

**Ofcom**



# Communications Market Report 2011

## **5 Telecoms and networks**

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# 5.1 Key market developments in telecoms and networks

## 5.1.1 Industry metrics and summary

Figure 5.1 UK telecoms industry key statistics

	2005	2006	2007	2008	2009	2010
Operator-reported retail revenue (£bn)	29.6	30.7	31.7	32.0	31.1	30.8
Operator-reported wholesale revenue (£bn)	9.6	10.1	10.4	10.5	10.2	9.7
Total operator-reported revenue (£bn)	39.2	40.8	42.1	42.5	41.2	40.5
Fixed voice call minutes (billions)	163	155	150	141	132	129
Mobile voice call minutes (billions)	71	82	100	111	118	125
Average monthly household telecoms spend (£)	75.56	73.77	70.92	68.57	65.92	63.10
Fixed access and call revenues (£bn)	10.6	10.5	10.3	10.0	9.6	9.3
BT share of fixed call volumes (%)	50.7	46.9	46.5	43.7	40.1	36.5
Proportion of premises connected to an unbundled exchange (%)	39.6	66.6	80.2	84.2	84.5	89.0
Fixed lines (millions)	34.9	34.5	34.5	34.2	34.2	33.4
Mobile retail revenues (£bn)	13.1	13.9	15.0	15.4	14.9	15.1
Active mobile connections per 100 population	108.8	115.2	120.5	124.5	129.5	130.1
Active 3G mobile connections per 100 population	7.6	13.1	21.3	31.6	43.5	53.2
Fixed internet revenues (£bn)	2.1	2.5	2.8	3.2	3.2	3.3
Fixed internet connections per 100 population	27.4	28.1	29.8	30.1	31.0	32.9
Fixed broadband connections per 100 population	16.4	21.4	25.5	28.0	29.5	31.4

Source: Ofcom / operators

For the second successive year UK operator-reported retail telecoms revenues fell in 2010, although the rate of decline was lower than it had been in 2009. Revenues from fixed voice services and the volume of fixed calls continued to fall during the year as consumers increasingly use mobile telephony and other forms of communication such as email, VoIP and instant messaging as substitutes for landline calls.

Retail mobile revenues returned to growth in 2010, having fallen for the first time in 2009. The total volume of mobile-originated calls and number of active mobile connections both continued to increase, and by the end of the year there were more than 1.3 mobile connections per person in the UK. Growth in mobile data connections, including mobile broadband dongles and data-only SIM cards (for use in devices such as tablet computers) continued in 2010, and these accounted for 80% of the total growth in mobile connections during the year.

Revenues from fixed internet services fell for the first time in 2010, a reflection of the shift towards bundled broadband services, which are frequently provided using local loop unbundling (LLU). These services, which are often lower-cost alternatives, have proved popular in the current economic climate when many consumers are looking for ways to reduce their household spend.

The following two sections look at the telecoms sector from an industry and then from a consumer perspective. In this section we look at five key market developments that are shaping the future of the industry and changing consumer behaviour. These are:

- **The increasing availability of super-fast broadband services.** We look at the roll-out of fibre to the cabinet (FTTC) and cable super-fast broadband services, along with the pricing of these services and planned future service upgrades (page 246).
- **Purchasing and usage patterns among super-fast broadband users.** We look at the drivers behind super-fast broadband take-up, along with how users are taking advantage of these higher-speed connections (page 249).
- **The migration of customers from pre-pay (pay-as-you-go) to pay monthly mobile contracts.** The proportion of mobile connections on pay-monthly tariffs increased from 41% at the end of 2009 to 49% by the end of 2010. We look at the drivers of this shift in the market (page 259).
- **The explosion in mobile data volumes.** The increasing use of mobile broadband services via dongles and smartphones resulted in a 67% increase in data transferred over the UK's mobile networks in 2010. We look at the implications of this and how the scene is set for the launch of higher-capacity LTE networks in the next few years (page 264).
- **Recent trends in residential fixed telecoms pricing.** We look at whether the average prices paid by consumers are going up in real terms as a result of the seeming acceleration of residential fixed telephony price increases over the past few years (page 267).

### 5.1.2 Roll-out of super-fast broadband services

#### BT fibre-to-the-cabinet roll-out gains pace as Virgin Media upgrades to 100Mbit/s

The first large-scale super-fast broadband deployment in the UK was by Virgin Media, which started upgrading its cable network to offer an 'up to' 50Mbit/s service using DOCSIS 3.0 technology at the end of 2008 and this service was available across its entire cable network (around half of UK homes) by mid-2009. In 2010 Virgin Media started to upgrade its network to support an 'up to' 100Mbit/s service, which is currently available to around four million<sup>45</sup> UK homes and the roll-out of which should be completed by mid-2012, while it has also trialled an 'up to' 200Mbit/s service. In 2010 Virgin Media extended the footprint of its cable network to cover an additional 177,000<sup>46</sup> homes.

In March 2011, Virgin Media replaced its mid-tier 'up to' 20Mbit/s with an 'up to' 30Mbit/s service (existing 'up to' 20Mbit/s customers are able to upgrade for a one-off payment of £30 which covers the cost of a new wireless router). The change means that Virgin Media's basic 'L' 'up to' 10Mbit/s service is its only cable broadband product that is not classed as being super-fast. Virgin Media's cable packages all offer 'up to' upload speeds of 10% of the connection's headline 'up to' download speed, following a recent upgrade.

BT's roll-out of fibre-to-the-cabinet (FTTC) services continued in 2010, and by the end of the year an estimated 16% of UK homes were connected to an FTTC-enabled local exchange. BT claims that its roll-out of super-fast broadband is one of the most rapid in the world; its

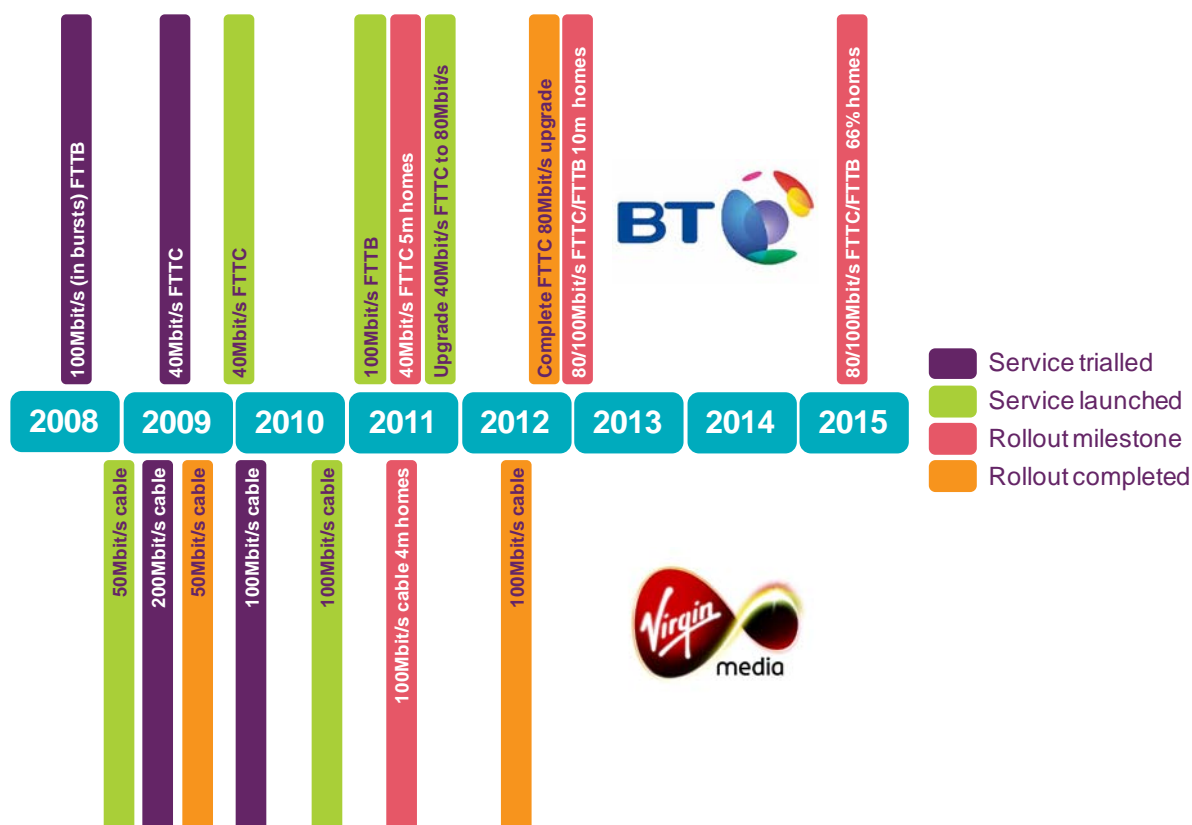
<sup>45</sup> <http://pressoffice.virginmedia.com/phoenix.zhtml?c=205406&p=irol-newsArticle&ID=1572617&highlight=>

<sup>46</sup> <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9ODE4MTJ8Q2hpbGRJRD0tMXxUeXBIPtM=&t=1>

FTTC network is passing an average of 80,000 additional premises a week<sup>47</sup>, and we estimate that by July 2011 around 20% of homes were able to obtain FTTC services (and a total of around 57% were able to receive BT and/or Virgin Media's super-fast broadband services).

BT has committed to making fibre-based services available to 40% of UK households by summer 2012, and to 67% by 2015, using a mixture of fibre-to-the-home (FTTH) and FTTC. It also plans to increase the speeds available via FTTC from 'up to' 40Mbit/s to 'up to' 80Mbit/s in 2012 and its FTTC product currently offers upload speeds of 'up to' 2Mbit/s or 10Mbit/s, depending on which tariff the user subscribes to. Figure 5.2 below shows a timeline for the roll-out of BT and Virgin Media's super-fast services, including future milestones.

**Figure 5.2 UK super-fast broadband rollout timeline**



Source: Ofcom

### Broadband Delivery UK (BDUK) is trialling fibre services in Cumbria

In addition to BT and Virgin Media's super-fast roll-out, many smaller fibre deployments are either in the planning stage, being deployed or complete. These include Broadband Delivery UK's (BDUK)'s trial deployment in Cumbria.

BDUK, a team within the Department for Culture, Media and Sport (DCMS), was set up to deliver the government's broadband strategy of bringing super-fast broadband to all parts of the UK. BDUK's main role is to allocate and distribute £530m of funding to bring super-fast broadband to the third of UK homes which are unlikely to be provided for by the broadband market and would otherwise miss out.

<sup>47</sup> <http://www.btplc.com/News/ResultsPDF/q411release.pdf>

County councils, unitary authorities and Local Enterprise Partnerships can apply for a share of this money by developing a local broadband plan setting out how everyone in the area will be provided with super-fast broadband access. Once the local plan is sufficiently developed, BDUK will allocate the funding and the work will be put out to tender to bidding suppliers. In July 2011 Ofcom published data showing broadband information by administrative authority, which is aimed at helping local authorities to bid for a share of the BDUK funding<sup>48</sup>.

The first BDUK FTTH trial deployment is to take place in Cumbria, and Cumbria County Council has begun the procurement process for its super-fast broadband pilot, the intention being that deployment of the network will begin in 2012. In addition, £50m of BDUK funding has been earmarked to fund similar deployments in Wiltshire, Norfolk and Devon & Somerset and further pilots have been announced in North Yorkshire, Herefordshire, the Highlands and Islands and Wales. The aim is that 90% of UK homes and businesses will have access to super-fast broadband by 2015.

In addition there are developments based on EU funding in Cornwall and South Yorkshire, the latter of which covers around 500,000 homes.

### **Take-up of super-fast services remains low**

Despite the growth in availability of super-fast services and the range of services that are available, we estimate that only around 2% of residential and SME UK broadband connections had a headline speed over 24Mbit/s at the end of March 2011 (although this was more than five times the figure for a year previously). Figure 5.3 below shows how the monthly cost of residential super-fast services compares to those with a headline speed of 'up to' 24Mbit/s or less. It indicates that a premium of at least £5 a month is generally charged for super-fast broadband services.

This may be constraining take-up, although a notable finding from our consumer research among super-fast broadband customers was that value for money was the most commonly-cited reason for choosing their service, and satisfaction with value for money was very high (see Figure 5.7 below). In fact, Enders Analysis estimate that only 15% of households with a broadband connection would be willing to pay an additional £5 a month for higher connection speeds.<sup>49</sup>

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<sup>48</sup> <http://maps.ofcom.org.uk/broadband/>

<sup>49</sup> UK residential high speed broadband outlook: leading the horse to water, Enders Analysis July 2011

**Figure 5.3 Comparison of broadband costs**

	Virgin Media 'up to' 10Mbit/s cable	BT 'up to' 20Mbit/s ADSL	Virgin Media 'up to' 30Mbit/s cable	BT 'up to' 40Mbit/s FTTC	Virgin Media 'up to' 50Mbit/s cable	Virgin Media 'up to' 100Mbit/s cable
'Up to' upload speed	1Mbit/s	1Mbit/s	3Mbit/s	2Mbit/s	5Mbit/s	10Mbit/s
Data cap	Unlimited	10GB	Unlimited	40GB	Unlimited	Unlimited
Standalone monthly cost	£21.00	n/a	£28.50	n/a	£35.00	£45.00
Monthly cost when bundled with landline (excluding line rental)	£13.50	£13.00	£18.50	£18.00	£25.00	£35.00
Average download speed, May 2011	9.5Mbit/s	8.2Mbit/s	31.0Mbit/s	33.8Mbit/s	48.4Mbit/s	No data

Source: Ofcom / PurePricing Broadband Pricing Factbook, June 2011

Note: BT also offers a more expensive FTTC service with upload speeds of 'up to' 10Mbit/s and unlimited monthly use, which is available on a standalone basis.

### 5.1.3 Purchasing and usage patterns among super-fast broadband users

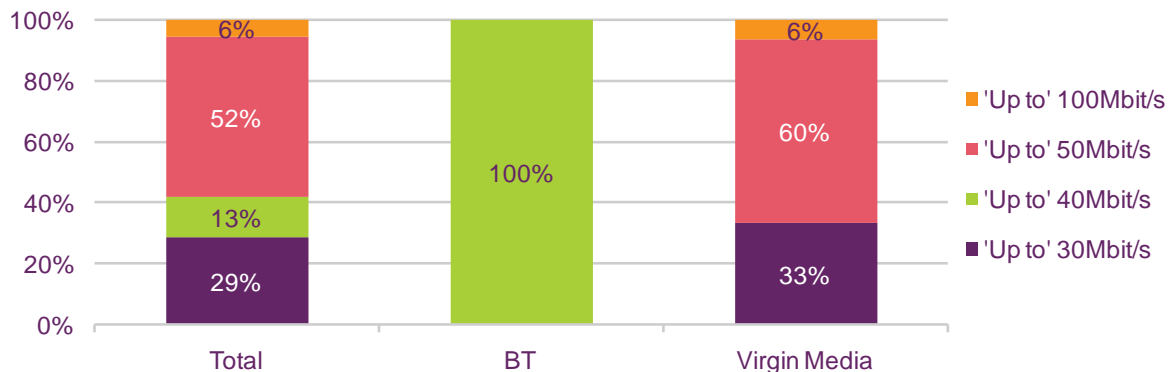
#### Introduction

In order to better understand how consumers choose and use super-fast broadband services we commissioned market research company YouGov to conduct consumer research among BT and Virgin Media super-fast users. For the purposes of this survey super-fast broadband was classified as connections with headline speeds above 'up to' 24Mbit/s, and we included Virgin Media cable customers on 'up to' 30Mbit/s, 50Mbit/s and 100Mbit/s services, and BT customers receiving its 'up to' 40Mbit/s FTTC service. Other ISPs including Plusnet, TalkTalk and Zen Internet have also launched FTTC services using BT wholesale products, but were not included in this research due to currently small customer bases.

The research was conducted by an online survey of 1,008 super-fast users. The mix of consumers surveyed is detailed in Figure 5.15 below and was to a great extent defined by the take-up of services when the research was undertaken. The research methodology is detailed on page 259.

**Figure 5.4** Headline download speed, by provider

Q1 – What is the maximum download speed you have been told you would get from your home broadband service?



Source: Ofcom research, fieldwork carried out by YouGov in April 2011

Base: All with super-fast broadband (1008; Virgin Media 874, BT Infinity 134)

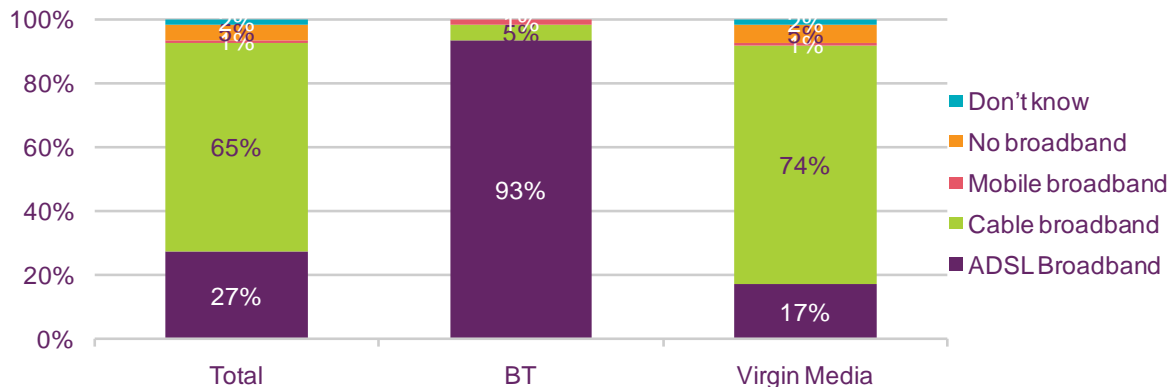
Note: Only respondents citing available suppliers and speeds were included in the survey

**Most super-fast users stick with the same technology when upgrading their service...**

The majority of BT FTTC customers said that they had previously had a fixed broadband ADSL service before subscribing to their current service, while the majority of Virgin Media super-fast users had previously had a cable broadband package, less than one-fifth having previously subscribed to an ADSL service (Figure 5.5).

**Figure 5.5** Previous broadband package, by current provider

Q6 – What type of broadband package did your household have before subscribing to the (current) broadband service?



Source: Ofcom research, fieldwork carried out by YouGov in April 2011

Base: All with super-fast broadband (1008; Virgin Media 874, BT Infinity 134)

**...in fact, most stay with the same ISP**

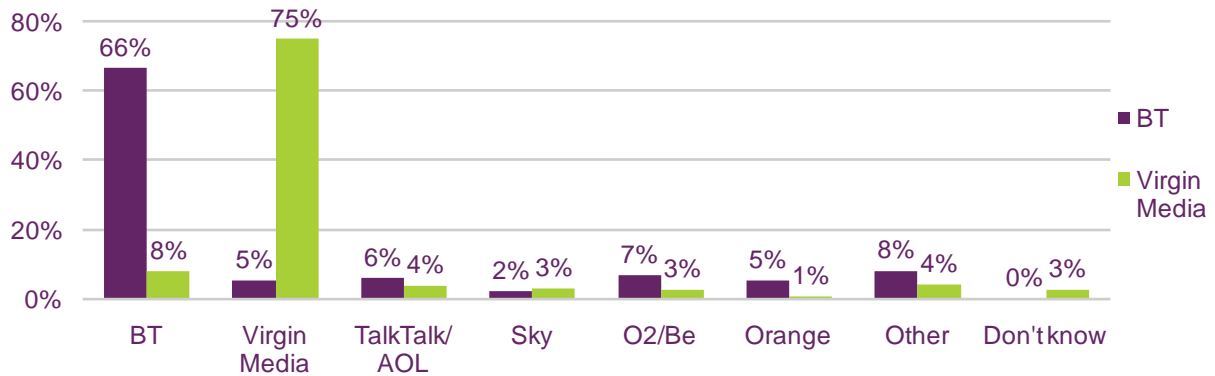
Most respondents said that they had not changed supplier when they upgraded to a super-fast broadband service; 75% of superfast connections with Virgin Media had previously used Virgin Media and only 5% of BT Infinity customers had switched from Virgin Media (Figure 5.6). Similarly, 66% of BT FTTC customers were previously BT customers and only 8% had been with Virgin Media. BT super-fast broadband users customers appear to be drawn from



a broader range of previous suppliers, with small but notable proportions migrating from O2, Orange and TalkTalk/AOL.

**Figure 5.6 Previous internet service provider, by current provider**

Q6a – And which internet service provider did your household use before you subscribed to your (current) service?



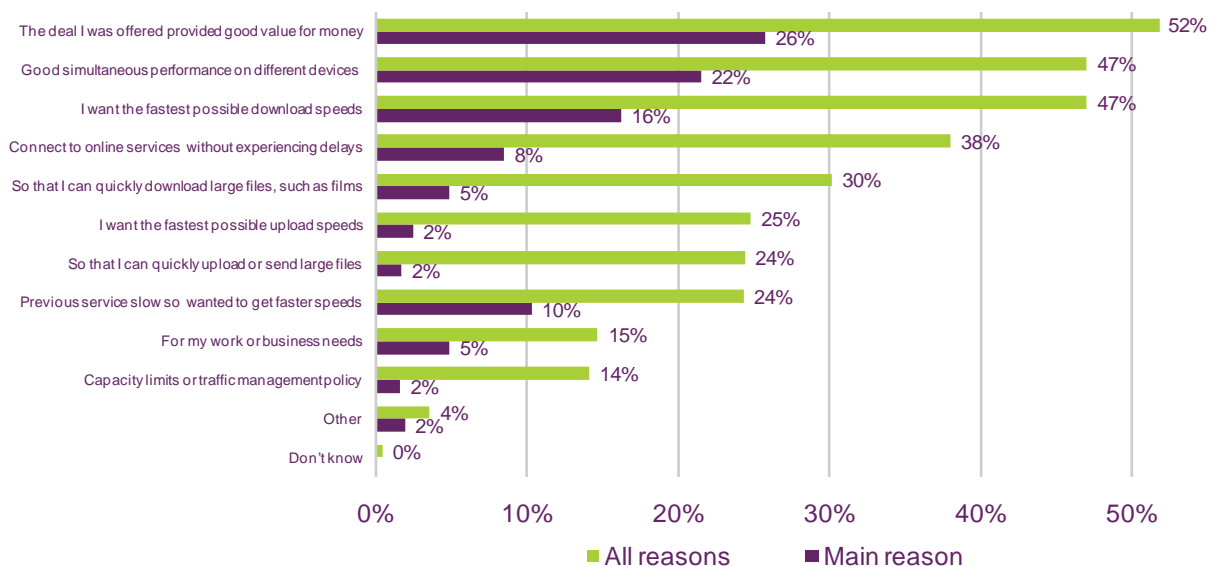
Source: Ofcom research, fieldwork carried out by YouGov in April 2011  
 Base: All with broadband before (943; Virgin Media 809, BT Infinity 134)

**Value for money was the most important consideration when choosing a super-fast service**

Even though super-fast broadband services are generally more expensive than slower services (see section 5.1.2 above), value for money was the most important single reason for consumers choosing their current super-fast broadband service (Figure 5.7). Nearly half of all respondents said that good simultaneous performance on multiple devices was a reason for taking super-fast broadband, indicative of how households are increasingly using WiFi connectivity to provide internet connections to multiple devices, including desktop, laptop and tablet PCs, mobile phones, games consoles and internet-enabled televisions.

### Figure 5.7 Reasons for choosing current broadband service

Q3/4 – Why did you choose a <xMbit/s> broadband service? And which of these was the single most important reason?



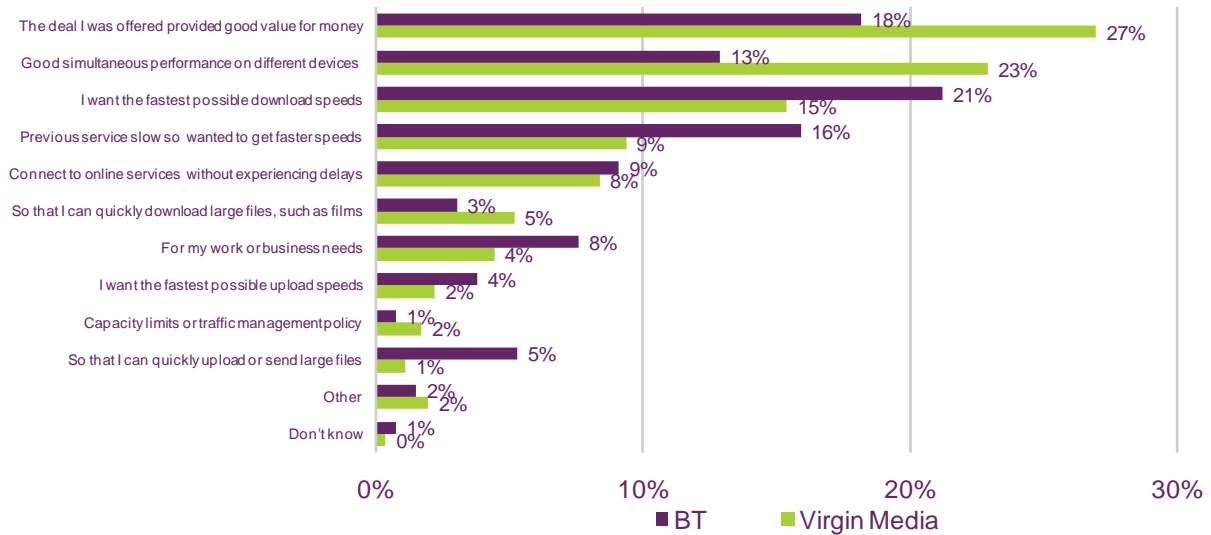
Source: Ofcom research, fieldwork carried out by YouGov in April 2011  
 Base: All with super-fast broadband (1008; Virgin Media 874, BT Infinity 134)

#### ...but having the fastest speeds available was most important to BT Infinity users

BT and Virgin Media super-fast broadband customers give different reasons for taking their current services; Virgin Media customers are more likely to say that the most important reason was because the deal offered good value for money, or that they wanted good simultaneous performance on different devices, while BT customers were more likely to say that they wanted faster speeds (Figure 5.8). This may well relate to customers' previous experience of using broadband services, as BT customers would typically have experienced slower speeds than Virgin Media customers, due to the high proportion previously having used ADSL broadband (which typically delivers lower average speeds than comparable cable services).

**Figure 5.8 Most important reason for choosing broadband service, by current provider**

Q4 – Why did you choose a <xMbit/s> broadband service? And which of these was the single most important reason?



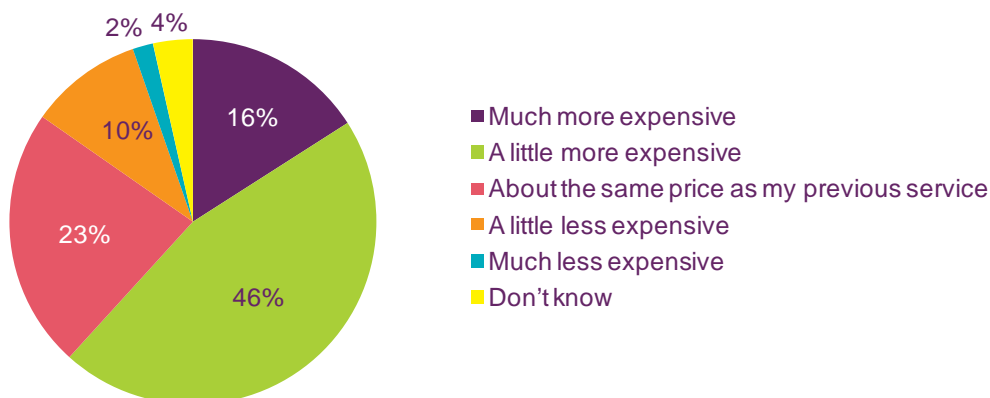
Source: Ofcom research, fieldwork carried out by YouGov in April 2011  
 Base: All with super-fast broadband (1008; Virgin Media 874, BT Infinity 134)

**Most super-fast users recognise that they pay a premium for the service**

Nearly two in three respondents said that their current broadband service was more expensive than the service they used to have, and one in six said that it was much more expensive (Figure 5.9). This pattern was similar across both Virgin Media and BT super-fast customers.

**Figure 5.9 Price of current broadband service compared to previous service**

Q9 – How does the price of your current broadband service compare to the broadband service that you used to have?



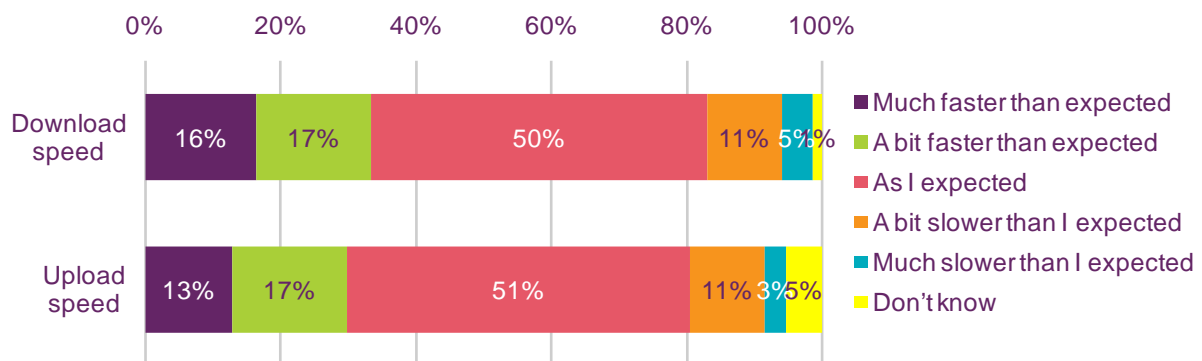
Source: Ofcom research, fieldwork carried out by YouGov in April 2011  
 Base: All with broadband before (943)

## Actual super-fast speeds are meeting or exceeding expectations in most cases

Half of all respondents said that upload and download speeds had met their expectations when they signed up for the service, while a third said that the speed of the service had exceeded expectations (Figure 5.10). BT FTTC customers were more likely to say that their speeds were faster than expected (43% compared to 32% for download speed and 28% for upload speed for Virgin Media); again, likely to be driven by previous experience of slower broadband speeds on ADSL compared to cable connections.

**Figure 5.10 Speed of broadband service compared to initial expectations**

Q10/11 – How does the download/upload speed of your current broadband service compare with what you expected when you signed up for it?



Base: All with super-fast broadband (1008)

Source: Ofcom research, fieldwork carried out by YouGov in April 2011

## Over 80% of super-fast users said that they were satisfied with their service

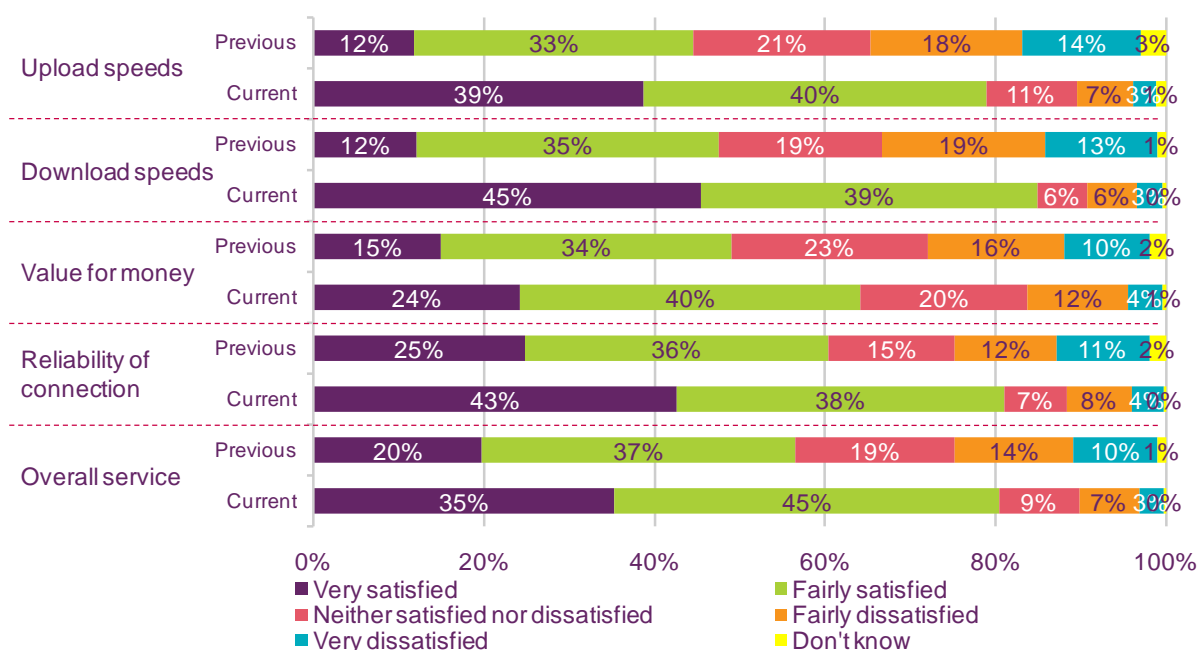
The majority of super-fast broadband users were happy with their overall service, 80% being 'very' or 'fairly' satisfied and just 10% being 'very' or 'fairly' dissatisfied. These levels compare favourably with respondents' satisfaction levels with their previous services, which showed that 57% had been 'very' or 'fairly' satisfied and 24% 'very' or 'fairly' dissatisfied).

Super-fast broadband users' satisfaction with the upload speeds, download speeds and reliability of their current services also compared favourably with those for their previous services (Figure 5.11 **Error! Reference source not found.**). The biggest increases in satisfaction levels between current and previous service were for download speeds (a 37 percentage point increase in the proportion that were 'very' and 'fairly' satisfied) and for upload speeds (a similar 34 percentage point increase).

Satisfaction with value for money also increased (a 15 percentage point increase in the proportion that were 'very' and 'fairly' satisfied), despite the fact that most respondents were paying more for their current service than they had done previously.

**Figure 5.11 Satisfaction with aspects of current broadband service**

Q7/8 – To what extent are you satisfied or dissatisfied with the following aspects of your home broadband service?/Thinking about the broadband service that you used to have, to what extent were you satisfied or dissatisfied with the following aspects of that service?



Source: Ofcom research, fieldwork carried out by YouGov in April 2011  
 Base: All with super-fast broadband (1008), all with broadband before (943)

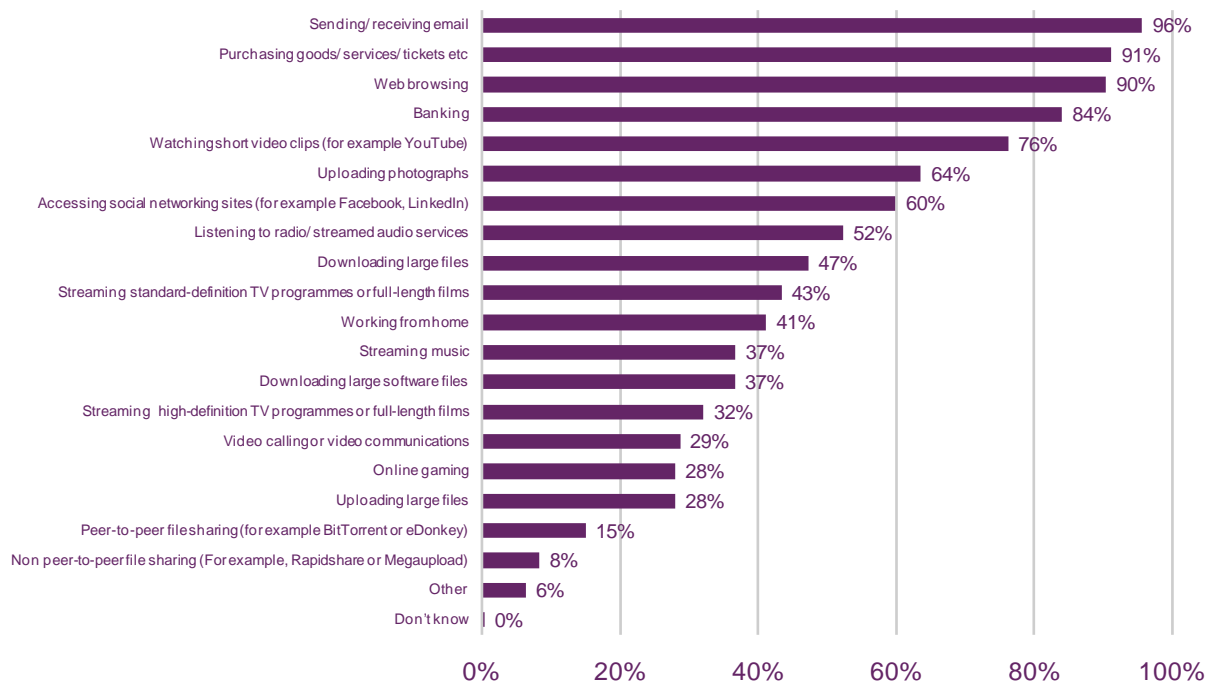
**Less than half of super-fast users use their connection to download large files...**

While over 90% of the super-fast broadband users surveyed used their broadband connection for sending/receiving email, purchasing goods/services/tickets and web browsing, and over 80% used their broadband service for banking, just 47% said that they used their connection to download large files (Figure 5.12). Comparing these results with usage among all internet users<sup>50</sup> reveals higher use of a number of services; some of the biggest differences were: watching short video clips (76% compared to 40% for all internet users), banking (84% compared to 60% for all users) and purchasing good/services/tickets (91% compared to 71% for all users). It is likely that these differences are due to higher levels of digital engagement among these consumers, as well as differences in the demographic profile of super-fast broadband users compared to all internet users<sup>51</sup>.

<sup>50</sup> Ofcom Technology Tracker Q1 2011, QE12A

<sup>51</sup> Super-fast broadband users in our survey were more likely than all internet users to be male and to fall into the ABC1 social group; they also tended to be older and were less likely to have children living at home

**Figure 5.12 Services current broadband connection used for**



Source: Ofcom research, fieldwork carried out by YouGov in April 2011  
 Base: All with super-fast broadband (1008)

**...but levels of large file downloading and content streaming are higher than average**

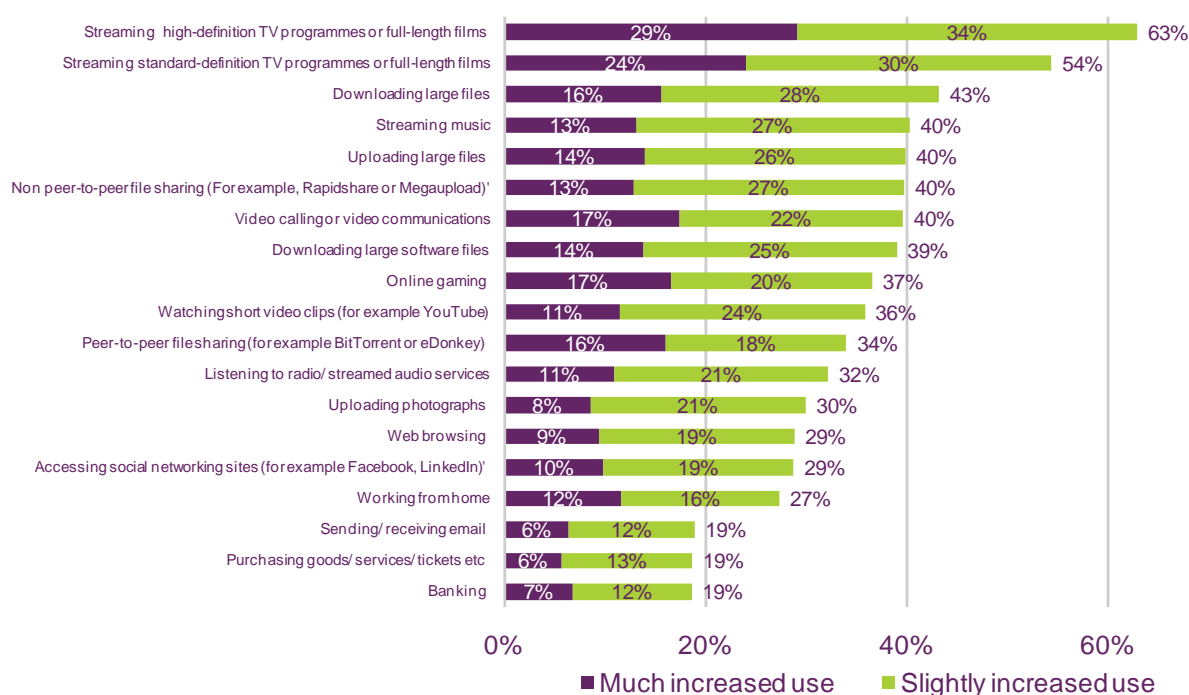
There is strong evidence that the take-up of super-fast broadband changes the ways in which consumers use the internet, as users benefit from the improved experience of services which benefit from faster speeds and the higher quality of service typically offered by super-fast services.

The largest increases in reported use relate to streaming TV programmes or full-length films; nearly two-thirds of respondents said that they had increased their levels of streaming high-definition content and more than half had increased their streaming of standard-definition content (Figure 5.13). There were also notable increases in some services which are less mainstream, including file-sharing and online gaming.

The lowest increases were for those services where use was already high, and which typically benefit less from having faster speeds: sending and receiving email, purchasing goods/services/tickets and banking.

## Figure 5.13 Change in use compared to previous broadband connection

Q13 – How has the amount you use this service(s) changed compared to when you had your previous broadband connection?



Source: Ofcom research, fieldwork carried out by YouGov in April 2011

Base: All with broadband before and using specified service (943)

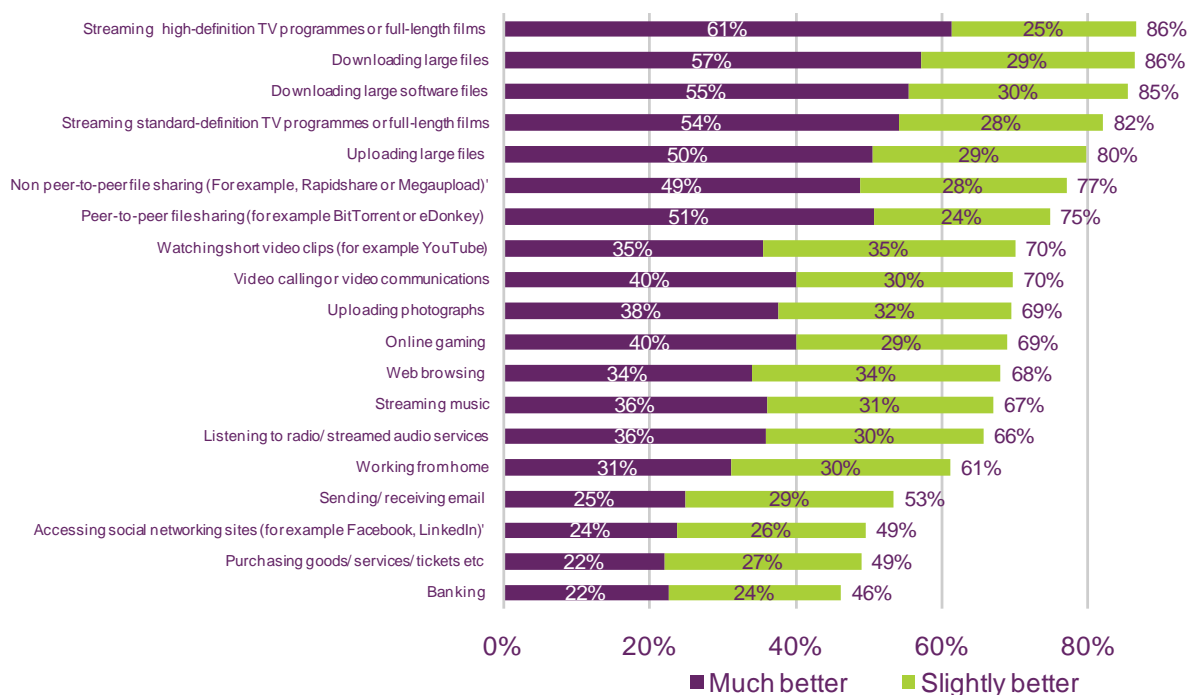
### Most super-fast users say that the service has improved their online experience

Most respondents said that their experience of using services had improved since taking up their new broadband service; over 80% of respondents said that streaming high-definition TV programmes and full-length films, downloading large files, downloading large software files and streaming standard-definition TV programmes and full-length films had improved (Figure 5.14). The majority of consumers (68%) also said that web browsing was better over their super-fast connection; this possibly being due to the typically higher responsiveness of super-fast connections<sup>52</sup>.

<sup>52</sup> Responsiveness is typically measured by latency, which is the time it takes for a single packet of data to travel from a user's PC to a third party server and back again. Ofcom research into broadband speeds finds that super-fast broadband services typically had latency more than 30% faster than ADSL services, <http://stakeholders.ofcom.org.uk/market-data-research/telecoms-research/broadband-speeds/>

## Figure 5.14 Experience of using these services compared to previous broadband connection

Q14 – And how would you describe your experience of these services using your current connection compared to your previous connection?



Source: Ofcom research, fieldwork carried out by YouGov in April 2011

Base: All with broadband before and using specified service (943)

### Notes on methodology

In order to better understand how consumers choose and use super-fast broadband services we commissioned market research company YouGov to conduct consumer research among BT and Virgin Media super-fast broadband users. For the purposes of this survey super-fast broadband was classified as connections with headline speeds above 'up to' 24Mbit/s, and we included Virgin Media customers on 'up to' 30Mbit/s, 50Mbit/s and 100Mbit/s services, and BT customers receiving its 'up to' 40Mbit/s FTTC service.

YouGov screened respondents on its online panel to identify 1,008 super-fast broadband users who met these criteria, and these respondents formed our survey sample. All respondents were UK adults aged 18+. Fieldwork was conducted from 19 to 27 April 2011.

The survey data have not been weighted and may not represent the profile of the total UK super-fast broadband market; due to the low incidence of super-fast broadband subscribers in the total population (less than 2%) it is not possible to profile this market accurately using our current data. Figure 5.15 summarises the sample profile.



**Figure 5.15 Super-fast broadband research sample profile**

	Respondents	% of sample	% of population
<b>Total</b>	1008		
<b>Age</b>			
18 to 24	72	7	14
25 to 34	146	14	18
35 to 44	181	18	19
45 to 54	228	23	15
55+	381	38	33
<b>Gender</b>			
Male	728	72	48
Female	280	28	52
<b>Social group</b>			
ABC1	631	63	55
C2DE	377	37	45
<b>Children at home</b>			
No	756	75	60
Yes	236	23	40

Source: Ofcom

### 5.1.4 Mobile customers flock to pay-monthly contracts

#### Nearly seven million contract subscriptions added in 2010 as consumers move to pay-monthly

For several years there has been a gradual shift of consumers from pre-pay (pay-as-you-go) mobile connections to post-pay (pay monthly contracts). This shift gathered pace in 2010 as the number of pre-pay mobile connections increased by 6.5 million, and the number of pre-pay connections fell by 5.7 million. By the end of the year, 49% of mobile connections were post-pay, compared to 41% at the end of 2009 (Figure 5.16).

As mobile take-up approaches saturation, mobile network operators have focused on increasing their pay-monthly customer bases as a way of reducing customer churn and maximizing revenues. Average monthly spend for pay-monthly connections is more than three times that of a pre-pay customer (although the differential has been falling as customers increasingly take lower-price pay-monthly tariffs), and the customer lifetime value of a post-pay customer is much higher than that of a pre-pay customer, as the propensity to switch provider is much lower (in part because most post-pay customers are tied into a minimum contract duration).

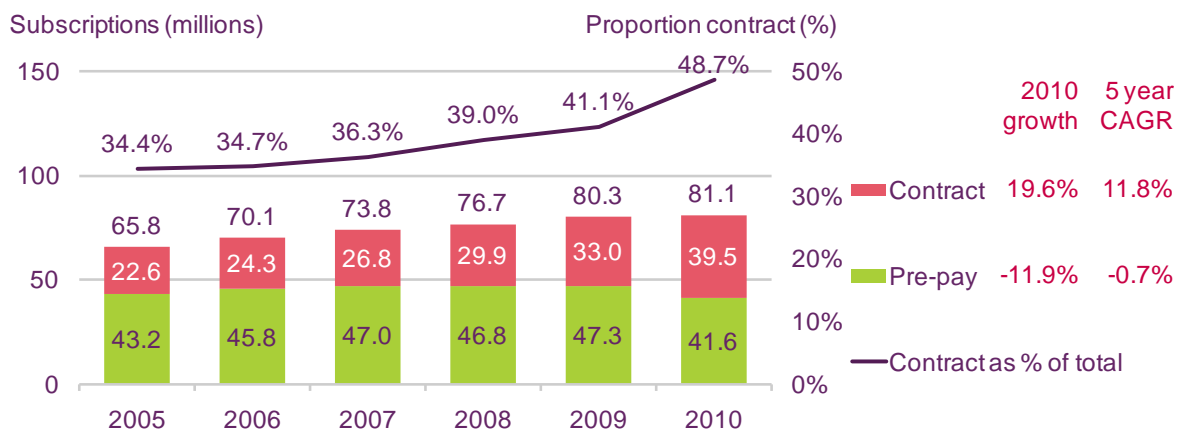
The migration from pre-pay to post-pay can be attributed to three main factors:

- the growth of sub-£20 mobile contracts, which have made pay-monthly contracts affordable for more users, and often offer greater value than pay-as-you-go tariffs.
- the growth of one-month SIM-only contracts, which enable subscribers to take advantage of the bundled calls, messages and data allowances provided by post-pay contracts without committing to a long-term contract; and

- growth in the popularity of smartphones (which were owned by 27% of adults and accounted for around half of mobile phone sales in Q1 2011), the most desirable models of which are often only available on post-pay contracts, and because post-pay tariffs allow users to spread the high handset cost across the duration of the contract rather than paying up front

This trend towards contract subscriptions looks set to continue, as following Ofcom's move to reduce mobile termination rates to 0.69p per minute by 2015, some operators have increased the cost of pre-pay charges. In July 2011 Orange increased its standard pre-pay prices by 25% for calls to mobiles, landlines and voicemail and the price of texting by 20%, and Vodafone also increased its pre-pay prices<sup>53</sup>. In addition, Vodafone, O2, and Everything Everywhere (which operates the T-Mobile and Orange brands) have all announced that they will stop subsidising pre-pay handsets, thereby increasing the overall cost for pre-pay consumers and making monthly contracts potentially more attractive for some consumers.<sup>54</sup>

**Figure 5.16 Pre-pay and contract mobile connections**



Source: Ofcom / operators

Notes: Based on data provided to Ofcom by operators; includes estimates where Ofcom does not receive data from the operators

### One in five pay-monthly contracts is for less than £15 a month

Figure 5.17 details how the monthly rental costs of new mobile contracts have changed between Q1 2005 and Q1 2011. It indicates how there has been an ongoing growth in lower-value contracts: in Q1 2011 the majority of new contracts (51%) were for less than £25 a month, compared to just 15% of new contracts sold in Q1 2005.

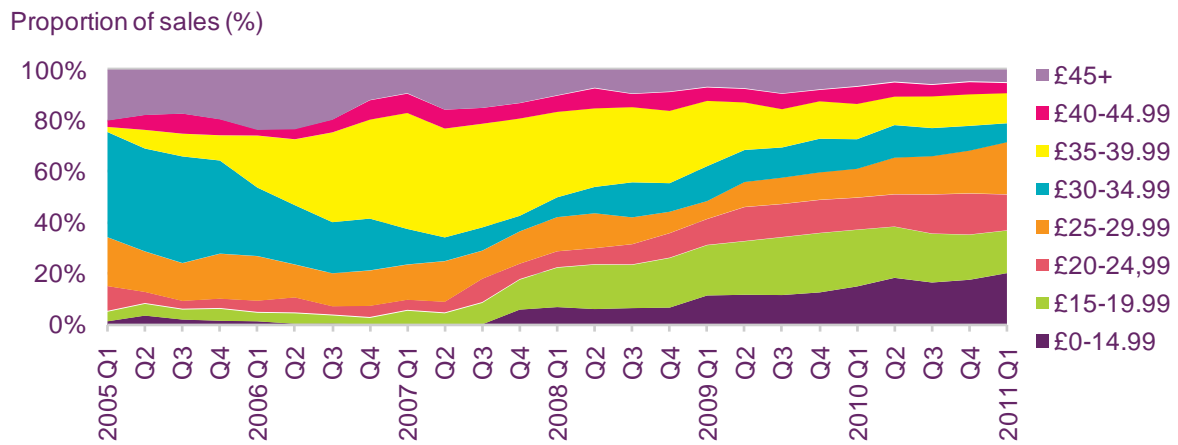
Also evident is the growth of sub-£15 a month contracts, which accounted for 20% of new contracts sold in Q1 2011, having been virtually non-existent four years previously. The low monthly cost and limited contractual commitment makes SIM-only contracts attractive to many pre-pay users who continue to use their existing handsets. In June 2011 SIM-only tariffs, including at least 100 anytime, any network minutes, were available on one-month contracts from all the UK's mobile network operators as well as leading MVNOs for £10.50 or less a month. These SIM-only contracts also typically include a large number of text messages; indeed some tariffs offer 100 minutes and unlimited texts for £10 a month,

<sup>53</sup> [http://www.mobiletoday.co.uk/News/11951/Orange\\_and\\_Vodafone\\_hike\\_PAYG\\_charges\\_as\\_EU\\_slashes\\_roaming\\_fees.aspx](http://www.mobiletoday.co.uk/News/11951/Orange_and_Vodafone_hike_PAYG_charges_as_EU_slashes_roaming_fees.aspx)

<sup>54</sup> <http://www.independent.co.uk/news/uk/home-news/mobile-operators-pull-prepay-phone-subsidies-2290895.html>

making them particularly attractive to younger users who are often very high users of text messaging.

**Figure 5.17 Monthly line rental prices for new mobile contract connections**



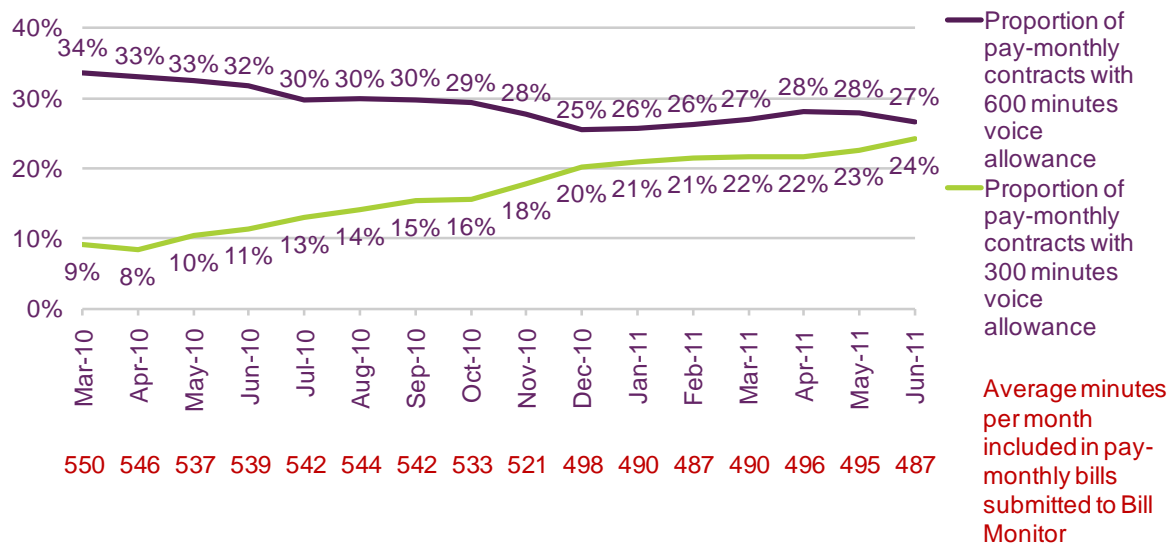
Source: GfK Retail and Technology UK Ltd, *Contract Handset Acquisitions: price segments*.  
 Notes: England, Scotland and Wales only (excludes Northern Ireland); based on GfK's coverage of 94% of the consumer market; based on new post-pay connections; excludes contract renewals; only represents sales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

### Numbers of inclusive minutes fall as mobile contracts get cheaper

As the proportion of sub-£25 mobile contracts has increased, the average number of inclusive minutes in pay-monthly contracts has fallen. Based on an analysis of mobile bills submitted to price comparison service billmonitor, the average number of inclusive minutes on mobile contracts fell from 550 minutes in March 2010 to 487 in June 2011. These data should be treated with caution, as users of billmonitor may not be representative of mobile users as a whole, and it is likely that the data over-represent users at the ends of their contracts, as it is these users who are of course most likely to be using a price comparison site.

Nevertheless, it is clear that there is a movement towards pay-monthly users taking subscriptions with lower numbers of inclusive minutes. Figure 5.18 shows that there has been a significant increase in contracts with 300 minutes, which accounted for nearly a quarter of the mobile bills submitted to billmonitor in June 2011, while there has been a steady drop in the proportion of mobile contracts that include 600 minutes.

**Figure 5.18 Proportion of pay-monthly customers with 300 and 600 minutes voice allowance**



Source: billmonitor

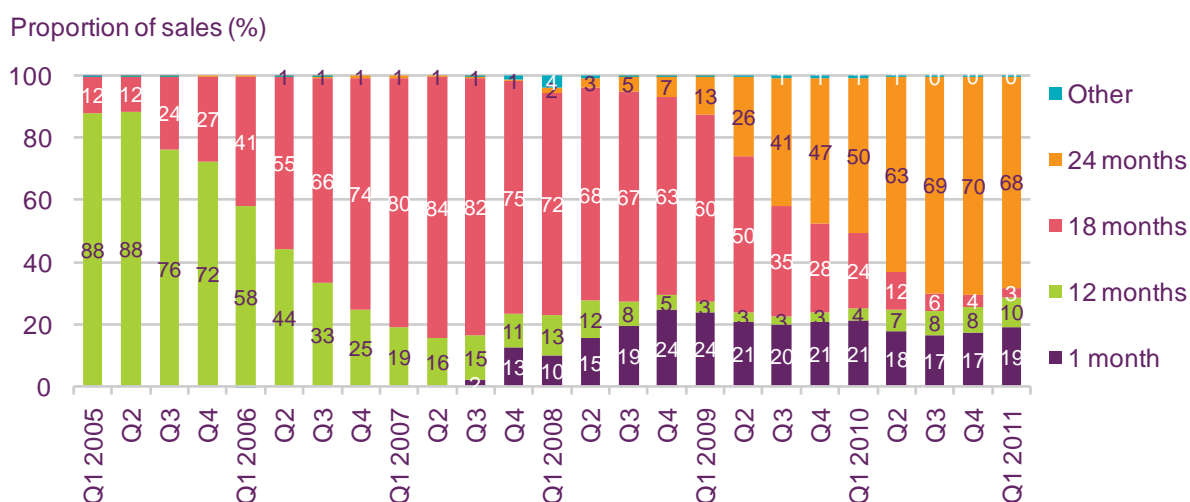
### The large majority of contracts are either one month or 24 months

Figure 5.19 below details how the length of mobile contracts has evolved in recent years. It shows that one-month contracts (i.e. most SIM-only contracts) accounted for around one in five new connections in Q1 2011. However, the emergence of one-month contracts has been accompanied by the increasing availability and take-up of two-year contracts, which have accounted for more than two-thirds of new pay-monthly connections since Q3 2010.

The lengthening of standard contract lengths from 12 months to 18 months, and then to 24 months (and in some cases 36 months), has been driven by operators looking to reduce customer churn. It has also made smartphones more affordable for many consumers, as the monthly fees on 24-month contracts are lower than on 12- or 18-month contracts, as mobile operators recoup the cost of a subsidised handset over a longer period.

However, in May 2011 new EU regulations came into force that mandate mobile providers to offer 12-month contracts and place an upper limit of 24 months on new contract lengths. These shorter contracts may be popular with consumers who do not wish to subscribe to longer contracts, or those who are eager to have the latest handsets (as previously the limited availability of the latest handsets on 12-month contracts meant that they were forced to continue using a handset which had been replaced by a newer model).

**Figure 5.19 Monthly line rental for new mobile contract connections**



Source: GfK Retail and Technology UK Ltd, Contract Length Sales of new Mobile Connections, Q1 2005-Q1 2011.

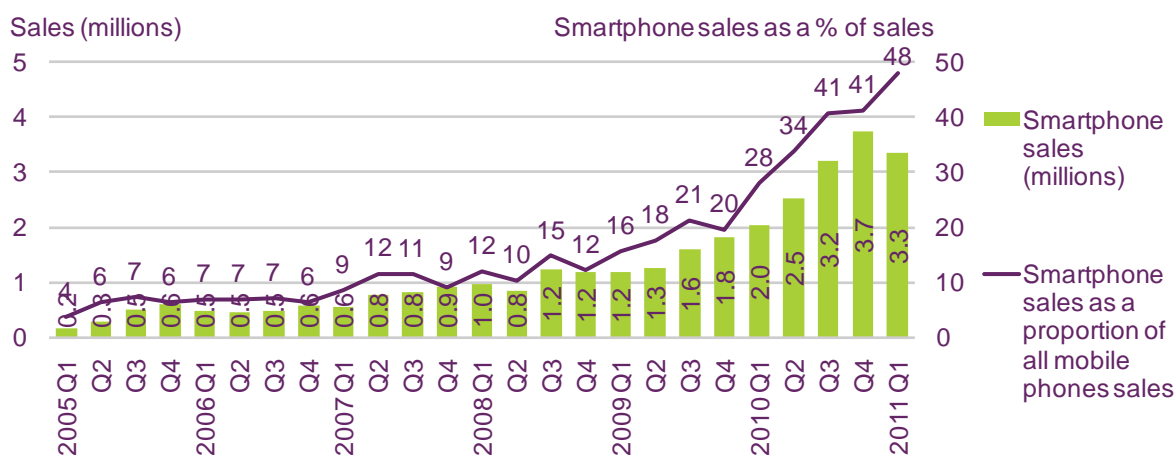
Notes: England, Scotland and Wales only (excludes Northern Ireland); based on GfK's coverage of 94% of the consumer market; based on new post-pay connections; excludes contract renewals; only represents sales through consumer channels (i.e. most business connections are excluded)

### Growth of smartphones and mobile internet use

A key characteristic of the communications market in the past year has been the growth in take-up of smartphones (see Section 0 above). Figure 5.20 details sales data collected by GfK, which indicate that smartphone sales nearly tripled between Q1 2009 and Q1 2011. By the first quarter of 2011, around half of new handsets sold were smartphones (note that in this analysis smartphones are defined by the operating system – this may be a more restrictive definition of smartphone than is used elsewhere in this report, where smartphones are defined more by functionality).

It is likely that the demand for smartphones, particularly among younger users, has played a role in the increasing take-up of pay-monthly contracts, as users repay much of the cost of an expensive handset over a 24-month contract. In addition, as internet access on mobile phones becomes more widespread (we find that 36% of mobile users claim to access the internet on their mobile phone – see Section 4.1.2 of this report), pay-monthly tariffs may be more attractive than pay-as-you-go tariffs, as the majority of post-pay tariffs now include some element of bundled data use.

**Figure 5.20 UK smartphone sales**



Source: GfK Retail and Technology Ltd, based on factual point-of-sale information

- (1) Smartphones are defined as any handset running an open operating system, including Symbian (6.1 and above), Android, BlackBerry, iPhone, Palm, Windows Mobile or Linux operating systems;
- (2) England, Scotland and Wales only (excludes Northern Ireland);
- (3) Based on GfK's coverage of 95% of the market – data have been extrapolated to represent whole market;
- (4) Only represents sales through consumer channels, i.e. most business connections are excluded

### 5.1.5 Mobile networks look to keep up with explosion in mobile data use

#### Data volumes transferred over mobile networks increased by 67% in 2010

As detailed elsewhere in this report, there has been an explosion in the use of mobile data services in the last couple of years – both through the take-up of dongles connecting PC/laptops to the internet and through the increasing use of data services on mobile handsets. We estimate that data volumes increased by a factor of 38 in the three years to the end of 2010.

It is the increasing take-up of smartphones, which were used by 26% of the UK population in March 2011 (see Section 0 of this report) and represented over 40% of handset sales in the second half of 2010 (see Figure 5.20 above), that is likely to have been the primary driver of the 67% increase in mobile data volumes in 2010; in Q1 2011 our consumer research found that 28% of UK adults claimed to access the internet on a mobile phone (up from 22% a year previously), and 17% claimed to access the internet on a PC/laptop via mobile broadband (up from 15% a year previously). (See Figure 4.14 in Section 4 of this report for further details).

This rapid increase in data use inevitably puts a strain on mobile networks, particularly at peak times. Our research into mobile broadband performance, undertaken in Q4 2010, found that the average speed delivered to consumers in off-peak periods was 1.9Mbit/s, compared to an average speed of 1.4Mbit/s in peak periods, while average download speeds for operators on their 3G networks were between 16% and 50% lower in peak periods than in off-peak periods<sup>55</sup>. However, there is some evidence that investment in network upgrades is keeping up with increases in demand. The average download speed of 1.5Mbit/s that we measured in Q4 2010 was significantly faster than the 1Mbit/s average speed reported in a previous study of mobile broadband performance by Epiteiro (December

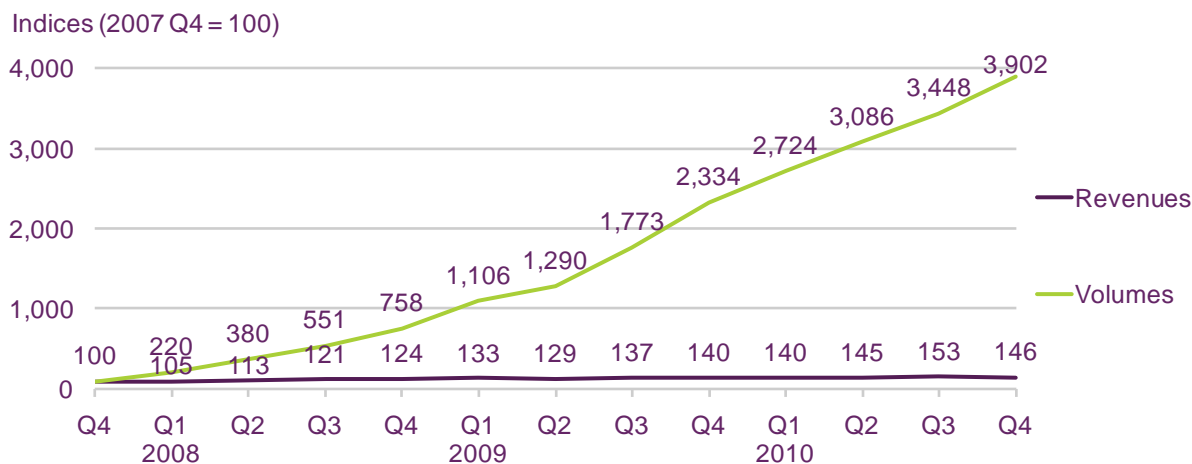
<sup>55</sup> [http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2010/Mobile\\_BB\\_performance.pdf](http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2010/Mobile_BB_performance.pdf)

2008 to May 2009)<sup>56</sup>. Although like-for-like comparison is not possible due to methodological differences, the increase in speeds may be indicative of improved network performance.

In addition to detailing the increase in data volumes, Figure 5.21 also maps the increase in data revenues over the same period. It shows that while data volumes increased by 3800% between Q4 2007 and Q4 2010, data revenues only increased by 46%. During 2010, data revenues were fairly flat (up 4.3%), while data volumes increased by 67%. It is important to note that these data revenues are likely to be understated, as we are able to include only data-specific revenues (i.e. metered fees or separate add-ons), whereas increasingly a data allocation is included within the monthly line rental fee for mobile phone contracts. It is also true that substantial increases in capacity can often be achieved with relatively inexpensive upgrades, for example from 3G to HSPA.

Nevertheless, this growing gap between data volumes and data revenues represents a significant challenge to the mobile industry. It is this that has led some operators to reduce the data limits associated with mobile phone subscriptions and introduce tiered pricing. For example, in January 2010 T-Mobile set a 500MB limit on streaming or downloading video, while still continuing to offer unlimited web browsing; and in June 2010 O2 ended unlimited data plans for all its mobile tariffs, setting limits ranging from 500MB to 1GB per month according to tariff, and offering additional 'bolt-ons' of an extra 500MB for £5 a month or 1GB for £10.

**Figure 5.21 Mobile data volume and revenue growth**



Source: Ofcom / operators

Notes: Data revenues include revenues for data services on mobile phone connections and mobile broadband (dongle) connections, but do not include any allocation for data services which may be bundled with access charges in mobile phone subscriptions; includes estimates where Ofcom does not receive data from operators

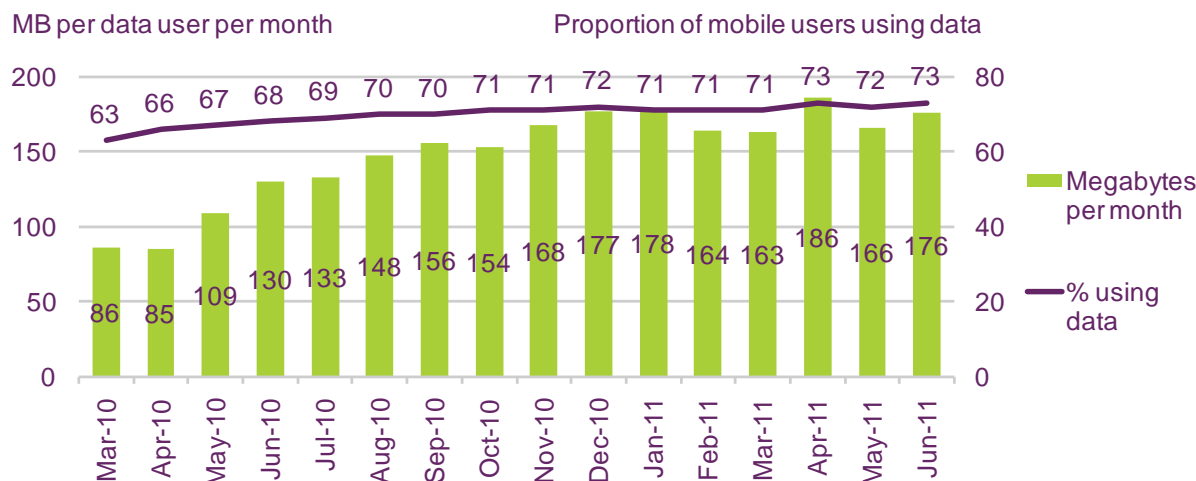
Data collected by price comparison service billmonitor allow us to track the changes in data use, as reported on the mobile phone bills that users of the service submit. It should be noted that consumers using billmonitor may not be representative of mobile users as a whole, but nevertheless the data does provide some insight into the trends in the use of mobile data services. Based on between 3,000 and 10,000 bills submitted every month, the proportion of pay-monthly customers who used data services increased from 63% to 73% between March 2010 and June 2011. However, more striking is the increase in the average data use by these consumers, which approximately doubled over the same period. But there are some signs that the average data use of pay-monthly customers has levelled off since

<sup>56</sup> [http://www.epitiro.com/assets/files/ukmobilebroadband\\_final.pdf](http://www.epitiro.com/assets/files/ukmobilebroadband_final.pdf)



November 2010 – although it is difficult to draw conclusions from a limited data set over a short period of time, it may be that the rapid growth phase seen until the end of 2010 is slowing, due to a combination of factors including changing behaviour as the market moves from early adopter to late adopter phase, and operator pricing policies reducing heavy users' data consumption.

**Figure 5.22 Average monthly data use for pay-monthly mobile phone users**



Source: billmonitor

### WiFi offers some potential for off-loading mobile data...

Our research finds that by Q1 2011, 75% of home broadband connections used a WiFi router (see Figure 4.15 in Section 4 of this report), thereby allowing consumers with WiFi-enabled mobile phones (which most smartphones are) to use their home fixed-line broadband connection, thereby reducing the risk of exceeding data limits and generally benefitting from better performance (our research finds, for example, that average download speeds over home fixed-line broadband connections were 6.2Mbit/s in Q4 2010, compared to 1.5Mbit/s over mobile broadband networks)<sup>57</sup>.

Public WiFi 'hotspots' also offer the potential for off-loading data used on mobile devices to fixed-line networks. BT is the largest provider of hotspots in the UK, with over 2 million on the BT FON network (these are BT home broadband subscribers who securely share a portion of their WiFi connection, making it available to other members who are in range), and nearly 4,000 OpenZone public hotspots. BT Total Broadband customers with an iPhone or Android device can download a free app that gives free access to BT's WiFi network and includes a mapping service showing the nearest hotspot. By November 2010, BT reported that over 170,000 people had downloaded this app<sup>58</sup>.

O2, Orange, Vodafone and Tesco Mobile all include access to WiFi hotspots within some of their mobile tariffs. In January 2011 O2 announced that it was investing in developing its own public WiFi network, initially in 450 O2-owned sites, but with plans to expand to 15,000 WiFi hotspots by 2013. Also in January 2011, Sky announced that it was purchasing WiFi operator The Cloud, which has 5,000 hotspots throughout the UK – indicating the

<sup>57</sup> [http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2010/Mobile\\_BB\\_performance.pdf](http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2010/Mobile_BB_performance.pdf)

<sup>58</sup> [http://www.btopenzone.com/news/news\\_20101109.jsp](http://www.btopenzone.com/news/news_20101109.jsp)



importance Sky attaches to being able to deliver data (and in particular content) services to its customers outside the home without relying on cellular networks.

### **...but a step change in the performance of mobile networks will come with the launch of LTE networks**

Current UK mobile networks use the 3G/HSPA standard. However, trials are under way for the launch of super-fast mobile broadband networks using the LTE standard (often referred to as '4G'). LTE networks will offer much higher theoretical speeds (commercial deployments elsewhere in the world are delivering speeds in excess of 50Mbit/s), but also much greater capacity. In part, increased capacity will come from greater spectral efficiency – research commissioned by Ofcom from Real Wireless estimates that initial deployments of LTE will provide a 1.2 times increase over the most efficient 3G technology in deployment in the UK (HSPA+), and forecasts that increased spectral efficiency will enable the networks to carry as much as 5.5 times more traffic in the same spectrum by 2020<sup>59</sup>. However, the main driver of increased capacity will come from the allocation of more spectrum. Ofcom has announced plans to auction spectrum at 800MHz and 2.6GHz (the 'digital dividend' spectrum made available by the switchover from analogue to digital television) in Q1 2012, which should lead to the launch of commercial LTE services from 2013<sup>60</sup>.

In preparation, a number of operators have been running mobile broadband trials using spectrum in the 800MHz and 2.6GHz bands. By June 2011, Ofcom had issued 14 non-operational licences in the 2.6GHz band which were live (eight for test purposes using LTE technology, five for WIMAX and two for rural broadband), with one non-operational licence in the 800MHz band which had recently expired and two more shortly to start (all for LTE technology). The Global Mobile Suppliers Association reported in June 2011 that O2 and Vodafone had made commitments to investing in LTE network infrastructure, while Arqiva and Clear Mobile were engaged in pre-commitment trials<sup>61</sup>. In May 2011 Everything Everywhere and BT announced the UK's first live customer trial of LTE-based mobile broadband using 800MHz test spectrum to offer broadband services to up to 100 mobile customers and up to 100 fixed-line customers in a 25km<sup>2</sup> area of rural Cornwall; the trial will start in September and continue until early 2012<sup>62</sup>.

### **5.1.6 Overview of recent trends in residential fixed telecoms pricing**

In March 2011, BT announced changes to its residential fixed-line pricing, including:

- a 30p a month increase in the standard monthly line rental charge, to £13.90;
- a 9% increase in the cost of a daytime call to a UK landline call, from 7p a minute to 7.6p; and
- an increase in the call set-up fee, from 11.5p to 12.5p.

These came following a 50p increase in line rental and increases in call charges of around 10%, which BT introduced in October 2010, a £1 increase in standard line rental in April 2009 and a 75p increase in standard line rental in April 2008. BT's changes in pricing are

<sup>59</sup> <http://stakeholders.ofcom.org.uk/market-data-research/technology-research/2011/4G-Capacity-Gains/>

<sup>60</sup> <http://stakeholders.ofcom.org.uk/consultations/combined-award/>

<sup>61</sup> The GSA Mobile Broadband Update, 16 June 2011, [http://www.gsacom.com/gsm\\_3g/info\\_papers.php4](http://www.gsacom.com/gsm_3g/info_papers.php4)

<sup>62</sup> <http://everythingeverywhere.com/2011/05/25/everything-everywhere-and-bt-wholesale-to-deliver-the-uk%e2%80%99s-first-live-customer-trial-of-4g-high-speed-broadband-technology/>

often followed by other operators: Virgin Media increased various residential landline prices in April and will increase its line rental to match BT's £13.90 a month in August 2011, Sky increased line rental from £11.25 to £12.25 in July 2011, and TalkTalk also introduced revised prices in May 2011.

However, these headline price increases do not necessarily mean higher prices for consumers as they have been associated with a raft of other tariff changes such as options to receive inclusive calls in return for higher line rental, reduced line rental for paying 12 months in advance, lower monthly fees for committing to 12-month rolling contracts and 'discounts' for paying by direct debit and not receiving paper bills.

In this part of the report we look at how average residential fixed prices have changed over the last few years. Providers have attempted to maintain revenues and margins while the number of residential fixed lines, and the average use per line, have declined as consumers increasingly use mobile telephony. Ofcom does not regularly collect pricing information (rather, we collect revenue and volume data from operators), so the tariff data that feed into this paper are from Teligen (the data were provided to inform the price benchmarking work which we include in the our *ICMR* and *Consumer Experience* reports<sup>63</sup>), and from Pure Pricing (which publishes monthly updates covering UK fixed voice and broadband tariffs).

This analysis represents an overview of pricing trends using the data available to us: it is not a definitive assessment of pricing, but is designed to present a summary of key trends. It focuses on stand-alone fixed voice and broadband pricing, but also contains some analysis of the cost of voice and broadband bundles. We make no attempt to relate price changes to the competitive environment and draw no policy conclusions.

### **Operator revenue data indicate that average residential voice costs have remained broadly stable**

Based on data collected from operators, there is evidence that average prices paid for fixed voice services by residential consumers have fallen in real terms, albeit by a very small amount, over the last couple of years. Figure 5.23 shows the changes in the real cost of a basket of residential fixed voice services by calculating the average price per minute for access and calls in a year, and then defining the basket as the average number of monthly minutes used per residential connection in 2010 (227 outbound UK geographic minutes, 17 outbound international minutes and 20 outbound minutes to mobiles).

It indicates that RPI-adjusted prices fell by 1.9% in real terms in 2009 and again by 0.2% in 2010 (these prices include VAT; it is notable that retail prices appear to be largely unaffected by the decrease in VAT from 17.5% to 15% in January 2009 and the increase back to 17.5% in January 2010).

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<sup>63</sup> Ofcom, International Communications Market Report 2010, Section 2, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/icmr/ICMR\\_2010.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/icmr/ICMR_2010.pdf)

**Figure 5.23 Cost of a basket of residential fixed voice services**



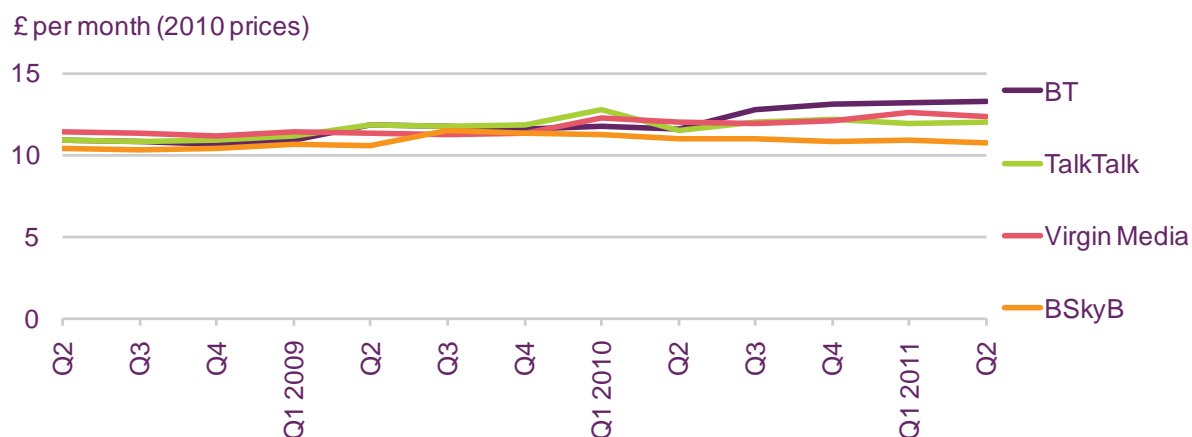
Source: Ofcom / operators

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

### Stand-alone line rental price increases have accelerated since 2008

BT is not alone among landline providers in increasing the prices of its residential prices. Figure 5.24 below shows how the rental cost of a stand-alone basic residential landline, provided by the three largest UK residential suppliers, has changed in the three years to 2010, with all having increased in nominal terms over the period, and these increases having accelerated since 2008.

**Figure 5.24 Monthly line rental for a basic residential line, 2007 to 2010**



Source: Ofcom analysis of data provided by Pure Pricing

Notes: Figures include VAT and are adjusted for RPI

### Tariff data show that basic fixed line call prices are also creeping upwards

Data compiled by Teligen to inform Ofcom's international price benchmarking work show how the charges for the largest UK residential fixed telephony providers' basic fixed-line voice services changed between July 2008 and July 2010. For the sake of simplicity, this analysis is based on the costs associated with each provider's stand-alone fixed-line voice service, but it should be noted that most homes now buy their fixed-line service as part of a bundle which includes broadband.

Figure 5.25 shows that, with the exception of the cost of BT calls to mobiles in 2009, nominal call set-up and per-minute charges increased across the board over the period in question.

**Figure 5.25 Estimated average service call costs for basic fixed-line services**

	Monthly line rental (£)	UK call set-up charge (pence)	UK fixed daytime call cost per minute (pence)	Average international daytime call cost per minute (pence)	Average mobile daytime call cost per minute (pence)
<b>BT</b>					
2008	11.75	6.0	4.0	20.1	12.5
2009	12.50	8.0	4.5	19.6	12.2
2010	12.79	9.9	5.9	20.0	12.5
<b>Virgin Media</b>					
2008	12.00	7.0	4.0	24.8	15.0
2009	12.25	8.8	5.4	32.9	15.7
2010	13.24	11.0	8.5	38.8	19.0
<b>TalkTalk</b>					
2008	11.75	6.0	3.9	14.7	12.0
2009	12.50	8.0	4.5	14.7	11.7
2010	14.44	9.9	5.8	14.7	12.0

Source: Ofcom / Teligen

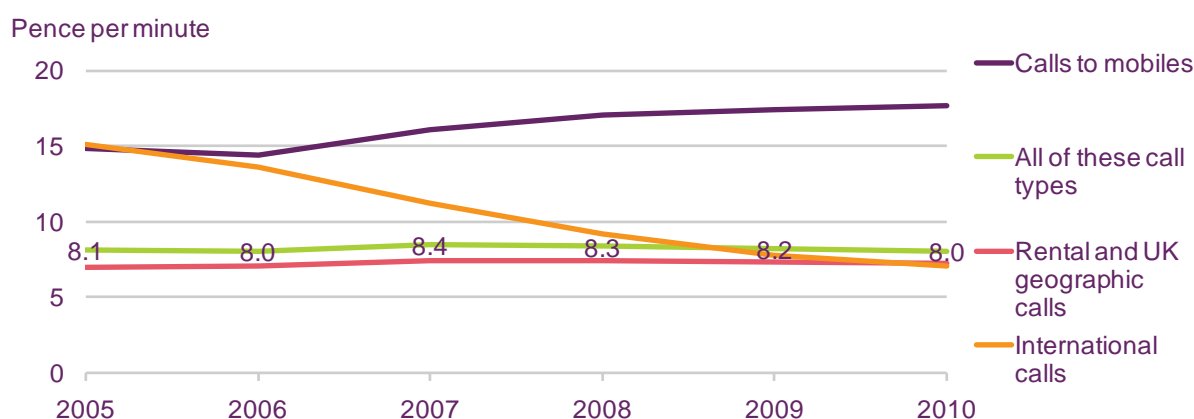
Notes: Figures include VAT, data as at July of each year; TalkTalk tariff changed in 2010 and included bundled evening calls in addition to weekend calls

### Overall average voice call costs fell in the five years to 2010

Figure 5.26 below indicates changes in the average cost per minute of an outbound fixed voice call, calculated by dividing total call revenues by total call volumes (and including access revenues in the calculation for all, and UK, geographic calls). This indicates that the average cost of a residential call minute in 2010 was lower than it had been five years previously, although it had risen and then fallen during the intervening period.

A possible explanation is that, although metered call charges have increased, more calls have been bundled in with line-rental tariffs, meaning that a lower proportion of calls are charged on a per-minute basis. The cost per minute of calls to mobiles appears to have increased since 2005, despite reductions in mobile termination rates.

**Figure 5.26 Cost per minute of residential fixed-voice calls**



Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators; calculation of total and UK geographic calls costs include line rental revenues; excludes non-geographic voice calls; adjusted for RPI; includes VAT

### **Changes in headline tariffs and other charges may be increasing the cost of services for some consumers**

While the average cost of fixed-line voice services appear to be fairly stable, tariff changes may affect different types of consumers in different ways: for example, it is possible that average costs are being maintained by offering lower prices to higher usage and/or engaged customers (who may have the highest propensity to switch, and may also offer greater up-sell opportunities, for example, to a broadband service), while increasing the prices to lower-usage customers and/or those who are less engaged.

While the tariff data shown above indicate how headline service charges have increased, other billing changes have also had an upward effect on the price that residential fixed-line customers have paid for their service over the past few years. While much price competition focuses on headline prices, providers have increased the prices of service elements that are not at the front of consumers' minds when comparing packages.

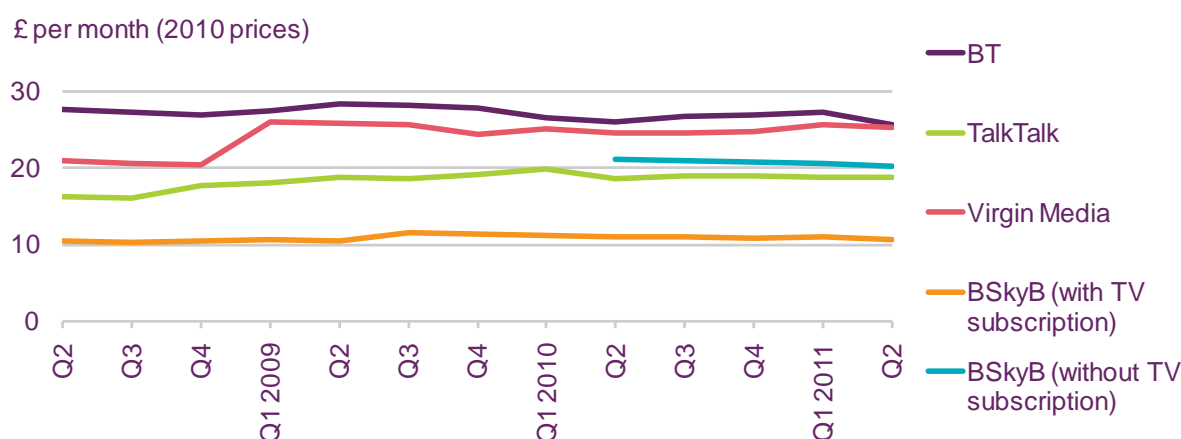
Examples include shifting the start of the evening off-peak period from 6pm to 7pm (as BT, Sky and TalkTalk did in 2010) and the introduction of additional charges for those consumers who do not pay their bills by direct debit (first introduced in 2008) and for those who continue to receive paper bills.

### **There is upward movement in the cost of bundled landline and broadband services**

Over half of all residential UK landlines are bought in conjunction with another service or services from the same supplier, most frequently fixed-line broadband. Figure 5.27 below shows how the monthly cost of a basic landline and broadband bundle, taken from the four largest residential telephony suppliers, has changed over time. This shows that in the three years to Q1 2011, BT was the only one of the three largest UK residential ISPs for which comparable figures were available (BT, TalkTalk and Virgin Media) which had a falling real monthly cost for taking these two services together (note that although BT prices have fallen, in part due to deregulation following Ofcom's 2009 *Fixed Narrowband Retail Services Markets Review*<sup>64</sup>, it is still the most expensive of the three providers).

<sup>64</sup> [http://stakeholders.ofcom.org.uk/consultations/retail\\_markets/?a=0](http://stakeholders.ofcom.org.uk/consultations/retail_markets/?a=0)

**Figure 5.27 Monthly cost of a bundled basic residential line and broadband**



Source: Ofcom analysis of data supplied by Pure Pricing

Note: Figures include VAT and are adjusted for RPI; BSkyB (with DSAT) figure excludes the cost of the required DSAT service

## Conclusions

Overall, average fixed voice prices in the UK have remained fairly stable in the past three years as increases in line rental, per-minute charges and call set-up charges have been offset by the increasing use of ‘bundled’ calls (where some types of calls are included within the access charge).

Changes in tariff structures over the past few years will have affected different types of consumers in different ways. High-using consumers may have seen a reduction in the price of their fixed voice telephony, as increases in line rental and out-of-bundle call charges have been offset by greater numbers of inclusive minutes, and the increasing range of tariff combinations available may have benefited savvy consumers who are willing and able to identify the best tariff for them. And some consumers purchasing voice in a bundle with broadband will have benefitted from an overall reduction in price.

Increases in fixed prices may hit the most vulnerable consumers hardest. Increasing line rental costs will affect those consumers who make low volumes of calls, who buy standalone landline services (and therefore do not benefit from bundle discounts) and those who rely on fixed telephony rather than mobiles. These groups are likely to include, among others, a large number of older consumers.

It is also notable that increases in line rental represent a ‘hidden’ cost of broadband: a fixed voice line is required to receive ADSL broadband services and line rental is rarely included in headline prices.

While an increasing range and complexity of tariffs may increase consumer choice, it also increases the potential for consumer confusion, particularly among more vulnerable consumer groups, and the likelihood of consumers being on sub-optimal tariffs. The “hidden” nature of some of the costs – for example, increases in call connection charges or additional fees for paper billing – is also a potential barrier to consumers understanding the cost of services and making comparisons between them. Confusion over switching processes and contractual lock-ins may exacerbate the difficulty of consumers taking the tariff most suitable for their needs.

There are a number of ways by which consumers can lower their bills, including:

- Shopping around and comparing the increasing range of (in many cases complex) tariffs to find that which best meets their needs (including 'bolt-ons' such as anytime packages, mobile call packages, international call packages and 'friends and family' packages that offer inclusive or discounted calls in return for an increase in line rental).
- Paying for bills by direct debit and opting out of paper bills.
- Negotiating 'loyalty' discounts when out of contract, in exchange for agreeing to stay with a supplier for an additional minimum period.
- Some lower-income users of landline services will be able to take advantage of the BT Basic tariff, which costs £13.80 a quarter (£4.60 a month) and includes £4.50 worth of inclusive calls.
- It is also currently possible to pay the BT line rental fee for a year in advance for £120 (a saving of £46.80) (although it is, of course, likely that lower income households may be less able to take advantage of this tariff due to the high upfront cost). Sky also operates a similar scheme.
- Use of a Voice over internet protocol (VoIP) service over a broadband connection may also enable some consumers to reduce their overall spend on fixed voice services.





## 5.2 The telecoms industry

### 5.2.1 Introduction

In this section of the report we examine recent trends in the telecommunications market from an industry and operator viewpoint. This section is structured as follows:

- Section 5.2.2 provides an overview of the industry in its entirety, considering recent developments in revenue growth, and availability and take-up of telecom services.
- Section 5.2.3 covers the latest developments in the roll-out of local loop unbundling (LLU) and the take-up of LLU services.
- Section 5.2.4 looks at the fixed voice telephony market.
- Section 5.2.5 considers the markets for mobile voice and data services.
- Section 5.2.6 looks at the fixed internet market, including fixed broadband services.
- Section 5.2.7 looks at businesses' use of voice and data telephony services in more depth.

The key findings in this section of the report are:

- **Total operator-reported telecoms revenues fell by 2% in 2010.** Retail revenues from mobile services increased slightly (up 1%, having fallen for the first time in 2009), but those from fixed voice and fixed internet services continued to decline, down by 3% and 6% respectively (page 276).
- **BT's share of voice call volumes fell to under 20% during the year.** BT's share of total fixed and mobile voice call volumes fell to 19.4% in 2010, while mobile's share increased to 49.2%, making it likely that more than half of UK voice calls will be mobile-originated in 2011. BT's share of fixed voice call volumes also fell to under 40% for the first time during the year (pages 281 and 286).
- **Total revenues from fixed internet services fell by 6% in 2010.** Total fixed internet revenues were £3.0bn in 2010, down from £3.2bn a year previously. The majority of this fall was due to declining residential broadband prices. (page 294).
- **The number of UK business fixed lines fell to under 10 million in 2010.** The decline in the number of businesses lines accelerated in 2010, falling by 5.2%, the largest annual decline since the number of business lines began to decline in 2008 (page 300).

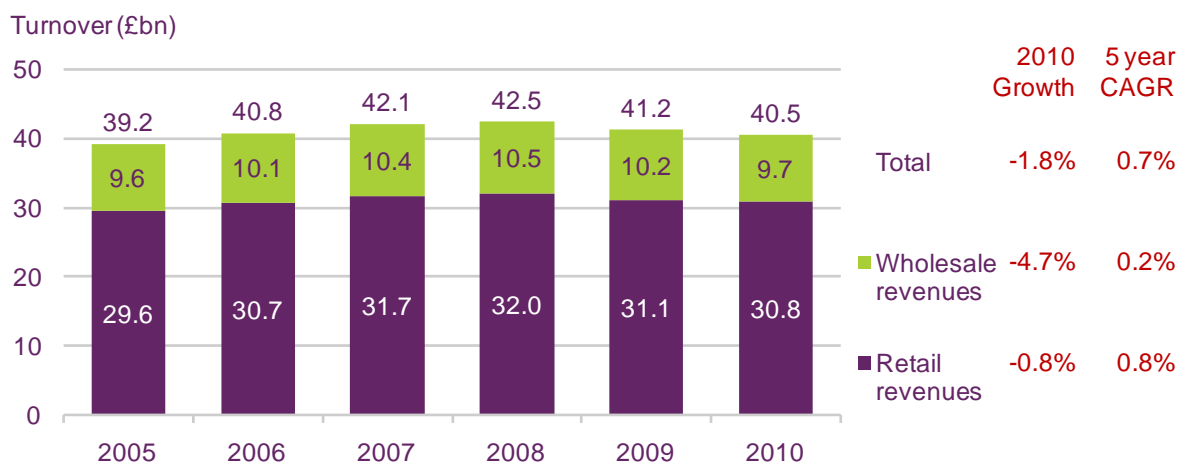
### 5.2.2 Industry overview

Data reported to Ofcom by telecoms providers suggest that the UK telecommunications industry generated £40.5bn in turnover during 2010, 1.8% less than the corresponding figure for 2009 (Figure 5.28). Of this revenue, £30.8bn (76%) was generated by retail services, while wholesale services accounted for the remaining £9.7bn (24% of the total).

These figures, and the trend in growth shown, are significantly different to the numbers compiled by the Office of National Statistics (ONS), which show total telecoms turnover of £65.6bn in 2010, an increase of 4.6% on 2009. This discrepancy is explained by the fact that

ONS figures include turnover from activities in markets not regulated by Ofcom, such as revenue from the transmission of radio and television programmes, and network installation and maintenance costs.

**Figure 5.28 UK telecoms industry revenue overview**



Source: Ofcom / ONS / operators

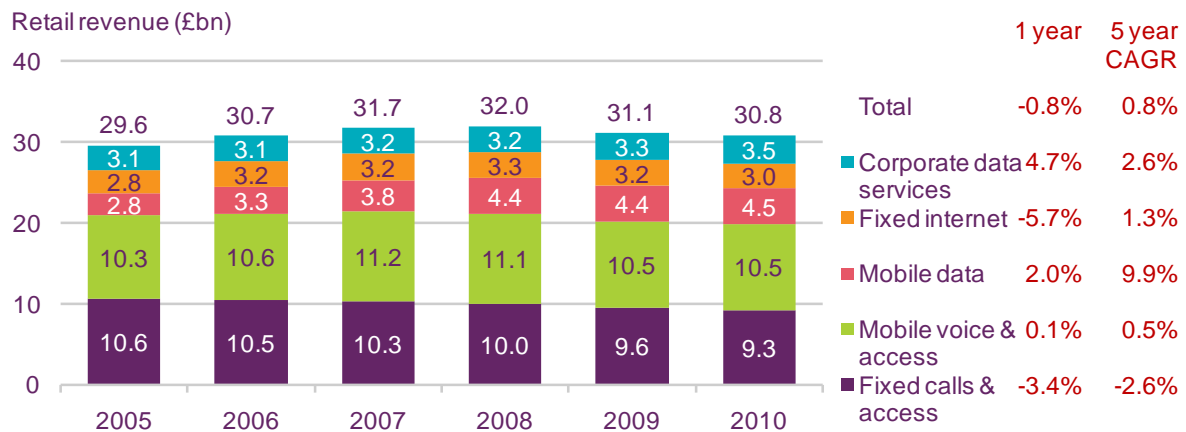
Note: Includes estimates where Ofcom does not receive data from operators

### Overall service revenue continues to decline

Ofcom's own figures, collected from operators, show that overall operator revenues from telecoms services continued to decline in 2010, having fallen in 2009 for the first time since market data began to be collected by Oftel in the early 1990s. Figure 5.29 shows that total operator-reported retail revenues fell by 0.8% during 2010 to £30.8bn. The main cause of this fall was the continued decline in revenues from fixed telecoms services; fixed voice revenues fell by 3.4% during the year as the number of landlines continued to decline, while fixed internet revenues fell by 5.7% as a result of consumers switching to lower-cost broadband services.

Mobile voice and data revenues increased in 2010, with mobile voice and access (line rental) revenues increasing marginally (up by 0.1%), following a 5.0% fall in 2009, and mobile data revenues increasing by 2.0%. The return to growth in mobile revenues can be partly explained by growth in the take-up of smartphones (it is commonplace for handsets to be offered to consumers either free or heavily discounted at the start of a contract, with the cost of the handset being recouped in the monthly payments throughout the duration of the contract – these monthly revenues are included in operator-reported revenues, although 'one-off' handset revenues are not), along with the related increases in the proportion of total subscribers who are post-pay and use data services.

**Figure 5.29 UK telecoms industry retail revenue**

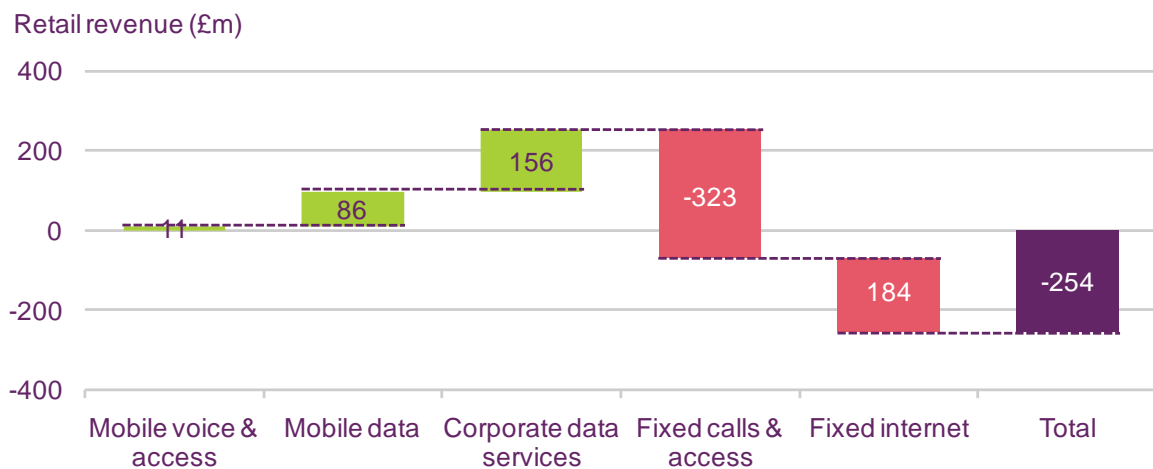


Source: Ofcom / operators / IDC

**Operator-reported telecoms revenue fell by over £250m in 2010**

Figure 5.30 shows how retail revenue growth of £97m in mobile services and £156m in corporate data services was offset by a £323m fall in fixed voice services and a £184m decline in fixed internet services, resulting in an overall fall in retail telecoms revenue of £254m. While total revenue from data services increased by £58m during the year, total revenue from voice telephony fell by £312m.

**Figure 5.30 Change in UK telecoms industry retail revenue, 2010**



Source: Ofcom / operators / IDC

**The proportion of retail revenue generated by data services was 36% in 2010**

The growing importance of data services to the telecoms industry is evident in Figure 5.31, which shows that data services contributed 35.7% of total industry service revenue in 2010, up from 29.4% five years previously.

With overall voice revenues in decline, operators are looking to data to drive future growth; although the 0.4 percentage point increase in the proportion of revenues generated by data services in 2010 was less than a third of the 1.4 percentage point increase in 2009, as growth in revenue from mobile data services (up £0.1bn) and corporate data services (up £0.2bn) was offset by falling fixed internet revenues (down by £0.2bn as a result of falling

broadband revenues as consumers switch to bundled services). Nevertheless, it is likely that in the coming years fixed-line operators will look to data services to drive growth, through offering higher-speed connectivity with the roll-out of super-fast broadband, and developing additional revenue streams through offering new services such as IPTV, cloud computing and machine-to-machine services such as smart metering and fleet management.

Mobile network operators (MNOs) face a similar challenge, with mobile voice and access revenues having grown by just £0.1bn in 2010 (following a 5% fall in 2009). MNOs are therefore looking to generate revenue growth from mobile data services on mobile phones, mobile broadband 'dongles' connected to PCs, and new wireless connected devices such as e-readers, 'tablets' and other data-centric devices. Like fixed operators, mobile providers are investing in networks that provide faster data speeds (3G+ and 4G services) and are looking to develop new services that allow for the continued growth of devices connected wirelessly.

**Figure 5.31 Voice and data revenue as a proportion of total telecoms revenue**



Source: Ofcom / operators

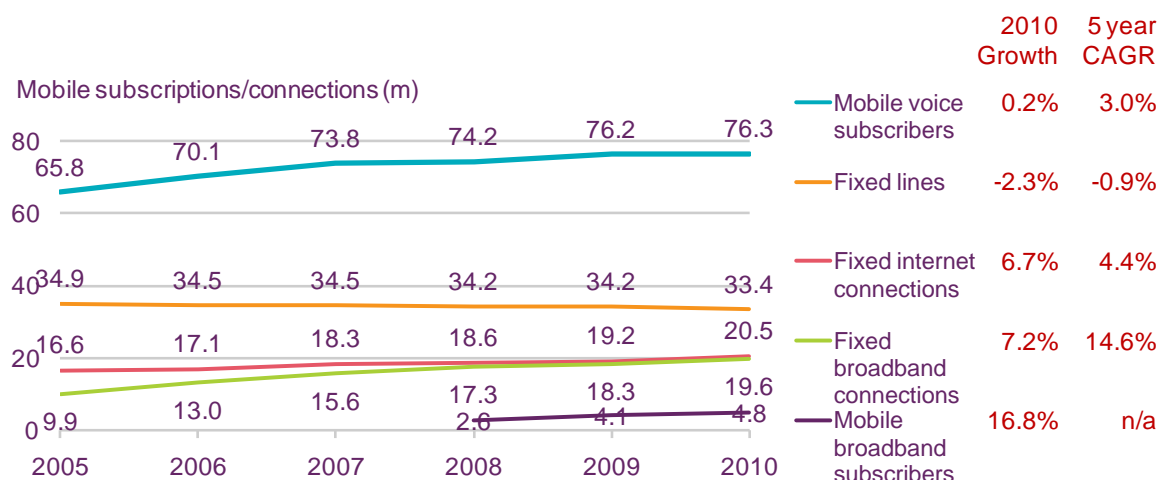
The bundling of messaging and data services in with monthly rental tariffs means voice revenue will include an element of mobile data revenue

### Fixed-line decline accelerates as the number of mobile voice and data connections grows

The number of fixed lines continued to decline in 2010, falling by 2.3% (0.8 million) to 33.4 million (Figure 5.32). This was the fastest rate of decline since connections began to decrease in 2002, and the rate of decline in the number of business lines (5.2%) was much higher than that in the residential fixed telephony market (1.0%), suggesting that business users are more likely to switch away from fixed voice to other methods of communication, including VoIP and mobiles.

The total number of mobile connections continued to rise in 2010, increasing by 0.9 million (1.1%) to 81.1 million. The main driver behind this growth was a 0.7 million increase in the number of mobile broadband connections using a USB dongle or datacard. Growth in the total number of residential and SME fixed broadband connections increased to 7.2% in 2010, with 66% of households having a fixed-line broadband connection).

**Figure 5.32 Total telecoms connections**



Source: Ofcom / operators

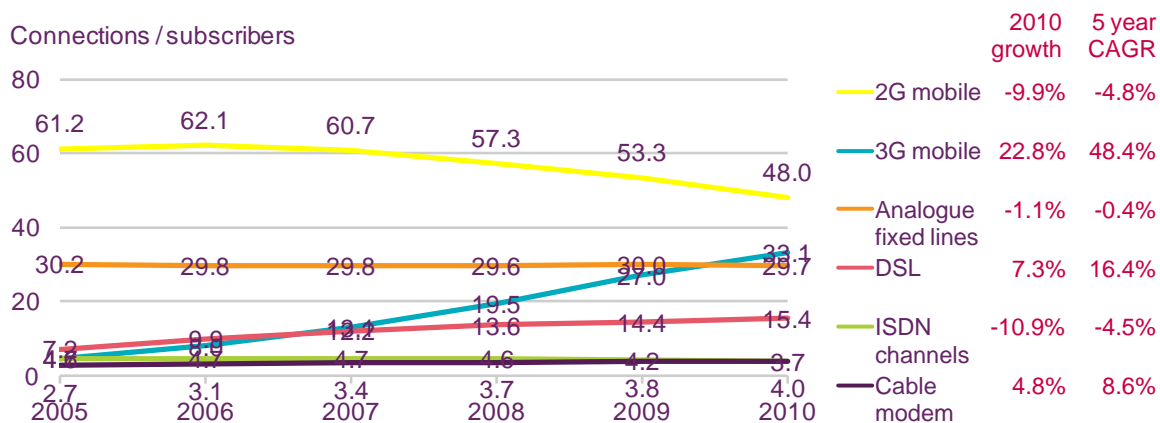
Note: Includes estimates where Ofcom does not receive data from operators; broadband excludes corporate connections; fixed-line connections includes PSTN lines and ISDN channels along with lines reported as 'other' which were previously excluded from the analysis

### Growth in the number of 3G and DSL connections continues

The number of digital subscriber-line (DSL) broadband connections continued to grow in 2010, rising by 7.3% to 15.4 million (Figure 5.33), in part driven by the take-up of broadband services 'bundled' with voice telephony ('double-play') or voice telephony and pay-TV services ('triple-play'). In contrast, the decline in ISDN channels accelerated in 2010, suggesting that an increasing number of businesses are using other broadband technologies and switching their voice calls to cheaper alternatives such as VoIP and mobile telephony.

The number of mobile connections able to access third-generation (3G) mobile technology increased by 6.2 million in 2010 to 33.1 million, more than double the number three years previously. 2G connections fell by 5.3 million connections (9.9%) during 2010, to 48.0 million, in part driven by the growth in take-up of smartphones, which use the faster data connections provided by 3G networks.

**Figure 5.33 Fixed and mobile connections, by technology**



Source: Ofcom / operators

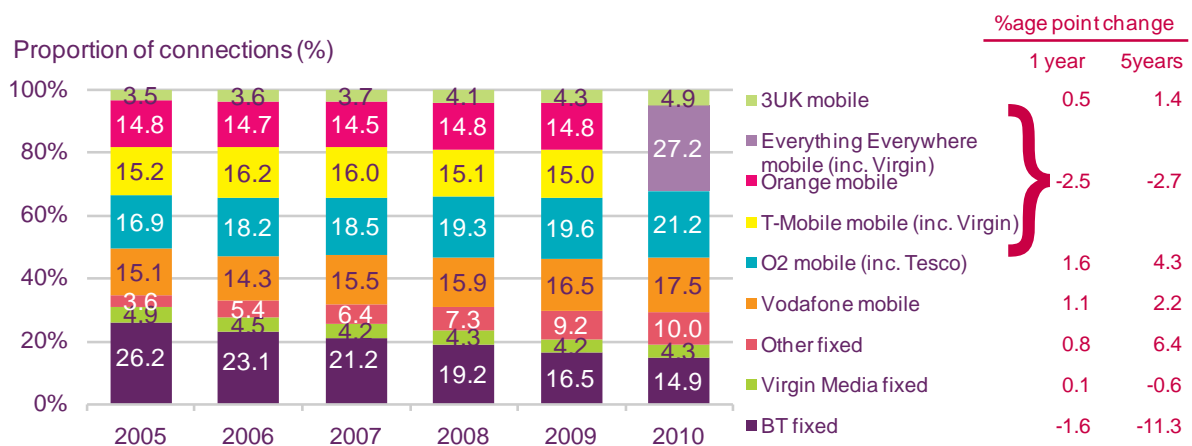
Note: Includes estimates where Ofcom does not receive data from operators; broadband excludes corporate connections; analogue fixed lines include lines reported as 'other' which were previously excluded from the analysis

## Mobile's share of total connections continues to grow

Mobile operators made up 70.8% of all telecoms connections at the end of 2010, 5.5 percentage points more than they had five years previously and a 0.7 percentage point increase compared to the end of 2009 (Figure 5.34). This increase is likely to continue as the number of mobile-connected devices - particularly focused on data-centric services - continues to expand. O2 (including Tesco Mobile) reported the largest increase in share among the mobile operators, increasing by 1.6 percentage points due to strong growth in post-pay connections in 2010.

The decline in BT's share of total connections slowed in 2010, falling by 1.6 percentage points to 14.9% (compared to a 2.7 percentage point decline in 2009). BT's share of total fixed lines stood at 51.0% at the end of 2010, down 4.2 percentage points, as alternative operators, particularly those using LLU, continued to take market share.

**Figure 5.34 Share of total UK fixed and mobile telecoms connections**



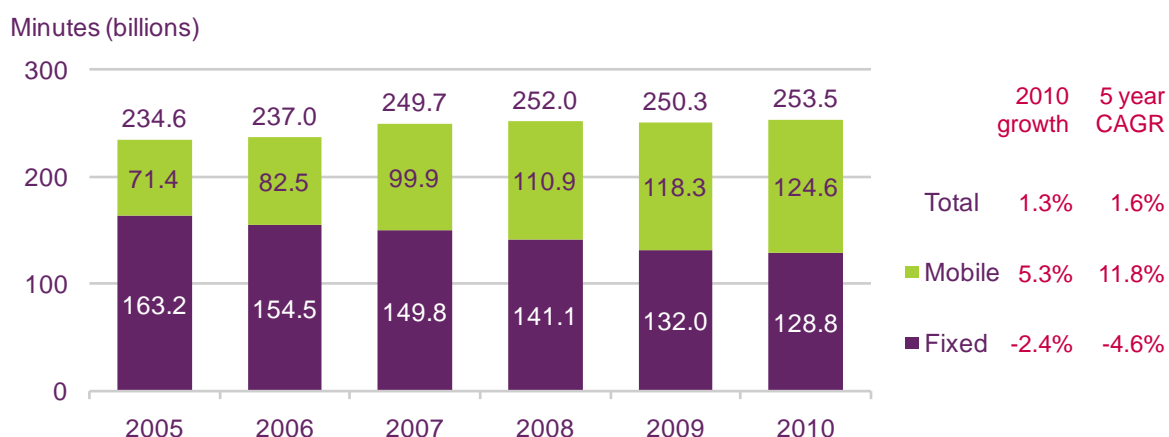
Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators; 'Other' includes carrier pre-selection and wholesale line rental in addition to fixed other licensed operators. MVNOs and mobile service provider connections are included within the network operator figures

## Mobile drives up total voice telephony call volumes

Figure 5.35 shows that over the past few years growth in mobile voice call volumes has more than offset the decline in fixed voice volumes, except in 2009 when total voice call revenues fell by 0.7%. In 2010, total UK voice call volumes returned to growth, increasing by 1.3% to 253.5 billion minutes. Mobile voice call volumes increased by 5.3% during the year (lower than the 11.8% average over the five years to 2010), while fixed volumes fell by 2.4%, a slower rate of decline than the average 4.6% fall in the five years to 2010.

**Figure 5.35 Total voice volumes**



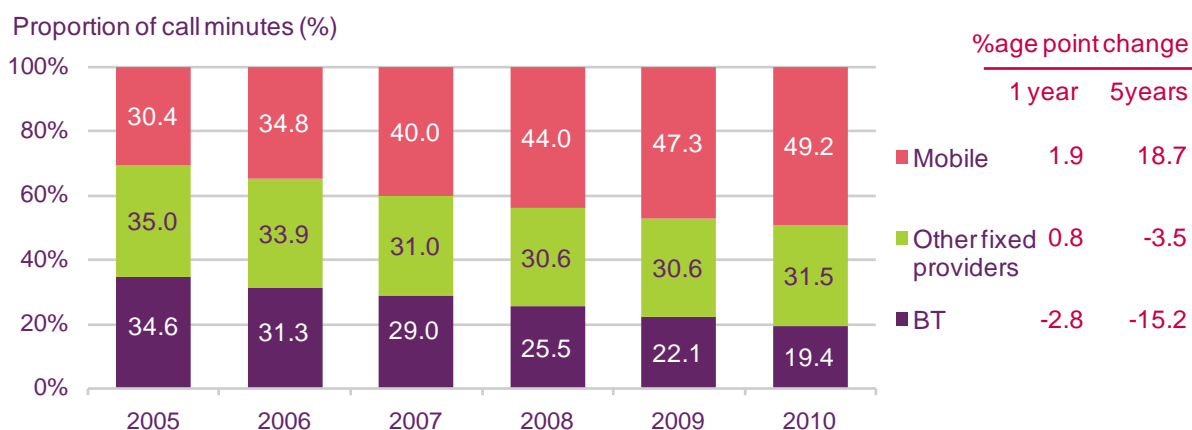
Source: Ofcom / operators

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

### Mobile likely to exceed fixed call volumes in 2011

Over the past few years an increasing proportion of total voice volumes have originated on mobile networks. In 2010 49.2% of voice call minutes originated on mobile networks, and based on current trends mobile will generate the majority of outgoing voice call volumes in 2011 (Figure 5.36). In the five years to 2010 mobile's share of originating call volumes increased by 18.7 percentage points, while BT's fell by 15.2 percentage points and other fixed providers' by 3.5 percentage points.

**Figure 5.36 Share of total UK voice call volumes**



Source: Ofcom / operators

Note: Includes non-geographic voice calls

### 5.2.3 Local loop unbundling

#### Growth in proportion of unbundled local exchanges increases

During 2010 the proportion of UK premises connected to an unbundled BT local exchange increased by 4.5 percentage points to 89.0%, compared to increases of 0.3 percentage points in 2009 and 4.0 percentage points in 2008. This reflects LLU providers' renewed focus on rolling out their services, and was rewarded by a 3.0 percentage point increase in



the proportion of lines taking LLU services in 2010, compared to a 2.7 percentage point increase in 2009.

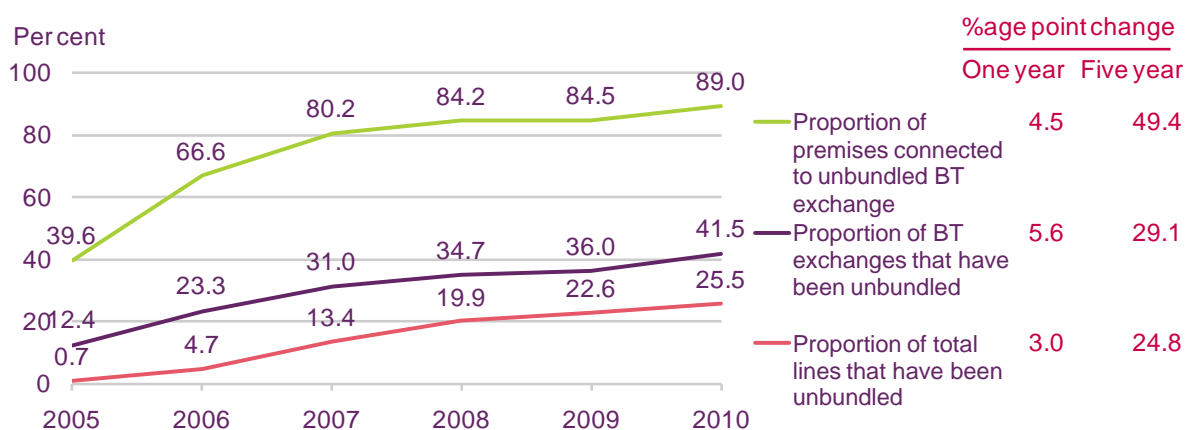
In rolling out LLU, alternative providers have concentrated on unbundling exchanges that are connected to a large number of premises, in order to maximise their potential customer bases, and this is reflected by the fact that while 89.0% of premises are connected to an unbundled local exchange, just 25.5% of exchanges have been unbundled (Figure 5.37). Given the high up-front costs of unbundling an exchange, LLU providers are likely to be less inclined to unbundle the remaining BT exchanges, as these are typically connected to far fewer premises than those which have already been unbundled.

### Local loop unbundling (LLU)

LLU enables operators to site their own equipment in the incumbent operator's local exchange, lease the local loop (the twisted copper cable from the exchange to the customer's premises) and, after connecting the local exchange to their own network, provide either DSL broadband or DSL broadband and fixed voice services.

Under partial LLU the unbundling operator and the incumbent share the same line, with the LLU operator providing DSL broadband services and the incumbent providing the voice service. With full LLU the unbundling operator provides both DSL broadband and voice services and the customer's relationship with the incumbent ceases.

**Figure 5.37 Proportion of unbundled exchanges and connected premises**



Source: Ofcom / operators

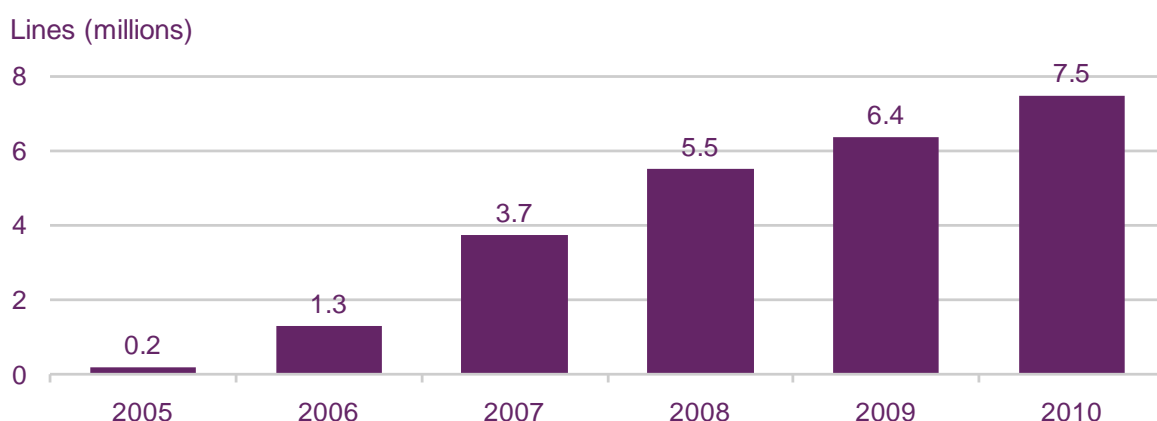
### Growth in LLU lines increases to 18% during 2010

There were a total of 7.5 million unbundled lines providing stand-alone broadband or bundled fixed voice and broadband services at the end of 2010, an increase of 1.1 million lines (17.7%) during the year (Figure 5.38). This represented an increase in connection growth compared to 2009, when the number of LLU lines increased by 15.6% (0.9 million).

This acceleration in LLU growth can be attributed to the popularity of bundled fixed voice and broadband services which are often provided using full LLU, and growth in the availability of these services. A number of larger LLU providers (such as O2 and Sky) which previously offered only stand-alone LLU broadband services (leaving BT to provide voice services over the same line), have started to offer bundled fixed voice and broadband LLU services over the past few years, and take-up of these services has been the main driver behind continuing LLU connection growth.



**Figure 5.38 Unbundled lines (full and partial unbundling)**



Source: Ofcom / operators

## 5.2.4 Fixed voice services

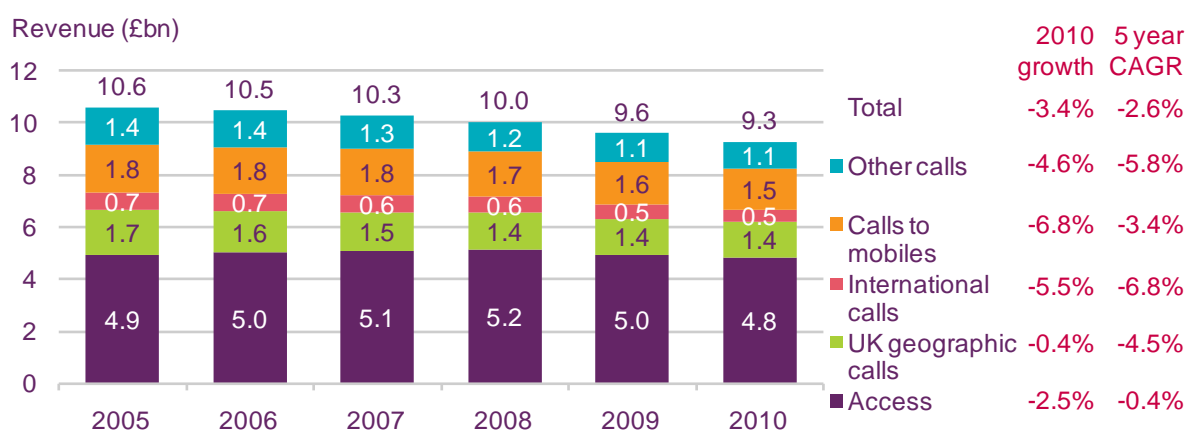
### Revenue

#### Fixed-line voice revenue fell by £0.3bn during 2010

The decline in fixed line voice revenue slowed in 2010, with total fixed voice revenue falling by 3.4% to £9.3bn (Figure 5.39). During the year, revenue from fixed access fell by 2.5%, while fixed call revenue fell by an average of 4.3%, with the decline in revenue ranging from 0.4% for UK geographic calls to 6.8% for calls to mobiles.

The loss of revenue from fixed voice calls is likely to be related to increasing take-up of fixed-line access tariffs that include bundled calls. Most standard fixed telephony line rental tariffs now include some element of bundled calls to UK geographic numbers, and over recent years the availability of tariffs which include bundled calls to these numbers at all times has increased. Some tariffs also include bundled calls to selected international destinations, and falling mobile termination rates should see calls to UK mobiles increasingly being included in fixed line rental services during the coming years.

**Figure 5.39 Retail fixed voice telecoms revenues**



Source: Ofcom / operators

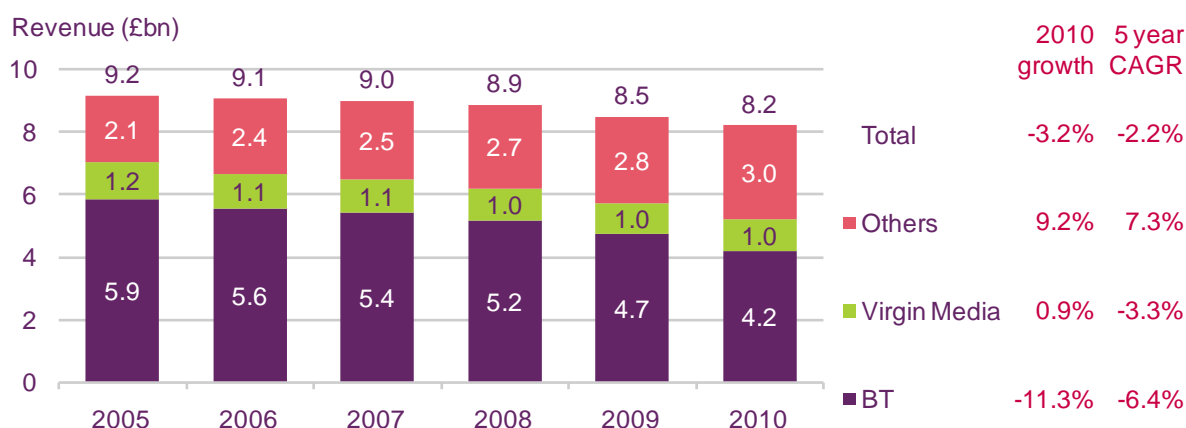
Note: Includes estimates where Ofcom does not receive data from operators

## BT's fixed voice revenue fell by over 10% in 2010

Total fixed voice revenue (which here excludes NTS voice calls) fell by 3.2% (£0.3bn) to £8.2bn in 2010 (Figure 5.40). This was a faster rate than the 2.2% average decline over the five years to 2010 and came as a result of a £0.5bn (11.3%) fall in BT's fixed voice revenues which was offset by increasing revenues for Virgin Media (up 0.9%) and 'other' providers (up 9.2%).

Falling total fixed voice revenues reflect the growing use of mobiles, VoIP and other forms of communication such as email and instant messaging. Although BT's retail fixed voice revenues are falling rapidly, growth in the use of services provided by 'other' operators means that BT will benefit from increasing wholesale revenues, as many of these operators use wholesale BT products such as local loop unbundling (LLU), wholesale line rental (WLR), carrier pre-selection (CPS) and its *Wholesale Calls* product.

**Figure 5.40 Retail fixed voice telecoms revenues, by provider**



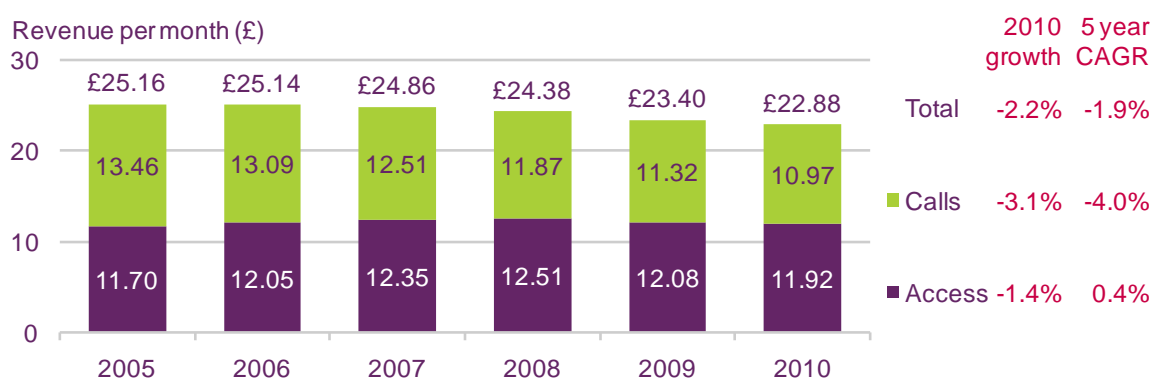
Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators, excludes revenues from NTS voice calls

## Average revenue per fixed line continues to fall

Average monthly revenue per fixed line fell marginally in 2010, declining by £0.52 to £22.88. Both average call and average rental revenue per line fell during the year, with the 3.1% fall in average call revenue during the year being greater than that in access fees (1.4%) (Figure 5.41). Prior to 2009, average fixed access spend per line had been increasing as providers started to include more bundled calls in their rental packages (and hence average call spend continued to decline). However, in 2009 and 2010 average rental per line spend has fallen as consumers have switched to lower-cost (often LLU-based) bundled services.

**Figure 5.41 Average monthly voice revenue per fixed line**



Source: Ofcom / operators

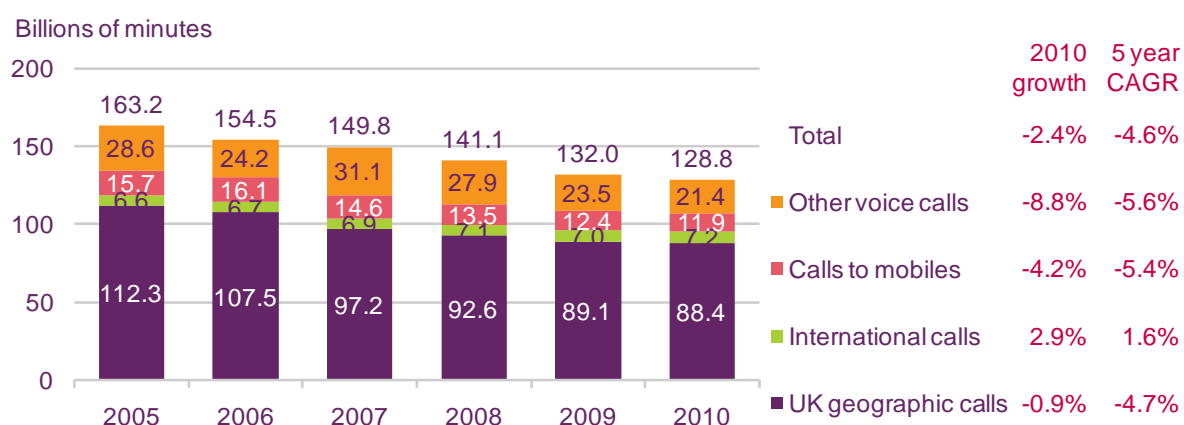
Note: Includes spend on non-geographic voice calls

### Fixed-line call volumes

#### Decline in fixed voice call volumes slows to 2.4%

Fixed call volumes fell by over 20% to 128.8 billion minutes in the five years to 2010, largely as a result of the decline of calls to UK geographic numbers (Figure 5.42). The annual rate of decline in total fixed call volumes slowed to 2.4% in 2010, compared to a 6.5% fall in 2009, and the largest fall in fixed-line originated call volumes during 2010 was in 'other' voice calls, in which category volumes declined by 8.8% to 21.4 billion minutes. This is likely to be a result of the decline in calls to directory enquiries and premium rate numbers, as consumers increasingly use the internet to access information. The only type of fixed-line call for which volumes increased in 2010 was international calls, which grew by 2.9% to 7.2 billion minutes.

**Figure 5.42 Fixed telecoms voice call volumes**



Source: Ofcom / operators

#### BT's share of fixed voice call volumes falls under 40% for the first time

BT's share of total fixed-line voice call volumes fell below 40% for the first time in 2010, with its market share declining by 3.5 percentage points to 36.5% during the year. Virgin Media also lost share during 2010 (down 0.9 percentage points to 12.1%), while other direct providers (up 3.7 percentage points) and indirect access providers (up 0.8 percentage points) both increased their shares (Figure 5.43).

This was something of a reversal, as in 2009 other indirect operator market share growth (up 2.6 percentage points) was higher than that of direct access providers (up 1.7 percentage points). The change in 2010 came as a result of strong growth in the use of full LLU-based telephony services, which are included in the 'other direct' category. Other indirect calls (which include those made using CPS and BT's Wholesale Calls service) accounted for a third of all fixed voice call volumes in 2010, only a few percentage points short of BT's own retail share.

**Figure 5.43 Share of retail fixed voice call volumes**



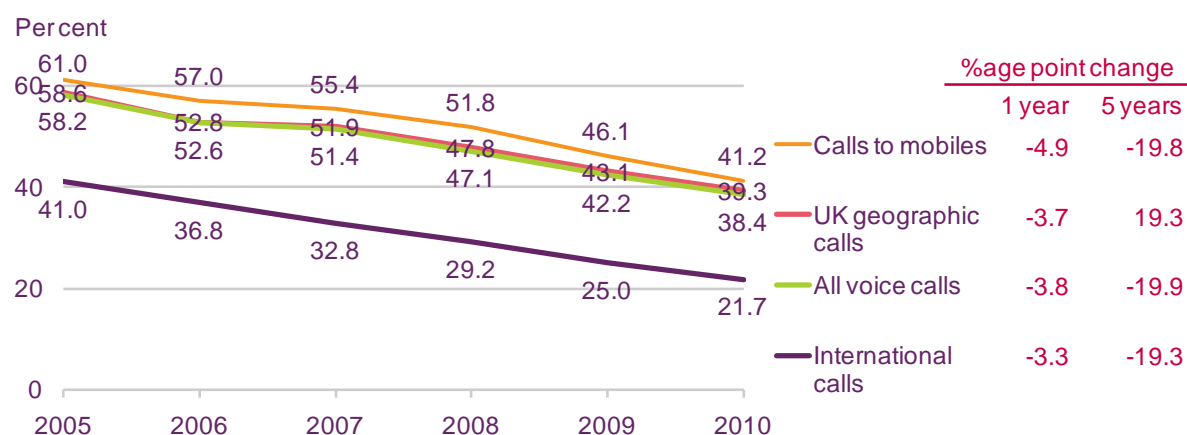
Source: Ofcom/operators

Note: Excludes NTS voice calls

**BT's share of retail residential UK voice call volumes falls below 40%**

BT continued to lose residential retail market share in 2010; its share of fixed voice calls (excluding NTS voice calls) falling by 3.8 percentage points to 38.4% during the year (Figure 5.44). The largest fall in BT's share of residential calls was in calls to mobiles (down 4.9 percentage points to 41.2%), while its share of UK geographic and international calls fell by 3.7 and 3.3 percentage points respectively. BT's combined share of all of these call types has fallen by 20 percentage points since 2005, reflecting the competition it faces from LLU-based fixed voice services in the residential market.

**Figure 5.44 BT share of residential fixed-voice call volumes, by type**



Source: Ofcom / operators

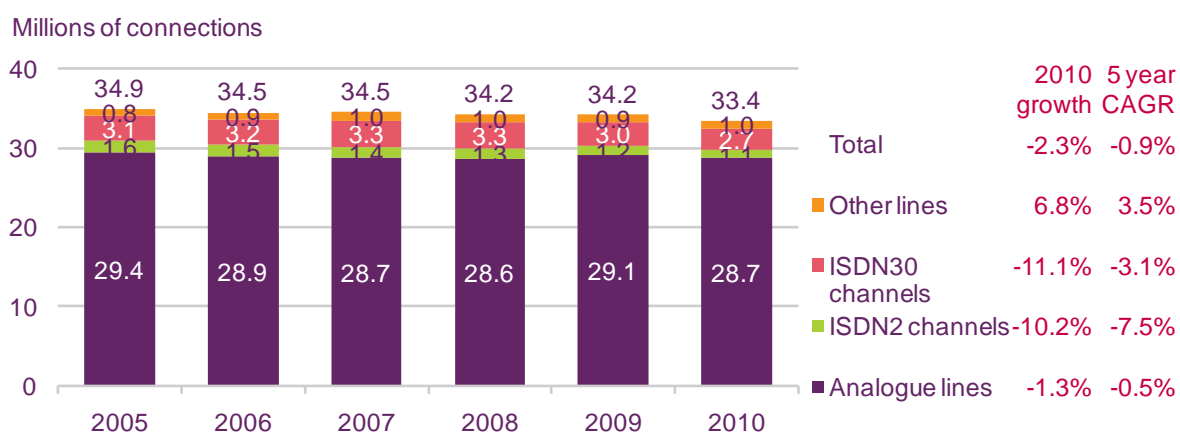
Note: Includes estimates where Ofcom does not receive data from operators; excludes NTS voice calls

## Fixed-line voice connections

### The total number of fixed lines fell by 2.3% in 2010

There were 33.4 million UK fixed lines at the end of 2010, 0.8 million (2.3%) fewer than a year previously (Figure 5.45). This represented an increase in the rate of decline, both compared to 2009 (when the number of fixed lines fell by just 0.1%) and the 0.9% average fall over the five years to 2010. The largest fall in connections was for analogue lines (down by 0.4 million), although the percentage rate of decline was lower than that for ISDN channels.

**Figure 5.45 Fixed-line connections, by type**



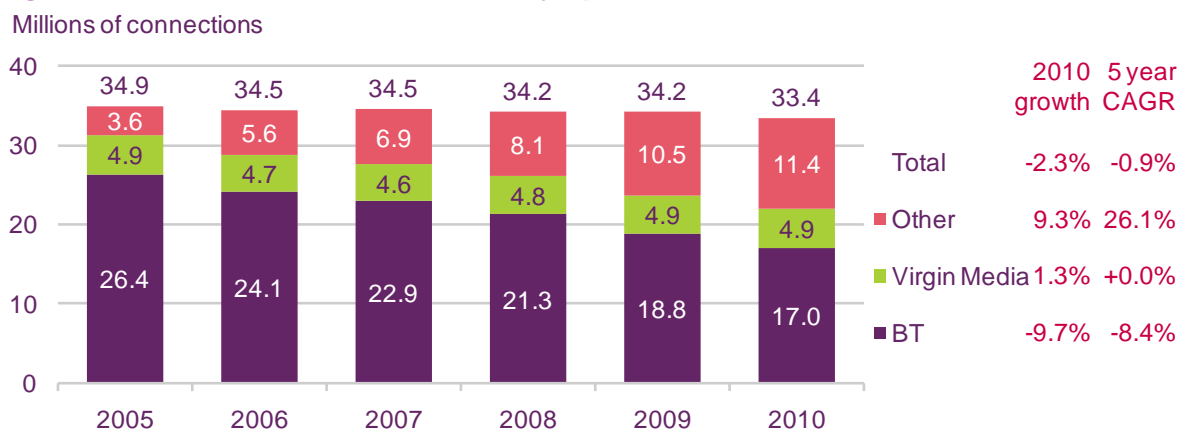
Source: Ofcom / operators

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

### BT's share of retail fixed voice connections likely to fall below 50% in 2011

At the end of 2010 BT had 17.0 million retail analogue lines and ISDN channels, equating to a market share of 51.0% (Figure 5.46). This was 4.2 percentage points lower than at the end of 2009 and if this trend continues BT's share is likely to fall below 50% for the first time in 2011. Virgin Media's share of fixed lines increased by 0.5% to 14.7% during 2010, following the fourth successive year in which it increased its fixed-line subscriber numbers, while the number of lines provided by operators other than BT and Virgin Media had grown to 11.4 million by end of 2010, a 34.3% share of total fixed-line connections.

**Figure 5.46 Fixed-line connections, by operator**



Source: Ofcom / operators

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

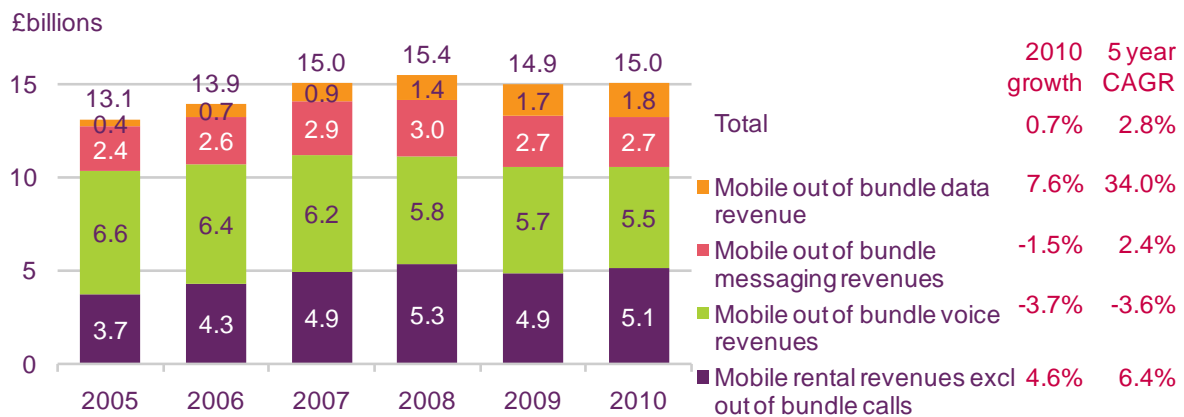
## 5.2.5 Mobile services

### Mobile revenues

#### Mobile revenues returned to growth in 2010

Having fallen by 3.3% in 2009, mobile revenues returned to growth in 2010, although the rate of increase (0.7%) was a quarter the 2.8% average over the five years to 2010. The largest revenue increase was in rental revenues, which grew by £0.2bn as the proportion of mobile subscribers with post-pay contracts increased, as shown in Figure 5.47. However, revenues from out-of-bundle services fell as a higher proportion of users received voice, messaging and data allowances. The one exception to this was out-of-bundle data revenue, which increased by 7.6%, probably as a result of growth in the use of smartphones, particularly among pre-pay users, and smaller data allowances / unpredictable levels of data use among consumers.

**Figure 5.47 Mobile telecoms retail revenues**



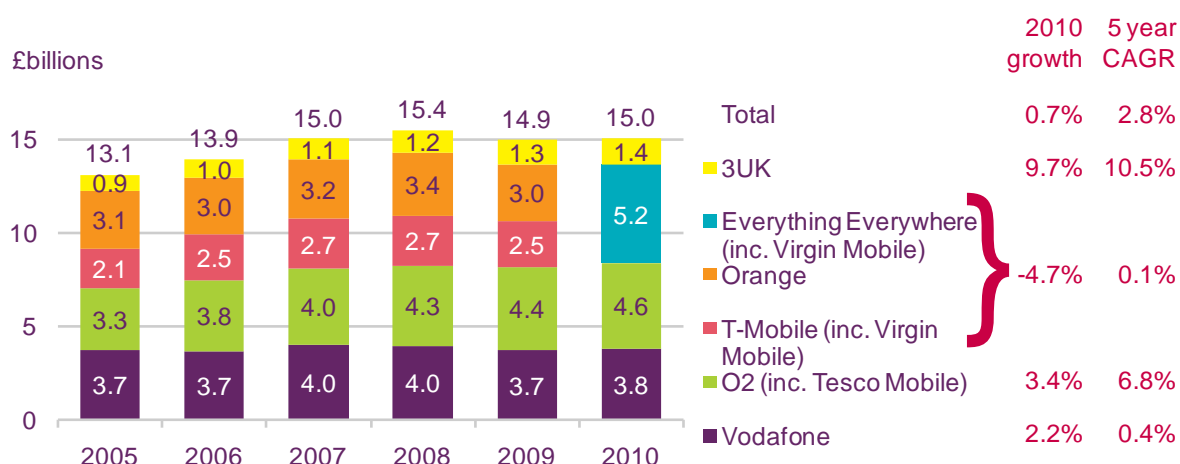
Source: Ofcom / operators

#### Everything Everywhere becomes the UK's largest network in terms of revenue

The merger of T-Mobile and Orange made Everything Everywhere, the resulting provider, the largest UK mobile network in 2010, with revenues of £5.2bn, 34.8% of total mobile retail revenue (Figure 5.48). However, comparing revenue growth across the networks in 2010 shows that Everything Everywhere had the worst revenue performance among the UK MNOs in 2010, with total revenues 4.7% lower in 2010 than the combined 2009 revenues for Orange and T-Mobile (including Virgin Mobile).

The smallest network, 3UK, had the strongest percentage growth in revenues in 2010, up an estimated 9.7% to £1.4bn, corresponding to a market share of 9.5%, 0.8 percentage points higher than a year previously. Vodafone and O2 also increased their revenues during the year.

**Figure 5.48 Mobile telecoms retail revenues, by provider**



Source: Ofcom / operators

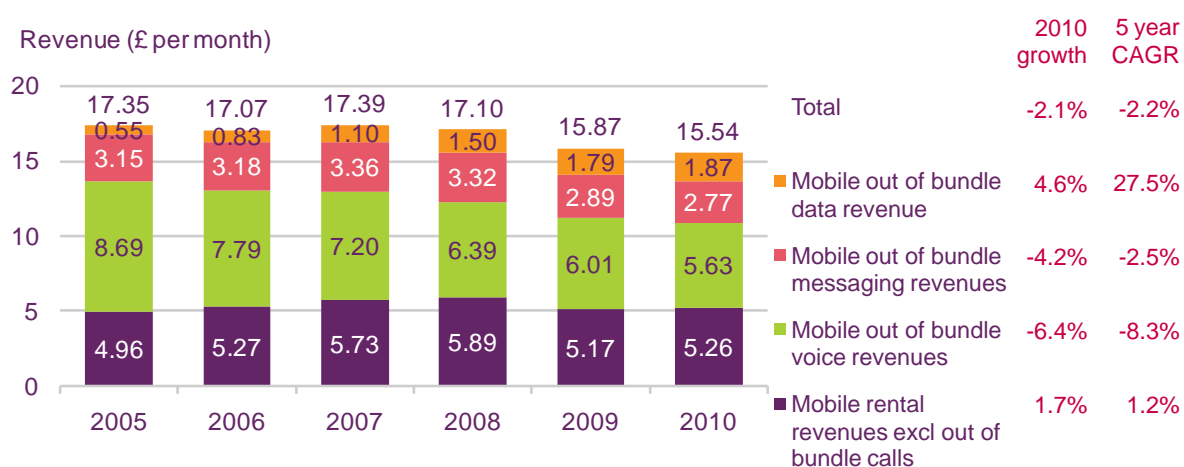
### T-Mobile/Orange merger – Everything Everywhere

In September 2009 the European owners of Orange and T-Mobile UK (France Telecom and Deutsche Telekom) announced that they would merge their UK businesses to create a 50/50 joint venture under the company name Everything Everywhere Ltd. The European Commission granted clearance to the proposed merger in March 2010, after commitments were given on spectrum and network sharing. The new entity merged its accounts in April 2010 and was officially launched on 1 July.

### Revenue per connection fell by 2.1% in 2010

Average voice and data revenue per mobile connection has fallen steadily since 2007 as a result of falling prices and the introduction of more generous pay-monthly call, messaging and data allowances. Average monthly spend per mobile subscription fell by 2.1% in 2010, in line with the 2.2% average fall in the five years to 2010 and, at £15.54, it was more than 10% lower than the £17.35 figure for 2005, despite increasing average use over the period (Figure 5.49).

**Figure 5.49 Average monthly retail revenue per mobile subscription**

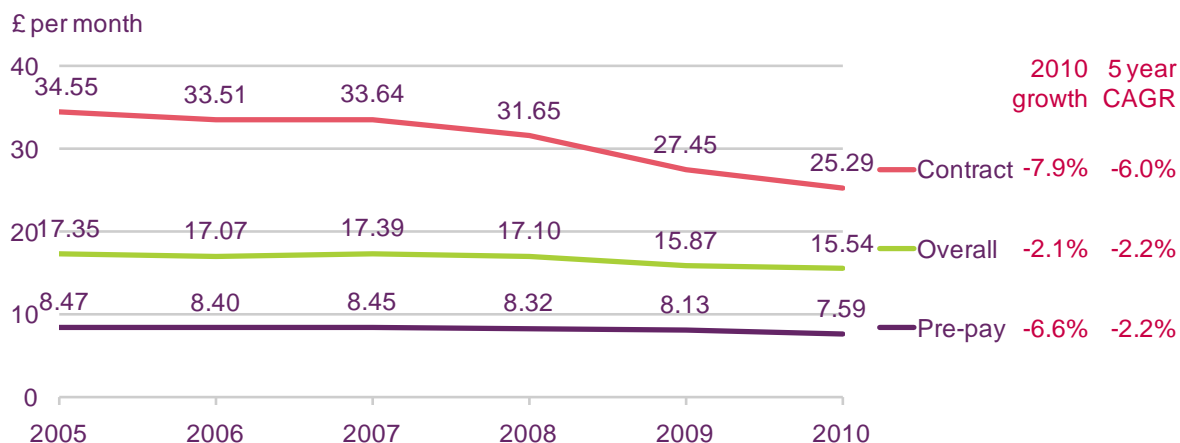


Source: Ofcom / operator data

## Average spend per post-pay subscription is three times that of pre-pay

Retail revenue per pay-monthly (contract) subscriber fell by 7.9% in 2010, while revenues per pre-pay user fell by 6.6%. However, average monthly spend per contract user (£25.29) was still more than three times that of a pre-pay user (£7.59) (Figure 5.50).

**Figure 5.50 Average monthly retail revenue per mobile subscription, by type**



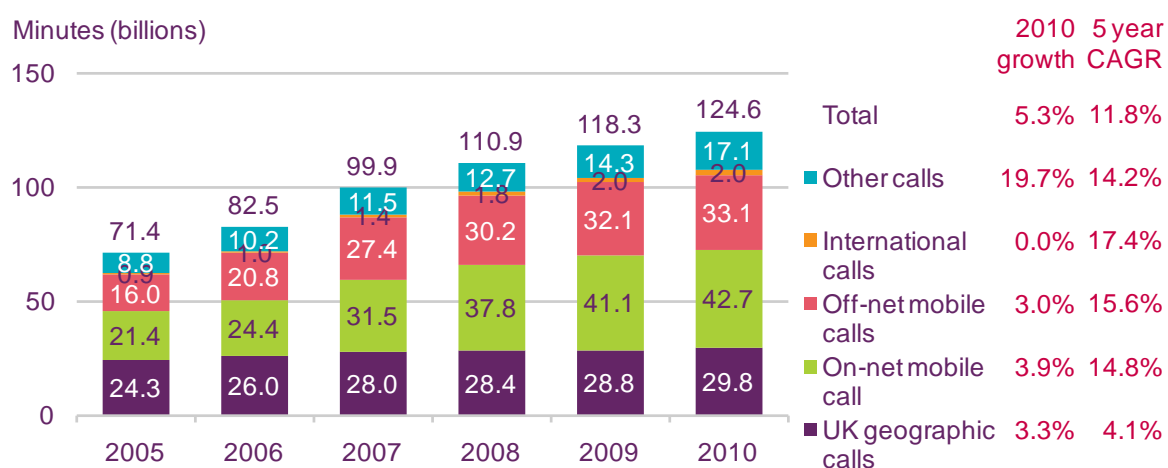
Source: Ofcom / operator data

## Mobile call volumes

### Growth in mobile voice call volumes slows

The volume of voice call minutes originating on mobiles increased by 5.3% to 124.6 billion during 2010, following a 6.7% growth in 2009 and 11.0% growth in 2008 (Figure 5.51). Mobile-originated call volumes increased for all call types except international calls, which were unchanged. Among the other call types, rates of growth ranged from 3.0% for calls to other mobile networks to 19.7% for 'other' calls.

**Figure 5.51 Mobile originating voice call volumes**



Source: Ofcom / operators

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

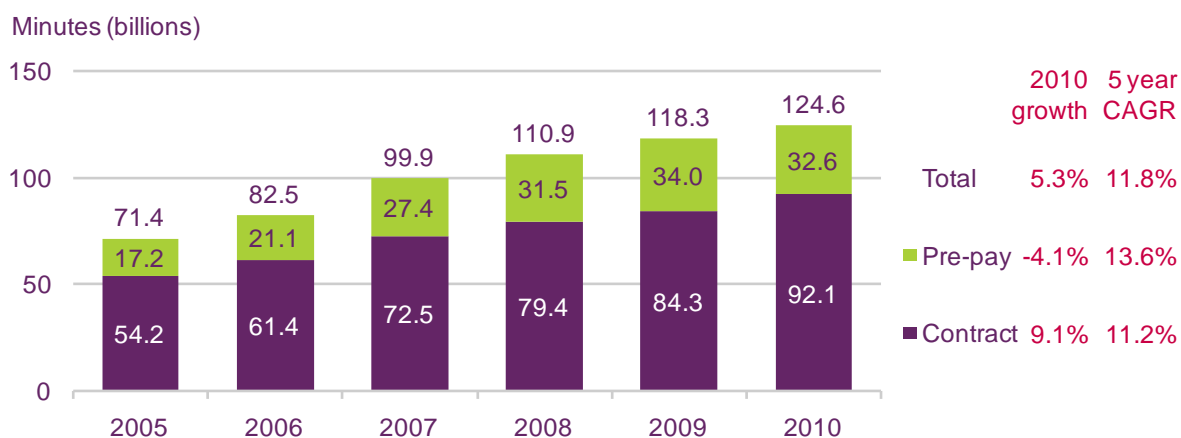


## Pre-pay call volumes decline for the first time

Call minutes made from pre-pay phones fell for the first time in 2010, declining by 4.1% to 32.6 billion minutes (Figure 5.52). This was a result of a fall in pre-pay mobile subscribers as an increasing number of customers subscribed to pay monthly contracts (see Section 5.1.4 above).

In 2010 pre-pay accounted for 26.1% of outgoing mobile call volumes, down from 28.7% in 2009, while contract customers' share of total mobile call volumes increased to 73.9% as total contract call volumes increased by 9.1%, to 92.1 billion minutes. This shift came despite falling average monthly use per contract connection (down 5.3% to 212 minutes) and increasing average pre-pay use (up 1.5% to 61 minutes a month).

**Figure 5.52 Mobile telecom call volumes, by subscription type**



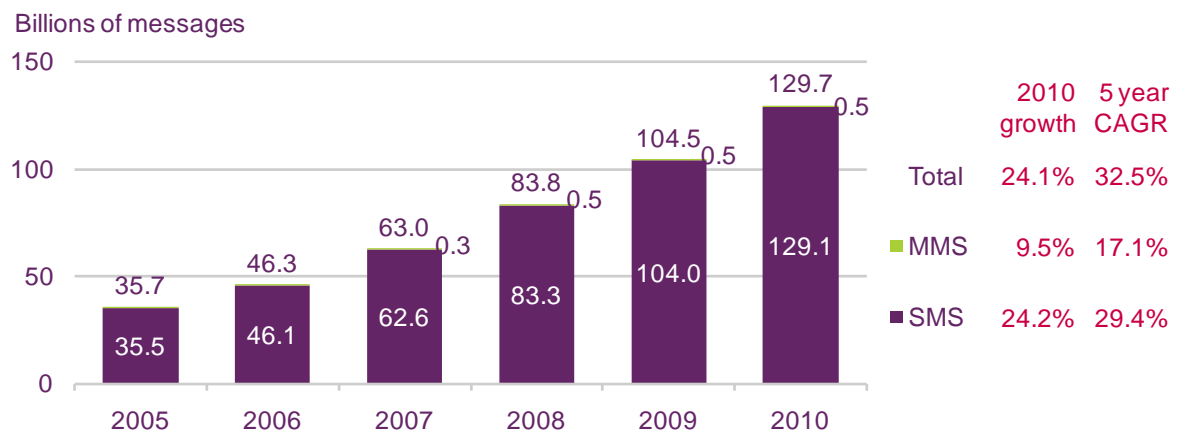
Source: Ofcom / operators

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

## Messaging use increases by 24% in 2010

Despite the increasing use of internet-based communications services such as social networking sites and instant messaging, the numbers of text messages sent by mobile users continued to climb in 2010, growing by 24.1% to 129.1 billion messages representing an average of over five a day for every person in the UK and a similar rate of growth to 2009 (24.9%). Meanwhile, the volume of MMS messages grew by 9.5% during 2010 to just over half a billion messages, equivalent to just 0.02 messages per person per day (Figure 5.53). Increasing take-up of smartphones may have a downward effect on the use of MMS, as these handsets allow users to send pictures using email without additional cost (assuming that their tariff includes a data allowance).

**Figure 5.53 Mobile messaging volumes**



Source: Ofcom / operators

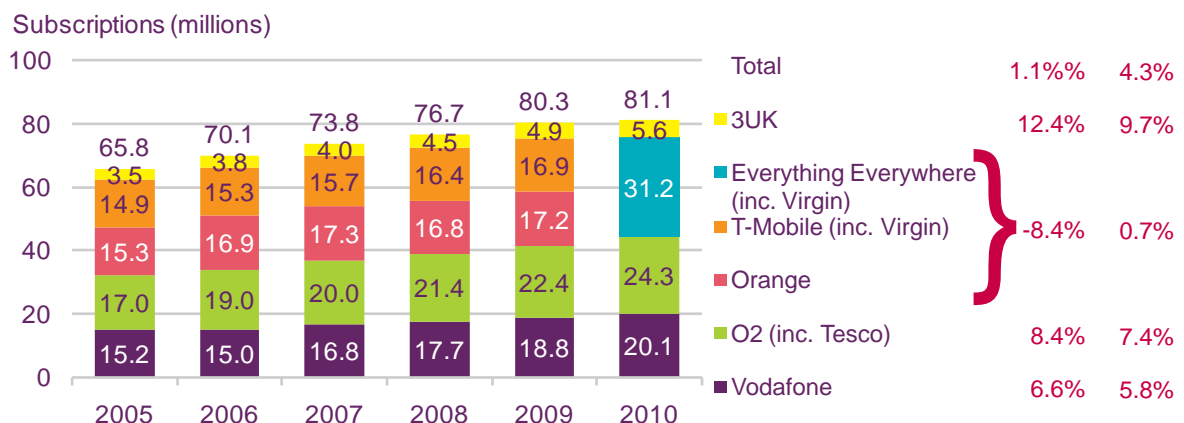
### Mobile connections

#### O2 achieves the largest increase in mobile connections in 2009

At the end of 2010 Everything Everywhere (created by the merger of T-Mobile and Orange in 2009) had the largest number of mobile subscribers on its network, at 31.2 million (including Virgin Mobile and subscribers of other MVNOs that use the network). However, Everything Everywhere had 8.4% fewer subscribers at the end of 2010 than the combined number of T-Mobile and Orange subscribers at the end of 2009. But part of this fall is the result of a change in the methodology used to define active subscribers for the ex-T-Mobile part of Everything Everywhere's customer base (Figure 5.54).

3UK had the highest subscriber growth rate in 2010, at 12.4%, although it remained the smallest UK network in terms of subscribers, with an estimated 5.6 million users (a 6.8% market share) at the end of the year. O2 (including Tesco Mobile and other MVNOs) had the highest net increase in subscribers (1.9 million) in 2010, bringing its total to 24.3 million. Vodafone's rate of subscriber growth in 2010 was 6.6%, unchanged from 2009, and at the end of the year it had 20.1 million mobile subscribers, making it the third largest UK mobile network.

**Figure 5.54 Mobile connections, by operator**



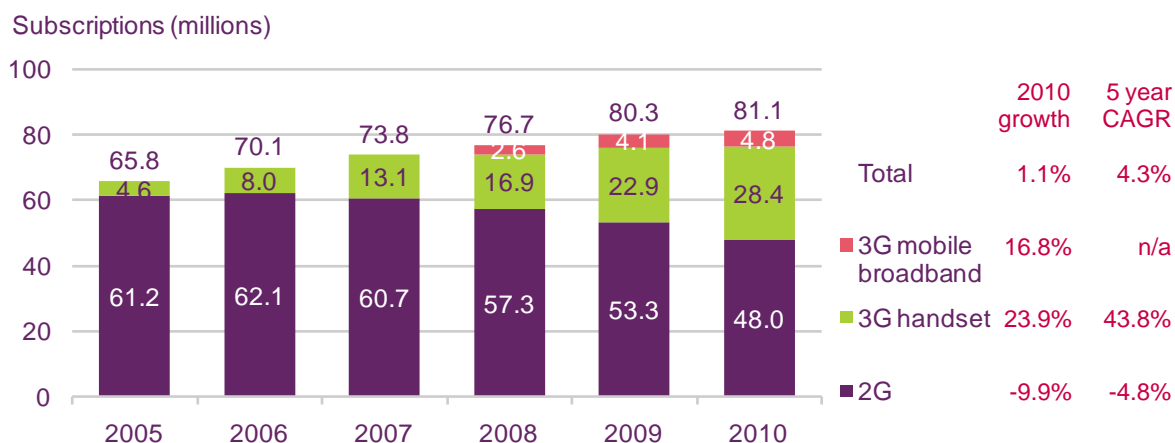
Source: Ofcom / operators

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

## Migration from 2G to 3G continues...

At the end of 2010 there were 33.1 million 3G mobile connections (including 4.8 million mobile broadband dongles and datacards), 6.2 million (22.8%) more than a year previously (Figure 5.55). Surprisingly (given the growth in popularity of smartphones over the year) this rate of increase was slower than that in 2009, both in terms of the net increase in 3G subscriptions and in percentage point terms. This is possibly a reflection of the increasing prevalence of longer minimum term mobile contracts, which means that contract mobile users upgrade their handsets less frequently, although slowing growth in the number of mobile broadband connections will also be a major contributing factor.

**Figure 5.55 Mobile subscriptions, by technology**

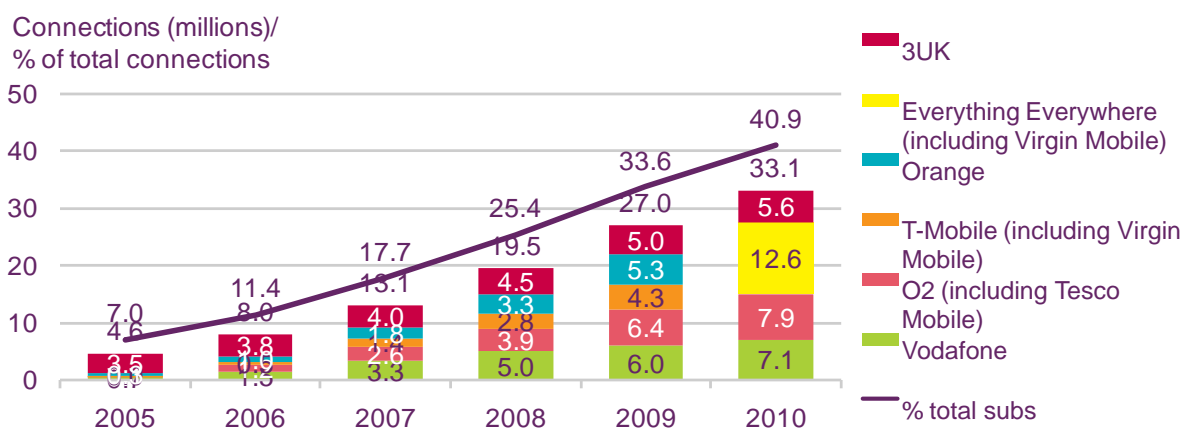


Source: Ofcom / operators

## Four in ten mobile subscriptions were 3G-enabled at the end of 2010

Around four in ten UK mobile connections (40.9%) were 3G-enabled at the end of 2010, compared to just 4.6% five years previously (Figure 5.56). The merger of Orange and T-Mobile meant that Everything Everywhere had the most 3G connections (12.6 million, a 38.0% share). O2 had 7.9 million 3G connections, and 3G-only operator 3UK (the largest 3G provider before 2009) now has the smallest share, with an estimated 5.6 million 3G connections.

**Figure 5.56 3G connections, by network operator**



Source: Ofcom / operators

Note: 3G includes connections made via laptops/dongles as well as mobile handsets

## 5.2.6 Fixed data services

### Fixed-line internet revenue

#### Fixed-line broadband and internet revenues fall by £0.2bn

Revenues from fixed-line internet and broadband services declined by 5.7% to £3.0bn in 2010, mainly driven by a 4.8% fall in residential broadband revenues, but also as a result of a 5.7% decrease in residential narrowband revenues and a 10.3% fall in SME internet revenues due to falling SME broadband prices (Figure 5.57).

**Figure 5.57 Estimated UK internet and broadband retail revenue**



Source: Ofcom / operators

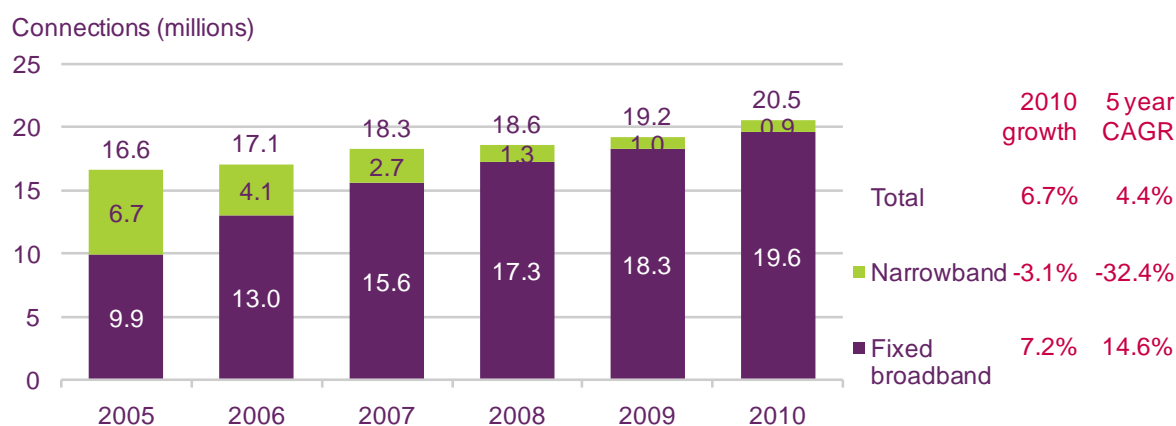
### Fixed internet connections

#### Total fixed-line internet connections increase by 24% over five years

At the end of 2010 there were 20.5 million broadband and narrowband fixed UK internet connections, compared to 16.6 million five years before (Figure 5.58). Despite a maturing market and the increase in mobile broadband take-up, fixed-line broadband connections continued to increase, and in fact the growth rate of 7.2% in 2010 was higher than the 5.7% growth rate in 2009. Narrowband internet connections fell by 30,000 in the year, but nearly a million households and SMEs still connect to the internet through a narrowband dial-up connection.

Around two-thirds (66%) of households now have a fixed-line broadband connection, and while there is still potential for significant growth, further take-up of fixed-line broadband may be constrained by some households opting to take only a mobile broadband connection (Figure 5.71 in the Telecoms User section of this report shows that 7% of UK households had a mobile but not a fixed broadband connection in Q1 2011). In addition, some households may rely on a mobile handset/s for an internet connection while others may not have any devices capable of connecting to the internet.

**Figure 5.58 Estimated UK residential and SME fixed internet connections**

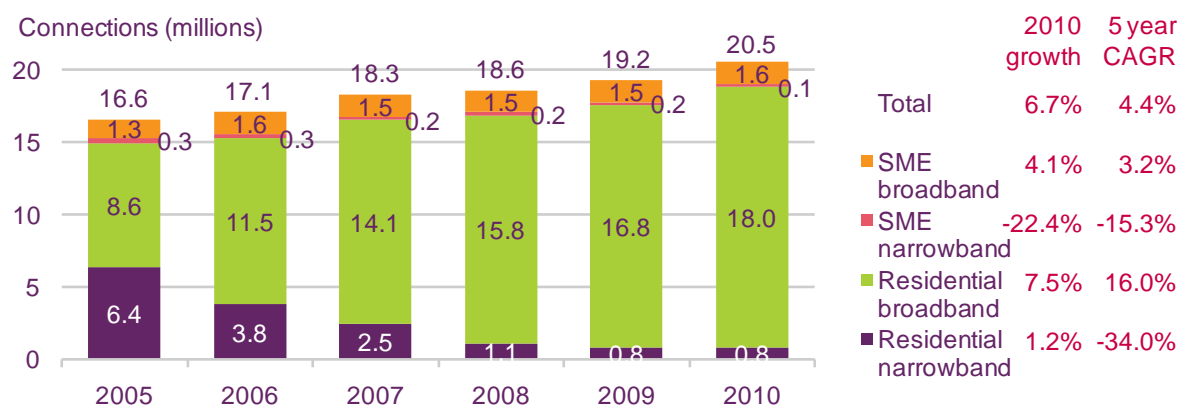


Source: Ofcom / operators

### Fewer than a million households use dial-up internet

Ninety-five per cent of residential fixed internet connections were broadband at the end of 2010, compared to 59.7% five years previously (Figure 5.59). Among small and medium-sized enterprises (SMEs), fixed broadband was also the main method of access, with just over 8% still relying on a narrowband connection. The number of residential narrowband connections was unchanged in 2010 at 0.8 million, suggesting that there remains a significant minority of online UK homes which are either unable to receive fixed broadband services, or for which a narrowband connection is sufficient for their needs

**Figure 5.59 UK residential and small business fixed internet connections**



Source: Ofcom / operators

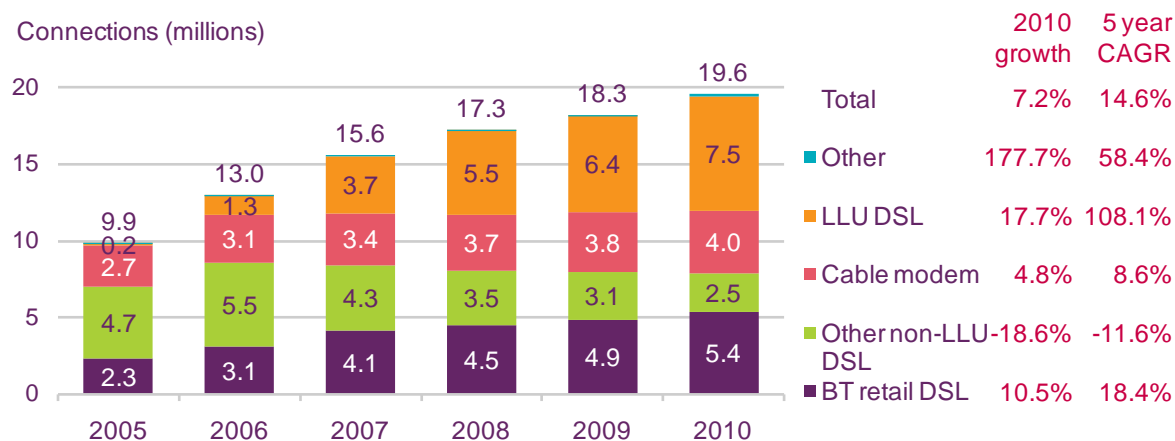
Note: SME broadband includes some connections over leased lines

### LLU providers continue to gain market share

The proportion of fixed broadband connections using local-loop unbundling (LLU) grew by 3.4 percentage points to 38.2% in 2010; this compares to less than 2% five years earlier (Figure 5.60). However, BT Retail continued to have the largest share of broadband subscribers and increased its share by 0.8 percentage points during 2010, to 27.5%. Growth in the number of fixed broadband connections using cable increased by 4.8% to 4.0 million in 2010, as Virgin Media continued to market its services based on the faster speeds that cable can offer compared to ADSL services. However, cable broadband's share of

connections continued to fall during the year, down to 20.9% (although as cable is available to only 48% of households, this represents a share of over 40% in the areas where a cable service is available).

**Figure 5.60 UK residential and small business fixed broadband connections**



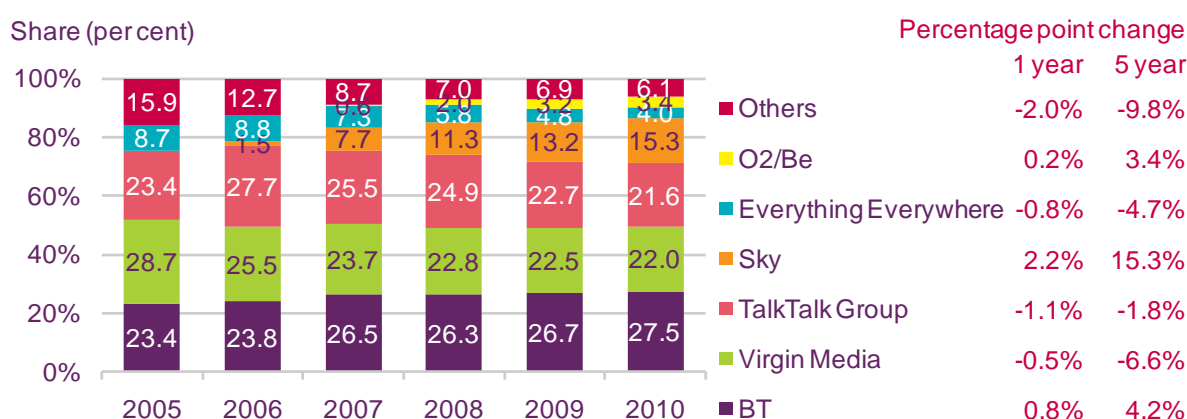
Source: Ofcom / operators

Note: Excludes connections made over cellular networks

### Sky had the highest growth in broadband market share in 2010

While BT continued to be the largest UK broadband provider in 2010 with a market share of 27.5% (0.8 percentage points higher than a year previously), Sky had the largest increase in market share during the year, up by 2.2 percentage points to 15.3%. O2/Be also increased its market share in 2010, up 0.2 percentage points to 3.4%. Virgin Media, TalkTalk Group and Everything Everywhere's market shares all fell in 2010, by 0.5, 1.1 and 0.8 percentage points respectively, and this led to Virgin Media overtaking TalkTalk Group to become the UK's second largest broadband provider with a market share of 22.0%, compared to TalkTalk Group's 21.6% (Figure 5.61).

**Figure 5.61 UK residential and small business broadband connection shares**



Source: Ofcom / operators

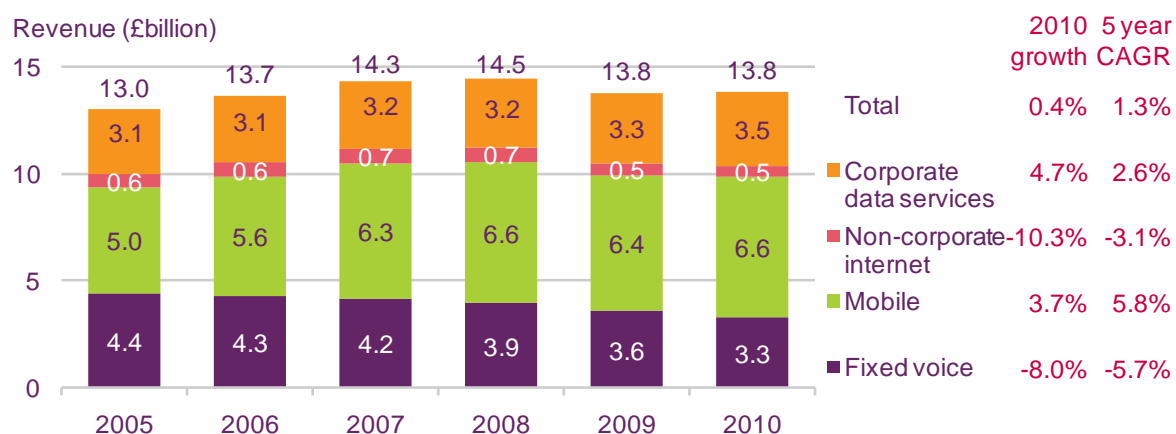
Note: Where providers have merged, historical data are included under the ISP in operation at the end of 2010; excludes connections made over cellular networks

## 5.2.7 Business markets

### Business retail telecoms revenues unchanged in 2010

Business spend on telecoms services was unchanged at £13.8bn in 2010, having fallen by £0.7bn (4.7%) in 2009 (Figure 5.62). Growth in revenues from business mobile services (up 3.7%) and corporate data services (up 4.7%) were offset by falling spend on non-corporate internet (down 10.3%) and fixed voice services (down 8.0%).

**Figure 5.62 Business telecoms service revenue**

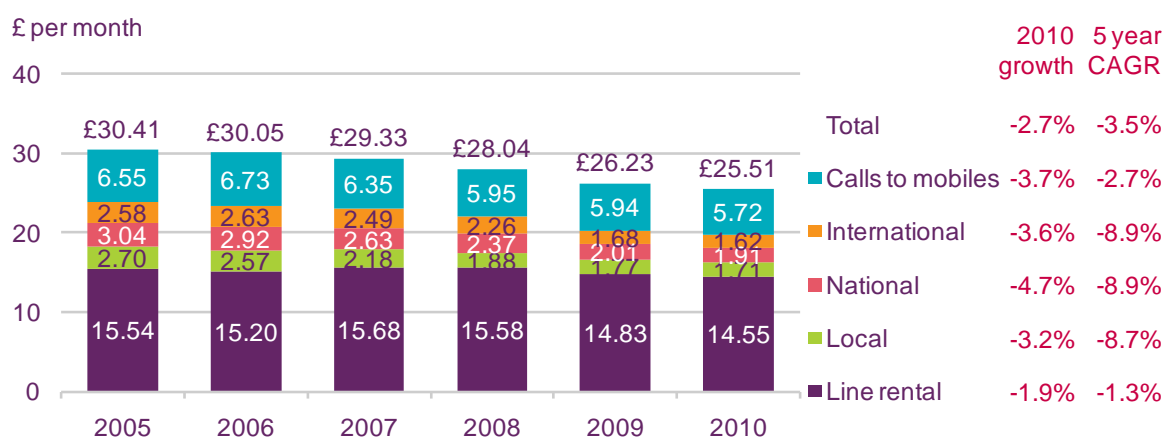


Source: Ofcom / operators / IDC

### Average monthly revenue per business fixed line fell by £0.71

Average monthly revenue per business line continued to fall in nominal terms in 2010, down by 2.7% to £25.51, a much lower rate than the 6.5% decline in 2009 (Figure 5.63). The largest reduction in spend during 2010 was in national calls (down 7.3%), followed by calls to mobiles (down 3.7%), calls to international destinations (down 3.6%) and local calls (down 3.2%). Line rental revenues, which account for over half of business fixed-line revenue, fell by 1.9% during the year, a slower rate than the 4.9% decline in 2009. In the five years to 2010, line rental revenues have declined at a much slower rate than call revenues, indicating a change in tariff structures as businesses increasingly subscriber to packages with some inclusive calls.

**Figure 5.63 Average monthly voice revenue per business fixed line**



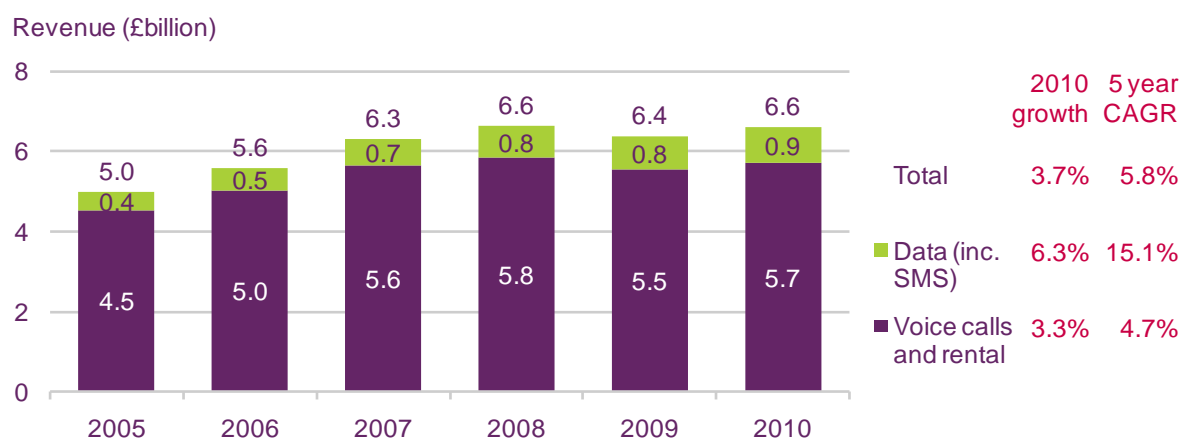
Source: Ofcom / operators

Note: Excludes revenues from non-geographic voice calls

### Business spend on mobile voice increases by 3.7%

Revenue from business spend on mobile services increased by £0.2bn to £6.6bn in 2010, following a 3.9% decline in 2009 and a 5.1% increase in 2008 (Figure 5.64). The majority of this growth was due to a £0.2bn increase in revenues from rental and voice calls, although data revenues increased at a greater rate, up 6.3% to £0.9bn.

**Figure 5.64 Breakdown of business mobile revenue**



Source: Ofcom / operators

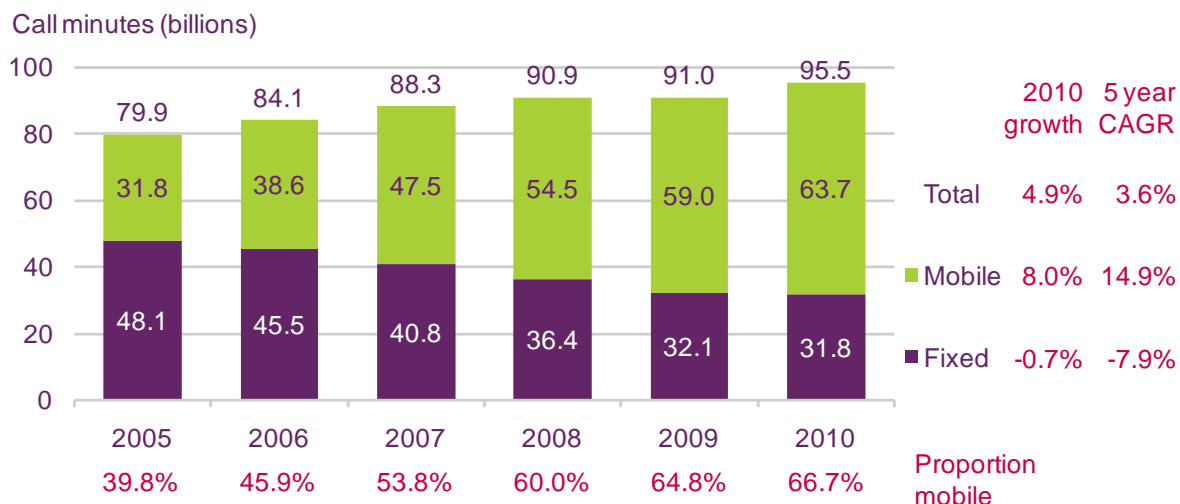
### Two-thirds of business voice calls originate on mobiles

Total business call volumes increased by 4.9% to 95.5 billion minutes in 2010, driven by an 8.0% rise in mobile-originated business call volumes to 63.7 billion minutes (Figure 5.65). Over two-thirds (66.7%) of all calls made by business users (excluding VoIP calls, for which figures are not available) were mobile-originated during 2010, compared to 39.8% five years previously. The shift towards mobile telephony by business users is partly driven by growth in mobile-to-mobile call volumes, as an increasing number of mobile business plans provide free on-net calls, meaning that businesses incur no incremental cost when employees call each other.



Fixed-originated call volumes continued to decline in 2010, falling by 0.7% to 31.8 billion minutes. In addition to the increasing use of mobile for voice telephony, the use of cheaper VoIP services is also likely to be a contributory factor in driving down call volumes made from traditional PSTN lines.

**Figure 5.65 Business voice call volumes**



Source: Ofcom / operators

Note: Fixed data excludes NTS voice call volumes

### The number of business fixed lines fell by 0.5 million in 2010

The decline in the number of fixed lines used by businesses accelerated in 2010, falling by 5.2%, the largest annual decline since 2004 (Figure 5.66). The rate of decline in the number of ISDN2 and ISDN30 channels was higher than that for analogue lines, a reflection that businesses are starting to move away from ISDN technology towards cheaper and faster data connections for internet access, VoIP services and/or mobile services.

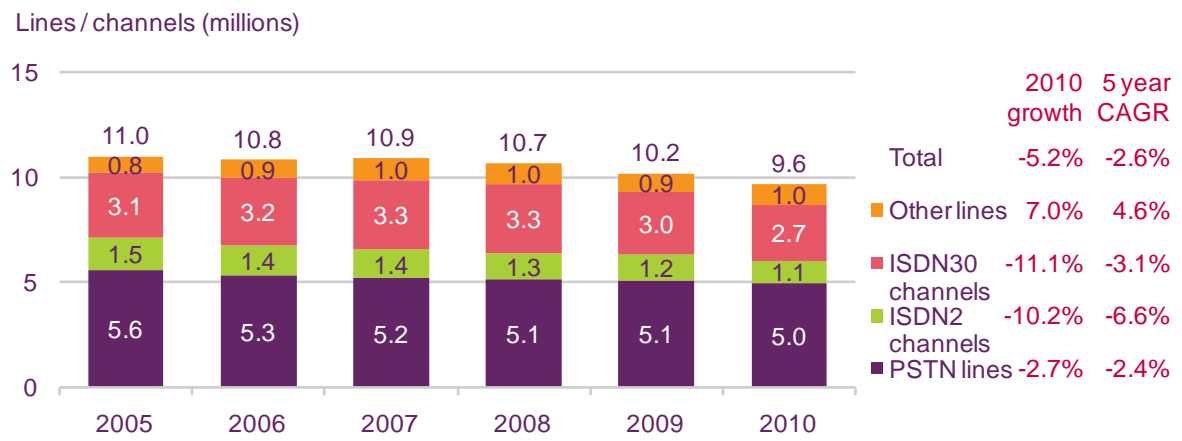
#### ISDN

ISDN is a set of standards for digital transmission over ordinary telephone copper wire (and other media). The key feature of the ISDN is that it integrates speech and data on the same lines, resulting in better voice quality than a conventional analogue phone.

ISDN offers connections in increments of 64kbit/s (the equivalent of a standard analogue line). In the UK there are two main types of ISDN: ISDN2 (which consists of two 64kbit/s channels and a 16kbit/s signalling channel) and ISDN30 (thirty 64kbit/s channels and a 64kbit/s signalling channel). Each channel can be used independently, so an ISDN2 line can be used as two voice lines, one voice line and a 64kbit/s data connection, or as a 128kbit/s data connection.

Cheap broadband means that ISDN2 has largely been superseded as a method of internet connection, but it is still used in some industries, as an ISDN data connection is always a fixed, reliable 64kbit/s. ISDN30 remains popular as a way for large businesses to obtain multiple fixed-voice lines for a set cost.

**Figure 5.66 Business fixed lines, by type**



Source: Ofcom / operators

## 5.3 The telecoms user

### 5.3.1 Introduction

In this section we consider the major consumer trends in the use of telecoms services over the past few years. We base our analysis on data received from telecoms providers, our own consumer research and third-party suppliers. While consumers can be split into two broad categories, residential and business, in this section we focus solely on the residential sector. The latest edition of Ofcom's *Business Consumer Experience* report<sup>65</sup>, published in December 2010, covers the experiences and views of consumers within UK businesses.

The section is split into three main areas; the first provides a general overview of the general trends in take-up and spend on telecoms services, while the next focuses on developments in fixed-line services, including fixed broadband. The final part looks at trends in the use of mobile services among consumers in terms of voice and data use on mobile handsets, as well as the use of mobile broadband services via dongles and PC datacards.

The key findings of this section are:

- **Average monthly household spend on telecoms services fell by 4.3% in 2010 to £63.10.** Spend on telecoms services accounted for 3.1% of household outgoings in 2010, the lowest proportion over the past five years (page 302).
- **Total broadband take-up increased by three percentage points to 74% by the end of Q1 2011.** Two-thirds of households (66%) have a fixed broadband connection (page 304).
- **Growth in the take-up of mobile broadband slowed in the year to Q1 2011, up two percentage points to 17% of households.** However, growth in take-up remained strong among younger age groups, up six percentage points among 16–24 year-olds to nearly one-third; more than half of users in this age group rely on a mobile rather than fixed broadband connection for their internet access (page 304).
- **Over half of 15–34 year-olds and one-third of 35–54 year-olds have used their mobile to access the internet.** Growth in the take-up of the internet on mobile devices is strongest among AB households, up 14 percentage points in 2010, compared to only a two percentage point increase among DE households (page 325).
- **Nearly two-thirds claim to access the internet on their mobile phone while in the home.** Our research showed that one in seven 'mainly' or 'always' use the mobile internet while at home, while nearly one-third mainly or always use it outside the home (page 325).
- **Over 90% of users are satisfied with fixed and mobile services.** The levels of satisfaction with fixed broadband and mobile broadband services were lower, at 86% and 88% respectively, although satisfaction with the speed of mobile broadband increased by seven percentage points to 80% (pages 310, 322 and 327).

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<sup>65</sup> <http://stakeholders.ofcom.org.uk/binaries/research/consumer-experience/tce-10/business-consumer-experience.pdf>

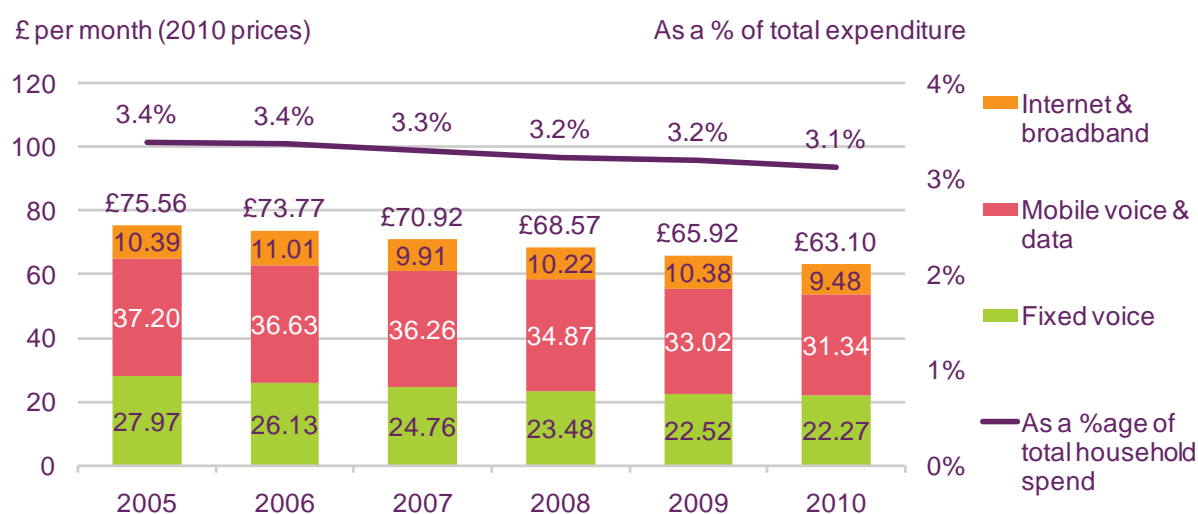
### 5.3.2 Residential sector overview

#### Average household spend on telecoms services falls by over 5%

Monthly average household spend on telecoms services fell in 2010 by £2.82 to £63.10, a fall of 4.3% - the largest annual decline over the five years since 2005 (Figure 5.67). As in previous years, the majority of the fall was on mobile services, where average spend fell by £1.68 a month to £31.34. Average spend on fixed voice services also fell, down by £0.25 to £22.27 while, in contrast to 2009 when spend increased, average spend on fixed internet and broadband services fell in 2010 by £0.90 to £9.48.

At 3.1% of total household spend, telecoms services represented a lower proportion of the average household's outgoings in 2010 than in any of the previous five years covered in this analysis.

**Figure 5.67 Average household spend on telecoms services**



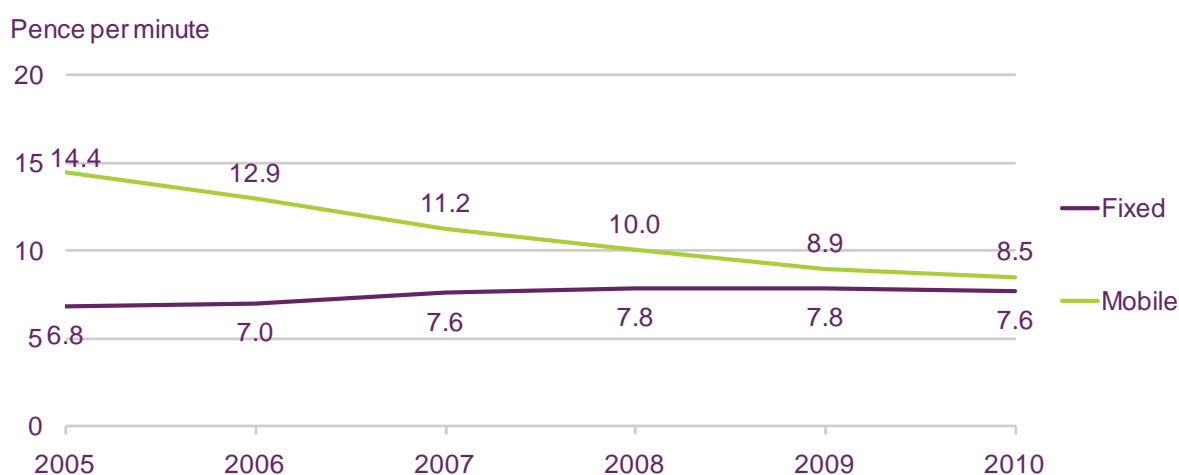
Source: Ofcom / operators / ONS

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

#### Fixed-call per-minute charges fall as declines in mobile charges slow

Fixed and mobile voice call per-minute charges both fell during 2010, as shown in Figure 5.68. Call charges on fixed lines declined by 0.2 pence to 7.6 pence in 2010, in contrast to the previous five years, when average cost per minute increased in each successive year. The increased use of bundled minutes may be the main driver behind this fall, although fixed call volumes continued to decline in 2010, albeit at a slower rate than previous years (see Figure 5.35 in the Telecoms Industry section above). The average price per minute on mobile continued to fall in 2010, down by 0.4 pence to 8.5 pence per minute; the smallest annual decline since 2005.

**Figure 5.68 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

### Nearly three-quarters of households have a broadband connection

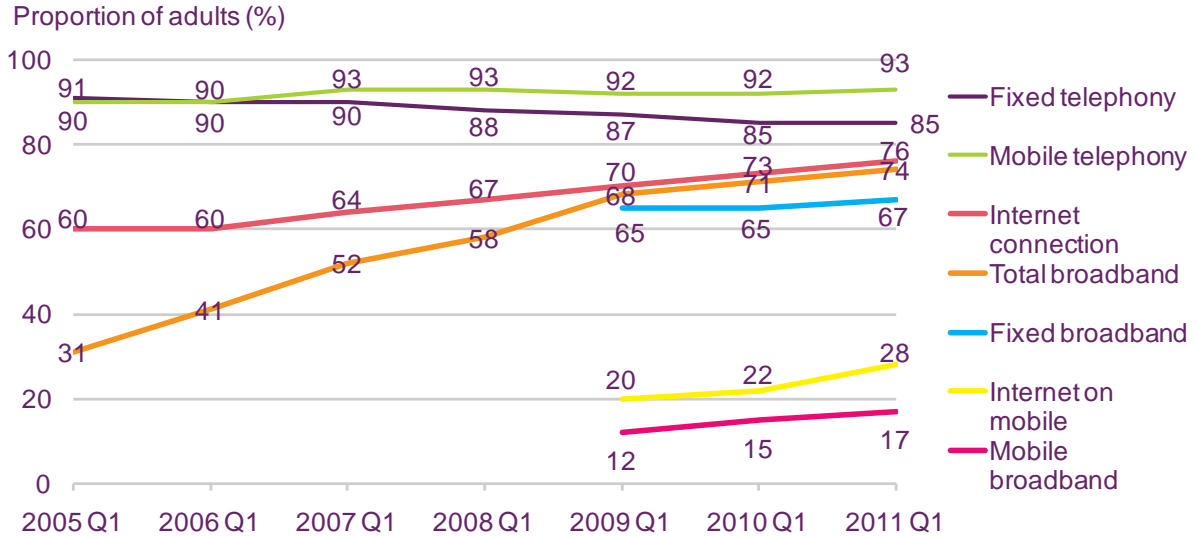
Take-up of all telecoms services increased during 2010, with the exception of fixed voice telephony, which remained stable at 85% of all households in 2010 following three years of falling penetration (Figure 5.69). The requirement to have a fixed voice line for DSL broadband acts as a constraint on households giving up their fixed phone.

Over three-quarters (76%) of households had an internet connection in Q1 2011, and 74% used broadband (either fixed broadband or mobile broadband on a PC) as their main method of accessing the internet, up from 71% in Q1 2010. The number of households using fixed broadband in Q1 2011 increased by two percentage points to 67% while those using PC-based mobile broadband rose by a similar amount to 17%. More than a quarter of households access the internet on a mobile phone – for the large majority this is in addition to PC-based internet access.

Mobile telephony continued to have the highest penetration among households of any telecoms service; take-up increased by one percentage point to 93% by Q1 2011. In addition over one in four households (28%) used their mobile to access the internet in Q1 2011.

### Figure 5.69 Household penetration of key telecom technologies

QE1: Does your household have a PC or laptop computer? / QE2: Do you or does anyone in your household have access to the internet/World Wide 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?

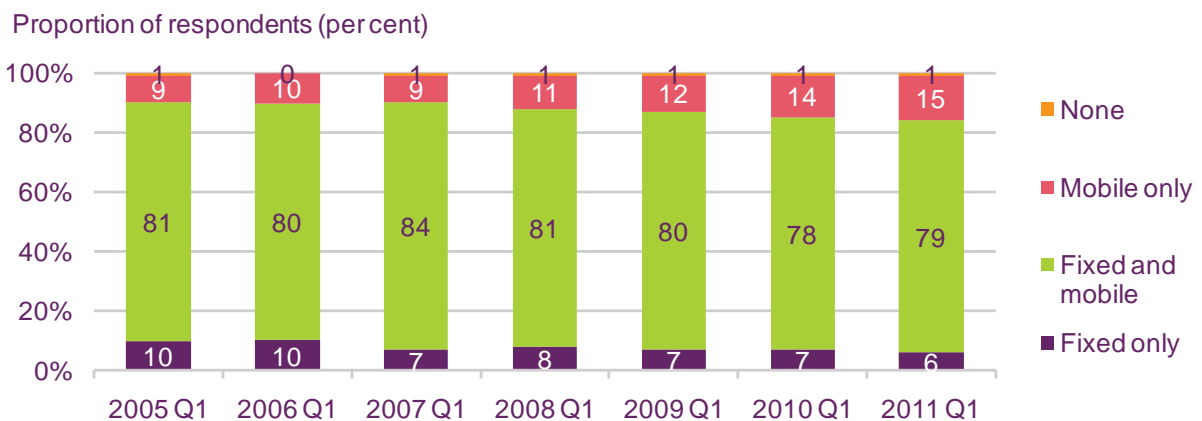


Source: Ofcom technology tracker, Q1 2011  
 Base: All adults aged 16+ (n=3474)

### Fifteen per cent of UK households are mobile-only

The proportion of households relying on mobile as their only means of voice telephony increased slightly (+1%) during 2010 to 15% in Q1 2011, while those with only a fixed line decreased from 7% to 6% over the same period (Figure 5.70). Around eight in ten (79%) of households have both a fixed and a mobile phone.

### Figure 5.70 Household penetration of fixed and mobile telephony



Source: Ofcom research  
 Base: All adults aged 16+ (n=3474)

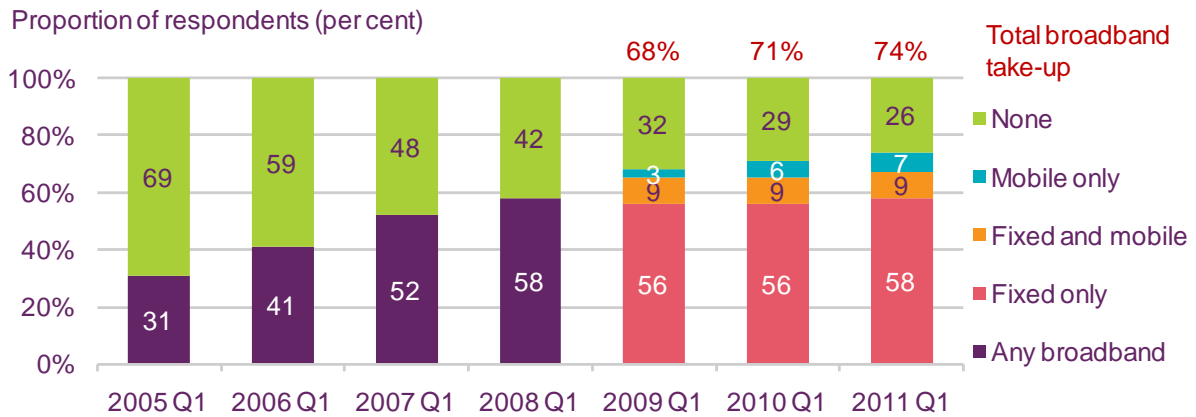
### Fixed and mobile broadband drive household take-up of broadband services

Since Q1 2009 the number of households using both fixed and mobile broadband has been stable, at just under one in ten households, while those using solely fixed broadband have

increased by two percentage points to 58% in Q1 2011 (Figure 5.71). Seven per cent of UK households have only a mobile connection.

A quarter of households (26%) had no broadband access at the end of Q1 2011, although this was down from nearly a third (32%) of households in Q1 2009.

**Figure 5.71 Household penetration of fixed and mobile broadband**



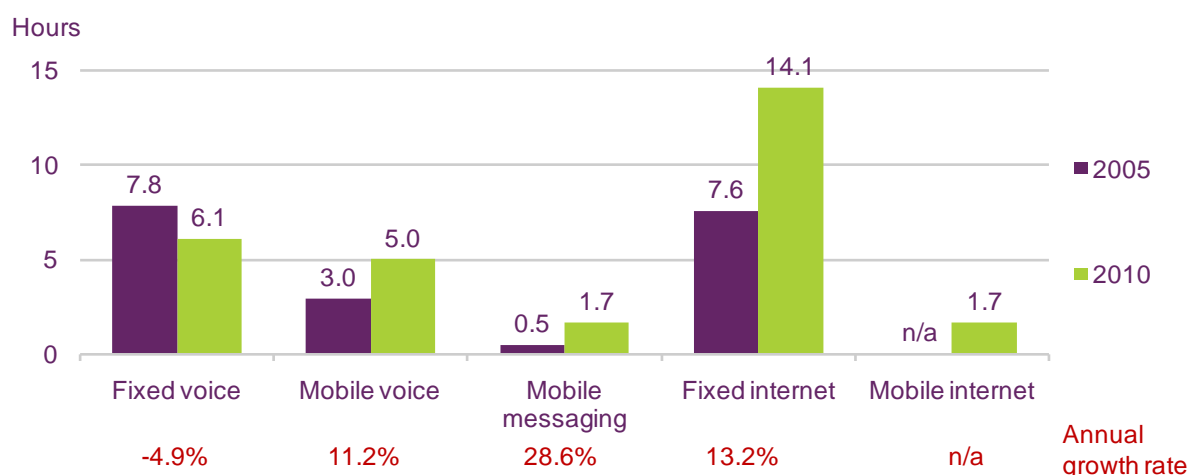
Source: Ofcom research  
Base: All adults aged 16+

### Time spent per month on telecom services increases by ten hours since 2005

Time spent using fixed internet services accounted for the largest increase in time spent on telecoms services, with usage almost doubling to over 14 hours between 2005 and 2010 (Figure 5.72). Calls made on landlines made up the second-largest share, although this fell from just under eight hours in 2005 to 6.1 hours in 2010. Conversely, mobile call minutes per person increased over the five-year period, with average annual growth of 11.2% to 5.0 hours per month.

The number of hours spent using mobile messaging services such as SMS recorded the largest average annual increase, at nearly 30% per annum to 1.7 hours per person per month (based on an estimated average of 35 seconds per text message), the same amount of time as was spent on mobile internet services in 2010.

**Figure 5.72 Average monthly time spent using telecoms services, per person,**



Source: Ofcom / operators / Nielsen / UKOM/ Comscore

Note: Includes estimates where Ofcom does not receive data from operators; fixed voice call figures include NTS voice calls; mobile messaging figures assume an average of 35 seconds per message; Ofcom estimate of fixed internet use per person is based on Nielsen data on the average monthly time spent online at home including the use of applications across the online population only; Nielsen's methodology changed in October 2006 so comparisons before this period should be treated with caution; fixed internet use figures are for May of the following year.

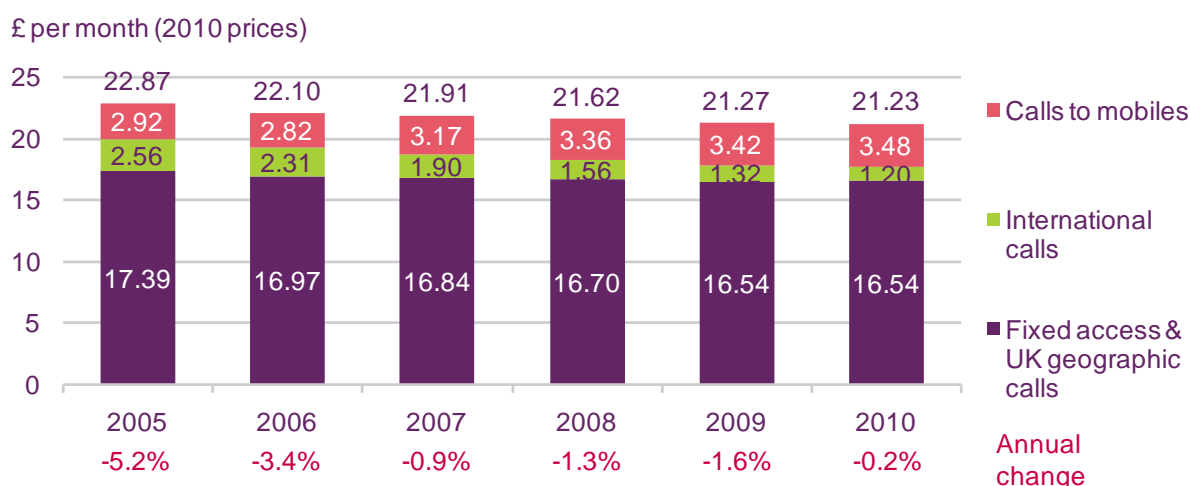
### 5.3.3 Fixed-line services (including fixed broadband)

#### Cost of a basket of fixed-line services remains unchanged in 2010

The average cost of a basket of residential fixed voice services remained relatively flat in 2010, falling by just 0.2% to £21.23 (Figure 5.73). A 1.8% increase in the cost of calls to mobiles, to £3.48 per month, was offset by an 8.9% fall in the cost of international calls to £1.20 (despite call volumes having increased, as shown in Figure 5.42). This is a reflection of operators increasingly offering fixed tariffs that include low-cost charges to popular international destinations. The average cost of fixed access plans and calls to UK destinations was unchanged during the year, at £16.54.



**Figure 5.73 Real cost of a basket of residential fixed voice services**



Source: Ofcom / operators

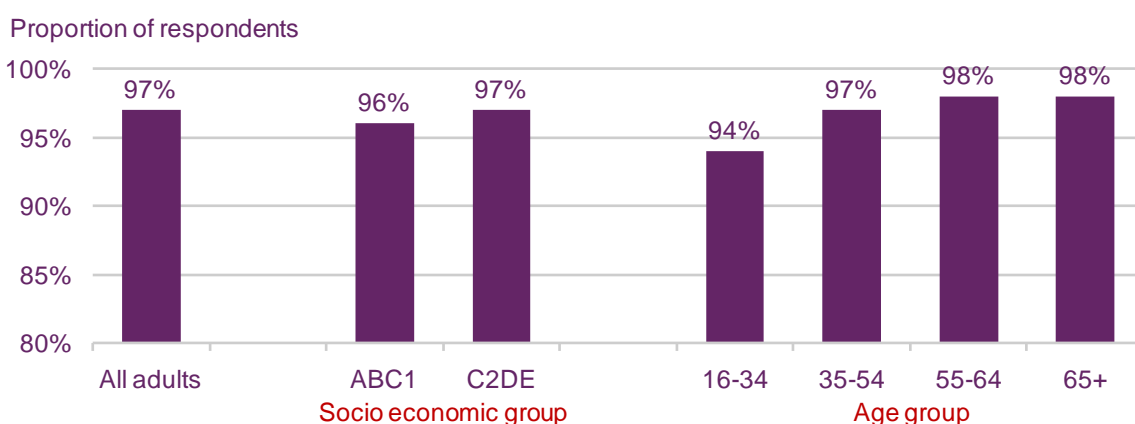
Note: Includes estimates where Ofcom does not receive data from operators; excludes non-geographic voice calls; adjusted for RPI; includes VAT

### Most people continue to make and receive calls on their landlines

Although more than nine in ten adults have a mobile phone, nearly all adults who have a landline (97%) claim to use it for voice calls (Figure 5.74). Use varies slightly by age; older people are more likely to use the service. At the end of Q1 2011 98% of those aged 55 and over claimed to use a fixed line for voice calls; this compares with a slightly lower figure among 16 to 34 year-olds at 94%. Use varied little by socio-economic group.

**Figure 5.74 Use of landline for voice communications services in the home**

QC2A. Do you ever use this landline phone at home yourself to make and/or receive calls, for internet access or both?



Source: Ofcom research, Quarter 1 2011

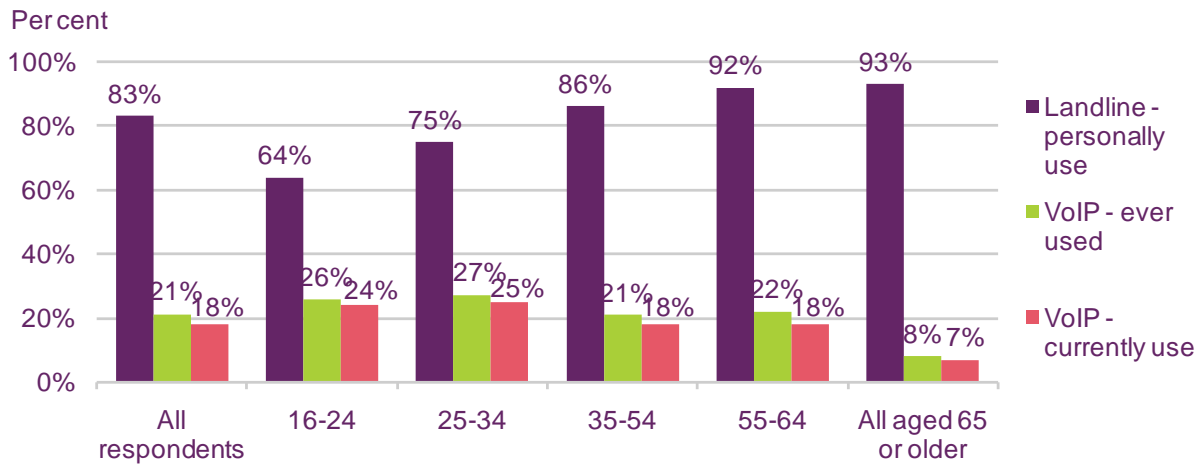
Base: All adults aged 16+ with a landline phone at homes (n = 3474 All, 1798 ABC1, 801 C2DE, 537 16-34s, 680 35-54s, 312 55-64s, 381 65+)

### Eighteen per cent of UK adults claim to use VoIP regularly

Nearly one in five adults (18%) claimed to regularly make voice calls over a broadband internet connection (VoIP) in Q1 2011 (including PC-to-PC calls) with only a small variance

in take-up between age groups under 64 (Figure 5.75). Just over one in four 16 to 34 year-olds and one in five 35 to 64 year-olds use VoIP compared to just one in 12 aged 65 and over.

**Figure 5.75 Use of fixed voice communications services in the home, Q1 2011**



Source: Ofcom research Q1 2011

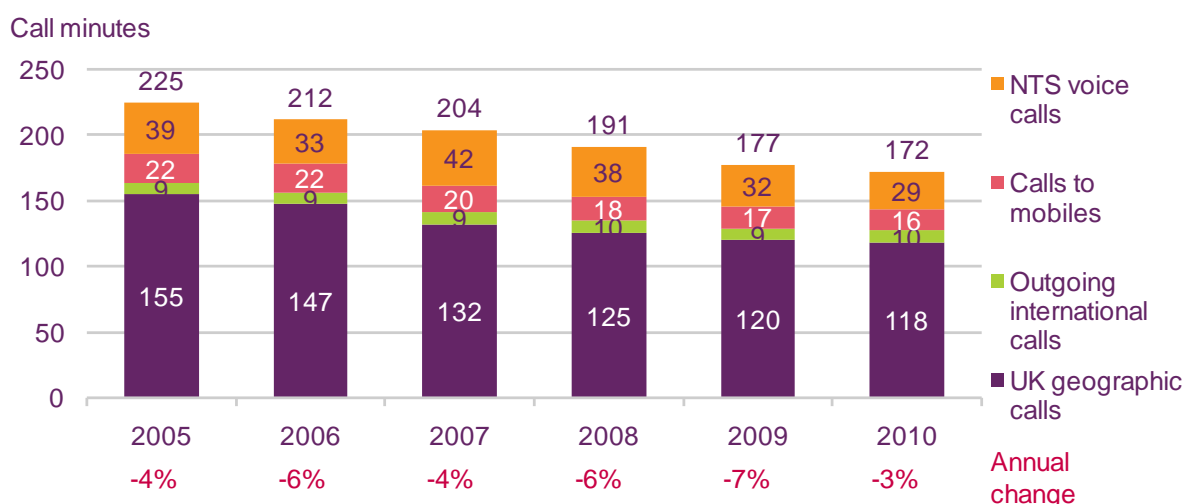
Base = All respondent s: 3474; 16-24s = 460; 25-34s = 540; 35-54s = 1204; 55-64 = 535; 65+ = 735

### Decline in fixed-line call minutes per person slows in 2010

Average monthly fixed voice call volumes per person fell by 3% in 2010 to 172 minutes in 2010, the slowest rate of annual decline over the past six years (Figure 5.76). The volume of fixed outbound calls to mobiles and number translation services (i.e. NTS special services numbers - broadly, numbers that start with 08 or 09) remained static in 2010, while calls to UK geographic numbers declined slightly (-1.4%) to 118 minutes per month. This was despite the fact that many standard line rental tariffs, including those from BT and TalkTalk, include 'free' off-peak calls minutes to other UK-based landlines as well as to 0845/0870 numbers

Only outgoing calls to international destinations increased in 2010, up by one minute to an average of ten minutes per person, the same level as in 2008.

**Figure 5.76 Average monthly outbound fixed voice call volumes, per person**



Source: Ofcom / operators

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

### Rises in fixed-line costs vary among providers

A comparison of the lowest-cost fixed-line tariffs available from a selection of providers in March 2010 and March 2011 is shown in Figure 5.77 below. The table gives some indication of the price trends in fixed phone and call charges but it should be noted that many consumers (51%) purchase their fixed line as part of a bundle of communications services.

In nominal terms, stand-alone fixed phone tariffs from all the main providers, including those tariffs with inclusive minutes, increased during 2010. Some of these increases can be attributed to the effect of the increase of VAT to 20% at the beginning of 2011 along with inflation, as in real terms most of the tariffs increased only marginally over the year.

At the same time as tariff charges have increased, the inclusion of flat-rate call charges, either for no extra charge (usually off-peak calls), or for an additional monthly cost (typically around £5/month for calls to other fixed lines at any time), have benefited consumers who make regular outgoing calls to other landline numbers. Consumers who primarily use their landline for incoming calls, and those who make more calls to mobiles are less likely to have benefited from the recent move towards flat-rate use and price increases.

We look at residential fixed telephony prices in more detail in section 5.1.6 above.

**Figure 5.77 Fixed-line tariff analysis: 2010 and 2011**

Provider	2010			2011		
	Fixed phone only	with fixed calls off-peak	with fixed calls anytime	Fixed phone only	with fixed calls off-peak	with fixed calls anytime
BT	-	£11.54*	£16.54	-	£13.60 <sup>1</sup>	£18.60
O2	-	-	-	£7.66	£9.70	£12.77 <sup>2</sup>
Orange	£10.25	-	-	£11.50	-	-
Sky	-	£11.00	£16.00	-	£11.25	£16.25
TalkTalk	£11.49	£14.44	£16.98	£12.30	£15.91	£18.51 <sup>3</sup>
Virgin Media	£11.99	£15.44	£19.94	£12.99 <sup>4</sup>	£16.99 <sup>4</sup>	£20.99 <sup>3,4</sup>

Source: Pure Pricing UK Broadband Pricing Factbook, March 2010 and March 2011

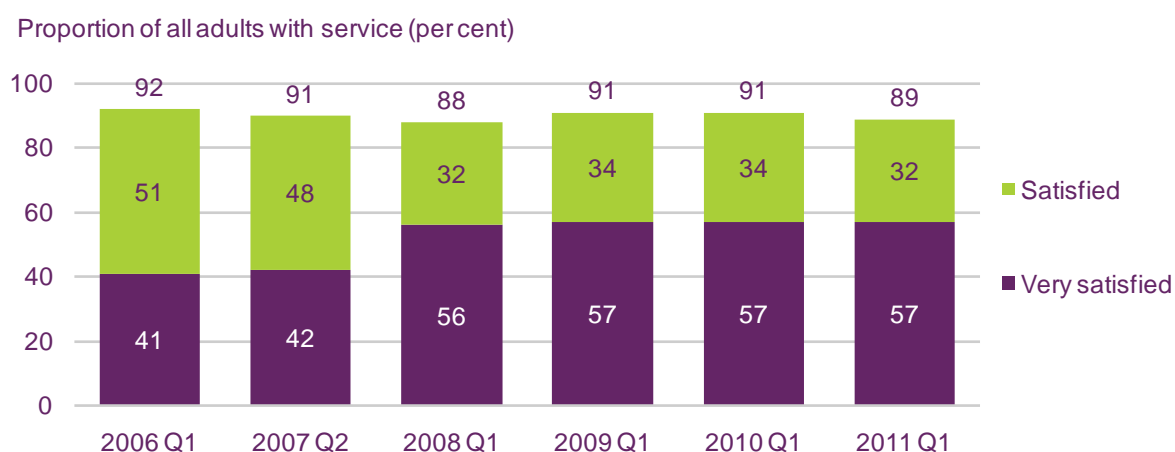
Notes: All tariffs exclude activation charges and promotional discounts and include VAT; all tariffs are the lowest price available, contract lengths vary. <sup>1</sup>Off-peak only applies to weekends <sup>2</sup>Also includes 600 minutes to selected international destinations, + 600 minutes to 0845/0870 numbers (O2 only). <sup>3</sup> includes calls to TalkTalk/Virgin mobile numbers. <sup>4</sup> Set to increase by £1.00 on 1 August 2011.

### Three in five consumers were very satisfied with their landline service in Q1 2011

Despite the rising cost of basic fixed-line tariffs, the proportion of consumers either satisfied or very satisfied with their fixed-line services remained high at 89% and fell only slightly in 2010 by two percentage points (Figure 5.78).

In line with the previous two years, the proportion of consumers who were very satisfied with the overall service remained flat, at just under three in five (57%), indicating that the majority of consumers continue to be very satisfied with the overall service being delivered by their fixed-line providers, and satisfied with the inclusion of more call minutes within their line rental packages.

**Figure 5.78 Overall consumer satisfaction with residential fixed-line services**



Source: Ofcom research

Base: All adults aged 15+ with a fixed-line phone

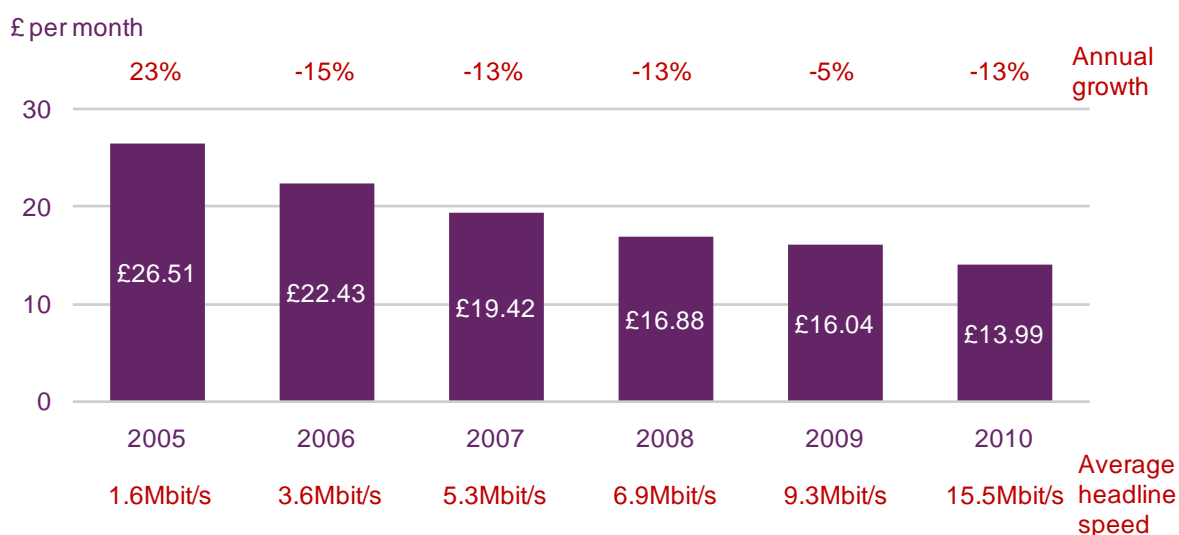
Note: Includes only those who expressed an opinion

## Decline in the cost of fixed broadband connection accelerates in 2010

We calculate the average cost of a broadband connection from the total retail revenues and the total number of connections reported by operators. This finds that the average monthly cost of a residential fixed broadband connection fell by 13% to £13.99 in 2010 (Figure 5.79), representing a faster decline in the cost of fixed broadband than in 2009 (-5%) even though the average headline speed increased during the year. This suggests that there was significant price competition from providers during 2010; many broadband providers offer various forms of discounts on broadband connections including reduced or free monthly charges over the first few months of the contract, while discounts are generally offered when broadband is purchased in a 'bundle' with another service (note that these data include the revenues from bundled services that operators themselves attribute to broadband; typically this does not include any element of line rental, which is attributed to fixed voice). From September 2009, BT has been able to offer bundled broadband services, following deregulation by Ofcom.<sup>66</sup>

Despite the average headline speed of a connection rising from 1.6Mbit/s to 15.5Mbit/s over the five-year period, the cost of a broadband connection in 2010 was nearly half the 2005 cost.

**Figure 5.79 Estimated average monthly cost of a residential fixed broadband**



Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operator; includes VAT

## Consumers have a wide range of fixed-broadband packages to choose from

Figure 5.80 summarises the lowest-cost broadband tariffs from a selection of the UK's largest ISPs, as at June 2011, including the cost when bundled with other communications services. Most UK consumers have a wide choice when deciding what broadband service to purchase alongside a fixed line (as is required with all providers except Virgin Media cable), with different broadband speeds available in addition to various TV packages and discounts on mobile tariffs.

Broadband speeds available on basic packages can vary from 'up to' 8Mbit/s or 10Mbit/s to higher speeds of 'up to' 20Mbit/s or 24Mbit/s (where available). Some ISPs also bundle in

<sup>66</sup> Ofcom Fixed Narrowband Retail Services Market Review:

[http://stakeholders.ofcom.org.uk/binaries/consultations/retail\\_markets/statement/statement.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/retail_markets/statement/statement.pdf)

inclusive call minutes when consumers purchase a broadband package (instead of including them in the landline rental) while several mobile providers (O2, Orange and Virgin Media) offer discounts to consumers when they purchase a mobile tariff alongside their broadband service.

**Figure 5.80 Lowest-cost fixed broadband options from major suppliers, June 2011**

Provider	Broadband only	Broadband and fixed calls	Broadband and fixed line	Broadband and mobile	Broadband and pay-TV	Broadband, fixed line and mobile	Broadband, fixed line and pay-TV
AOL	£15.31 <sup>1</sup>	£10.20 <sup>1</sup>	£19.09	-	-	-	-
BSkyB	£15.00 <sup>1</sup>	£15.00 <sup>1</sup>	£21.25	-	-	-	£30.75
BT	£25.60	£25.60	£26.90	-	-	-	£31.90
O2	£13.50 <sup>1</sup>	-	£21.00	£8.50 <sup>1,2</sup>	-	£16.00 <sup>2</sup>	-
Orange Home	£15.00 <sup>1</sup>	-	£24.00	£10.00 <sup>2</sup>	-	£19.00 <sup>2</sup>	-
Plusnet	£6.49 <sup>1</sup>	-	£18.48	-	-	-	-
TalkTalk	£6.50 <sup>1</sup>	-	£22.70	£16.50-	--	£29.10	-
Virgin Media	£21.00	-	£26.49	£26.00	£45.99	£31.49	£32.99

Source: Pure Pricing UK Broadband Pricing Factbook, June 2011

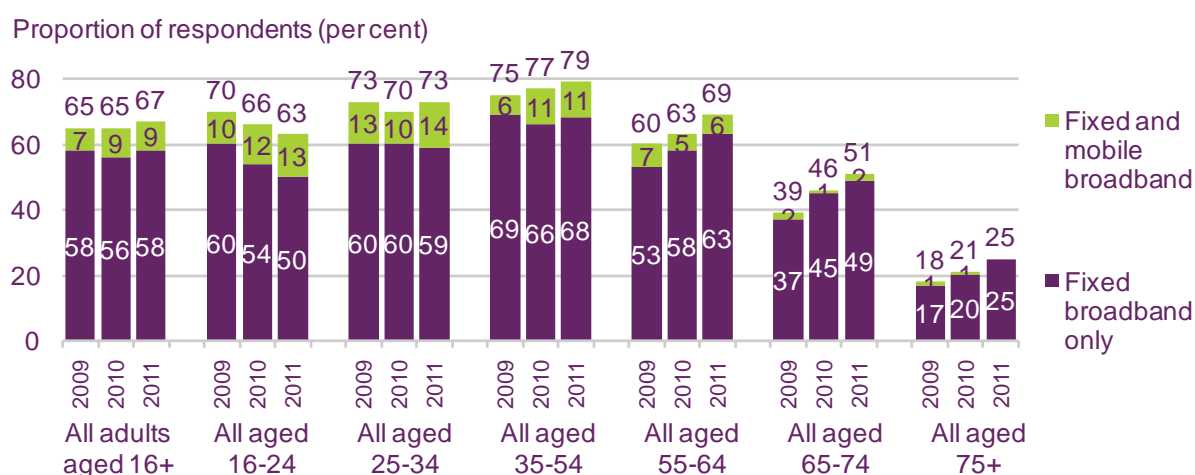
Notes: All tariffs exclude activation charges and promotional discounts and include VAT; all tariffs are the lowest price available, contract lengths vary; allowances for fixed-line and mobile calls, plus availability of TV channels included within packages may differ by operator and option; <sup>1</sup>Also requires BT fixed line rental at £13.90 a month; <sup>2</sup> plus cost of mobile tariff.

### Older age groups drive take-up of fixed broadband

Figure 5.81 shows that, overall, take-up of fixed broadband increased slightly to 67% in Q1 2011, due to an increase in fixed-broadband-only take-up, while the penetration of adults taking both fixed and mobile broadband services remained stable at 9% of all households.

Within the different age groups covered by our research there were differences in take-up of fixed-broadband services among the youngest and oldest age groups over the year to Q1 2011. Among older age groups there was a six percentage point rise among those aged 55–64 and a five percentage point increase among 65-74s. There was also an increase among over-75s, with one in four taking a fixed broadband connection in Q1 2011, compared to one in five in the previous year. The 16-24 year old age group was the only age group in which overall fixed broadband take-up declined (to 63%), largely driven by a fall in take-up of fixed broadband only (-4%). There is always a statistical error margin associated with consumer research, so we should treat an apparent seven percentage point fall in household broadband take-up among 16-24s with some caution, but it may be indicative that increasing numbers in this age group are relying on their mobile phone for internet connectivity.

**Figure 5.81 Household take-up of fixed broadband, by age**



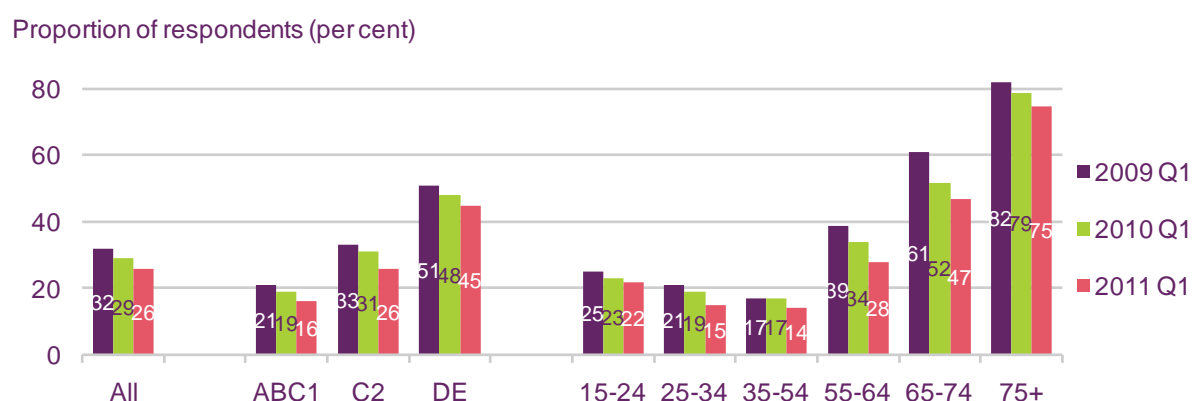
Source: Ofcom research, data as at Q1 of each year  
Base: All adults aged 16+

### Non-ownership of fixed-broadband remains high among older age groups

Non-ownership of fixed broadband varies considerably by socio-economic group and age (0). Among DE households, 45% did not have a fixed-broadband connection, down from just over half in Q1 2009; this compares to only one in six ABC1 households not having fixed broadband in Q1 2011.

The difference in take-up between age groups is even more marked. Only around one in seven of those aged 25-54 did not have broadband in their household in Q1 2011, compared to nearly half of 65-74 year-olds and three-quarters of those aged 75+. It is notable, however, that broadband take-up among older age groups has increased significantly in the past two years. More detail on broadband take-up and how it varies by demographic factors is included in Section 4.2.3 of this report.

**Figure 5.82 Non-ownership of home broadband, by socio-economic group and age**



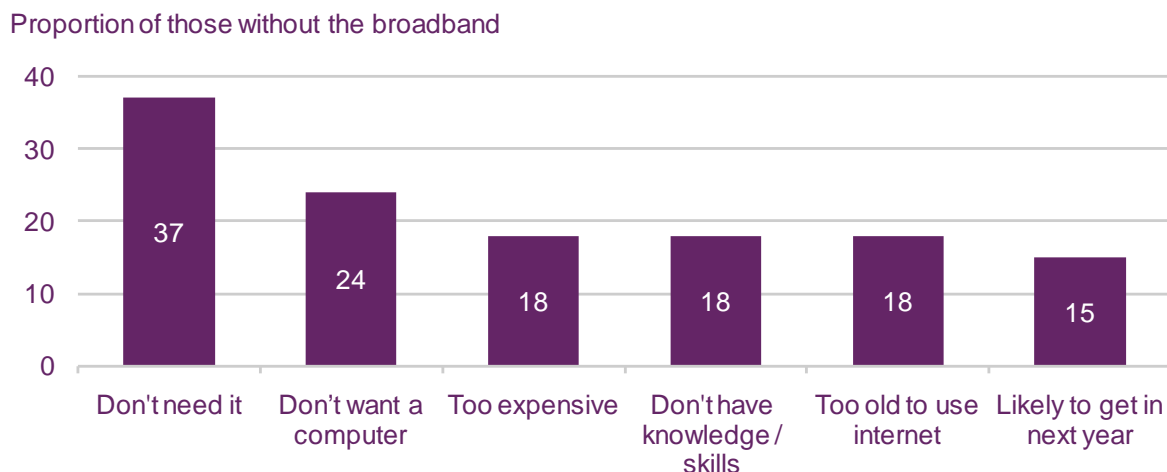
Source: Ofcom research, Q1 2011  
Base: All adults 16+

### Wide variety of reasons given for not accessing the internet

One in three of those without an internet connection stated that they did not need it, while nearly one in four believed that they were either 'too old to use the internet' or did not want a

computer (Figure 5.83). A significant majority (36%) stated involuntary reasons for not accessing the internet, with half of these saying that connecting to the internet is 'too expensive' while the remainder believed they did not have the necessary knowledge or skills. Nearly one in seven (15%) signalled their intention to connect to the internet in the next year.

**Figure 5.83 Main reasons for not taking up the internet**



Source: Ofcom research

Note: 6% of people without the internet did not know what their main reason was or provided an 'other' reason

Base: All adults without the internet aged 16+ (n=920)

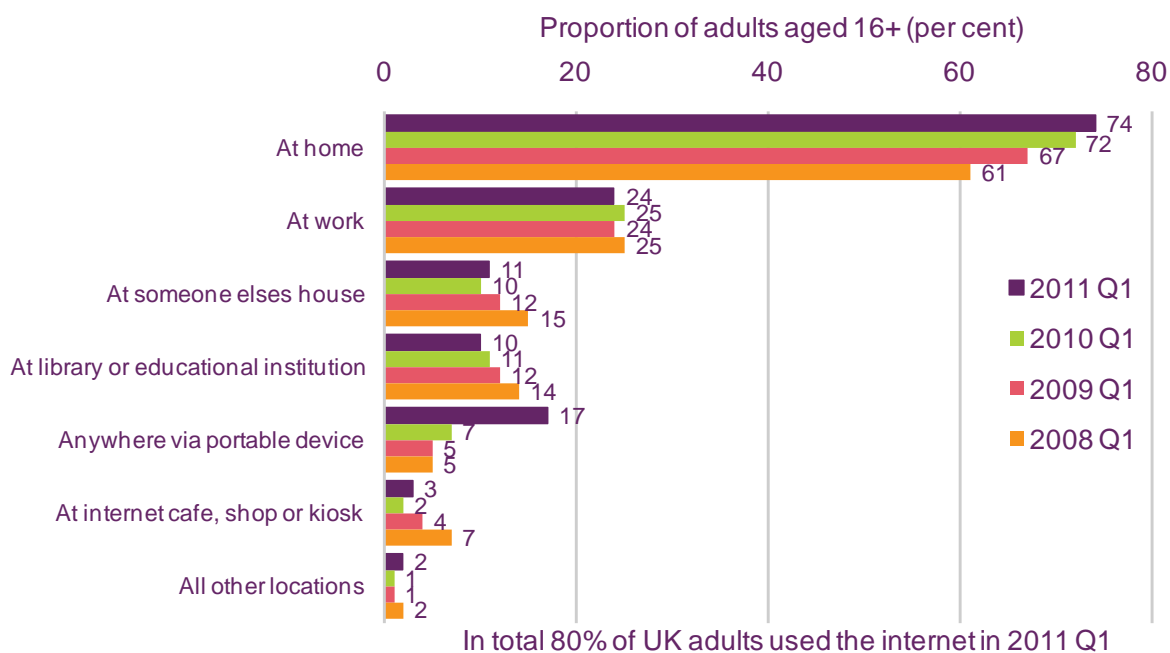
### Most access the internet at home while nearly one in five use a portable device

Nearly three-quarters of adults (74%) accessed the internet while at home in Q1 2011, compared to 61% in the same quarter in 2008 (Figure 5.84). Accessing the internet at work has remained static over the last four years at one in four, while the proportion using an internet connection in a library, educational institution or at someone else's house has declined since 2008, as more people access the internet in the home.

Those accessing the internet via a portable device reached 17% in Q1 2011, a ten percentage point increase on the year before. This large increase in internet connectivity via portable devices is likely to be the result of the increasing penetration of smartphones as well as other portable data-centric devices such as tablets and e-readers (the use of smartphones is detailed in Section 0 of this report, and the use of other devices in Section 4.2.2).



**Figure 5.84 Location of internet access**

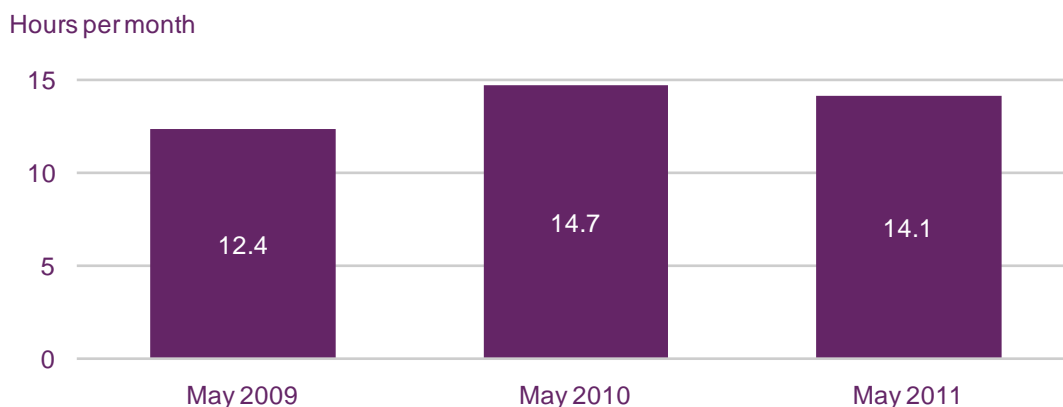


Source: Ofcom research  
Base: All internet users aged 16

**Time spent on fixed internet is event-driven**

Figure 5.85 below shows the average number of hours spent per person on internet access via a fixed PC in the month of May, from 2009 to 2011. As has already been shown in Figure 1.6, use has generally increased over a five-year period and reached a peak of 14.7 hours in 2010; however, in May 2011 time spent was 4% less, at 14.1 hours. This is largely explained by several factors driving particularly high use of internet services in May 2010, notably the General Election and also the build-up to the football World Cup, rather than indicating a general decline in use in 2011. More detail on time spent online is available in 4.2.4 of this report.

**Figure 5.85 Average fixed PC/internet time online at home, per person**



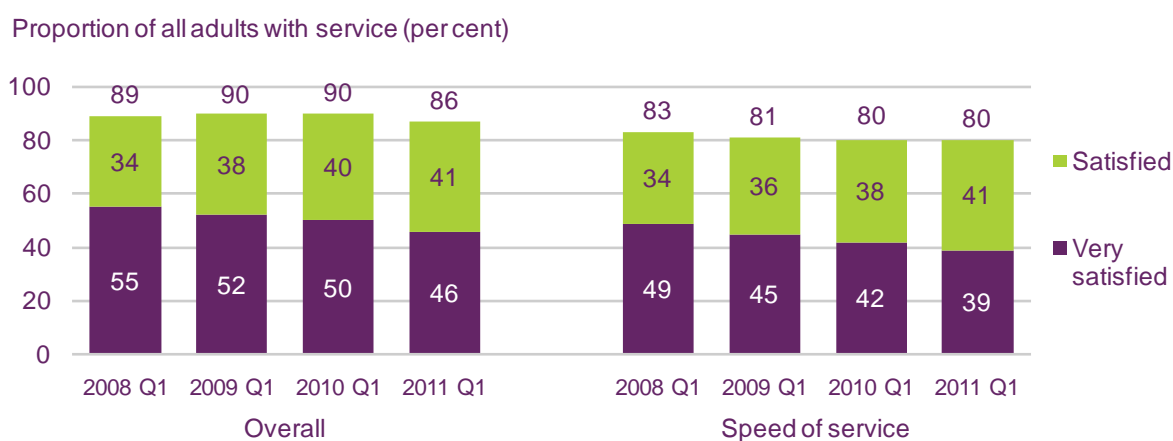
Source: Ofcom / Nielsen / UKOM  
Note: Ofcom estimate of fixed internet use per person is based on Nielsen data on the average monthly time spent online at home including the use of applications across the online population only; data are for May of each year

## Satisfaction with overall fixed-broadband service falls during 2010

Overall satisfaction with fixed-broadband services, although high at 86% in Q1 2011, fell by four percentage points over the year, while satisfaction with the speed of fixed-broadband services remained unchanged in 2010 at 80%, slightly below the 83% reported satisfaction in 2008 (Figure 5.86). This fall in satisfaction comes in the context of increasing average broadband speeds<sup>67</sup>, so it may be the consequence of changing consumer expectations, or consumers increasingly using services such as video streaming which benefit from a higher speed connection.

Less than half of respondents in Q1 2011 were 'very satisfied' with the overall service and speed of their broadband connection, with both measurements registering a decline each year since 2008. The largest fall is related to speed, down ten percentage points over the four-year period to 39% in Q1 2011.

**Figure 5.86 Residential consumer satisfaction with aspects of fixed-broadband services**



Source: Ofcom research

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

Note: Includes only those who expressed an opinion

### 5.3.4 Mobile services (including mobile broadband)

#### Cost of mobile services continues to decline

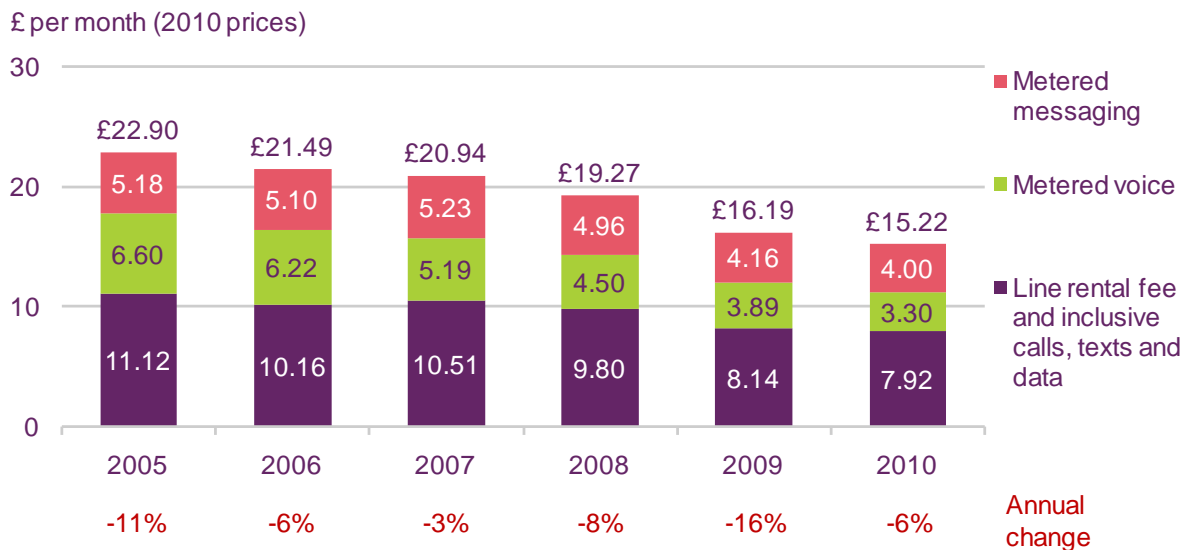
The cost of a basket of mobile services fell again in 2010, by 6% to £15.22, although the rate of decline slowed compared to 2008 and 2009 (Figure 5.87). The largest fall in mobile spend was on metered voice, down 15% to £3.30 over the year, while spend on texts outside any bundled services declined by 6% over the period. It is notable that this fall came despite increasing use of the both voice (up 5%) and texts (up 24%) (see Figure 5.51 and Figure 5.53 above), so is likely to be driven by increasing numbers of inclusive voice minutes and texts being used within pay-monthly contracts, with the proportion of mobile connections on pay-monthly contracts (rather than pay-as-you-go) increasing from 41% at the end of 2009 to 49% at the end of 2011 (see Figure 5.16 above).

Spend on line rental and bundles (voice calls, text and mobile data), which accounted for approximately half of total spend in 2010, fell by just 3% in 2010. This is significantly less

<sup>67</sup> See Ofcom's research into broadband speeds, <http://stakeholders.ofcom.org.uk/market-data-research/telecoms-research/broadband-speeds/>

than the 17% fall during 2009, again indicative of the migration of customers from pay-as-you-go to pay-monthly subscriptions.

**Figure 5.87 Real cost of a basket of mobile services**



Source: Ofcom / operators

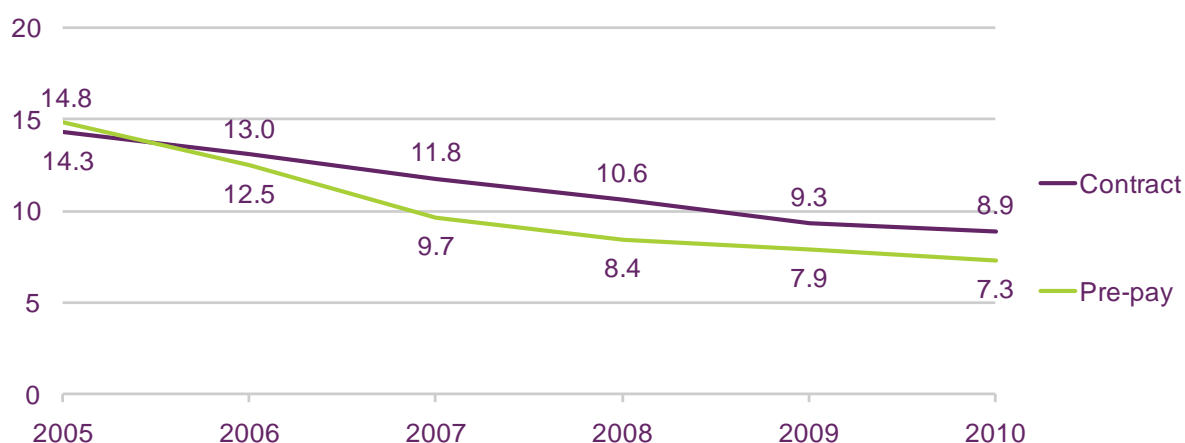
Note: Includes estimates where Ofcom does not receive data from operators; excludes non-geographic voice calls; adjusted for RPI; includes VAT

### Cost of per minute on pre-pay and contract continues to fall

The average cost per voice minute on a contract and pre-pay tariff fell to 8.9p and 7.3p respectively in 2010; however, the difference in the cost per minute for each customer type widened by 0.2p to 1.6p in 2010. This can be explained by the accelerated decline in pre-pay charges in 2010, down by 8% or 0.6 pence over the year (Figure 5.88).

However, these costs should be treated with caution; it is likely that the cost per minute for contract calls is overstated as it includes the monthly rental fee. This means that, in addition to voice calls, other inclusive services such as text messages and/or data use are included within the calculation for price per minute. In addition, many pay-monthly contracts also include a free or discounted handset, with the cost of the handset factored into the monthly payments – so the price per minute will include some payment for handsets.

**Figure 5.88 Average mobile cost per mobile voice minute, by customer type**



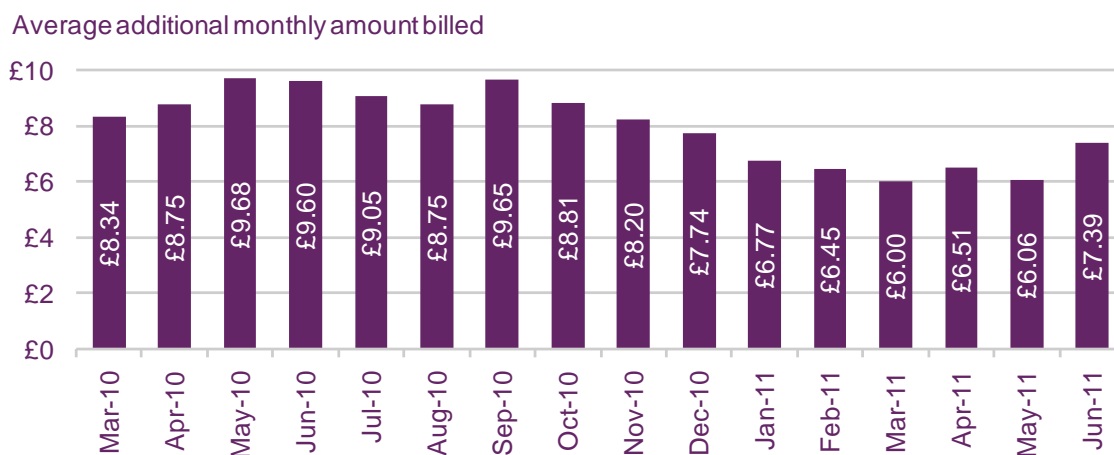
Source: Ofcom / operators

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

### Pay-monthly mobile users spend an average of around £6 to £10 a month in addition to their monthly fee

In Q1 2011, the majority (51%) of new pay-monthly contracts had a fee of less than £25 a month (see Figure 5.17 above). However, in addition to monthly fees users pay for calls, messaging and data services that are not included in their monthly allowance. Figure 5.89 is compiled from data collected by price comparison service billmonitor and is based on between 3,000 and 10,000 bills submitted by mobile customers every month. It indicates that, on average, mobile users were billed between about £6 and £10 a month in addition to their contractual monthly fee – and there are some indications that this has been falling since Q3 2010. These out-of-allowance charges represent on average about 20-30% of average mobile bills (data supplied to Ofcom from the mobile operators show that average revenue per contract subscription was £25.29 in 2010 – see Figure 5.50 above - which equates to an average bill of around £30 once VAT is added).

**Figure 5.89 Average out-of-allowance costs billed to pay-monthly customers**



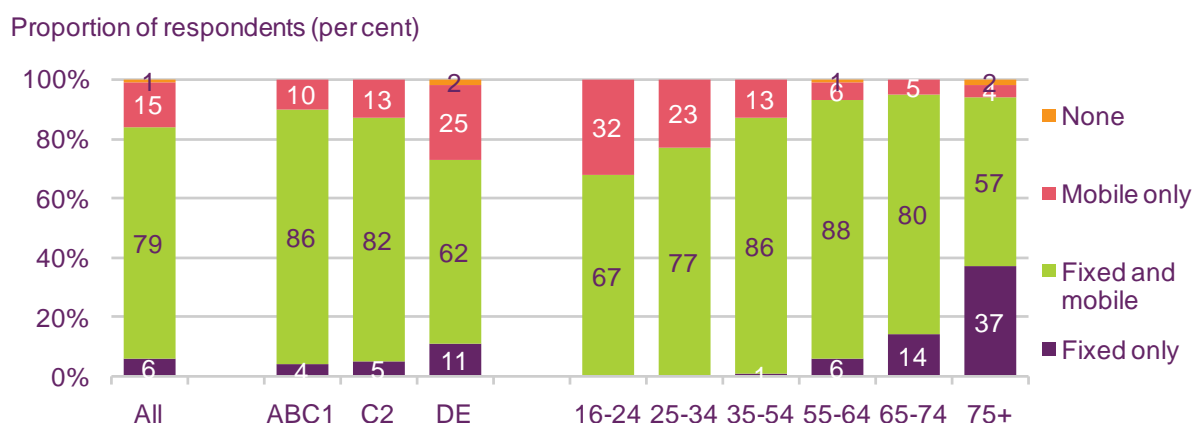
Source: billmonitor

## One in three 16 to 24 year-old households were mobile-only in Q1 2011

In Q1 2011 15% of UK households relied solely on mobile for their communications needs, up slightly from 14% in Q1 2010 (Figure 5.90). Within the different socio-economic and age groups there is wide variation in the proportion of mobile-only households, with those in the DE socio-economic group and younger respondents most likely to solely use mobile telephony. According to our research, one in four DE households (25%) and nearly one-third of 16-24 year-olds (32%) were mobile-only in Q1 2011, compared to 10% of ABC1 households and just 5% of 65-74 year-olds.

Most households (79%) had both fixed and mobile telephony connections in Q1 2011, with the highest proportion of ownership of both services among ABC1 households (86%) and those aged 55-64 (88%). Our research shows there is also a strong correlation between age and fixed-only households for voice telephony, with over one-third of over-75s using only a landline; in contrast, less than 1% of households with 16-35 year-olds had no mobile connection.

**Figure 5.90 Household penetration of fixed and mobile telephony, by socio-economic group and age**



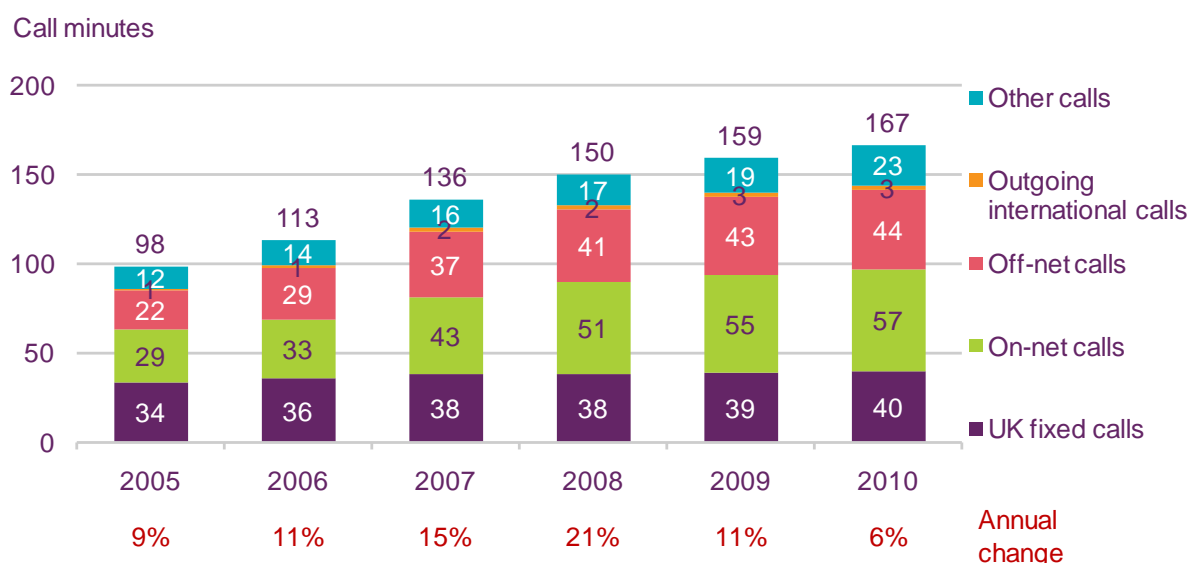
Source: Ofcom research  
Base: All adults aged 16+

## Monthly mobile call volumes per person rise to 167 minutes in 2010

The average person in the UK made over 70% more outgoing mobile call minutes in 2010 than in 2005, although growth has slowed in recent years (Figure 5.91). In 2010 people in the UK made an average of 167 minutes of outgoing mobile calls per month, a 5% increase compared to 2009 (growth was 11% in 2009 and 21% in 2008).

Mobile-to-mobile call volumes per person rose by three minutes to 101 minutes during 2010, representing 61% of total use. On-net call volumes continued to account for the largest proportion of both mobile-to-mobile calls (56%) and overall call volumes (34%). Outgoing international call minutes remained flat in 2010 at just three minutes per month, compared to an average of ten minutes a month per fixed-line connection, as landlines remain the most popular way of making international calls (see Figure 5.76 above).

**Figure 5.91 Average monthly outbound mobile voice call volumes per person**



Source: Ofcom / operators

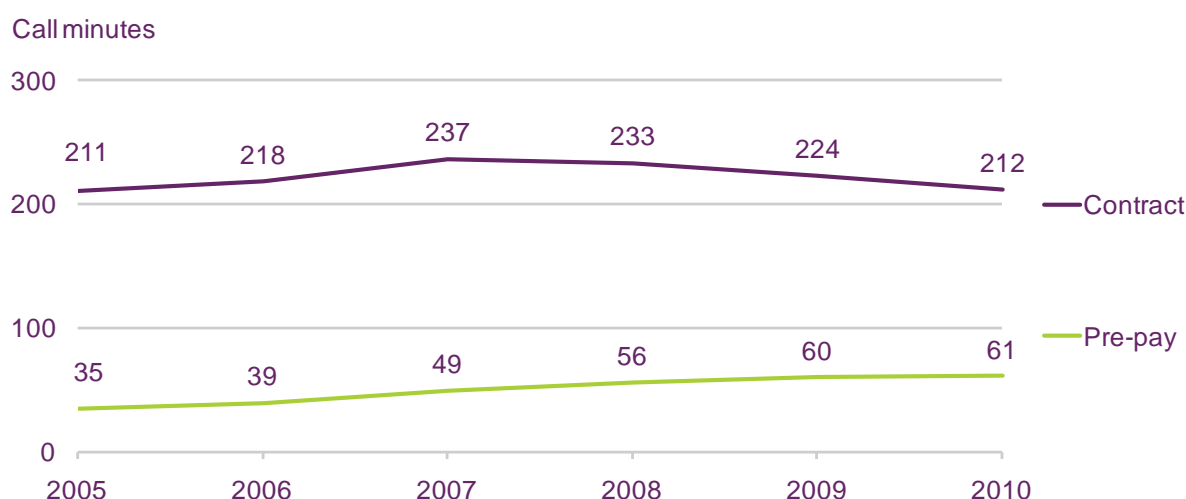
Note: Includes estimates where Ofcom does not receive data from operators; excludes 3UK; calculation excludes mobile broadband connections

### Call minutes per contract connection in 2010 fall back to 2005 levels

The average number of call minutes per contract connection fell by 5% to 212 in 2010, while pre-pay call volumes remained relatively static, up by one minute to 61 minutes per month (Figure 5.92). A contract connection, on average, generated over three times as many voice call minutes as a pre-pay connection in 2010; this compares with over six times the number of call minutes in 2005, when monthly contract call volumes amounted to 212 minutes compared to just 35 minutes on pre-pay.

Call volumes per contract connection have been in decline since 2007, but this reflects a change in the proportion of users on contract tariffs (see Figure 5.16 above), rather than a fall in overall contract minutes. Lower-volume voice users are now moving to pay-monthly contracts, attracted by low-cost tariffs (often SIM-only) which typically include a relatively small number of inclusive minutes and unlimited text messages, while the rising popularity of smartphones (see Section 0) means that consumers whose primary use of a phone may be for data services are taking up pay-monthly tariffs which include a handset and a monthly data allowance.

**Figure 5.92 Average monthly outbound mobile call minutes, by subscription type**



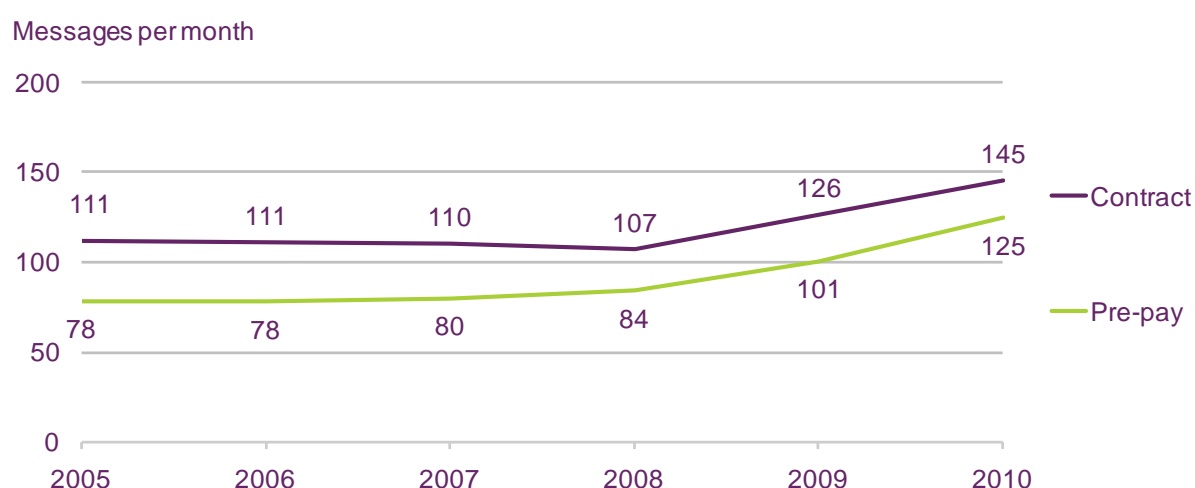
Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators; excludes 3UK; calculation excludes mobile broadband connections

### Strong increase in messaging volumes per connection in 2010

Our analysis of the number of SMS and MMS messages sent per connection type shows an upturn in volumes from 2008 onwards after several years of stability (Figure 5.93). The average number of texts sent by a pre-pay user over a month increased by nearly half (49%) since 2008 to 125 messages, and by 36% on contract connections to 145 messages over the same period. This growth is likely to be linked to the inclusion of more text messages within both pre-pay and pay-monthly tariffs (with many contract tariffs, including £10-a-month SIM-only tariffs, including unlimited text messages), in addition to text messaging becoming increasingly easy to use on smartphones that include keyboards and present text messages in the form of a 'conversation', almost equivalent to instant messaging interfaces.

**Figure 5.93 Average monthly messaging volumes, by connection type**



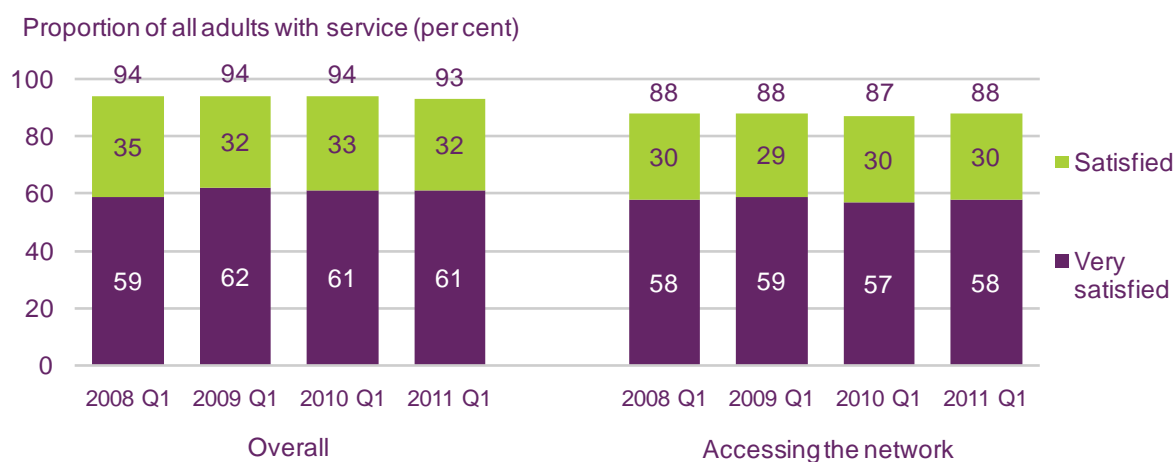
Source: Ofcom / operators

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

## Satisfaction with overall mobile phone services remains stable at 93% in Q1 2011

Levels of satisfaction with mobile phone services were unchanged in the year to Q1 2011 (Figure 5.94). Overall satisfaction with mobile services remained stable, with 93% of respondents either very satisfied or satisfied; as with previous years three in five respondents were very satisfied with the overall service. Satisfaction with being able to access the network was slightly lower than overall satisfaction levels, at 88%, with 58% saying they were very satisfied and 30% satisfied.

**Figure 5.94 Residential consumer 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

## Nearly one-third of younger people use mobile broadband

Figure 5.95 below shows the proportion of households that had a mobile broadband connection using a dongle or PC datacard in Q1 2011 and how these break down by socio-economic group, age and type of housing. It shows that, overall, 16% of households had a mobile broadband connection, with the majority of these (9% of all households) having it in addition to a fixed-line broadband connection. Seven per cent of households have a mobile broadband connection as their only PC-based broadband connection.

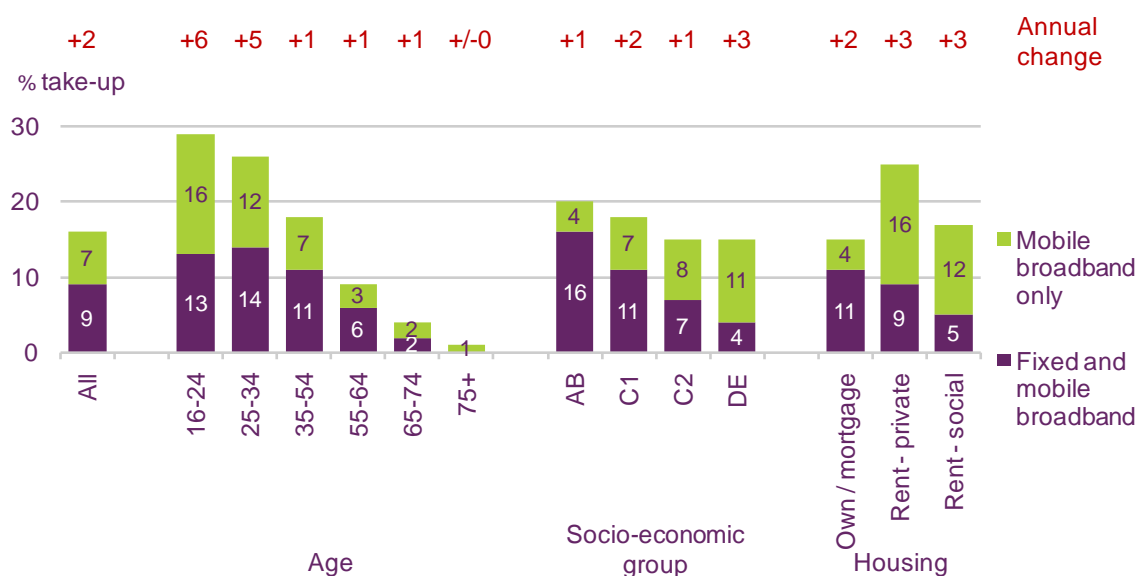
Take-up of mobile broadband was highest among younger age groups, with nearly a third (29%) of 16 to 24 year-olds using mobile broadband, and more than half of these relying solely on mobile broadband. Pre-pay and monthly mobile broadband contracts are particularly suited to those living in short-term accommodation for which longer-term 12 or 18 month fixed-broadband contracts may not be viable options. People living in rented private accommodation are therefore more likely to have mobile broadband (24%) with 16% of such households only using mobile broadband; this compares with only 15% of owned or mortgaged households having a broadband connection, and only 4% using mobile broadband only. This reflects how mobile broadband is typically a personal purchase, whereas fixed-line broadband (which uses the fixed voice line and is usually purchased in association with voice services and sometimes also with television services) is typically a household purchase.

Overall household take-up of mobile broadband increased by just 2% in 2010; this follows three years of initially strong growth since the services launched in 2007. Among over-35s and AB households, take-up was largely flat while there was increased take-up among younger age groups, DE households, and those living in rented accommodation. This



slowdown in take-up of PC-based mobile broadband may reflect that some users consider internet access on their phone to be sufficient for their mobile internet needs.

**Figure 5.95 Take-up of mobile broadband, by socio-economic group: Q1 2011**



Source: Ofcom research, Q1 2011

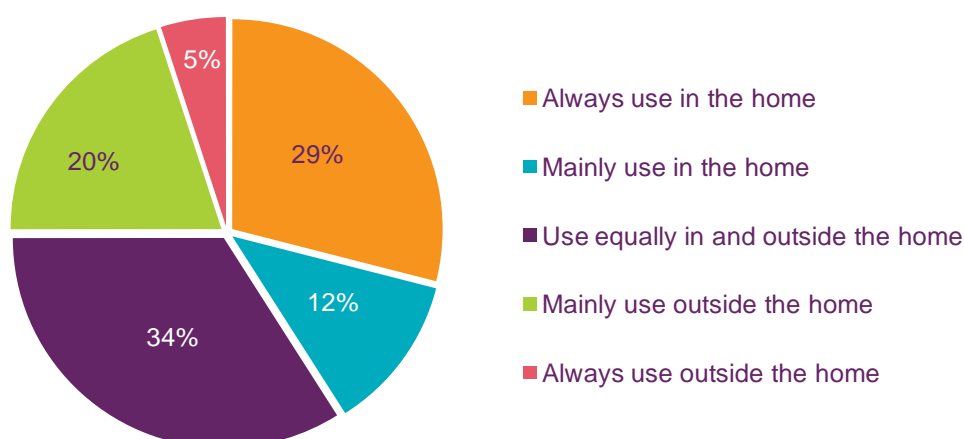
Note: Sum of 'All' does not total 17% due to rounding issues.

Base: All adults aged 16+ (n=3474)

### Most consumers are more likely to use their mobile broadband service within the home than outside

A key benefit of mobile broadband is that it enables users while 'out and about' to connect to the internet at any location where there is 3G network coverage. However, while one in four mobile broadband users (25%), 'mainly use' or 'always use' the service while outside the home, a greater proportion (41%) claimed to either 'mainly use' or 'always use' mobile broadband while in the home (Figure 5.96). The reasons for consumers' use of mobile broadband in the home are likely to be factors other than mobility, including being a mobile broadband-only household due to shorter contract lengths or perceived lower costs, lack of access to a fixed connection, or the greater convenience of laptop-based mobile broadband compared to fixed broadband. Two-thirds of mobile broadband users (64%) say they use mobile broadband both in and out of the home, with a third (34%) saying that they use it equally inside and outside the home.

**Figure 5.96 Location of those using mobile broadband to access the internet**



Source: Ofcom research, Q1 2011  
Base: All adults aged 16+ (n=750)

### **More than half of under-35s access the internet on their mobile phone**

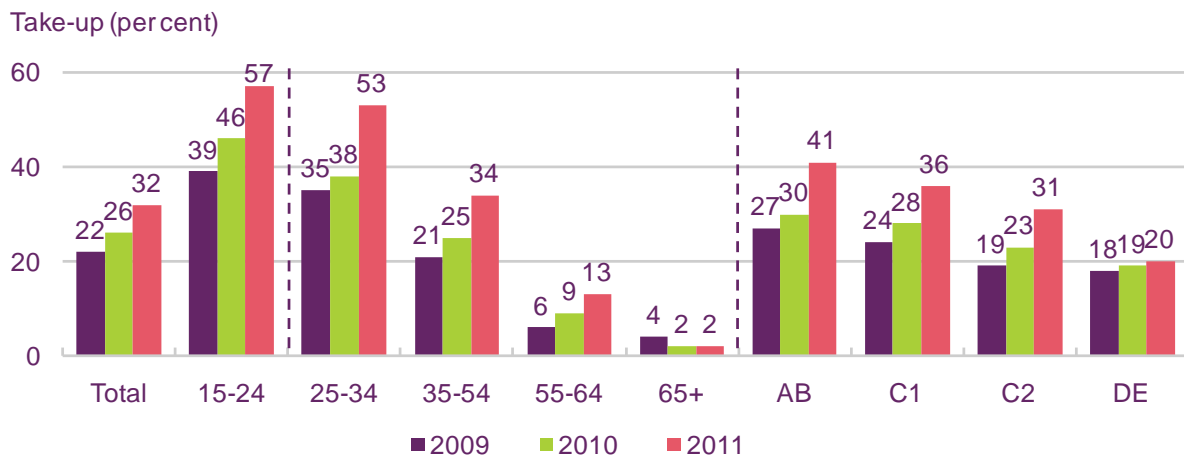
Figure 5.97 shows the proportion of mobile users who accessed the internet on their mobile phone, split by age and socio-economic group. It shows that mobile internet use increased from 22% in Q1 2009 to 32% in Q1 2011 and that over half of 15-34s and a third (34%) of 35-54 year-olds had used their mobile handset to access the internet. In line with take-up of mobile services (see Figure 5.97), older age groups were less likely to use mobile phones to access the internet, with only one in eight 55-64s and one in 50 over-65s accessing the internet in this way.

Our research indicates a two percentage point increase in the proportion of people in the DE socio-economic group accessing the internet on mobile phones between Q1 2010 and Q1 2011 (up to 20%), but a 14 percentage point increase among AB households over the same period, to 41%. This suggests that those within DE households are less likely to access the internet from their mobile phone; this is likely to be because a significant proportion of this group are over 65 and therefore less likely to use mobile services. In addition this group comprises lower-income households with less disposable income to spend on mobile internet access, whether smartphones or mobile data tariff plans.

More detail on take-up and use of the internet on mobile phones is provided in Section 4.1.2 of this report.

**Figure 5.97 Use of the internet on mobile phones, by age and socio-economic group**

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



Source: Ofcom technology tracker, Q1 2011

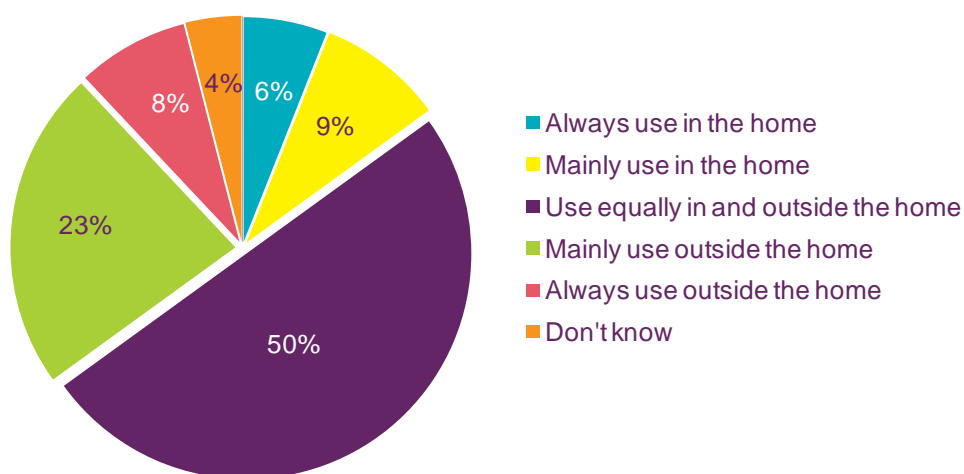
Base: All adults 16+ (n = 3474 UK, 460 16-24, 540 25-34, 1204 35-54, 535 55-64, 735 65+, 784 AB, 1014 C1, 701 C2, 975 DE, 1679 male, 1795 female)

Note: Web/data access includes accessing the internet, downloading and streaming content, connecting using WiFi and using VoIP.

### Nearly two-thirds use mobile internet access at home

Over 80% of those that access the internet on their mobile device have done so outside the home at some point and nearly one-third (31%) 'mainly' or 'always' use the mobile internet outside the home (Figure 5.98). The largest proportion (50%) said they used the service equally inside and outside the home. Interestingly, nearly two-thirds claim to access the mobile internet at home, with one in seven 'mainly' or 'always' using their mobile device at this location. It should be noted that this research includes users accessing the internet from their mobile device over a WiFi connection, which may partly explain the use of mobile devices within the home.

**Figure 5.98 Location of internet access using a mobile device**



Source: Ofcom research, Q1 2011

Base: All adults aged 16+ (n=471)

## Operators target low-use consumers with new mobile broadband tariffs

A summary of the lowest-cost mobile broadband tariffs from mobile providers is shown in Figure 5.99 below. This shows that over the past year Vodafone, O2 and Orange have launched tariffs at lower price points but with less inclusive data, while T-Mobile has reduced its price and its fair-use policy (customers who exceed this limit can still use some services such as email and web browsing, but services such as file downloading and streaming services may be restricted). See Section 5.1.5 for more information on mobile data use. Overall, this indicates a gradual migration towards usage-based charging, which is prompted by the need to manage capacity as mobile data use increases (see Section 5.1.5 above), but may also increase revenue by developing a price-based segmentation between light and heavy users.

Along with O2, which includes unlimited access to its network of WiFi 'hotspots' as part of its mobile broadband tariffs, Vodafone has begun to include monthly WiFi allowances in some of its mobile broadband offers, with 1GB of WiFi access now included within the lowest-priced plan.

**Figure 5.99** Lowest-cost stand-alone mobile broadband contracts, by provider

Provider		Monthly charge	Data allowance	Minimum contract length	Charges above allowance	WiFi hotspot use
Vodafone	2009	£14.68	1GB	1 month	£7.50 / 500MB	Not included
	2010	£15.00	3GB	1 month	£15.00 / GB	Not included
	2011	£7.50	500MB	1 month	£15.00 / GB	1GB
O2	2009	£14.69	3GB	1 month	19.6p / MB	Unlimited
	2010	£10.00	1GB	1 month	2.4p / MB	Unlimited
	2011	£5.11	500MB	1 month	Bundles available e.g. £5.11 / 500MB	Unlimited
T-Mobile	2009	£14.68	3GB fair use	18 months	n/a	Unlimited
	2010	£15.00	3GB fair use	18 months	n/a	Unlimited
	2011	£10.00	1GB fair use	18 months	n/a	Not included
Orange	2009	£9.79	1GB	18 months	1.43p / MB	Not included
	2010	£10.00	1.5GB	18 months	2p / MB	Not included
	2011	£10.00	500MB	1 month	Bundles available e.g. £5.00 / 500MB	Not included
3UK	2009	£9.79	1GB	12 months	10p / MB	Not included
	2010	£7.50	1GB	18 months	10p / MB	Not included
	2011	£7.89	1GB	18 months	10p / MB	Not included
Virgin Mobile	2009	£14.68	3GB	18 months	£14.68 / GB	Not included
	2010	£10.00	1GB	2 months	£15 / GB	Not included
	2011	£10.21	1GB	2 months	£15 / GB	Not included

Source: Pure Pricing

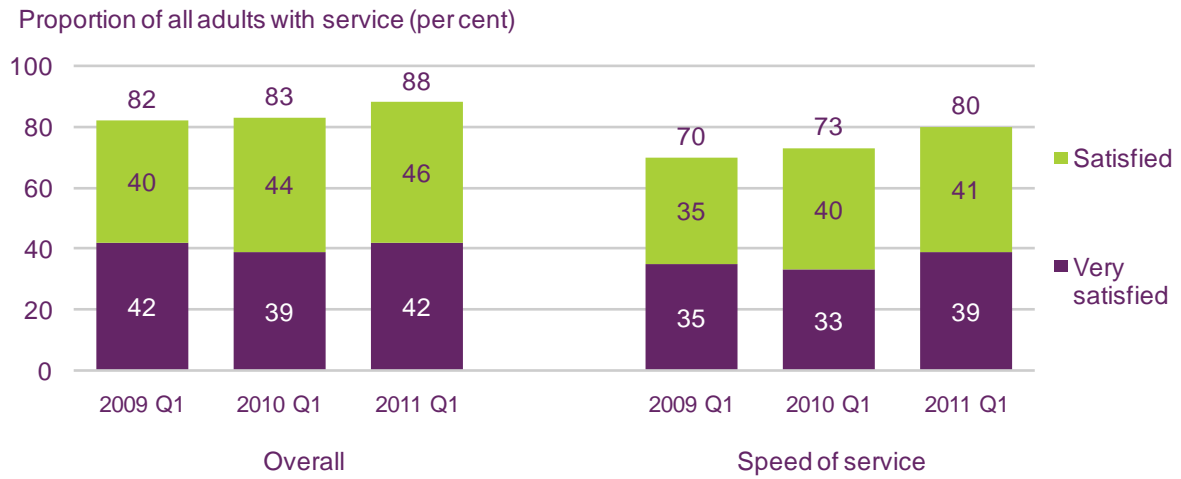
Note: Data as at March of each year.

## Almost nine in ten consumers satisfied with mobile broadband service

Levels of satisfaction with mobile broadband services have risen since 2009, with a significant rise in satisfaction with the speed of the service in the year to Q1 2011, up by seven percentage points to 80% (Figure 5.100). This may be a result of improvements in the

quality of service delivered to consumers, but may also reflect greater consumer awareness of the type of services suited to mobile broadband, and more realistic expectations of the levels of speed the service can deliver.

**Figure 5.100 Residential consumer satisfaction with aspects of mobile broadband**



Source: Ofcom research

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

Note: Includes only those who expressed an opinion