Ofcom

Mobile Broadband Research

Summary Report

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Tim Barber & Dave Chilvers
Tel: 020 7400 1000
tim.barber@bdrc-continental.com

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1. Background, objectives and method

1.1 Background

A major ongoing priority for Ofcom is ensuring availability, take-up and effective use of communications services. As a part of this, encouraging consumers to take up and use broadband is a specific stated priority for 2010/11. In order to provide support to this aim, Ofcom requires market research to understand existing consumer attitudes to and usage of mobile broadband.

Mobile broadband is typically defined as high speed wireless internet access, and this can be via a variety of devices and connection methods including access from a laptop or PC via a dongle, or via a mobile phone. Broadband mobile is primarily 3G usage but in some cases, particularly for mobile phone usage, it may be difficult to distinguish this from 2G and 2.5G usage. So for this reason, both mobile broadband and mobile internet usage (which may not actually be 'true' broadband) are to be included within this research, although the term broadband has been used throughout this report for simplicity.

1.2 Objectives

The specific objectives of this research were therefore:

- To explore users' experience of and attitudes to mobile broadband. This includes drivers as to why they use it, as well as barriers to why they don't use it.
- To explain how mobile broadband is being used, for example, in terms of frequency of use, applications used, content accessed and location of use
- To profile mobile broadband users in terms of key demographics and behaviour, and segment them if appropriate
- To establish why they initially started using it and how this can be related to a user profile or segment
- To understand which aspects of mobile broadband are most valued by users
- To compare consumer experience (e.g. satisfaction) and usage and understand how these may differ by device or method

1.3 Method

A three stage approach was used for this research:

- An initial qualitative stage to ensure all key drivers to choice of internet access device type were included and to ensure appropriate language was used in the quantitative questionnaire

- A large scale face to face quantitative survey among a representative sample of broadband users and covering all the specific subgroups identified. A segmentation was produced at the end of this stage

- A second qualitative stage, focusing on areas deemed worthy of further investigation from the quantitative research

More detail on the methodology is provided at Annex A.

2. Executive summary

- Usage of newer access methods (mobile phone and laptop via dongle/USB) is significant and multiple access methods are common

- Older methods (particularly fixed-line without WiFi) still play an important role, especially for certain sections of society

- Many mobile phone internet users access the internet at home via their phones when other devices are available

- What each device/method is used for is influenced primarily by demographics rather than device, although the technical limitations/advantages of each method do come into play for certain activities

- There are no activities that are solely the domain of specific device types/access methods (with the exception of mobile phone only applications)

- Satisfaction levels with mobile broadband are generally high. However, satisfaction does decrease with mobility – with consumers accessing the internet via a mobile or dongle whilst out of the home more likely to encounter problems compared to fixed line in-home users (particularly in relation to speed of connection)

- On the whole, findings from this research indicate that mobile internet usage is not significantly dissimilar to fixed internet usage

3. Detailed findings

3.1 Usage of broadband devices and methods

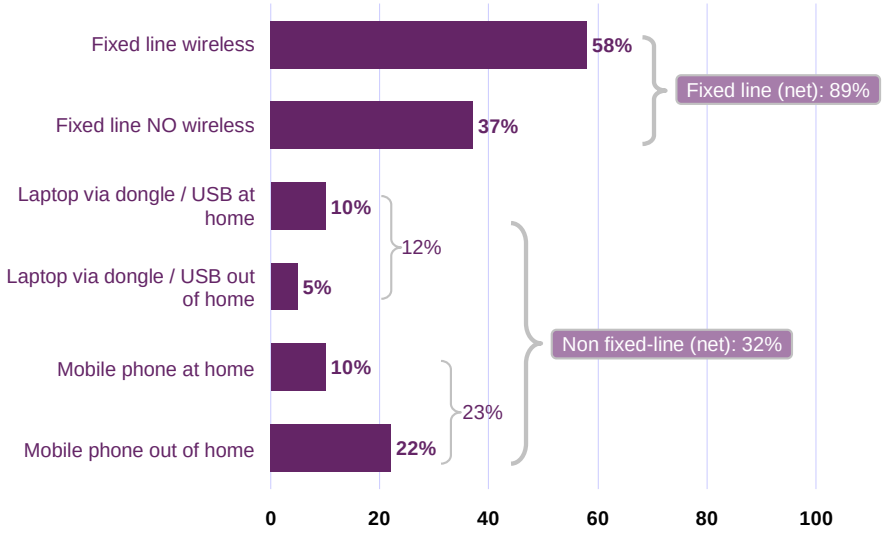
This section examines what devices and access methods are being used, how they are used, and provides a breakdown of the profile of the users of each device/method.

Penetration of device/method

A laptop computer is now the most common device for accessing the internet (59% of all internet users), slightly more popular than via a desktop computer (55%). Nearly a quarter (23%) of those accessing the internet use a mobile phone, and one in twenty people do so via a games console. Amongst those accessing with a mobile phone, the great majority (86%) use a smartphone.

The chart below shows what device/access methods individuals use to access the internet. In total almost a third (32%) of broadband users are now connecting via either a mobile phone or laptop via dongle/USB.

Proportions using each device / method for accessing internet



Source: Qs.3-8/13
Base: All respondents (2,001)

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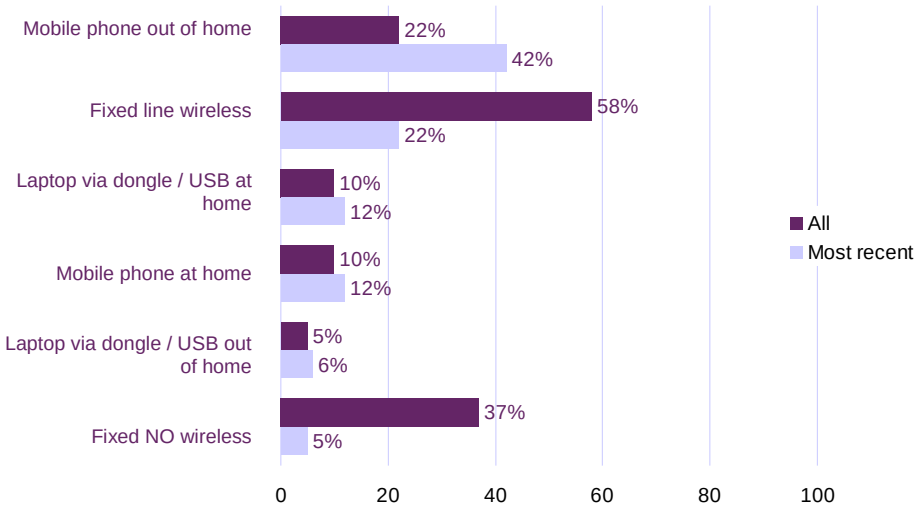
There are a significant proportion of people that use multiple access methods – 17% have fixed line access at home *and* also use their mobile phones to access the net, whilst 6% have access via a fixed line as well as via a dongle/USB.

However, a fixed landline is still the dominant method of access (with 58% doing so via WiFi, and 37% doing so with a non-wireless connection), but mobile phone and laptop/dongle are the methods most likely to have been **recently** acquired.

Device / method acquired most recently



Source: Q.13/20
Base: All respondents with more than one means of accessing internet (1,023)

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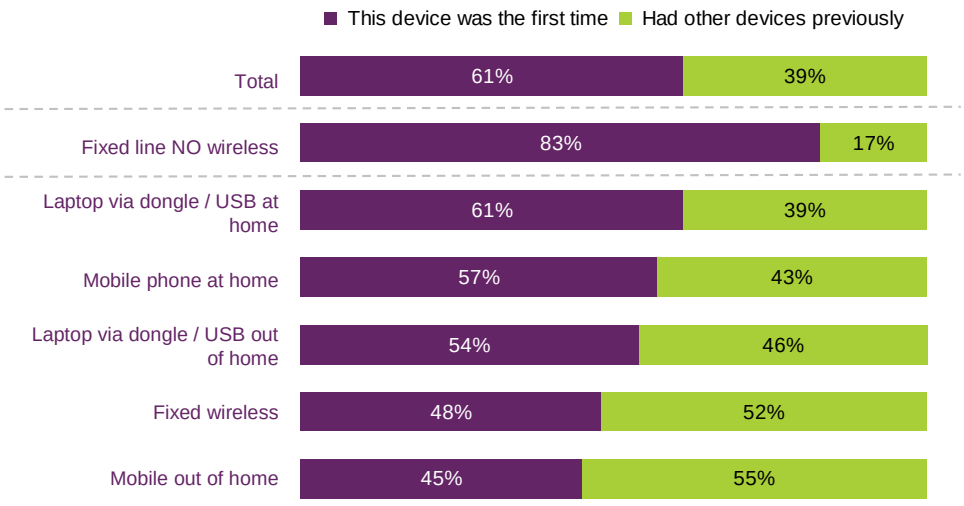
Previous usage of other devices/methods

39% of all users that currently have a single access device/method have previously used a different one. Those that access the net using use fixed non-WiFi are significantly less likely to have previously used a different method (17%) than users of the other methods, particularly those that access via mobile phone out of the home (55%).

Whether device / method was respondent's first or whether had other previously



Source: Q.23
Base: All respondents with only 1 device/ method (906)

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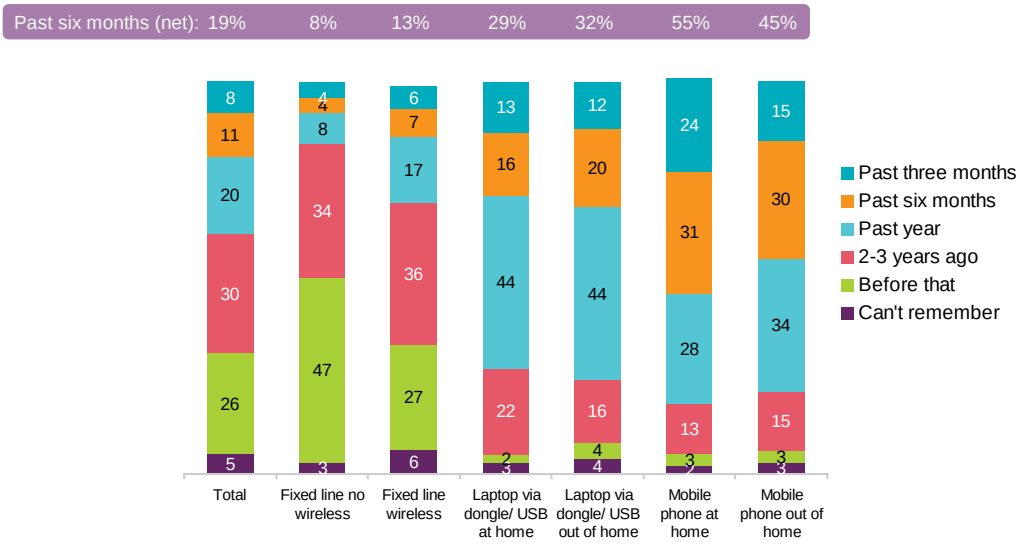
This is reflected by the fact that mobile phone users are more likely to have acquired their device recently (around half have done so in the past 6 months), particularly compared to users with fixed line access - over half of whom have been using this current method for at least two years.

How long have had latest (or only) device / method of accessing internet



Source: Q.21
Base: Most recent device / method acquired (2,001 / 282 / 580 / 342 / 129 / 250 / 402)

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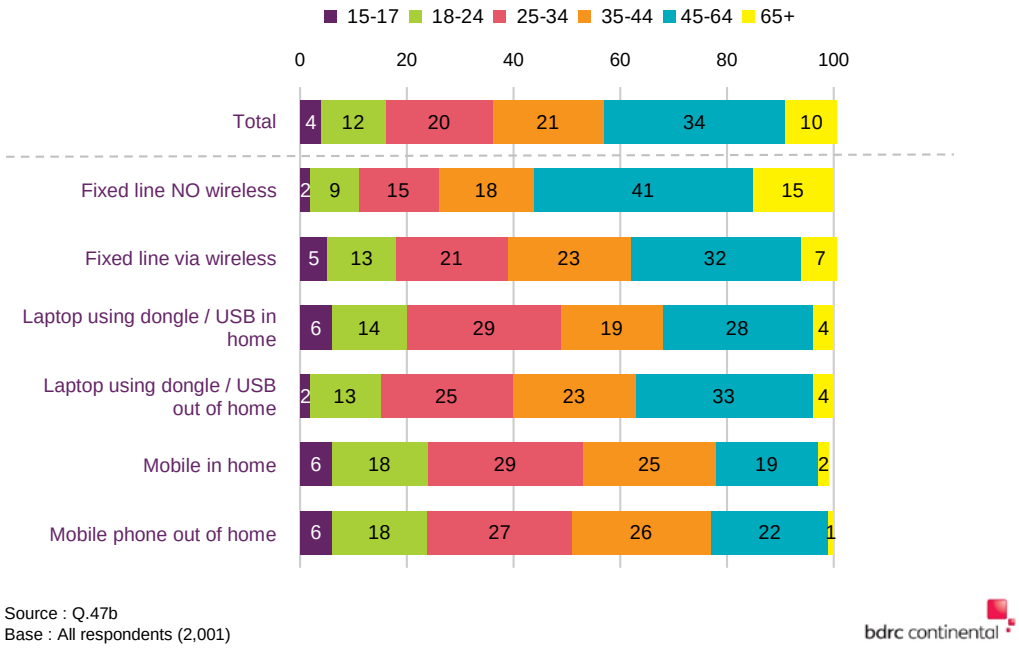
Demographic profile

On the whole, under-35s are more likely to use mobile internet compared to older consumers. However fixed line still plays an important role for certain sections of society, with over 45s most likely to use fixed line without WiFi.

Age by device / method used



Source : Q.47b
Base : All respondents (2,001)

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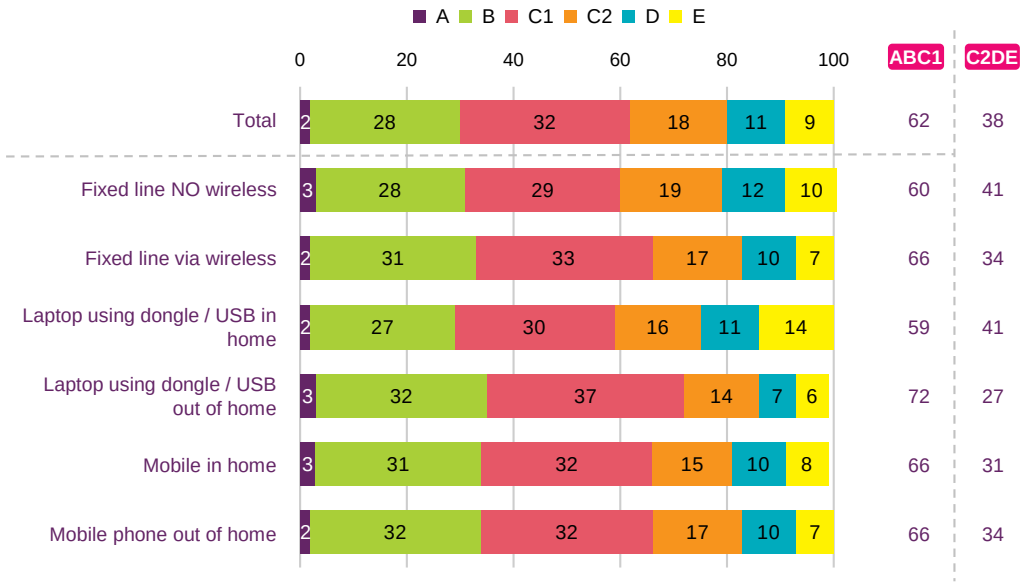
By social class, there is less variation between groups, but the laptop/dongle out of home group is biased towards ABC1s (72% compared to 62% for the total sample).

Social grade by device / method used



Source : Q.51
Base : All respondents (2,001)

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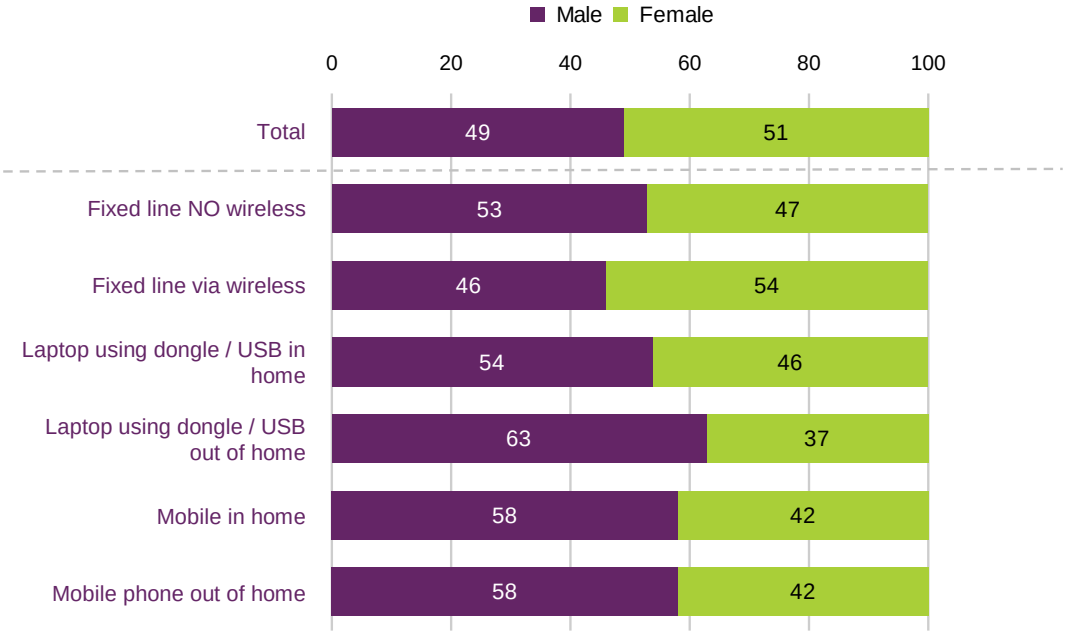
Males are more likely than females to access the internet via mobile phone or laptop via a dongle.

Gender by device / method used



Source : Q.46 Gender
Base : All respondents (2,001)

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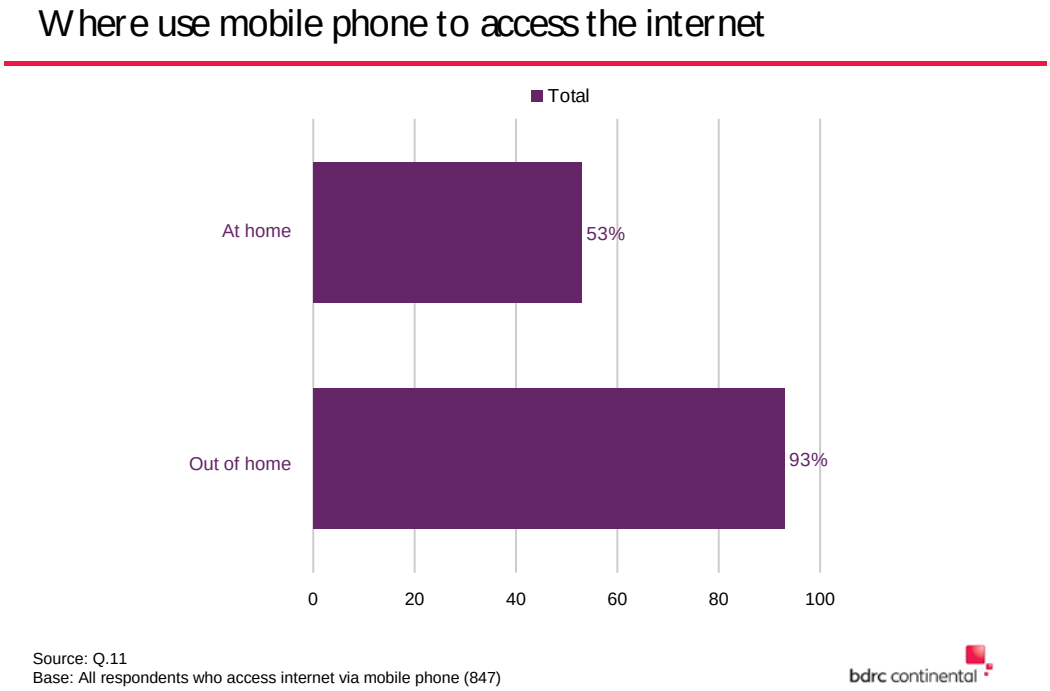
Mobile phone usage in-home

Using a mobile phone to access the internet is not just an out of home occurrence, with around half (53%) of those accessing the internet via this device doing so at home.



Source: Q.11
Base: All respondents who access internet via mobile phone (847)

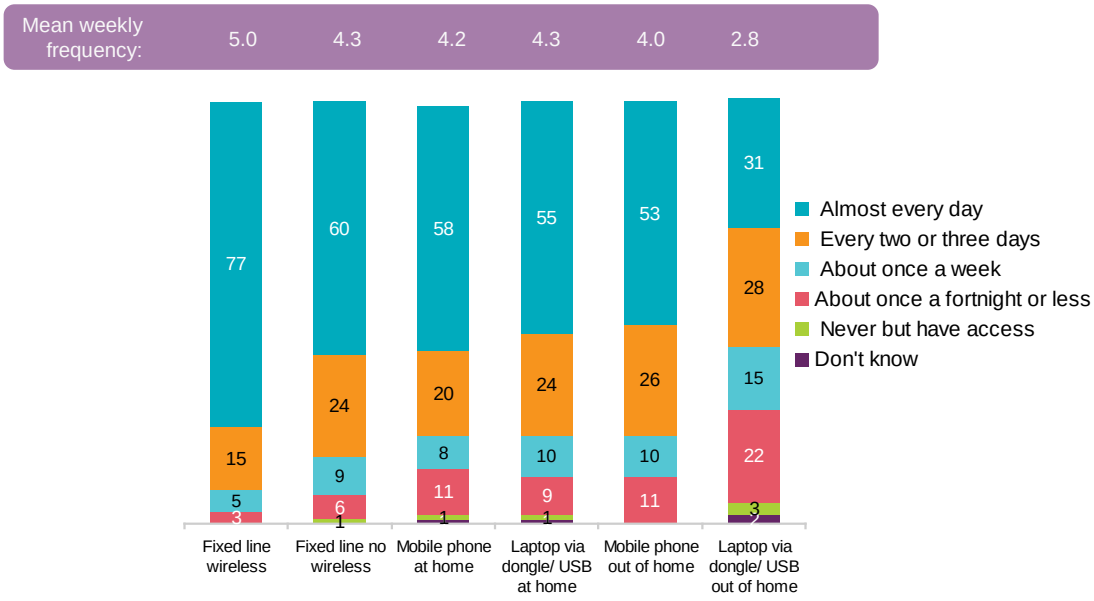
The follow up qualitative research suggested that this is due to:

- Faster access times, so a convenience factor when requiring information quickly
- A fixed device being used by someone else in the household
- A desire to access whilst still being in the same room as a partner or other family member

Frequency of usage

The frequency of use of the different access methods does vary, with a laptop/dongle out of home being used significantly less often than those with other access methods (2.8 occasions per week compared to between 4 and 5 times per week for each of the other access methods). In general, location seems to be the defining factor with regard to frequency – overall, out of home usage is less frequent than in home usage. In fact, the research indicates that a mobile phone is used significantly more frequently at home to access the internet than out of the home.

Frequency of using each device / method



Source: Qs. 13/ Q.19
Base: Respondents using each device / method (530 / 1,035 / 600 / 522 / 781 / 304)

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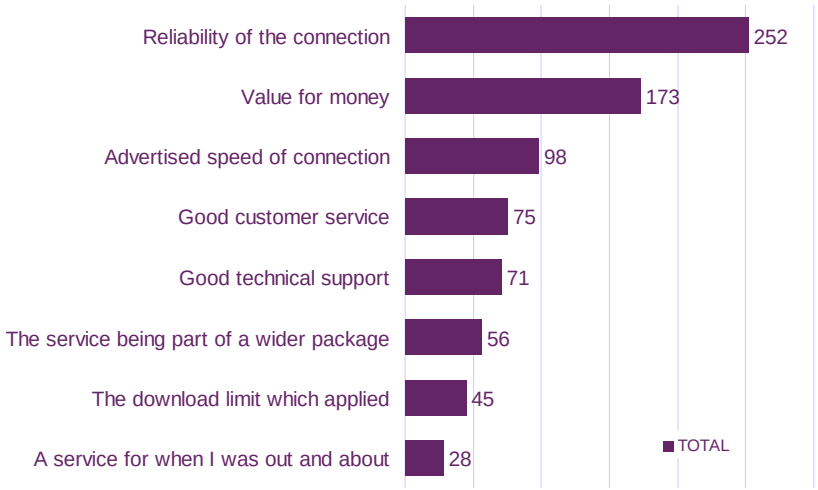
3.2 Why is mobile broadband used, and what for?

This section looks at what features are important to broadband users, what they use the internet for, and what factors influence the specific types of activity they conduct.

In order to understand what aspects of a mobile broadband package could be most valued by users, a stated preference analysis was conducted. This produces an index score showing the relative importance of a range of issues to users when they are considering getting a new mobile device to access the internet. By far and away the most important issue identified in this research is the *reliability of the connection*. Other factors such as value for money or good customer service are also important to consumers, but being able to get a connection is essential if the mobile broadband service is able to be used.

Relative importance of features for a new access method



Source: Q.45 – Stated preference
Base : All respondents (2,001)

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Reasons for initial choice

The following chart shows the reasons behind users' choice of each particular access device/method. It suggests that whilst there are some differences in the reasons individuals initially acquired an access method, the differences are not huge and most motivators apply to at least some degree to each access method.

The notable exception is the one in five mobile phone internet users that started using it because the facility came with the phone. In other words, they didn't purchase the phone so they could use the internet – but instead it's the device that's driving their usage.

Reasons for initial choice of device / method

Reason started using access method (%)?	Total	Fixed line (No WiFi)	Fixed line (WiFi)	Dongle/ USB at home	Dongle/ USB out of home	Mobile phone at home	Mobile phone out of home
Convenience / ease of use	21	20	22	19	22	28	24
Package / Contract	14	11	14	10	6	20	21
Mobility	14	9	18	24	40	28	33
Specific usage/task requirement	13	18	12	10	14	10	12
Cost	8	7	7	13	9	5	5
Speed	7	7	10	3	0	4	3
Came with phone	-	-	-	-	-	19	20

Figures in green are significantly higher than Total Figures in red are significantly lower than Total

Source : Q.22
Base: All respondents (2,001)

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Activities conducted

The same is true when we look at the types of activities undertaken on the internet split by device/method – the majority of activities are conducted via most access methods, and whilst there are differences, it is not the case that some activities are *solely* the preserve of specific access methods. Notably, consumers' usage of mobile internet is not that different from their usage of fixed line internet.

Activities conducted (at least weekly) split by device / method

Type of activity conducted	Total	Fixed line (No WiFi)	Fixed line (WiFi)	Dongle/ USB at home	Dongle/ USB out of home	Mobile phone at home	Mobile phone out of home
Surfing the internet	91	87	94	94	87	83	84
Email	87	86	91	90	84	77	76
Social Networking	60	51	63	67	77	65	64
Banking	50	47	55	46	53	41	42
School / college work	43	36	46	45	658	37	49
Watching video clips	39	32	43	45	38	40	39
Shopping	39	35	42	38	48	34	39
Local area maps	39	35	39	39	49	48	47
Listening to or downloading audio services (e.g. radio stations)	29	20	33	29	32	33	37
Playing games online	29	26	30	32	30	28	30
Downloading music	28	20	30	32	36	35	38
Downloading short video clips	21	17	21	27	24	23	25
Watching full length TV programme	16	11	19	17	16	11	14
Downloading full length TV programme	8	6	10	10	9	8	8

Figures in green are significantly higher than Total Figures in red are significantly lower than Total

Source: Q39
Base: All using each device / method as main device (337/646/332/123/253/310)

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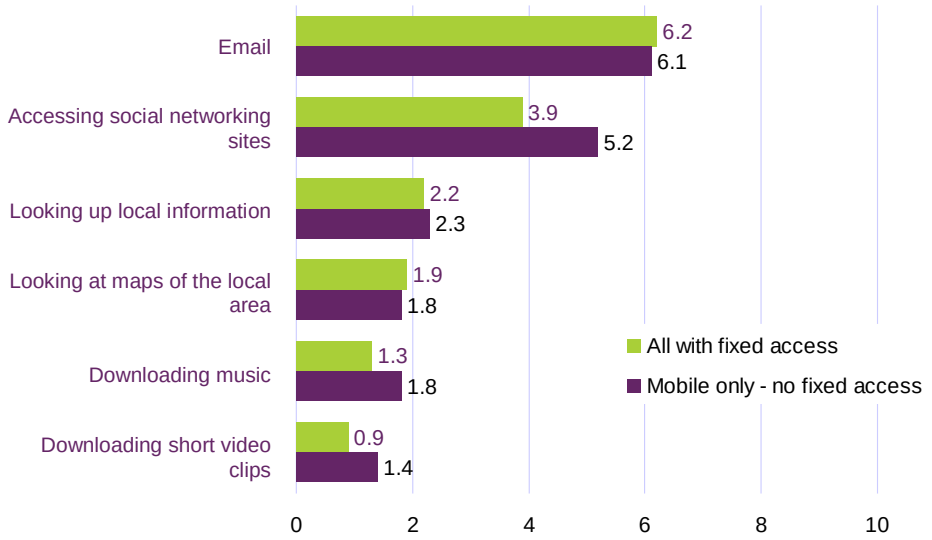
However, there are some interesting differences. Social networking and school/college work is more likely to be done via a laptop with dongle (67% at home, 77% out of home), as a result of the higher penetration of this device amongst younger age groups. Unsurprisingly, (due to the limited screen size, as well as potential bandwidth issues) watching a full length TV programme is less likely to be done on a mobile phone (11% out of home) – an example of where the activity conducted is strongly influenced by the device.

When *frequency* of conducting particular activities is examined, there are minimal differences between those with fixed access and those that only have mobile access. One might expect location-based services such as looking at local information or maps to be significantly higher amongst those with mobile access, but the only notable difference is again for accessing social network sites (as mentioned, an activity that is generally more youth-oriented). This further indicates that device may have less of an influence on the type of activities conducted, and that the demographics of the user may have a more significant influence.

How many times a week each activity conducted via main device



Source: Q.39
Base: All respondents (2,001)

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What's driving usage?

To probe this further, we conducted a key driver analysis to see which aspects (access method/device type; gender; social class; and age groups) are driving usage of a number of different online activities. This analysis confirms that demographics (particularly age) are, in general, more important drivers to undertaking a particular activity than the internet access method used. Demographics drive both access method and activity, but access method does not really drive activity itself. The following table details which aspects are key drivers of each online activity.

Drivers for each activity

	Drivers			
Activity	**Device**	**Gender**	**Class**	**Age**
Surfing the internet looking at websites	✓	✓	✓	✓
Watching a full length TV programme	✓	✓		✓
Watching short video clips	✓	✓		✓
Watching a full length film	✓	✓		✓
Downloading short video clip		✓		✓
Downloading a full length TV programme		✓		✓
Downloading a full length film		✓		✓
Catching up with news or sports		✓	✓	✓
Making telephone calls using the internet			✓	
Playing games online			✓	✓
Listening to or downloading audio services		✓		✓
Downloading music		✓		✓
Looking up local information			✓	✓
Looking at maps of the local area		✓	✓	✓
Accessing social networking sites	✓	✓		✓
Email	✓		✓	
Banking	✓		✓	✓
Shopping	✓		✓	✓
School/college/work related activities	✓		✓	✓

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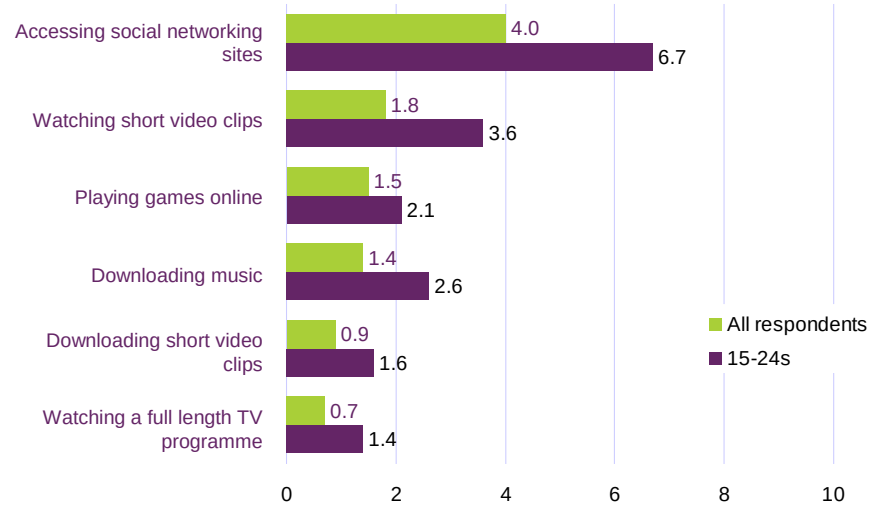
Given the importance of age as a key driver for almost every online activity, it is not surprising that younger internet users undertake some activities more frequently (as well as being more likely to undertake them in the first place).

How many times a week each activity conducted via main device Total vs 15-24s



Source: Q.39
Base: All respondents (2,001)

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3.3 User satisfaction

Overall there are very high satisfaction levels for the majority of activities. Even for the activity with the lowest satisfaction - downloading a full length film – 84% of those doing it are at least "quite" satisfied.

Satisfaction with activities conducted via the internet

Activity	% Extremely / very / quite satisfied (net)
Email	97
Surfing the internet	97
Banking	95
Shopping	94
Access social networking sites	94
School / college / work related activities	94
Looking up local information	94
Catching up with news or sports	93
Looking at maps of the local area	92
Downloading music	90
Watching short video clips	89
Listening to or downloading audio services	89
Playing games online	87
Making telephone calls using internet	86
Downloading short video clips	86
Watching a full length TV programme	85
Downloading a full length TV programme	85
Watching a full length film	84
Downloading a full length film	84

Source: Q40
Base: All doing each activity

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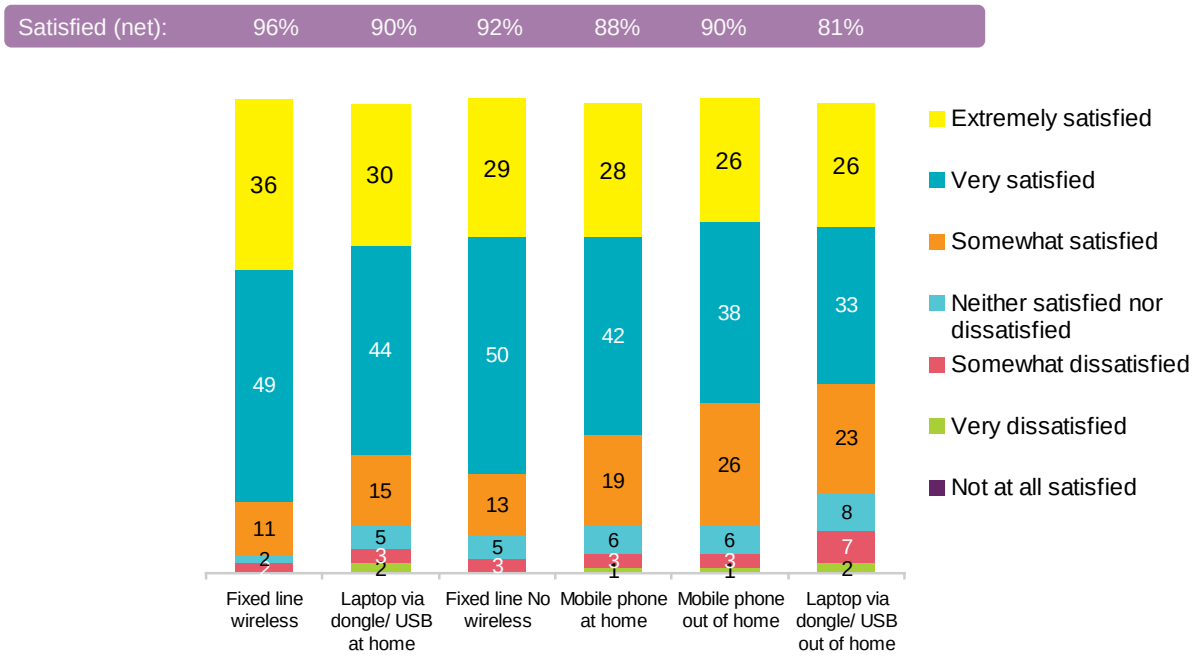
Users are also generally satisfied with the internet access methods they use, although there is clear evidence of lower satisfaction for out of home access especially via laptop/dongle. However, even for this group, 59% are either very or extremely satisfied (and only 17% dissatisfied). Two-thirds of mobile phone out of home users were extremely or very satisfied. At 85%, those with a fixed WiFi connection were the most satisfied.

Satisfaction with device / method of accessing internet



Source: Q.24
Base: Respondents using each device / method (1,035 / 522 / 530 / 600 / 781 / 304)

The main cause of dissatisfaction relates to speed of access rather than the ability to make a connection. Around 10% of out of home users (laptop/dongle or mobile phone) site *lack of coverage* as a problem, compared to 34% citing *slow download speed* as the main issue. Laptop/dongle out of home users are more likely to cite a problem overall. However, mobile phone internet users are no more likely to say they encounter problems than fixed line users.

Main problems experienced when accessing the internet

Are there any problems using (X) to access the Internet?	Fixed line (no WiFi)	Fixed line (WiFi)	Laptop via dongle/ USB at home	Laptop via dongle/ USB out of home	Mobile phone at home	Mobile phone out of home
Speed of connection is too slow	24%	18%	22%	34%	27%	22%
The internet connection is unreliable	7%	7%	12%	13%	12%	12%
Poor coverage – it's hard to get a connection	2%	3%	7%	9%	6%	12%

Source : Q.43
Base: All using each device / method as main device (337/646/332/123/253/310)

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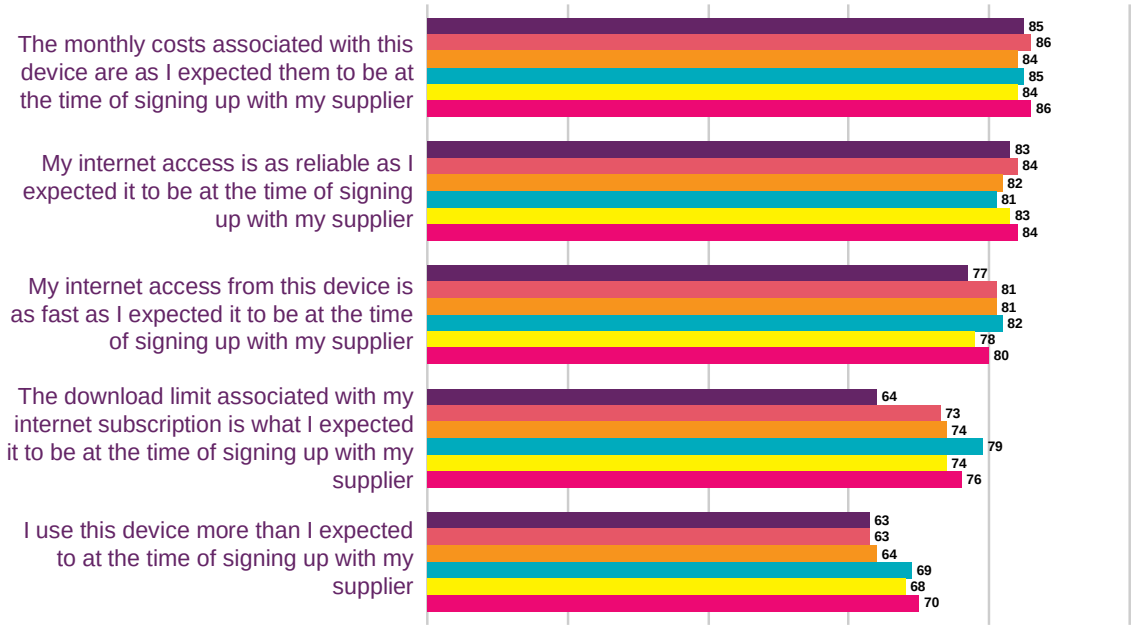
The expectations that users had at the time of signing up for their service are largely being met. 80% agree that the speed meets their expectations at the time of signing, however it should be noted that 21% did report experiencing problems with the speed of the device they use to access the internet.

Nearly two-thirds of users (65%) are using their device more than they thought they would when they initially signed up with their supplier, suggesting that it becomes of increasing importance and usefulness the more they use it.

Levels of agreement do not vary much by device with the exception of fixed line without WiFi, where the research suggests that download limits are less likely to be meeting expectations.

To what extent is device meeting expectations



Source : Q.42
Base: All respondents (2,001)

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4. Market segmentation

One of the objectives of this research was to profile mobile broadband users in terms of key demographics and behaviour, and segment them if appropriate. Accordingly, a cluster analysis was undertaken, with frequency of conducting the various online activities as the behavioural variables included in the cluster analysis. We undertook a hierarchical segmentation using Euclidean distance and Ward's method of fusion. An initial factor analysis was undertaken and the cluster analysis based on the resultant factors; this approach reduces the risk of any particular factor affecting the segmentation too much.

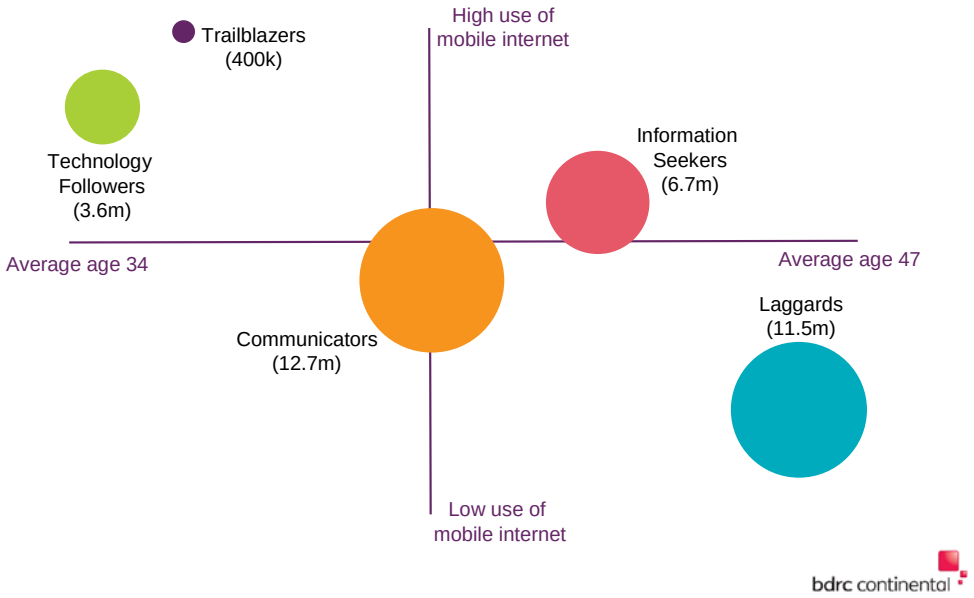
Five segments were identified (with the subsequent number of UK adults in each segment in brackets):[1]

- Trailblazers (400k)
- Technology Followers (3.6m)
- Information Seekers (6.7m)
- Communicators(12.7m)
- Laggards (11.5m)

[1] Figures for each segment are rounded, and grossed up to the total UK adult broadband user population

By plotting the average age of each segment against how much they use mobile internet it can be observed that the most 'advanced' group (Trailblazers) is not the youngest. In fact they tend to be middle aged, male and in full-time employment (and hence have the disposable income to purchase the most up-to-date devices). The next segment down in terms of breadth of usage of online activities – the 'Technology Followers' – are in fact the youngest.

Segments - Average age vs. mobile internet usage (comprising weight of usage and range of activities conducted)



Although the Trailblazers segment is quite small (around 1% of the market), it is the segment which makes the widest and most frequent use of the internet generally and mobile internet in particular. It is therefore an interesting segment to monitor going forward, to help understand which aspects of new technology are being experimented with and taken up by this early-adopting segment.

Technology Followers are, as the name suggests, a segment that follows the lead established by the Trailblazers. They are high frequency users of most online activities, but lag the Trailblazers on most activities in terms of frequency of use, except internet surfing. There are particularly large differences with regard to the downloading and streaming of TV and movies. NB although there are several notable differences for the Trailblazers, due to the small sample size of this group, most findings are not statistically significant.

Frequency of activity by segment

Activity	Average times per week undertaken	
	Trailblazers	Technology followers
Surfing the internet	8.9	8.9
Catching up with new or sports	8.0	5.9
Looking up local information	7. 5	5.5
Watching short video clips	9.1	4.6
Playing games online	6.7	3.5
Listening to or downloading audio services (e.g. radio stations	7.8	4.9
Downloading music	7.4	4.8
Downloading short video clips	7.3	3.0
Watching a full length TV programme	8.7	1.8
Making telephone calls on the internet	7.3	1.2
Downloading a full length TV programme	8.9	1.3
Watching a full length film	8.3	1.0
Downloading a full length film	7.6	0.7

Source : Q.39
Base: All in that segment (32/241)

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There were few significant between the device/method of connection between individual segments and the Total average, but one exception was for Trailblazers who were significantly more likely to use a mobile phone of home.

Members of the Communicators segment are more likely to use the internet as an electronic tool for communication, staying in touch with friends and family via email and social network sites more than the average.

Frequency of activity by segment

Activity	Average times per week undertaken	
	Total	Communicators
Surfing the internet	6.2	7.9
Email	6.2	7.4
Accessing Social networking sites	4.0	4.9
Catching up with new or sports	2.9	3.2
Looking up local information	2.2	1.7
Watching short video clips	1.8	2.0
Playing games online	1.5	1.6
Listening to or downloading audio services (e.g. radio stations	1.4	1.1
Downloading music	1.4	1.2
Downloading short video clips	0.9	0.8
Watching a full length TV programme	0.7	0.6
Downloading a full length TV programme	0.5	0.3

Figures in green are significantly higher than for the Total/ segment

Source : Q.39
Base: All respondents/Communicators (2,001/373)

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Information Seekers use the internet to access information such as news and sport, local information, and also check their bank accounts online.

Frequency of activity by segment

Activity	Average times per week undertaken	
	Total	Information seekers
Surfing the internet	6.2	7.3
Catching up with new or sports	2.9	3.8
Looking up local information	2.2	3.0
Banking	2.5	6.1
Looking up maps of the local area	1.8	2.6
Listening to or downloading audio services (e.g. radio stations	1.4	1.2
Downloading music	1.4	1.2
Downloading short video clips	0.9	0.7
Watching a full length TV programme	0.7	0.8
Watching a full length film	0.4	0.4
Downloading a full length film	0.4	0.4

Figures in green are significantly higher than for the Total/ segment

Source : Q.39
Base: All respondents/Information Seekers (2,001/750)

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Laggards use the internet quite infrequently, as can be seen from their frequency of use of the various activities (all are significantly less frequent than the Total).

With regard to connection method, they were significantly less likely to use a mobile phone out of home to access the internet, and were more likely to use fixed line access.

Frequency of activity by segment

Activity	Average times per week undertaken	
	Total	Laggards
Surfing the internet	6.2	2.7
Catching up with new or sports	2.9	1.1
Looking up local information	2.2	1.1
Watching short video clips	1.8	0.6
Playing games online	1.5	0.7
Listening to or downloading audio services (e.g. radio stations	1.4	0.5
Downloading music	1.4	0.4
Downloading short video clips	0.9	0.3
Watching a full length TV programme	0.7	0.3
Making telephone calls on the internet	0.7	0.3
Downloading a full length TV programme	0.5	0.2
Watching a full length film	0.4	0.2
Downloading a full length film	0.4	0.1

Figures in red are significantly lower than for the Total/segment

Source : Q.39
Base: All respondents/Laggards (2,001/605)

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Demographic profile of segments

Laggards are an older group with a female bias, as can be seen from the table below which shows key demographics for each segment. Trailblazers, Technology Followers and Information Seekers tend to have a male bias, with Technology Followers being the youngest segment, as highlighted earlier. There is limited variation between segments by social class, with the first three groups having a slight ABC1 bias, but the social class differences are less marked than the age and gender differences.

Demographic profile of segments

	Total	Trailblazers	Technology followers	Information seekers	Communicators	Laggards
Male	49%	64%	60%	57%	48%	41%
Female	51%	36%	40%	43%	52%	59%
15-17	4%	6%	11%	1%	5%	3%
18-24	12%	8%	23%	11%	14%	6%
25-44	20%	35%	22%	20%	22%	16%
35-44	21%	35%	19%	26%	23%	17%
45-54	19%	14%	17%	20%	16%	21%
55-64	15%	2%	3%	14%	12%	22%
65-74	9%	0%	5%	7%	7%	13%
75+	1%	0%	0%	1%	1%	0%
A	2%	4%	2%	3%	3%	1%
B	28%	39%	33%	36%	25%	25%
C1	32%	36%	29%	38%	32%	29%
C2	18%	14%	14%	14%	18%	22%
D	11%	4%	13%	5%	12%	13%
E	9%	3%	9%	4%	11%	9%

Source: Q. 46/47b/51
Base: All respondents (2,001)

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Annex B contains more information on each segment.

5. Qualitative case studies

After the quantitative stage was completed, a second qualitative stage was conducted to explore some of the issues further and provide more depth to the initial findings. Six types of users were identified for further research, and in total 20 interviews were conducted, split out as follows:

Phase 3 Qualitative Respondents

Total	Business Users	Residential Users
Multiple access users	3 x interviews	2 x interviews
Laptop users with dongle, unaware of mobile phone network access		2 x interviews
Smartphone owners	3 x interviews	2 x interviews
Smartphone users without fixed broadband – who did no specifically acquire phone to access the internet		2 x interviews
Dissatisfied with key aspects of service	2 x interviews	2 x interviews
Consumers who just have desktop or laptop		2 x interviews

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The following section contains one case study from each of the six groups outlined above.

BUSINESS USERS

Overall, business users appreciated the security of “having all the bases covered” thanks to the flexibility of mobile broadband. This can, however, be a mixed blessing as it means they see themselves as “always on duty”.

While company policy can restrict internet access, this was not an issue for the self-employed.

In terms of devices, desktops were perceived as being more ‘businesslike’. The size of the screen influenced the appearance of images, which could be useful when researching products or when showing clients information. Laptops were perceived as a portable, flexible version of a desktop, which was handy when travelling, attending trade shows or when away on holiday but still needing access to email etc. for the business. Users perceived both desktop and laptop as functional ways of accessing the internet.

Smartphones had more emotional appeal, being personal devices that kept them in contact, were convenient and always to hand. They had the advantage of having less boot-up time and multiple applications.

Case Study 1 – Business multiple access user

Ed is in his 30s and MD of a Midlands-based business with a full-time staff of five. They have networked desktops and his ISP, although a minor provider, was recommended by his IT director, based on a good reputation for internet speed, reliability and price. There are three laptops, all with dongles, for staff use off site; and there is now one new netbook. He and his staff all have previous generation smartphones, chosen because his contract with another provider was expiring and staff were pestering for the brand. He perceives his smartphone to be the best, "cool" and still a real novelty, so he is proud to own one.

"It's brilliant. I wouldn't be without it. It's so quick, intuitive and easy. Anyone could use it."

When in the office Ed uses his desktop, accessing the internet throughout the day not only for his work but also for social networking. He has a laptop for convenience and portability between work and home and his online laptop behaviour is identical to his desktop behaviour, except he may use it whilst concurrently watching TV, balancing it on his lap.

His smartphone is the main point of contact for his partner and friends and for internet access when out and about. This is mainly for social or practical purposes, although he occasionally uses it at home for internet access if his partner is using the laptop. His smartphone can be slow, however, with sites taking time to upload, so he does not enjoy this experience and prefers not to use it.

"It's just slower so I use it for stuff that won't take forever. I wouldn't download things but check things quickly…I might be buying something and want to check out prices so will use a price comparison app or be wanting a new pair of shoes and might check online to see if they have them before I go to the shop."

Accessing the internet is very important to running his business; the key issue for him is speed. When he has problems with internet speed at work this creates high stress levels as not only does this impact on his business but he also does not feel in control of the problem. He's reluctant to change provider, however, not believing that others will be any better. Laptop and dongle speeds, particularly from home, are inconsistently slow and therefore difficult to fix or improve. Slow speed happens at completely random times so he feels it is not something he can solve or has any control over.

"The internet access on the desktops can be slow at times and it is frustrating but you do put up with it. You try different things like re-booting but nothing seems to make a difference."

Case Study 2 - Business Smartphone user

Graeme is in his late 50s and owns a pub and B&B in Scotland. He travels a fair amount for work and leisure so he needs to have internet access to monitor his business websites, check and deal quickly with bookings etc. He also has financial accounts emailed every day so access to email is paramount.

He owns a previous generation smartphone, for both business and leisure use. He would consider moving away from his current provider if another provider could prove that their coverage was better, especially in the country areas of Scotland.

Graeme chose his smartphone initially because of the look of it and at that time the applications were the cheapest. He is fully aware that other smartphones are available now and that networks try and sell these hard by offering cheap or even free apps but he is now wedded to this particular style and brand, being quite passionate about it. He is amazed by its capabilities, the fun he can have with it and is still discovering all the things he can do on it for leisure e.g. GPS, sport apps etc.

"It was the best on the market at the time I was buying one, so of course I wanted that. It's still the one people want."

He uses his smartphone for business and leisure: checking emails; dealing with queries about his business. He can respond quickly as he always has his phone with him and clients need not know where he is or that he is not on site.

He also has a desktop and netbook but his relationship to these is very functional compared to his smartphone.

"It's just amazing what you can do. I never thought I would be able to track my cycling to this detail. It is very clever."

RESIDENTIAL USERS

Case Study 3 - Laptop with dongle user

Anna is a young single mother of three, living in a suburban area in South East England. Her main internet access is via laptop and dongle. Although it is also possible to access the internet via her mobile, she rarely uses this as she considers it not only expensive but also slower, difficult to use and the smaller screen makes it less enjoyable. For her the cheapest way of accessing the internet at home is by Pay as You Go. She buys £20 credit, which lasts 3 months.

"I can control how much I spend this way, with Pay as You Go."

Anna has chosen the mobile broadband provider that works best in her area, as it works well from both her home and her parents'. She would prefer another brand, but there is a lack of reception for that provider in her area.

Her laptop was chosen on price alone as the budget was £250 and a good quality software package was already installed. Her key reason for purchasing the laptop was social networking. She mostly uses MSN and Facebook, as she finds using the internet the cheapest ways of staying in touch with friends. As a young single mother she is emotionally attached to her laptop as it provides social contact when she is on her own at night. Occasionally she will use an online auction site to buy items for the children. She mainly uses the internet at home when the children are not about; she does not download anything or watch/stream TV etc via the internet. She will also take her laptop on UK holidays and to her parents'.

"[The internet is] my life, really, especially when I'm at home so much in the evenings on my own."

Anna's children only ever use her laptop or the internet to help with their homework.

Amongst this group as a whole (laptop with dongle users) the ability to control costs was paramount.

Case Study 4 - Laptop only user – urban area South East

Carol is in her late 40s and lives with her husband and two teenage sons. Although they have both desktop and laptop, the latter has replaced the desktop. Her older son keeps both in his bedroom. She bought him the laptop five years ago for flexibility to study in the lounge rather than having to sit in his bedroom. The laptop is a well-known brand, but she has no idea of the model.

Carol is not a heavy internet user, deferring to her IT literate son.

"I don't understand any of it really. I get my son to sort out things and ask him."

She gets to use the laptop during the day when everyone is out, mainly using search engines to search for unusual plants (an interest of hers) a couple of times a month, or whenever a particular strange plant grabs her interest. Her other main use is to talk to her friend in Australia. She also checks her credit rating once a month so as not to be a victim of fraud.

Logging into the internet during the day, particularly around 2PM, can take a long time, although she does not mind, using the time to 'potter about'. Her husband and sons do not complain about the speed when they use it in the evening, however, so she perceives this to be a daytime phenomenon.

Carol also has a smartphone and knows the brand but has no clue as to the exact model. She is on a monthly contract, paying on average £25 per month. This includes some free internet usage but she has no inclination to use it as she feels it would not be capped, and she fears she could therefore run up expensive bills.

"I sometimes press a wrong button on my phone and it says it's connecting to the internet and I panic. Think of the money it would cost!"

Her family have switched landline providers a couple of times and are now with a third provider for broadband and phone as this was the cheapest at the time. They have a full TV channel package but did not opt for a bundled package as that would be more expensive. Carol is not bothered about having separate suppliers as she feels cost savings are more important.

Overall, those interviewed in this group (Laptop only user) had a basic, functional approach. Usage was limited e.g. hobby; email; Skype; online shopping and banking. They tended to be suspicious of technology and were not keyboard confident or IT literate.

Case study 5 – Dissatisfied with service

Finn is a 19 year old student living with his parents and sister in a rural area of the Midlands.

In the recent past he accessed the internet with a laptop and dongle and this was the cause of dissatisfaction because he could not always get a connection – even when in the same place where it had worked before. In addition, speed was very slow – slower than his phone internet access – and it was inconsistent, rarely working in the same way.

> *"It was really patchy – I could never be sure of getting on the net, and some pages would take forever to load, even though it was fine earlier in the day"*

Finn's dissatisfaction has recently been resolved as the family now has broadband at home via their TV package, which he perceives as 'an upgrade' - he is not only delighted to have fast and consistent broadband but can also access all his favourite TV channels.

He prefers to use his laptop for accessing the internet as it is comfortable with a large screen and a keyboard. It also offers privacy as he can use it anywhere in the house, including his bedroom.

Although he can also access the internet from his phone - his parents pay £15 towards topping up his Pay as You Go, which entitles him to unlimited texts and internet usage - he finds it fiddly and thinks that it takes too long. Nothing is so urgent that it cannot wait until he gets home. However, he likes and feels reassured by the idea that he could access it if he wanted to.

For Finn, apart from college work research, the internet is essentially social networking.

In general, those who were dissatisfied complained chiefly of slow speeds and difficulties with accessing the internet that seemed to be random.

Case Study 6 - Smartphone user, with no Fixed Broadband at home

Brenda is 24, married with two small children. They live in an urban area of Northern Ireland. The family cannot have a fixed line because their house is on a new estate where there are no landlines. One major provider is investigating putting in a line, which they would do for free, whereas another would charge to dig up the road and Brenda is hoping that they will eventually get a fixed line.

Brenda defines a smartphone as:

"The internet in your hand; on the go no matter where you are - on holiday; on a bus, you always have it."

She also likes to send photographs of the children to their grandparents.

She got her phone at a high street store and liked it because it was cheap and her favourite colour: lime green. It has a touchscreen, however, which can be difficult to use as she has long nails. She is spends £15 a month on Pay as You Go.

"Everyone I know is on [the same network], so it's free to text or call them."

She particularly appreciates the discreet and convenient nature of accessing and / or sending information via her phone as it does not upset her children or their bedtime routine in the way interacting with a desktop or laptop would.

Brenda was on holiday with her family earlier this year and experienced delays in returning home, due to the volcanic ash cloud. She found the phone to be a boon as she could check news and flight updates etc. without having to queue with dozens of others to use the hotel internet service

Annexes

A. Detailed methodology

This Annex provides more detail on the methodologies employed in each of the three stages of research. The fieldwork dates were as follows:

Stage 1: Qualitative: 16th – 24th March

Stage 2: Quantitative: 19th April-13th May

Stage 3: Qualitative: 5th-31st July

Stage 1 – Qualitative research

This first stage research comprised five face to face depth interviews:

- 1 x Business mobile broadband users
- 4 x Consumer mobile broadband users

Across the sample we included:

- People using a mix of different broadband – fixed, mobile and a mix
- Different providers.
- Different manufacturers
- Different contract types
- Men and women
- Range of ages / demographics
- Business users using different mobile broadband connection types (laptop via dongle, mobile phone etc.)

All interviews were conducted in London and the South East.

Business users would be using mobile broadband for business purposes (and probably also for leisure use) via:

- Laptops, smartphone handsets and / or 'standard' mobile phones etc. to access the internet and make phone calls
- Touchscreen; keypad

Consumer users would be using mobile broadband for personal reasons via mobile phone and laptop. We included as many as possible doing the following:

- Phoning; SMS; MMS
- Gaming
- Accessing search engines – Google etc.
- Social networking – Facebook; YouTube
- News / Sport / Weather
- Sat Nav / GPS / Maps
- Music / films / TV / internet radio
- Ring-tone / themes

Stage 2 – Quantitative research

Sample design and quotas

This second stage research comprised 2,001 face to face interviews among a representative sample of UK broadband users. Quotas were set to cover the six specific subgroups, each with minimum samples of 150 respondents. In addition, minimum sample sizes of 150 were set for those with:

- Both fixed line access and laptop/dongle access
- Both fixed line access and access via a mobile telephone

There were thus eight quotas to be achieved and interviewers were given a requirement to undertake at least one interview with a respondent in each of the eight quota cells in each of 250 sampling points to generate the 2,000 total sample.

In addition, regional quotas were applied and achieved by setting an appropriate number of sampling points in each region. The regional quotas aimed to achieve a minimum of 150 interviews in each nation (Northern Ireland, Scotland and Wales) and apart from that to achieve a pro rata distribution in the nine English regions.

The access devices for which specific quotas were set are as follows (together with sample sizes achieved):

Broadband / internet connection type	Sub-groups: Respondents may qualify for several groups	Minimum sample required	Sample achieved
Fixed	Wired	150	530
	WiFi via a wireless router (in home)	150	1035
Mobile	Laptop / PC via dongle / built in (in home)	150	522
	Laptop / PC via dongle / built in (out of home)	150	304
	Via mobile phone / smartphone (in home)	150	600
	Via mobile phone / smartphone (out of home)	150	781
Fixed and mobile	Wired or Wifi in home and laptop / PC via dongle	150	244
	Wired or Wifi in home and mobile phone / smartphone*	150	244

Quotas and sample sizes achieved for each nation and English region are as follows:

	Quota	Achieved
Nation		
Northern Ireland	150	151
Scotland	160	157
Wales	150	146
English Regions		
East Anglia	170	148
East Mids	135	127
London	225	232
North East	80	85
North West	210	209
South East	250	257
South West	160	164
West Mids	160	172
Yorks & Humber	150	153
TOTAL	2,000	2,001

Questionnaire

The questionnaire was developed from the qualitative research findings and structured to enable the specific objectives to be met. Many of the questions were asked for each device type owned and as, in general, most respondents had more than one access method, this generated a relatively long questionnaire. As a result, there was a need to restrict some

questions to a single access method, to control the overall questionnaire length and to avoid respondent fatigue and potential boredom.

Initially, it was planned to focus these questions at the lowest incidence access methods, to provide the largest possible sample sizes for these subgroups. However, this approach biases the sample for these questions and in particular fewer of those with the more common access methods are asked about these when they also have access to a lower incidence access method.

To resolve this, questionnaires were produced for each of the 720 combinations of possible access methods and interviewers given a rule as to which access method to use for these questions, dependent upon the number of access methods the respondent used. Here is an example from a questionnaire:

SELECT PRIORITY DEVICE AS FOLLOWS FROM CODES GIVEN AT Q13

IF JUST ONE CODED - DEVICE = THAT CODE

IF TWO DEVICES CODED = first IN LIST

IF THREE DEVICES CODED = second IN LIST

IF FOUR DEVICES CODED = third IN LIST

IF FIVE DEVICES USED = second IN LIST

IF SIX DEVICES USED = fifth IN LIST

With 2000 interviews to be undertaken, each of these 720 questionnaires was printed three times, generating an initial set of 2160 questionnaires which were sent out to interviewers.

The approach is analogous to a Kish Grid, and ensures that the questions just asked of one access method are asked of a random subsample of the respondents using that method. The table below confirms that this method has given a similar distribution to the original sample.

	All access methods	Selected access methods
INTERNET VIA FIXED LINE - DESKTOP (ANY) OR LAPTOP NO WIRELESS ROUTER	14%	17%
INTERNET VIA FIXED LINE - WIRELESS ROUTER	27%	32%
LAPTOP VIA DONGLE/USB - USE INTERNET AT HOME	14%	17%
LAPTOP VIA DONGLE/USB - USE INTERNET OUT OF HOME	8%	6%
MOBILE - USE INTERNET AT HOME	16%	13%
MOBILE - USE INTERNET OUT OF HOME	21%	15%

Weighting

The sample design significantly over represented the lower incidence access methods and this needed to be corrected via weighting the data. The following weights were derived from the Ofcom Technology Tracker:

Internet Access Method	%
Any fixed line access	88.53%
Fixed line access via wireless router	58.29%
Laptop via dongle out of home	4.68%
Solus at home access via mobile/laptop with dongle	8.20%
Access via mobile phone	22.82%
At home access via mobile/laptop with dongle	20.41%

In addition, demographic weights were applied to the total sample as follows:

Group	Weight
15-24	30%
25-34	32%
35-54	18%
55+	
AB	30%
C1	32%
C2	18%
DE	20%
NORTH EAST	4.24%
NORTH WEST	11.18%
YORKSHIRE AND THE HUMBER	8.51%
EAST MIDLANDS	7.25%
WEST MIDLANDS	8.74%
EAST	9.31%
LONDON	12.33%
SOUTH EAST	13.62%
SOUTH WEST	8.60%
WALES	4.89%
SCOTLAND	8.53%
NORTHERN IRELAND	2.80%

This weighting regime ensures that the sample overall reflects the universe of those with home internet access.

Stage 3 – Follow up qualitative research

Following the quantitative survey, a number of subgroups were identified as being worthy of follow up, to provide more insight into the particular subgroup concerned. The sample design was as follows:

Phase 3 qualitative respondents		
Type of user	**8 business interviews**	**12 consumer interviews**
Multiple access users	3 x interviews	2 x interviews
Laptop users with dongle, unaware of mobile phone network access		2 x interviews
Smartphone owners	3 x interviews	2 x interviews
Smartphone users without fixed broadband – who did not specifically acquire phone to access the internet		2 x interviews
Dissatisfied with key aspects of service	2 x interviews	2 x interviews
Consumers who just have desktop or laptop		2 x interviews

Interviews were conducted with individuals meeting the specific criteria outlined above. Some were undertaken face to face, some by telephone, primarily using re-contacts from the quantitative survey (where permission to re-contact had been provided) supplemented with some respondents meeting the specific criteria who were free found.

Trailblazers

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Trailblazers
Relatively small segment
Most likely to have multiple access methods (desk top, dongle and mobile phone)
Highest users of all online activities
Most likely to watch video ,TV and films online
The first into new applications
Male, middle aged, BC1
Work full time

I am the person who likes to have the latest phone and internet

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Technology followers

3.6m

Technology Followers
Key mainstream heavy internet users
Indexes highly on most online activities
Segment most likely to use an iPhone
Male skew and average social class
Younger than trailblazers
Segment most likely to be in higher education

I have it [an iPhone] because it's fashionable, useful…it's necessary because I'm out of home a lot and want constant access

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Information seekers

6.7m

Information Seekers
Typical levels of use for most internet activities
More likely to use internet for; Banking Shopping Use local maps Catching up with news/sport Downloading music
Above average mobile phone internet users
Use the internet a lot whilst on the go
Male skew, more likely to be working

I can use it while travelling to check email and use the applications. [I use the] satnav built into phone

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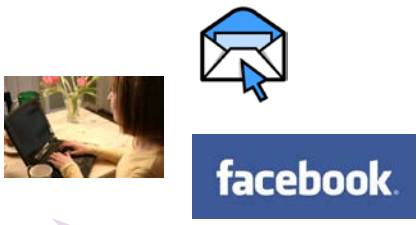
Communicators

12.7m

Communicators
Largest segment
Slightly below average usage of most activities except; Social networking Email
Most likely to use desktop or lap top via fixed line with WiFI
No bias towards mobile broadband
No great bias in relation to age, gender or social class



I am nosey and I like to see what my friends are doing socially on the web.

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Laggards

11.5m

Laggards
Large segment
Below average use of all online activities (typically half the average)
Most likely to use desktop via a fixed line
Least likely to use mobile devices to access internet
Female, older, downmarket bias

I'm not very computer savvy…sometimes I press a wrong button on my phone and it says it's connecting to the internet and I panic. Think of the money it would cost! 55-64, Male, Urban, Rochdale

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