



The Communications Market 2013

5 Telecoms and networks

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5.1 Key market developments in telecoms

5.1.1 Industry metrics and summary

Figure 5.1 UK telecoms industry: key statistics

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--|-------|-------|-------|-------|-------|-------|
| Total operator-reported revenue (£bn) | 42.1 | 42.5 | 41.3 | 40.4 | 39.5 | 38.8 |
| Operator-reported retail revenue (£bn) (excl. CDS) | 28.5 | 28.9 | 27.9 | 27.4 | 27.3 | 27.5 |
| Operator-reported wholesale revenue (£bn) | 10.3 | 10.5 | 10.1 | 9.7 | 8.8 | 7.8 |
| Average monthly household telecoms spend (2012 prices) (£) | 88.38 | 85.71 | 82.07 | 79.62 | 78.94 | 80.25 |
| Fixed access and call revenue (£bn) | 10.4 | 10.2 | 9.6 | 9.3 | 8.8 | 8.5 |
| Fixed internet revenue (£bn) | 3.2 | 3.2 | 3.3 | 3.2 | 3.4 | 3.7 |
| Fixed lines (millions) | 34.5 | 34.2 | 33.5 | 33.4 | 33.3 | 33.1 |
| Fixed broadband connections (millions) | 15.6 | 17.3 | 18.2 | 19.5 | 20.6 | 21.7 |
| Superfast broadband connections (millions) | 0.0 | 0.0 | 0.0 | 0.2 | 1.1 | 3.3 |
| Fixed voice call minutes (billions) | 149 | 141 | 128 | 123 | 111 | 103 |
| Mobile retail revenues (£bn) | 15.0 | 15.5 | 14.9 | 14.9 | 15.1 | 15.3 |
| Mobile voice call minutes (billions) | 105 | 115 | 121 | 125 | 124 | 122 |
| SMS messages sent (billions) | 66 | 85 | 104 | 128 | 151 | 152 |
| Active mobile subscribers (millions) | 73.8 | 76.5 | 80.3 | 81.2 | 81.6 | 82.7 |

Source: Ofcom / operators

Notes: CDS = corporate data services

Operator-reported telecoms revenues fell for the fourth consecutive year in 2012

Total UK telecoms revenues declined for the fourth consecutive year in 2012, falling by £0.7bn (1.8%) to £38.8bn, largely as a result of a £1.0bn fall in wholesale revenues (Figure 5.1).⁸⁹ Retail revenue (excluding corporate data services) increased by £0.2bn to £27.5bn during the year: this comprised a £0.3bn increase in mobile retail revenue, a £0.3bn increase in fixed internet revenue and a £0.3bn decrease in fixed access and call revenue. This was reflected by an increase of £1.31 per month in average household telecoms spend. Corporate data services revenue increased by £0.1bn in 2012.

The total number of active mobile subscribers increased by 1.1 million in 2012, as did the total number of fixed broadband connections. During the year, the number of fixed broadband connections that were classed as being superfast (i.e. which had a headline speed of 30Mbit/s or higher) increased from 1.1 million to 3.3 million as consumers migrated to faster services. Call volumes from both fixed and mobile phones decreased in 2012, with the former down by eight billion minutes to 103 billion minutes and the latter down by one billion minutes to 122 billion minutes.

⁸⁹ Wholesale revenues include those from fixed access and call products, fixed broadband services NTS services, mobile voice and data services, mobile call and SMS termination and inbound mobile roaming on a UK mobile network.

These data are discussed in greater detail in the second and third parts of this chapter: the *Telecoms Industry* section and the *Telecoms User* sections, which focus on the consumer perspective. First we consider three key developments in the telecoms market. These are:

- **The launch of 4G mobile services.** This key market development provides quantitative and qualitative information on the launch of the new generation of mobile services. We examine use, take-up (existing take-up and future intention to subscribe), awareness and attitudes.
- **Availability and take-up of superfast broadband.** This key market development focuses on the increases in availability and take-up of superfast broadband and what is driving those increases. It examines the price premium required to upgrade to superfast services and looks at how the market for fibre is developing.
- **Consumer attitudes towards superfast broadband.** This key market development looks at the attitudes of consumers who have superfast broadband. It examines what the main reasons are for upgrading to superfast broadband, whether internet use changes after upgrading, and the level of satisfaction among consumers.

5.1.2 The launch of 4G paves the way for faster mobile services

The UK's first 4G service launched in 2012

2012 was the year when 4G services were launched in the UK. EE, the mobile operator that was formed by the merger of Orange UK and T-Mobile UK, launched 4G services on 30 October using the EE brand. The other mobile network operators (MNOs) – Vodafone, Telefonica O2 and Three – are expected to launch 4G services in the second half of 2013.

Following 3G, 4G describes the fourth generation of mobile networks. Known technically as Long Term Evolution, or LTE, 4G offers subscribers faster data downloads and uploads. This allows faster downloading and streaming of video and faster access to other data services like social networking. In June 2013, EE quoted a report from measurement firm RootMetrics which said the average download speed on its 4G network was 19.4Mbit/s,⁹⁰ and in July 2013 it announced that it had launched double-speed 4G services in 12 UK cities.⁹¹ For a typical user, initial 4G download speeds may be around six times those they would experience on existing 3G networks.

LTE also offers benefits to network operators, including more efficient use of radio spectrum and potential savings in capital expenditure. In the future, telephony and messaging may be carried over 4G networks (at present they use 2G and 3G networks unless they are carried as data). The coverage provided by EE's 4G network has increased since the service launched, and in June 2013 EE announced that its network footprint covered more than 55% of the UK population, and forecast 98% coverage by the end of 2014.⁹² Roll-out to June 2013 had been focused mainly on urban areas, with the company announcing⁹³ that 85 towns and cities were covered.

⁹⁰ <https://explore.ee.co.uk/our-company/newsroom/ee-unveils-latest-innovations-as-4g-customers-pass-half-million-mark>

⁹¹ <https://explore.ee.co.uk/our-company/newsroom/ee-launches-next-generation-services-on-world-s-fastest-network>

⁹² <https://explore.ee.co.uk/our-company/newsroom/ee-unveils-latest-innovations-as-4g-customers-pass-half-million-mark>

⁹³ <https://explore.ee.co.uk/our-company/newsroom/ee-4g-goes-live-in-11-more-towns-across-the-uk>

Ofcom auctioned 250MHz of radio spectrum to support the launch of 4G

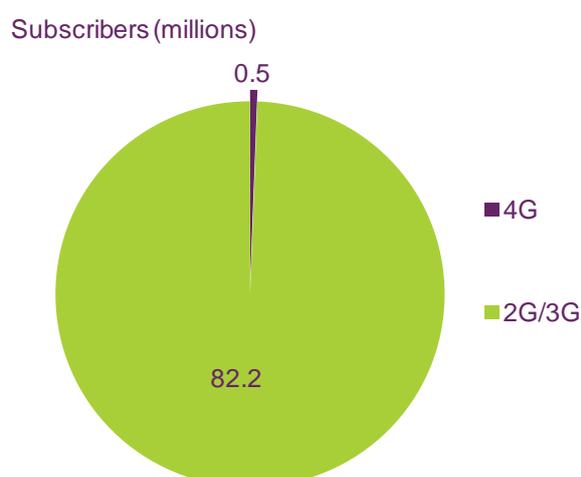
Critical to the existence of 4G services is the availability of radio spectrum in specific frequency bands. The quantity of radio spectrum available for use by mobile operators increased significantly when Ofcom auctioned 250MHz of spectrum in the 800MHz and 2.6GHz bands in the first quarter of 2013. Five operators: EE, Niche Spectrum Ventures (a wholly-owned subsidiary of BT), Telefonica O2, Three and Vodafone were successful in their bids for spectrum. EE used some of its existing 1800MHz radio spectrum to launch 4G.

Telefonica successfully bid for specific bands of radio spectrum that carried a coverage obligation. This means that Telefonica O2 will have to provide indoor 4G coverage to at least 98% of the UK population by the end of 2017. This is likely to be equivalent to at least 99% outdoor coverage. The coverage obligation also specifies that O2 will have to provide 4G coverage to at least 95% of the population of each of England, Northern Ireland, Scotland and Wales.

Half a million subscribers have signed up to 4G

In March 2013, EE said that 42% of those signing up to its post-paid tariffs took a 4G-enabled smartphone (although only a small proportion of these will have subscribed to a 4G mobile service), and a month later it said it aimed to have a million 4G subscribers by the end of 2013. According to EE,⁹⁴ there were more than 500,000 subscribers to its 4G service by the end of May 2013, representing approximately 2% of the company's total subscriber base and around 0.5% of all UK mobile subscribers (Figure 5.2).

Figure 5.2 4G share of total mobile subscribers: May 2013



Source: EE for 4G subscriber figures; Ofcom/ operators for remaining mobile subscribers
Note: 4G subscribers are cited for the end of May 2013. Total mobile subscribers are cited for the end of December 2012. Because growth in the number of total mobile subscribers is low, the December 2012 figure is likely to provide an accurate estimate of the figure for the end of May 2013.

Awareness of 4G services reaches four in five adults who have a mobile phone from which they can access the internet

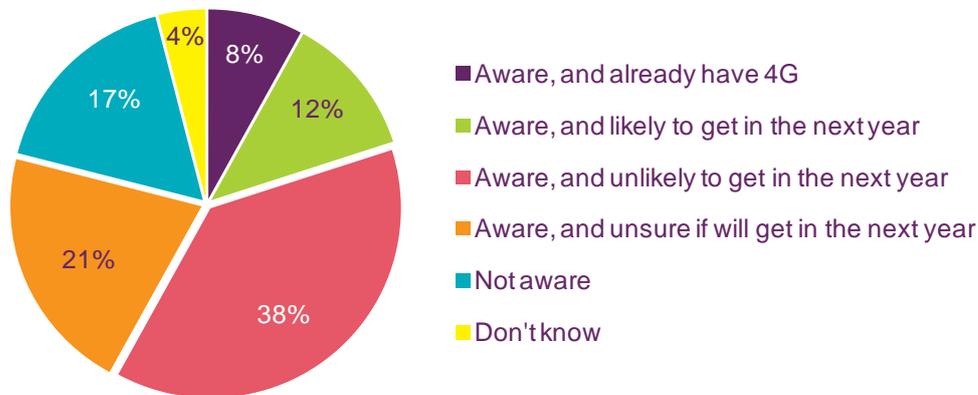
The proportion of consumers who are aware of 4G already appears to be high. According to Ofcom research conducted in April 2013, 79% of adults with a mobile phone from which they could access the internet said that they were aware of 4G services (Figure 5.3). Eight per

⁹⁴ <https://explore.ee.co.uk/our-company/newsroom/ee-unveils-latest-innovations-as-4g-customers-pass-half-million-mark>

cent of the same sample said they were already a subscriber to EE's 4G service, while a further 12% said that they were likely to purchase 4G services within the next 12 months.

Figure 5.3 Awareness and take-up of 4G

Proportion of respondents (%)



Source: Ofcom research, April 2013

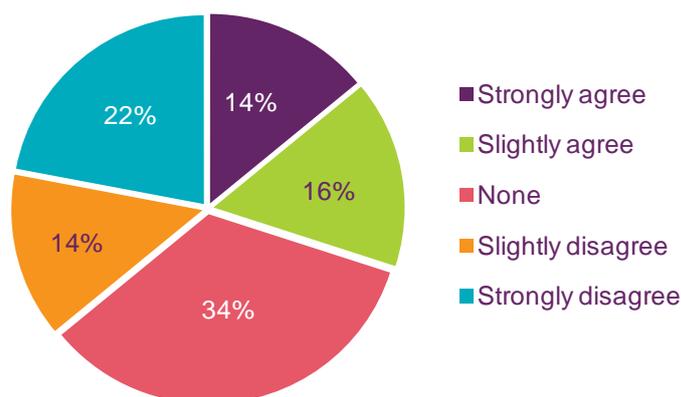
Base: All with mobile phone with internet (1320)

Question: 4G is a new service only currently available to Orange and T-Mobile (Everything Everywhere) customers and it enables faster mobile internet access. Which of the following statements best describes your awareness and use of 4G?

30% of smartphone users intend to upgrade to 4G at the end of their current contract

According to the same Ofcom research, three in ten smartphone users said they would like to upgrade to 4G when their contract expires (Figure 5.4). These users may wish to wait until the end of their contract because of the early termination charges that they might incur if they leave their contract before its minimum term has elapsed.

Figure 5.4 Future intention to sign up to 4G



Source: Ofcom research, April 2013

Base: All who use a smartphone (967)

Statement: I would like to upgrade to a 4G service when my contract is renewed

Mobile broadband subscribers were the keenest to upgrade to 4G

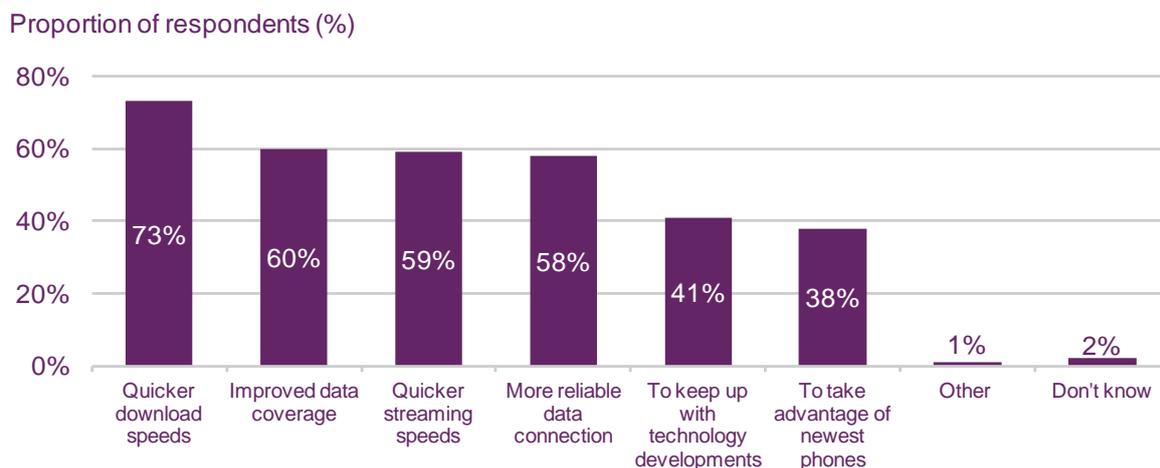
Figures from YouGov's DingleTrack survey suggest that interest in 4G appears to be higher among mobile broadband users than among mobile users in general. This is not surprising

because mobile broadband is a data-only service, and its users will benefit most from faster data connection speeds. Forty-one per cent of mobile broadband users said they were 'somewhat', or 'very', interested in switching to a 4G service at current prices, while only around a quarter (26%) said they were uninterested in 4G.

Although there are a number of consumer benefits to 4G, the most commonly cited reason for wanting a 4G service is speed, according to YouGov's SMIX (Smartphone, Mobile Internet eXperience) tracker (Figure 5.5). Nearly three-quarters (73%) of smartphone owners said they wanted a 4G service because of quicker download speeds, and 59% said they wanted 4G because it would enable faster streaming. The second most commonly-cited reason for smartphone owners wanting to upgrade to a 4G service was the reliability of the data service: six in ten said they wanted to take advantage of 'improved data coverage' and 58% said they sought a 'more reliable data connection'.

A desire to keep up with technology was stated less often as a reason for wanting 4G. 'Wanting to keep up with new technology developments' (41%) and 'taking advantage of new phones' (38%) were the fifth and sixth most commonly cited reasons.

Figure 5.5 Reasons for wanting to upgrade to 4G



Source: YouGov Smartphone, Mobile Internet eXperience, December 2012.

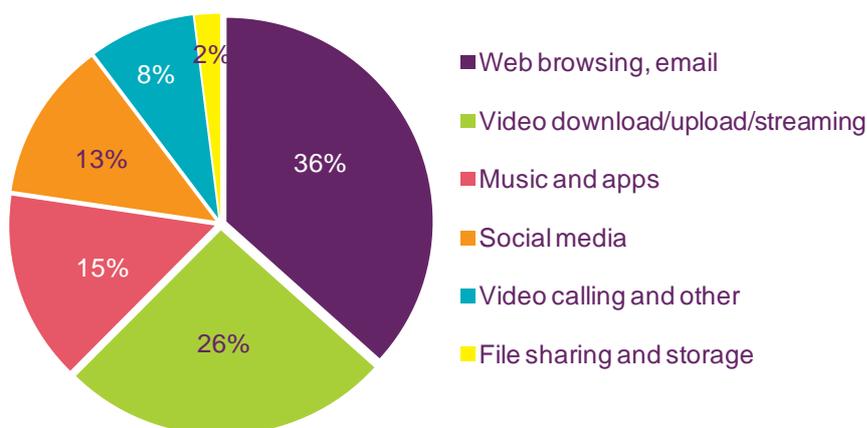
Base: Respondents who own a smartphone and said they are likely to get a 4G handset on a 4G contract (681).

Question: You said that you are likely to get a 4G-enabled handset on a 4G data contract in the future. For which, if any, of the following reasons are you likely to get a 4G data contract? (Please select all that apply).

4G users are more likely to watch video on their phone

EE has reported that its 4G subscribers use a different mix of services to its 3G subscribers, particularly with regard to an increased use of video downloading, uploading and streaming, which accounted for over a quarter of 4G data use in March 2013. However, although they require less bandwidth, web browsing and email contributed their highest consumption of data, at 36%, and as a proportion of time spent, the figure is likely to be higher, as web browsing tends to consume data at a much slower rate than the streaming of media. Music and apps (15%), and social media (12%) were the third and fourth largest activities in terms of data used, EE reported. YouTube accounted for over one-eighth of all 4G data, while Facebook and iTunes consumed 10% and 7% of the total respectively.

Figure 5.6 Use of EE's 4G network, by application: March 2013

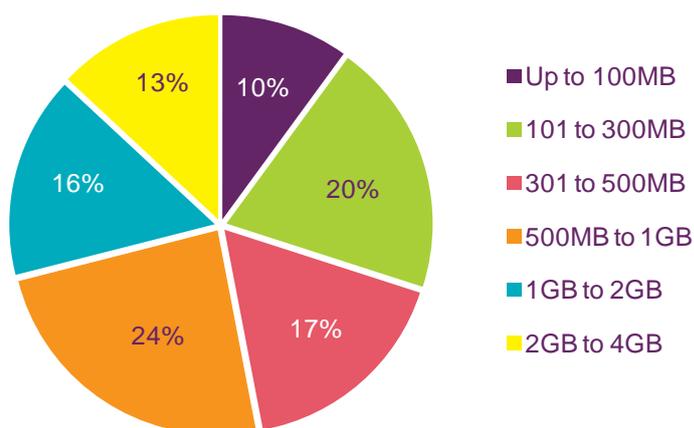


Source: EE

EE says that its 4G subscribers consume an average of 1.4GB of data per month

Speaking at the Mobile World Congress conference in February 2013, EE's chief executive officer Olaf Swantee said that subscribers to its 4G services used an average of 1.4GB of data per month.⁹⁵ This level of data consumption was higher than that of the majority of 4G handset users interviewed by YouGov SixthSense in May 2013. One-third of YouGov's respondents subscribed to EE's 4G service, while the remainder were using a 3G service. Among those that knew their level of data consumption, YouGov found that just 29% of 4G users said that they used more than 1GB per month, and almost half (47%) said they used less than 500MB per month (Figure 5.7). It is likely that faster mobile data networks will contribute to further increases in average data consumption, and 44% of the smartphone users questioned by Ofcom in April 2013 said that they would use their handset more if their mobile data connection was faster.

Figure 5.7 Volume of mobile data used by 4G handset owners



Source: YouGov, SixthSense & 4G Tariffs report

Question: How much data do you use in an average month? 'Don't knows' have been excluded. Remaining base: 286, all of whom owned a 4G handset.

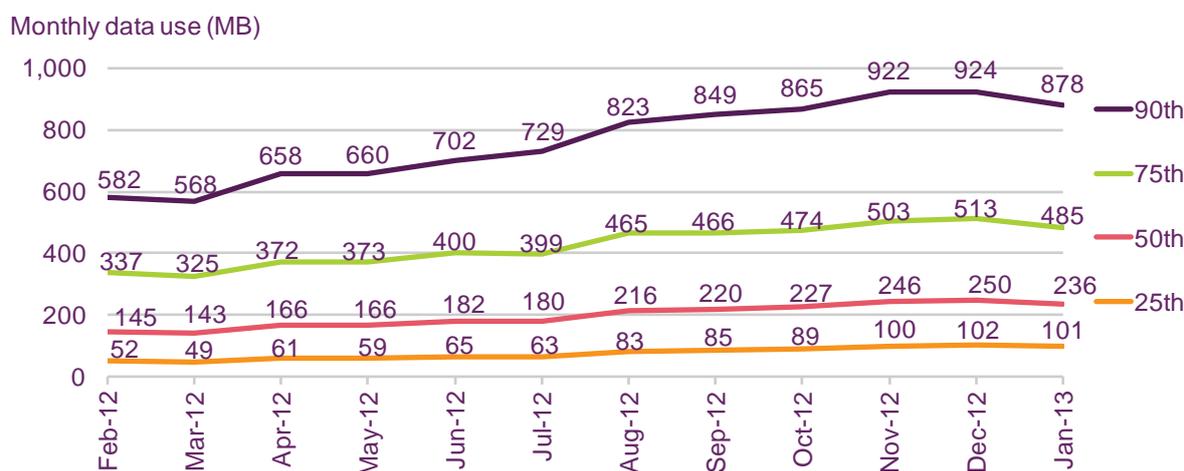
⁹⁵ <https://explore.ee.co.uk/our-company/newsroom/olaf-swantee-ceo-of-ee-mwc-speech-highlights>

Consumers' use of mobile data increased at an annual rate of 70%

Data collected by BillMonitor (Figure 5.8), a company that aims to help subscribers to analyse their mobile bills and find suitable tariffs, shows how data consumption has increased over time. From the sample of mobile users who checked their bill using the BillMonitor site, the median⁹⁶ user consumed 63% more data in January 2013 than in February 2012, a total of 236MB. This was equivalent to an annual increase of 70%.

BillMonitor also found that the largest percentage increases in the consumption of mobile data were from the lowest users. The 25th percentile⁹⁷ increased their use of mobile data by 94% over the same period; equivalent to 106% on an annual basis. The 90th percentile⁹⁸ increased their use of mobile data by 51% over the period, or 57% on an annual basis. The 90th percentile used 878MB of data in January 2013, more than 3.7 times the consumption of the median user. The rate of increase in the use of mobile data among the lowest users may be partly due to new segments of the population starting to use smartphones. Some bias is likely to be introduced because the BillMonitor site may attract certain types of users, such as those who are more technologically engaged. This may inflate the figures for the consumption of mobile data above those of the population as a whole.

Figure 5.8 Volume of mobile data used by BillMonitor site visitors, by percentile



Source: BillMonitor

Note: Percentiles are counted from the lowest user. Therefore, a quarter of all users consumed less data than the 25th percentile.

The price premium was cited as the main reason not to upgrade to 4G

Despite the interest of many consumers, some do not anticipate signing up to 4G. Ofcom research among smartphone users in April 2013 found that 70% of respondents did not intend to migrate to 4G when their current contract expired. There appear to be several reasons for this, primarily related to the additional cost of 4G services.

YouGov's SixthSense survey asked respondents who had said that they were unlikely to switch to 4G why this was the case. Forty-six per cent of those asked cited data charges as a reason, while 37% said handset cost was a reason, and just 29% named lack of interest in

⁹⁶ The median, or 50th per centile, is the middle value. For a simple example, if there were five subscribers that used 100MB, 150MB, 250MB, 275MB and 700MB respectively, the median data user would have used 250MB.

⁹⁷ The 25th per centile is one-quarter from the bottom. Three-quarters of the sample used more data than this and one-quarter used less.

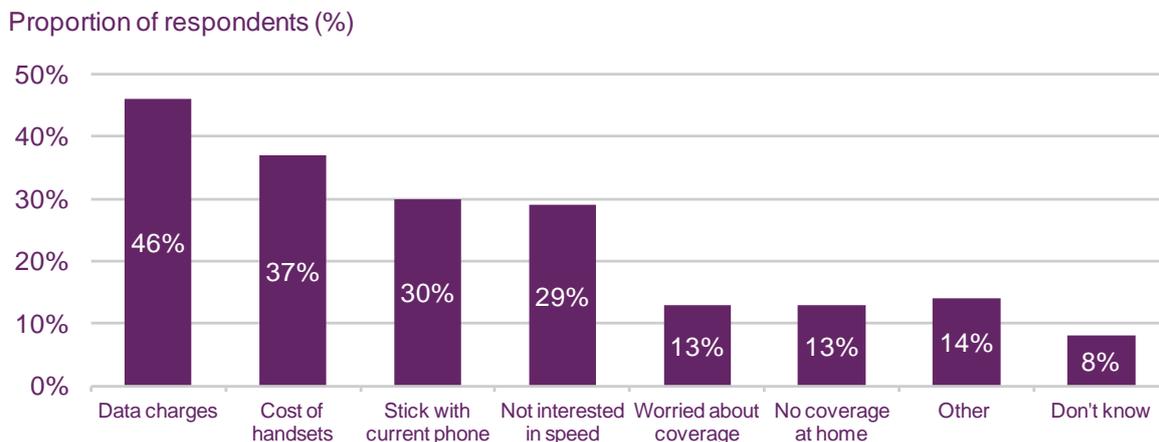
⁹⁸ The 90th per centile is one-tenth from the top of the sample.

faster speeds as a reason (Figure 5.9). The same survey asked consumers directly about the price of 4G services. Provided with the statement: “It will be too expensive for me”, 55% of respondents agreed or strongly agreed, while just 6% disagreed or strongly disagreed.

The roll-out of 4G by EE has been accompanied by new pay-monthly tariffs that offer unlimited texts and minutes, with the price varying depending on the amount of data included.⁹⁹ EE’s tariffs, including a handset, ranged from £31 per month for 500MB of data to £76 per month for 20GB of data at the time of writing. In contrast, many 3G tariffs are tiered by the number of minutes included. Some mobile industry analysts¹⁰⁰ have quantified the gap for consumers between the price of 4G services and 3G services – the so-called 4G price premium – as around £5 per month, based on EE’s initial published pricing.

EE reported that medium-sized and corporate businesses and public sector organisations were paying “from an additional £3 per month” to upgrade from 3G to 4G.¹⁰¹ At the time of writing, Three was the only mobile network operator to have published a statement regarding its intended 4G pricing; this said that there would not be a price premium for its 4G services when they launched.¹⁰²

Figure 5.9 Reasons for not moving to 4G



Source: YouGov SixthSense 4G Tariffs report.

Q: Which of these describes why you are unlikely to move to 4G? Please choose all that apply.

Base: 225. The answers given in the chart are abbreviated for reasons of space and clarity. The full answers, in the same order given in the chart are: The greater use of data will make it too expensive; The handsets are too expensive; Not interested in faster speed; I really like my current phone, which is not 4G compatible; Worried about poor reception; Will not get reception where I live; Other; Don't know.

5.1.3 Superfast broadband becomes mass-market as availability increases

BT’s fibre roll-out target will be achieved 18 months earlier than originally planned

Superfast services refer to broadband connections with a headline speed of 30Mbit/s or higher. The two main technologies offering superfast broadband services in the UK both use fibre optic infrastructure, and are operated by BT Openreach and Virgin Media. BT is part-

⁹⁹ According to EE, subscribers receive an SMS when they are near their data limit at which time they can add more data if they wish. If they do not add more data, they do not incur any further data charges because data use is capped.

¹⁰⁰ <http://www.mobilenewscwp.co.uk/2013/04/23/ee-missed-the-point-with-4g-pricing-analyst-says/>

¹⁰¹ <https://explore.ee.co.uk/our-company/newsroom/big-business-backs-4g-in-britain>

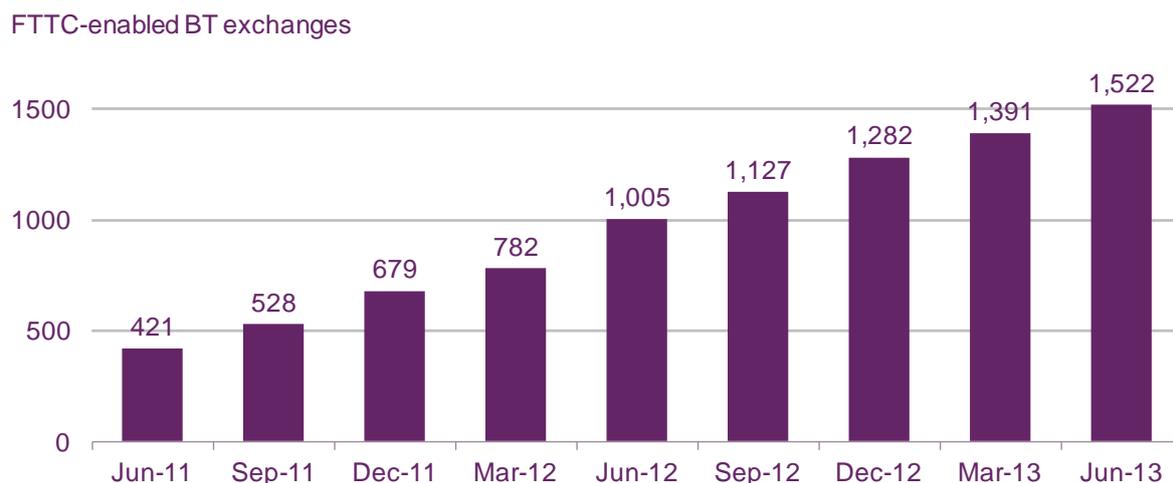
¹⁰² <http://www.threemediacentre.co.uk/Press-Releases/752/Three-to-offer-latest-technology-as-standard-with-no-price-premium>

way through its commercial roll-out programme, which when completed will make superfast services available to 66% of UK premises, while Virgin Media has no published plans to extend its current cable network.

BT Openreach's fibre deployment maintained its momentum in 2012, and in April 2013 it announced that its fibre network had passed 15 million premises, with between 100,000 and 200,000 additional premises being passed each week.¹⁰³ This is 18 months ahead of its original schedule, and BT believes it is on course to reach its commercial next-generation access (NGA) deployment target of passing 66% of UK premises (a total of 19 million) by the end of spring 2014. Figure 5.10 shows that the number of FTTC-enabled BT local exchanges has risen rapidly since June 2011, with over 500 additional exchanges having been FTTC-enabled in the year to June 2013, bringing the total to over 1,500.¹⁰⁴

According to data provided to Ofcom, Virgin Media's cable network passed 48% of UK premises by June 2013, and in early 2012 it initiated an upgrade programme which doubled the speeds of most of its cable broadband connections at no extra cost to the customer. Although these increases have now been completed, Virgin Media is still in the process of upgrading its cable network to offer speeds of 'up to' 120Mbit/s, and this is expected to be completed by the end of 2013. Virgin Media now offers superfast services only to new cable customers, its lowest-tier cable broadband service offering speeds of 'up to' 30Mbit/s.

Figure 5.10 Number of BT exchanges that are fibre-to-the-cabinet enabled



Source: BT Wholesale

¹⁰³ <http://www.btplc.com/news/articles/showarticle.cfm?articleid=%7b0b783057-2416-4a4d-8c8c-82a779f1c807%7d>

¹⁰⁴ https://www.btwholesale.com/pages/static/Library/Network_Information/21CN_Broadband_Availibility/index.htm

Fibre-to-the-cabinet (FTTC)

In fibre-to-the-cabinet deployments, optical fibre (which is capable of handling faster broadband speeds) is run to the street cabinet, which is usually close to the user's premises, typically within 300m (1,000 feet). VDSL, a faster form of DSL, is then used to transmit data from the street cabinet to the end user's premises over the twisted copper pair. VDSL can take advantage of the shorter length of the twisted copper pair to deliver much higher data speeds. Current UK FTTC services are retailed as providing downstream speeds of 'up to' 38Mbit/s or 'up to' 76Mbit/s.

The vast majority of BT's fibre network is FTTC rather than fibre-to-the-premises (FTTP), where fibre is deployed all the way to the end user's premises. FTTP can provide higher speeds than FTTC, but the investment required is higher than for FTTC. In April 2013 BT launched its FTTP-on-demand service, which makes FTTP available to all FTTC-supporting lines. However, this is likely to be predominantly for business customers, due to the high installation charges.

Funding from BDUK sought to increase superfast availability

The UK government is investing £530m, with an additional £150m set aside for 'super-connected' cities (a voucher scheme is out for consultation in July 2013), to ensure that superfast broadband is available to communities which may not be served by purely commercial deployments. In June 2013 the government announced a target; that 95% of UK premises would have superfast availability by 2017. Broadband Delivery UK (BDUK), a team within the Department for Culture, Media and Sport, is responsible for managing this funding, with local authorities and devolved administrations running tendering processes to allocate funds to suppliers. Following Fujitsu's withdrawal in March 2013, only BT remains in the tendering process. As of March 2013, BT had won 19 BDUK contracts and in December 2012 the first customers began to be connected in North Yorkshire.¹⁰⁵

Seventy-three per cent of UK premises were in postcodes that were served by NGA networks in June 2013

Superfast broadband services are provided over NGA networks, which use technologies such as FTTC, FTTP and DOCSIS 3.0 (in the case of cable). Ofcom collects postcode-level data on the number of premises that are able to receive services over BT Openreach, Kcom (the incumbent fixed telecoms provider in the Kingston-upon-Hull area) and Virgin Media's NGA networks, in order to monitor the UK's communications infrastructure. From this data we are able to calculate the proportion of premises that are in postcodes in which one or more premises can receive NGA broadband services.

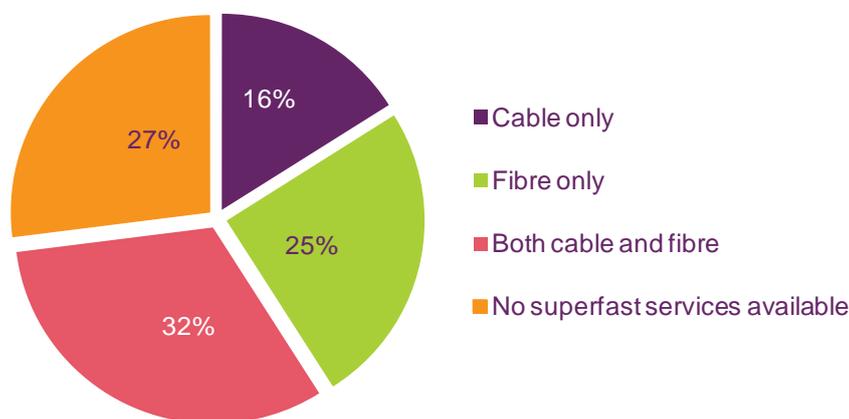
Using the latest data available to us, we estimate that 73% of UK premises were in a postcode that was served by an NGA network by June 2013, an eight percentage point increase compared to June 2012, which is largely as a result of the continued roll-out of BT Openreach's FTTC network. This estimate of NGA coverage is likely to be slightly overstated (despite the fact that it only includes data regarding these three providers' NGA networks) as not all premises in a postcode will necessarily be able to receive NGA services. In addition, not all NGA broadband connections will achieve actual speeds of 30Mbit/s or more, particularly FTTC-based services where line speeds are dependent on the length and quality of the line from the street cabinet to the end-users premises, among other things.

While the availability of NGA networks is increasing, so are the connection speeds that they offer. In March 2012 Virgin Media started an 18-month programme to double the speed of

¹⁰⁵ For more information: <https://www.gov.uk/broadband-delivery-uk>

most of its cable broadband connections¹⁰⁶, and it is currently upgrading its cable network to offer speeds of 'up to' 120Mbit/s. Similarly, BT Openreach doubled the speeds available over its FTTC network to 'up to' 80Mbit/s in April 2012, and has also increased the maximum speeds offered by its FTTP network to 'up to' 330Mbit/s.

Figure 5.11 Proportion of premises in postcodes served by NGA networks, by technology



Source: Ofcom / operator data, June 2013

Superfast services typically command a price premium of £5 to £10 a month

Figure 5.12 shows the difference between the cost of the lowest-priced superfast and ADSL2+ services from a number of large ISPs, when bought in conjunction with a fixed voice service (Sky offers a lower-cost ADSL2+ option when bought in a triple-play bundle with pay-TV, and Virgin Media offers a cheaper stand-alone broadband offer which does not require a landline). The price differential between these services was £10 a month for all ISPs except BT, where the difference was £5.

Ofcom data show that in the six months to November 2012 the average speeds recorded for superfast connections (those with an advertised 'up to' speed of 30Mbit/s and above) increased from 35.8Mbit/s to 44.6Mbit/s.¹⁰⁷ This can be compared to the 64% of connections that were advertised as being over 'up to' 10Mbit/s but less than 'up to' 30Mbit/s, which had an average speed of 8.1Mbit/s. From this it can be seen that by upgrading to superfast services, for a price premium of £5 to £10 a month, consumers get a significant increase in average broadband speeds.

¹⁰⁶ <http://mediacentre.virginmedia.com/Stories/Virgin-Media-s-speed-doubling-starts-2380.aspx>

¹⁰⁷ http://stakeholders.ofcom.org.uk/binaries/research/broadband-research/nov2012/Fixed_bb_speeds_Nov_2012.pdf

Figure 5.12 Comparison of major ISPs' superfast and current-generation broadband services

| | | BT | Virgin Media | TalkTalk | Plusnet | Sky |
|---|------------------------------------|--------------------------|--|-------------------------|------------------------------|----------------------|
| Lowest cost superfast service | Headline download speed/technology | 38Mbit/s FTTC | 30Mbit/s cable | 38Mbit/s FTTC | 38Mbit/s FTTC | 38Mbit/s FTTC |
| | Average actual speed, Nov 2012 | 34.2Mbit/s | 28.7Mbit/s | - | - | - |
| | Data allowance | 40GB plus unlimited WiFi | Unlimited | Unlimited | 40GB plus unlimited off-peak | Unlimited |
| | Call allowance | Fixed off-peak | Virgin Media plus fixed weekend | Fixed off-peak | Fixed off-peak | Fixed weekends |
| | Monthly cost | £18 plus line rental | £14.50 plus line rental (or stand alone at £22.50) | £16.50 plus line rental | £15.99 plus line rental | £20 plus line rental |
| Lowest cost current generation service | Headline download speed/technology | 16Mbit/s ADSL2+ | n/a | 16Mbit/s ADSL2+ | 16Mbit/s ADSL2+ | A16Mbit/s DSL2+ |
| | Average actual speed, Nov 2012 | 9.2Mbit/s | n/a | 8.3Mbit/s | 9.9Mbit/s | 8.3Mbit/s |
| | Data allowance | 10GB plus unlimited WiFi | n/a | Unlimited | 10GB plus unlimited off-peak | Unlimited |
| | Call allowance | Fixed off-peak | n/a | Fixed off-peak | Fixed off-peak | Fixed weekends |
| | Monthly cost | £13 plus line rental | n/a | £6.50 plus line rental | £5.99 plus line rental | £10 plus line rental |
| Additional monthly superfast cost | | £5 | n/a | £10 | £10 | £10 |

Source: Ofcom / Pure Pricing UK Broadband Pricing Briefing, March 2013

Note: Excludes Virgin Media's ADSL service as this is available only outside its cable network footprint, meaning that the two services are not substitutes for each other

Take-up of superfast broadband services has doubled since June 2012

The number of superfast broadband connections doubled from 1.9 million to 3.8 million in the nine months to Q1 2013, with the proportion of all fixed broadband connections that were classed as being superfast increasing by 8.6 percentage points to 17.5% over the period (Figure 5.13).

The main driver of this increase was Virgin Media's 'double-speeds' upgrade programme, which doubled the speeds provided by most of its cable broadband connections at no extra charge to the customer. However, consumers are also choosing to migrate to faster packages, and over the course of the 2012/13 financial year the number of BT retail FTTC and FTTP broadband connections increased from around 550,000¹⁰⁸ to over 1.3 million.¹⁰⁹ This rapid rise shows that most current FTTC and FTTP broadband users had previously used an ADSL service, and had therefore elected to pay more for their service when switching to superfast broadband.

¹⁰⁸ BT's 2012 annual report:

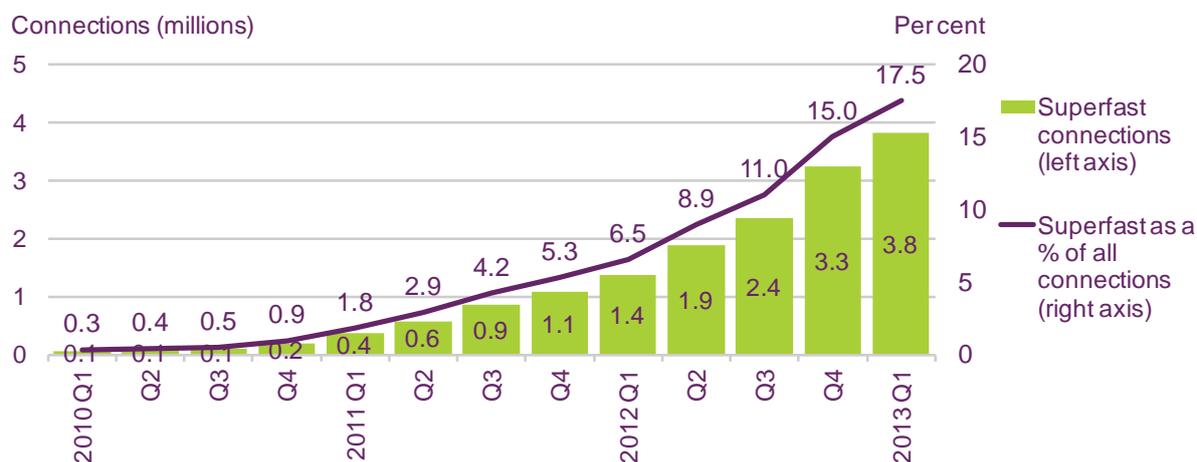
<http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/BTAnnualReport2012.pdf>

¹⁰⁹ BT's 2013 annual report:

http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/2013_BT_Annual_Report_smart.pdf

The reasons for this increase in consumers proactively migrating to superfast services (as opposed to automatic package upgrades) are wide-ranging, but are likely to include the increase in penetration of internet-connected devices and the number of such devices per household. In addition, the increase in video streaming services such as Netflix and Lovefilm is likely to have contributed to some extent to higher levels of demand for superfast services, alongside other popular activities such as streaming music and playing online games.

Figure 5.13 Take-up of superfast broadband services



Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators

Over half of cable connections were superfast by March 2013

As mentioned previously, most of the increase in the number of superfast connections in the year to March 2013 has been due to Virgin Media's 'double-speeds' upgrade programme. Data released by Virgin Media in April 2013 shows that it had 2.5 million superfast connections at the end of March 2013, up from 843,600 a year previously, and that 58% of its broadband subscriber base was superfast at the end of March 2013, almost three times the 20% figure at the end of March 2012. Figure 5.14 highlights the change in the composition of Virgin Media's broadband subscriber base, with 27% of connections being 'up to' 60Mbit/s or faster by Q1 2013, a year-on-year increase of 21% percentage points. The majority of the speed increases under the 'double-speeds' upgrade programme have now been completed, meaning that this rate of change is likely to slow.

Figure 5.14 Changing composition of Virgin Media's broadband customer base



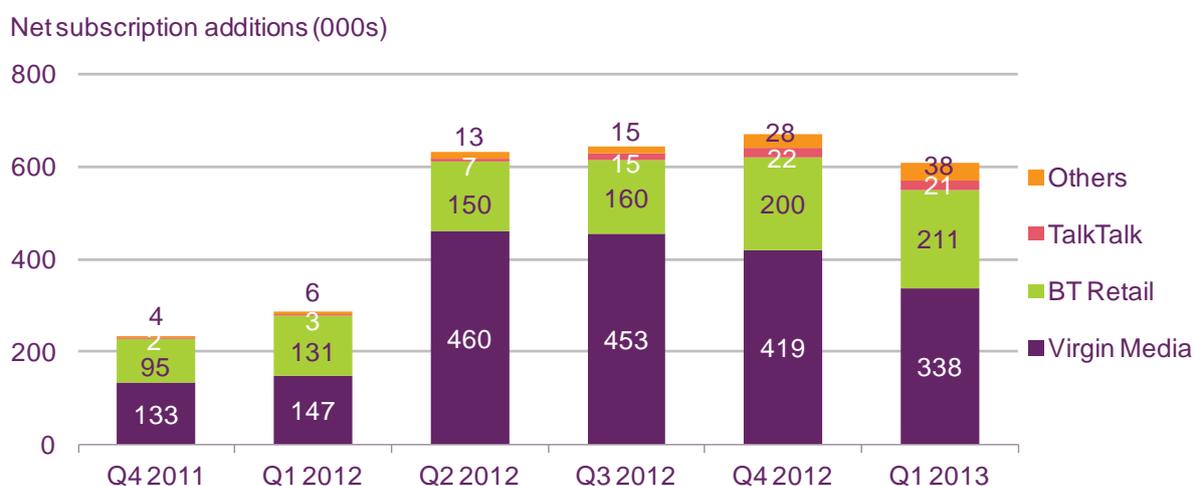
Source: Virgin Media: Q1 2013 Earnings Presentation

Other fibre providers have a small but increasing number of subscribers

Increasingly, other ISPs have been marketing superfast fibre broadband services using wholesale products that use BT Openreach's network. Data compiled by Enders Analysis from company reports show that net fibre subscription additions for these ISPs (which include TalkTalk, Sky and EE) are increasing (Figure 5.15). Between Q2 2012 and Q1 2013 TalkTalk's net fibre additions tripled and, according to its preliminary 2012/2013 report, this resulted in it having a total of 73,000 residential fibre customers by Q1 2013.¹¹⁰

These figures are small in comparison to Virgin Media and BT Retail (which includes Plusnet), although fibre products were launched by other providers only in 2012. It is also worth noting that Virgin Media's superfast broadband net additions started to decline in late 2012, as its 'double-speeds' upgrade programme approached completion, while BT's net additions have increased.

Figure 5.15 Superfast broadband net additions



Source: Company reports/Enders Analysis

Note: Data reflect company reported information, although estimates are used where data are incomplete or inconsistent.

5.1.4 Superfast users are altering their online behaviour after upgrading

Introduction

In order to better understand how UK consumers choose, and use, superfast broadband services (i.e. those with a headline speed of 30Mbit/s or higher), Ofcom commissioned market research company, Populus, to conduct consumer research among superfast users in the UK. The study was done to help us understand why superfast broadband users chose their service, how their use of internet has changed since they upgraded and how satisfied they are with their service. It is a follow-up to a similar study conducted in 2011, and we compare some of our 2011 findings to those in 2013. The research was conducted online among a sample of 1,215 superfast users in March 2013, and all respondents were UK adults aged 18+.

¹¹⁰ <http://www.talktalkgroup.com/~media/Files/T/TalkTalk/pdfs/presentations/2013/preliminary-results-presentation-2013.pdf>

Thirty per cent of consumers said value for money was the main reason for choosing their superfast broadband service

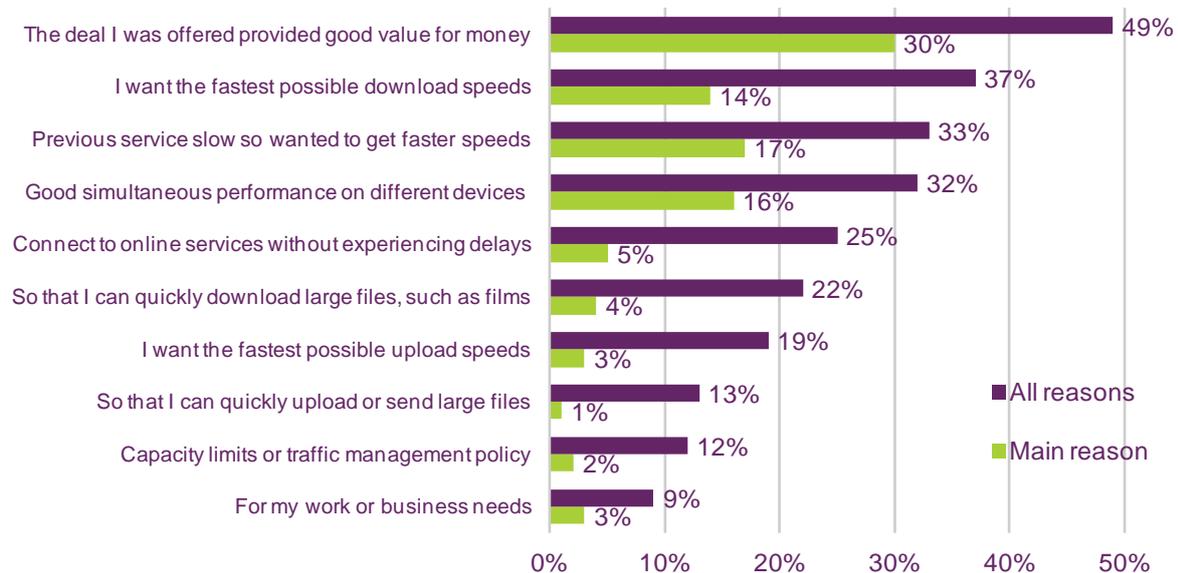
Value for money was the most-cited reason for choosing a superfast broadband service. It was mentioned by half (49%) of superfast users questioned, and was the most important reason for choosing their current service for 30% of respondents. Other reasons mentioned were that the respondent's previous service was slow and they wanted faster speeds (the main reason for 17% of those completing the survey), the need for good simultaneous performance on multiple devices (the main reason for 16% of respondents) and wanting to get the fastest possible download speeds (the main reason for 14% of respondents).

Two reasons for choosing a superfast service were more prevalent in 2013 than they had been two years before. The first was that 17% said they wanted a service that was faster than their previous connection (up from 10% in 2011); the second was the proportion who said they chose their broadband service because the deal offered good value for money; this rose by four percentage points, to 30%, over the same period.

There were differences between BT and Virgin Media customers in the reasons given for upgrading to superfast broadband; Virgin Media customers were more likely to say that the most important reason for their purchase was that the deal offered good value for money, while BT customers were more likely to say that they wanted faster speeds. This is likely to be related to Virgin Media's upgrade programme, which has resulted in customers' package speeds being doubled without any increase in charges.

A significant proportion of respondents (16%) said that they had been upgraded by their provider, with almost a quarter (24%) of Virgin Media superfast users saying that this had been the case (a likely consequence of Virgin Media's 'double-speeds' upgrade programme) compared to only 5% of BT superfast users.

Figure 5.16 Reasons for choosing current broadband service



Source: Ofcom research, fieldwork carried out by Populus in March 2013

Base: All respondents (excluding those upgraded by their provider) (1016; Virgin Media 516, BT Infinity 272)

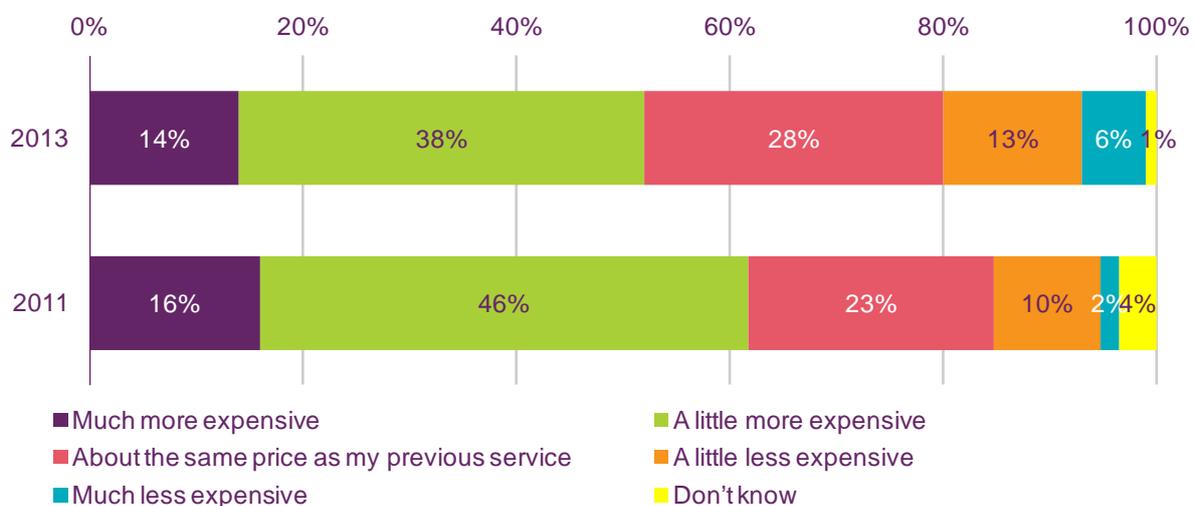
Question 1 & 2: Why did you choose a <x Mbit/s> broadband service? And which of these was the single most important reason?

Most superfast users pay more to receive superfast broadband

In 2013 just over half of respondents (52%) said that their current broadband service was more expensive than the service they used to have, down from 62% who said this in 2011. In 2013, 14% of superfast users said that their service was ‘much more expensive’ than their previous service, with 38% saying that it was ‘slightly more expensive’.

Two-thirds (66%) of BT customers said that they paid more for their superfast broadband than their previous broadband, compared to 51% of Virgin Media customers. This is likely to be partly a consequence of Virgin Media’s automatic upgrade programme, where speeds doubled while prices remained unchanged. However, between March 2011 and March 2013 prices for the lowest-cost superfast service (when bundled with a landline) fell from £18.50 to £14.50 for Virgin Media customers, while BT’s lowest-cost service remained at £18 over the same period. This may partially account for this difference.¹¹¹

Figure 5.17 Price of current broadband service, compared to previous service



Source: Ofcom research, fieldwork carried out by Populus in March 2013

Base: All respondents who had ADSL, cable or mobile broadband previously (994)

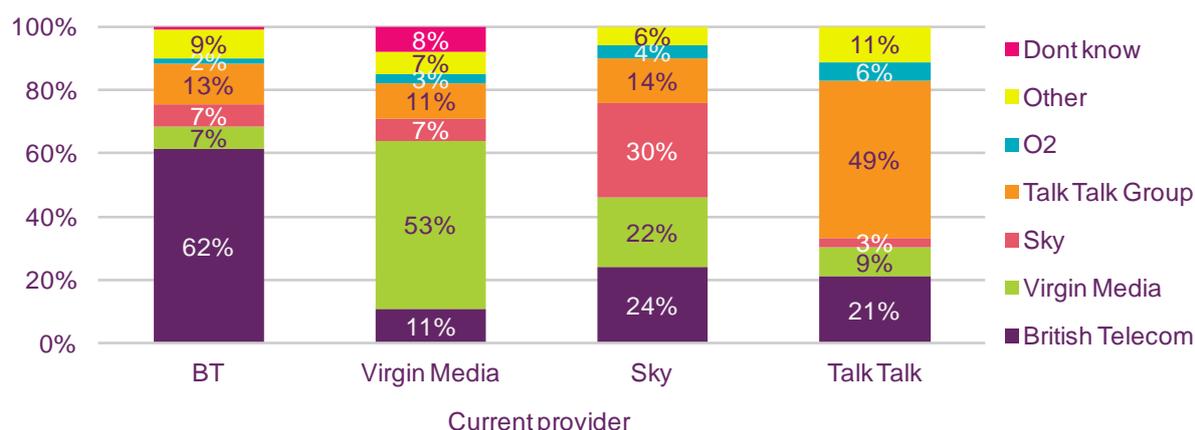
Question 9: How does the price of your current broadband service compare to the broadband service that you used to have?

Most superfast users stayed with the same ISP when upgrading to a superfast service

Most respondents said that they had not changed supplier when they upgraded to a superfast broadband service: 62% of BT fibre customers had been BT customers before upgrading to their superfast service, while just 7% had switched from Virgin Media, the same proportion from Sky and 6% from TalkTalk. Similarly, 53% of Virgin Media superfast broadband users had previously been Virgin Media customers (partly because Virgin Media has been migrating most of its customer base onto superfast services) and 49% of TalkTalk customers had been TalkTalk Group customers before purchasing superfast services (Figure 5.18). In contrast, Sky customers were more likely to have migrated from other providers, with just 30% of Sky superfast users saying that they had previously used its ADSL service.

¹¹¹ Prices are taken from Pure Pricing UK’s March 2011 and March 2013 Broadband pricing briefing and exclude line rental.

Figure 5.18 Previous internet service provider, by current superfast provider



Source: Ofcom research, fieldwork carried out by Populus in March 2013

Base: All with ADSL cable or mobile broadband previously: 1012; BT Infinity: 244; Virgin Media: 595, Sky 61, Talk Talk 76

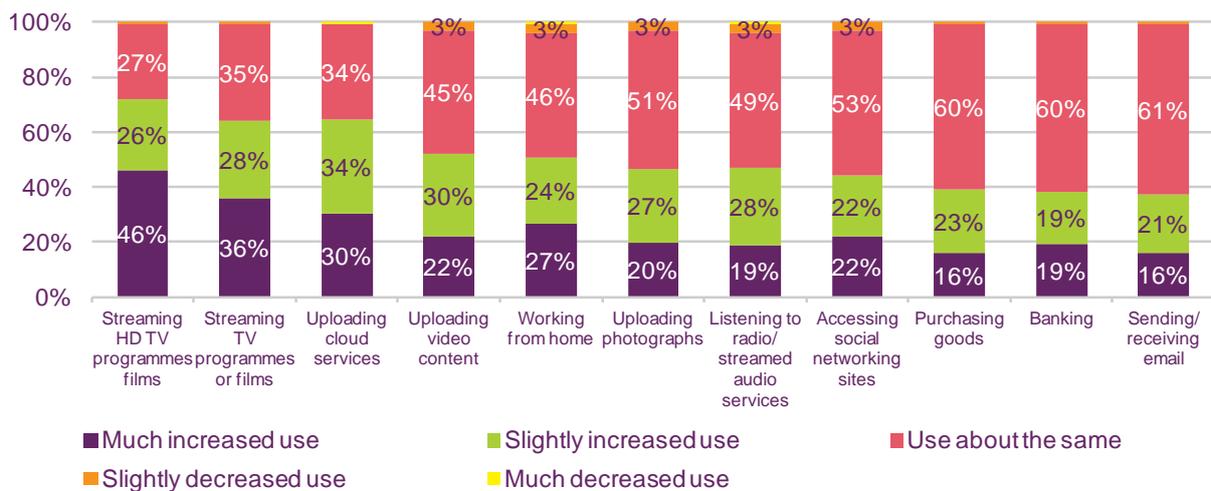
Question 5: And which internet service provider did your household use before you subscribed to your (current) service?

Superfast users consumed more streamed TV content than they had done previously

The most notable ways in which superfast broadband users said they had changed their use of broadband since upgrading to a superfast service related to the streaming of TV programmes and full-length films (Figure 5.19). Seventy-two per cent of respondents said that they had increased their levels of streaming high-definition content since switching to a superfast service, while 64% had increased streaming of standard-definition content (the same proportion that reported increased use of cloud services). This increase is likely to be related to the increase in the speed of the broadband service, but also to the increase in the general use of these services since 2011.

There were also notable increases in the uploading of video content (cited by 52% of superfast users) and the proportion who said that they worked from home more frequently (51%). The smallest increases were for those services for which use was already high and/or those which typically benefit less from having faster speeds, such as sending and receiving email, purchasing goods/services/tickets and online banking.

Figure 5.19 Change in use, compared to previous broadband connection



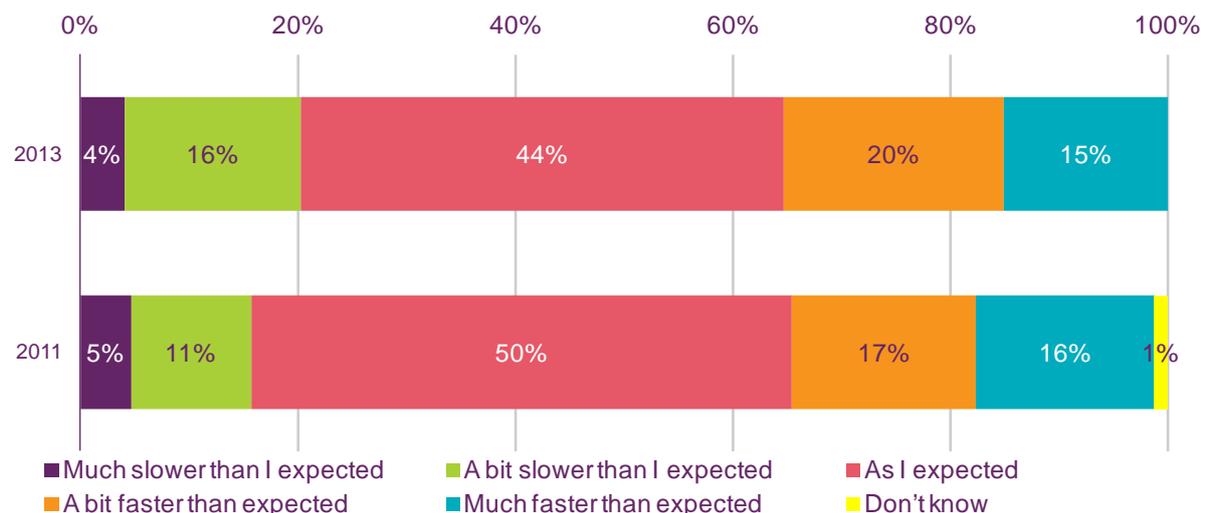
Source: Ofcom research, fieldwork carried out by Populus in March 2013

Base: All respondents who had ADSL, cable or mobile broadband previously and use each service
 Question 12: How has the amount you use these services changed compared to when you had your previous

Actual superfast speeds met or exceeded expectations in most cases

In 2013, almost eight in ten (79%) superfast users said that the download speeds provided by their service had met or exceeded their expectations when they purchased the service, a similar proportion to that recorded in 2011. The proportion saying this was similar among BT and Virgin Media superfast users, with 81% of BT customers and 80% of Virgin Media customers saying their download speeds met or exceeded their expectations. The proportions of TalkTalk and Sky customers who made the same statement were 74% and 72% respectively.

Figure 5.20 Speed of downloads compared to initial expectations, by year



Source: Ofcom research, fieldwork carried out by Populus in March 2013

Base: All with broadband before (943)

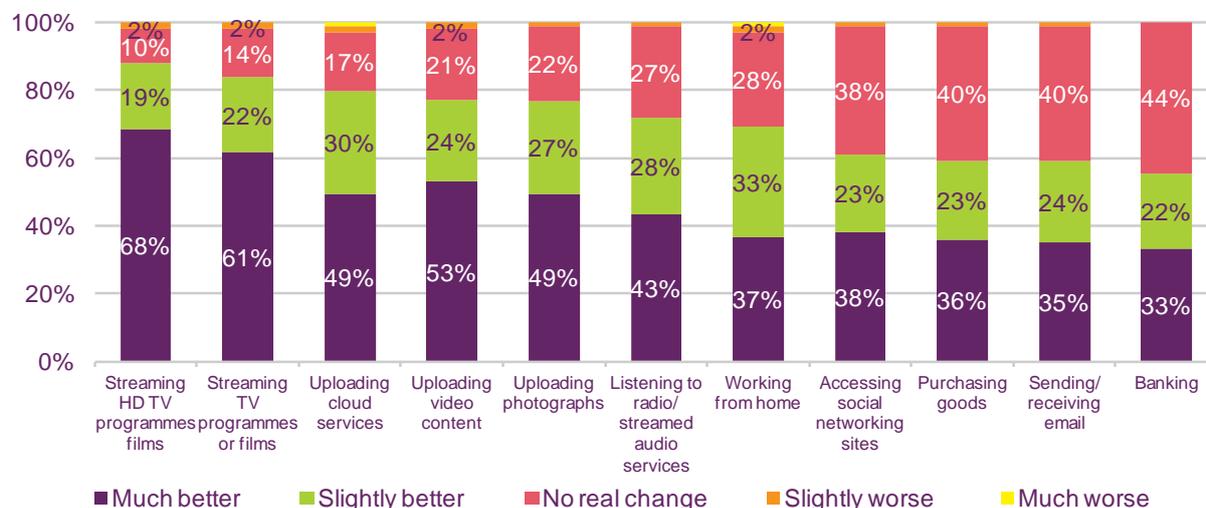
Question 9: How does the download speed of your current broadband service compare with what you expected when you signed up for it?

Most users said that having a superfast service had improved their online experience

Most respondents said that their experience across a range of online services had improved. In particular, the services where the largest proportion of respondents felt that their experience was slightly, or much, better were those services which benefit the most from higher speeds, such as streaming activities. More than four in five respondents said that streaming HD TV programmes and full-length films, and streaming standard-definition TV programmes and full-length films, was better than it had been previously, while over three-quarters said that their experience of uploading to cloud services, uploading video content and uploading photographs had improved (Figure 5.21).

The activities with the smallest improvement were those that benefit less from higher speeds, such as online banking (55%), sending and receiving emails (59%), and making online purchases (59%).

Figure 5.21 Experience of using services, compared to previous broadband connection



Source: Ofcom research, fieldwork carried out by Populus in March 2013

Base: All respondents who had ADSL, cable or mobile broadband previously and use each service
 Question 13: How would you describe your experience of these services using your current connection compared to your previous connection?

5.2 The telecoms industry

5.2.1 Introduction

In this section of the report, we examine recent trends in the telecommunications market from the perspective of industry revenues, subscribers and volumes. This section is divided into four sections:

- Industry overview: top-level findings from the UK telecoms industry
- Fixed markets: covers fixed-line telephony and fixed broadband
- Mobile markets: covers mobile telephony, mobile messaging, mobile data, mobile broadband and machine-to-machine communications.
- Business markets: covers mobile and fixed voice and broadband business services.

The key findings in the section of the report are:

- **Total telecoms revenue fell by 1.8%, or £700m, to £38.8bn in 2012.** This decrease was as a result of a £1bn fall in wholesale revenues during the year, which was offset by 0.5% increase in retail revenues. Retail mobile revenues increased by 1.1% in 2012, while fixed internet revenues increased by 8.3% and fixed voice revenues fell by 3.4%.
- **Outgoing call volumes from landlines and mobiles and both decreased in 2012.** The volume of calls from fixed lines fell by 7.7% to 103 billion minutes in 2012, while the volume of mobile-originated calls fell by 1.0% to 122 billion minutes. Overall, total fixed and mobile call volumes fell by 4.2% to 225 billion minutes in 2012; 31 billion minutes less than the 2008 peak of 256 billion minutes.
- **The volume of outgoing text messages has been declining since Q4 2011.** Text message volumes fell in each of the first three quarters of 2012, and while there was a small increase in Q4 (which is usually strong because of the Christmas holiday), message volumes were 6.5% lower than they had been in Q4 2011.
- **The number of post-paid mobile subscribers exceeded the number of pre-paid subscribers at the end of 2012.** There were more post-paid mobile subscribers than pre-paid subscribers at the end of 2012, the first time that this had been the case since 1999. During the year the proportion of mobile subscribers that were on post-pay tariffs increased from 49% to 53%.
- **Over a million new fixed broadband connections were added in 2012.** The total number of fixed broadband connections continued to grow in 2012, increasing by 5.4% year on year to 21.7 million. Most of this growth was due to a 0.9 million increase in the number of LLU ADSL connections.
- **The number of business fixed lines fell in 2012, while the number of residential lines increased.** The total number of fixed lines continued to decline in 2012, falling by 0.3% to 33.1 million as a fall in the number of business lines was offset by a 0.5 million increase in the number of residential lines. This increase is likely to be because most UK households need a fixed line in order to receive fixed broadband services.

5.2.2 Industry overview

Total UK telecoms revenue fell by 1.8% in 2012

Total UK telecoms revenue fell by 1.8%, or £700m, to £38.8bn in 2012 (Figure 5.22). This decrease was largely due to a £1bn fall in wholesale revenues. The other segments – wholesale and retail fixed, retail mobile and corporate data services – remained broadly unchanged in 2012. Total retail telecoms retail revenue increased by 0.5% to £27.4bn in 2012, driven by a 1.1% increase in mobile telecoms retail revenue (see Figure 5.22). Fixed telecoms retail revenue decreased by 0.1% to £12.2bn in 2012, as an 8.3% increase in fixed internet revenues was offset by a 3.4% fall in fixed voice revenues.

Figure 5.22 Total telecoms revenue, by wholesale and retail, fixed and mobile, and corporate data services



Source: Ofcom / operators with the exception of corporate data services, sourced from IDC. Notes: Corporate data services comprises web hosting, ethernet, IP VPN, digital leased line and frame relay/ATM services; wholesale mobile comprises mobile voice and SMS termination revenue and wholesale inbound roaming revenue (i.e. - revenue from overseas operators when their subscribers use UK networks).

Fixed broadband and mobile data were the leading retail revenue growth categories

Total telecoms retail revenue decreased by a compound annual rate of 0.8% between 2007 and 2012.

Fixed internet revenues (which are predominantly fixed broadband revenues with a small amount of narrowband internet revenue) and mobile data revenues were the largest components of retail revenue growth in 2012, increasing by 8.3% and 16.8% to £8.5bn and £2.4bn respectively during the year (Figure 5.23). Increasing use of fixed broadband and mobile data services drove the increases: the number of mobile subscribers who used their handset to access the internet grew rapidly in 2012 (see Figure 5.41), while the total number of fixed broadband connections also increased (see Figure 5.25), as did the number of superfast broadband connections (shown in Figure 5.13).

The retail revenue component that showed the largest decrease in 2012 was mobile messaging (total of text and picture), with a 9.6% decrease, while revenues from fixed voice services decreased by 3.4% to £8.5bn during the year. Post-pay monthly mobile access/rental revenues, which often include bundled voice, messaging and data services, are recorded with voice call revenues below. As such, mobile messaging and data revenues relate only to out-of-bundle use, and as the use of pre-pay services has increased in the five years to 2012 (as is shown in Figure 5.41), changes to messaging and data revenue do not necessarily reflect changes in the use of these services.

Figure 5.23 Retail revenue, by service



Source: Ofcom / operators

The volume of calls from mobile phones and landlines both decreased in 2012

The volume of calls from fixed lines fell by 7.7% to 103 billion minutes in 2012, marking a decrease every year since 2007, while the volume of calls made from mobile phones also fell in 2012, down by 1.0% in 2012 to 122 billion minutes, a second consecutive annual decrease (Figure 5.24). The total volume of outgoing calls fell by 4.2% to 225 billion minutes in 2012; 31 billion minutes less than its 2008 peak of 256 billion minutes.

The volume of calls from mobile phones has exceeded the volume of calls from fixed lines each year since 2010. But for the first time in 2012, the volume of calls made by subscribers on post-pay tariffs (104 billion minutes) was greater than the volume of calls from fixed phones (103 billion minutes). There was a sizeable difference in trends in usage levels between post-paid and pre-paid subscribers, with the volume of calls made by post-paid subscribers increasing by 1.8% in 2012, while the volume of calls made by pre-paid subscribers fell by nearly 15%, largely as a result of the migration of pre-pay subscribers to post-paid tariffs (see Figure 5.41).

Figure 5.24 Volume of outgoing fixed and mobile voice minutes



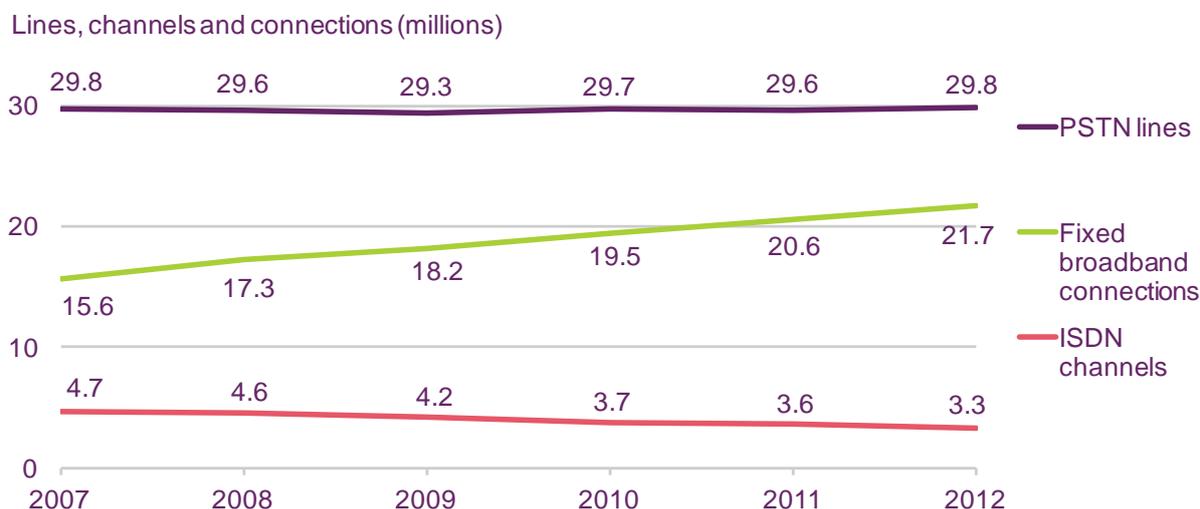
Source: Ofcom / operators

Increasing fixed broadband take-up is likely to be driving growth in the number of PSTN lines

Increasing take-up of fixed broadband services appeared to be underpinning resilience in the number of PSTN lines. The total number of fixed broadband connections increased by 5% to

21.7 million in 2012, while the number of PSTN lines also increased during the year, up by 0.5% to 29.8 million (Figure 5.25). There were over 600,000 more PSTN lines at the end of 2012 than there had been three years previously, and this resilience (against a backdrop of falling fixed-line telephony use) is likely to reflect the fact that a PSTN line is required in order to be able to subscribe to all ADSL, and most fibre, broadband services.

Figure 5.25 Number of fixed connections, by service



Source: Ofcom / operators

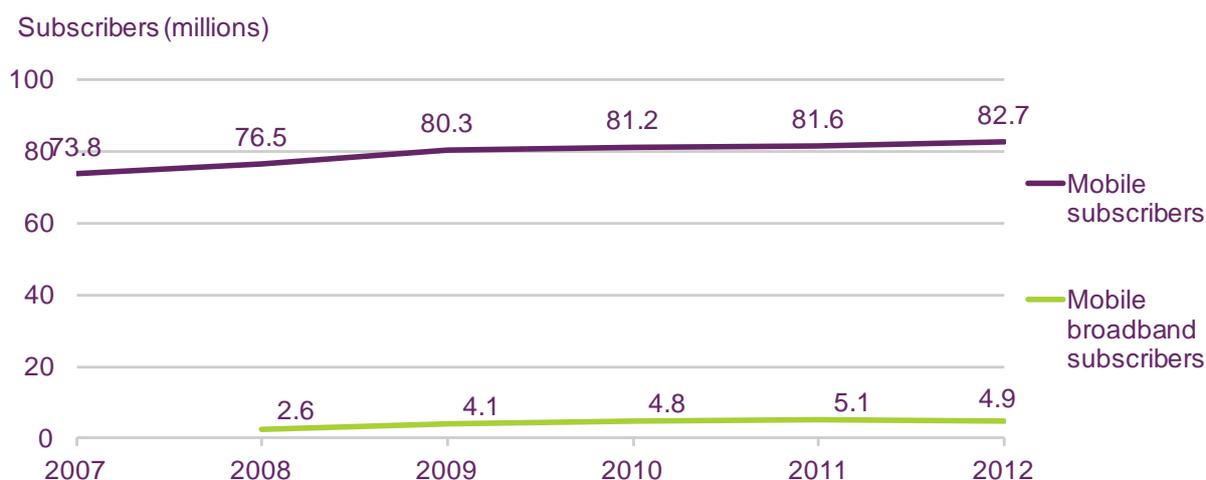
The number of mobile broadband subscribers fell in 2012

For the first time on an annual basis, the number of data-only mobile broadband subscribers decreased in 2012, down by 0.1 million to 4.9 million. This figure includes dongles (USB modems), mobile WiFi devices and SIMs used in laptops and tablets, but excludes devices with a SIM that can be used for voice, most commonly mobile handsets.

The decrease in the use of mobile broadband may be linked to two developments. First, more consumers are using their mobile phones to access the internet (Ofcom estimates that over 40 million subscribers did so in 2012) so these consumers may have less of a need to use mobile broadband. Second, the increasing availability of WiFi (public and private) may mean that fewer people have the need to use a cellular connection to get online.

The total number of active mobile subscribers (which includes mobile broadband subscribers) increased by 1.1 million in 2012 to 82.7 million (Figure 5.26). The total has increased each year, although the percentage increase (1.3%) was lower than the average annual increase between 2007 and 2012 (2.3%). The market appears to be largely saturated: 92% of the population owned a mobile phone in the first quarter of 2013, while the number of SIMs per person was 1.30 at the end of 2012, up from 1.29 at the end of 2011.

Figure 5.26 Number of mobile and mobile broadband subscribers



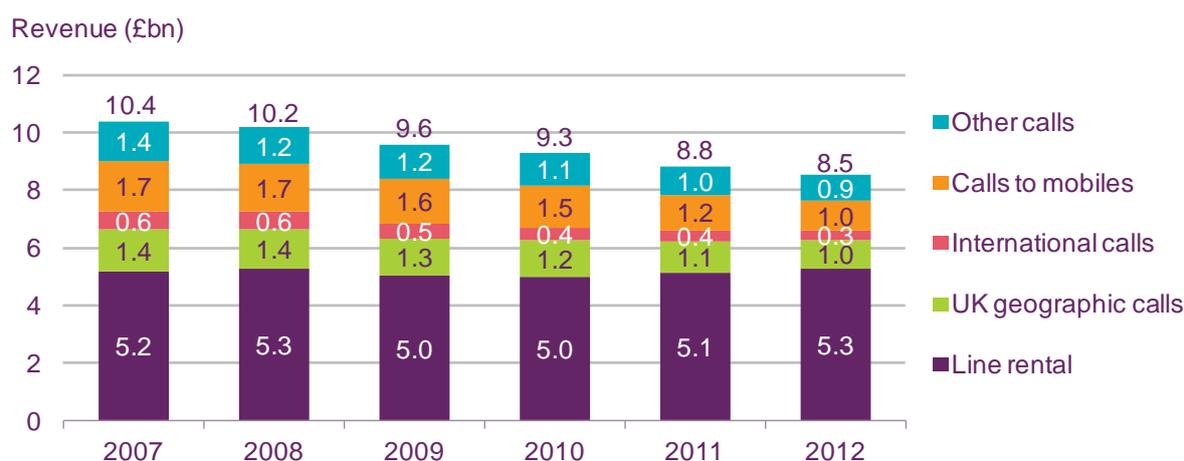
Source: Ofcom/operators. Mobile broadband figures are included in the total mobile subscriber figures.

5.2.3 Fixed voice services

Retail fixed voice revenues continued to decline in 2012

Fixed retail voice call revenues fell by 3.4% to £8.5bn in 2012 (Figure 5.27). Line rental revenue increased by 2.7% to £5.3bn during the year, and accounted for 62.1% of total retail fixed voice revenue in 2012. Line rental revenue in 2012 matched that in 2008, despite the total number of fixed lines (which includes ISDN channels) having fallen by over 3% in the intervening period. Revenues from calls to UK geographic numbers, international numbers, and ‘other’ calls each fell by £0.1bn in 2012, representing rates of decline of 9.3%, 13.3% and 9.2% respectively. The greatest proportional drop was seen in calls to mobiles, where revenues fell from £1.2bn to £1.0bn in 2012, a 16.2% decrease. This decline was partly the result of falling mobile call termination rates and falling call volumes, but was also due to the increased bundling of calls to mobiles with fixed line rental.

Figure 5.27 Retail fixed voice revenues: 2007 to 2012



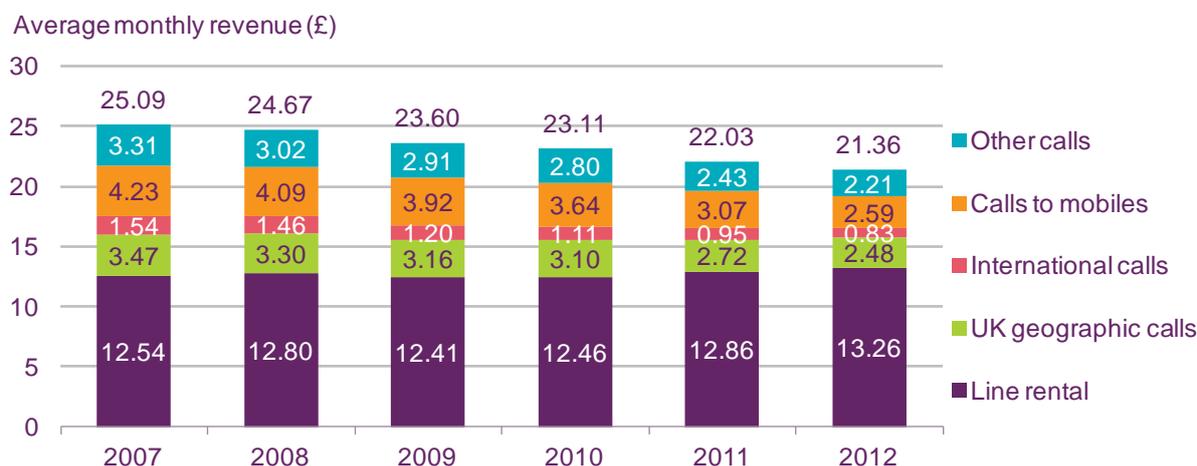
Source: Ofcom/operators

Average monthly revenue per retail fixed line decreased in 2012

Average monthly revenue per fixed line fell by £0.67 (3.0%) to £21.36 in 2012 (Figure 5.28). The largest reduction in average spend per line in 2012 was in calls to mobiles (down 15.8%

to £2.59), followed by calls to international destinations (down 13.0% to £0.83). Average monthly revenue per line from calls to UK geographic numbers and 'other' calls saw similar rates of decline in 2012, falling by 8.9% to £2.48 and 9.0% to £2.21 respectively. Line rental revenues, which accounted for more than half of average revenue per line in 2012, increased by 3.1% during the year, and have been increasing since 2009 as these increasingly include a bundled call allowance or 'bolt-on'.

Figure 5.28 Average monthly retail revenue per fixed line

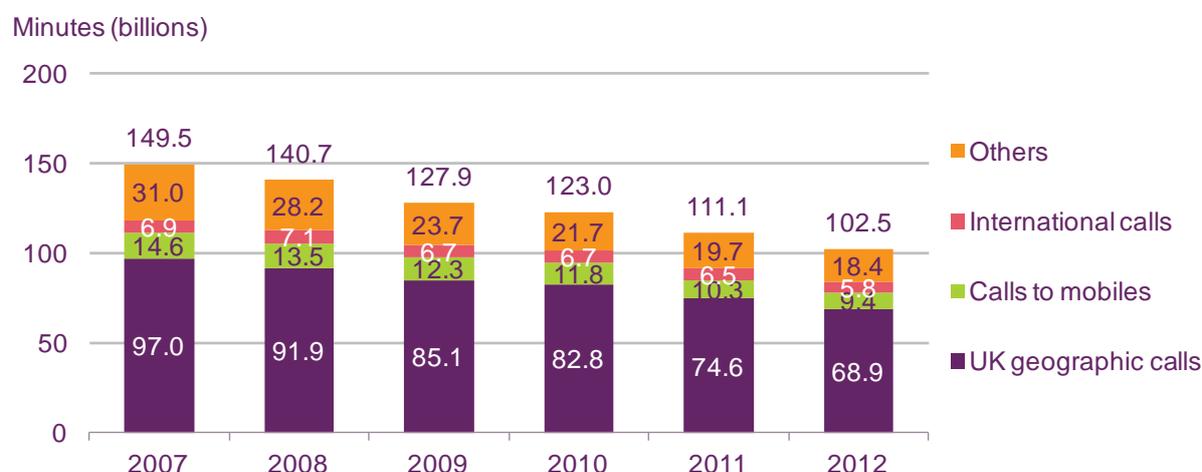


Source: Ofcom/operators

Fixed voice volumes declined in 2012

Total fixed-originated voice call volumes fell by 7.7% to 102.5 billion minutes in 2012. The highest percentage decreases were in calls to mobiles and international calls, which fell by 9.3% to 9.4 billion minutes and 9.6% to 5.8 billion minutes respectively (Figure 5.29). Calls to UK geographic numbers accounted for two-thirds of total call volumes in 2012, and declined by 7.6% to 68.9 billion minutes during the year. With call volumes from mobile phones having also declined during the year, the main driver of the decline in fixed voice volumes is likely to have been increasing use of text-based communication services, such as text messaging, email, instant messaging, social networking and micro-blogging sites. Increasing use of voice over IP services may have also had some impact on fixed call volumes.

Figure 5.29 Fixed voice volumes, by type of call



Source: Ofcom/operators

Note: Others category includes narrowband internet calls

Other direct operator market share increased to above 25% for the first time in 2012

'Other direct' operators' share of total fixed-line voice call volumes increased to above 25% for the first time in 2012, up by 2.9 percentage points during the year (Figure 5.30). This growth was as a result of increased use of full-LLU-based telephony services (such as those provided by Sky and TalkTalk), which are included in this category. The market share of indirect access providers (i.e. operators that offer services over another provider's network infrastructure) fell in 2012 (down three percentage points to 23.8%) while BT's share increased slightly (up by 0.1 percentage point to 38.0%) and Virgin Media's was unchanged (at 12.4%).

Figure 5.30 Share of fixed voice call volumes: 2007-2012

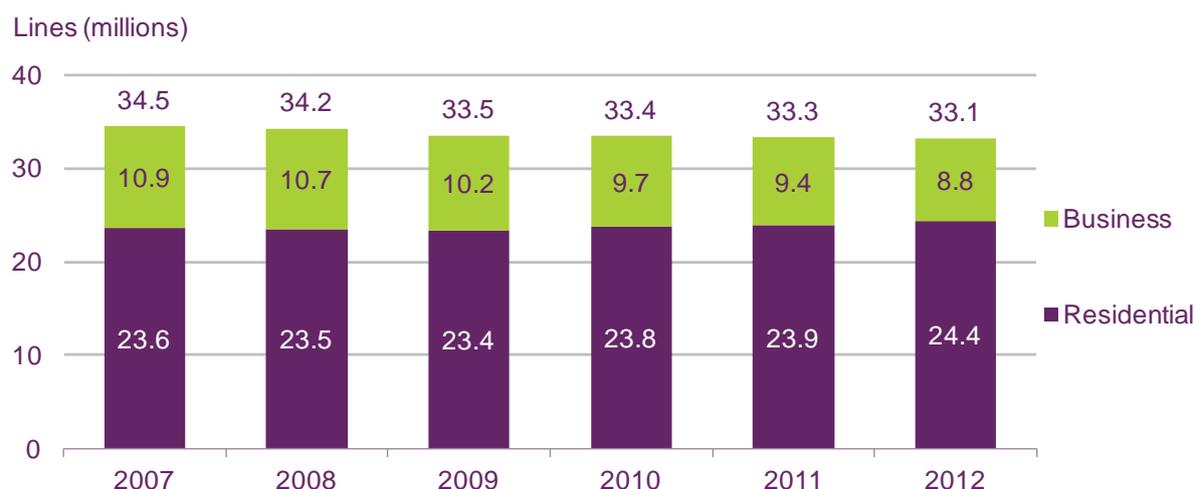


Source: Ofcom/operators

The number of business fixed lines fell in 2012, while the number of residential lines increased

The total number of fixed lines continued to decline in 2012, falling by 0.3% (0.1 million) to 33.1 million as a fall in the number of business lines was offset by an increase in the number of residential lines (Figure 5.31). During the year the total number of business lines (which include ISDN channels) fell by 0.6 million (6.3%) to 8.8 million, while the number of residential lines saw an increase of 0.5 million lines (2.0%) to 24.4 million over the same period. This increase is likely to be because most UK households need to have a fixed line in order to receive fixed broadband services.

Figure 5.31 Number of fixed lines: 2007-2012



Source: Ofcom/operators

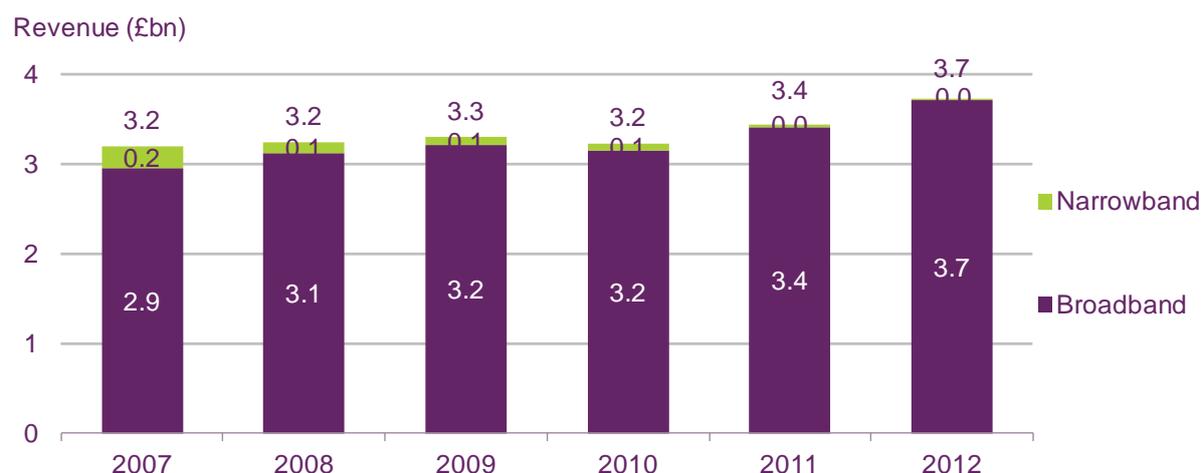
5.2.4 Fixed data services

Fixed broadband revenues increased by £300m in 2012

Total fixed internet revenues grew in 2012, increasing by 8.3% to £3.7bn during the year (Figure 5.32). Retail broadband revenues increased from £3.4bn to £3.7bn, while narrowband internet revenues remained at less than £0.1bn.

This increase was as a result of increases in both the number of fixed broadband connections (see Figure 5.33) and the average revenue per connection (Figure 5.64 shows that the average price of a residential connection increased by 1.1% in real terms in 2012). Increasing average revenue per fixed broadband connection is in part due to growth in the take-up of superfast broadband services, as the number of fixed broadband connections that are classed as superfast (i.e. which had a headline speed of 30Mbit/s or higher) tripled from 1.1 million to 3.3 million during the year (see Figure 5.13).

Figure 5.32 Retail fixed internet revenues



Source: Ofcom/operators

Over a million new fixed broadband connections were added in 2012

The total number of fixed broadband connections continued to grow in 2012, increasing by 5.4% year on year to 21.7 million (Figure 5.33). Most of this growth was due to an increase in the number of LLU ADSL connections, which grew by 0.9 million to 8.8 million during the year. ADSL connections made up three-quarters (75.1%) of total fixed broadband connections at the end of 2012, with a further 19.8% being cable modem connections and 5.1% being classed as 'other' (the majority of which were fibre connections), a three percentage point year-on-year increase.

Each of these connection types increased in 2012, with the number of ADSL connections growing by 0.3 million and the number of cable modem connections by 0.2 million. But it was 'other (inc. FTTx)' connections that saw the greatest increase in 2012, with 0.7 million net additions, an increase of over 150%. Most of this growth was due to the increased take-up of fibre-to-the-cabinet (FTTC) services; by the end of March 2013 17.5% of UK broadband connections were classed as being superfast. More information on superfast broadband services can be found in sections 5.1.3 and 5.1.4 of this report.

Figure 5.33 Fixed broadband connections: 2007-2012



Source: Ofcom/operators

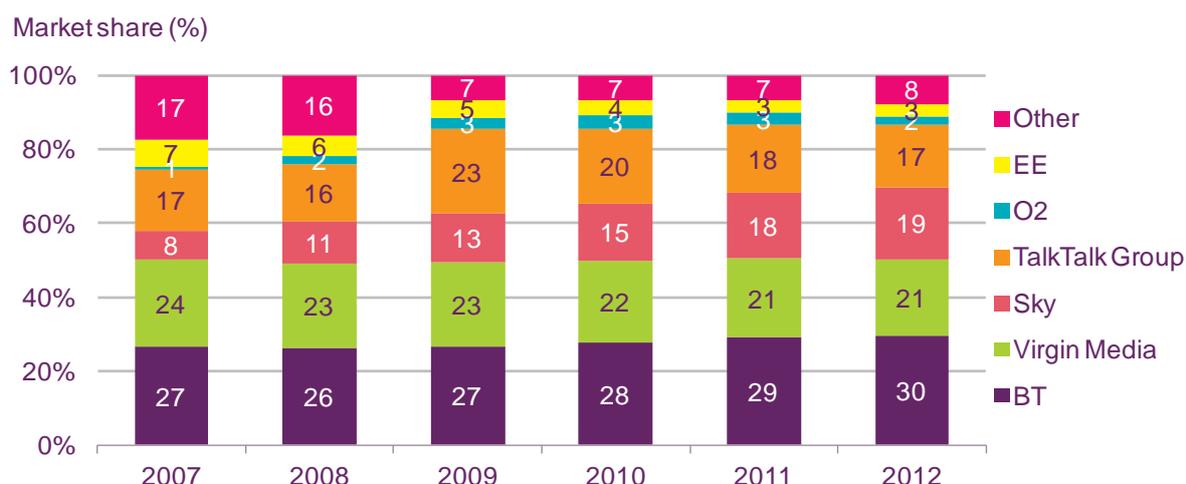
BT and Sky had the highest growth in broadband market share in 2012

BT continued to have the largest fixed broadband retail market share in 2012, with a 29.6% share of subscribers, an increase of 0.5 percentage points on the previous year (Figure 5.34). Cable operator Virgin Media had the second highest market share, at 20.8%, while Sky (the third largest provider in 2012, with a 19.4% market share) gained further ground on Virgin Media, with its share increasing by 1.6 percentage points during the year.

Sky announced that it had completed its acquisition of Telefónica UK's broadband and fixed-line telephony business (which includes the O2 and BE fixed broadband brands) in May 2013.¹¹² This will have further increased Sky's broadband market share, and is likely to have enabled it to overtake Virgin Media to become the UK's second largest broadband provider after BT. TalkTalk Group's market share fell by 1.4 percentage points to 17.0% in 2012, while EE's share remained flat at 3.4% during the year.

¹¹² <http://www.sky.com/mysky/latestnews/article/my-sky-updates/2013-05/sky-home-phone-and-broadband-service-gets-even-bigger/>

Figure 5.34 Fixed broadband market share: 2007-2012



Source: Ofcom/operators

Note: TalkTalk figures include Tiscali from 2009 onwards. Please also note that Tiscali was included in 'other' prior to 2009.

5.2.5 Mobile markets

Subscription revenue led an increase in mobile voice retail revenue in 2012

Retail mobile voice revenues increased by 0.5% to £10.6bn in 2012, reversing the trend of the previous five years, which has seen revenues decline by an average of 1.6% a year (Figure 5.35). The increase is likely to be due to the increased number of mobile subscribers, as well as the migration of subscribers from pre-paid to post-paid tariffs. Revenue from subscriptions (referred to as 'access and bundled calls', which often include bundled voice calls, text messages and data), is included in mobile voice revenue. The increasing use of bundled mobile data services is likely to have been a driver of the increase in revenue, as extra revenues will have been generated by these services. Access and bundled calls were the largest element of mobile voice retail revenue in 2012, accounting for 66% of the total, or nearly £7bn.

Figure 5.35 Mobile voice retail revenue, by type of call



Source: Ofcom / operators

Average revenue per user increased slightly as subscribers shifted to post-paid tariffs

Average revenue per user (ARPU) increased by 14 pence per month to £15.57 in 2012, an increase of just under 1%, following four consecutive years of decline. The average figure for 2012 was therefore £1.83 lower than that it was in 2007 (Figure 5.36). Pre-pay and post-pay ARPU both decreased in 2012, by 23 pence and 91 pence per month respectively, although the average across all subscribers (blended ARPU) increased during the year. This was because although the pre-pay and post-pay averages both fell during 2012, the proportion of mobile subscribers who were post-pay customers (and therefore had a higher average spend) increased during the year, and pulled up the average.

Figure 5.36 Mobile average revenue per user, by pre-pay and post-pay



Source: Ofcom/operators

Note: Blended refers to all subscribers: prepay and postpay.

The volume of mobile calls fell for the second consecutive year in 2012, although international calling increased

After falling for the first time in 2011, the total volume of mobile-originated voice calls fell again in 2012, by 1% to 122 billion minutes (Figure 5.37). Nevertheless, this was still nearly one-sixth higher than it had been in 2007. The volume of international calls increased by more than 7% in 2012 to two billion minutes, bringing the total to nearly 50% higher than in 2007. The increase is likely to be driven by cheaper pricing, as mobile providers compete with calling cards and voice over IP services such as Skype. The increase in revenue from international calls was less than 0.5% in 2012, reflecting this price reduction.

The volume of calls from mobile phones to fixed phones, and the volume of calls from mobile phones to other mobile phones, both decreased in 2012, by 2.0% to 31 billion minutes and 0.7% to 82 billion minutes respectively. The proportion of total mobile calls that were accounted for by calls to other mobiles remained constant during the year, at 67%. In 2012, the volume of off-net mobile-to-mobile calls (i.e. calls from from one mobile network to another) exceeded the volume of on-net mobile calls (calls made to the same network) for the first time since 2007.

Figure 5.37 Volume of outgoing mobile calls, by type of call



Source: Ofcom / operators

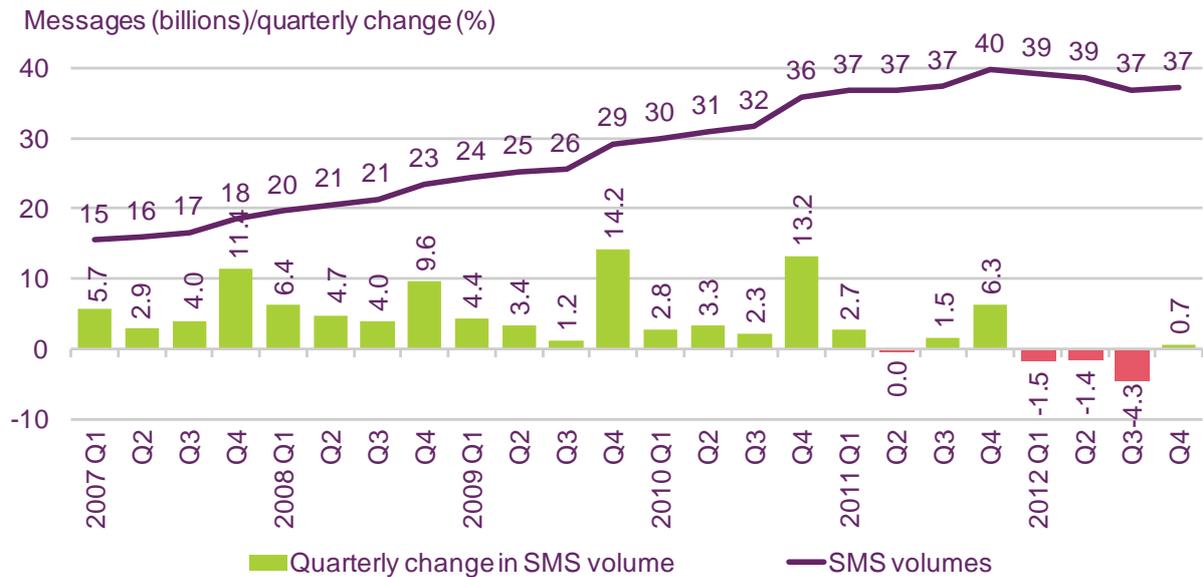
The volume of outgoing text messages has been declining since Q4 2011

The number of outgoing SMS (text) messages fell through much of 2012, having reached a peak in the fourth quarter of 2011. The first three quarters of 2012 saw sequential decreases in message volume, sliding from 39.7 billion messages in Q4 2011 to 36.9 billion in Q3 2012 (Figure 5.38). The fourth quarter of 2012, which is seasonally strong because of the Christmas holiday, when many consumers send festive messages, saw a small increase to 37.1 billion messages, although this was 6.5% less than the same quarter the previous year.

The quarterly declines in messaging throughout 2012 are likely to be a result of the increased availability of alternatives to SMS. There are now many ways consumers can send electronic messages to each other, including instant messaging, other 'over-the-top'¹¹³ applications such as WhatsApp and Viber, and messaging capabilities built into frequently-used web tools such as Facebook and Skype.

¹¹³ An over-the-top application is used to send messages using the data connection of a mobile phone, making it different to text messaging, which operators provide as a service. Such applications are usually installed by a consumer from an applications marketplace, or directly from the vendor of the application, although some operators, like O2, offer their own over-the-top applications. In the former case, the operator receives no direct revenue from use of the application. They may gain a small amount of revenue from use of the data connection by the consumer.

Figure 5.38 Volume of SMS messages sent, and quarter-on-quarter change: Q1 2007 to Q4 2012



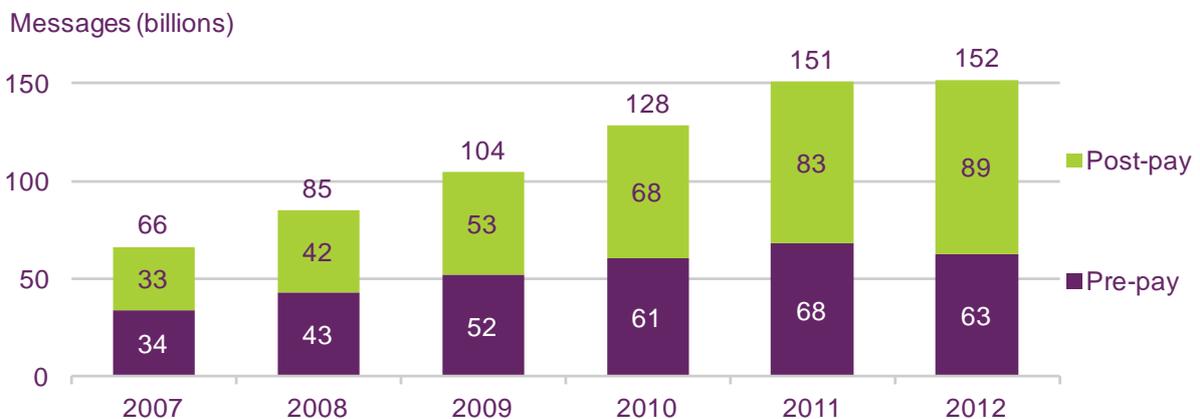
Source: Ofcom / operators

Year-on-year total SMS messages increased slightly after four years of strong growth

Expressed on an annual basis, the number of outgoing SMS messages increased by 0.7% to 152 billion in 2012, despite message volumes having peaked in the last quarter of 2011 (the annual figure increased because the first three quarters of 2012 saw a greater number of text messages sent than the first three quarters of 2011).

Post-paid subscribers sent 89 billion SMS messages in 2012, 7.2% more than 2011, while pre-pay subscribers sent 63 billion messages, 7.3% fewer than the previous year (Figure 5.39). As a result, the proportion of SMS messages that were sent by post-paid mobile subscribers' tariffs increased from 55% in 2011 to 59% in 2012. The decrease in the proportion of text messages that were sent by pre-pay users is likely to be a reflection of the migration of pre-pay users to post-pay tariffs, and the widespread availability of large and unlimited bundles of text messages on post-pay tariffs.

Figure 5.39 Volume of SMS messages sent, by pre-pay and post-pay: 2007-2012



Source: Ofcom / operators

The volume of outgoing picture messages continues to grow

In 2012, 225 SMS messages were sent for every MMS (picture) message sent. In total, 674 million MMS messages were sent in 2012, up by nearly 9% compared with 2011 (Figure 5.40). Fifty-nine per cent of MMS messages were sent by subscribers on post-pay tariffs, an increase from 55% in 2011. However, MMS messages represent only a proportion of the total number of pictures sent by mobile phones. Many photos are now sent using the data connections of smartphones (e.g. using email, OTT messaging services or social networking sites).

Figure 5.40 Volume of MMS messages sent, by pre-pay and post-pay: 2007-2012



Source: Ofcom / operators

The number of mobile subscribers continued to increase in 2012

While the rate of growth in the number of mobile subscribers has slowed, amid signs of market saturation (there were 1.30 mobile connections per person in the UK at the end of 2012), it continued to increase in 2012; up by 1.1 million to 82.7 million (Figure 5.41). This equated to an annual increase of 1.3%, less than half the 3.1% annual average recorded over the previous five years.

Almost half of the increase in 2012 was the result of a 515,000 increase in the number of business mobile connections (see the *Business Markets* section below). Ofcom market research indicates that the percentage of adults who personally used a mobile phone was unchanged, at 92%, in the year to Q1 2013 (see Figure 5.51), suggesting that the majority of the growth in mobile connections in 2012 was as a result of existing mobile users taking out additional subscriptions or being given a second mobile device by their employer.

The number of data-only mobile broadband connections¹¹⁴ fell for the first time in 2012, ending the year 138,000 lower, at 4.9 million. Until 2012, mobile broadband had been a growth market, and the decrease in 2012 is likely to be due to the widespread use of smartphones, which provide an alternative to mobile internet access on a PC/laptop using a dedicated mobile data connection such as a USB 'dongle'. The increasing availability of public and private WiFi may have also contributed to a lower perceived need for cellular mobile broadband connections. The increasing use of tablet PCs, some of which offer a

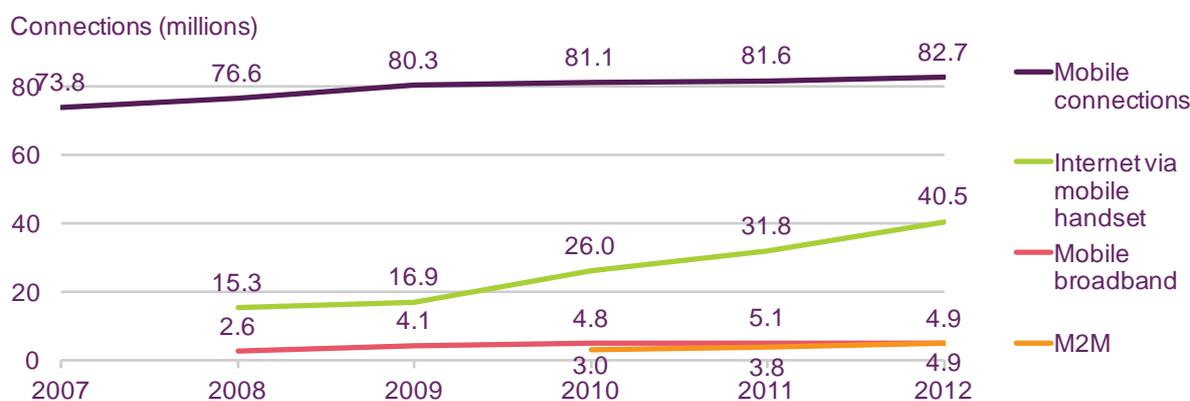
¹¹⁴ Mobile broadband includes the use of USB modems ("dongles"), datacards, mobile Wi-Fi devices and embedded cellular SIMs in tablets and PCs, or in other words a cellular data service that is not sold with a voice service. Mobile broadband excludes smartphone use because smartphones are usually sold with a voice service.

cellular data connection, is likely to have limited the decline in the number of dedicated mobile broadband connections.

Ofcom estimates that the number of subscribers who accessed the internet from mobile phones increased by nearly nine million to over 40 million in 2012. As well as the widespread take-up of smartphones, the bundling of data in many monthly tariffs is likely to have acted as a driver for higher data use. These figures include subscribers who use social networking and streaming media, as well as email and web browsing, and do not equate to the number of people who access the internet from mobile phones, because some people have more than one mobile data subscription.

Machine-to-machine communications (M2M) was one of the largest growth areas for mobile in 2012, with an increase of 1.1 million connections to 4.9 million at the end of the year. Our definition of M2M refers to cellular communications between machines, rather than between people. It includes uses such as smart electricity meters, connected office equipment and connections with company vehicle fleets, provided directly by mobile network operators.

Figure 5.41 Mobile connections, by type: 2007-2012



Source: Ofcom/ operators

Note: 'Internet via mobile handset' figures are based on Ofcom's market research on mobile internet use in Q1 of the year after the one stated; and Ofcom's subscriber figures obtained from operators that refer to the end of the year stated. M2M figures relate to the end of September of the year stated. The number of mobile subscribers includes mobile broadband subscribers but excludes M2M connections.

The number of post-paid mobile subscribers exceeded the number of pre-paid subscribers at the end of 2012

There were more post-paid mobile subscribers than pre-paid subscribers at the end of 2012, when nearly 53% of active mobile subscribers were on post-pay tariffs, up from 49% at the end of 2011 (Figure 5.42). This was the first time that there had been more post-pay than pre-pay mobile subscribers since 1999; the number of active post-paid mobile subscribers increased by 3.5 million to 43.7 million in 2012.

The increasing proportion of mobile subscribers on post-paid tariffs is likely to be driven by mobile operators making post-paid tariffs more attractive than pre-paid. Most of the mobile operators have publicly stated that their strategy is to encourage this shift, because post-paid subscribers generally spend more than pre-paid subscribers, as indicated in Figure 5.36. Post-paid tariffs may have become more attractive because:

- They now often include a large quantity of inclusive voice and SMS messages, plus an inclusive data allowance.

- There is now a wide choice of 30-day SIM-only rolling contracts from many operators.
- Post-paid tariffs often include handset subsidies that reduce the upfront cost of getting a new handset, including smartphones which can cost over £500 when bought without a monthly contract. The upfront purchase cost of pre-paid handsets may have become prohibitive for some consumers.

Figure 5.42 Number of active mobile subscribers, by pre-pay and post-pay: 2007-2012

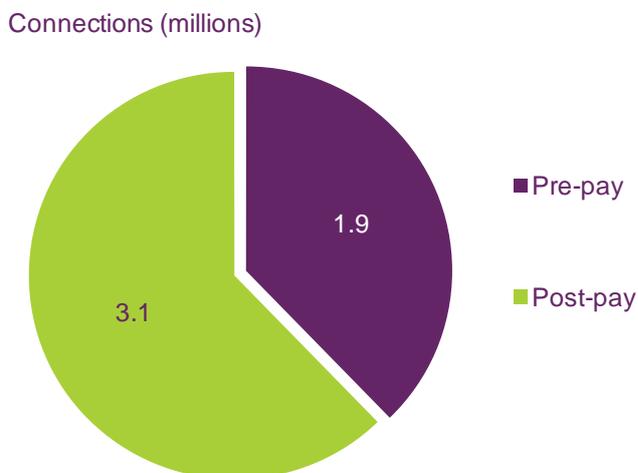


Source: Ofcom / operators

Over a third of data-only mobile broadband subscriptions are on pre-pay tariffs

There were 3.1 million post-paid data-only mobile broadband connections at the end of 2012, accounting for 62% of the total (Figure 5.43). Mobile broadband post-pay tariffs include large data allowances (as much as 15GB a month), and this may explain why the proportion of mobile broadband connections that are on a monthly contract is higher than the proportion for mobile subscribers as a whole. In addition, the availability of 30-day rolling data-only mobile broadband contracts may be a driver of post-pay mobile broadband take-up among occasional mobile data users who might otherwise have chosen a pre-pay service.

Figure 5.43 Number of active mobile broadband subscribers, by pre-pay and post-pay: 2012



Source: Ofcom / operators

5.2.6 Business markets

The number of business fixed lines decreased and the number of business mobile subscriptions increased in 2012

The number of business PSTN lines fell by 329,000, or 5.7%, to 5.4 million in 2012; a larger decrease than the total fall over the previous three years (Figure 5.44). Meanwhile, the number of business mobile subscriptions increased by 515,000, or 5.1%, to 10.7 million in 2012 (Figure 5.45). These trends were not mirrored among residential consumers, among whom the number of residential PSTN lines increased faster (by more than 2%) than the number of consumer mobile subscriptions (less than 1%).

In terms of broadband, businesses increased their take-up of both fixed and mobile services in 2012, when the number of fixed broadband connections increased by 2% and the number of data-only mobile broadband connections by 3% (in contrast to consumer mobile broadband connections, which decreased). Businesses used 18% of the available PSTN lines and 8% of fixed broadband lines, 13% of mobile phone subscriptions and 29% of data-only mobile broadband subscribers at the end of 2012. Note that the fixed broadband figures used here exclude corporate connections.

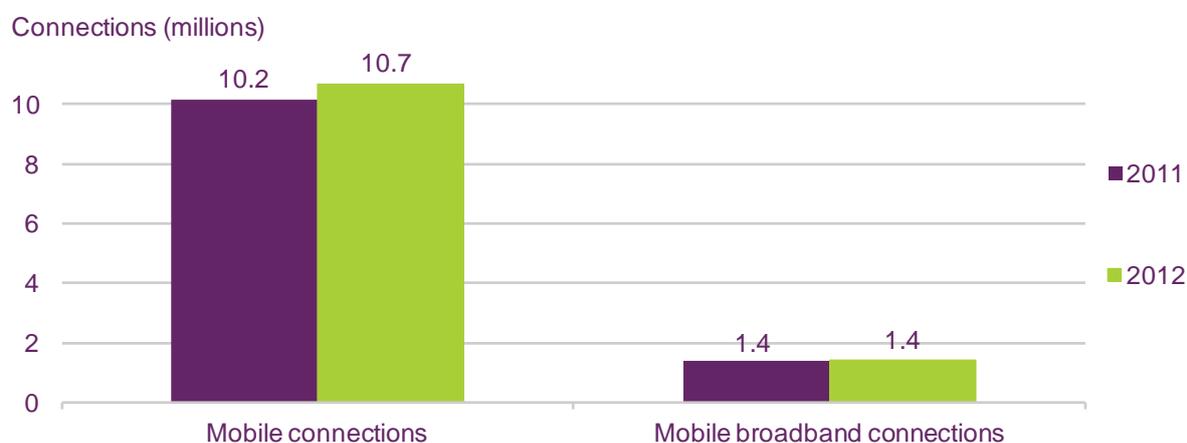
Figure 5.44 Business fixed voice and fixed broadband connections: 2007-2012



Source: Ofcom / operators

Notes: Fixed broadband includes FTTx and PSTN lines includes lines classed as 'other'

Figure 5.45 Business mobile and mobile broadband connections: 2011 and 2012

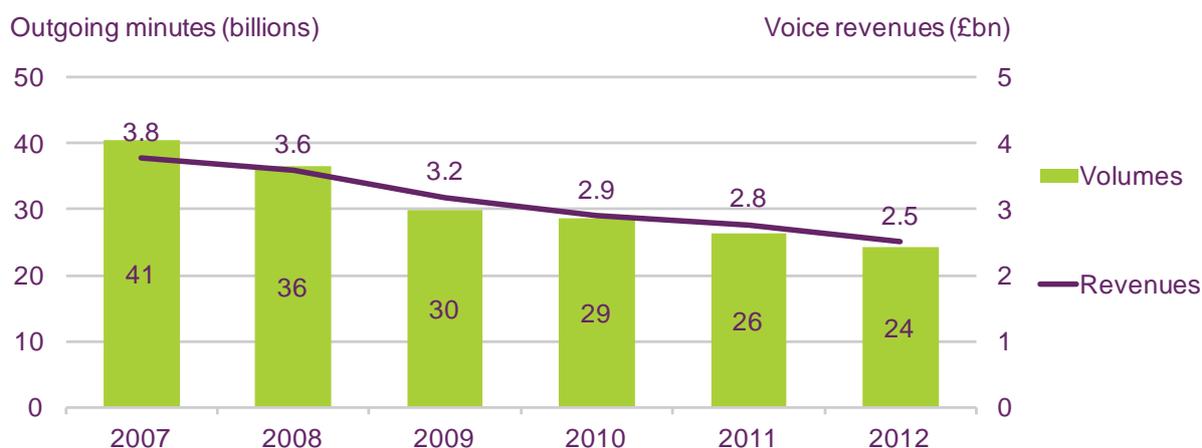


Source: Ofcom / operators. Mobile broadband excludes smartphone data use.

Business fixed voice volume and revenue continued to decline

The volume of fixed voice calls made by businesses fell by 7.8% to 24.2 billion minutes in 2012. Business fixed calls comprised 24% of total fixed calls by volume in 2012, with the remainder being residential calls. The decrease in business volume was larger than the decrease in the number of business PSTN lines, indicating a lower volume of calls per business PSTN line (371 minutes per month in 2012 compared with 379 minutes per month in 2011 and 545 minutes per month in 2007). Business fixed voice revenue fell at a faster rate than call volumes in 2012, down by 9.6% to £2.5bn, indicating falling average call revenues per minute. The decrease in residential voice revenue was much smaller during the year, down by 0.6% to £6.0bn.

Figure 5.46 Business fixed voice volume and revenue: 2007-2012



Source: Ofcom / operators

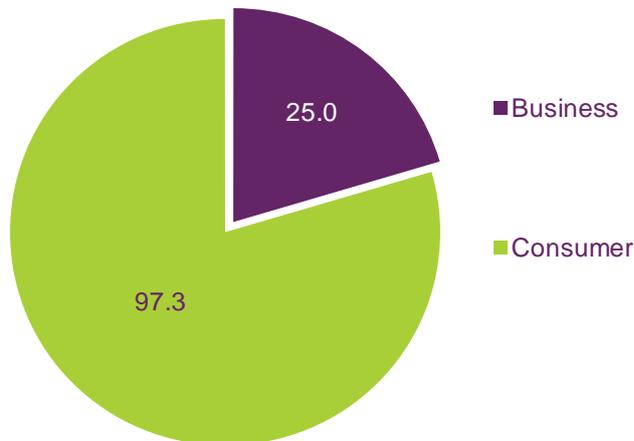
Businesses made a larger volume of calls from mobile phones than fixed phones

Businesses are prolific users of mobile voice services, making 25.0 billion minutes of outgoing mobile calls in 2012. This was higher than the 24.2 billion minutes of outgoing fixed voice calls made by businesses in 2012, meaning that mobile voice calls accounted for 50.9% of total outgoing business voice calls during the year. Average outgoing voice call volumes per mobile subscription were higher among business users (195 minutes per month) than among residential users (113 minutes per month) in 2012, and in total, businesses originated 20% of outgoing mobile call minutes during the year (Figure 5.47).

Higher average use among business mobile users may be because businesses tend to provide mobile phones only to employees who are expected to be regular users, whereas consumers may own a mobile phone even if their average use is low. Furthermore, use of some alternatives to voice calls, such as text messaging, instant messaging and social networking sites, is likely to be lower among business users.

Figure 5.47 Mobile voice call volume, by consumer and business: 2012

Outgoing minutes (billions)



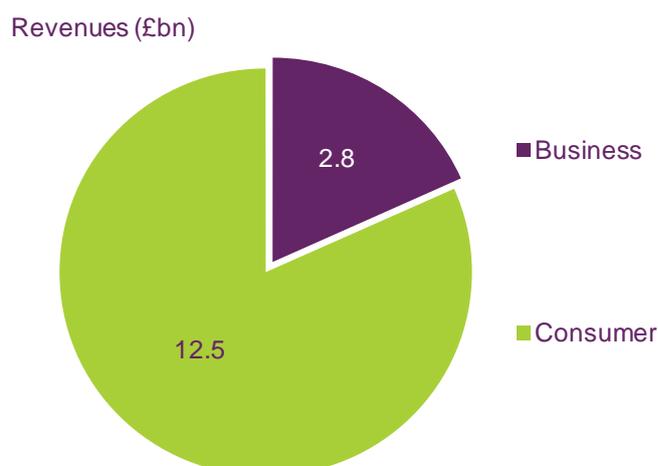
Source: Ofcom / operators.

Business mobile retail revenue was nearly £3bn in 2012

Although business subscribers represented 13% of the total number of mobile subscribers in 2012, they accounted for 18% of operators' mobile retail revenue: £2.8bn. Average revenue per subscriber was £21.90 per month for business subscribers, more than 50% higher than the £14.48 per month average for residential users. Business subscribers are likely to spend more per subscriber because:

- they have higher average use than residential subscribers;
- they may consume a greater quantity of data per subscriber, because of their use of mobile applications and downloading files;
- some business subscribers might not be as price-sensitive as residential subscribers, as they are not individually responsible for the costs of the call;
- basic handsets are likely to be insufficient for workers who need mobile data access, so subscription charges are likely to be higher;
- business subscribers may require mobile services that consumer subscribers do not, such as mobile enterprise applications; and
- business subscribers may travel abroad more often than residential users, and therefore spend more on roaming calls and data.

Figure 5.48 Mobile retail revenue, by consumer and business: 2012



Source: Ofcom / operators. Contains estimates for some operators.

Web hosting lifted corporate data services revenue in 2012

Data provided to Ofcom by IDC show that revenues from corporate data services (i.e. spend on services that connect business sites to each other and to the internet) increased by £50m to £3.5bn in 2012. This increase was largely as a result of a £65m increase in web-hosting revenues, as total revenues from the four remaining services included in the data (Ethernet, IP VPN, digital leased lines and Frame Relay/ATM) decreased by £15m during the year. Frame Relay¹¹⁵ and ATM¹¹⁶ revenues have been in decline for many years because of the migration of businesses to newer services, particularly IP VPNs¹¹⁷ and Ethernet¹¹⁸.

Revenues from these services are additional to the SME fixed broadband revenue recorded elsewhere in this report, and are related to connectivity revenues only (i.e. they exclude any revenues from managed services).

¹¹⁵ Frame relay is a packet-switched technology that was widely used to carry data across networks that connect business sites. It was commonly used over ISDN networks, but has for many years been in declining use.

¹¹⁶ ATM, or Asynchronous Transfer Mode, is a cell-based switching technique that was designed for high-throughput real-time wide area networks connecting business sites and has for many years been in declining use.

¹¹⁷ An IP VPN is a service using internet protocol provided on a public telecommunications network that provides businesses with secure inter-site connections emulating those of a private network.

¹¹⁸ Ethernet was invented as a protocol for carrying data across local area networks, such as those used within office buildings. However, Ethernet is now also used to carry data between business sites and for connections to the internet because it is easier to change the bandwidth required, easier to manage and often cheaper than older technologies like frame relay and ATM, and it is this that we refer to as Ethernet in this report.

Figure 5.49 Corporate data services connections and revenue: 2007-2012



Source: IDC

Note: Data services means the following services for connections and revenue: Ethernet, IP VPN, digital leased lines¹¹⁹, frame relay/ATM and, for revenue only, web hosting.

¹¹⁹ A leased line is a data connection provided by multiple PSTN lines that is dedicated to a specific company.

5.3 The telecoms user

5.3.1 Introduction

In this section we consider the major trends in the use of residential telecoms services during the five years to 2012. The analysis in this section is based on a mixture of data provided to Ofcom by telecoms providers as part of its regular data collection programmes, Ofcom consumer research and data obtained from third-party suppliers.

The section is split into four main areas; the first provides an overview of the general trends in take-up and spend on fixed telephony services, while the second and third focus on developments in fixed voice and fixed broadband services. The final part looks at trends in the use of mobile voice and data services on mobile handsets and the use of data-only mobile broadband services.

Key findings

The key findings of this section are as follows:

- **Average household spend on telecoms services increased by 1.7% in 2012.** Average monthly household spend on telecoms services was £80.24 in 2012, £1.31 more than it had been in 2011. This represented 3.8% of average total household spend in 2012, a 0.1 percentage point increase compared to 2011.
- **The average cost of a fixed-originated call minute was 5% higher than that of a mobile call minute in 2012.** The average cost of a fixed voice call was 9.1 pence per minute in 2012, 5.0% higher than the 8.6 pence per minute average for a mobile-originated voice call.
- **People in the UK spent an average of over one day a month using the internet over a mobile network or a fixed internet connection PC in 2012.** Most of this use (23.9 hours out of the total of 26.1 hours per month) was use over a fixed internet connection, with the remaining 2.2 hours being access over a mobile network.
- **The cost of a basket of residential fixed voice services increased in 2012.** The price of a basket of residential fixed telephony services (based on average use in 2012) increased by 0.5% in real terms in 2012. This was the first increase after a prolonged period during which residential fixed prices had fallen.
- **Over a quarter of DE homes were mobile-only in Q1 2013.** Ofcom research suggests that while the proportion of homes that were mobile-only averaged 15%, it was significantly higher among those aged 16 to 34 (at just under 30%) and households in the DE socio-economic group (26%).
- **The average price of a residential fixed broadband connection increased in 2012.** The average monthly price of a residential fixed broadband connection was £16.35 in 2012, an 18p per month (1.1%) increase in real terms compared to 2011. Growth in the take-up of superfast broadband services contributed to this increase.
- **Data-only mobile broadband use halved in the year to Q1 2013.** The proportion of adults who used a dedicated mobile broadband connection was just 5% in Q1 2013, eight percentage points less than a year previously and less than a third of the peak take-up level of 17% (recorded in Q1 2011). Increasing smartphone take-up is a key factor behind this decline.

Average household spend on telecoms services increased by 1.7% in 2012

Average monthly household spend on telecoms services (which is calculated by dividing residential telecoms service revenues by the number of UK households) was £80.25 in 2012, £1.31 (1.7%) more than it had been in 2011 in real terms (i.e. adjusted for inflation). This represented 3.8% of average total household spend in 2012, a 0.1 percentage point increase compared to 2011 (Figure 5.50). Average household spend on fixed voice services fell by 3.8% to £21.61 during the year, as a result of declining average call volumes per line, despite an increase in the number of residential fixed lines and increasing fixed voice prices (see Figure 5.58).

Average household spend on mobile services increased by 3.4% to £46.73, largely as a result of the growing use of mobile data services (driven by increasing smartphone take-up), while average spend on fixed internet services increased by 5.8% to £11.91 as a result of growth in the number of residential broadband connections and the migration to superfast broadband services (those with a headline speed of 30Mbit/s or higher) which are generally more expensive than lower-speed current generation services (see Figure 5.12).

Figure 5.50 Average household spend on telecoms services



Source: Ofcom / operators / ONS

Notes: Includes estimates where Ofcom does not receive data from operators; adjusted to RPI; includes VAT.

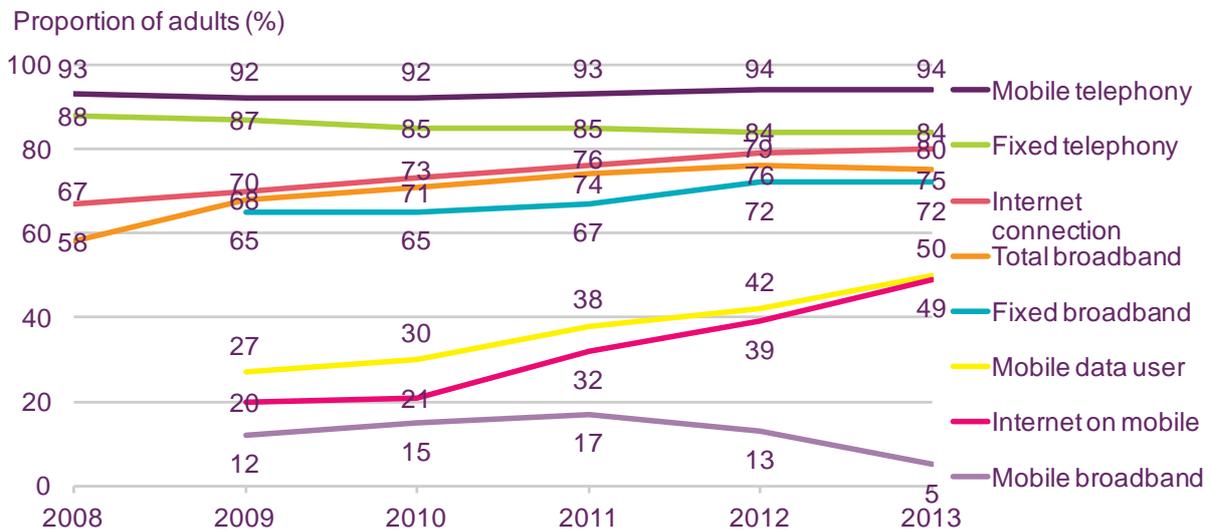
Use of data-only mobile broadband connections fell, as internet via a mobile handset increased

There was little change in the household take-up of most telecoms services in the year to Q1 2013 (Figure 5.51). Take-up of fixed and mobile telephony services were both unchanged, at 84% and 94% respectively during the year, while there was also no change in the proportion of homes which had an internet connection of any description (80%), a broadband connection of any description (75%) or a fixed broadband connection (72%).

The most notable changes in consumer use of telecoms services in the year to Q1 2013 related to mobile data services. First, the proportion of homes which accessed the internet or web-based services over a mobile network increased by eight percentage points to 50% during the year, the main driver of this being a ten percentage point increase (to 49%) in the proportion of homes accessing the internet using a mobile handset, largely as a result of increasing smartphone take-up. Second, over the same period, the proportion of homes that

accessed the internet using a dedicated data-only mobile broadband connection fell by more than half, from 13% to 5%, and it is likely that consumers are substituting a mobile broadband connection on a PC/laptop with internet access on a smartphone.

Figure 5.51 Household penetration of key telecoms technologies



Source: Ofcom research, data as at Q1 of each year

Base: All adults aged 16+

QE1: Does your household have a PC or laptop computer? / QE2: Do you or does anyone in your household have access to the internet/worldwide web at home (via any device, e.g. PC, mobile phone etc)? / QE6: Which of these methods does your household use to connect to the internet at home?

The proportion of homes that were mobile-only was unchanged at 15% in the year to Q1 2013

There was no change in household use of voice telephony services in the year to Q1 2013, when the majority of UK homes (79%) used both fixed and mobile telephony services (Figure 5.52). As had been the case in Q1 2012, 15% of homes were mobile-only, and 5% solely used a landline.

Figure 5.52 Household penetration of fixed and mobile telephony



Source: Ofcom research, data as at Q1 of each year

Base: All adults aged 16+

The average cost of a fixed-originated call minute was 5% higher than that of a mobile call minute in 2012

We are able to calculate the average cost of a voice call minute by dividing total line rental and out-of-bundle call revenues by total voice call minutes. This calculation shows that the average cost of a fixed-originated voice call was 9.1 pence per minute in 2012, 5.0% higher than the 8.6 pence average for a mobile voice call minute (Figure 5.53). By way of comparison, five years previously the average cost of a mobile-originated voice call minute had been 10.9 pence, 44% higher than the 7.6 pence-per-minute average for a fixed-originated voice call.

During the year the average cost of a fixed voice call minute increased by 0.5 pence per minute (5.7%), and while there is evidence that fixed telephony prices are increasing (Figure 5.58 shows that the cost of a basket of residential fixed voice services increased in real terms in 2012), this is partly due to average voice call volumes per line having fallen at a faster rate than the number of lines (these rates of decline were 7.6% and 0.3% respectively during the year). As a result, a larger proportion of the line rental cost is apportioned to each call minute, and the average call pence-per-minute cost is higher.

While this analysis shows that the average price of a mobile call voice minute increased by 0.1 pence per minute (1.6%) in 2012, it is likely that increasing smartphone take-up is distorting the analysis, as this will result in mobile contract monthly fees increasingly including a bundled data allowance (in addition to SMS/MMS messages). As it is not possible to split the SMS/MMS and data element of the line rental fee from that relating to voice calls, this analysis uses all of the monthly line rental fee, which means that the average mobile pence-per-minute will be overstated.

Figure 5.53 Comparison of average fixed and mobile voice call charges



Source: Ofcom / operators

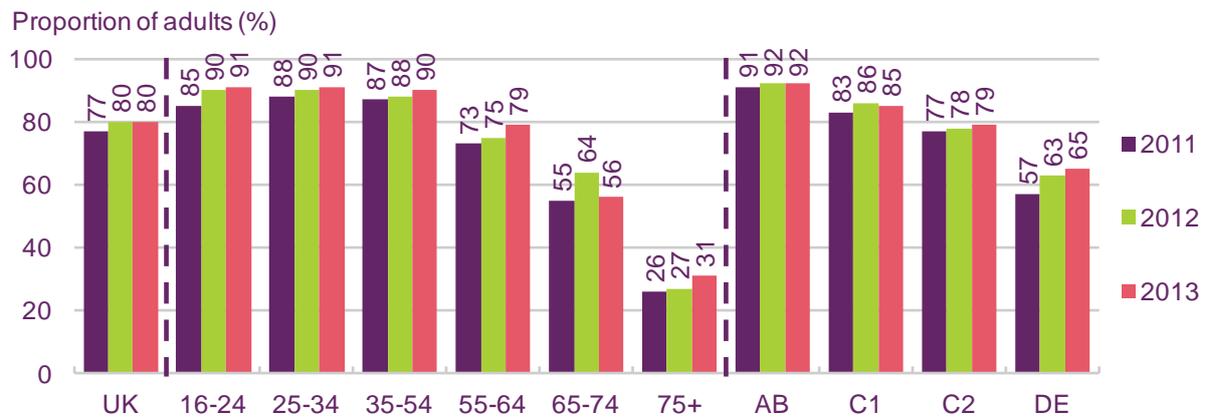
Note: Includes estimates where Ofcom does not receive data from operators; fixed calculation excludes non-geographic voice calls

Household internet take-up was unchanged at 80% in the year to Q1 2013

As mentioned previously, the proportion of homes which had an internet connection of any description was unchanged in the year to Q1 2013, at 80% (Figure 5.54). As was the case in previous years, the proportion of homes with an internet connection was highest among those aged 16 to 54, and those in the AB socio-economic group, and was lower among older age groups and less affluent households. The only groups among which there was a change in household internet take-up in the year to Q1 2013 were the 55 to 64 and 75+ age groups (where in both cases take-up increased by four percentage points, to 79% and 31%

respectively) and among the 65 to 74 age group (where take-up fell by eight percentage points to 56%, although it is likely that this is a statistical anomaly).

Figure 5.54 Home internet access, by age and socio-economic group



Source: Ofcom research, data as at Q1 2013

Base: All adults aged 16+

QE2: Do you or does anyone in your household have access to the internet/ worldwide web at home?

The proportion of homes using mobile broadband fell in the year to Q1 2013

Overall household broadband take-up was unchanged in the year to Q1 2013, when 75% of homes had either a fixed broadband connection or a data-only mobile broadband service (Figure 5.57). The five percentage point difference between this and the 80% internet take-up shown in Figure 5.54 is largely a result of homes that solely access the internet on a mobile handset, although it also includes a dwindling number of narrowband users.

The proportion of homes that used mobile broadband services fell by eight percentage points to 5% during the year, mainly as a result of increasing smartphone take-up, although this fall did not have a statistically significant effect on overall broadband take-up, as most of the homes which stopped using mobile broadband had been using it as a complement to a fixed broadband service. As a result, the fall in the proportion of homes which used both fixed and mobile broadband services (from 8% to 2% of homes) was offset by a similar six percentage point increase in the proportion of homes that solely used a fixed broadband connection.

Figure 5.55 Household penetration of fixed and mobile broadband

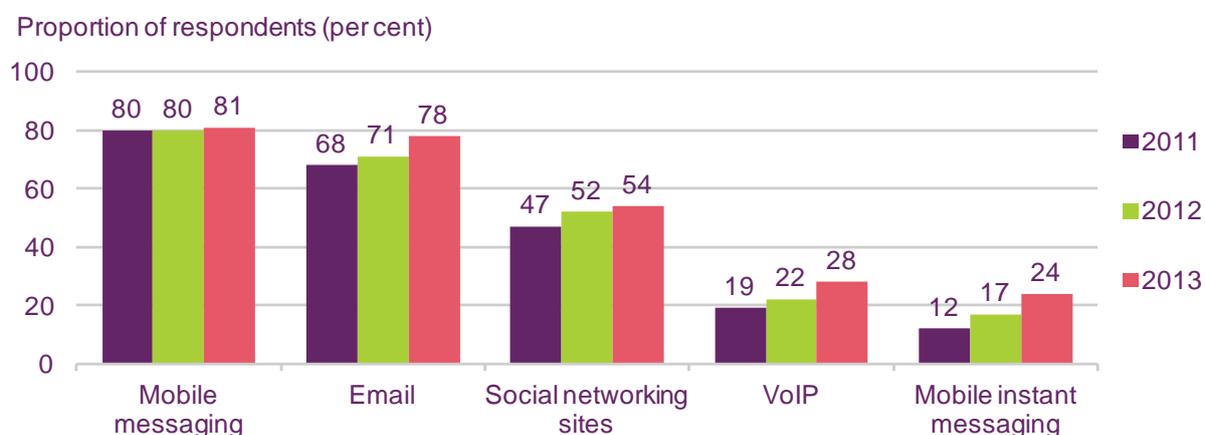


Source: Ofcom research, data as at Q1 of each year
Base: All adults aged 16+

Use of email, social networking sites, VoIP and instant messaging are all increasing

The changing use of communications services is shown in Figure 5.56 below. This shows that while the percentage of respondents who said that they currently used traditional mobile messaging services (i.e. SMS and MMS) was unchanged between Q1 2011 and Q1 2013, the proportion who said that they used email, social networking sites and instant messaging services all increased. Use of VoIP services also increased during the year, and by Q1 2013 over a quarter of respondents said that they were VoIP users.

Figure 5.56 Use of methods of communication other than traditional voice telephony



Source: Ofcom research, data as at Q1 of each year

Base: All adults 16+

Note: VoIP data for 2013 are not comparable to those from previous years they have been compiled on a different basis.

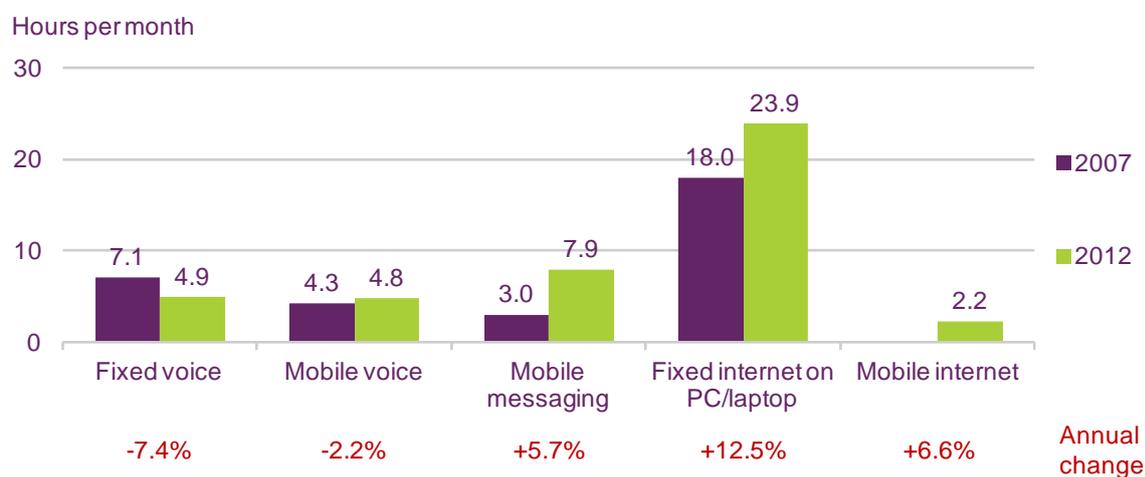
QD28A Which, if any, of the following activities, other than making and receiving voice calls, do you use your mobile for? QE5A Which, if any, of these do you use the Internet for? QE30 Have you or anyone in your household ever used one of these services to make voice calls using the Internet at home? (answers used relate to current use).

On average, people in the UK spent over one day a month using the internet in 2012

People in the UK spent an average of over one day a month using the internet on a PC/laptop over a fixed internet connection or over a mobile data network in 2012 (Figure 5.57). Most of this use (23.9 hours out of the total of 26.1 hours per month) was use over a fixed internet connection, with the remaining 2.2 hours being access over a mobile data network. During 2012, the average time spent using a mobile data connection increased by eight minutes per day (6.6%), while fixed internet use with a PC/laptop increased by 159 minutes per month (12.5%).

Average fixed voice call use per person continued to decline in 2012, when it fell by 24 minutes per month (7.4%) to 4.9 hours per month, and there was also a 2.2% decline in average time spent on mobile calls, which fell to 4.8 hours per month in 2012. The average time spent on mobile messaging increased by 5.7% to 7.9 hours per month in 2012; this increase was a result of growth in the use of instant messaging services, as average time spend using SMS and MMS services was unchanged at 6.7 hours per month during the year.

Figure 5.57 Average monthly time per person spent using telecoms services



Source: Ofcom / operators / comScore MMX, UK, home and work panel, January to December 2007 and January to December 2012 / US Census Bureau / comScore GSMA MMM, UK, browser access only, on-network, December 2011 and December 2012

Note: Includes estimates where Ofcom does not receive data from operators; voice calls include incoming and outgoing calls; fixed voice call figures include NTS voice calls; mobile messaging figures assume an average of two minutes per SMS and MMS message and one minute per IM message; Ofcom's estimates of fixed and mobile internet use per person are based on comScore data and exclude time spent watching online video and listening to streamed music; Mobile internet use includes on-network traffic only, and excludes time spent using internet connected mobile applications.

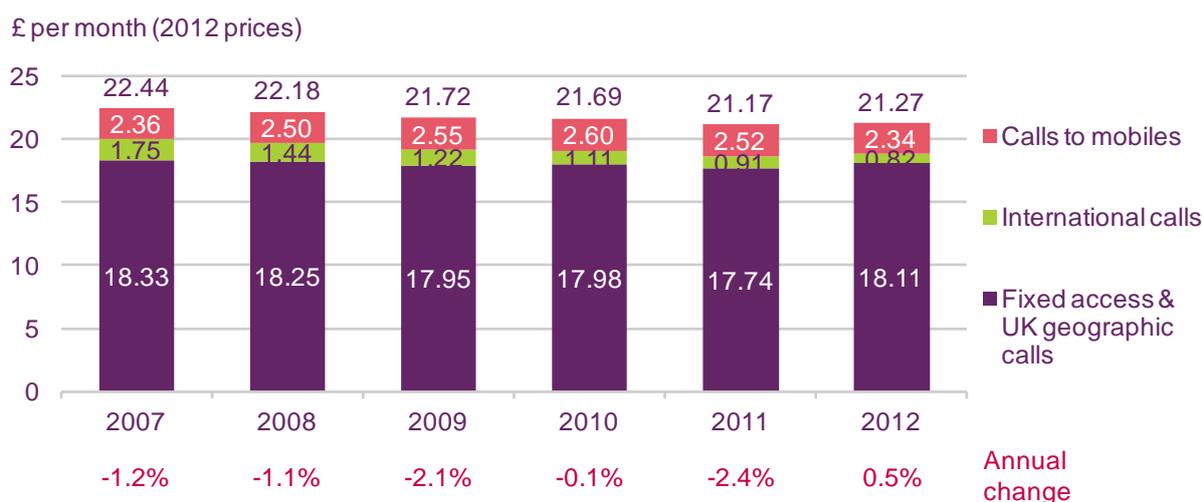
5.3.2 Fixed voice services

The cost of a basket of residential fixed voice services increased in 2012

The average price of a basket of residential fixed telephony services (consisting of a fixed line and average numbers of UK geographic, calls to mobiles, and international call minutes at 2012 levels) increased in real terms (i.e. adjusted for inflation) in 2012 (Figure 5.58). Although this increase was relatively small (at ten pence per month or 0.5%), it was the first increase after a prolonged period during which residential fixed prices fell (most recently as a result of the introduction of full LLU, which enabled providers such as Sky and TalkTalk to gain significant residential fixed-line market share).

The increase in the price of the basket of services in 2012 was as a result of an increase in the line rental and UK geographic calls element of the basket, as the cost of out-of-bundle international and calls to mobiles fell during the year. The main drivers behind this increase are likely to be residential line rental price increases (which were introduced by some of the largest residential telecoms providers in 2012), along with increasing take-up of ‘bolt-on’ call bundles that include additional or discounted calls to UK fixed numbers, mobile phones and/or international destinations for an increased monthly charge. Increasing use of call bolt-ons will result in an increase in fixed access revenues and a fall in out-of-bundle charges for these call types.

Figure 5.58 Real price of a basket of residential fixed voice services



Source: Ofcom / operators

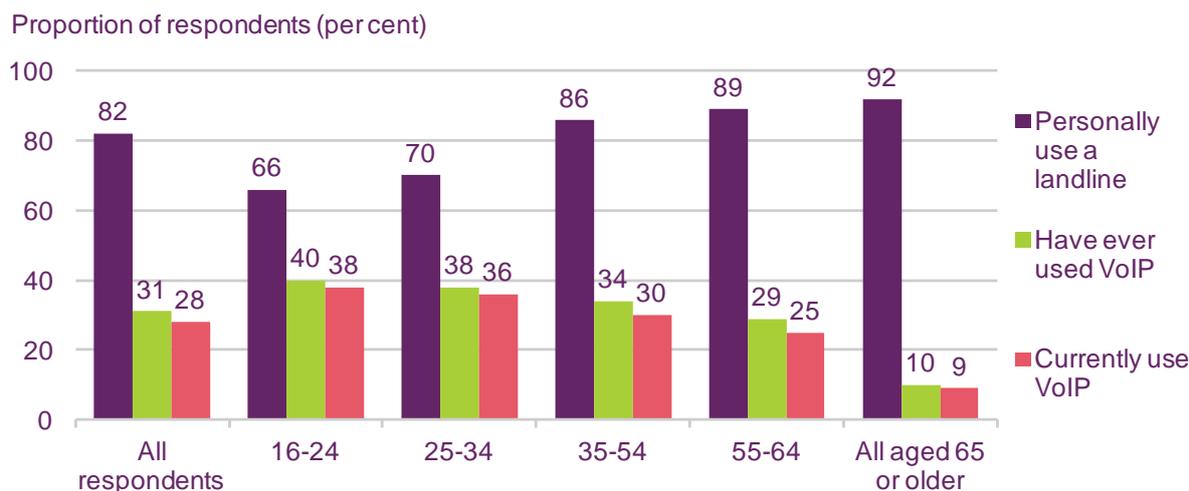
Note: Includes estimates where Ofcom does not receive data from operators; excludes non-geographic voice calls; adjusted for RPI; includes VAT

Almost three in ten UK adults used VoIP services in Q1 2013

Ofcom research suggests that 82% of adults used a landline at home in Q1 2013, in line with the proportion who said that they had a home landline (84%). Although the two percentage point difference between these figures is not statistically significant, it is likely that there are some adults who either live in a house with a landline that they do not use, but which is used by someone else, or who have a landline that is not used for calls, but has been installed in order to be able to access fixed broadband services (more than half of UK premises need to have a fixed line in order to be able to access fixed broadband services; Virgin Media’s cable broadband offering is the only UK fixed broadband service that does not require a fixed line of any description).

As is shown in Figure 5.59, the proportion of adults who use a landline increases with age, and, in Q1 2013, ranged from 66% of those aged 16 to 24 to 92% among those aged 65 and older (it is likely that the main reason for this difference is higher levels of mobile use among younger consumers). The opposite was true of voice over Internet Protocol (VoIP), where use was higher among the younger age groups: while 28% of adults claimed that they currently used VoIP in Q1 2013, this proportion was highest among those aged 16 to 24 and 25 to 34, at 38% and 36% respectively, and fell to just 9% among those aged 65 and older. The main drivers of these disparities in VoIP use are likely to be the lower levels of broadband take-up and technical expertise among older consumers.

Figure 5.59 Use of fixed voice communication services in the home



Source: Ofcom research, data as at Q1 2013

Base: All adults aged 16+.

Average fixed call volumes per person fell by a third in the five years to 2012

On average, people in the UK made 135 minutes of outgoing fixed-line originated calls per month in 2012 (Figure 5.60). This was 12 minutes per month (8.2%) less than in 2011, and 68 minutes per month (33.3%) less than the 203 minutes recorded in 2007. The rate of decline in average use in 2012 was slightly less than the 10.1% drop recorded in 2011, and while the majority of the average 2012 fall (eight minutes per month) was due to falling call minutes to UK geographic numbers, the fastest rate of decline was for outgoing international calls, which fell by over 10% during the year to eight minutes per month.

As average mobile use per person has been falling since 2010 (as is shown in Figure 5.76), it is likely that the main driver of falling fixed voice calls per person is the increasing use of VoIP and non-voice forms of communication such as email, SMS, and instant messaging (IM), including the services provided on social networking sites.

Figure 5.60 Average monthly outbound fixed call volumes per person



Source: Ofcom / operators

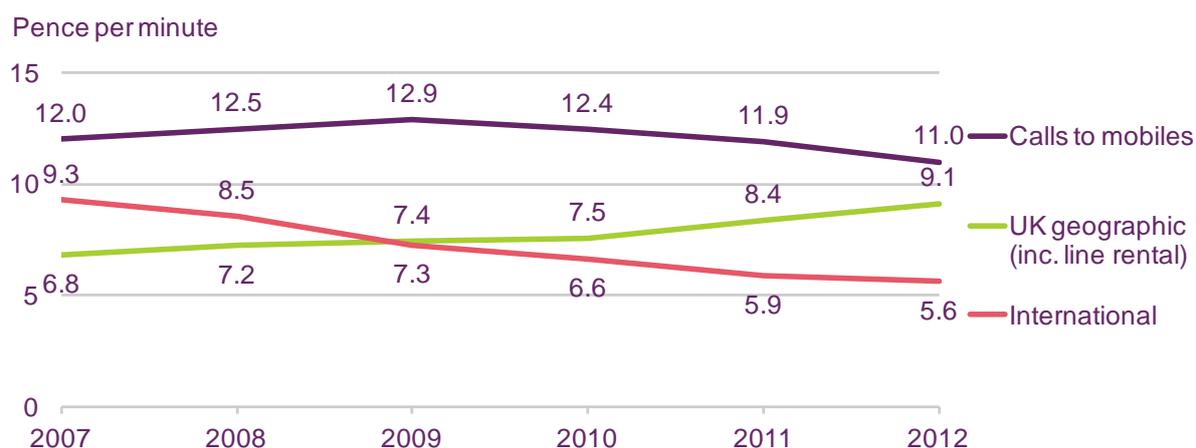
Note: Includes estimates where Ofcom does not receive data from operators

The cost of calling mobile numbers from fixed lines continued to fall in 2012

As shown previously in Figure 5.53, the average cost of a fixed-originated voice call minute (excluding voice calls to non-geographic numbers) increased by 5.7% in 2012. Figure 5.61 shows average pence-per-minute call charges by call type, which shows that the average costs of fixed-originated outgoing international calls, and calls to mobiles, fell by 4.1% and 7.6% respectively during the year. Conversely, the price of an average call to a UK geographic number (the calculation of which includes the monthly line rental fee) increased by 8.9% during the year, and it was this that was the driver of increasing overall fixed voice call revenues per minute, largely because these calls account for over 80% of the total volumes of all three call types.

Falling international, and calls to mobile, prices can partly be attributed to the increased availability of tariffs that bundle, or offer reduced prices for, these calls, although additionally, falling international call prices also reflect declining prices, as fixed providers seek to compete with low-cost international mobile and VoIP-based services. Falling calls to mobile average charges can partly be attributed to declining mobile call termination rates.

Figure 5.61 Average revenue per fixed-voice call minute



Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators; UK geographic calculation includes line rental revenues; excludes VAT

The availability of standalone fixed voice services is becoming more limited as providers push bundles

Two of the UK's largest residential fixed telephony providers, TalkTalk and Virgin Media, stopped selling standalone fixed telephony services in the year to March 2013 (Figure 5.62). In general, providers are now more focused on selling bundles rather than standalone services, as these generate more revenue, and customers who buy bundles are less likely to switch provider.

BT and Sky, which continued to offer standalone residential landline services in the year to March 2013, both increased the prices of their landline services during this period. BT increased its monthly line rental fee from £14.60 to £15.45 and increased the prices of its call bundles (although its line rental pre-payment annual fee was unchanged),¹²⁰ while Sky increased its basic line rental fee by 18%, from £12.25 to £14.50, an increase that was deemed to be sufficiently large that its line rental customers were given the option to cancel their subscription without charge.

¹²⁰ The price of BT's *Line Rental Saver* line rental pre-payment plan increased from £129 to £141 a year on 1 June 2013.

Figure 5.62 Standalone fixed-line tariff analysis

| Provider | 2012 | | | 2013 | | |
|--------------|--------------------|--|---------------------|--------------------|--------------------------------|--------------------|
| | With weekend calls | With evening and weekend calls | With anytime calls | With weekend calls | With evening and weekend calls | With anytime calls |
| BT | £14.60 (£10.75) | £17.75 (£13.90) | £19.50 (£15.65) | £15.45 (10.75) | £18.75 (£14.05) | £20.60 (£15.90) |
| Sky | - | £12.25 (£9.95) | £17.25 (£14.95) | £14.50 | - | £19.50 |
| TalkTalk | - | £17.41 ¹ (£13.11) ¹ | £20.01 (£15.71) | - | - | - |
| Virgin Media | - | £18.50 ² | £21.90 ² | - | - | - |

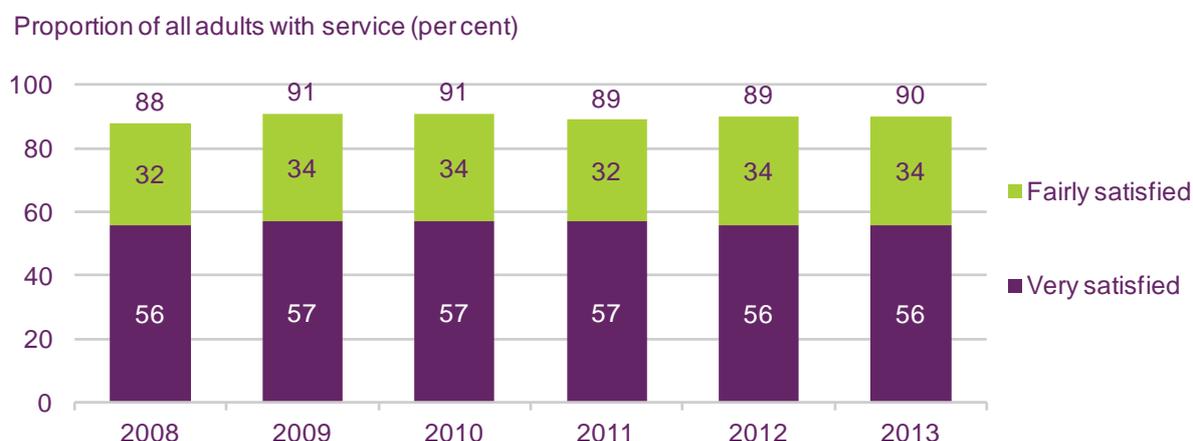
Source: Pure Pricing UK Broadband Pricing Briefing, March 2012 and March 2013

Note: All tariffs exclude activation charges and promotional discounts and include VAT; all tariffs are the lowest price available; contract lengths vary; figures in brackets require pre-payment of twelve month's line rental; ¹ Also includes anytime calls to TalkTalk landlines; ² Also includes calls to Virgin Mobiles

Ninety per cent of landline users were satisfied with their service in Q1 2013

Satisfaction with fixed-line services was unchanged in the year to Q1 2013, when 90% of adults with a fixed line were either 'very' or 'fairly' satisfied with their service (Figure 5.63). Over half of those with a landline (56%) said they were 'very satisfied' with their service in Q1 2013, while over a third (34%) were 'fairly satisfied'. Both of these figures were in line with responses in Q1 2012.

Figure 5.63 Residential consumer satisfaction with fixed-line services



Source: Ofcom research, data as at Q1 of each year

Base: All adults aged 16+ with a fixed line phone

Note: Only includes those who expressed an opinion

5.3.3 Fixed broadband services

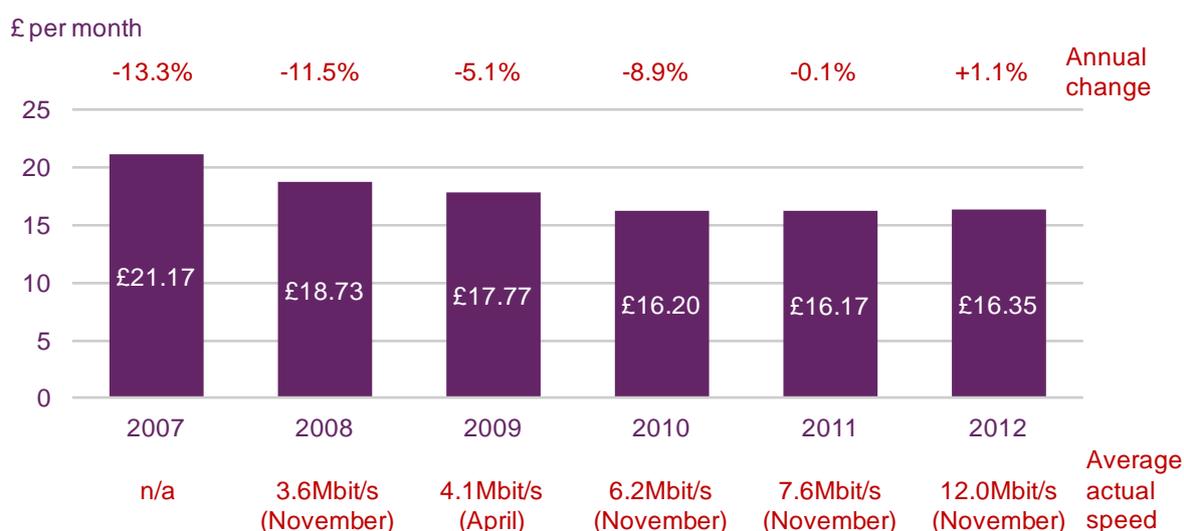
The average price of a fixed broadband connection increased in real terms in 2012

The average price of a residential fixed broadband connection was £16.35 a month in 2012, an 18 pence-per-month (1.1%) increase in real terms (i.e. adjusted for inflation) compared to 2011 (Figure 5.64). This was the first time that that average residential broadband prices had increased since Ofcom started collecting fixed broadband revenue data in 2004, and it is likely to be the first time this has happened since these services launched in 2000.

A key driver of increasing average prices in 2012 was the migration of consumers onto superfast broadband services (i.e. those with a headline speed of 30Mbit/s or higher), which are usually more expensive than slower, current-generation services. Data provided to Ofcom by ISPs show that the proportion of residential UK broadband connections that were superfast more than doubled, from 5% to 13%, in the year to November 2012, while Ofcom research shows that the average actual download speed of a UK residential fixed broadband connection increased by 4.5Mbit/s (59%) to 12.0Mbit/s over the same period.¹²¹

More information on the availability, take-up and use of superfast broadband services can be found in Sections 5.1.3 and 5.1.4 of this report.

Figure 5.64 Real average monthly price of a residential fixed broadband connection



Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators; includes VAT; adjusted for RPI

Few major UK ISPs continue to offer standalone fixed broadband services

Figure 5.65 shows the lowest-cost fixed broadband services offered by UK's largest ISPs in March 2013. Other than Virgin Media's cable-based service, these were all ADSL2+ services, which are typically marketed as offering speeds of 'up to' 14Mbit/s or 'up to' 16Mbit/s (the lowest-cost Virgin Media cable service offers a headline speed of 'up to' 30Mbit/s).

¹²¹ <http://stakeholders.ofcom.org.uk/market-data-research/other/telecoms-research/broadband-speeds/broadband-speeds-nov2012/>

As is the case with fixed voice services, there has been a move away from offering standalone fixed broadband services among UK ISPs, and in March 2013 only three of the UK's six largest fixed broadband providers offered standalone services: Virgin Media (which offers the only UK fixed broadband service that does not require a fixed voice line of any description, O2 (whose fixed telecoms business has recently been acquired by Sky) and Plusnet (which is wholly owned by BT). All of the ISPs listed below, other than O2 and Virgin Media, also offer superfast broadband services over the BT Openreach fibre network and, as is noted in Section 5.1.3, these services typically command a premium of between £5 and £10 a month above the price of a comparable ADSL service.

Figure 5.65 Lowest-cost fixed broadband options from major ISPs

| Provider | Fixed broadband only | Fixed broadband and calls | Fixed broadband and fixed line | Fixed broadband and mobile | Fixed broadband and pay-TV | Fixed broadband, fixed line and mobile | Fixed broadband, fixed line and pay-TV |
|---------------------------|----------------------|---------------------------|--------------------------------|----------------------------|----------------------------|---|--|
| BT | - | - | £28.45 (£23.75) | - | - | - | £33.45 (£28.75) |
| EE | - | - | £24.00 | - | - | £19.00 ² | - |
| O2 | £13.50 ¹ | - | £26.50 | £8.50 ^{1,2} | - | £21.50 ² | - |
| Plusnet | - | £5.99 ¹ | £19.98 (£16.48) | - | - | - | - |
| Sky | - | - | £24.50 (£19.95) | - | - | - | £36.00 (£31.45) |
| TalkTalk | - | - | £21.45 (£16.00) | - | - | - | £30.45 (£25.00) |
| Virgin Media ³ | £22.50 | - | £29.49 (£24.50) | £22.50 ² | £36.50 | £29.49 ² (£24.50 ²) | £32.99 (£28.00) |

Source: Pure Pricing UK Broadband Pricing Briefing, March 2012 and March 2013

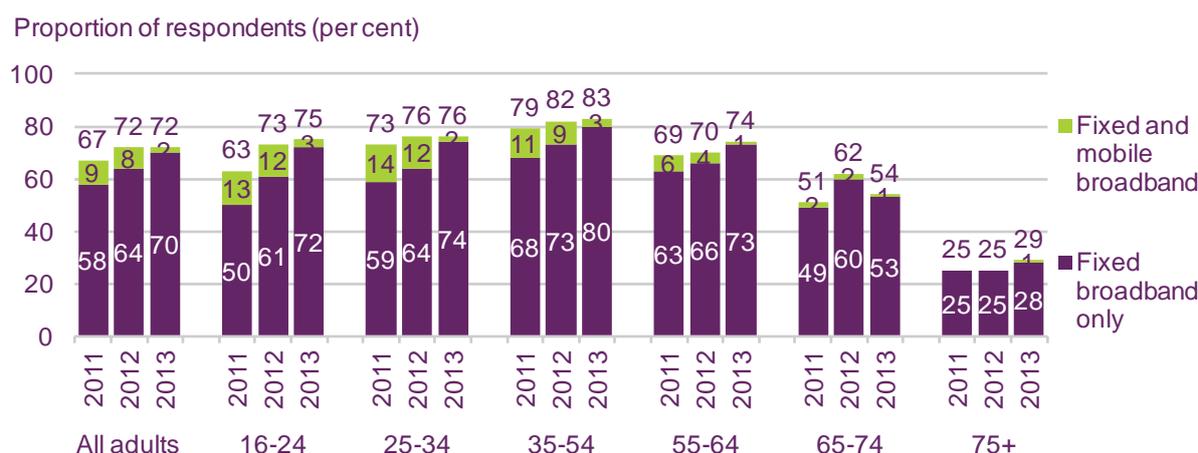
Note: All tariffs exclude activation charges and promotional discounts and include VAT; all tariffs are the lowest price available; contract lengths vary; allowances for fixed-line and mobile calls, plus availability of TV channels included within packages may differ by operator and option; figures in brackets require pre-payment of twelve months' line rental; ¹ Also requires BT fixed-line rental at £15.45 a month/£129 pre-payment for a year; ² plus cost of mobile tariff; ³ discounts available on Virgin Mobile tariffs.

Fixed broadband take-up is highest among those aged 35 to 54

As mentioned previously, overall fixed broadband take-up was unchanged at 72% in the year to Q1 2013. While overall take-up across all age groups was unchanged over this period, there were some differences by age group, with take-up increasing by four percentage points among those aged 55 to 64, and 75 and older (to 74% and 29% respectively), and falling by eight percentage points to 54% among those aged 65 to 74¹²² (Figure 5.66). Fixed broadband take-up was lowest among the older age groups in Q1 2013, and ranged from 83% among those aged 35 to 54 to 29% among those aged 75 and older.

¹²² It is likely that the fall in fixed broadband take-up recorded among the 65 to 74 age group is a statistical anomaly.

Figure 5.66 Take-up of fixed broadband, by age

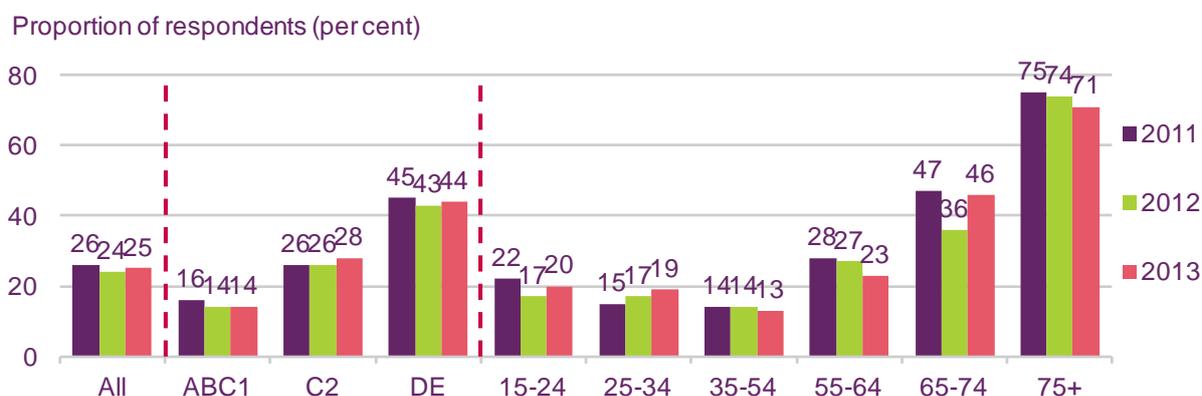


Source: Ofcom research, data as at Q1 of each year
Base: All adults aged 16+

A quarter of UK homes do not have a broadband connection of any description

Ofcom research shows that 25% of UK homes did not have a broadband connection of any description in Q1 2013, this proportion being unchanged from a year previously (Figure 5.67). The proportion of respondents who lived in a home without either a fixed or a mobile connection varied by age, ranging from 13% among those aged 35 to 54 to 71% among those aged 75 and older, and it was also higher among the less affluent socio-economic groups (44% of DE homes did not have a broadband connection, compared to just 14% of ABC1 homes).

Figure 5.67 Non-ownership of home broadband, by socio-economic group and age



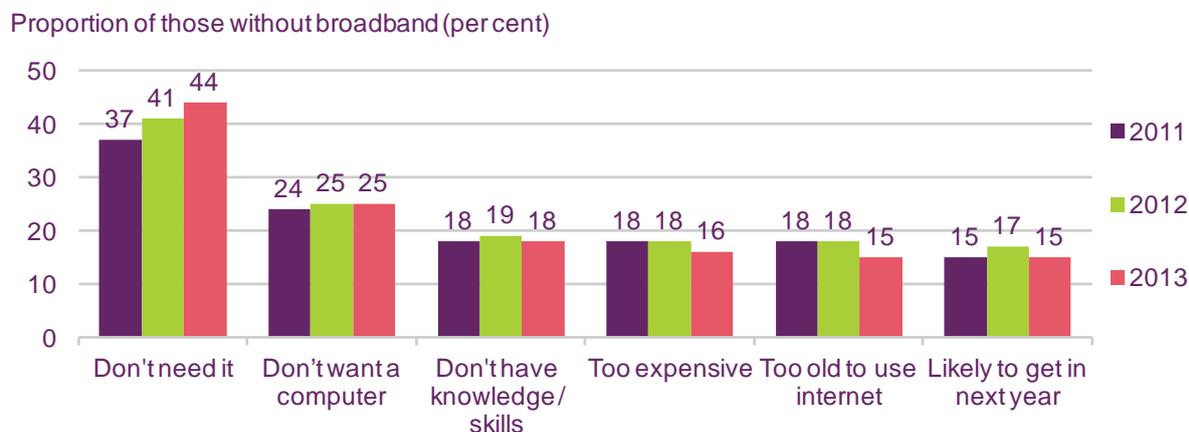
Source: Ofcom research, data as at Q1 2013
Base: All adults 16+

Almost half of those without a broadband connection do not think they need it

Ofcom research suggests that just under half the adults who did not have a home broadband connection in Q1 2013 (44%) did not think they needed one (Figure 5.68). This was the most frequently-cited reason given for not having home broadband, and the proportion of those without broadband who give this reason has increased over the past few years, partly because people giving this reason are less likely to have purchased broadband services in the intervening period.

The second most frequently-cited reason for not having a home broadband connection (which was given by a quarter of those without broadband) was that the respondent did not want to get a PC, while 18% didn't think they had the knowledge or skills to use the internet, 16% considered that it was too expensive and 15% said they were too old to use it. But 15% said they planned to purchase home broadband within the next 12 months.

Figure 5.68 Main reasons for not having a home broadband connection



Source: Ofcom research, data as at Q1 of each year

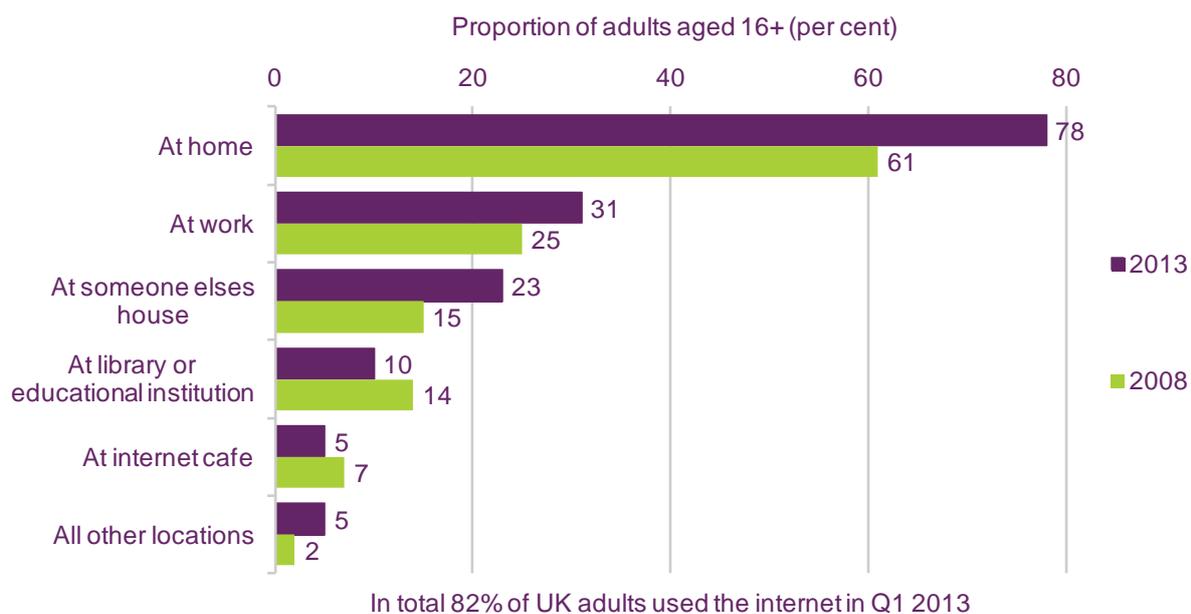
Base: All adults without the internet aged 16+

Note: 2% of people without the internet in Q1 2013 did not know what their main reason was or provided an 'other' reason.

Home and work are the places where people most frequently access the internet

Almost four in five internet users (78%) said that they accessed the internet at home in Q1 2013, 31% said they accessed it at work and 23% said they did so at someone else's house (Figure 5.69). All three of these proportions have increased in the five years to Q1 2013, with the largest increase being a 17 percentage point increase in the proportion accessing it at home, mainly reflecting growth in household internet take-up (which has increased from 67% to 80% over the period). This increase in home internet take-up also contributed to a decline in the proportion of people who went to an internet cafe or library/educational institution to access the internet.

Figure 5.69 Location of internet access



Source: Ofcom research, data as at Q1 of each year
 Base: All internet users aged 16+

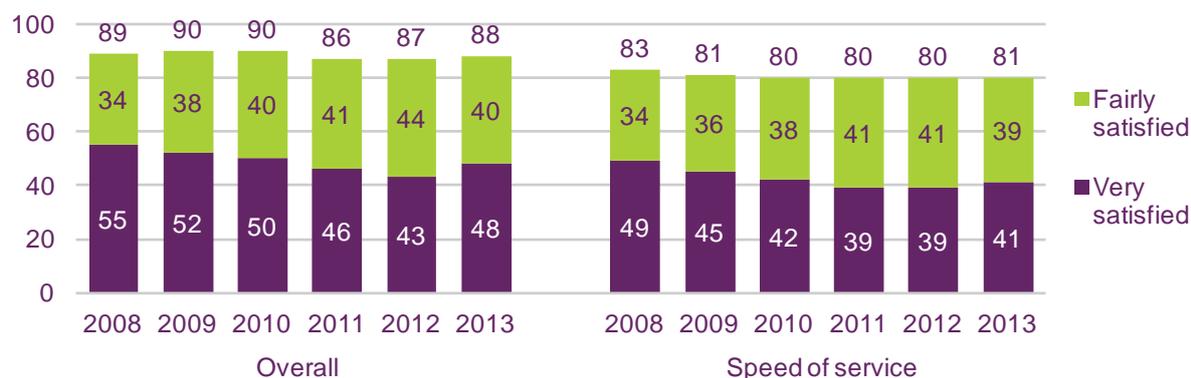
More than four in five fixed broadband users are satisfied with the speed of their service

Ofcom research conducted in Q1 2013 suggested that overall satisfaction with fixed broadband services had remained high, with 88% of broadband users being 'very' or 'fairly' satisfied with their service (Figure 5.70). This overall level of satisfaction with fixed broadband services is unchanged compared to Q1 2012, although the proportion who were 'fairly' rather than 'very' satisfied fell slightly during the year. Levels of satisfaction with fixed broadband speeds were lower, with 81% being 'very' or 'fairly' satisfied with the speed of their fixed broadband service, in line with the previous year's figure, despite average connection speeds having increased significantly over the period.

Separate analysis of levels of satisfaction among superfast broadband users can be found in Section 5.1.3 of this report.

Figure 5.70 Satisfaction with aspects of fixed broadband service

Proportion of all adults with service (per cent)



Source: Ofcom research, data as at Q1 of each year

Base: All adults aged 16+ with a fixed broadband connection

Note: Includes only those who expressed an opinion

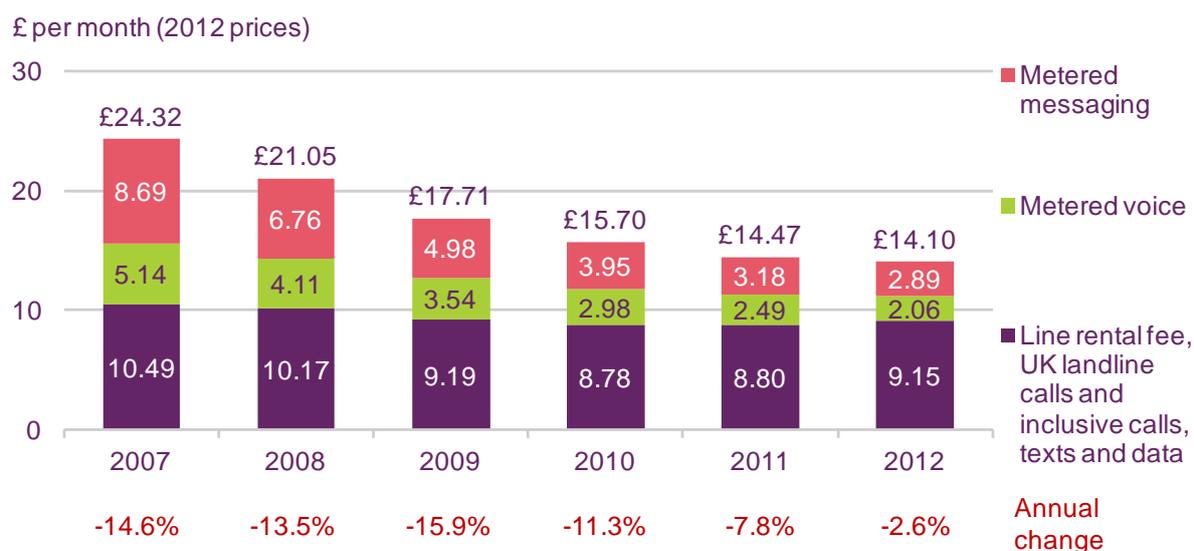
5.3.4 Mobile voice and data services

The rate of decline in mobile prices has slowed significantly

Figure 5.71 shows how the price of a basket of mobile telephony services (which is based on average use of UK geographic, on-net mobile, off-net mobile, outgoing international calls and SMS messages at 2012 levels) changed in the five years to 2012. Although this bundle of services does not explicitly include any mobile data use (as Ofcom does not currently hold the information required to add this to the basket), it does include an element of mobile data as its calculation includes post-pay monthly rental revenues, which will include revenues relating to bundled mobile data services.

Our analysis indicates that the price of the basket of mobile services fell by 2.6% to £14.10 in 2012. During the year, the cost of the line rental and bundled voice, messaging and data services part of the basket increased by 4.0% to £9.15, partly as a result of increasing take-up of smartphones, which meant that a higher proportion of monthly contracts include a mobile data allowance. The cost of out-of-bundle voice calls and messaging both fell (by 17.4% and 9.3% respectively), reflecting the shift towards tariffs that include generous (and sometimes unlimited) call and message allowances.

Figure 5.71 Real price of a basket of mobile services



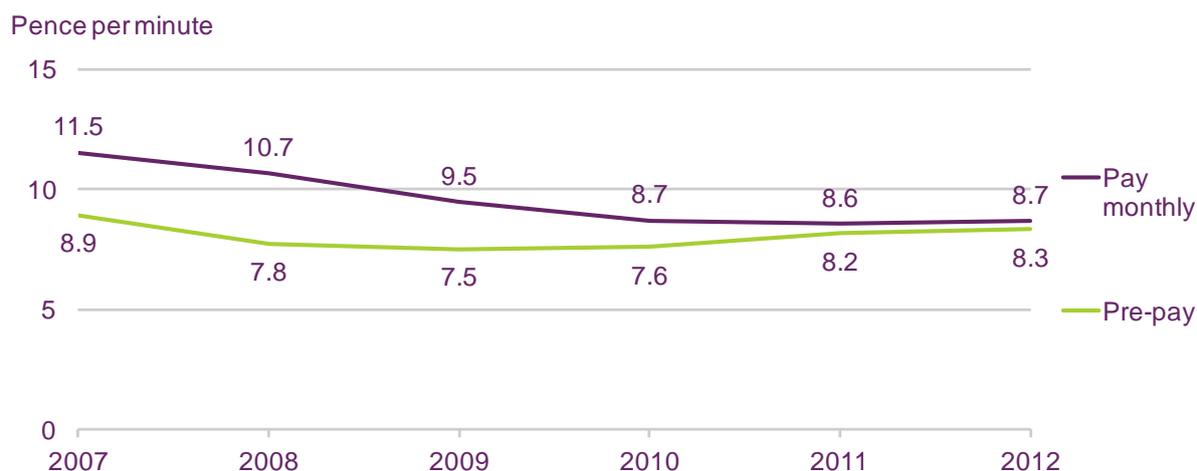
Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators; excludes non-geographic voice calls; adjusted for RPI; includes VAT

There was little difference between average pre-pay and post-pay pence-per-minute call charges in 2012

Data provided to Ofcom by the mobile network operators and MVNOs show that the average cost of a pay-monthly call minute remained slightly above that of a pre-pay call minute in 2012, at 8.7 pence per minute compared to 8.3 pence per minute for a pre-pay originated call (Figure 5.72). The average cost of an outgoing call increased for both pre-pay and post-pay customers in 2012, with the increase in that of pre-pay calls (0.2 pence per minute) being slightly higher than the 0.1 pence-per-minute increase for pay-monthly calls. It should be noted that these average call charges will be slightly overstated, as monthly mobile line rental payments and pre-pay top-ups often include bundled mobile messages and data, and the revenues relating to these services will be included in this calculation of average call charges.

Figure 5.72 Average per-minute mobile call charges, by customer type



Source: Ofcom / operators

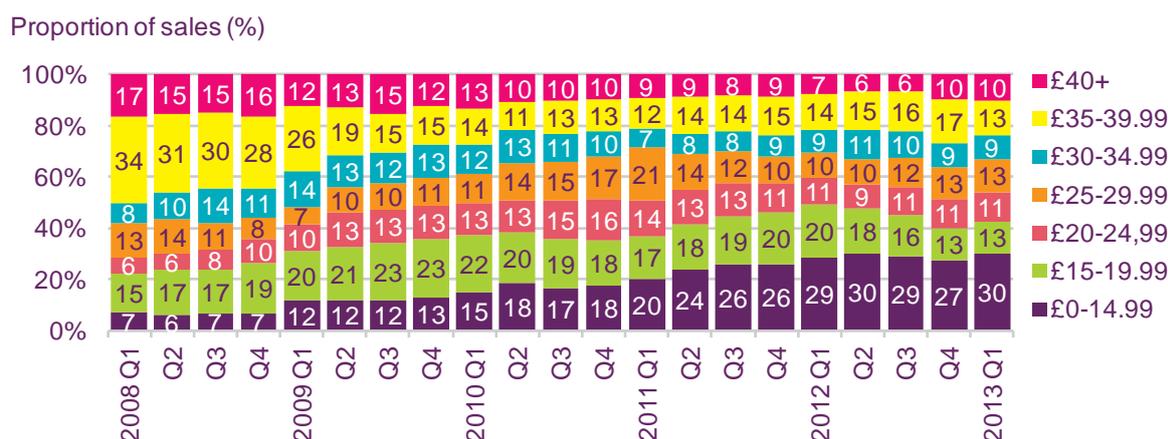
Note: Includes estimates where Ofcom does not receive data from operators; contract calculation includes rental element which will often include a number of inclusive messages and data allowance; calculations use actual minutes of use

Three in ten new mobile contracts in Q1 2013 had a monthly fee of £15 or less

GfK collects point-of-sale data from retailers, covering over 90% of new consumer mobile pay-monthly contract sales. This data show that 30% of new mobile post-pay contract sales (both including and excluding a handset) had a monthly fee of less than £15 in Q1 2013, an increase of one percentage point compared to Q1 2012, and twice the 15% figure recorded three years previously (Figure 5.73). In total, 54% of new sales were for contracts with a monthly rental fee of less than £25 in Q1 2013, up from 50% in Q1 2012, while over the same period the proportion with a monthly fee of £40 or more also increased, from 7% to 9%.

Over the past few years falling service prices, increasing average contract lengths and growing take-up of SIM-only services have all driven an increase in the availability and take-up of lower price monthly contracts, despite the upward pressure on average monthly mobile contract prices caused by increasing take-up of expensive smartphone handsets (which are often included in the price of monthly contracts) and the increasing demand for new services (particularly mobile data services).

Figure 5.73 Monthly line rental prices for new post-pay mobile connections



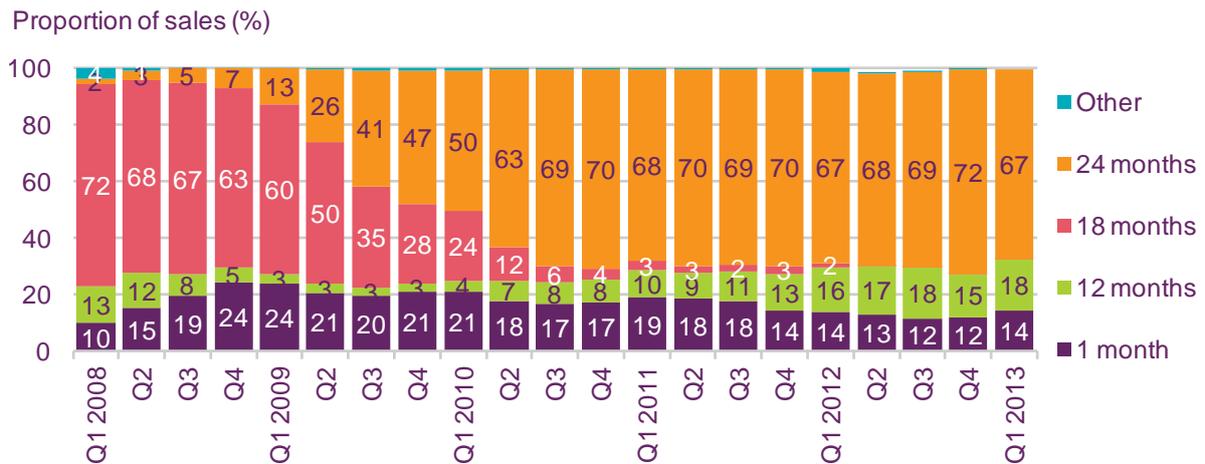
Source: GfK Retail and Technology UK Ltd, Contract Handset Acquisitions: price segments.
 Notes: England, Scotland and Wales only (excludes Northern Ireland); based on GfK's coverage of 94% of the consumer market; based on new post-pay connections; excludes contract renewals; only represents sales through consumer channels (i.e. most business connections are excluded)

Two-thirds of new mobile contracts had a minimum period of 24 months in Q1 2013

As is shown in Figure 5.74 below, GfK sales data show that two-thirds of new pay-monthly mobile sales in Q1 2013 had a minimum contract period of 24 months, unchanged from a year previously. At the same time, 18-month contracts, which had accounted for almost three-quarters of contract sales five years previously, had all but disappeared by Q1 2013, partly due to increasing smartphone take-up (as longer contracts enable consumers to spread the high upfront cost of the handset across more monthly payments, therefore keeping monthly rental fees down).

In total, 32% of new mobile contracts had a minimum term of 12 months or less in Q1 2013, up two percentage points compared to Q1 2012. All of the 14% of new connections that were one-month contracts, and many of those with a 12-month minimum term, are likely to be SIM-only contracts, with which the user receives a new SIM to be used in a mobile handset that they already own. These have proved to be popular with consumers, as SIM-only contracts are usually much cheaper than those which include a new handset.

Figure 5.74 Contract lengths for new post-pay mobile connections



Source: GfK Retail and Technology UK Ltd, Contract Length Sales of new Mobile Connections
 Notes: England, Scotland and Wales only (excludes Northern Ireland); based on GfK's coverage of 94% of the consumer market; based on new post-pay connections; excludes contract renewals; only represents sales through consumer channels (i.e. most business connections are excluded)

Over a quarter of DE homes were mobile-only in Q1 2013

Ofcom research suggests that there were significant differences by age and socio-economic group in Q1 2013 in the proportions of homes that solely use mobile phones to fulfil their voice telephony requirements (Figure 5.75). While the proportion of homes that were mobile-only averaged 15% across the UK as a whole, it was significantly higher among younger and less affluent households, with just under three in ten respondents in the 16 to 24 and 25 to 34 age groups, and over a quarter of those in the DE socio-economic group (26%), saying that they lived in a mobile-only household. In comparison, just 3% of those aged 75 and older, and 11% of those in the ABC1 group, said that they lived in a mobile-only home.

The lower landline take-up among these consumers may be because they are reluctant to sign up to landline contracts with 12- or 18-month minimum terms, or have difficulty passing credit checks, or prefer to use pre-pay mobiles to enable them to control their telephony spend.

Figure 5.75 Household penetration of fixed and mobile telephony, by socio-economic group and age



Source: Ofcom research, data as at Q1 2013
Base: All adults aged 16+

Average outgoing mobile call minutes per person continued to fall in 2012

On average, people in the UK made 161 minutes of outgoing mobile calls per month in 2012, three minutes less than in 2011 (Figure 5.76). This was the second successive year in which average mobile-originated call volumes per person fell, and as the level of outgoing SMS messages per person was unchanged in 2012 (see Figure 5.78) it is likely that mobile users are substituting mobile voice calls with messaging via social networking sites, email and instant messaging services.

A key driver of the shift away from mobile voice services is increasing take-up of smartphones, as these devices allow consumers to communicate using alternatives to fixed voice calls (such as email, instant messaging and social networking sites) that are either not available, or not sufficiently convenient to use, to make them a mass-market proposition on more basic handsets. Increasing use of these services on a mobile handset is shown in Figure 5.82 of this report.

Figure 5.76 Average monthly outbound mobile voice minutes per person



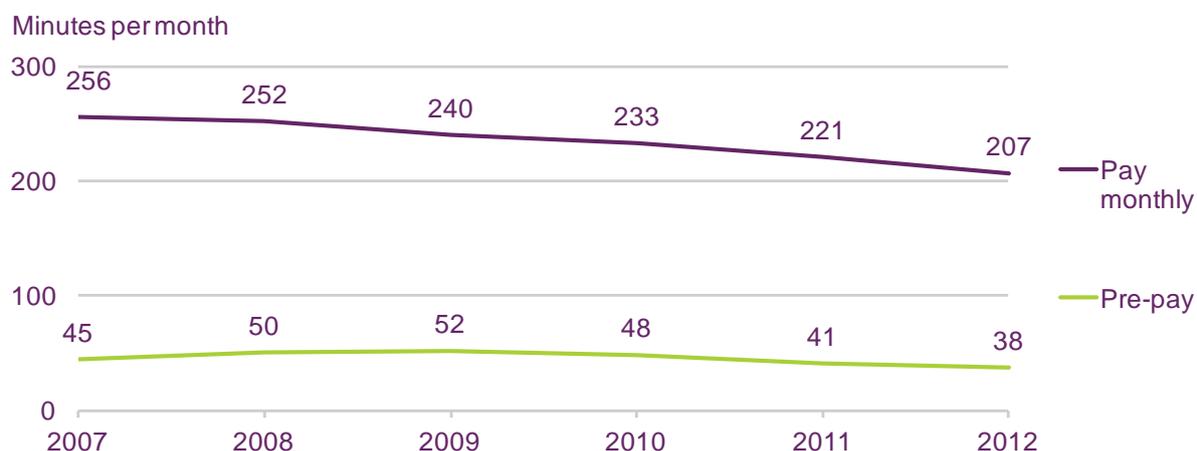
Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators; calculation excludes mobile broadband connections

Both pre-pay and post-pay contract mobile users are making fewer minutes of calls

Figure 5.77 shows that average outbound minutes per month fell, both for pay-monthly and pre-pay users, in 2012. The average decline in monthly minutes per connection was highest among pay-monthly users at 14 minutes per month (a 6.2% fall), compared to a 4-minute per month (9.1%) fall among pre-pay users.

Figure 5.77 Average monthly outbound mobile call minutes, by subscription type



Source: Ofcom / operators

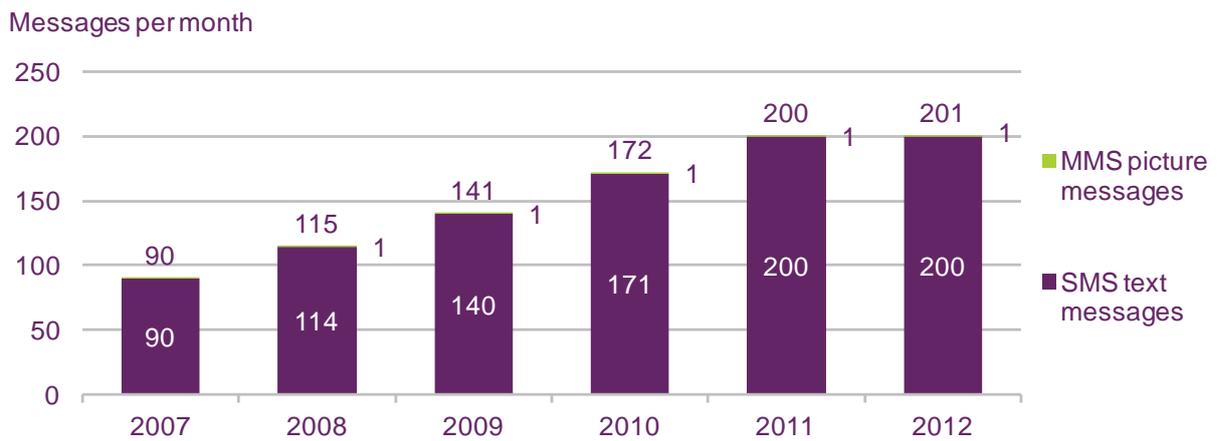
Note: Includes estimates where Ofcom does not receive data from operators; calculation excludes mobile broadband connections

Mobile messages per person: growth stalls, following years of rapid growth

Growth in the number of SMS and MMS picture messages sent per person slowed significantly in 2012, when an average of 201 were sent per person per month, an increase of just one message per month compared to 2011 (Figure 5.78). This 0.1% increase in the average number of mobile messages per person follows a sustained period of rapid increase in SMS and MMS use (in the four years prior to 2011, the average number of messages per person grew by more than 20% on average).

Slowing growth in the use of traditional mobile messaging services is related to increasing smartphone take-up, as these devices enable consumers to access a number of alternatives to SMS and MMS messaging while on the move. These include email, instant messaging services (such as *BlackBerry Messenger* and *WhatsApp*) and social networking sites, which enable users to post updates to all of their 'friends' or on a one-to-one basis. Some of these SMS/MMS alternatives are provided on an 'over-the-top' (OTT) basis, and use apps which utilise a smartphone's internet connection. Strategy Analytics data show that the total volume of mobile instant messages sent in the UK increased from 37 billion in 2011 to 57 billion in 2012, equivalent to an increase from 49 to 75 messages per person per month).

Figure 5.78 Average monthly mobile messaging volumes per person



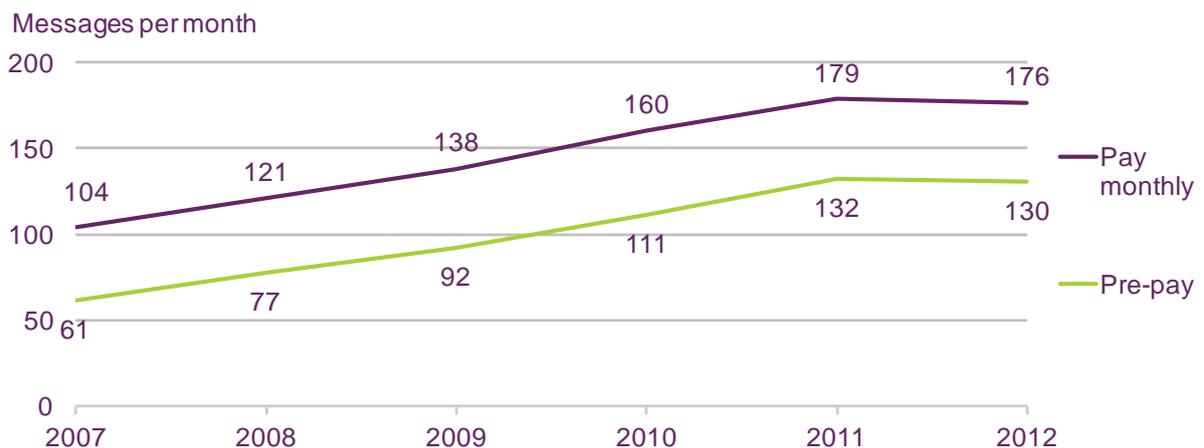
Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators.

Messaging levels fell among post-pay and pre-pay mobile users in 2012

Figure 5.79 shows that average total monthly SMS and MMS messages per mobile subscription fell by two messages per month, both for pay-monthly and for pre-pay subscribers in 2012, with the average percentage decline in use slightly greater among pre-pay customers (1.4%) than among pay-monthly customers (down 1.2%), because they have lower average use. This faster rate of decline among pre-pay users seems surprising, as increasing smartphone take-up is a major cause of falling SMS and MMS use, and as most smartphone users (84% in Q1 2013, according to Ofcom research) have monthly contracts. However, there has been a migration of pre-pay customers onto pay-monthly contracts (shown in Figure 5.42), and it is likely to be the higher-use pre-pay customers who are switching to pay-monthly services.

Figure 5.79 Average monthly mobile messaging volumes, by subscription type



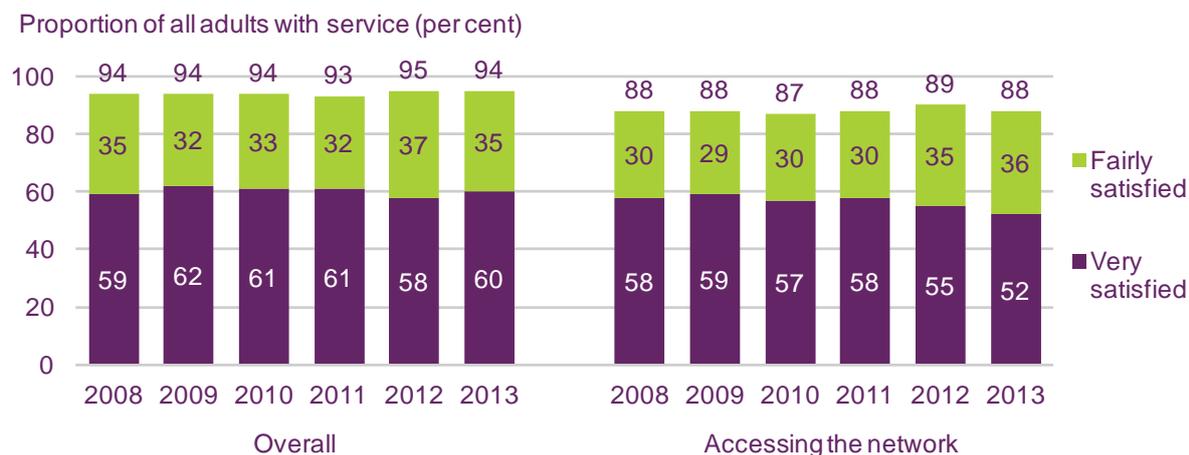
Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators.

Satisfaction with mobile services remains high

Ofcom research conducted in Q1 2013 suggests that levels of customer satisfaction with mobile services has remained high, with 94% of mobile users being 'very' or 'fairly' satisfied with their mobile service overall, and 88% being very' or 'fairly' satisfied with their ability to access their mobile network (Figure 5.80). These figures were both in line with those recorded over the past few years.

Figure 5.80 Satisfaction with aspects of mobile service



Source: Ofcom research

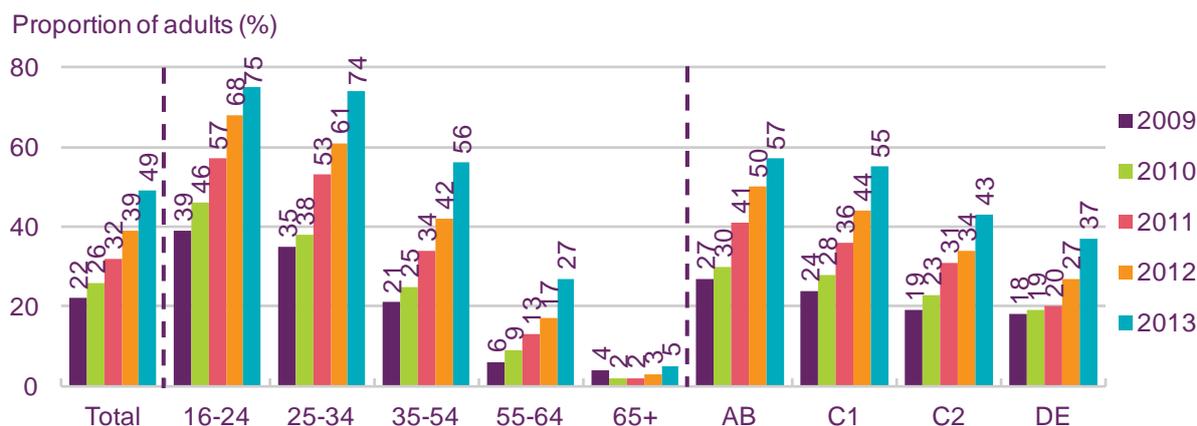
Base: All adults aged 16+ with a mobile phone

Note: Includes only those who expressed an opinion

Almost half of all adults accessed the internet using a mobile phone in Q1 2013

In Q1 2013, 49% of adults said that they used mobile data services, up from 39% a year previously (Figure 5.81). The proportion of people using mobile data services was highest among the younger age groups (around three-quarters of those aged 16 to 34 said that they accessed the internet using a mobile) and among the more affluent socio-economic groups (57% of AB respondents and 55% among the C1 group). The main driver of increasing internet use on mobile handsets is growth in smartphone take-up (as shown in section 4.1.2).

Figure 5.81 Use of data services on mobile phones, by age and socio-economic group



Source: Ofcom research, data as at Q1 of each year

Base: All adults 16+

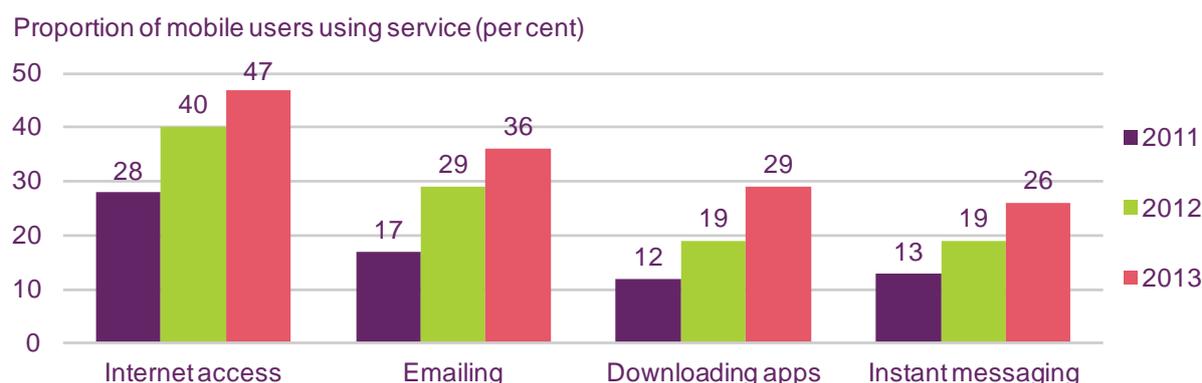
Note: Internet use includes accessing the internet, downloading and streaming content, connecting using WiFi and using VoIP

QD28A: Which if any, of the following activities, other than making and receiving voice calls, do you use your mobile for?

Over a third of people with a mobile use email on their handset, while over a quarter download apps or use IM

As is shown in Figure 5.82, the proportions of mobile users who use their handset to access websites, send and receive emails, use IM services or download apps all increased between Q1 2011 and Q1 2013. Almost half of all mobile users (47%) accessed web pages using their mobile in Q1 2013, up from 28% in Q1 2011, while the percentage of mobile users who used their handset to access emails, download apps and send and receive instant messages were 36%, 29% and 26% respectively in Q1 2013, all at least doubled since two years previously.

Figure 5.82 Use of mobile data services among mobile users



Source: Ofcom research, data as at Q1 of each year

Base: All mobile users aged 16+

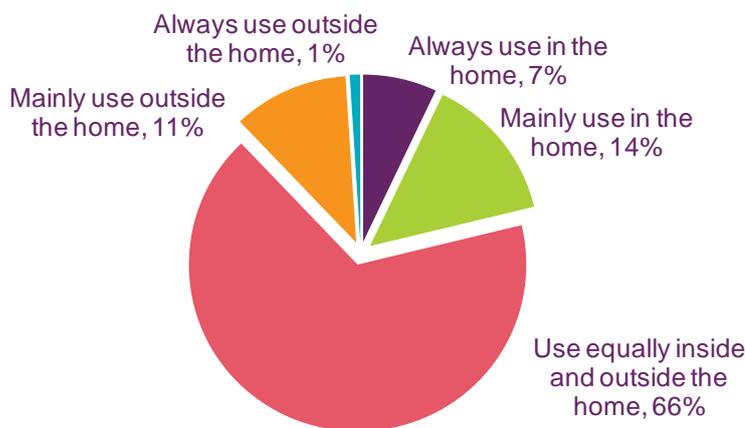
QD9A: Which if any of the following activities, other than making and receiving voice calls, do you use your mobile for?

Most people who use a mobile to access the internet do so equally inside and outside the home

Ofcom research suggests that almost two-thirds (66%) of people who use a mobile handset to access the internet did so equally inside and outside the home in Q1 2013 (Figure 5.83). Most of the remaining users (21% of the total) used their handset to access the internet either always or mainly in the home (with two thirds of these saying that they always used it to do so in the home). Conversely, a total of 12% said that they always or mainly used their mobile to access the internet outside the home, with just 1% saying that they always did so outside the home.

Figure 5.83 Location of internet access using a mobile handset

Proportion of mobile data users



Source: Ofcom research, data as at Q1 2013

Base: All adults aged 16+ who access the internet on their mobile phone

Data-only mobile broadband use halved in the year to Q1 2013

The proportion of adults who said that they used a dedicated mobile broadband connection (such as a 'dongle' on a PC/laptop or a tablet with a mobile data SIM) was just 5% in Q1 2013, eight percentage points less than a year previously, and less than a third of the peak take-up level of 17% (in Q1 2011). It is likely that increasing smartphone take-up is a key reason for the decline in mobile broadband use: smartphone users are able to use their handset to access the internet on the move (and in many cases make their data connections available to other devices using tethering). This means that there is less of a need for a dedicated mobile broadband connection, and some consumers are likely to have cancelled their mobile broadband service in order to reduce their telecoms spend.

Figure 5.84 Take-up of mobile broadband: by age, socio-economic group and housing type

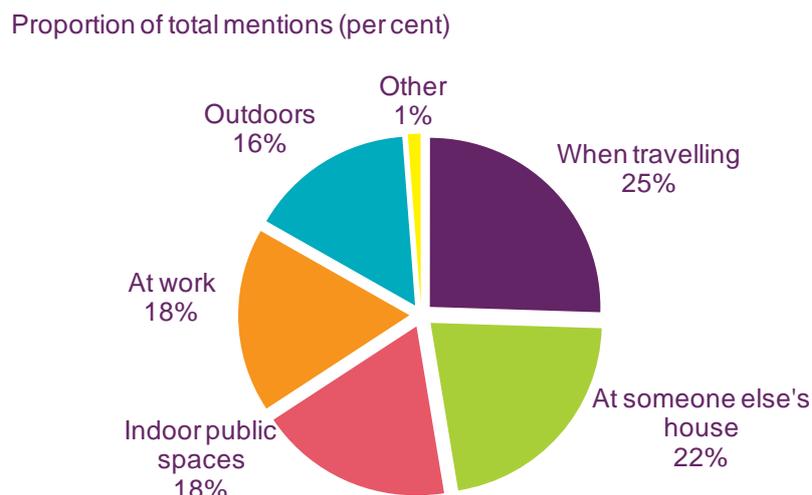


Source: Ofcom research, data as at Q1 2013
Base: All adults aged 16+

Only a small proportion of mobile broadband use takes place outdoors

Ofcom research, conducted in Q1 2013, asked mobile broadband users where they used their mobile broadband connection when not at home (Figure 5.85). More than half of the total responses (58%) were indoor locations, with 22% being 'at someone else's house', 18% at indoor public spaces (such as a library) and 18% at work. Conversely, just 16% of responses were 'outdoors', while a quarter were 'when travelling' (e.g. on a bus or a train), the largest proportion for any location.

Figure 5.85 Location of mobile broadband use outside the home



Source: Ofcom research, data as at Q1 2013
Base: All adults aged 16+ who use mobile broadband outside the home

4G mobile broadband services cost more than their 3G equivalents

Figure 5.86 summarises the lowest-cost pay-monthly dedicated mobile broadband services offered by a number of major UK mobile providers, and shows that there was little in the way of price changes for these services in the year to March 2013. Using the 4GEE brand, Everything Everywhere (EE) launched the UK's first 4G mobile services in late 2012 and, as can be seen in the table below, 4GEE's lowest-cost mobile broadband service is more expensive than similar 3G services, and also has a longer minimum contract term, at 24 months.

Figure 5.86 Lowest-cost standalone mobile broadband contracts, by provider

| Provider | | Monthly charge | Data allowance | Minimum contract length | Charges above allowance | WiFi hotspot use |
|----------------------|------|----------------|----------------|-------------------------|--------------------------|------------------|
| Vodafone | 2011 | £7.50 | 500MB | 1 month | £15/GB | 1GB |
| | 2012 | £3.00 | 250MB | 1 month | £2/250MB/day | Not included |
| | 2013 | £3.00 | 250MB | 1 month | £2/250MB/day | Not included |
| O2 | 2011 | £5.11 | 500MB | 1 month | 2.4p/MB | Unlimited |
| | 2012 | £10.21 | 1GB | 1 month | £5.11/500MB or £10.21/GB | Unlimited |
| | 2013 | £10.21 | 1GB | 1 month | £5.11/500MB or £10.21/GB | Unlimited |
| T-Mobile | 2011 | £10.00 | 1GB fair use | 18 months | n/a | Not included |
| | 2012 | £10.00 | 1GB fair use | 18 months | n/a | Not included |
| | 2013 | £7.50 | 1GB fair use | 1 month | £3/day | 3GB fair use |
| Orange | 2011 | £10.00 | 500MB | 1 month | 5.1p/MB | Not included |
| | 2012 | £10.00 | 500MB | 1 month | 5.1p/MB | Not included |
| | 2013 | £10.00 | 500MB | 1 month | £3/day | Not included |
| 3UK | 2011 | £7.89 | 1GB | 18 months | 10p/MB | Not included |
| | 2012 | £7.87 | 1GB | 18 months | 10.2p/MB | Not included |
| | 2013 | £7.87 | 1GB | 24 months | 10.2p/MB | Not included |
| 4GEE | 2013 | £12.99 | 1GB | 24 months | £6/500MB or £15/2GB | 3GB fair use |
| Virgin Mobile | 2011 | £10.21 | 1GB | 2 months | 1.46p/MB | Not included |
| | 2012 | £10.21 | 1GB | 2 months | 1.46p/MB | Not included |
| | 2013 | £10.21 | 1GB | 2 months | 1.46p/MB | Not included |

Source: Pure Pricing UK Broadband Pricing Briefings
 Note: Data as at March of each year