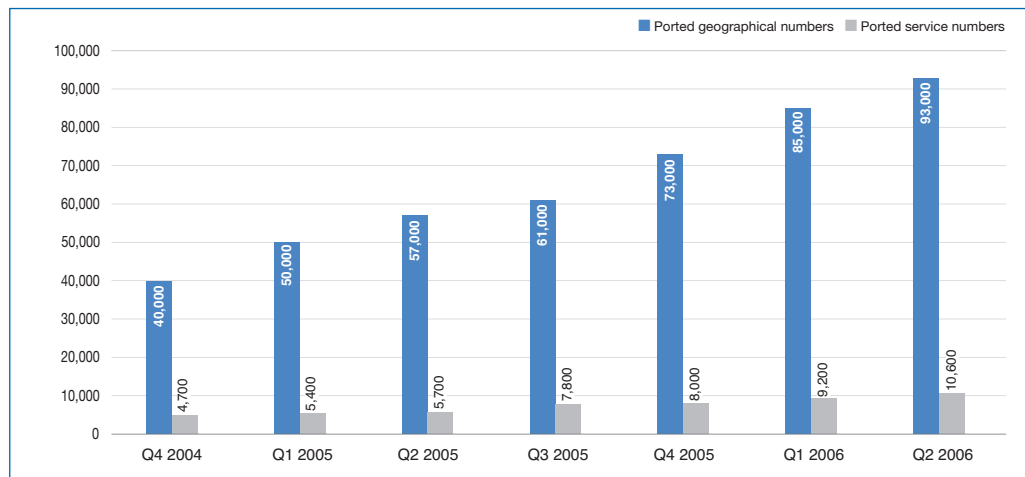


Figure 9: Service numbers in use: (0)900, (0)930

The number of service numbers in use shows an increasing trend in all ranges. Especially the (0)810, (0)820, (0)821 and (0)828 number ranges showed strong growth in 2005, and this trend continued in the first half of 2006. The number of service numbers in use in the (0)900 and (0)930 ranges likewise showed a significant increase.

## 2.8. Number porting

Number porting allows customers to retain their telephone numbers when they switch communications service providers. This means that customers can keep their original geographical telephone number (within the same local area code) when they switch to a new telephone service provider. The same applies to the service numbers mentioned in Section 2.7. The users of such numbers can retain their assigned numbers when they switch from one service network operator to another. Figure 10 shows the total number of geographical numbers and service numbers ported.



**Figure 10:** Number of geographical numbers and service numbers ported

Due to an adjustment in the data model, a consistent time series is only available from Q4 2004 onward.

On average, the number of geographical numbers ported has increased by approximately 9,000 each quarter. The number of service numbers ported has also shown steady growth.

## 3. Leased lines

Leased lines refer to connections which provide transparent transmission capacity between two network termination points without switching functions.

According to this definition, there are three criteria which must be fulfilled in order to classify a connection as a leased line:

- A leased line is a symmetrical, bidirectional point-to-point connection which supports data and voice traffic.
- A leased line is a transparent connection, which means that payload data bits are transmitted through the line in unchanged form.
- A leased line does not provide switching functions, meaning that the user does not have the ability to control the connection (i.e., no on-demand switching function).

The technology used to realize a leased line is generally irrelevant for the purpose of this classification.

### 3.1. Number of domestic retail leased lines

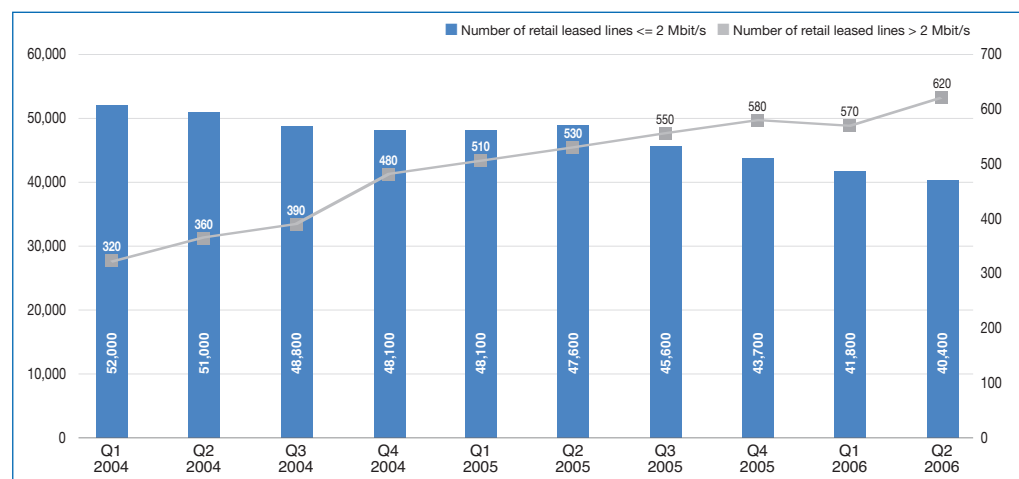


Figure 11: Number of domestic retail leased lines

Figure 11 shows the number of domestic retail leased lines in Austria. Retail leased lines are those which are not provided for communications network operators or communications service providers (= holders of general licensing approvals). As regards data transmission rates, a distinction is drawn between  $\leq 2$  Mbit/s and  $> 2$  Mbit/s.

The sharp decrease in leased lines  $\leq 2$  Mbit/s has been accompanied by growth in the number of leased lines with higher transmission rates ( $> 2$  Mbit/s), but the overall number

of domestic retail leased lines shows a declining trend. This was primarily caused by the massive decrease in the number of leased lines with a capacity of up to 64 kbit/s. A closer look at the leased bandwidth (not shown here) reveals that leased lines with higher bandwidths are in demand: Despite the decreasing number of leased lines, total capacity is increasing.

### 3.2. Revenues from domestic retail leased lines

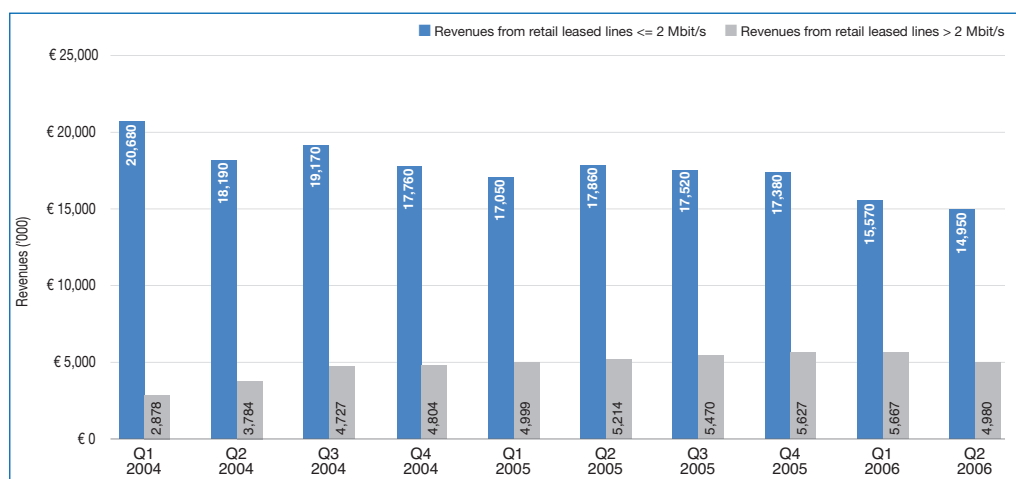


Figure 12: Revenues from domestic retail leased lines

Figure 12 shows the revenues earned from domestic retail leased lines. As described above, a distinction is drawn between  $\leq 2$  Mbit/s and  $> 2$  Mbit/s lines in this context as well.

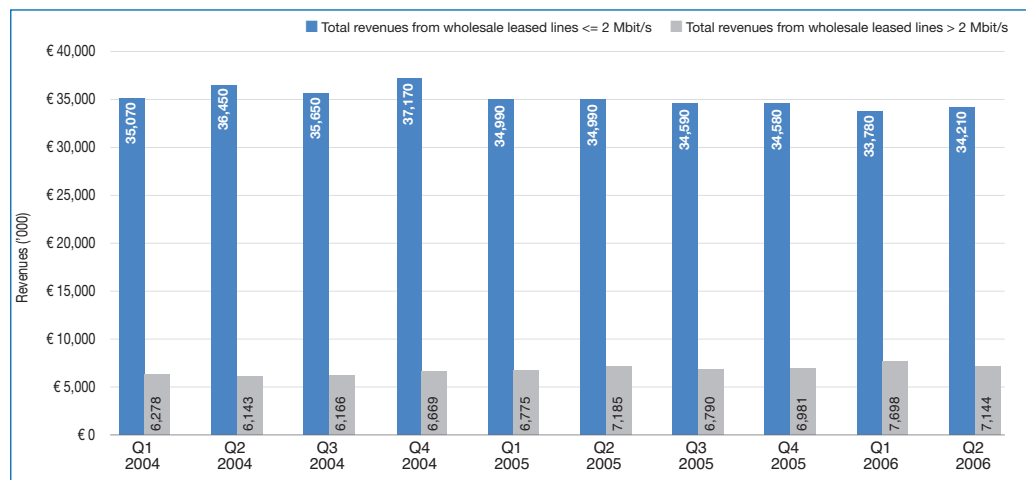
In revenues from leased lines, one can also observe a decline in lines with a transmission rate of  $\leq 2$  Mbit/s in the period under review, while revenues from lines with higher data rates ( $> 2$  Mbit/s) show an increasing trend. This serves to confirm the observation that demand for lower bit-rate leased lines – which command the lowest price per line – is declining as higher-priced leased lines with higher data rates are seeing increased use.

### 3.3. Revenues from domestic wholesale leased lines

Wholesale leased lines are those which are provided for communications network operators and communications service providers.

In the context of domestic wholesale leased lines, a distinction is drawn between terminating segments and trunk segments. Trunk segments refer to domestic wholesale leased lines or sections of wholesale leased lines which connect the trunk segment interconnection points of the providing operator in two of the 28 Austrian towns where Telekom Austria has realized its points of interconnection for the telephone network (Vienna, Graz, Linz, Salzburg, Innsbruck, Klagenfurt, Villach, Wels, St. Pölten, Dornbirn, Steyr, Wiener Neustadt, Feldkirch, Baden, Amstetten, Mödling, Spittal an der Drau, Bruck an der Mur, Telfs, Lienz, Vöcklabruck, Ried im Innkreis, Eisenstadt, Korneuburg, Wörgl, Hollabrunn, Judenburg, and Bruck an der Leitha).

Terminating segments refer to all domestic wholesale leased lines which can not be classified as trunk segments.



**Figure 13: Total revenues from domestic leased lines at the wholesale level**

Figure 13 shows the total revenues from trunk segments and terminating segments broken down into  $\leq 2$  Mbit/s and  $> 2$  Mbit/s lines.

In contrast to those at the retail level, the revenues from wholesale leased lines have remained fairly stable overall in both bandwidth categories. The trend of declining revenues from low bit-rate leased lines and increasing revenues from higher bit-rate lines is also evident at the wholesale level.

## 4. Mobile communications

The mobile communications market has been a fast-growing area of the telecommunications industry for some time now. After the penetration rate (i.e., the number of activated SIM cards divided by the population; not shown here) leveled off from the year 2000 onward, this rate has been climbing again since 2003; mobile penetration even exceeded the 100% mark in 2005. This means that there are already more active cell phones than inhabitants in Austria. This rising rate of penetration can be attributed in part to the fact that an increasing number of people have more than one activated cell phone, but it is also partly due to initial mobile phone acquisitions. Figure 14 provides an overview of mobile penetration, which had reached approximately 110% by mid-2006. In October 2005, the EU-25 average came to 93%, while the corresponding figure for Austria was over 103% (source: 11<sup>th</sup> Implementation Report of the European Commission).

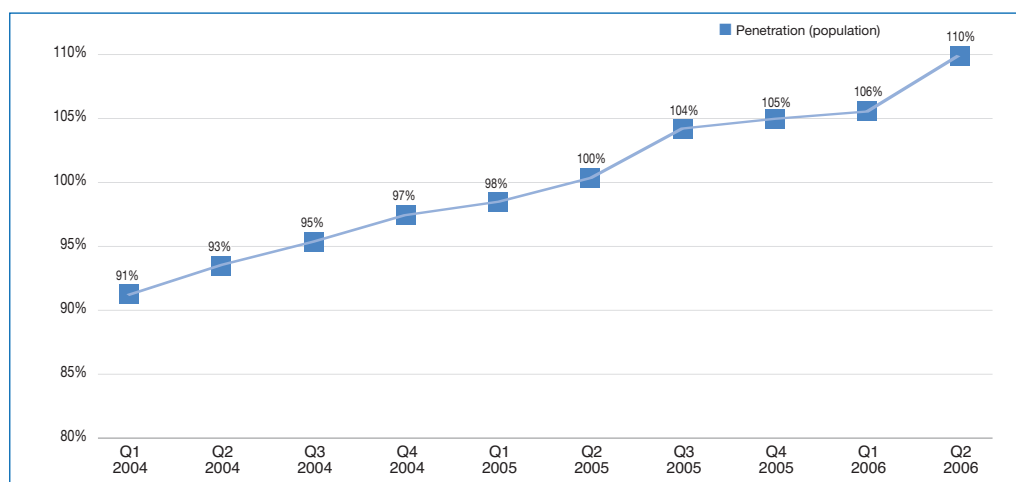


Figure 14: Mobile penetration

### 4.1. Total revenues from mobile communications

The total revenues from mobile communications in Figure 15 consist of revenues at the wholesale and retail levels.

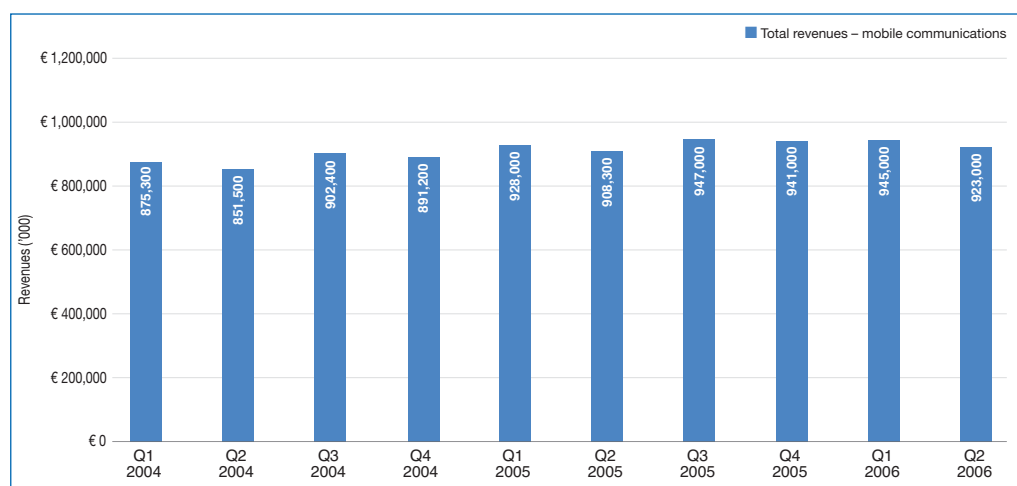
At the wholesale level, the figures include revenues from the following services:

- Termination (call routing from the exchange to the subscriber, used by fixed-link and mobile network operators)
- Origination (call routing from the subscriber to the exchange, used by service providers)
- International roaming (visitor roaming – origination; provided for foreign mobile network operators whose subscribers roam in Austria)
- Sale of airtime to resellers (provided for mobile communications service providers without their own network infrastructure, e.g., the provider "Yesss")
- National roaming (provided for Austrian mobile network operators such as H3G and for MVNOs<sup>1</sup> such as Tele2UTA).

<sup>1</sup> Mobile virtual network operator

At the retail level, revenues include the following:

- Connection charges for voice communications
- Monthly base fees
- Setup charges
- Text messaging (SMS) charges
- Fees for data services and value-added data services
- Charges for special coverage services
- Other charges.



**Figure 15: Total revenues from mobile communications**

Since early 2005, total revenues from mobile communications services have shown only slight growth. In the second quarter of 2006, these revenues were just over EUR 900 million. Figure 15 also reveals seasonal fluctuations. In each year shown, the second quarter has seen the weakest revenues. In the first half of 2006, revenues grew by some 1.7% compared to the same period in the previous year.

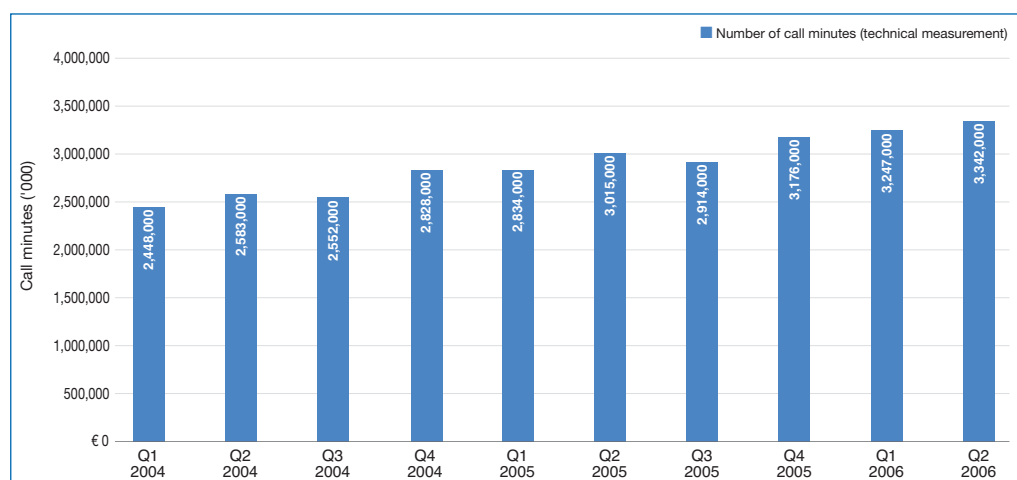
In this context, it is necessary to note that termination fees (and thus also the corresponding revenues) in the first half of 2005 were approximately 10% higher than in the first half of 2006. This increase in revenues can therefore be attributed in particular to growth in revenues at the retail level – which, as discussed in the next section, is also reflected in the number of call minutes.

#### 4.2. Call minutes on the retail market

Figure 16 provides an overview of technically measured call minutes. These minutes reveal the actual time retail customers spent talking on their mobile phones. In contrast, billed call minutes refer to the number of call minutes charged to retail customers. The essential factors responsible for the difference between these two figures are the number of free minutes included in the monthly base fee and the pulse rate used for calls.

The values shown in Figure 16 include all calls which were successfully connected in each quarter except for non-voice services (e.g., data services, video calls).





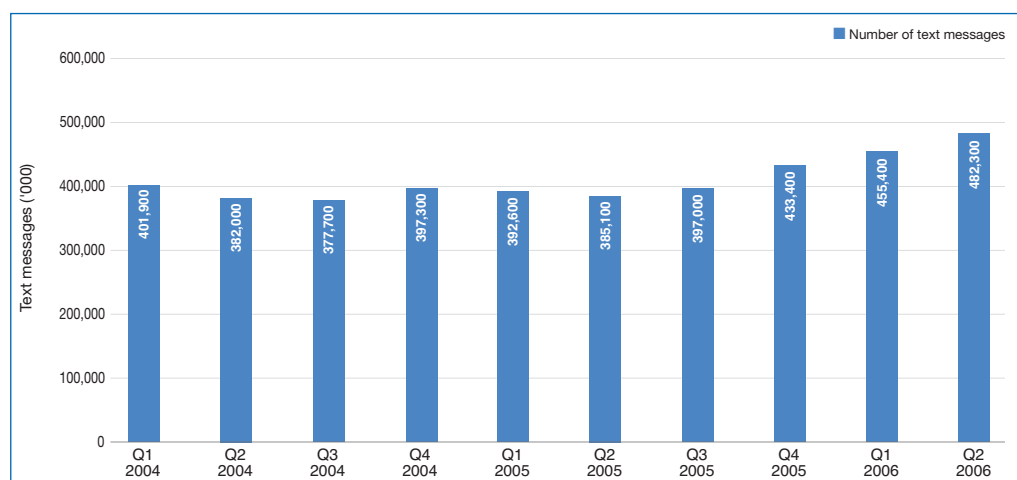
**Figure 16: Number of call minutes on the retail market (technical measurement)**

As in the total revenues for mobile communications (see Figure 15), substantial growth has also been recorded in the number of call minutes. In each quarter in the reporting period, growth compared to the same quarter in the previous year exceeded 10%.

In the year 2005, substantial cyclical fluctuations with a peak in Q4 can be observed; these fluctuations can be attributed mainly to increased demand for communications services at the end of the year. Compared to the same period in the previous year, the number of call minutes rose by 12.7% in the first half of 2006.

#### 4.3. Number of text messages

The values in Figure 17 refer to all text messages sent, including value-added text messaging services (technical measurement). MMS messages are not included. The term "technical measurement" has a similar meaning in the context of text messaging: the figures also include text messages which are not charged directly to the retail customer (e.g., text messages included in the monthly base fee for certain package offers).



**Figure 17: Number of text messages (technical measurement)**

After a decline in the first half of 2005, the number of text messages has once again seen significant growth. Up to Q4 2005, the growth rates in text messaging compared to the same quarter in the previous year were significantly lower than comparable growth rates for call minutes. Only at the end of 2005 and in the first half of 2006 did the number of text messages sent show a significant increase. In the first two quarters of 2006, 20.6% more text messages were sent than in the same period in 2005.

#### 4.4. Number of SIM cards in use

Figure 18 shows the number of SIM cards activated and in use, broken down according to whether they allow access to a GSM network only (2G) or also to a UMTS network (3G). These figures do not allow any conclusions as to the actual use of UMTS services or the handsets in which these SIM cards are used (GSM or UMTS cell phone, UMTS data card, etc.). The number of SIM cards in use is not necessarily the same as the number of subscriber numbers in use, as multiple numbers (e.g., voice mail, fax number) may be assigned to one SIM card; conversely, multiple SIM cards may also be assigned to the same number.

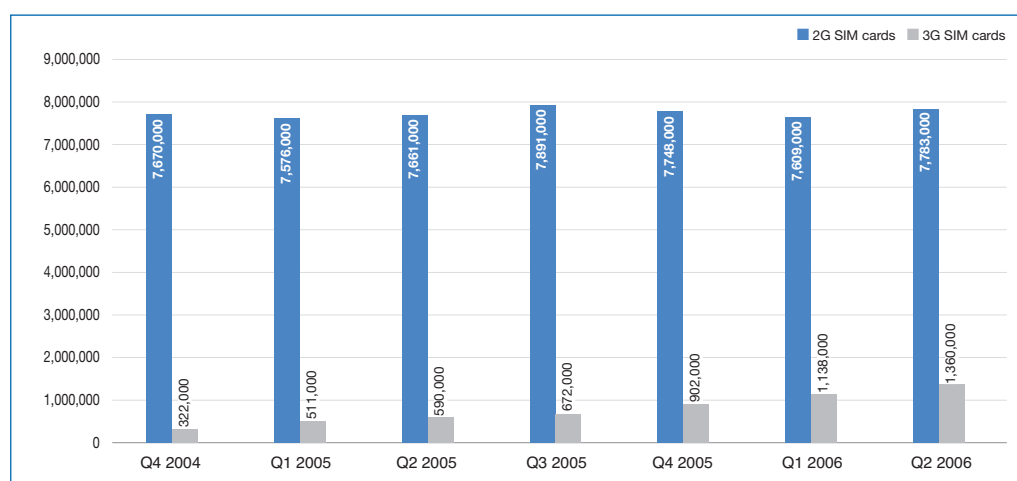


Figure 18: Number of SIM cards in use

A substantial increase can be identified in the number of 3G-compatible SIM cards in use. Among other things, this can be attributed to the fact that some operators are now only issuing 3G-compatible SIM cards even if the customer only uses 2G services (GSM telephony).

#### 4.5. Number of subscriber numbers in use

Figure 19 shows the number of subscriber numbers in use, broken down into contract customers and prepaid customers. For the reasons mentioned above, the number of subscriber numbers differs from the number of SIM cards in use.

Austria has more contract customers than prepaid customers; with the exception of Q1 to Q3 2005, the growth rate for contract customers has also been higher than in the case of prepaid customers.

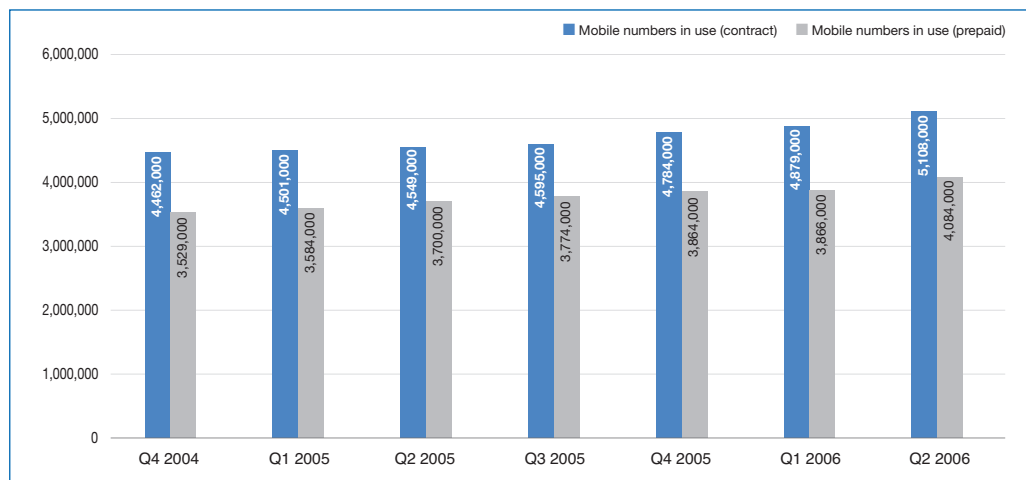


Figure 19: Number of mobile subscriber numbers in use

#### 4.6. Number of mobile numbers ported

Figure 20 shows the total number of mobile numbers ported since mobile number portability (MNP), which allows customer to retain their numbers when they switch service providers, was introduced in October 2004.

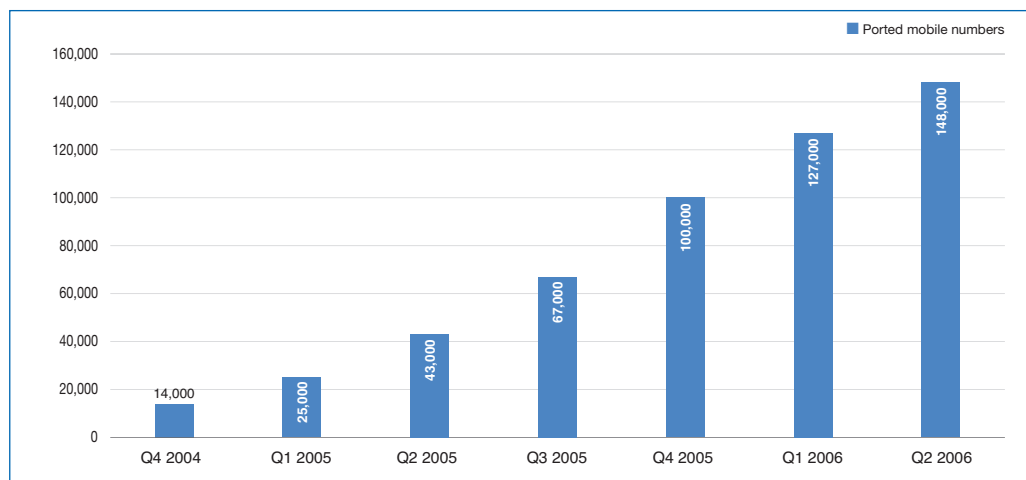


Figure 20: Total number of mobile numbers ported

Mobile number porting has shown strong growth, averaging approximately 21,500 numbers per quarter. At the end of 2005, the cumulative total of numbers ported passed the 100,000 mark.



## 5. Comparisons of fixed-link and mobile networks

Comparisons of this nature are generally difficult due to fundamental differences between fixed-link and mobile communications. Nonetheless, the charts below provide an overview of certain statistical values and clearly recognizable trends. The underlying figures are extrapolations of the data collected in accordance with the Communications Survey Ordinance.

The revenues in Figure 21 include the following:

### Fixed-link network:

- Revenues from residential and business customers as well as public telephones
- Retail revenues from monthly base fees and setup charges
- Retail revenues from carrier charges
- Wholesale revenues from origination, termination and transit services
- Revenues from additional services and miscellaneous charges
- Charges under the Telecommunications Fee Subsidies Act.

### Broadband:

- Retail revenues from monthly base fees and setup charges for broadband connections, as well as volume-based charges
- Wholesale revenues from setup charges, ongoing charges and volume-based charges.

### Leased lines:

- Retail revenues from base fees and setup charges for domestic leased lines
- Wholesale revenues from base fees and setup charges for terminating and trunk segments

### Mobile communications:

- Retail revenues from monthly base fees and activation charges
- Retail revenues from carrier charges (voice, text messaging)
- Retail revenues from data services (MMS, video telephony, Internet, etc.)
- Wholesale revenues from termination, origination, international roaming (visitor roaming), national roaming (including the sale of services to MVNOs) and the sale of airtime to resellers.

The (retail) call minutes in Figure 22 include the following:

### Fixed-link network:

- Call minutes to the domestic fixed-link network, domestic mobile networks, international destinations, service numbers and directory assistance services as well as online services.

### Mobile communications:

- Call minutes to the domestic fixed-link network, to domestic mobile networks, international numbers, service numbers and directory assistance services.

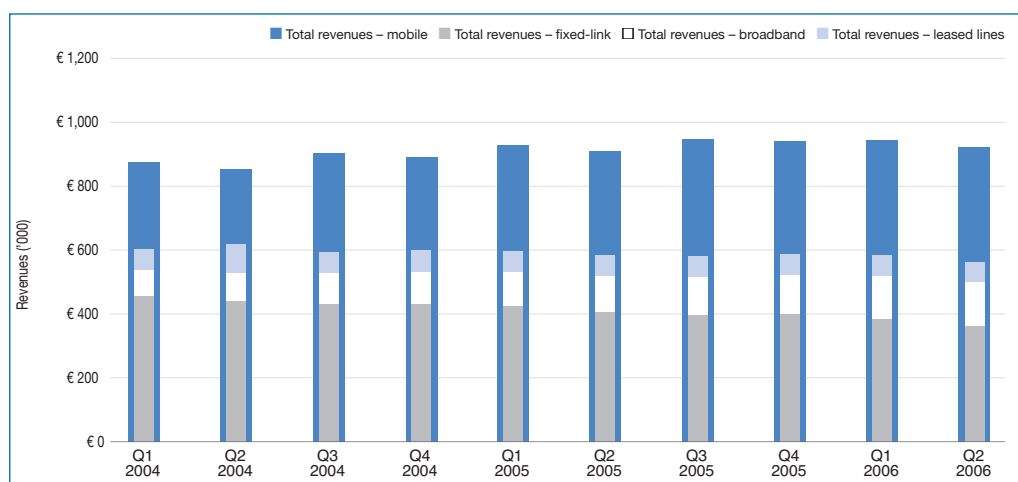


Figure 21: Total revenues from fixed-link and mobile communications

Figure 21 clearly shows that fixed-link telephony revenues accounted for just under 40% of mobile communications revenues at the end of 2005 and that growth in mobile communications is slowing down, while fixed-link communications revenues (without leased lines and broadband) are declining slowly but steadily.

From 2004 to 2005, the total revenues from both fields grew by more than 2.7%. Real GDP growth for the same period came to 2%.

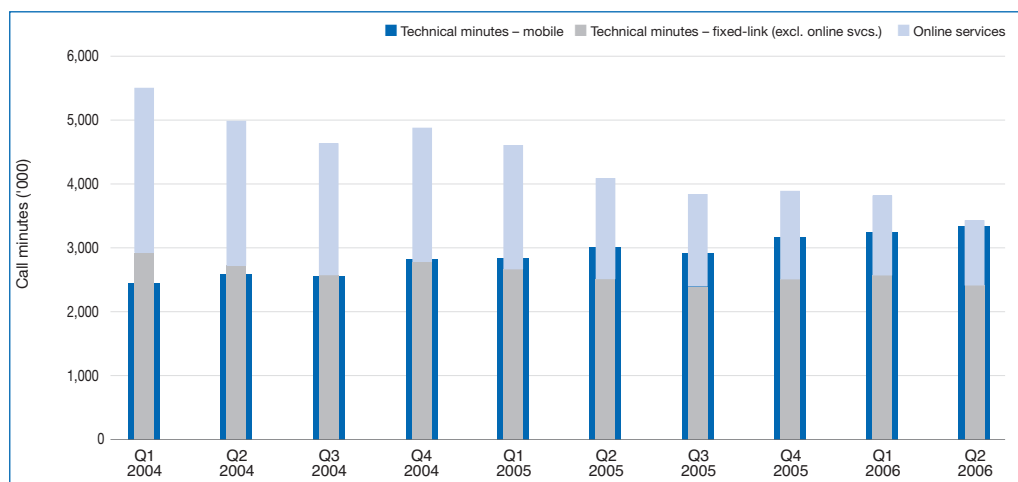


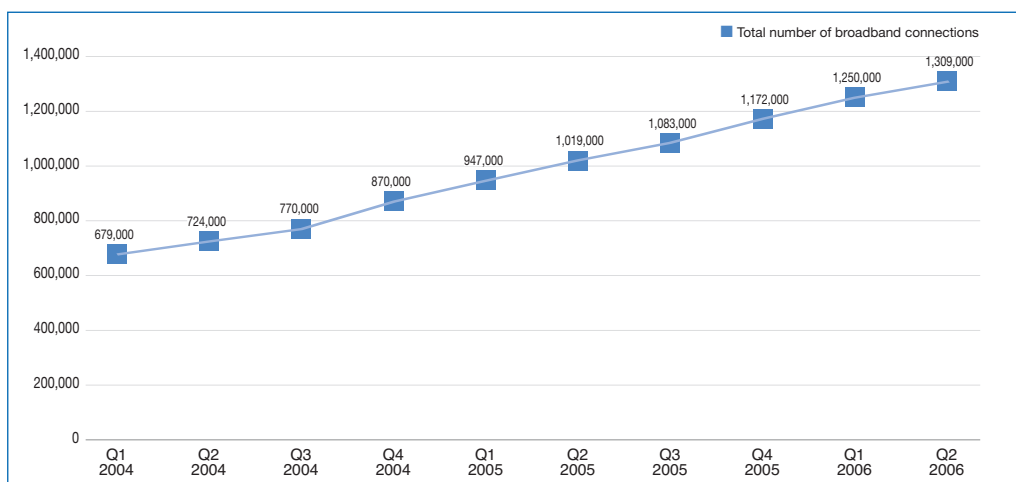
Figure 22: Technical minutes in fixed-link and mobile networks

Technical minutes in fixed-link and mobile networks are subject to seasonal fluctuations. In terms of call minutes, the mobile sector overtook its fixed-link counterpart by a slight margin at the end of 2004. The total number of voice call minutes shows a clearly upward trend. In fixed-link communications, call minutes to online services (dialup Internet) are shown separately. At the end of 2004, this figure was approximately the same as the total voice telephony minutes in fixed-link networks (call minutes to the fixed-link network, to mobile networks, international calls, etc.), but since then it has declined substantially. This can be attributed to heady growth in the number of broadband connections.



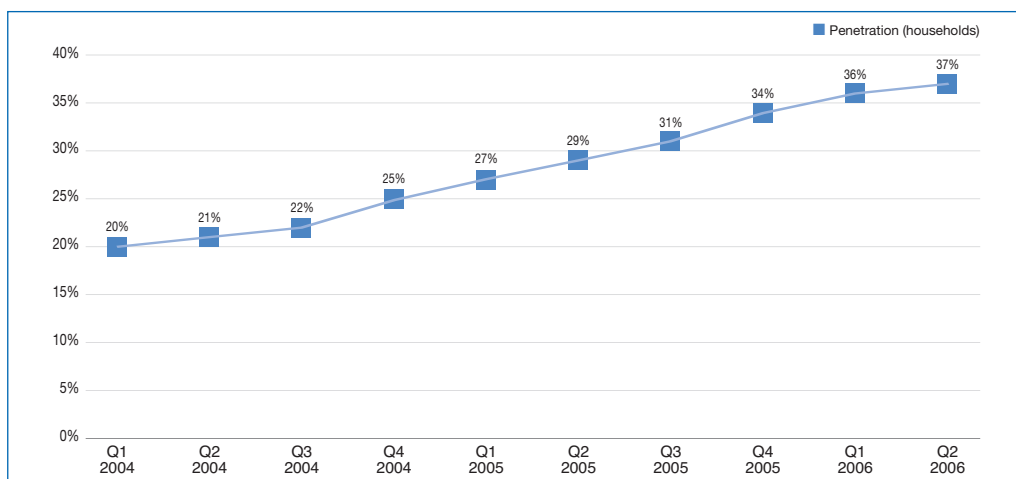
## 6. Broadband

In recent years, the broadband market has seen substantial growth. In 2005, there were already some 53 million broadband connections throughout the EU.



**Figure 23: Total number of broadband connections in Austria**

Figure 23 shows the total number of broadband connections in Austria (regardless of the technology used for the connections). At the end of June 2006, this figure came to 1,290,000 connections, thus indicating an increase of 27.4% over just one year.



**Figure 24: Broadband penetration in Austria**

The ratio of broadband connections to total households is referred to as "broadband penetration." The percentages indicated in Figure 24 are often interpreted as the share of Austrian households which have a broadband connection. This interpretation is not entirely accurate,

as the total number of broadband connections also includes those which are only used in businesses. Despite this frequent misinterpretation, this indicator is rather popular in international comparisons. Broadband penetration in Austria (in terms of households) rose from 25% in Q4 2004 to more than 33% in Q4 2005; in June 2006, the figure had almost reached 37%. Measured against the population of Austria (i.e., per capita), broadband penetration was just over 14% in Q4 2005. The EU-25 average at the same point in time was 12.9% (source: <http://www.ectportal.com>, Broadband Scorecard Q4/2005).

In the period described, average growth came to approximately 7.7% per quarter. In absolute terms, the number of broadband connections rose by almost 89,000 from Q3 to Q4 2005.

### 6.1. Number of retail broadband connections

The number of retail broadband connections includes all connections which offer a download bandwidth of more than 144 kbit/s.

Figure 25 gives a breakdown according to infrastructure used: copper-wire pairs in the Telekom Austria network (subdivided into Telekom Austria's retail broadband connections and broadband connections realized by means of bitstreaming), unbundled lines, coaxial cable, FWA (fixed wireless access, e.g., W-LAN, WiFi and WLL for "fixed" access, not hot spots) and other infrastructure.

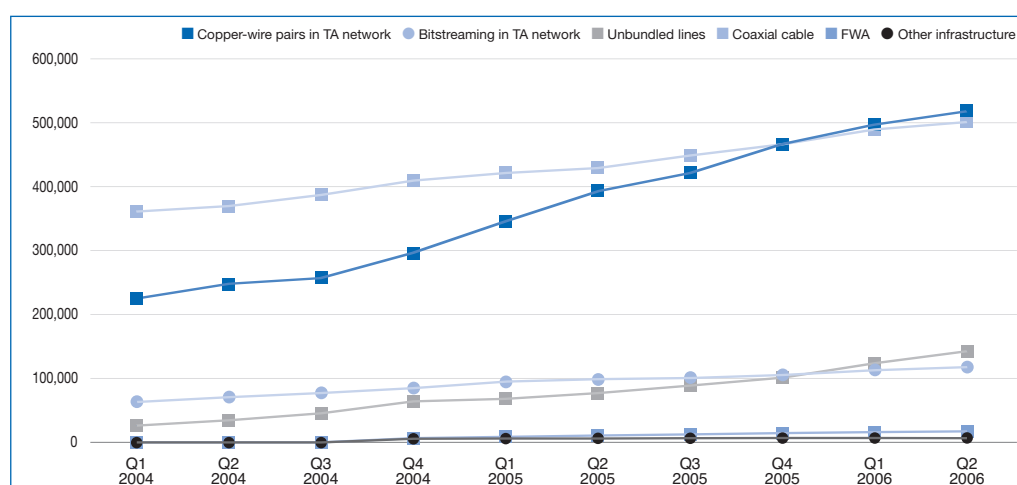


Figure 25: Number of retail broadband connections

Substantial growth can be observed in all access technologies, with broadband connections based on copper-wire pairs and unbundled lines (both DSL) seeing the highest growth rates.

The figure below clearly shows that the broadband connections realized by Telekom Austria (copper-wire pairs on the retail market and bitstreaming on the wholesale market) account for the largest share, which will soon exceed 50%.

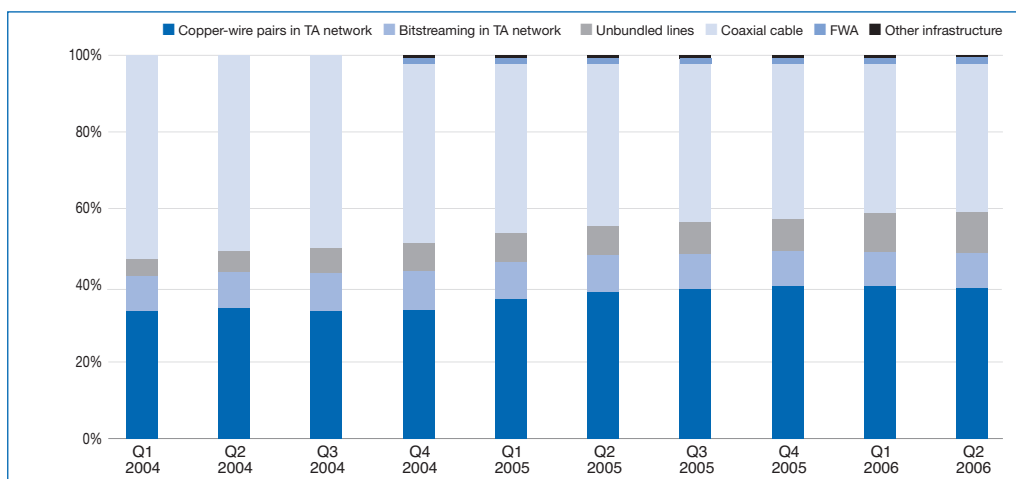


Figure 26: Total number of broadband connections in Austria (broken down by infrastructure)

"Other infrastructure" includes leased lines (i.e., lines leased by other providers, but not unbundled subscriber lines), FTTH (fiber to the home), PLC (power line communications) and satellite broadband connections. Broadband Internet connections based on mobile technology (UMTS) are not included in these statistics.



## 6.2. Number of wholesale broadband connections

Figure 27 shows the number of wholesale broadband connections made available to other communications service providers in wholesale offers (in contrast to the market definition in the TKMVO, the figures shown do not include own services). The figures are broken down by infrastructure: bitstreaming realized in the Telekom Austria network, by unbundling partners and in coaxial networks (open access).

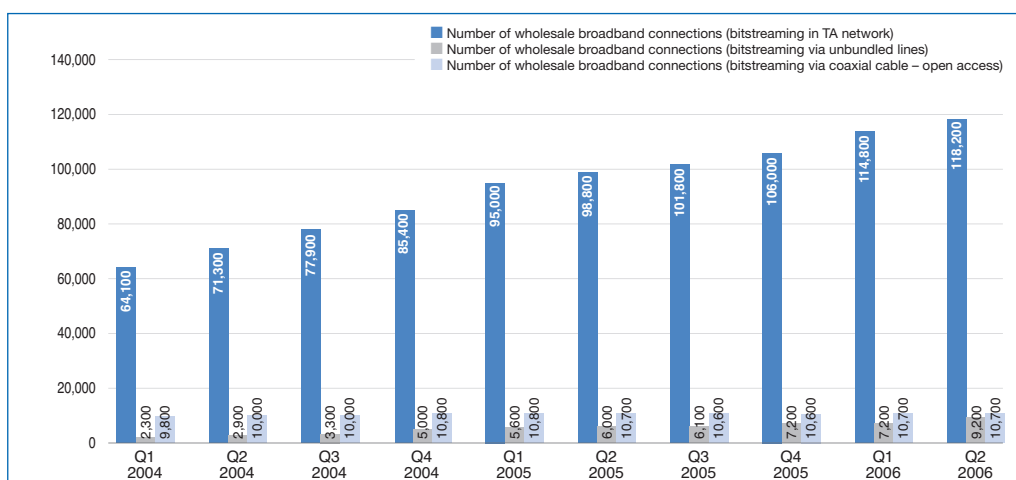


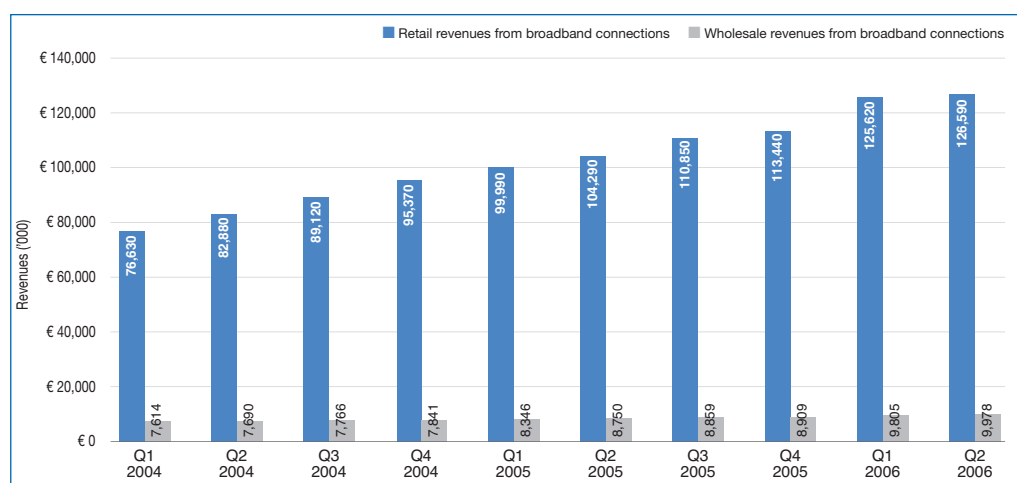
Figure 27: Number of broadband connections offered on the wholesale market



Substantial growth can also be observed on the wholesale markets. Broadband connections via self-operated copper-wire pairs refer exclusively to Telekom Austria connections. Figure 27 clearly reveals that Telekom Austria provides the largest number of broadband connections on the wholesale market with its bitstream offer; this figure has also exhibited the strongest growth.

### 6.3. Revenues from broadband connections

Figure 28 shows the revenues earned from retail and wholesale broadband connections in Austria. The retail revenues represent the total of ongoing monthly charges, volume-based charges for data transfer and miscellaneous revenues in the retail segment. The wholesale broadband revenues refer to the total of one-off setup charges, ongoing monthly charges for ATM connections, ongoing monthly charges based on retail customers, data volume charges and other revenues earned in connection with wholesale offers.



Figures 28: Revenues from broadband connections

The growth in the number of broadband connections is also reflected in the corresponding revenues. Due to falling prices, however, the rate of revenue growth is not as high as the growth rate for the number of connections.



## 7. Business indicators

### 7.1. Investments

Figure 29 shows the development of investments in frequencies, technical infrastructure, sales and customer services in the years 2004 and 2005. In this context, it is important to note that the values reported are based in part on estimates and extrapolations from individual quarters for entire years. As a result, the exact figure for total investments can not be calculated reliably.

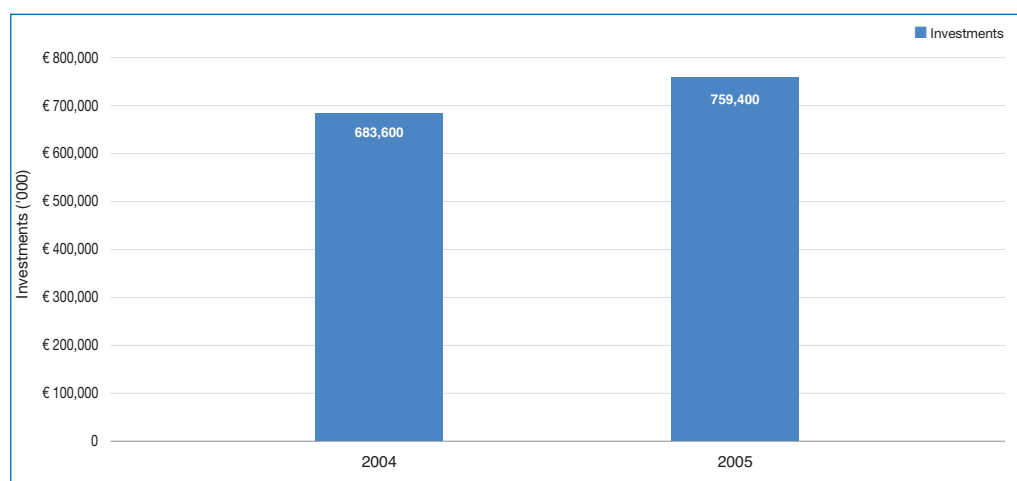
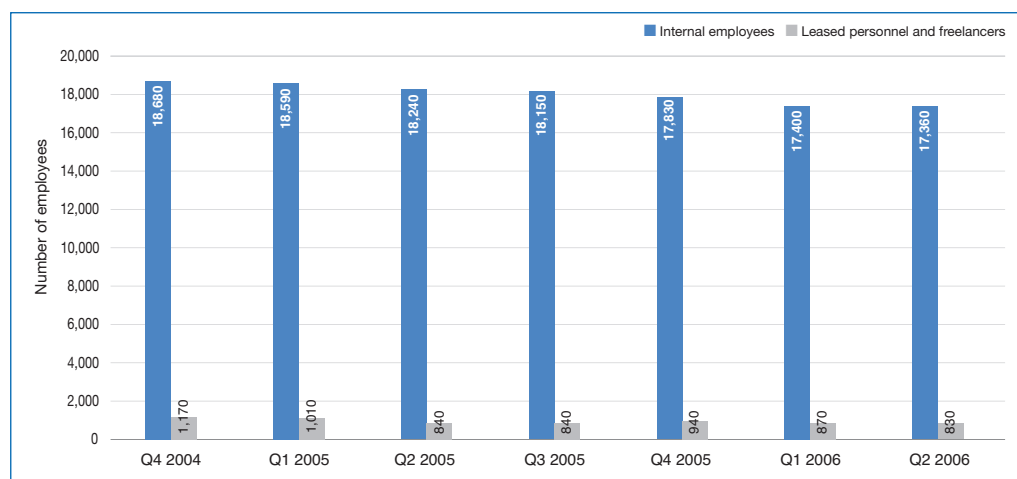


Figure 29: Investments

Despite those limitations, the chart clearly reveals a significant increase in investments from 2004 to 2005. As is the case in the personnel figures shown in Figure 30, the investment amounts indicated above only include investments made directly by the telecommunications companies. They do not include investments in upstream branches of the industry.

## 7.2. Number of employees

Figure 30 presents the number of employees in the telecommunications sector, distinguishing between internal employees vs. leased personnel and freelancers in full-time equivalents (FTEs).



**Figure 30: Number of employees (FTEs)**

When interpreting these figures, please note that they only include staff employed directly by telecommunications enterprises. The figures do not include employees in supplier industries, external call-center employees or outsourced positions.

While the number of internal employees has dropped slightly over time, the number of leased employees and freelancers has remained fairly constant.

### Publishing information

**Owner, publisher and editor:** Austrian Regulatory Authority for Broadcasting and Telecommunications (Rundfunk und Telekom Regulierungs-GmbH), Mariahilfer Strasse 77-79, A-1060 Vienna; Tel.: +43 (0)1 58058-0, Fax: +43 (0)1 58058-9191, e-mail: rtr@rtr.at, Internet: <http://www.rtr.at>

**Responsible for content:** Georg Serentschy (CEO, RTR Telecommunications Division)

**Conceptual design and text:** Austrian Regulatory Authority for Broadcasting and Telecommunications

**Graphic design and layout:** Atelier 21 GmbH, Schönburgstrasse 48, A-1040 Vienna; Internet: <http://www.atelier21.at>

**Translation:** Christopher James Anderson, Lerchenfelder Strasse 100/9, A-1080 Vienna, e-mail: [chris.anderson@wu-wien.ac.at](mailto:chris.anderson@wu-wien.ac.at)

All parts of this publication are protected by copyright. All rights reserved under copyright, especially rights to distribution, reprinting, translations, presentations, the use of data, broadcasting, microfilms or reproduction of this document in photocopies or any other form, as well as storage in computer systems, even in cases where excerpts are used.

The text in this report was prepared with due attention to gender neutrality. Any and all deviations from this policy are exclusively for the sake of improving the text's readability.

Copyright © Rundfunk und Telekom Regulierungs-GmbH 2006