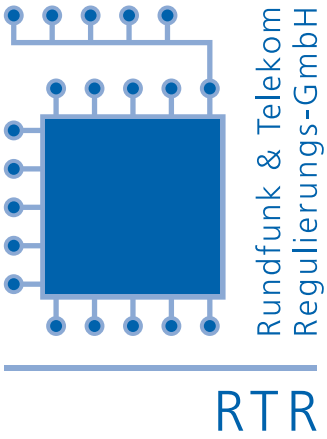
RTR Telekom Monitor

Annual Review 2015



Preface

Dear readers,

With the Annual Review of the RTR Telekom Monitor this year again we take a look at the developments on the Austrian telecommunications market in a year-on comparison.

What happened on the market in 2015?

Also in 2015, the mobile communications market was the major driver of revenues on the Austrian telecommunications market: more than 63% of total sector revenues were generated by mobile communications. At the end of 2015, mobile penetration – measured in terms of the population – was above 150% and close to 95% of households had smartphone tariffs. In the last quarter of 2015, the mobile data volume used rose to almost 100,000 terabytes. In 2015 as a whole, some 300,000 terabytes of data volume were used, which is an increase of more than 80% against 2014.

Also on the supply side the mobile communications market is in motion: new mobile service providers, among them HoT, UPC and Spusu, muscled in on the game of the three major operators, A1, Hutchison and T-Mobile, and already held a market share of 3.6% at the end of 2015. At the beginning of 2015, their market share had been only 1.8%, i.e. it doubled throughout 2015. Together, the new providers have already nearly half a million customers, and the trend is rising.

More pressure from competition leads to lower prices: Throughout 2015, the price index in mobile communications shows falling prices for all user types, the overall index dropped by 14.8% in 2015.

At the same time, operators are again investing more into infrastructure: At nearly EUR 646 million in 2015, these investments were the highest since 2008. Rollout of fibre optics and LTE is particularly speeded up, with the objective of being able to provide higher bandwidths.

RTR-NetTest shows increasing data rates

In 2015, the number of measurements using the RTR-NetTest increased by 50% against the previous year. And the RTR-NetTest shows: The measured data rates for WLAN and LAN tend to increase in the same way as in the 3G and 4G networks.

In this edition of the Telekom Monitor the data published on the RTR-NetTest are even more up to date as they comprise already the first quarter of 2016.

What else can you expect in the Annual Review 2015 of the RTR Telekom Monitor?

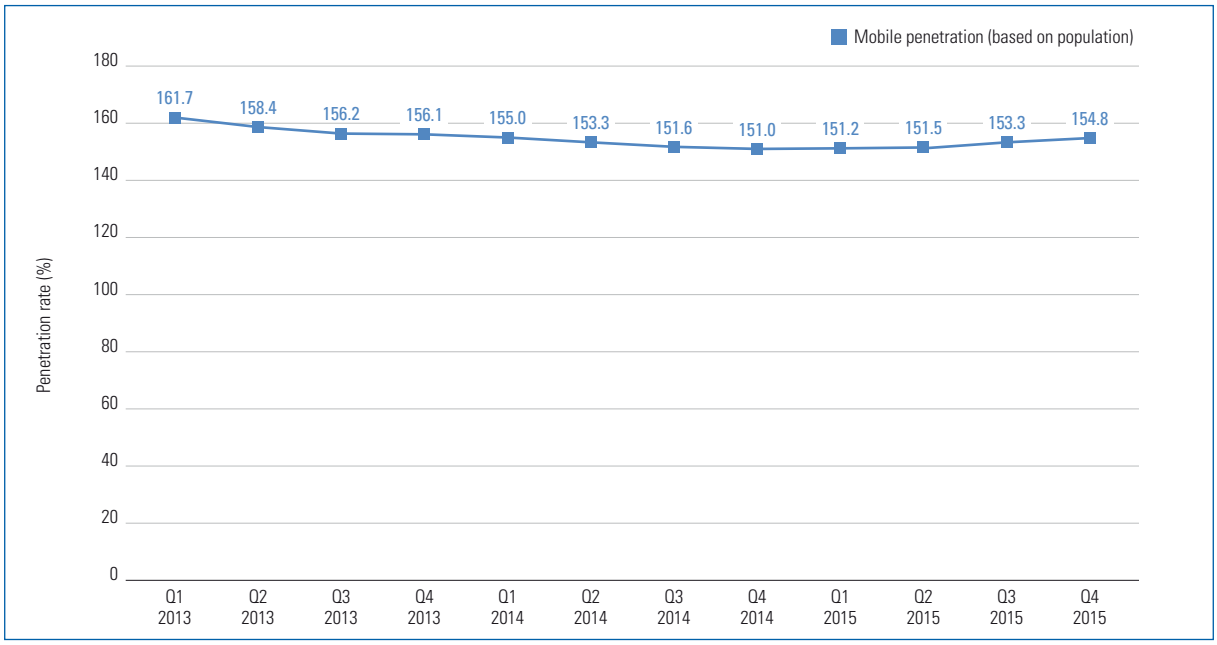
Sections 7 and 8 of this Annual Review draw international comparisons, present technology indicators and examine the ranks of Austria in international indices. These two sections, which are not contained in the quarterly editions, thus provide an additional perspective of the Austria market.

Johannes Gungl
CEO Telecommunications and Postal Services
Austrian Regulatory Authority for Broadcasting and Telecommunications (RTR)

1 | Mobile communications

Mobile penetration

➡ IN 2015 MOBILE PENETRATION INCREASED STEADILY



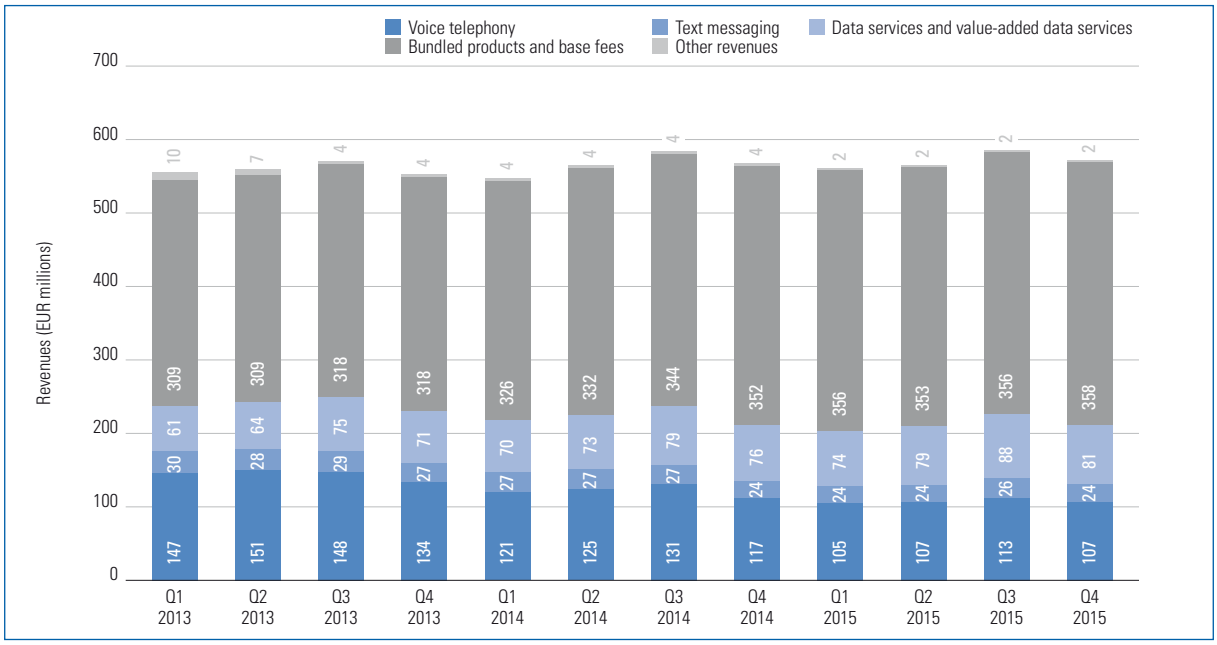
Source for population figure: Statistics Austria

The mobile penetration rate is calculated as the number of activated SIM cards divided by the country's population. This figure therefore represents the (notional) average number of SIM cards owned by every inhabitant. However, it also includes both SIM cards used by businesses and machine-to-machine (M2M) SIM cards.

- The mobile penetration rate rose steadily in the course of 2015. At the end of 2014, following data cleansing by operators, it was 151.0%, one year later 154.8%. In 2015, the number of active SIM cards thus increased more strongly than the country's population.

Retail revenues from mobile communications

BUNDLED PRODUCTS AND DATA SERVICES DRIVE REVENUES



The chart above includes all revenues (base fees, activation charges, service charges, connection charges, etc.) earned from (own) retail customers in Austria, including revenues earned from roaming. In line with the amendment to the KEV, mobile services revenues were classified in 2012 as follows:

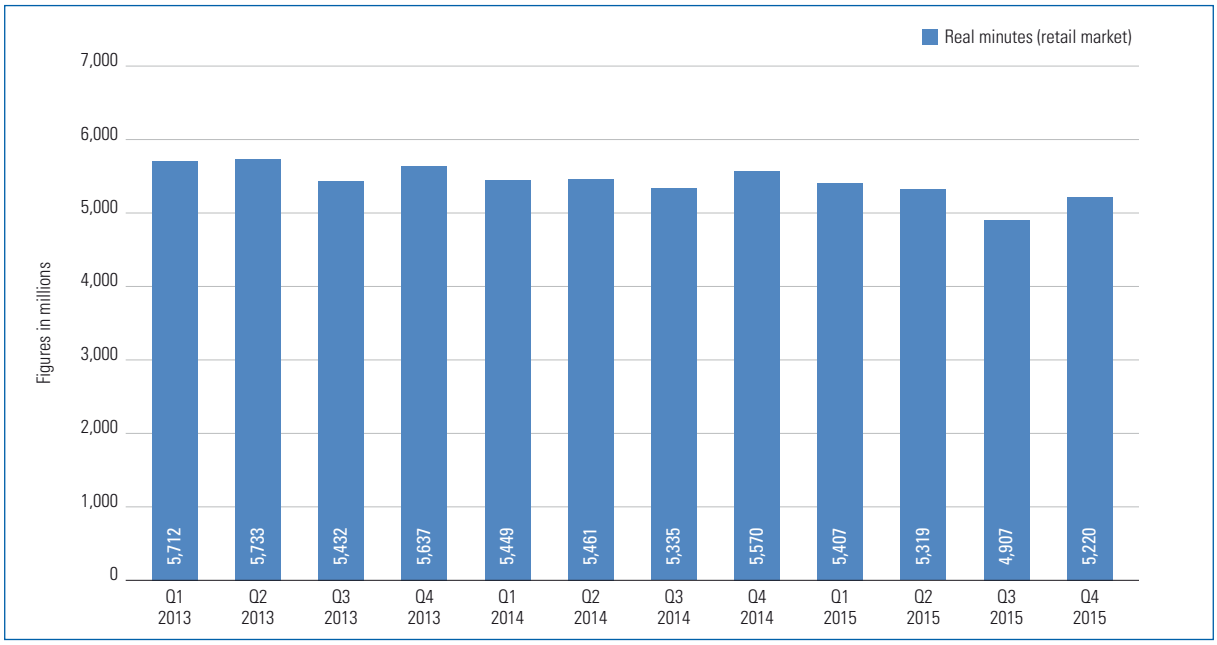
- Revenues clearly attributable to mobile voice telephony or value-added voice services;
- Revenues clearly attributable to text messaging and value-added text messaging services;
- Revenues clearly attributable to mobile data and value-added data services (including multimedia messages);
- Bundled products and base fees: revenues not clearly attributable to one of the aforementioned categories;
- Revenues from "bundled products and base fees" accounted for by data services (excluding text messages);*
- Other revenues, e.g. reminder charges.

- In 2015, the mobile communications retail segment generated revenues of EUR 2.284 billion. Against the year 2014, this is an increase of 0.9%.
- 62.3% of revenues (EUR 1.423 billion) were earned from bundled products and base fees in 2015. This revenue category climbed by 5.1% against 2014. It also includes revenues from data services of EUR 224.7 million.
- Altogether, data services (included in bundled products as well as mere data services) generated revenues of EUR 546.6 million, which is an increase of 6.1% compared with 2014.
- EUR 431.7 million were attributable to mere voice telephony, 12.5% less than in 2014. Text messaging produced revenues of EUR 98.1 million in 2015, down by 6.1% against 2014. Revenues from voice telephony and text messaging totalled 23.2% of mobile services revenues.
- In 2015, revenues from other charges came to EUR 8.6 million, which is a decline of 42.3% against 2014. In 2015, their share in total revenues was only 0.4%.

*These are not shown separately in the chart; however, their share can be seen in the table at the end of the section.

Call minutes on the retail market

YEAR-ON-YEAR DECLINE IN CALL MINUTES

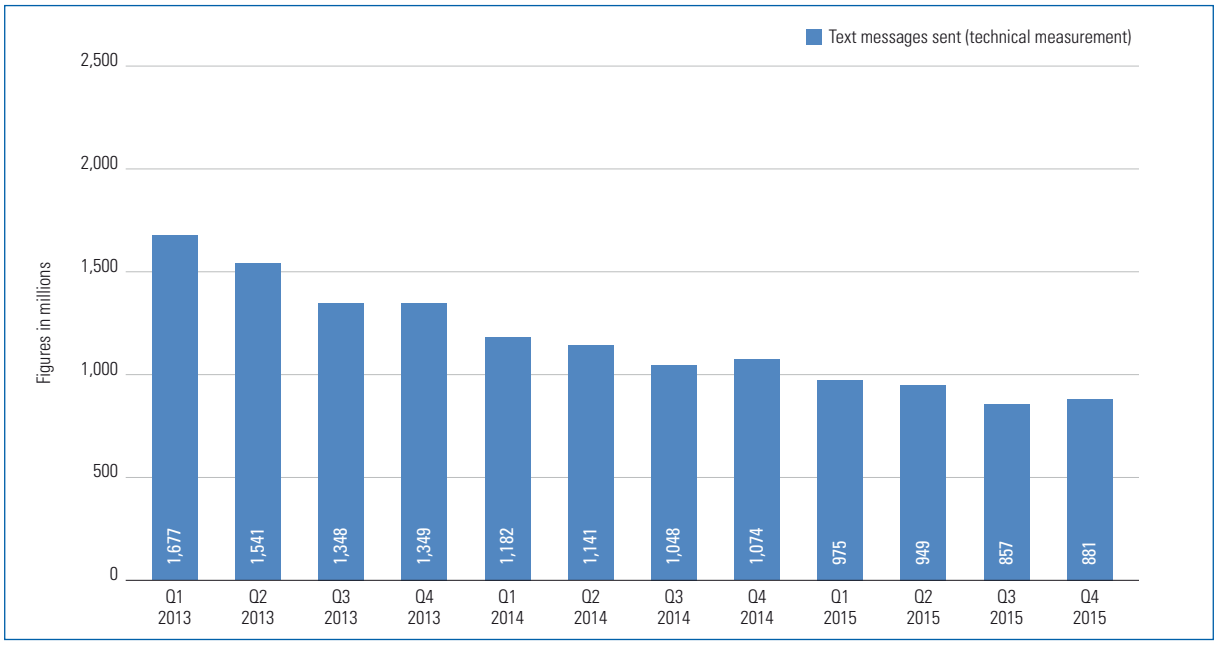


The chart above shows the actual call minutes (technical measurement, see Glossary) on mobile networks. This includes minutes from voice telephony including value-added voice services, but not non-voice services, video telephony, etc.

- Like every year, the number of call minutes rose significantly in Q4 compared with Q3 2015 (up 6.4%).
- In 2015, mobile call minutes totalled some 20.853 billion. Against the previous year, this is a decrease of 4.4%. From 2013 to 2014, total call minutes on mobile networks had also fallen (down 3.1%). This suggests a general downward trend.

Text messages (SMS)

FEWER TEXT MESSAGES YEAR AFTER YEAR

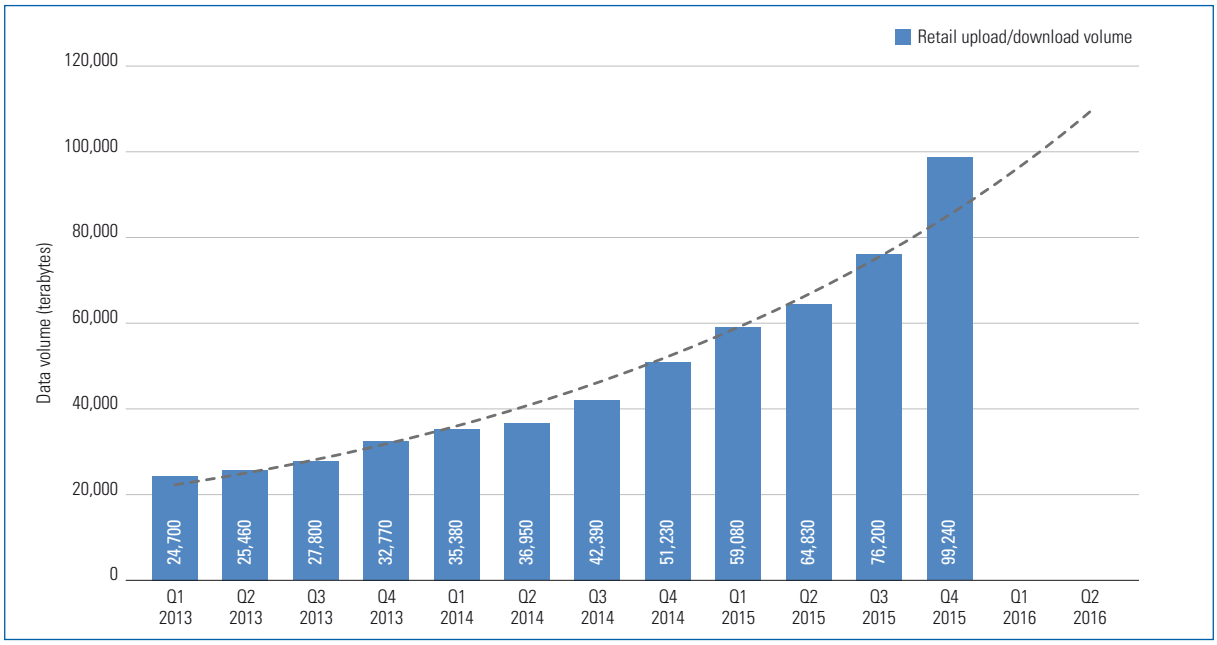


The chart above shows the number of text messages (technical measurement) sent in the respective quarters. For text messages, similar to call minutes, the term "technical measurement" means that the figure also includes text messages that are not charged individually to the retail customer (e. g. text messages included in the base fee or flat rate). Multimedia messages are not included in these figures.

- Like every year, also in Q4 2015, the number of text messages rose compared with the previous quarter (up 2.8%). For the entire year 2015, however, the downward trend of the preceding years was seen to continue.
- In 2015, a total of 3.7 billion text messages were sent compared with 4.5 billion text messages in 2014; thus, the year-on-year decline was 17.6%, which means that the trend away from text messages towards data-based instant messaging services like e.g. WhatsApp or Facebook Messenger continued also in 2015.

Data volume (retail market)

➡ NEARLY 100,000 TERABYTES USED IN THE FOURTH QUARTER OF 2015

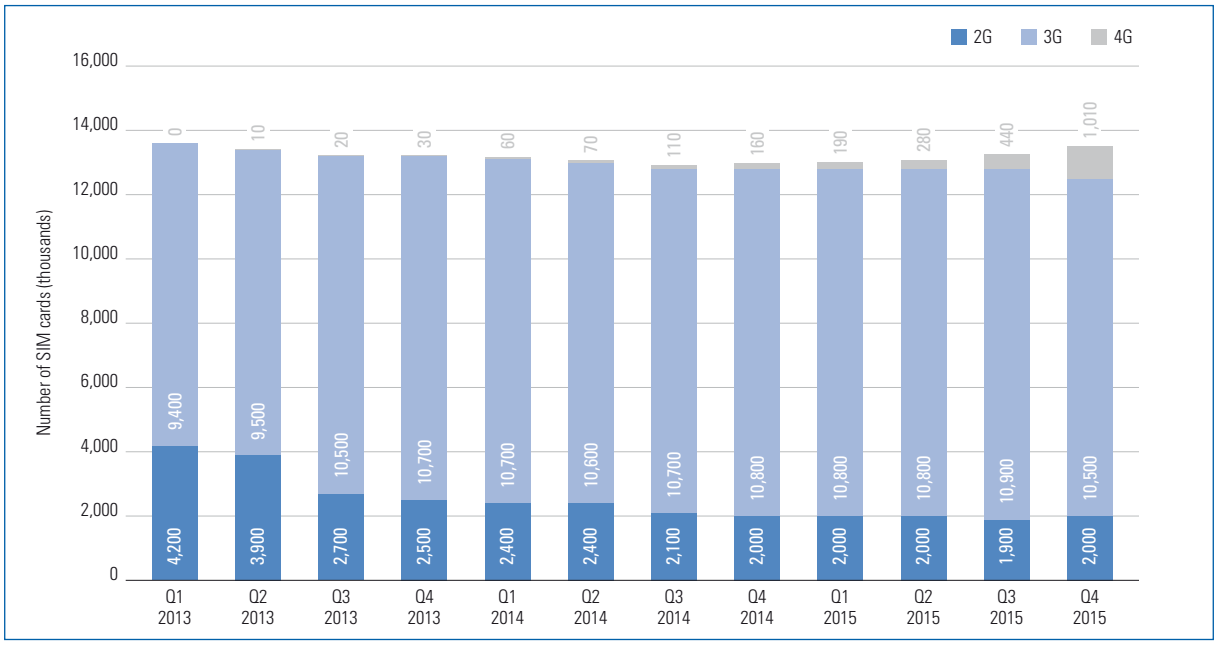


The chart above shows the data volume used for uplink and downlink transmissions on the retail mobile communications market in terabytes (1 terabyte = 1,024 gigabytes = 1,048,576 megabytes). These figures do not include text messages or multimedia messages. In addition, a simple exponential trend line illustrates how the data volume would develop if the trend persisted.

- The mobile data volume used (upload and download) has been rising exponentially in recent years and is expected to grow on this scale. In the last quarter of 2015, the data volume once again climbed sharply (up 30.2%), almost breaking the 100,000-terabyte mark.
- In 2015, close to 300,000 terabytes of data were used in total. Compared with 2014, this once again constituted an enormous increase of 80.4% and of even 170.3% against 2013. The increase in the number of SIM cards was significantly less pronounced in this period.

SIM cards in use

ALREADY MORE THAN ONE MILLION 4G CARDS

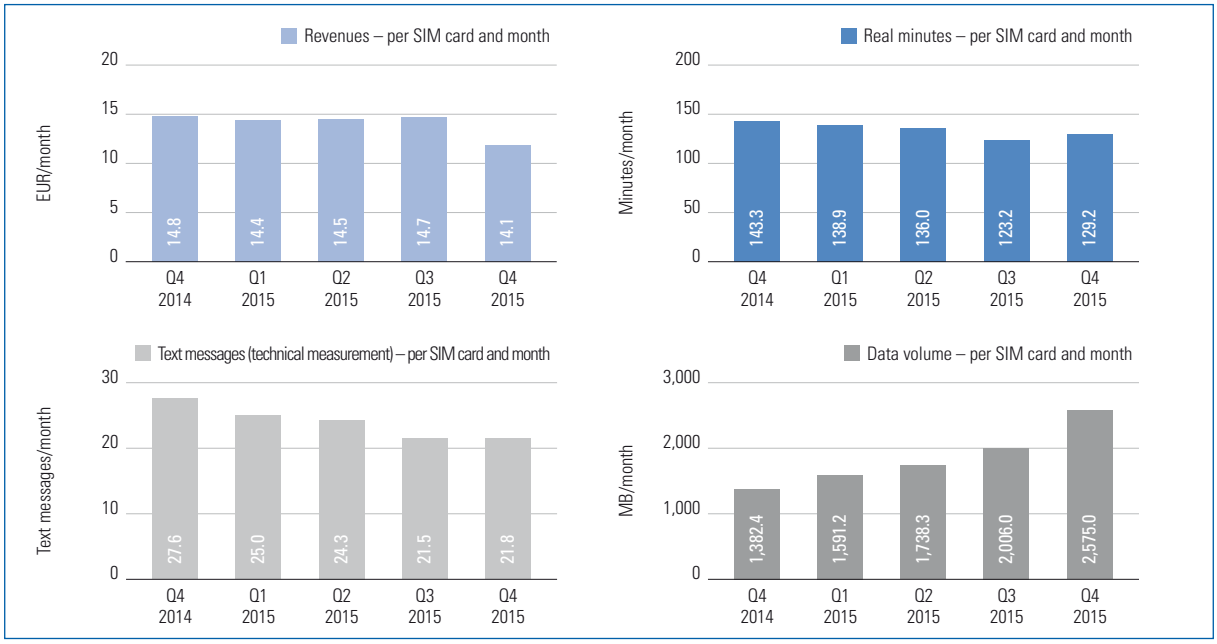


The chart above shows the number of SIM cards activated and in use, broken down into 2G (GSM), 3G (UMTS) and 4G (LTE) cards.
The breakdown of SIM cards into prepaid and postpaid customers can be found in the table at the end of the section.

- At the end of 2015, some 13.5 million SIM cards were in use, 4.0% more than in the previous year, with 4G cards strongly on the rise. Operators reported 1.0 million 4G cards at the end of 2015, which is more than six times as many as at the end of 2014 (162,000). In contrast, 2G cards dropped by 3.9% (to 2.0 million) and 3G cards by 2.3% (to 10.5 million). At the end of 2015, 3G cards still amounted to 78% of all SIM cards.
- The number of postpaid cards declined by 1.2% to 9.0 million, whereas the number of prepaid cards gained 16.2% (to 4.5 million). Nevertheless, at the end of 2015, postpaid cards still accounted for about two thirds of all SIM cards on the market.

The average SIM card

➡ ONLY DATA VOLUMES INCREASE STEADILY

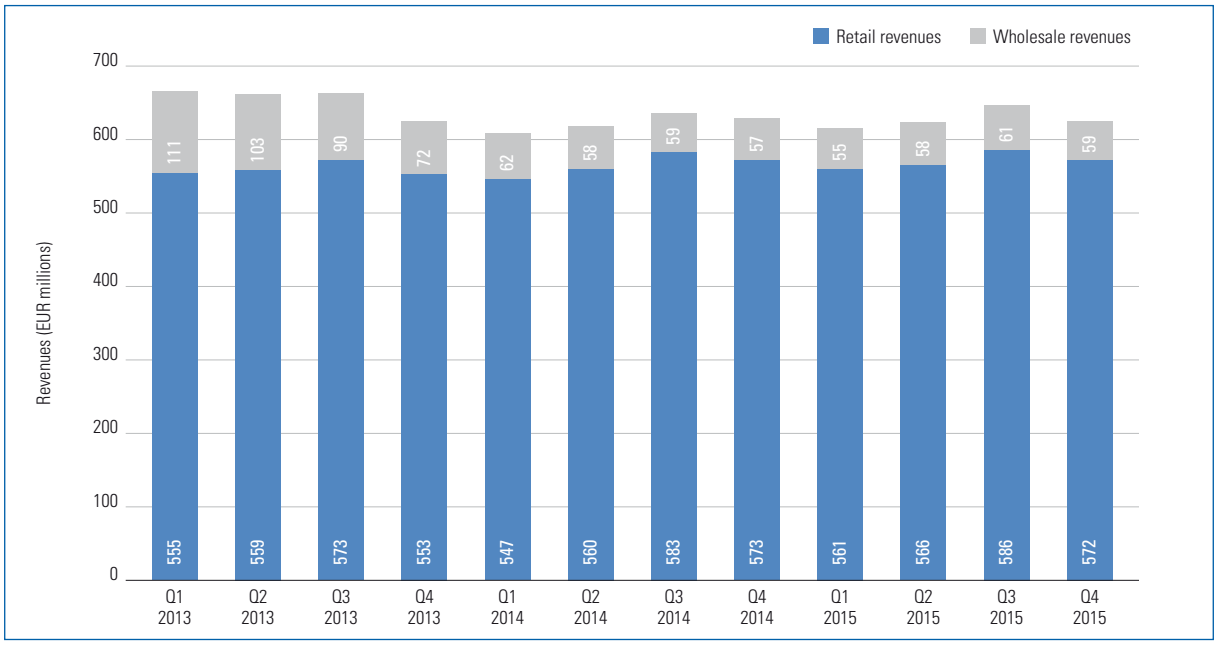


The charts show the average revenues generated (ARPU – Average Revenue per User), the average number of real minutes and text messages sent as well as the data volume used in megabytes per SIM card in an average month for each quarter. The values are therefore based on one-third of retail customer revenues, real minutes, number of text messages sent and data volumes of a quarter, divided by the total number of activated SIM cards (including mobile broadband cards and M2M SIM cards). The revenues per SIM card depicted shall not be interpreted as prices. Information on the price developments can be found in the price index for mobile communications at the end of the section.

- The charts reflect the trends in the areas described on the previous pages – here in terms of the average usage of a SIM card in an average month of a quarter.
- Accordingly, on average per SIM card and month in Q4 2015, revenues of EUR 14.1 were generated, 21.8 text messages sent, outgoing calls amounting to 129.2 call minutes made and 2,575 megabytes of data volume used.
- Compared with an average month of Q4 2014, revenues per SIM card thus dropped by 4.7%. The number of call minutes (down 9.8%) and text messages (down 21.0%) was also declining. Solely data volumes were on the increase, up 86.3%.

Total mobile communications revenues

➡ SLIGHT INCREASE YEAR ON YEAR

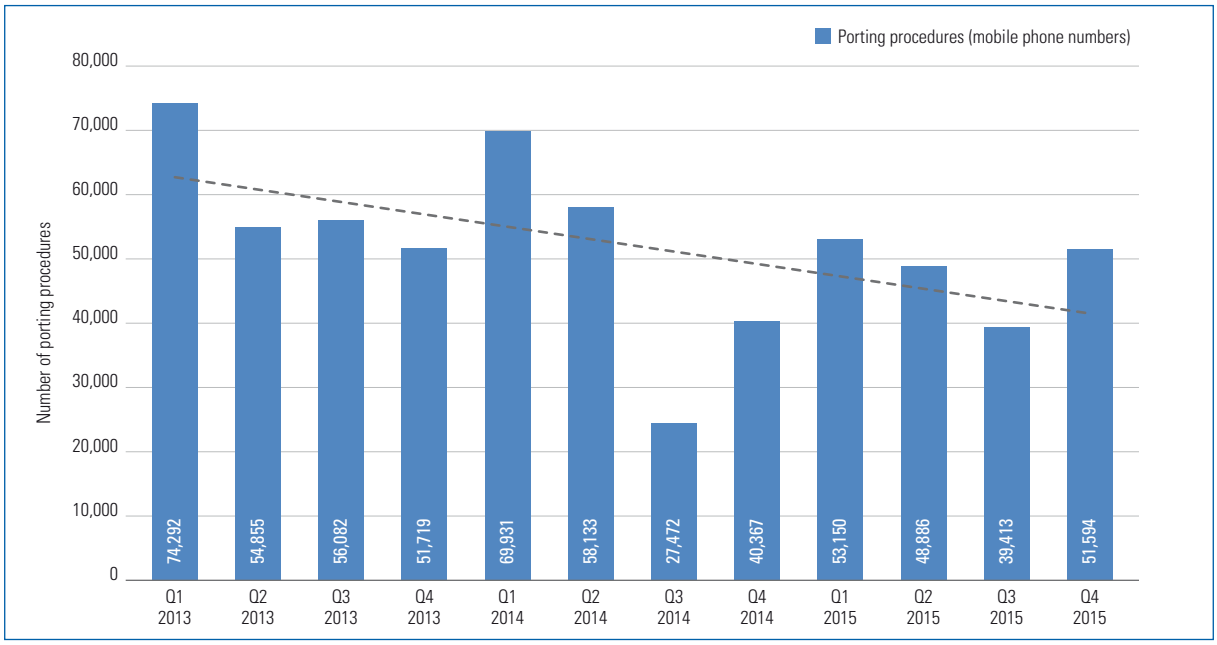


The chart above shows the revenues on the retail and wholesale markets. Retail revenues include all revenues (base fees, activation charges, service charges, connection charges, etc.) earned from (own) retail customers in Austria, including revenues earned from roaming. Wholesale revenues are revenues from origination and termination charges, from selling airtime to resellers and revenues from national and international roaming (including MVNO access).

- Taking into account retail and wholesale revenues, some EUR 2.516 billion were generated in 2015, thus 0.8% more than in 2014.
- Retail revenues climbed by 0.9% to EUR 2.284 billion, whereas wholesale revenues declined by 0.7% to EUR 232.8 million.

Porting of mobile telephone numbers

➡ 193,000 PORTING PROCEDURES IN 2015

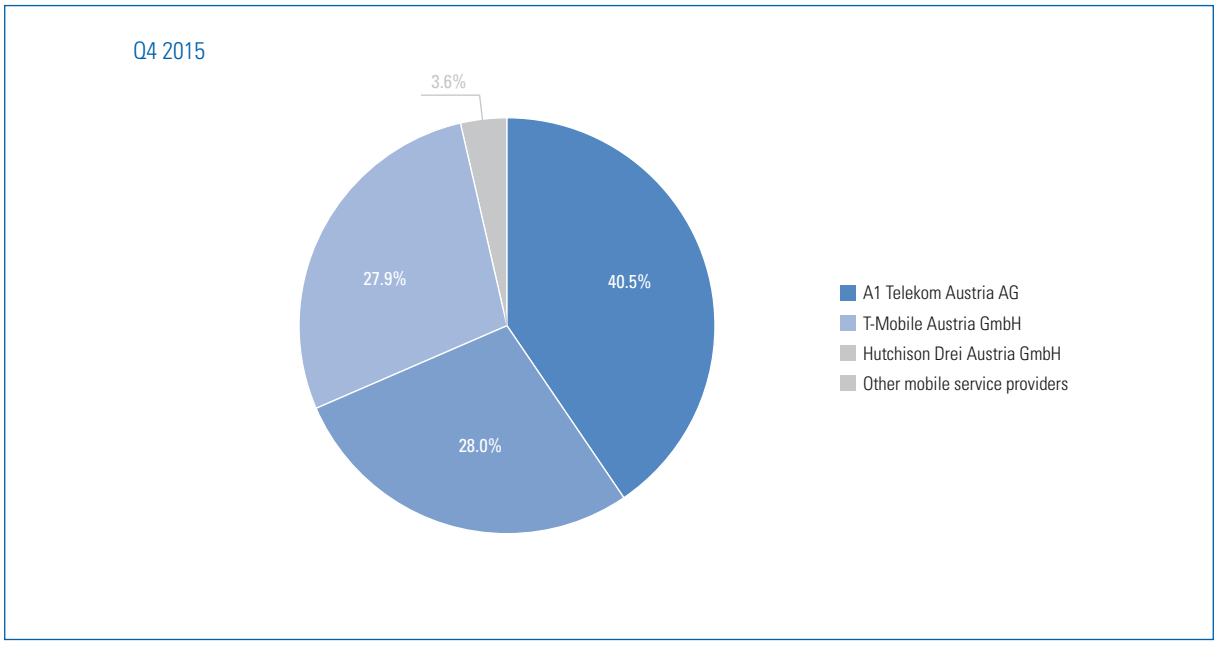


Number porting allows customers to retain their telephone numbers when they switch service providers. The chart above shows the porting procedures/imports of telephone numbers carried out for an operator in one quarter, i.e. SIM cards in the case of mobile operators and subscriber numbers on the fixed network. Reverse portings (e.g. after cancellation by a subscriber) are not considered as porting procedure. If a subscriber number is ported several times within a quarter ("subsequent porting"), this is counted separately each time. In addition to the number of porting procedures in the respective quarter, the chart also shows a linear trend line.

- In Q4 2015, close to 51,600 portings of mobile phone numbers were recorded and thus significantly more than in the previous quarter. The number of porting procedures fluctuated during the year.
- If one looks at the total number of porting procedures on an annual basis, it can be seen that in 2015 (193,000) this figure was almost the same as in 2014 (195,900), the decline being only 1.5%.
- Generally, the number of portings of mobile phone numbers shows a downward trend over the whole time period depicted, as illustrated by the linear trend line. However, when interpreting the trend line, it has to be noted that it is certainly also influenced by the sharp fall in 2014.

Market shares of mobile service providers in Austria

➡ MARKET SHARES OF ALTERNATIVE MOBILE SERVICE PROVIDERS ON THE RISE

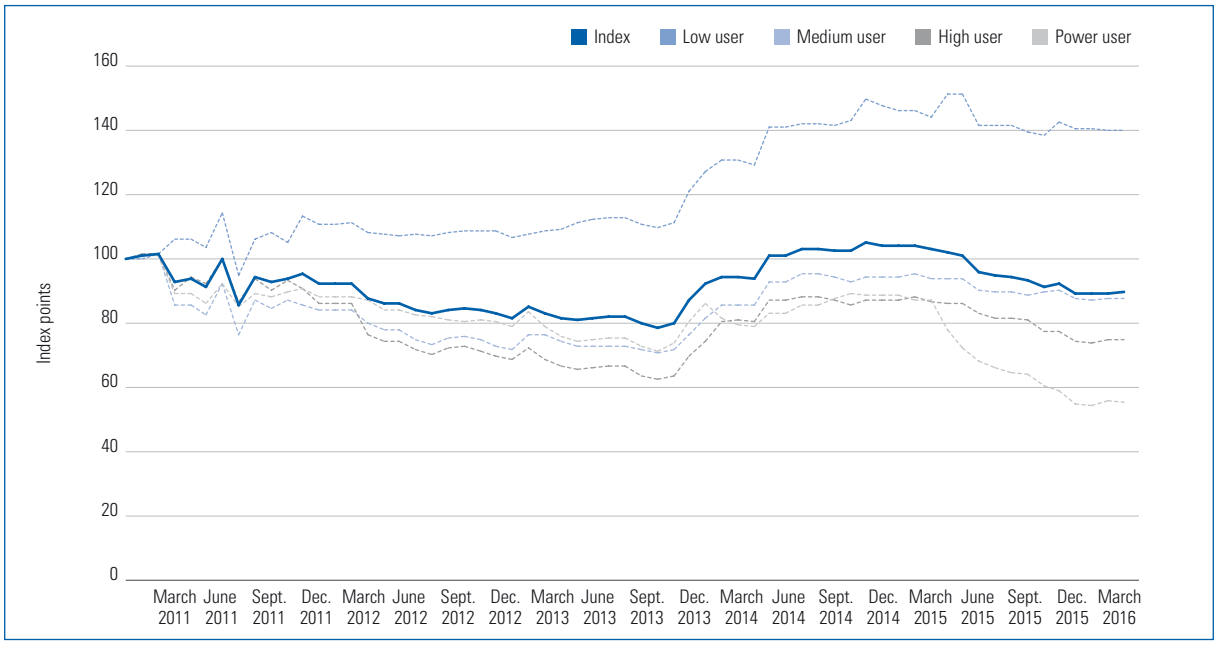


The chart above shows the market shares of mobile operators in Austria based on the number of their subscribers (number of SIM cards used).

- In Q4 2015, A1 achieved a market share of 40.5% (5.5 million customers), T-Mobile held a market share of 28.0% (3.8 million customers), Hutchison reached a share of 27.9% (3.8 million customers).
- The "Other mobile services providers" category comprises MVNOs and airtime resellers (see Glossary) that notified RTR of the provision of mobile communications services and hold the corresponding general authorisation. With 489,000 customers, together they had a market share of 3.6% at the end of 2015.

Price index in mobile communications

➡ STABLE DEVELOPMENT IN THE FIRST QUARTER OF 2016



For the calculation of the average monthly prices the tariff data published monthly by the Austrian Chamber of Labour are used and average prices are derived for four different user types: three of these user types are so-called "smartphone users" who use both voice and text messaging services as well as data services. The fourth user type (the low user) exclusively uses voice and text messaging services. Up to five of the respective most economical tariffs per brand are used (see Glossary).

In contrast to the other charts in the RTR Telekom Monitor, this chart does not show the price development on a quarterly but on a monthly basis. As data up to March 2016 are already available, they are also included in the chart.

- In the course of Q1 2016, the overall index remained stable (up 0.15 index points between December 2015 and March 2016).
- During this period, tariff changes were seen primarily for the sub-brands of the network operators as well as for MVNOs: Among other things new tariffs for Bob, Spusu and eety were introduced. In addition, the base fee of UPC tariffs was lowered.

RETAIL REVENUES FROM MOBILE COMMUNICATIONS (PAGE 9)

		EUR					
		Voice telephony	Text messaging	Data services and value-added data services	Bundled products and base fees	Share of data services in bundled products	Other revenues
2013	Q1	146,459,491	29,730,824	60,701,228	308,466,400	16.5%	9,644,009
	Q2	150,603,221	28,444,167	64,444,548	308,550,091	15.8%	6,851,369
	Q3	147,712,506	28,970,715	74,645,871	317,975,220	16.3%	3,706,136
	Q4	133,526,449	26,827,217	71,040,035	317,931,169	16.1%	3,837,465
2014	Q1	120,631,986	26,777,086	70,131,480	325,475,670	16.2%	3,520,683
	Q2	124,999,047	26,625,960	72,544,340	332,298,017	16.2%	3,494,429
	Q3	130,688,351	26,727,094	78,453,031	343,834,578	16.2%	3,557,355
	Q4	116,716,645	24,346,787	75,917,695	351,999,691	15.9%	4,303,151
2015	Q1	104,690,741	23,686,570	74,416,237	355,881,764	15.8%	2,118,423
	Q2	107,235,977	24,140,879	78,908,481	353,092,874	15.5%	2,080,240
	Q3	113,186,234	26,074,581	87,742,707	356,376,087	15.6%	2,256,923
	Q4	106,537,539	24,195,302	80,907,516	357,883,531	16.2%	2,132,310

CALL MINUTES ON THE RETAIL MARKET (PAGE 10)

		Real minutes
2013	Q1	5,711,663,968
	Q2	5,732,826,273
	Q3	5,431,953,366
	Q4	5,637,233,118
2014	Q1	5,448,927,110
	Q2	5,461,038,011
	Q3	5,335,100,383
	Q4	5,569,638,361
2015	Q1	5,407,174,215
	Q2	5,318,743,559
	Q3	4,907,266,739
	Q4	5,219,612,725

TEXT MESSAGES (PAGE 11)

		Text messages sent (technical measurement)
2013	Q1	1,677,485,280
	Q2	1,541,179,929
	Q3	1,348,486,974
	Q4	1,349,464,137
2014	Q1	1,182,412,903
	Q2	1,141,435,245
	Q3	1,047,778,887
	Q4	1,073,631,357
2015	Q1	974,741,653
	Q2	949,268,075
	Q3	857,063,815
	Q4	881,028,118

DATA VOLUME RETAIL MARKET (PAGE 12)

		Retail upload/download volume (megabytes)
2013	Q1	25,900,761,088
	Q2	26,700,365,824
	Q3	29,155,606,528
	Q4	34,364,913,664
2014	Q1	37,097,558,016
	Q2	38,746,697,728
	Q3	44,448,830,464
	Q4	53,717,924,864
2015	Q1	61,949,792,256
	Q2	67,976,836,096
	Q3	79,906,373,632
	Q4	104,059,714,560

SIM CARDS IN USE (PAGE 13)

		Number of SIM cards			
		2G SIM cards	3G SIM cards	4G SIM cards	thereof M2M SIM cards
2013	Q1	4,241,772	9,421,539	628	109,343
	Q2	3,909,645	9,488,201	10,220	113,861
	Q3	2,680,314	10,538,191	17,281	117,423
	Q4	2,547,291	10,691,826	32,905	127,797
2014	Q1	2,447,319	10,680,634	58,291	139,392
	Q2	2,354,056	10,648,919	70,133	142,564
	Q3	2,099,580	10,743,490	108,688	145,988
	Q4	2,033,287	10,757,346	161,972	149,466
2015	Q1	1,969,370	10,818,048	190,023	153,083
	Q2	1,953,255	10,806,399	275,590	154,489
	Q3	1,947,260	10,891,525	438,873	155,146
	Q4	1,954,285	10,504,623	1,011,715	156,576

PREPAID VS. POSTPAID SIM CARDS

		Number of SIM cards	
		Postpaid	Prepaid
2013	Q1	9,391,702	4,272,237
	Q2	9,172,226	4,235,840
	Q3	9,173,165	4,062,621
	Q4	9,210,558	4,061,464
2014	Q1	9,199,183	3,987,061
	Q2	9,124,882	3,948,226
	Q3	9,070,277	3,881,481
	Q4	9,066,368	3,886,237
2015	Q1	8,947,741	4,029,700
	Q2	8,903,983	4,131,261
	Q3	8,892,969	4,384,689
	Q4	8,955,747	4,514,876

TOTAL MOBILE COMMUNICATIONS REVENUES (PAGE 15)

		EUR		
		Retail revenues	Wholesale revenues	Total
2013	Q1	555,001,952	111,136,199	666,138,151
	Q2	558,893,396	102,956,960	661,850,356
	Q3	573,010,448	90,406,632	663,417,080
	Q4	553,162,335	72,445,449	625,607,784
2014	Q1	546,536,905	61,886,533	608,423,438
	Q2	559,961,793	57,523,889	617,485,682
	Q3	583,260,409	58,512,925	641,773,334
	Q4	573,283,969	56,456,867	629,740,836
2015	Q1	560,793,735	54,809,952	615,603,687
	Q2	565,458,451	58,293,294	623,751,745
	Q3	585,636,532	61,063,285	646,699,817
	Q4	571,656,198	58,580,797	630,236,995

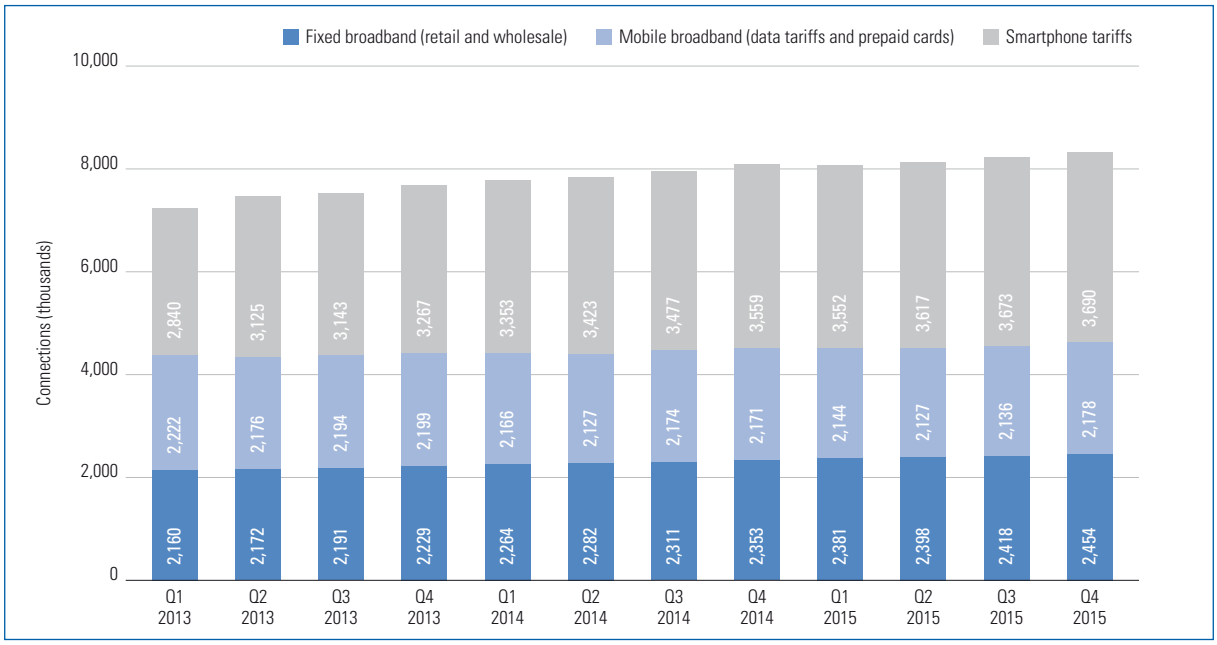
PORTING OF MOBILE TELEPHONE NUMBERS (PAGE 16)

		Porting procedures / mobile phone numbers
2013	Q1	74,292
	Q2	54,855
	Q3	56,082
	Q4	51,719
2014	Q1	69,931
	Q2	58,133
	Q3	27,472
	Q4	40,367
2015	Q1	53,150
	Q2	48,886
	Q3	39,413
	Q4	51,594

2 | Broadband

Fixed and mobile broadband connections

SLIGHT GROWTH IN ALL CATEGORIES

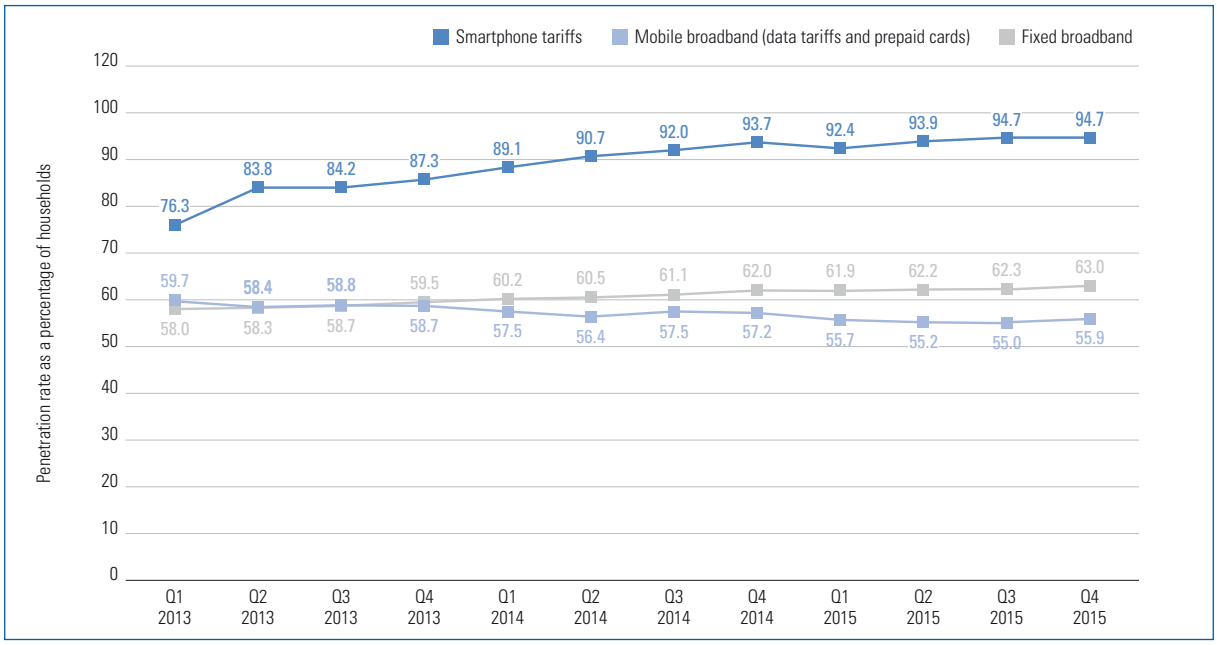


The chart above shows the total number of fixed and mobile broadband connections. With mobile broadband, mobile data tariffs and smartphone tariffs are distinguished. For the definitions of fixed broadband connections as well as mobile data tariffs and smartphone tariffs see Glossary.

- At the end of 2015, there were 8.3 million broadband connections in Austria. Thus the number of broadband connections increased by 3.0% in one year.
- In the said period, fixed broadband connections grew by 4.3% to almost 2.5 million, smartphone tariffs rose by 3.7% to just under 3.7 million. With a total of 2.2 million connections, mobile data tariffs and prepaid cards went up by only 0.4%.

Broadband penetration

MORE FIXED BROADBAND CONNECTIONS AND SMARTPHONE TARIFFS



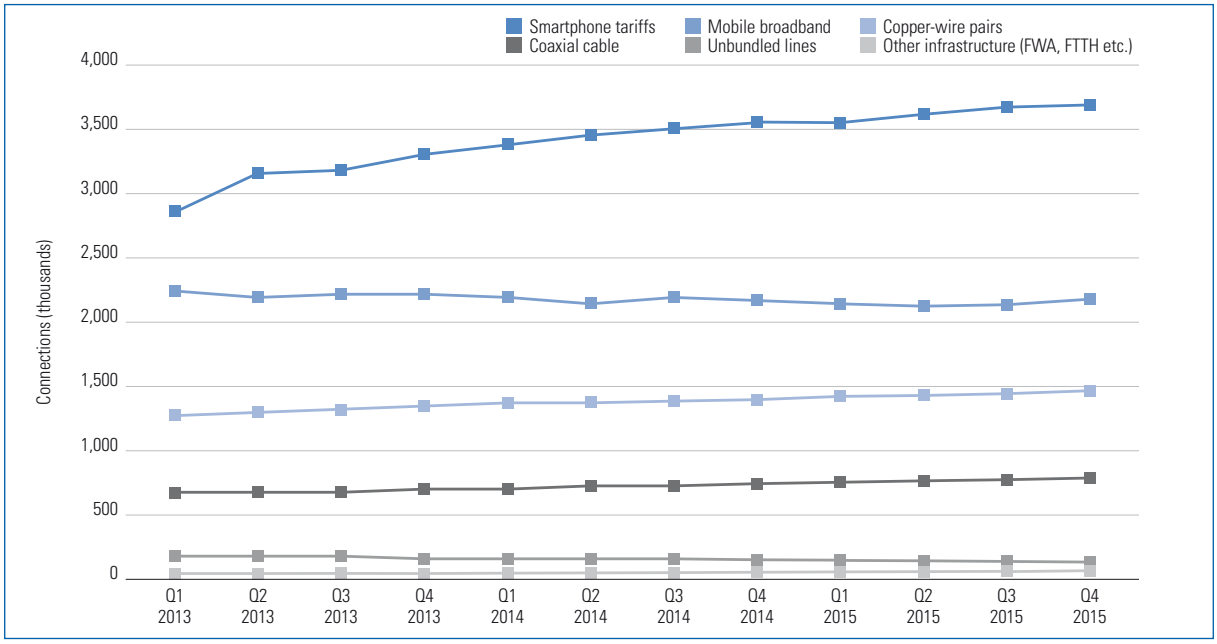
Source for number of households: Statistics Austria

Broadband penetration refers to the ratio of fixed and mobile broadband connections to the total number of households in Austria. Calculation of the penetration rate also includes broadband connections used in businesses.

- Statistically speaking, 94.7% of households had a smartphone tariff at the end of 2015, which is up one percentage point compared with the year before.
- At the end of 2015, fixed broadband penetration was 63.0% and thus also one percentage point above the corresponding value of the previous year.
- Penetration of mobile data tariffs and prepaid cards slipped by 1.3 percentage points against the end of 2014 and came to 55.9% in Q4 2015.

Retail broadband connections by type of infrastructure

➡ SMARTPHONE TARIFFS AS PRIMARY BROADBAND TECHNOLOGY

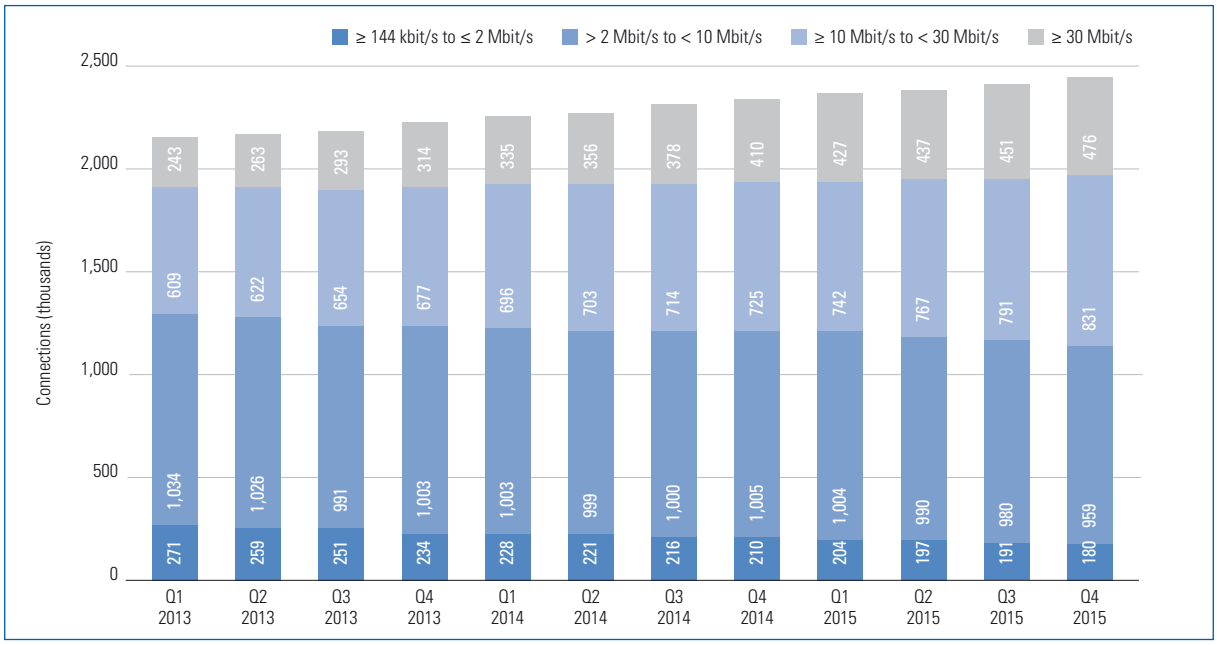


The chart above shows the total number of fixed and mobile broadband connections in Austria by infrastructure used. For the infrastructure of fixed broadband connections see Glossary. The data underlying this chart and the number of connections realised by means of virtual unbundling are contained in the table at the end of the section.

- As described before, the number of smartphone tariffs went up by 3.7% to roughly 3.7 million in the course of 2015. At the end of 2015, 44.3% of all broadband connections in Austria fell into this category.
- At the end of 2015, 26.2% of retail broadband connections were mobile broadband connections, increasing in number by hardly noticeable 0.4% to 2.2 million between Q4 2014 and Q4 2015.
- Over the same period, broadband connections based on copper-wire pairs using own infrastructure increased by 4.5% to 1.5 million and constituted 17.6% of broadband connections at the end of 2015. The number of broadband connections via unbundled lines dropped by 11.9% to 134,200 in the course of 2015.
- At the end of 2015, cable broadband connections numbered some 788,100, up 6% against the end of 2014.
- Even though fibre optic connections were being increasingly expanded and in high demand (up 21.8% between the end of 2014 and the end of 2015), they accounted for only 0.5% of all broadband connections at the end of 2015. With 40,300 connections, they constituted the lion's share in the "Other infrastructure" category depicted in the chart. In addition, this category includes connections implemented by means of virtual unbundling (6,900) and wireless broadband connections (16,600).

Retail broadband connections by bandwidth category – fixed network

➡ CONTINUED INCREASING DEMAND FOR HIGH BANDWIDTHS

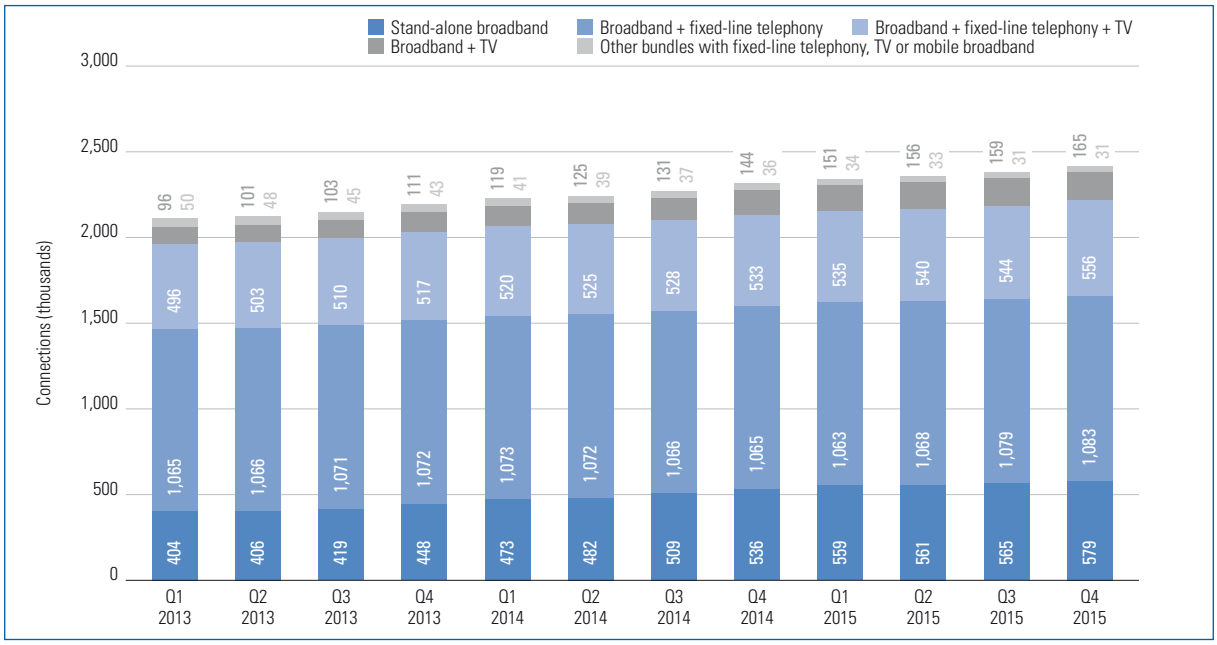


The chart above shows the total number of fixed broadband connections in Austria, broken down by bandwidth categories. Because of the small number of cases, categories with low bandwidths (≥ 144 kbit/s to < 2 Mbit/s and = 2 Mbit/s) and categories with high bandwidths (30 Mbit/s to < 100 Mbit/s and ≥ 100 Mbit/s) were combined. The categories in between (> 2 Mbit/s to < 10 Mbit/s and 10 Mbit/s to < 30 Mbit/s) are unchanged. All categories are shown separately in the table at the end of the section.

- Unsurprisingly, the chart reflects the trend towards higher bandwidths. Out of about 2.5 million fixed broadband connections only 180,000 connections (7.4%) have bandwidths below 2 Mbit/s, i.e. 14.2% less than one year before. The number of connections with bandwidths below 10 Mbit/s also declined: 959,200 connections (39.2%) constitute a drop of 4.6% against the end of 2014.
- In contrast, the number of connections with bandwidths of up to 30 Mbit/s rose by 14.7%. At the end of 2015, they numbered 831,100 (34.0% of the total number). Even more significant is the increase in the case of bandwidths above 30 Mbit/s: Even though they accounted for only 19.5% of all fixed broadband connections with 475,800 connections at the end of 2015, they increased in number by 16.1% in the reference period.

Number of retail broadband connections – fixed network

➡ PRODUCTS BUNDLED WITH BROADBAND ON THE UPSWING

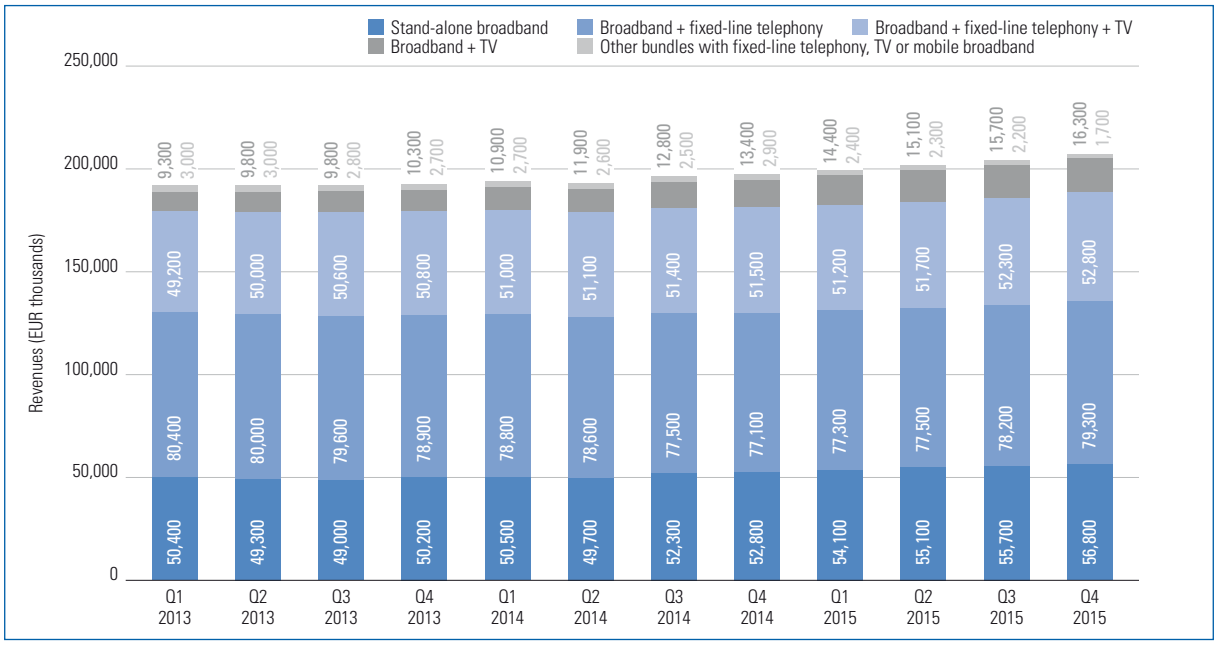


The chart shows the number of broadband products sold to retail customers, using own infrastructure or an unbundled line. Broadband products may be sold without any other product (stand-alone) or can be a combination of broadband with one or more other products (bundled product), for example, broadband and fixed network and/or TV.

- 578,600 connections (24.0% of fixed-line broadband connections) were stand-alone connections at the end of 2015. This figure increased by 7.9% in the course of the year under review.
- At the end of 2015, the most prominent product bundled with broadband was the one combining broadband and fixed-line telephony: There existed 1.1 million of such connections, amounting to 44.9% of all fixed-line broadband connections.
- The largest increase, up 14.8%, was seen for the bundle combining broadband and TV, which climbed to 164,800.
- The connections bundling broadband, fixed-line telephony and TV saw growth of 4.5% to 556,400 (23.1% of all fixed-line broadband connections).
- Other broadband combinations than those mentioned above accounted for only 1.3% of all broadband products, i.e. some 30,900 connections at the end of 2015. Besides, the figure for these connections declined sharply (down 13.0% within one year).

Revenues from retail broadband connections – fixed network

➡ BROADBAND PRODUCTS GENERATED REVENUES OF MORE THAN EUR 800 MILLION IN 2015

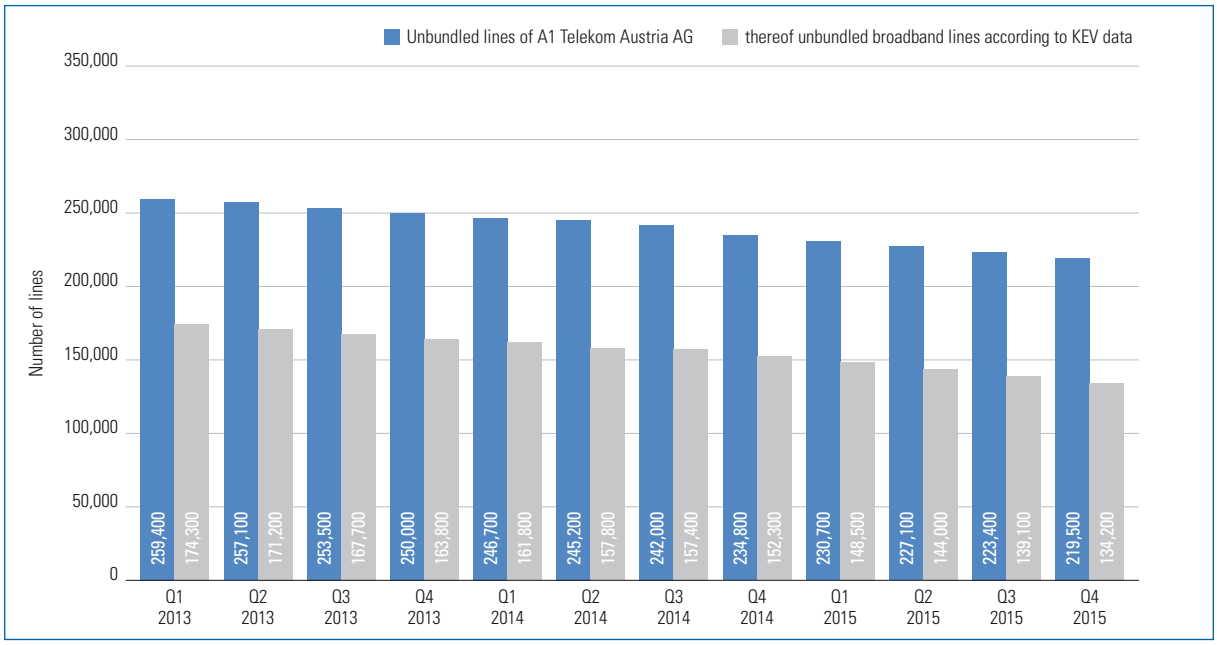


The chart shows the revenues from broadband connections sold to retail customers using own infrastructure or an unbundled line. This includes broadband stand-alone products and bundled products where broadband is offered in combination with another product (voice telephony and/or TV and/or other products).

- Given the increasing number of fixed-line broadband connections, the associated increase in revenues was hardly surprising. In Q4 2015, fixed-line broadband products generated revenues of EUR 207.0 million, 4.7% more than in the reference quarter of 2014.
- In 2015, revenues from products bundled with broadband totalled some EUR 812.2 million compared with EUR 782.1 million in the previous year.

Unbundled lines of A1 Telekom Austria AG

➡ NUMBER OF UNBUNDLED LINES IS DECLINING FURTHER

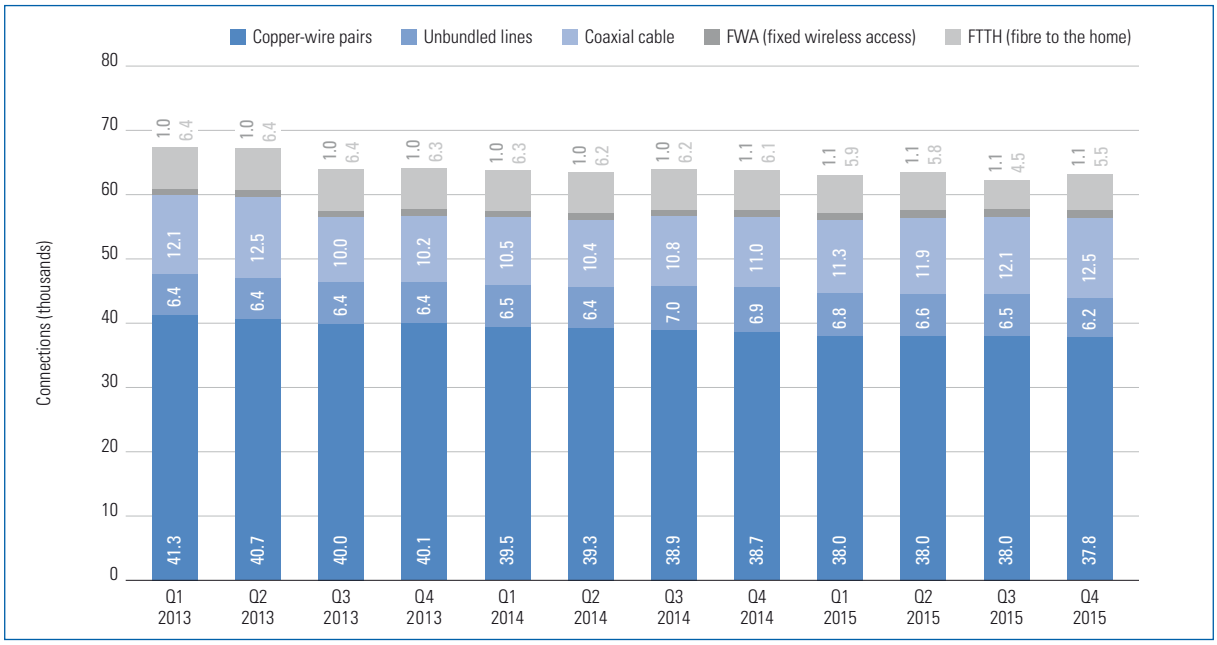


The chart above shows all unbundled lines in the network of A1 Telekom Austria AG and the unbundled broadband lines thereof that are used by the operators according to the KEV sample. This means that all lines unbundled by A1 (supply-side) are depicted in comparison to the broadband lines unbundled by the other operators (demand-side) according to the KEV. The difference between the two bars relates to those unbundled lines that are exclusively used for voice or for leased lines and are therefore not attributable to broadband.

- In the course of 2015, the number of unbundled lines decreased by 6.5% to 219,500.
- The number of unbundled broadband lines (subset of all unbundled lines) dropped by 11.9% to 134,200.

Number of wholesale broadband connections

LITTLE CHANGE AT THE WHOLESALE LEVEL

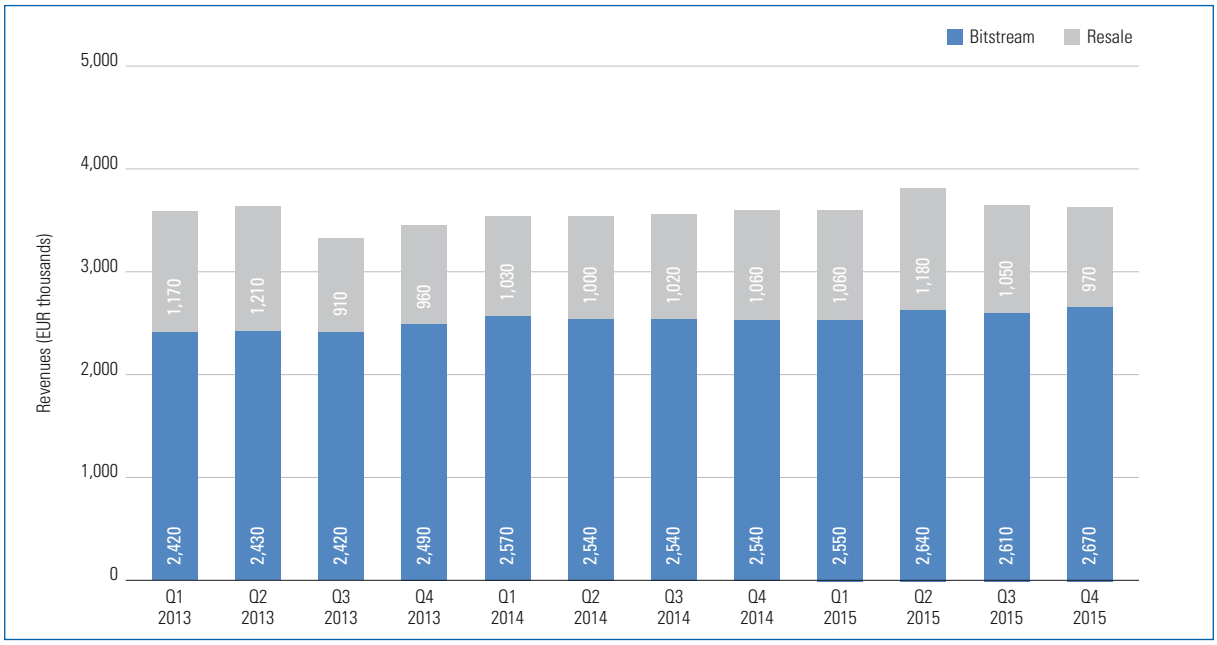


This chart shows the number of broadband connections provided as bitstream or resale products to other communications service providers on the wholesale market on their own or on leased infrastructure (unbundled) for connecting to retail customers (or for resale) – classified by the infrastructure used.

- Even if the number of wholesale broadband connections rose again slightly at the end of 2015, a slight downward trend can be observed nevertheless in the course of 2015. While there were still 65,290 wholesale broadband connections at the end of 2014, this figure dropped to 64,710 at the end of 2015, down by 0.9%.
- About 58.4% of wholesale broadband connections (37,800) were copper-wire pairs at the end of 2015, down 2.2% in the course of 2015.
- 19.4 % of all wholesale broadband connections were cable connections, numbering 12,530 at the end of 2015, which is more than 13.6% compared with the end of 2014.
- About 9.6% of wholesale broadband connections (6,240) were attributable to unbundled lines; this figure was lower by 9.6% compared with the year before.
- In the course of 2015, wholesale fibre optic connections dropped by 10.2% to 5,470, accounting for only 8.5% of all wholesale broadband connections.
- The total share of wholesale broadband connections based on radio or satellite was only about 4.1%, which corresponds to a slight rise of 1.9% compared to the end of 2014.

Revenues from wholesale broadband connections

➡ HIGHER WHOLESALE REVENUES IN 2015 THAN IN 2014

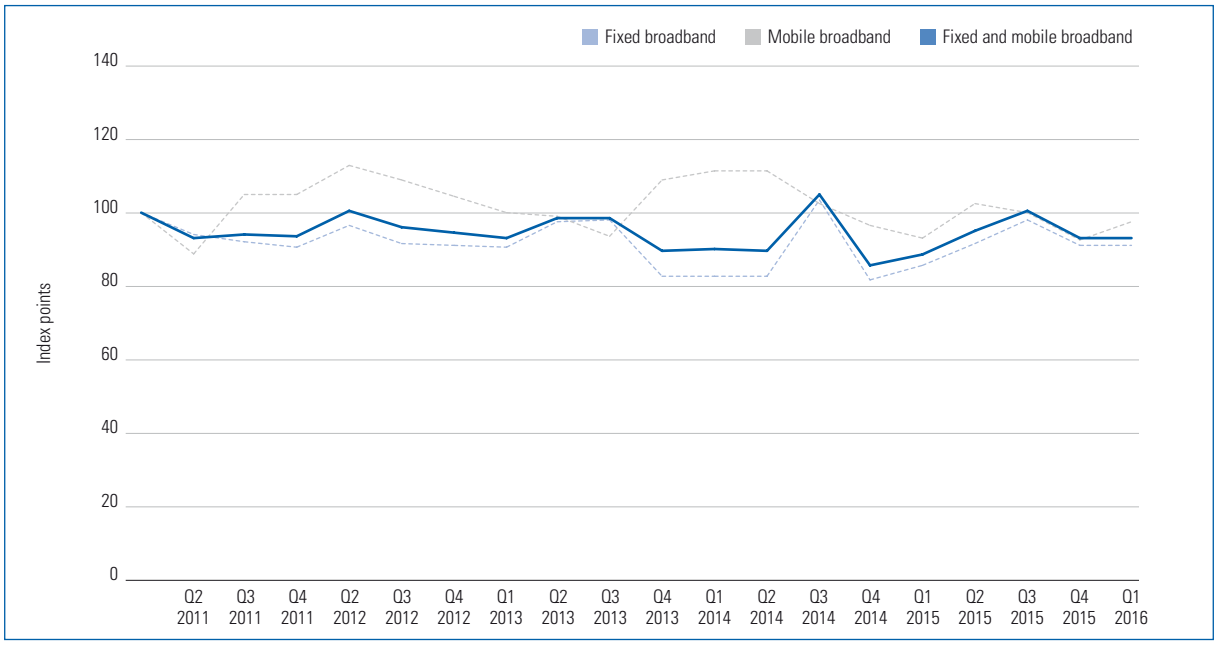


Revenues from broadband connections supplied on the wholesale market include one-off charges (e.g. installation charges, setup and activation charges) and ongoing charges plus any charges for data transfer, etc. A distinction is made between bitstream and resale (see Glossary).

- In 2015, wholesale broadband connections generated revenues of some EUR 14.7 million and thus 3.0% more than in 2014. Among other things this is attributable to one operator's extraordinarily high growth in revenues from resale in Q2 2015.
- Bitstream revenues accounted for about 71.0% of wholesale revenues in the broadband segment, whereas 29.0% came from mere resale.

Price index for broadband (hedonic)

➡ OVERALL INDEX REMAINS STABLE IN THE FIRST QUARTER OF 2016



The broadband index is a hedonic price index for fixed and mobile broadband products. Hedonic means that both price changes and changes in the product characteristics (in particular download rate and download volume) are taken into account. For this purpose, a regression of prices on product characteristics and on time variables is performed.

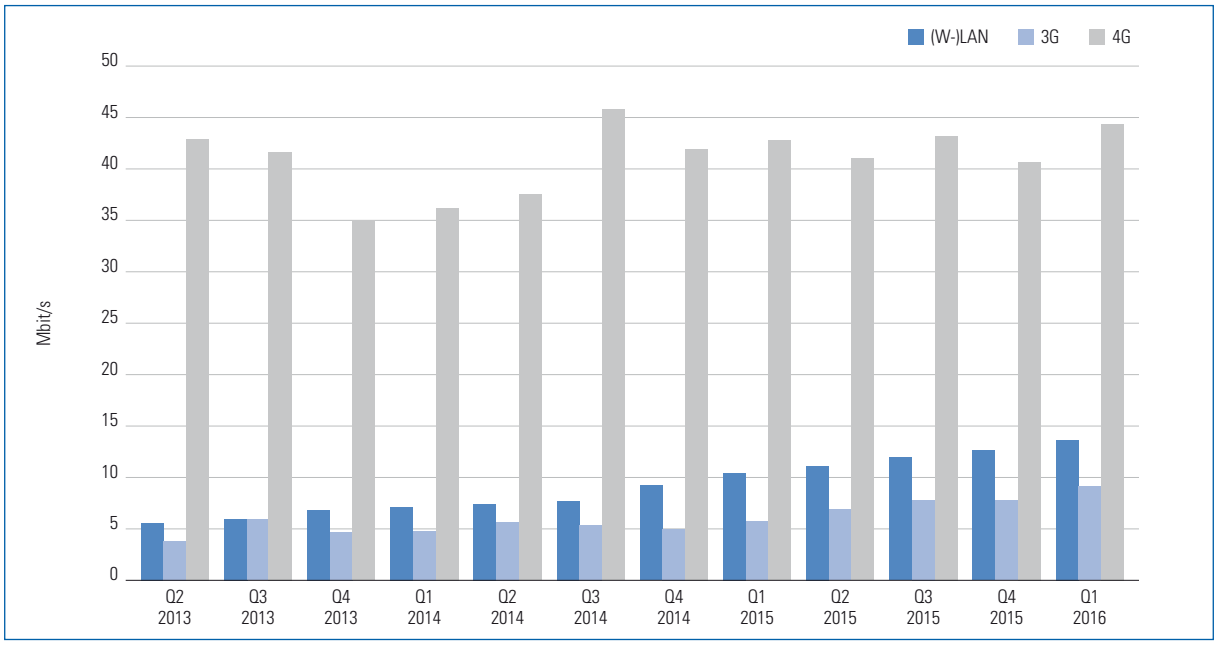
For the calculation, tariffs and product characteristics of the broadband products of the major suppliers (currently A1, UPC, Tele2, LIWEST, Salzburg AG, Kabelplus, Russmedia IT, T-Mobile, Hutchison, HoT) are collected quarterly. All tariffs available to new customers at the respective time are collected. Both mere stand-alone broadband products and products bundled with fixed-line telephony or TV are captured. In the case of mobile broadband, prepaid tariffs are not included. In addition to monthly charges, also one-off charges and annual charges as well as special offers are taken into account. The most expensive 10% of tariffs (currently tariffs exceeding EUR 65) are not included in the calculation, as they can be assumed to be in low demand by customers. The remaining tariffs are weighted in proportion to the operators' market shares in the respective quarter. In the calculation all tariffs of an operator are given the same weights in a quarter. The reference basis is 2010.

As data up to March 2016 are already available, they are also included in the chart.

- The index for mobile broadband showed a slight increase (from 92.4 to 97.4 index points), which is due to the fact that A1 introduced flat rates for the Net-Cube tariffs, while at the same time clearly reducing the maximum download speed. Altogether, this led to a rise in the hedonic index.
- The hedonic index for fixed-line broadband did not see any significant overall index change despite new tariffs of A1.
- The overall index remained constant between Q4 2015 and Q1 2016.

RTR-NetTest: Download speed per technology

➡ SIGNIFICANTLY HIGHER MEDIAN IN HE 3G NETWORK



Source: RTR-NetTest

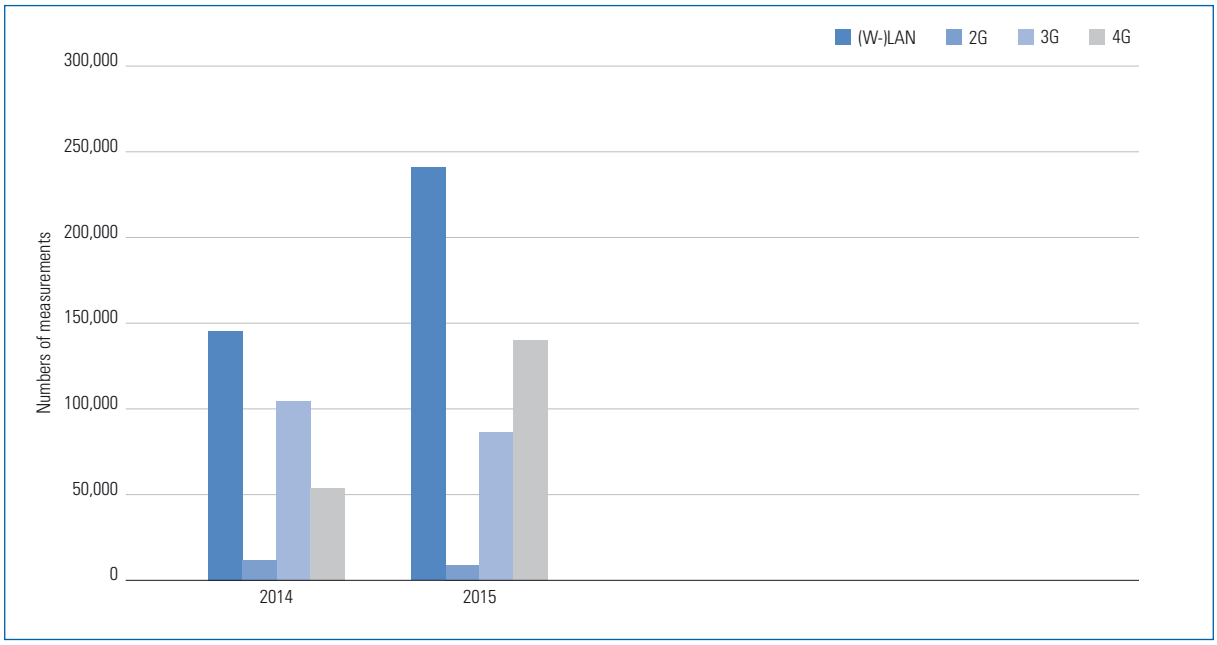
The RTR-NetTest allows users to test the speed and quality of their Internet connection reliably and independently of their provider. In addition, it is possible to compare the measurement results with the average values of other users. The speed of an Internet connection is expressed in megabits per second (Mbit/s) and thus indicates the data volume transmitted in one second. Among other things the speed depends on the technology used. 2G (GPRS, EDGE), 3G (UMTS, HSPA), 4G (LTE) as well as connections using different technologies that are set up via LAN or W-LAN are distinguished. The chart shows the median per technology and quarter, i.e. the observed value that lies exactly in middle of all these values. Due to the low data rates the medians of 2G data connections are not shown in the chart.

The data underlying this chart can be found in the table at the end of the section.

- For LTE the median fell by 4.7% to 41 Mbit/s in Q4 2015 and climbed again to 44.0 Mbit/ in Q1 2016.
- Data rates of 12.6 Mbit/s on average for broadband connections via LAN or W-LAN were clearly behind. The median decreased somewhat in Q4, rising again slightly at the beginning of this year.
- Measurements in the 3G network showed average data rates of about 7.7 Mbit/s at the end of 2015, while this year, at 9.1 Mbit/s, the median is significantly higher than before.
- The median of the non-depicted 2G quarterly measurements of all users was 0.15 Mbit/s.

RTR-NetTest: Measurements per technology from 2014 to 2015

➡ OVER 50% MORE MEASUREMENTS IN 2015 THAN IN 2014



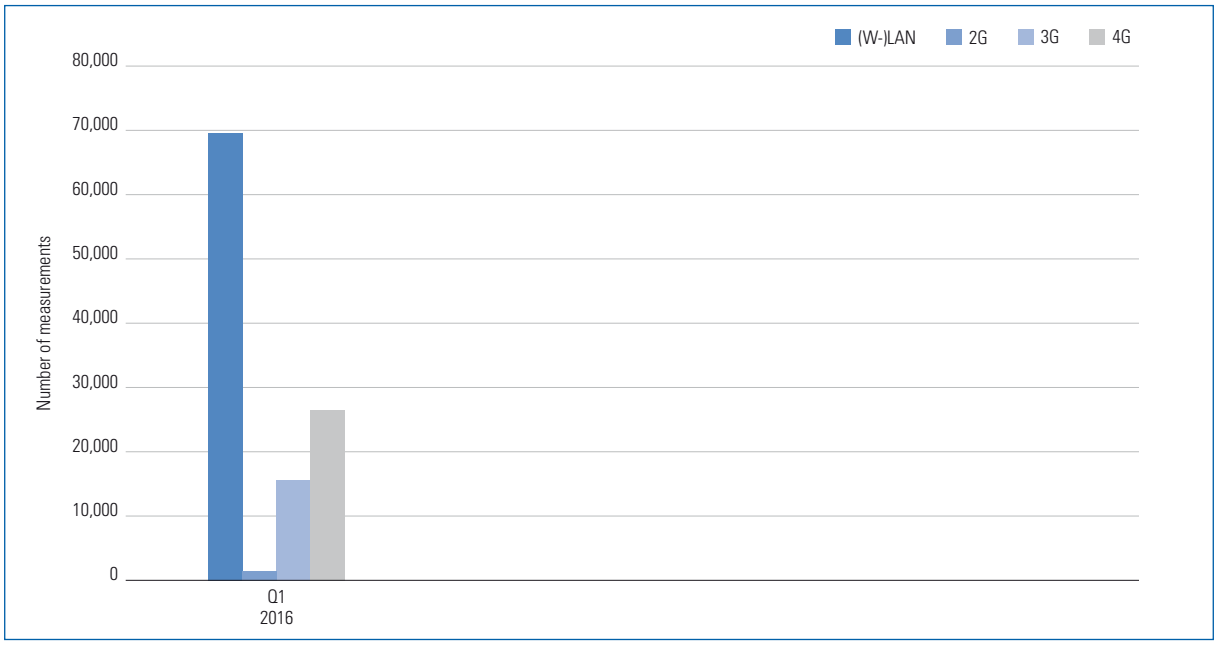
Source: RTR-NetTest

Using the RTR-NetTest users can perform measurements under real conditions and compare their test results with those of other users.
The data underlying this chart can be found in the table at the end of the section.

- In 2015, a total of 476,400 measurements were performed. Against 2014, this is a gain of 50.9%. The increase in the number of measurements was particularly high for the LTE network (up 160.9%) and for the (W)LAN network (up 65.8%). Measurements in the 2G and 3G networks declined.

RTR-NetTest: Measurements per technology in 2016

➡ MORE THAN 50% OF MEASUREMENTS IN THE 4G NETWORK



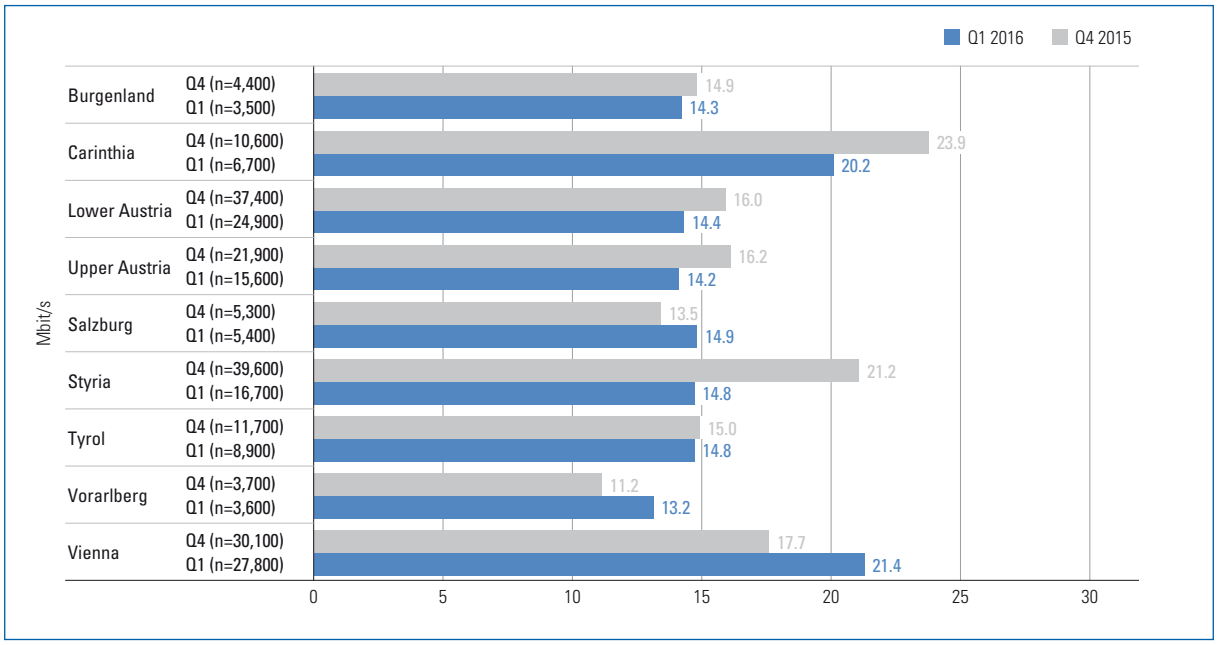
Source: RTR-NetTest

As of the beginning of 2016, there was a change regarding the measurements performed within the framework of the RTR-NetTest. Accordingly, repeated measurements carried out by the same user at the same location within a short time span are no longer included in the statistics. Therefore, the statistics for Q1 2016 show fewer measurements, which is why comparison with previous periods has no informative value.

- In Q1 2016, a total of 113,200 measurements were included in the statistics. 61.5% (69,600) of these were accounted for by measurements in the (W)LAN network. Nearly one fourth of the measurements (23.4%, about 26,500) took place in the LTE network. The remaining 15.1% (17,100) were carried out in the 2G and 3G networks.

RTR-NetTest: Download speed per Austrian province

FAST CONNECTIONS IN VIENNA AND CARINTHIA



Source: RTR-NetTest

In measurements using the RTR-NetTest the location of the measurement can be determined. For the above evaluations only measurements with a location accuracy of < 2 km are used. Accordingly, for each province the median of the measured download speed can be depicted. The chart also shows the number of measurements (n) performed in each province. The average data rate is determined across all technologies.

- Because of the new statistics the median showed a downward tendency in most provinces. Nevertheless, in Vienna and Vorarlberg the median increased.
- The new statistics also gave rise to the fact that fewer measurements were reported in all provinces (except for Salzburg) in Q1 2016 than in Q4 2015. However, this does not mean that fewer measurements were conducted.

FIXED AND MOBILE BROADBAND CONNECTIONS (PAGE 24)

		Number of connections		
		Fixed broadband (retail and wholesale)	Mobile broadband (data tariffs and prepaid cards)	Smartphone tariffs
2013	Q1	2,161,300	2,221,600	2,839,600
	Q2	2,173,800	2,176,000	3,125,000
	Q3	2,192,800	2,194,100	3,143,100
	Q4	2,230,600	2,199,100	3,267,000
2014	Q1	2,265,900	2,166,100	3,352,600
	Q2	2,283,000	2,127,400	3,423,100
	Q3	2,312,500	2,173,600	3,477,400
	Q4	2,354,500	2,170,700	3,558,500
2015	Q1	2,382,900	2,143,600	3,552,400
	Q2	2,399,300	2,126,700	3,616,500
	Q3	2,420,000	2,135,600	3,672,600
	Q4	2,455,900	2,178,500	3,689,900

RETAIL BROADBAND CONNECTIONS BY TYPE OF INFRASTRUCTURE (PAGE 26)

		Number of connections						
		Copper-wire pairs	Unbundled lines	Coaxial cable	FWA (fixed wireless access)	FTTH (fibre to the home)	Virtual unbundling	Others
2013	Q1	1,271,800	174,300	670,700	18,100	22,100		4,300
	Q2	1,283,600	171,200	673,900	17,400	23,700		4,100
	Q3	1,300,000	167,700	679,200	17,100	24,800		4,000
	Q4	1,328,000	163,800	693,700	16,000	25,300		3,800
2014	Q1	1,351,600	161,800	705,000	16,100	27,500		3,900
	Q2	1,361,500	157,800	713,800	16,300	29,100		4,500
	Q3	1,376,800	157,400	726,300	16,400	30,900		4,700
	Q4	1,403,600	152,300	743,800	16,500	33,100		5,200
2015	Q1	1,422,600	148,500	754,800	16,200	34,500	3,100	3,200
	Q2	1,429,800	144,000	766,100	16,300	35,900	4,100	3,100
	Q3	1,444,400	139,100	774,900	16,600	36,700	5,400	3,000
	Q4	1,467,000	134,200	788,100	16,600	40,300	6,900	2,800

RETAIL BROADBAND CONNECTIONS BY TYPE OF INFRASTRUCTURE 2 (PAGE 26)

		Number of connections	
		Mobile broadband	Smartphone tariffs
2013	Q1	2,221,600	2,839,600
	Q2	2,176,000	3,125,000
	Q3	2,194,100	3,143,100
	Q4	2,199,100	3,267,000
2014	Q1	2,166,100	3,352,600
	Q2	2,127,400	3,423,100
	Q3	2,173,600	3,477,400
	Q4	2,170,700	3,558,500
2015	Q1	2,143,600	3,552,400
	Q2	2,126,700	3,616,500
	Q3	2,135,600	3,672,600
	Q4	2,178,500	3,689,900

RETAIL BROADBAND CONNECTIONS BY TYPE OF INFRASTRUCTURE – RESIDENTIAL CUSTOMERS

		Number of connections						
		Copper-wire pairs	Unbundled lines	Coaxial cable	FWA (fixed wireless access)	FTTH (fibre to the home)	Mobile broadband	Smartphone tariffs
2013	Q1	1,120,400	132,900	660,000	16,300	14,700	1,974,600	2,554,900
	Q2	1,132,300	130,400	662,200	15,600	16,000	1,915,000	2,816,400
	Q3	1,149,700	127,000	666,500	15,300	17,000	1,939,100	2,831,400
	Q4	1,177,100	123,400	673,200	14,200	17,600	1,939,600	2,943,400
2014	Q1	1,200,600	120,000	685,300	14,300	19,700	1,878,200	2,988,400
	Q2	1,210,100	116,600	693,600	14,400	21,300	1,820,900	3,007,200
	Q3	1,225,900	113,400	705,200	14,600	23,200	1,859,500	3,046,000
	Q4	1,253,600	110,800	719,900	14,700	25,300	1,857,700	3,113,800
2015	Q1	1,273,200	108,100	729,500	14,300	26,600	1,812,200	3,098,900
	Q2	1,280,300	104,700	739,400	14,400	27,800	1,799,600	3,137,400
	Q3	1,294,100	100,700	747,300	14,700	29,600	1,818,600	3,303,900
	Q4	1,315,600	96,400	759,600	14,700	32,100	1,810,100	3,346,200

RETAIL BROADBAND CONNECTIONS BY TYPE OF INFRASTRUCTURE – BUSINESS CUSTOMERS

		Number of connections						
		Copper-wire pairs	Unbundled lines	Coaxial cable	FWA (fixed wireless access)	FTTH (fibre to the home)	Mobile broadband	Smartphone tariffs
2013	Q1	151,400	41,400	10,700	1,800	7,400	247,000	284,700
	Q2	151,300	40,800	11,700	1,800	7,700	261,000	308,600
	Q3	150,300	40,700	12,700	1,800	7,800	255,000	311,700
	Q4	150,900	40,400	20,500	1,800	7,700	259,500	323,600
2014	Q1	151,000	41,800	19,700	1,800	7,800	287,900	364,200
	Q2	151,400	41,200	20,200	1,900	7,800	306,500	415,900
	Q3	150,900	44,000	21,100	1,800	7,700	314,100	431,400
	Q4	150,000	41,500	23,900	1,800	7,800	313,000	444,700
2015	Q1	149,400	40,400	25,300	1,900	7,900	331,400	453,500
	Q2	149,500	39,300	26,700	1,900	8,100	327,100	479,100
	Q3	150,300	38,400	27,600	1,900	7,100	317,000	368,700
	Q4	151,400	37,800	28,500	1,900	8,200	368,400	343,700

RETAIL BROADBAND CONNECTIONS BY BANDWIDTH CATEGORY – FIXED NETWORK (PAGE 27)

		Number of connections					
		≥ 144 kbit/s to < 2 Mbit/s	= 2 Mbit/s	> 2 Mibt/s to < 10 Mbit/s	≥ 10 Mbit/s to < 30 Mbit/s	≥ 30 Mbit/s to < 100 Mbit/s	≥ 100 Mbit/s
2013	Q1	18,200	252,700	1,034,300	608,800	206,800	36,300
	Q2	15,900	243,500	1,025,500	622,300	225,100	37,500
	Q3	14,200	236,700	991,300	653,900	252,800	39,900
	Q4	13,100	220,400	1,003,000	676,700	273,300	40,300
2014	Q1	13,000	214,800	1,003,000	695,900	294,200	41,100
	Q2	11,900	208,900	998,900	702,600	315,400	40,700
	Q3	11,200	204,800	1,000,300	713,900	334,400	43,100
	Q4	10,400	199,300	1,005,200	724,600	339,300	70,500
2015	Q1	9,600	194,000	1,003,900	742,000	353,300	74,000
	Q2	8,900	188,500	990,300	767,200	362,400	74,900
	Q3	8,300	182,200	979,500	791,100	373,700	77,000
	Q4	6,800	173,200	959,200	831,100	392,600	83,200

NUMBER OF RETAIL BROADBAND CONNECTIONS – FIXED NETWORK (PAGE 28)

		Number of connections				
		Stand-alone broadband	Broadband + fixed-line telephony	Broadband + fixed-line telephony + TV	Broadband + TV	Other bundles with fixed-line telephony, TV or mobile broadband
2013	Q1	404,400	1,065,100	496,200	96,400	49,800
	Q2	406,100	1,066,200	503,400	100,800	47,800
	Q3	418,900	1,070,600	509,600	103,400	45,300
	Q4	448,300	1,071,700	517,100	111,400	42,500
2014	Q1	472,800	1,073,300	520,400	118,800	40,900
	Q2	482,100	1,072,100	524,800	125,200	38,800
	Q3	508,800	1,066,100	528,100	131,000	37,200
	Q4	536,400	1,064,900	532,500	143,600	35,500
2015	Q1	559,000	1,063,200	534,700	151,000	33,800
	Q2	561,000	1,067,500	539,600	156,100	32,500
	Q3	565,000	1,078,500	543,800	159,400	31,400
	Q4	578,600	1,082,900	556,400	164,800	30,900

REVENUES FROM RETAIL BROADBAND CONNECTIONS – FIXED NETWORK (PAGE 29)

		EUR				
		Stand-alone broadband	Broadband + fixed-line telephony	Broadband + fixed-line telephony + TV	Broadband + TV	Other bundles with fixed-line telephony, TV or mobile broadband
2013	Q1	50,375,800	80,383,900	49,224,900	9,267,300	3,028,500
	Q2	49,281,300	79,994,600	49,993,700	9,817,000	3,009,800
	Q3	48,994,800	79,604,500	50,561,200	9,786,800	2,829,300
	Q4	50,240,000	78,878,200	50,777,400	10,262,100	2,676,300
2014	Q1	50,524,700	78,807,600	50,971,300	10,936,400	2,737,400
	Q2	49,690,500	78,567,300	51,121,500	11,879,800	2,604,700
	Q3	52,267,100	77,526,800	51,446,200	12,764,300	2,503,200
	Q4	52,835,000	77,146,400	51,545,100	13,369,900	2,854,000
2015	Q1	54,060,400	77,289,700	51,169,700	14,395,700	2,381,900
	Q2	55,087,100	77,503,200	51,671,000	15,144,800	2,290,400
	Q3	55,717,900	78,219,900	52,338,000	15,673,800	2,209,800
	Q4	56,844,500	79,294,600	52,822,200	16,310,300	1,739,500

NUMBER OF WHOLESALE BROADBAND CONNECTIONS (PAGE 31)

		Number of connections					
		Copper-wire pairs	Unbundled lines	Coaxial cable	FWA (fixed wireless access)	FTTH (fibre to the home)	Others (satellite etc.)
2013	Q1	41,290	6,410	12,050	980	6,370	1,550
	Q2	40,710	6,360	12,460	980	6,400	1,540
	Q3	40,010	6,440	9,970	990	6,440	1,530
	Q4	40,110	6,420	10,180	990	6,250	1,550
2014	Q1	39,490	6,470	10,500	1,000	6,250	1,560
	Q2	39,300	6,370	10,410	1,020	6,210	1,560
	Q3	38,860	7,020	10,780	1,020	6,180	1,570
	Q4	38,650	6,900	11,030	1,050	6,090	1,570
2015	Q1	37,990	6,760	11,270	1,050	5,930	1,570
	Q2	38,000	6,640	11,870	1,050	5,810	1,610
	Q3	38,000	6,480	12,120	1,050	4,530	1,610
	Q4	37,800	6,240	12,530	1,070	5,470	1,600

NUMBER OF WHOLESALE BROADBAND CONNECTIONS – BITSTREAM

		Number of connections				
		Copper-wire pairs	Unbundled lines	Coaxial cable	FWA (fixed wireless access)	FTTH (fibre to the home)
2013	Q1	41,270	3,430	8,560	950	6,360
	Q2	40,680	3,380	11,260	950	6,390
	Q3	39,980	3,320	8,750	960	6,430
	Q4	40,080	3,200	8,940	970	6,240
2014	Q1	39,460	3,100	9,090	980	6,240
	Q2	39,270	2,990	9,160	1,000	6,200
	Q3	38,830	2,890	9,260	1,000	6,160
	Q4	38,620	2,860	9,410	1,020	6,080
2015	Q1	37,960	2,770	9,630	1,030	5,920
	Q2	37,970	2,680	11,870	1,030	5,800
	Q3	37,970	2,590	12,120	1,030	4,520
	Q4	37,770	2,470	12,530	1,050	5,460

NUMBER OF WHOLESALE BROADBAND CONNECTIONS – RESALE

		Number of connections				
		Copper-wire pairs	Unbundled lines	Coaxial cable	FWA (fixed wireless access)	FTTH (fibre to the home)
2013	Q1	29	2,980	3,490	23	12
	Q2	29	2,980	1,200	23	12
	Q3	29	3,120	1,210	23	13
	Q4	29	3,220	1,240	23	12
2014	Q1	29	3,370	1,420	23	12
	Q2	29	3,390	1,250	23	13
	Q3	29	4,130	1,520	23	13
	Q4	29	4,040	1,610	23	12
2015	Q1	29	3,990	1,640	23	13
	Q2	29	3,960	0	23	14
	Q3	29	3,890	0	23	15
	Q4	29	3,770	0	23	15

REVENUES FROM WHOLESALE BROADBAND CONNECTIONS (PAGE 32)

		EUR	
		Bitstream	Resale
2013	Q1	2,418,900	1,169,100
	Q2	2,431,900	1,208,100
	Q3	2,420,500	910,900
	Q4	2,489,800	961,000
2014	Q1	2,568,700	1,030,100
	Q2	2,542,500	995,500
	Q3	2,543,200	1,021,700
	Q4	2,544,100	1,062,000
2015	Q1	2,548,200	1,064,900
	Q2	2,637,700	1,176,500
	Q3	2,613,000	1,053,900
	Q4	2,669,600	972,600

NUMBER OF RETAIL FIXED BROADBAND CONNECTIONS BY CUSTOMER TYPE

		Number of connections		
		Residential customers	Business customers	Total
2013	Q1	1,916,500	195,500	2,112,000
	Q2	1,929,400	195,000	2,124,400
	Q3	1,953,300	194,400	2,147,700
	Q4	1,996,700	194,300	2,191,000
2014	Q1	2,032,500	193,800	2,226,300
	Q2	2,050,900	192,100	2,243,000
	Q3	2,076,800	194,400	2,271,200
	Q4	2,118,500	194,500	2,313,000
2015	Q1	2,147,800	193,900	2,341,700
	Q2	2,163,200	193,500	2,356,700
	Q3	2,184,700	193,400	2,378,100
	Q4	2,218,900	194,800	2,413,700

REVENUES FROM RETAIL FIXED BROADBAND CONNECTIONS BY CUSTOMER TYPE

		EUR		
		Residential customers	Business customers	Total
2013	Q1	154,498,900	37,781,600	192,280,500
	Q2	154,464,900	37,631,500	192,096,400
	Q3	154,281,800	37,494,900	191,776,700
	Q4	155,209,300	37,624,800	192,834,100
2014	Q1	156,914,400	37,062,900	193,977,300
	Q2	156,920,400	36,943,500	193,863,900
	Q3	158,892,200	37,615,200	196,507,400
	Q4	160,003,000	37,747,400	197,750,400
2015	Q1	161,573,300	37,724,100	199,297,400
	Q2	163,689,800	38,006,700	201,696,500
	Q3	165,747,200	38,412,300	204,159,500
	Q4	167,400,000	39,611,100	207,011,100

RTR-NETTEST: DOWNLOAD SPEED PER TECHNOLOGY (PAGE 34)

		Mbit/s		
		(W-)LAN	3G	4G
2013	Q2	5.6	3.8	43.0
	Q3	6.0	5.9	42.0
	Q4	6.8	4.7	35.0
2014	Q1	7.1	4.8	36.0
	Q2	7.4	5.7	38.0
	Q3	7.7	5.4	46.0
	Q4	9.2	5.0	42.0
2015	Q1	10.4	5.7	43.0
	Q2	11.1	6.9	41.0
	Q3	12.0	7.8	43.0
	Q4	12.6	7.7	41.0
2016	Q1	13.7	9.1	44.0

RTR-NETTEST: MEASUREMENTS PER TECHNOLOGY FROM 2014 TO 2015 (PAGE 35)

	Number of measurements				
	4G	3G	2G	(W)LAN	Total
2014	53,700	104,800	11,900	145,300	315,700
2015	140,100	86,600	8,900	240,900	476,500

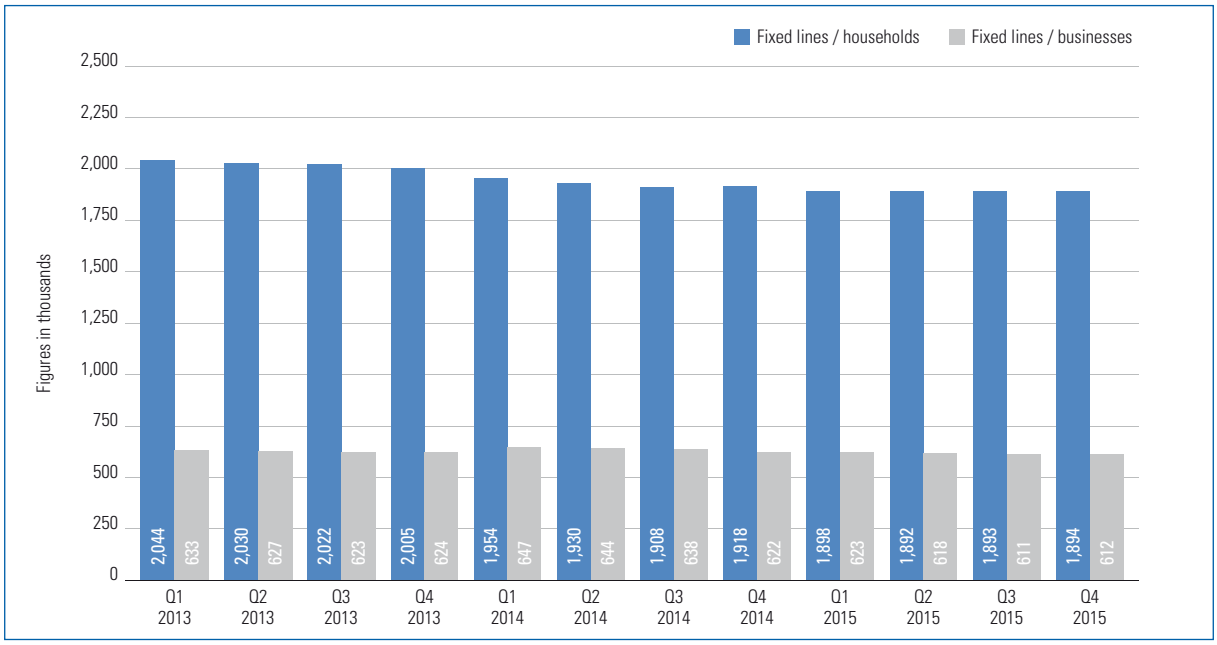
RTR-NETTEST: MEASUREMENTS PER TECHNOLOGY 2016 (PAGE 36)

		Number of measurements				
		4G	3G	2G	(W)LAN	Total
2016	Q1	26,500	15,600	1,500	69,600	113,200

3 | Fixed network

Fixed lines

➡ SLIGHT DECREASE IN NUMBER OF FIXED LINES

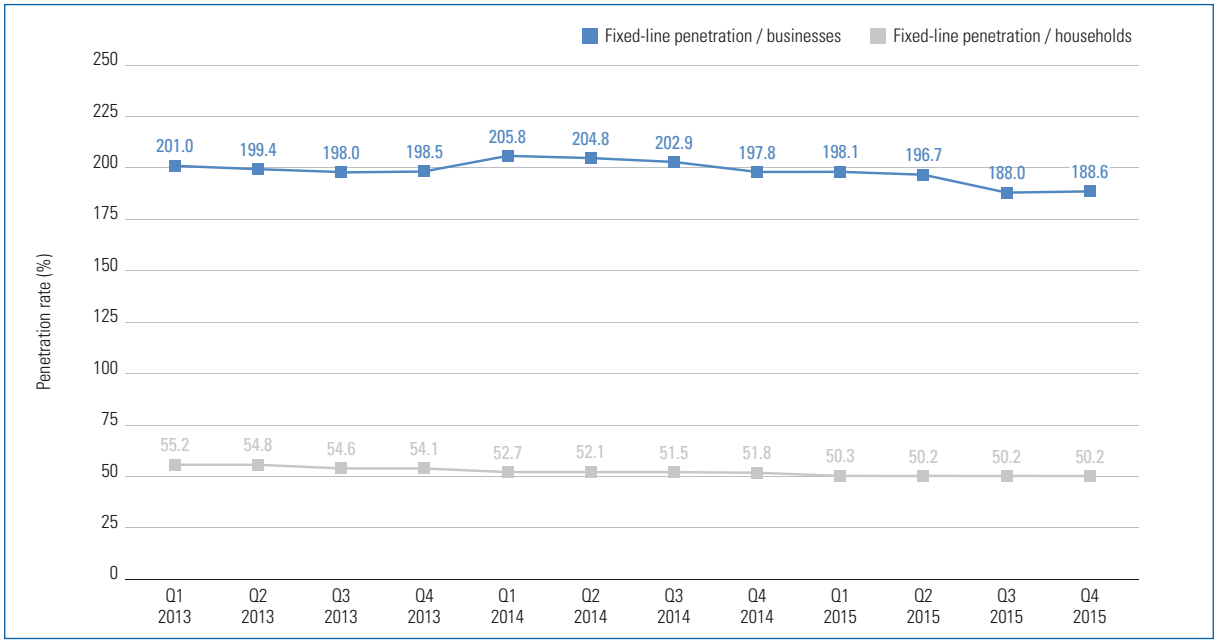


The chart above shows the total number of fixed telephone lines in households and businesses, regardless of the infrastructure on which those lines are based (e.g. copper-wire pairs, coaxial cable or optical fibre).

- Of about 2.5 million fixed lines at the end of 2015, 75.6% were accounted for by connections in households and 24.4% by business connections.
- Compared with the end of 2014, the number of business connections dropped by 1.5% (down by 9,300), that of fixed lines in households by 1.3% (down by 24,600).

Fixed-line penetration

➡ CONSIDERABLE DECLINE IN FIXED-LINE PENETRATION OF BUSINESSES



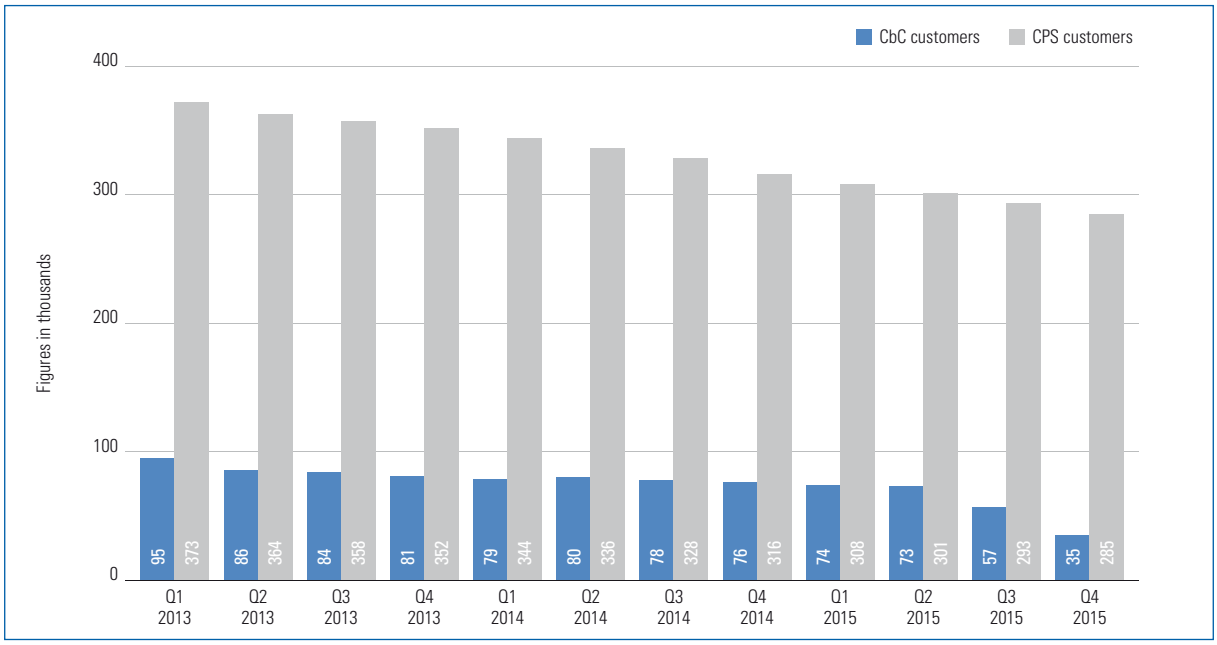
Source for number of households and businesses: Statistics Austria

The chart shows fixed-line penetration rates among households and businesses. The higher penetration rate for businesses is due to the - in most cases - greater number of fixed lines per business and is therefore not strictly comparable with that of households.

- From a statistical point of view, at the end of 2015, every other household had a fixed line (50.2%). This figure slipped by 1.6 percentage points in the course of the year.
- More pronounced is the decline in fixed lines in businesses. Here, statistically speaking, every business has on average nearly two fixed lines (188.6%). Compared with the end of 2014, this figure dropped by 9.2 percentage points, which, however, also has to do with the increasing number of businesses.

Carrier pre-selection and call-by-call usage

➡ CBC USAGE DOWN BY 50%

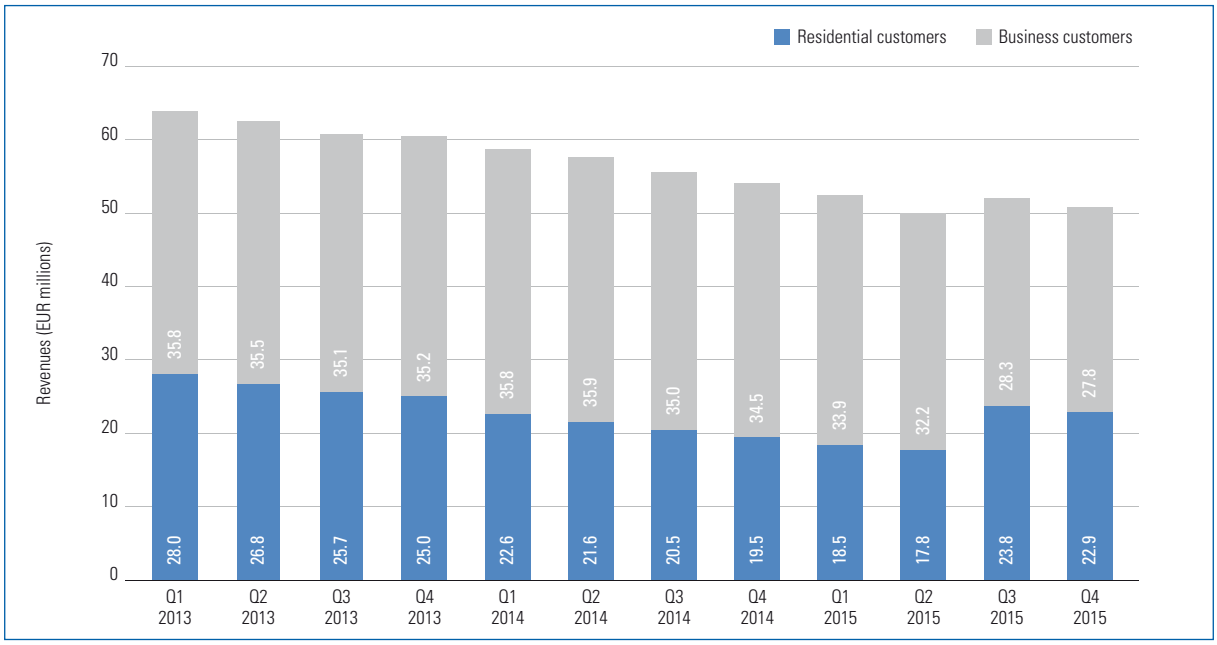


The chart shows the number of customers with lines on which carrier pre-selection (CPS) is used and the number of call-by-call (CbC) customers who used call-by-call at least once in each quarter (see Glossary).

- The number of customers using CPS declined from 316,100 at the end of 2014 to 285,200 customers at the end of 2015, which is a decrease of 9.8%.
- The use of CbC halved within one year. This is mainly due to database cleansing by operators. While there had been still as many as 76,400 CbC customers at the end of 2014, this figure dropped to 35,300 at the end of 2015 (down 53.8%).

Retail revenues from access services

➡ REVENUES LOWER BY 9% AGAINST 2014



Retail revenues from access services include base fees and setup charges.

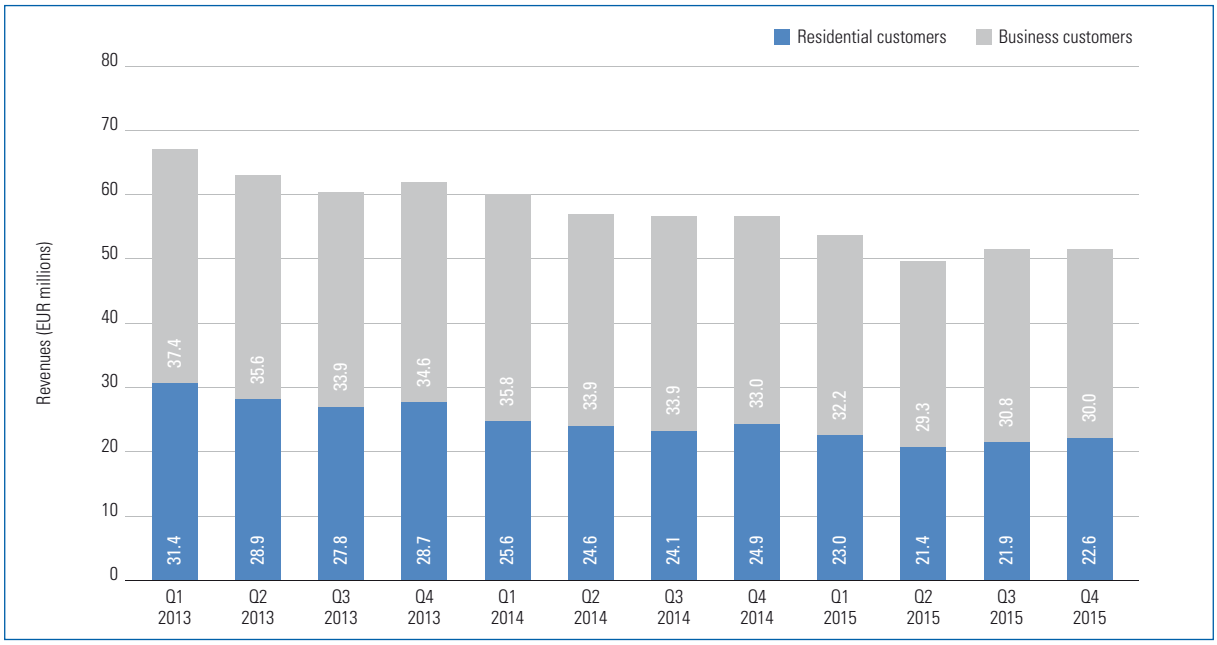
Base fees refer to revenues that are earned periodically and do not depend on the actual use of the subscriber line. They also include revenues from monthly flat rates (e.g. packages which include a certain number of minutes), but such rates do not play a significant role in fixed-network services. Not included are so-called "optional tariffs" and "flat-rate tariffs" as well as revenues from products bundled with broadband.

Setup charges include revenues generated from the setup, transfer and termination of fixed telephone lines.

- What is striking here is the unusual development in Q3 2015, when a major operator performed various updates in the databases. This caused revenues from business customers to shift to revenues from residential customers.
- In 2015, total retail revenues from access services amounted to approx. EUR 205.2 million, in the previous year the figure had stood at EUR 225.5 million. Thus, revenues dropped by 9.0% from 2014 to 2015. Revenues from residential customers accounted for about 40.4% in 2015, revenues from business customers for the remaining 59.6%.

Retail revenues from carrier services

➡ REVENUES FROM CARRIER SERVICES 10% BELOW THE LEVEL OF 2014



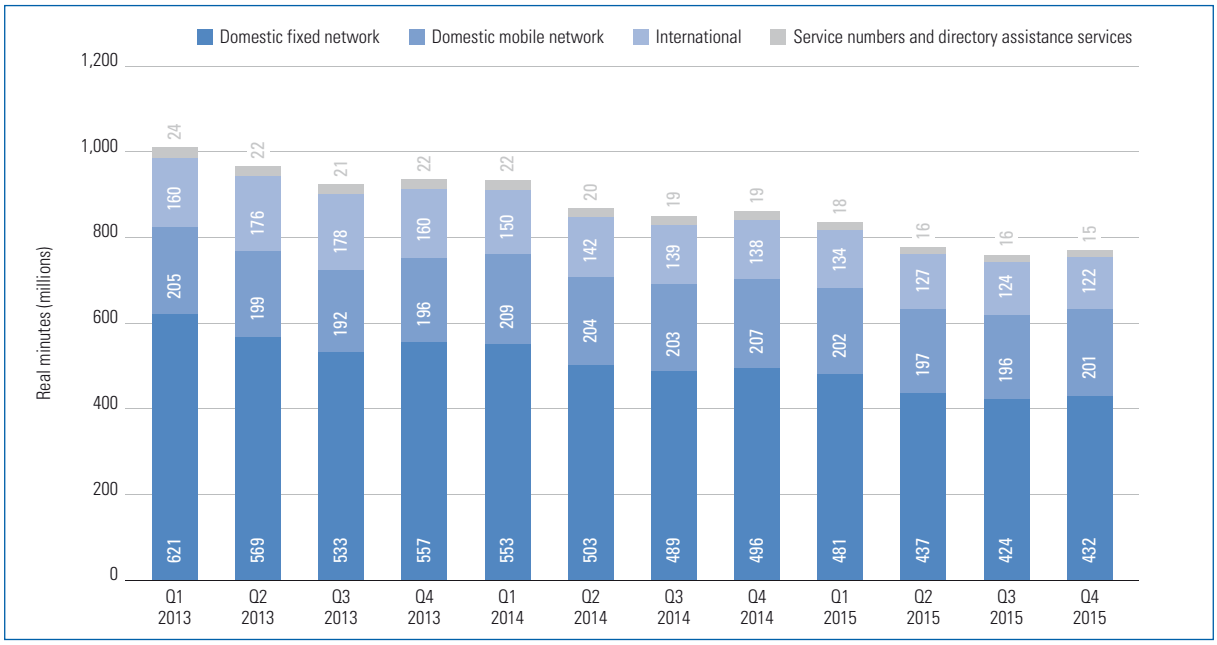
Retail revenues from carrier services depend on the number of call minutes used, i.e. the more telephone calls a fixed subscriber makes, the higher their bill normally is.

The revenues shown above include the retail fees charged by operators for calls to the domestic fixed network, domestic mobile networks, international destinations and service numbers. Revenues from fixed monthly flat rates (e.g. packages including a certain number of minutes) are not included in the figures above.

- Revenues from carrier services totalled EUR 211.1 million in 2015 compared with EUR 235.8 in the year before. Thus, revenues from carrier services declined by 10.5%.
- The decrease referred to revenues from residential customers (EUR 88.8 million in 2015) and business customers (EUR 122.3 million) in equal measure.

Call minutes on the retail market

➡ CLEAR DOWNWARD TREND IN 2015

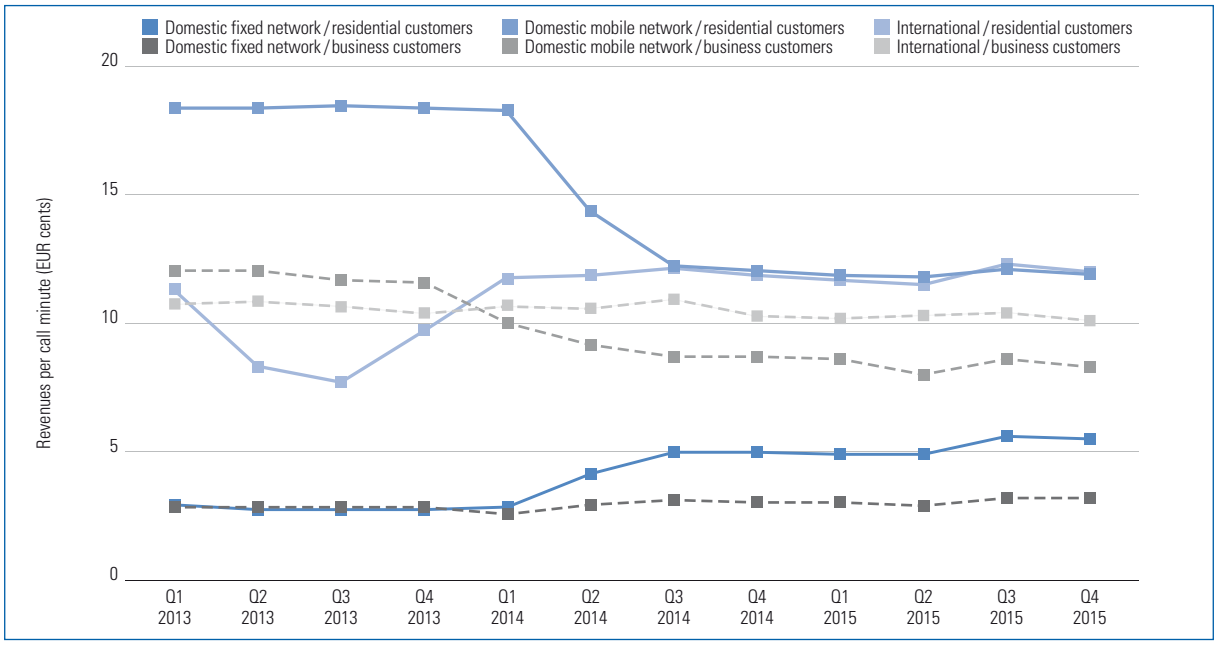


The chart above shows the number of real minutes (see Glossary) in the fixed network, broken down by destination.

- In 2015, call minutes totalled 3.142 billion, which is a decline of 10.6% against the previous year.
- Most of these minutes (56.4%) were accounted for by calls to the domestic fixed network. However, they decreased by 13.1% to 1.774 billion in 2015 against 2014.
- At 3.2%, call minutes to the domestic mobile network registered the least decline. 796.4 million minutes accounted for about one fourth of all call minutes.
- Calls to international networks amounted to 507.3 million minutes, down 11.0% against 2014.
- Calls to service numbers totalled 64.8 million minutes, which was a drop of 18.9% compared with the previous year.

Revenues per call minute

➡ INCREASE IN REVENUES PER CALL MINUTE TO THE FIXED NETWORK

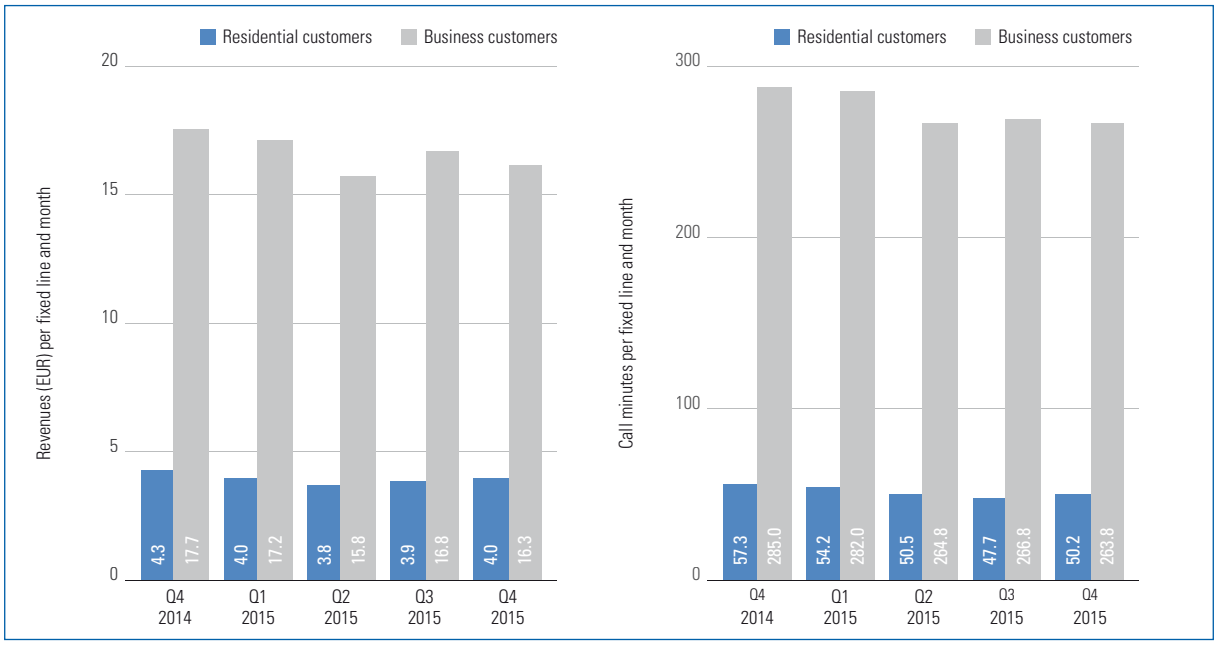


The chart above shows the revenues per call minute for telephone calls from the fixed network to various destinations, broken down into residential and business customer segments. Revenue per call minute is calculated from retail revenues from carrier services to individual destinations (see table at the end of the section), divided by the number of real minutes (chart "Call minutes on the retail market"). The data underlying this chart can be found in the table at the end of the section.

- In the residential customer segment revenues per call minute to the domestic fixed network increased by 10.5% from 4.95 euro cents at the end of 2014 to 5.48 euro cents at the end of 2015. In the business customer segment this figure rose from 3.08 euro cents to 3.15 (up 2.4%) over the same period.
- For residential customers revenues per call minute to the mobile network decreased from 12.08 euro cents at the end of 2014 to 11.87 euro cents at the end of 2015 (down 1.7%). In the business customer segment revenues per call minute to the mobile network dropped from 8.76 euro cents to 8.28 euro cents (down 5.5%).
- In the residential customer segment revenues per call minute to international networks remained virtually unchanged, with a marginal increase of 0.8%, and amounted to about 11.98 euro cents at the end of 2015. The corresponding revenues from business customers slowed down by 1.6% to 10.14 euro cents.

The average fixed line

➡ DECLINE IN REVENUES AND MINUTES

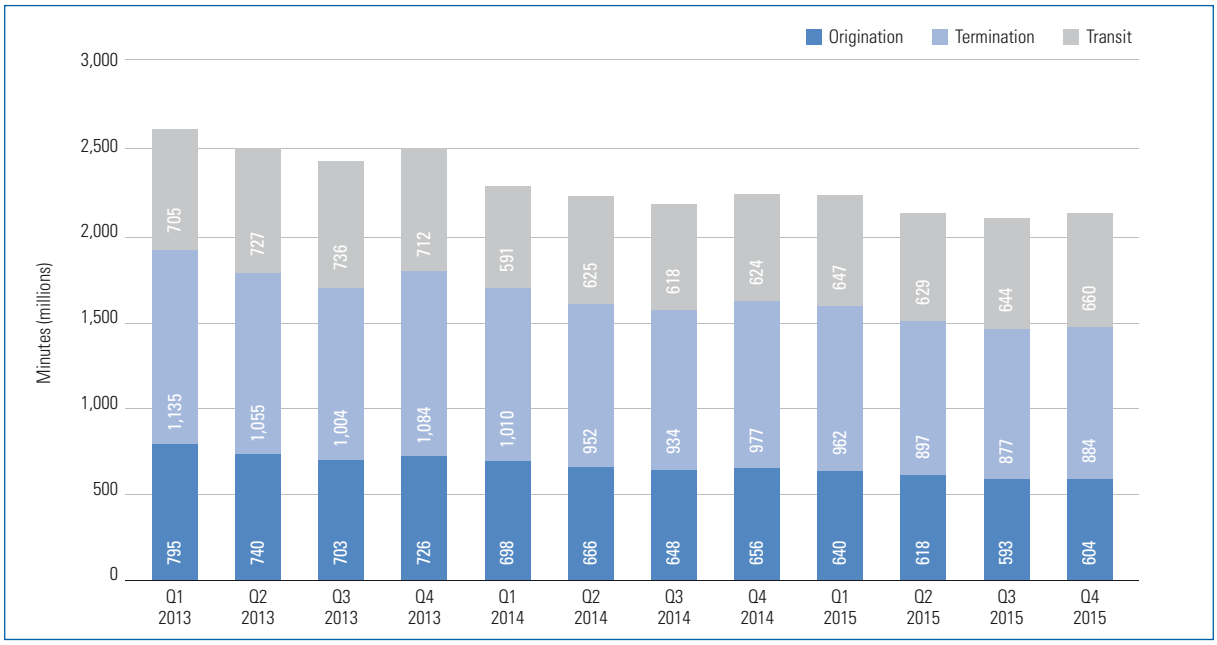


The chart shows the average number of active call minutes (real minutes) on the fixed network per customer in the business and residential segments per month in the respective quarter as well as the average revenues from carrier services generated per month in the quarter. The monthly values are calculated from a third of revenues from carrier service charges and a third of the call minutes, divided in each case by the total number of fixed-network lines in the respective quarter. Revenues from access services are not depicted in the chart as they have no longer been exactly attributable to fixed-line voice telephony (products bundled with broadband) since the KEV amendment.

- For Q4 2015, revenues from business customers per month amounted to some EUR 16.3 per line. Thus, these revenues declined by 7.8% compared with the corresponding figure of 2014. For residential customers the respective figure dropped from EUR 4.3 in Q4 2014 to EUR 4.0 in the last quarter of 2015 (down 8.0%).
- In the reference period, minutes per line and month decreased by 7.4% to 263.8 in the business customer segment and by even 12.2% to 50.2 minutes in the residential customer segment.

Wholesale market in minutes

➡ DECLINE IN WHOLESALE MINUTES

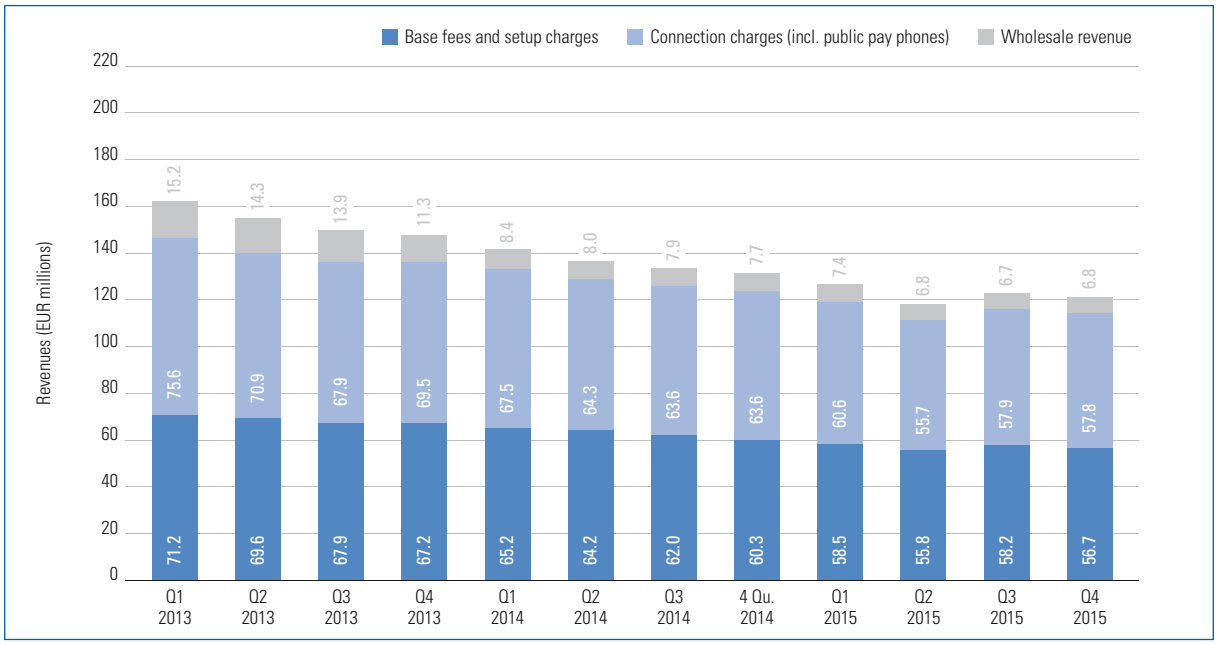


Wholesale services in the field of fixed-network voice telephony include three sub-services: origination, termination and transit services (see Glossary). In the chart wholesale minutes are shown; the corresponding revenues can be found in the table at the end of the section.

- In 2015, wholesale minutes totalled 8.655 billion. Against 2014, this means a drop of 3.8%.
- About 41.8 % of wholesale minutes were accounted for by termination minutes in 2015, amounting to 3.619 billion, down 6.5 % against 2014.
- In the year under review, origination minutes amounted to 28.4% of wholesale minutes (2.455 billion) and also slumped against the previous year (down 8.0%).
- In the period under review, only transit minutes increased, namely by 5.0% to 2.580 billion in 2015, accounting for 29.8% of all wholesale minutes.

Total fixed-network revenues

➡ FIXED-NETWORK REVENUES CONTINUE TO DECLINE

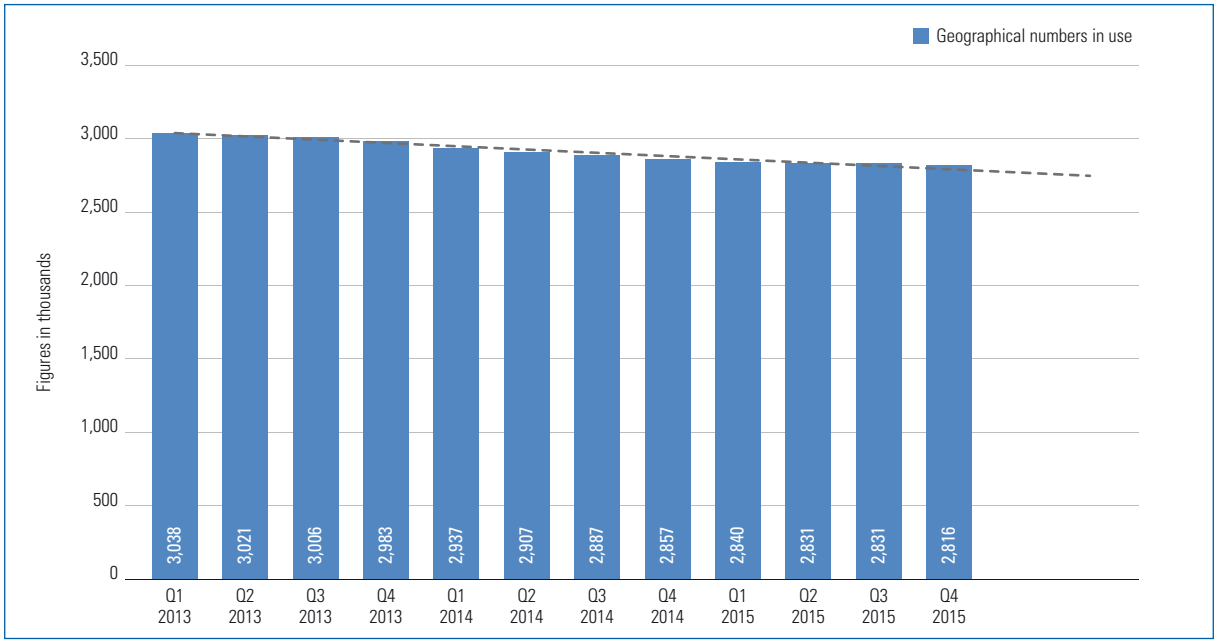


Total fixed-network revenue is calculated from the total of all base fees and setup charges including other charges (revenues from optional tariffs, calling cards, charges stipulated by the Telecommunications Fee Subsidies Act and other charges such as invoicing, additional services, etc.), connection charges (including public pay phones) and revenues from origination, termination and transit services. Not included are revenues from fixed-network voice telephony that were earned from products bundled with broadband.

- Apart from a single slight increase in revenue in Q3 2015, fixed-network revenues are declining steadily. In 2015, total revenues of about EUR 488.7 million were generated, i.e. 10% less than in 2014.
- Base fees and setup charges recorded the lowest decline: Compared with 2014, they dropped by 9.0% to EUR 229.2 million and accounted for some 46.9% of fixed-network revenues in 2015.
- In 2015, the share of connection charges in total fixed-network revenues was 47.5%. They totalled EUR 231.9, down 10.5% against 2014.
- Compared with 2014, wholesale revenues dropped by 13.6% to EUR 27.6 million, contributing 5.7% to total fixed-network revenues in 2015.

Geographical numbers in use

➡ DOWNWARD TREND FOR GEOGRAPHICAL NUMBERS CONTINUES

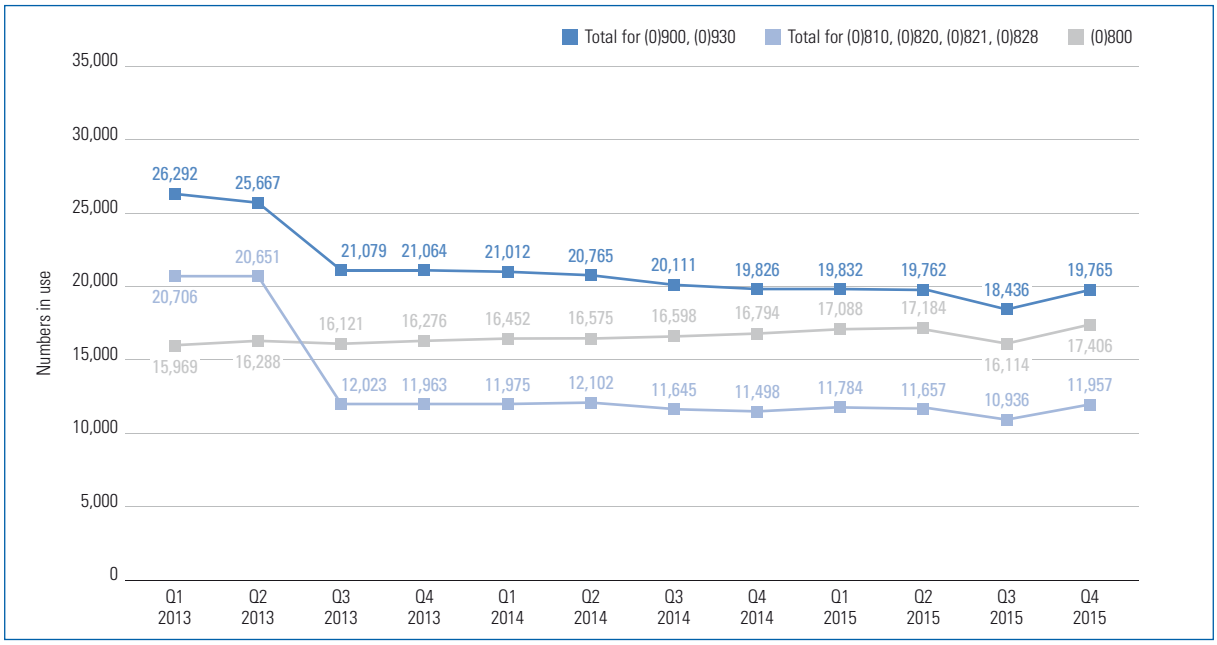


Geographical numbers are domestic telephone numbers prefixed by a local area code (e.g. 01 for Vienna).
As more than one number may be assigned to a single line, the number of geographical numbers is not identical to the number of fixed subscriber lines. The chart also includes a linear trend line.

- The amount of geographical numbers in use changes only slightly over time. At the end of 2015, about 2.8 million geographical numbers were in use, which is down by 1.5% against the end of 2014.
- Geographical numbers in use have shown the tendency to decline slowly but steadily, which is also illustrated by the linear trend line in the chart.

Service numbers in use

➡ SIGNIFICANT INCREASE IN THE LAST QUARTER OF 2015



The chart above shows the number of service numbers in use in the following ranges:

- (0)800 range: toll-free services
- (0)810 range: max. EUR 0.10 per minute or text message
- (0)820 range: max. EUR 0.20 per minute or text message
- (0)821 range: max. EUR 0.20 per call or text message
- (0)828 range: text messages only; standard charges apply
- (0)900 range: max. EUR 3.64 per minute or max. EUR 10.- per text message
- (0)930 range: max. EUR 3.64 per minute or max. EUR 10.- per text message (erotic hotlines)

- At the end of 2015, 97,500 service numbers were in use, 2.5% more than at the end of 2014.
- 19,765 numbers came from the (0)900 and (0)930 number ranges, down 0.3% against the end of 2014.
- 17,406 numbers were from the 0800er number range (up 3.6%), close to 12,000 numbers came from the (0)810, (0)820, (0)821 and (0)828 ranges (up 4.0%).
- The figures for service numbers in use in the (0)720 and (0)780 ranges, which are not depicted in the chart, as well as for ported service numbers can be found in the table at the end of the section.

FIXED LINES (PAGE 46)

		Number of lines	
		Fixed lines / households	Fixed lines / businesses
2013	Q1	2,044,200	632,900
	Q2	2,030,400	626,800
	Q3	2,022,100	622,500
	Q4	2,005,400	624,000
2014	Q1	1,954,000	647,000
	Q2	1,929,500	643,700
	Q3	1,907,700	637,700
	Q4	1,918,200	621,600
2015	Q1	1,897,500	622,800
	Q2	1,891,900	618,300
	Q3	1,892,800	610,500
	Q4	1,893,600	612,300

FIXED-LINE PENETRATION (PAGE 47)

		in %	
		Fixed-line penetration / households	Fixed-line penetration / businesses
2013	Q1	55.2%	201.0%
	Q2	54.8%	199.4%
	Q3	54.6%	198.0%
	Q4	54.1%	198.5%
2014	Q1	52.7%	205.8%
	Q2	52.1%	204.8%
	Q3	51.5%	202.9%
	Q4	51.8%	197.8%
2015	Q1	50.3%	198.1%
	Q2	50.2%	196.7%
	Q3	50.2%	188.0%
	Q4	50.2%	188.6%

DEVELOPMENT OF FIXED LINES

		Number of lines				
		POTS	ISDN	Multi-ISDN	VoB	Wireless
2013	Q1	2,353,900	304,800	18,300	579,800	28,500
	Q2	2,337,900	300,700	18,600	586,400	28,700
	Q3	2,328,700	297,100	18,700	593,800	28,900
	Q4	2,313,300	295,600	20,500	607,200	29,300
2014	Q1	2,288,300	291,800	20,800	612,700	29,500
	Q2	2,262,200	288,800	22,300	629,200	30,300
	Q3	2,236,700	285,600	23,100	638,900	30,400
	Q4	2,241,100	274,400	24,300	645,000	30,700
2015	Q1	2,224,500	270,600	25,200	647,600	30,700
	Q2	2,214,800	269,000	26,400	653,300	30,900
	Q3	2,212,400	263,500	27,400	660,800	30,900
	Q4	2,216,700	260,100	29,100	673,300	31,200

CARRIER PRE-SELECTION AND CALL-BY-CALL CUSTOMERS (PAGE 48)

		Number of customers	
		CbC	CPS
2013	Q1	95,000	372,700
	Q2	86,100	364,400
	Q3	84,200	357,500
	Q4	81,200	351,900
2014	Q1	78,600	344,200
	Q2	80,000	335,700
	Q3	78,100	327,700
	Q4	76,400	316,100
2015	Q1	74,000	308,000
	Q2	73,300	300,900
	Q3	57,400	292,700
	Q4	35,300	285,200

RETAIL REVENUES FROM ACCESS SERVICES (PAGE 49)

		EUR	
		Residential customers	Business customers
2013	Q1	27,991,200	35,775,600
	Q2	26,824,800	35,471,000
	Q3	25,727,200	35,097,000
	Q4	24,975,100	35,200,200
2014	Q1	22,572,600	35,849,700
	Q2	21,575,600	35,937,000
	Q3	20,512,200	35,023,400
	Q4	19,533,100	34,461,400
2015	Q1	18,453,200	33,946,000
	Q2	17,754,800	32,240,000
	Q3	23,754,200	28,336,100
	Q4	22,947,400	27,784,700

RETAIL REVENUES FROM CARRIER SERVICES (PAGE 50)

		EUR	
		Residential customers	Business customers
2013	Q1	31,399,100	37,379,800
	Q2	28,934,300	35,569,600
	Q3	27,841,400	33,911,900
	Q4	28,646,700	34,592,700
2014	Q1	25,623,600	35,803,300
	Q2	24,644,700	33,911,400
	Q3	24,068,300	33,865,300
	Q4	24,878,600	33,012,400
2015	Q1	22,974,000	32,181,100
	Q2	21,377,800	29,300,400
	Q3	21,903,600	30,801,100
	Q4	22,586,800	29,989,400

RETAIL REVENUES FROM CARRIER SERVICES 2

		EUR			
		Domestic fixed network	Domestic mobile network	International	Service numbers and directory assistance services
2013	Q1	17,856,800	29,178,700	17,643,300	4,100,000
	Q2	15,972,400	28,222,000	16,641,700	3,667,800
	Q3	15,043,000	26,950,300	16,022,100	3,737,900
	Q4	15,673,900	27,241,700	16,118,900	4,204,900
2014	Q1	14,925,600	25,784,400	16,763,100	3,953,800
	Q2	17,287,500	21,785,000	15,917,100	3,566,600
	Q3	18,713,200	19,784,900	15,880,400	3,555,100
	Q4	19,089,500	20,112,600	15,167,100	3,521,700
2015	Q1	18,121,300	19,212,600	14,531,000	3,290,300
	Q2	16,050,700	17,760,400	13,756,900	3,110,100
	Q3	17,444,200	18,631,700	13,736,400	2,892,400
	Q4	17,645,300	18,632,400	13,232,500	3,065,900

CALL MINUTES ON THE RETAIL MARKET (PAGE 51)

		Minutes			
		Domestic fixed network	Domestic mobile network	International	Service numbers and directory assistance services
2013	Q1	620,495,000	205,090,000	160,158,000	24,463,000
	Q2	569,251,000	198,579,000	176,384,000	21,533,000
	Q3	532,962,000	192,395,000	178,394,000	21,102,000
	Q4	557,006,000	195,569,000	159,950,000	22,343,000
2014	Q1	553,321,000	209,059,000	150,413,000	21,800,000
	Q2	503,026,000	204,270,000	142,479,000	19,822,000
	Q3	489,067,000	203,102,000	138,685,000	19,389,000
	Q4	496,474,000	207,308,000	138,285,000	18,847,000
2015	Q1	480,876,000	202,418,000	134,444,000	17,526,000
	Q2	437,122,000	197,064,000	127,338,000	16,219,000
	Q3	423,613,000	196,167,000	123,942,000	15,727,000
	Q4	432,277,000	200,775,000	121,612,000	15,292,000

REVENUES PER CALL MINUTE (PAGE 52)

		EUR cents					
		Domestic fixed network / residential customers	Domestic mobile network / residential customer	International / residential customers	Domestic fixed network / business customers	Domestic mobile network / business customers	International / business customers
2013	Q1	2.91	18.40	11.30	2.85	12.08	10.74
	Q2	2.75	18.47	8.33	2.86	12.06	10.84
	Q3	2.79	18.51	7.73	2.85	11.75	10.69
	Q4	2.79	18.41	9.75	2.83	11.64	10.44
2014	Q1	2.85	18.31	11.78	2.59	10.02	10.68
	Q2	4.17	14.45	11.92	2.94	9.23	10.63
	Q3	4.98	12.30	12.18	3.09	8.77	10.96
	Q4	4.95	12.08	11.88	3.08	8.76	10.31
2015	Q1	4.93	11.88	11.73	3.01	8.60	10.19
	Q2	4.86	11.80	11.49	2.89	7.96	10.34
	Q3	5.57	12.06	12.25	3.21	8.55	10.36
	Q4	5.48	11.87	11.98	3.15	8.28	10.14

WHOLESALE MARKET IN MINUTES (PAGE 54)

		Minutes		
		Origination	Termination	Transit
2013	Q1	795,410,200	1,135,045,900	705,273,700
	Q2	739,686,300	1,054,635,900	727,228,000
	Q3	702,590,100	1,003,714,700	735,807,200
	Q4	725,639,400	1,084,335,100	712,272,600
2014	Q1	697,907,500	1,009,864,900	590,609,500
	Q2	666,073,700	952,006,900	625,252,700
	Q3	647,579,300	933,714,100	618,289,900
	Q4	656,254,400	976,529,200	624,081,700
2015	Q1	640,330,500	962,479,200	647,467,800
	Q2	618,165,500	896,752,900	628,577,100
	Q3	592,976,100	876,556,600	644,334,100
	Q4	603,928,700	883,696,700	659,559,500

WHOLESALE REVENUES

		EUR		
		Origination	Termination	Transit
2013	Q1	2,354,300	11,098,600	1,737,700
	Q2	2,172,100	10,439,400	1,721.800
	Q3	2,054,500	10,120,600	1,683,700
	Q4	2,756,700	6,890,700	1,699,300
2014	Q1	2,967,300	4,025,900	1,407,600
	Q2	2,847,700	3,857,800	1,249,800
	Q3	2,761,500	4,008,600	1,124,500
	Q4	2,762,900	3,837,300	1,107,300
2015	Q1	2,610,900	3,690,400	1,099,200
	Q2	2,404,300	3,332,500	1,016,200
	Q3	2,337,000	3,383,100	990,300
	Q4	2,387,500	3,299,900	1,072,200

TOTAL FIXED NETWORK REVENUES (PAGE 55)

		EUR		
		Base fees and setup charges	Connection charges (incl. public pay phones)	Wholesale revenue
2013	Q1	71,213,800	75,552,600	15,190,500
	Q2	69,570,700	70,886,800	14,333,300
	Q3	67,927,200	67,858,400	13,858,800
	Q4	67,202,300	69,483,500	11,346,700
2014	Q1	65,243,900	67,539,700	8,400,800
	Q2	64,227,800	64,347,200	7,955,300
	Q3	62,019,900	63,641,100	7,894,700
	Q4	60,298,700	63,588,200	7,707,400
2015	Q1	58,517,000	60,606,700	7,400,500
	Q2	55,831,900	55,663,100	6,753,000
	Q3	58,174,000	57,916,700	6,710,500
	Q4	56,657,000	57,758,500	6,759,600

GEOGRAPHICAL NUMBERS IN USE AND FIXED-LINE PORTING (PAGES 56)

		Number of telephone numbers		
		Geographical numbers in use	Geographical numbers ported	Service numbers ported
2013	Q1	3,037,523	295,652	11,752
	Q2	3,020,653	303,964	12,292
	Q3	3,006,438	310,636	11,624
	Q4	2,983,373	311,474	11,603
2014	Q1	2,936,986	307,383	12,058
	Q2	2,907,113	308,597	11,933
	Q3	2,887,446	311,403	13,240
	Q4	2,857,400	310,853	13,080
2015	Q1	2,839,775	311,003	13,446
	Q2	2,830,545	310,215	13,463
	Q3	2,830,825	309,391	13,340
	Q4	2,815,607	301,393	13,340

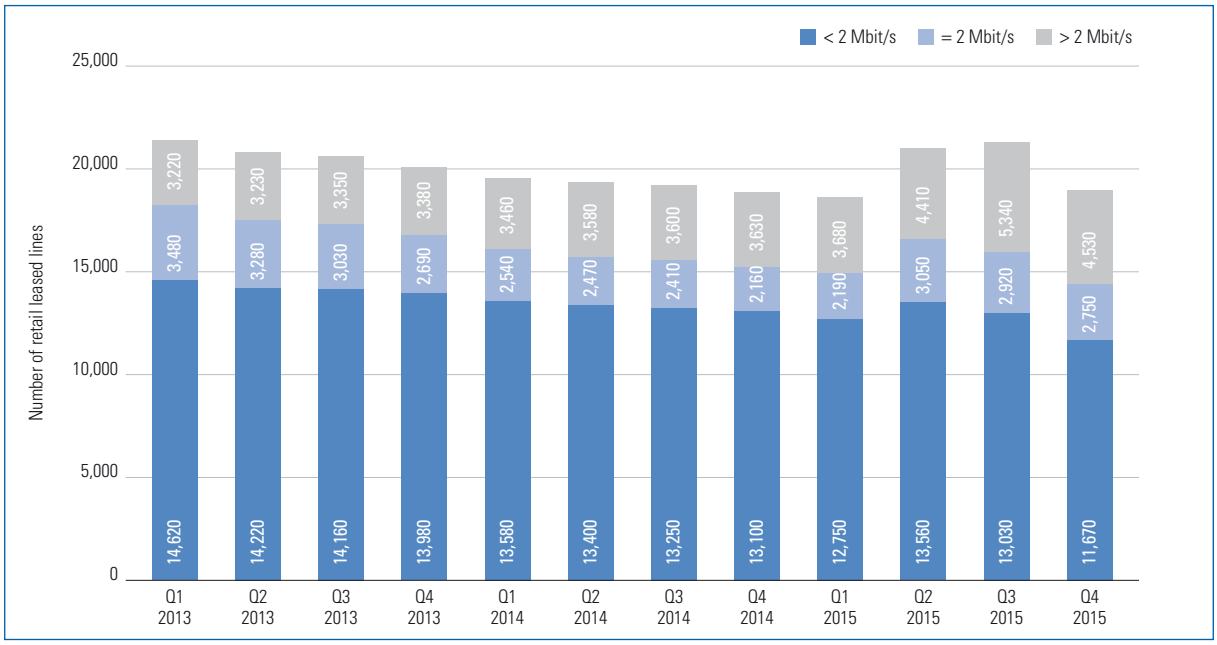
SERVICE NUMBERS IN USE (PAGE 57)

		Numbers in use				
		(0)720	(0)780	(0)800	(0)810, (0)820, (0)821, (0)828	(0)900, (0)930
2013	Q1	66,657	1,902	15,969	20,706	26,292
	Q2	68,451	1,890	16,288	20,651	25,667
	Q3	71,126	1,078	16,121	12,023	21,079
	Q4	71,507	551	16,276	11,963	21,064
2014	Q1	42,342	549	16,452	11,975	21,012
	Q2	43,255	549	16,575	12,102	20,765
	Q3	46,107	545	16,598	11,645	20,111
	Q4	46,450	542	16,794	11,498	19,826
2015	Q1	43,958	536	17,088	11,784	19,832
	Q2	48,280	536	17,184	11,657	19,762
	Q3	46,954	536	16,114	10,936	18,436
	Q4	47,840	531	17,406	11,957	19,765

4 | Leased lines

Number of retail leased lines in Austria

➡ HIGHER BANDWIDTHS ARE REPLACING LOWER ONES

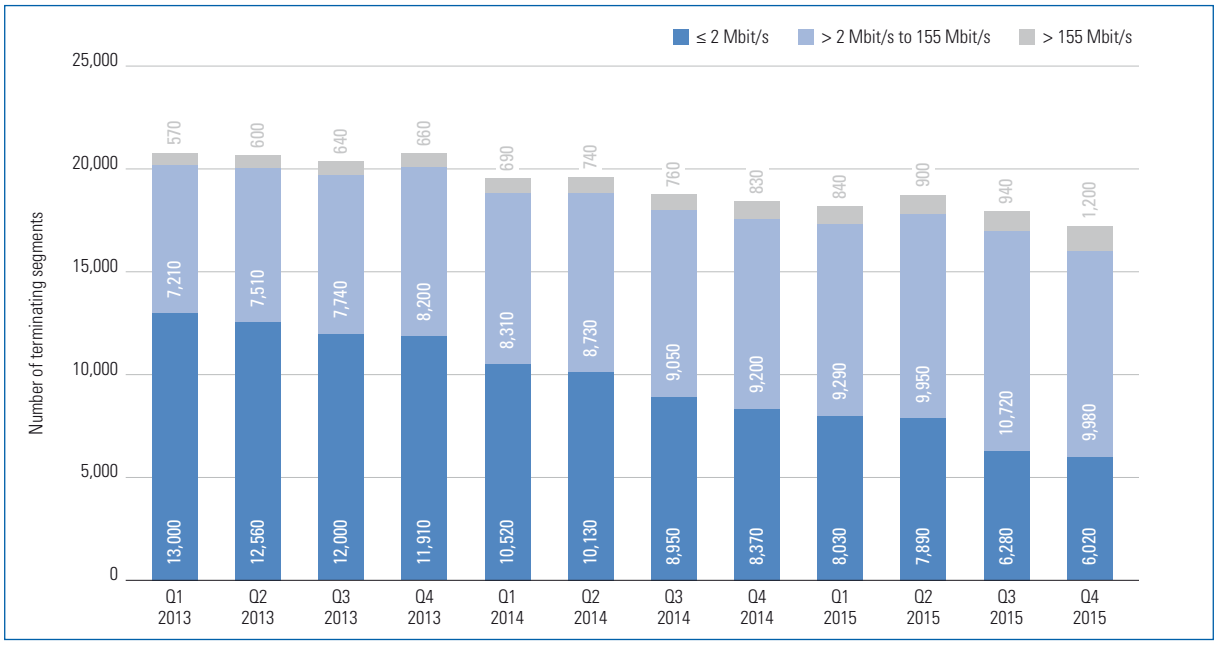


The chart above shows the number of retail leased lines (see Glossary), broken down into data rates of < 2 Mbit/s, = 2 Mbit/s and > 2 Mbit/s. A differentiation between the > 2 Mbit/s to 155 Mbit/s and > 155 Mbit/s categories as well as corresponding revenues can be found in the tables at the end of the section.

- Retail leased lines were characterized by a continuous decline as well as by unusual developments in 2015, caused by the fact that one operator recorded also all backup lines as of the beginning of Q2 2015.
- When comparing the number of retail leased lines at the end of 2015 (18,950) with that at the end of 2014 (18,890), it shows an increase of 0.3%.
- All in all, the decline in leased lines with low bandwidths was fully compensated by growth in leased lines with higher bandwidths. At the end of 2015, leased lines with bandwidths of ≤ 2 Mbit/s accounted for about 76.1% of all retail leased lines (14,420) but decreased by 5.5% year on year.
- Even though leased lines with bandwidths of > 2 Mbit/s amounted to only 23.9% of all leased lines (4,530), they jumped up by 24.8% within one year.

Number of terminating segments of leased lines in Austria

➡ NUMBER OF TERMINATING SEGMENTS ALSO DECLINING



The chart above shows the number of terminating segments of leased lines and Ethernet services, broken down into data rates of ≤ 2 Mbit/s, > 2 Mbit/s to 155 Mbit/s and > 155 Mbit/s. In addition, a breakdown into data rates of < 2 Mbit/s and = 2 Mbit/s as well as > 155 Mbit/s to 1 Gbit/s and > 1 Gbit/s, broken down into terminating segments of leased lines and Ethernet services, as well as corresponding revenues can be also found in the tables at the end of the section.

- The number of terminating segments dropped by 6.5% throughout 2015. Terminating segments of leased lines contracted significantly (down 17.0%), while, in contrast, Ethernet services grew by 8.3%.
- Looking at the bandwidths, the development towards higher bandwidths already described for retail leased lines is also confirmed. The number of terminating segments with bandwidths of up to 155 Mbit/s (16,000) shrank by 8.9% against Q4 2014, that with bandwidths above soared by 44.6%. However, the latter, numbering 1,200, accounted for only 5.2% of terminating segments.

NUMBER OF RETAIL LEASED LINES IN AUSTRIA (PAGE 64)

		Number of lines			
		< 2 Mbit/s	= 2 Mbit/s	> 2 Mbit/s to 155 Mbit/s	> 155 Mbit/s
2013	Q1	14,620	3,480	2,940	280
	Q2	14,220	3,280	2,960	270
	Q3	14,160	3,030	3,050	300
	Q4	13,980	2,690	3,090	290
2014	Q1	13,580	2,540	3,210	250
	Q2	13,400	2,470	3,290	290
	Q3	13,250	2,410	3,300	300
	Q4	13,100	2,160	3,310	320
2015	Q1	12,750	2,190	3,370	310
	Q2	13,560	3,050	4,080	330
	Q3	13,030	2,920	5,010	330
	Q4	11,670	2,750	3,940	590

REVENUES FROM RETAIL LEASED LINES IN AUSTRIA

		EUR			
		< 2 Mbit/s	= 2 Mbit/s	> 2 Mbit/s to 155 Mbit/s	> 155 Mbit/s
2013	Q1	2,303,100	4,358,300	5,202,700	631,100
	Q2	2,232,300	4,046,100	5,334,400	740,900
	Q3	2,134,900	3,964,800	5,365,700	838,300
	Q4	2,259,900	3,638,400	5,288,600	785,200
2014	Q1	1,899,100	3,483,400	5,456,500	608,500
	Q2	1,874,500	3,392,700	5,536,800	716,600
	Q3	1,800,200	3,332,700	5,571,100	783,100
	Q4	1,837,300	2,987,900	5,650,800	786,100
2015	Q1	1,572,300	3,156,900	5,851,900	829,600
	Q2	1,629,800	3,175,000	5,943,000	770,700
	Q3	1,662,700	3,051,900	3,920,400	736,400
	Q4	1,661,000	3,003,600	5,282,800	1,657,800

NUMBER OF TERMINATING SEGMENTS OF LEASED LINES IN AUSTRIA (PAGE 65)

		Number of terminating segments				
		< 2 Mbit/s	= 2 Mbit/s	> 2 Mbit/s to 155 Mbit/s	> 155 Mbit/s to 1 Gbit/s	> 1 Gbit/s
2013	Q1	390	11,790	2,940	270	8
	Q2	350	11,370	2,950	280	7
	Q3	330	10,850	3,050	290	7
	Q4	320	10,200	3,110	290	8
2014	Q1	320	8,860	3,170	290	11
	Q2	360	8,400	3,260	330	10
	Q3	340	7,420	3,280	320	14
	Q4	330	6,910	3,240	340	11
2015	Q1	330	6,600	3,240	340	11
	Q2	320	6,460	3,760	350	11
	Q3	300	4,920	4,380	320	8
	Q4	310	4,660	3,490	470	64

NUMBER OF TERMINATING SEGMENTS OF ETHERNET SERVICES IN AUSTRIA (PAGE 65)

		Number of terminating segments				
		< 2 Mbit/s	= 2 Mbit/s	> 2 Mbit/s to 155 Mbit/s	> 155 Mbit/s to 1 Gbit/s	> 1 Gbit/s
2013	Q1	26	790	4,270	290	4
	Q2	17	820	4,560	300	11
	Q3	14	810	4,690	330	12
	Q4	14	1,380	5,090	350	12
2014	Q1	14	1,330	5,140	380	12
	Q2	7	1,360	5,470	380	25
	Q3	12	1,180	5,770	400	27
	Q4	14	1,120	5,960	450	30
2015	Q1	14	1,090	6,050	460	30
	Q2	12	1,100	6,190	500	36
	Q3	12	1,050	6,340	560	47
	Q4	9	1,040	6,490	610	54

WHOLESALE REVENUES FROM LEASED LINES AND ETHERNET SERVICES

		EUR			
		Terminating segments / leased lines	Terminating segments / Ethernet services	Trunk segments / leased lines	Trunk segments / Ethernet services
2013	Q1	15,685,000	8,777,800	1,830,600	522,400
	Q2	15,804,300	9,161,500	1,728,800	575,200
	Q3	15,097,600	9,350,900	1,547,800	598,400
	Q4	15,526,800	9,574,000	1,610,800	930,000
2014	Q1	14,069,200	9,528,400	1,374,500	1,054,800
	Q2	13,840,500	10,453,400	1,291,000	866,300
	Q3	12,888,500	10,677,700	1,290,700	903,300
	Q4	11,413,200	11,121,100	1,295,900	931,500
2015	Q1	12,002,600	11,402,700	1,301,400	964,400
	Q2	12,267,600	11,692,800	1,432,000	980,300
	Q3	11,887,800	12,066,600	1,552,600	937,300
	Q4	10,528,400	12,191,200	1,611,700	917,700

LEASED LINES – NUMBER OF 64 KBIT/S EQUIVALENTS

		Number of 64 kbit/s equivalents				
		< 2 Mbit/s	= 2 Mbit/s	> 2 Mbit/s to 155 Mbit/s	> 155 Mbit/s to 1 Gbit/s	> 1 Gbit/s
2013	Q1	4,370	388,930	1,828,540	3,785,350	1,029,610
	Q2	4,090	372,370	1,786,830	3,869,980	984,460
	Q3	3,930	360,590	1,834,630	3,953,990	984,460
	Q4	3,790	338,750	1,876,180	2,777,220	1,398,880
2014	Q1	3,730	297,410	1,968,660	2,723,900	1,390,740
	Q2	4,840	278,470	1,900,870	3,055,570	1,215,070
	Q3	4,750	245,520	1,933,300	2,919,430	2,047,010
	Q4	4,620	231,000	1,951,250	3,486,180	1,505,300
2015	Q1	4,350	221,150	1,948,940	3,013,220	1,666,250
	Q2	4,330	215,750	4,403,730	3,182,090	1,798,570
	Q3	4,140	163,060	4,255,550	2,934,750	1,445,330
	Q4	5,170	155,790	1,939,800	3,661,220	12,913,170

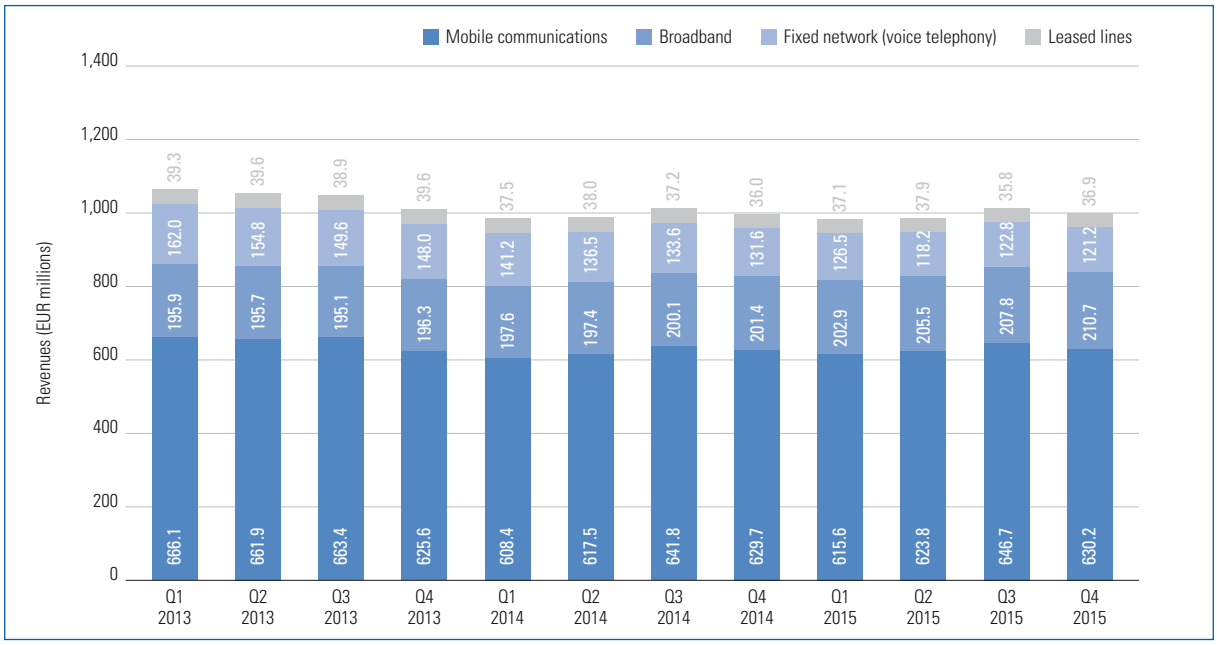
ETHERNET SERVICES – NUMBER OF 64 KBIT/S EQUIVALENTS

		Number of 64 kbit/s equivalents				
		< 2 Mbit/s	= 2 Mbit/s	> 2 Mbit/s to 155 Mbit/s	> 155 Mbit/s to 1 Gbit/s	> 1 Gbit/s
2013	Q1	300	25,840	1,602,770	2,898,370	81,400
	Q2	210	26,690	1,739,350	2,959,070	265,830
	Q3	180	26,580	1,738,550	3,077,010	299,010
	Q4	180	44,850	1,984,540	3,372,790	428,100
2014	Q1	180	43,350	2,024,240	3,486,930	428,100
	Q2	90	44,360	2,122,630	3,565,650	877,590
	Q3	150	38,460	2,176,420	3,610,930	889,890
	Q4	180	36,500	2,276,220	3,800,910	909,840
2015	Q1	180	35,680	2,415,840	4,084,550	907,960
	Q2	150	35,710	2,443,230	4,467,620	1,085,910
	Q3	150	33,020	2,517,960	5,230,630	1,511,310
	Q4	120	32,660	2,606,320	5,898,550	1,944,640

5 | Comparisons across sectors

Revenues from mobile, broadband, fixed and leased line services

➡ REVENUES IN 2015 ALMOST THE SAME AS IN 2014



The chart includes revenues from the following categories:

Mobile communications: Retail revenues from periodic base fees, activation charges, connection charges and data services, remuneration pursuant to the Telecommunications Fee Subsidies Act, wholesale revenues from termination, origination, international roaming, national roaming, sale of airtime to resellers (see Glossary);

Broadband (fixed network): Retail revenues (including revenues from products bundled with broadband) and wholesale revenues from setup charges, ongoing charges and volume-based charges;

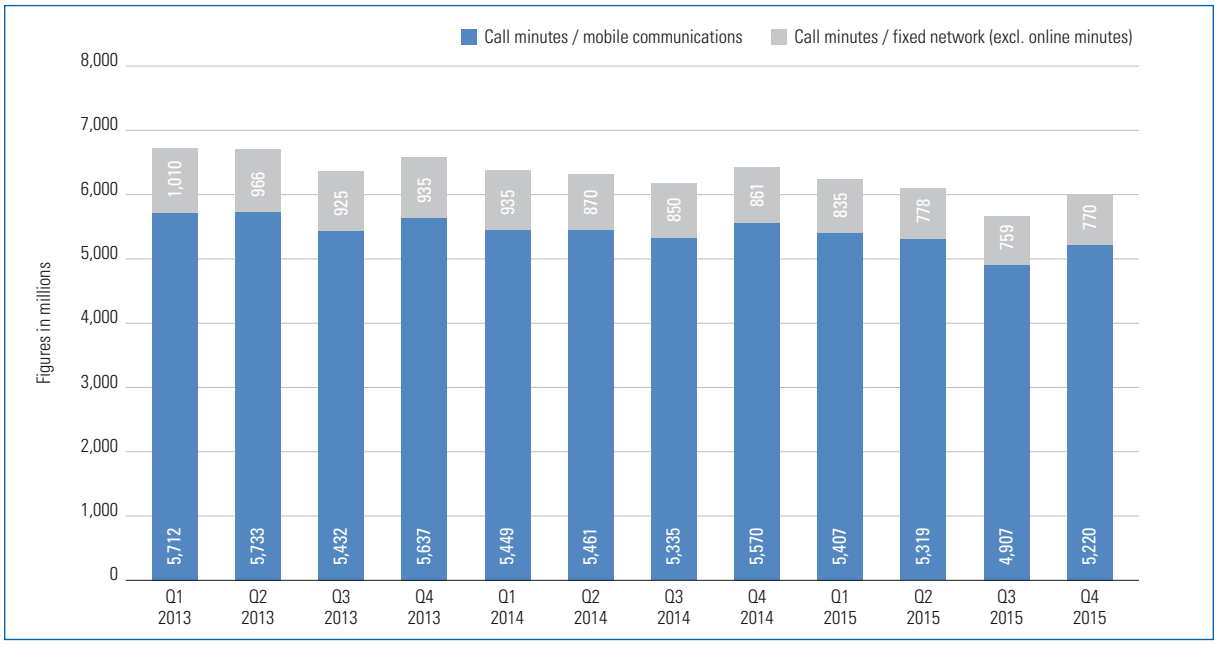
Fixed network (voice telephony): Retail revenues from residential and business customers (except for bundles with broadband) as well as public pay phones (phone booths), wholesale revenues, revenues from additional services, other fees and remuneration pursuant to the Telecommunications Fee Subsidies Act;

Leased lines: Retail revenues from periodic base fees and setup charges for domestic retail leased lines, wholesale revenues from terminating segments and trunk segments (see Glossary).

- Total revenues from mobile, broadband, fixed and leased line services amounted to nearly EUR four billion (EUR 3,979.6 million), declining by 0.1% (some EUR 5.8 million) against 2014.
- In 2015, revenues from mobile services, at 63.2%, accounted for the lion's share of telecommunications revenues, followed by revenues from fixed broadband at 20.8%. The fixed network contributed 12.3% to revenues, leased lines 3.7%.

Real minutes in fixed and mobile networks

DECREASE IN MINUTES IN FIXED AND MOBILE NETWORKS



The chart above shows the number of real minutes (in million) in the following segments:

Mobile communications: Call minutes to the domestic fixed network, domestic mobile networks, international numbers, service numbers and directory assistance services;

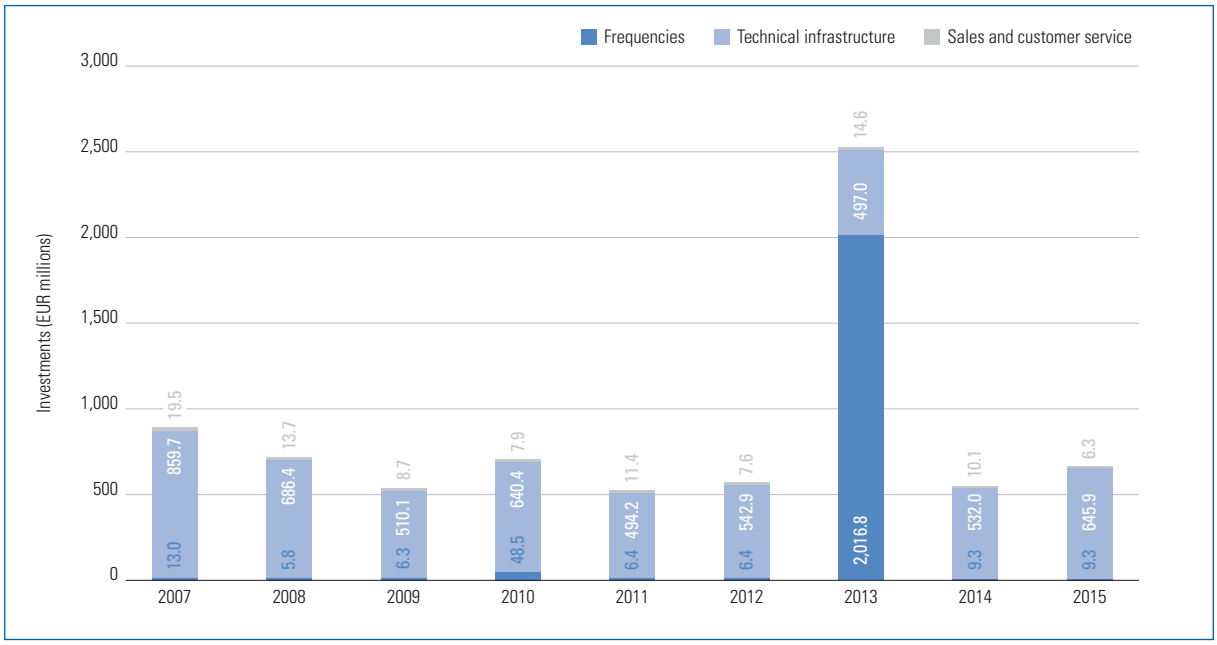
Fixed network: Call minutes to the domestic fixed network, domestic mobile networks, international numbers, service numbers and directory assistance services.

- Even though the number of mobile and fixed-line minutes rose significantly (up 5.7%) as always from Q3 to Q4, total annual minutes retreated by 5.3% against 2014 and amounted to about 23.995 billion minutes in 2015.
- 86.9% of these minutes (20.853 billion) came from the Austrian mobile network, down by 4.4% against 2014. The remaining 13.1% (3.142 billion) of minutes came from the fixed network, falling by 10.6%.

6 | Business indicators

Investments

INVESTMENTS ABOVE THE LEVEL OF 2014



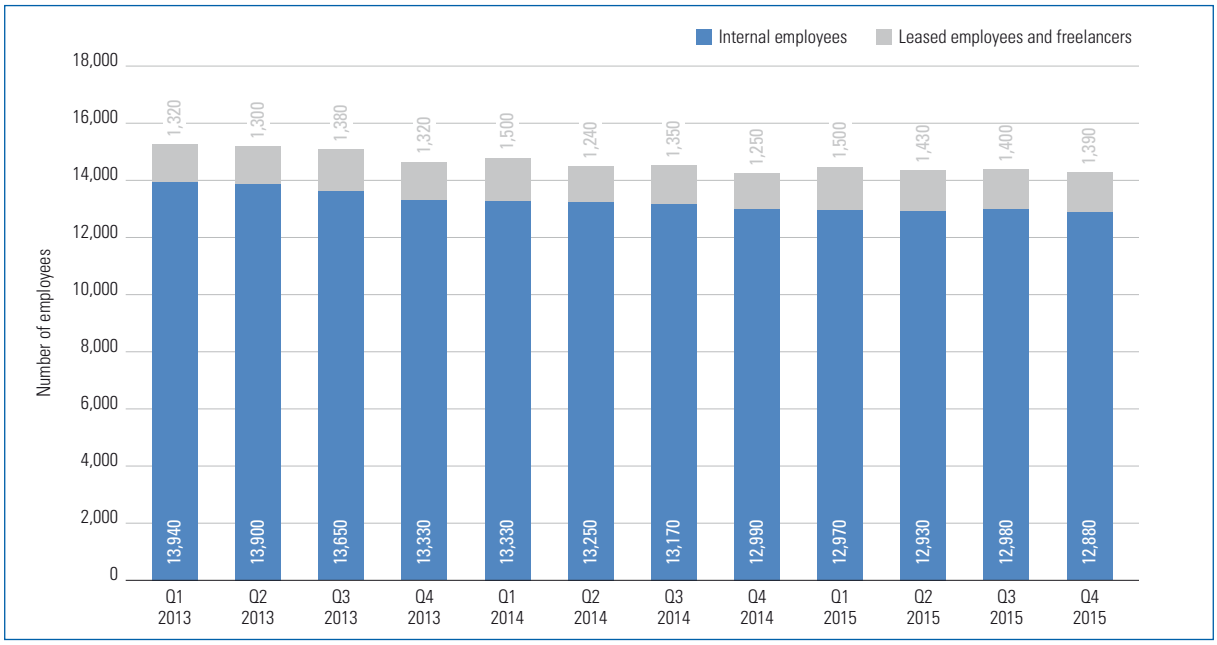
The chart above shows the development of investments in frequencies, technical infrastructure as well as sales and customer service on an annual basis. In this context, it is important to note that the values reported here are partly based on estimates and extrapolations from individual quarters for entire years. As a result, the exact figure for total investments cannot be calculated reliably.

The investment volumes shown above only include those investments made directly by telecommunications enterprises. They do not include investments by upstream or downstream industry sectors.

- In 2015, total investments in the telecommunications sector amounted to some EUR 661.5 million. This figure is higher by one fifth than in 2014.
- Basically, investments in the telecommunications sector go above all into technical infrastructure, thus into network expansion. 97.6% of total investments, i.e. EUR 645.9 million, were spent on this segment, 21.4% more than in 2014.
- With some EUR 9.3 million in 2015, the amount of investments in frequencies was nearly the same as in the previous year. EUR 6.3 million were invested in sales and customer service, which is 38.1% less than in 2014.
- The 2-billion investment of the mobile operators in 2013 was generated by the frequency auction for the 800/900/1800 MHz frequencies and is now used for the rollout of ultra-fast broadband in Austria.

Employees in the telecommunications sector

NUMBER OF EMPLOYEES VIRTUALLY UNCHANGED



The chart above shows the number of employees in the telecommunications sector, broken down into internal employees, leased employees and freelancers, and expressed in terms of full-time equivalents.

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

- At the end of 2015, approx. 14,270 persons were employed in the telecommunications sector and thus almost as many as at the end of 2014 (up 0.2%).
- The number of persons employed directly in telecommunications companies dropped slightly (down 0.8%), that of leased employees went up by 11.2%.

INVESTMENTS (PAGE 74)

	EUR			
	Frequencies	Technical infrastructure	Sales and customer service	TOTAL
2006	2,581,600	743,762,900	15,689,100	762,033,600
2007	13,027,200	859,669,700	19,544,600	892,241,500
2008	5,806,500	686,385,700	13,681,400	705,873,600
2009	6,266,100	510,088,500	8,722,600	525,077,200
2010	48,471,900	640,352,400	7,901,500	696,725,800
2011	6,391,800	494,222,700	11,412,600	512,027,100
2012	6,417,300	542,940,300	7,612,700	556,970,300
2013	2,016,843,900	497,028,300	14,580,800	2,528,453,000
2014	9,325,700	531,980,500	10,137,600	551,443,800
2015	9,332,800	645,924,500	6,276,300	661,533,600

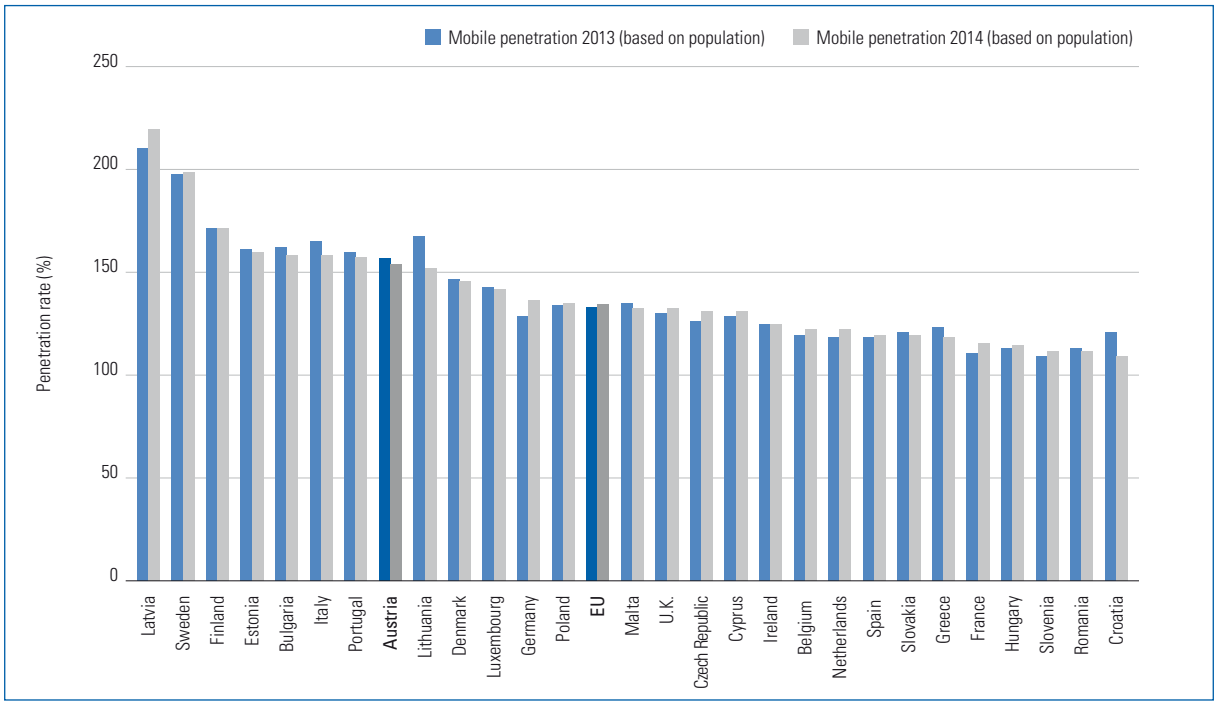
7 | International comparisons

This section contains several comparisons of European mobile and broadband services data. The statistics given here are an extended and more in-depth analysis of the data on the Austrian market discussed in Sections 1-6. The data are taken mainly from the Digital Agenda Scoreboard of the European Commission. It contains a series of indicators charting the progress made in achieving the goals of the Digital Agenda of the European Commission.

All other graphics in this section show the latest available figures. Regularly updated data and the option to create interactive charts can be found on the website of the Digital Agenda (http://ec.europa.eu/digital-agenda/en/scoreboard).

Mobile penetration rate (2013 to 2014)

➡ FROM 2013 TO 2014 ONLY MINOR CHANGES FOR AUSTRIA



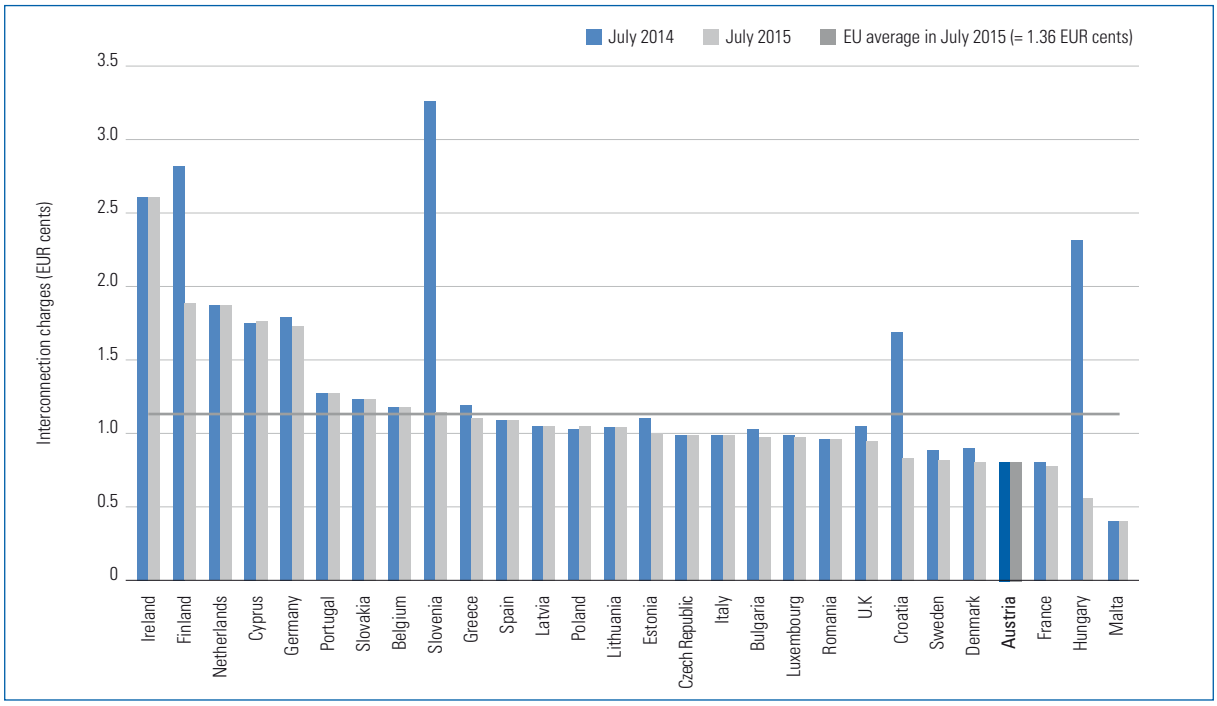
Source: Digital Agenda Scoreboard

The chart above provides an international comparison of mobile penetration rates (as of 2013 and 2014). The respective penetration rate is based on the number of SIM cards per 100 inhabitants.
The data underlying this chart can be found at the end of the section.

- The mobile penetration rate in Austria was 153.4%, almost 20 percentage points up against the EU average. By international comparison, Austria thus took 8th place, losing one rank compared with 2013.
- In 2014, the unweighted EU average slightly increased to 134.2 %.
- As in previous years, Latvia was in 1st position with a penetration rate of 219.7%.
- At the bottom of the ranking were Croatia (almost 110%) along with Romania, Slovenia, Hungary and France; however, penetration rates in these countries were also clearly above 100%.

Interconnection charges for termination in mobile networks

AUSTRIA HAS FOURTH LOWEST TERMINATION CHARGES



Source: BEREC –Termination Rates at European level July 2015

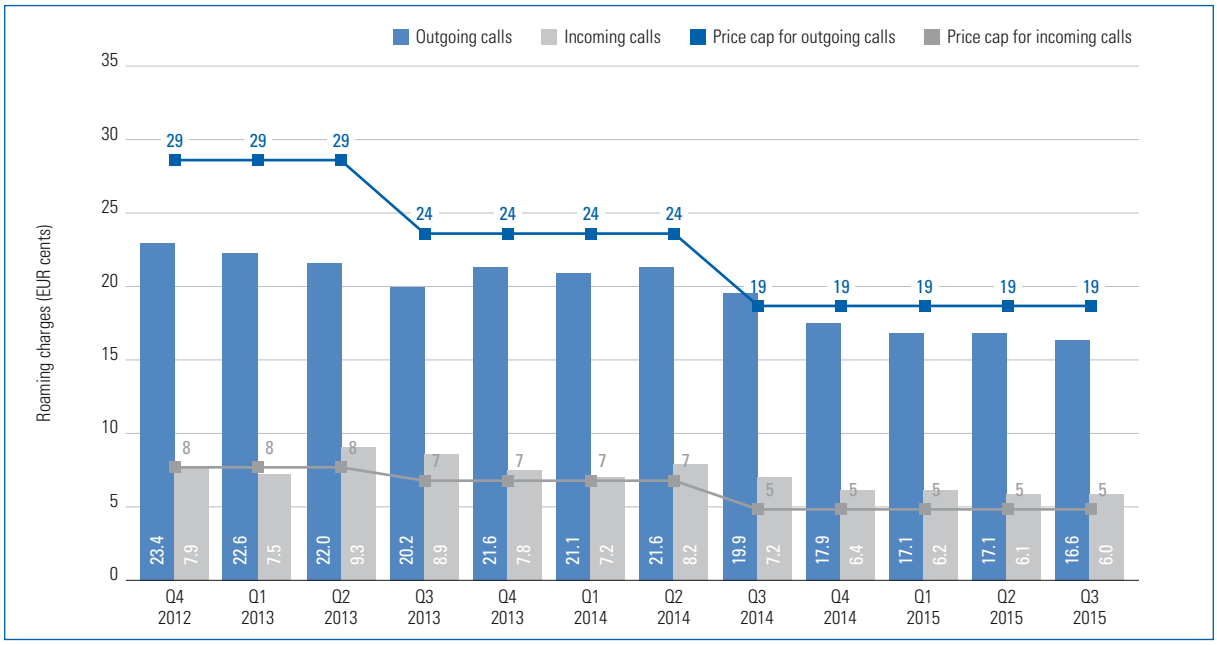
The chart above provides an international comparison of mobile termination charges. Telecommunications service providers charge each other (at the wholesale level) for termination services, that is, the routing of incoming calls to their mobile networks.

The data underlying this chart can be found at the end of the section.

- With a few exceptions, termination charges remained roughly the same in most countries compared with 2014.
- Austria is among the countries with the lowest termination charges. Even though Austria lost one place compared with mid-2014, at 0.80 euro cents it still ranks fourth among the countries with the lowest termination charges and lies far below the EU average of 1.13 euro cents. Malta (0.40 euro cents), Hungary (0.56 euro cents) and France (0.78 euro cents) lead the ranking of lowest termination charges in the EU.
- Over the years, the EU average dropped from 2.22 euro cents (2013) to 1.36 euro cents (2014) and was last at 1.13 euro cents (2015).
- Major improvement is seen in Hungary, Croatia and Slovenia, where termination charges dropped significantly.
- In mid-2015, the country with the highest termination charge was Ireland at 2.60 euro cents, followed by Finland (despite a reduction from 2.80 in 2014 to 1.87 euro cents in 2015) and the Netherlands (1.86 euro cents).

Average retail roaming charges for calls within EU/EEA

CALLS IN THE EU/EEA AREA CHEAPER ALSO IN 2015



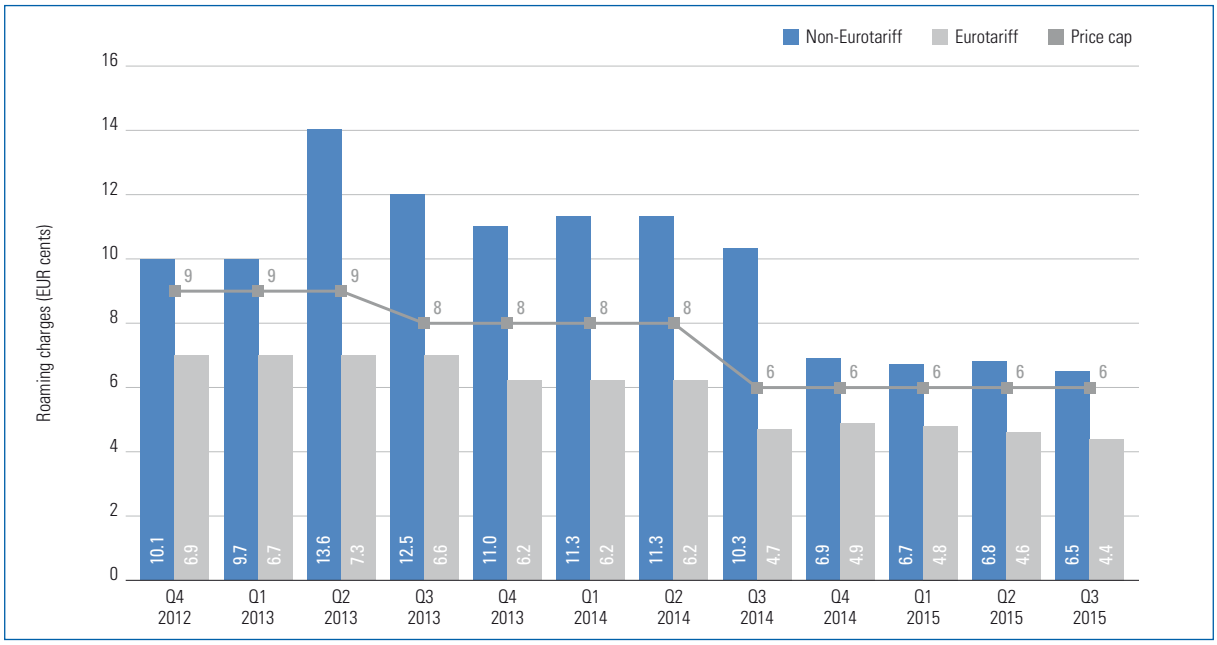
Source: RTR, BEREC International Roaming Benchmark Data Reports

The chart above shows the average retail roaming rates (excluding VAT) charged to Austrian subscribers for outgoing and incoming calls while roaming within the EU/EEA and the price caps prescribed by the Roaming Regulation.

- A similar pattern as in previous periods is apparent. Average retail roaming charges for both incoming and outgoing calls within the EEA fell from 2014 to 2015.
- For outgoing calls within the EU/EEA, in Q3 2015, average retail roaming rates, at 16.6 euro cents, were below the maximum rate of 19.0 euro cents permitted under the Roaming Regulation. For incoming calls the charges were 1.0 euro cent above the prescribed cap of 5.0 euro cents.
- The price cap is exceeded because subscribers may choose a roaming tariff that is not subject to any price regulation (in contrast to the Eurotariff to be provided by each mobile network operator). Indeed, the prescribed limits are complied with in line with statutory regulations.

Average retail SMS roaming charges within the EU/EEA

➡ EUROTARIFF SMS EVEN FURTHER BELOW PRICE CAP



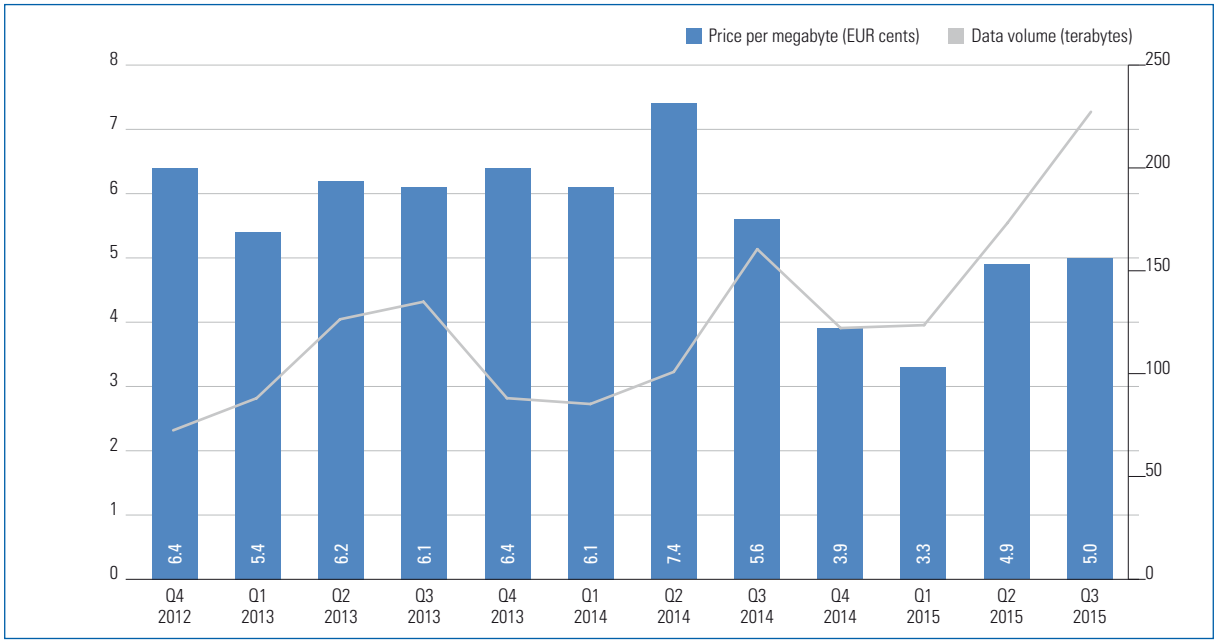
Source: RTR, BEREC International Roaming Benchmark Data Reports

The chart above shows the average amount (excluding VAT) charged to Austrian and EU/EEA subscribers for sending a text message (SMS) within the EU/EEA, as well as the price cap applicable to roaming text messages since the Roaming Regulation was expanded in the summer of 2009.

- In line with the regulation on text message roaming charges in force since the summer of 2009, the price cap was lowered from 8.0 euro cents to 6.0 euro cents in the summer of 2014.
- In Q3 2015, subscribers paid on average only as little as 4.4 euro cents for one roaming text message according to the Eurotariff (scope of application of the Roaming Regulation).
- For subscribers who chose a tariff other than the Eurotariff, text messages got considerably cheaper compared with 2014: the costs dropped by almost 50%. In Q3 of the year under review, the average price outside the Eurotariff was 6.5 euro cents for one roaming text message within the EU/EEA, one year before it had been still 10.3 euro cents.

Average retail data roaming charges within the EU/EEA (per megabyte)

AGAIN VIGOROUS RISE IN USAGE OF DATA ROAMING



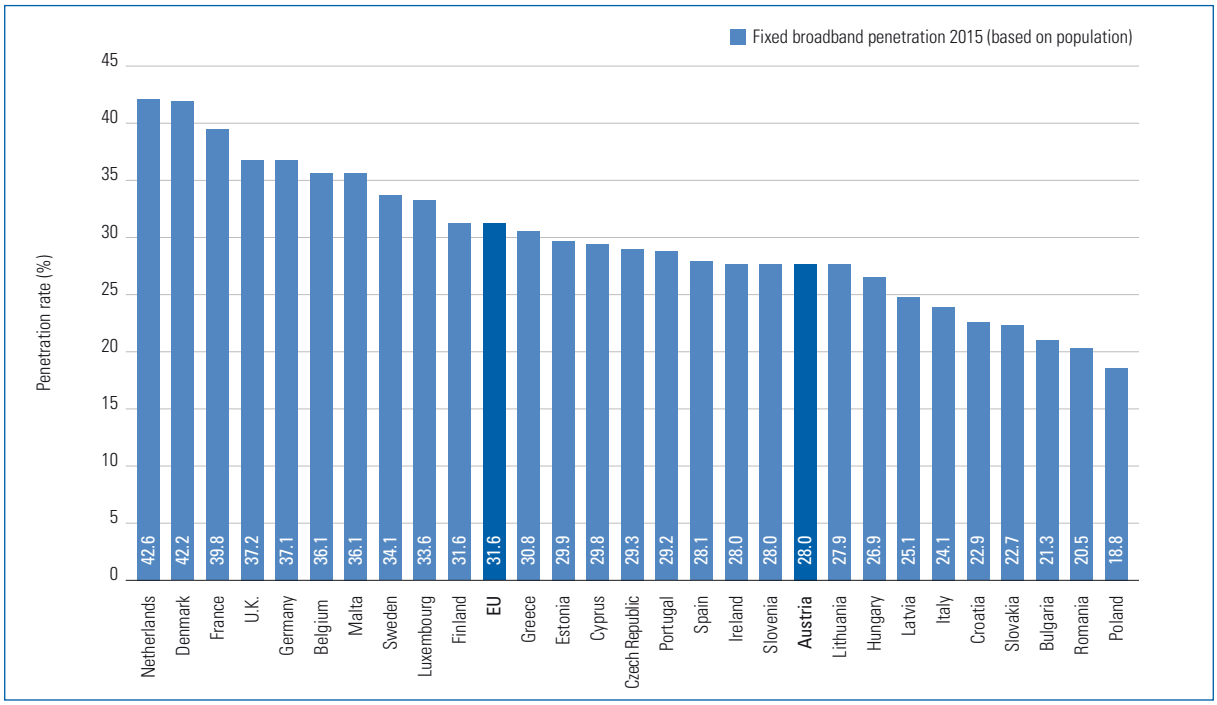
Source: RTR

The chart above shows the average charges per megabyte (excluding VAT) for data roaming within the EU/EEA. A statutory price cap for data roaming came into force on 1 July 2012 (EUR 0.70 maximum excluding VAT per megabyte transmitted). On 1 July 2013 the price cap was lowered to EUR 0.45 (excluding VAT), on 1 July 2014 to EUR 0.2 (excluding VAT).

- After the charges for data roaming had reached a high of 7.4 euro cents per megabyte in Q2 2014, they slumped to a record low of 3.3 euro cents within the following three quarters. In the last two quarters depicted, the value stabilised at around 5 euro cents per megabyte.
- In the last three quarters depicted, the data volume used abroad almost doubled (from 118 terabytes in Q4 2014 to 220 terabytes in Q3 2015).

Fixed broadband penetration

➡ 28 % OF AUSTRIANS HAVE FIXED BROADBAND ACCESS



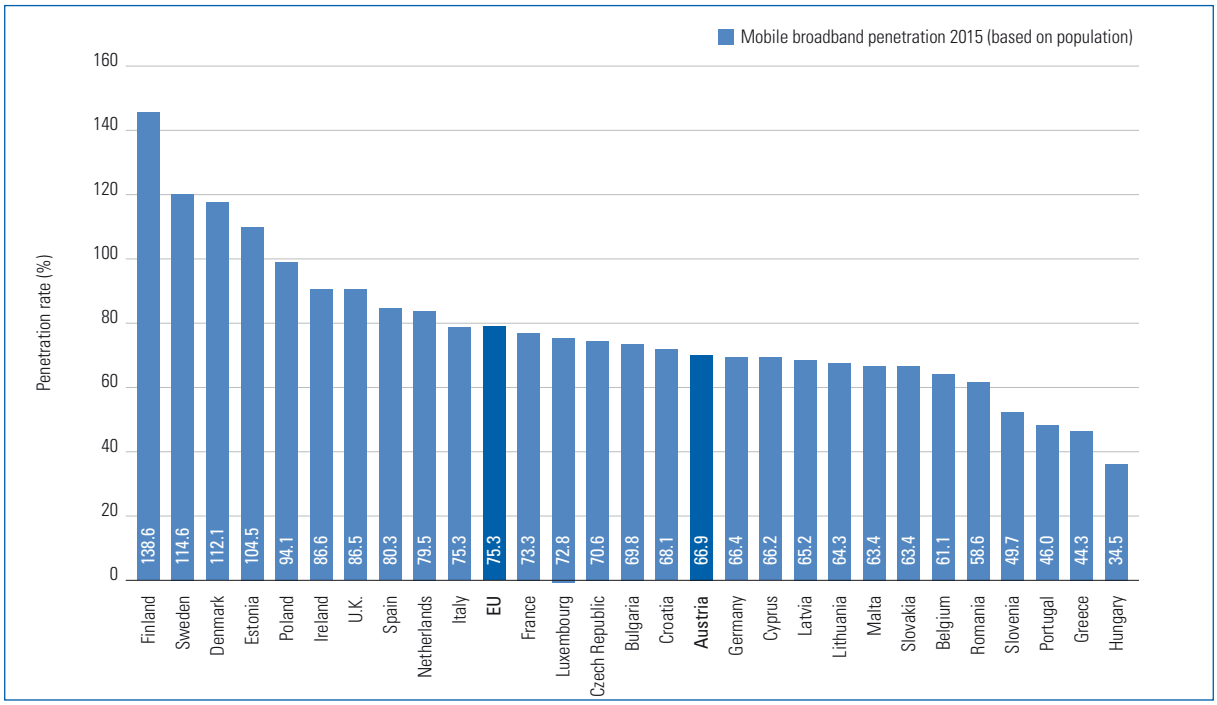
Source: Digital Agenda Scoreboard

The chart above provides an international comparison of broadband penetration rates based on fixed infrastructure such as DSL, cable broadband, unbundled line (see Glossary), wireless, etc. (as of June 2015). The penetration rate is calculated from the number of broadband connections per 100 inhabitants. Mobile broadband connections are not included in these figures.

- Compared with the previous year, fixed broadband penetration in Austria (relative to the country's population) increased from 26.9% to 28.0%; however, it was still below the EU average, which was about 31.6% in 2015 and increased slightly against the previous year.
- As in the year before, the penetration rates 2015 were highest in the Netherlands (42.6%), Denmark (42.2%) and France (39.8%).
- Poland, at 18.8 %, followed by Romania (20.5 %) and Bulgaria (21.3 %) reported the lowest density of fixed broadband connections.

Mobile broadband penetration

AUSTRIA LOST A FEW PLACES



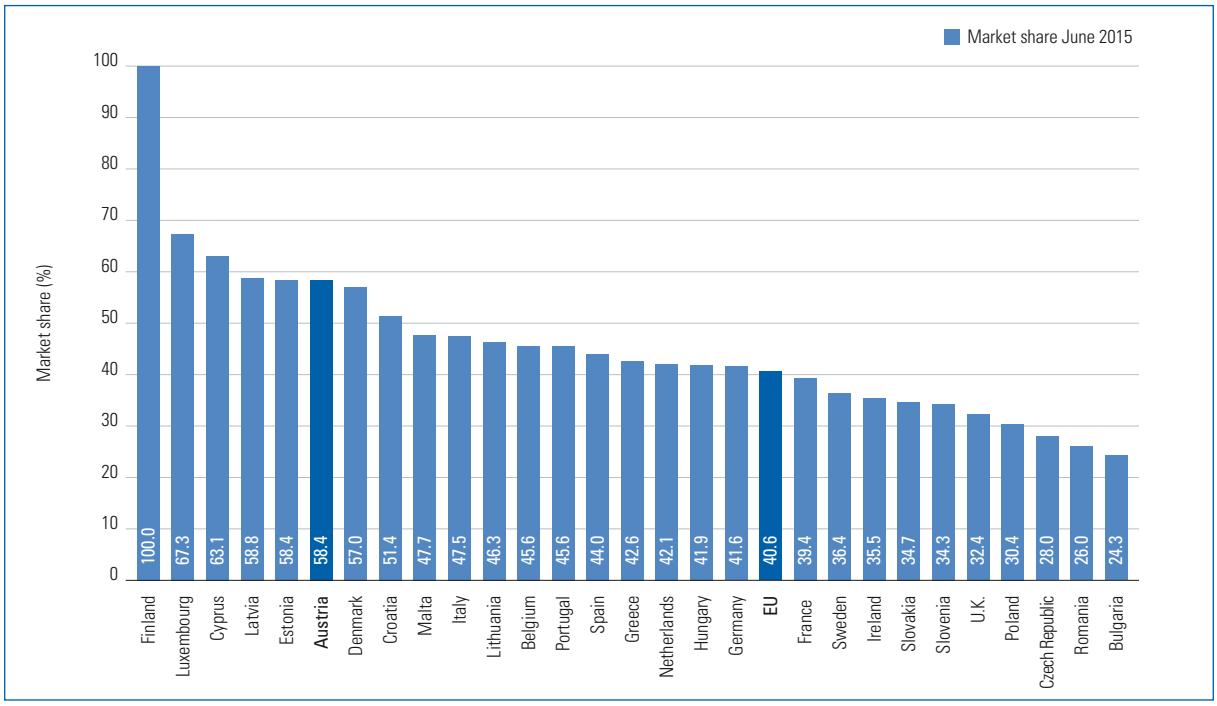
Source: Digital Agenda Scoreboard

The chart provides an international comparison of mobile broadband penetration rates (as of June 2015). The penetration rate is calculated from the number of mobile broadband connections (active broadband SIM cards) per 100 inhabitants. Broadband connections on fixed infrastructure (such as DSL, coaxial cable, etc.) are not included in these figures.

- In 2015, mobile broadband penetration in Austria was 66.9% and thus rose slightly compared with the previous year (1.7 percentage points); nevertheless, comparison between countries shows that Austria fell behind a few places.
- As in 2014, Finland (penetration rate of 138.6%), Sweden (114.6%) and Denmark (112.1%) were at the top of the ranking.
- Hungary was by far the country with the lowest number of mobile broadband connections (penetration rate of 34.5%), trailing almost 10 percentage points behind the second-placed country, Greece (44.3%).

Incumbent operator's share of broadband market

AUSTRIAN INCUMBENT HOLDS A MARKET SHARE OF 58%



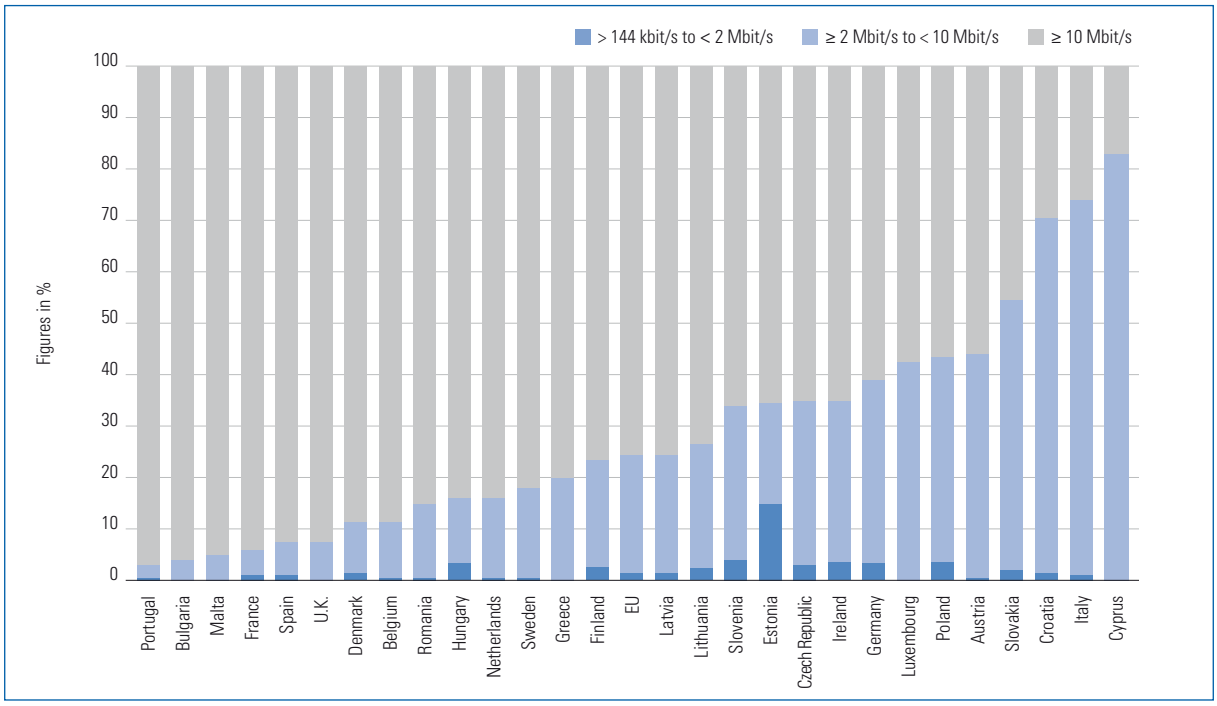
Source: Digital Agenda Scoreboard

The chart above shows the market shares of the retail broadband market held by national incumbent operators (former monopoly operators) (as of June 2015). It only includes broadband connections based on fixed infrastructure (e.g. DSL, cable broadband, etc.). Mobile broadband connections are not included in these figures.

- Almost unchanged against the previous year, the market leader A1 had a market share of 58.4% on the fixed retail broadband market in June 2015.
- Thus, throughout Europe, Austria was in 5th place tied with Estonia, behind Finland (100%), Luxemburg (67.3%), Cyprus (63.1%) and Latvia (58.8%).
- As in 2014, also in 2015, Bulgaria (24.3%) was the country with the lowest market share of the incumbent operator, followed by Romania (26.0%) and Czech Republic (28.0%)

Broadband connections by bandwidth

➡ AUSTRIA STILL NEEDS TO IMPROVE IN RESPECT OF HIGH BANDWIDTHS



Source: Digital Agenda Scoreboard

The chart above provides an international comparison of the different bandwidths of fixed broadband connections (as of June 2015). The data underlying this chart can be found at the end of the section

- In mid-2015, only 0.5% of all fixed broadband connections were in the bandwidth category below 2 Mbit/s. Thus, the value for Austria is one percentage point below the EU average of 1.5%.
- With regard to broadband connections with high bandwidths (above 10 Mbit/s), Austria, at 56.1%, was lagging far behind the EU average of 75.5%.
- Fixed broadband connections with bandwidths above 10 Mbit/s accounted for shares of over 95% in Portugal, Bulgaria and Malta, followed by France, Spain and the United Kingdom with shares still greater than 90%.

MOBILE PENETRATION RATE 2013 TO 2014 (PAGE 78)

	in %	
Country	Penetration rate 2013	Penetration rate 2014
Latvia	210.2%	219.7%
Sweden	197.8%	199.1%
Finland	171.6%	171.8%
Estonia	161.6%	160.3%
Bulgaria	162.9%	159.4%
Italy	165.6%	158.4%
Portugal	159.9%	157.5%
Austria	156.3%	153.4%
Lithuania	167.8%	152.0%
Denmark	146.7%	145.9%
Luxembourg	143.0%	141.8%
Germany	129.3%	136.5%
Poland	134.8%	135.6%
EU	132.9%	134.2%
Malta	135.3%	132.4%
U.K.	130.6%	132.4%
Czech Republic	126.4%	131.4%
Cyprus	128.6%	131.4%
Ireland	124.9%	125.1%
Belgium	119.7%	122.4%
Netherlands	118.3%	122.1%
Spain	118.4%	119.8%
Slovakia	121.1%	119.3%
Greece	123.3%	119.2%
France	110.9%	115.6%
Hungary	113.7%	114.4%
Slovenia	109.4%	112.7%
Romania	112.9%	111.7%
Croatia	120.8%	109.7%

INTERCONNECTION CHARGES FOR TERMINATION IN MOBILE NETWORKS (PAGE 79)

	EUR cents	
Country	July 2014	July 2015
Ireland	2.59	2.60
Finland	2.80	1.87
Netherlands	1.86	1.86
Cyprus	1.74	1.76
Germany	1.79	1.72
Portugal	1.27	1.27
Slovakia	1.23	1.23
Belgium	1.18	1.18
Slovenia	3.24	1.14
Greece	1.19	1.10
Spain	1.09	1.09
Latvia	1.05	1.05
Poland	1.03	1.05
Lithuania	1.04	1.04
Estonia	1.10	1.00
Czech Republic	0.98	0.99
Italy	0.98	0.98
Bulgaria	1.02	0.97
Luxembourg	0.98	0.97
Romania	0.96	0.96
U.K	1.05	0.94
Croatia	1.69	0.83
Sweden	0.89	0.81
Denmark	0.90	0.81
Austria	0.81	0.80
France	0.80	0.78
Hungary	2.31	0.56
Malta	0.41	0.40

BROADBAND LINES BY BANDWIDTH (PAGE (86)

	in %		
Country	> 144 kbit/s to < 2 Mbit/s	≥ 2 Mbit/s to < 10 Mbit/s	≥ 10 Mbit/s
Portugal	0.8%	2.1%	97.1%
Bulgaria	0.2%	3.6%	96.2%
Malta	0.0%	5.0%	95.0%
France	1.0%	5.0%	94.0%
Spain	0.9%	6.8%	92.4%
U.K.	0.0%	7.7%	92.3%
Denmark	1.6%	9.8%	88.6%
Belgium	0.7%	11.0%	88.3%
Romania	0.8%	14.2%	85.1%
Hungary	3.4%	12.5%	84.1%
Netherlands	0.4%	15.8%	83.8%
Sweden	0.6%	17.5%	81.9%
Greece	0.1%	19.9%	80.0%
Finland	2.5%	21.0%	76.4%
EU	1.5%	23.0%	75.5%
Latvia	1.7%	22.9%	75.4%
Lithuania	2.6%	24.0%	73.4%
Slovenia	4.0%	30.0%	66.0%
Estonia	15.2%	19.4%	65.4%
Czech Republic	2.8%	32.2%	65.0%
Ireland	3.5%	31.6%	64.9%
Germany	3.4%	35.7%	60.9%
Luxembourg	0.0%	42.3%	57.7%
Poland	3.8%	39.8%	56.5%
Austria	0.5%	43.4%	56.1%
Slovakia	2.0%	52.5%	45.5%
Croatia	1.4%	69.1%	29.5%
Italy	1.1%	72.8%	26.1%
Cyprus	0.1%	82.9%	17.0%

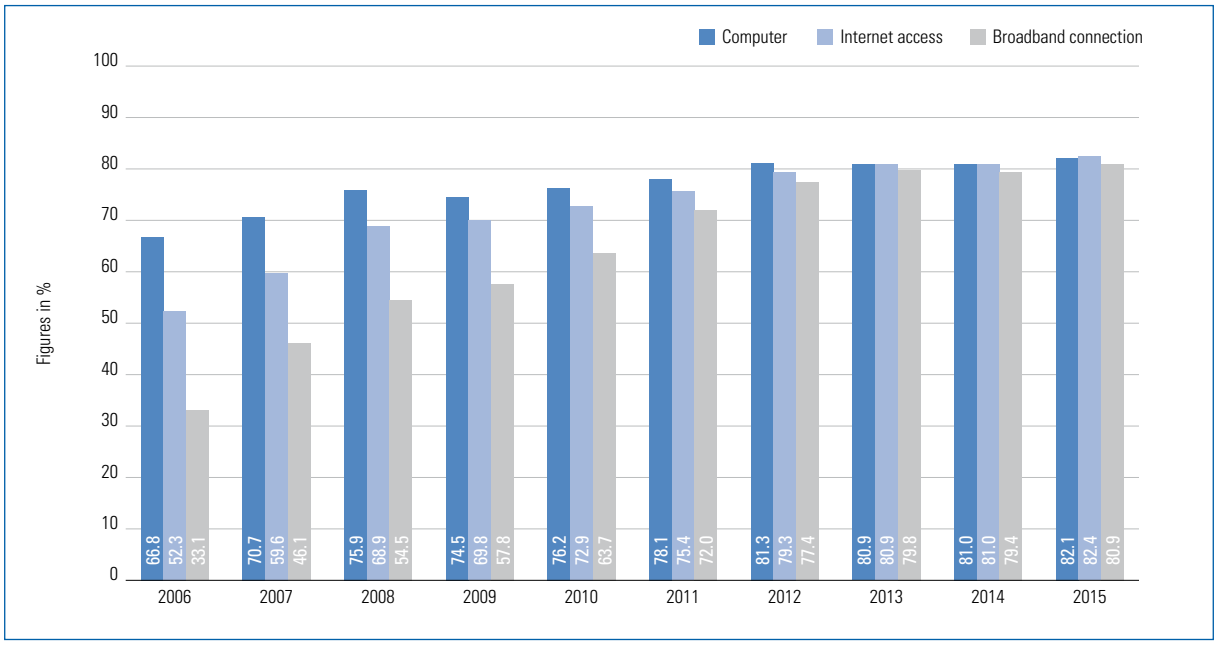
8 | Technology indicators

Information and communications systems are the pillars of the knowledge society and form the basis for the interaction of industry, politics and society. Technologies driving and underpinning information and communications are therefore increasingly important. Coupled with this is the need to quantify the developmental levels of societies with respect to the use of information and communications technologies (ICT). The intention is to make comparisons between countries, chart developments over time and create the basis for economic and political decision-makers. One method of responding to all these requirements is to map the relevant technology and communications parameters in the form of indices.

There are various technology indices used internationally with differing methodological approaches and emphasis. This section will discuss the main indices and Austria's performance by international standards.

Computers, Internet access and broadband in households

➡ CLOSE TO 20% HAVE NEITHER COMPUTER NOR INTERNET AT HOME



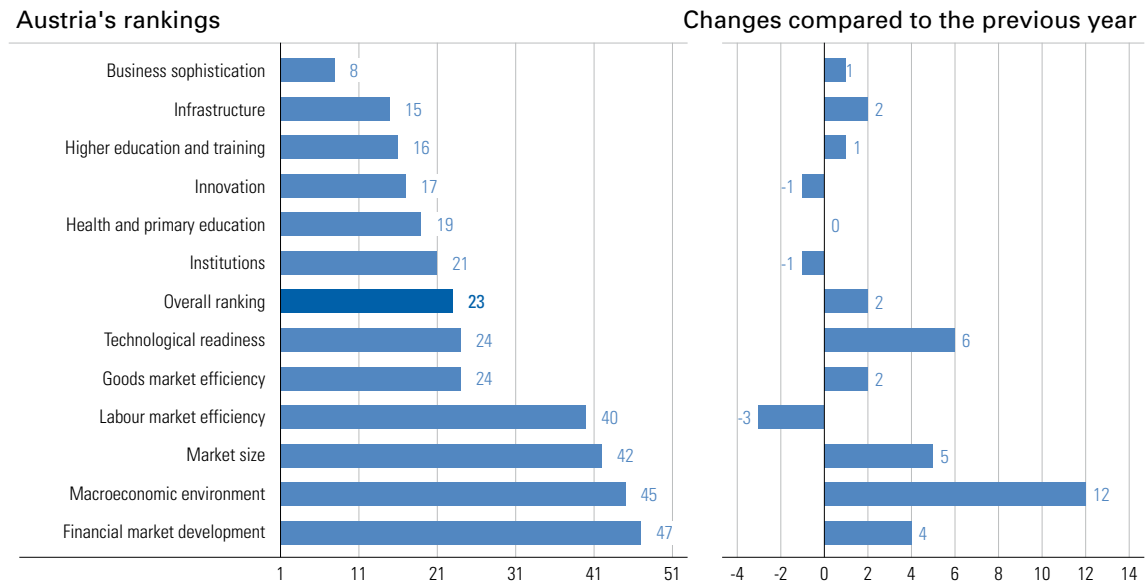
Source: Statistics Austria

This chart shows the percentages of Austrian households with computers, Internet access and (fixed or mobile) broadband connection over the years.

- While the statistical data on the use of computers in households, Internet access and broadband connections had still shown substantial differences and growth rates until a few years ago, a certain saturation level has apparently been reached since 2013. Virtually every household that has a computer also has Internet access. And each household connected to the Internet uses a broadband connection.
- Nevertheless, since 2013 18 to 20% of households have had neither a computer nor Internet access. This does not rule out that the computer and/or the Internet are used at other locations (e.g. school, at work).

Global Competitiveness Index

AUSTRIA LOSES TWO MORE PLACES BY INTERNATIONAL COMPARISON



Source: World Economic Forum, Global Competitiveness Report 2015-2016

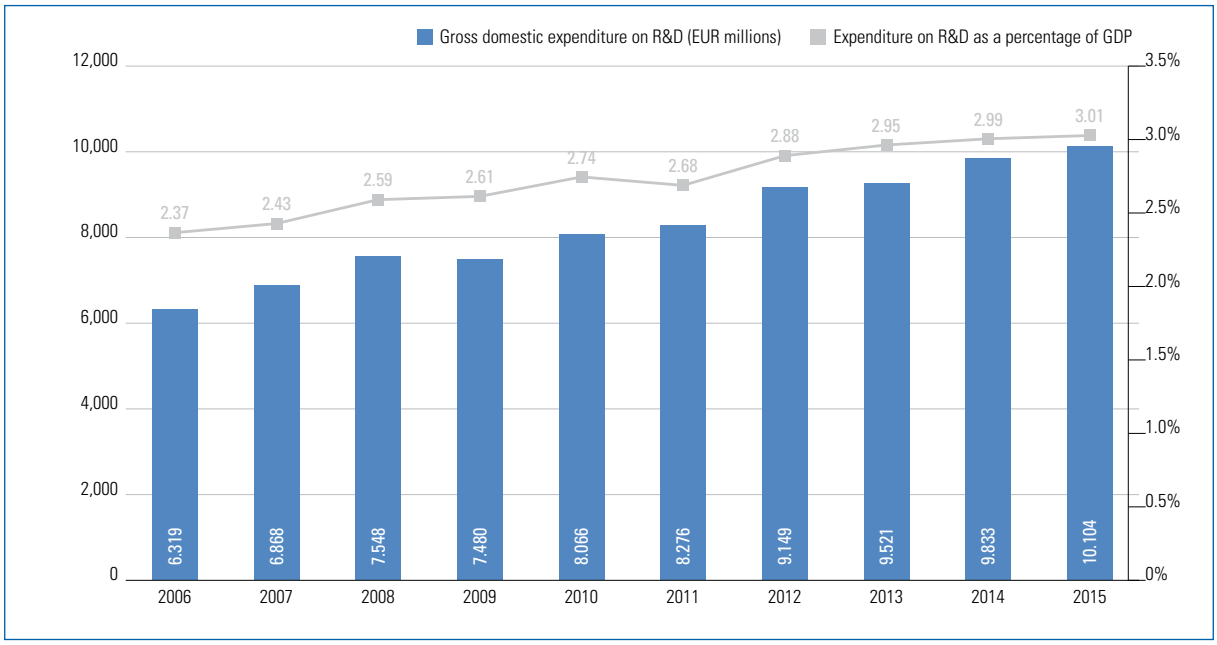
The World Economic Forum defines competitiveness as the set of institutions, policies and production factors that determine the level of productivity of a country. The level of productivity, in turn, sets the level of prosperity that can be earned by an economy. In other words, the greater a country's competitiveness, the more likely it is that it can produce high incomes. Productivity is by definition an input-output ratio, i.e. it is a measure of the best possible output that can be achieved with the existing production factors.

The twelve parameters are measured either by questioning or by observation. The index also takes into account a country's level of development. Accordingly, it distinguishes between factor-driven, efficiency-driven and innovation-driven economies. Developing countries are among the factor-driven economies, while western industrial nations represent innovation-driven economies.

- In this year's GCI ranking Austria has fallen behind further. While Austria had lost five places in last year's ranking, this year it has lost two more, thus ranking 23rd worldwide. A comparison with the result of the previous year shows only three minor improvements: "Labour market efficiency" (up three places to 40th), "Institutions" (up by one place to 21st) and "Innovation" (also up one place to 17th). In the remaining categories Austria deteriorated partly enormously. In particular, in the "Macroeconomic environment" category Austria lost twelve places. This is mainly attributable to the dramatic drop in the "Government budget balance" subindex from 48th place to 74th.
- Despite losing one position in the "Business sophistication" category, 8th place still means a top position for Austria.
- As in previous years, the ranking is headed by Switzerland, followed by Singapore, the United States and Germany that climbed by one spot.

Gross domestic expenditure on R&D in absolute terms and as a proportion of GDP

➡ RESEARCH-SPENDING RATIO ABOVE THE THREE-PERCENT MARK FOR THE FIRST TIME



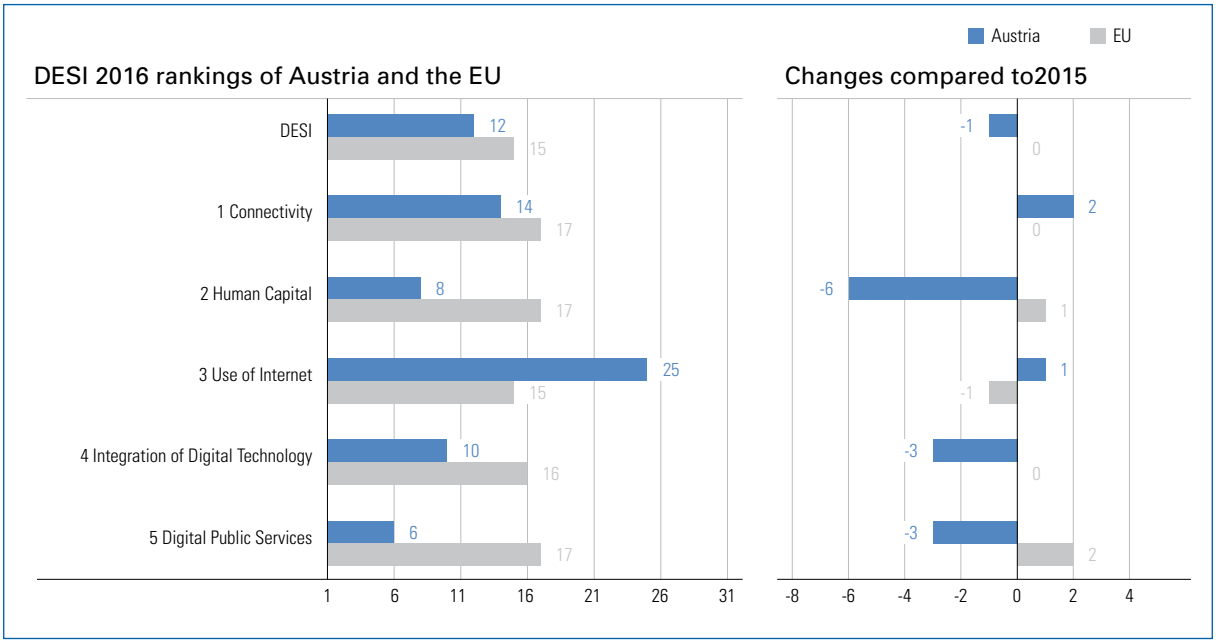
Source: Statistics Austria

The annual overall estimate of gross domestic expenditure on research and development (R&D) is derived from the detailed structural data of Statistics Austria obtained from primary-data surveys on R&D and the research-related analyses and evaluations of the budgets of the federal and provincial governments of Austria, also conducted annually. Gross domestic expenditure on R&D (sometimes referred to as "research-spending ratio"), expressed as a percentage of gross domestic product, is an indicator of major political relevance.

- In 2015, for the first time more than EUR 10 billion were spent on research and development in Austria. With a GDP of about EUR 335 billion, this R&D expenditure corresponds to a research-spending ratio of 3.01%, which thus climbed above the three-percent mark for the first time.
- The largest share of expenditure on R&D, EUR 4.77 billion (47.2%), came from Austrian businesses, followed by EUR 3.21 billion (31.8%) from the Austrian federal government and EUR 1.53 billion (15.1%) from abroad. The remaining expenditure came from the Austrian provinces and other funding sources.

Digital Economy and Society Index

AUSTRIA RANKS 12TH IN THE EU



Source: http://digital-agenda-data.eu/charts/

The index for digital economy and society (Digital Economy and Society Index – DESI) is compiled annually by the EU Commission. Different technology parameters are used to compare the 28 EU Member States and Norway. In the course of the evaluation by the European Commission, Member States were surveyed according to performance indicators in 5 main groups and 33 subgroups that that altogether showed the degree of their digitisation. The chart shows the rankings of Austria and the EU average for 2016 as well as the changes against the previous year. In calculating the rankings the figures for Norway as a non-EU Member State have not been considered.

- In the current DESI ranking Austria is in 12th place and thus gained one position compared with the previous year. In contrast, the average value of all 28 EU Member States remained unchanged and was in 15th place in 2016.
- Generally, Austria is above the EU average in the main DESI dimensions, with the exception of the "Use of Internet" indicator. Here, Austria, from the weak 24th place, slipped by another place and now ranks only 25th.
- Austria scores well for the "Digital Public Services" (6th) and "Human Capital" (8th) parameters, moving up 6 places for the latter indicator within one year.
- The DESI ranking is headed by Denmark, followed by (the non-EU Member State) Norway and the Netherlands, while Bulgaria and Romania are at the bottom of the ranking.

9 | Explanatory comments and glossary

Explanatory comments on the survey

The rationale for the data survey on which the RTR Telekom Monitor is based is the Communications Survey Ordinance (KEV), Federal Law Gazette II No. 365/2004, which came into force on 1 October 2004. RTR is obliged by this Ordinance to carry out statistical surveys of communications markets on a quarterly basis, compile the statistics and publish them.

With effect from April 2013 the KEV was last amended; prior to that, in March 2012, there had been a major amendment, replacing the previous KEV dating from 2004. The amendment had become necessary because in such a highly dynamic field as telecommunications a great deal happened both on the markets and in the technology and this fact had to be properly reflected. In addition, RTR was keen to standardise the type of questions asked in the operator surveys (BAF) and the KEV. To do this it was necessary to bring terms and definitions into line with those from the operator surveys.

In order to reduce the burden on the individual operators, RTR specified the sample in line with Art. 4 Par. 1 KEV in such a way that, on the basis of the statistical population of the most recent market analyses, a market share of at least 90% is covered for each cluster (mobile communications, broadband, fixed network and leased lines). From this sample, RTR extrapolates the data for the statistical population.

The charts in the RTR Telekom Monitor contain for the most part heavily rounded values. Tables with data underlying the charts as well as some additional tables can be found at the end of each section. The retail revenues referred to are always net revenues. Due to occasional post-hoc data corrections, the values in the charts presented here may differ slightly from the information provided in earlier issues of the RTR Telekom Monitor. Where major deviations (> 5%) arise in individual data values, a comment to this effect is provided for the figure in question.

Airtime (mobile communications)

Airtime refers to a service which mobile network operators provide for domestic resellers. A reseller (airtime reseller) is a communications service provider that offers public mobile services to retail customers but does not provide those services using its own network. This includes all mobile service providers (such as resellers or [enhanced] service providers) that do not operate their own communications network – neither a radio network nor a core network – in providing mobile communications services.

Bitstream and resale

Bitstream and resale are wholesale products at different levels of the value chain, on the basis of which Internet connections can be provided to the end user. Bitstream access is provided at predefined (regional or national) handover points, the wholesale customer providing Internet connectivity. By comparison, in the case of resale, Internet connectivity is provided by the wholesale supplier, the wholesale customer acting merely as reseller.

Broadband

Broadband Internet access or broadband Internet connections are Internet connections (technology neutral) with a download speed of > 144 kbit/s. The Internet connection can also be offered as part of a bundle with other services. The connection can be made in the following ways:
- using own infrastructure (copper-wire pairs in the A1 Telekom Austria AG network),
- on an unbundled line (see unbundling),
- as virtual unbundling (see virtual unbundling),
- via coaxial cable (cable modem),
- as fixed wireless access, e.g. W-LAN, WiFi, WLL ("fixed" access, not via hot spots),
- or on other infrastructure. This includes e.g. powerline carrier broadband (PWL) and broadband access via satellite (SAT).

Carrier Pre-Selection and Call-by-Call

Carrier pre-selection (CPS) refers to a pre-set carrier network code (10xx) which routes all of a subscriber's traffic (except for calls to value-added services and public service numbers) via the pre-selected carrier network.

In contrast, call-by-call carrier selection (CbC) makes it possible to route individual telephone calls via a service provider other than the network which provides the subscriber line. In this case, the subscriber is required to enter the carrier network code (10xx) before each call.

Ethernet services

Ethernet services with guaranteed bandwidth are lines that provide guaranteed bandwidth between two network termination points, excluding leased lines with Ethernet user interfaces at the user's end (because, for example, on-demand switching functionality is provided).

Fixed wholesale market for voice telephony

The fixed wholesale market includes three sub-services: origination, termination and transit services. Origination refers to calls that originate from a fixed-network termination point in a carrier's own network. Termination refers to the routing of calls to a fixed-network termination point in a carrier's own network. Transit refers to calls between two networks or between two interconnectable exchanges in a network. These services can be provided internally (i.e. as self-provided services, e.g. in an intra-network call) or externally between network operators (e.g. origination to services and carrier network operators or termination from an external network). Origination, termination and transit services are not charged to the customer directly but are settled between network operators (at the wholesale level). The RTR Telekom Monitor reports both revenues and corresponding origination, termination and transit minutes.

International roaming

In connection with mobile communications, the term "roaming" refers to the use of a mobile telephone outside the coverage area of one's own network operator (the home network), in which case the mobile phone uses the service of another network (the host network). In international roaming, the home and host networks are located in different countries and their coverage areas generally do not overlap.

Leased lines

Leased lines provide symmetrical transmission capacity with a guaranteed bandwidth between two points without switching functions. Leased lines may also be referred to as "dedicated lines" or "point-to-point connections". A distinction is made between retail and wholesale leased lines.

Retail leased lines refer to leased lines which are not provided for operators or providers of communications networks or services (i.e. companies having a general authorisation) but for companies outside the telecommunications sector (e.g. banks, insurance companies, retail stores, etc.).

Wholesale leased lines are leased lines provided for other operators or providers of communications networks or services. A distinction is made between trunk segments and terminating segments (see trunk segments and terminating segments).

Where leased lines are concerned, it must be borne in mind that there are often time lags in leased lines markets between revenues and demand, frequently resulting in strong fluctuations between months and, indeed, quarters, caused by the billing of project business, billbacks and credits.

Mobile broadband

Mobile broadband comprises pure data tariffs, data products not based on a fixed monthly charge and smartphone tariffs.

Pure data tariffs (no voice services or text messaging) are mobile services including at least 250 MB in the monthly charges.

Products not based on a fixed monthly charge (e.g. prepaid data products or data/voice products) are products that are used by customers to access the Internet at least one time each quarter. Smartphone tariffs are all contracts for voice and text messaging services that include at least 250 MB of data services in the monthly charges and that are used by customers to access the Internet at least one time each quarter.

Mobile Virtual Network Operator (MVNO)

Mobile Virtual Network Operators (MVNOs) are communications network operators that do not have their own radio communications networks (or the corresponding frequency usage rights) but operate essential network elements in the core network (Home Location Register "HLR", Mobile Switching Centre "MSC", etc.), possess corresponding addressing elements (e.g. Mobile Network Code) and administer SIM cards themselves. Thus, MVNOs are active as providers on the retail and wholesale markets. As they do not have their own radio communications networks, they have to rely on corresponding wholesale services of mobile network operators. Examples of MVNOs are Mass Response (Spusu) and UPC (UPC mobile).

Number porting

Number porting allows customers to retain their telephone numbers when they switch service providers. The RTR Telekom Monitor only includes the porting procedures/imports of telephone numbers carried out for an operator in one quarter, i.e. SIM cards in the case of mobile operators and subscriber numbers on the fixed network. Reverse portings (e.g. after cancellation by a subscriber) are not considered porting procedures. If the number of a subscriber is ported several times within a quarter (subsequent porting), this is counted separately each time.

Price index in mobile communications

For the calculation of the monthly prices for different user types RTR uses the tariff data published by the Austrian Chamber of Labour on a monthly basis. Only new tariffs available in the respective month are considered because this allows immediate detection of changes in tariffs (price increases and reductions).

The details about minutes, text messages (SMS) and data services used monthly by the respective user types and about handset subsidies per tariff are supplied by the mobile operators; with regard to information not provided, RTR makes every effort to estimate such information on the basis of available data. Average prices per month are calculated for four different user types. The medium user, high user and power user types also use data services; therefore, for these user types only so-called smartphone tariffs (with included data volume) are applied. The fourth user type, the so-called low user, exclusively relies on voice and text messaging services.

The user types were classified as follows: for each service (voice, SMS, data) the users were ranked according to the frequency of use and divided into four groups of equal size (quartiles). One quartile each represents one user type and the median of the respective quartile is used for the underlying number of used minutes, SMS and megabytes. The user type data are fed into the tariff data by means of the following procedure: the usage values of the previous year are used for the respective tariffs of the current year (e.g. usage 2012 for calculation of the prices per tariff for 2013). It is determined which new tariffs available are the most inexpensive ones for the respective user type per brand. Apart from the monthly base fees and the included minutes, SMS and data volume, the following tariff components are reflected in the calculation: activation charge, SIM/service charge, minimum revenue, where appropriate, as well as the price per minute, SMS and megabyte beyond the included quantities and the handset subsidies (written off over 24 months).

An average price from the respective up to five most inexpensive tariffs per brand is calculated. The following brands are reflected: A1, T-Mobile, Drei, tele.ring, Yesss!, Bob, Ge.org, Red Bull Mobile, S-Budget, since Q1 2015 HoT, UPC, since Q2 2015 also VOLmobil, Wowww! and Spusu. Since Q3 2015 also tariffs of the Allianz SIM brand of ATK Telekom and Service GmbH have been reflected and since Q4 2015 also eety und Yoopi.

Subsequently, the price per brand is weighted with the brand's market share.

The calculated price index is a linked index, where usage is adjusted regularly, in this case annually, similarly to the Consumer Price Index.

The average usage of the four user types used for the calculation is shown in the following table:

User type	Power	High	Medium	Low
Year	**Minutes**			
2010	550	240	120	20
2011	530	250	120	20
2012	510	240	100	20
2013	500	230	110	20
2014	471	208	93	19
2015	469	210	94	21
Year	**Text messages**			
2010	229	33	5	1
2011	243	42	7	1
2012	260	46	7	1
2013	168	42	9	1
2014	104	28	6	1
2015	90	23	6	1
Year	**Data in megabytes**			
2010	136	9	2	0
2011	417	36	3	0
2012	932	134	2	0
2013	1.483	345	21	0
2014	2.093	632	60	0
2015	2.382	816	171	0

Residential customers – business customers

"Business customers" are all legal persons and corporations under public or private law, partnerships, registered companies and partnerships under the Civil Code [eingetragene Erwerbsgesellschaften, Gesellschaften bürgerlichen Rechts], as well as natural and legal persons who are entrepreneurs within the meaning of Art. 1 of the Austrian Consumer Protection Act (Federal Law Gazette 140/1979 as amended), including start-up activities within the meaning of Art. 1 Par. 3 leg. cit). In this context, business shall mean any organisation that is intended to be permanent for the purposes of independent commercial activity, even though it may be a non-profit enterprise.

"Residential customers" are all customers not captured by the above definition.

For the distinction between residential customers and business customers all relevant information available shall be used.

Technical measurement (real minutes)

Real minutes refer to the actual duration of calls made by customers. In contrast, billed call minutes indicate the number of minutes actually charged to those customers. The main factors accounting for the difference between these two figures are the number of free minutes included in the base fee, which carry considerably more weight in mobile networks than in the fixed network, and the billing increment.

Trunk segments and terminating segments (leased lines and Ethernet services)

At the wholesale level a distinction is made between trunk segments and terminating segments. Trunk segments refer to leased lines or Ethernet services that normally do not extend to the user's network termination point and link interconnection points in the 28 Austrian towns and cities where A1 Telekom Austria AG has set up network interconnection points to other telecommunications operators. In contrast, terminating segments refer to leased lines or Ethernet services at the wholesale level, which are not to be classified as trunk segments.

Unbundling

In telecommunications, unbundling refers to the separate provision of specific services which were previously available only in conjunction with other services. For example, the unbundling of subscriber lines from fixed-network access offered by the incumbent operator gives alternative service providers direct access to the customer without requiring the latter to install the "last mile" themselves, as they can lease the (naked) subscriber line from the incumbent at a regulated price. Unbundled network elements are made available if the regulatory authority has identified in a market analysis procedure that one company has significant market power and has imposed on it the obligation of granting access to its telecommunications network and unbundled elements thereof.

Virtual unbundling

According to an official TKK decision, A1 Telekom Austria AG is obliged to offer virtual unbundling in areas where it expands the fibre optic cable network (Next Generation Access - NGA). Virtual unbundling is a wholesale service that enables alternative providers (as in the case of physical unbundling) to offer their own (broadband) products to end users.

Voice over Broadband (VoB)

VoB are voice telephony services based on a broadband connection (stand-alone or bundled). VoB does not include Voice over Internet, where services are provided on the basis of the (public) Internet, but the Internet connection is provided by an independent third party (e.g. Skype).

Publishing information

Owner and publisher:

Austrian Regulatory Authority for Broadcasting and Telecommunications (Rundfunk und Telekom Regulierungs-GmbH)

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Conceptual design and text:

Austrian Regulatory Authority for Broadcasting and Telecommunications