5 Telecoms and networks

5.1 Recent developments in Northern Ireland

Broadband

The Department of Enterprise, Trade and Investment (DETI), working with BT, recently completed its Next Generation Broadband Project. Under this project, street cabinets were connected to local exchanges with high-capacity fibre cabling. The project, which was funded by DETI, the Department of Agriculture and Rural Development and the EU, was supported by £29.8m of investment by BT.[5] With the construction phase complete in the first quarter of 2012:

- a total of 2,461 street cabinets (over 80% of Northern Ireland stock) have been upgraded to deliver fibre-based broadband services, 1,196 of these as a result of the additional BT investment secured under the Next Generation Broadband Project; and

- Ofcom estimates that 87% of homes in Northern Ireland were able to receive fibre-to-the-cabinet (FTTC) services by March 2012.

As of February 2012, take-up of new services in Northern Ireland accounted for 13.9% of all new superfast connections in the UK.[6] In January, Virgin Media announced it was doubling the speed of its broadband services for most of its customers across the UK, with customers in Belfast being among the first to benefit. Virgin Media's upgrade will mean customers currently signed up for its ‘up to’ 10Mbit/s service will be boosted to ‘up to’ 30Mbit/s, while those on the company’s top tier ‘up to’ 100Mbit/s tariff will be raised to 120Mbit/s.

Belfast is to become a ‘super-connected’ city under plans announced by the Chancellor, George Osborne, in the March Budget. The city successfully bid for funding to deliver ultrafast fixed broadband access, and large areas of public wireless connectivity. Ultrafast broadband is defined as having a minimum download speed of at least 80Mbit/s. The city will receive funding of a minimum of £6m and up to a maximum of £13.4m to invest in improved infrastructure.

In January 2012, Onwave won the DETI contract to deliver high-speed satellite broadband services to areas of Northern Ireland where broadband cannot be accessed via telephone lines. The contract is part of DETI’s 100% broadband availability commitment.

The service means that customers can get downloads speeds of up to 6Mbit/s wherever they live, with packages for businesses allowing download speeds of up 8Mbit/s or 10Mbit/s.

Telecoms

A £25m investment in mobile infrastructure, announced in February, is set to boost 2G and 3G mobile coverage in Northern Ireland. Everything Everywhere, 3UK, and Mobile Broadband Network Limited are jointly funding the initiative.

When the upgrade is completed at the end of 2012, the companies predict 3G coverage at 94%, a significant improvement on existing levels and in network performance and customer experience.

[5] http://www.detini.gov.uk/deti-telecoms-index/deti--telecoms-next-gen-broadband-project.htm
[6] BT Ireland

5.2 Availability of broadband services

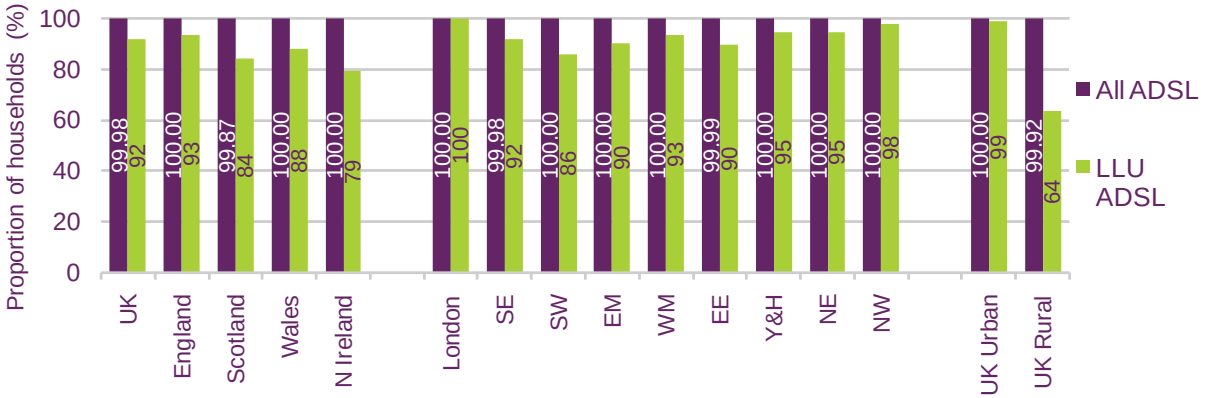
All homes in Northern Ireland are connected to an ADSL-enabled BT local exchange

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 Northern Ireland (as in Wales) all of BT's exchanges have been upgraded 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 by the end of 2011. 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 a year previously. 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 was much higher in urban areas (99%) than in rural ones (64%). Northern Ireland had the lowest proportion of households that were connected to an LLU-enabled exchange at the end of 2011, at 79%, while this proportion was highest in England at 93%.

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



Sources: Ofcom/BT, December 2011 data

Northern Ireland had the second-lowest availability of cable broadband services in May 2012

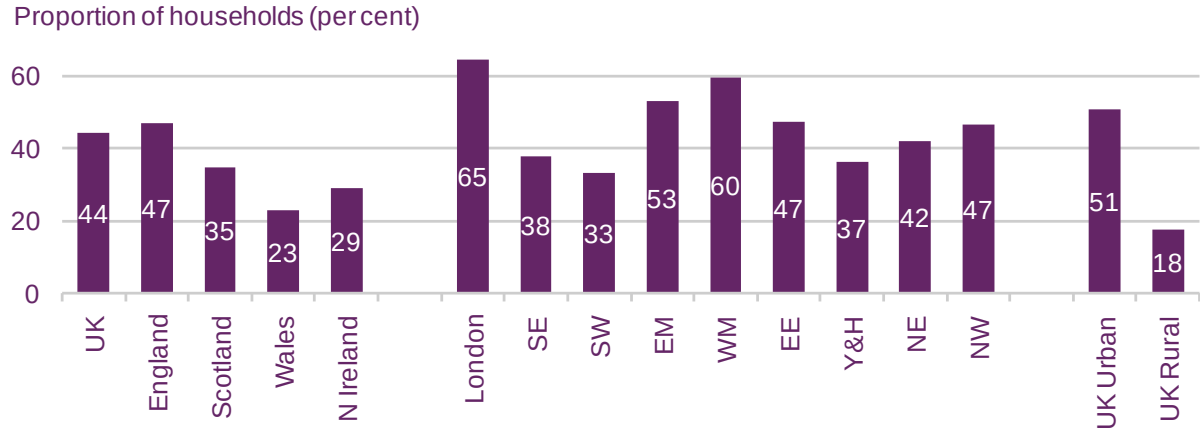
Ofcom estimates, based on data provided by Virgin Media, show that 44% of UK homes were passed by Virgin Media's cable broadband network in May 2012. However, this figure

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).[7]

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; household coverage in urban areas was 51%, compared to 18% in rural areas. Northern Ireland had the second-lowest proportion of homes passed by Virgin Media's cable broadband network in May 2012, at 29%, while among the other UK nations availability ranged from 23% in Wales to 47% in England.

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/s.[8]

Figure 5.2 Proportion of households passed by Virgin Media broadband



Sources: Ofcom/Virgin Media, May 2012 data

Northern Ireland had the highest availability of fibre-to-the-cabinet services 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 that are 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).[9]

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 able to receive 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

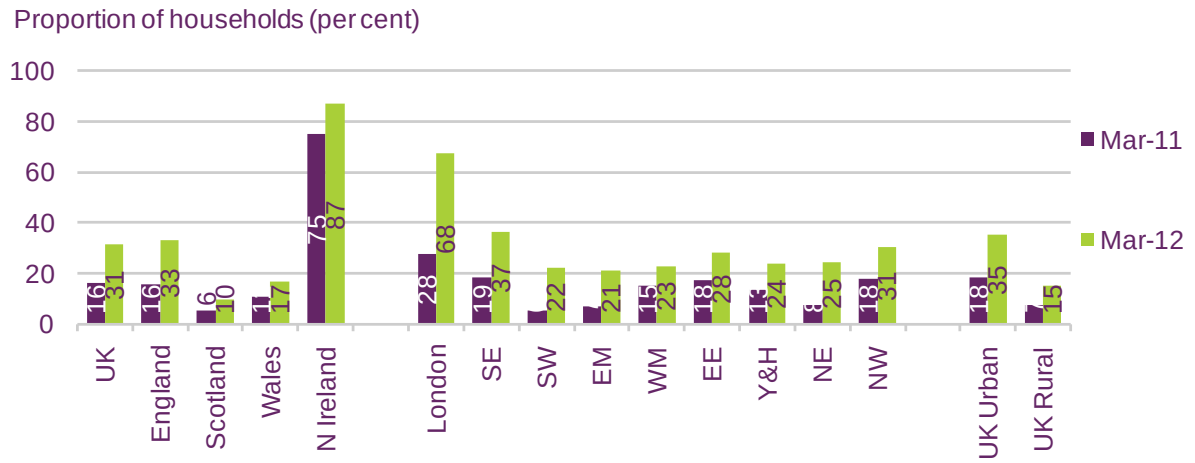
[7] While the most recent data available to Ofcom show that 44% of UK homes were able to receive triple-play cable services from Virgin Media in May 2012, data from 2010 show that in total 48% of UK homes were able to receive Virgin Media cable broadband in June of that year.
[8] http://mediacentre.virginmedia.com/Stories/Virgin-Media-boosts-Britain-s-broadband-speeds-2322.aspx
[9] http://www.digitalregion.co.uk/digital-region-wholesale/the-networkrollout

them). BT's FTTC service had a headline speed of 'up to' 40Mbit/s at launch, and in April 2012 it upgraded its FTTC network to offer 'up to' 80Mbit/s.[10]

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%). Northern Ireland had the highest estimated proportion of homes able to receive FTTC services from BT in March 2012, at 87%, over eight times higher than the 10% figure for Scotland, where availability was lowest. 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.[11] 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.[12]

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



Sources: Ofcom/BT

Northern Ireland had the highest availability of superfast broadband services in March 2012

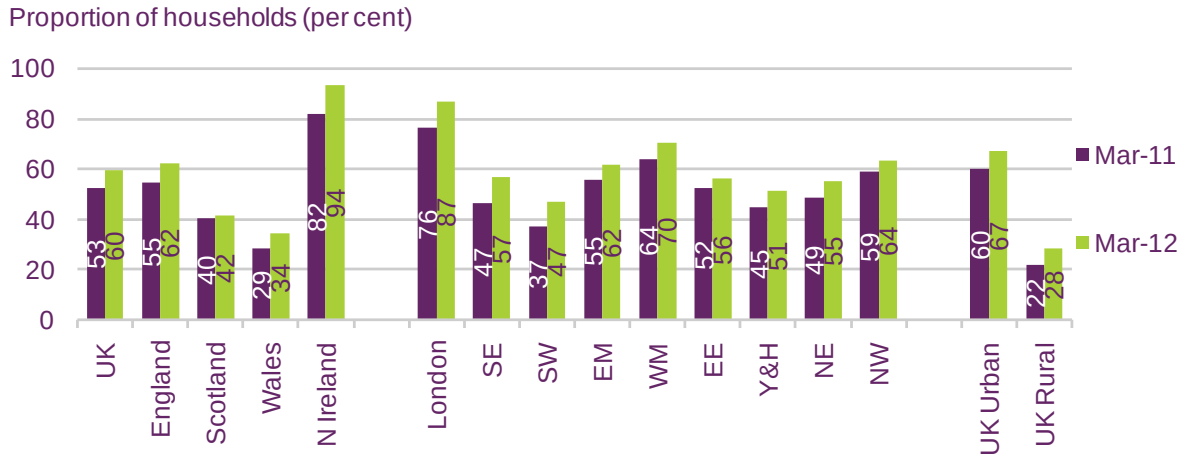
Superfast broadband is defined as those connections with a headline 'up to' speed of 30Mbit/s or more, and by overlaying Virgin Media cable broadband availability data onto that of BT's FTTC network we are able to estimate the overall availability of superfast services. Again, it should be noted that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

We estimate that by March 2012 60% of UK homes were able to receive superfast broadband services, up from 53% a year previously, largely as a result of BT's ongoing FTTC roll-out (Figure 5.4). Household availability of superfast broadband in rural areas (28%) was less than half that in urban areas (67%) by March 2012, and Northern Ireland had

[10] http://www.btplc.com/News/ResultsPDF/q411release.pdf
[11] http://www.btplc.com/Sharesandperformance/Quarterlyresults/PDFdownloads/q312_transcript.pdf
[12] http://www.btplc.com/news/articles/showarticle.cfm?articleid=%7Bd228f2b4-25fc-4095-8ec4-bd17b903cc3b%7D

the highest estimated proportion of homes able to receive superfast services among the UK nations, at 94%. Conversely, the availability of FTTC and/or cable superfast broadband was lowest in Wales, where an estimated 34% 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

Twelve per cent of premises have no 3G mobile coverage from any operator

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 200x200metre pixel of landmass across the UK. This information is correlated with maps of premises to give the premises coverage figures. This new methodology is different to that used in previous *Communications Market Reports* and 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.

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 premises have no 3G coverage from any operator.

These figures all refer to outdoor coverage. Coverage figure 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.

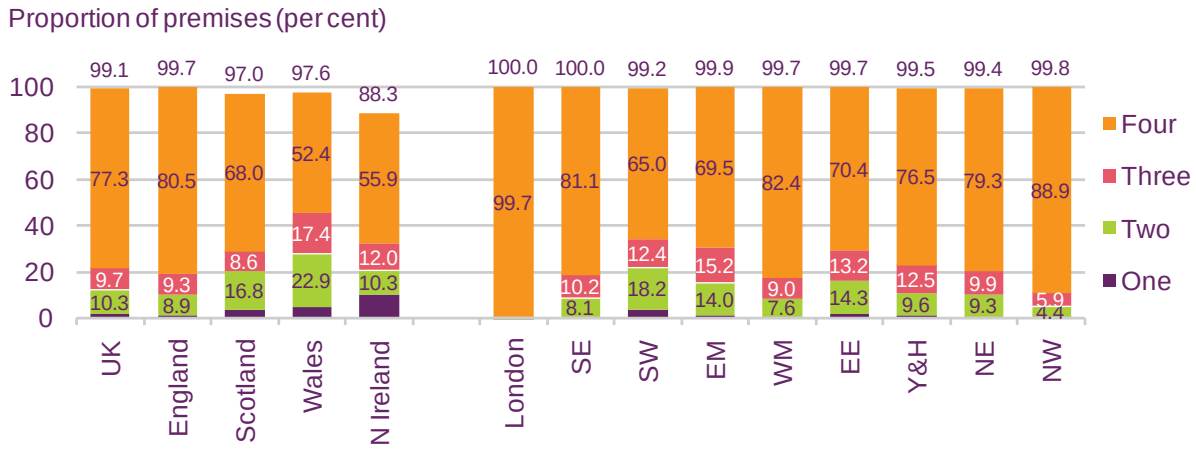
Eighty-eight per cent of Northern Ireland's premises have mobile coverage from all three 2G operators, this is nearly six percentage points lower than the UK average. Northern Ireland's 3G coverage is also lower than the UK average, at 55.9% premises coverage for all 3G operators. And at 11.7%, Northern Ireland fares worst of all four nations in terms of the percentage of premises that have no 3G coverage from any operator.

Expressed in terms of geographical area, coverage figures are usually much lower, because mobile masts are more commonly installed near centres of population. Eight and a half per cent of the area of Northern Ireland has no 2G mobile coverage from any operator, compared to 12.8% of the UK. 3G coverage is lower, with 52.1% of the area of Northern Ireland having 3G coverage from any operator compared to 75.8% across the UK as a whole.

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.

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.

5.4 Service take-up

Significant rise in smartphone ownership in Northern Ireland

Take-up of fixed telephony dropped by four percentage points to 80% in Northern Ireland in the year to Q1 2012, when it was four percentage points lower than the UK average of 84% (Figure 5.7).

However, personal ownership of mobile telephony in Northern Ireland was among the highest in the UK at 93% in Q1 2012. Furthermore, 34% of all adults in Northern Ireland owned a smartphone handset (equivalent to 37% of mobile phone users), and although this was below the UK average of 39% of adults, it represented a significant increase from the previous year's figure of 21%.

Figure 5.7 Take-up of communications services, 2012

		UK	N Ireland	England	Scotland	Wales	NI urban	NI rural
Individual								
Voice telephony	Fixed Line	**84%**	80%	85%	82%	80%	79%	83%
	Mobile	**92%**	93%	93%	85%	92%	94%	92%
	Smartphone	**39%**	34%	40%	32%	39%	38%	34%
Internet	Computer (any type)	**79%**	73%	80%	70%	71%	72%	74%
	Tablet computer	**11%**	9%	11%	11%	8%	11%	6%
	Total Internet	**80%**	73%	81%	71%	74%	73%	74%
	Broadband (fixed and mobile)	**76%**	69%	78%	68%	68%	69%	69%
	Fixed Broadband	**72%**	66%	73%	64%	63%	65%	66%
	Mobile Broadband	**13%**	7%	13%	12%	16%	7%	8%

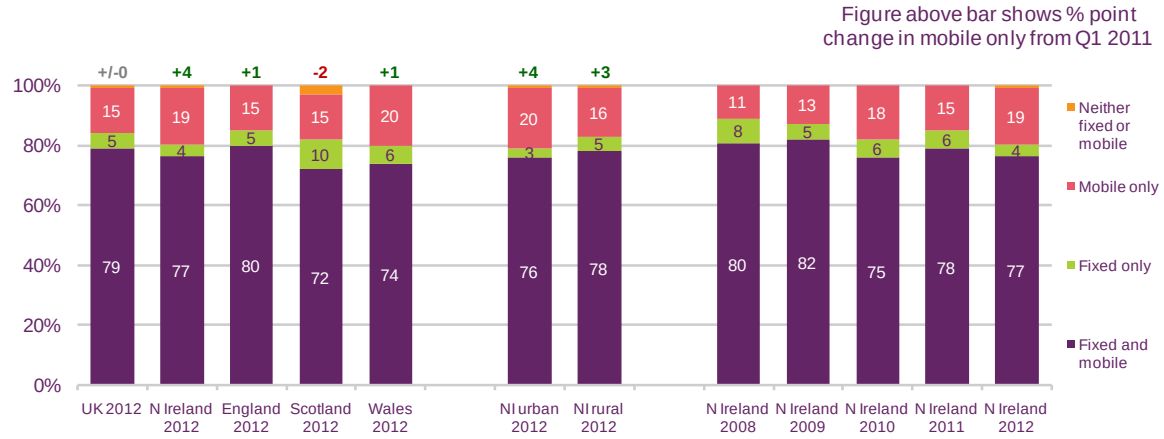
Source: Ofcom research, Quarter 1 2012
Base: All adults aged 16+ (n = 3772 UK, 508 Northern Ireland, 2251 England, 500 Scotland, 513 Wales, 255 Northern Ireland urban, 253 Northern Ireland rural)

Nineteen per cent of homes in Northern Ireland were mobile-only in Q1 2012

Similar to the UK as a whole, nearly eight in ten households in Northern Ireland (77%) used both fixed and mobile telephony in Q1 2012, while 19% used only mobile telephony, one of

the highest proportions among the UK nations (Figure 5.8). The proportion of homes that were mobile-only increased by four percentage points in the year to Q1 2012, although this change falls within the survey's error margins.

Figure 5.8 Cross-ownership of household telephony services



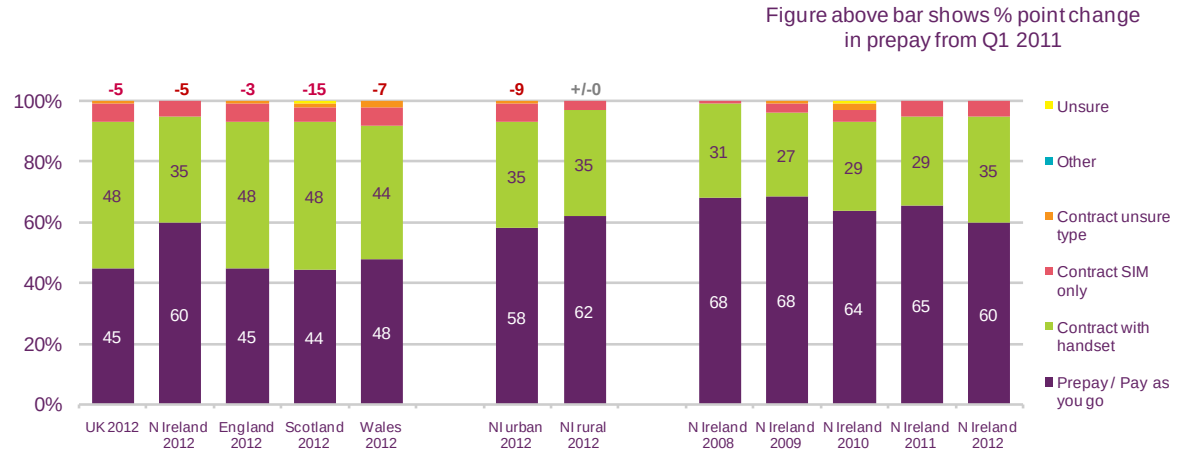
Source: Ofcom research, Quarter 1 2012
Base: All adults aged 16+ (n = 3772 UK, 508 Northern Ireland, 2251 England, 500 Scotland, 513 Wales, 255 Northern Ireland urban, 253 Northern Ireland rural, 629 Northern Ireland 2008, 652 Northern Ireland 2009, 761 Northern Ireland 2010, 511 Northern Ireland 2011, 508 Northern Ireland 2012)
QC1. Is there a landline phone in your home that can be used to make and receive calls?/ QD1. How many mobile phones in total do you and members of your household use?

Use of pre-pay mobile services was higher than average in Northern Ireland in Q1 2012

Six in ten mobile users in Northern Ireland had a pre-pay (or 'pay-as-you-go') package rather than a contract (or 'pay-monthly') subscription in Q1 2012, significantly higher than the 45% average across the UK as a whole (Figure 5.9). Northern Ireland appears to be following the trend in the UK as a whole (with mobile users moving from pre-pay to contract tariffs), and the proportion of mobile connections that were pre-pay fell by five percentage points in the year to Q1 2012.

Another characteristic of the Northern Ireland mobile market is the high share of O2 customers, with 68% of mobile users claiming to use the O2 network most often – significantly higher than the 26% UK average.

Figure 5.9 Type of mobile subscription



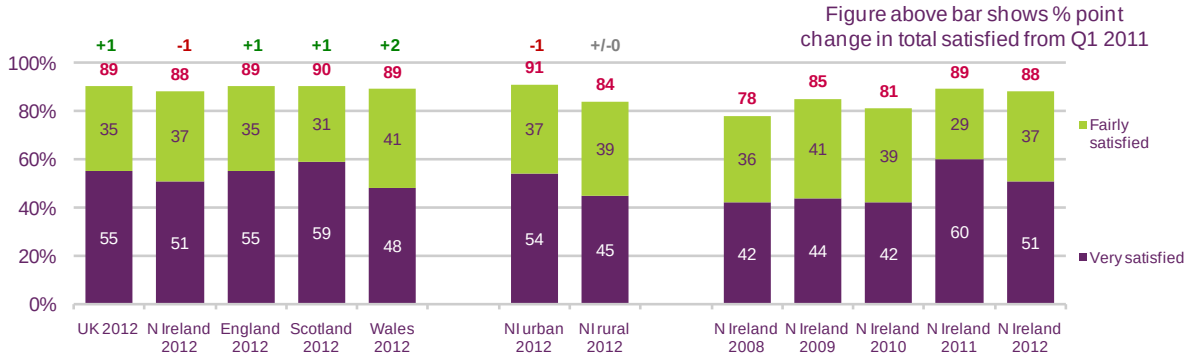
Source: Ofcom research, Quarter 1 2012
Base: Adults aged 16+ who personally use a mobile phone (n = 3392 UK, 463 Northern Ireland, 2043 England, 430 Scotland, 456 Wales, 236 Northern Ireland urban, 227 Northern Ireland rural, 744 Northern Ireland 2008, 877 Northern Ireland 2009, 1237 Northern Ireland 2010, 425 Northern Ireland 2011, 463 Northern Ireland 2012)

5.5 Satisfaction

Nearly nine in ten mobile users in Northern Ireland were satisfied with their mobile service in Q1 2012

Overall satisfaction with mobile phone services remained stable in Northern Ireland in the year to Q1 2012, with 88% of mobile consumers saying that they were 'very' or 'fairly' satisfied with their service, in line with the UK average of 89%. (Figure 5.10). Satisfaction was slightly higher in urban (91%) than rural (84%) areas, probably due to better reception in urban centres.

Figure 5.10 Satisfaction with reception of mobile phone service

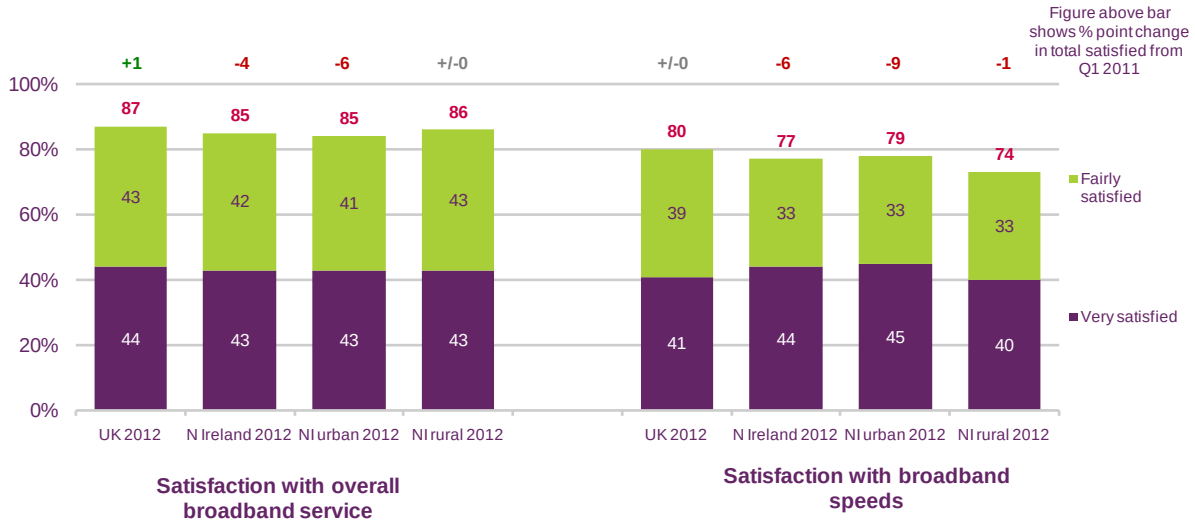


Source: Ofcom research, Quarter 1 2012
Base: Adults aged 16+ who personally use a mobile phone (n = 3392 UK, 463 Northern Ireland, 2043 England, 430 Scotland, 456 Wales, 236 Northern Ireland urban, 227 Northern Ireland rural, 527 Northern Ireland 2008, 587 Northern Ireland 2009, 658 Northern Ireland 2010, 464 Northern Ireland 2011, 463 Northern Ireland 2012)
QD21c. Thinking about your mobile phone service only, how satisfied are you with (main supplier) for reception/ accessing network?
Note: Figures above chart columns indicate the proportion of people who were 'very' or 'fairly' satisfied with their mobile reception

Eighty-five per cent of fixed broadband users in Northern Ireland were satisfied with their service in Q1 2012

Overall satisfaction with fixed broadband services remained relatively stable at 85% in Northern Ireland in the year to Q1 2012 (Figure 5.11). However, there was a six percentage point (pp) fall in satisfaction with the speed of fixed broadband services over the same period, driven by a nine pp decease in satisfaction in urban areas. As with the rest of the UK, most broadband users in Northern Ireland (67%) were unaware of the advertised speed of their connection, and nearly three-quarters were unaware of their actual speed (73%).

Figure 5.11 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, 331 Northern Ireland, 1577 England, 330 Scotland, 318 Wales, 166 Northern Ireland urban, 165 Northern Ireland rural, 319 Northern Ireland 2008, 388 Northern Ireland 2009, 469 Northern Ireland 2010, 335 Northern Ireland 2011, 331 Northern Ireland 2012)
QE8b. Thinking about your fixed broadband internet service, how satisfied are you with your main supplier for the overall service provided by (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