



The Communications Market 2008: Nations and Regions

Wales

Research Document

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Foreword

This is Ofcom's third annual review of the markets for television, radio, and telecommunications, showing detailed data for the nations and regions across the UK.

Its aim, like that of its predecessors, is to provide the context for Ofcom's own policy thinking and to inform debates and decisions taken by stakeholders in the public and private sectors.

This year's review takes place against the background of significant policy debates on issues as diverse as the future of public service broadcasting and the future regulatory framework for high-speed broadband. It is increasingly the case that distinct versions of these debates are taking place in Wales, Northern Ireland, Scotland, and in the regions of England.

That is why Ofcom continues to seek, within the resources available, to deepen the geographical detail of its research, as well as to reflect on new themes and patterns of consumer behaviour, brought about by the convergence between fixed and wireless communications technologies.

The story that emerges from this year's research is that the pace of change continues to be rapid, but that some previously strong distinctions have shaded to grey.

For example, broadband. In the first two years that we have reported, we found that take-up was strikingly lower in rural than in urban areas. This year, the data suggest that, taken as a whole, rural areas have caught up – in fact, slightly overtaken urban areas. Overall, 57% of UK homes now have a broadband internet connection, up from 45% a year earlier.

There are other striking patterns; in the UK's biggest cities, such as Belfast, Birmingham, Cardiff, Glasgow, Liverpool, and Manchester, an ever-larger segment of the population is living without the use of fixed-line telephony. Across the UK as a whole, 87% of homes have a fixed-line telephone (down three percentage points from last year). The 12% of homes which rely on mobile phones only are able, increasingly, to access broadband through wireless technology.

People are also using broadband to download video. This report suggests that 30% of adults have taken advantage of video downloading, although on a city-by-city analysis, the hottest hotspots are Aberdeen, Dundee and Edinburgh.

There are many other such fascinating points of detail in the pages that follow. Social networking, as Ofcom has previously reported, is now enjoyed by one in five UK adults. This report suggests that the people of Northern Ireland are among the UK's most avid social networkers. Across the UK, these sites are most popular among young people.

Another big trend is the fact that more than 85% of UK homes now have digital television – ten percentage points higher than a year ago and a significant milestone to have passed in the year in which digital switchover began, in Copeland, Cumbria.

At the same time, take-up of digital radio continues to grow, with one in five adults reporting that they have a DAB digital radio at home.

On the whole, consumers are satisfied with the quality of the communications services they buy. Across the UK, 89% of broadband users say they are satisfied and 94% of consumers say they are satisfied with their mobile phone service. But our data show differences across the UK in levels of satisfaction.

As this year's report contains more detailed data, two other points need to be made. Firstly, care needs to be taken in drawing excessively far-reaching conclusions from data based upon small sample sizes. Secondly, this Ofcom exercise now involves so much data that we have decided to publish much of it separately, as a complement to this report. You can find the full data set by going to the following link: <http://www.ofcom.org.uk/research/cm/cmnr08>.

I hope that you will find this research useful and that it will encourage you to take the fullest possible part in the debates it is designed to support and stimulate.

Ed Richards
Chief Executive

The information set out in this report does not represent any proposal or conclusion by Ofcom in respect of the current or future definition of markets and/or the assessment of licence applications or significant market or dominant position for the purposes of the Communications Act 2003, the Competition Act 1998 or other relevant legislation. We endeavour to ensure that the data in this report are the most accurate currently available.

Key themes

Take-up of digital TV and broadband has slowed in Wales

Since the end of 2006, take-up of digital television in Wales has risen by 2 percentage points, to 84%. This modest rise contrasts with England and Scotland, where relatively large increases of 11 and 9 percentage points respectively were recorded over the same period.

Historically, take-up of digital TV in Wales has been higher than the UK average, related to poor analogue television reception in some parts of the country, and the availability of the full Channel 4 and five services on digital television platforms. In addition, S4C Digidol broadcasts 12 hours a day of Welsh language programming, compared to 6 hours a day on the S4C analogue service. However, large increases in 2007 mean that England (86%) and Scotland (85%) now have similar levels of take-up to Wales, while Northern Ireland stands at 79%. Less than 1% of the population said that they did not have digital television because it was not available.

During the same period, broadband take-up in Wales has increased by 3 percentage points to 45%. Wales now has the lowest broadband penetration of the UK nations. This contrasts with significant growth in other parts of the UK; in England take-up rose from 44% to 57%; in Scotland from 46% to 57% and in Northern Ireland from 42% to 52%.

Non-ownership of telecommunications services is due to cost and lack of interest

Consumers who do not have fixed line phones, mobile phones or broadband typically say that this is because they don't want them or that the cost is too high. No respondents state that lack of service availability is the reason they did not have these services.

Communications service take-up is highest in Cardiff, Swansea and Newport

New survey data this year allow us to see how take-up and use of communications services varies across different parts of Wales.

Take-up of digital TV is highest in Cardiff (95%), Swansea (88%) and Newport (88%), compared to 82% in the rest of Wales. Similarly, take-up of broadband is highest in Cardiff (58%), Swansea (56%) and Newport (62%), compared to 42% in the rest of Wales. Take-up is lowest in smaller urban areas in the south (34%).

Use of converged communications services is highest in Cardiff, and in some cases Swansea. For example, use of VoIP stands at 17% in Cardiff and 18% in Swansea compared to the average of 11% across Wales. The figure stands at 13% in England, 11% in Scotland and 9% in Northern Ireland. Over a third (36%) of adults in Cardiff have watched video content online, compared to 24% across Wales. Adults in Cardiff are also more likely to have listened to radio online (14%), compared to the Wales national average of 9%.

Whilst take-up is highest in these cities in Wales, rural areas in Wales have higher take-up of fixed-line phones (88%) and broadband (51%) than in urban areas of Wales taken as a whole (77% and 43% respectively).

DAB radio coverage is set to improve in Wales

The advertisement of three new local multiplexes over the past year should significantly improve DAB coverage in Wales, particularly for the BBC's services, Radio Wales and Radio Cymru. In addition, two new FM services have launched, including a new licence for South Wales. However, XFM South Wales is currently up for sale.

Key points: converged communications

- **A quarter of adults in Wales have watched video content online**
Broadcasters operating in Wales are repackaging content for distribution over the internet; the BBC, S4C and ITV all offer online Wales-focused programmes. Around a quarter (24%) of adults in Wales have used the internet to watch TV or video content, rising to 36% in Cardiff. This compares with 30% across the UK as a whole. Use appears to correlate with broadband penetration.
- **One in ten adults in Wales have listened to radio online**
Many radio stations offer listen-live functionality over the internet. One in ten (9%) in Wales have used the internet to listen to the radio; lower than the UK average (13%). Use is higher in England, with similar levels in Wales, Scotland and Northern Ireland.
- **17% of adults in Wales have accessed mobile internet**
Accessing the internet using a mobile phone is less common in Wales (at 17%) than the UK average (20%).
- **16% of adults in Wales have listened to audio on a mobile handset...**
One in six adults (16%) in Wales have used their mobile handset to listen to audio content – a similar level to the UK overall. There is a big difference between urban and rural areas, where use stands at 17% and 11% respectively.
- **...although very few have watched video on a mobile handset**
Across Wales, only a very small proportion have used their mobile to watch television or video clips – 4%, the same as the UK as a whole.
- **15% of adults in Wales have used a social networking site**
Fewer people in Wales use social networking sites than the UK average – 15% compared to 20%. Again this is related to the lower take-up of broadband in Wales.
- **One in ten adults in Wales have made VoIP telephone calls**
Eleven per cent of adults have used the internet to make VoIP telephone calls in Wales, very similar to the UK figure (12%), and up from around 7% in 2006. Use appears higher in Cardiff and Swansea, and lower in rural areas. Unsurprisingly, use of VoIP also correlates with broadband penetration.
- **16,000 Wikipedia articles are available in Welsh**
More Wikipedia articles are written in Welsh than any other UK indigenous language other than English. As of January 2008, there were around 16,000 Wikipedia articles written in Welsh, two and half times as many as were written in Irish.

Key points: television

- **Digital TV take-up has slowed in Wales**
At 84%, take-up of digital television (DTV) is close to the UK-wide average of 85%. However, growth in Wales has slowed, rising 2 percentage points between 2006 and 2008, while the UK average climbed 10 percentage points.
- **Satellite television take-up is higher in Wales than the rest of the UK**
In 2007, 52% of homes in Wales paid for television services – 3 percentage points higher than the UK average. Of these, 79% took satellite, a higher proportion than in any other UK nation, and 14 percentage points higher than the UK average (65%).
- **The five main PSB channels had a collective viewing share of 62%**
The five main PSB channels in Wales attracted a collective share of 59% (62% if the full Channel 4 service is included), the lowest share of any nation and 5 percentage points below the UK average. BBC One was the most watched channel in Wales, delivering an all-homes share of 23%, followed by ITV1 with 20%.
- **BBC One's early evening local news in Wales attracted the largest share in the UK**
BBC One's early evening local news bulletin in Wales attracted the highest viewing share in the UK in 2007, at 35% (compared to the UK average of 28%).
- **The BBC and ITV1 spent £35m on Wales originated output in 2007**
The BBC and ITV1 spent £35m on originated output for viewers in Wales during 2007; this accounted for 11% of their UK-wide spend. This figure was 13% higher in real terms than in 2006, against a UK-wide average reduction of 3%, and was driven in large part by the BBC's increased spend on non-news and non-current affairs output. S4C spent an additional £69m on originated output – the majority of this went towards drama (£16m), general factual (£14m), sport and children's programming (£9m each).
- **Per head, spend on originated output was over twice the UK average**
On a per head basis, viewers benefited from spend of £11.63 on originated output by the BBC and ITV1 during 2007. This figure was over twice the UK average of £5.41.
- **There were 1,249 hours of Wales originated output in 2007**
The £35m funded 1,249 hours of originated output in 2007 – nearly 200 fewer hours than in 2006. S4C transmitted an additional 5,768 hours for viewers in Wales (2006) – one third of which was in the Welsh language. Current affairs/factual programming accounted for the largest proportion of these hours (31%), followed by light entertainment (20%) and drama (18%).
- **Out-of-London production quotas met by the BBC, Channel 4 and five but shortfall by ITV**
The BBC Channel 4 and five each met their out-of London production quotas by value and by volume in 2007. While ITV1 met its 50% volume quota, achieving 53%, the proportion of ITV1 spend outside London in 2007 was 44% - significantly below the 50% minimum. ITV's failure to meet the value element of its out-of-London quota is a serious matter, and one which is the subject of further consideration by Ofcom with a view to regulatory action.
- **Viewers in Wales more concerned about TV content**
Viewers in Wales expressed more concern than in any other UK nation about what was on television – 42% were fairly, or very, concerned (UK average 36%).

Key points: radio

- **Wales has highest levels of radio listening in the UK**
Radio audiences in Wales averaged 24.4 hours of listening per week in 2007, higher than in any other UK nation but down slightly from 24.7 hours in 2006. The BBC's national and network radio services attracted a collective share of 62%, significantly higher than the UK-wide average figure of 54%. The popularity of BBC Wales meant that conversely, commercial local stations were less popular, attracting a 27% share in Wales, up from 24% last year, but still lower than the UK average of 32%.
- **BBC national stations have highest reach in Wales**
The two BBC national stations for Wales reached 576k listeners each week (equivalent to 23% of all adults in Wales) in 2007, up from 551k in 2006. Real Radio was the nearest commercial competitor with 363k listeners per week (up from 327k), followed by Red Dragon with 256k (down from 302k).
- **Digital radio listening increasing**
Around one in seven (14%) individuals in Wales own a DAB digital radio set. This is lower than in England (22%) and Scotland (21%), but higher than in Northern Ireland (13%). Ownership in Wales remained relatively stable over the year, while the UK increased by 4% on average. Almost a third (32%) of listeners in Wales say they used digital TV to listen to radio stations in 2007. With one in seven (14%) listening to radio via the internet.
- **BBC radio spend per head highest in Wales,**
BBC expenditure on the national stations for Wales increased to £29.9m in 2006/07, up by £2.5m on 2005/06. This took average spend per head to £10.48 in 2006/07, compared to the UK average of £3.60.
- **Commercial revenues in Wales are the lowest among the UK nations**
Commercial radio generated £21m of revenue in 2007, up by £2.3m on 2006. This took commercial radio revenue per head to £7.41, up from £6.69 in 2006, although this was still lower than the UK average of £8.11 per person.
- **Digital radio availability set to increase in Wales**
Three local digital radio multiplex licences were awarded in 2007/08, covering Northeast Wales, Mid and West Wales, and North Wales. The three multiplex areas potentially cover a combined total of almost a million people in Wales. All three services will carry the BBC national stations, BBC Radio Wales and Cymru, along with local commercial radio services. National DAB digital radio coverage from the BBC and Digital One was estimated to have reached 74% of the population in Wales by 2008, up from around 54% in 2006.
- **Five new community radio licences awarded in Wales**
There are 19 licenced FM/AM commercial local radio stations aimed at listeners in Wales, along with two national stations from the BBC. The typical listener can receive four to five of these stations. In addition, five community radio stations now broadcast in Wales, with a further four licences awarded for stations yet to go on air.

Key points: telecoms

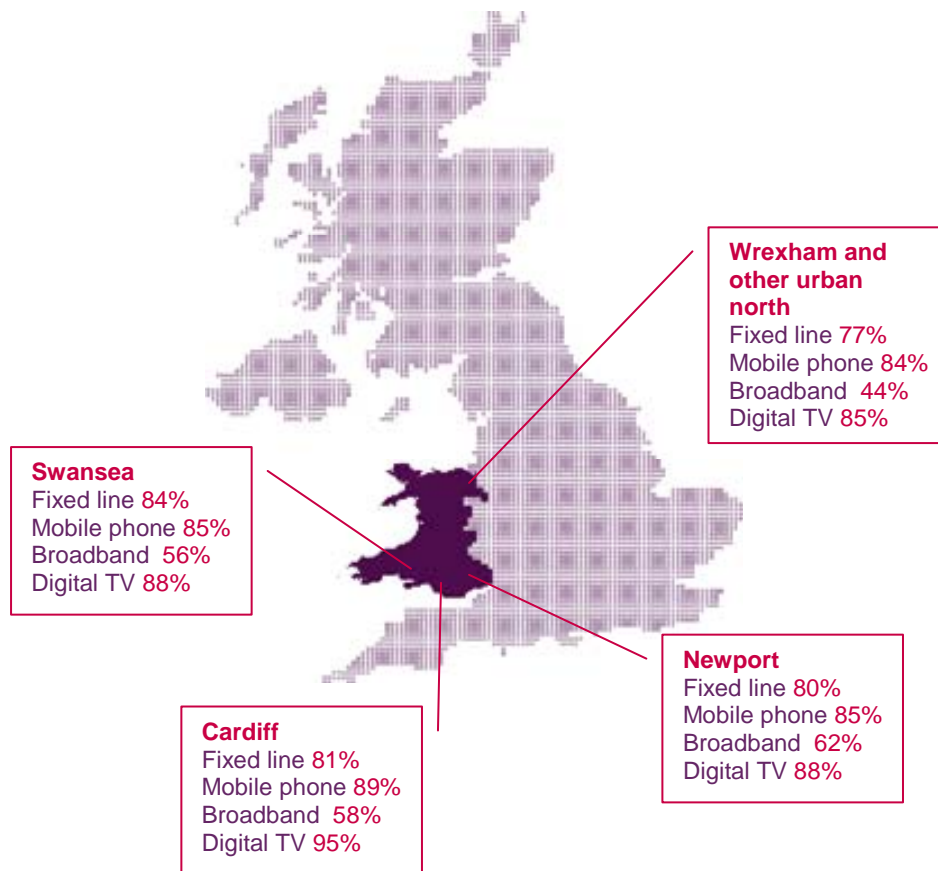
- **Take-up of telecoms services lower in Wales than the rest of the UK**
Take-up of telecoms services is generally lower in Wales than in the rest of the UK: 79% of households in Wales have a fixed-line (compared to 87% across the UK), 82% have a mobile phone (84% across the UK) and 55% have internet access at home (65% across the UK). Take-up of fixed and mobile telephony in rural areas of Wales (74%) is lower than average in rural areas of the UK (84%).
- **Broadband take-up highest in Cardiff and Swansea**
Internet access in Wales has not grown significantly since 2006 although broadband take-up rose from 43% to 45% over the period. Broadband penetration is higher across the larger southern urban areas (58% in Cardiff and 56% in Swansea), and lower in the smaller southern towns (34%). Broadband take-up in rural areas of Wales is similar to that in rural areas of Northern Ireland, but lower than in England and Scotland.
- **3G take-up in Wales highest in the UK**
Reported take-up of 3G mobile services in Wales (20%) is higher than in England (18%), Scotland (14%), or Northern Ireland (17%).
- **82% of broadband customers in Wales are satisfied with connection speed**
Ninety per cent say they are satisfied with their overall broadband service in Wales, similar to the level across the UK as a whole (89%). A slightly lower proportion of broadband customers (82%) are satisfied with the speed of their broadband connection, consistent with the UK average (83%).
- **89% of mobile customers in Wales satisfied with reception**
Eighty-nine per cent of people in Wales are satisfied with their mobile phone reception, slightly higher than the UK average (87%). Satisfaction levels are lower in rural areas (84%) than in urban areas (90%), with people in Mid Wales the least satisfied (77%).
- **Mobile phone coverage on the A470 road has been surveyed**
Ofcom commissioned a survey of mobile phone coverage on the A470 road. The results suggest that coverage in less populated parts of the route are significantly less than in population centres.
- **63% of premises in Wales connected to an unbundled local exchange**
By November 2007, 63% of premises in Wales had lines connected to unbundled local exchanges (compared to the UK average of around 70%).

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1 Wales: setting the scene

1.1 Profile of Wales



| | |
|----------------------|---------------------------------|
| Size | 130,395 km ² |
| Population | 2.9 million |
| Population density | 140 persons per km ² |
| Households | 1.2 million |
| Average age (median) | 40 |

1.2 Introduction

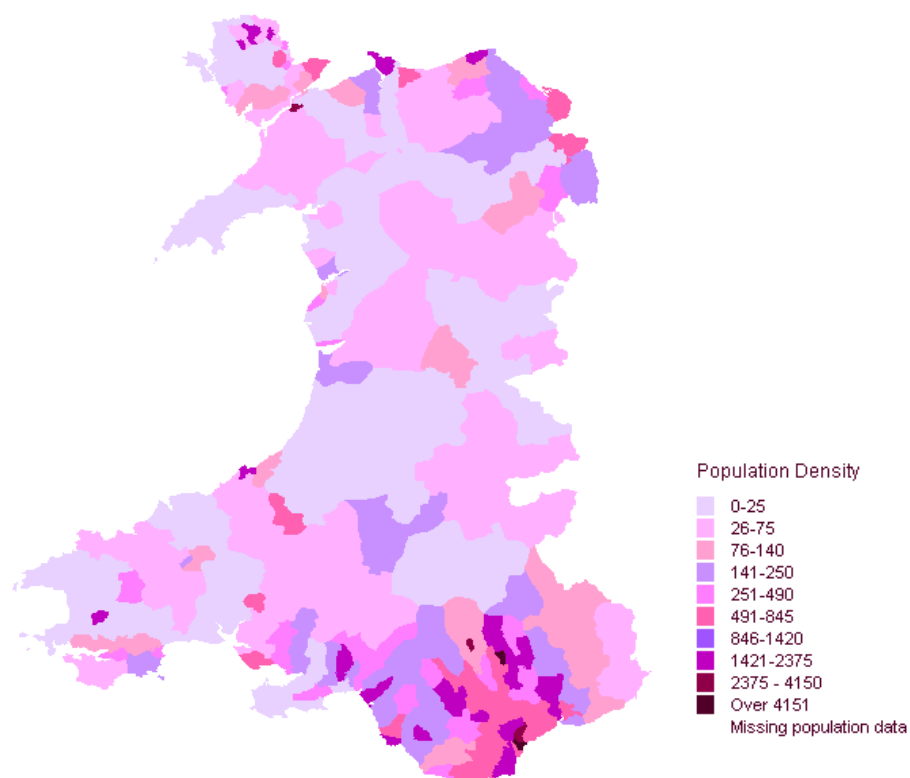
Wales has cultural, geographic and socio-demographic characteristics that influence and shape its communications landscape. The following section provides an analysis of key features of the Welsh population, socio-economic groups and age profile. Many of the data in this section are taken from the 2001 Census and, as such, have not changed materially since the 2007 report.

1.3 Socio-demographic features

Population

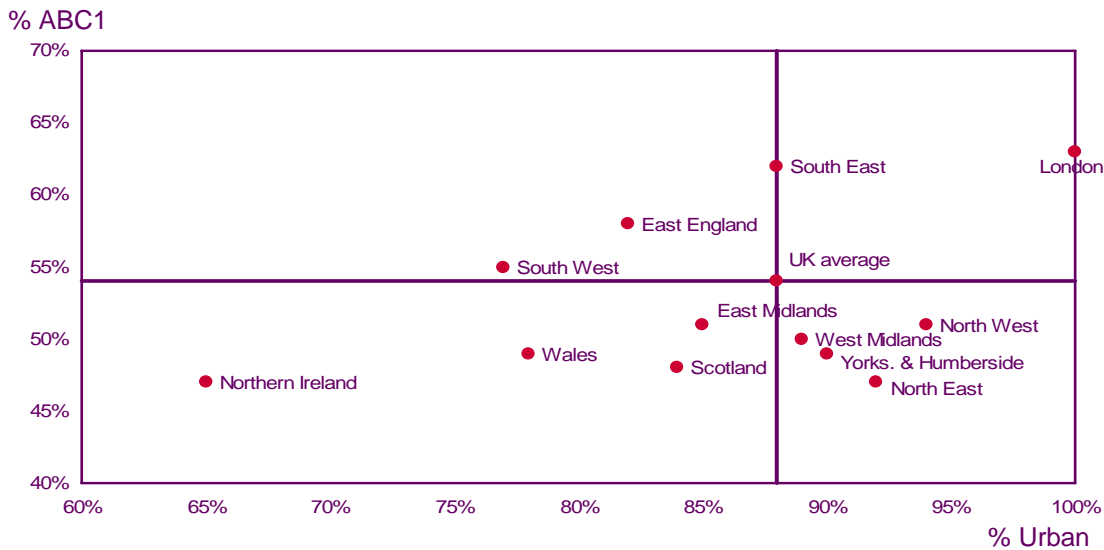
Wales has a population of 2.9 million – 5% of the UK total – and 1.21¹ million households. Figure 1.1 illustrates how population density varies across Wales. The population is concentrated around Cardiff and Swansea with further areas of high density in the north-east around Wrexham and Deeside.

Figure 1.1 Population density map



¹ Source: Welsh Assembly Government. The most recent figures showed that there were 1.21 million households in Wales in mid 2003.

Figure 1.2 Geographic and socio-economic profile of the UK



Source: Indicative analysis based on Business Geographics *Urban Indicator* and Office of National Statistics, Census 2001 (National Statistics website: www.statistics.gov.uk. Crown copyright material is reproduced with the permission of the Controller of HMSO)

Figure 1.2 illustrates the distribution of the UK population according to the proportion of ABC1s and the percentage of the population living in urban areas. Wales has a higher proportion of C2DEs (51%) than the UK average (45%) and consequently a lower proportion of ABC1s than the UK average of 54% - a characteristic it shares with Scotland, Northern Ireland and the North East of England. Wales has a relatively high rural population compared to the other nations and regions (22% compared with the 12% UK average), being similar in profile to the South West of England. 'Rural' areas are defined as settlements with fewer than 2,000 inhabitants, situated more than ten miles from a larger settlement.

Welsh language

According to the 2001 Census, 20.8% of people living in Wales are able to speak Welsh. The Census also indicated significant growth in the younger age groups: 37.7% of children between 3 and 15 years old in Wales can speak the language, an increase of 13.4 percentage points since the 1991 Census.

Ethnicity

Three-quarters of the population were born in Wales and around 2.5% of the Welsh population are from an ethnic minority background, with the main groups concentrated in Cardiff and Swansea. Cardiff Bay has some of the oldest ethnic minority communities in the UK, established over 200 years ago, but overall, Wales has a higher White population percentage (97.5%) than the UK average (91%).

Age of population

The age profile of the Welsh population is slightly higher than the UK average, with a median age of 40 compared to 38 in the UK. Only the South West of England has a higher median age, 41.

Income and expenditure

Figure 1.3 illustrates average weekly household income and expenditure for Wales in 2007. At £547 and £405 respectively, income and expenditure levels in Wales are well below the UK averages (£642 and £456), although only slightly below Northern Ireland levels. Before housing costs are taken into account, between half and three-quarters of a million people in Wales are calculated to be living in a low-income household in 2001/02, equating to one in five people.

Figure 1.3 Average weekly household income and expenditure



Source: Office of National Statistics, Family Spending: 2007 edition.
National Statistics website: www.statistics.gov.uk Crown copyright material is reproduced with the permission of the Controller of HMSO

Industry

The total GVA (Gross Value Added) for Wales in 2005 was £40.9 billion. Manufacturing in Wales accounted for 18% of GVA in 2004 compared with the UK average of 14%. Agriculture, hunting, and fishing accounted for 1.6% of GVA compared with the UK average of 1%, and GVA per head in Wales in 2005 was £13,813 compared with £17,677 for the UK as a whole.

Employment

The unemployment rate in Wales was 5.9% in Q2 2006 compared with 5.5% for the UK as a whole. During the same period the employment rate (for people of working age) was 71.5%, slightly below the UK average of 74.6%. But total employment costs in manufacturing industries are significantly lower than the UK average (£22,411 per person in 2004, 10% lower than the UK average for that year).

Deprivation

Owing to its post-industrial legacy, Wales has a number of demographic indicators that point to higher levels of deprivation and financial exclusion than in the UK as a whole. For example, 80% of Wales qualifies for EU Convergence Programme funding (the same area qualified for Objective 1 funding between 2000 and 2006) which is available in regions where GDP per head is below 75% of the EU average.

These factors can affect levels of take-up of, and exclusion from, electronic communications services.

1.4 Geography

The landscape of Wales presents a significant challenge to the provision of electronic communications services. In many areas of rural Wales, communications services are unavailable. These areas include broadband 'not spots' and places where there is also often no mobile, digital terrestrial television or digital radio coverage.

The shape and nature of the terrain has also had a significant influence on population spread and density, with most of the country's 2.9 million inhabitants living in and around the lowland coastal plains of the south and north. The population outside these areas is thinly scattered across large mountainous areas where, for example, television, radio and mobile phone reception can often be difficult.

Wales' long border with England influences television transmission overlap (affecting about 40% of the population). In the post-devolution age, poor reception of Welsh services and the choice by some viewers in border areas to receive services from England have raised concerns about citizenship and democratic inclusion.

1.5 Politics

The National Assembly for Wales has 60 members (26 Labour, 15 Plaid Cymru, 12 Conservative, 6 Liberal Democrat, 1 Other). Following the most recent Assembly elections in May 2007, a coalition between Labour and Plaid Cymru was eventually formed and a new programme of government was agreed, set out in the 'One Wales' document.

The Welsh Assembly Government is responsible for over £11bn of expenditure covering economic development, transport, health, education, agriculture, culture, the Welsh language, environment, planning, local government and public services. Local government is represented by 22 Unitary Local Authorities.

The 2006 Government of Wales Act came into force in May 2007. The Act strengthened the National Assembly's powers by changing its structure and electoral system, and giving it the power to make some of its own laws. It established the Welsh Assembly Government as a separate executive body, accountable to the National Assembly and provided a mechanism for the Assembly to pass legislative measures on devolved matters such as health and education. Schedule 5 of the Act sets out fields and matters where the Assembly will be able to pass Measures, which have the same authority in Wales as acts of Parliament. In addition, the Assembly can seek the passage through Parliament of Legislative Competence Orders which, if passed by both houses, would add new matters to Schedule 5. Although there is no limit to the number of Measures made under a Matter, Parliament remains the sole legislator in a number of policy fields including defence, foreign affairs, fiscal policy, broadcasting and many areas of economic regulation including competition and trading law. The Act also reforms the electoral system by ensuring that candidates can only stand for either a constituency or a regional seat.

At the UK level, Wales retains a Secretary of State in the Cabinet, who has a key constitutional role, including negotiation of the block grant on behalf of the Welsh Assembly Government and scrutiny of Legislative Competence Orders. UK Parliamentary representation for Wales consists of 40 MPs (29 Lab, 3 PC, 4 LD, 3 Con, 1 Other). In the European Parliament, Wales is represented by four members based on a single all-Wales constituency (2 Lab, 1 PC, 1 Con).

2 Recent developments in Wales

2.1 Television

Digital switchover

Plans for digital switchover are well advanced in Wales, with the first relays that receive their signals from the Kilvey Hill, Carmel and Preseli transmitters due to switch in Q3, 2009.²

Following a consultation in 2007, the S4C Authority is currently seeking approval from the DCMS Secretary of State to launch a new children's channel using the capacity currently allocated to S4C-2. The option that drew most support from the public in their responses to the consultation was the creation of a full, dedicated children's channel, although this option would leave no capacity for live coverage of National Assembly proceedings. However, the Authority has said that *third parties might be willing to provide such coverage*³. In addition, S4C recently announced that, from June 2008, programmes for pre-school children will be screened on its main digital channel (S4C Digidol) on weekday mornings from 7am to 1.30pm. The service represents a significant increase in S4C's current provision and will be funded from its existing budget.

In November 2007, Ofcom published a consultation on proposals to re-configure the digital terrestrial television (DTT) capacity on the public service multiplexes to enable high-definition television services (HDTV) to be carried within existing capacity. Ofcom set out how the re-organisation could be achieved without requiring additional spectrum, while protecting viewers with standard definition equipment. As a result of these proposals, the composition of the DTT platform will have to be changed at switchover. S4C-2 will continue to be carried on the SDN commercial multiplex but carriage of S4C Digidol will transfer to a PSB multiplex. Under Ofcom's proposals, S4C will be able to bid for capacity on the HDTV multiplex along with the other public service broadcasters.

Following digital switch-over, 97.8% of viewers in Wales should be able to view the full range of PSB channels via DTT (also taking account of reception also available from neighbouring transmitters in England). DTT coverage, both for the three PSBs and for the three commercial multiplexes, is expected to increase from the present level of 57% to around 73% of households in Wales. As S4C-2 will continue to be carried on the less widely available commercial multiplex, after digital switchover, it will have significantly less coverage than S4C Digidol on the DTT platform in Wales. However, S4C-2 is also carried on digital satellite (across the UK) and via cable in Wales.

2.2 Radio

Listeners in Wales can access radio services through a variety of platforms and technologies, as in other parts of the UK. The BBC provides two national services for Wales, Radio Wales in English and Radio Cymru in the Welsh language. In addition, there are 19 local and regional commercial radio stations serving Wales, and four community radio

² Details of the switchover plans for Wales can be found at <http://www.ofcom.org.uk/tv/ifi/tech/dsodetails/wales.pdf>

³ P10, "Serving Children in the Digital Future", An S4C Authority Consultation Paper.

stations currently on air (with at least a further two stations due to launch during spring 2008).

Announcements and news

On 11 February, GCap announced a major package of cost savings, which included disposing of Digital One and its non-core UK brands, The Jazz and Planet Rock and also the XFM regional analogue licences, including XFM South Wales, which launched in November 2007. The group announced that it would sell XFM South Wales or hand back the licence to Ofcom. Global Radio subsequently made an offer for GCap and although XFM South Wales remains on air the station continues to be for sale. Any new buyer will have to operate the service under the present format although the station could be based at different premises and could be re-branded. Ofcom will not allow any change, nor simplification the station's existing FM format for two years.

In addition to broadcasting on FM, XFM South Wales is also currently carried on DAB on the South Wales/Severn Estuary multiplex operated by MXR. (Before XFM South Wales was launched, a UK version of XFM had been broadcasting on DAB via the Cardiff/Newport local commercial multiplex.) If the XFM licence is sold to another operator it is not clear if the service would continue to be carried on DAB in South Wales.

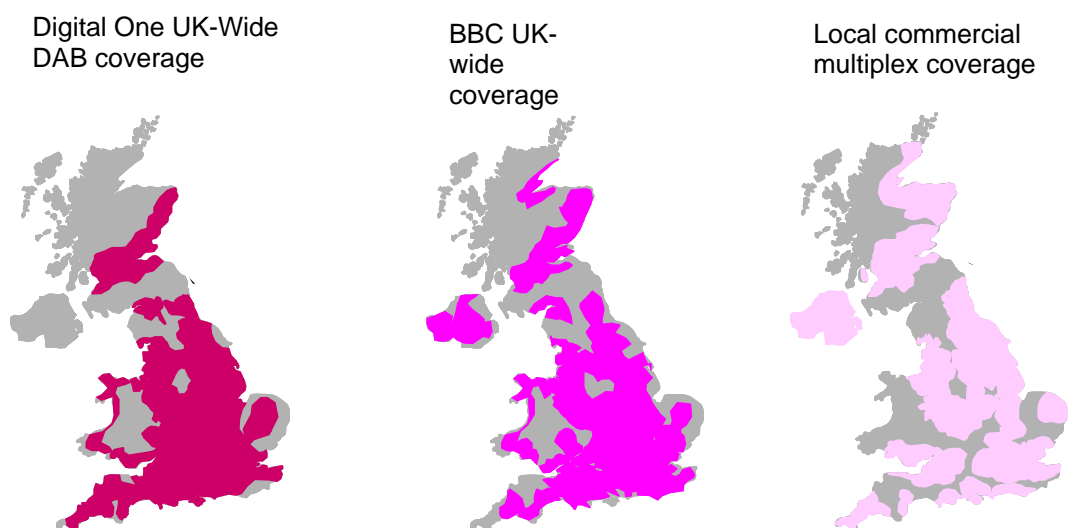
Herefordshire and Monmouthshire Classic Hits, primarily owned by Laser Broadcasting, went on air in December 2007 as Sunshine Radio. The station serves the Abergavenny and Monmouth areas in Wales (along with Herefordshire across the border). The Sunshine brand is already familiar to listeners in the in the West Midlands, where two AM stations owned by Laser also broadcast under this name.

Digital audio broadcasting (DAB) radio availability

DAB radio availability continued to improve across Wales during 2007 and is currently delivered via the UK BBC multiplex⁴ and the Digital One multiplex, (owned by GCap and Arqiva), together serving around 67% of the population⁵. The BBC multiplex carries all the BBC's UK-based radio services, Radio 1, 2, 3, 4, 5 Live, 6, 7, BBC Asian Network, 1Xtra and 5 Live Sports Extra, while Digital One carries a range of services including Classic FM, talkSPORT and Virgin Radio. For technical reasons it is not possible to vary the service line-up on these UK multiplexes to carry services specifically for Wales, so the BBC UK multiplex does not carry Radio Wales or Radio Cymru. A second UK-wide DAB commercial multiplex licence was awarded in July 2007 to the 4Digital Group, but this service is not yet on air.

⁴ The BBC does not have a public figure for the coverage of its UK DAB multiplex in Wales.

⁵ Coverage figure as at April 2007. During the year additional transmitters went on air which increased coverage to around three quarters of the Welsh population.



In the UK, DAB services are also delivered via local commercial multiplexes which must carry the BBC's local radio services⁶. In England this arrangement has worked reasonably well, although the existing coverage areas for some local multiplexes do not always exactly fit BBC local radio coverage areas. Extending the DAB coverage of Radio Wales and Radio Cymru in Wales depends on securing carriage on local commercial multiplexes based in Wales⁷.

Wales has two DAB local commercial multiplexes currently transmitting. The Cardiff and Newport multiplex, operated by Now Digital (owned by GCap), broadcasts a range of services including Red Dragon FM, Gold (Cardiff and Newport), and Chill, along with BBC Radio Wales and Radio Cymru. The Swansea multiplex is operated by UTV–Bauer Digital and carries The Wave, Swansea Sound, Kiss and Smash Hits, in addition to BBC Radio Cymru and Radio Wales. These multiplexes cover around 56% of the population in Wales⁸. South Wales is also served by the Severn Estuary DAB multiplex (which also broadcasts to the West of England). This multiplex, operated by MXR, carries XFM South Wales⁹, Choice, Kiss 101, Heart, Real Radio, The Arrow, Smooth and LBC.

In February 2007, Ofcom advertised a DAB multiplex for north east Wales and west Cheshire, including Wrexham and Chester, and in September announced its award to MuxCo Northeast Wales and West Cheshire Limited. The key shareholders in this bid include Town and Country Radio, and UTV. The company is proposing seven local digital sound programme services including Wales Live, in addition to BBC Radio Wales and BBC Radio Cymru. Ofcom estimates that this licence could achieve coverage of an area with an adult population of around 647,000 (of which 231,000 of these are based in north east Wales). The multiplex is due to start broadcasting in late summer 2008 but for commercial and technical reasons MuXCo has recently decided to postpone the on-air date for the north east Wales multiplex until at least Q4 2008.

Also in February 2007, Ofcom advertised a DAB multiplex for the rest of North Wales, covering the area not already served by the north east Wales and west Cheshire multiplex, including the counties of Gwynedd, Anglesey, Conwy and most of Denbighshire (with

⁶ Under Section 49, 1996 Broadcasting Act, the BBC can secure carriage for its nations and local services on the local commercial DAB multiplexes operating in the UK.

⁷ 'Policy Implications Arising from the Communications Market', Ofcom, 12 October 2006.

⁸ (Adults 15+) Not everyone living within these areas will be able to receive a service. Actual coverage depends on local topography and transmitter roll-out.

⁹ Future carriage of this service is uncertain.

estimated coverage of up to 311,146 adults within the licensed area). This multiplex will also have capacity reserved for BBC Radio Wales and BBC Radio Cymru. The timing of the award is conditional on the Republic of Ireland releasing frequencies in VHF Band 3, currently used for analogue television, but which are used in the UK for DAB radio. The achievable coverage of the North Wales service may therefore be significantly constrained until June 2015 (at the latest) under the terms of international spectrum agreements.

In November 2007, Ofcom advertised a local DAB radio multiplex licence to cover Mid and West Wales. Originally this multiplex had been planned to cover Pembrokeshire and Carmarthenshire (reaching an adult population of up to 234,000), but it was extended to cover Ceredigion and Powys (potentially reaching up to 400,000 listeners) to enable provision of Radio Wales and Radio Cymru across as much of Wales as possible. By the closing date of 20 February 2008, Ofcom had received one application, from MuxCo Wales Ltd., which is 70% owned by Town and Country Broadcasting. The company proposes to provide Radio Pembrokeshire, Radio Carmarthenshire and Wales Live, in addition to BBC Radio Wales and BBC Cymru, on this multiplex, and initially aims to be on air by Q1 2010, with an estimated 'outdoor' coverage of 55.8% of the adult population of the licenced area (reaching around 220,000 listeners). MuxCo's technical plan adds that "we have not identified an efficient and viable commercial model to launch DAB within Ceredigion and Powys from launch". It goes on to state that "we would arrive at a decision [regarding expansion in this area] in conjunction with the BBC and Ofcom, and after discussion with the Welsh Assembly and other regional bodies, such as the Welsh Language Board, as to financial grants to support this development." However, MuxCo has identified a medium-power transmission site to cover Aberystwyth should it wish to expand coverage into this area in future.

Community radio

Community radio licences are issued for small-scale, not-for-profit radio stations operated to provide social gain and benefits to the community. In Wales, there are currently seven licensed services, with four services currently on air. In January 2008, Ofcom awarded licences to two North Wales groups: Point FM serving Rhyl, and Tudno FM, based in Llandudno.

2.3 Telecommunications

Mobile

A470 case study

Following discussions with the Ofcom Wales Advisory Committee, we commissioned a drive-by survey of the A470 as a case study of mobile availability. The A470 is one of Wales' main trunk routes, connecting North and South Wales, but is not currently surveyed by the mobile phone providers. The results are set out below and show that there are some locations on the route where mobile reception is significantly less than in population centres. The research data will be used in the cost benefit analysis work relating to telecommunications service provision to be carried out as part of Ofcom's Access and Inclusion project.

A470 Mobile coverage survey

In January 2008 Ofcom commissioned a survey of mobile telephony coverage on the A470 in Wales to provide an insight into the level of service availability on this main road which runs the full length of Wales, from Llandudno in the North to Cardiff in the South.

Using an automated test rig, calls were made from mobile handsets mounted in a car which was driven the entire length of the route. Call attempts were made every 2 minutes and successful calls lasted 90 seconds; where there was no coverage calls were re-attempted every 10 seconds¹⁰. Handsets from each of the four mobile network operators were used for the GSM (2G) test and all five operators for 3G.

Of the calls made with GSM handsets, 32% of call attempts failed because there was insufficient signal quality. Where there was a good signal, 89% of calls made were completed successfully, with the majority of failures due to calls dropping after being established successfully. Sections of the road north and south of Dolgellau, including the Coed Y Benin forest park, and over the Brecon Beacons proved particularly problematic for some operators.

With calls made with dual mode 3G/GSM handsets, 39% of call attempts failed because there was insufficient GSM or 3G signal quality. Where calls could be made, only 17% were made using the 3G network, with the majority of phones falling back to the more widely available GSM networks. Once a call was established, 81% of calls completed successfully.

Whilst the methodology used was not suitable for drawing direct comparison between different mobile operators, the results provide a good overview of service availability on this route and highlight that coverage in these less populated routes is significantly less than in population centres.

Mobile broadband

Several 3G providers, including 3, T-Mobile and Vodafone have introduced mobile broadband services for use with laptop computers and other portable devices, offering speeds over their 3G networks of up to 2.8 Mbit/s, with contract prices starting from £10 per month. In Wales, the full benefit of these services is limited to areas, primarily on the north and South Wales coastal areas, where 3G reception is currently possible. In other areas of Wales, where 2G mobile coverage is available, speeds are limited to 'up to 48 Kbit/s'.

Fixed-line broadband

DSL broadband services are generally available to users based up to 5km from an exchange, with speeds and available bandwidth reducing with distance. According to Ofcom research, commissioned in 2006¹¹, 18% of premises in Wales are situated further than 5 km from an exchange (compared to the UK average of 14%), while 19% of premises in Wales are within 2km of an exchange (allowing users to potentially take advantage of significantly higher broadband speeds) compared with the UK average of 17%.

¹⁰ Note that up to 12 failed call attempts could occur in the 2 minutes that it took to make a successful call.

¹¹ Source: Point Topic, Broadband User Service, June 2005. Distances based on 'implied local loop length'.

Following implementation, by the Welsh Assembly Government, of its EU-approved Regional Innovative Broadband Support Scheme (RIBS) contract, which was awarded to BT, the 35 remaining exchanges in Wales have been upgraded to offer DSL broadband including ADSL Max, with the capability of supporting ADSL2+ roll-out in the future. The first part of the RIBS contract was completed when the last two exchanges, Rhos and Llawhaden, were upgraded in summer 2007, allowing an additional 7,500 premises to be served by broadband-enabled exchanges.

However, there are still a number of 'not-spot' areas in Wales which (due to localised technical issues such as the presence of line concentrators or aluminium rather than copper cable) are not able to receive ADSL services, or can access broadband services only at very low bandwidths.

In November 2007, the Deputy First Minister asked officials to consult the wider telecommunications industry to seek affordable and economically viable solutions to enable households in the 'not spot' areas to access broadband¹². A wide cross-section of broadband providers and equipment manufacturers were consulted and following this assessment of the market, the Deputy First Minister announced, in April 2008, that the Welsh Assembly Government would undertake a Wales-wide procurement to seek a telecommunications provider or consortium to enable access in broadband not-spots across Wales. In addition, the Welsh Assembly Government continues to work with BT to explore options for addressing a number of significant not-spot areas (which were not therefore included in the above procurement) and details of these areas will be published at a later date.

In the meantime, people in Wales who are unable to receive a broadband service are encouraged to register their details with the Welsh Assembly Government using the not-spot form at www.bnrrw.org.uk (or in the Welsh language at www.cadbec.org.uk). So far, around 1,200 registrations have been received.

Local loop unbundling (LLU)

Local Loop Unbundling (LLU) is the process by which an alternative operator can lease the BT line connecting an exchange to a residential property or business premises. The operator places its own equipment in the exchange and connects it to the trunk network, thereby enabling it to provide services such as DSL broadband to end-users. However, operators do not have to use LLU to provide services; wholesale products such as IP stream also provide a way in which third parties can compete with BT in the provision of, for example, DSL broadband services. Due to the level of investment involved, LLU is only likely to develop in exchanges that serve significant populations.

By November 2006, 48% of premises in Wales had lines connected to either LLU exchanges or were in areas where it is possible to access cable services, and this figure increased significantly to 62.5% of premises by November 2007 (compared to a UK average of around 70%). Most of the remaining exchanges that have not been unbundled are in more rural locations which serve fewer premises. Due to the economics of LLU provision, further roll-out to these exchanges appears to be unlikely. To date, however, there are no significant price differentials between broadband services available in LLU and non-LLU areas. However, in cable areas, domestic consumers can already access broadband speeds of up to 20Mbit/s for £20 per month and, if Virgin Media rolls out a new 50Mbit/s service later this

¹² The RIBS contract was awarded under EU State Aid rules which limited the available subsidy that could be offered to 50%.

year, the differences in terms of broadband service access between cable and non-cable areas could become significant.

3 Comparative analysis

3.1 Key Statistics

Figure 3.1 Key statistics

| | Wales 2007* | Wales 2008 | Wales % point change | UK 2008 |
|----------------------------------------------|------------------------------------|------------------------------------|----------------------|------------------------------------|
| Convergence | % of adults (unless stated) | % of adults (unless stated) | | % of adults (unless stated) |
| Use of VoIP at home | 9% | 11% | +2% | 12% |
| Watching video content online | Not available | 24% | N/A | 30% |
| Listening to the radio online | Not available | 9% | N/A | 13% |
| Internet access with a mobile phone | Not available | 17% | N/A | 20% |
| Watching video on a mobile phone | Not available | 4% | N/A | 4% |
| Listening to audio content on a mobile phone | Not available | 16% | N/A | 17% |
| Use of social networking sites | Not available | 15% | N/A | 20% |
| Television | | | | |
| Digital Television ownership | 82% | 84% | +2% | 85% |
| Pay TV subscription | 55% | 52% | -3% | 49% |
| Average hours viewed per day | 3.8 hours | 3.3 hours | - 0.5 hours | 3.6 hours |
| Radio | | | | |
| DAB set ownership (among radio listeners) | 14% | 14% | No change | 22% |
| Average hours listened to per week | 24.7 hours | 24.4 hours | - 0.3 hours | 23.5 hours |
| Telecommunications | | | | |
| Fixed line phone at home | 89% | 79% | -10%** | 87% |
| Mobile phone ownership | 77% | 82% | +5% | 84% |
| 3G phone ownership | 13% | 20% | +7% | 17% |
| Internet at home | 59% | 55% | -4%*** | 65% |
| Broadband at home | 42% | 45% | +3% | 57% |

*Survey data reported in the 2007 report were based on data from a survey conducted during 2006

** Note that this fall is subject to error margins of approximately +/- 5%

*** The figures are subject to error margin of approximately +/- 5%. The fall in narrowband connections is linked to the reduction in fixed-line phone penetration.

A note on the Wales survey data

We conducted a face to face survey of 5,812 adults in the UK with 811 interviews conducted in Wales. Fieldwork took place in January and February 2008.

Some of the survey data in this section of the report are split by geographic areas of Wales.

The survey sample in Wales has error margins of approximately +/- 3-4% at the 95% confidence interval.

In specific geographic areas survey error margins are approximately +/- 6-10%, although wider in Mid Wales and North Coastal Wales.

Respondents were defined as urban if they lived in a settlement with a population of 2000 or more and rural if they lived in areas with smaller populations.

This year, the survey was conducted in January and February 2008. In last year's report survey data were conducted across the whole of 2006. Year-on-year comparisons should therefore be considered with this in mind.

Annex 1 contains full details of the survey methodology and error margins.

In addition to the survey data, this section of the report refers to data from a range of other sources, including data provided to Ofcom by stakeholders.

3.2 Converging communications markets

Introducing convergence

This chapter analyses what convergence means for the supply and demand of communications content and services in Wales.

Figure 3.2 Delivering audiovisual and voice services to consumers



Source: Ofcom

Content and packaging

This section looks at how radio stations, television channels and local and regional newspapers are taking advantage of the ways in which content is being created, distributed and received. We then look at ways in which consumers are creating and interacting with content based on their regional interests.

Radio

Many local and regional radio stations in Wales use the internet to appeal to a wider audience for their content, and repackage their content for this purpose. In addition to 'listen live', visitors to the Red Dragon FM (owned by GCap) website are able to:

- view the schedule;

- watch music videos;
- listen to and download singles;
- watch DJ and artist video interviews;
- view picture galleries;
- watch scenes from the studio via webcam; and
- search for and buy tickets.

The Wave Radio and Valleys Radio (both owned by UTV) offer:

- listen live;
- news feeds;
- photo galleries; and
- news headlines.

Regional and local radio stations look set to continue to develop their online propositions. For example, in February 2008 GCap, owner of a number of regional radio stations, said that it would focus on broadband as a platform for expansion, and in March 2008 it announced that it had acquired a majority stake in the local social networking website company welovelocal.com. Similarly, in February 2008 UTV Media announced the acquisition of Tibus, a web development company which UTV said would enhance the online proposition of its television and radio stations, and facilitate the integration of media across online and broadcast platforms.

BBC local radio stations are also available over the internet, including BBC Radio Cymru. The websites allow visitors to listen live and listen again, as well as to find out more information about specific programmes.

Television

In 2007 the roll-out of the itvlocal websites was completed. There is a specific website for each of the ITV Plc regions, and each site hosts video clips about topics including local news, sport and weather as well as live webcams and traffic and travel information. The *Wales Tonight* bulletin is streamed in full. The websites also offer RSS feeds, local blogs and user-generated content forums, where viewers can upload their own video clips. According to ITV's 2007 results, by the end of the year the ITV local websites were reaching 750,000 unique users per month.

The S4C website allows viewers to watch recent episodes of selected programmes. It also acts as a portal directing viewers to microsites for series featured on the channel; for example *Natur Cymru*, *Cwpwrdd Dillad* and *Caerdydd*. These websites provide more detailed information about the programmes, including character backgrounds, an archive of information from previous episodes and programme wallpapers.

The BBC offers Wales-focused audiovisual content over the internet via its local news websites, as well as the BBC Wales website, which also features message boards and user-

generated-content. In October 2007, as part of its *Delivering Creative Future* plan, the BBC announced that it was planning significant investment to develop an online multimedia interactive offering, called MyLocalNow. This project would be subject to approval by the BBC Trust.

Clips of certain BBC-produced Welsh language programmes, e.g. *Pobol y Cwm* are available on the BBC's Welsh language website. Users can also stream certain BBC Welsh language programmes, including *Yr Wythnos* via the S4C website, but not via the BBC iPlayer.

Newspapers

Digital publishing is increasingly becoming a core part of the regional newspaper business. According to the Newspaper Society, at the end of 2006 there were 1,303 regional newspaper hard copy titles and 1,102 regional newspaper websites offering a wide range of content and functionality. The table below lists some of the online services provided by newspapers in the regions where we conducted consumer research. The newspapers selected are not intended to be representative of the entire output of either the relevant region or the newspaper group, but to indicate the range of digital services on offer.

Figure 3.3 Online content and functionality offered by selected regional newspapers

| Region | Newspaper | Group | Website | Podcasts | Video | Blogs | RSS | UGC photos/video | Forum | Digital edition |
|-------------------------|------------------------------|-------|---------|----------|-------|-------|-----|------------------|-------|-----------------|
| Cardiff | South Wales Echo* | TM | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Newport | South Wales Argus | NQ | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Swansea | South Wales Evening Post | NN | Yes | Yes | | Yes | Yes | Yes | | |
| Wrexham and Urban North | Wrexham Leader | JP | Yes | | Yes | Yes | Yes | Yes | | |
| Other South | Western Mail* | TM | Yes | | Yes | Yes | Yes | | Yes | Yes |
| Mid Wales | Mid Wales Journal | MNA | Yes | | | | | | | |
| North Coastal | Holyhead and Anglesey Mail** | TM | Yes | | Yes | Yes | Yes | | Yes | |
| Rural North | Daily Post | TM | Yes | | Yes | Yes | Yes | Yes | Yes | |

Source: Ofcom

Note: Newspaper websites are evolving continuously. This functionality is accurate as of March 2008

* The South Wales Echo and the Western Mail share the same website

<http://icwales.icnetwork.co.uk/>;

** Online functionality relates to the <http://icnorthwales.icnetwork.co.uk> which represents a number of Trinity Mirror papers in North Wales

Key: TM = Trinity Mirror, NQ = Newsquest, NN = Northcliffe Newspapers, JP = Johnston Press, MNA = Midland News Association

The audiovisual content available on newspapers' websites comes from a variety of sources. Regional newspapers, like the Wrexham Leader, generally syndicate national news from a national source such as the Press Association. For regional news, newspapers often film and package their own footage for a story which appears on their website, as done by the

South Wales Argus. Trinity Mirror, the largest newspaper group in Wales, is in the process of building an audiovisual studio in Cardiff to strengthen its online content, and is also recruiting audiovisual journalists.

Regional newspapers' investment in digital media does not appear to be generating significant revenues. At £2.8bn, advertising and sponsorship accounted for almost 75% of UK regional newspaper revenues in 2006, but only 2.5% of this (£71m) was generated by online advertising.

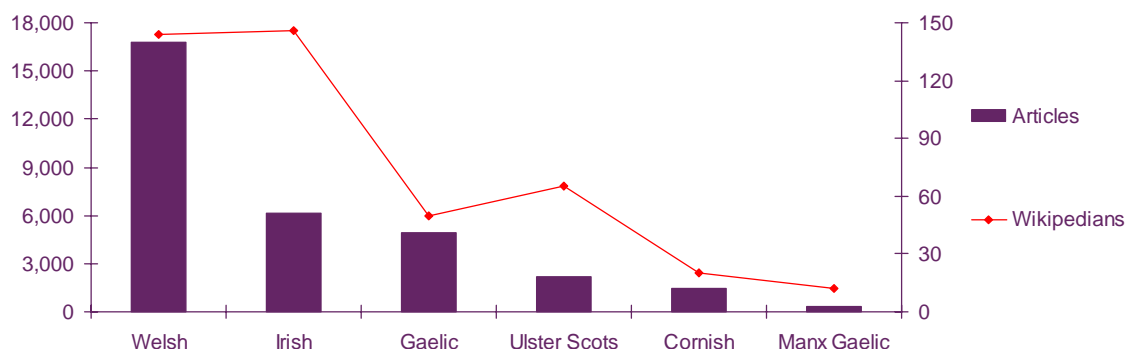
However, there are now signs that the regional newspaper groups are trying to increase their online advertising revenues, particularly in classified advertising. For example, Archant, Johnston Press and Trinity Mirror have all recently launched websites dedicated to key classified categories of property, jobs and cars. Trinity Mirror's 2007 annual report cites the launch of such sites as being one of the contributory factors to its 33.3% year-on-year increase in digital revenues.

User-generated content

As the level of user-generated content available on many local newspaper sites demonstrates, we are not only consumers of region-specific content, but also creators of it. Many websites offer individuals the opportunity to upload content relating to a particular regional area or interest. For example, anyone can upload photos to the Flickr website and label or 'tag' them with a particular region, e.g. Pembrokeshire, Snowdonia or Cardiffbay (tags have to be one word).

Another website which allows a large group of users to contribute online content is Wikipedia, versions of which exist in many different languages including most of the indigenous languages spoken in the UK. The numbers of articles on Wikipedia in these languages, as well as the number of contributors to each linguistic version, are shown in Figure 3.4. More Wikipedia articles are written in Welsh than in any UK indigenous language other than English. As of January 2008, there were around 16,000 Wikipedia articles written in Welsh, two and half times as many as were written in Irish.

Figure 3.4 Indigenous languages Wikipedia articles and contributors, Jan 2008



Source: Wikipedia

Note: English is not shown as the high numbers make it impossible to show on the same scale as other indigenous languages.

Consumption

This section begins by looking at the types of communications services that are purchased and consumed together in 'bundles'. We will then review how consumption of selected converged services varies by region. The services covered are:

- those delivered over the internet, including voice calls, audio and audiovisual content;
- those delivered to the mobile handset, including data in the form of web pages, audio and audiovisual content; and
- social networking sites, which can be accessed via several distribution networks including internet and 2G and 3G mobile technologies.

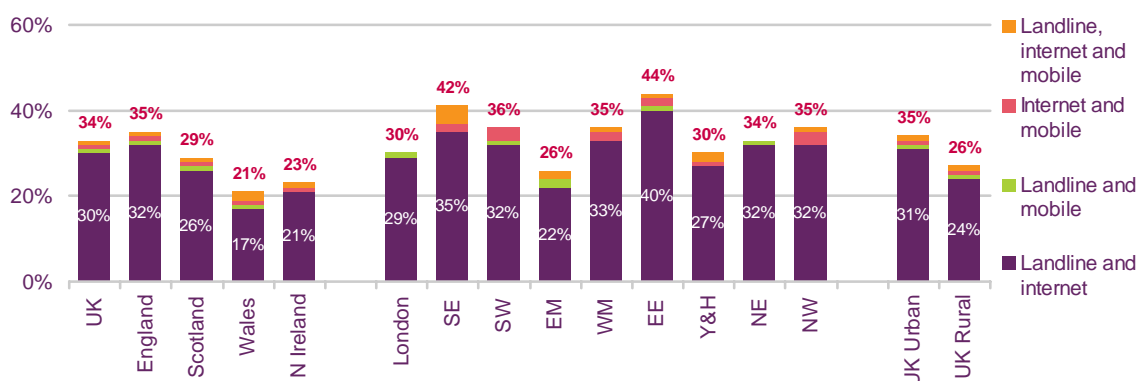
Communications service bundles

Convergent technologies allow delivery of multiple content types over multiple networks. Many operators are seeking to exploit this by expanding into adjacent markets and offering 'bundles' of communications services.

Purchasing bundles of communications services

Just over one in five (21%) adults in Wales have purchased service bundles, substantially lower than the UK average (34%) and than levels in both England and Scotland.

Figure 3.5 Bundling of telecoms services



Source: Ofcom. Base: Adults aged 15+

* Sample size less than 100. Apply caution and treat as indicative only.

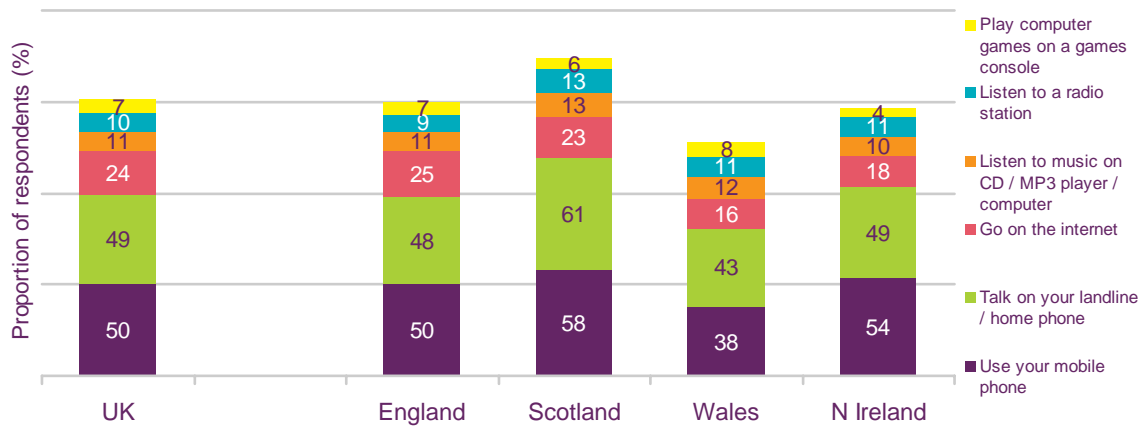
Across Wales, bundling of services appear to be more common in the larger urban areas of South Wales – Cardiff, Newport and Swansea – but overall there is little difference between urban and rural areas.

Media stacking

With the increasing range and ubiquity of communications services, multiple media can be used concurrently. This is often termed 'media stacking', and is a widespread phenomenon among UK adults, as indicated by Figures 3.6 and 3.7.

The most popular activity to combine with watching TV is talking on the phone, either a mobile phone or a landline. However, a lower proportion of adults in Wales talk on the phone while watching TV than in the other nations.

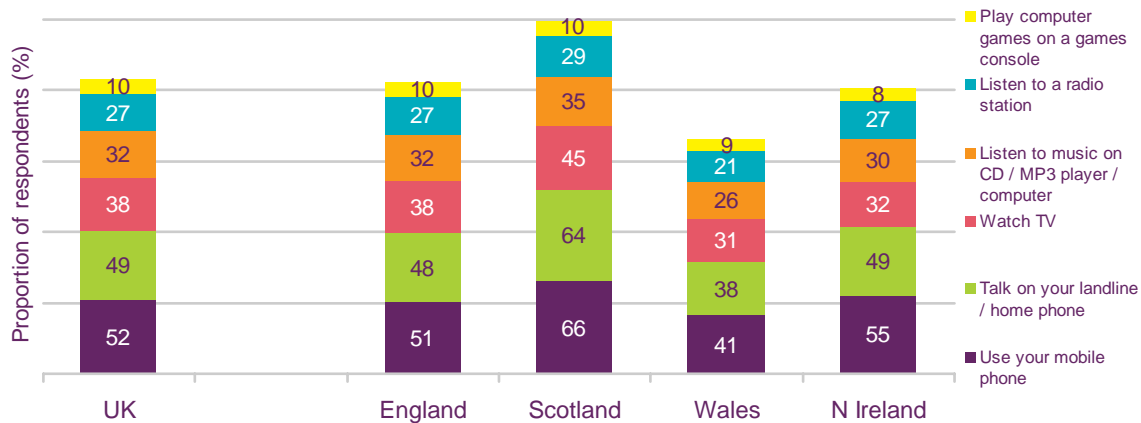
Figure 3.6 Use of other media while watching TV



Source: Ofcom

Similar trends can be seen in the use of other media while using the internet, with roughly two-fifths of adults in Wales saying that they have talked on a mobile phone or landline while using the internet. This is a lower proportion than for the other nations, Scotland in particular.

Figure 3.7 Use of other media while using the internet



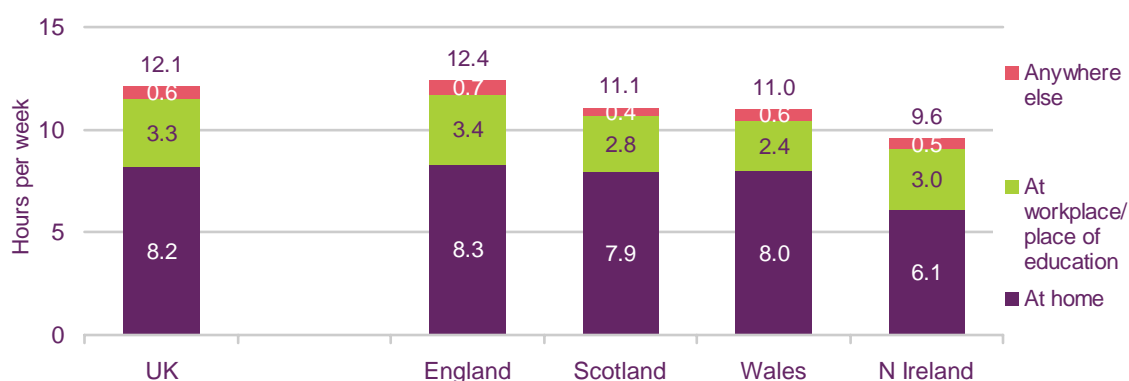
Source: Ofcom. Base: All adults with internet.

Internet

Consumers can make phone calls, listen to the radio, and watch video over the internet. This section looks at time spent and activities carried out on the internet, before looking at the consumption of voice, audio and audiovisual content.

According to self-reported estimates, the average time spent online by an adult in Wales who uses the internet is 11.0 hours a week, with over two-thirds of this time spent online at home. These figures are broadly in line with those in Scotland, although lower than those in England.

Figure 3.8 Time spent online

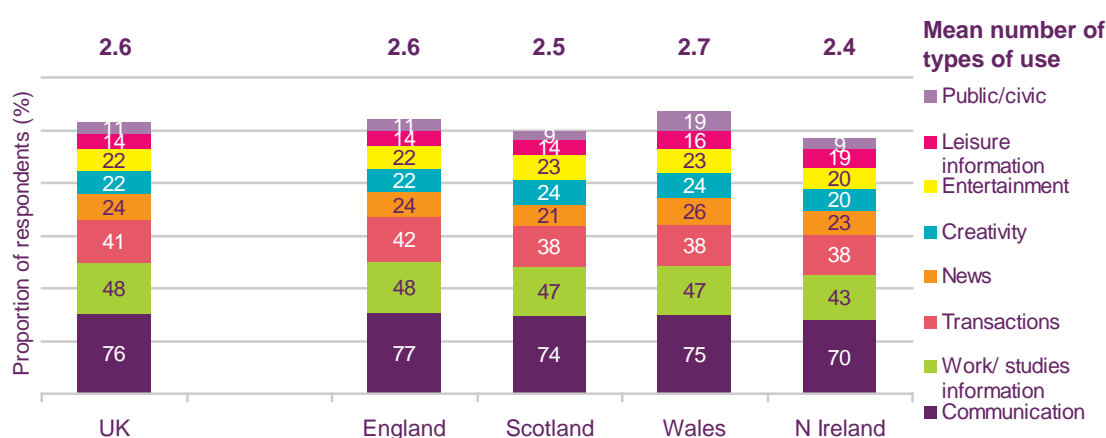


Source: Ofcom

Across all the UK nations, the internet is most commonly used for communication: for example, in the form of email, instant messaging or chat rooms, with 75% of adults in Wales saying they use it for this reason. Across the UK, consumers use the internet for a variety of purposes, as shown in Figure 3.9.

A greater proportion of adults in Wales than in the other nations say they use the internet for public or civic purposes¹³.

Figure 3.9 What the internet is used for



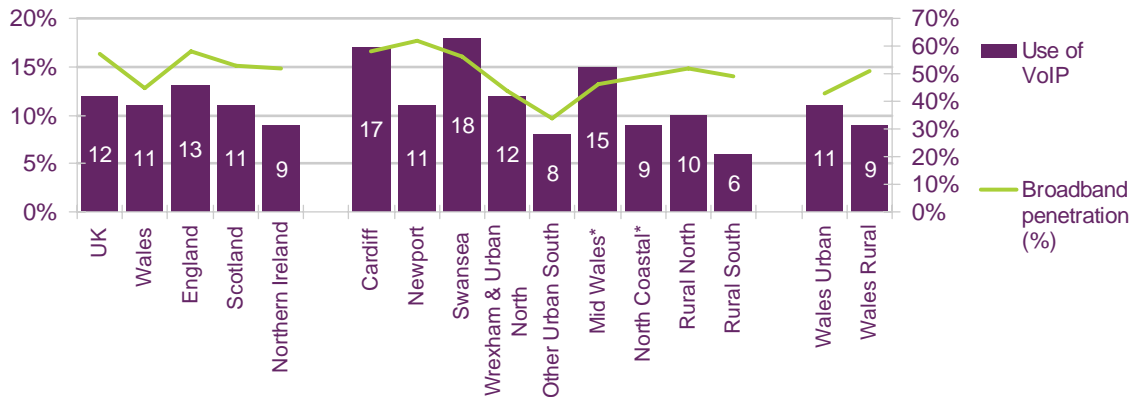
Source: Ofcom

Use of internet to make phone calls (VoIP)

Eleven per cent of adults in Wales use the internet to make telephone calls, similar to the UK average (12%). This has risen from around 7% in 2006. There are indications that use is higher in Cardiff and Swansea, and lower in rural areas – age is probably a factor, as urban dwellers tend to be younger. Unsurprisingly, use of VoIP correlates with broadband penetration.

¹³ This means finding out about public services or looking at political/ campaign/ issues websites.

Figure 3.10 Proportion of adults living in a household that has used Voice over IP



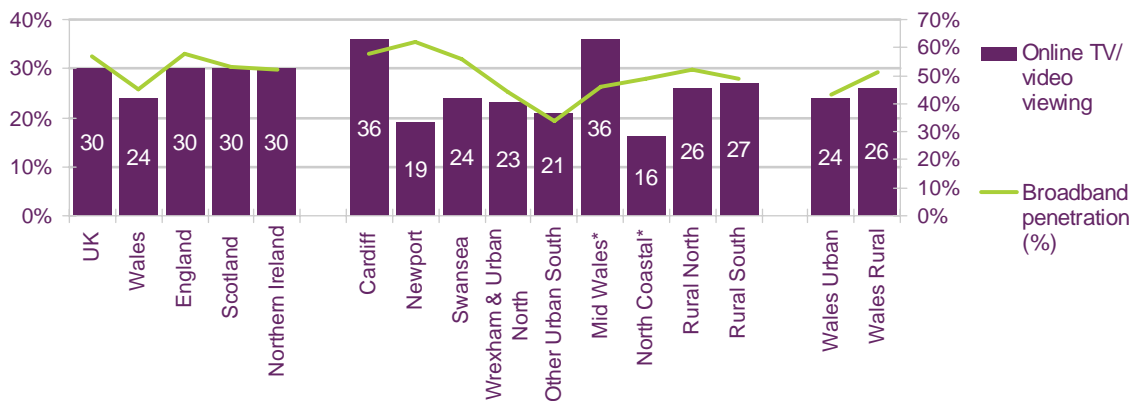
Source: Ofcom. Base: Adults aged 15+

* Sample size less than 100. Apply caution and treat as indicative only.

Use of internet to watch television and video content

Around a quarter (24%) had used the internet to watch TV or video content in Wales, compared with 30% in the UK (and each of the other three nations). Higher use was apparent in Cardiff, and possibly also in Mid Wales (though note the small sample size). Use appears to correlate with broadband penetration.

Figure 3.11 Proportion of adults living in a household that has used the internet to watch TV or video content



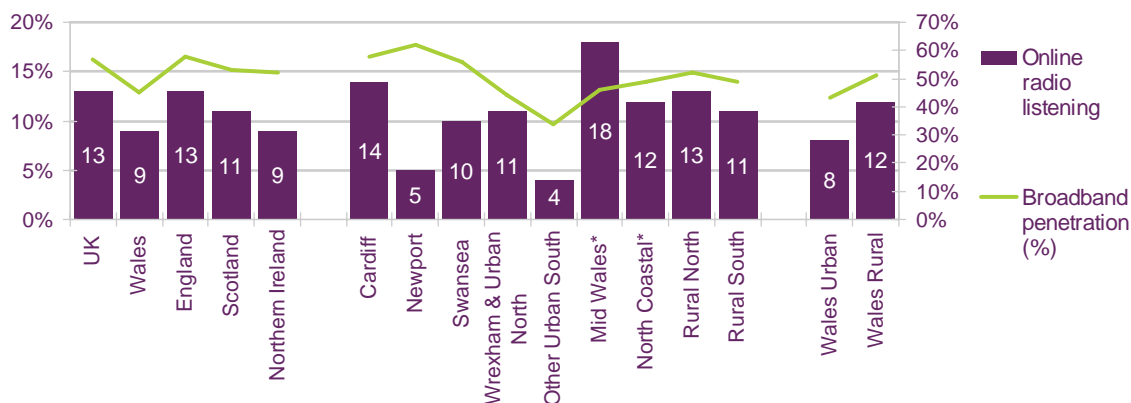
Source: Ofcom. Base: Adults aged 15+

* Sample size less than 100. Apply caution and treat as indicative only.

Use of internet to listen to the radio

Under one in ten (9%) adults in Wales have used the internet to listen to the radio, lower again than the UK average (13%). Use was higher in England, with similar levels in Wales, Scotland and Northern Ireland.

Figure 3.12 Proportion of adults living in a household that has used the internet to listen to radio



Source: Ofcom. Base: Adults aged 15+

* Sample size less than 100. Apply caution and treat as indicative only.

Use was higher in rural areas, despite the older age profile. It was also high in Cardiff and Mid Wales (although caution should be applied to the latter finding, due to a small sample size).

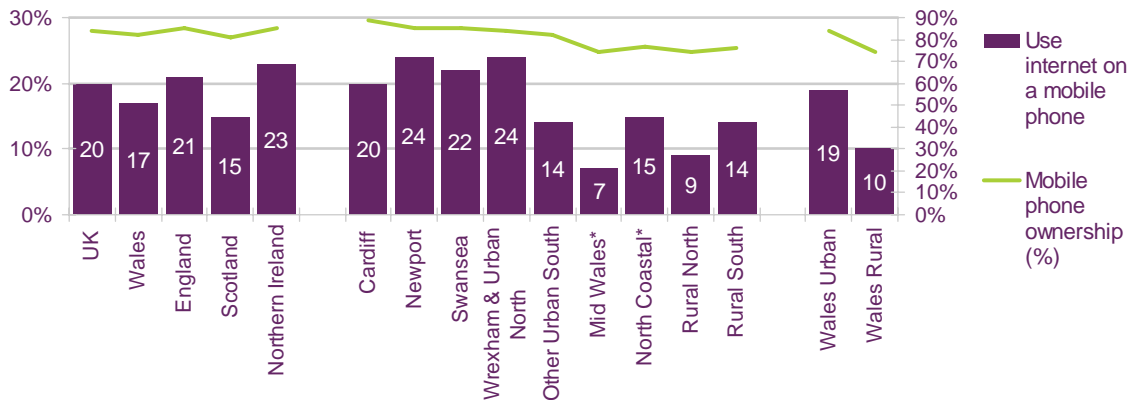
Mobile phone

The core 2G and 3G mobile phone technologies are able to carry voice, data and audiovisual content. In addition, the mobile handset can incorporate many more functions such as the ability to play music and games, and technologies such as Wifi, Bluetooth and GPS. This section looks at the proportion of adults who use their mobile phone to access the internet, watch video and listen to audio content.

Use of a mobile phone to access the internet

The proportion of adults who have accessed the internet using a mobile phone was lower in Wales (17%) than in the rest of the UK (20%). Use was highest in Northern Ireland.

Figure 3.13 Proportion of adults who have used a mobile phone to access the internet



Source: Ofcom. Base: Adults aged 15+

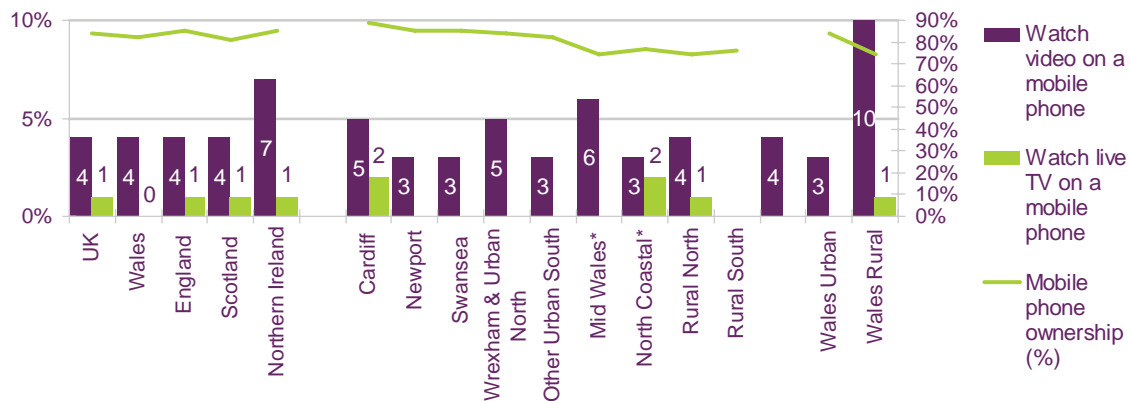
* Sample size less than 100. Apply caution and treat as indicative only.

Use was strongly differentiated by area, with all urban areas (except the smaller southern towns) showing high levels of use, with the lowest being in Mid Wales (7%) and the rural north (9%).

Use of a mobile phone to watch audiovisual content

Across Wales, only a very small proportion had used their mobile for watching audiovisual content – 4%, the same as the UK as a whole. There appear to be no significant differences between the Welsh areas.

Figure 3.14 Proportion of adults that have used a mobile phone to watch audiovisual content



Source: Ofcom. Base: Adults aged 15+

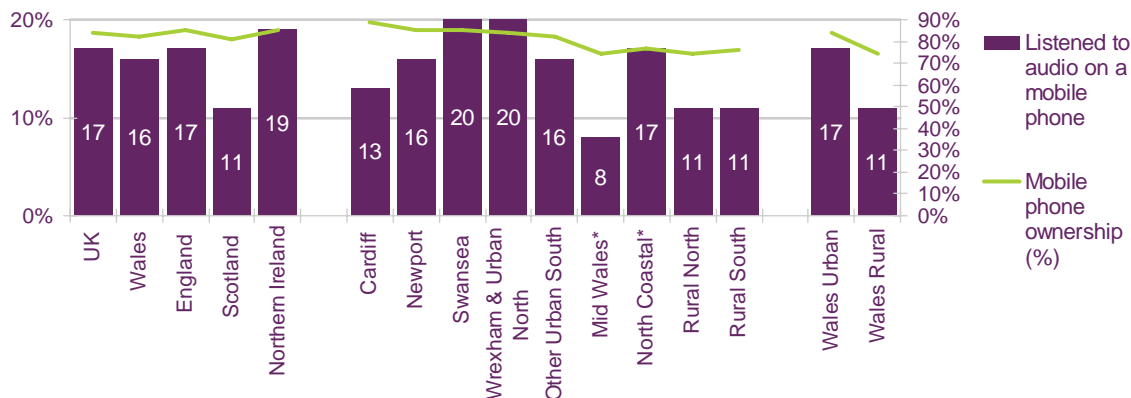
* Sample size less than 100. Apply caution and treat as indicative only.

Use of a mobile phone to listen to audio

One in six adults (16%) in Wales said that they had used their mobile phone handset to listen to audio content, such as radio, pre-recorded digitally stored music and podcasts –

approximately the same incidence as the UK overall. There is a big difference between urban and rural areas, at 17% and 11% respectively.

Figure 3.15 Proportion of adults who have used a mobile phone to listen to audio content



Source: Ofcom research, 2008. Base: Adults aged 15+

* Sample size less than 100. Apply caution and treat as indicative only.

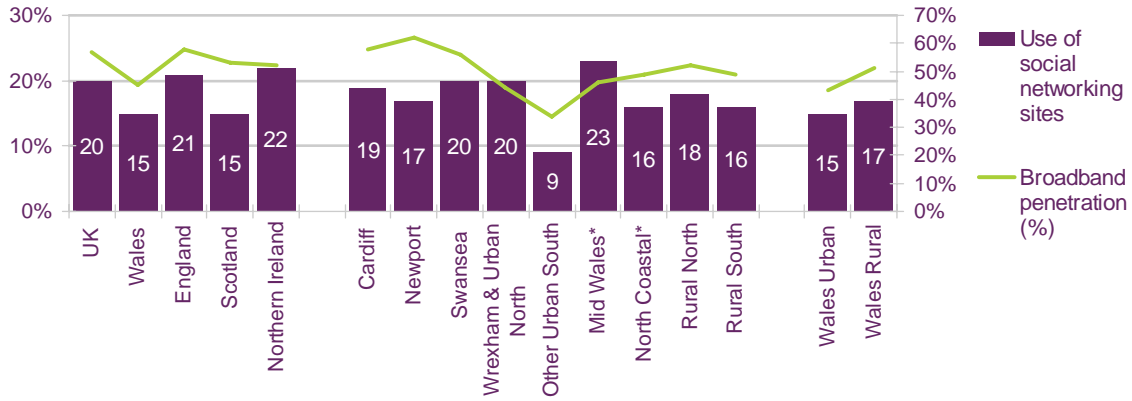
Social networking sites

'Social networking sites' are websites on which users can create their own profiles using text, graphics and photos, join groups of people with common interests and send messages to other site members.

Despite the media coverage that these sites attract, this remains for now a minority activity among adults. Levels of use are lower in Wales than in the rest of the UK – 15% and 20% respectively, which broadly matches the difference in broadband take-up.

Across Wales, levels of use of social networking sites were fairly consistent, the exception being the smaller southern towns, where use was lowest, at 9%.

Figure 3.16 Proportion of adults in a household that has used social networking sites

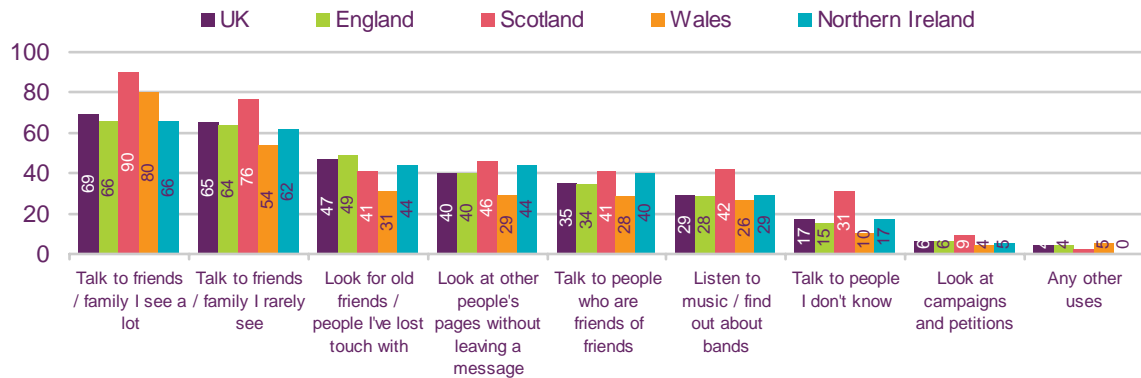


Source: Ofcom. Base: Adults aged 15+

* Sample size less than 100. Apply caution and treat as indicative only.

Adults in Wales with a page or profile on a social networking site were most likely to use the sites to talk to friends and family that they see a lot. Only 10% of profile owners in Wales used social networking sites to talk to people they don't know.

Figure 3.17 What social networking websites are used for



Source: Ofcom

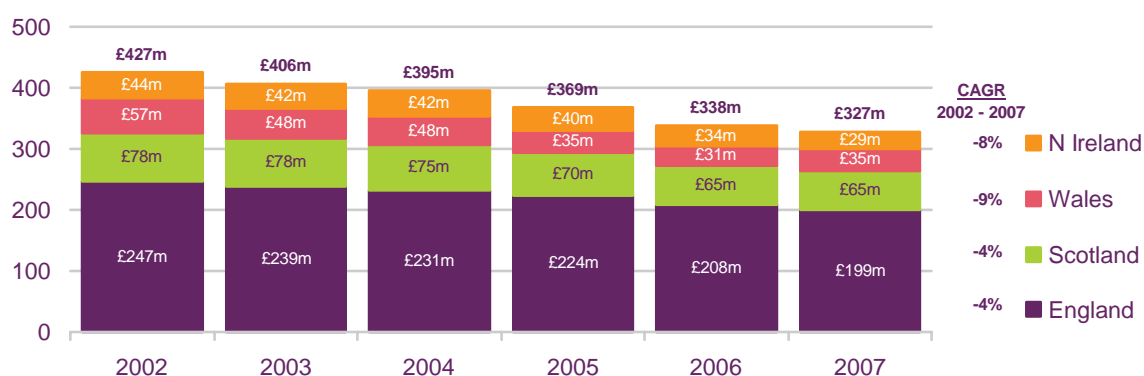
3.3 Television

PSB spend on originated output for the nations and English regions

In 2007 ITV1 Wales and the BBC spent a total of £35m on originated hours of output for viewers in Wales. This accounted for 11% of their UK-wide spend on national and regional output, while Wales' 3 million residents make up 5% of the total UK population. 20% of the UK-wide figure was spent on output for viewers in Scotland while 9% went on output for Northern Ireland. Spend on output for English viewers accounted for the remaining 61%.

In Wales, the £35m represented a real-terms increase of 13% on 2006, compared to the UK-wide *reduction* of 3%. It was driven by the BBC's increased spend on non-news/ and non-current affairs output, and by ITV1's rising spend on news and non news/current affairs output for viewers in Wales.

Figure 3.18 Total spend on nations and regions output by the BBC, ITV/stv/UTV

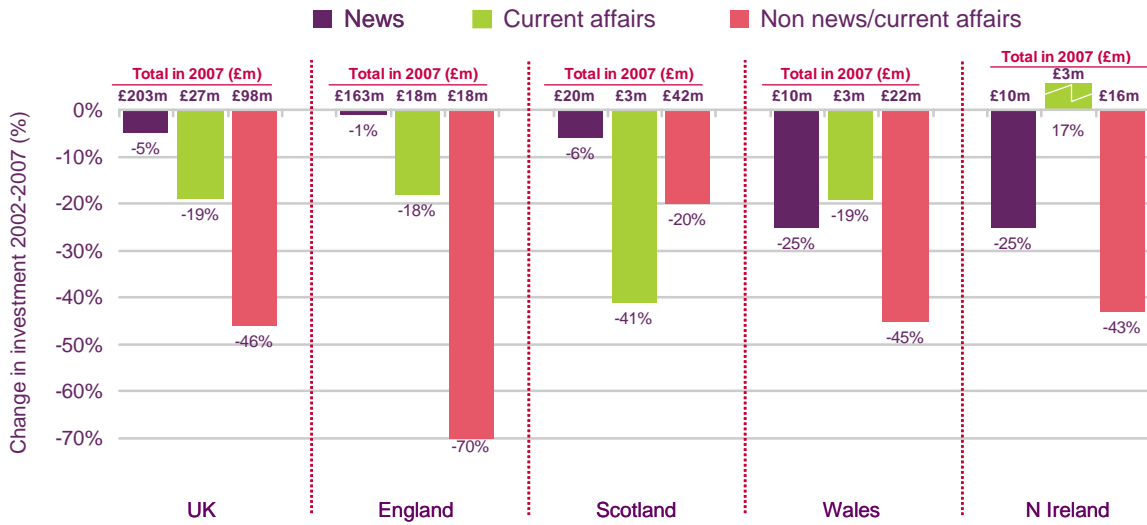


Source: Broadcasters. All figures expressed in 2007 prices.

Note: Figures do not include programme spend by S4C or by the BBC on programmes in the Welsh language. The BBC changed the way it calculated spend from 2005 onwards; the figures for 2002 – 2004 are based on cost per hour averages, while those for 2005 - 2007 are actual spend figures.

In spite of the increase between 2006 and 2007, a five-year time series analysis reveals that, since 2002, spend by the BBC and ITV1 on originated output for viewers in Wales has fallen from £57m to £35m. Spend on originated non-news/non-current affairs output fell by 45% (or £18m) in real terms, compared to a UK-wide reduction of 46%. Reduced spend on current affairs in Wales also tracked the UK average, with a fall of 19% (or £1m) over the same period. By contrast, spend on news fell by 25% (or £3m), significantly outstripping the UK-wide average reduction of 5% - along with Northern Ireland, this was the highest proportional reduction in spend on news among the four nations.

Figure 3.19 Change in spend by genre and nation by the BBC, ITV1/stv/UTV 2002 - 2007

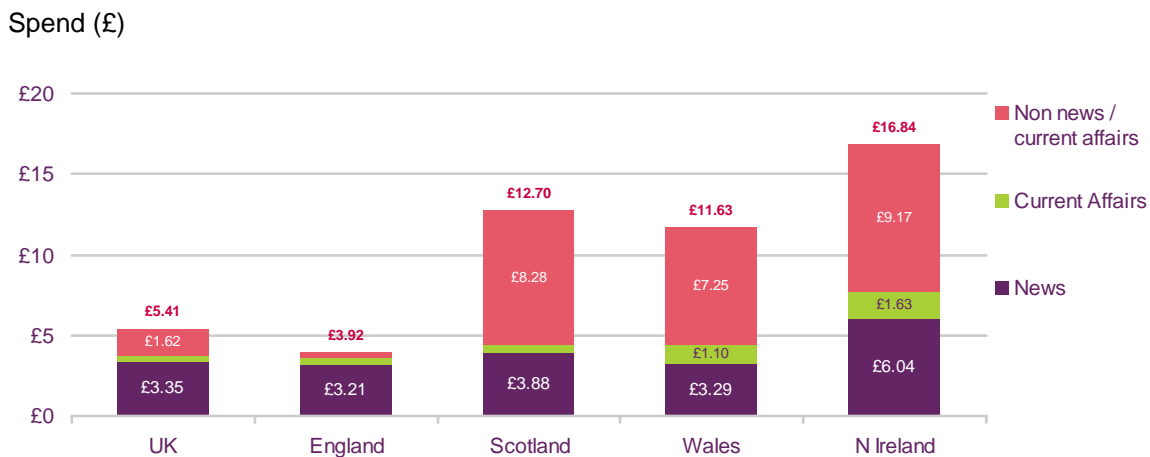


Source: Broadcasters and Ofcom calculations. All changes are expressed in real terms.

Note: The BBC changed the way it calculated spend figures from 2005 onwards. The figures for 2002 – 2004 are based on cost per hour averages, while those for 2005 - 2007 are actual spend figures. Comparisons over this time period should therefore be treated with caution.

On a per-capita basis, UK-wide spend stood at £5.41 in 2007, down 3% in real terms since 2006. The equivalent figure for Wales (£11.63) rose by 13% (£1.36) over the same period, consistent with the year-on-year increase in total spend in Wales. Along with Scotland and Northern Ireland, viewers in Wales benefited from an above-average level of spend on non-news/non-current affairs content, at £7.25 per head of population (the UK-wide figure was just £1.62) – and this was up by 19% (£1.15) on 2006. Spend on news for viewers in Wales in 2007 ran slightly behind the UK average at £3.29 (versus £3.35 for the UK as a whole and £6.04 in Northern Ireland, where spend per head on news was at its highest).

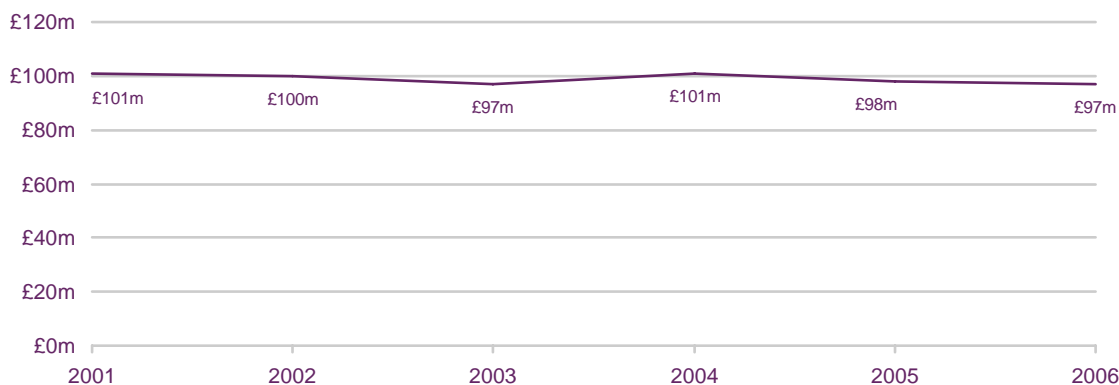
Figure 3.20 Spend on nations and regions' output by the BBC, ITV1/stv/UTV, 2007



Source: Broadcasters and Ofcom calculations, 2007 prices

In addition to the English language nations and regions' programming from the BBC and ITV1 Wales, S4C offers a schedule of Welsh language output. In 2006 S4C benefited from a DCMS grant of £91m, up from £81m in 2001. Revenue from the sale of airtime, programme rights, sponsorship, merchandising and the leasing of digital multiplex capacity contributed a further £6m (2005: £9m).

Figure 3.21 S4C total income

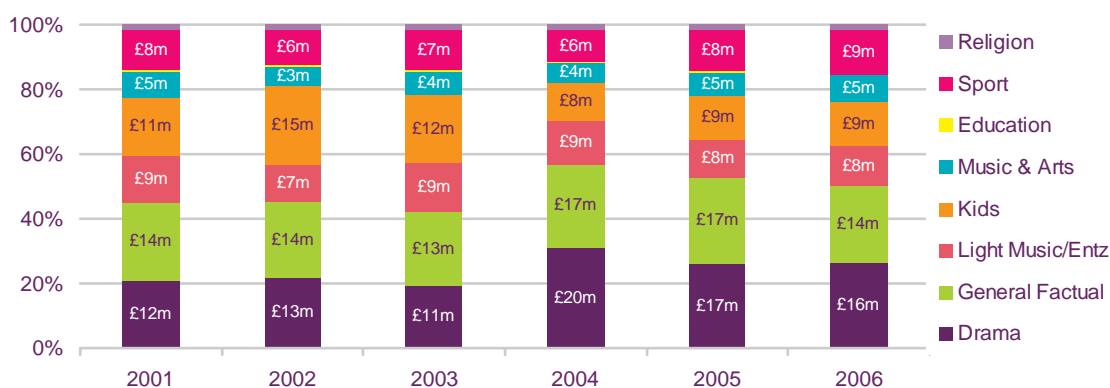


Source: S4C Statement of Accounts

In 2006 S4C spent £69m on commissioning and acquiring Welsh language programmes (2005: £71m); this accounted for £23 per head.¹⁴ Of this, £16m was spent on drama, £14m on general factual programming, £9m on each of children's programming and sport, £8m on light music/entertainment and £5m on music and arts programming. The most significant changes in spending patterns between 2001 and 2006 were a £4m increase in spend on drama and a £2m decrease in spend on children's programming.

Figure 3.22 S4C's spend on Welsh language programmes, by genre

Total investment (£m)



Source: S4C Statement of Accounts

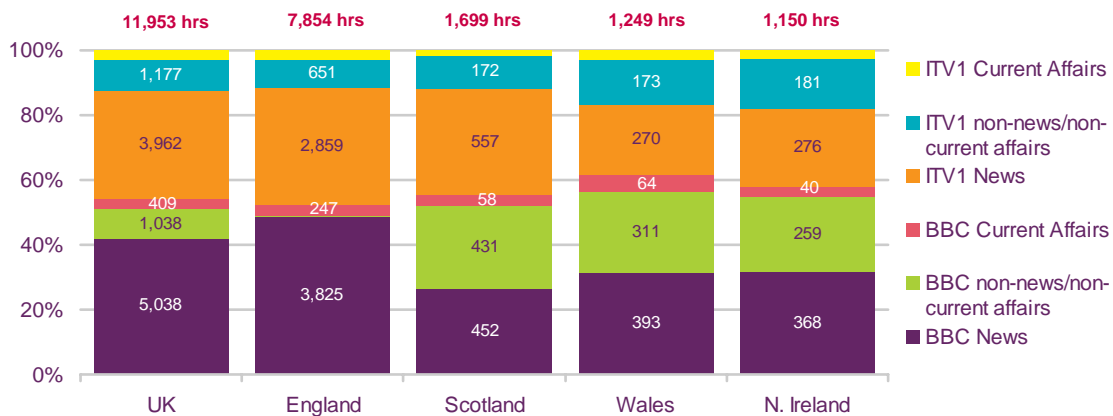
¹⁴ The remaining amount went on various costs such as programme transmission and distribution, operational and administrative expenses, audience research, playout costs relating to advertisements, operational costs for teletext and subtitling services, etc.

Programme output

Across the UK, ITV1 and the BBC broadcast 11,953 hours of originated nations or regions' output in 2007, a figure that was almost unchanged on 2006. Ten per cent or 1,249 of these hours were broadcast in Wales, down 59 hours or 5% on 2006. News output in Wales accounted for 53% of the total – ITV1 broadcast 270 hours during 2007, while the BBC contributed a further 393 hours. Non-news/non-current affairs output accounted for a further 484 hours, or 39%, of the total of originated output in 2007.

Figure 3.23 Hours of nations and regions' output, by genre and broadcaster, 2007

Proportion of output (%)

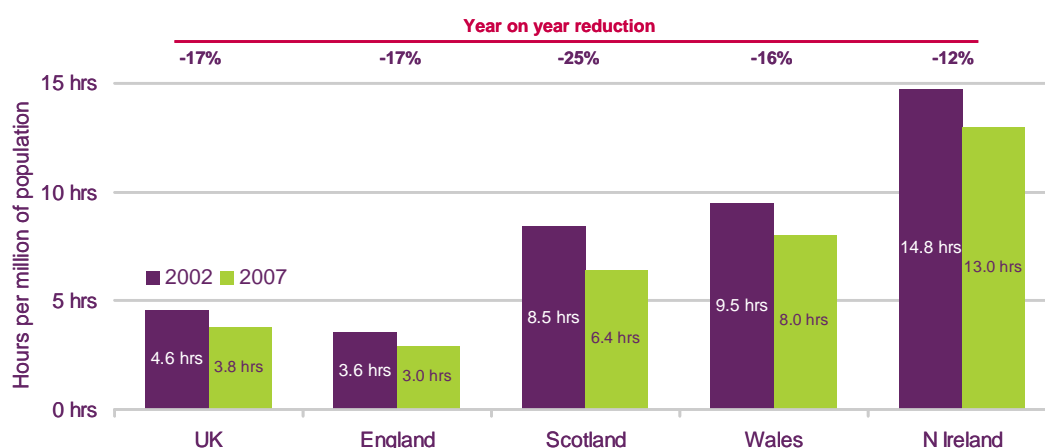


Source: Broadcasters

Per million, hours of output for viewers in Wales fell by 16% between 2003 and 2007

Taking account of population size, ITV1 Wales and the BBC broadcast 8.0 hours of nations and regions' output per million of population in Wales during 2007. The equivalent figure in England was 3.0 hours, in Scotland 6.4 and in Northern Ireland 13.0 hours. Output for viewers in Wales fell by 1.5 hours, or 16%, between 2002 and 2007, while Scotland experienced a reduction of 2 hours (24%), Northern Ireland 1.8 hours (12%) and England 0.6 hours (17%) (Figure 3.24).

Figure 3.24 Total hours of nations and regions output



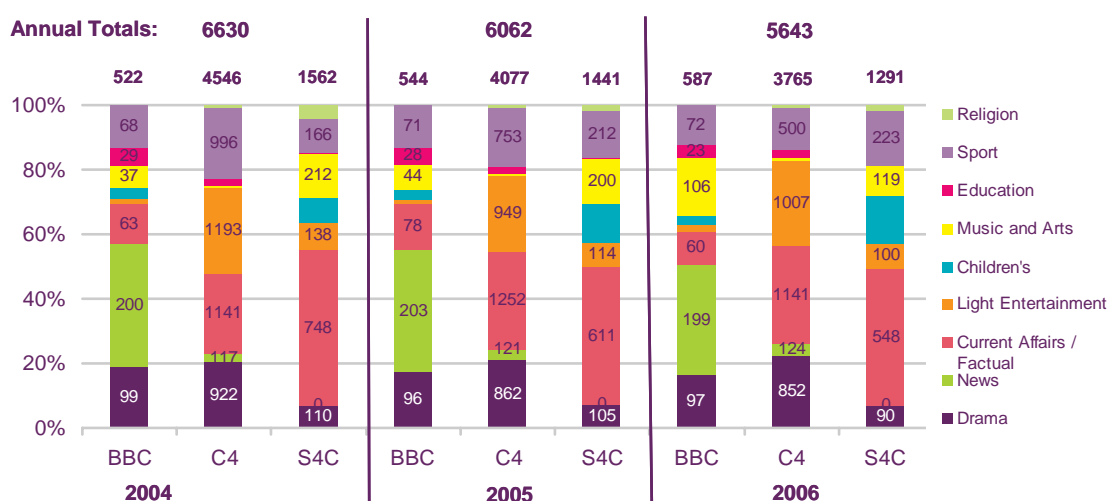
Source: Broadcasters and Ofcom calculations

In 2006, S4C transmitted a total of 10,479 hours of output (2005: 10,608). Of this, 5,768 hours were first-run originations. Of these, 2,003 hours were in the Welsh language - 587 hours from the BBC, 1,291 hours commissioned and 125 hours acquired by the S4C. This comprised 33% of its total output. The remaining two-thirds of first-run hours were in English and came from Channel 4 (3,765 hours).

By genre, Figure 3.25 reveals that the BBC was the largest contributor of news, providing roughly 200 hours (driven partly by its weekday 30-minute news bulletin), while Channel 4 provided the most current affairs/factual programming (1,141 hours) and light entertainment (1,007 hours). S4C commissioned a substantial amount of factual programming (584 hours).

Figure 3.25 Hours of first-run output by genre

Hours



Source: S4C Statement of Accounts

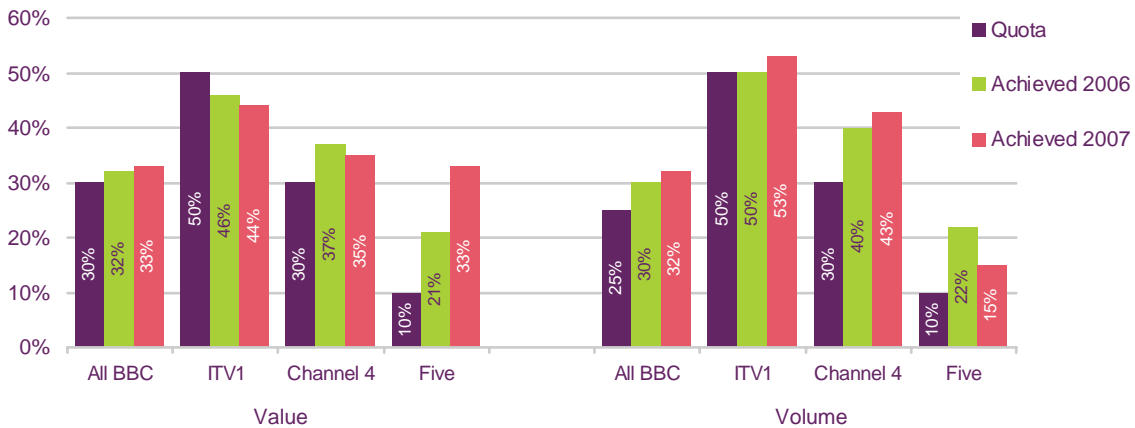
Note: The hours for S4C include those commissioned for the digital service plus the simultaneous transmission of the analogue service. There were 125 hours of acquired Welsh language content that is not included in this chart for 2006, 115 hours in 2005 and 120 in 2004, because S4C does not break down these hours by genre. Note that the Channel 4 hours are all in English.

Out-of-London production quotas

In terms of network production in the nations and regions the Communications Act introduced a requirement for Ofcom to ensure that a suitable proportion and range of programmes are made outside the M25 and that a suitable proportion of money is spent in a range of production centres. The requirement applies across all PSBs (apart from S4C) and is represented in the form of volume and value quotas for out-of-London network production. In order to qualify against the out-of-London quota, programmes should comply with Ofcom's Regional Production Definition. This establishes three criteria: having a production base, and achieving minimum spending levels for production budget and for production talent, in the nation or region concerned. Programmes must meet at least two of the criteria to qualify.

Figure 3.26 Performance against the Out-of-London production quotas

Percentage of network production produced outside London, by value and by volume



Source: Broadcaster returns¹⁵

Note: Figures for 2006 have been restated following Ofcom's audit of out-of-London production (see below)

The out-of-London quotas apply by value and by volume. The BBC, Channel 4 and five each met their value and volume quotas in 2007. While ITV1 met its 50% volume quota, achieving 53%, the proportion of ITV1 spend outside London in 2007 was 44% - significantly below the 50% minimum and therefore ITV1 failed to meet the value element of its out-of-London production quota in 2007.

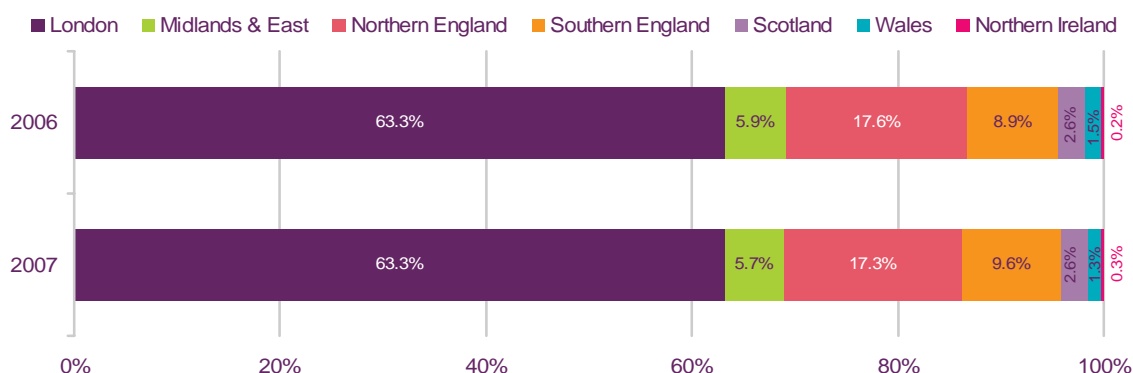
Ofcom believes it is important that broadcasters meet the minimum requirements set out in their licences (or in the case of the BBC their service licences). ITV's failure to meet the value element of its out-of-London quota is a serious matter, and one which is the subject of further consideration by Ofcom with a view to regulatory action.

The percentages shown in Figure 3.27 take account of changes made as a result of Ofcom's audit of out-of-London production (see below) and include restated figures for 2006. The post-audit data shows that ITV1 also failed to meet the quota by value in 2006, achieving a level of 46%.

¹⁵ These figures reflect data provided to Ofcom by the PSBs as at 2 May 2008 and may be subject to further minor amendments.

Figure 3.27 Expenditure on out-of-London production

Percentage of production by value

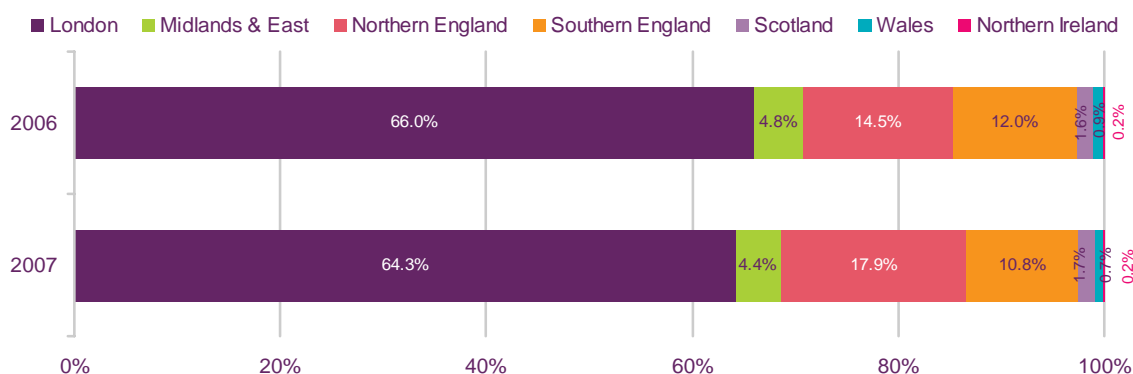


Source: Broadcaster returns¹

Note: Figures for 2006 have been restated

Figure 3.28 Volume of out-of-London production

Percentage of production by volume

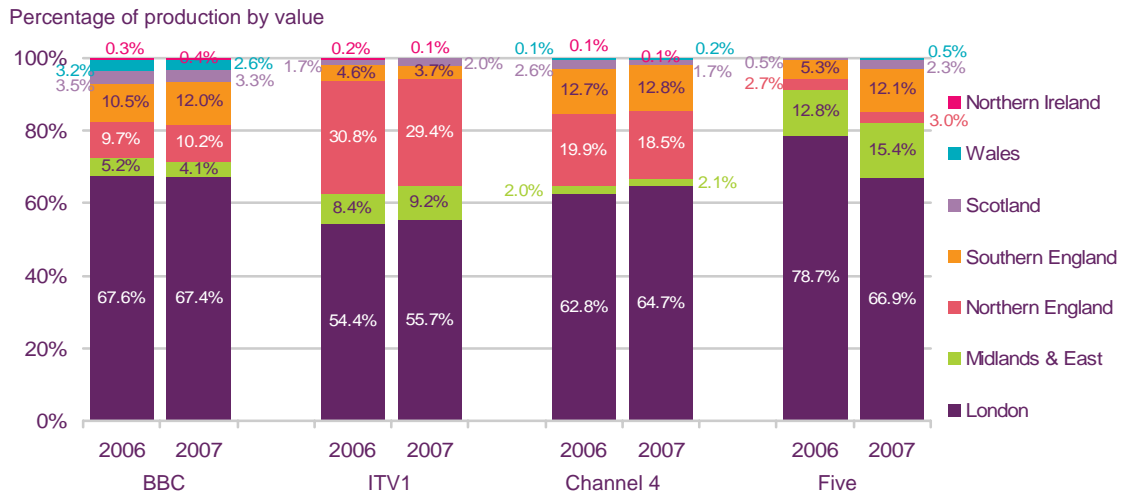


Source: Broadcaster returns¹

Note: Figures for 2006 have been restated

Across all of the PSBs out-of-London production and spend are concentrated in the English regions, with low levels of network production and spend in the three devolved nations. The impact of Ofcom's audit of TV production, in correcting the figures, was felt more strongly in Wales than in Scotland or Northern Ireland. The level achieved in 2006 reduced from 2.5% to 1.5% by value and 1.4% to 0.9% by volume. Changes were made because some programmes produced in the English regions had been mistakenly attributed to Wales. The level of network spend from Wales in 2007 remains low at 1.3% by value and 0.7% by volume and is a matter of concern. Ofcom will consider this issue further in the second phase of its PSB review, to be published in the autumn.

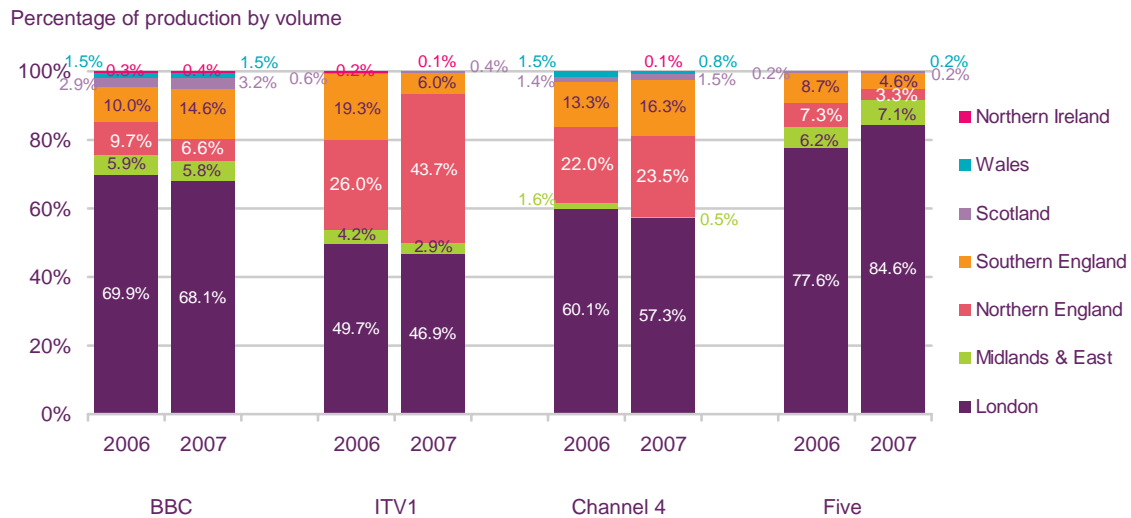
Figure 3.29 Breakdown of expenditure on production by broadcaster



Source: Broadcaster returns¹

Note: Figures for 2006 have been restated

Figure 3.30 Breakdown of production volume, by broadcaster



Source: Broadcaster returns¹

Note: Figures for 2006 have been restated

Ofcom audit of the out-of-London quotas

Pact and the Scottish Broadcasting Commission have each raised queries recently about some BBC programmes that appear to be labelled on-screen as nations and regions productions. On investigation by Ofcom, it was apparent that these programmes had not been reported to Ofcom as qualifying against the out-of-London production quota, despite their misleading on-screen credits.

However, recognising the importance of this issue, Ofcom decided to carry out a full audit of those programmes returned by the broadcasters as qualifying against the out-of-London quotas in 2006 and 2007. We identified those programmes returned against the quota that we believed merited further investigation and asked the broadcasters to provide evidence to show the basis on which each one had qualified as an out-of-London production. Broadcasters also carried out their own reviews to check that all programmes had been correctly allocated.

On reviewing responses and evidence from the BBC and Channel 4, we found a small number of programmes that were wrongly returned against the out-of-London quotas. These changes resulted in relatively modest adjustments to the percentages achieved and the data presented in this section reflects those adjustments, including restated figures for 2006. There were no errors found in the data received from five.

In ITV's case, the number of programme amendments was more significant and ITV1 failed to meet the quota by value in 2006, as well as in 2007, as noted above. In addition, an issue arose over the methodology ITV1 used in calculating the quota figures. This concerned ITV's *Nightscreen* output – a text based service shown in the late night hours. This had been excluded from the total amount of originated programming for the purposes of calculation of the out-of-London quota percentage, on the basis that it is not a television programme, but simply a rolling teletext service. Ofcom's view is that this output cannot be excluded from the out-of-London production quota calculations and therefore the level of production by volume in 2006 and 2007 is several percentage points lower than would otherwise have been the case. The quota by value is not affected by this change in methodology.

Ofcom plans to assess whether and what further data might need to be sought from the broadcasters in relation to compliance with the out-of-London production quotas.

Digital TV penetration

DTV take-up is slowing down in Wales

In 2008 digital television (DTV) penetration stood at 84% in Wales. Historically, take-up in Wales has run ahead of the UK average, possibly explained by poor analogue television reception in parts of the country and the availability of the full Channel 4 service on digital television platforms. But DTV growth in Wales has slowed recently with take-up rising 2 percentage points (pp) between 2006 and 2008, compared to an average UK increase of 10pp over the same period.

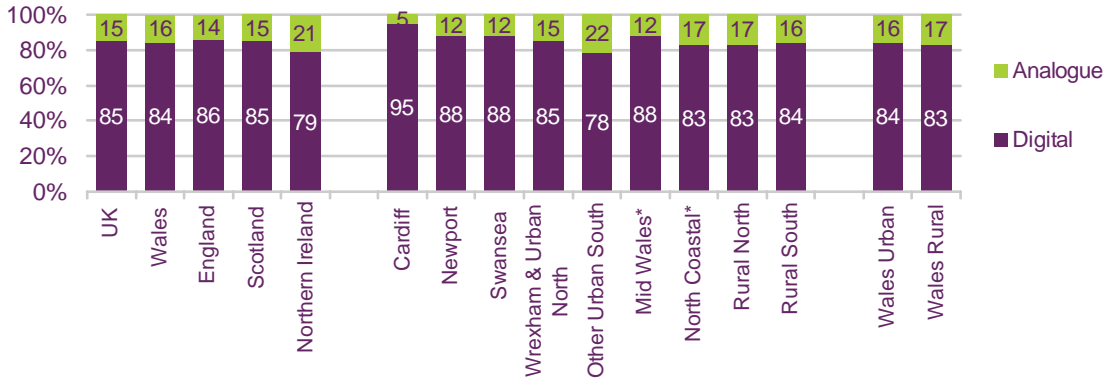
In comparison to other nations, Wales DTV penetration fell slightly behind England (86%) and Scotland (85%), but remained ahead of Northern Ireland (79%). Within Wales, the areas with the highest levels of take-up were Cardiff (95%), Newport (88%) and Swansea (88%), while take-up in other areas in the urban south region was below 80%. Overall, there was little difference in take-up between urban and rural areas.

Please note that the penetration figures for the Mid Wales and North Coastal regions should be treated with caution as the base sizes were relatively small, below 100 respondents. These data were collected by Ofcom's survey for this report¹⁶ and therefore are subject to error margins, explaining slight inconsistencies between these figures and those of the Ofcom/Digital UK joint tracker.

¹⁶ Further detail about the survey can be found at the beginning of the Comparative Analysis section and in Annex 1.

Figure 3.31 Individuals' take-up of digital television at home, 2008

Proportion of individuals with a television (%)



Source: Ofcom

*Base size less than 100. Apply caution.

Over half of all homes in Wales (52%) paid for their television services in 2007 – 3 pp higher than the UK average (49%). Of these, 79% received satellite and 15% cable. Proportionally, this made paying television customers in Wales the largest adopter of satellite services in the UK – possibly because Wales has the lowest levels of cable and DTT availability in the UK.¹⁷

Television consumption

During 2007, people in Wales spent 8% less time watching television than people in the rest of the UK, at 3.3 hours per day, compared to 3.6 hours. Average viewing levels have also fallen faster in Wales than in the rest of the UK, contracting by nearly 6% since 2003, compared to a UK-wide fall of 3%.

The proportion of the population that watched at least 15 consecutive minutes of television in any one week in Wales during 2007 also ran slightly below the UK average – 92% versus 93%. And television reach in Wales fell by 2.1pp since 2003, ahead of the UK average reduction of 1.4pp.

The five PSB channels attracted the lowest share of viewing in Wales

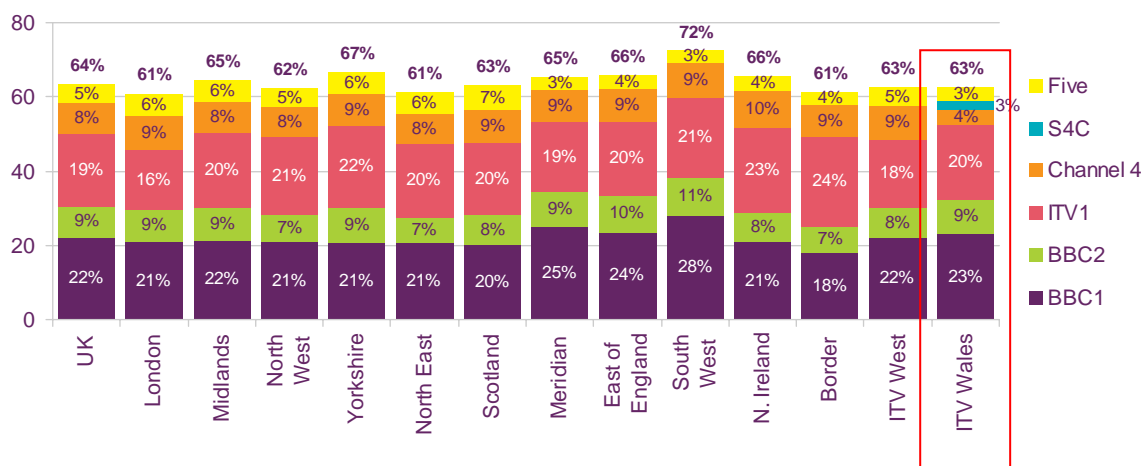
The five PSB channels held a 59% viewing share in Wales in 2007, lower than any other nation, and 5pp below the UK average (64%). This was largely because S4C attracts a lower share of viewing in Wales, relative to Channel 4 in the UK as a whole; and because five is less popular in Wales (possible due to reception issues, as fewer people in Wales can receive five than the other terrestrial channels). Adding viewing to the full Channel 4 service

¹⁷ The remaining percentages are those homes that have Freeview with free channels plus paid-for top-up channels.

to the total takes the six PSBs' channel share figure to 63%. BBC One attracted a 23% share of viewing, while ITV1 took 20% - largely in line with the rest of the UK. (Figure 3.32)

Figure 3.32 Share of the five PSB channels in all homes, 2007

Audience share (%)

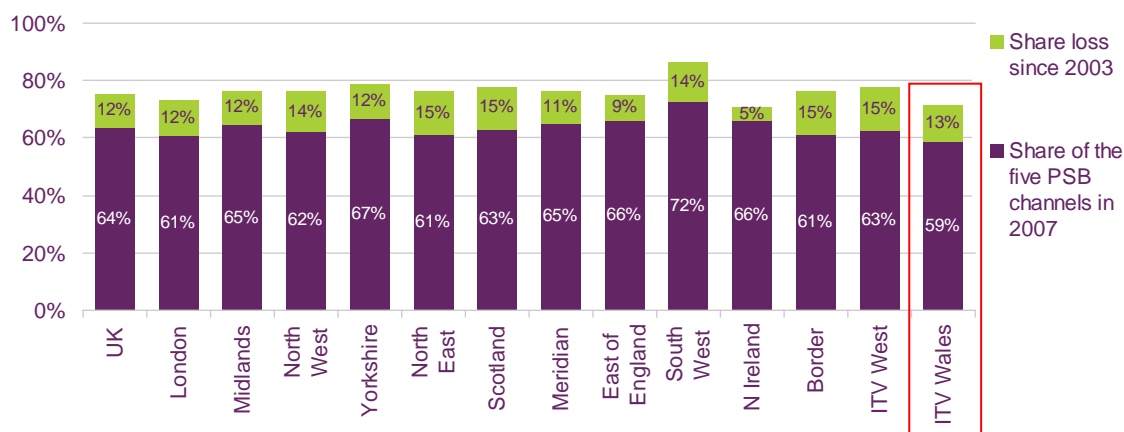


Source: BARB

Since 2003, the five PSB channels' combined share of viewing fell by 13 percentage points in all homes in Wales - this is 1 percentage point more than the UK average reduction of 12 percentage points and 8 percentage points more than Northern Ireland. It came despite the historically higher levels of DTV take-up in Wales, and points to the possibility that adoption of DTV in Wales has been driven less by the desire for more choice, and possibly more by improved reception and access to the full Channel 4 service, as highlighted in the earlier section on DTV penetration (Figure 3.33).

Figure 3.33 Reduction in share of the five PSB channels, all homes, 2003 – 2007

Audience share (%)



Source: BARB. Note that 'ITV Wales' excludes growth in the share of the full Channel 4 service

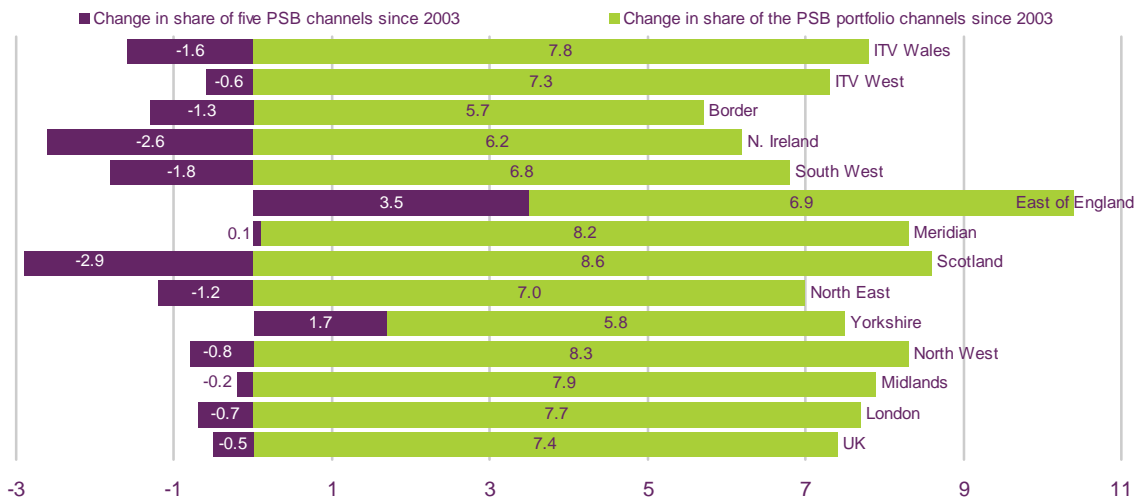
In Wales, ITV2 was the most popular digital-only channel with a share of viewing in multichannel homes of 2.6%, followed by ITV3 (2.0% share) and Sky One (1.8%). This

differed somewhat from the UK average – there, ITV2 was also the most watched multichannel in the UK with a total 2.2% viewing share, followed by E4 (total 1.8% share) and Sky Sports One (1.7%).

Portfolio channels’ increasing popularity offsets the loss of the five PSB channels

In multichannel homes in Wales, PSBs’ portfolio channels have collectively gained 7.8pp of share since 2003 (this includes all PSB channels except the five terrestrial channels). This ranks as one of the larger increases across the UK, alongside the 8.6pp increase in share in Scotland, and 8.3pp and 8.2pp respective increases in the North West and Meridian regions of England. In Wales, this more than offset the substantial 1.6pp loss in the six PSB channels’ share (i.e. including the full Channel 4 service) – the fourth largest loss in the UK after Scotland, Northern Ireland and the South West (Figure 3.34).

Figure 3.34 Net change in the audience share of the five main networks and the PSB portfolio channels, 2003-2007 – multichannel homes



Source: BARB

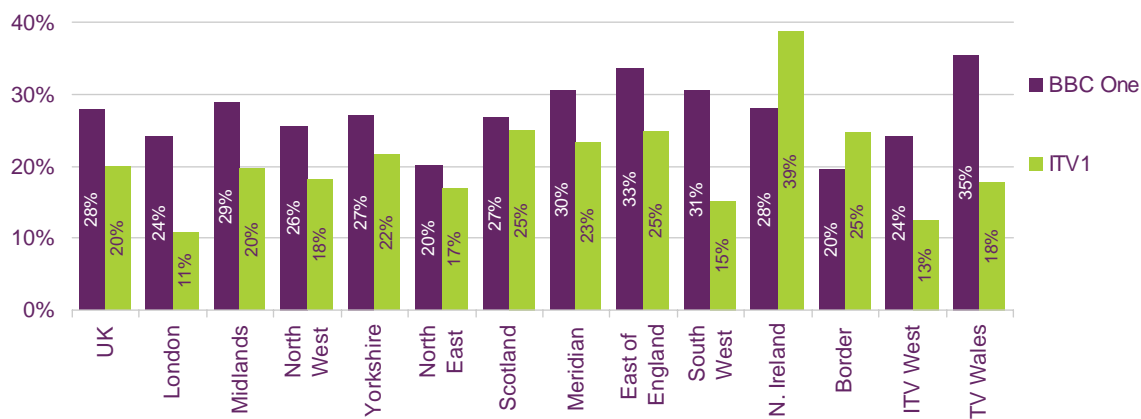
Note: In the chart, the ‘ITV Wales’ bar for PSB channels includes Channel 4 and S4C. If S4C is only included, the reduction for the five PSB channels would be -2.8pp rather than -1.6pp. Also, the term ‘PSB portfolio channels’ includes all PSB channels except for the five terrestrial channels.

Viewers in Wales rely heavily on local television news

Wales Today from BBC One Wales attracted a 35% share of viewing in 2007 (relative to the UK-wide average of 28%) – 17pp ahead of the ITV1 Wales bulletin, which took an 18% share of viewing compared to the UK-wide average of 20%.

Figure 3.35 BBC One and ITV1 early evening news bulletin shares, 2007

Audience share (%)



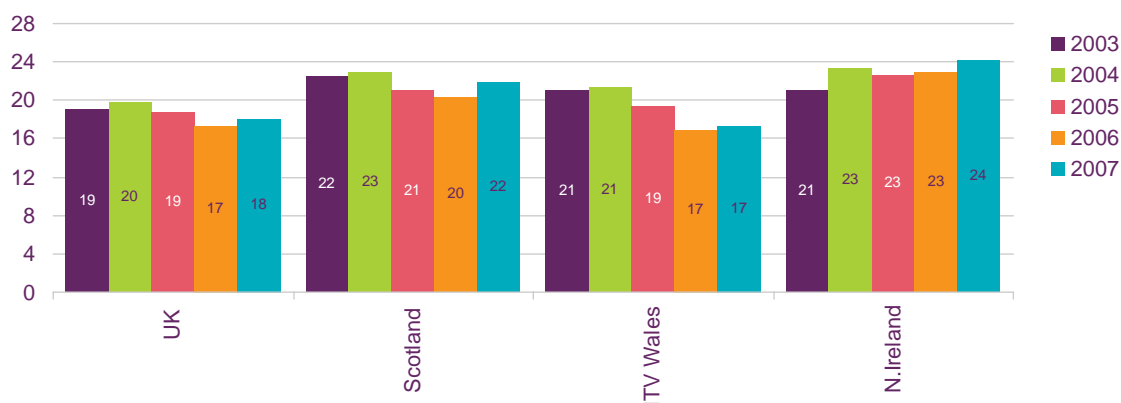
Source: BARB

People in Wales claim to rely most heavily on television for their local news (45%) and second most heavily on newspapers (16%) – both in line with the UK averages. But ‘talking to people’ was the third most popular choice (16%) – the UK equivalent was 6%.

Viewers in Wales watched an average of 17 hours of early evening regional news bulletins per head in 2007 – the lowest level of consumption in the UK. Levels of consumption have fallen furthest in Wales since 2003 - by 4 hours in four years – compared to generally stable patterns of viewing on a nationwide basis (Figure 3.36).

Figure 3.36 Combined total hours of viewing of early evening regional news bulletins, all homes, 2003-2007

Hours



Source: BARB

Note: Analysis done on genre regional news, start time 17:55-18:35, 10mins+ duration, channels BBC1 and ITV1 combined, Monday to Friday

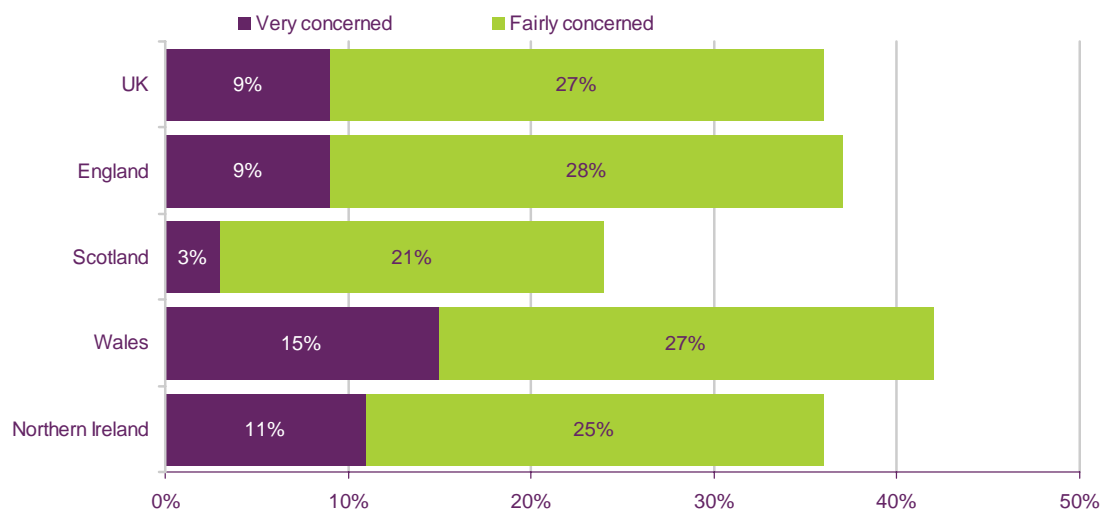
Attitudes towards television content

Viewers in Wales are the most concerned in the UK about TV content

In May 2008 we published the *Adult Media Literacy Audit* which found that 15% of respondents in Wales were 'very concerned' about what was on television, while 27% were 'fairly concerned'. Combined, this was 6pp higher than the UK average (of 36%), 6pp higher than in Northern Ireland (36%) and 5pp higher than in England (37%) (Figure 3.37).

Figure 3.37 Concern about TV content

Overall, how concerned are you about what is on TV?



Source: Ofcom

3.4 Radio

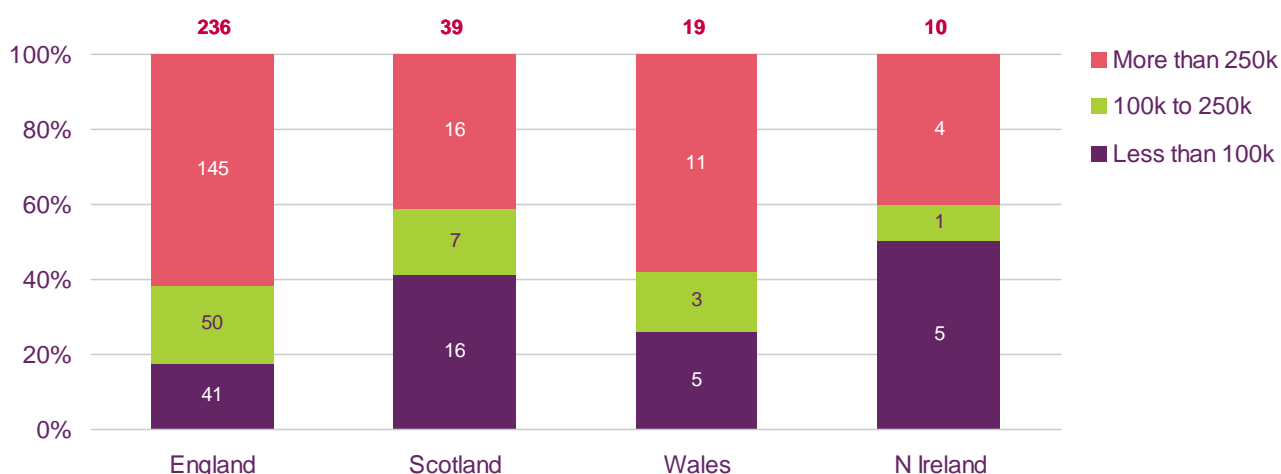
The radio industry

Choice of local commercial stations lower in Wales than UK average

Wales has 19 local commercial analogue radio stations, equivalent to around 6% of the UK's total of 304. This compares to the ten local commercial stations licensed in Northern Ireland, 39 in Scotland and 236 in England. Per head of population, people in Wales have a choice of 2.9 local commercial stations, on average. This is lower than the UK average of 4.6 local commercial stations per head, although choice varies across Wales, with a greater range available in areas around the larger cities. Two national BBC stations are also available in Wales: BBC Radio Wales and BBC Radio Cymru. There are also currently five community radio stations on air, with a further five community licences awarded.

Eleven of the 19 local commercial stations in Wales cover populations of over 250,000 people, with five covering populations of fewer than 100,000 and three covering medium-sized territories of between 100,000 and 250,000 people. This distribution pattern is similar to that in England and may be explained by the fact that a large proportion of the Welsh population live close to the main conurbations of South Wales.

Figure 3.38 Distribution of local commercial stations by population coverage



Source: Ofcom

BBC spend on local radio higher in Wales

BBC local radio spend is higher in Wales on a per-capita basis than the average for the UK. In 2006/07, BBC spending on nations' stations in Wales (BBC Radio Wales / Cymru) also increased by a higher amount than in the other nations, up by £0.74 per head on last year. Total BBC spend on local radio services in Wales therefore totalled £29.9m in 2006/07 (up by £2.5m from £27.4m in 2005/06), equivalent to £10.48 per person (up from £9.73 per head in 2005/06). This compared to £9.64 per person in Northern Ireland, £7.07 in Scotland and £2.65 on local radio for the English regions.

Figure 3.39 BBC spend on national / local radio programming 2006-07

BBC programme spend per head (£ per head)



Source: BBC Annual Report and Accounts 2006/07

Note: The revenue data above have been compiled on a new basis by the BBC to illustrate UK public services expenditure by service. The annual increase is also calculated using the new basis, for consistency.

BBC spend per listener hour second highest at £0.97 per hour

The cost per listener hour for the BBC national or local stations can be calculated by dividing expenditure on the BBC nations' stations (or local radio stations in England) by the total number of listening hours for those stations.

On a UK-wide basis, BBC nations and local programming cost 47p per listener hour in the financial year 2006/07. In the nations, expenditure was highest in Scotland, where BBC Radio Scotland and Radio nan Gaidheal cost £1.16 per listener hour, while in Wales BBC Radio Wales and Cymru cost an average of 97p per listener hour. Expenditure in Northern Ireland for BBC Radio Ulster and Radio Foyle was less, at 55p per listener hour.

On a cost-per-listener-hour basis, spend is therefore lower in Wales and Northern Ireland than in Scotland, despite the higher expenditure per head. This is due to the higher average listening hours of the national stations in Wales and Northern Ireland. The cost of the local BBC stations in the English regions was lower than in the nations, with an average cost of 36p per listener hour. This was partly due to the larger populations served and the lower costs of providing a single service for each region.

Figure 3.40 BBC expenditure per listener hour 2006/07

£ per hour



Source: BBC annual report and accounts 2006/07, RAJAR 2006/07

Three main groups own 15 of the 19 local commercial stations in Wales. The GCap radio group currently holds seven licences, with Town and Country owning five licences. Other groups operating in Wales include UTV, with three stations, and Bauer, GMG, Tindle Newspapers and Murfin Media each owning one station. Revenue generated by the commercial stations in Wales stood at £21m in 2007 (up from £19m in 2006), equivalent to around 4.5% of the UK total of £526m. Adjusting for population size, local commercial revenue in Wales was equivalent to £7.41 per head in 2007, up by £0.72 on £6.69 in 2006. This was, however, still lower than the UK average of £8.11 per person.

Figure 3.41 Local commercial radio revenue per head in 2007

Revenue £ per head



Source: Ofcom, broadcasters, 2007

Note: Chart shows net broadcasting revenues as based on returns received by Ofcom for the year 2007. The UK total also includes revenues for the UK-wide commercial stations: Classic FM, TalkSPORT, and Virgin 1215

Radio service availability

Analogue radio is available to almost all of Wales, although in some areas there is restricted FM coverage of BBC Radio Wales. The UK-wide 'national' DAB digital radio services from the BBC and Digital One are broadcast from nine sites in Wales, located at Llanddona, Moel-y-Parc, Arfon, Blaenplwyf, Preseli, Carmel, Kilvey Hill, Christchurch, and Wenvoe. In addition there are currently two local commercial multiplexes, operated by GCap and UTV-Bauer. These local services are broadcast from DAB transmitter sites based in Swansea, Cardiff and Newport, along with other sites in South Wales. Another regional multiplex, operated by MXR, covers South Wales and the Severn Estuary.

By 2008 the BBC and Digital One national DAB networks were estimated to cover around 74% of the population in Wales. Coverage has increased since 2006, with the BBC installing transmitters at Anglesey and Cardigan Bay. Commercial DAB network developments during 2007 included five new transmitters in Anglesey, Cardigan Bay, Newport, North West Wales, and South West Wales. Following these developments, local commercial DAB coverage was estimated to have reached around 56% of the population.

Ofcom local DAB multiplex awards 2007/08

Wales' local multiplex developments

Three new local DAB multiplexes have been advertised for regions in Wales within the past year. In March 2008 Ofcom awarded the Mid & West Wales local digital radio multiplex licence to MuxCo Wales Ltd. The area covered by the multiplex will include the counties of Pembrokeshire/Sir Benfro, Carmarthenshire/Sir Gaerfyrddin, Ceredigion and Powys. MuxCo aims to launch a service by Q1 2010 with the objective of covering 56% of the local adult population. Total coverage could eventually reach up to around 400,000 adults in the area.

In September 2007, the local radio multiplex licence for Northeast Wales & West Cheshire ('NEWWC') was awarded to MuxCo Northeast Wales and West Cheshire Ltd. The area covered by the multiplex will include the Unitary Authorities of Flintshire/Sir y Fflint and most of Wrexham/Wrecsam, along with the western part of Cheshire and the Wirral in England. MuxCo intends to launch this service by Q4 2008¹⁸ with transmitters at Moel-y-Parc, Wrexham Rhos and St.John's Beacon. It aims to provide indoor coverage of 94.8% for the area, with a predicted population coverage of around 640,000 adults in England and Wales (231,000 of these in North East Wales).

In February 2008 Ofcom advertised a new local digital radio multiplex licence for North Wales, with the aim of eventually covering around 300,000 people in the area; applications were due in by 21 May 2008. The area covered will include the counties of Gwynedd, Anglesey/Sir Fôn, Conwy and most of Denbighshire/Sir Ddinbych.

All of the above three local multiplexes will transmit BBC Radio Wales and Cymru as well as local commercial radio services.

¹⁸ Muxco has requested to postpone launch for three months from its original proposed August 2008 on-air date.

Radio listening

People in Wales listen to more radio than those in other nations

Radio services reached 90.5% of the adult population in Wales on a weekly basis in 2007, (up by 2.1 percentage points from 88.4% in 2006). Average hours per listener in Wales are also higher than average, at 24.4 hours per week during 2007, compared to the UK average of 23.5 hours (Figure 3.42).

Figure 3.42 Levels of radio listening in 2007

Average weekly listening hours and percentage reach of population

| | England | Scotland | Wales | Northern Ireland | UK TOTAL |
|--------------------------|------------|------------|------------|------------------|------------|
| Average weekly listening | 23.5 hours | 22.9 hours | 24.4 hours | 23.1 hours | 23.5 hours |
| Reach | 90.3% | 88.6% | 90.5% | 89.6% | 90.1% |

Source: RAJAR 2007

Radio services consumption by service type

BBC stations enjoyed a 62% share of all listening in Wales in 2007, up from 60% in 2006. BBC network stations accounted for 47% of this share (compared to the UK average of 44%) with BBC local radio attracting 15% (compared to 10% across the UK). As a result local commercial radio has a lower audience in Wales, with 27% of listening in 2007, compared to the UK average of 32%. This is possibly also due to the lower number of local commercial stations per head in Wales. However, local commercial listening in Wales was up on last year by 3 percentage points, from 24%. National commercial listening was largely in line with the UK average, at 10% of all listening hours.

Figure 3.43 Share of listening hours, by nation

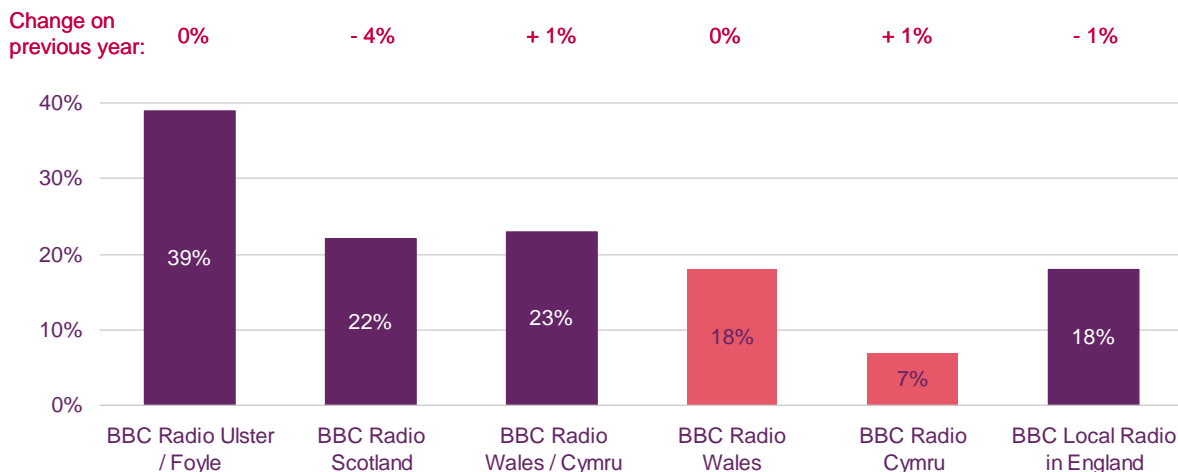


Source: RAJAR 2007

Twenty-three per cent of adults listened to BBC Radio Wales/Cymru in an average week in 2007, up by 0.5% on 2006. Of this, listening to BBC Radio Cymru accounted for 7% and BBC Radio Wales 18%. Total listening hours for the two stations was up by 1% on last year overall. There was a similar level of listening in Scotland, where BBC Radio Scotland reached 22% of adults per week. This was higher than listening hours for local BBC services in England (18%), but lower than in Northern Ireland (39%).

Figure 3.44 Weekly listening to national / local BBC services

% of adult population reached per week



Source: RAJAR Q4 2007

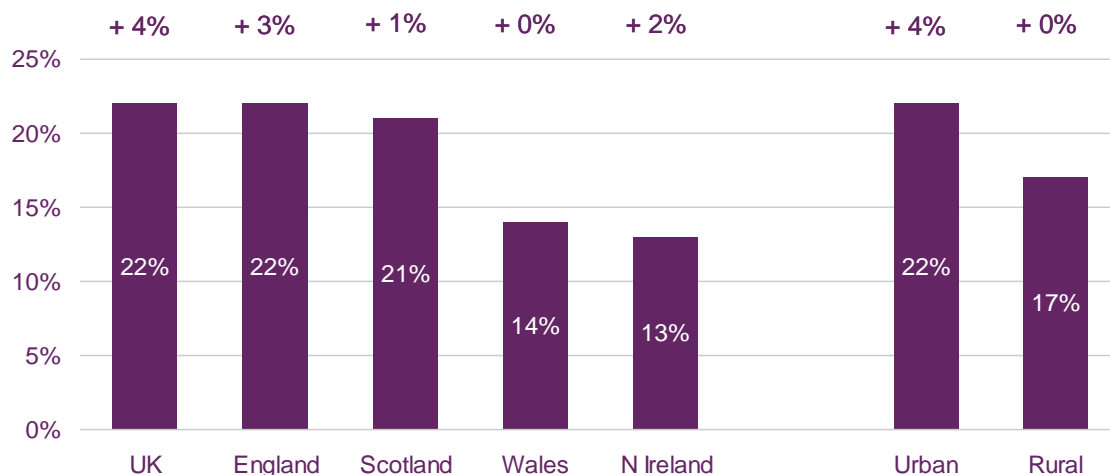
Ownership of DAB digital radio sets

Fourteen per cent of individuals in Wales now own a DAB digital radio set. This is lower than in England (22%) and Scotland (21%), but slightly higher than in Northern Ireland (13%). Ownership in Wales has remained generally stable over the year, against the UK average 4 percentage points of growth. Across the UK, levels of DAB ownership increased most in urban areas; by 4% (Figure 3.45). Awareness of DAB digital radio in Wales was generally in line with the other nations, with around 73% of people having heard of the term 'DAB digital radio' compared to the UK average of 75%. Around 15% of respondents in Wales said that they were likely to acquire a DAB set over the next six months, the same as in Scotland and Northern Ireland but slightly lower than in England (18%).

Figure 3.45 Ownership of DAB digital radios

Proportion of respondents (%)

% point change from 2006



Source: Ofcom Base: All who listen to radio

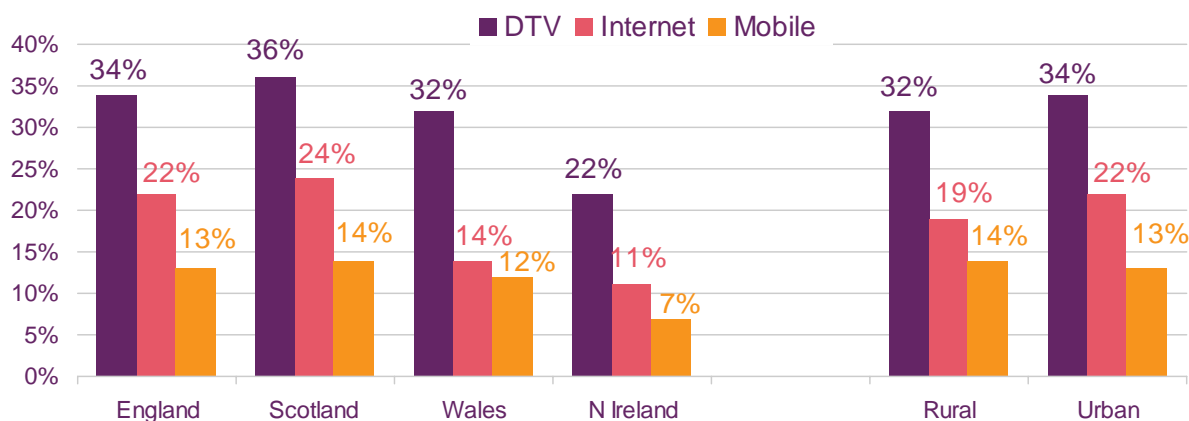
Listening to radio via the internet lower in Wales than in Scotland and England

In 2007, 32% of radio listeners in Wales had used digital television to listen to the radio (with 17% claiming to do this on a weekly basis). This level was similar to that in Scotland (36%) and England (34%), but higher than in Northern Ireland (22%).

Listening to the radio via the internet had been tried by 14 per cent of radio listeners in Wales (and was a weekly activity for 7%). This was lower than in Scotland (24%) and England (22%) but higher than in Northern Ireland (11%). Meanwhile over one in ten (12%) of radio listeners had listened to the radio using a mobile phone, just below that in Scotland (14%) and England (13%), and higher than Northern Ireland at 7% (Figure 3.46).

Figure 3.46 Listening to radio via DTV, internet, mobile phone

Proportion of respondents (%) who have listened to radio via DTV, internet or mobile phone



Source: Ofcom. Base: All who listen to radio

Listeners in Cardiff and Newport have access to the greatest choice of DAB stations, with 32 DAB services, comprising 15 national and 17 local stations. In Swansea, there are 16 local services in addition to the 15 national services. The two national BBC stations, Radio Wales and Radio Cymru, are also available via the various digital platforms. (Figure 3.47)

Figure 3.47 National BBC radio stations available via digital radio in Wales

| BBC station | DAB area | bbc.co.uk | Freeview | Sky | Virgin Media |
|-----------------|----------|------------------------------------------------------------------------------------|----------|-----|--------------|
| BBC Radio Wales | Wales | www.bbc.co.uk/wales/radiowales | 719 | 117 | 931 |
| BBC Radio Cymru | Wales | www.bbc.co.uk/cymru/radiocymru | 720 | 154 | 936 |

Source: BBC

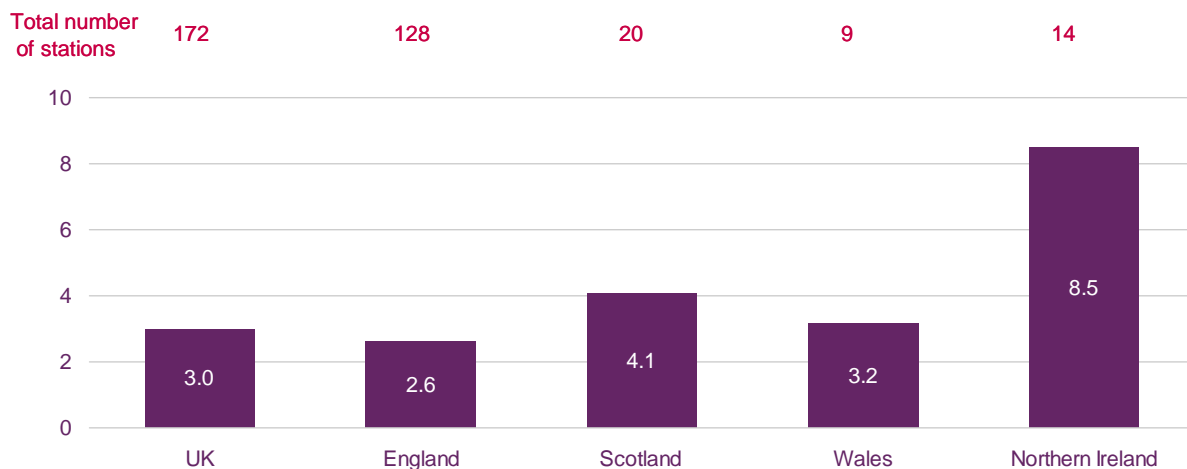
Community radio stations

Community radio licences are awarded to small-scale operators working on a not-for-profit basis to serve local areas or particular communities. The number of community stations has increased over the last couple of years, with many new licences issued by Ofcom for services throughout the UK's nations and regions; Wales currently has nine community stations awarded, with five of these already broadcasting. Another licence awarded for the Pontypool and Torfaen area was recently handed back to Ofcom. This compares to 20 community stations in Scotland with 11 already on air; while Northern Ireland currently has ten stations on air and a further four awarded. Over the last couple of years there have been over a hundred community station licences awarded across England, with 83 already on air.

Wales has a lower average number of community stations per head than either Northern Ireland or Scotland, with an average of 3.2 stations per million people. Northern Ireland has the most stations per head of population, with an average of 8.5 community stations per million people, followed by Scotland with 4.1 stations, and England the lowest with 2.6 (Figure 3.48).

Figure 3.48 Community radio stations in the UK

Number of community radio stations, (average per million head of population)



Source: Ofcom

Community station licences awarded in Wales, 2007/08

Wales community awards: Ofcom awarded two community station licences in North Wales in January 2008: Tudno FM in Llandudno and Radio Elwy/Point FM in Rhyl. South Wales had three stations awarded in February/ March 2007: BRfm in Brynmawr, Radio Tircoed in Tircoed Forest Village and Bro Radio in Barry. So far there have been ten community stations awarded in Wales, with one of these licences (for Pontypool and Torfaen), recently returned to Ofcom (Figure 3.49).

Figure 3.49 Community station awards in Wales

| Community station | Location |
|-------------------|------------------------------|
| Afan FM | Port Talbot |
| BRfm | Brynmawr, Blaenau Gwent |
| Bro Radio | Barry, vale of Glamorgan |
| Calon FM | Wrexham |
| GTFM Pontypridd | Pontypridd |
| Point FM | Rhyl |
| Radio Cardiff | Cardiff |
| Radio Tircoed | Tircoed Forest Vill, Swansea |
| Tudno FM | Llandudno |

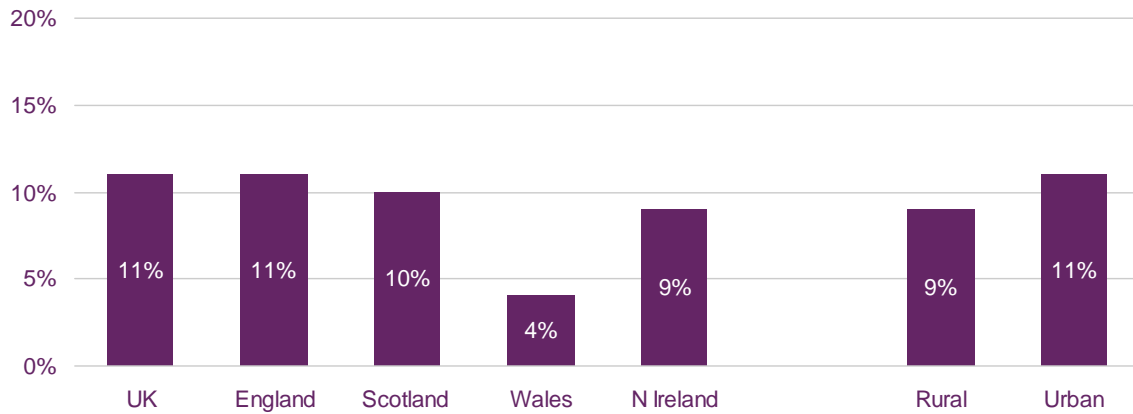
Source: Ofcom

Use of radio for local news - Wales

In Wales a lower number of people cited radio as their source of local news. Only 4% of respondents in Wales claim to use radio for local news, compared to the UK average of 11%. People in Scotland (10%) and Northern Ireland (9%) were also more likely than those in Wales to use radio for local news.

Figure 3.50 Use of radio for local news

What, if anything, is your main source of news about what is going on in your area? (Local and regional news)



Base: All who listen to radio
Source: Ofcom

3.5 Telecommunications

Availability

Fixed-lines

Fixed telephony services over the public switched telephone network (PSTN) are available to all of the UK population as a result of the universal service obligation (USO) which is provided by British Telecom (BT) and Kingston Communications in Kingston-upon-Hull.

Under the USO all UK households have access to a landline at a standard charge, although additional charges for connection apply where the cost of installation is in excess of £3,400. The USO mandates BT and Kingston to provide affordable telephone services for less advantaged members of the community in the form of special pricing schemes.

As a result of the USO, there are no significant issues relating to the availability of fixed voice telephony services in Wales or anywhere else in the UK, although a small number of single dwellings in remote locations may have difficulty in connecting to the network.

Narrowband internet

The availability of narrowband internet services (defined as an internet connection achieved by means of dial-up over a twisted copper pair or coaxial cable at speeds of less than 128kbit/s) is the same as that of fixed-line voice services, as the only equipment required to access narrowband services (apart from a standard fixed-line) is a suitably equipped personal computer.

Over recent years the use of narrowband internet services has declined rapidly as the availability of broadband internet services has increased and as prices for these faster services has fallen. According to the Office for National Statistics¹⁹, at the end of 2007 less than 10% of UK internet connections were narrowband, compared to 56% three years earlier.

Broadband internet

The two main technologies used to supply broadband services in the UK are digital subscriber line (DSL) supplied over a standard copper twisted pair connected to a local telephone exchange, and cable modem technology over a cable operator's hybrid fibre-coaxial network.

Ofcom's figures show that at the end of 2007 DSL connections, including those provided using Local Loop Unbundling (LLU), accounted for 78% of non-corporate broadband connections across the UK, compared to 76% a year previously. Cable modem broadband connections made up 22% of total connections at the end of 2007. Despite growth in the availability of wireless and satellite broadband services, such connections accounted for less than 1% of the total at the end of 2007. Data are not currently available on take-up of cellular wireless broadband connections, and these are excluded from our connection figures.

¹⁹ <http://www.statistics.gov.uk/pdfdir/int0208.pdf>

DSL broadband availability

Figure 3.51 shows that almost all UK households (over 99.9%) were connected to a DSL-enabled BT local exchange at the end of December 2007, although not all of these will be able to obtain broadband services (see the box on ‘not-spots’ below). DSL availability is higher than that of cable modem services in all areas of the UK, therefore the availability of DSL can be used as a model for overall UK broadband availability.

Broadband ‘not-spots’

Not all delivery points in an area served by a DSL-enabled area exchange will be able to obtain broadband services, for a variety of reasons including distance from the exchange and network quality.

BT estimates that 99.6% of its network is able to support broadband speeds of 512kbit/s and above. However, even with this level of availability there will still be a significant number of households in ‘not-spots’ (areas unable to receive DSL broadband services), although the exact scale of the problem is difficult to quantify.

Households in ‘not-spots’ will not be able to access or obtain the full experience of using services which require higher or consistent bandwidth, such as VoIP and video streaming. As such, these consumers suffer a substantial detriment, and as both broadband take-up and the use of higher-bandwidth services increase, the scale of the problem is becoming more apparent.

The proportion of households connected to a DSL-enabled exchange was over 99.99% in both rural and urban areas of Wales at the end of 2007, in line with levels across the UK.

Figure 3.51 Proportion of households connected to a DSL-enabled exchange

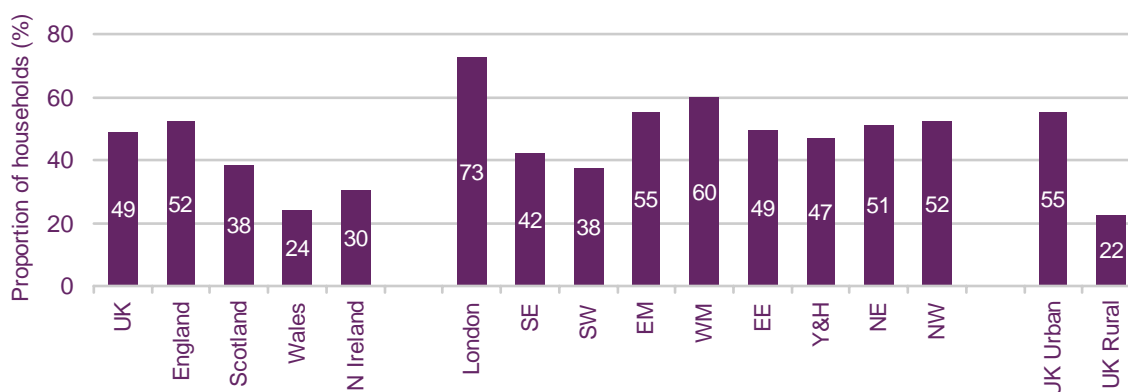


Source: Ofcom/BT, December 2007 data

Cable modem broadband availability

Data from Virgin Media show that at the end of 2007 almost half of all UK households (49%) were passed by its broadband-enabled cable network; although a small proportion of these will not be able to receive cable broadband services (Figure 3.52). The proportion of households passed by Virgin Media’s broadband-enabled cable network was lowest in Wales, at 24% of households, and highest in England, at 52%.

Figure 3.52 Proportion of households passed by Virgin Media broadband

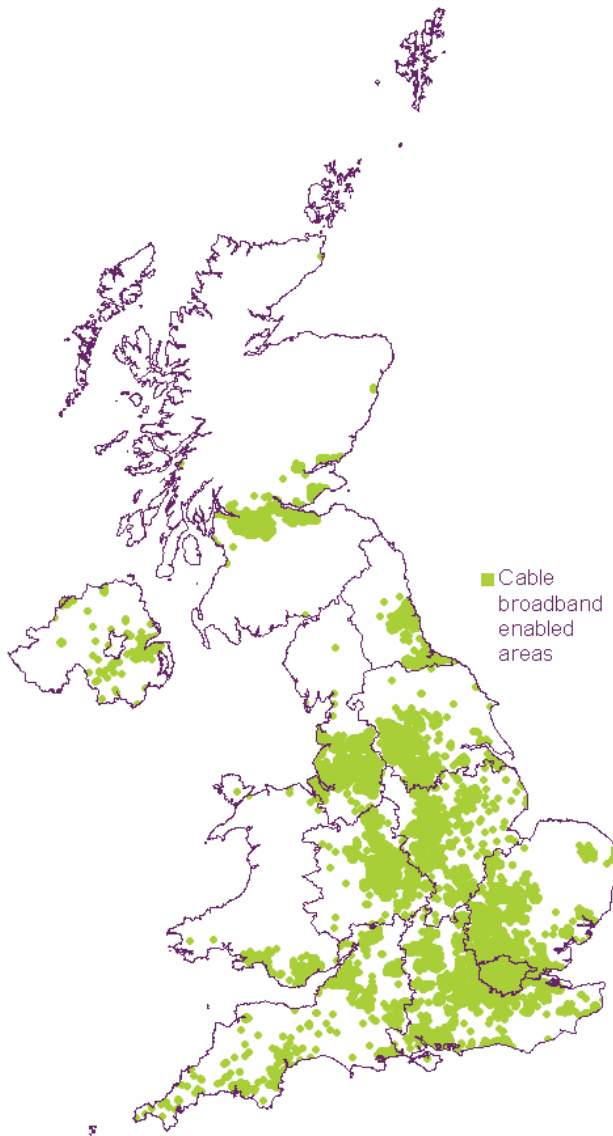


Source: Ofcom/Virgin Media, December 2007 data

Note: The basis on which figures have been calculated is different to that used in the 2007 report

When rolling out their networks the original cable franchisees concentrated network build in areas with high population density, in order to maximise the potential return on their investment. This is clearly reflected in Figure 3.53, which shows that availability of Virgin Media cable broadband services is concentrated in large urban conurbations.

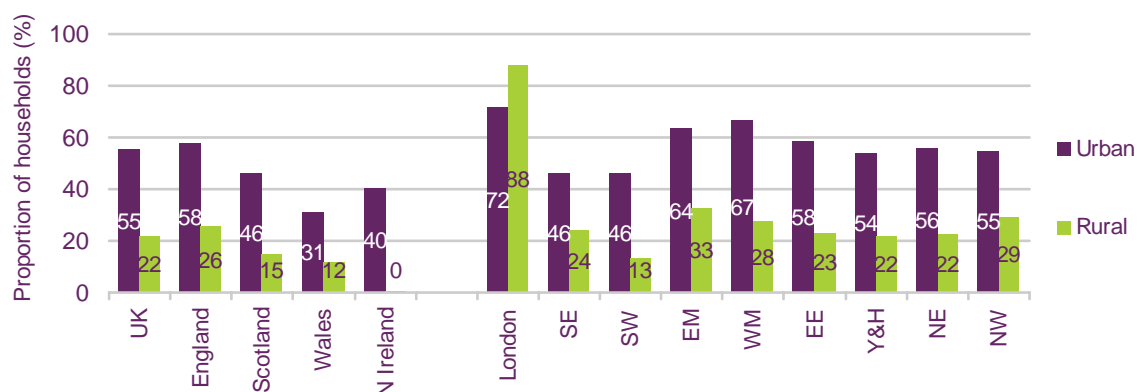
Figure 3.53 Availability of Virgin Media cable broadband



Source: Ofcom/Virgin Media, Q4 2007 data

Households located in urban areas were more than twice as likely to be able to receive cable broadband services as those in rural areas (Figure 3.54). This was evident in Wales, where Virgin Media broadband was available to 31% of households in urban areas, compared to 12% in rural ones.

Figure 3.54 Coverage of urban and rural areas by Virgin Media broadband



Source: Ofcom/Virgin Media, December 2007 data

Note: The basis on which these figures have been calculated is different to that in the 2007 Nations and Regions report; the urban rural split for Northern Ireland is based on the location of the local exchange rather than the area which it covers (as is used for the other nations). As such, the rural figure is likely to be understated and data are not directly comparable to those for the other nations

Local loop unbundling broadband availability

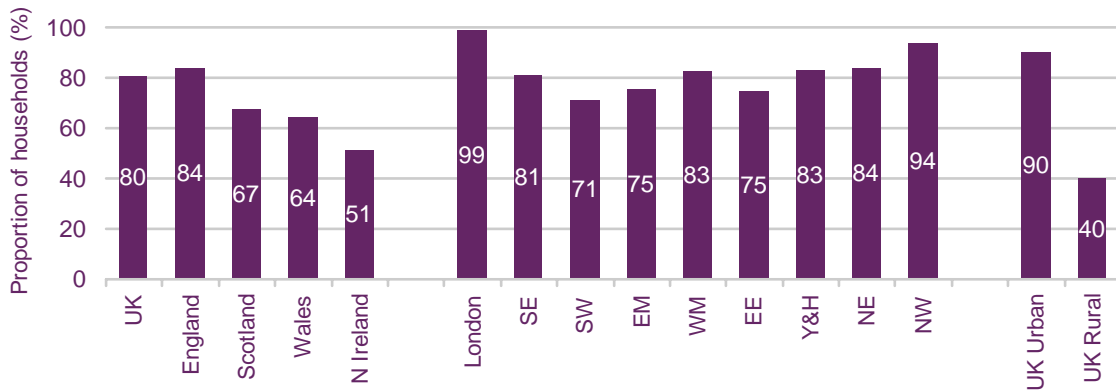
Local loop unbundling (LLU) involves an alternative operator leasing the twisted copper pair between the BT or Kingston Communications local exchange and a customer's premises, and placing its own equipment in the exchange. This allows the LLU operator to connect the end-user to its own network and to provide voice and DSL services without investing in an expensive access network over the 'last mile'.

Unbundling an exchange allows operators to offer services without being tied to BT or Kingston's wholesale products, enabling greater differentiation in services and tariffs. It can also give operators economies of scale which are not available to them when purchasing wholesale products on a per-unit basis.

Consumers living in an unbundled exchange area are likely to have access to a wider range of suppliers and retail propositions than those living in an area which has not been unbundled, and in the last quarter of 2007 LLU services were responsible for over 85% of the growth in the total number of non-corporate UK broadband connections.

At the end of 2007 80% of UK households were connected to an unbundle local exchange (Figure 3.55), up from 67% at the end of 2006. The proportion of households connected to an unbundled exchange was highest in England among the nations at 84%, and lowest in Northern Ireland at 51%. In Wales almost two-thirds (64%) of households were connected to an unbundled local exchange at the end of 2007, the third highest among the nations.

Figure 3.55 Proportion of households connected to an unbundled exchange

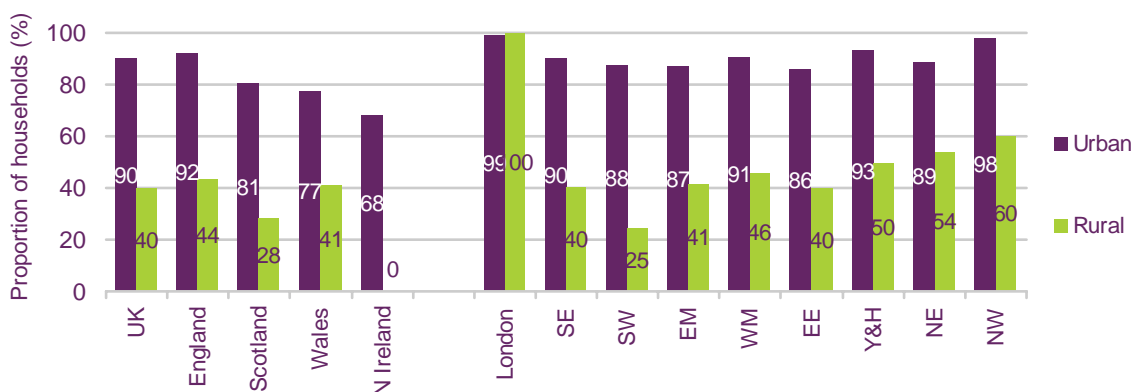


Source: Ofcom/BT, December 2007 data

The high fixed costs associated with unbundling a local exchange (installing the equipment in the local exchange, the equipment itself and providing connectivity to the LLU provider's network) and the low rental cost per line (currently £1.30 a month for DSL services and £6.67 per month for DSL and voice services) mean that in order for an exchange to generate per-unit cost savings over the use of BT's wholesale products it must have a certain number of unbundled customers.

LLU operators have therefore tended to unbundle exchanges serving a large number of delivery points, and typically these are found in urban areas. As a result, 90% of households in urban areas across the UK are connected to an unbundled local exchange, compared to just 40% in rural areas. This was also the case in Wales where households in urban areas (77% availability) were almost twice as likely as those in rural areas (41% availability) to be able to receive LLU-based services.

Figure 3.56 Proportion of households in urban and rural areas connected to an unbundled exchange

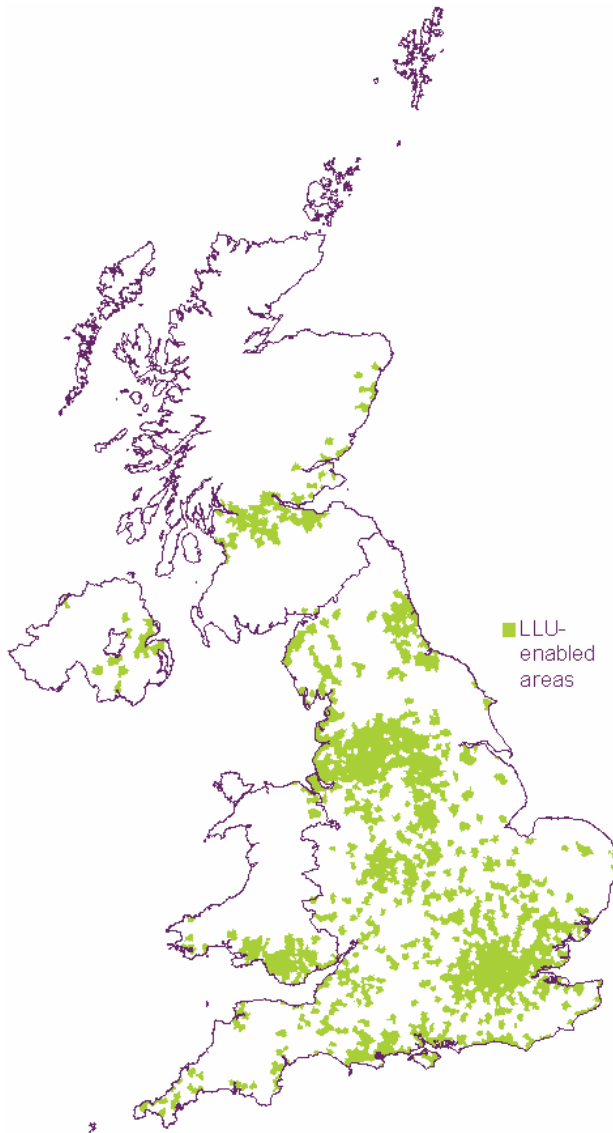


Source: Ofcom/BT, December 2007 data

Note: The urban/rural split for Northern Ireland is based on the location of the local exchange rather than the area which it covers (as is used for the other nations). As such, the rural figure is likely to be understated and data are not directly comparable to those for the other nations

Figure 3.57 shows the UK distribution of areas able to receive LLU-based voice and broadband services and the concentration of unbundled exchange areas in urban locations. In Wales these are concentrated in the south of the country (Cardiff, Swansea and Newport) and the north-east (Wrexham).

Figure 3.57 Areas served by unbundled exchanges



Source: Ofcom/BT, Q4 2007 data

Mobile availability

In order to evaluate the availability of mobile telephony services across the UK we examine the number of mobile networks with second generation (2G) and third generation (3G) coverage in each postcode district. For an operator to be counted as having coverage its network footprint has to cover at least 75% of the postcode district, and by using this data in conjunction with population figures we are able to calculate the proportion of people living in such postcode districts. The 75% threshold is different to those used in the 2007 report (when we used 95% for 2G services and 50% for 3G) for the following reasons:

- to allow direct a comparison of 2G and 3G coverage levels;
- to reflect that the availability of 3G services is now widespread; and
- analysis of the data at a 95% area threshold revealed that small changes in the way in which the 2008 coverage figures had been compiled by the mobile network operators led to marked differences in the output figures.

It is important to note that just because a postcode district does not have 75% mobile coverage it does not necessarily follow that mobile services are not available there.

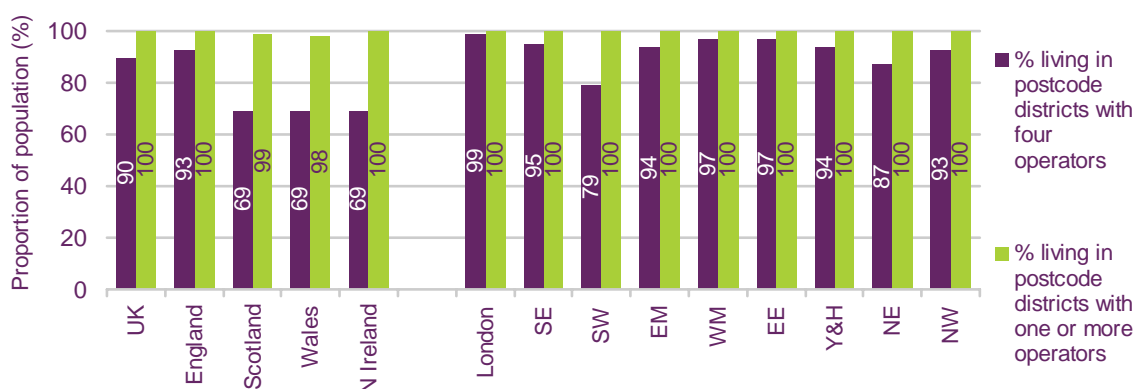
2G availability high across most of the UK

For 2G services we identified postcode districts where a) at least one and b) all four of the 2G networks had area coverage over the 75% threshold. It is important to note that the figures for Q1 2008 are not directly comparable with those published in the 2007 report as a result of the changes to the area coverage threshold outlined above.

The data show that across the UK almost all of the population (over 99%) lived in a postcode district where there was at least 75% 2G area coverage from one or more of the mobile networks in Q1 2008 (Figure 3.58). The data shows that in Wales the proportion living in an area with 2G coverage from at least one operator was, at 98%, slightly lower than those in the other nations.

There was greater variation in the proportion of people living in a postcode district with at least 75% coverage from all four 2G mobile networks. Across the whole of the UK 90% of people lived in such an area, while in Wales more than two-thirds (69%) did. This was identical to levels in Scotland and Northern Ireland but lower than in England (93%).

Figure 3.58 2G mobile phone population coverage



Source: GSM Association / Europa Technologies; Q1 2008

Note: Figures show the percentage of population within postcode districts where at least one or four operators had at least 75% 2G area coverage; data not directly comparable to that published in the 2007 report.

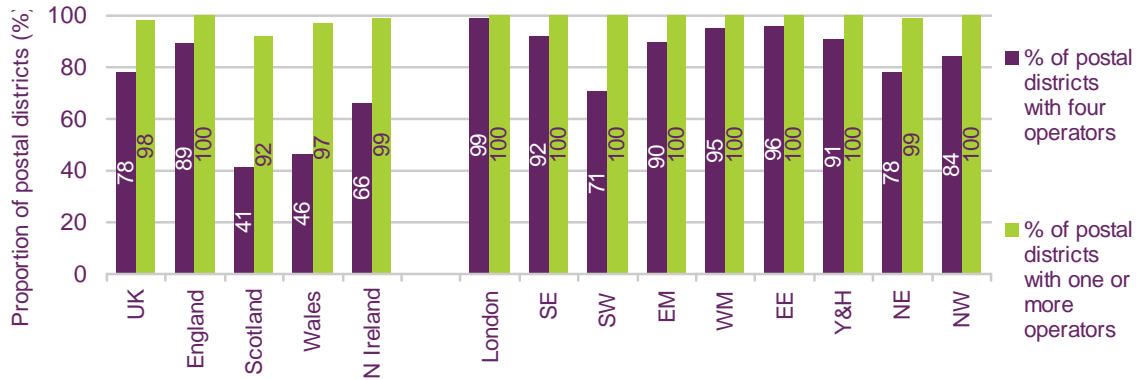
2G geographic coverage high in Wales

In addition to population coverage we also calculated geographic 2G coverage (using the same 75% area coverage threshold) in order to understand where there were gaps in coverage. Figure 3.59 below shows that, although 2G mobile geographic coverage was high across most of the UK in Q1 2008, it was not as high as population coverage. This is a result of the networks concentrating network build in areas of higher population density.

The majority of postcode districts in the UK (98%) had 2G area coverage from one or more mobile networks (Figure 3.59). Geographic 2G coverage in Wales was the second lowest among the UK nations at 97%, while it was highest in England (over 99%). The lower geographic coverage in Scotland (92%) reflects the fact that large areas of the sparsely populated Highlands and Islands are without coverage.

The proportion of postcode districts with 75% area coverage from all four 2G networks varied across the UK nations and English regions. In all of the nations except England (89%) less than two-thirds of postcode districts had 2G coverage at a 75% area threshold from all four providers. Wales had the second lowest level of geographic 2G coverage from all four providers at 46% of postcode districts.

Figure 3.59 2G mobile phone geographic coverage

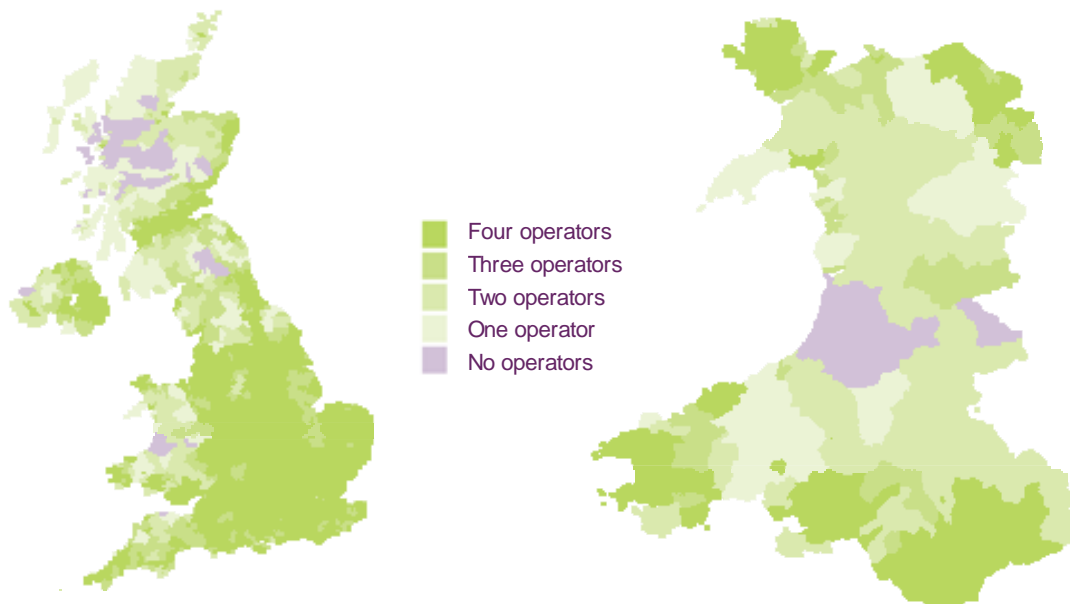


Source: GSM Association / Europa Technologies; Q1 2008

Note: Figures show the percentage postcode districts where at least one or four operators had at least 75% 2G area coverage; data not directly comparable to that published in the 2007 report.

Figure 3.60 shows that although most of the UK was covered by 2G services there were still sizeable areas where coverage was less than 75% or where 2G services were only available from one or two mobile networks. These regions included the Scottish Highlands and Islands, areas of mid-Wales and the west of Northern Ireland, many of which have poor coverage as a result of topographies that limit the range of cellular masts. The areas affected by lower levels of network 2G coverage in Wales include mid-Wales and parts of the border with England.

Figure 3.60 Map of 2G mobile phone geographic coverage by number of operators



Source: Ofcom / GSM Association / Europa Technologies; Q1 2008

Note: Maps show the number of 2G operators with at least 75% area coverage; not directly comparable to those published in the 2007 report.

3G availability concentrated around urban areas

The 75% postcode district network footprint threshold was also used when analysing 3G mobile availability. In the 2007 report a 50% area threshold was used for 3G services to reflect ongoing network rollout ahead of the end 2007 deadline for achieving 80% population coverage as stipulated in the five 3G licences. This means that that the data in this year's report are not comparable to those published last year.

Similarly, it should be noted that the methodology used to derive the coverage data in this report is different to that which was used to ascertain whether the 3G networks had met the coverage obligations outlined in their 3G licences earlier this year. The data in this report are based on postcode district coverage estimates provided to the GSM Association by the mobile networks, while the methodology used to establish whether the 3G licence coverage obligations had been met can be found at:

http://www.ofcom.org.uk/consult/condocs/3g_rollout/3GRolloutobligation/

In the case of 3G services there are five network operators (rather than four as there are for 2G) and we identified postcode districts where a) at least one and b) at least four of the 3G networks had area coverage above the 75% threshold.

90% of the UK population lives in an area where 3G services are available

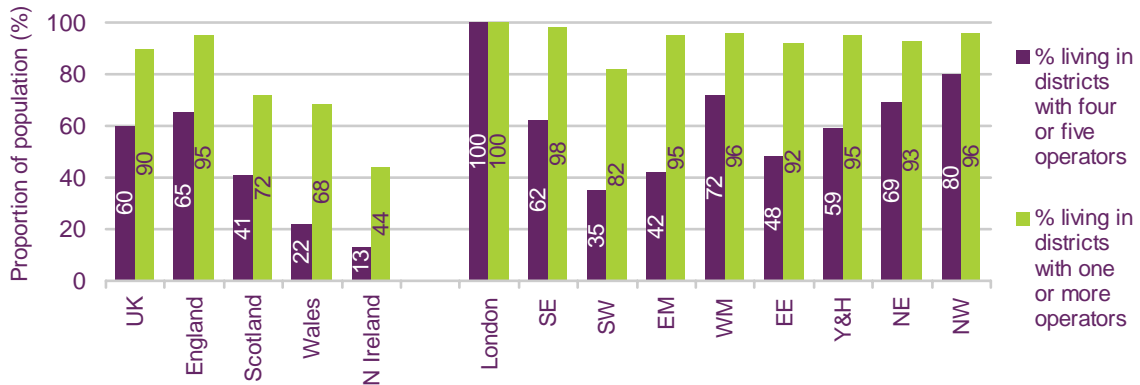
Across the UK, 3G coverage figures were lower than those for 2G services, the only exception being in London where the proportion of postcode areas with 2G and 3G coverage from at least one network at the 75% threshold was the same (over 99%) and the proportion with 3G coverage from four or more networks at the same threshold was higher than for 2G.

The data show that 90% of the UK population lived in a postcode district with at least 75% area coverage from one or more 3G networks, and the proportion among the UK nations varied from 44% in Northern Ireland to 95% in England (Figure 3.61). Wales had the second lowest 3G coverage at 68% of the population.

60% have a choice of four or more 3G networks

Across the UK, 60% of people lived in postcode districts with 75% 3G area coverage from at least four mobile networks. The proportion living in these areas was highest in England (65%) and lowest in Northern Ireland (13%). In Wales 22% of people lived in an area with 3G coverage from four or more networks, again the second lowest among the nations.

Figure 3.61 3G mobile phone population coverage



Source: GSM Association / Europa Technologies; Q1 2008

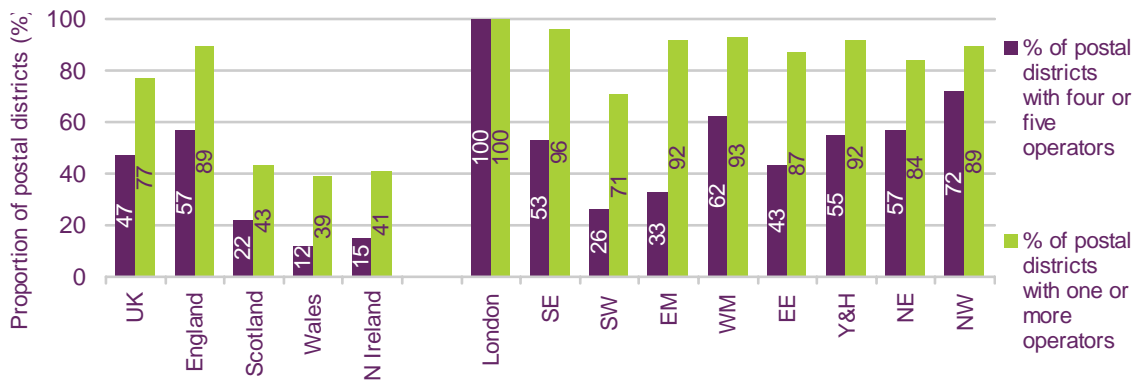
Note: Figures show the percentage of population within postcode districts where at least one or four or five operators had at least 75% 3G area coverage; data not directly comparable to that published in the 2007 report.

Geographic 3G coverage varies widely across the UK

Analysis of geographic 3G coverage showed that in Q1 2008 over three-quarters (77%) of UK postcode districts had 75% 3G area coverage from one or more of the mobile networks (Figure 3.62). Among the UK nations the geographic 3G coverage was highest in England at 89%, while it was lowest in Wales at 39%.

Across the UK, just under half of postcode districts (47%) had 75% 3G area coverage from at least four of the UK 3G networks. The proportion in England (57%) was, again, much greater than in the other nations, where it was highest in Scotland (22%) and lowest in Wales (12%).

Figure 3.62 3G mobile phone geographic coverage



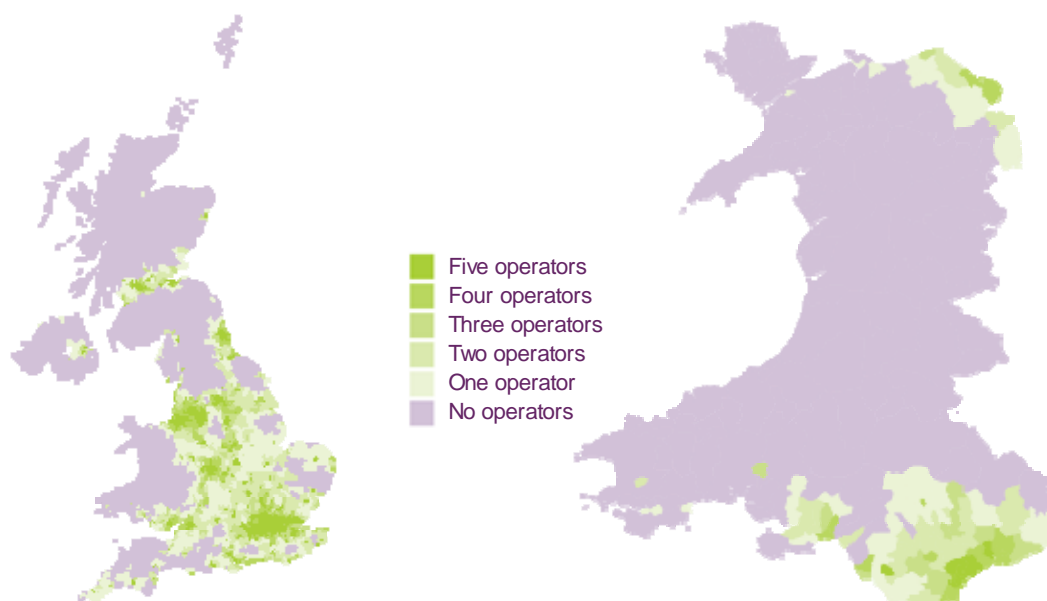
Source: GSM Association / Europa Technologies; Q1 2008

Note: Figures show the percentage of postal districts where at least one or four or five operators had at least 75% 2G area coverage; data not directly comparable to that published in the 2007 report.

Figure 3.63 shows where the mobile operators have implemented their 3G networks. Across the UK 3G network rollout has been concentrated in urban areas to enable the networks to meet the population coverage obligations outlined in the 3G spectrum licences. The result of this is that there are still large areas with a low population density where 3G services are not

available. 3G coverage in Wales is concentrated around Cardiff, Swansea, Newport and the Cheshire border area.

Figure 3.63 Map of 3G mobile phone geographic coverage by number of operators



Source: Ofcom / GSM Association / Europa Technologies; Q1 2008

Note: Map shows the number of 3G operators with at least 75% area coverage; not directly comparable to that published in the 2007 report.

Service take-up

Take-up of telecommunication services was generally lower in Wales than in the rest of the UK, although the majority of respondents had fixed-line telephony (79%), mobile telephony (82%) and internet access (55%) at home (Figure 3.64).

Take-up of telephony services (both fixed-line and mobile) in rural Wales was lower than take-up in rural areas in the other three nations. Take-up of broadband (and the internet) in rural Wales was similar to rural areas in Northern Ireland, but was significantly lower than in rural areas in England and Scotland.

Take-up of mobile phones in urban Wales was at a similar level to urban areas in the other three nations. In comparison, take-up of fixed-line telephony, the internet and broadband in urban Wales was significantly lower than in urban areas in England, Scotland and Northern Ireland.

Internet access showed no significant growth over the figure reported in 2006, although broadband access grew from 43% to 45% over the period. Both figures are subject to error margins of +/-3-4%.

Figure 3.64 Take-up of communications services

| | | UK | England | Scotland | Wales | N. Ireland | UK Urban | UK Rural |
|------------------------|----------------|-----|---------|----------|-------|------------|----------|----------|
| Individual | | | | | | | | |
| Voice telephony | Fixed Line | 87% | 87% | 87% | 79% | 88% | 86% | 93% |
| | Mobile | 84% | 85% | 81% | 82% | 85% | 84% | 84% |
| Internet | PC | 69% | 70% | 64% | 60% | 65% | 68% | 73% |
| | Total Internet | 65% | 66% | 60% | 55% | 61% | 64% | 69% |
| | Broadband | 57% | 58% | 53% | 45% | 52% | 57% | 59% |

Source: Ofcom

Analysis of broadband take-up across Wales showed that penetration was relatively high across the larger southern towns (Figure 3.65). However, overall urban penetration was confined to 43% by low take-up (34%) among the smaller southern towns.

Figure 3.65 Take-up of communications services in Wales

| | | Wales | Cardiff | Nport | Sw'sea | Wxam | Other Urban Sth | Mid Wales* | Coastal North* | Rural Nth | Rural Sth | Wales Urban | Wales Rural |
|------------------------|----------------|-------|---------|-------|--------|------|-----------------|------------|----------------|-----------|-----------|-------------|-------------|
| Individual | | | | | | | | | | | | | |
| Voice telephony | Fixed Line | 79% | 81% | 80% | 84% | 77% | 74% | 85% | 78% | 88% | 86% | 77% | 88% |
| | Mobile | 82% | 89% | 85% | 85% | 84% | 82% | 74% | 77% | 74% | 76% | 84% | 74% |
| Internet | PC | 60% | 72% | 67% | 66% | 71% | 43% | 69% | 64% | 67% | 65% | 59% | 67% |
| | Total Internet | 55% | 69% | 62% | 64% | 58% | 40% | 65% | 56% | 62% | 57% | 53% | 61% |
| | Broadband | 45% | 58% | 62% | 56% | 44% | 34% | 46% | 49% | 52% | 49% | 43% | 51% |

Source: Ofcom

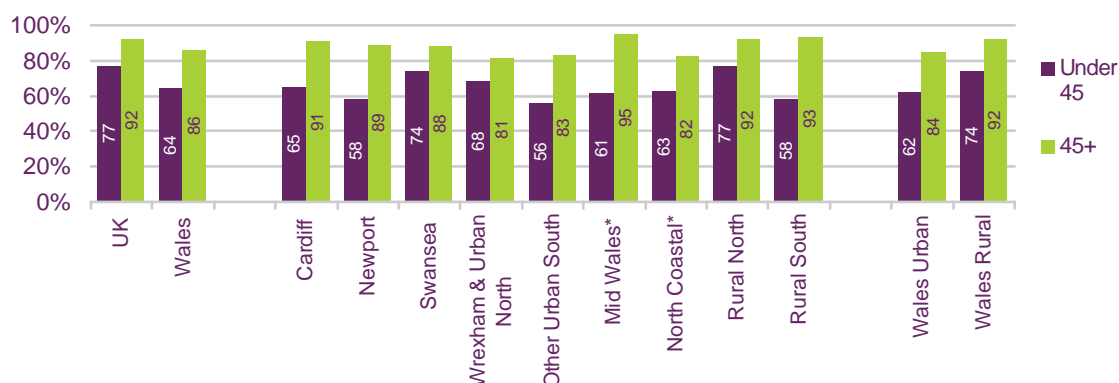
* Sample size less than 100. Apply caution and treat as indicative only.

At 79%, fixed-line penetration was also significantly lower in Wales than in the rest of the UK, and fell by 10 percentage points from 2006²⁰ (compared to a UK average fall of around 3%). While survey error margins of 3-4% on both the 2006 and 2008 surveys mean that this figure should be treated with some caution, it is clear that there have been significant decreases in the use of fixed-lines across urban areas in Wales, all of which reported household levels under 85%. Rural penetration remained relatively high, at 88%.

Figure 3.66 illustrates that this trend was particularly marked amongst 15-44 year olds in urban areas, where 38% did not have a fixed-line.

²⁰ Note that the 2006 figure was an average from a survey conducted throughout the year, so the fall in use of fixed line phones is likely to have been more gradual than the direct comparison between the 2006 and 2008 data suggests.

Figure 3.66 Fixed-line take-up

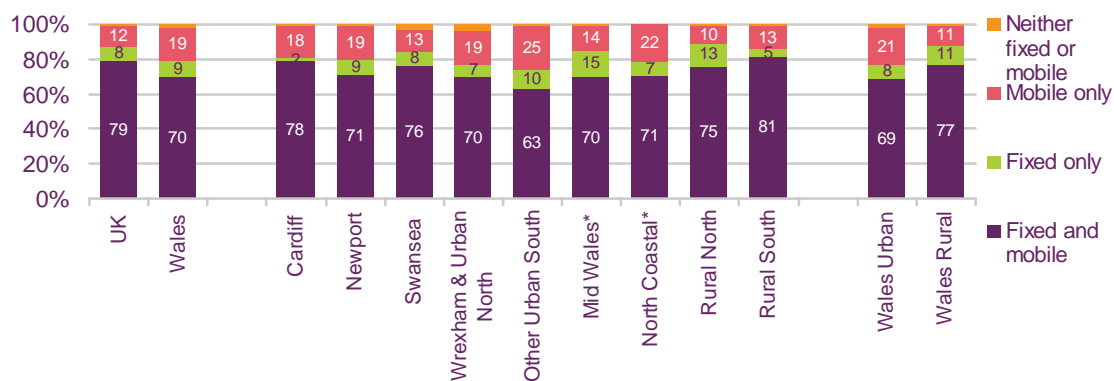


Source: Ofcom

* Sample size less than 100. Apply caution and treat as indicative only.

This lower penetration of fixed-lines in Wales does not necessarily indicate lower access to telephony overall, but rather reflects a much higher proportion of consumers using a mobile phone only. Nineteen per cent of respondents reported that they lived in a household with a mobile phone, but no fixed-line, compared to the UK average of 12% (Figure 3.67). The proportion of people living in mobile-only households was high across all the urban areas in Wales that we surveyed.

Figure 3.67 Cross-ownership of household telephony services



Source: Ofcom

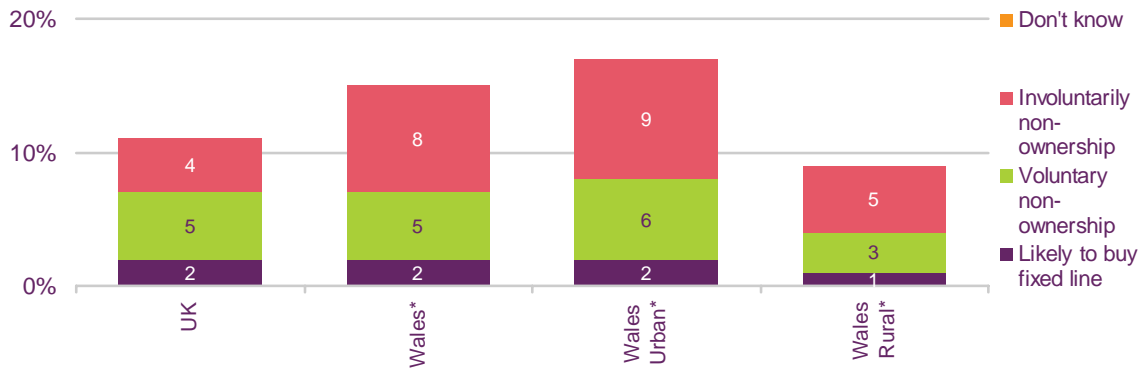
* Sample size less than 100. Apply caution and treat as indicative only.

Non-ownership of telecommunications services

There are many possible reasons for not owning a particular communications service, and these generally fall into one of two categories; voluntary and involuntary. Voluntary non-ownership is where potential consumers do without services because they perceive they do not need them, or because they are satisfied with alternative services. Involuntary non-ownership is where potential consumers do without services, but not through choice; this is mainly due to affordability. In the following analysis where consumers gave multiple responses which fall into both categories these have been reported as 'involuntary'.

The survey suggested that involuntary exclusion from fixed telephony was more common in Wales (8%) than across the whole of the UK (4%), particularly in urban areas (Figure 3.68). It also showed that involuntary exclusion was most likely to relate to the cost or affordability of the service.

Figure 3.68 Non-ownership of fixed-line services

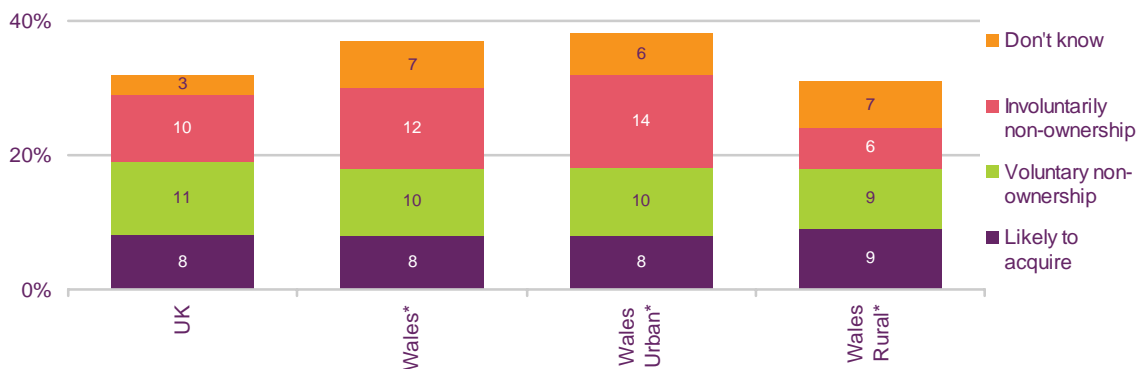


Source: Ofcom

* Sample size less than 100. Apply caution and treat as indicative only.

A majority (55%) of people in Wales lived in a household without a broadband connection, compared to the UK average of 43% (Figure 3.69). There was no clear pattern regarding involuntary non-ownership of broadband in Wales, which at 12% was only slightly higher than the UK average of 10%, although it was higher in the smaller southern towns (21%).

Figure 3.69 Non-ownership of broadband services

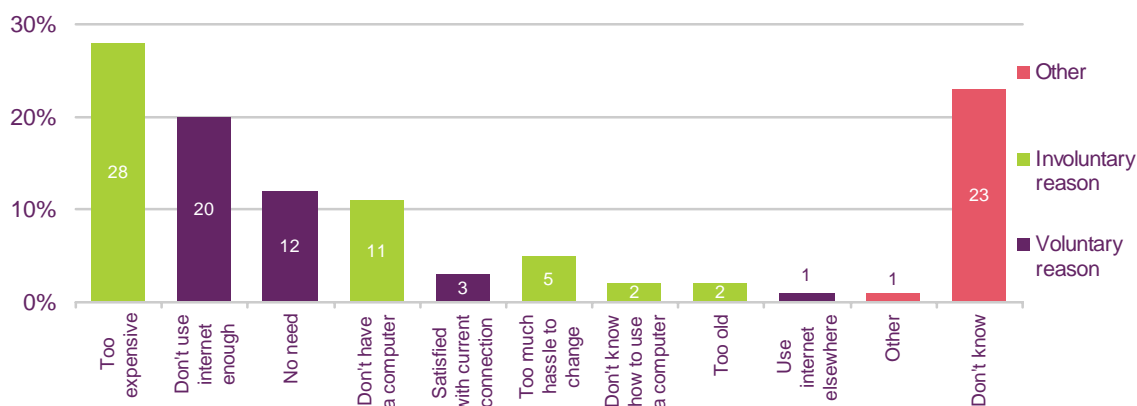


Source: Ofcom

* Sample size less than 100. Apply caution and treat as indicative only.

Figure 3.70 shows that the two most commonly cited reasons for not having broadband among respondents in Wales were the perceived cost (28%), and people's belief that their levels of internet use were too low to justify having broadband (20%). Lack of availability was not a frequently cited reason for not having broadband at home.

Figure 3.70 Reasons for not having broadband



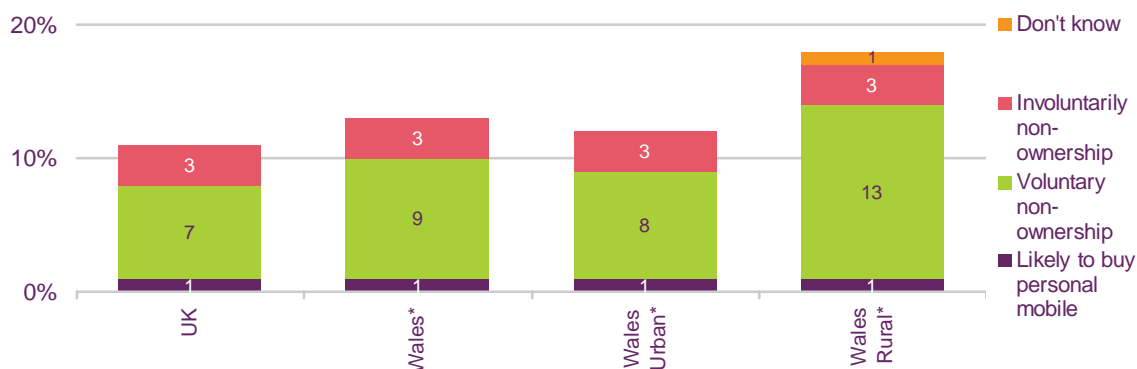
Source: Ofcom

* Sample size less than 100. Apply caution and treat as indicative only.

The reasons given for not having broadband by people in Wales were similar to those across the UK as a whole, although cost was slightly more of a factor, and 'no need' was mentioned less.

Involuntary ownership of a mobile phone was low in Wales at 3%, the same level as the UK overall (Figure 3.71).

Figure 3.71 Reasons for not having mobile services



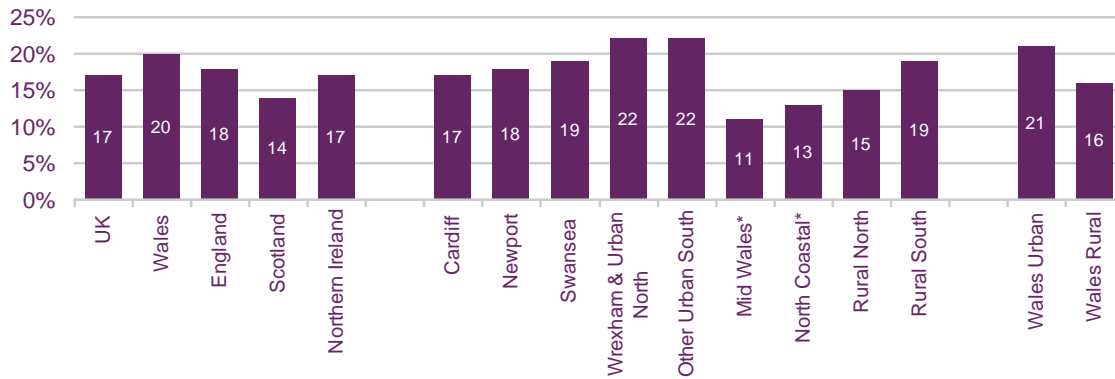
Source: Ofcom

* Sample size less than 100. Apply caution and treat as indicative only.

3G take-up

Take-up of 3G mobile services in Wales (20%) was higher than the 17% average across the UK, and was higher than in England, Scotland or Northern Ireland (Figure 3.72).

Figure 3.72 Take-up of 3G services



Source: Ofcom

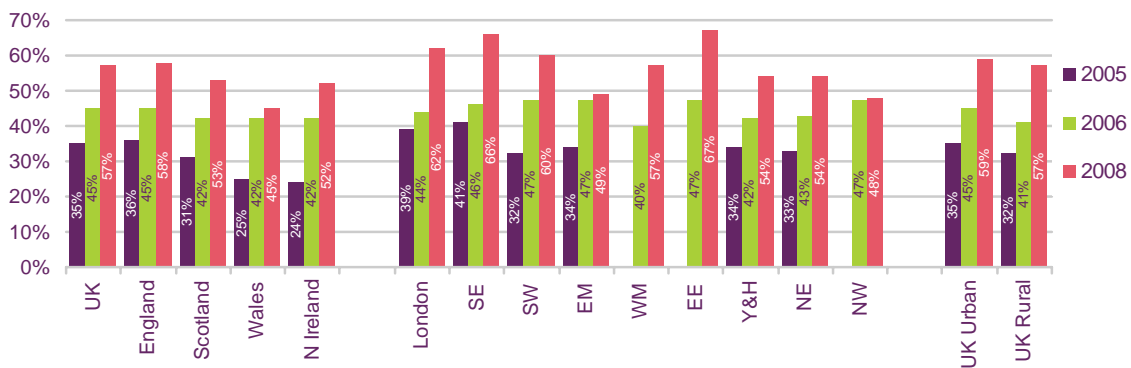
* Sample size less than 100. Apply caution and treat as indicative only.

In line with the rest of the UK, the biggest difference in 3G mobile take-up in Wales was between urban (21%) and rural areas (16%), perhaps reflecting higher 3G availability in urban areas. None of the other regional variations were statistically significant.

Broadband

Broadband growth in Wales has slowed since 2006, with an increase of 3 percentage points. This contrasts with significant growth in broadband in the UK in general, with take-up increases of 10 percentage points or more observed in England, Scotland and Northern Ireland (Figure 3.73).

Figure 3.73 Broadband take-up trend



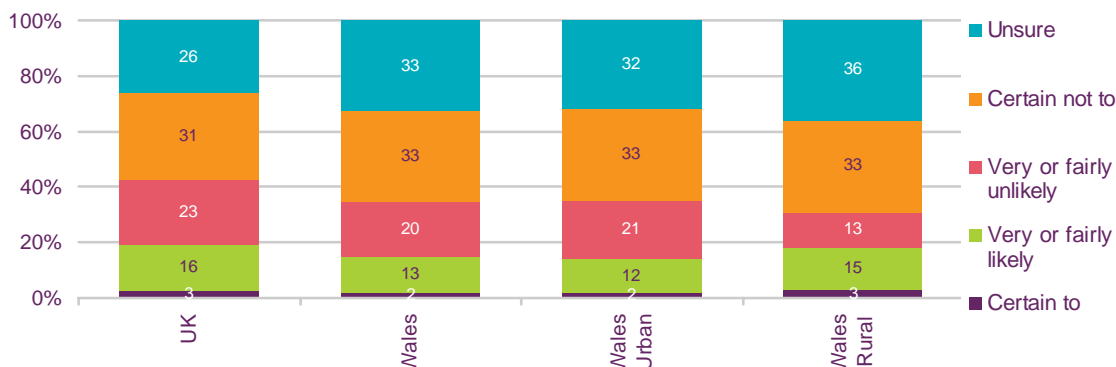
Source: Ofcom

Consumer responses suggest that the gap in broadband take-up between Wales and the rest of the UK will not close significantly during 2008 (Figure 3.74). Only 15% of those without broadband in Wales said that they were likely to get it in the following year; 53% were unlikely to and 33% were unsure. Within Wales, interest in getting broadband was lower in urban than in rural areas.

Take-up of broadband was highest in the main population centres with little difference between Cardiff (58%), Swansea (56%) and Newport (62%). In Mid-Wales take-up was

comparable (at 65%), but it is lowest in smaller urban areas in the south (34%) and Wrexham and other urban areas in the north (44%).

Figure 3.74 Intention to get broadband in next year

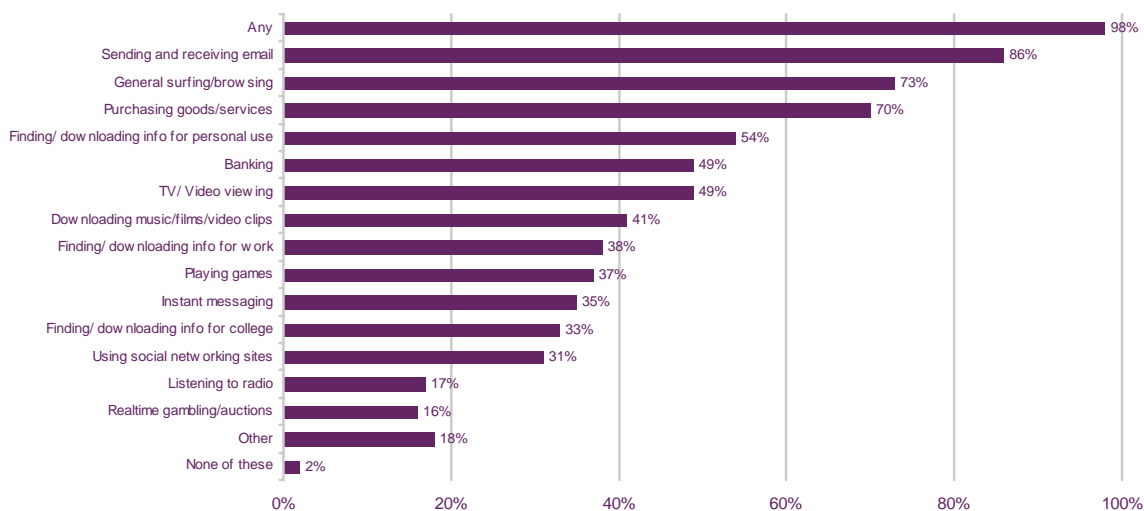


Source: Ofcom

* Sample size less than 100. Apply caution and treat as indicative only.

The most common online activities among broadband owners in Wales were sending and receiving email (86%), general surfing/browsing (73%), purchasing goods/ services (70%) and finding/downloading information for personal use (54%). Around half said that they used the internet for banking, and for watching TV/video clips (49%) (Figure 3.75).

Figure 3.75 Use of online applications among Wales broadband users



Source: Ofcom

Base: Adults aged 15+ with a broadband connection at home

Overall, there was little difference in use of online applications between consumers in Wales and the UK average.

Suppliers

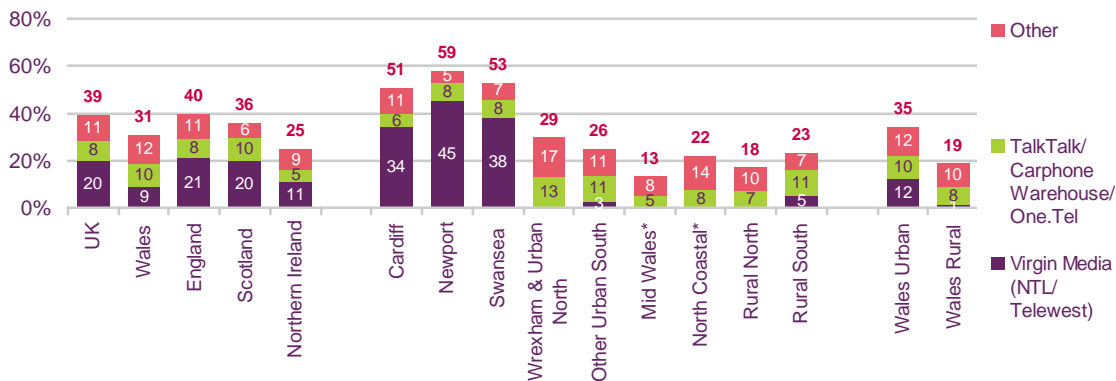
Fixed-line suppliers

Use of fixed-line suppliers other than BT was slightly lower in Wales (31%) than the UK average of 39% (Figure 3.76) although it is also important to note that some BT customers may also take call services from another operator using carrier pre-selection (CPS) or indirect access. However, use of providers other than BT was higher than in Northern Ireland (25%), with wide gaps between rural and urban areas in all parts of the UK. This reflects the lower availability of cable and unbundled exchanges (LLU) in rural areas across the UK.

Within Wales, 35% of urban consumers used alternatives to BT, compared to 19% in rural areas (Figure 3.76). This difference can be partly explained by the level of Virgin Media cable penetration, which was 12% in urban areas, and just 1% in rural areas. Virgin Media’s overall penetration of 9% in Wales, compared with 20% across the UK, reflects the fact that cable availability in Wales is the lowest among the UK nations.

Other differences were apparent across Wales. Penetration of non-BT suppliers was much higher in the three key urban areas of Wales (Cardiff, Swansea and Newport). This was again due to take-up of Virgin Media cable services, which was between 34% and 45% of the total fixed-line customer base in these areas. Use of suppliers other than Virgin Media or BT was similar across all areas.

Figure 3.76 Fixed-line supplier use



Source: Ofcom. Base: Adults aged 15+ with a fixed line at home.

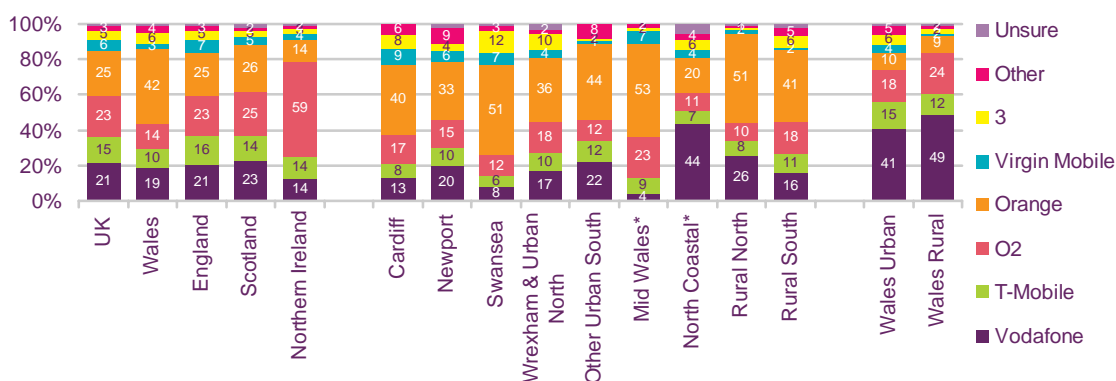
* Sample size less than 100. Apply caution and treat as indicative only.

Mobile networks

Mobile users differ in their choice of mobile network in Wales compared to the other UK nations: Orange was the most-used mobile network (42% compared to the UK average of 25%), and O2 at 14% was some way behind its national share of 23% (Figure 3.77).

Across Wales, Orange was the most-used network in all areas except North Coastal, where Vodafone had the largest share. Vodafone and Orange had higher shares in rural areas, where 3 and other network operators had a lower share.

Figure 3.77 Mobile network operator used

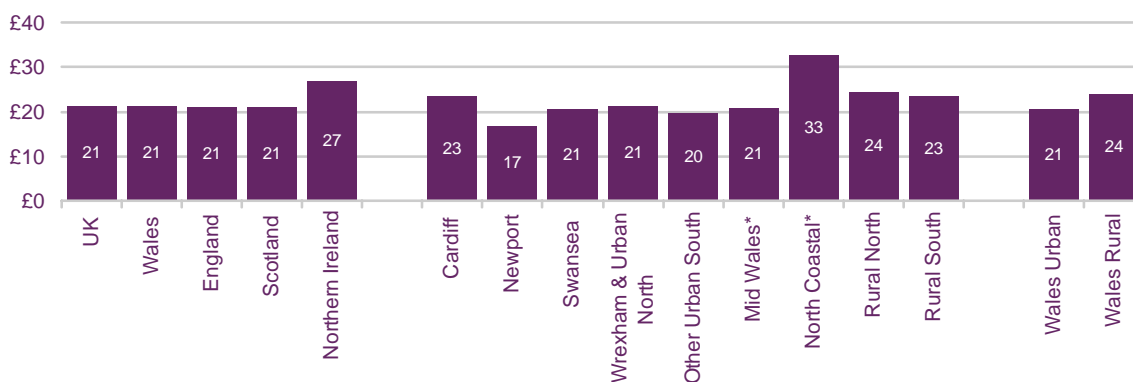


Source: Ofcom. Base: Adults aged 15+ with a mobile phone
* Sample size less than 100. Apply caution and treat as indicative only.

Telecoms spend

Average claimed monthly fixed telephony spend in Wales was £21, identical to the UK average (Figure 3.78). Spend was similar across most areas of Wales, but was lower in Newport at £17 a month and higher in North Coastal areas at £33 a month. It was also slightly higher in rural areas (£24 a month) than in urban areas (£21 a month), perhaps a reflection of the fact that those in rural areas are more dependant on fixed telephony to keep in contact than those in urban areas, where mobile use is higher.

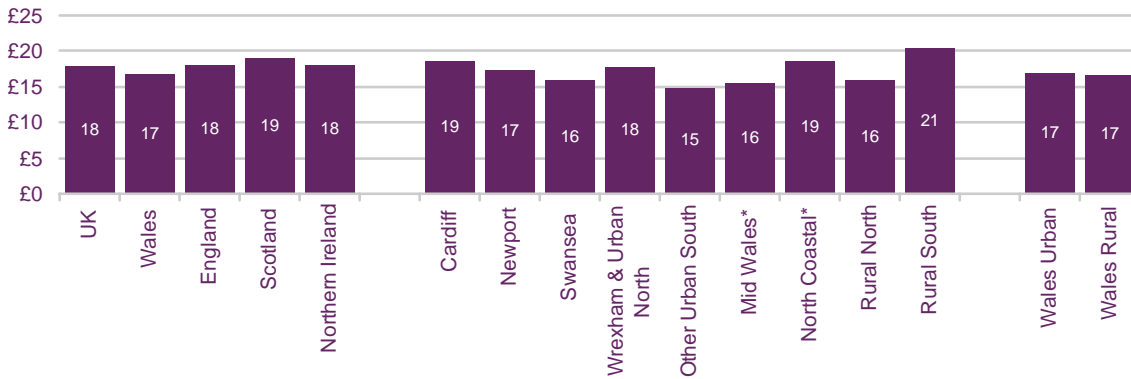
Figure 3.78 Average monthly household spend on fixed-line telephony



Source: Ofcom. Base: Adults aged 15+ with a fixed line at home
* Sample size less than 100. Apply caution and treat as indicative only.

Average monthly internet spend in Wales (£17) was similar to the UK average of £18 (Figure 3.79). Claimed spend did not vary significantly across areas of Wales, and there was no difference between urban and rural areas. Spend in smaller southern towns, where broadband penetration was lowest and the range of internet applications used was narrow (as shown in the convergence section), was marginally lower than in other areas of Wales.

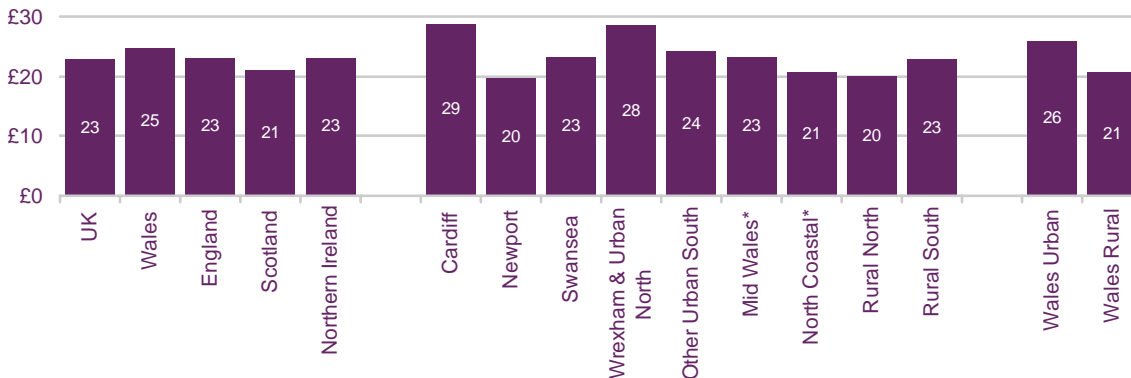
Figure 3.79 Average monthly household spend on internet service



Source: Ofcom. Base: Adults aged 15+ with a fixed line at home * Sample size less than 100. Apply caution and treat as indicative only

Claimed mobile phone spend was a little higher in Wales than the UK average, and was also higher in urban areas than in rural areas (Figure 3.80). Pre-pay use in Wales was most common in Welsh rural areas (74%) where spend tended to be lower. Mobile spend was highest in Cardiff and the urban north, and higher 3G use in urban areas of Wales may also be a factor.

Figure 3.80 Average monthly individual spend on mobile phone

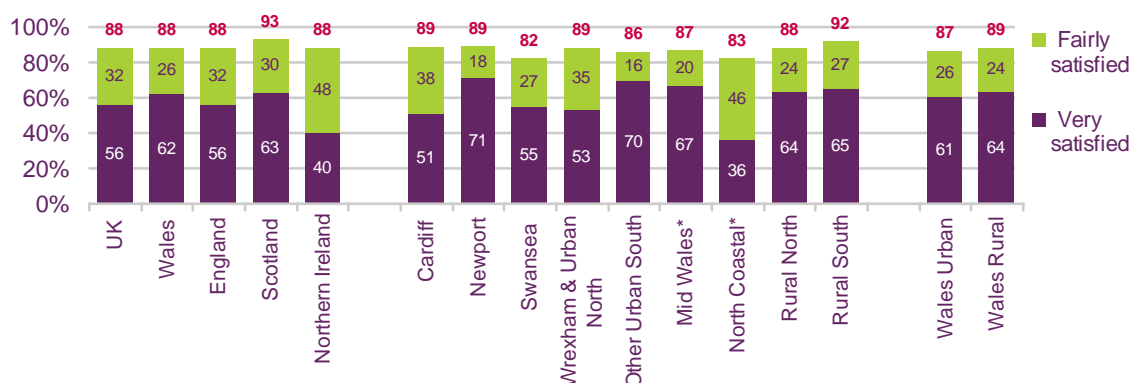


Source: Ofcom. Base: Adults aged 15+ with a fixed line at home
* Sample size less than 100. Apply caution and treat as indicative only

Satisfaction

The level of satisfaction with fixed-line services in Wales was high at 88%, the same as the UK average. Satisfaction levels may be related to spend, as the area which had the lowest satisfaction (North Coastal Wales) also had the highest overall claimed mobile spend.

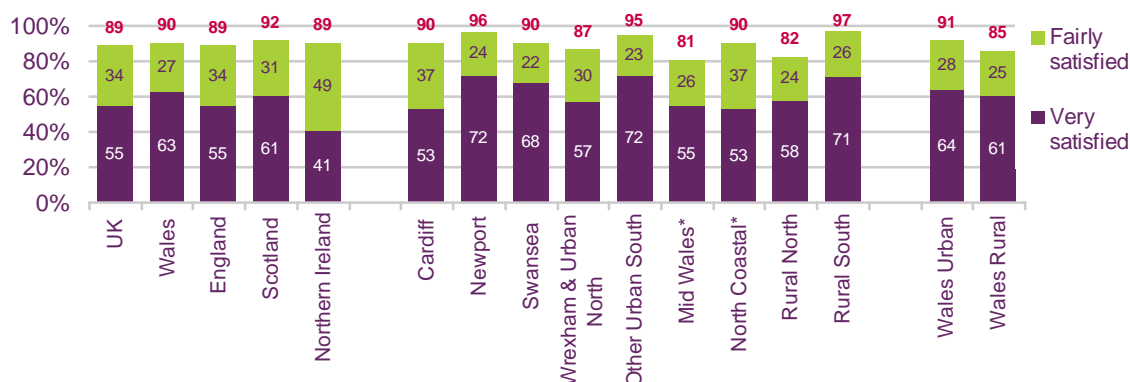
Figure 3.81 Overall satisfaction with fixed-line service



Source: Ofcom. Base: Adults aged 15+ with a fixed line at home
* Sample size less than 100. Apply caution and treat as indicative only

Figure 3.82 shows that there were marginally higher levels of satisfaction with broadband services in Wales (90%) than across the UK as a whole (89%). There was some indication that satisfaction levels were lower in rural areas than in towns, and they were lowest in Cardiff.

Figure 3.82 Overall satisfaction with broadband service

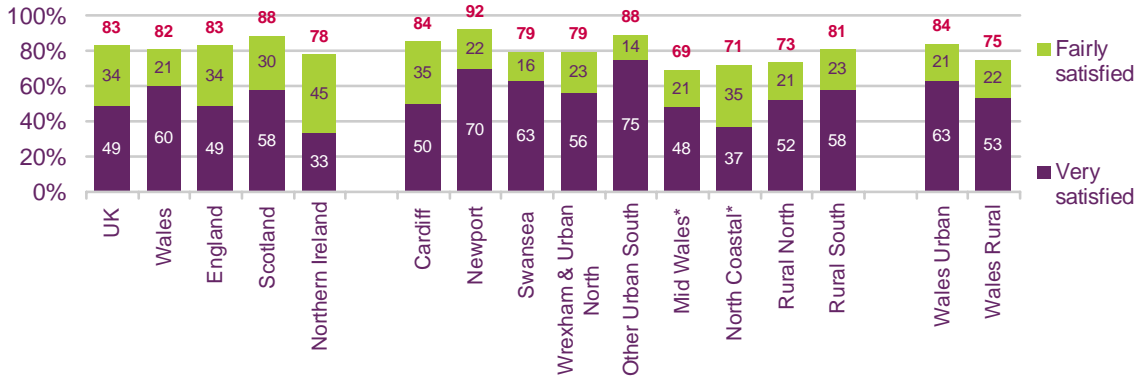


Source: Ofcom. Base: Adults aged 15+ with a fixed line at home
Sample size less than 100 in all areas within Wales. Apply caution and treat as indicative only.

The lower overall broadband satisfaction levels in rural areas of Wales may be driven by low satisfaction with connection speed (in rural areas distances from exchange to premises tend to be further, so speeds tend to be slower). Only 75% of broadband users in rural areas of Wales were satisfied with the speed of their broadband connection, compared to 84% in urban areas.

Overall, more than four in five consumers in Wales (82%) were satisfied with the speed of their broadband connection. This was on a par with the UK average (83%), although the proportion of 'very satisfied' customers was higher than average in Wales. Consumers in Cardiff gave the lowest satisfaction rating among those living in towns.

Figure 3.83 Satisfaction with speed of broadband connection

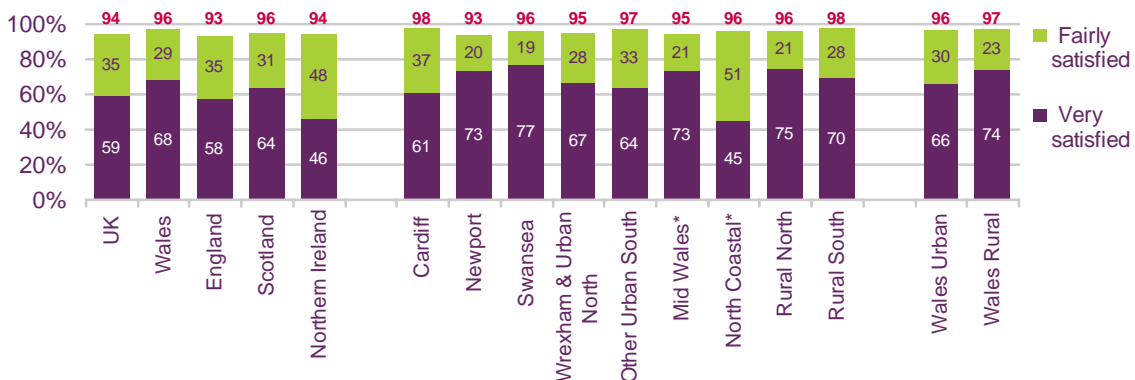


Source: Ofcom. Base: Adults aged 15+ with a broadband connection at home
Sample size less than 100 in all areas within Wales. Apply caution and treat as indicative only.

The proportion of consumers in Wales who were satisfied with their mobile service (96%) was higher than that for both fixed-line and broadband services (88% and 90% respectively) as shown in Figure 3.84. Satisfaction in Wales was similar to the UK average, but a greater proportion of consumers in Wales (68%) were 'very satisfied' than the UK average (59%).

Satisfaction with mobile service was similar in rural areas (97%) and urban areas (96%), and among the latter Cardiff had the lowest proportion of users who were very satisfied, at 61% compared to the average of 66% in urban areas. Spend may have been a contributory factor, as average claimed monthly mobile spend in Cardiff was around 15% above the average for Wales. North Coastal areas had the lowest proportion of mobile users who were very satisfied with their service (45%), possibly due to coverage issues and lack of choice of suppliers in the area.

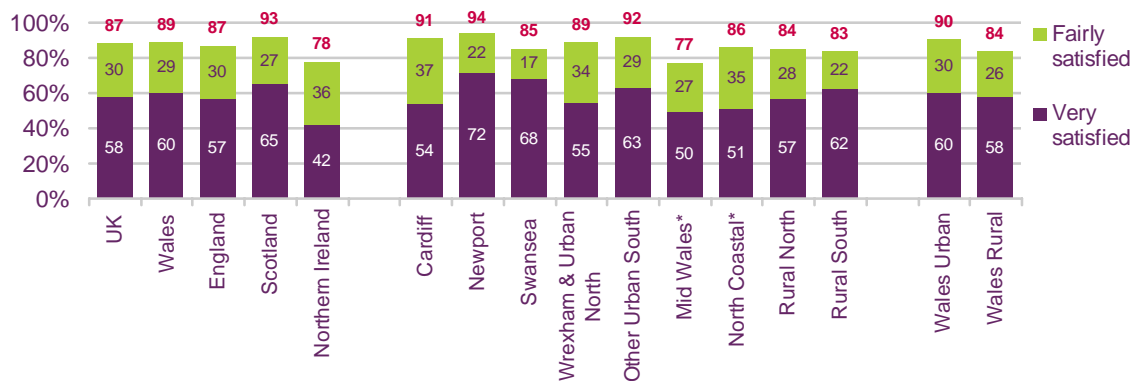
Figure 3.84 Overall satisfaction with mobile service



Source: Ofcom. Base: Adults aged 15+ with a mobile phone
Sample size less than 100. Apply caution and treat as indicative only.

Figure 3.85 shows that the proportion of people satisfied with their mobile reception in Wales (89%) was slightly higher than the UK average (87%). Satisfaction levels were lower in rural areas (84%) than in urban areas (90%), with Mid Wales returning the lowest satisfaction (77%). It is likely that coverage issues were a factor here.

Figure 3.85 Satisfaction with reception of mobile service



Source: Ofcom. Base: Adults aged 15+ with a mobile phone

* Sample size less than 100. Apply caution and treat as indicative only.

Annex A: Survey methodology

The research survey referred to in this report is the first in a planned series of annual surveys. Respondents were adults, living in the UK, aged 15 or over. A total of 5,812 interviews were conducted; 3,447 in England, 925 in Scotland, 811 in Wales and 629 in Northern Ireland.

In England, the North West, North East and South West regions were over-sampled. This is to allow more detailed analysis within those areas. In future years, other regions will be picked for detailed analysis.

Research agency Saville Rossiter-Base was commissioned to conduct the survey as part of Ofcom's annual residential consumer tracking survey. A specialist sampling agency (UK Geographics) was used to draw the sampling points, using output areas (OAs) as classified by the 2001 Census. In Scotland, due to the smaller size of OAs, UK Geographic used their own aggregation process to create sample areas of a comparable population to English and Wales OAs.

Interviewers were provided with specific addresses to approach regarding the research. All interviews were conducted in the respondents' homes using paper questionnaires and prompt material. The questionnaire took an average of 30 minutes to complete. Parents of respondents aged 15 were free to stay with their child during the interview. In total, 5,812 interviews were conducted across 490 sampling points; 289 in England, 78 in Scotland, 67 in Wales and 56 in Northern Ireland. Fieldwork was conducted between 12 January and 29 February 2008.

Quotas were set according to regional population profiles, so the findings are representative of the regions surveyed. The quotas were set on age, gender, social-economic group, and whether the area was cabled, rural or urban, and the level of deprivation. The indices of rurality and deprivation are UK Geographics' proprietary datasets, to ensure comparability between nations.

Quotas were set to achieve a minimum of 100 interviews in each of the regions and sub-regions of interest. This required the number of interviews to be boosted in many areas, including specific towns and some rural areas. Data analysed on sample sizes below 100 within nation or region are indicated in the charts and tables with an asterisk (*). These findings should be treated with caution and at an indicative level only.

Data weighting

All data have been weighted to match the profile of each of the four nations as detailed in the 2001 Census and to remove the effect of the over-sampling of specific areas mentioned above. Unweighted bases are shown throughout this report to illustrate the number of respondents interviewed.

| | Unweighted | Weighted |
|------------------|------------|----------|
| UK | 5,812 | 3,000 |
| England | 3,447 | 2,510 |
| Scotland | 925 | 261 |
| Wales | 811 | 146 |
| Northern Ireland | 629 | 82 |

Margin of error and statistical significance

Because the survey was conducted among a sample of people aged 15 or over rather than the whole UK population, the data may be subject to a small margin of error. The error margin for each of the nations and regions of interest covered by the survey are illustrated in the following tables. Error margin rises among smaller sub-groups. Results referred to as 'significantly' different, have been tested at the 95% level of confidence.

UK nations

| | Total sample size | Error margin at 95% confidence interval, for questions asked of the full sample |
|------------------|-------------------|---------------------------------------------------------------------------------|
| UK | 5,812 | 1-2% |
| England | 3,447 | 1-2% |
| Scotland | 925 | 3-4% |
| Wales | 811 | 3-4% |
| Northern Ireland | 629 | 3-5% |

UK regions - England

| | Total sample size | Error margin at 95% confidence interval, for questions asked of the full sample |
|--------------------------|-------------------|---------------------------------------------------------------------------------|
| Total urban | 2,224 | 1-2% |
| Total rural | 1,203 | 2-3% |
| London | 192 | 4-7% |
| South East urban | 184 | 4-7% |
| Bristol & SW urban | 106 | 6-10% |
| Plymouth | 115 | 6-9% |
| Truro | 108 | 6-10% |
| East Midlands urban | 131 | 5-9% |
| Birmingham | 108 | 6-10% |
| West Midlands urban | 227 | 5-8% |
| East of England urban | 142 | 5-8% |
| Yorkshire & Humber urban | 143 | 5-9% |
| Newcastle | 108 | 6-10% |
| Sunderland | 107 | 6-10% |
| Middlesbrough | 97 | 6-10% |
| Greater Manchester | 193 | 6-9% |
| City of Manchester | 108 | 6-10% |
| Liverpool | 109 | 6-10% |
| South East rural | 106 | 6-10% |
| Devon & Cornwall | 108 | 6-10% |
| Other South West rural | 108 | 6-10% |
| East Midlands rural | 108 | 6-10% |
| West Midlands rural | 103 | 6-10% |
| East of England rural | 107 | 6-10% |
| Yorkshire & Humber rural | 109 | 6-10% |
| Northumberland rural | 108 | 6-10% |
| Durham rural | 108 | 6-9% |
| Cumbria rural | 109 | 6-10% |
| Other North West rural | 105 | 6-10% |

UK regions – Scotland

| | Total sample size | Error margin at 95% confidence interval, for questions asked of the full sample |
|---------------------|-------------------|---------------------------------------------------------------------------------|
| Total urban | 689 | 3-5% |
| Total rural | 236 | 4-7% |
| Aberdeen | 107 | 6-10% |
| Dundee | 107 | 6-10% |
| Glasgow | 104 | 6-11% |
| Edinburgh | 108 | 6-10% |
| Border | 108 | 6-10% |
| Highlands & Islands | 116 | 9-14% |
| Other urban | 191 | 4-7% |
| Other rural | 84 | 6-11% |

UK regions – Wales

| | Total sample size | Error margin at 95% confidence interval, for questions asked of the full sample |
|-----------------------|-------------------|---------------------------------------------------------------------------------|
| Total urban | 566 | 3-5% |
| Total rural | 245 | 4-7% |
| Cardiff | 108 | 6-10% |
| Newport | 111 | 6-10% |
| Swansea | 108 | 6-10% |
| Wrexham & urban north | 121 | 6-9% |
| Other urban south | 118 | 6-9% |
| Mid Wales | 68 | 8-13% |
| North Coastal | 56 | 8-14% |
| Rural North | 136 | 5-9% |
| Rural South | 109 | 6-10% |

UK regions – Northern Ireland

| | Total sample size | Error margin at 95% confidence interval, for questions asked of the full sample |
|--------------------|-------------------|---------------------------------------------------------------------------------|
| Total urban | 487 | 3-5% |
| Total rural | 142 | 5-8% |
| West | 227 | 5-8% |
| East | 402 | 3-5% |
| West urban | 166 | 6-10% |
| East urban | 321 | 4-6% |
| West rural | 61 | 8-13% |
| East rural | 81 | 7-11% |
| Belfast | 176 | 4-7% |
| Londonderry/ Derry | 118 | 5-9% |
| Small towns | 109 | 6-10% |
| Border | 183 | 5-9% |

Glossary

2G Second generation of mobile telephony systems. Uses digital transmission to support voice, low-speed data communications, and short messaging services.

3G Third generation of mobile systems. Provides high-speed data transmission and supports multimedia applications such as full-motion video, video-conferencing and internet access, alongside conventional voice services.

ADSL Asymmetric Digital Subscriber Line. A digital technology that allows the use of a standard telephone line to provide high speed data communications. Allows higher speeds in one direction (towards the customer) than the other.

ADSL1 The first generation of ADSL, capable of data speeds of up to 8Mbit/s towards the customer and up to 640kbit/s from the customer.

ADSL2/ADSL2+ Improved versions of ADSL, offering high speeds, especially on shorter telephone lines. In the case of ADSL2+, up to 24Mb/s can be delivered towards the customer.

Broadband A service or connection generally defined as being 'always on' and providing a bandwidth greater than narrowband.

Contention ratio An indication of the number of customers who share the capacity available in an ISP's broadband network. Figures of 50:1 for residential broadband connections and 20:1 for business are typical).

CPS Carrier Pre-selection. The facility offered to customers which allows them to opt for certain defined classes of call to be carried by an operator that has been selected in advance and has a contract with the customer. CPS does not require the customer to dial a routing prefix or use a dialler box.

DAB Digital Audio Broadcasting. A set of internationally accepted standards for the technology by which terrestrial Digital Radio multiplex services are broadcast in the UK.

Digital dividend The spectrum that will be released by the switch to all-digital television.

Digital switchover The process of switching over the current analogue television broadcasting system to digital, as well as ensuring that people have adapted or upgraded their televisions and recording equipment to receive digital TV.

DSL Digital Subscriber Line. A family of technologies generally referred to as DSL, or xDSL, capable of transforming ordinary phone lines (also known as 'twisted copper pairs') into high-speed digital lines, capable of supporting advanced services such as fast Internet access and video-on-demand. ADSL, HDSL (High data rate Digital Subscriber Line) and VDSL (Very high data rate Digital Subscriber Line) are all variants of xDSL).

DTT Digital Terrestrial Television, currently most commonly delivered through the Freeview service.

Fibre-to-the-cabinet Access network consisting of optical fibre extending from the access node to the street cabinet. The street cabinet is usually located only a few hundred metres from the subscriber premises. The remaining segment of the access network from the

cabinet to the customer is usually a copper pair but could use another technology, such as wireless.

Fibre-to-the-home A form of fibre optic communication delivery in which the optical signal reaches the end user's living or office space.

Fibre-to-the-building A form of fibre-optic communication delivery in which an optical fibre is run directly onto the customers' premises.

FM Frequency Modulation. Type of modulation produced by varying the frequency of a radio carrier in response to the signal to be transmitted. This is the type of modulation used by broadcasters in part of the VHF (Very High Frequency) band, known as VHF Band 2.

GSM Global Standard for Mobile Telephony, the standard used for 2G mobile systems.

HDTV High-Definition Television. A technology that provides viewers with better quality, high-resolution pictures.

International roaming A service offered by mobile operators that allows customers to use their phone abroad. The home operator has agreements with foreign operators that allows customers to make and receive calls, send and pick up text messages, and use some of the other mobile services (such as access to voicemail or topping-up credit on pre-pay phones). The exact services available and the charges for their use vary between operators.

Internet A global network of networks, using a common set of standards (e.g. the Internet Protocol), accessed by users with a computer via a service provider.

IP (Internet Protocol) The packet data protocol used for routing and carriage of messages across the Internet and similar networks.

IPTV Internet Protocol Television. Television and/or video signals that are delivered to subscribers or viewers using Internet Protocol (IP), the technology that is also used to access the Internet. We use the term to mean delivery over a 'closed intranet', typically operated by ISPs and local-loop unbundlers, rather than over the public internet. IPTV services are hosted on servers placed in the exchange, which means they can be delivered with assured QoS since the ISP has more control over the network.

ISP Internet Service Provider. A company that provides access to the internet.

LLU (Local Loop Unbundling) LLU is the process whereby incumbent operators (in the UK this means BT and Kingston Communications) make their local network (the lines that run from customer's premises to the telephone exchange) available to other communications providers. The process requires the competitor to deploy its own equipment in the incumbent's local exchange and to establish a backhaul connection between this equipment and its core network.

Local Loop The access network connection between the customer's premises and the local PSTN exchange, usually a loop comprised of two copper wires.

Multichannel In the UK, this refers to the provision or receipt of television services other than the main five channels (BBC ONE & TWO, ITV1, Channel 4/S4C, five) plus local analogue services. 'Multichannel homes' comprise all those with digital terrestrial TV, satellite TV, digital cable or analogue cable, or TV over broadband. Also used as a noun to refer to a channel only available on digital platforms (or analogue cable).

Multiplex A device that sends multiple signals or streams of information on a carrier at the same time in the form of a single, complex signal. The separate signals are then recovered at the receiving end.

MVNO An organisation which provides mobile telephony services to its customers, but does not have allocation of spectrum or its own wireless network.

Narrowband A service or connection providing data speeds up to 128kbit/s, such as via an analogue telephone line, or via ISDN.

PAYG Pay-as-you-go.

Podcasting Away for digital audio files to be published on the internet, which can then be downloaded onto computers and transferred to portable digital audio players.

PSB Public Service Broadcasting, or Public Service Broadcaster. The Communications Act in the UK defines the PSBs to include the BBC, ITV1, Channel 4, five and S4C.

PSTN Public Switched Telephony Network.

RAJAR Radio Joint Audience Research The pan-industry body which measures radio listening.

RSS is an acronym of either 'Really Simply Syndication' or 'Rich Site Summary'. It refers to a news feed that is generated by the content on a website, but which visitors can select to have delivered to their computer without visiting the source website

Service bundling (or multi-play) A marketing term describing the packaging together of different communications services by organisations that traditionally only offered one or two of those services.

Service provider A provider of electronic communications services to third parties whether over its own network or otherwise.

Share (Radio) Proportion of total listener hours, expressed as a percentage, attributable to one station within that a defined area.

Share (TV) Proportion of total TV viewing to a particular channel over a specified time, expressed as a percentage of total hours of viewing.

Sub-loop unbundling A variant of LLU where a competitive operator takes control of only a portion of a customer's local loop, allowing them to install their equipment closer to the customer and potentially offer higher-speed services. In Sub-loop unbundling, the point of handover is commonly the Primary Connection Point (PCP) or street cabinet.

Telecommunications, or 'Telecoms' Conveyance over distance of speech, music and other sounds, visual images or signals by electric, magnetic or electro-magnetic means.

VoIP Voice over Internet Protocol. A technology that allows users to send calls using Internet Protocol, using either the public Internet or private IP networks.

Web 2.0 A perceived second generation of web-based communities and hosted services - such as social-networking sites and wikis, which facilitate collaboration and sharing between users.

WiFi hotspot A public location which provides access to the internet using WiFi technology.

WiMAX A wireless MAN (metropolitan area network) technology, based on the 802.16 standard. Available for both fixed and mobile data applications.

Wireless LAN or WiFi (Wireless Fidelity) Short range wireless technologies using any type of 802.11 standard such as 802.11b or 802.11a. These technologies allow an over-the-air connection between a wireless client and a base station, or between two wireless clients.

WLR Wholesale Line Rental A regulatory instrument requiring the operator of local access lines to make this service available to competing providers at a wholesale price.

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