

# 5 Telecoms and networks

## 5.1 Recent developments in Scotland

### Digital strategy

In October 2012 the Scottish Government published its first update on progress on its digital strategy: *Scotland's Digital Future*. It reported significant progress across the four workstreams – digital infrastructure, digital public services, digital economy and digital participation. It signalled that an additional £32m of UK Government funding for next-generation broadband had been secured, resulting in a national fund for Scotland of over £240m. It also indicated a renewed interest in the opportunities that mobile devices and smart TVs could offer. In February 2013, the Scottish Government published a draft narrative for its World Class 2020 connectivity vision: to support connectivity at any time, at any place, and on any device.

### Digital Economy

The Scottish Government published the report “Scotland’s Digital Future – Supporting the Transition to a World-leading Digital Economy: Emerging Findings April 2013” on 7 May 2013. The report assesses the role that the public sector in Scotland is playing in stimulating the digital economy. It also proposes actions that could be taken collectively and in partnership with the private sector to ensure that Scotland develops and sustains a world class digital economy in the future.

### Highlands and Islands

In March 2013 Highlands and Islands Enterprise (HIE) announced a £146m investment project to deliver high speed fibre broadband across the Highlands and Islands. When the project, which will be led by HIE and delivered by BT, is completed, around 84% of Highlands and Islands homes and businesses will have access to fibre broadband. The public sector investment towards the contract is £126.4m. It is being delivered through the Scottish Government broadband fund, which incorporates funding from Broadband Delivery UK (BDUK), and also includes up to £12m from HIE’s own budget. BT is investing an additional £19.4m in the project, on top of its investment in its wider commercial roll-out for the region.

During the life of the project, BT and HIE will assess new and emerging technology options through a £2.5m innovation fund, with a view to extending faster broadband to the most remote places in the Highlands and Islands. In addition, the procurement exercise for the rest of Scotland project remains on track. A contract to provide next-generation access to the rest of Scotland was expected to be signed by the end of June 2013.

In November 2012 it was announced that residents in six communities were to benefit from a £5m fund to bring next-generation broadband to hard-to-reach rural areas, and three of these – Applecross, Colonsay and Tomintoul & Glenlivet - are in the Highlands and Islands. Additional projects will be in Aberdeenshire, South Lanarkshire and Dumfries & Galloway. The support is being provided by the Community Broadband Scotland initiative, launched to provide a one-stop-shop for rural community groups to develop broadband coverage in their areas. A Pioneering Communities Seminar was held in April 2013 to bring together the six community groups to learn from each other’s experiences.

The UK Government’s £150m Mobile Infrastructure Project (MIP) will bring improved mobile coverage to areas where coverage is poor or non-existent, beginning in 2013 and

completing in 2015. Later this year, it is expected to announce the areas in Scotland which will benefit – which are known to include the A82 road.

### **Connected cities**

In December 2012 the Department for Culture, Media and Sport (DCMS) announced the second wave of ‘super connected cities’, including Aberdeen and Perth, following Edinburgh, which was announced in the first wave of awards.

### **Centre for White Space Communications**

In January 2013 the Centre for White Space Communications within the University of Strathclyde was formally opened. Established with initial funding from the Scottish Funding Council, the Centre will engage with industry and Government to develop and apply spectrum technology to tap into unused white space spectrum capacity. One of the key projects of the Centre is a rural broadband trial on the Island of Bute.

### **Glasgow – Future City**

In January 2013 it was announced that Glasgow had won a £24m future cities competition to showcase how UK cities can develop their local economies and improve the lives of their citizens by making the most of new technologies, and by integrating and connecting city systems. The Future Cities Demonstrator competition, managed and funded by the UK Government's innovation agency, the Technology Strategy Board, saw Glasgow secure the major funding in an open competition against 30 other UK cities. One practical result will be a Glasgow smartphone app which will allow members of the public to interact with the new technology.

### **4G in Scotland**

Ofcom attached a coverage obligation to one of the 800MHz lots of spectrum in its 4G auction. The winner of this lot, Telefónica UK Ltd, is obliged to provide a mobile broadband service with indoor reception to at least 95% of the population of each of the UK nations by the end of 2017 at the latest and a mobile broadband service for indoor reception to at least 98% of the UK population (expected to cover at least 99% when outdoors). In April 2013 changes were made to transmitters serving various parts of Scotland to free up frequencies for the introduction of 4G services.

### **Glasgow 2014 Commonwealth Games**

Work continues in connection with Ofcom's role in spectrum management for the Games. Ofcom is responsible for organising a full spectrum plan for the Games, arranging all the licences in good time in support of the plan and ensuring that key wireless services are free from harmful interference.

### **Carnegie Trust**

In April 2013 the Carnegie Trust published its report *Across the Divide – Tackling Digital Exclusion in Glasgow*.<sup>36</sup> The report suggests that there are no easy solutions to low broadband take-up in Glasgow. Even identifying who was offline was a complex process. There were major differences between citizens who were offline, in terms of their attitude to technology and the internet, their desire, interest and motivation to get online and the range of barriers and challenges that they might experience in seeking to access the digital world.

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<sup>36</sup> <http://www.carnegieuktrust.org.uk/publications/2013/across-the-divide---full-report>

The key findings of the Carnegie Trust report are discussed in our analysis of fixed broadband take-up in Glasgow, in Section 1.5. The Scottish Government has been working with existing partner signatories to the Digital Participation Charter and is also in the process of setting up a Ministerial Advisory Group to take forward the digital inclusion agenda and the work of the Charter.

## 5.2 Availability of fixed broadband services

### **ADSL broadband availability in Scotland was slightly lower than in the other nations at the end of 2012**

Almost all UK premises are connected to an ADSL-enabled BT local exchange, although some may not be able to receive ADSL broadband services, or may be able to do so only at very slow speeds, as a result of the long length or poor quality of the line from the premises to the local exchange.

BT has just under 5,600 local exchanges, of which around 30 were not able to provide ADSL broadband at the end of 2012. Most of the BT local exchanges that are not capable of providing ADSL broadband are in Scotland (the remainder being in England) and the proportion of premises connected to an ADSL-enabled BT exchange is marginally lower in Scotland than in the rest of the UK (Figure 5.1).

Local loop unbundling (LLU) operators are able to provide fixed telecoms services by placing their own network equipment in the incumbent's local exchange. This is then connected to the LLU provider's backhaul network and ADSL broadband services are provided to the end user over the copper line from the exchange, which is leased from the incumbent operator. LLU operators generally benefit from economies of scale that are not available when purchasing wholesale services on a per-unit basis, and are better able to differentiate their services from those offered by their competitors. Premises in LLU-enabled exchange areas benefit as they usually have a greater choice of ADSL broadband services, and access to lower-cost services.

We estimate that 94% of UK premises were connected to an unbundled BT local exchange at the end of 2012, two percentage points higher than had been the case a year previously. This increase was largely due to LLU providers deploying services in rural areas: while the proportion of premises connected to an LLU-enabled local exchange in urban areas was unchanged at 99% during the year, the proportion in rural areas increased by over eight percentage points, to 72%. This pattern is typical of telecoms network deployment: roll-out usually begins in urban areas (where there are larger numbers of premises and therefore potential customers), and subsequently spreads to less densely populated areas. In fact, urban LLU availability was at a similar level to current rural availability as far back as 2006.

Across the UK nations, the proportion of premises connected to an LLU-enabled BT local exchange was lowest in Northern Ireland (85%) and highest in England (95%) at the end of 2012 (in Scotland and Wales the figures were 87% and 93% respectively). Among the English regions, LLU availability ranged from 89% of premises in the South West to almost 100% in London.

**Figure 5.1 Proportion of premises connected to ADSL and LLU-enabled exchanges: December 2012**



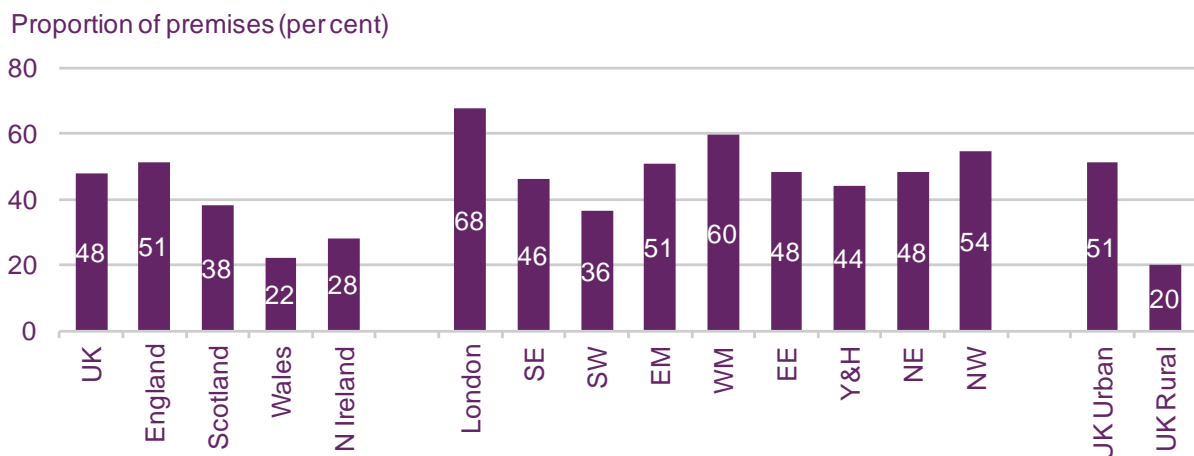
Sources: Ofcom/BT, December 2012 data

**‘Up to’ 120Mbit/s cable broadband services are available to over a third of premises in Scotland**

As part of its work to monitor the UK’s communications infrastructure, Ofcom collects data which show the total number of premises that are in postcodes in which one or more premise can receive services from cable and fibre broadband networks. This methodology is likely to slightly overestimate the coverage of these networks, as not all premises in a postcode will necessarily be able to receive the same services.

Data provided to Ofcom by Virgin Media show that 48% of UK premises were in postcodes that were served by its cable broadband network in June 2013 (Figure 5.2). Among the UK nations, the proportion of premises passed by Virgin Media’s cable broadband network ranged from 22% in Wales to 51% in England, while in Scotland it was 38%, the second highest proportion among the UK nations. All of Virgin Media’s cable network is able to provide broadband speeds of ‘up to’ 100Mbit/s and it is rolling out an upgrade to ‘up to’ 120Mbit/s, which has already been completed in Scotland.

**Figure 5.2 Proportion of premises in postcodes served by Virgin Media’s cable broadband network**



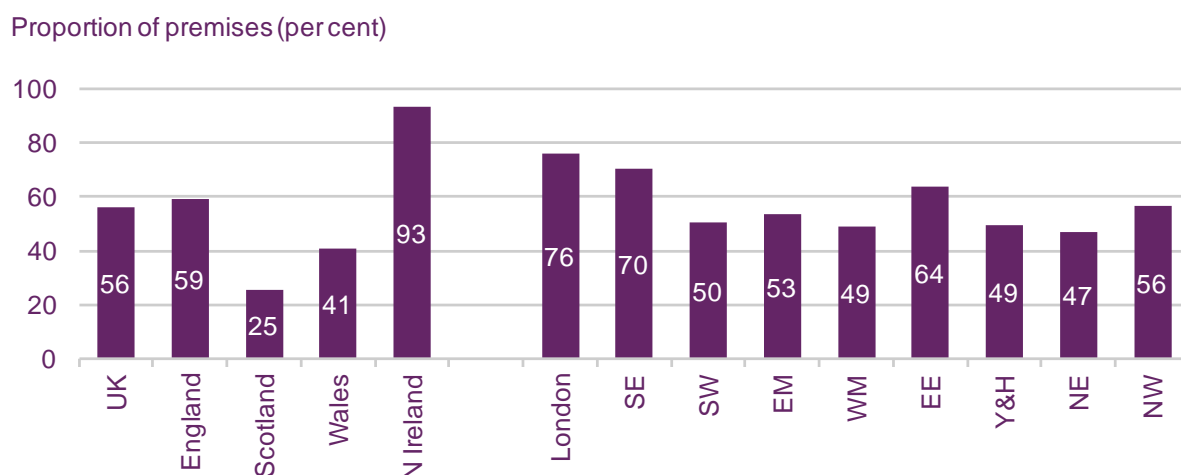
Sources: Ofcom/Virgin Media, June 2013 data

## Scotland had the lowest availability of fibre broadband among the UK nations in June 2013

Data provided to Ofcom by BT Openreach and Kcom (the incumbent operator in the Kingston-upon-Hull area) show that over half of UK premises (56%) were in postcodes served by their fibre broadband networks by June 2013 (Figure 5.3). Once again, this is likely to slightly overstate the availability of fibre broadband services, as different premises in the same postcode may be served by different street cabinets, and one cabinet may have been upgraded while another has not.

In Scotland, a quarter of premises (25%) were in postcodes served by BT Openreach's fibre network in June 2013, less than half the UK average and the lowest proportion across the UK nations. By contrast, the proportion of premises which were served by BT Openreach/Kcom's fibre networks was highest (at 93%) in Northern Ireland, which has benefited from a Department of Enterprise, Trade and Investment (DETI) initiative to increase the availability of superfast broadband services. In Wales and England the proportions were 41% and 59% respectively.

**Figure 5.3 Proportion of premises in postcodes served by BT Openreach/ Kcom fibre broadband networks**



Sources: Ofcom/BT Openreach/Kcom, June 2013 data

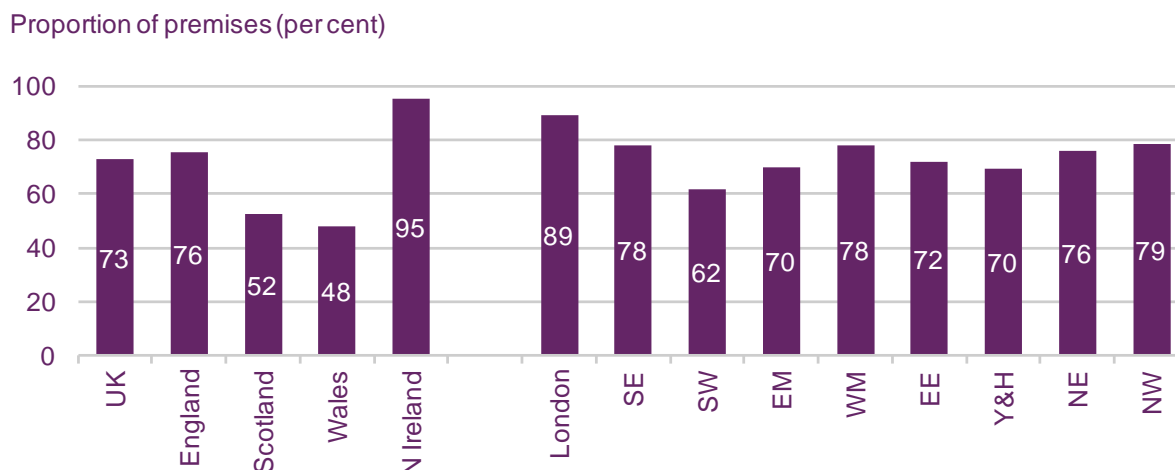
## Over half of premises in Scotland were served by NGA networks in June 2013

By overlaying the Virgin Media cable broadband availability data in Figure 5.2 with the BT Openreach /Kcom fibre availability data in Figure 5.3 we are able to estimate the proportion of premises that are in postcodes served by the next-generation access (NGA) networks which are used to provide superfast broadband services. As previously, this methodology is likely to slightly overestimate NGA coverage (despite the fact that this analysis includes only Virgin Media, BT Openreach and Kcom's NGA networks) as not all premises in a postcode will necessarily be able to receive NGA services.

This analysis suggests that just under three-quarters of UK premises (73%) were in postcodes served by NGA networks by June 2013, up from 65% in June 2012 (Figure 5.4). Across the UK nations this proportion ranged from 48% in Wales to 95% in Northern Ireland, with just over half of premises in Scotland (52%, up from 45% in June 2012) and three-quarters of premises in England (76%) being within NGA network footprints.

Not all broadband connections provided by NGA networks will necessarily achieve ‘superfast’ speeds (here defined as an actual speed of 30Mbit/s or higher). In particular, the speed achieved on a given line using fibre-to-the-cabinet (FTTC) technology will depend on the length and quality of the copper connection from the street cabinet to the consumer’s premises.

**Figure 5.4 Proportion of premises in postcodes served by NGA networks**



Sources: Ofcom/operators, June 2013 data

### 5.3 Mobile coverage

#### The proportion of premises in areas with outdoor mobile coverage varies across the UK nations

Ofcom research suggests that 92% of UK adults had a mobile phone in Q1 2013. While mobile use is widespread, there are still areas of the country where a lack of network coverage means that making mobile phone calls, sending text messages or accessing the internet over a cellular network is not possible. These areas, which are often referred to as ‘mobile not-spots’, are often characterised by low population density and/or undulating terrain, and present physical and economic obstacles that may deter mobile network operators (MNOs) from installing mobile phone masts in these 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’.

#### How we measure the availability of mobile telephony for this report

The coverage information presented in Ofcom’s *Communications Market Reports* and *Infrastructure Report* is collected by Ofcom from the four MNOs. Information on coverage is provided by each operator for each 200x200m pixel of landmass across the UK. This information is correlated with maps of premises to give the premises coverage figures.

These availability figures quoted 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, making it difficult to calculate accurate indoor coverage figures.

Figure 5.5 and Figure 5.6 detail levels of mobile coverage based on premises (i.e. homes and offices) for 2G and 3G services respectively. 3G is often considered as the minimum



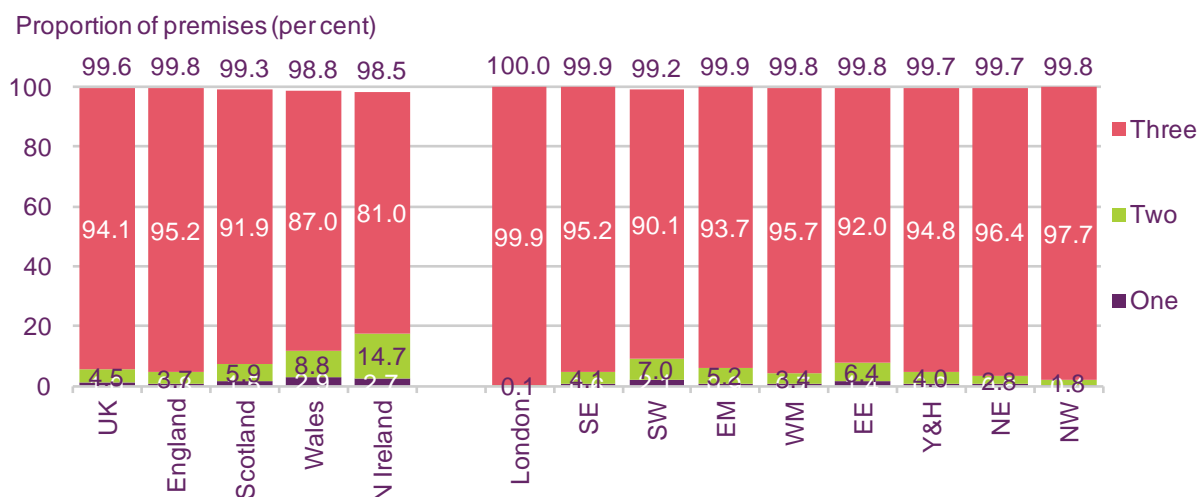
necessary to provide a satisfactory experience of mobile internet, while 2G is considered satisfactory for telephone calls and text messaging. Mobile network operator Everything Everywhere (EE) launched 4G mobile services in the UK in October 2012, but we do not include details of 4G mobile coverage here.

### 99.3% of premises in Scotland were in areas with outdoor 2G coverage in June 2013

The coverage data provided to us by MNOs shows that 94.1% of premises had outdoor coverage from all three UK 2G network operators (EE, O2 and Vodafone) in June 2013 (Figure 5.5). In total, 99.6% of premises were in areas where at least one mobile network provided outdoor 2G coverage, suggesting that 0.4% of UK premises (around 100,000 premises) were in areas without any 2G mobile coverage. The proportion of premises in areas with outdoor 2G coverage recorded in June 2013 is slightly lower than the 99.7% figure, calculated from 2011 data, which was included in the 2012 *Communications Market Reports*, and we are investigating this discrepancy.

2G coverage was slightly higher than average in England in June 2013, when 99.8% of premises were in areas with outdoor 2G mobile coverage. Scotland had the second highest proportion of premises with outdoor coverage from all three 2G networks in June 2013, at 91.9%, while 0.7% of premises in Scotland (around 20,000 premises) were in areas without 2G coverage. The lower-than-average network coverage in Scotland is a reflection of its lower population density (which means that providing mobile services in some areas is not commercially viable) and its hilly terrain, which restricts the propagation of mobile signals. Northern Ireland had the lowest population coverage across the UK nations, with 81.0% having outdoor coverage from all three 2G networks and 1.5% being in areas without any 2G coverage.

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



Sources: Ofcom/operators, June 2013 data

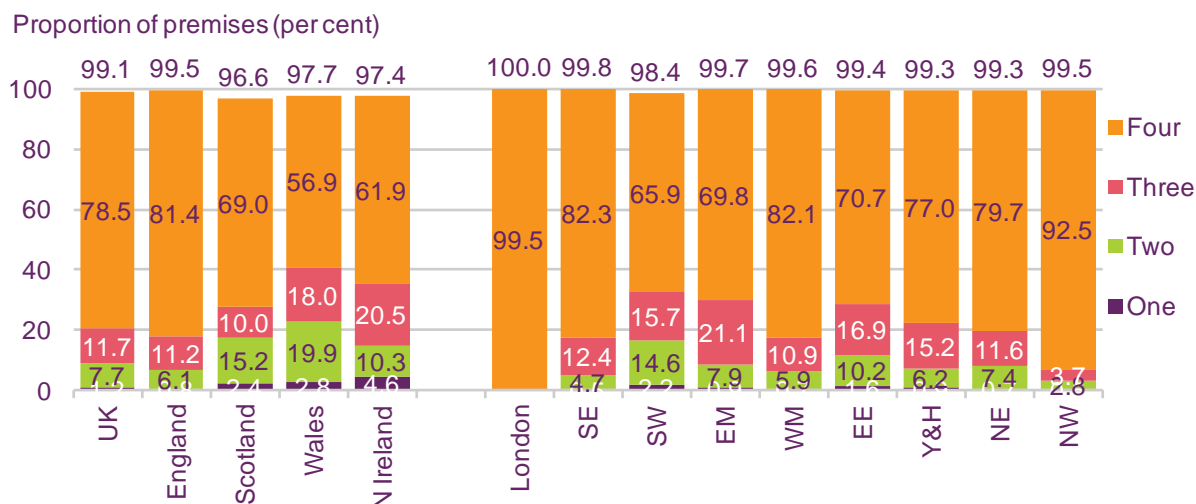
Note: Coverage is based on 200m square pixels covering the UK

### Scotland had the lowest proportion of premises in areas with outdoor 3G coverage in June 2013

Our analysis suggests that 99.1% of UK premises were in areas where there was outdoor 3G mobile coverage in June 2013, while 78.5% were in areas where there was similar coverage from all four UK 3G networks (EE, O2, Vodafone and Three). Conversely 0.9% of premises were in areas without any 3G mobile reception, equivalent to around 260,000 premises.

As was the case with 2G services, the proportion of premises in areas with outdoor 3G mobile coverage was highest in England, where 99.5% of premises were in areas with coverage from at least one 3G network, and 81.4% had coverage from all four MNOs (Figure 5.6). Scotland had the lowest proportion of premises in areas with outdoor 3G coverage from at least one MNO in June 2013, at 96.6%, 2.5 percentage points lower than the UK average, although it had the second-highest proportion of premises with similar coverage from all four 3G networks, at 69.0%.

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



Sources: Ofcom/operators, June 2013 data

Note: Coverage is based on 200m square pixels covering the UK

## 5.4 Service take-up

### Significant rise in mobile phone ownership has brought Scotland into line with the UK average

Figure 5.7 compares the take-up of communications services in Scotland in Q1 2013 to the other UK nations and the UK average.

The proportion of homes in Scotland that used fixed telephony services (83%) and the proportion of people in Scotland who owned a mobile phone (92%) were both in line with the other UK nations in Q1 2013. In Q1 2012, mobile phone ownership in Scotland had been lower than the UK as a whole, and in the year to Q1 2013 the proportion of adults in Scotland who used a mobile phone increased significantly in Scotland (up from 85% to 92%), to match the UK average.

As was the case across the UK, the proportion of adults who used a smartphone increased significantly in Scotland in the year to Q1 2013 (up from 32% to 45%), but this remains lower than the UK average of 51%. Mobile broadband take-up using a dongle or datacard has fallen in Scotland since Q1 2012 (down from 12% to 7%), partly as a result of growth in the use of smartphones. A similar trend is evident across the UK as a whole.



**Figure 5.7 Take-up of communications services: 2013**

		UK	Scotland	England	Wales	N Ireland	Scotland urban	Scotland rural
<b>Individual</b>								
<b>Voice telephony</b>	Fixed Line	<b>84%</b>	83%	85%	76%	82%	83%	86%
	Mobile phone	<b>92%</b>	92%	92%	92%	94%	91%	94%
	Smartphone	<b>51%</b>	45%	52%	49%	45%	45%	45%
	Mobile-only homes	<b>15%</b>	16%	15%	23%	18%	17%	13%
<b>Internet</b>	Total Internet	<b>80%</b>	76%	81%	75%	78%	75%	77%
	Broadband (fixed and mobile)	<b>75%</b>	70%	76%	66%	74%	69%	73%
	Fixed Broadband	<b>72%</b>	67%	73%	63%	71%	67%	66%
	Mobile Broadband	<b>5%</b>	7%	5%	7%	5%	7%	8%
	Mobile internet	<b>49%</b>	44%	49%	47%	45%	44%	42%

Source: Ofcom research, Q1 2013 Base: All adults aged 16+ (n = 3750 UK, 501 Scotland, 2250 England, 492 Wales, 507 Northern Ireland, 250 Scotland urban, 251 Scotland rural)  
Question: various.

### Seven in ten households in Scotland have a broadband connection

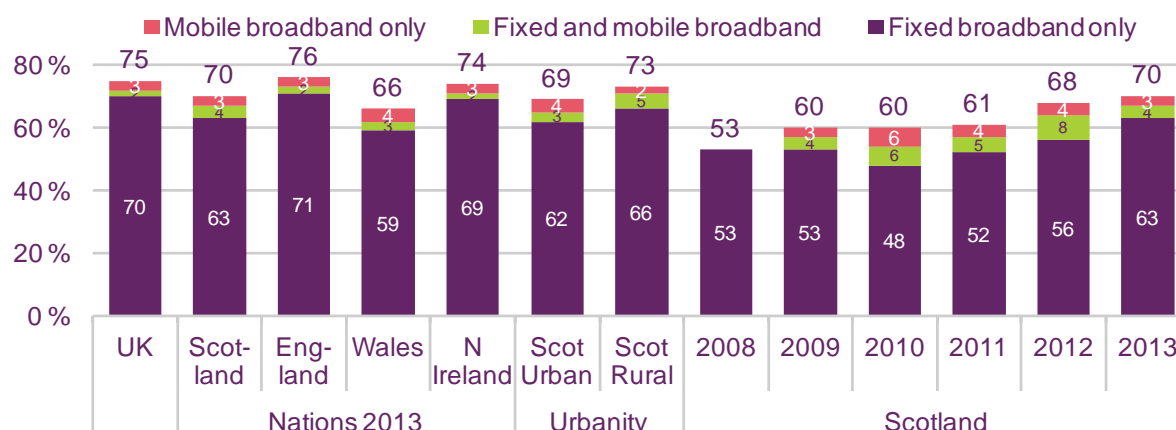
Seven in ten households in Scotland (70%) had a broadband connection in Q1 2013, a two percentage point increase compared to Q1 2012 (Figure 5.8). Use of mobile broadband through a dongle or connection built into a laptop fell by five percentage points to 7% of households during this period, while fixed broadband take-up increased by three percentage points to 67% of households.

Take-up of broadband in rural areas of Scotland (73%) was higher than the Scotland average, with take-up in urban areas below average, at 69%. Mobile broadband is likely to be a complement to fixed broadband in rural areas, where 5% of households accessed the internet using both fixed and mobile connections. In contrast, mobile broadband was twice as likely to be the sole means of accessing the internet in urban areas of Scotland (4%) than in rural areas (2%).

Take-up of fixed broadband varied across the urban areas of Scotland. As is shown in Section 1.5, take-up in Glasgow was just 50%, compared to 88% in Edinburgh and 71% in Dundee.

**Figure 5.8 Consumer broadband take-up in Scotland, by connection type**

Households (%)



Source: Ofcom research, Q1 2013 QE9. Which of these methods does your household use to connect to the internet at home? (NB 2008 survey did not cover mobile broadband. 2008 measure shows any broadband)

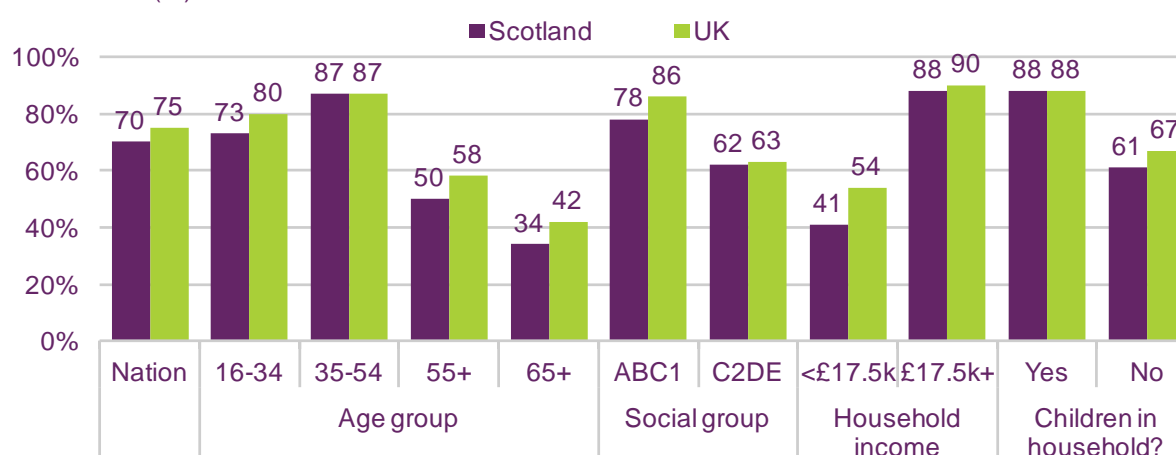
Base: All adults aged 16+ (n = 3750 UK, 501 Scotland, 2250 England, 492 Wales, 507 Northern Ireland, 250 Scotland urban, 251 Scotland rural, 925 Scotland 2008, 1014 Scotland 2009, 1468 Scotland 2010, 487 Scotland 2011, 500 Scotland 2012, 501 Scotland 2013)

**Broadband take-up is lower than average among over-65s and C2DE households in Scotland**

While broadband take-up averaged 70% across all households in Scotland in Q1 2013, take-up was lower than the Scotland average among those aged 55+, C2DE social groups and low-income households (Figure 5.9). Broadband penetration in Scotland was also lower than the UK average among low-income, older and ABC1 households. Take-up was highest, and in line with the UK averages, among those aged 35 to 54 (87%), higher-income households (88%) and those with children in the household (88%).

**Figure 5.9 Broadband take-up in Scotland compared to the UK average**

Households (%)



Source: Ofcom research, Q1 2013

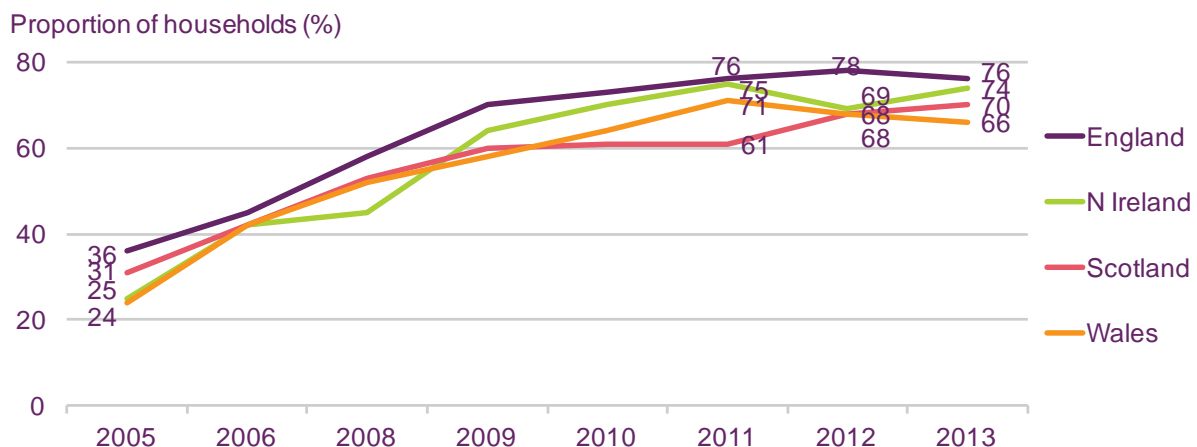
Base: All adults aged 16+ (n = 501 Scotland, 143 16-34s, 151 35-54s, 207 55+, 117 65+, 262 ABC1, 239 C2DE, 160 <£17.5k income, 133 £17.5k+, 159 children in home, 342 no children in home) NB. 55+ and 65+ overlap.

QE9. Which of these methods does your household use to connect to the internet at home?

## Scotland maintains parity with the other nations on broadband take-up

Figure 5.10 shows that household broadband take-up in Scotland was in line with the other nations until Q1 2010, but while take-up continued to increase in England, Wales and Northern Ireland between Q1 2009 and Q1 2011, it stalled in Scotland, which fell behind the other UK nations. The growing gap between Scotland and the other nations has been a cause for concern among stakeholders in Scotland. Our research suggests that there was a seven percentage point increase in broadband take-up in Scotland in the year to Q1 2012, which has narrowed the gap between it and the rest of the UK, and data from Q1 2013 show that broadband take-up has continued to rise in Scotland, albeit at a slower rate than in the previous year.

**Figure 5.10 Broadband take-up across the UK's nations**



QE9. Which of these methods does your household use to connect to the internet at home?

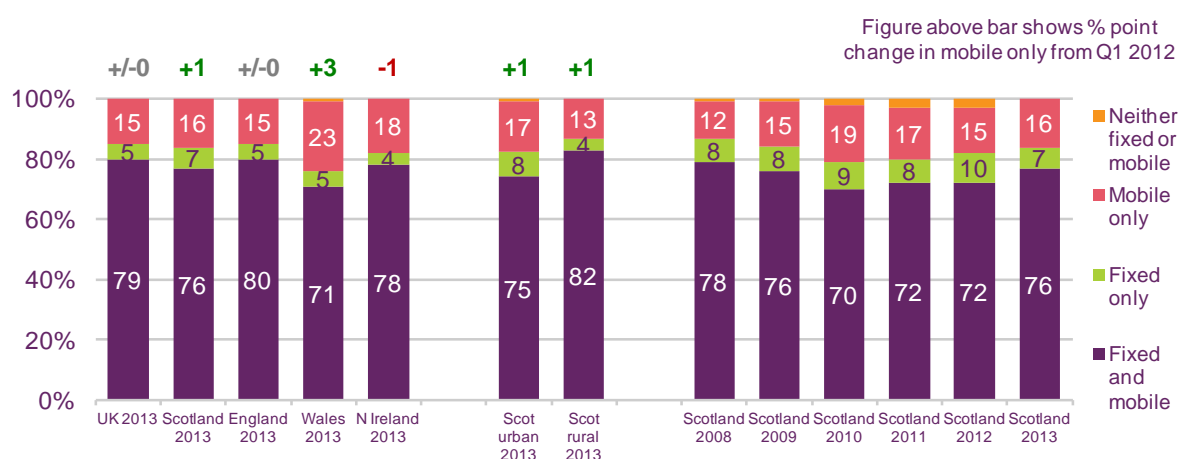
Source: Ofcom research, Q1 2013

Base: All adults aged 16+ (n = 3750 UK, 492 Wales, 2250 England, 501 Scotland, 507 Northern Ireland)

## One in seven households in Scotland were mobile-only in Q1 2013

One in seven households in Scotland (16%) used mobiles as their only form of telephony in Q1 2013, a similar level to that recorded in Q1 2012 and the average for the UK as a whole (Figure 5.11). The penetration of mobile-only households varied significantly by demographic group in Scotland, with over a third of those aged 16-34 (36%) and those in the DE group (35%) having only mobile telephony in their household, compared to 6% of those aged 55+ and 1% of AB households. Households in rural areas of Scotland were more likely than those in urban areas to use both fixed and mobile telephony.

**Figure 5.11 Household penetration of fixed and mobile telephony**

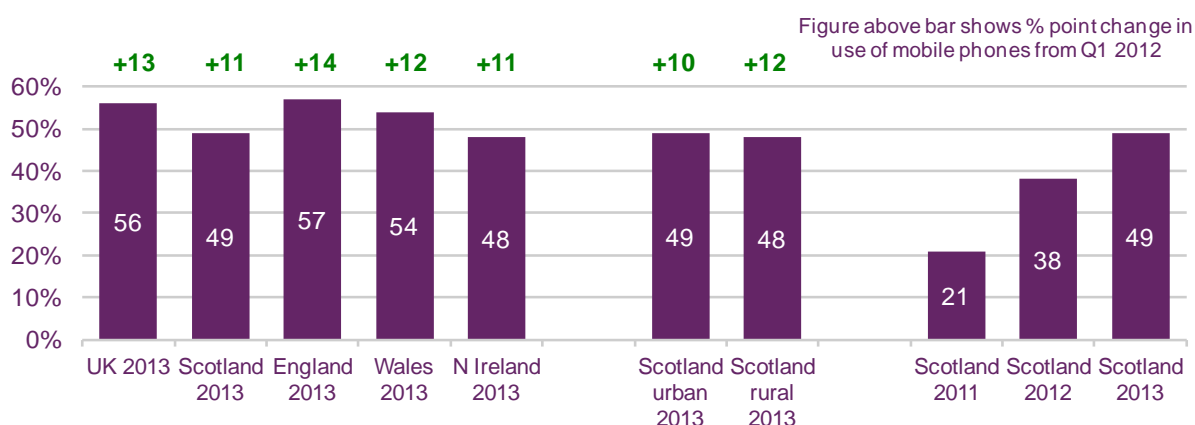


Source: Ofcom research, Q1 2013 Base: All adults aged 16+ (n = 3750 UK, 501 Scotland, 2250 England, 492 Wales, 507 Northern Ireland, 250 Scotland urban, 251 Scotland rural, 925 Scotland 2008, 1014 Scotland 2009, 1468 Scotland 2010, 487 Scotland 2011, 500 Scotland 2012, 501 Scotland 2013) Question: Is there a landline phone in your home that can be used to make and receive calls?/ How many mobile phones in total do you and members of your household use?

### Almost half of mobile users in Scotland have a smartphone

Just under half of all mobile phone users in Scotland (49%) used a smartphone in Q1 2013, an increase of 11 percentage points compared to Q1 2012 (Figure 5.13). Smartphone take-up among mobile users in Scotland continued to be lower than the UK average of 56%, as take-up in each of the other UK nations also increased in the year to Q1 2013. Smartphone take-up among mobile phone users is highest in Scotland among those aged 16-34 (72%), those in the C1 socio-economic group (62%) and higher-income households (take-up was 60% among mobile users with a household income of £17.5k+). It did not differ across Scotland's urban and rural areas.

**Figure 5.12 Take-up of smartphones among mobile phone users**



Source: Ofcom research, Q1 2013 Base: Base: Adults aged 16+ who personally use a mobile phone (n = 3387 UK, 464 Scotland, 2020 England, 440 Wales, 463 Northern Ireland, 227 Scotland urban, 237 Scotland rural, 425 Scotland 2011, 430 Scotland 2012, 464 Scotland 2013) Question: Do you personally use a Smartphone? A Smartphone is a phone on which you can easily access emails, download files and applications, as well as view websites and generally surf the internet. Popular brands of Smartphone include BlackBerry, iPhone and Android phones such as the Samsung Galaxy.

## Most mobile connections in Scotland are now post-pay contracts

The UK as a whole saw a significant shift away from pre-pay and towards monthly contracts in the year to Q1 2013, with a decrease of six percentage points to 39% in the proportion of mobile users using pre-pay services (Figure 5.13). For the first time in Scotland, most mobile connections were post-pay contracts with a handset in Q1 2013.

The increase in use of monthly contracts that include a handset (from 48% in Q1 2012 to 53% in Q1 2013) is likely to be related to the increasing take-up of smartphones, as post-pay services allow consumers to spread the high up-front cost of the handset across the length of their contract. While smartphone take-up did not differ between Scotland's urban and rural areas (see Figure 5.12), mobile phone users in urban areas were more likely to have a monthly contract that includes a handset.

**Figure 5.13 Type of mobile subscription**



Source: Ofcom research, Q1 2013 Base: Adults aged 16+ who personally use a mobile phone (n = 3387 UK, 464 Scotland, 2020 England, 440 Wales, 463 Northern Ireland, 227 Scotland urban, 237 Scotland rural, 425 Scotland 2011, 430 Scotland 2012, 464 Scotland 2013) Question: Which of these best describes the mobile package you personally use most often?

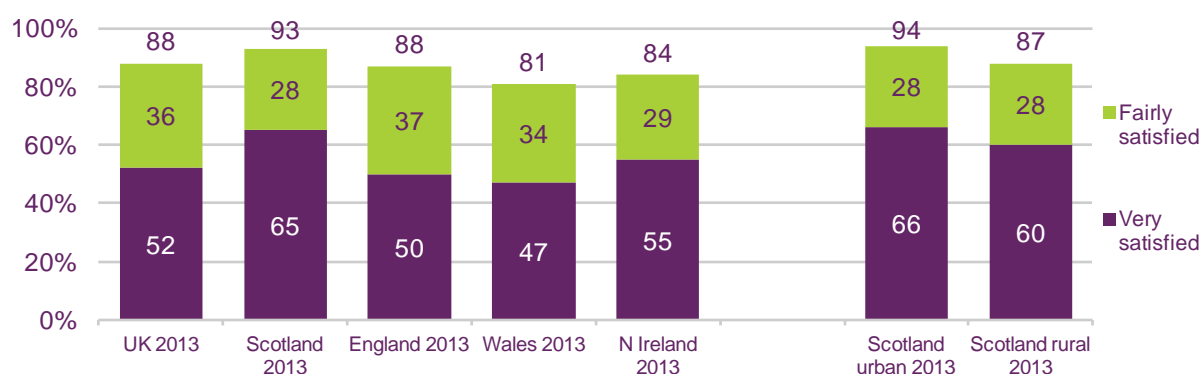
## 5.5 Satisfaction with telecoms services

### Satisfaction with the ability to connect to the internet using a mobile network was high among smartphone users in Scotland

Satisfaction levels with regard to mobile phone services remained high in Scotland in Q1 2013, with at least nine in ten consumers in Scotland being 'very' or 'fairly' satisfied with their overall service and reception, the highest level among the UK nations.

In addition, as is shown in Figure 5.14 below, just over nine in ten smartphone users in Scotland (93%) were 'very' or 'fairly' satisfied with their mobile network service in terms of the ability to connect to the internet via 3G or 4G in Q1 2013. Scotland had the highest level of satisfaction in the UK; five percentage points above the UK average of 88%, and there were no significant differences across Scotland's urban and rural areas. Furthermore, Scotland also had the highest proportion of smartphone consumers who were 'very' satisfied (65% in Scotland compared to the UK average of 52%). Satisfaction levels in Scotland remained similar to those in 2012 (91%).

**Figure 5.14 Satisfaction with ability to connect to the internet via 3G or 4G network**

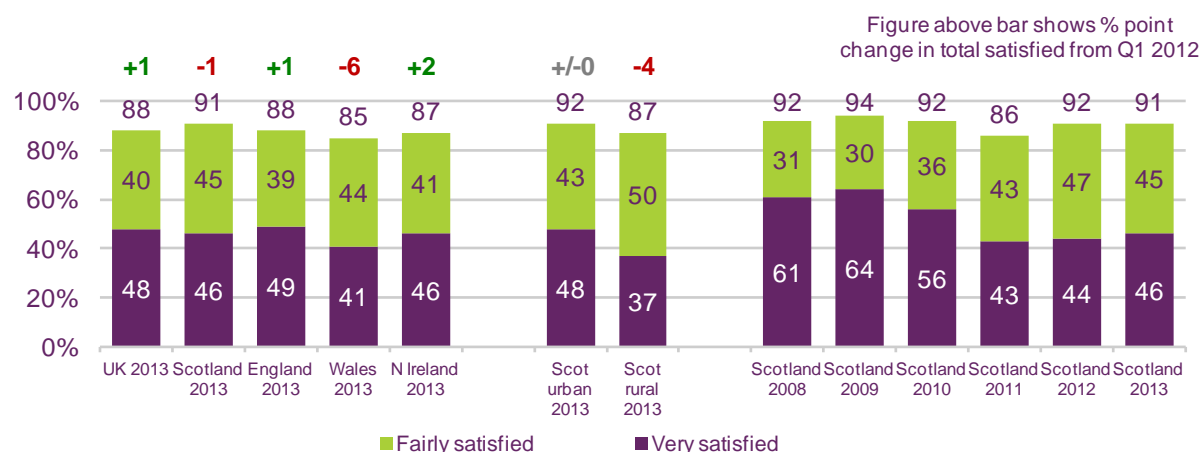


Source: Ofcom research, Q1 2013 Base: Adults aged 16+ who personally use a smartphone (n = 1683 UK, 220 Scotland, 1052 England, 212 Wales, 199 Northern Ireland, 109 Scotland urban, 111 Scotland rural) Question: Thinking about your mobile phone service only, how satisfied are you with (main supplier) for ability to connect to the internet using the mobile network (3G or 4G)? Note: Figures above chart columns indicate the proportion of people who were 'very' or 'fairly' satisfied with the ability to connect to the internet using the mobile network

### Overall satisfaction with fixed broadband services remained high in Scotland

Nine in ten fixed broadband users in Scotland (91%) were 'very' or 'fairly' satisfied with their fixed broadband service in Q1 2013, unchanged since 2012 and similar to the average for the UK as a whole (88%). Overall satisfaction with the fixed broadband service did not differ to any significant extent across Scotland's urban or rural areas, but those in urban areas are more likely to be 'very satisfied' (Figure 5.15).

**Figure 5.15 Overall satisfaction with fixed broadband service**



Source: Ofcom research, Q1 2013 Base: Adults aged 16+ with a fixed broadband connection at home (n = 2548 UK, 341 Scotland, 1562 England, 294 Wales, 351 Northern Ireland, 162 Scotland urban, 179 Scotland rural, 489 Scotland 2008, 528 Scotland 2009, 778 Scotland 2010, 294 Scotland 2011, 330 Scotland 2012, 341 Scotland 2013) Question: Thinking about your fixed broadband internet service, how satisfied are you with (main supplier) for the overall service provided by (main supplier)? Note: Figures above chart columns indicate the proportion of people who were 'very' or 'fairly' satisfied with their overall fixed broadband service

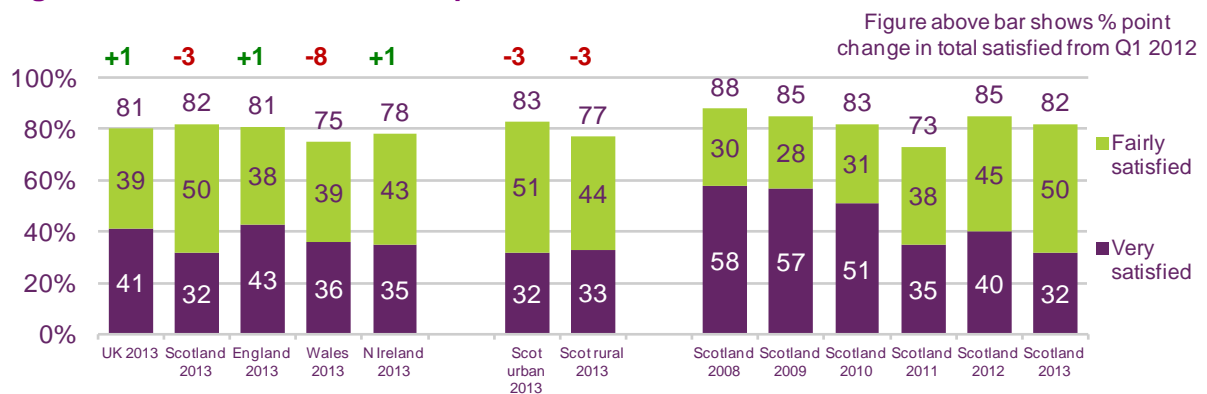
### Satisfaction with the speed of fixed broadband services was unchanged in the year to Q1 2013

Eight in ten fixed broadband users in Scotland (82%) were 'very' or 'fairly' satisfied with the speed of their fixed broadband service in Q1 2013, unchanged since 2012 and similar to the



average for the UK as a whole (Figure 5.16). Overall satisfaction with the speed of service did not differ across Scotland's urban or rural areas to any significant extent.

**Figure 5.16 Satisfaction with speed of fixed broadband service**



Source: Ofcom research, Q1 2013 Base: Adults aged 16+ with a fixed broadband connection at home (n = 2548 UK, 341 Scotland, 1562 England, 294 Wales, 351 Northern Ireland, 162 Scotland urban, 179 Scotland rural, 489 Scotland 2008, 528 Scotland 2009, 778 Scotland 2010, 294 Scotland 2011, 330 Scotland 2012, 341 Scotland 2013) Question: 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)? Note: Figures above chart columns indicate the proportion of people who were 'very' or 'fairly' satisfied with their speed of service while online