

4 Telecoms and networks

4.1 Recent developments in Northern Ireland

Investment to target mobile not-spots

Arqiva, the company charged with carrying out the Government's UK-wide £150m Mobile Infrastructure Project (MIP), has identified potential locations for new mobile masts in Northern Ireland and is currently working on acquiring suitable sites, applying for planning permissions and building masts.

The project aims to expand mobile phone coverage to areas where there is currently no coverage from any UK operator, and is due to be completed in 2016. The majority of potential sites in Northern Ireland are in border areas, which means they have the potential to help tackle inadvertent roaming.

Broadband speeds set to increase

DETI, the Department of Culture Media & Sport (DCMS), and BT are investing around £17m to raise broadband speeds for up to 38,000 premises across Northern Ireland. The Superfast Broadband Roll-out Programme, announced in March 2015, aims to lift broadband speeds in these premises to superfast levels (>24Mbit/s, in line with DETI's definition of superfast broadband).²⁵

Most of the funding is coming from government sources, with DETI and DCMS contributing around £7m each. BT - which will deliver the Superfast Roll-out Programme - is contributing the other £3m towards the project.

The main elements of the scheme include: some re-engineering of BT's network; an additional 300 new fibred cabinets; and 300 new fibre-to-the-premise nodes being built, considerably expanding Northern Ireland's fibre footprint. The roll-out is due to be completed by December 2017.

This builds on the £23.7m NI Broadband Improvement Project, currently in its fourth phase, which is aimed mainly at improving speeds for around 45,000 premises currently only able to achieve download speeds of less than 2Mbit/s. This too involves some re-engineering of the network; around 450 new cabinets and 150 new fibre-to-the-premises nodes.

It also follows the £52m Next Generation Broadband Project, completed in 2012, which helped the fibre-enabling of 2,461 roadside cabinets.

Separately, in June 2015 the Department of Agriculture and Rural Development announced a further £2m investment in broadband through its Rural Development Programme.

The funding aims to improve broadband provision in hard-to-reach areas that are unlikely to benefit from fixed-line solutions. Applications for funding will be led by councils in partnership with local communities.

²⁵ Ofcom's definition of superfast broadband is connections with an actual speed ≥ 30 Mbit/s.

4.2 Availability of fixed broadband services

Almost all UK premises are able to receive basic broadband services

Three key technologies are used to provide fixed broadband services in the UK; exchange-based ADSL, cable (over a hybrid fibre-coaxial network) and fibre-to-the-cabinet (using VDSL in the street cabinet).²⁶ ADSL transmits data over the existing copper network, and is the cheapest of these technologies to deploy as, in most cases, it does not require an upgrade to the existing telephone network other than new equipment in the local exchange (cable and fibre roll-out both involve the deployment of new infrastructure to connect local exchanges/nodes to the end-user).

However, while ADSL technology has the benefit of being comparatively cheap to roll out, it is unable to provide the superfast speeds²⁷ that cable and fibre can, and some premises in ADSL-enabled areas may not be able to receive service, or may only be able to do so at very low speeds of as a result of the long length, or poor quality, of the telephone line from their premises to the local exchange.

By the end of 2014, almost all of BT's local exchanges (of which there are around 5,600 across the UK) had been upgraded to offer ADSL broadband services, and across the UK as a whole, the proportion of premises (i.e. homes and offices) that were connected to an ADSL-enabled exchange was over 99.9% (Figure 4.1). In Northern Ireland and Wales, all BT local exchanges have been upgraded to offer ADSL broadband services, while in England and Scotland there remain exchanges that are not ADSL-enabled, and the proportion of premises connected to ADSL-enabled exchanges is slightly lower.

Local-loop unbundling (LLU) enables an alternative provider to offer broadband services over the twisted copper pair from the local exchange to the end-user's premises. To do this, the LLU provider has to site its own equipment in the incumbent's local exchange and connect it to its own backhaul network. The advantage of LLU to ISPs is that it allows them to benefit from the economies of scale that are not available when purchasing wholesale services from the incumbent on a per-connection basis, and it also enables them to differentiate their retail products from those offered by their competitors. The deployment of LLU ADSL services in the UK has resulted in the availability of low-cost bundled broadband services to consumers living in unbundled exchange areas.

By the end of 2014, LLU availability in the UK was high, with 95% of premises being in areas served by unbundled local exchanges (an increase of just 0.2 percentage points compared to the previous year). Roll-out of any fixed telecoms network tends, initially at least, to be concentrated in urban areas (where there are a larger number of premises to be served) and this is reflected in the fact that the proportion of premises connected to an unbundled local exchange at the end of 2014 was higher in urban areas (over 99.9%) than in rural areas (77%). Along with Scotland, Northern Ireland had the joint-lowest proportion of premises connected to an unbundled local exchange at the end of 2014 (89%). England had the highest proportion, at 96%, while in Wales, the proportion was 93%.

²⁶ A small proportion of premises is also served by fibre-to-the-premises (FTTP).

²⁷ i.e. actual speeds of 'up to' 30Mbit/s or higher

Figure 4.1 Proportion of premises connected to ADSL-enabled and unbundled exchanges



Source: Ofcom / BT, December 2014 data

By May 2015 27% of premises in Northern Ireland could receive cable broadband services

Ofcom, as part of its work to monitor the UK’s communications market infrastructure, collects data showing the number of UK premises that are able to receive cable and fibre broadband services. It is important to note that not all cable and fibre broadband connections are capable of providing superfast broadband services (i.e. with an actual speed of 30Mbit/s or higher). For example, the speed achievable on a fibre-to-the-cabinet (FTTC) line will depend on the length and quality of the copper connection from the street cabinet to the user’s premises, as is the case with ADSL (these limitations do not apply to cable and fibre-to-the-premises services). Ofcom’s 2015 *Infrastructure Report Update*²⁸ will provide more detailed analysis of the distribution of fixed broadband speeds.

Urban and rural classifications

In previous *Communications Market Reports*, Ofcom has used a third-party data source (*Locale*) to classify postcodes as being urban or rural. This year, that data source was not available, so Ofcom has used the rural/urban classifications developed by DEFRA, NISRA and The Scottish Registry Office to produce urban/rural splits. Analysis shows that at an urban/rural split level, the two datasets correspond 95% of the time, where postcodes can be matched. However, each dataset cannot match 2.5% of all postcodes, and the unallocated postcodes differ between datasets. Therefore, the urban/rural classification of between 5% and 10% of postcodes varies between datasets, and the urban/rural figures in this report are not directly comparable to those in previous reports.

Data provided to Ofcom by Virgin Media shows that 44% of UK premises were able to receive cable broadband services over Virgin Media’s network in May 2015, unchanged from June 2014 (Figure 4.2). Across the UK nations, the proportion of premises able to receive Virgin Media cable broadband services (which offer advertised download speeds of ‘up to’ 50Mbit/s, 100Mbit/s and 152Mbit/s) ranged from 21% in Wales to 47% in England (in Northern Ireland it was 27%, the second lowest proportion across the nations). The proportion of premises able to receive Virgin Media cable broadband services was significantly higher in urban areas of the UK (50%) than in rural areas (1%).

²⁸ Due to be published in Q4 2015

Figure 4.2 Proportion of premises able to receive Virgin Media cable broadband services



Source: Ofcom / Virgin Media, May 2015 data

Northern Ireland had the highest proportion of premises that could receive fibre broadband services in May 2015

We have calculated the proportion of premises able to receive fibre broadband services using data provided by Openreach (a BT Group company) and Kcom (the incumbent provider in the Kingston-upon-Hull area).²⁹ As stated previously, it is important to note that not all fibre broadband connections will be able to achieve actual download speeds of 30Mbit/s.

Our analysis shows that by May 2015 82%³⁰ of UK premises were able to receive fibre broadband services over Openreach or Kcom's fibre broadband networks, a 13 percentage point increase compared to June 2014 (Figure 4.3). Northern Ireland had the highest proportion of premises that could receive fibre broadband services in May 2015 (92%, unchanged from June 2014) as a result of a Department of Enterprise, Trade and Investment (DETI) initiative to increase the availability of superfast broadband services.

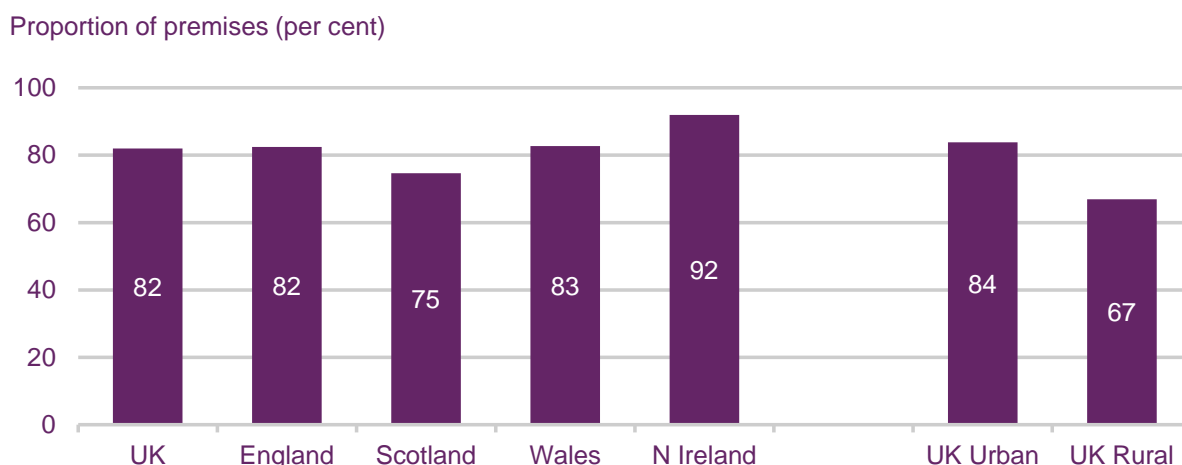
Among the other nations, the proportion of premises served by Openreach or Kcom's fibre broadband networks ranged from 75% in Scotland to 83% in Wales and, as with cable services, the availability of fibre broadband services was higher in urban areas of the UK than in rural areas, with 84% of premises in urban areas being able to receive Openreach or Kcom's fibre broadband services, compared to 67% in rural areas.

Again, it is important to note that not all fibre broadband connections will be able to achieve actual downstream speeds of 30Mbit/s.

²⁹ Under regulatory rules other providers can provide retail fibre broadband services to consumers using these networks.

³⁰ It should be noted that this figure, and those given below, will understate actual fibre broadband availability as they exclude availability over networks other than Openreach and Kcom's.

Figure 4.3 Proportion of premises able to receive Openreach / Kcom fibre broadband services



Source: Ofcom / Openreach / Kcom, May 2015 data

By May 2015, 95% of premises in Northern Ireland could receive next generation access broadband services

We are able to estimate the proportion of premises that are served by next generation access (NGA) networks (used to deliver superfast broadband services) by combining the Virgin Media cable broadband availability data shown in Figure 4.2 with the Openreach/Kcom fibre broadband availability data shown in Figure 4.3.

Combining postcode-level availability data for cable and fibre services gives us a range of availability for NGA broadband services: for example, if cable broadband and fibre broadband services are both available to 50% of premises in a postcode, the availability of NGA services in that postcode will be somewhere between 50% of premises (where cable and fibre services are available to the same premises within the postcode area) to 100% of premises (where there is no overlap in the availability of cable and fibre services). In Figure 4.4 below, we show the mean of the possible range of availability of NGA services, which would be 75% in the example given above.

Our analysis indicates that 90% of UK premises were able to receive fixed broadband services over NGA networks by May 2015, a 12 percentage point increase compared to June 2014. High fibre broadband availability in Northern Ireland contributed to it having the highest availability of NGA broadband networks in May 2015, with 95% of premises having access to these services, unchanged from June 2014. Across the other UK nations, the proportion of premises that could receive NGA broadband services ranged from 85% in Scotland to 90% in England, with 87% of premises in Wales being within NGA network footprints. In urban areas of the UK, 92% of premises were able to receive NGA broadband services in May 2015, compared to 67% in rural areas.

Figure 4.4 Proportion of premises able to receive NGA broadband services



Source: Ofcom / Openreach / Virgin Media / Kcom, May 2015 data

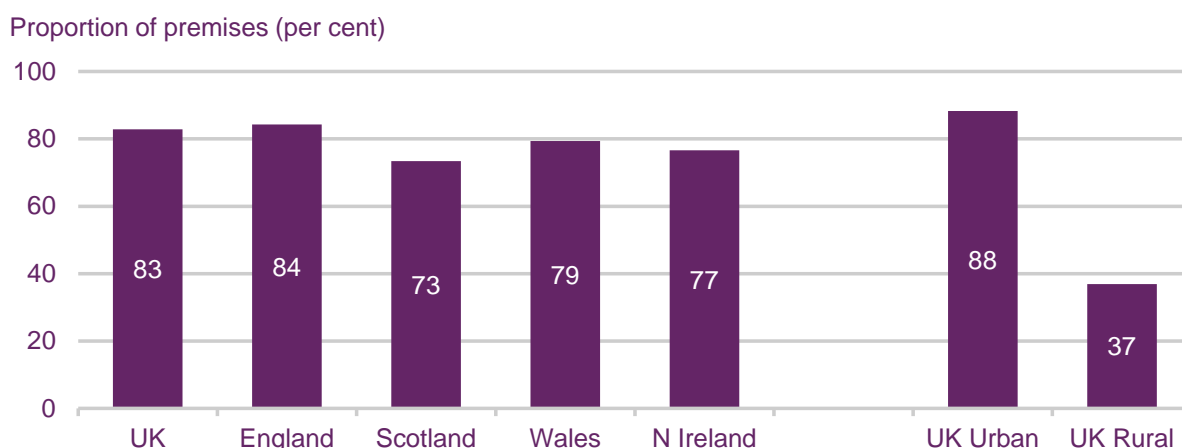
Seventy-seven per cent of premises in Northern Ireland were able to receive superfast broadband services in May 2015

As mentioned previously, not all NGA broadband connections are capable of providing superfast broadband services (i.e. those with an actual speed of 30Mbit/s or higher) and, in particular, the speed achievable over an FTTC connection will depend on the length and quality of the copper connection from the street cabinet to the user's premises. In collecting data to inform its work monitoring the UK's communications market infrastructure in 2015, Ofcom asked Virgin Media, Openreach and Kcom to provide postcode-level data regarding the proportion of premises that could receive superfast broadband services, i.e. a fixed broadband service with an actual speed of 30Mbit/s or higher.

As is shown in Figure 4.5 below, these data suggest that while 90% of UK premises were able to receive NGA broadband services in May 2015, the proportion that were able to receive superfast broadband services was seven percentage points lower, at 83%. While Northern Ireland had the highest proportion of premises able to receive NGA broadband services, it had the second lowest proportion that could receive superfast broadband services (77%), meaning that 18% of premises in Northern Ireland were in areas where NGA broadband was available, but were unable receive actual broadband speeds of 30Mbit/s; the highest proportion across the UK nations.

Among the other UK nations, the proportion of premises that could receive superfast broadband services ranged from 73% in Scotland to 84% in England (in Wales it was 79%). The proportion of premises that could receive superfast broadband services in urban areas of the UK (88%) was significantly higher than in rural areas (37%). This indicates that while across the UK as a whole, 7% of premises in NGA areas could not receive an actual fixed broadband download speed of 30Mbit/s, this proportion was much higher in rural areas (45%) than in urban areas (4%).

Figure 4.5 Proportion of premises able to receive superfast broadband services



Source: Ofcom / Openreach / Virgin Media / Kcom, May 2015 data

4.3 Mobile network coverage

Overview

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 UK mobile network operators (MNOs). Information on coverage is provided by each operator for each 100x100m pixel of landmass across the UK. This information is correlated with maps of premises to give the premises' coverage figures.

The 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 4.6, Figure 4.7 and Figure 4.8 show coverage levels for 2G, 3G and 4G mobile services respectively.³¹ 2G is considered satisfactory for telephone calls and text messaging, while 3G is considered the minimum necessary to provide an acceptable experience of accessing mobile data services. 4G generally provides a better user experience than 3G when accessing mobile data services as a result of the faster data speeds that it offers.

There are still areas of the UK where a lack of mobile coverage means that it is not possible to make mobile voice calls, send text messages and/or access mobile data services. These areas are known as 'mobile not-spots' and are often characterised by low population density and/or hilly terrain which present physical and economic obstacles that deter mobile network operators (MNOs) from deploying mobile network infrastructure in these areas. In other areas (known as 'partial not-spots') some operators have mobile coverage whereas others do not.

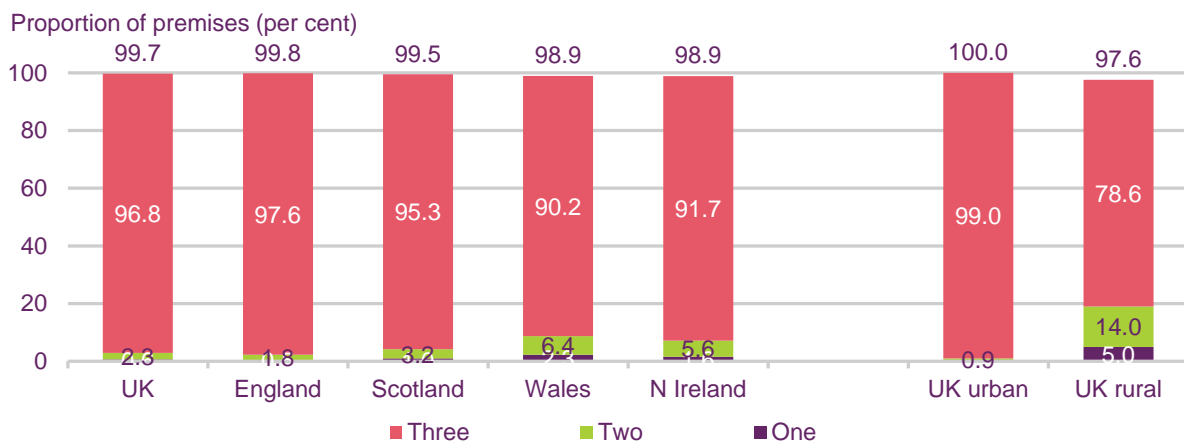
³¹ The availability data provided by the MNOs are taken from network planning tools, which are subject to a margin of error, and local factors such as tall buildings or trees can affect signal strength.

98.9% of premises in Northern Ireland were in areas with outdoor 2G coverage in May 2015

The coverage data provided to us by MNOs show that 96.8% of UK premises had outdoor coverage from all three 2G network operators (EE, O2 and Vodafone) in May 2015 (Figure 4.6). Overall, 99.7% UK of premises were in areas where at least one mobile network provided outdoor 2G coverage, suggesting that 0.3% of UK premises (around 75,000 premises) were in areas without any 2G mobile coverage. The proportion of UK premises in areas with outdoor 2G mobile coverage was higher in urban locations (100.0%) than in rural ones (97.6%).

Northern Ireland had the second lowest proportion of premises with outdoor coverage from all three 2G networks among the UK nations in May 2015, at 91.7%, while 1.1% of premises in Northern Ireland (around 8,000 premises) were in areas without 2G coverage. The lower-than-average 2G coverage in Northern Ireland is partly because a relatively large proportion of its population is evenly spread across its rural areas, and providing mobile services may not be commercially viable in some instances. England had the highest 2G coverage across the UK nations, with 97.6% of premises having outdoor coverage from all three 2G networks and 0.2% being in areas without any outdoor 2G coverage.

Figure 4.6 2G outdoor mobile coverage to premises, by number of operators



Source: Ofcom / operators, May 2015 data

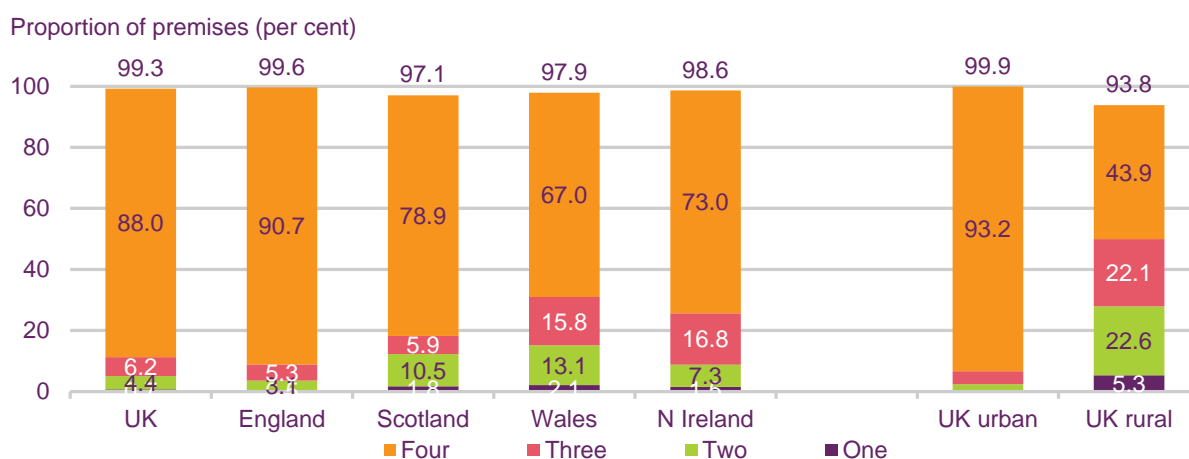
Note: Coverage is based on 100m² pixels covering the UK

Over 98% of premises in Northern Ireland had outdoor 3G coverage in May 2015

Our analysis suggests that 99.3% of UK premises were in areas where there was outdoor 3G mobile coverage in May 2015, while 88.0% were in areas where there was similar coverage from all four UK 3G networks (EE, O2, Vodafone and Three). Conversely, 0.7% of premises were in areas without any 3G mobile reception, equivalent to around 210,000 premises. The proportion of premises in areas with outdoor 3G coverage was higher in urban areas of the UK (99.9%) than in rural areas (93.8%).

As was the case with 2G services, the proportion of premises in areas with outdoor 3G mobile coverage was highest in England, where 99.6% of premises were in areas with coverage from at least one 3G network, and 90.7% had coverage from all four MNOs (Figure 4.7). Northern Ireland had the second highest proportion of premises in areas with outdoor 3G coverage from at least one MNO, among the UK nations, in May 2015, at 98.6%, 0.6 percentage points below the UK average, and also had the second lowest proportion of premises with similar coverage from all four 3G networks, at 73.0%.

Figure 4.7 3G outdoor mobile coverage to premises, by number of operators



Source: Ofcom / operators, May 2015 data

Note: Coverage is based on 100m² pixels covering the UK

91.1% of premises in Northern Ireland were in areas with outdoor 4G coverage in May 2015

The UK's four national MNOs are still in the process of deploying their 4G networks; this is reflected by the fact that the availability of 4G services in May 2015 is lower than of 2G and 3G services (Figure 4.8).

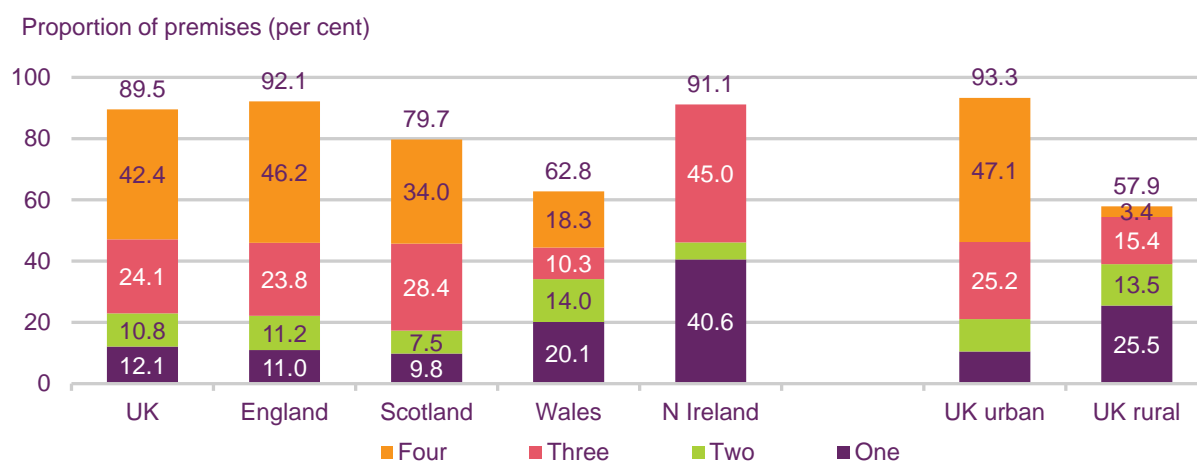
Data provided by the MNOs suggest that 89.5% of UK premises were in areas with outdoor mobile coverage from at least one 4G network in May 2015, a 17.7 percentage point increase compared to the 71.8% recorded in June 2014³². All four UK MNOs aim to have at least 98% 4G population coverage by the end of 2015, and the 4G spectrum licence acquired by O2 stipulates that it should provide indoor coverage to 98% of the UK population (and at least 95% of the population of each of the UK nations) by the end of 2017 at the latest.

Northern Ireland had the second highest proportion of premises in areas with outdoor 4G network coverage from at least one 4G network in May 2015, at 91.1%; this was despite Three not having launched 4G services in Northern Ireland, and was an 11.9 percentage point increase on June 2014, the lowest such increase among the UK nations over this period. The proportion of premises with outdoor 4G coverage ranged from 62.8% in Wales to 92.1% in England (in Scotland it was 79.7%).

The difference between urban and rural 4G coverage was much more marked for 4G services than for 2G and 3G in May 2015, with 93.3% of urban premises having outdoor 4G coverage, compared to 57.9% of those in rural areas.

³² All 4G coverage comparisons between 2014 and 2015 are indicative only as coverage data for Three was not available in 2014, and 2014 figures are therefore based on three rather than four UK MNOs.

Figure 4.8 4G outdoor mobile coverage to premises, by number of operators



Source: Ofcom / operators, May 2015 data

Note: Coverage is based on 100m² pixels covering the UK

4.4 Service take-up

Broadband take-up is below the UK average in Northern Ireland

Take-up of landline services, mobile phones and smartphones were all in line with the average for the UK as a whole in Northern Ireland in Q1 2015. This compares to Q1 2014, when smartphone take-up in Northern Ireland was lower than the UK average. In 2015, the proportion of adults with a tablet computer in Northern Ireland was in line with the UK average (both 54%), although the level of ownership of any type of computer in Northern Ireland (77%) was lower than the UK average (83%). This was due to lower household ownership of laptop computers (55% vs. 65%) and desktop computers (28% vs. 34%).

Three of the measures of household internet access, shown in Figure 4.9 below, were lower than the UK average in Northern Ireland in Q1 2015: total internet access (79% vs. 85%), broadband access (72% vs. 80%) and fixed broadband access (69% vs. 78%). In 2014 these measures had been at similar levels in Northern Ireland and the UK overall. Adults in urban areas of Northern Ireland are more likely than those in rural areas to own a smartphone (67% vs. 57%), to have a tablet computer in the household (57% vs. 48%) and to have mobile broadband access in the home (10% vs. 5%).

Figure 4.9 Take-up of communications services: 2015

		UK	N Ireland	England	Scotland	Wales	NI urban	NI rural
Individual								
Voice telephony	Fixed Line	84%	84%	85%	82%	83%	84%	85%
	Mobile phone	93%	91%	93%	91%	90%	91%	91%
	Smartphone	66%	63%	67%	63%	63%	67%	57%
Internet	Computer (any type)	83%	77%	84%	75%	84%	77%	75%
	Tablet computer	54%	54%	54%	52%	60%	57%	48%
	Total Internet ¹	85%	79%	86%	78%	86%	81%	76%
	Broadband (fixed & mobile) ²	80%	72%	81%	73%	78%	72%	74%
	Fixed Broadband	78%	69%	79%	71%	77%	68%	71%
	Mobile internet ³	61%	60%	62%	59%	59%	62%	56%

Source: Ofcom Technology Tracker, wave 1 2015

Notes: ¹Households with an internet connection of any description; ²Households with a fixed broadband and/or dedicated mobile broadband (dongle/SIM) data connection (excludes households that solely use a mobile handset/s to access the internet); ³households that use a use a mobile handset/s to access the internet (may also have any other type of internet access).

Base: All adults aged 16+ (n = 3756 UK, 504 Northern Ireland, 2264 England, 492 Scotland, 496 Wales, 249 Northern Ireland urban, 255 Northern Ireland rural)

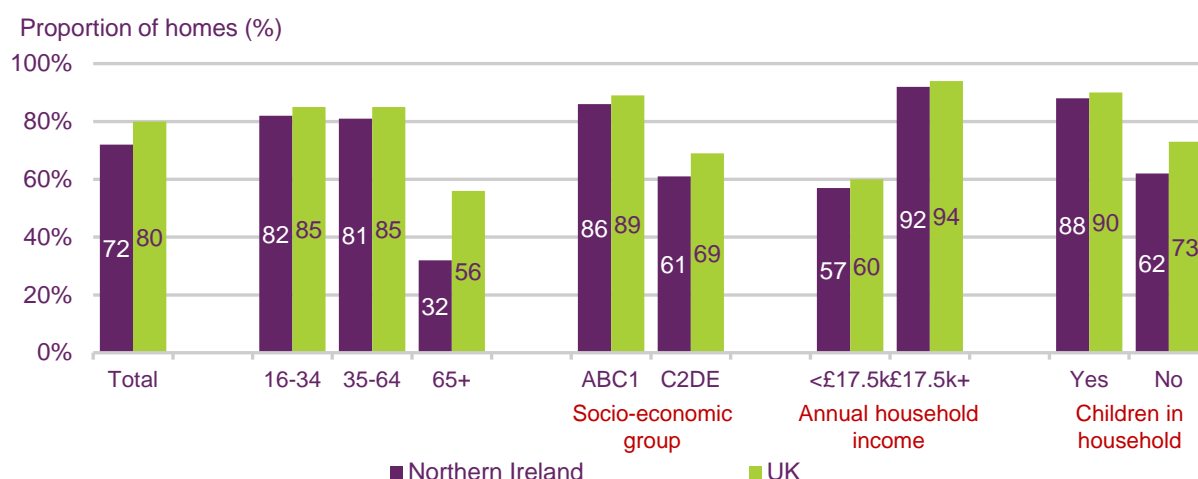
QC1. Is there a landline phone in your home that can be used to make and receive calls?/ QD2. Do you personally use a mobile phone?/ QD24B. Do you personally use a smartphone?/ QE1. Does your household have a PC or laptop computer?/ QE2. Do you or does anyone in your household have access to the internet/ World Wide Web at home?/ QE9. Which of these methods does your household use to connect to the internet at home?/ QD28A. Which if any, of the following activities, other than making and receiving voice calls, do you use your mobile for?

Household broadband take-up in Northern Ireland is lower than the UK average among those aged 65, C2DE households and homes without children

As shown in Figure 4.10, consumer broadband take-up was lower in Northern Ireland (72%) than in the UK as a whole (80%) in Q1 2015. Across the different demographic groups, three had lower broadband take-up in Northern Ireland compared to the UK measure: adults aged 65 and over (32% for Northern Ireland vs. 56% for the UK), C2DE socio-economic groups (61% vs. 69%) and those without children in the household (62% vs. 73%).

As with the UK as a whole, there were differences in broadband take-up in Northern Ireland by age, socio-economic group, household income and the presence of children. Adults aged 65 and over were less likely to have broadband (32%) compared to 16-34s (82%) and 35-64s (81%). Broadband take-up was 25 percentage points higher among ABC1 households in Northern Ireland (86%) compared to C2DE households (61%). Similarly, there was a 35 percentage point difference in broadband take-up between households with an income below £17.5k (57%) and those with a household income above £17.5k (92%) in Northern Ireland. Households with children in Northern Ireland were more likely than households without children to have broadband at home (88% vs. 62%).

Figure 4.10 Consumer broadband take-up in Northern Ireland, by demographic



Source: Ofcom Technology Tracker, wave 1 2015
 Base: All adults aged 16+ (n =504 Northern Ireland, 168 16-34s, 235 35-64s, 101 65+, 238 ABC1, 265 C2DE, 147 <£17.5k income, 141 £17.5k+, 187 children in home, 317 no children in home)
 QE9. Which of these methods does your household use to connect to the internet at home?

A majority of adults in Northern Ireland had been online using their mobile phone in the previous week

In Q1 2015, six in ten (60%) adults in Northern Ireland said that they used their mobile phone to access the internet, with almost all of these (93%) saying they had done so in the previous week (Figure 4.11). These figures were in line with the UK average. There was a nine percentage point increase in use of a mobile phone to access the internet in the year to Q1 2015, up from 51%.

Figure 4.11 Proportion of adults who have used a mobile phone to access the internet



Source: Ofcom Technology Tracker, wave 1 2015
 Base: All adults aged 16+ (n = 3756 UK, 504 Northern Ireland, 2264 England, 492 Scotland, 496 Wales, 249 Northern Ireland urban, 255 Northern Ireland rural, 761 Northern Ireland 2010, 511 Northern Ireland 2011, 508 Northern Ireland 2012, 507 Northern Ireland 2013, 499 Northern Ireland 2014, 504 Northern Ireland 2015)
 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?

A quarter of adults in Northern Ireland have a 4G service

Figure 4.12 shows that just over a quarter (26%) of adults in Northern Ireland had a 4G service in Q1 2015, in line with the UK average of 30%. The proportion of 4G users in Northern Ireland increased by 17 percentage points in the year to Q1 2015 (up from 9% in Q1 2014).

Figure 4.12 4G take-up, by nation



Source: Ofcom Technology Tracker, wave 1 2015

Base: All adults aged 16+ (n = 3756 UK, 438 Northern Ireland, 2264 England, 492 Scotland, 496 Wales

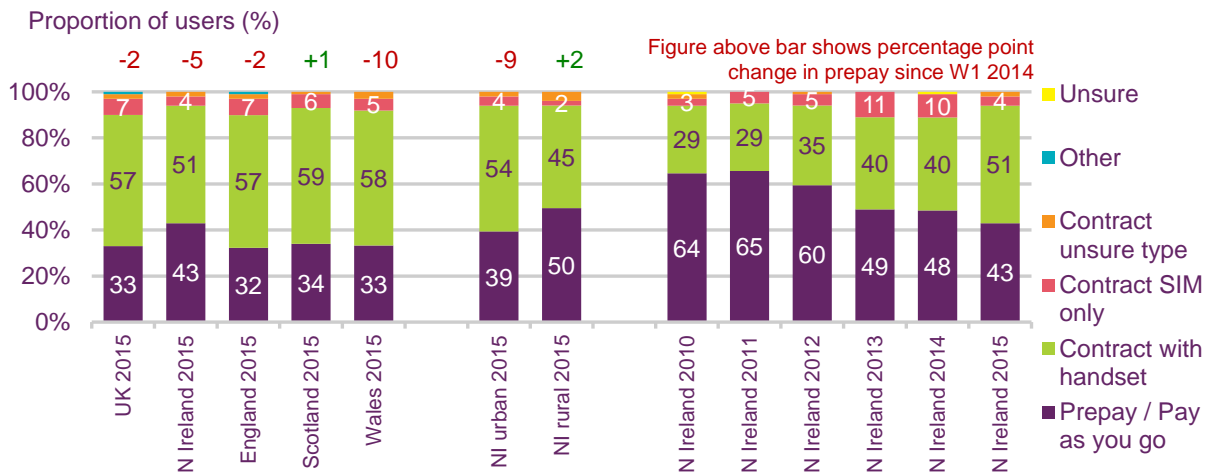
QD6 (QD41). Do you have a 4G service? This is a relatively new service that enables faster mobile internet access

Take-up of pay-monthly mobile services remains below the UK average in Northern Ireland

Northern Ireland continued to have the highest proportion of mobile phone users who mostly used a pre-pay service in Q1 2015 (43%); ten percentage points higher than the UK average of 33% (Figure 4.13). There was an increase in take-up of pay-monthly mobile services including a handset (rather than SIM-only) in Northern Ireland in the year to Q1 2015, from 40% to 51%.

The proportion of mobile users in Northern Ireland who mainly used pre-pay services did not change significantly in the year to Q1 2015, despite a nine percentage point fall in pre-pay mobile use among mobile phone users in urban areas of Northern Ireland (from 48% to 39%). Mobile phone users in rural areas of Northern Ireland were more likely to be pre-pay users (50%).

Figure 4.13 Type of mobile subscription



Source: Ofcom Technology Tracker, wave 1 2015

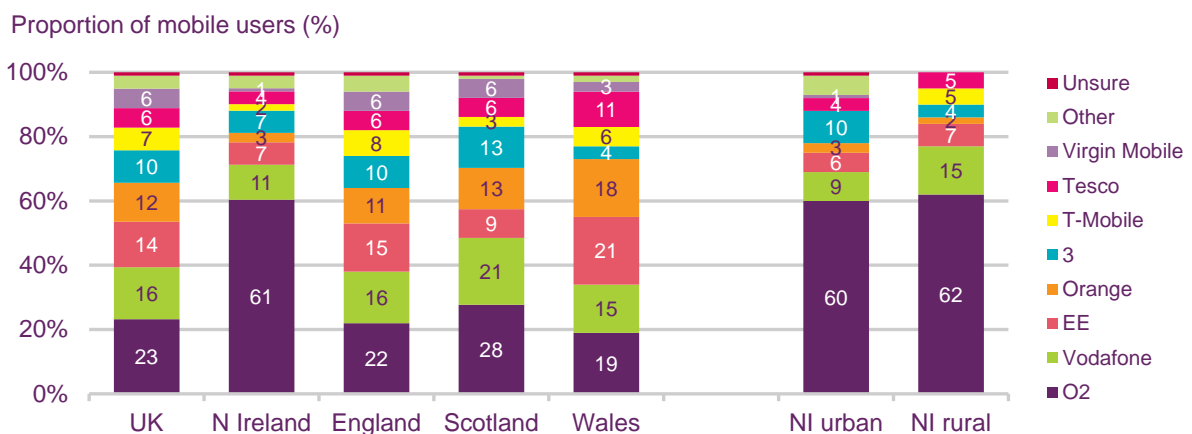
Base: Adults aged 16+ who personally use a mobile phone (n = 3425 UK, 456 Northern Ireland, 2080 England, 450 Scotland, 439 Wales, 226 Northern Ireland urban, 230 Northern Ireland rural, 658 Northern Ireland 2010, 425 Northern Ireland 2011, 463 Northern Ireland 2012, 463 Northern Ireland 2013, 465 Northern Ireland 2014, 456 Northern Ireland 2015)

QD11. Which of these best describes the mobile package you personally use most often?

O2 is the most frequently-used mobile network provider for three in five mobile users in Northern Ireland

Sixty one per cent of mobile users in Northern Ireland said O2 was the network they used most often, compared to just under a quarter (23%) across the UK as a whole, in line with previous years (Figure 4.14). Across Northern Ireland as a whole Vodafone was the second most popular mobile network provider (11%) in Q1 2015; this was also the case in rural Northern Ireland (15%). However, Three was the second most popular network provider in urban Northern Ireland (10%).

Figure 4.14 Mobile network provider used most often



Source: Ofcom Technology Tracker, wave 1 2015

Base: Adults aged 16+ who personally use a mobile phone

QD10. Which mobile network do you use most often?

4.5 Satisfaction with telecoms services

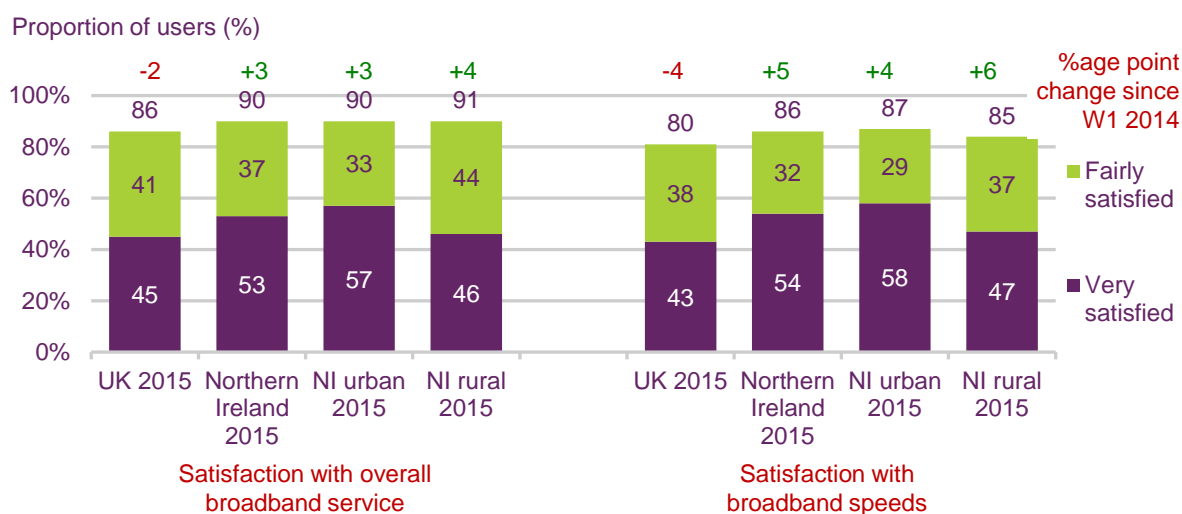
Fixed broadband users in Northern Ireland are more likely to be satisfied with their overall service and broadband speeds, compared to all UK users

Nine in ten fixed broadband users (90%) in Northern Ireland were 'very' or 'fairly' satisfied with their fixed broadband service in Q1 2015 (Figure 4.15). This was higher than the UK average of 86%, and users in Northern Ireland were also more likely to say they were 'very' satisfied (53% vs. 45%). Compared to Q1 2014 there has been no change in satisfaction with the broadband service in Northern Ireland, or in the UK overall.

As with overall satisfaction, fixed broadband users in Northern Ireland were more likely to be satisfied with their broadband speeds than the UK average (86% vs. 80%), with users in Northern Ireland being more likely to say they were 'very' satisfied (54% vs. 43%). While there was a fall in satisfaction with fixed broadband speeds across the UK as a whole in the year to Q1 2015 (down from 84% to 80%) there was no such change in satisfaction with broadband speeds among internet users in Northern Ireland over this period.

Fixed broadband users in urban and rural areas of Northern Ireland were equally as satisfied with the speed of their services (possibly related to the high rural fibre broadband availability in Northern Ireland, as shown in Figure 4.3).

Figure 4.15 Satisfaction with overall service and speed of fixed broadband connection



Source: Ofcom Technology Tracker, wave 1 2015

Base: Adults aged 16+ with a fixed broadband connection at home (n = 2781 UK, 335 Northern Ireland, 162 Northern Ireland urban, 173 Northern Ireland rural)

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

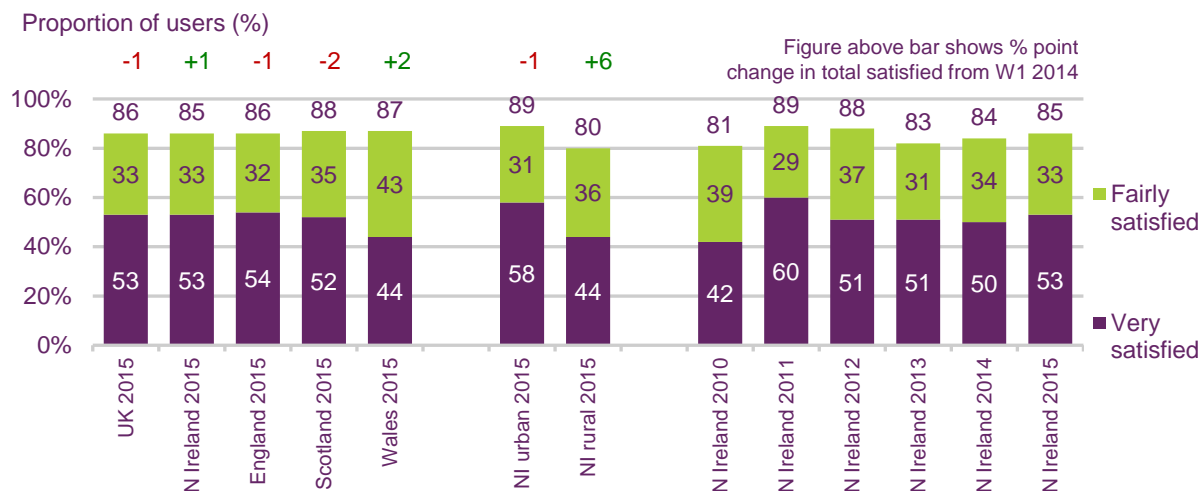
QE8b. Thinking about your fixed broadband internet service, how satisfied are you with (main supplier) for the overall service/ for the speed of your service while online (not just the connection)?

Satisfaction with mobile reception is in line with the UK average in Northern Ireland

More than eight in ten mobile phone users in Northern Ireland (85%) were 'very' or 'fairly' satisfied with their mobile reception in Q1 2015 (Figure 4.16). Responses were in line with the UK average at an overall level, and in terms of the proportion saying they were 'very' or 'fairly' satisfied with their mobile phone reception.

There was no change in satisfaction with reception among mobile phone users in Northern Ireland in the year to Q1 2015, and mobile users in urban areas of Northern Ireland were more likely to say they were satisfied compared to those in rural areas (89% vs. 80%), because the proportion that were 'very' satisfied was higher (58% vs. 44%).

Figure 4.16 Satisfaction with reception of mobile service



Source: Ofcom Technology Tracker, wave 1 2015

Base: Adults aged 16+ who personally use a mobile phone (n = 3425 UK, 456 Northern Ireland, 2080 England, 450 Scotland, 439 Wales, 226 Northern Ireland urban, 230 Northern Ireland rural, 658 Northern Ireland 2010, 425 Northern Ireland 2011, 463 Northern Ireland 2012, 463 Northern Ireland 2013, 465 Northern Ireland 2014, 456 Northern Ireland 2015)

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

QD21c. Thinking about your mobile phone service only, how satisfied are you with (main supplier) for reception/ accessing network?