

5 Telecoms and networks

5.1 Recent developments in Wales

Broadband Support Scheme

In July 2011, the Welsh Government announced the extension of its £2m Broadband Support Scheme to include those who live in broadband 'slow-spots' (i.e. those who receive speeds of less than 2Mbit/s) in addition to those who live in 'not-spots'. Since July 2010, the scheme has offered up to £1,000 for eligible consumers to approach service providers directly. In February 2012, the Welsh Government announced a further extension of the Broadband Support Scheme so that it operates in parallel with the Next Generation Broadband for Wales project.

Next Generation Broadband for Wales

The Welsh Government conducted a competitive procurement process to secure a provider to deliver its Next Generation Broadband for Wales Project. The UK Government has also allocated £56.9m towards the roll-out of next-generation broadband across Wales, which will be used to help fulfil the Welsh Government's policy commitment to deliver superfast broadband (i.e. that with an 'up to' headline speed of at least 30Mbit/s) to all households in Wales by 2015.

Urban Broadband Fund

In November 2011, the Chancellor of the Exchequer announced that Cardiff will be one of ten 'super-connected' cities with funding from the Urban Broadband Fund. In May 2012, Swansea and Newport were named as cities which are eligible to bid for the second round of funding.

BT

BT has continued to roll-out its superfast broadband offering, with thousands of homes and businesses across Wales being set to benefit from fibre-to-the-cabinet (FTTC) and fibre-to-the-premises (FTTP) broadband. BT estimates that 72% of homes and businesses in Wales will be connected to an upgraded ADSL2+ exchange by spring 2013.

Arqiva Alcatel-Lucent LTE Trial

A high speed wireless broadband system using LTE (4G) technology (which can deliver speeds of over 50Mbit/s) was tested by Arqiva and Alcatel-Lucent in the Preseli mountains. This was the first live trial of LTE in the UK to use the 800MHz spectrum.

Mobile: Ger-y-Gors Community Forum

The people of Ger-y-Gors near Tregaron in West Wales have set up a not-for-profit company to operate a mobile communications mast. They secured a £164,542 grant to fund a mast at Ystrad Meurig, which will provide coverage for people living in the Pontrhydfendigaid area. The mast is planned to be fully operational by the end of 2012 and will be leased to mobile network operators.

Mobile: 3UK

As part of its collaboration with The Countryside Alliance and Go ON UK, 3UK is bringing 3G mobile services to Ceredigion. Twenty families and businesses will be provided with MiFi mobile broadband devices, and a community hotspot will be created in Aberaeron.

5.2 Availability of broadband services

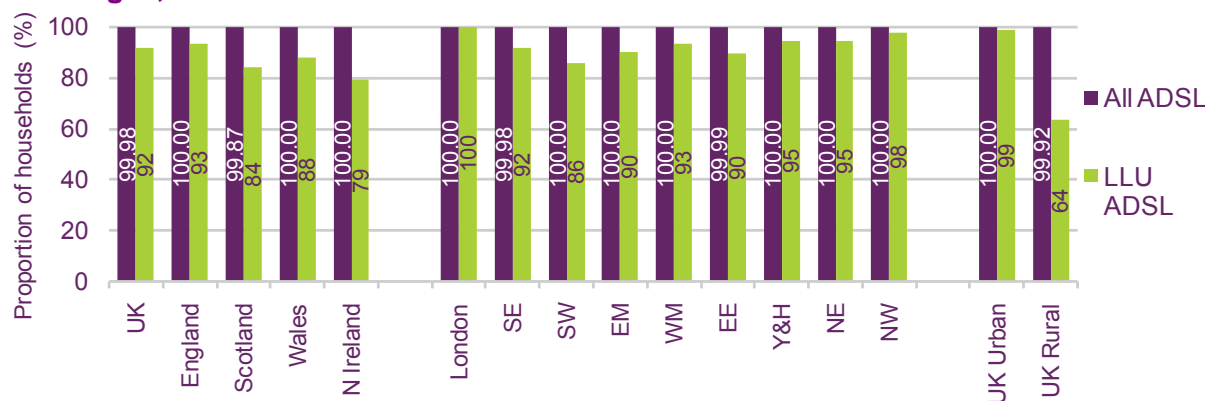
All homes in Wales are connected to an ADSL-enabled local exchange

By the end of 2011 almost all UK homes were connected to an ADSL-enabled BT local exchange, although some people may not be able to receive ADSL broadband services, or may only be able to do so at very slow speeds, as a result of the long length or poor quality of the copper telephone line from their premises to the local exchange. In Wales (as in Northern Ireland) all of BT's exchanges had been upgraded by the end of 2011 to offer ADSL broadband, and of BT's 5,589 local exchanges, only 26 (20 in Scotland and six in England) had not been upgraded to offer ADSL broadband services. As a result, the proportion of homes connected to an ADSL-enabled BT exchange was marginally lower in Scotland than in the rest of the UK (Figure 5.1).

Local loop unbundling (LLU) involves an alternative operator placing its own equipment in the incumbent's local exchange. This is then connected to the LLU provider's own backhaul network, and ADSL broadband services are provided over the twisted copper pair, which is leased from the incumbent operator. LLU operators are able to benefit from economies of scale which are not available to them when purchasing wholesale services on a per-unit basis, and have greater opportunity to differentiate the services that they offer from their competitors'. As a result, consumers living in LLU-enabled exchange areas are likely to have a greater choice of ADSL broadband services and, typically, access to lower-cost (particularly bundled) services.

At the end of 2011 92% of UK homes were connected to an LLU-enabled BT exchange, a three percentage point increase on the previous year. LLU roll-out has historically been concentrated in exchange areas serving a large number of premises (which tend to be in urban areas) and as a result of this, the proportion of homes connected to an LLU-enabled local exchange is much higher in urban areas (99%) than in rural ones (64%). Wales had the second highest proportion of households which were connected to an LLU-enabled exchange at the end of 2011, at 88%, while across the other UK nations this proportion ranged from 79% in Northern Ireland to 93% in England.

Figure 5.1 Proportion of homes connected to ADSL-enabled and unbundled exchanges, December 2011



Sources: Ofcom/BT, December 2011 data

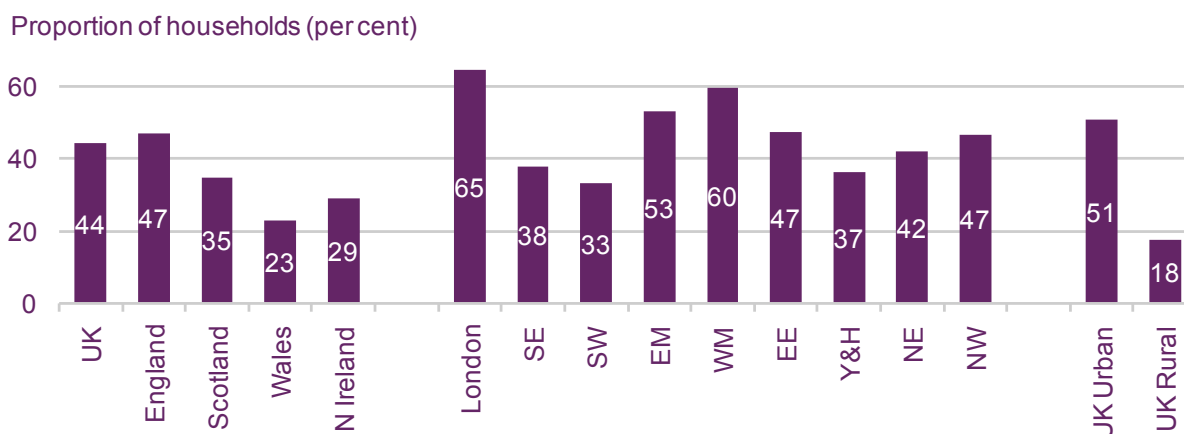
Wales had the lowest household availability of cable broadband services among the UK nations in May 2012, at 23%

Ofcom estimates, based on data provided by Virgin Media, show that 44% of UK homes were passed by Virgin Media's cable broadband network in May 2012. However, this figure will be under-stated as it excludes homes where Virgin Media is not also able to provide fixed voice and pay-TV services (Figure 5.2).¹⁴

As with the roll-out of LLU broadband services, the original cable franchisees concentrated network deployment in urban areas in order to maximise the number of premises covered by their networks (and therefore their potential customer bases). This is reflected below, with household coverage in urban areas being 51%, compared to 18% in rural areas. Wales had the lowest proportion of homes passed by Virgin Media's cable broadband network at the end of 2012 (23%), less than half the figure in England, where it was 47%.

All of Virgin Media's cable network is able to provide broadband speeds of 'up to' 100Mbit/s and in January 2012 Virgin announced that it was doubling the speeds of most of its broadband connections in the 18 months from February 2012, thereby increasing the speed of its fastest package to 'up to' 120Mbit/s¹⁵.

Figure 5.2 Proportion of households passed by Virgin Media broadband



Sources: Ofcom/Virgin Media, May 2012 data

Wales had the second lowest availability of fibre-to-the-cabinet broadband in March 2012

Fibre-to-the-cabinet (FTTC) involves running fibre optic cable from the local exchange to the street cabinet, from which VDSL (a fast form of DSL) is used to transmit data over the twisted copper pair to the customer's premises. Figure 5.3 shows Ofcom estimates of the proportion of UK homes which were able to receive BT FTTC services in March 2012 (there are other FTTC deployments, the most notable of which is South Yorkshire Digital Region which covers around 440,000 premises in the South Yorkshire area).¹⁶

BT is currently in the process of rolling out FTTC services, and this is reflected by the fact that in the year to March 2012 our estimate of the proportion of homes available to receive

¹⁴ While the most recent data available to Ofcom show that 44% of UK homes were able to receive triple-play cable services from Virgin Media in May 2012, data from 2010 show that in total 48% of UK homes were able to receive Virgin Media cable broadband in June of that year.

¹⁵ <http://mediacentre.virginmedia.com/Stories/Virgin-Media-boosts-Britain-s-broadband-speeds-2322.aspx>

¹⁶ <http://www.digitalregion.co.uk/digital-region-wholesale/the-networkrollout>

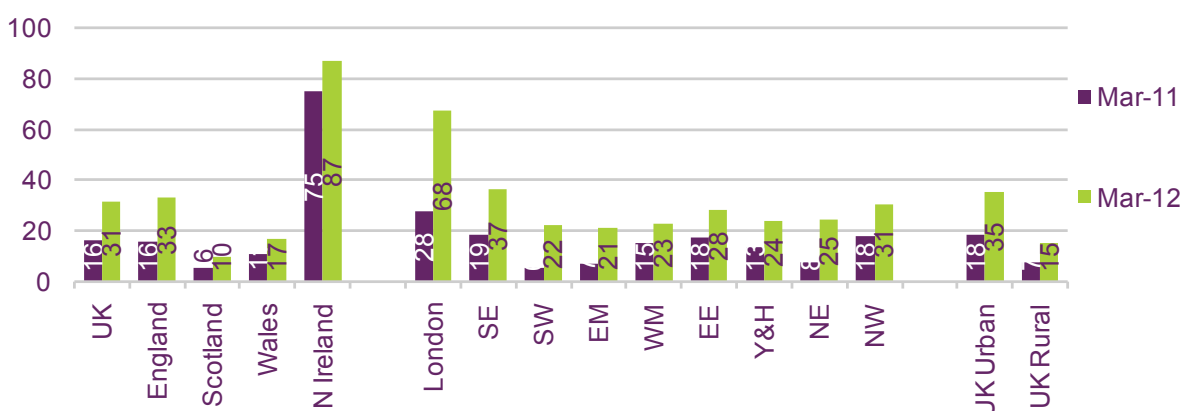
BT FTTC services (or services using BT's FTTC network) increased by 15 percentage points to 31% (these estimates have been adjusted to take into account the fact that not all street cabinets connected to an exchange that has been upgraded to offer FTTC have fibre run to them). BT's FTTC service had a headline speed of 'up to' 40Mbit/s at launch, but in April 2012 it upgraded its FTTC network to offer 'up to' 80Mbit/s.¹⁷

In urban areas of the UK 35% of UK homes were able to receive BT FTTC services by March 2012, more than twice the proportion that could do so in rural areas (15%). Wales had the second-lowest estimated proportion of homes able to receive FTTC services from BT, at 17%, while among the other UK nations the proportion ranged from 10% in Scotland to 87% in Northern Ireland. The availability of BT's FTTC services was higher in Northern Ireland than in the other UK nations as a result of a Department of Enterprise, Trade and Investment (DETI) initiative to increase the availability of fibre-based broadband services.

BT is also deploying fibre-to-the-premises (FTTP) services, and by the end of 2011 its FTTP network, which offers speeds of 'up to' 110Mbit/s, covered around 50,000 UK homes.¹⁸ BT intends to make its superfast broadband services available to two-thirds of UK premises using a mixture of FTTC and FTTP, and in October 2011 it announced that this goal would be attained by the end of 2014, a year sooner than originally planned.¹⁹

Figure 5.3 Estimated proportion of households able to receive BT FTTC services

Proportion of households (per cent)



Sources: Ofcom/BT

Wales had the lowest availability of superfast broadband services across the UK nations in March 2012

Superfast broadband is defined as those connections with a headline 'up to' speed of 30Mbit/s or more, and by overlaying Virgin Media cable broadband availability data onto that of BT's FTTC network we are able to estimate the overall availability of superfast services. Again it should be noted that the figures below will be slightly understated, as they exclude BT's FTTP network, homes where Virgin Media is not able to provide fixed voice and pay-TV cable services, and other smaller-scale fibre deployments.

We estimate that by March 2012 60% of UK homes were able to receive superfast broadband services, up from 53% in March 2011, largely as a result of BT's ongoing FTTC roll-out (Figure 5.4). Household availability of superfast broadband in rural areas (28%) was

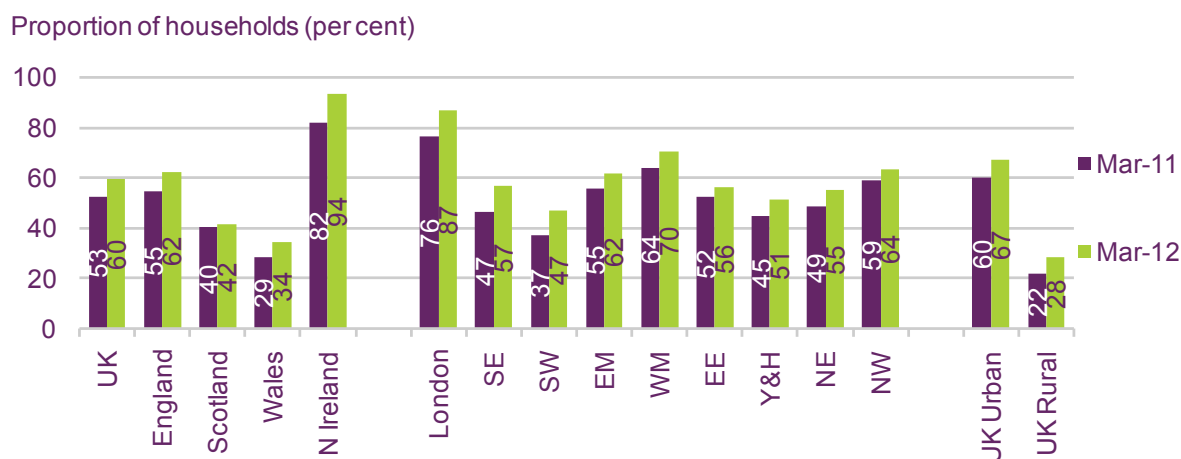
¹⁷ <http://www.btplc.com/News/ResultsPDF/q411release.pdf>

¹⁸ http://www.btplc.com/Sharesandperformance/Quarterlyresults/PDFdownloads/q312_transcript.pdf

¹⁹ <http://www.btplc.com/news/articles/showarticle.cfm?articleid=%7Bd228f2b4-25fc-4095-8ec4-bd17b903cc3b%7D>

less than half that in urban areas (67%) by March 2012, and Wales had the lowest estimated proportion of homes able to receive superfast services, among the UK nations, at 34%. Conversely, the availability of FTTC and/or cable superfast broadband was highest in Northern Ireland, where an estimated 94% of homes were able to receive such services.

Figure 5.4 Estimated proportion of households able to receive superfast broadband services



Sources: Ofcom/BT/Virgin Media

5.3 Mobile coverage

Wales has the lowest proportion of premises covered by all mobile operators

Although 92% of UK adults have a mobile phone, according to Ofcom's market research, there remain areas of the country where a lack of network coverage means that making mobile phone calls, sending text messages or accessing the internet from a mobile device is not possible. These areas, sometimes known as 'mobile not-spots', are often characterised by low population density and/or undulating terrain, presenting physical and economic obstacles that may deter mobile network operators from installing mobile phone masts in those areas.

In other areas of the UK, some operators have installed masts and provide a mobile service where other operators do not have a presence, leading to the creation of partial not-spots.

Figure 5.5 and Figure 5.6 detail levels of mobile coverage based on premises (homes and offices) for 2G and 3G services respectively. 3G is often considered as the minimum necessary to provide a satisfactory experience of mobile internet, but 2G is satisfactory for telephone calls and text messaging.

How we measure the availability of mobile telephony in this report

The coverage information presented in Ofcom's *Communications Market Report, Nations and Regions* reports and *Infrastructure Report* is collected by Ofcom from the four mobile network operators. Information on coverage is provided by each operator for each 200x200 metre pixel of landmass across the UK. This information is correlated with maps of premises to give the premises coverage figures. This new methodology is more precise than that used in previous *Communications Market Reports* and uses a higher signal strength of -86dBm. Therefore figures should not be compared with previous years.

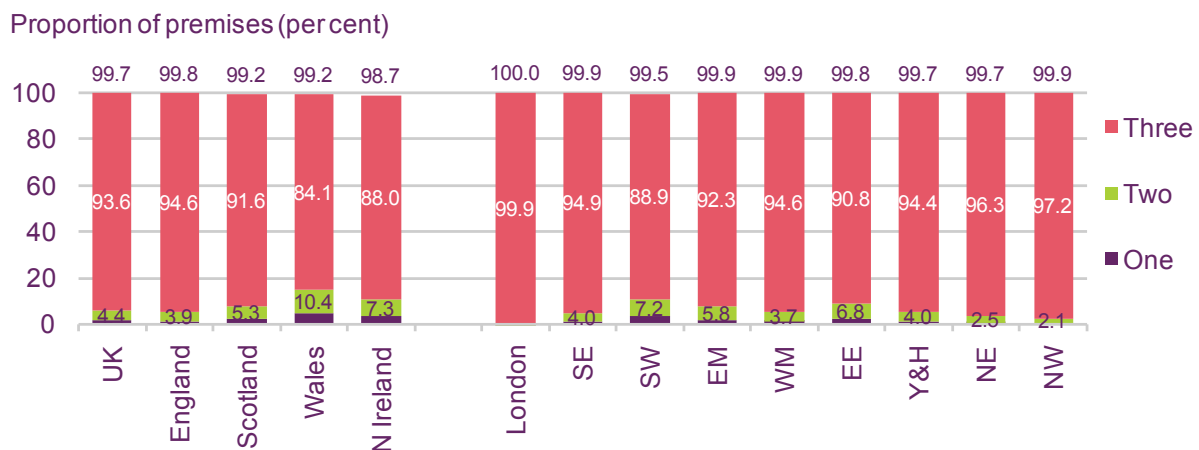
Figure 5.5 shows that, across the UK, 93.6% of premises have coverage outside the building from all three 2G network operators (Everything Everywhere, O2 and Vodafone). A small proportion of premises in the UK – 0.3% - do not have 2G coverage from any operator.

These figures all refer to outdoor coverage. Coverage figures for indoor reception are likely to be lower because radio signals are attenuated as they pass through the fabric of buildings. Indoor reception is highly dependent on the building in which reception is desired and where the user is located in the building. This makes it difficult to calculate indoor coverage figures.

Fewer of Wales' premises (84.1%) have mobile coverage from all three 2G operators than those in each of the other three UK nations. Wales also has the lowest level of coverage of the nations from all 3G operators, at little over half (52.4%).

Lower network coverage in Wales, compared to England, is a reflection of the country's hilly terrain, which restricts reception of mobile signals.

Figure 5.5 2G premises mobile coverage, by number of operators

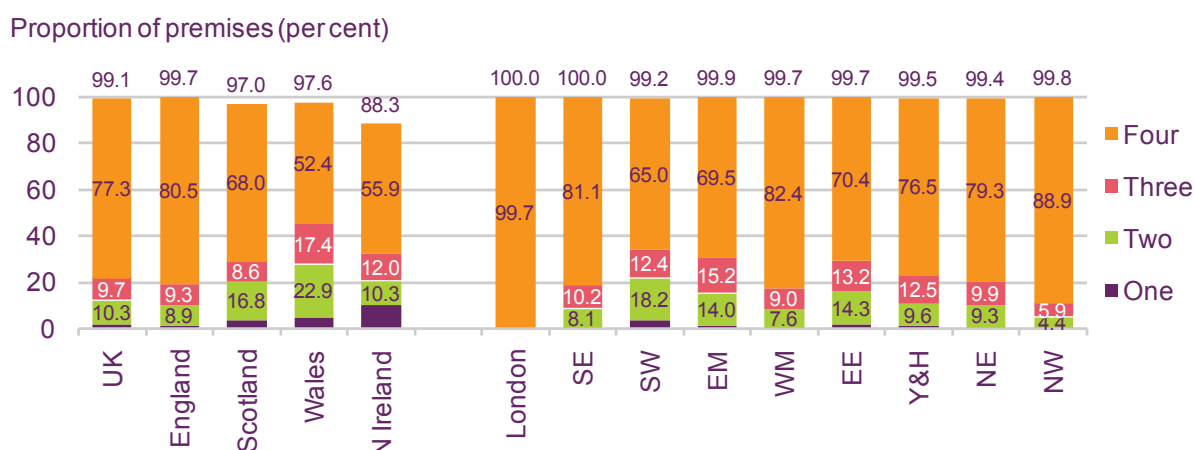


Source: Ofcom, based on operator data. Coverage is based on 200m square pixels covering the UK using an enhanced methodology. Therefore data are not comparable to those published in the 2011 Communications Market Report.

As shown in Figure 5.6, UK 3G coverage is less prevalent, with 77.3% of UK premises having coverage from all operators (including Three) outside the building. Just under 1% of UK premises have no 3G coverage from any operator.

2.4% of premises in Wales have no 3G coverage from any operator - this is higher than in England, but lower than in Scotland and Northern Ireland.

Figure 5.6 3G premises mobile coverage, by number of operators



Source: Ofcom, based on operator data. Coverage is based on 200m square pixels covering the UK using an enhanced methodology. Therefore data are not comparable to those published in the 2011 Communications Market Report.

Expressed in terms of geographical area, coverage figures are much lower because mobile masts are more commonly installed near centres of population. 12.8% per cent of the UK area is not covered by any 2G signal, and 24.2% of the UK area is not covered by a 3G signal.

One-seventh (14.3%) of the area of Wales has no 2G mobile coverage from any operator, marginally worse than the UK average (12.8%).

5.4 Service take-up

Fixed broadband take-up was lower in Wales in Q1 2012 compared to the UK average

Take-up of communications services in Wales was broadly in line with other UK nations in Q1 2012 (Figure 5.7). The most notable exception was the proportion of households with a fixed broadband connection, which was 63% in Wales, nine percentage points lower than the UK average of 72%. Households in Wales, particularly those in urban areas, continued to be more likely than average to rely solely on a mobile phone in Q1 2012, with 20% of homes in Wales being mobile-only compared to the 15% average across the UK. There has been very little change in these levels over the past few years.

Overall mobile phone ownership increased by five percentage points to 92% in Wales in the year to Q1 2012. Take-up of smartphones increased significantly throughout the UK over the same period, with Wales experiencing a 14 percentage point increase in ownership to 39% over the period, in line with the UK average.

Figure 5.7 Take-up of communications services, 2012

		UK	Wales	England	Scotland	N Ireland	Wales urban	Wales rural
Individual								
Voice telephony	Fixed Line	84%	80%	85%	82%	80%	78%	87%
	Mobile	92%	92%	93%	85%	93%	94%	91%
Internet	PC	79%	71%	80%	70%	73%	71%	73%
	Total Internet	80%	74%	81%	71%	73%	74%	75%
	Broadband (fixed and mobile)	76%	68%	78%	68%	69%	67%	73%
	Fixed Broadband	72%	63%	73%	64%	66%	61%	69%
	Mobile Broadband	13%	16%	13%	12%	7%	18%	8%

Source: Ofcom research, Quarter 1 2012

Base: All adults aged 16+ (n = 3772 UK, 513 Wales, 2251 England, 500 Scotland, 508 Northern Ireland, 249 Wales urban, 264 Wales rural)

QC1. Is there a landline phone in your home that can be used to make and receive calls?/ QD2. Do you personally use a mobile phone?/ 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?/ QE9. Which of these methods does your household use to connect to the Internet at home?

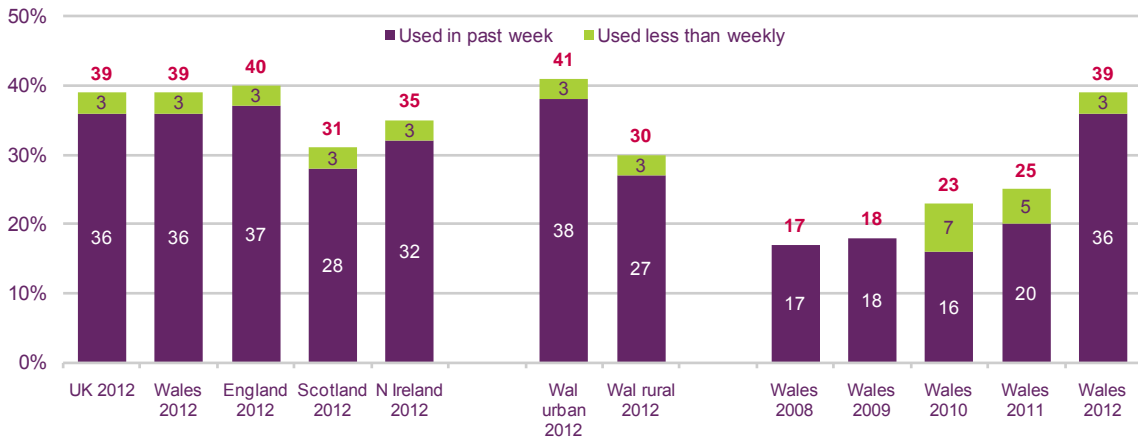
Rapid increase in use of mobile to access the internet in the year to Q1 2012

In the year to Q1 2012 the proportion of adults who said that they used their mobile to access the internet increased by 14 percentage points to 39%, in line with the UK average (Figure 5.8). Use of mobiles for internet access in Wales is now comparable to the UK average. Growth in the proportion of people in Wales using a mobile handset to access the web has largely been driven by consumers in urban areas, among whom the proportion doing this increased from 26% to 41% in the year to Q1 2012. Use in rural areas also increased over this period, up from 22% of adults to 30%.

The vast majority (over 90%) of people in Wales who used their mobile to access the internet said that they had done so in the past week.

The rise in the proportion of consumers in Wales using their mobile to access the internet in the year to Q1 2012 was consistent with the 13 percentage point rise in smartphone ownership over the period (42% of mobile customers in Wales said that they used a smartphone in Q1 2012). Four per cent of households in Wales used smartphones as their sole internet connection in Q1 2012, unchanged from a year previously.

Figure 5.8 Use of mobile phone to access the internet



Source: Ofcom research, Quarter 1 2012

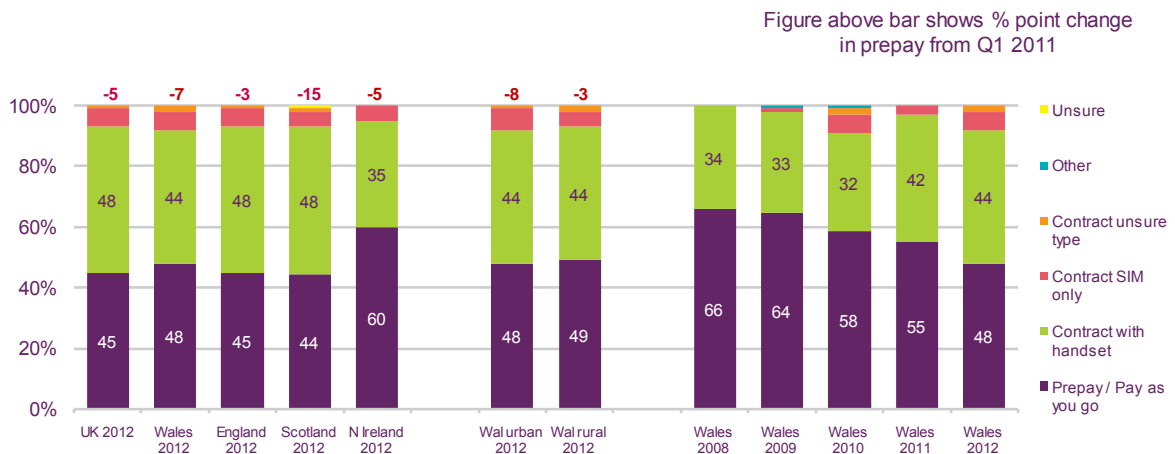
Base: All adults aged 16+ (n = 3772 UK, 513 Wales, 2251 England, 500 Scotland, 508 Northern Ireland, 249 Wales urban, 264 Wales rural, 811 Wales 2008, 987 Wales 2009, 1075 Wales 2010, 493 Wales 2011, 513 Wales 2012)

QD28A-B. Which, if any, of the following activities, other than making and receiving calls, do you use your mobile for?/ And which of these activities have you used your mobile for in the last week? (NB 2008 and 2009 surveys did not cover use in past week – 2008 and 2009 measures show any use)

Monthly mobile contracts were more common than pay-as-you-go in Wales in Q1 2012

In common with the overall UK trend, many pre-pay mobile phone users in Wales have migrated onto monthly contracts over the last couple of years. As a result, the proportion of mobile users in Wales who used pre-pay services fell by seven percentage points to 48% in the year to Q1 2012, meaning that over half of mobile customers in Wales used pay-monthly services during the period (Figure 5.9). The shift is likely to be related to the increased take-up of smartphone handsets, with consumers choosing to spread the cost of the handset across the length of a pay-monthly contract.

Figure 5.9 Type of mobile subscription



Source: Ofcom research, Q1 2012 Base: Adults aged 16+ who personally use a mobile phone (n = 3392 UK, 456 Wales, 2043 England, 430 Scotland 463 Northern Ireland) Question: Which of these best describes the mobile package you personally use most often?

5.5 Satisfaction

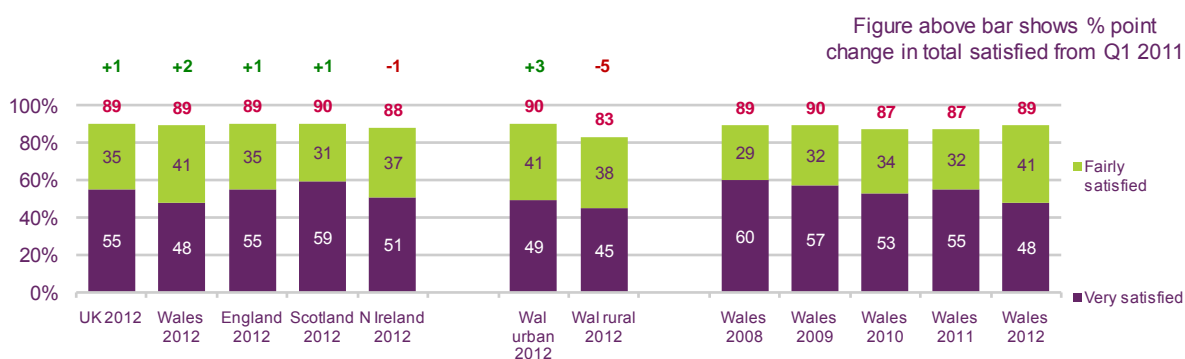
Satisfaction with telecoms services remained high in Wales in Q1 2012

Satisfaction levels with communications services in Wales were comparable to the UK averages in Q1 2012. There was no change in overall levels of satisfaction with fixed-line services in Wales (93%) in the year to Q1 2012, although the proportion of fixed-line customers who were 'very' rather than 'fairly' satisfied with their service fell by 11 percentage points to 52% over the period.

Similarly, in the mobile market there has been little change in satisfaction levels over the period, with 97% of mobile customers in Wales being satisfied with their overall mobile service and 89% being satisfied with their mobile reception (Figure 5.10). Satisfaction with reception remains lower in rural parts of Wales (83%) than in urban areas (90%) and fell by five percentage points in the year to Q1 2012. However, this does not appear to have affected overall satisfaction in this market, which increased by two percentage points overall and three percentage points in rural areas.

Satisfaction levels may have been influenced by the rise in mobile ownership generally in Wales, and of smartphones, where data connectivity may be considered by some as 'reception'.

Figure 5.10 Satisfaction with mobile phone service reception



Source: Ofcom research, Quarter 1 2012

Base: Adults aged 16+ who personally use a mobile phone (n = 3392 UK, 456 Wales, 2043 England, 430 Scotland, 463 Northern Ireland, 229 Wales urban, 227 Wales rural, 645 Wales 2008, 836 Wales 2009, 923 Wales 2010, 416 Wales 2011, 456 Wales 2012)

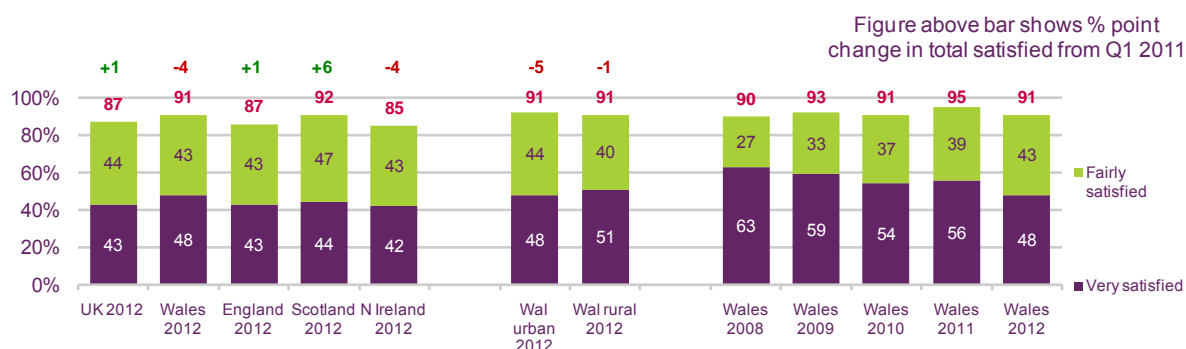
Note: Figures above chart columns indicate the proportion of people who were 'very' or 'fairly' satisfied with their overall mobile service

QD21a. Thinking about your mobile phone service only, how satisfied are you with (main supplier) for the overall service provided by (main supplier)?

Over 90% of fixed broadband users in Wales were happy with their service in Q1 2012

Overall satisfaction with fixed broadband services in Wales continued to fluctuate in the year to Q1 2012, during which the proportion of users who were satisfied with their service fell by four percentage points to 91% (Figure 5.11), comparable to levels in previous years. This decline in overall satisfaction levels in Wales was driven by a five percentage point fall in satisfaction levels among users in urban areas, but despite this fall, overall satisfaction levels were higher than the UK average of 87%.

Figure 5.11 Overall satisfaction with fixed broadband service



Source: Ofcom research, Quarter 1 2011 Base: Adults aged 16+ with a fixed broadband connection at home (n = 2556 UK, 318 Wales, 1577 England, 330 Scotland, 331 Northern Ireland, 146 Wales urban, 172 Wales rural, 386 Wales 2008, 527 Wales 2009, 604 Wales 2010, 303 Wales 2011, 318 Wales 2012)

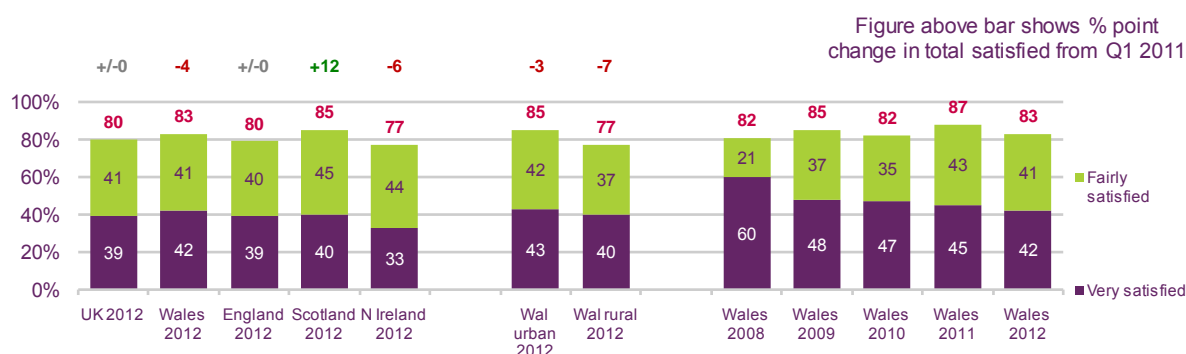
Note: Figures above chart columns indicate the proportion of people who were 'very' or 'fairly' satisfied with their speed of service while online

QE8b. Thinking about your fixed broadband internet service, how satisfied are you with (main supplier) for the speed of your service while online (not just the connection)?

Satisfaction with fixed broadband speeds was higher than average in Wales in Q1 2012

Eighty-three per cent of fixed broadband users in Wales were 'very' or 'fairly' satisfied with the speed of their service in Q1 2012, higher than the UK average of 80%. Higher than average satisfaction with fixed broadband speeds in Wales came despite a four percentage point decline in satisfaction levels in the year to Q1 2012, with the fall in satisfaction being greatest in rural areas of Wales, where it fell by seven percentage points to 77% (Figure 5.12).

Figure 5.12 Satisfaction with speed of fixed broadband connection



Source: Ofcom research, Quarter 1 2011 Base: Adults aged 16+ with a fixed broadband connection at home (n = 2556 UK, 318 Wales, 1577 England, 330 Scotland, 331 Northern Ireland, 146 Wales urban, 172 Wales rural, 386 Wales 2008, 527 Wales 2009, 604 Wales 2010, 303 Wales 2011, 318 Wales 2012)

Note: Figures above chart columns indicate the proportion of people who were 'very' or 'fairly' satisfied with their speed of service while online

QE8b. Thinking about your fixed broadband internet service, how satisfied are you with (main supplier) for the speed of your service while online (not just the connection)?