



The Communications Market: Nations and Regions Scotland

Research report

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Section 1

Foreword

This survey is part of Ofcom's Communications Market series of reports. It examines availability, take-up and consumption of communications services across the UK, exploring how citizen and consumer interests are being met and how this picture varies by each of the nations and regions.

This report sets out the findings from the survey for Scotland, setting them in the context with the UK as a whole and the other three nations (England, Wales and Northern Ireland). For the full findings of the survey, please refer to the main report *The Communications Market: Nations and Regions*.

We undertook this project to address stakeholder feedback that Ofcom's work should take into consideration the differences between the nations and regions of the UK. The project is consistent with Ofcom's duties to secure the availability of a wide range of electronic communications services throughout the UK, having regard to the different interests of people living in different parts of the UK and in rural and urban areas.

The survey considers the three basic communications platforms; telecoms (including telephone landlines and second and third generation mobile phones), internet (including broadband and high speed services) and digital broadcasting (including digital TV and radio). It explores the key patterns for these services as they apply to availability, take-up and consumption across the UK, amongst consumers and small and medium-sized enterprises (SMEs).

Most of the data in the report was collated from research undertaken in the second half of 2005, including Ofcom's residential tracking study, the Media Literacy Audit and operator data for mobile phone, digital subscriber line (DSL) and cable coverage.

This report should be seen in the context of a series of complementary research surveys to be published by Ofcom during 2006. These include the Media Literacy Audit, (the main report was published in March 2006 and the supplementary report on media literacy in the nations and regions is being published alongside this report), reports on consumer and SME engagement with digital services and the annual Communications Market report, (all to be published later in the year).

We believe that this report will provide a valuable resource for Ofcom, national, regional and local government and other stakeholders, to tailor their approach to national and regional differences in availability, take-up and consumption of communications services. A series of Rural, Regional and Remote seminars in the nations and regions will be held shortly after publication so they can be used as a forum for discussion of the research findings. Ofcom will then publish a final report which will assess the implications of the research findings on current and planned Ofcom work and, where appropriate, make recommendations.

It is our intention that the nations and regions survey should be repeated on a regular basis and supplemented, where appropriate, by further UK-wide research amongst ethnic minorities, disability groups and key age and social groups.

Section 2

Key findings for Scotland

- Due to its geography, certain parts of Scotland, particularly the Highlands and Islands, experience lower levels of availability, including some mobile phone black spots, satellite coverage and lower speed broadband.
- 36% of adults living in Scotland say they have taken-up three of the main communications platforms of mobile phone, digital TV and the internet at home, compared to 43% for the UK as a whole.
- Household take-up of telephone landlines in Scotland, at 87%, is lower than the UK average of 91%, driven primarily by lower take-up among younger age groups.
- Scotland has lower 2G mobile phone coverage (56% of postal districts with at least 75% area coverage by all 4 operators). However mobile phone take-up is broadly in line with the UK average, at 77%.
- Scotland has lower than average PC and internet take-up at 51% and 57% respectively, but levels of broadband take-up at 60% are consistent with the UK average and higher than Wales and Northern Ireland.
- Scotland has higher availability than the UK average (73%) for Digital Terrestrial Television (DTT) at 82%. However, despite higher availability of DTT services, take-up of DTT is lower in Scotland, and take-up of digital satellite is also lower than the UK average.
- People in Scotland spend less on communications services than the UK as a whole, £14.50 a week against £15.20 a week for the UK. However, as a percentage of average weekly disposable income, people in Scotland spend a larger proportion of their income on communications at 3.4% against the UK average of 3.2%.
- Adults in Scotland consume more digital TV than anywhere else in the UK – at nearly 22 hours per week, compared to a UK average of 19 hours.

Section 3

Introduction

3.1 Background

This research report sets out the findings from Ofcom's survey of communications across the nations and regions of the United Kingdom as they relate to Scotland, setting them within the context of the UK as a whole and relative to the other three nations (England, Northern Ireland and Wales).

This survey is a commitment included in the 2005/6 Annual Plan. It addresses stakeholder feedback that Ofcom's work should better reflect and demonstrate an understanding of the differences between the nations and regions of the UK. This sentiment was reinforced at our Rural, Regional and Remote seminars in 2005 and Annual Plan consultation events in the nations and regions which took place at the beginning of 2006.

It is also consistent with Ofcom's principal statutory duty; namely, to further the interests of citizens and consumers, where appropriate by encouraging competition and duties to secure the availability of a wide range of electronic communication services and a wide range of television and radio services throughout the UK. In doing this, Ofcom must among other things have regard to the desirability of encouraging the availability and use of high speed internet throughout the UK and the different interests of persons living in different parts of the UK and in rural and urban areas.

The Terms of Reference for the project were published on 10 November 2005 and are available at <http://www.ofcom.org.uk/research/cm/nations/tor/?a=87101>.

This report should be seen in the context of a series of complementary research surveys to be published by Ofcom during 2006. These include the Media Literacy Audit, (the main report was published in March 2006 and the supplementary report on media literacy in the nations and regions is being published alongside this report), reports on consumer and SME engagement with digital services and the annual Communications Market report, (all to be published later in the year).

3.2 Objectives

There has been considerable debate about the importance of geographic variations in the availability, take-up and consumption of communications services and the reasons behind these differences. However, the patterns of variance have never been analysed systematically using market research and other secondary data.

This survey of communications across nations and regions seeks to address this by gathering available data relating to telecommunications (landlines, mobile phones), internet (narrowband, broadband) and digital broadcasting (digital TV, digital radio) and analysing patterns of variance by nation and region.

The information collected looks at availability, take-up and consumption across each of these services among consumers by geographic location. The survey also examines take-up of communications amongst small and medium sized enterprises (SMEs).

The main aims of the project are to:

- create an evidence base of key trends in communications markets in the UK in relation to geographic location and selected socio-economic indicators;
- identify options and choices for Ofcom's regulatory approach to reflect national and regional differences;
- engage and involve stakeholders and advisory committees in identifying regional differences; and
- engage with national and regional Government to identify issues beyond Ofcom's remit which may merit further consideration.

Ofcom hopes that the research findings presented in this report will establish a robust evidence base for communications services across the UK. This can be used as a benchmark against which to assess the impact of future activity and to inform and guide policy development.

3.3 Research methodologies

This report draws on data from a number of sources, including Ofcom research initiatives and other external sources. Data sources have been selected to ensure that they are as comparable as possible but reference should be made to the source notes relating to each section which clearly identify how the research has been used.

The majority of data used in this report is drawn from surveys conducted between Q1 and Q3 2005.

Ofcom is aware, however, that some markets have seen change notably in penetration levels since Q3 2005. For example, data from Q4 2005 of Ofcom's Residential Communications Tracking Study suggests that Wales' take-up of mobile phones and broadband has increased significantly and at a UK level digital TV take-up has increased to more than 70% as reported in *The Communications Market: Digital Progress Report – Digital TV*.

Throughout this report, both residential consumer and SME data referred to as 'significantly' different has been tested at the 99% level of confidence and therefore can be considered to be robust. Data referred to as showing 'indicative' differences is significant at the 95% level of confidence.

Data has only been analysed on sample sizes of 100 or more. As such, it has not been possible to analyse all aspects within nation or region. For example, the media literacy audit survey was designed to examine English regions only at an indicative level, which means that where data from the audit is used in this report, the North East cannot be included.

All data used is weighted data and un-weighted base sizes are shown on charts and tables to show the number of respondents who were asked the question.

The three key Ofcom research initiatives used in this report are as follows:

Ofcom's Residential Communications Tracking Study

This survey is a continuous face to face survey, with monthly interviewing of a representative sample of around 700 UK adults aged 15+.

The residential tracker achieved a total sample of 4426 UK adults, 3379 adults in England, 407 adults in Scotland, 292 adults in Wales and 348 adults in Northern Ireland. As Northern Ireland only accounts for 3% of the UK a representative sample (i.e. 3% of the total sample) is insufficient to allow individual analysis of this nation. Therefore, Ofcom's residential tracking study boosts the number of interviews in Northern Ireland to provide a sufficiently robust sample.

Data was collected between January and September 2005.

Ofcom's Media Literacy Audit

This survey was a discrete face to face survey, interviewing a representative sample of 3244 UK adults aged 16+. It achieved a total sample of 1816 adults in England, 437 adults in Scotland, 495 adults in Wales and 496 adults in Northern Ireland.

Data was collected between June and August 2005. Ofcom's Media Literacy Audit did not extend to landline telephones and therefore the landline telephones section does not include any findings about intention to take-up, and voluntary and involuntary exclusion, as detailed in the other sections.

Ofcom carried out a comparison of these two residential studies with various other sources of data, all of which are detailed in the methodology section of this report along with further sampling details of each survey.

Small and Medium Enterprises (SME) Tracking Study

This survey is a continuous telephone survey, with monthly interviews of a representative sample of SMEs (1-250 employees and annual turnover in excess of £50k).

A total sample of 2117 SMEs has been used for analysis in England, 298 in Scotland, 149 in Wales and 147 in Northern Ireland. The latter three are relatively small and therefore caution should be taken when drawing conclusions from this data. Sample size has also limited analysis to take-up figures. However, Ofcom is currently performing a review of this research which will potentially include an increase in sample sizes.

3.4 Scope

Issues relating to content including, the Public Service Broadcasting (PSB) review settlement and broadcast production, are beyond the scope of this report.

This project has not addressed detailed behaviour amongst ethnic minorities, disabled people or specific age groups (such as young people). Some of the findings – such as groups involuntarily excluded from digital broadcasting platforms and the internet – suggest there is more work to be done in these areas which is planned to be picked up in the phase two of this project and in future versions of the survey.

3.5 Report structure

This report comprises a current examination of the communications markets in Scotland – for telecoms (landlines and mobile phones), internet (including broadband) and digital broadcasting (television and radio). It is accompanied by a main report, which examines the UK overall and compares across nations and regions, and by separate national reports for Northern Ireland, Wales, and England.

The Communications Market: Nations and Regions - Scotland

The report begins by describing the geographic, socio-demographic and economic contexts of each communications market. It then presents data on the markets themselves, under three main sections, which consider respectively the availability of communications services, the take-up of communications services (including exclusion from services, both voluntary and involuntary), and the consumption of services (including usage patterns and satisfaction levels). The final section presents findings on the SME markets for telecoms and internet.

We recommend that this report is read in conjunction with the main report – *The Communications Market: Nations and Regions*.

Section 4

Setting the scene

4.1 Introduction

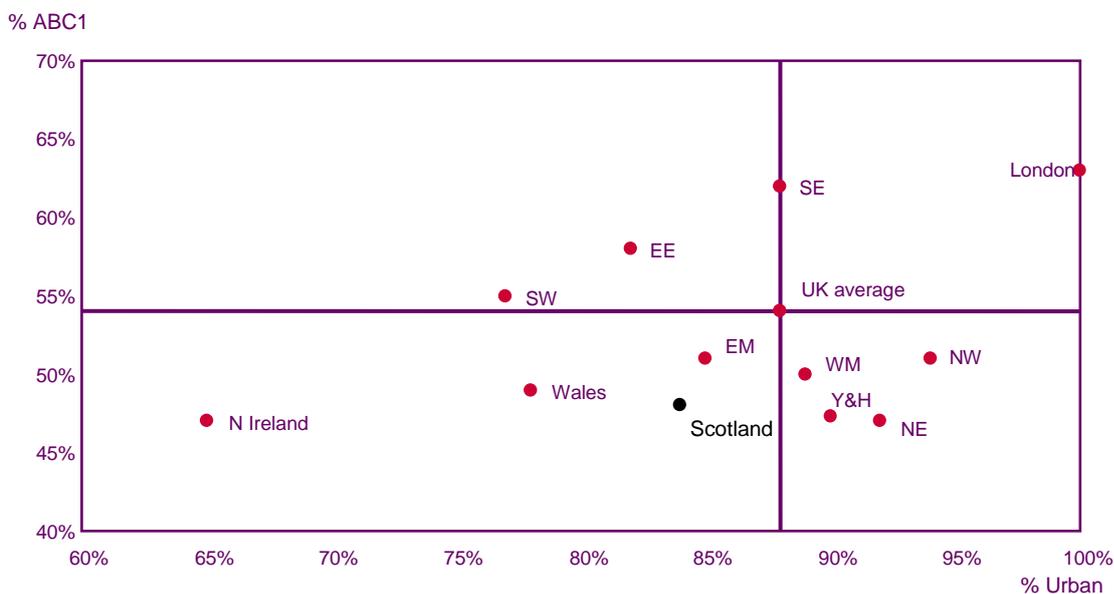
Scotland has unique geographic, linguistic, and socio-demographic features which influence and shape its communications services. The following figures analyse some of the socio-demographic characteristics which influence communications services including population, rural/urban split, socio-economic groups, and age. Cultural, geographic and other features also influence the communications services and a summary of these as they relate to Scotland is also provided.

4.2 Socio-demographic features

Figure 1 shows the distribution of the UK population according to the proportion of ABC1s and those living in urban areas.

Scotland has a number of key demographic indicators distinguishing it from the UK average, and linking to higher levels of deprivation and financial exclusion. These factors may be related to the economic viability, and thus take-up and exclusion from electronic communications services. Highlands & Islands is the only area with transitional EU Objective 1 status (compared for example with with 80% of Wales).

Figure 1: The geographic and socio-economic profile of the UK



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

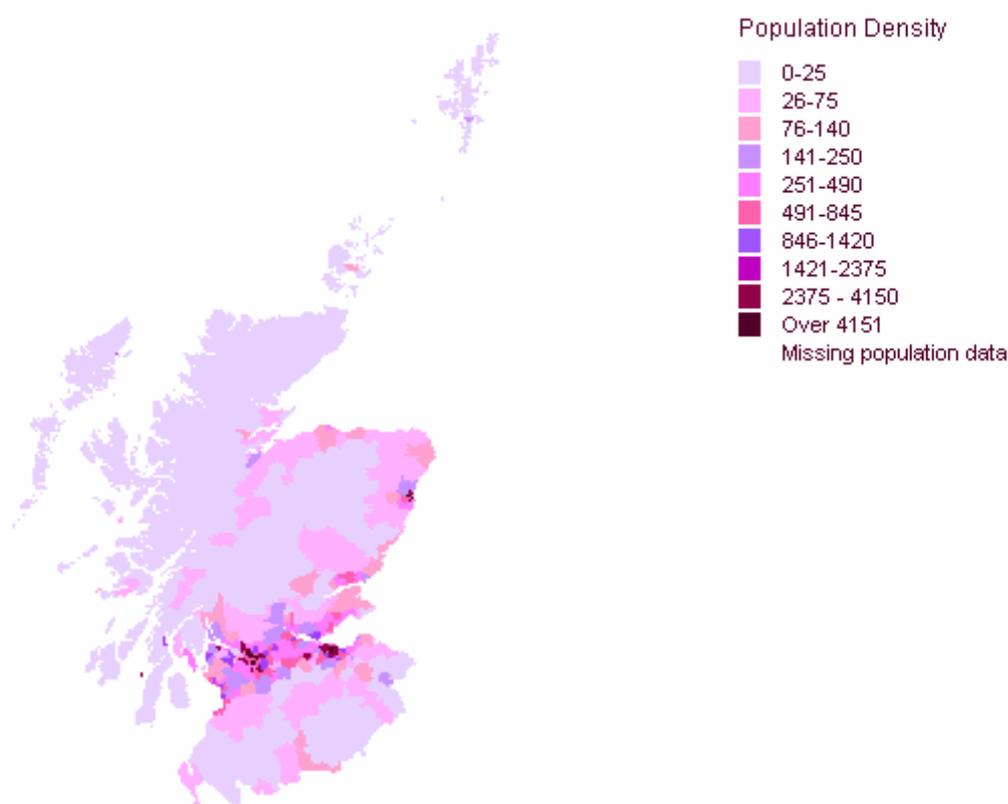
Scotland has a higher proportion of C2DEs (52%) than the UK average (45%) and the remaining 48% of its population falls within the ABC1s (lower than UK average of 54%). Scotland, Wales, Northern Ireland, Yorkshire & Humber, and the North East show similar socio-economic groups.

Scotland also has a higher rural population (16%) than UK average (12% UK average) but is less rural than Wales and Northern Ireland. Rural is defined to mean settlements less than

2,000 and less than 10 miles from a larger settlement. Some 27% of Scotland's population live in the four main cities of Glasgow, Edinburgh, Aberdeen and Dundee.

The age make up of the Scottish population is broadly similar to the UK average; however, it has a slightly older population. Its median age is 39 compared to 38 for the UK average. (The south of Scotland (Dumfries and Galloway, and Scottish Borders) has an unusually high percentage of over 65s – verging on 20%).

Figure 2: Population density map



Source: Ofcom, based on Office of National Statistics 2001 Census data (National Statistics website: www.statistics.gov.uk Crown copyright material is reproduced with the permission of the Controller of HMSO)

Figure 2 shows areas of population density across Scotland. It shows that Scotland's population is concentrated around Edinburgh and Glasgow and is also more concentrated around the coast than inland. Scotland has a population of 5.1 million which represents approximately 9% of the UK population. This is spread across a total of 2.2m households.

Figure 3 shows the average weekly household income and expenditure for Scotland. Both income and expenditure in Scotland (£523 and £380 respectively) are lower when compared to UK average (£574 and £420). Both figures are higher than in Northern Ireland or Wales.

Figure 3: Average weekly household income and expenditure



Source: Office of National Statistics, *Family Spending, A Report on the 2004-2005 Expenditure & Food Survey 2005 Edition* ONS published 10 March 2006 Edition (National Statistics website: www.statistics.gov.uk Crown copyright material is reproduced with the permission of the Controller of HMSO)

Scotland's average weekly household income was £523, slightly lower than the UK average of £574. 19% of adults in Scotland live in low income households, which equates to around 960,000 people.

The unemployment rate in Scotland was 5.1% in October 2005. Young adults aged 18 to 24 were more likely to be unemployed (14.5%) than older adults (12%). Glasgow and East Ayrshire had the highest unemployment rates at 5%. The lowest rates were in Aberdeenshire, East Dunbartonshire, East Lothian, East Renfrewshire, Orkney Islands, Shetlands and Scottish Borders, at under 2%.

In terms of employed people, 78% work full time hours and 22% part time¹. 13% of employed people are self employed with the rest being employees. With regard to the sectors employed people work in, 68% are employed in the service sector, 23.5% in production, 5.8% in construction, and 1.8% in agriculture.

4.2.1 Features of Scotland

Geography

The topography of the Highlands and Islands has been a factor in extending television, radio and mobile phone coverage. The Central and North West Highlands contain the highest peaks in the UK and the rugged terrain has posed difficulties for modern communications providers, although various initiatives have responded to the challenges. There are 186 islands off the coast of Scotland while the Scottish coastline, measured around the many firths and lochs is estimated to be around 3,700 km long. Some of the same challenges of topography are to be found in the south of Scotland.

¹ Registrar general for Scotland census profile 1, 2003

The cities of Scotland are: Edinburgh (Capital of Scotland), Glasgow, Aberdeen, Dundee, Inverness, and Stirling. The key towns include Ayr, Dumfries, Falkirk, Greenock, Paisley, Perth, Fort William, Kirkwall, Lerwick, and Stornoway

Language and Culture

According to the 2001 Census, over 92,000 people in Scotland (just under 2 per cent of the population) had some Gaelic language ability and almost half of these people lived in Eilean Siar, Highland or Argyll & Bute. Lallans is the name given to the variety of Scots spoken in the Scottish Lowlands (it comes from the Scots word for Lowlands). At one time, the term "Doric" was used to describe any rural dialect of English, but especially from the Scottish Lowlands. It is now applied only to the dialect of the north-east of Scotland in Aberdeenshire.

Scotland is renowned for its music and literature, both traditional and modern. Among various cultural events, the series of annual festivals in Edinburgh one of the most prominent.

Politics

In 1997, a referendum in Scotland showed that a majority of people were in favour of devolution. Elections were held and the Scottish Parliament was reconvened on 1 July 1999. Traditionally there has been a strong sense of Scottish identity permeating Scottish culture, including broadcasting; although it is also true that within a complex nation, there are also strong regional identities.

At the UK level, Scotland's parliamentary representation is 59 MPs (39 Lab, 12 Lib Dem, 6 SNP, 1 Con, 1 Speaker of the House). There are 129 members of The Scottish Parliament (MSPs): 50 Labour, 25 Scottish Nationalist Party (SNP), 17 Conservative, 17 Liberal Democrat, 7 Scottish Green, 6 Scottish Socialist Party (SSP), 1 Scottish Senior Citizens' Unity, 5 Independent, and 1 Presiding Officer.

Areas of devolved responsibility are: Health, Local Government (including Education, Housing, Social Work, Roads, Planning), Sport and Arts, Agriculture, Forestry & Fishing, Economic Development, Tourism, Heritage, Emergency services, Environment, Public records, and some aspects of transport. Scotland has its own legal system. There are 32 Unitary Local Authorities.

Section 5

Availability of communications services

5.1 Introduction

This section details the availability of communications services in Scotland, when compared to the other nations. It considers telecoms (landline and mobile), internet (including broadband) and broadcasting (digital TV and digital radio).

We have analysed data provided to us by operators, supplemented by Ofcom research.

5.2 Key findings for Scotland

- There are significant variances in the availability of mobile phone services. Availability of second generation (2G) mobile phone services (as defined by the proportion of postal districts with 75% area coverage by the four main operators) is the lowest in the UK (56%, UK average 82%).
- Availability of third generation (3G) mobile phone services is also lower than UK average (17%, average 35%).
- BT data from January 2006 shows that 99.9% of premises in Scotland are connected to DSL enabled exchanges. However, some premises within exchange areas are not suitable for delivery of broadband services, or only at very low speeds, due to local technicalities such as distance from exchange or poor quality of networks.
- Broadband cable availability is lower than UK average (37% compared to 45%)
- Digital terrestrial television (DTT) availability is 82% in Scotland – the highest of any of the nations.
- Due to its geography, certain parts of Scotland, particularly the Highlands and Islands, experience lower coverage levels and some mobile phone black spots, inconsistent satellite coverage and lower speed broadband. These are areas where population densities tend to be low.

5.3 Availability of telecoms services

5.3.1 Telephone landlines

Telephone services over the public switched telephone network (PSTN) are available to 100% of the population living in Scotland. The universal service obligation (USO) is currently provided by BT. All households in Scotland have access to a landline at a standard charge, although additional connection charges apply when they are so remote that installation would cost over £3,400. Further detail is provided in the main report. As noted, there remain a very small number of single dwellings in remote locations that may have difficulties with connection to the PSTN.

5.3.2 Mobile phones - 2G

Ofcom requested data from mobile network operators for second generation (2G) coverage across the UK as of Q3 2005. The data was provided at postal district level and we have analysed it first by population coverage and second by geographic coverage.

Our benchmark for 2G mobile phone availability was 75% area coverage within an individual postal district. For each of population coverage and geographic coverage, we identified postal districts where there was such coverage by at least one operator, indicating that people living in that district had access to at least one 2G mobile phone service. Then we identified postal districts where there was such coverage by all four operators.

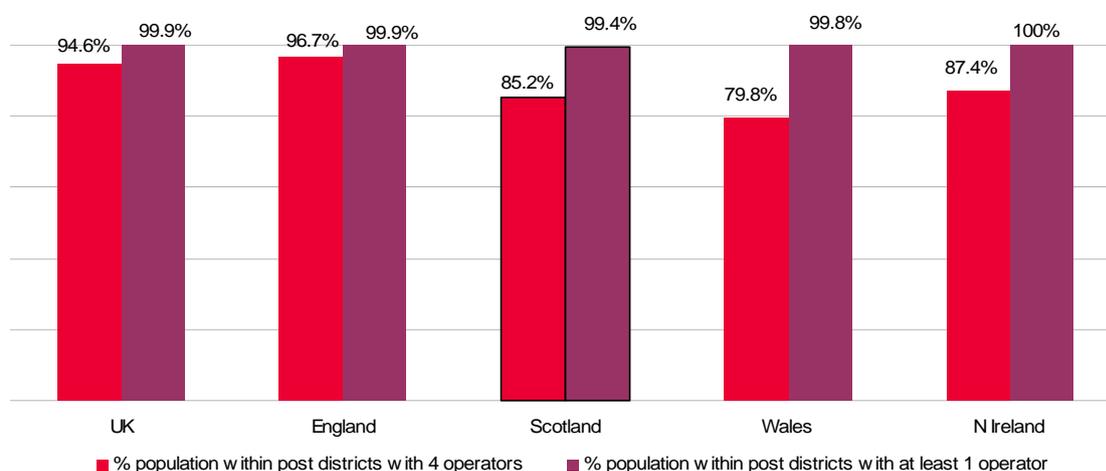
Population coverage

There was a consistently high level of network coverage across the UK population as a whole with each of the four 2G mobile phone operators stating that they covered 99% of the UK's population.

Figure 4 shows that 99.9% of the UK population lived in postal districts which had at least 75% area coverage by at least one mobile phone operator. In Scotland, this figure was 99.4%.

Most people in the UK also had a choice of operator in their area: 94.6% of the population lived in postal district areas which had at least 75% area coverage by four operators. This was lower than UK average in Scotland (85.2%, compared to 94.6%), but not as low as Wales (79.8%).

Figure 4: 2G mobile phone population coverage by postal district*



Source: Ofcom, operator data, Q3 2005. *Note: figure shows percentage of population within postal districts where at least one operator and four operators report at least 75% area coverage

Geographic coverage

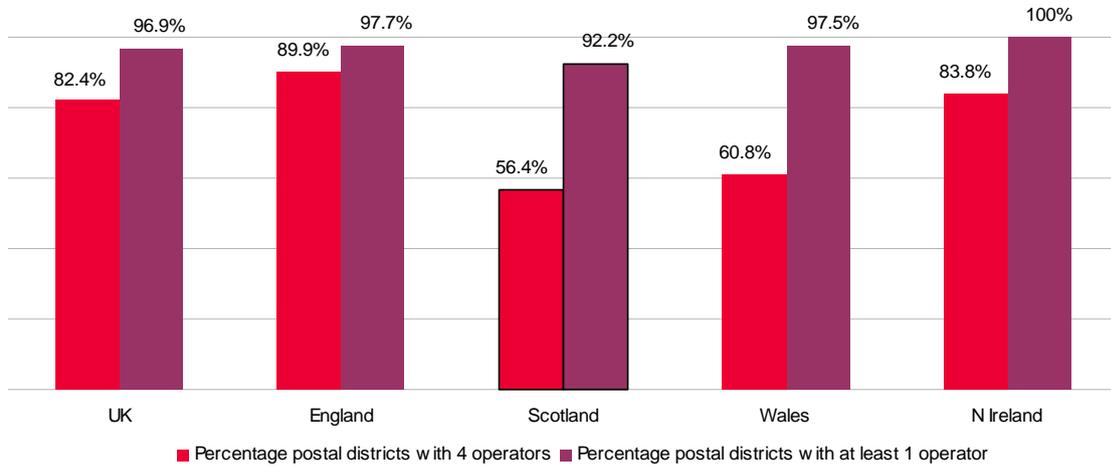
As well as looking at population coverage for 2G mobile phones, we also measured geographic coverage of the UK, to understand where there were coverage gaps.

Figure 5 shows that geographic coverage by at least one 2G mobile phone operator was high, but not as high as population coverage: 96.9% of postal districts across the UK had at

least 75% area coverage by at least one mobile phone operator. In Scotland this figure was 92.2%.

82.4% of postal districts across the UK had at least 75% area coverage by all four mobile phone operators. This was lowest in Scotland (56.4%).

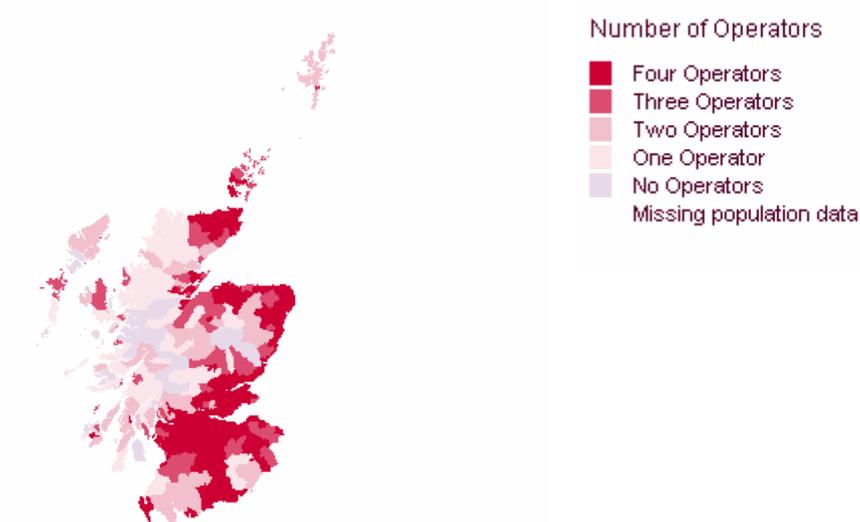
Figure 5: 2G mobile phone geographic coverage by postal district*



Source: Ofcom, operator data, Q3 2005. *Note: figure shows the percentage of postal districts where at least one operator and four operators report at least 75% area coverage

Figure 6 illustrates geographic coverage of the UK by number of 2G mobile phone operators. The map shows that all four operators covered large sections of the UK. It shows that nearly all of the postal districts which had greater than 75% area coverage by all four operators were in the population centres around Glasgow, Edinburgh, and the East Coast. However large areas of Central and Western Scotland had 75% coverage from two or fewer operators.

Figure 6: 2G coverage in Scotland by number of operators (postal districts with at least 75% area coverage)

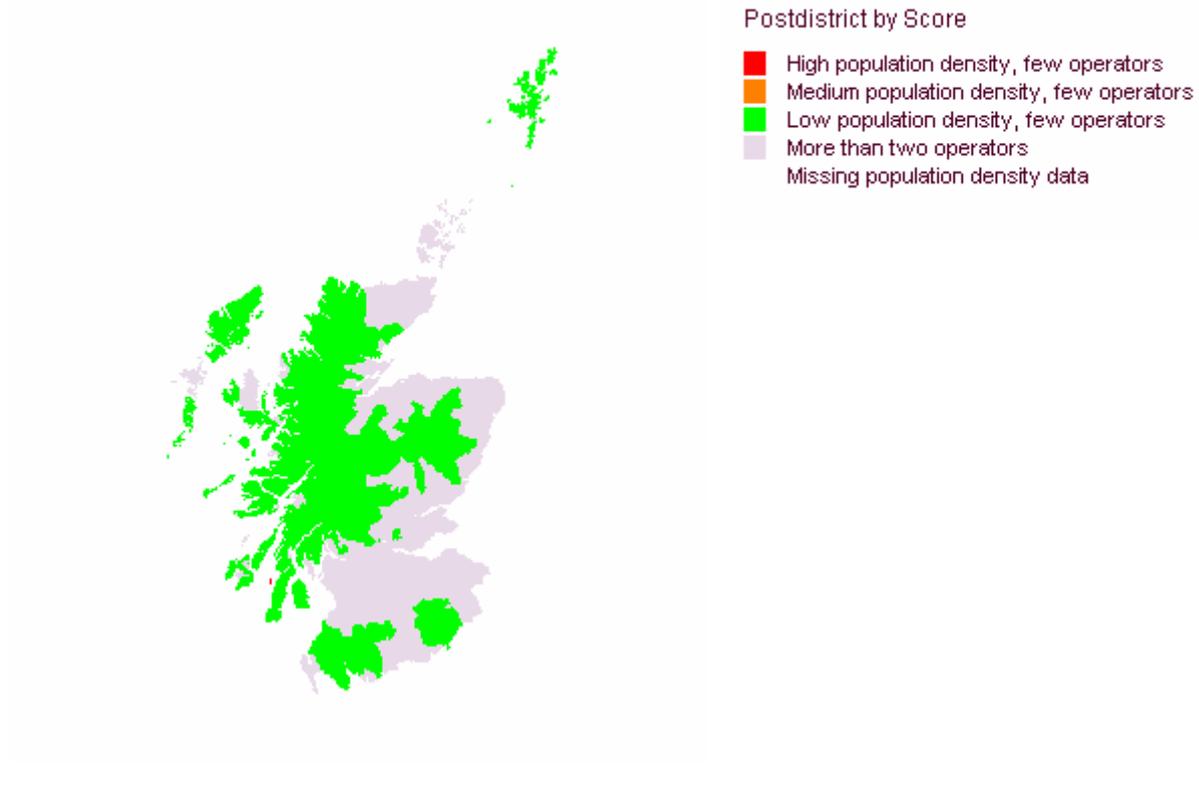


Source: Ofcom, operator data, Q3 2005. Shows the postal districts where the number of operators identified report at least 75% area coverage

In general, areas with reported coverage lower than the UK average were those where population density is also very low (for example, the Scottish Highlands). Whilst lower coverage in deeply rural areas may concern those that live there, or those visiting, it is often difficult for the mobile network operators to commit to the costs of network build in these areas (often areas with hilly terrain) in the light of low additional expected returns. It is worth noting that less than 1% of the UK population live where there is no coverage according to the criteria defined above.

A small number of areas had higher population density coupled with lower levels of 2G geographic coverage. Figure 14 shows an overlay of the postal districts where fewer than three operators reported the defined level of geographic coverage, against relative population density in those areas. It shows that the majority of the areas with lower coverage were those where population density was also low (the green areas on the map).

Figure 7: 2G coverage in Scotland against population density (postal districts with at least 75% area coverage)



Source: Ofcom, operator data, Q3 2005

5.3.3 Mobile phones - 3G

Ofcom also requested data from the mobile network operators for 3G coverage across the UK. The data was provided at postal district level and we have analysed it by geographic coverage across postal districts.

For this purpose our benchmark for 3G mobile phone availability was 25% area coverage within an individual postal district to a speed of at least 128 kbit/s outdoors. 3G coverage is not simply a 'yes or no' answer, in the way that 2G coverage is. A number of factors affect the quality of 3G service, including distance from the base station, the number of simultaneous users of a given base station and whether the user is indoors or outdoors. We asked mobile network operators to give us details of those areas where they provide 3G services at sufficient bandwidth to enable data and video services (>128kbit/s), rather than their total 3G coverage areas which would include areas where the 3G network could be used for lower bandwidth services. The way 3G technology transmits data signals means that 3G transmission speeds deteriorate significantly over distance. A 3G base station typically serves a significantly smaller area than an equivalent 2G base station - especially for higher-speed 3G services (>128 kbit/s).

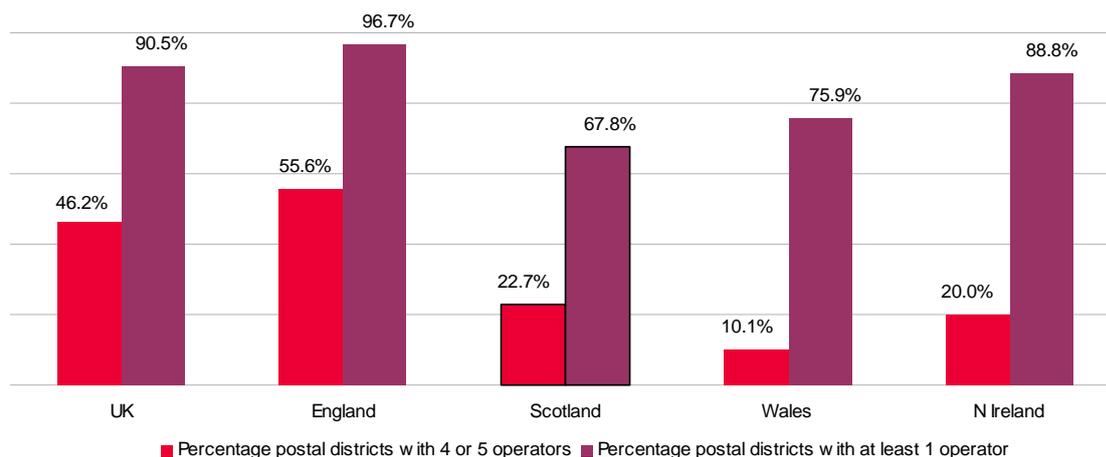
However using this 25% area coverage threshold means that it has not been possible to calculate meaningful statistics about 3G population coverage. In this case the geographic extent of coverage may be more significant than the population covered.

When evaluating 3G coverage, it is worth noting that all current 3G handsets also have the capability to operate on 2G networks. This means that subscribers with 3G devices will be able to use higher-bandwidth data and video services in the areas where there is 3G

network coverage, and will also be able to use 2G networks for voice and simple data when they are outside of a 3G coverage area but still within a 2G coverage area.

Figure 8 shows 3G geographic coverage by postal district. Geographic coverage levels were consistent with 3G rollout occurring in urban parts of the UK first. Some 46.2% of postal districts in the UK had the defined level of coverage by at least four 3G operators and 90.5% of postal districts had such coverage by at least one operator. In Scotland, these levels of coverage were 22.7% for coverage by at least four 3G operators and 67.8% by at least one operator.

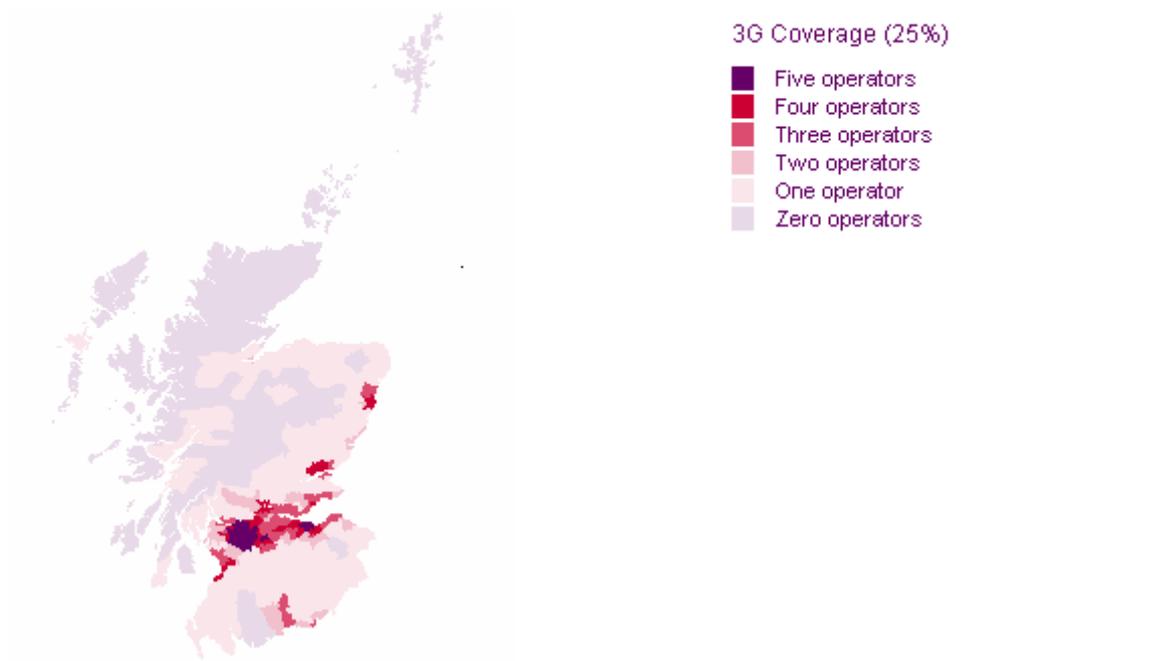
Figure 8: 3G mobile phone geographic coverage by postal district*



Source: Ofcom, operator data, Q3 – Q4 2005. *Note: figure shows the percentage of postal districts where at least one operator and four or five operators report at least 25% area coverage

The map in Figure 9 shows that, although 3G operators have achieved significant coverage to date, they are still in rollout stage. Naturally, areas of higher population have been targeted first. For Scotland, rollout has been concentrated around the central belt area, Aberdeen, Perth and Dundee, and this is reflected in the figure.

Figure 9: 3G coverage in Scotland by number of operators (postal districts with at least 25% area coverage)



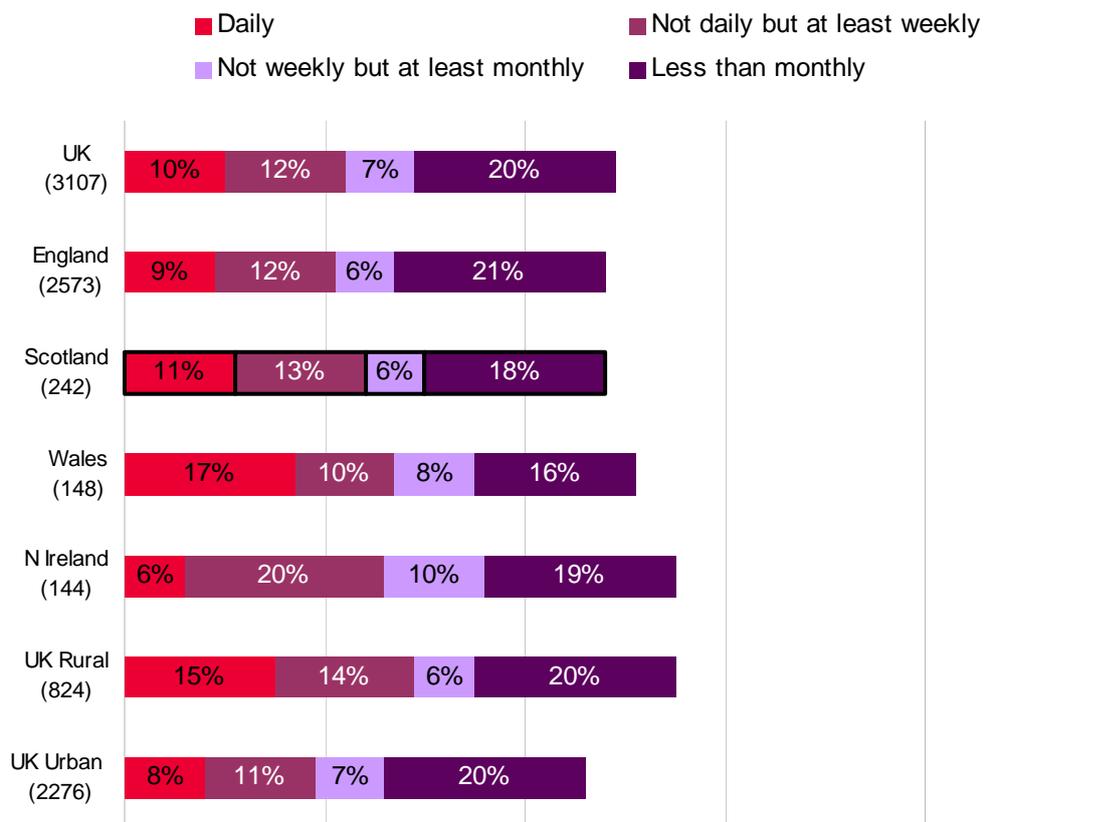
Source: Ofcom, operator data, Q3 - Q4 2005. Shows the postal districts where the number of operators identified report at least 25% area coverage

5.3.4 Consumer perceptions of their mobile phone reception

Figure 9 shows the proportion of mobile phone users reporting reception problems by nation.

Ofcom carried out research into the consumer perceptions of reception from mobile phones. It showed that 18% of consumers questioned in Scotland reported reception problems less than once a month. However, on average 10% of mobile phone customers in Scotland reported daily reception problems, a level consistent with the UK average of 11%, and less than Wales at 17%. However, this proportion rose to 15% when speaking to mobile customers living in rural parts of Scotland.

Figure 10: Proportion of mobile phone users reporting reception problems



Source: ICM survey, 3-16 February 2006

5.4 Availability of internet services

5.4.1 Total internet

Availability of internet services at low speed via a narrowband connection is the same as landline voice services – in other words virtually ubiquitous throughout the UK (we define ‘narrowband’ as an internet connection achieved by means of dial up over twisted copper pair or coaxial cable at speeds of less than 128kbit/s).

However, whilst many consumers are currently satisfied with this type of connection, there has been a rapid increase in appetite for broadband connections. Ofcom’s latest market data (September 2005) shows that 57% of the UK’s 15.5 million internet connections were over broadband connections (up from less than 10% at the end of 2002); the trend towards broadband is likely to continue as a larger proportion of websites and internet applications require higher connection speeds to function effectively. In this context, we will focus on the availability of broadband services.

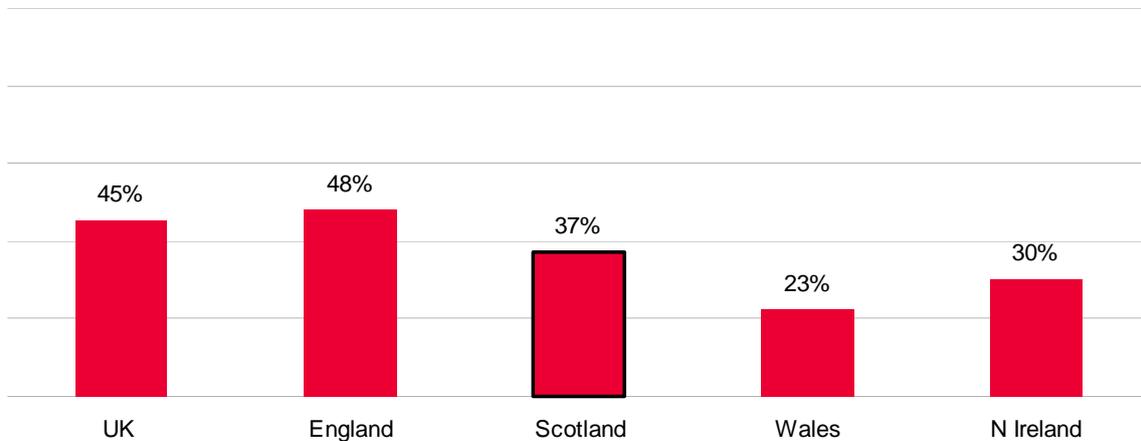
5.4.2 Broadband

As a result of a Scottish Executive contract with BT, also supported by the European Regional Development Fund, broadband was made available to all communities by the end of 2005.

BT data from January 2006 shows that 99.9% of premises in Scotland were connected to broadband enabled exchanges. However, some premises within exchange areas are not suitable for delivery of broadband services, or only at very low speeds, due to local technicalities such as distance from exchange or poor quality of networks.

Operator data in Figure 11 demonstrates that around 38% of households in Scotland can access cable modem services. This figure is higher than Wales or Northern Ireland but lower than the UK average of 45%.

Figure 11: Percentage of delivery points passed by ntl or Telewest digital cable



Source: Ofcom, operator data, January 2006

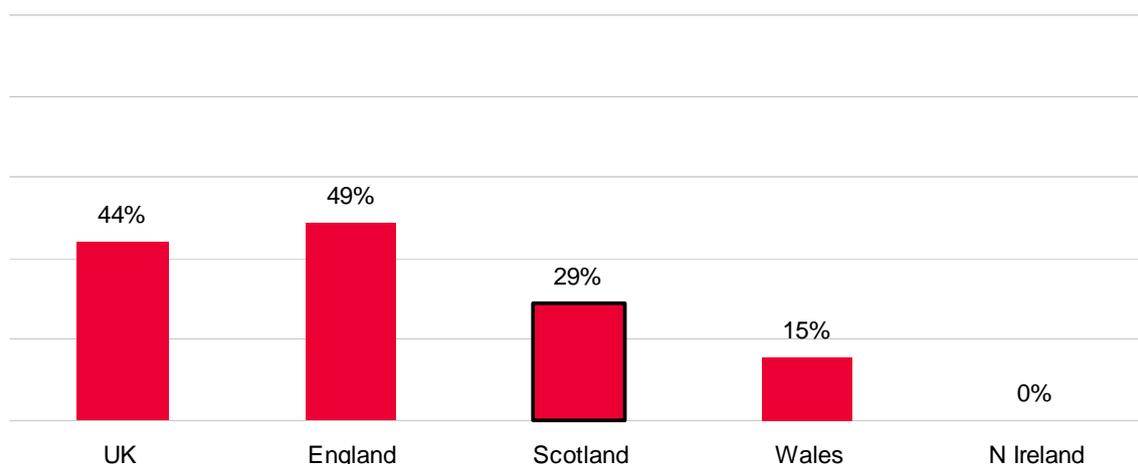
Local Loop Unbundling (LLU)

A significant factor affecting choice of digital subscriber line (DSL) broadband services is the presence in the local exchange of an alternative operator with the ability to “unbundle” the local loop line. In simple terms, this means that the alternative operator takes over from BT the local line connecting the exchange and the household. The operator places its own equipment in the exchange to connect to the trunk network and facilitate services including digital subscriber line (DSL).

Figure 12 shows the percentage of delivery points within the footprint of an LLU enabled exchange.

Scotland has a lower proportion of delivery points within the footprint of an LLU enable exchange than the UK average, 29% compared to the UK’s 44%. However this is higher than Wales(15%) or Northern Ireland (0%).

Figure 12: Percentage of delivery points connected to an LLU enabled exchange



Source: Ofcom, operator data, January 2006

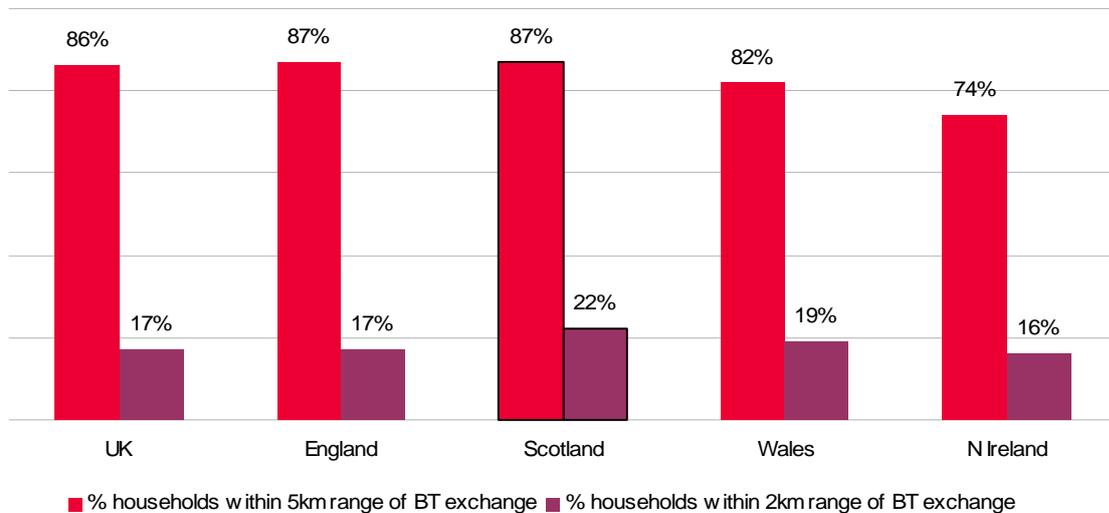
Distance from exchange

Over DSL, potential connection speeds are constrained by one major factor: the customer's line to the exchange. In general, the further a customer's home is from the exchange, the worse the quality of the line will be. This in turn has an impact on the speed of service available to a customer. The greater the distance from the exchange, the slower the potential speed that can be achieved. However, this relationship is complex and depends on a number of other variables, including the condition of the copper wire network and how directly the line is routed to the customer's home. Speed of service will also depend on the technology employed.

Ofcom commissioned research to estimate network distances from the exchange in Scotland. The proportion of homes within 5kms and 2kms of an exchange is shown in Figure 13. Note that these distances are measured as the length of the copper wire network, not "as the crow flies" - modelling suggests that on average the network length is 1.4 times the straight-line distance, hence these are 'implied' distances.

At the 5km level, Scotland is consistent with UK average levels – approximately 13% live outside the range of 5kms from an exchange (14% UK average). At the 2km level, analysis suggests that Scotland has slightly more premises within 2km range of an exchange (at 22%, compared to UK average of 17%).

Figure 13: Percentage of premises within a 2km and 5km 'implied' local loop length range of a BT exchange



Source: Point Topic, BroadBand User Service, June 2005

Government initiatives

The Scottish Executive has a digital inclusion strategy, designed to address the digital divide and digital exclusion. The Executive has put in place a range of initiatives and schemes - including Digital Scotland - that is intended to develop access, skills and content, involve communities, and contribute to the closure of the digital divide.

This has involved providing additional public access internet points. Pilot digital communities were created in two areas of Scotland – Mull and 12 other islands in North Argyll, and Bellsmyre in West Dunbartonshire. A report (Digital Communities Final Report, July 2004 – DTZ Pieda Consulting and TNS for the Scottish Executive) concluded that the initiative increased the use of internet and e-mail in the participating communities. However there was still a significant group of people who did not take-up the opportunity of ICT even when they were provided with access free of charge. This is in line with the existence of a core of viewers unwilling to make the transition to digital TV. The report suggests a completely different approach may be needed to tackle those not interested in the ICT project.

The digital inclusion strategy has led to the creation of Information and Communication Technology projects within Scotland's Social Inclusion Partnership (SIP) designated areas. Eighty percent of facilities in these projects have some form of broadband connection and they feature IT courses for the local community, for example in North Lanarkshire. (Source: Digital Inclusion Audit 2004, Scottish Enterprise/part funded by the EU). Glasgow City Council has recently introduced free WiFi access to the Internet from three of its libraries. North Lanarkshire Council is also developing its "Logintolearn" open learning initiative so that a range of lifelong learning courses will be available through interactive digital TV in recognition that not everyone has access to the internet. In their report "Review of Interactive Digital Television Pilot" commissioned by the Scottish Executive, Dr Colin Smith and Dr C William R Webster point to interactive digital TV being likely to become an important complementary platform for developing electronic public services. This report evaluated a Scottish iDTV pilot via the Sky digital platform that provided such electronic public services and information. Smith and Webster cite evidence that, despite the pilot scheme featuring limited use, there is evidence that citizens and service users are interested in using the digital TV medium.

However according to the Scottish Consumer Council's 2005 report "Freedom of Access", 38% of Scots surveyed were not aware of public internet access facilities, and of those who did, most were in higher income groups and more likely to have internet access at home.

A report for the Scottish Executive - "Evaluation of the Public Internet Access Point Initiative" by Hall Aitken in May 2004 - concluded this initiative had been a success in providing access to around 100,000 users without home access and around 40,000 people who had no other public access. Under the initiative 94.6% (approximately 4.8m people) live within the catchment areas of the public access points. However this means that some 272,000 people do not have the recommended level of public access, with three quarters living in urban Scotland. Only 3.7% of the Scottish population has used the programme. However, it has been particularly effective in attracting unemployed people to use the internet and has had considerable impact in disadvantaged areas. It has not had the same success in attracting older people and people new to the internet. The report recommended targeting disadvantaged users in areas with low rates of home internet access.

5.4.3 Other broadband technologies

There are a few wireless broadband projects (see BIRRA case study below) complementing conventional broadband provision. These tend to rely on public funding and community goodwill for their sustainability. Ofcom is also aware of some wi-fi hot spots (see reference to Glasgow below).

Whilst community networks do exist in Scotland, they are typically outside of the high-density population areas of greatest profitability for major suppliers at this time. In many cases the networks that have been set up and reported are either very small, or have not been developed well enough to gain an appreciation of how they will perform and survive in the longer term. They depend a lot on community goodwill supporting their existence although the Connected Communities network referred to below also attracted considerable funding by the DTI, UKOnline, Scottish Executive, Western Isles Enterprise and Comhairle nan Eilean Siar.

Project Atlas is a Scottish Enterprise initiative strategic investment in technology that will give SMEs access to high bandwidth e-Business services in six business parks using advanced broadband connections. Construction work has taken place during late 2005/early 2006.

Glasgow has set up a 'Wireless Glasgow Strategy Group' consisting of various public sector bodies. The Group is considering what a Wireless Glasgow would deliver for everyone who lives, works, visits, does business or plays in the City and how Wireless Glasgow can be assisted into being.

Case study: BIRRA

The Broadband in Remote and Rural Areas (BIRRA) is a Northern Periphery funded Project with partners in Iceland, Lapland & Northern Finland, Northern Sweden and Western Isles of Scotland. The project is establishing comparative benchmarks through an eLadder system between these rural areas with a particular focus on eBusiness, eHealth, eLearning, eGovernment and eSocialCare. First stage outputs were available by March 2006.

The Connected Communities Wireless Broadband Network is bringing high speed symmetric services to all the rural areas of the Western Isles with £5m of funding. The Highlands and Islands Enterprise-led project will also bring broadband services to all schools, local authority offices, hospitals and health centres throughout the Western Isles. Funding amounting to £200,000 from the Community Initiated Projects Scheme with match funding from Western Isles Enterprise is in place.

5.5 Availability of digital broadcasting services

5.5.1 Digital TV

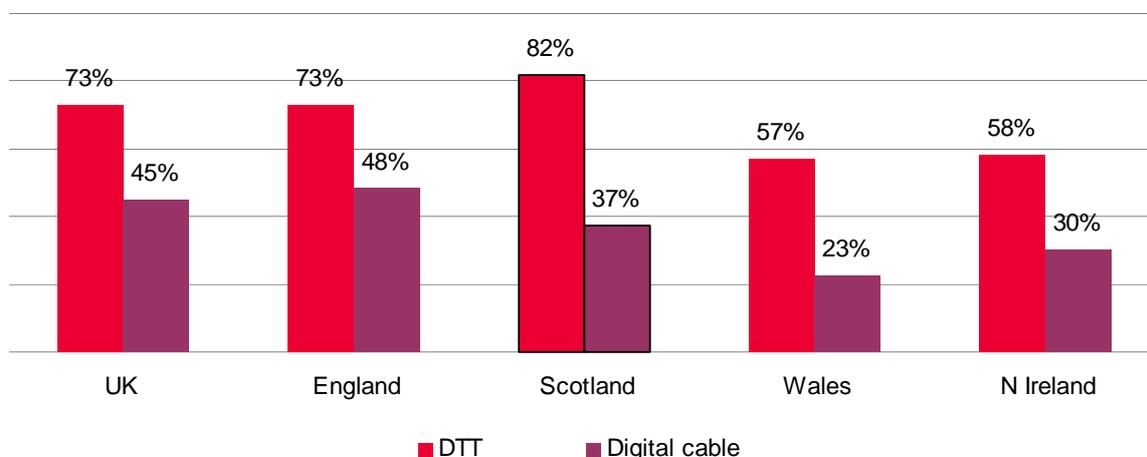
Digital TV is available in Scotland on three of the four main digital TV platforms in the UK: digital terrestrial television, cable and satellite. TV over broadband is not currently available in Scotland.

Satellite

The digital TV platform with the greatest coverage in Scotland is digital satellite which covers approximately 98% of the population. The service is in principle ubiquitous throughout Scotland but reception at some sites may not be possible due to local obstructions, for example in deep valleys with steep south facing hills.

Digital terrestrial television and digital cable television

Figure 14: Digital terrestrial television and digital cable availability



Source: DTT: Ofcom, *Driving Digital Switchover, 2004*, Cable: Ofcom, operator data January 2006

Figure 14 shows that digital cable is available to around 37% of households in Scotland, below the UK average of 45% but slightly higher than the other nations. DTT coverage in Scotland is shown to be the highest in the UK at 82%, compared to 73% UK-wide. One factor in this comparatively high coverage is the concentration of mainly urban populations in central Scotland and the other main cities which have access to a DTT signal. Large areas of the Highlands and Islands do not currently have DTT coverage.

5.5.2 Digital radio

Digital radio is available on the internet and digital TV as well as DAB digital radio. The availability of DAB digital radio services in Scotland is shown in Figure 15 below.

Figure 15: DAB digital radio population coverage by nation



Source: BBC, Digital One, Ofcom, June 2005. Figure for Digital One UK shows the percentage coverage of Great Britain (Digital One's licence does not include N Ireland). Population coverage for local commercial digital multiplexes shows the percentage of population living within licensed areas. Not everyone living within these areas will be able to receive the services at present as transmitter networks are not complete. Actual coverage varies by multiplex and ranges between around 70% and 95% of the licensed area.

Figure 15 shows that Scotland has availability of DAB digital radio services in line with the UK average across BBC, Digital One and Local commercial services. 80 % of the population is covered by the BBC multiplex (carrying BBC UK wide services only, i.e. not BBC Local and Nations services). 92% of the population live within areas licensed for local multiplexes (transmitter networks are not complete so actual population coverage will be between 70% and 95% of the licensed area).

Both of the BBC National Radio services for Scotland have the right to be carried on local multiplexes in Scotland.

Section 6

Take-up of communications services

6.1 Introduction

The following section reports take-up levels of each of the three categories of communications services. A number of factors are likely to influence the take-up of communications services such as location, income, age and attitudes (as discussed in Section 4 – Setting the Scene). This section explores patterns in take-up of services in Scotland, compared to UK average, and also considers consumers who are potentially excluded from taking up services. Demographic and attitudinal data are also examined to highlight key factors impacting on take-up of communications services in Scotland and across the UK.

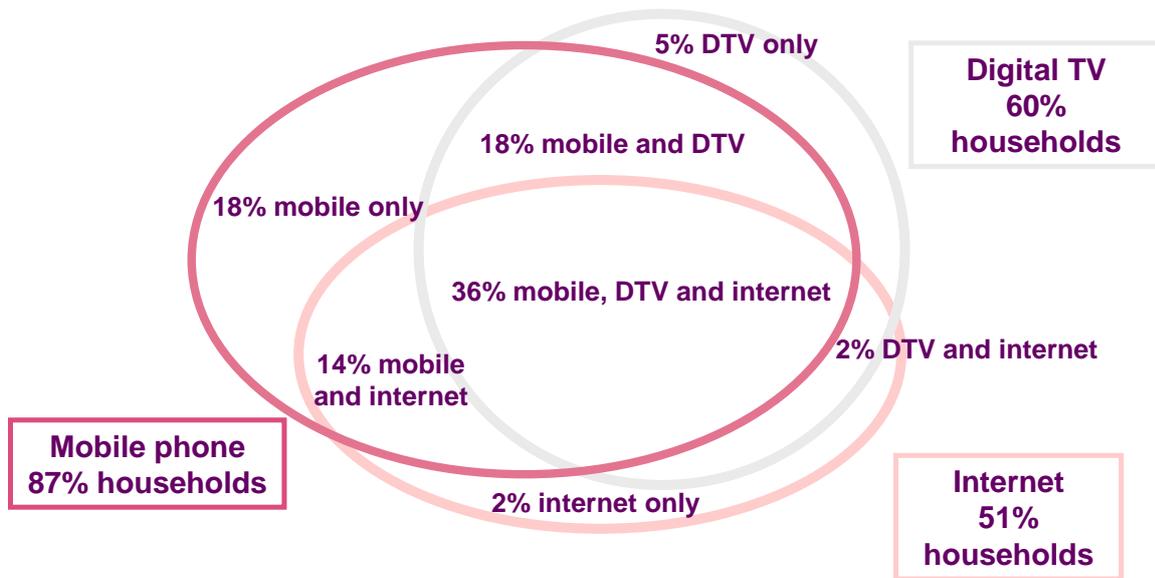
6.2 Key findings for Scotland

- Fewer people in Scotland have all of the three communications services together (mobile phones, digital TV and the internet) than the UK average (36%, compared to 43%)
- In spite of its higher rural population, Scotland has the joint lowest take-up (with Wales and N Ireland) of landlines across the UK, at 87% (UK average 91%)
- Internet penetration in Scotland (at 51%) is lower than the UK average of 57%.
- Take up of cable TV is highest in Scotland, at 14% (UK average 11%)

6.3 Cross platform take-up

Figure 16 shows cross platform take-up amongst households in Scotland. Just over one third of adults in Scotland (36%) had taken up three of the four key communications services – mobile phone, digital TV and internet – at home. A fifth (18%) had access to a mobile and digital TV, and a similar proportion (14%) had both mobile and home internet access. Consistent with UK findings, internet owners rarely purchased this service in isolation (2%); however, digital TV owners were comparatively more likely only to have digital TV (5%).

Figure 16: Cross ownership of mobile phone, digital TV and internet in Scotland



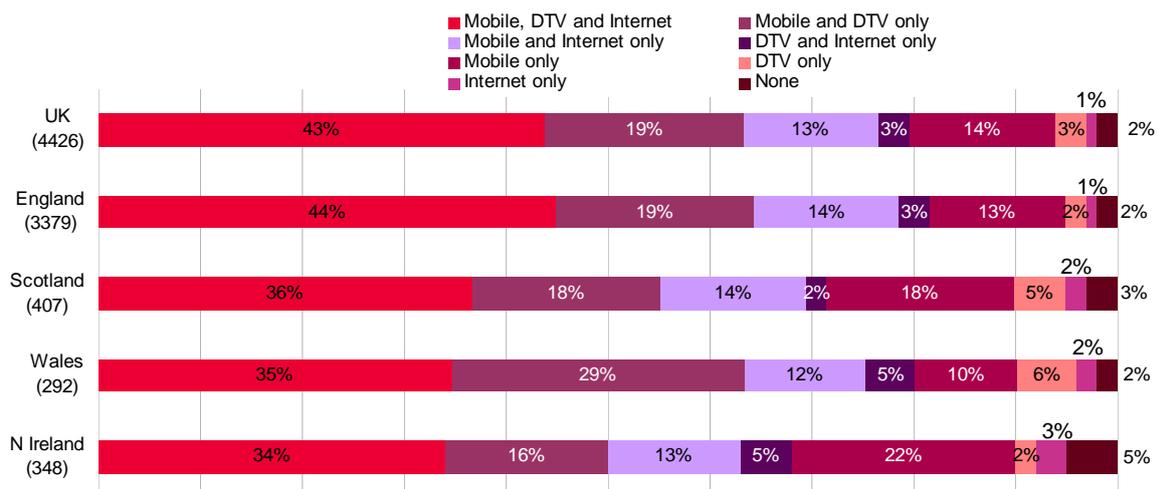
Source: Ofcom residential tracking survey, based on rolled data from Q2 and Q3 2005. Note individual % do not total the overall penetration figures precisely due to rounding of the data

Mobile only figures include consumers that have a landline at home

Base: 407 UK adults aged 15+

Figure 17 shows that the cross platform take-up picture in Scotland was different to that of UK average and to the other nations. Levels of take-up of all three platforms were significantly lower than average. However, it followed a trend that was broadly similar to that in Northern Ireland. Levels of non-ownership of any of these platforms were broadly similar across each of the nations.

Figure 17: Cross platform take-up of communication services



Source: Ofcom Communications Tracking Study, Q2/Q3 2005 rolled data, base sizes are illustrated in figure

Exclusion from taking-up services

This section examines the intentions and reasons for lack of take-up of mobile, internet, digital TV and digital radio². It focuses on the issue of exclusion and whether this is for voluntary or involuntary reasons. People who said they have no intention of getting the platform were asked their reasons for this. Those classified as *voluntarily excluded* gave responses which include being happy with current provision, see no need, or are not interested: in other words, saying that they made a positive choice.

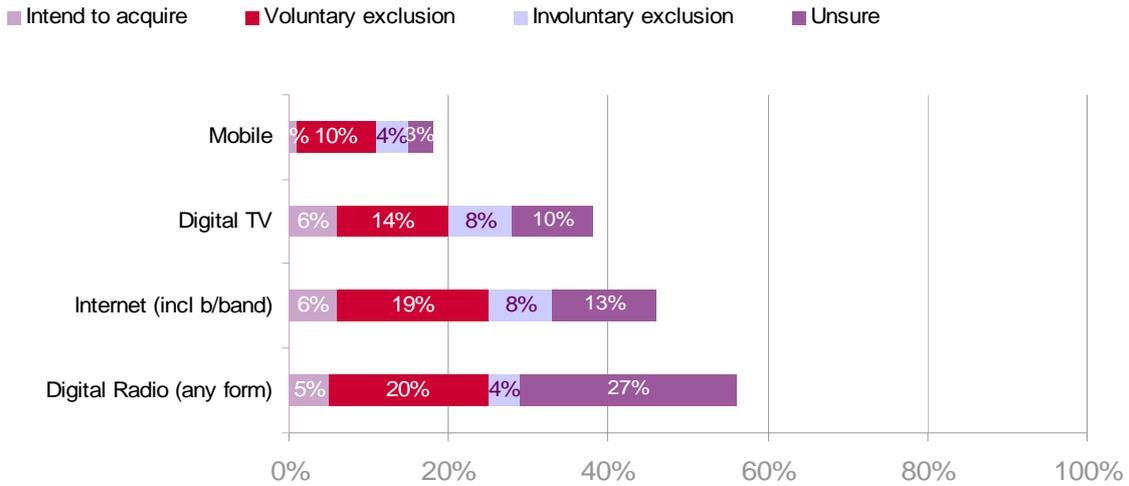
Those classified as involuntarily excluded gave responses that included affordability, perceived lack of digital coverage, perceived difficulty in using and lack of understanding. Those who gave a mix of voluntary and involuntary responses were classed as involuntarily excluded.

At a UK level, reasons for not taking up digital TV and the internet were around twice as likely to be voluntary as involuntary. For every platform, levels of involuntary exclusion were less than 10% of adults surveyed. For mobile phones and digital radio, levels were less than 5%. For digital radio and internet, the percentage of those voluntarily excluded was much higher than the other two platforms (20% and 19% respectively). The lowest level of exclusion overall was for mobile phones.

Figure 18 sets out the all-UK picture of those who did not take-up any of the main communications services, with specific technologies and the data for Scotland being covered in more detail in the following sections.

² The data is taken from Ofcom's Media Literacy Audit survey of 3244 adults aged 16+ June-August 2005.

Figure 18: Levels of voluntary and involuntary exclusion by platform (whole of UK)



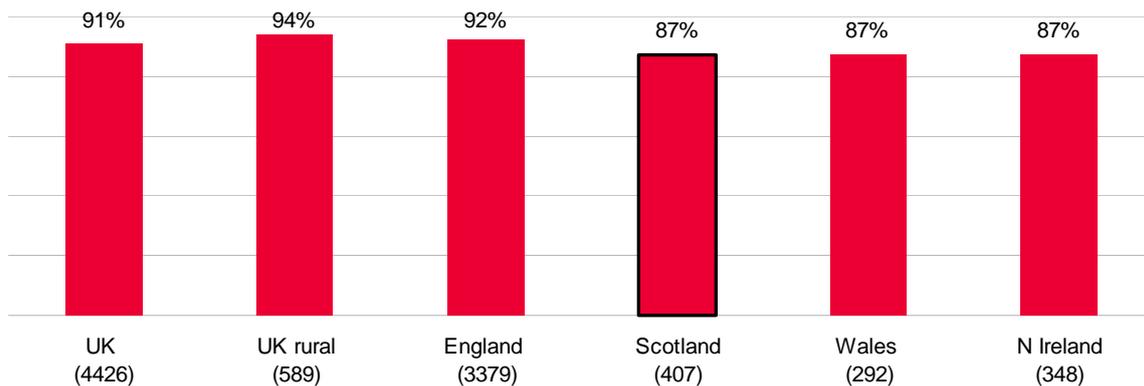
Source: Media Literacy Audit, Ofcom-SRB, June-August 2005
 Base: all UK adults (3244)

6.4 Telecoms

6.4.1 Telephone landlines

Figure 19 shows home landline take-up across the nations and in UK rural areas. Take up of landlines in Scotland was significantly below the UK average at 87% compared to 91%. However, take-up was comparable to Northern Ireland and Wales.

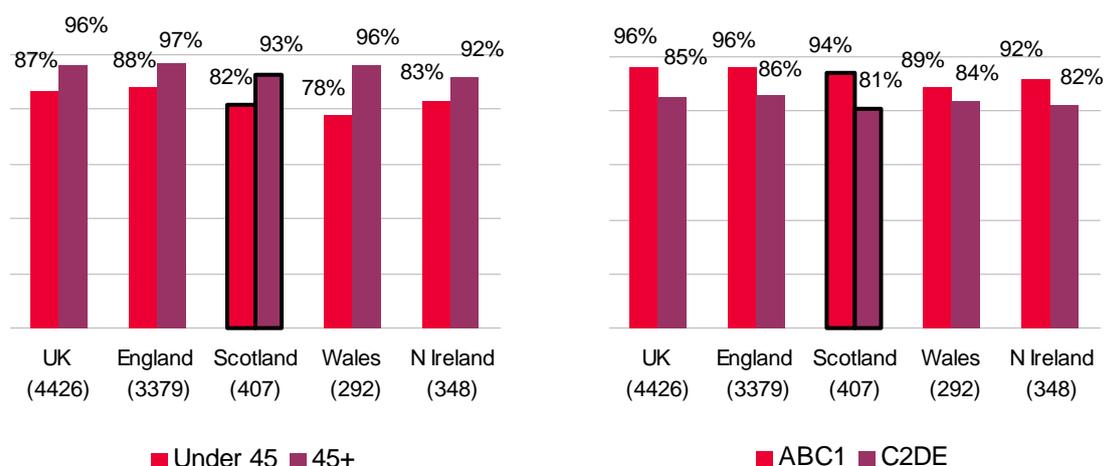
Figure 19: Home landline take-up



Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

Figure 20 shows levels of landline take-up by age and by socio-economic group. There were indications that younger adults in Scotland were less likely than average for this age group to own and landline (82% compared to 87%). There were no significant differences in take-up of landlines according to socio-economic group in Scotland.

Figure 20: Home landline take-up by age and socio-economic group

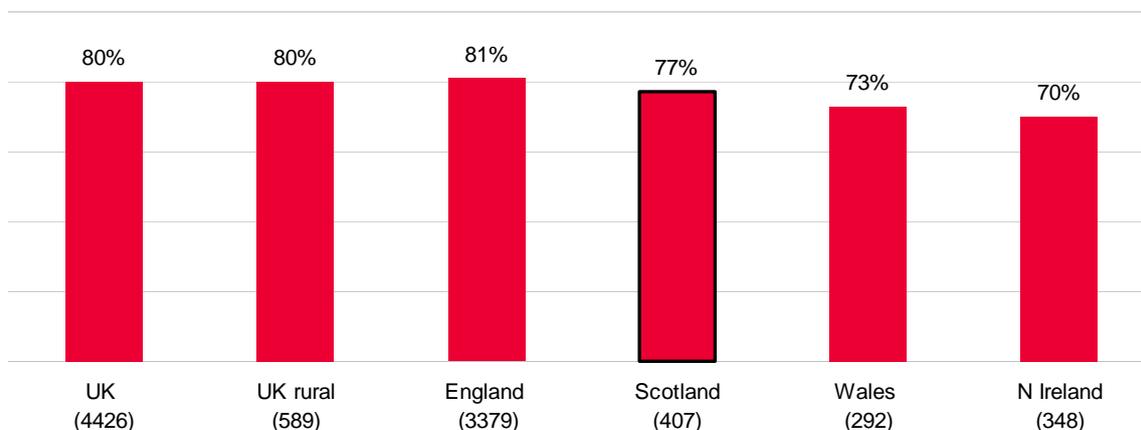


Source: Ofcom Residential Communications Tracking Study, Q2/Q3 200

6.4.2 Mobile phones

Figure 21 shows take-up of mobile phones. On average 80% of UK adults own a mobile phone and the figure in Scotland is broadly similar (77%) and significantly higher than reported in Northern Ireland (70%).

Figure 21: Personal take-up of mobile phones

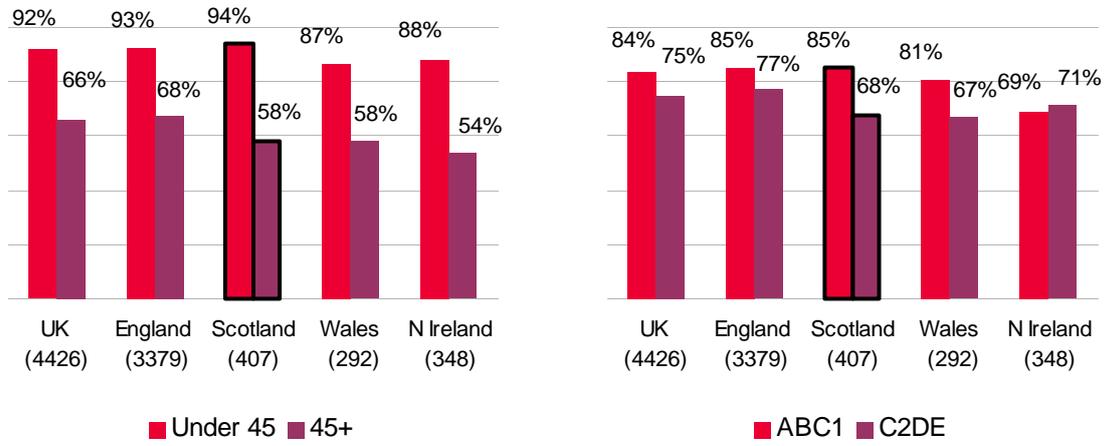


Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

Figure 22 shows personal take-up of mobile phones by age and socio-economic group. Age had the largest impact on mobile phone take-up across the UK. It was higher amongst younger consumers (92%) compared to those aged 45+ (66%). Consumers aged over 45 and living in Scotland were less likely than average for this age group to own a mobile (58%).

Socio-economic group has less impact on mobile phone take-up than age across all parts of the UK and take-up amongst ABC1s and C2DEs in Scotland were broadly similar to the average. However C2DEs were less likely than average to own a mobile phone.

Figure 22: Adults that personally own and use a mobile phone by age and socio-economic group

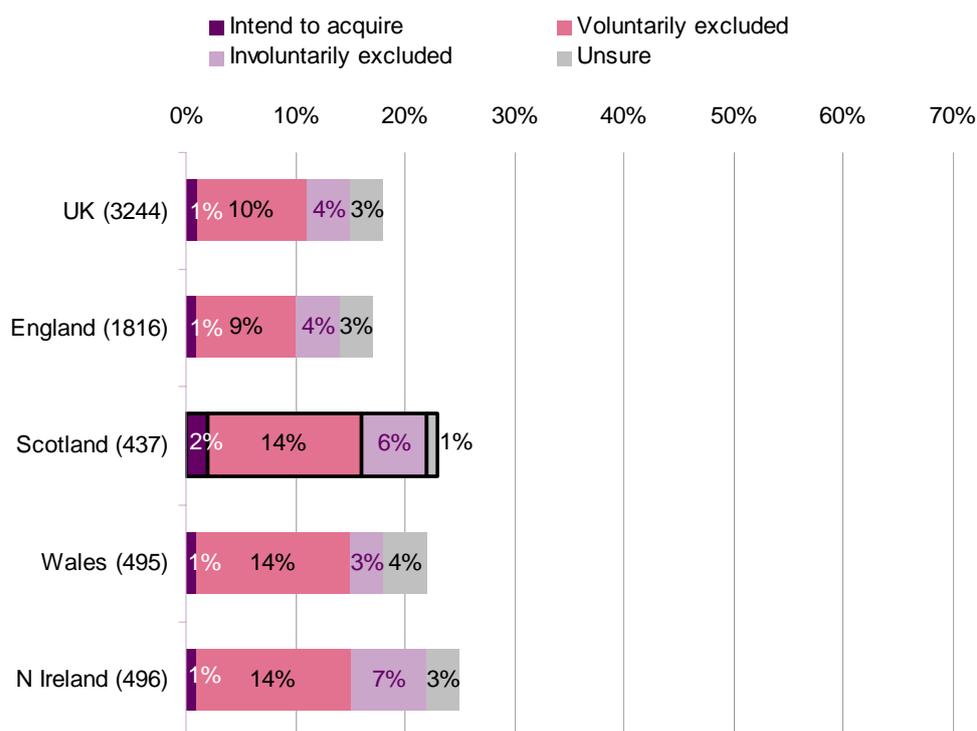


Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

Analysis of those not taking up mobile phones

Figure 23 shows levels of exclusion from taking up mobile phones in Scotland and across the UK. In Scotland only 6% of consumers reported being involuntarily excluded from taking up a mobile phone, consistent with UK average levels. While levels of voluntary exclusion were slightly higher than UK average (14% compared to 10%), this was not a statistically significant difference.

Figure 23: Mobile phone exclusion

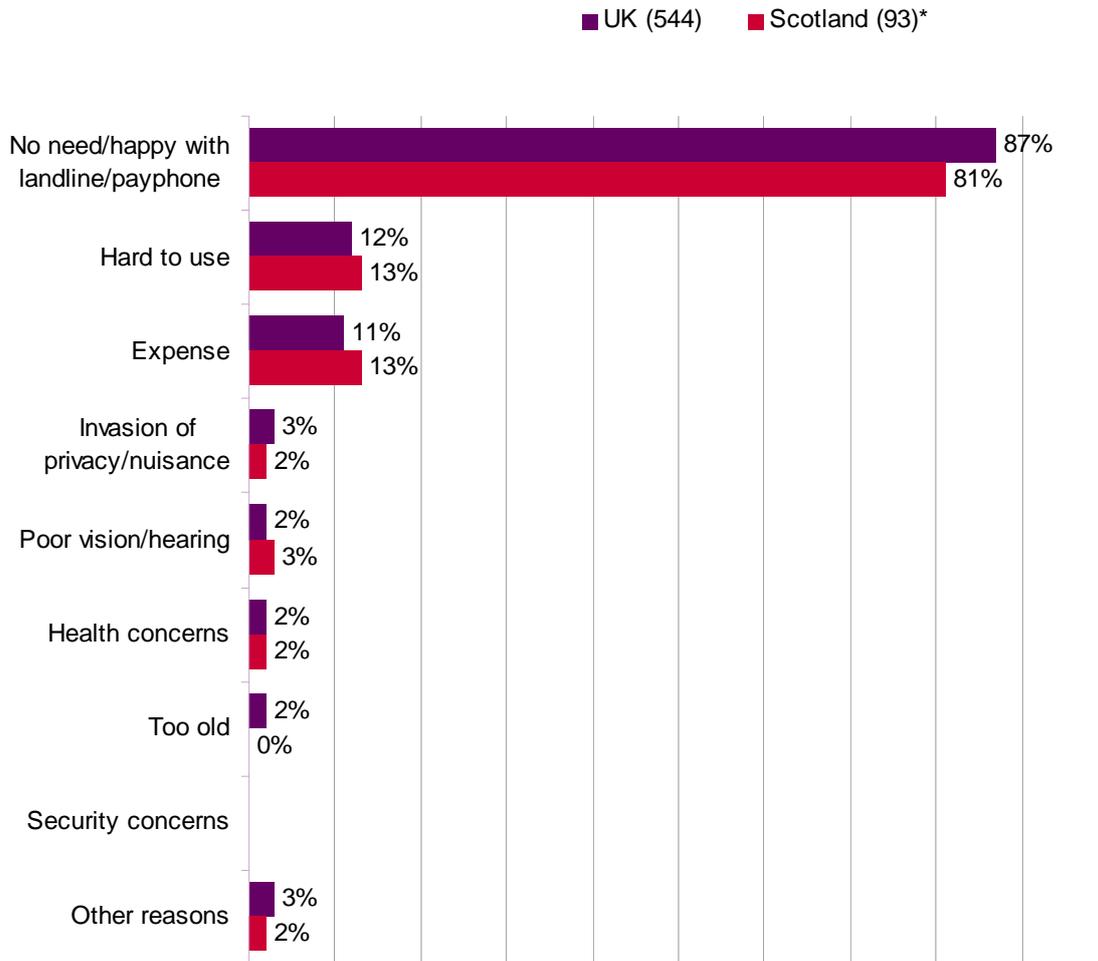


Source: Media Literacy Audit, Ofcom-SRB, June-August 2005

Figure 24 examines the reasons for not acquiring a mobile phone. Scotland had similar reasons to the rest of the UK for not acquiring a mobile phone. Over 80% of respondents without a mobile phone saw no need for one, or said that they were happy with their existing arrangement. The cost of calls did not appear to be a major source of concern among Scottish consumers.

Indications are that take-up of services like broadband and mobile phones in the Western Isles are high where services are available. A survey of the Western Isles by Lews Castle College UHI Millennium Institute and the Open University revealed high levels of mobile phone take-up and access at home to the internet (83%).

Figure 24: Reasons for not acquiring a mobile phone



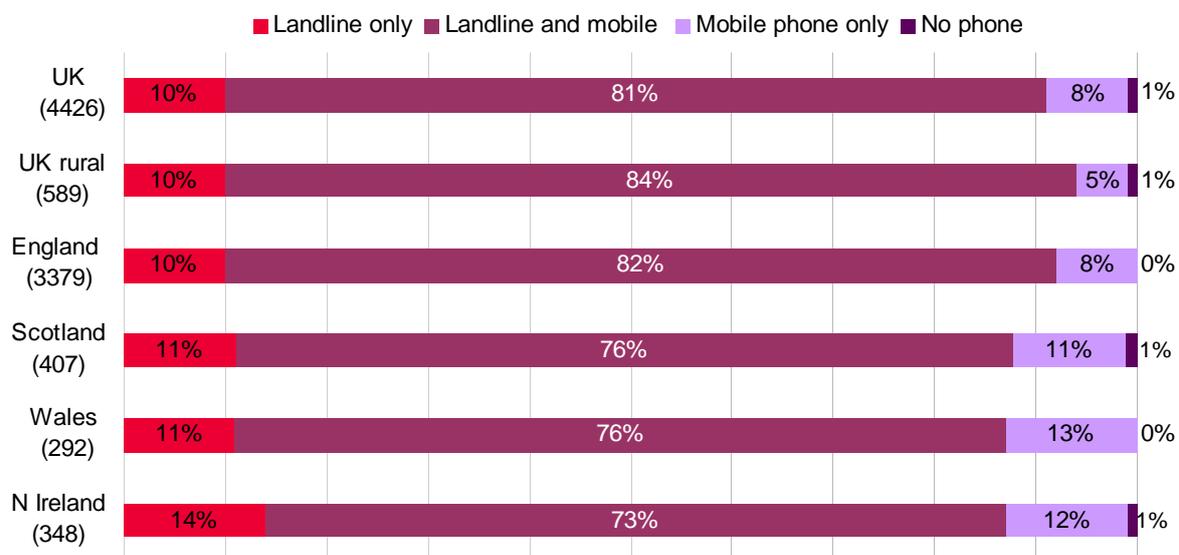
Source: Media Literacy Audit, Ofcom-SRB, June - August 2005. Base: all adults who do not intend to get a mobile phone in next 12 months

6.4.3 Combined take-up of mobile phones and landlines

Figure 25 shows a comparison of household phone take-up. On average 10% of households across the UK relied solely on a landline for their telecoms service at home. Conversely a similar proportion (8%) relied solely on a mobile meaning that the majority (81%) of households across the UK had access to both a landline and at least one mobile phone; 1% of households have no method of telephony.

Adults living in Scotland reported a similar picture to the UK average with regard to their household use of telecoms services, illustrated below.

Figure 25: Combined take-up mobile phones and landlines



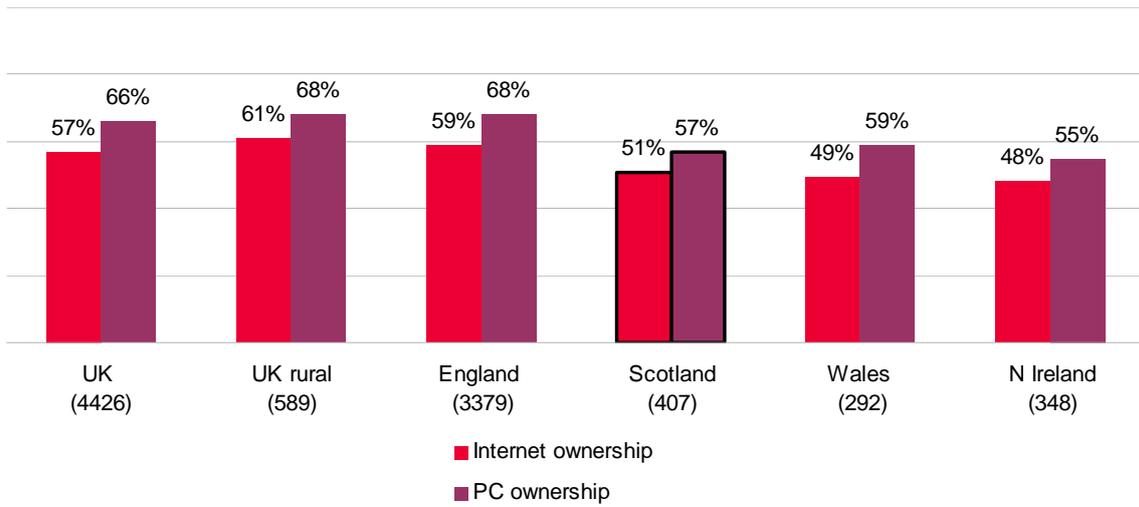
Source: Ofcom Communications Tracking Study, Q2/Q3 2005 rolled data, base sizes are illustrated in figure

6.5 Internet

6.5.1 PC, internet and broadband

Figure 26 shows PC and internet take-up across the nations and in UK rural areas. Internet penetration in Scotland (51%) was significantly lower than the UK average (57%), but showed a broadly similar picture to that in Wales (49%) and Northern Ireland (48%). There were also indications of lower home PC penetration in Scotland (57%) compared to the UK average (66%). These figures were again broadly in line with those for Wales and Northern Ireland.

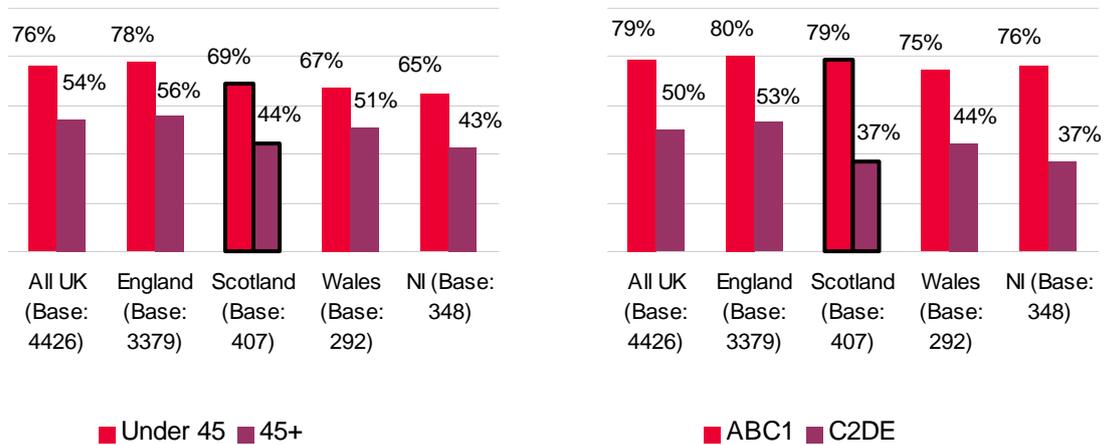
Figure 26: PC and internet take-up



Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

Figure 27 shows PC take-up by age and by socio-economic group. C2DEs in Scotland were significantly less likely to own a PC. PC take-up amongst consumers aged 45+ was fairly consistent across the UK although there are indications of lower take-up amongst this age group in Scotland. The same trends amongst both C2DEs and the 45+ age group were reported in Northern Ireland.

Figure 27: PC take-up by age and socio-economic group



Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

Figure 28 shows internet take-up by age and socio-economic group. Internet take-up was also lower across all age groups in Scotland and amongst C2DEs in particular.

It has been argued that the digital divide still exists in Scotland with a marked disparity among different socio-economic groups regarding access to the Internet (71% in A/Bs to

29% in D/Es). These findings are broadly consistent with those reported below, taken from Ofcom's tracking survey.³

Figure 28: Internet take-up by age and socio-economic group



Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

³ Source: Freedom of Access, Research on Public Internet access in Scotland, Scottish Consumer Council, 2005

Analysis of those not taking up the internet

Figure 29 shows that people in Scotland, along with other parts of the UK, were more likely to give voluntary reasons for not taking up the internet as opposed to involuntary reasons such as price, difficulty in using, and so on.

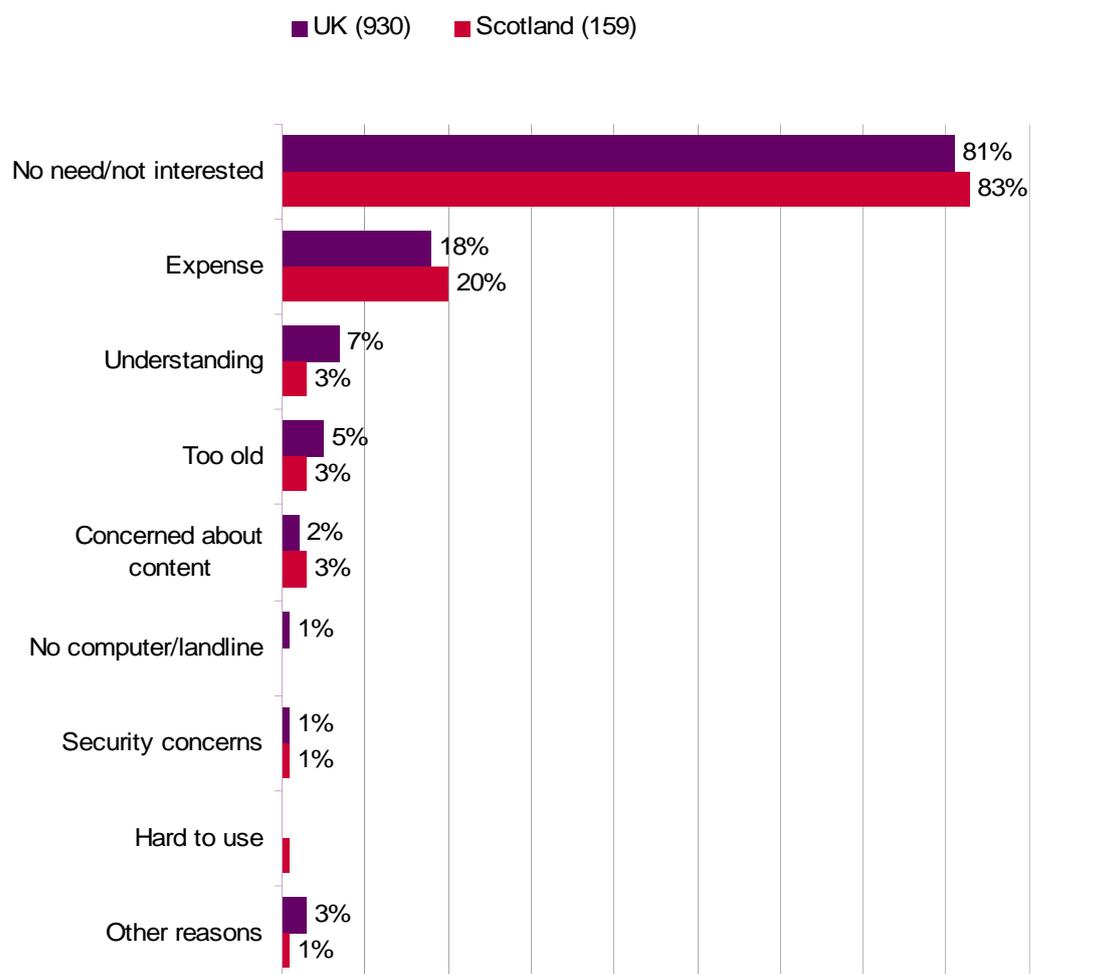
Figure 29: Internet exclusion - voluntary, involuntary and unsure



Source: Media Literacy Audit, Ofcom-SRB, June - August 2005

Figure 30 shows reasons for not taking up internet services. The main reason given for not taking up internet services was lack of interest, as in the UK as a whole (81% UK average, compared to 83% in Scotland). This reason was around four times more common than all the other reasons combined. However, nearly one in five cited expense as a reason not to have the internet.

Figure 30: Reasons not to take-up the internet

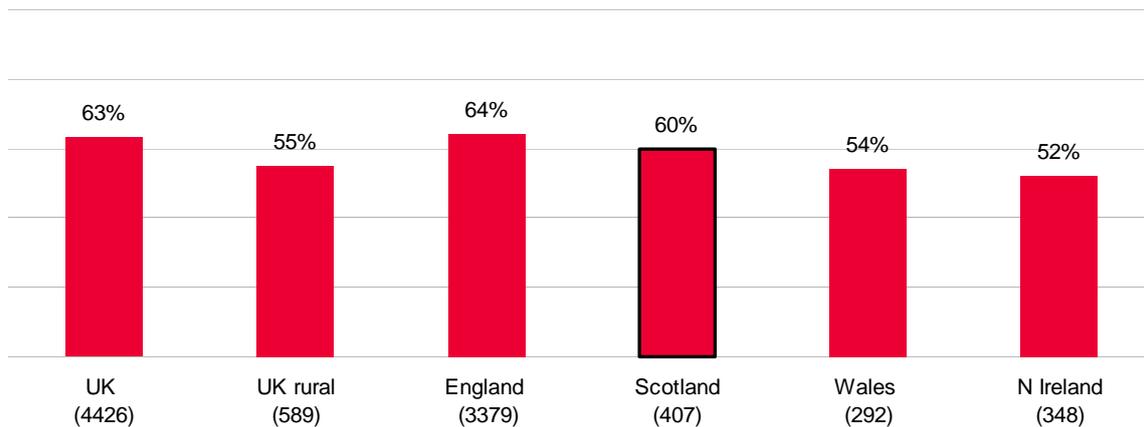


Source: Media Literacy Audit, Ofcom-SRB, June - August 2005. Base: adults aged 16+ who do not intend to get internet at home in next year

6.5.2 Broadband

Figure 31 shows that more than six in ten (63%) homes with the internet used a broadband connection. Use of broadband has overtaken narrowband as internet customers' primary method of connection. While Scotland was below the UK average in terms of PC take-up and home internet penetration, homes that did have access to the internet were more inclined to use broadband (60%), compared to Wales (54%) or Northern Ireland (52%).

Figure 31: Broadband take-up among internet homes



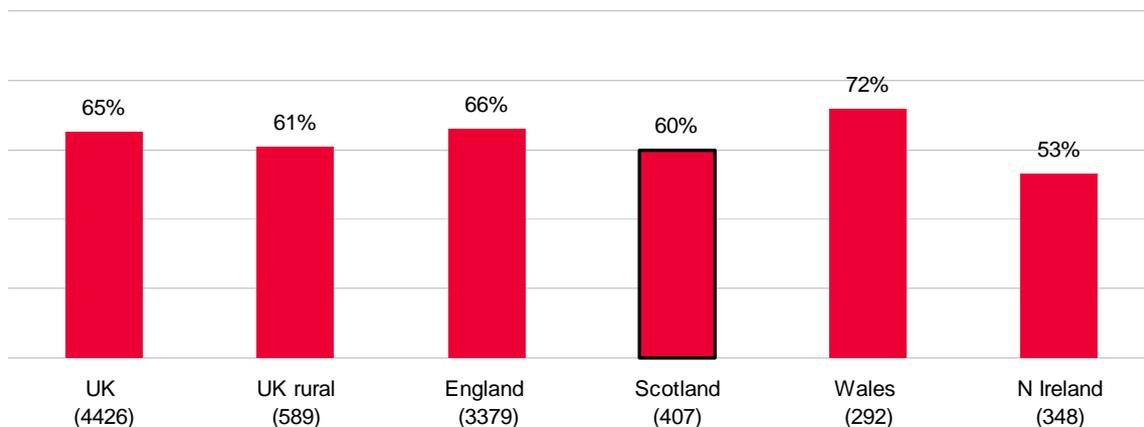
Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

6.6 Digital broadcasting

6.6.1 Digital TV

Figure 32 shows take-up of digital TV. Take up of digital TV in Scotland at 60% was not significantly different to the UK average of 65%.

Figure 32: Digital TV take-up



Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

Figure 33 shows digital TV take-up by age and by socio-economic group. Take up amongst under 45's in Scotland was 63%, 7 percentage points lower than the UK average of 70%. Over 45 take-up was broadly similar to the UK average. ABC1 take-up in Scotland was 63%, while C2DE take-up was 57%. Both of these were in line with the UK average of 68% and 62% respectively.

Figure 33: Digital TV take-up by age and socio-economic group

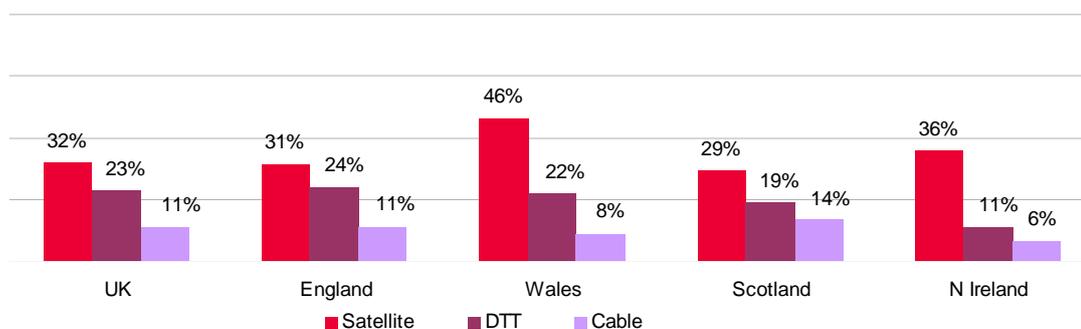


Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

Digital TV take-up by platform⁴

Figure 34 shows take-up of digital TV by platform. Take up of each of the digital TV platforms in Scotland were broadly similar to the UK average. 14% of homes had cable television services compared to the UK average of 11%. Take up of satellite stood at 29% in Scotland and DTT at 19%.

Figure 34: Take up of digital TV by platform



Source: Operator data / BARB regional homes data Q3 2005. (Please note that the data in this chart has been derived from BARB's TV regions rather than the Govt regions)

Scotland's higher level of DTT coverage is not matched by its take-up record. Overall DTT take-up in Scotland was 19%, slightly lower than the UK average of 23%. On the other hand, despite the lower level of cable coverage referred to in 0, digital cable was in 14% of homes in Scotland, higher than the UK average of 11%. Availability of these services would appear

⁴ Data by platform is based on a combination of operator data and BARB data and includes a minority of homes using analogue multi-channel – estimated at around 1% across the UK with slight variations by nation and region. Due to these differences this data is not directly comparable to overall take-up

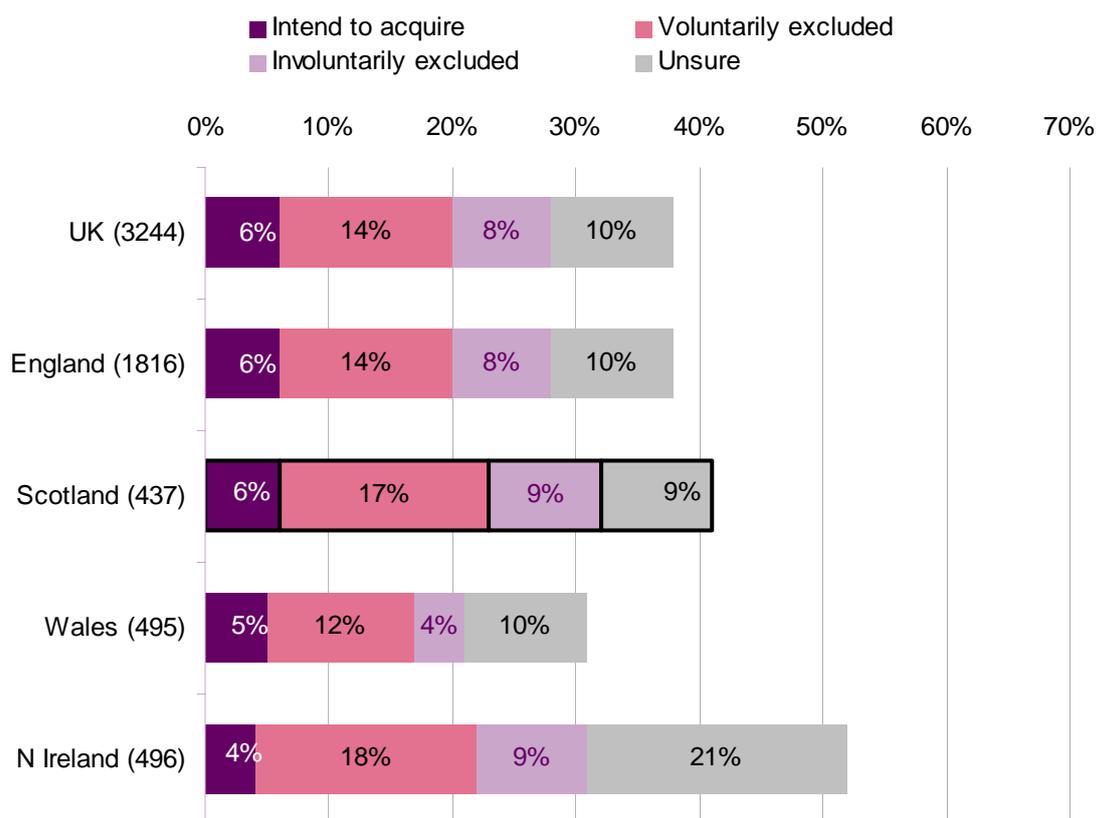
not to be the deciding factor in take-up rates. Awareness could be a factor given that the Border area used to be lower than the UK average for digital TV take-up but according to Digital UK has experienced significant increase in uptake since plans for digital switchover in that region received publicity. Ofcom's residential tracking study shows that amongst younger and more affluent sections of Scottish society, take-up of digital TV has lagged behind the UK average.

According to a 2004 digital TV study in Dumfries and Galloway, and West Lothian, younger and better off people are more open to digital technology. There was also reasonable interest in using digital TV to access local services (69% in West Lothian; 53% in Dumfries and Galloway) although respondents had requirements/suggestions for improvements. In the main, and despite some reservations, people liked the concept of information being available over digital TV.

Analysis of those not taking up digital TV

Figure 35 shows levels of voluntary and involuntary exclusion from owning digital TV. People in Scotland were more likely to give reasons relating to voluntary exclusion than involuntary exclusion when asked whether they would get digital TV in the next 12 months. Overall, figures for Scotland were not statistically different from the rest of the UK.

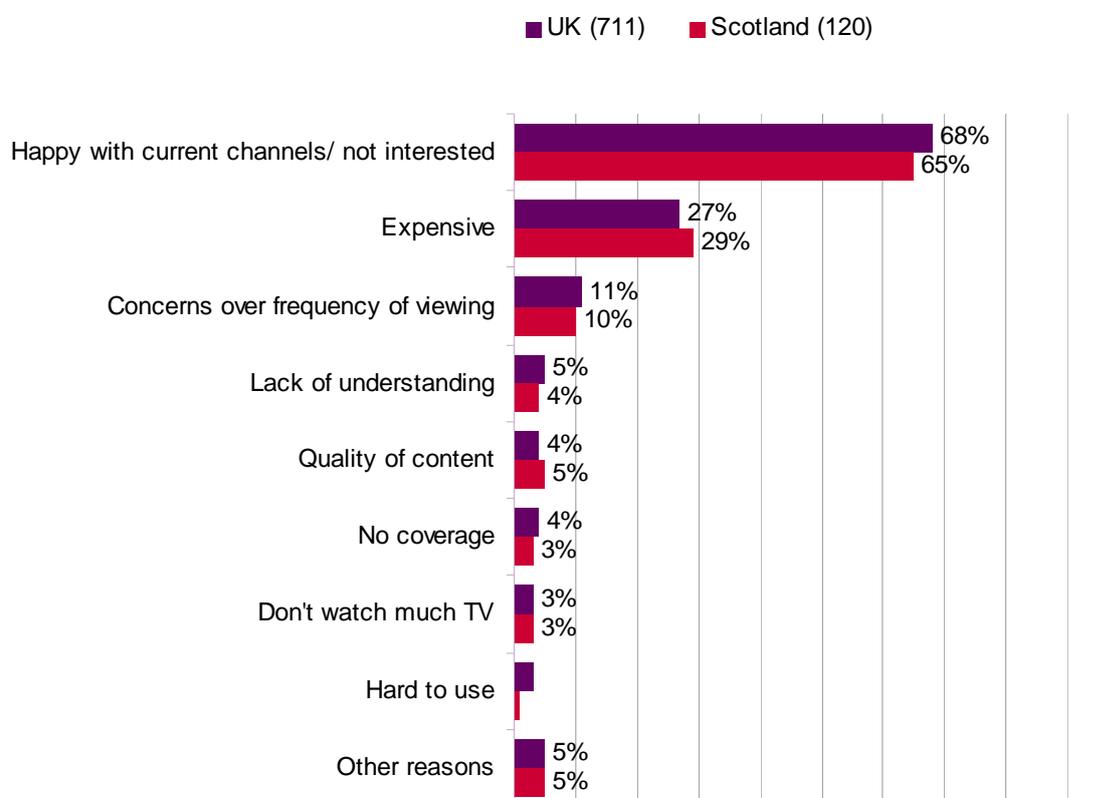
Figure 35: Digital TV exclusion - voluntary, involuntary and unsure



Source: Media Literacy Audit, Ofcom-SRB, June - August 2005

Figure 36 shows reasons not to get digital TV. Scottish respondents without digital TV gave similar reasons to the rest of the UK for not taking up the platform: 65% were happy with existing services while 29% had concerns over costs.

Figure 36: Reasons not to get digital TV



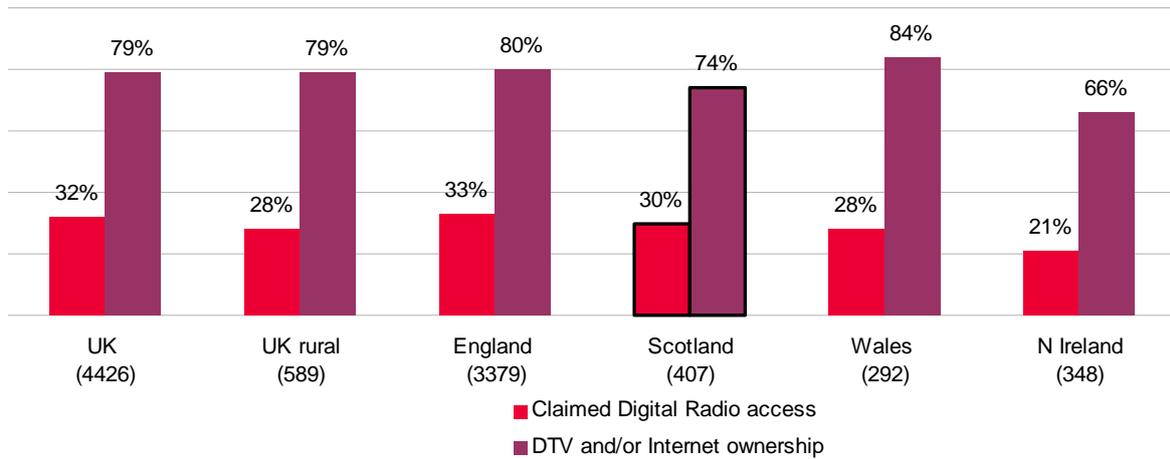
Source: Media Literacy Audit, Ofcom-SRB, June - August 2005. Base: those who do not intend to get digital TV in the next 12 months

6.6.2 Digital radio

Figure 37 shows take-up of digital radio. As noted in the main report, there were marked differences when comparing take-up of internet and/or digital TV (both provide access to digital radio) with stated take-up of digital radio services. This highlights an issue of awareness amongst consumers regarding the functionality of the internet and digital TV.

In Scotland, actual access to digital radio services was 74% - not-dissimilar to the UK average (79%). 30% of adults were aware that they had access to digital radio, again broadly consistent with the UK average of 32%.

Figure 37: Digital radio take-up

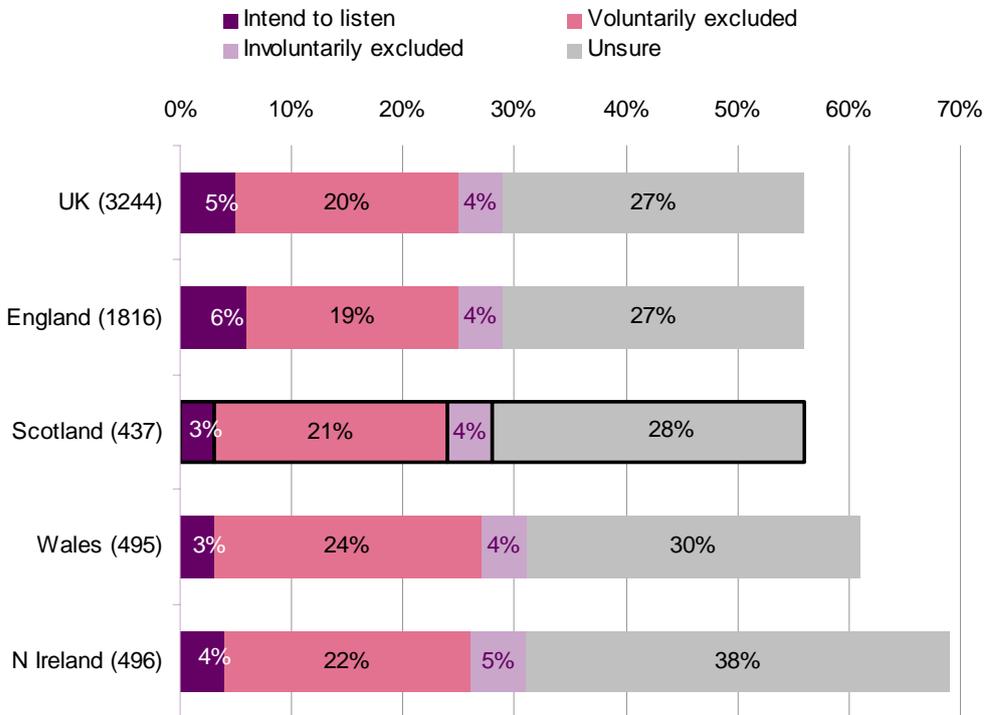


Source: Ofcom Residential Communications Tracking Study, Q2/Q3 2005

Analysis of those not taking up digital radio services

Figure 38 shows levels of voluntary and involuntary exclusion from owning digital radio services. Levels of exclusion, both voluntary and involuntary, for digital radio services in Scotland were essentially the same as the UK average. This alignment is matched across voluntary and involuntary exclusion as well as those unsure.

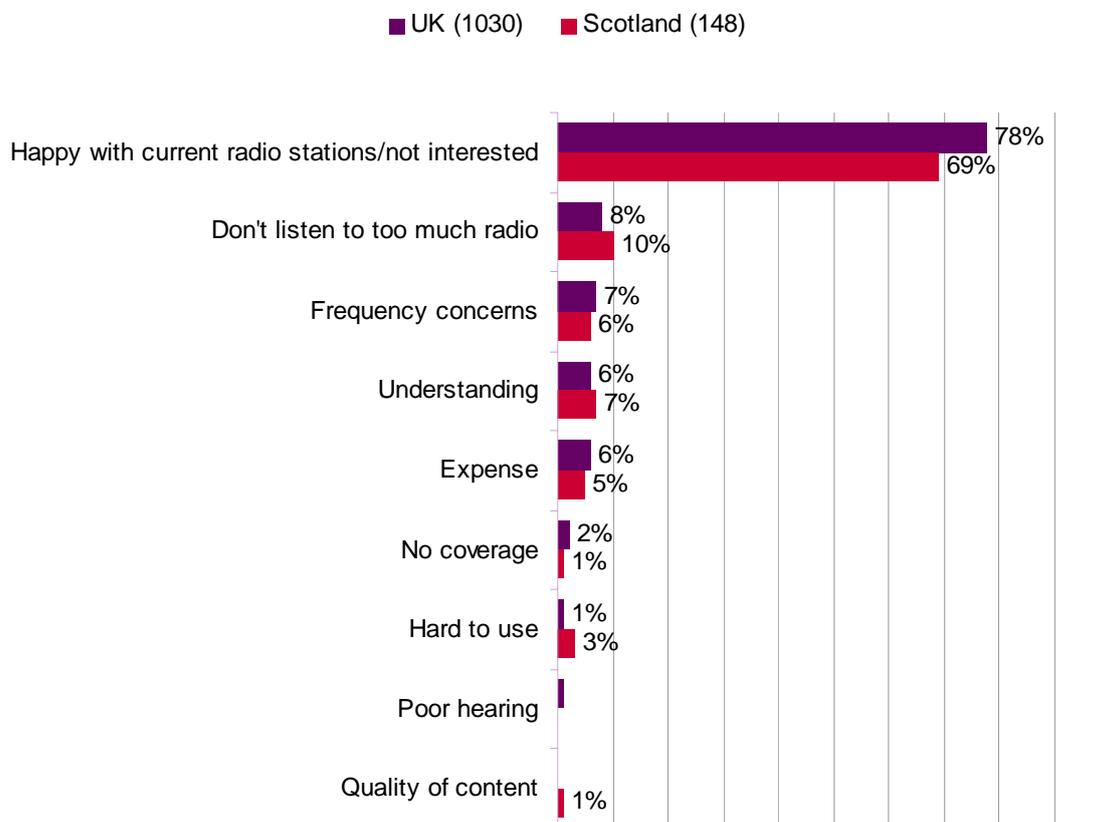
Figure 38: Digital radio exclusion - voluntary, involuntary and unsure



Source: Media Literacy Audit, Ofcom-SRB, June - August 2005

Figure 39 shows the reasons people gave for not starting to listen to digital radio. Nearly 70% of people in Scotland who did not intend to start listening to digital radio services in the next 12 months said this was because they were not interested in doing so, or were happy with current services. Only 5% gave reasons relating to expense.

Figure 39: Reasons not to start listening to digital radio



Source: Media Literacy Audit, Ofcom-SRB, June - August 2005

6.7 Take-up of services over time in Scotland

Trend in take-up of communications services

Figure 40 shows take-up of communications services in England over time. There has been no change in landline take-up in Scotland during the period of this research. Following a rise in home take-up of mobile phones between the end of 2004 and early 2005 penetration has remained stable.

There are indications of a rise in internet take-up between 2002 and 2004 but this has since remained relatively stable. However, this is combined with a consistent pattern across the UK of increased broadband penetration. Digital TV take-up shows indications of a rise between late 2004 and early 2005.

Figure 40: Trend in take-up of services in Scotland



Source: Ofcom/Ofcom Residential Tracking Survey, conducted by MORI, 2003-2005. Base sizes in figure

Section 7

Consumption of communications services

7.1 Introduction

Against the background of availability and take-up of communications services, this section considers the consumption of telecommunications, internet and digital broadcasting services. Where possible, we consider the extent of spend on communications across the nations and regions, extent of use of those services, and consumer satisfaction with both service and value for money.

Research is drawn from a range of sources, including Ofcom Residential Tracker data, BARB in relation to digital TV, RAJAR in relation to radio, and the Media Literacy Audit for extent of use of mobile and internet services.

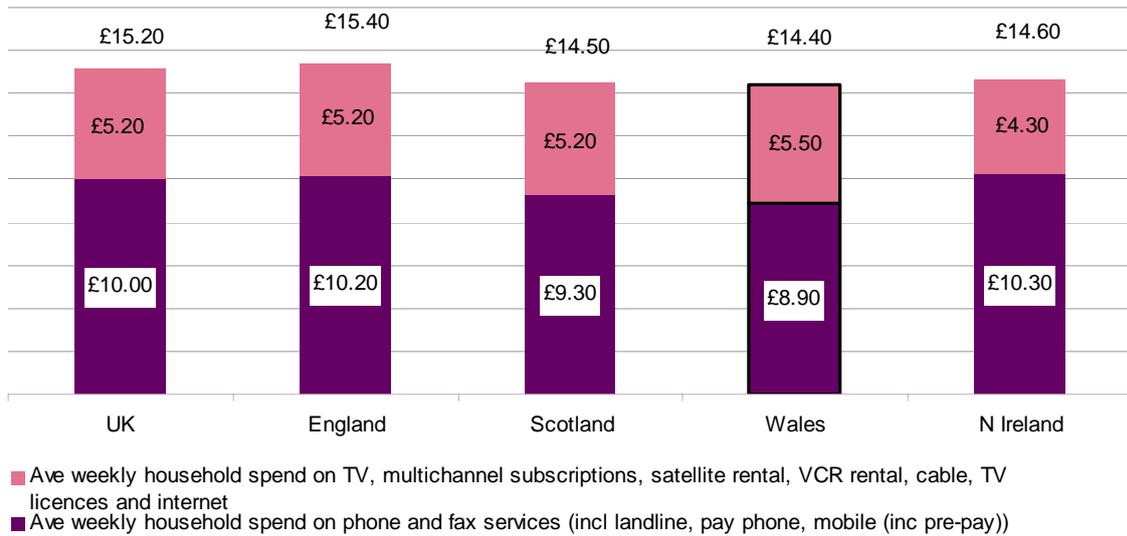
7.2 Key findings

- People in Scotland spend less on communications services than the UK as a whole (£14.50 against £15.20). However, as a percentage of overall average weekly income, people in Scotland spend a larger proportion of their income on communications at 3.4% against the UK average of 3.2%.
- In Scotland an average of 28.7 text messages are sent every week and 21.3 mobile phone calls made.
- Internet customers in Scotland report levels of average weekly use of the internet that are consistent with UK average (11.4 hours, UK average 9.9 hours).
- Adults in Scotland consume more digital TV than anywhere else in the UK – at nearly 22 hours per week, compared to a UK average of 19 hours.

7.3 Communications spend

Figure 41 shows that Scotland had the second lowest average weekly spend on communications amongst the Nations. The average spend in Scotland was £14.50 a week, close to the Wales and Northern Ireland spend levels, but lower than the England total of £15.40 a week.

Figure 41: Average gross weekly household communications expenditure



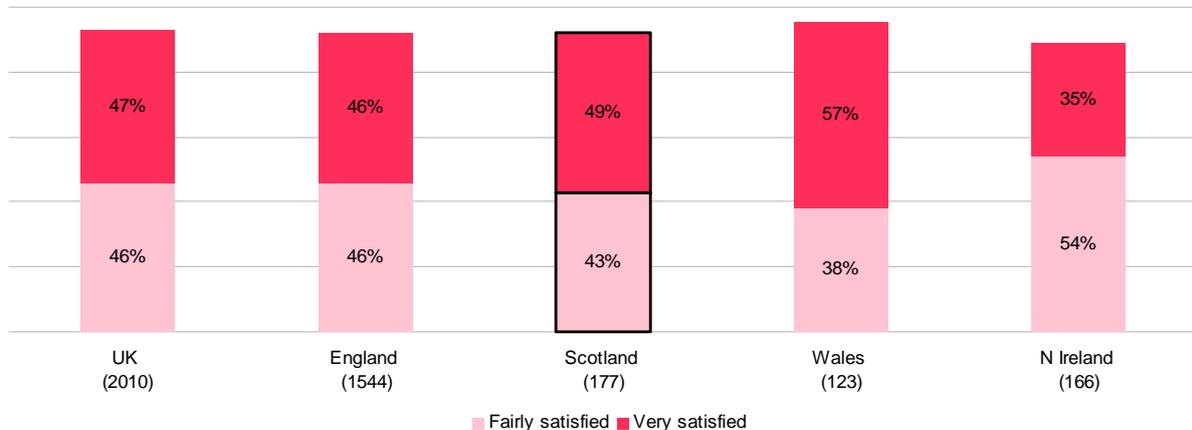
Source: Office of National Statistics, Family Spending 2005 Edition

7.4 Consumption of telecoms services

7.4.1 Telephone landlines

Figure 42 shows levels of satisfaction with telephone landline services. On average 93% of landline customers were satisfied with their landline service. There were no significant differences in total satisfaction levels across the UK.

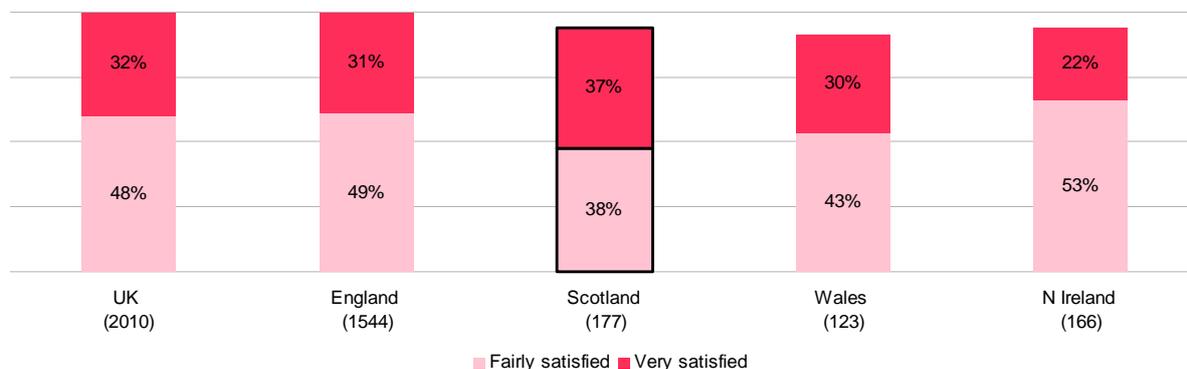
Figure 42: Home landline satisfaction



Source: Ofcom Residential Communications Tracking Study, Q2 2005

Figure 43 shows satisfaction with landline value for money. Across the UK, consumers were less satisfied with the value for money of their landline service (80%) than they were for the overall service provided (93%). Landline customers in Scotland were significantly less satisfied than the UK average with value for money (75%), but reported broadly similar levels to Northern Ireland (75%) and Wales (73%).

Figure 43: Home landline satisfaction with value for money

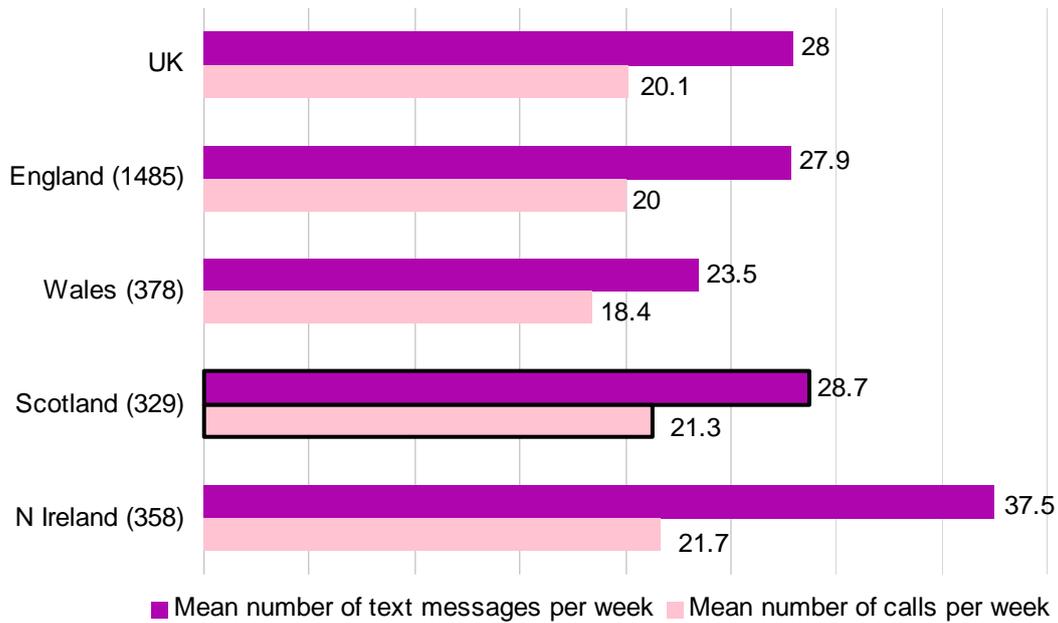


Source: Ofcom Residential Communications Tracking Study, Q2 2005

7.4.2 Mobile phones

Figure 44 shows the number of mobile phone calls and texts per week made by mobile phone users across the UK. The usage of mobiles and general attitudes towards telecoms were similar in Scotland to the rest of the UK. Levels of texting over mobile phone and the number of mobile phone calls a week in Scotland were similar to the UK average.

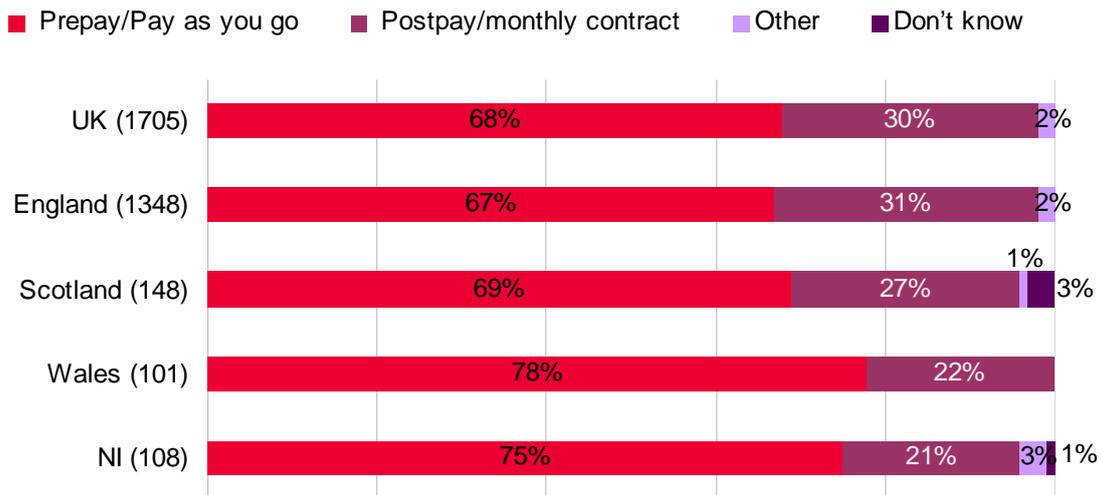
Figure 44: Number of mobile calls and texts per week



Source: Media Literacy Audit, Ofcom-SRB, June - August 2005. Base: adults aged 16+ with a mobile phone

Figure 45 shows usage of pre-pay mobile phone packages against contract. On average, 68% of UK mobile phone customers used a pre-pay mobile phone package compared to 30% who said they use contract. There were no significant differences in use of each package in Scotland compared to average.

Figure 45: Average use, pre-pay compared with contract



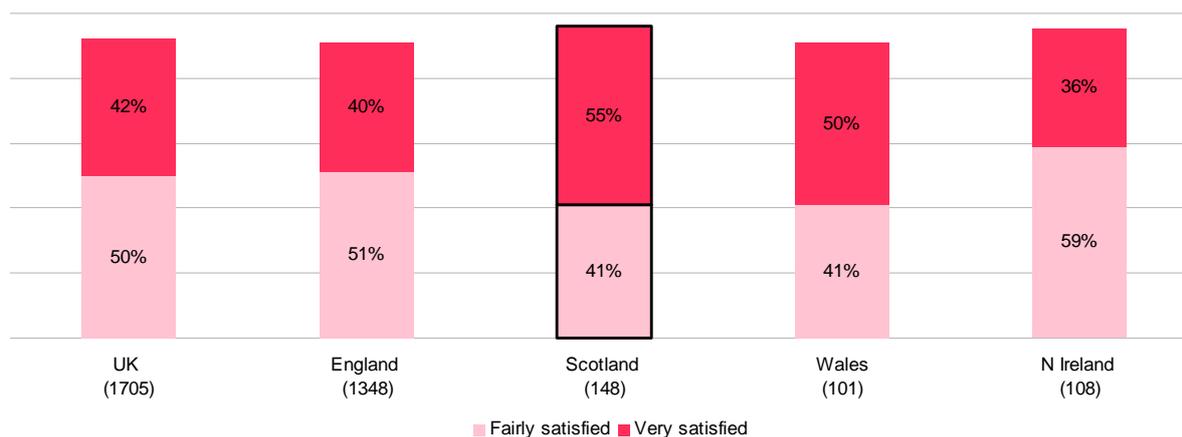
Source: Ofcom residential communications tracking study, Q2 2005

The Communications Market: Nations and Regions - Scotland

Figure 46 and Figure 47 show levels of satisfaction with mobile phone services. On average mobile phone customers across the UK were less satisfied with the value for money of their mobile service (80%) than they were overall (92%). These levels of satisfaction did not vary significantly across the UK with comparable figures in Scotland of 84% for value for money and 96% satisfied with their overall service.

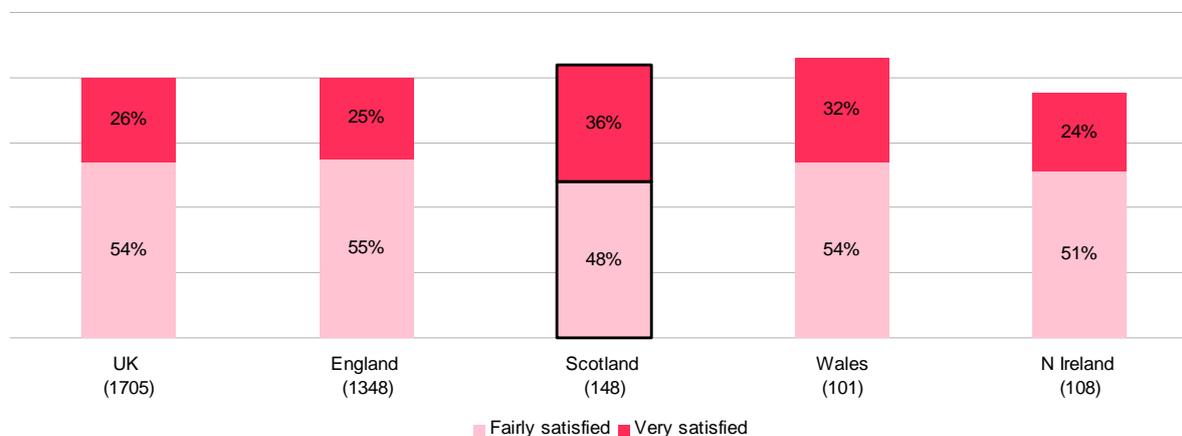
Mobile phone customers in Scotland were more likely to state that they were 'very satisfied' with their overall service (55%) and value for money (36%) than most other parts of the UK.

Figure 46: Satisfaction with mobile service



Source: Ofcom Residential Communications Tracking Study, Q2 2005

Figure 47: Satisfaction with mobile value for money



Source: Ofcom Residential Communications Tracking Study, Q2 2005

7.5 Internet

Figure 48 shows average weekly usage of the internet. Internet users across the UK said they spent an average of 9.9 hours a week on the internet. Internet customers in Scotland reported levels of use that were consistent with UK average (11.4 hours).

Figure 48: Weekly hours of use of internet

Q: Please think about the hours that you use the internet in a typical week – so both weekdays and at the weekend. How many hours in a typical week would you say you use

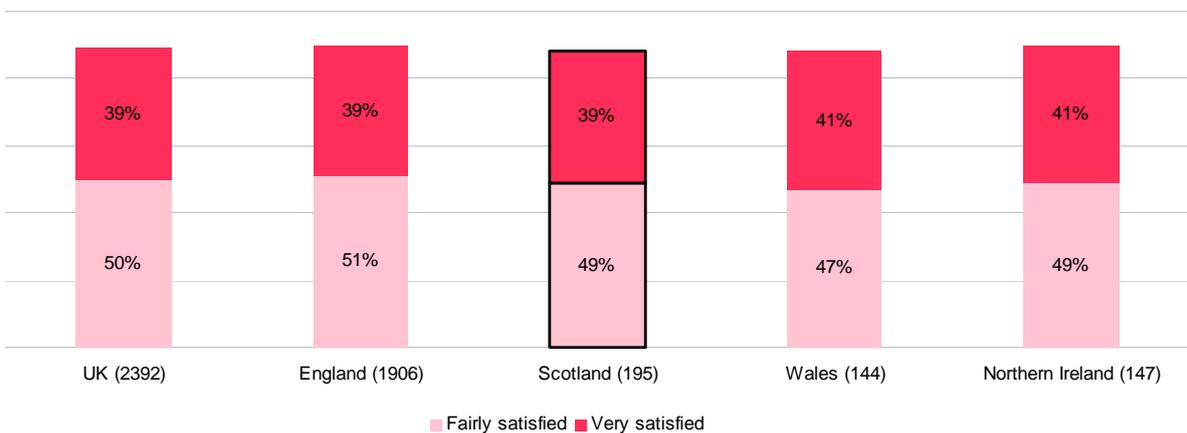
the internet at home?; How many hours in a typical week would you say you use the internet at your workplace or place of education? And how many hours in a typical week would you say you use the internet anywhere else?



Source: Media Literacy Audit, Ofcom-SRB, June - August 2005. Base: adults aged 16+ who use the internet

Figure 49 and Figure 50 show satisfaction with internet services and value for money of internet. 89% of internet customers across the UK were satisfied with their internet services. Satisfaction with value for money is lower at 81%. Satisfaction levels were broadly consistent across the UK – 88% in Scotland for overall service and 81% for value for money.

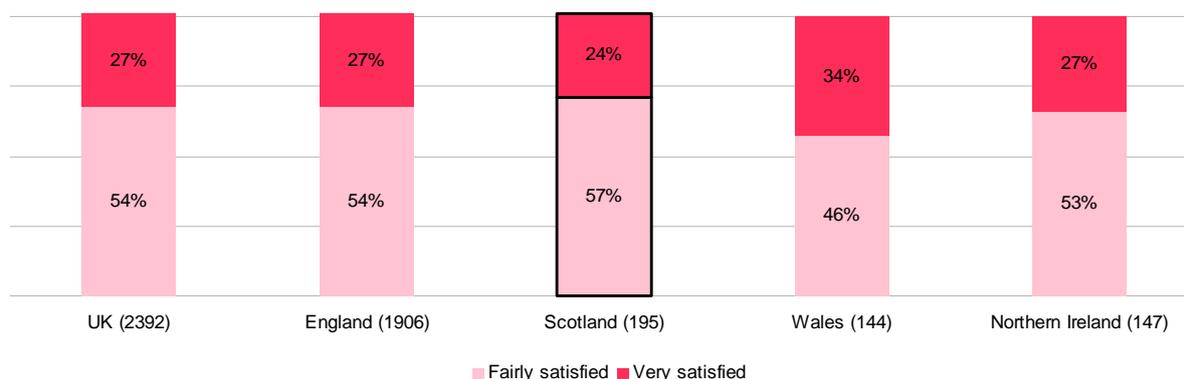
Figure 49: Satisfaction with internet service



Source: Ofcom Residential Communications Tracking Study, Q1/Q3 2005

There were no significant difference between Scotland and the UK average, in terms of either satisfaction with internet service, or satisfaction with internet value for money.

Figure 50: Satisfaction with value for money of internet



Source: Ofcom Residential Communications Tracking Study, Q1/Q3 2005

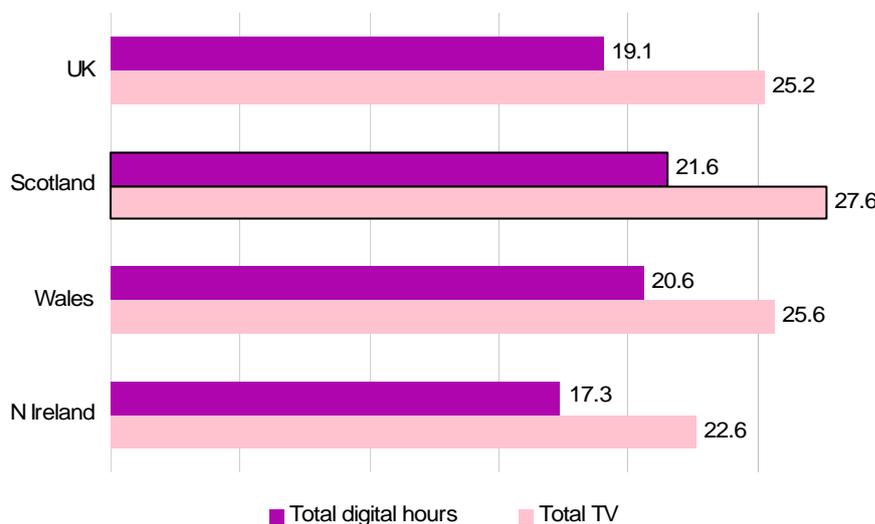
7.6 Digital broadcasting

7.6.1 Digital TV

Figures 51 through to Figure 54 show various aspects of digital TV viewing. Note that figures in this section refer to the following areas: Wales - HTV Wales; Scotland - Grampian and STV regions; Northern Ireland – the UTV area.

Average weekly viewing on digital platforms was highest in Scotland at 21.6 hours a week, the UK average being 19.1 hours

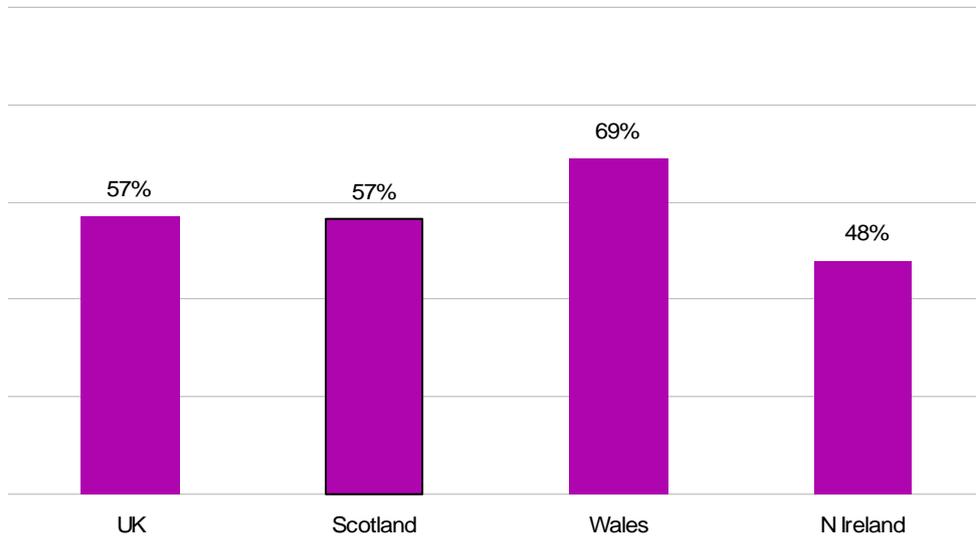
Figure 51: Average weekly hours of viewing TV by ITV region



Source: BARB 2005. All digital individuals (4+) in multichannel homes by region and across multichannel network

Figure 52 shows the 15 minute consecutive average weekly reach of viewing digital TV by ITV region. Scotland level of digital viewing as a proportion of total TV viewing was exactly at the UK average of 57%.

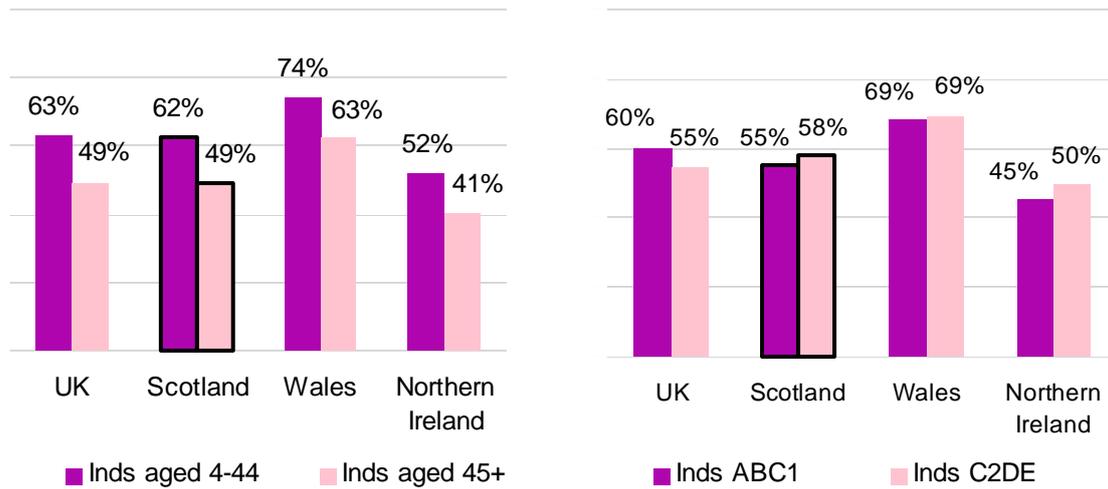
Figure 52: Average weekly reach to total TV via any digital signal by ITV region (15 minute consecutive)



Source: BARB 2005. Figure shows 15 minute consecutive average weekly reach via any digital signal to total TV. All individuals (4+)

Figure 53 shows digital TV reach by age and socio-economic group. The demographic breakdown by age for digital TV reach showed that younger age group watched more digital TV as a proportion of total TV than the older group, and this difference was closely aligned to the UK average. For socio-economic group the difference was much less, and in the opposite direction to the UK average, with a greater digital TV reach for C2DEs compared to ABC1s.

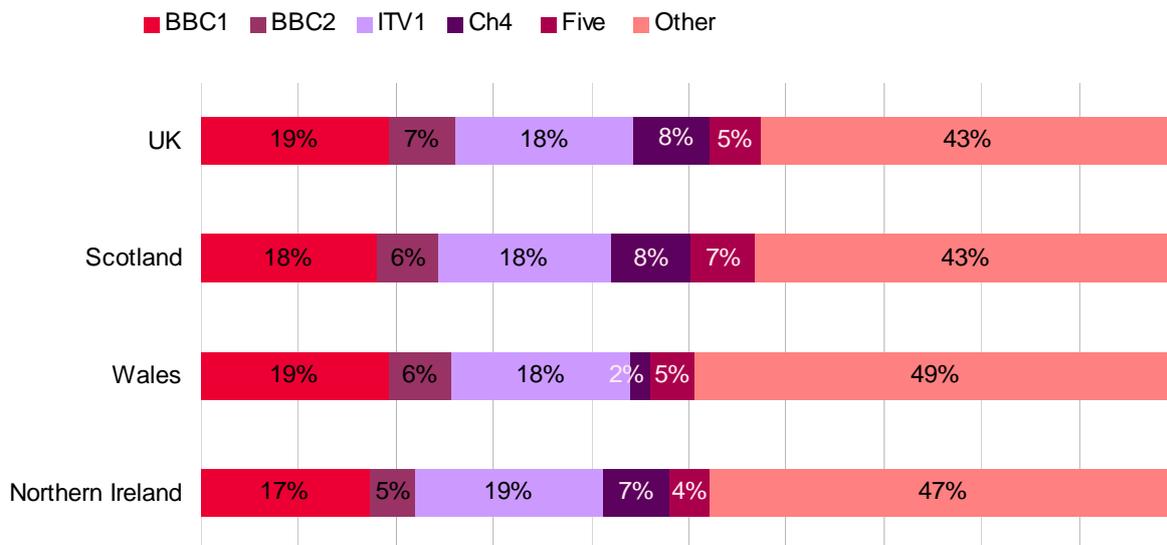
Figure 53: Average weekly reach to total TV via any digital signal by age and by socio-economic group by ITV region (15 minute consecutive)



Source: BARB 2005. Figure shows 15 minute consecutive average weekly reach via any digital signal to total TV. All individuals (4+)

Figure 54 shows the percentage share of viewing by digital channel. Viewing patterns for the five UK channels across the Nations and Regions were broadly similar with Scotland very close to the UK average.

Figure 54: % share of digital viewing by channel



Source: BARB 2005

Figure 55 shows the top ten rated programmes by audience size in 2005 by ITV region. The top 10 programmes watched in Scotland were similar to those for the UK in terms of genre, with three out of the top five the same. There is also evidence here of strong interest in BBC programming made for Scotland in the shape of Chewin' The Fat, Still Game and Hogmanay Live.

Figure 55: Top 10 programmes on television

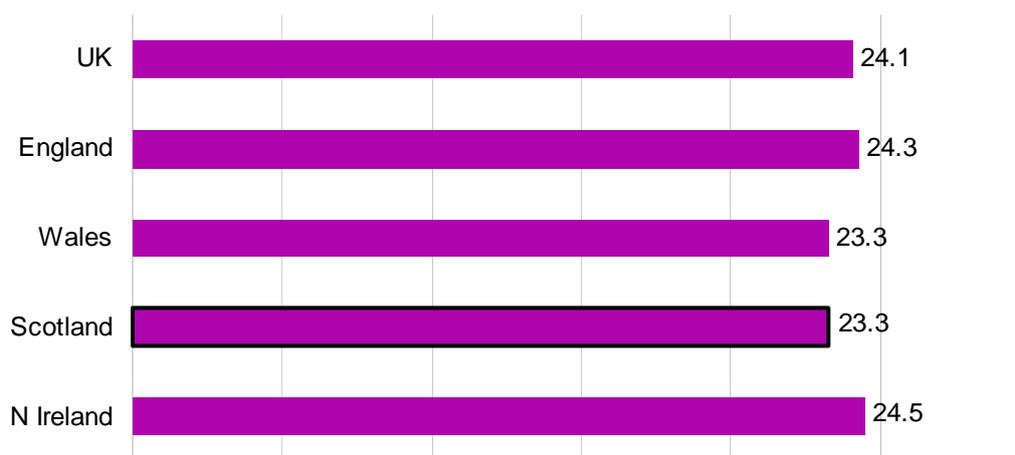
UK overall	Scotland
1. Coronation Street (ITV1)	1. Eastenders (BBC1)
2. Eastenders (BBC1)	2. Coronation Street (ITV1)
3. I'm A Celebrity - Get Me Out Of Here! (ITV1)	3. Chewin' The Fat (BBC1)
4. The Vicar Of Dibley (BBC1)	4. Emmerdale (ITV1)
5. Emmerdale (ITV1)	5. I'm A Celebrity - Get Me Out Of Here! (ITV1)
6. Weather (BBC1)	6. The X Factor Results (ITV1)
7. Comic Relief: Red Nose Night Live 05 (BBC1)	7. Still Game (BBC2)
8. Doctor Who (BBC1)	8. Hogmanay Live (BBC1)
9. Strictly Come Dancing (BBC1)	9. Only An Excuse? (BBC1)
10. A Touch of Frost (ITV1)	10. Comic Relief: Red nose night 05 (BBC1)

Source : BARB, 2005. Programmes analysed on highest occurrence only, ranked by audience numbers, programmes under 10 minutes in duration were excluded

7.6.2 Radio

Figure 56 shows the average weekly listening to radio by number of hours. The average weekly listening hours for radio were 23.3 hours in Scotland. This is the joint lowest level with Wales. The average for the UK was 24.1 hours.

Figure 56: Radio average weekly listening hours



Source: RAJAR, 2005. Note: Figures only available for total radio listening, not available for digital only. Results for other regions are not shown due to the small base sizes

Figure 57 shows 5 minute reach to total radio by nation. Radio reach shows little variation between the Nations. Scotland's reach was 90%, the same as the UK average.

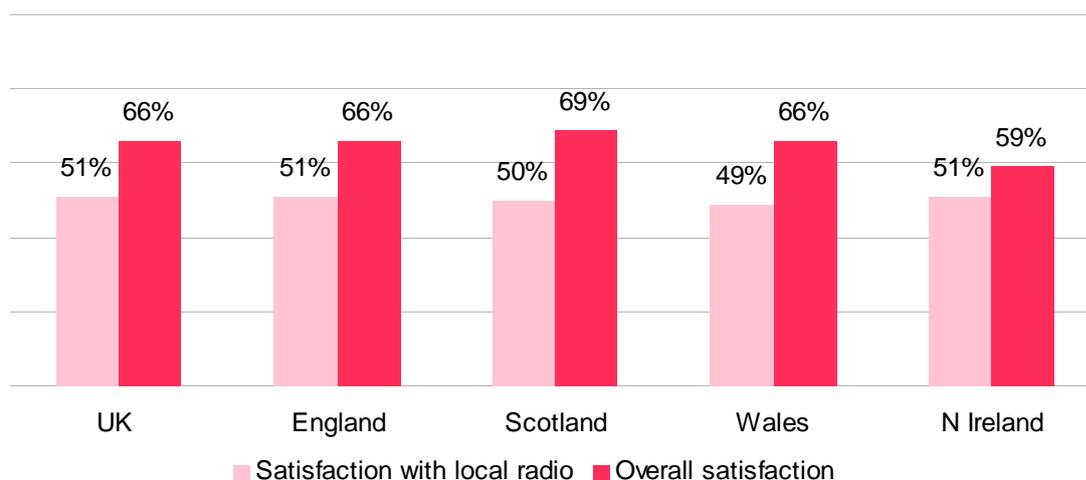
Figure 57: Average weekly reach to total radio (5 minute consecutive)



Source: RAJAR Q3 2005, radio reach of all adults (15+). Based around the RAJAR regions. Note: Figures only available for total radio, not available for digital only

Figure 57 shows satisfaction with radio services. Satisfaction with radio again showed very similar trends across the Nations. In Scotland, 50% of people questioned were satisfied with their local radio while 69%, the UK highest, expressed satisfaction with radio overall.

Figure 58: Percentage of adults satisfied with overall service and local radio content



Source: MORI, July-August 2004. Note: A score of 8-10 by respondents was taken to mean satisfied

Section 8

Small and Medium-sized Enterprises

8.1 Introduction

This section sets out research relating to take-up and consumption of mobile phone and internet services by SMEs in the nations and regions.

Research undertaken in this survey shows that there is relatively little information available about SMEs (either Ofcom data or third party research) at a level that allows full comparison across the nations and regions. Studies have been generally designed to produce findings representative of the UK as a whole, rather than broken down by nation and region. Comparison of data across different sources is also difficult, due to the different definitions of SMEs used by the research.

To enable comparison across nation and region, this report draws 2005 data from Ofcom's SME Tracking Study for the nations and regions. We have supplemented this research with a summary of other useful sources of SME information available in the UK.

Ofcom will be undertaking further research to understand SMEs and their behaviour, needs and attitudes towards communications. A research project 'The Digital Small and Medium-Sized Enterprise' (The Digital SME) will be published later in 2006 and will involve both qualitative and quantitative research. A major outcome of this piece of work will be a refinement in the current SME Tracking Study to ensure that important issues for SMEs are understood and monitored at both a UK level and within the nations and regions.

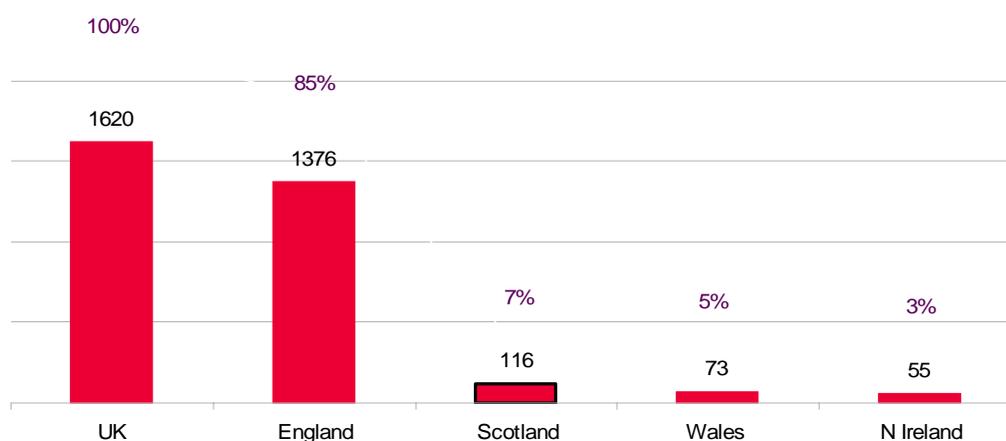
The 2004-5 Ofcom Annual Report outlines Ofcom's commitment to ensure that our policy development and regulatory actions are informed by the views of all those with an interest in the outcome, including engagement with SMEs.

8.2 Key findings for Scotland

- Research shows that similar proportions of SMEs owned or rented mobile phones across the nations (51% UK average). In Scotland, this figure was 47%.
- The majority of businesses in the UK had, or were in the process of gaining, access to the internet (79%). This was broadly consistent in Scotland (81%).

8.3 Setting the scene - SMEs in Scotland

Figure 59: Prevalence of SMEs (000s of businesses)



Source: Office of National Statistics, 2005

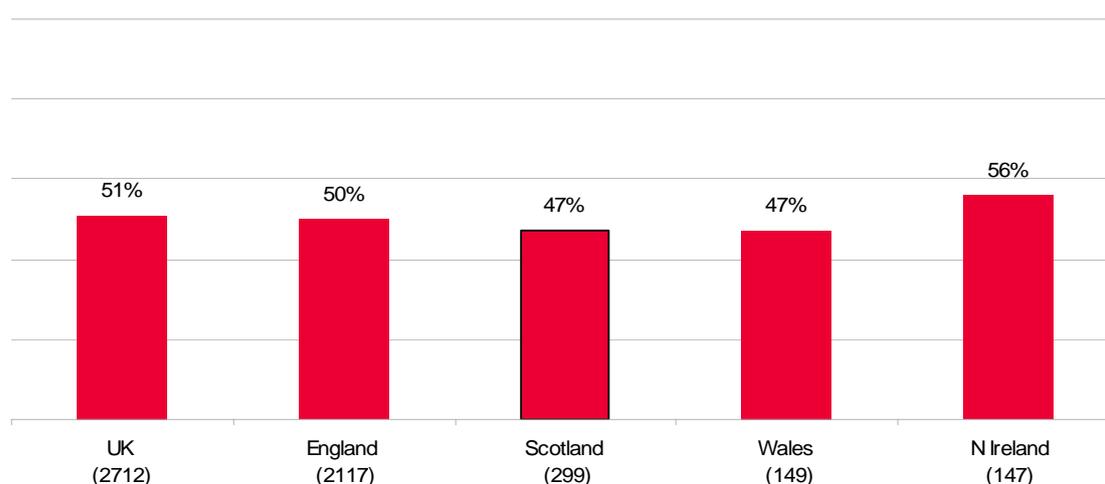
Figure 59 shows the location and number of business across the UK (1.6m) and in the nations. These were VAT registered businesses with up to 250 employees.

The data showed that in 2005, SMEs were predominantly located in England, with 85% based, or with their head office, there. Scotland was home to 5% of the UK's SMEs.

8.4 SME take-up of mobile phones

Figure 60 shows that a similar proportion of SMEs across the nations owned or rented mobile phones in 2005. Scotland take-up was 47%, consistent with UK average (51%) but below the nations of Northern Ireland (56%) and Wales (47%).

Figure 60: Mobile phone take-up for SMEs



Source: Ofcom SME Tracking Study, 2005

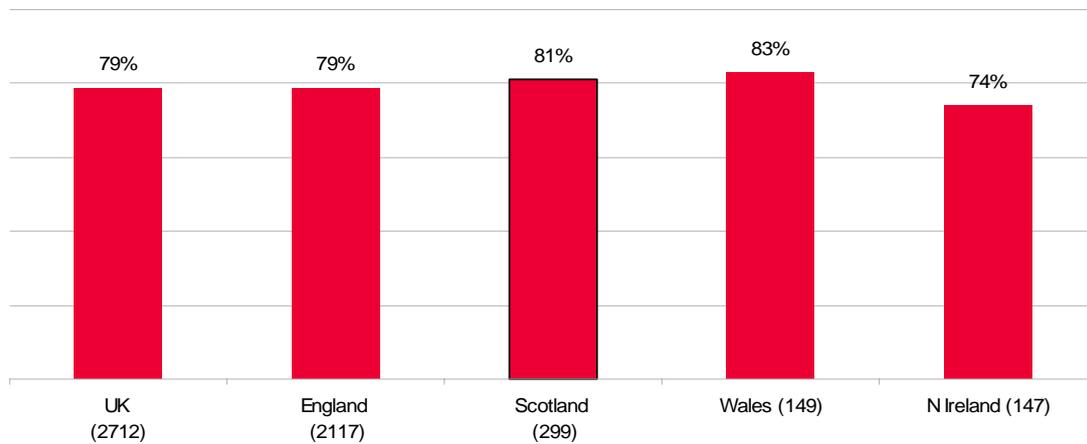
8.5 SME take-up of internet

8.5.1 Total internet

There is evidence of businesses in Scotland now being more inclined to use the Internet: 35% of organisations were trading online in 2005, an increase of 14% from 2004. (Scottish e-Business Survey, Scottish Enterprise 2005).

Figure 61 shows that 79% of SMEs across the UK have taken up the internet. Takeup was broadly consistent across the nations, with 81% of SMEs using the internet in Scotland.

Figure 61: SME internet take-up

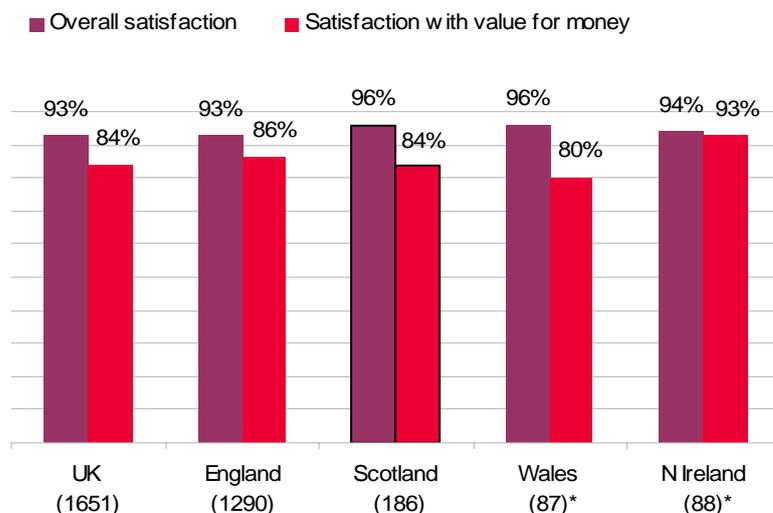


Source: Ofcom SME Tracking Study, 2005

Figure 62 shows that SMEs in Scotland were satisfied with the overall quality of their internet services (96% were either 'fairly' or 'very' satisfied). This trend was consistent with UK average (93%) and consistent across the nations.

84% of SMEs in Scotland also reported being 'fairly' or 'very' satisfied with value for money of internet services, consistent with UK average (84%).

Figure 62: SME overall satisfaction with internet services

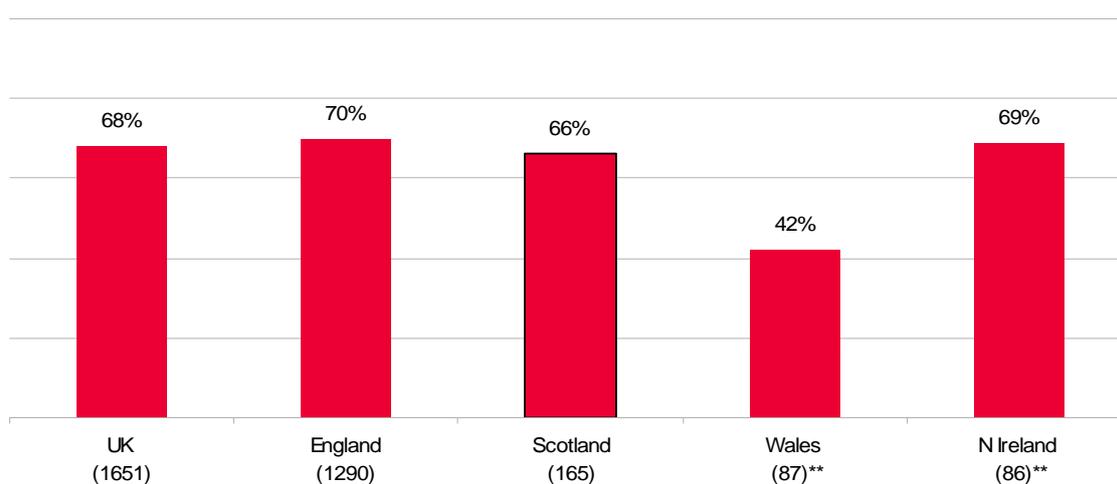


Source: Ofcom SME Tracking Study, 2005 *Base sizes small so care to treat as indicative only

8.5.2 Broadband

Figure 63 shows that SME take-up of broadband amongst SMEs varies across the nations. Take-up in Scotland was 66%, consistent with UK average (68%). Takeup in Northern Ireland was also consistent with UK average (69%), however it was significantly lower in Wales (42%).

Figure 63: SME broadband take-up among internet-using SMEs



Source: Ofcom SME Tracking Study, 2005 **Base sizes small so care treat as indicative only

8.6 Third party reports and regional activities

Scottish Enterprise reports that broadband has made a positive impact on both technology adoption and e-business practices. Broadband is a likely contributor to the increased levels of Local Area Network adoption across Scotland in 2005 – the cost of a network is now lower through broadband. Furthermore, the longer an organisation has broadband, the more likely it is to make continuous improvements to the business, to use Internet-based software, to trade online and to use e-learning with the organisation.

Broadband is an enabling technology for all types and sizes of organisation. Broadband uptake has increased substantially in Scotland over the last year, from 39% of connecting organisations in 2004 to 61% in 2005. In Glasgow and Edinburgh and Lothian, levels of broadband adoption have reached almost saturation with over 80% of connectors using broadband in these areas.

Within Scottish organisations, the biggest benefit experienced is in 'doing things faster' (91% of organisations) while faster file transfer was a benefit for 11% of broadband connectors and access to remote software a benefit for less than 1% of organisations.

33% of broadband connectors in Scotland are likely (definitely, very likely or likely) to upgrade to a faster connection speed within the next 12-18 months.

Within the Highlands and Islands Enterprise region, 38% of current broadband adopters made the decision to adopt within the last 6 months. This matches the rate of adoption of the previous 6 months. With only 29% of organisations adopting broadband to date (as of July 2005) within this region, there appears to be room for a similar rate of uptake as the previous six months (assuming the barriers to uptake can be overcome).

Almost one third of organisations already use (12%) or are definitely, very likely or likely to use mobile internet access (18%) within the next 12-18 months. The majority of organisations (67%) are still unlikely, very unlikely or definitely not going to adopt mobile internet technologies within the next 12-18 months.

Areas with the highest levels of internet access among businesses tend to be those with a high rural component eg Borders, Dumfries and Galloway, Western Isles, Grampian. In Ross and Cromarty, with a low proportion of organisations in urban areas, internet access is the high at 85%

Issues in the Highlands and Islands

According to Scottish Enterprise's e-Business survey 2005, broadband uptake is lower within the Highlands and Islands Enterprise (HIE) region than the Scottish Enterprise region and the Scottish average. The HIE broadband uptake figure of 29% of organisations, is an increase of 10% from 2004, when 19% of companies used broadband within the region. The following facts were also found:

- 38% of organisations in urban areas and small towns have broadband
- 40% of organisations in areas described in the e-Business survey as "rural accessible" have broadband
- 22% of organisations in rural remote areas have broadband

Scottish e-Business Survey 2005, authored by parallel56/Scottish Enterprise

According to Scottish Enterprise, e-Business is important to the current needs of 60% of Scotland's organisations, higher than at any time in the past. 76% of organisations now access the Internet, 74% use IT to support one or more business processes, 45% have and use a website and 33% have and use a local area network. Access to the internet across Scotland is now at its highest level, following a dip in 2004. Whilst it is encouraging that connection levels continue to rise, there remain 24% of organisations that do not have internet access. Amongst organisations that do not use the internet, the most frequently cited reason is that there is no need / no benefits (76%), followed by a lack of equipment (11%) and the cost (7%).

In 2005, more organisations were practising e-business than ever before. 35% of connected organisations are now involved in online trading, up from 27% in 2004, 24% of connecting organisations now trade online with international customers or suppliers, and 30% of connected organisations transact with the public sector online. These are positive results and, says Scottish Enterprise, suggest an increasing level of sophistication. That said, Scottish Enterprise believes that organisations could do more; upwards of 80% of website owners under-utilise their site as a marketing or sales resource and while online trading has increased substantially this year, still only 8% of organisations accept any customer payments online.

Annex 1

Research methodologies

Research sources quoted within this report are outlined below:

Ofcom's Residential Communications Tracking Study conducted by MORI

This study is a continuous face to face survey, with monthly interviewing of a representative sample of around 700 UK adults aged 15+.

The residential tracker achieved a total sample of 4426 UK adults, 3379 adults in England, 407 adults in Scotland, 292 adults in Wales and 348 adults in Northern Ireland. As Northern Ireland only accounts for 3% of the UK a representative sample (i.e. 3% of the total sample is insufficient to allow individual analysis of this nation. Therefore, Ofcom's residential tracking study boosts the number of interviews in Northern Ireland to provide a sufficiently robust sample.

The study was conducted amongst a representative sample of UK adults aged 15+, reflecting the UK profile of sex, age, socio-economic group, region and employment status and representative of cabled/non cabled areas, rural/urban areas and levels of deprivation. Data reported at a UK level has been weighted to ensure the sample is representative of the UK adult population and data reported at a national level has been weighted to ensure it is nationally representative.

Data was collected between January and September 2005. The sample sizes have dictated the level of possible analysis. Where socio-economic group is assessed - this is a comparison between ABC1s and C2DEs - and where age is analysed, this is split between younger (15-44) and older (45+) consumers.

Statistics for this report are largely based on rolling data over 6 months, combining data from two quarters of 2005 fieldwork where identical questions were asked. Combining periods increases the sample size and allows data to be analysed and interpreted with greater confidence.

Ofcom's Media Literacy Audit conducted by saville rossiter-base

This study was a discrete face to face survey, interviewing a representative sample of 3244 UK adults aged 16+. It achieved a total sample of 1816 adults in England, 437 adults in Scotland, 495 adults in Wales and 496 adults in Northern Ireland.

Data was collected between June and August 2005. As with the residential tracking survey the data is weighted for each nation individually, according to age, gender, socio-economic group, working status and region.

Ofcom carried out a comparison of these two residential studies with various other sources of data, all of which are detailed below.

Small and Medium Enterprises (SME) Tracking Study conducted by Continental Research

This study is a continuous telephone survey, with monthly interviews of a representative sample of SMEs (enterprises with 1-250 employees and annual turnover in excess of £50k).

A total sample of 2117 SMEs has been used for analysis in England, 298 in Scotland, 149 in Wales and 147 in Northern Ireland. The latter three are relatively small and therefore caution should be taken when drawing conclusions from this data. Sample size has also limited analysis to take-up figures. However, Ofcom is currently performing a review of this research which will potentially include an increase in sample sizes.

As small businesses make up 97% of the UK SME market data for small businesses closely resembles SMEs as a whole. Medium businesses were over-sampled in the survey in order to provide a sufficient sample to analyse individually. Overall data was re-weighted to reflect the profile of SMEs as a whole in the UK. Data for individual nations was weighted to the profile of SMEs within that nation.

Data for this report is based on rolling data over nine months, from January to September 2005. Given the range of questions asked, questions are rotated and changed between quarters. Data has been amalgamated over the period where possible to create sample sizes large enough to be analysed and interpreted.

Broadband User Service – Point Topic

A combination of official statistics and primary research to estimate broadband take-up by any desired geography in the UK. Further details of the methodology can be found on their website at www.point-topic.com.

The BARB establishment survey

A consumer survey of 4000 homes per month, resulting in 48,000 homes per year being surveyed. The report monitors TV programmes.

RAJAR

Information is collected by means of a seven day self-completion diary. Diaries are personally placed with one selected adult (aged 15+) and up to two children (according to the number of children present) in each selected household. Approximately 130,000 respondents per year are asked to complete a diary.

Further details on the methodology used by RAJAR can be found on their website at: <http://www.rajar.co.uk/>

Statistical Reliability

In a survey, you ask a representative number of people questions, to represent the views of the population as a whole. Since you cannot ask everybody, you cannot be certain.

So survey results are valid with limits on accuracy, the quoted figure + or – a percentage change, or with the comment significant at the 99.1% confidence level. This statistic says if you asked 100 people from the population, 99 of them would give you a response within the accuracy range of the survey.

The size of the accuracy range is dependent on the number of people you ask, and the level of agreement between them.

The sample tolerances that apply to some of the percentage results in this document are given in the table below. This table shows the possible variation that might be anticipated because a sample, rather than the entire population of adults, was interviewed. As indicated, sampling tolerances vary with the size of the sample and the size of the percentage results.

For example, on a question where 50% of the all respondents in a sample of 4,426 respond with a particular answer, the chances are 99 in 100 that this result would not vary more than 1.9 percentage points, plus or minus, from a complete coverage of the entire population using the same procedures.

	Approximate sampling tolerances applicable to percentages at or near these levels					
	10% or 90%		30% or 70%		50%	
Size of sample on which survey result is based	±		±		±	
	95%	99%	95%	99%	95%	99%
UK (4,426)	0.9	1.2	1.4	1.8	1.5	1.9
England (3,379)	1.0	1.3	1.6	2.0	1.7	2.2
Scotland (407)	2.9	3.8	4.5	5.9	4.9	6.4
Wales (292)	3.4	4.5	5.3	6.9	5.7	7.5
Northern Ireland (348)	3.2	4.1	4.8	6.3	5.3	6.9

Source: Ofcom

Tolerances are also involved in the comparison of results from different parts of the sample. A difference, in other words, must be of at least a certain size to be considered statistically significant. The following table is a guide to the sampling tolerances applicable to comparisons.

		Differences required for significance at or near these percentage levels		
		10% or 90%	30% or 70%	50%
Size of the sample compared	±		±	
Wales vs UK (292 vs. 4,426)	95%	3.6	5.4	5.9
	99%	4.7	7.1	7.8

Source: Ofcom

Significance testing has conducted on the data contained in this report.

Comparability assessment

Ofcom conducted a comparison of the data contained within this report with various data sources:

- Ofcom's Consumer Panel tracking survey, Q4 2004

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- Broadband Wales Resident survey, Broadband Wales Unit, Q1 and Q4 2005
- MORI's technology tracker, Q2 2005
- BMRB's Target Group Index (TGI), April 2004 to March 2005
- NISR, Northern Ireland omnibus, Q2 2005

Ofcom concludes from this comparison that the data obtained via its Residential Communications Tracking Study and Media Literacy Audit contained within this report, provides an accurate comparison of the attitudes and behaviours of consumers living in different parts of the UK.

Annex 2

References

- Brand, S., for the New Ways Planning Partnership (2004) *Second Quality of Life Survey*. Available at <http://www.scotborders.gov.uk/outabout/aboutborders/2677.html> (page accessed 20/03/06)
- Brogden, J. and Gilliat, J., Lambda Research and Consultancy Ltd, for Scottish Executive (2005) *21st Century Government: Interactive Digital Television (iDTV) Pilot*. Web only publication, available at <http://www.scotland.gov.uk/Publications/2005/05/19132826/28274> (page published 19/05/05)
- DTZ Pidea Consulting and tns, for Scottish Executive (2004) *Digital Communities Final Report*. Available at <http://www.scotland.gov.uk/library5/finance/dcfr-00.asp> (page accessed 20/03/06)
- Hall Aitken, for Scottish Executive (2004). *Evaluation of the Public Internet Access Point Initiative*. Available at <http://www.scotland.gov.uk/library5/finance/epiapi-00.asp> (page accessed 20/03/06)
- Highlands and Islands Enterprise (2004) *A Smart, Successful Highlands and Islands: An enterprise strategy for the Highlands and Islands of Scotland*. Available at <http://www.hie.co.uk/networkstrategy> (page accessed 20/03/06)
- Leirsinn (2005) *Digital Update September 2005*. Available via <http://www.leirsinn.smo.uhi.ac.uk/> (page accessed 20/03/06)
- parallel56, for Scottish Enterprise/Highlands and Islands Enterprise (2005) *Scottish e-Business Survey 2005*. Available at http://www.scottish-enterprise.com/sedotcom_home/sig/ebusiness-suppliers/software_publications_research/sebs2005.htm (page accessed 20/03/06)
- Rennie, F. and Mason, R. (2004) *The Use of Computer Networks for Community and Business Development*. Available at <http://www.lews.uhi.ac.uk/news%20and%20events/BROADB~1.pdf> (page accessed 20/03/06)
- Scottish Consumer Council (2005) *Freedom of Access: Research report on public internet access in Scotland*. Available at <http://www.scotconsumer.org.uk/publications/reports/reports05/re06free.pdf> (page accessed 20/03/06)
- Scottish Enterprise Digital Inclusion Team (2004) *Digital Inclusion Audit 2004, Digital Inclusion Champions, Public Internet Access in Social Inclusion Partnership Areas*. Available at http://www.ltscotland.org.uk/Images/digitalinclusionictaudit2004_tcm4-117885.doc (page accessed 20/03/06)
- Scottish Executive (2002) *Information Age Government in Scotland, A Common Framework*. Available at <http://www.scotland.gov.uk/Topics/Government/Open-scotland/17820/15323> (page accessed 20/03/06)

Smith, C. and Webster, C. W. R., for Scottish Executive (2006). *Review Of Interactive Digital Television Pilot*. Web only publication, available at <http://www.scotland.gov.uk/Publications/2006/01/06154352/0> (page published 11/01/06)

tns Social and Mori Scotland, for Scottish Executive National Statistics (2005) *Scotland's People, Annual Report: Results from the 2003/4 Scottish Household Survey*. Available at <http://www.scotland.gov.uk/Resource/Doc/57346/0016412.pdf> (page accessed 20/03/06)

A2.1 Further reading

Condie, R. and Munro, B., for Scottish Executive (2005) *Insight 20: The Impact of Information and Communication Technology in Scottish Schools: Phase 3*. Available at: <http://www.scotland.gov.uk/Publications/2005/09/09104316/43184> (page accessed 20/03/06)

MacDonald, M., for the Scottish Executive (2005) *Technical Evaluation of Digital Interactive Television Pilot*. Available at <http://www.scotland.gov.uk/Publications/2006/01/12104731/17> (page accessed 20/03/06)

Scottish Consumer Council (2002) *Reaching Out: The consumer perspective on communications in Scotland*. Available at <http://www.scotconsumer.org.uk/publications/reports/reports02/rp01reac.pdf> (page accessed 20/03/06)

Scottish Executive (2000) *Digital Scotland Task Force Report*. Available at <http://www.scotland.gov.uk/Topics/Government/Open-scotland/17820/15760> (page accessed 20/03/06)

Scottish Executive (2000) *Response to Digital Scotland Task Force*. Available at <http://www.scotland.gov.uk/Topics/Government/Open-scotland/17820/15361> (page accessed 20/03/06)

Scottish Executive (2001) *Digital Inclusion Strategy: Connecting Scotland's People*. Available at <http://www.scotland.gov.uk/library3/enterprise/dics-00.asp> (page accessed 20/03/06)

Annex 3

Glossary of terms and definitions

2G Second generation of mobile telephony systems using digital encoding. 2G networks support voice, low speed data communications, and short messaging services.

3G Third generation of mobile systems. Provide high-speed data transmission and supporting multimedia applications such as full-motion video, video-conferencing and Internet access.

ABC1 The aggregate of socio economic groups A, B and C1 (see SEG).

ADSL Asymmetric Digital Subscriber Line. A digital technology that allows the use of a copper line to send high bandwidths in one direction and a lesser bandwidth in the other.

BARB The pan-industry body which measures television viewing.

BBC British Broadcasting Corporation.

Broadband A service or connection generally defined as being "always on" and providing a bandwidth greater than 128kbit/s.

BSkyB British Sky Broadcasting Ltd, operator of the satellite television platform in the UK and broadcaster of the Sky channels.

BT British Telecommunications plc.

C2DE The aggregate of social grades C2, D and E (see SEG).

CBN Community Broadband Network.

DAB Digital Audio Broadcasting. The brand name for the technology by which terrestrial Digital Radio multiplex services are broadcast in the UK.

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)

DTI Department for Trade and Industry.

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

GOR Government Office Region. The highest level of sub-national government in England; the nine GORs were created in 1994.

GSM Global Standard for Mobile Telephony.

HFC Hybrid fibre coaxial. A technology by which telecommunications networks incorporate both optical fibre and coaxial cable to create a broadband network.

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.

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

ITV1 The television service broadcasting on analogue on Channel 3. The nationwide service is operated by a network of independent licences issued by Ofcom on a regional basis (plus a single nationwide breakfast-time licence).

Kbit/s Kilo bits per second (1,000 bits per second). A unit of measurement of data transmission speed.

Leased Line A transmission facility which is leased by an end user from a public carrier, and which is dedicated to that user's traffic.

LLU Local Loop Unbundling. A process by which BT's exchange lines are physically disconnected from BT's network and connected to other operators' networks. This enables operators other than BT to use the BT local loop to provide services to customers.

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

Mbit/s Mega bits per second (1,000,000 bits per second). A unit of measurement of data transmission speed.

Multichannel 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.

Narrowband A service or connection providing data speeds up to 128kbits, such as via an analogue telephone line, or via ISD.

Ofcom Office of Communications. The regulator for the communications industries, created by the Communications Act.

ONS Office for National Statistics.

PC Personal computer.

Postal district The geographic area identified by letters and numbers which appears as the first part of a post code, e.g. SW8.

PSB Public Service Broadcasting, or Public Service Broadcaster. The Communications Act 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.

RDA Regional Development Agency. A public body established for the purpose of development, primarily economic, of one of England's Government Office Regions (see GOR).

Reach (Radio) The number of adults aged 15+ who listen to at least five minutes of radio in a 15 minute period during a week.

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

SME Small or Medium sized Enterprise.

SMS Short Messaging Service

Socio Economic Group (SEG) A social classification, classifying the population into social grades, usually on the basis of the Market Research Society occupational groupings (MRS, 1991). The groups are defined as follows.

- A.** Professionals such as doctors, solicitors or dentists, chartered people like architects; fully qualified people with a large degree of responsibility such as senior civil servants, senior business executives and high ranking grades within the armed forces. Retired people, previously grade A, and their widows.
- B.** People with very senior jobs such as university lecturers, heads of local government departments, middle management in business organisations, bank managers, police inspectors, and upper grades in the armed forces.
- C1.** All others doing non-manual jobs, including nurses, technicians, pharmacists, salesmen, publicans, clerical workers, police sergeants and middle ranks of the armed forces.
- C2.** Skilled manual workers, foremen, manual workers with special qualifications such as lorry drivers, security officers and lower grades of the armed forces.
- D.** Semi-skilled and unskilled manual workers, including labourers and those serving apprenticeships. Machine minders, farm labourers, lab assistants and postmen.
- E.** Those on the lowest levels of subsistence including all those dependent upon the state long-term. Casual workers, and those without a regular income.

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

TV over DSL/TV over Broadband A technology that allows viewers to access TV content – either in a linear programme schedule, or on-demand – using Internet Protocol via broadband services, either on a PC or (via a set-top box) on a TV set.

Unbundle See LLU.

USO Universal Service Obligation. The requirement, currently upon BT and Kingston Communications, to provide every household in the UK with access to a land line telephone.

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.

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WiMax Improved standard wireless LAN technology, capable of operating over wider distances than WiFi. Still in a test phase.

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