Communications Market Report

United Kingdom Published 3 August 2017

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CMR

Angel of the North

About this document

The report contains statistics and analysis of the UK communications sector. It is a reference for industry, stakeholders, academics and consumers. It provides context to the work Ofcom undertakes in furthering the interests of consumers and citizens in the markets we regulate.

The report contains data and analysis on broadcast television and radio, fixed and mobile telephony, internet take-up and consumption and post.
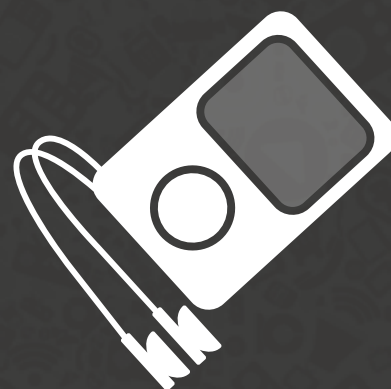
We publish this report to support Ofcom's regulatory goal to research markets constantly and to remain at the forefront of technological understanding. It also fulfils the requirements on Ofcom under Section 358 of the Communications Act 2003 to publish an annual factual and statistical report. It also addresses the requirement to undertake and make public our consumer research (as set out in Sections 14 and 15 of the same Act).

Much of the data included in this report is available for anyone to access, use and share on the open data pages of Ofcom's website: **www.ofcom.org.uk/opendata**

Communications Market Report

Main Contents

Introduction

This year's Communications Market Report highlights continuing changes in how consumers use communications services.

Our data shows how the increasing take-up of faster fixed and mobile data services is extending people's choice over how, where and when they communicate with others, watch or listen to content services, seek information, shop, and participate in the digital world.

Forty-four per cent of all fixed broadband connections were able to receive actual download speeds of 30Mbit/s or more in June 2016, up from 38% a year previously. Nearly two-thirds of mobile subscriptions were enabled for 4G, up from 46% in 2015. Take-up of faster data networks has gone hand-in-hand with increasing use of data services – average data use per fixed line residential broadband connection increased by 36% year on year to 132GB in June 2016, and average data use per mobile connection increased by 44% to 1.3GB.

Smartphones are the way many of us keep connected. They are now firmly established as the most widely owned internet-enabled device, with more than seven in ten consumers owning one, up by 5 percentage points from the previous year, and four in ten internet users consider smartphones to be their most important device for accessing the internet.

They are used both inside and outside the home: data collected through our mobile research app shows that around two-thirds of data connections are via Wi-Fi rather than a mobile network.

Our research shows that that on-demand and streamed content delivered over the internet is an important part of the way in which people watch television. The PSBs' online services (BBC iPlayer, All4, ITV Hub, My5) are used by 67% of adults, with subscription libraries such as Neflix and Amazon Prime used by 45% of adults. However, live broadcast TV is still the first choice for most people. When asked what we do first when wanting to watch a TV programme or film, half of us agreed that we 'switch on the TV and see what's airing on live broadcast TV'. Ninety-one per cent of us watch broadcast TV at least once during a typical week, and we spent an average of 3 hours 32 minutes a day watching broadcast TV on our TV sets in 2016, down just four minutes since 2015. However, there is a growing gap between the viewing habits of older and younger viewers: over-64s watched an average of 5 hours 44 minutes a day in 2016, up 50 minutes from 2006, whereas 16-24s watched an average of 1 hour 54 minutes, 41 minutes less than in 2006.

The ways in which we listen to the radio are also changing. Digital listening on DAB (33%), the internet (8%) and DTV (5%) now accounts for nearly half of all listening. Nearly a quarter of us (23%) say we use online music services such as Spotify and Apple Music at least weekly. But nine in ten of us listened to the radio at least once a week in 2016, listening for 3 hours 3 minutes a day on average (one minute more than in 2015).

This report includes industry revenue data, as well as data on changing consumer behaviour. It shows that, in general, revenues are holding up well, despite increasing use of 'over-the-top' internet services such as those provided by Netflix, WhatsApp and Spotify. In 2016 telecoms retail revenues increased by 0.4% in real terms, as people chose more expensive superfast broadband services. Broadcast television revenues were up by £0.1bn to £13.8bn in 2016, with further revenue of £1.7bn being generated by online AV services. Within this, net advertising revenues among the traditional TV sector exceeded £4bn for the second consecutive year, despite the continuing growth of internet advertising.

Radio advertising revenue was stable at £522m, helped by increased spend from online retailers, which increased expenditure by 89% in real terms between 2015 and 2016. Online retailers are also boosting the postal market, as increases in the parcel market offset a decline in letters.

This year's Communications Market Report analyses and examines these, and other, trends. It presents selected findings from some of our regular consumer tracking surveys, information collected directly from industry, analysis of data from the audience measurement systems for TV, radio and online use, and our ongoing app-based research into people's use of services on their smartphone. It also includes two pieces of consumer research commissioned for this report: *The changing TV landscape survey*, which looks at consumption of on-demand and streaming services, and *The power of the online image* which seeks to investigate how images are being used online.

To make this report and its resources more useable to stakeholders, we are publishing some of the key data in an interactive online tool. All the data and charts are also available as a searchable resource and in open data format.

Companion reports providing data and commentary on communications markets in Northern Ireland, in Scotland and in Wales are once again being launched alongside this report. Everything is available at www.ofcom.org.uk/cmr.

We publish this report to support Ofcom's regulatory goal to research markets constantly and to remain at the forefront of technological understanding; the report also fulfils the requirements on Ofcom under Section 358 of the Communications Act 2003 (the Act) to publish an annual factual and statistical report. It also addresses the requirement to undertake and make public our consumer research (as set out in Sections 14 and 15 of the Act)

The information set out in this report does not represent any proposal or conclusion by Ofcom in respect of the current or future definition of markets. Nor does it represent any proposal or conclusion about the assessment of significant market power for the purpose of the Communications Act 2003, the Competition Act 1998 or any other relevant legislation.

Methodological note

A variety of data sources were used in compiling this report: Ofcom's technology tracker survey, its residential consumer postal tracking survey, its business postal tracking survey and its media tracking survey, as well as a range of ad-hoc research. The following is a brief outline of the tracking surveys used, any methodological changes and an explanation of the significance testing.

Ofcom technology tracker

The technology tracker survey is run twice a year. It provides Ofcom with continuous understanding of consumer behaviour in the UK communications markets, helping us to monitor change and assess the degree and success of competition. The data collected is weighted to the profile of UK adults, so the data are representative of adults aged 16+. The weighting profile was updated from 2015 to reflect updated Census and NRS data.

Ofcom residential postal tracker

The residential postal tracker survey is run throughout the course of the year and reported on a quarterly basis. The main objective is to help Ofcom to keep abreast of the UK postal market and to help us to quickly identify and react to any changes in attitudes and behaviour among residential postal consumers.

Ofcom SME postal tracker

The business SME postal tracker survey is run throughout the course of the year on a sample of 1600 2000 SMEs (businesses with 0-249 employees) and reported annually. The main objective is to help Ofcom to keep abreast of the UK postal market and to help us to quickly identify and react to any changes in attitudes and behaviours among SME postal consumers.

Ofcom media tracker

The media tracker survey is run throughout the course of the year to counter potential seasonality issues, and is reported on an annual basis. The research provides Ofcom with a valuable source of information on consumers' attitudes, and helps inform Ofcom's work on broadcasting standards.

Significance testing

In statistics, a 'significant' result is one that is unlikely to have occurred by chance. All of the differences (e.g. year on year) that are commented on in the text of this report will be significantly different to one another. Where percentages are described as being the same or similar, despite there being a difference in number, this is because the difference is not statistically significant. Ofcom conducts all significance testing to a 95% confidence level, which means that we are 95% certain that there has been a 'real' change and that the difference has not occurred by chance. Significance is tested using the effective sample size, where available, and the unweighted base, where not. Ofcom's Technology Tracker survey methodology changed in 2017 to full CAPI (computer assisted personal interview). As such, year-on-year significance testing of Half 1 results have been conducted at the 99% confidence level, whereas testing within 2017 results are still conducted at 95%.

1 Market in context

1.1   **Market in context**

1.1.1   Overview

This introductory chapter of the Communications Market Report 2017 looks at the sectors Ofcom regulates as a whole.

It starts by looking at communications sector revenues (telecoms, TV, radio and post), and average monthly household spend on communications services over the past five years, followed by take-up of communications services and devices.

Following on from this, two pieces of market research, conducted for this report, seek to understand consumer behaviour in relation to TV consumption and the use of images, both photos and videos, as a method of communication. *The changing TV landscape* looks at consumption of on-demand and streaming services. The UK's TV landscape is evolving: subscription library services like Netflix and Amazon Prime are becoming as important as live TV for family time; eight in ten adults have watched multiple episodes of the same programme back-to-back in one sitting; and nearly four in ten adults watch programmes and films outside the home. The research seeks to better understand the needs these different services are meeting and the benefits and disadvantages of this new approach to TV consumption.

The second piece of research, *The power of the online image*, seeks to investigate how images, both photos and videos, are being used. Images are becoming an increasingly central method of communication, with six in ten people saying they post images and videos online. And, with a minority of people thinking that it's easy to recognise if an image or video online is real or truthful, and just one in seven thinking that it's easy to delete photos from the internet once they've been posted, this research also explores sharing, trust and understanding of privacy rules in the online world.

1.2 Fast facts

Fast Facts: United Kingdom

Unless otherwise stated, figures are from Q1 2017

TV

94%   Proportion of UK homes with digital TV[1]

3h 32m Minutes spent watching broadcast TV per day
            (per person aged 4+, average daily minutes across 2016)

Radio

57%   Proportion of radio listeners with a DAB radio in their household

46%   Proportion of listener hours through a digital platform
          (DAB, online DTV)

183   Minutes spent listening to radio per day (among radio listeners)[2]

329   Number of local radio stations broadcasting on analogue
          (excluding community stations) *(May 2017)*

251   Number of community radio stations currently on air *(May 2017)*

41   Number of UK-wide radio stations (analogue and DAB) *(May 2017)*

Internet

88%   Total household internet take-up

25.3m   Number of fixed broadband connections *(end 2016)*

10.8m   Number of superfast broadband connections *(end 2016)*

83%   Proportion of adults with broadband (fixed and mobile)

44%   Superfast broadband take-up (% of all connections) *(Q4 2016)*

36.2Mbit/s Average actual fixed broadband speed *(Nov. 2016)*

58%   Proportion of homes with a tablet computer

66%   Proportion of people who use their mobile phone to access
              the internet

Landlines and mobiles

26.4m Number of residential fixed landlines *(end 2016)*

33.5m Number of fixed landlines in the UK, including ISDN
           channels *(end 2016)*

94%   Proportion of adults who personally own/use a mobile phone

76%   Proportion of adults with a smartphone

18%   Proportion of adults who live in a mobile-only home[3]

92.0m Number of mobile subscriptions (including M2M) *(end 2016)*

52.4m Number of 4G subscriptions *(end 2016)*

Post

11.8bn Addressed letter mail volume in 2016

£4.2bn Addressed letter revenues in 2016

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[1] This figure is drawn from Ofcom's technology tracker. BARB's establishment survey measured TV take up at 95.6% of UK homes in Q1 2016 and this is set out in the TV section of this report.

[2] Average week in 2017

[3] A household that solely uses mobile phones to fulfil its voice telephony requirements.

1.3 Key market developments

1.3.1 UK communications market revenue

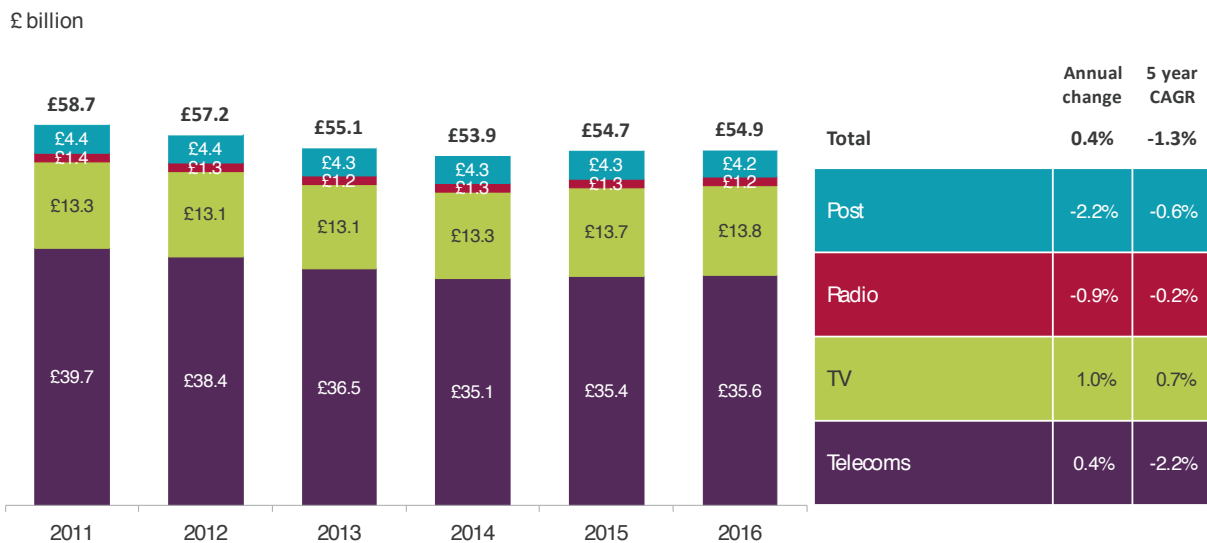**Total UK communications revenue stood at £54.9bn in 2016**

Total UK communications revenues generated by telecoms, TV, radio and postal services increased in 2016, rising by £0.19bn (0.4%) in real terms (i.e. adjusted for inflation) to £54.9bn. This overall increase was due in part to a rise in total telecoms revenue,[1] which increased by £0.2bn (0.4%) in real terms to £35.6bn, mainly due to a

4.3% increase in retail fixed revenue during the year and was partially offset by declining wholesale service revenues. There was also a rise in the revenue generated by the broadcast UK television industry, up by 1.0% in real terms to £13.8bn in 2016, driven by a 2.8% increase in pay-TV subscription revenues.

Addressed letter mail revenue decreased slightly to £4.2bn in 2016 (down by 2.7% in real terms), driven by declining volumes.

Total UK radio industry revenue decreased slightly to £1.2bn in 2016 (down by 0.9% in real terms), reflecting stable commercial radio revenues and a decline in real-terms expenditure on BBC radio.

Figure 1.1: **Communications industry revenue: telecoms, TV, radio and post (£bn)**

£ billion

Total	Annual change	5 year CAGR
	0.4%	-1.3%
Post	-2.2%	-0.6%
Radio	-0.9%	-0.2%
TV	1.0%	0.7%
Telecoms	0.4%	-2.2%

Source: Ofcom/ operators.
Note: figures are adjusted for CPI (2016). TV revenue excludes subscription revenues from online on demand and streaming services such as Netflix and Amazon Prime. Includes licence fee allocation for radio and TV; prices) Post is addressed letter mail. Changes in the way that revenue data is collected for the commercial radio sector means that data prior to 2014 are not comparable to data for 2014 and 2015. In a change from previous years, telecoms revenues data excludes revenues generated by corporate data services.

[1] Comprised of revenues from retail and wholesale fixed and mobile voice and data services.

## 1.3.2 Household spend on communications services

Average monthly household spend on communication services has increased slightly in real terms over the past five years

Average monthly household spend on communication services has increased slightly in real terms over the past five years from £122.15 in 2011 to £122.54 in 2016, representing a monthly increase of £0.39, or £4.64 per year.

Average spend on fixed internet reached £16.90 per month in 2016, an increase of 11.8% in real terms from previous year, largely due to consumers migrating to superfast broadband services, which tend to be more expensive than standard broadband services.

Household spend on television decreased by an average of five pence per month in 2016, returning to the 2014 level of £32.90 a month.

Figure 1.2: **Average household spend on communications services**
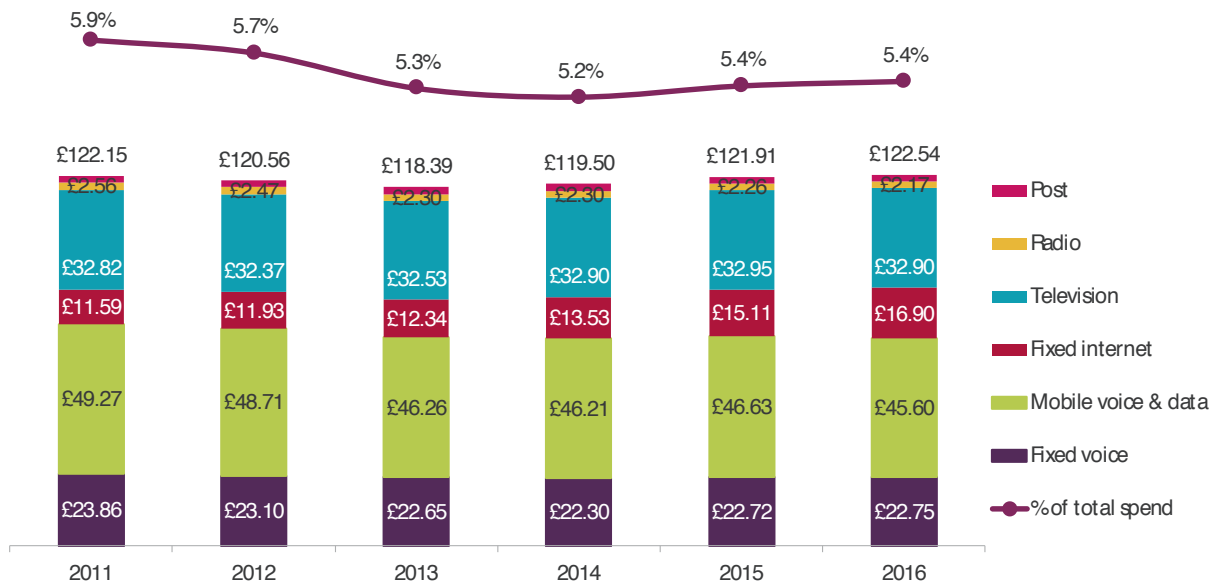
Source: Ofcom / operators/ ONS
Notes: Adjusted for CPI (2016 prices); historic telecoms figures have been re-stated, so are not comparable to those published in previous reports. Television excludes spend on subscriptions, download-to-own and pay-per-view through online on-demand and streaming services.

1.3.3 Take-up of communications services

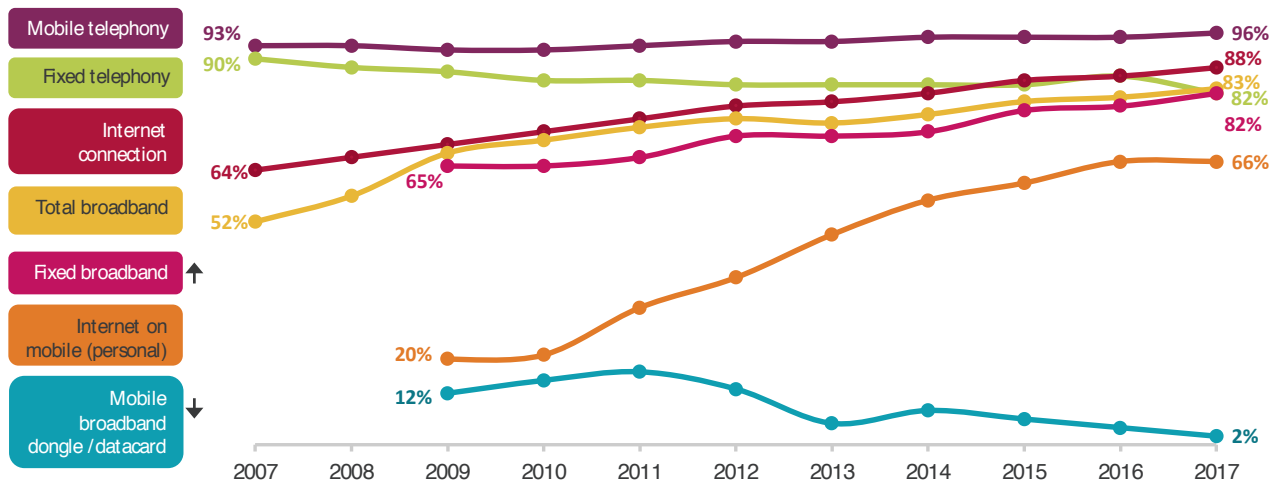### More than eight in ten households now have a fixed broadband connection

Take-up of fixed broadband in the home has increased since last year; more than eight in ten (82%) households now have a fixed broadband connection, compared to 79% in 2016. The proportion of households with fixed telephony (82%) and mobile telephony (96%)

remained relatively stable in 2017. Two-thirds of those aged 16 and over (66%) said they used their mobile phone to access the internet.

Corresponding to this increased take-up of fixed broadband, there continues to be a decline in the proportion of households

that use mobile broadband via a dongle or data-only SIM-card in a laptop or tablet – this now accounts for just 2% of households (down from 4% in 2016).

Figure 1.3: **Take-up of communications services**

Source: Ofcom Technology Tracker. Data from Q1 of each year 2007-2014, then H1 2015-2017.
Base: All adults aged 16+ (2017 n=3743).
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
QC1: Is there a landline phone in your home that can be used to make and receive calls? QE1: Does your household have a PC or laptop computer? / **QE2:** Do you or does anyone in your household have access to the internet/ world wide web at home (via any device, e.g. PC, laptop, mobile phone etc.)? / **QE12 (QE9):** Which of these methods does your household use to connect to the internet at home?
Note: Use of internet on mobile is personal take-up measure, whereas the other data relate to household take-up.

Although take-up of smart TVs continues to grow, TV ownership overall and DVD player ownership is declining

Figure 1.4 shows take-up of a range of communications and audio-visual devices over the last ten years. Take-up of paid-for and free TV services (such as Sky, Virgin Media and Freeview) has decreased by two percentage points since last year (down to 94% from 96%), whereas the take-up of smart TVs (with an integrated internet connection) has increased – more than a third of households (36%) now own one, compared to 27% in 2016. The decline in ownership of DVD players

continues, with 63% of households now having one, compared to 85% five years ago. Take-up of internet-connected dongles (e.g. Amazon Fire TV, Google Chrome, Apple TV) or set-top boxes (10% in 2017, up from 5% in 2016) has increased.

Take-up of smartphones has continued to increase over the past year, with three quarters of adults (76%) now owning one. Take-up of smart watches has also increased and now around one in ten (9%) households own one

(up from 5% in 2016). Take-up of MP3 players has declined, to 28% of households, down from 32% the previous year, probably due to the increasing popularity of listening to music via smartphones.

For the first time since 2011, take-up of tablets has remained stable year on year; just under six in ten households (58%) reported having at least one tablet computer (such as the Apple iPad or Samsung Galaxy Tab) in early 2017, in line with 2016 (59%).

Figure 1.4: Household take-up of digital communications/ AV devices: 2007-2017
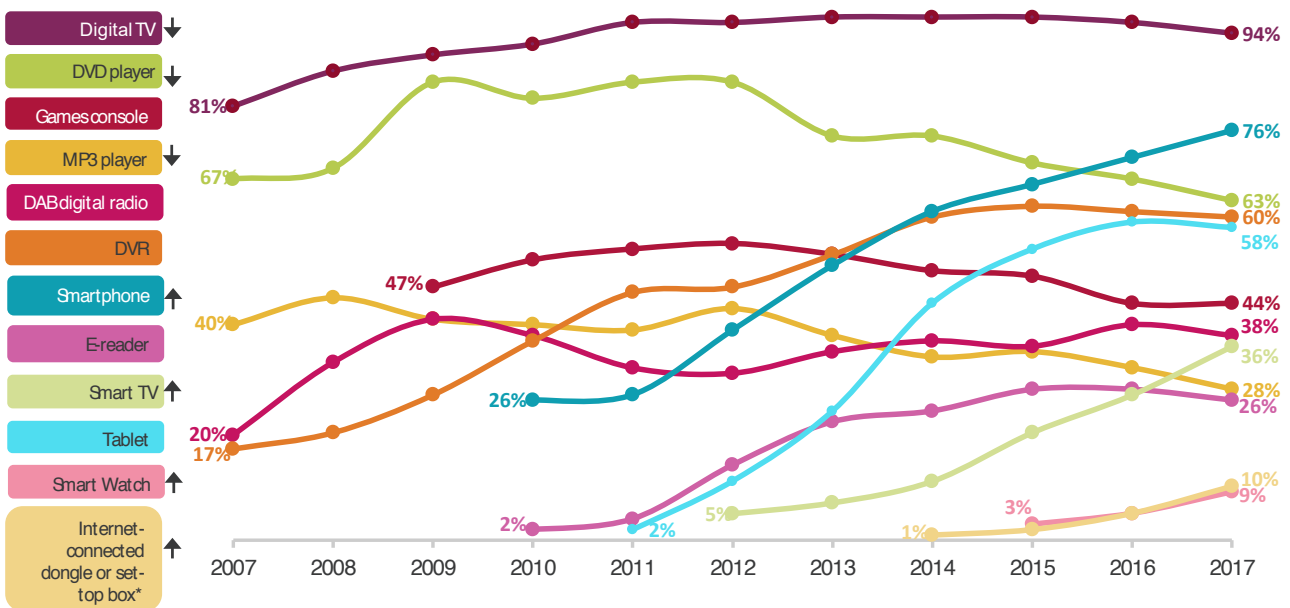
Source: Ofcom Technology Tracker. Data from Q1 of each year 2006-2014, then H1 2015-2017.
Base: All adults aged 16+ (2017 n=3743).
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
Note: The question wording for DVD Player and DVR was changed in Q1 2009 so data are not directly comparable with previous years.
* Internet-connected dongle or set-top box includes NOW TV set-top box, Roku, Google Chrome, Amazon Fire TV stick, Amazon Fire TV, Apple TV

## 1.3.4 Purchasing communications services in a bundle

Eight in ten households buy services in a bundle

Just over eight in ten households (81%) reported purchasing at least two of their communications services together, from the same supplier, in a bundle in 2017, in line with last year (79%).[1] Dual-play packages of landline and broadband, and triple-play packages of landline, broadband and TV were the most popular (at 34% and 33% of households respectively).

Figure 1.5: Take-up of bundled services
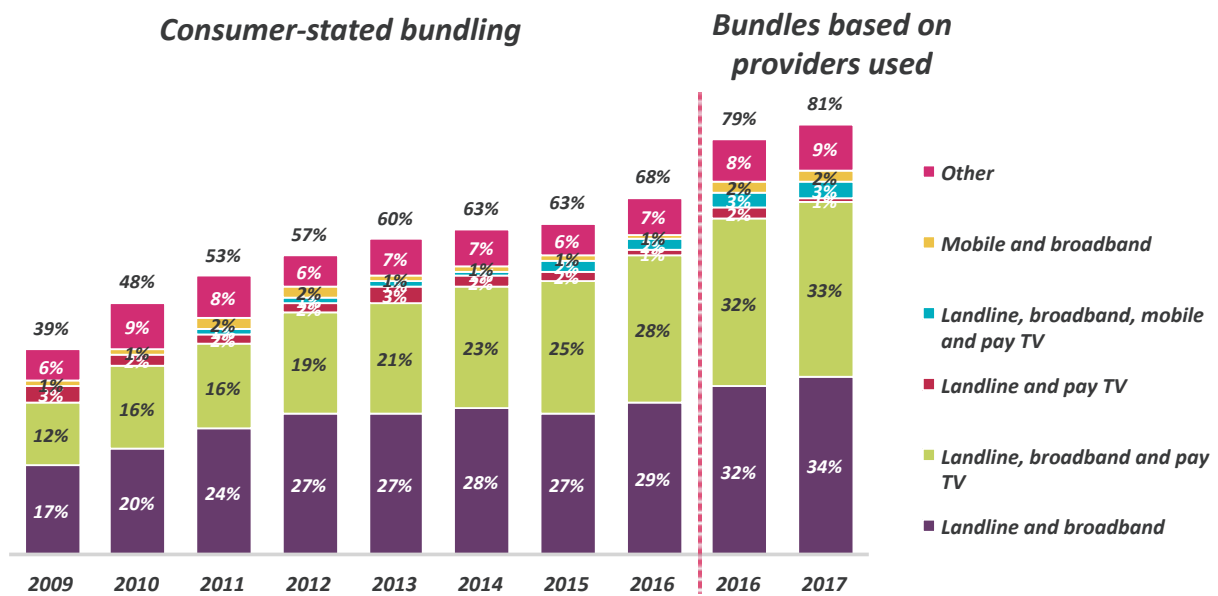
Source: Ofcom Technology Tracker, data as at Q1 2009-2014; H1 2015-2017

QG1. Do you receive more than one of these services as part of an overall deal or package from the same supplier?/ Q. Do you receive a discount or special deal for subscribing to this package of services? (latter question used for consumer-stated bundling figures)

Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.

Base: All adults 16+ (Q1 2009, 6090) (Q1 2010, 9013) (Q1 2011, 3474) (Q1 2012, 3772) (Q1 2013, 3750) (Q1 2014, 3740) (H1 2015, 3756) (H1 2016, 3737) (H1 2017, 3743), base excludes those who do not know the provider for one or more services

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[1] OOfcom has recently revised its bundle take-up figures; in previous years we have reported data from a question asking consumers 'Do you receive more than one of these services as part of an overall deal or package from the same supplier?'. From 2017 we are reporting bundling data based on whether the same provider was stated for two or more services, and have revised the 2016 for comparison to 2017. As a result the revised 2016 figures are not comparable to data from previous years.

The UK's TV landscape is evolving. We are no longer confined to the broadcasters' schedules.

1.4   The changing TV landscape

People are supplementing live broadcast TV[1] viewing with broadcasters' on-demand and streaming services, recorded TV and paid-for streaming services like Netflix and Amazon Prime Video, which are becoming increasingly mainstream. Live broadcast TV remains a central component of TV viewing, but increasingly people are using different services and types of content to meet different needs.

The availability of a wide range of on-demand and streaming services combined with the increase in take-up of fixed broadband (82% of UK households in 2017, compared to 72% in 2012) and portable devices (76% and 58% of people used a smartphone and tablet in 2017 compared to 39% and 11% in 2012)[2] is giving us the freedom to watch what we want, when we want, wherever we want to watch it. This section explores the needs that these services are meeting, and the benefits and disadvantages of this new approach to TV consumption..

1.4.1   Highlights from the research

- People are most likely to use live broadcast TV when they want to keep up with the news and to provide 'background noise'.

- More than half (54%) of adults in the UK like the freedom of being able to watch when and where they want on their tablet or smartphone. Seven in ten (67%) say they like to watch TV programmes and films on-demand to avoid adverts, or because there are no adverts.

- 'Binge watching' is now commonplace with 35% of people in the UK saying they do it at least weekly.

- Only 30% of people in the UK say they sit together with family members to watch the same TV programme or film on the same device every day.

- Three in ten (31%) say that at least once a week, members of their household sit together in the same room while watching different programmes on different screens.

- Almost half (45%) of people in the UK say they watch programmes and films by themselves every day.

- More than half (58%) of people in the UK say they prefer to watch big national events on live broadcast TV instead of on-demand because it's good to know everyone is watching at the same time. Nearly half of respondents (45%) said the same for sports programmes.

Methodology:

This section draws on new Ofcom research carried out between 27 April and 9 May 2017 by Populus. This research was conducted via an online survey comprising 2,356 interviews among adults aged 16+, and 505 interviews among 12-15 year olds.

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[1] The term 'Live TV' covers live scheduled programming that is broadcast as part of a linear channel.
[2] Ofcom Technology Tracker

1.4.2 The services people use

### On-demand and streaming are becoming more mainstream

While 91% of UK adults watched live TV in an average week in 2016[1], data from BARB show that the amount of time UK adults spend watching has fallen since 2010, with a decline in average daily viewing time of 36 minutes (-14%) to 3 hours 51 minutes per adult (16+) per day in 2016[2].

When respondents to our 2017 survey were asked what services other than live broadcast TV they used to watch TV programmes and films, BBC iPlayer was the most popular choice, with 63% of UK adults citing this, followed by ITV Hub (40%) and YouTube (38%). Almost a third (31%) said they used Netflix for watching programmes and films followed by All4 (26%) and Amazon Prime (20%), My5 (18%) and Facebook (16%), with all other services below 15%.

Figure 1.6: The proportion of adults who use different services for watching TV programmes/films (%)
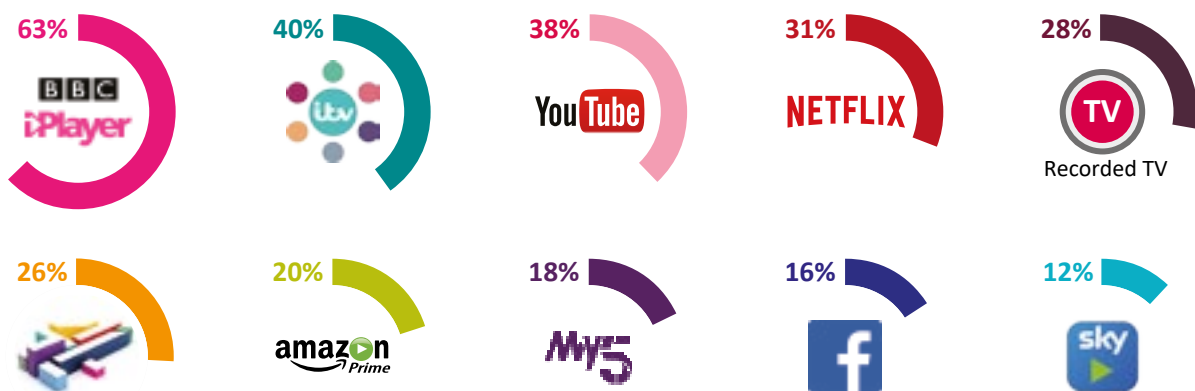
When we group these together into types of services, we can see that the most popular on-demand and streaming services for watching programmes and films are the public service broadcasters' online services (BBC iPlayer, All4, ITV Hub, My5) used by 67% of adults combined, followed by subscription on-demand and streaming services such as Amazon Prime and Netflix (45%), social media platforms such as Facebook and YouTube (41%) and pay TV services such as Sky TV and Virgin Media (23%). Adults aged 16-24 are most likely to use most types of services, including three-quarters who say they use subscription on-demand and streaming services (76%) and broadcaster on-demand and streaming services (75%).

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[1] https://www.ofcom.org.uk/research-and-data/multi-sector-research/digital-day

[2] Adults 16+. Based on viewing to scheduled, broadcast TV on TV sets including live at the time of broadcast plus time-shifted viewing through DVRs and catch-up TV up to seven days after transmission.

Figure 1.7: Non-broadcast services used by adults and teens for watching TV programmes and films
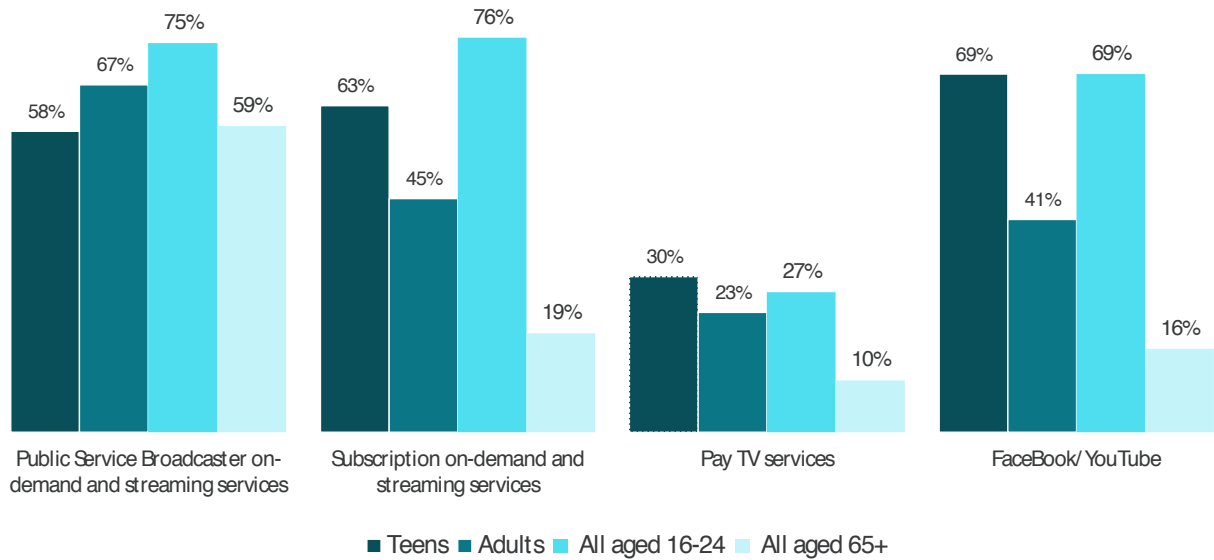
■ Teens ■ Adults ■ All aged 16-24 □ All aged 65+

Source: Use of on-demand and streaming services CMR research 2017 – Populus
Q5. Thinking about when you watch TV programmes/films, do you use any of the following?
Base: Adults (2356) teens (505) 16-24 (704) 65+ (498)

1.4.3 Reasons for using different services

To understand why people choose different services, we asked them which service they would use for a range of different needs. Live broadcast TV, on-demand and streaming services and social media sites have different roles to play in viewers' lives.

People are most likely to watch live broadcast TV for keeping up with the news

People are most likely to use live broadcast TV when they want to keep up with the news. When we asked adult users of broadcast TV why they used live TV, 57% said they used it to keep up with the news and what's happening around them, but this purpose was chosen by only 19% of viewers of broadcasters' on-demand and streaming services and 8% of those using subscription on-demand and streaming services. There is less of a difference among teens: 15% of teen viewers of live broadcast TV said they used it to keep up with the news, and a similar number (10%) said they used broadcasters' on-demand and streaming services.

Live broadcast TV is also the most likely service to be used to provide 'background noise'; 20% of respondents who watch live broadcast TV do so for this purpose. Among respondents who watch broadcasters' on-demand and streaming services, 8% do it for this reason, and among users of subscription on-demand and streaming services, pay TV services and Facebook/ YouTube, the figure is 9%.

Figure 1.8: Services used by adults in the United Kingdom to 'keep up with the news / keep up with what's happening around me'
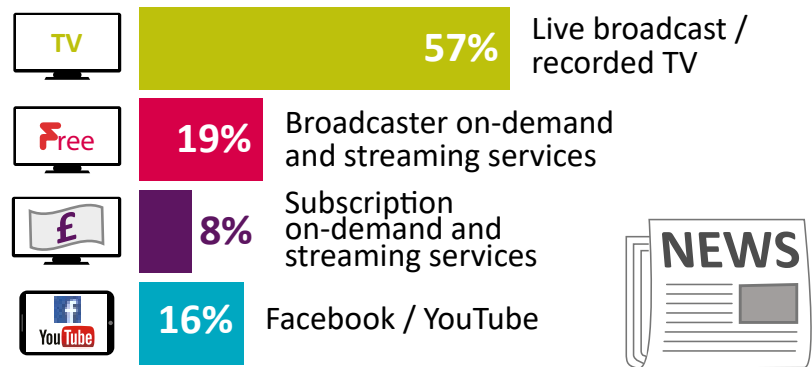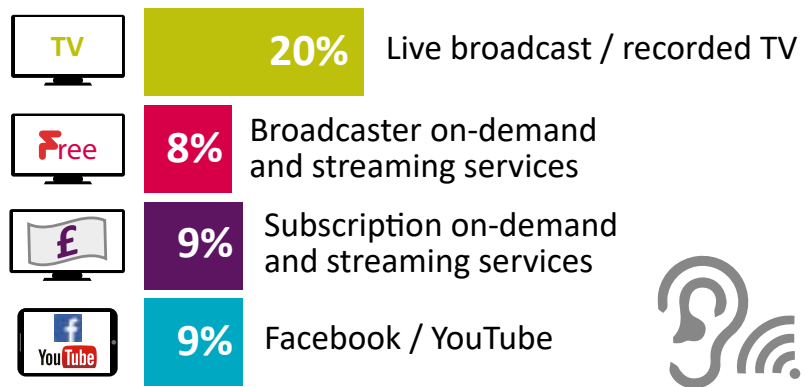

TV — **57%** Live broadcast / recorded TV

Free — **19%** Broadcaster on-demand and streaming services

£ — **8%** Subscription on-demand and streaming services

Facebook/YouTube — **16%** Facebook / YouTube

Figure 1.9: Services used by adults in the United Kingdom 'for background noise'

TV — **20%** Live broadcast / recorded TV

Free — **8%** Broadcaster on-demand and streaming services

£ — **9%** Subscription on-demand and streaming services

Facebook/YouTube — **9%** Facebook / YouTube

Adults and teens turn to different services to de-stress

Watching TV is also the way many people de-stress and unwind. Adults turn to a range of services for this. Forty-four per cent of live broadcast viewers use it to de-stress, as do 42% of subscription on-demand and streaming users, a third (33%) of both viewers of broadcasters' on-demand and streaming services and users of Facebook or YouTube, and 29% of pay-TV viewers. Teen viewers are also likely to use a range of services for this, although at lower levels: 27% of 12-15s who watch programmes and films on social media do it to de-stress, 25% of those who watch live broadcast TV do it for this reason, as do 23% of users of subscription on-demand and streaming services.

Teens are more likely than adults to turn to social media when they want some 'alone time'

In order to create some 'alone time', and to be able to watch what they want to, similar numbers of adult users say they turn to live or recorded TV (55%), broadcasters' on-demand and streaming services (50%) and subscription on-demand and streaming services (55%). Teens tend to choose social media (53%) or subscription on-demand and streaming services (50%) for this purpose.

This desire to watch alone is reflected in the numbers who say they watch TV programmes and films by themselves on any device. More than four in ten (45%) adults in the UK say they do this every day, three in ten (31%) do it several times a week, and one in ten (11%) do it once a week. Collectively, almost nine in ten (87%) engage in solitary viewing at least weekly and 92% do so at least monthly.

The numbers are higher for teens: more than nine in ten (93%) watch TV programmes/films by themselves at least weekly. Despite this, 57% of adults agree that "people spend too much time watching by themselves on their tablets and smartphones nowadays".

Live TV is most likely to be cited by teens as the service they use for family time, while adults cite both live and subscription library services

Respondents were also asked how often, if at all, they sat together with family to watch the same TV programmes/films on the same device. Three in ten (30%) adults in the UK say they do this every day, another three in ten (30%) say they do this several times a week, and one in ten (10%) that they do it once a week. Collectively, seven in ten (70%) watch with others on the same device at least weekly and three-quarters (75%) do so at least monthly. Amongst teens, almost nine in ten (88%) watch with others on the same device weekly and more than nine in ten (93%) do so monthly.

Family time is also a valued reason for viewing, with nearly seven in ten (68%) adults and 85% of teens in the UK agreeing that watching TV programmes/films brings the family together. When asked which services they use for family time, both live TV (35%) and subscription on-demand and streaming services (31%) are popular among adults, with pay TV (27%) and broadcasters' on-demand and streaming services (24%) not far behind, showing that all these services now play a role in family viewing.

68% of adults in the UK agree that watching TV programmes/films brings the family together
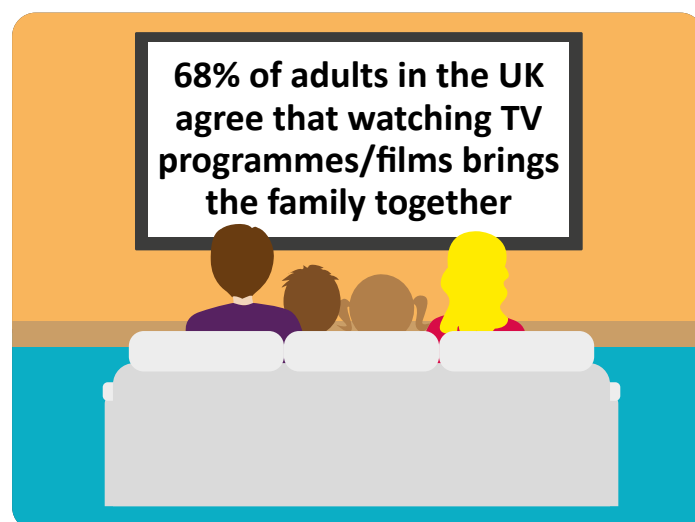
Live/recorded TV is also particularly important for teens, with 56% of users aged 12-15 citing family time as a reason for viewing, compared to around a third of users of broadcaster on-demand and streaming services, subscription on-demand and streaming services and pay TV. There is evidence that TV is also useful for keeping children entertained, with more than a third (36%) of those with children in the household reporting that they use live broadcast TV to keep children entertained. Two in ten (22%) adults with children in the household use pay TV services for this purpose.

The analysis above demonstrates that live broadcast TV remains important and is the clearly preferred way of viewing certain types of content, but that people are also embracing the choice offered by on-demand services. Around nine in ten adults (88%) and teens (92%) agreed that they enjoy the ability to watch what they want when they want. On-demand viewing also allows people to tailor what they're watching in a way that gives them control over their own personal viewing experience, evidenced by the nearly seven in ten (67%) of adults, and almost eight in ten teens (77%) who said they like to watch TV programmes and films on-demand to avoid adverts or because there are no adverts.

Figure 1.10: Reasons for using services: adults 16+

	Live broadcast/ recorded TV	Broadcasters' on-demand and streaming services	Subscription on-demand and streaming services	Pay TV services	Facebook/ YouTube
Base	1233	1578	997	555	945
Family time	35%	24%	31%	27%	14%
Alone time (I can watch anything I want to watch)	55%	50%	55%	35%	49%
For background noise	20%	8%	9%	9%	9%
To keep children entertained	9%	5%	9%	9%	7%
For de-stressing/unwinding	44%	33%	42%	29%	33%
To learn something new	34%	24%	14%	13%	23%
To keep up with the news/ to keep up with what's happening around me	57%	19%	8%	15%	16%
To keep up-to-date with the storyline/to keep up with a programme	51%	42%	29%	24%	13%
To keep up-to-date with the latest sport	26%	9%	3%	18%	6%
For company	13%	7%	5%	6%	6%

Source: Use of on-demand and streaming services CMR research 2017 – Populus
Q12. You said you watch programmes/films for the reasons below, which services do you use for this?
Base: shown in table

Figure 1.11: **Reasons for using services: teens 12-15**

	Live broadcast/ recorded TV	Broadcasters' on-demand and streaming services	Subscription on-demand and streaming services	Pay TV services	Facebook/ YouTube
Base	242	292	299	148	352
Family time	56%	35%	36%	32%	12%
Alone time (I can watch anything I want to watch)	41%	41%	50%	28%	53%
For background noise	12%	5%	8%	9%	9%
For de-stressing/unwinding	25%	19%	23%	12%	27%
To learn something new	17%	12%	8%	14%	18%
To keep up with the news/ to keep up with what's happening around me	15%	10%	3%	5%	9%
To keep up-to-date with the storyline/to keep up with a programme	40%	37%	28%	15%	16%
To keep up-to-date with the latest sport	17%	11%	4%	14%	8%
For company	4%	4%	3%	-	4%

Source: Use of on-demand and streaming services CMR research 2017 – Populus
Q12. You said you watch programmes/films for the reasons below, which services do you use for this?
Base: shown in table

1.4.4 Watching on different devices

Viewers like the flexibility of being able to watch the content they want, when they want, using their chosen device

More than half (54%) of adult respondents said they liked the freedom of being able to watch when and where they wanted on their tablet or smartphone. This is particularly notable among the younger age groups: 81% of 12-15s and 83% of those aged 16-24 agree with this statement. Although this is not entirely the preserve of the young, with 28% of over-64s also agreeing.

When we look at what devices people are using for viewing, 55% of adults say they use laptops/PCs to watch TV programmes or films, while 35% say they use tablets and 35% use smartphones. Younger age groups are more likely to use devices other than the TV set to view content. Almost eight in ten (77%) 16-24 year olds say they use their laptops or PCs, compared to 40% of over-64s.

Four in ten (41%) 16-24s use their tablets, compared to 19% of over-64s, and more than six in ten (64%) 16-24s use their smartphones, compared to 6% of over-64s. Teens are less likely than young adults to use laptops or PCs (56% vs. 77%), but have higher levels of use of tablets (51% vs. 42%) and are not far behind on use of smartphones (56% vs. 64%).

In spite of the relatively small screen size, smartphones are used by adults to view programmes and films via various services including social networking platforms: 63% of Facebook users and 52% of YouTube users use their phones to view programmes and films via these services[1]. They are also being used to view pay-as-you-go on demand and streaming content, with 68% of Google Play users viewing this content on their smartphones.

17% of Amazon Prime users and 21% of Netflix users watch these services on their phones.

Despite the growth in the use of alternative devices, the TV set remains the device most used by adults overall to watch TV programmes/films, with Ofcom's Technology Tracker showing that 94% of UK adults use a TV set.[2] However, the way we use the TV set is changing too: 24% of those who use on demand and streaming services said they watched content via the iTunes store on their TV set, 21% via Google Play, 7% said they watched programmes and films on Facebook via their TV set, and 4% are even using the TV to look at content on Snapchat.

Figure 1.12: **Devices used to access services**
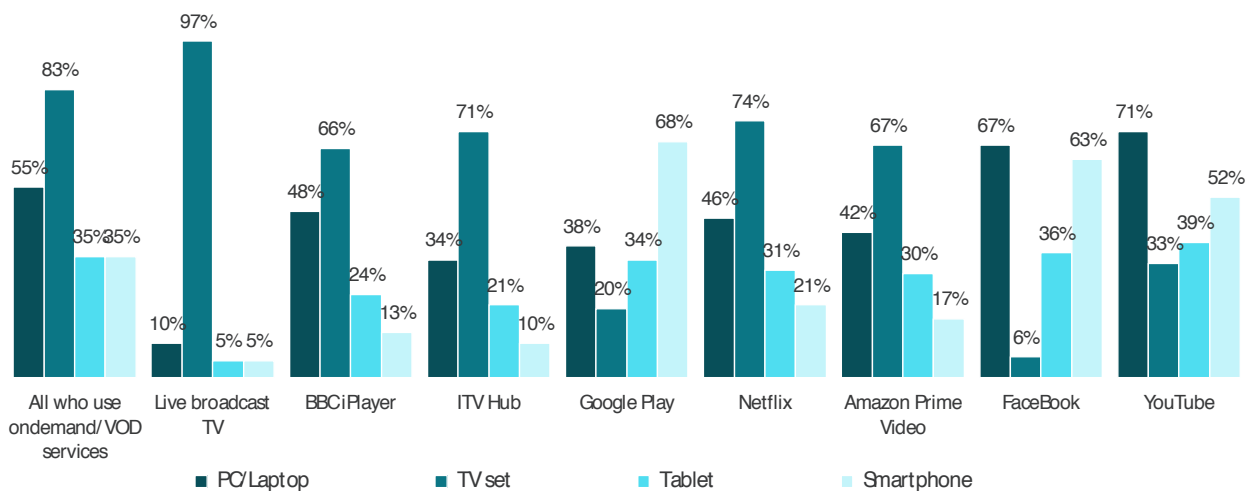
Source: Use of on-demand and streaming services CMR research 2017 – Populus
Q7. Thinking about the way you use ... for programmes/films what devices do you ever use to access it?
Base: All respondents who use catch up/VOD services (2155)

[1] It is possible that respondents considered watching video clips, as well as watching TV programmes and films when answering this question.
[2] Tech Tracker H1 2017

1.4.4 Viewing on the move

More than a third of people watch TV outside the home

The availability of a wide range of different services, and the widespread take-up of smartphones and tablets, has changed not just what people are watching, but when and where they are watching it. This means that people can now tailor what they watch to suit their location as well as their mood. Consequently, over a third (37%) of respondents ever watch content on any device outside their home. A quarter (24%) say they watch content when on holiday or breaks away from home, 16% say they do so while travelling or commuting and 7% say they do so in a pub, café or restaurant.

Younger people are the most likely to watch outside the home. Six in ten of those aged 16-24 say they do this (58%), compared to 37% overall, and 22% of those aged 65 and over.

Figure 1.13: Location where adults in the United Kingdom watch programmes/films on any device or service
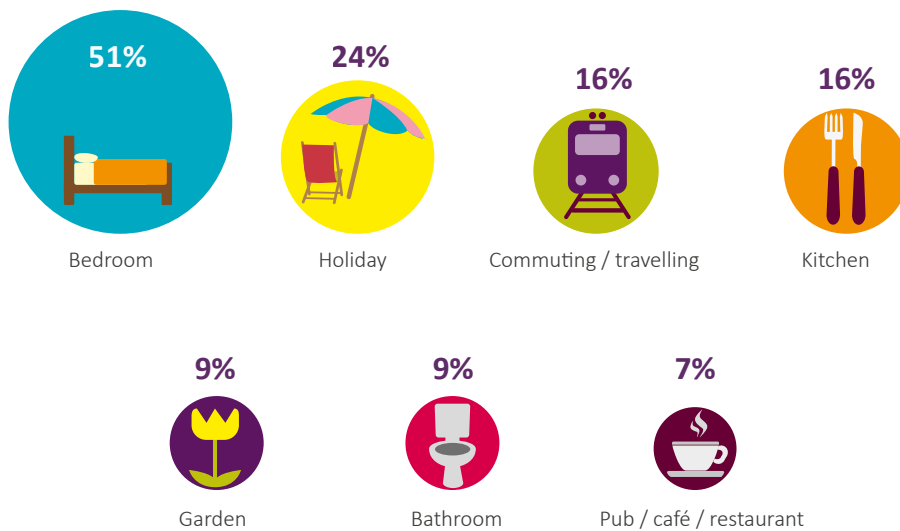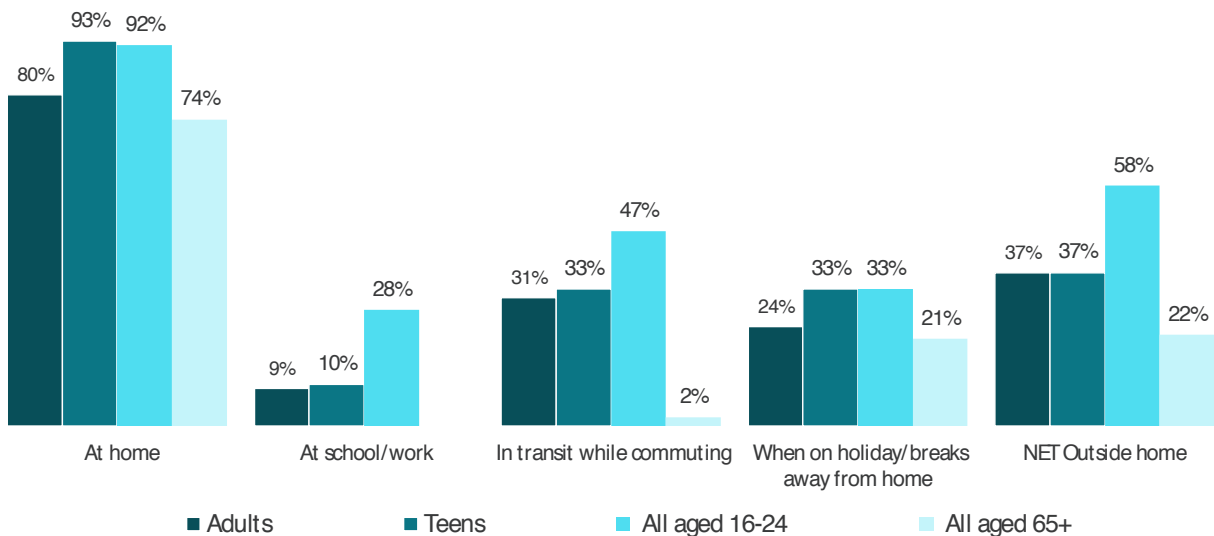

| 51% Bedroom | 24% Holiday | 16% Commuting / travelling | 16% Kitchen |

| 9% Garden | 9% Bathroom | 7% Pub / café / restaurant |

Figure 1.14: Location of watching TV programmes/films

Source: Use of on-demand and streaming services CMR research 2017 – Populus
Q32: How often do you watch any programmes/films on demand in any of the following locations?
All respondents: At home (2319) Net outside home (1063) At school/work (257) In transit while commuting (900) When on holiday/ away from home (708)

1.4.6 Family time and the use of multiple screens

Most recognise the importance of spending time together as a family but are increasingly doing their own thing

The proliferation of new viewing options is changing behaviour, as people embrace the increased choice and flexibility. This is having an impact not just on viewing behaviour, but also on the etiquette around it.

While the majority (68%) of people agree that watching TV programmes and films brings the family together, a third (31%) say that at least once a week, members of their household sit together in the same room while watching different programmes on different screens. This is particularly prevalent among younger people, with half of 12-

15s (51%) and four in ten 16-24s (40%) doing this at least weekly compared to 12% of over-64s.

When those who watch seperately in this way were asked how they felt about it, a quarter (26%) of those who do it say they like it because it's peaceful, 10% of adults and 14% of teens said it stopped arguments (a benefit of everyone getting to choose what they want to watch), and overall, almost six in ten of both adults (57%) and teens (58%) say they don't mind, indicating general acceptance of this behaviour.

However, recognising the drawback this scenario sometimes presents, 15% of adults who said this happens in their household agreed that it disrupts face-to-face communications and 16% said it makes talking to other people in the room difficult. Four percent even said they get angry when it happens.

Furthermore, use of multiple screens doesn't mean people no longer have family TV time; 30% said they sat together with family members to watch the same TV programme or film on the same device every day, while 70% said they did this at least once a week.

1.4.7 Back-to-back viewing

Over a third of people are regular 'binge viewers', watching multiple episodes of the same programme in one setting at least weekly
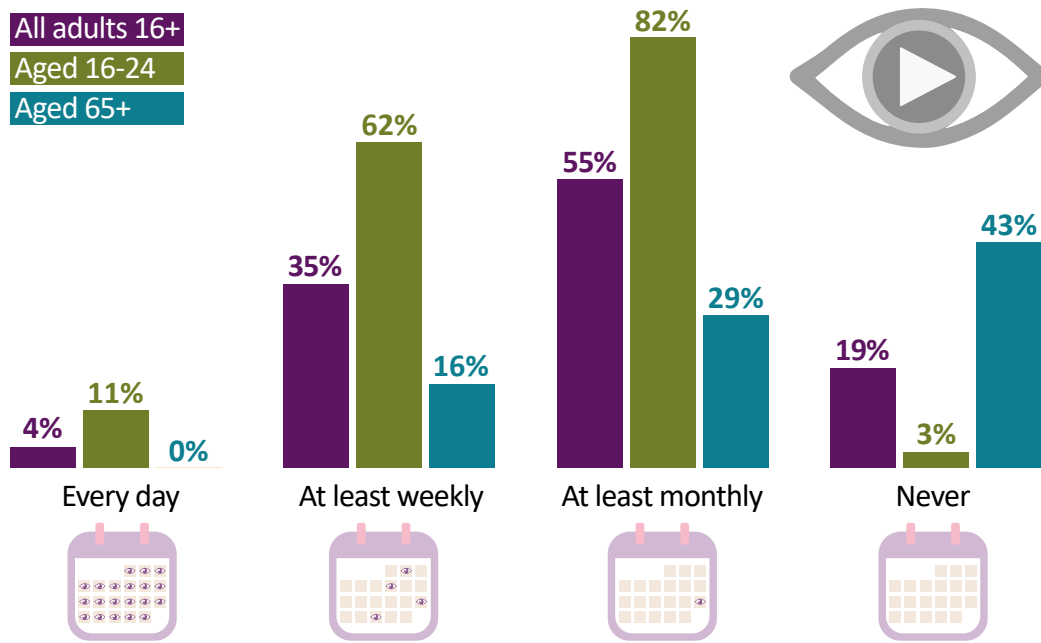
Another feature of the new TV landscape that on-demand and streaming has created is the ability to watch multiple episodes back-to-back, sometimes referred to as 'binge watching'. As the reach of paid-for on-demand services has increased, so has the availability of entire series. It is no longer necessary to wait a whole week to find out what happens after the

cliff-hanger, and many people are taking advantage of this, with eight in ten (79%) people overall saying they ever watch multiple episodes of the same programme back-to-back in one sitting, and over a third (35%) doing this at least weekly.

As with much of the other viewing behaviour discussed, this kind of viewing is predominately the

domain of the young. More than eight in ten (86%) teens ever engage in 'binge watching' including 53% who do at least weekly. Also, more than nine in ten of 16-24 year olds ever watch back-to-back, including more than six in ten (62%) who do so at least once a week. In contrast, just 16% of over-64s and doing it weekly and 56% ever do it at all.

Figure 1.15: How often people in the UK watch multiple episodes of the same programme back-to-back in one sitting

All adults 16+
Aged 16-24
Aged 65+

Every day
4% 11% 0%

At least weekly
35% 62% 16%

At least monthly
55% 82% 29%

Never
19% 3% 43%

Nearly half of those who watch episodes back-to-back do so with family and friends

When asked about why they do this back-to-back viewing, seven in ten (70%) of those who watch back-to-back episodes at least once a month said they found it relaxing and enjoyable. It also provides a chance for people to spend time with others; 46% of those who watch in this way do it with friends and family, with this most likely to be with a partner (22%) or family member (19%). For some

this can be a bonding experience: 24% said it gave them something to talk about with friends, 11% said it had brought them closer to friends/family and 6% said it gave them an opportunity to socialise.

This kind of back-to-back watching isn't always a planned activity. Seventy-four per cent of those who watch multiple episodes back to back at least once a month said

this was sometimes unintentional, while 18% of people said it always was. This could be because paid-for video-on-demand services are now putting original content at the forefront of their branding and often releasing the full season of shows at one time, with Netflix showcasing original content like *House of Cards* and *The Crown*, and Amazon Prime showing series like *The Man in the High Castle*.

A third of those who watch back-to-back say they have missed out on sleep as a result
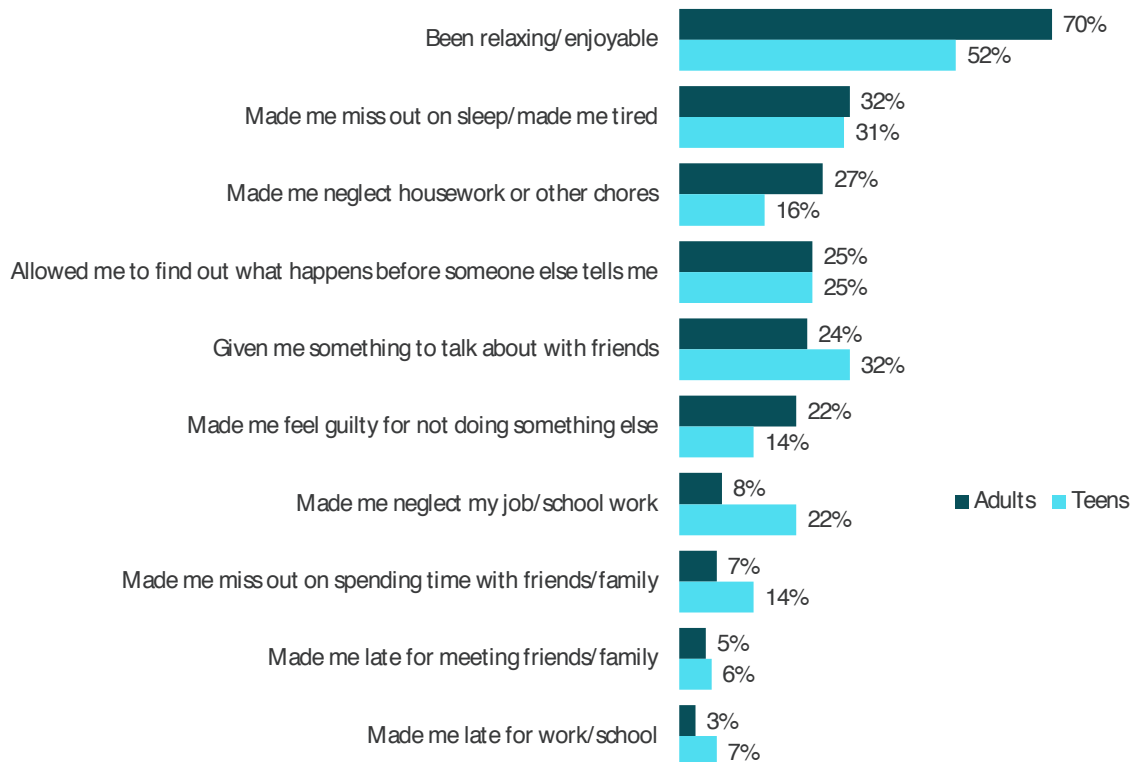
A third (32%) of adults who binge watch at least monthly admitted to sometimes missing out on sleep or being tired the next day because of this kind of viewing. More than a quarter (27%) said it had made them neglect housework or other chores, a fifth (22%) said it made them feel guilty for not doing something

else, 8% said it made them neglect their job/school work and 7% said it made them miss out on spending time with friends/family.

Teens tend to do the same thing: 31% of 12-15s who binge watch at least once a month said they had missed out on sleep or been tired

as a result, 22% said it made them neglect their school work, 16% that it had made them neglect their chores and 14% that it had made them feel guilty that they weren't doing something else and that it had made them miss out on spending time with friends and family.

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Figure 1.16: Reactions to binge watching: adults and teens

	Adults	Teens
Been relaxing/enjoyable	70%	52%
Made me miss out on sleep/made me tired	32%	31%
Made me neglect housework or other chores	27%	16%
Allowed me to find out what happens before someone else tells me	25%	25%
Given me something to talk about with friends	24%	32%
Made me feel guilty for not doing something else	22%	14%
Made me neglect my job/school work	8%	22%
Made me miss out on spending time with friends/family	7%	14%
Made me late for meeting friends/family	5%	6%
Made me late for work/school	3%	7%

Source: Use of on-demand and streaming services CMR research 2017
Q23 Watching lots of episodes of the same programme in one sitting is sometimes called binge watching. Thinking about when you have done this, do any of the statements below apply?
Base: All respondents who binge watch at least once a month, Adults (1300), teens (357)

Over a third of binge viewers have cut down on their viewing in some way

Thirty-five per cent of back-to-back viewers say that they have cut down on this type of viewing in some way. This is higher among young adults; almost half (47%) of back-to-back viewers aged 16-24 have taken action to cut down.

Almost one in five (19%) adults who view back-to-back at least monthly said they had rationed the amount of TV they watched, one in ten (10%) said they had found an alternative activity/hobby to occupy them, a similar proportion

(9%) said they now watched more live broadcast TV and 4% had cancelled a subscription on-demand or streaming service, thereby removing temptation altogether.

1.4.8 Awareness of and attitudes to box sets

Younger viewers are more likely to prefer a whole series being available at once

Despite the proliferation of catalogue and library services such as Netflix and Amazon, where viewers can access whole series at once, it is important to remember that this is still a minority activity. When asked whether they were aware that it is possible to view a whole new series in one go via these services, just 47% said they were

aware, a similar proportion to those watching on-demand and streaming services. This is where age differences are most evident; just over half of teens (55%) and 77% of 16-24s were aware, dropping to 25% among over-64s.

Those who were aware were asked which they would prefer: 'episodes of TV series being

released week by week' or 'an entire series released all at once'. Among all adults 49% preferred the entire series all at once, despite the temptation, while 39% opted for the weekly release. However, there is a marked difference in preferences by age: 54% of 16-24s want to see everything all at once, compared to 27% of over-64s.

Figure 1.17: **Preference of episode release: Adults and Teens**
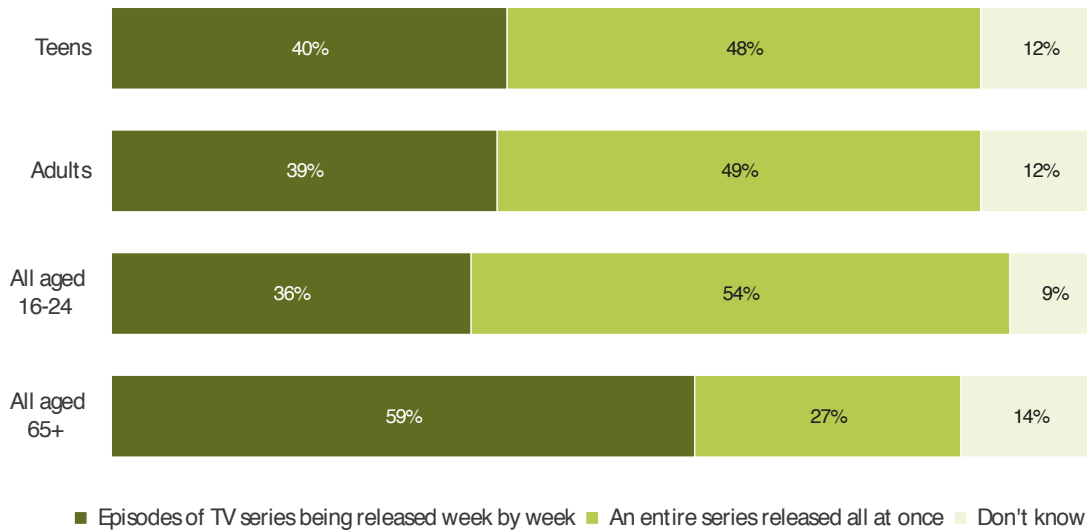
Source: Use of on-demand and streaming services CMR research 2017
Q26 Which of the following do you prefer?
Base: Adults who are aware of straight-to-VOD programmes (1127) teens (279) 16-24(310) 65+(120)

The release of all episodes in one go could be a reason for watching episodes back-to-back, as an attempt to avoid spoilers

The fact that many episodes are available all at once, inevitably means that others are more likely to spoil the ending for you if they're watching the same content. A quarter (25%) of people who watch back-to-back said it allowed them to find out what happens in a

programme before someone else tells them, one in five (20%) said it allowed them to avoid other people giving the plot away, while 16% said they felt under pressure to watch the latest episode so they could keep up with friends and family. This desire to make sure nobody

gives away the ending is also driving other behaviour: 37% of people say they have actively avoided going on the internet to avoid spoilers, with this particularly prevalent among young adults aged 16-24, more than six in ten (61%) of whom do this.

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1.4.9 Summary: the ongoing importance of live TV

Despite all this, live TV still underpins our TV-watching habits

People are changing the way they view, by using different services for different needs and drawing heavily on the flexibility and choice offered by on-demand, on-the-go video content. However, traditional live broadcast TV is still at the heart of our viewing experience. When asked what they would do first when wanting to watch a TV programme or film, the top answer was 'switch on the TV and see what's airing on live broadcast TV'. This response was chosen by half (50%) of people in the UK. The second-ranked answer was 'go straight to Netflix, Amazon Prime, Now TV or other on-demand

services that you pay a monthly subscription for' (12%), followed by 'go straight to recorded TV via DVR', selected by 11% of people in the UK. Other options were mentioned by less than 10% of respondents.

As we saw above, live broadcast TV dominates as the place to keep up with what's going on in the world and to share important moments with friends, family and the nation. BARB viewing data illustrates this. Included in the top 5 are the Euro 2016 final: Portugal vs. France (11.4 million) and programmes such as *The Great British Bake Off*

(14.6 million) and *Strictly Come Dancing: the final* (12.2 million).

These popular viewing experiences are still an important part of people's TV consumption. However, as more people take up the opportunities offered by new devices and services, they are increasingly becoming part of a wider mix, supplemented with a back-to-back viewing of the latest Netflix hit, time on the train catching up with the soaps on iPlayer and even, for some, broadcasting their own content via live-streaming.

1.5 The power of the online image

1.5.1 Introduction

In 2012 text messages were the most-used method of everyday communications with friends and family.[1]

But five years on, the landscape has shifted, with images becoming an increasingly central method of communication. There have been reports that emojis are now the fastest-growing language in the UK,[2] Snapchat is now used by more than 158 million people worldwide every day[3], and the rise of Instagram has paved the way for the creation of a whole new celebrity: the 'instafamous'.

Changes in the communications market have enabled this shift. Take-up of portable devices has risen dramatically (76% of people own a smartphone in 2017, up by 37 percentage points since 2012, while take-up of tablets is now at

58%, up by 49pp since 2012)[4]. At the same time, camera capability and performance is constantly improving, and increasing data allowances and further roll-out of fixed and mobile broadband makes it ever easier to access image-sharing social media sites. People can now share their latest selfie or photo of their cat with a click of a button, no matter where they are.

Ofcom commissioned research to investigate how images, both photos and videos, are being used. It also explores sharing and trust in the online world as well as understanding of the privacy rules that apply to it.

[1] Ofcom Ofcom Communications Market Report 2012
[2] http://www.bbc.co.uk/newsbeat/article/32793732/uks-fastest-growing-language-is-emoji
[3] http://uk.businessinsider.com/the-rise-of-snapchat-from-a-stanford-frat-house-to-a-3-billion-ipo-2017-1
[4] Ofcom Technology Tracker

1.5.2 Highlights from the research

- Holiday photos are the most popular types of images that people post and share, followed by pets/animals and landscapes/buildings. However, 18-24s are most likely to post and share pictures of themselves.

- Selfie-takers take six selfies, on average, before choosing the right one to post online, while almost half (44%) of respondents who say that selfies are the types of images they post and share most online, edit them before posting.

- People tend to be cynical about the photos that other people post; 74% of adults say that when they look at other people's photos/videos they 'often' or 'sometimes' think they show a 'rose-tinted' view of that person's life.'

- Only 16% of all respondents agree that it is easy to recognise if an image or video online is real or truthful, while 44% respondents disagree, and 10% of all respondents said they don't know.

- Around half of all respondents (51%) say that they check the source of photos and videos they see online before they decide whether they are trustworthy.

- Four in ten (42%) respondents say they would not know who to complain to if they saw misleading or untruthful content online.

- When asked if it is easy to delete photos or videos from the internet once they have been posted, 50% disagree. However, 17% say that it is easy, a further 17% neither agree nor disagree, and 16% say they do not know.

- Fifty-six per cent of parents say that they do not use social media to share, post or blog photos or videos of their children.

Methodology:

This section draws on two pieces of research: a new Ofcom-commissioned study carried out between 25 and 30 April 2017, using YouGov's online panel of 1,000 nationally representative adults aged 18+, across the UK. The second is Ofcom's Adults' Media Lives, a qualitative longitudinal study looking at participants' relationships with digital media over time. We also asked five of the Media Lives participants, aged between 20 and 62, about their experiences with posting and viewing online images. These responses are presented as quotes within the chapter. We have also drawn on other Ofcom research when relevant, and this is referenced in the footnotes.

1.5.3 The growth of social media and messaging apps in people's lives

Facebook is the most popular social media site, followed by WhatsApp and YouTube

The YouGov research shows that the most popular social media site to belong to, or use, is Facebook, with seven in ten (72%) UK adults claiming that they either use and/or have a profile on this site. This is followed by WhatsApp and YouTube (both at 42%), Twitter (35%), Instagram (23%) and LinkedIn (21%). Less than 20% of adults
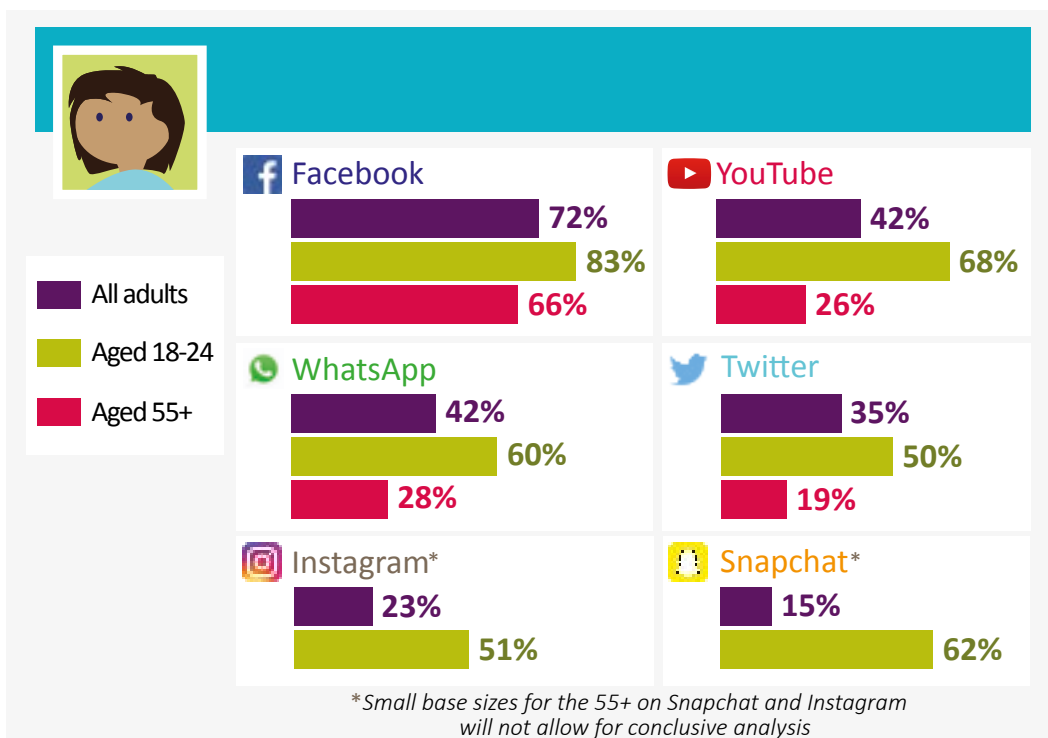
used and/or had a profile on all the other sites asked about.

Other research shows that use of many of these sites has increased rapidly. Ofcom's 2017 Adults' Media Literacy Report shows that between 2015 and 2016 there was growth in the use of WhatsApp (45% vs. 28%), Instagram (31% vs. 22%) and Snapchat (23% vs.

12%), while the use of Facebook and Twitter remained stable.[1]

These sites are particularly popular among younger users: more than half the 18-24 age group in the YouGov survey say that they belong to and/or use Snapchat (62%), WhatsApp (60%) and Instagram (51%).

Figure 1.18: Social media and messaging apps or sites people belong to/use

	All adults	Aged 18-24	Aged 55+
Facebook	72%	83%	66%
YouTube	42%	68%	26%
WhatsApp	42%	60%	28%
Twitter	35%	50%	19%
Instagram*	23%	51%	
Snapchat*	15%	62%	

Small base sizes for the 55+ on Snapchat and Instagram will not allow for conclusive analysis

Source: YouGov Reports: The Power of the Image Online 2017
Base: All respondents (1020 nationally representative adults aged 18+), 18-24 (115), 55+ (438)
Q2. Which if any, of the following online social media/messaging apps or sites do you personally belong to/use? Please choose all that apply
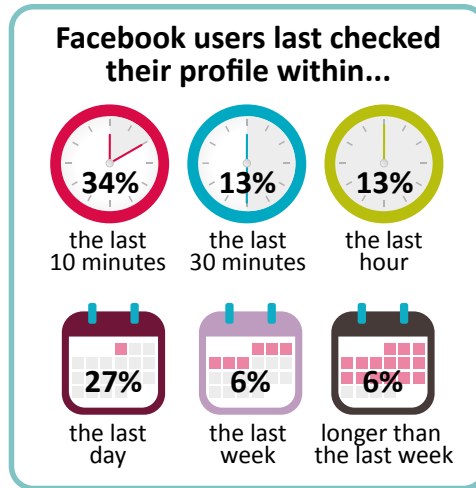
[1] https://www.ofcom.org.uk/__data/assets/pdf_file/0020/102755/adults-media-use-attitudes-2017.pdf

For many, social media is a constant companion

We asked respondents how often they checked their social media sites and apps. Facebook is the site that is checked most regularly, with 34% of users saying they had checked it within the last ten minutes. This was followed by WhatsApp (31%), Snapchat (26%) and Twitter (26%). .

Younger people tend to check their social media sites more frequently. For example, 31% of 25-34s who use WhatsApp said they had checked it in the last ten minutes (compared to 18% for all adults); and almost a quarter (24%) Instagram users aged 25-34 said they had checked it in the last ten minutes (14% for all adults). As respondents are online when they complete the survey, this may be more representative of their behaviour when online than at all times of the day.

Figure 1.19: **Frequency of checking Facebook site/app**

Facebook users last checked their profile within...

| 34% the last 10 minutes | 13% the last 30 minutes | 13% the last hour |
| 27% the last day | 6% the last week | 6% longer than the last week |

Source: YouGov Reports: The Power of the Image Online 2017
Base: All those who use Facebook (733)
Q4. When did you last check your social media account(s)?

1.5.4 Sharing images online

Six in ten respondents say they post images and videos online

Ofcom's Adults' Media Literacy survey shows that in 2016, nearly all (97%) smartphone users used their smartphone to take photos or videos, while 37% used them to edit photos or videos[1]. So it is unsurprising that six in ten (62%) of respondents in the YouGov survey say they post images and videos online.

While older people are more likely to post photos of their holidays, selfies are the top choice for younger age groups

The results show that people who do post and share images are often posting photos of similar things. People want to share what they see, where they are, what food they're eating, what a fun time they're having, and most importantly, for younger people, how good their life is.

[1] https://www.ofcom.org.uk/__data/assets/pdf_file/0020/102755/adults-media-use-attitudes-2017.pdf

"Generally, I I do [post pictures on Facebook] when on holiday, just so that friends and family back home can see what we're doing on holiday".

(Male, aged 42, Derbyshire)

When all respondents were asked what types of photos they posted and shared most often, holiday pictures came out on top. Almost a quarter (24%) said that they posted and shared pictures of their holiday, followed by photos of pets, and of landscapes and buildings. When we look at younger age groups, their priorities are a little different. 18-24 year olds are most likely to post and share pictures of themselves (34%), followed by landscapes and buildings (32%) and holidays (31%). People aged 55+ are more likely to post and share pictures of their holiday (22%), landscapes and buildings (17%) and their pets/animals (17%).

Figure 1.20: **What types of image do people post and share the most on social media?**
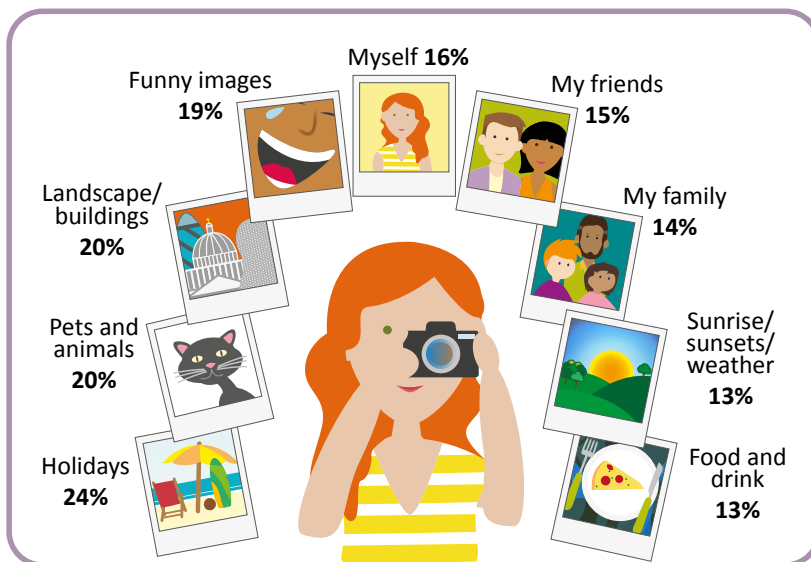
Source: YouGov Reports: The Power of the Image Online 2017
Base: All respondents (1020 nationally representative adults aged 18+)
Q6. And thinking about the images that you post and share online, which of the topics in the list below do you think you tend to post and share the most?

Qualitative research[1] shows that people post different kinds of images on different social media apps and sites, depending on the audience and the functionality of the service:

"...with Snapchat it's a little bit different because there's that kind of process of the image deleting. So I do find myself sending more kind of funny, like jokey, photos that I probably wouldn't put up on Facebook just because I've got family and stuff on there. But jokes with mates and that kind of thing that you can post on Snapchat – if you see something funny in the street or wherever, you take a photo of it – it might be something that my grandparents maybe wouldn't find appropriate or funny but mates from home would".

(Male, aged 20, Oxford)

[1] https://www.ofcom.org.uk/__data/assets/pdf_file/0021/102756/adults-media-lives-2016.pdf

1.5.5 Confidence in managing and interpreting images online

People's confidence in managing their images online, their ability to edit and manipulate these images, and their ability to comment on and make judgements about others' images are all key media literacy skills[1]; skills that enable people to use, understand and create media and communications. This section looks at how people manage content they post online, and how they protect themselves from any risks associated with using social media.

Four in ten 18-24s feel that it is important to receive approval for the photos and videos they post online

Overall, a fifth of all respondents (21%) say it is important to receive online approval, such as likes, shares and re-tweets, for photos and video they post. Twice as many 18-24 year olds (43%) as all adults feel that it is important to receive this kind of approval for their photos/videos, and twice as many women as men feel that it is *very* important (9% vs. 4%).

Seventy-one per cent of selfie posters say it is important to look their best in a selfie

Of the 16% of respondents who said that photos of themselves are the types of images they post and share the most online, three in ten (30%) do this at least once a month, 24% do it at least once a week, while some (4%) do it daily. Younger people are particularly likely to post regular selfies: 27%[2] of 18-24 year olds say they do this weekly, and 8%[3] every day.

Nearly half (47%) of selfie posters agreed that they feel pressure to look good online, and 71% agreed that it is important to look their best in a selfie that they post, increasing to 77% of 18-24s.[4] Women were more likely to agree with these statements: 60% agreed that they feel pressure to look good online,

compared to 32% of men, while 82% of women agreed that it is important to look your best in a selfie, compared to 58% of men.

This can often require taking multiple photos. Six selfies are taken, on average, before choosing the right one to post online. Younger people tend to take more; 20% of respondents aged 18-24 who post photos of themselves online say that they tend to take between six and ten pictures before choosing one to post. A further 10% say they take between 11 and 15 photos, while 7% take between 16 and 20.
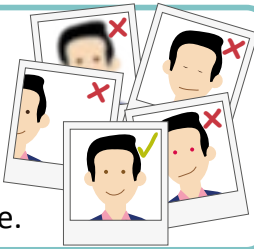
71% said it is important to look their best in a selfie.

"When I am posting a picture online I don't go to that much trouble. I probably take about three photographs, pick the best one because often my eyes are closed when I take the photograph so obviously I don't want to put that one up".

(Female, aged 55, London)

47% take 2-3 photos before choosing a picture to post online, while **21%** take 4-5 photos and **13%** take 6-10.

Six photos are taken, on average, before choosing just the right selfie to post online.

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[1] Note: small base size of 40 is indicative rather than conclusive
[2] Note: small base size of 40 is indicative rather than conclusive
[3] Note: small base size of 40 is indicative rather than conclusive

More than four in ten selfie posters say they edit their selfies before posting them

Almost half (44%) of respondents who say that selfies are the types of images they post and share most online, say they edit them before posting. Three in ten (29%) spend one to two minutes editing. However, for some people it can take longer; 17% say they spend longer than two minutes editing a photo. This could include things such as filtering options that services such as Instagram and Snapchat offer.

As well as being more likely to take multiple photos to get the perfect shot, younger people are also more likely to edit a photo before sharing it online, and likely to spend longer doing this. Over-35s who post selfies online are more likely to say that they do not spend any time editing their pictures.
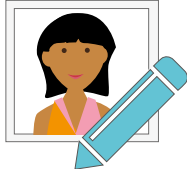
"If I see photographs of family I automatically assume that they are not photo-shopped. Having said that, if my young niece sends me a video or photograph within the internet, I have to assume because she's more used to the technology than most other people, then there is at least a possibility"

(Male, aged 62, London)

44% edit their selfies before posting.

**29%** spend 1-2 minutes editing.

17% spend longer than 2 minutes.

… despite almost half of selfie posters saying they edit their selfies, most think that the photos and videos they post represent them accurately

Most selfie-posters say that the photos and videos they post are accurate representations of themselves (61%). However, there is some ambivalence around this; 25% said they neither agree nor disagree, 9% disagree and 6% say don't know.

This ambivalence persists when we ask about the range of photos and videos that they share; 27% agree that 'make my life look more interesting than it is'. Women are particularly likely to agree with this – 32% agreed

with this statement, compared to 21% of men. Women are alsvho less likely to say that the selfies and videos they post represent them accurately (58% vs. 63%).

Figure 1.21: Attitudes to online presentation
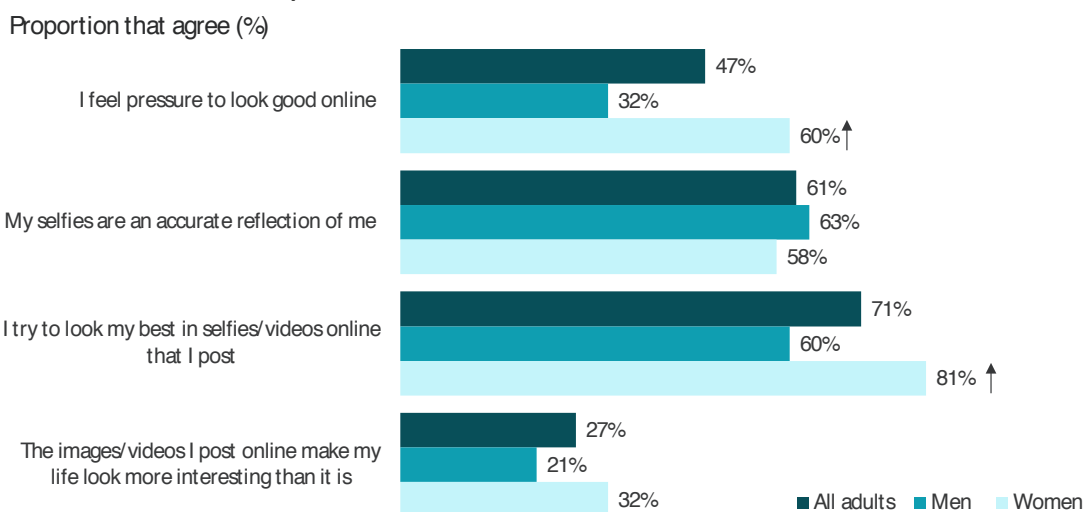
Proportion that agree (%)

Source: YouGov Reports: The Power of the Image Online 2017 **Base:** 162 adults who use social media/messaging apps or sites for sharing/posting photos of themselves online, Men (74), Women (89) **Q16.** To what extent, if at all, do you agree with the following statements? **Note:** Arrows indicate statistically significant differences between men and women

…most respondents believe that other people's photos and videos may not match up to reality

People tend to be cynical about the photos that other people post. Seven in ten (74%) adults say that when they look at other people's photos/videos they 'often' or 'sometimes' think they show a 'rose-tinted' view of that person's life. Younger people are more likely to feel this way; while

85% of 18-24s and 88% of 25-34s agree with this statement, only 65% of over-54s agree.

This can have a negative effect on people. Around a third (32%) of all respondents said that looking at other people's photos has 'often' or 'sometimes' left them feeling

that their life doesn't match up. This feeling is more prevalent among younger people; more than half (53%) of 18-24s say they feel this 'often' or 'sometimes', and 45% of 25-34 year olds say the same (compared to 29% of 45-54s and 17% of over-54s).

## For many, retaining control of their online image is important

Few people take selfies down once they have been posted online. When people do, the most common reason is because they do not like it or they have changed their mind.

As we have seen, people take a lot of care over the representation of themselves in the images they post. While it is harder to control what other people post, many will exert what control they can

by un-tagging themselves from others' posts (62% of selfie-posters said that they had ever untagged themselves from someone else's photo/video of them).

Figure 1.22: Reasons for taking a selfie down

Proportion of those who share/post photos of themselves online (%)
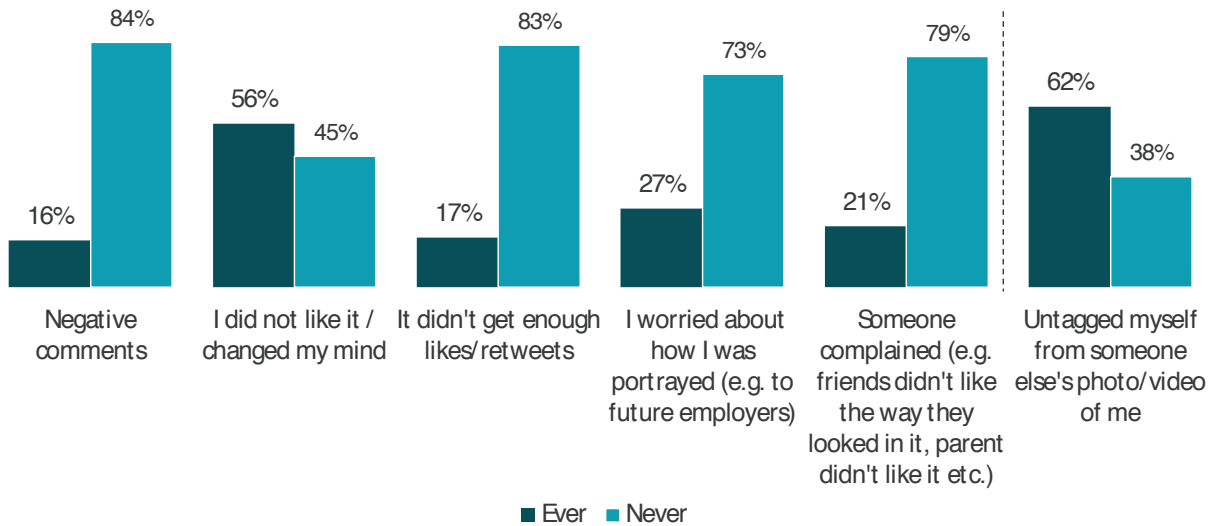
- Ever ■ Never

Source: YouGov Reports: The Power of the Image Online 2017
Base: 162 adults who use social media/messaging apps or sites for sharing/posting photos of themselves online
Q17. How often have you done any of the following?

32

1.5.6 Recognition of misleading / untruthful content

More than four in ten respondents say that it is not easy to recognise real/ truthful images/ videos online.

Only 16% of all respondents agreed that is easy to recognise if an online image or video is real or truthful, while 44% respondents disagreed, and 10% said they did not know. The younger age groups (18-24s and 25-34s) are more likely than all adults to be confident that they can recognise if an image or video

is real or truthful, while over-54s are less likely. Women are more likely to say they find it harder; 20% of men agreed that it was easy, compared to 12% of women.

While the younger age groups are more confident in their ability to tell whether an image or video is

real, they are also more likely to say that they know some content will be false but that it does not bother them. Around half of all respondents (51%) say that they check the source of photos and videos they see online before they decide whether it is trustworthy. The 25-34 age group are the most likely to do this.

Figure 1.23: **Trust in online images/videos**

Proportion of all adults (%)
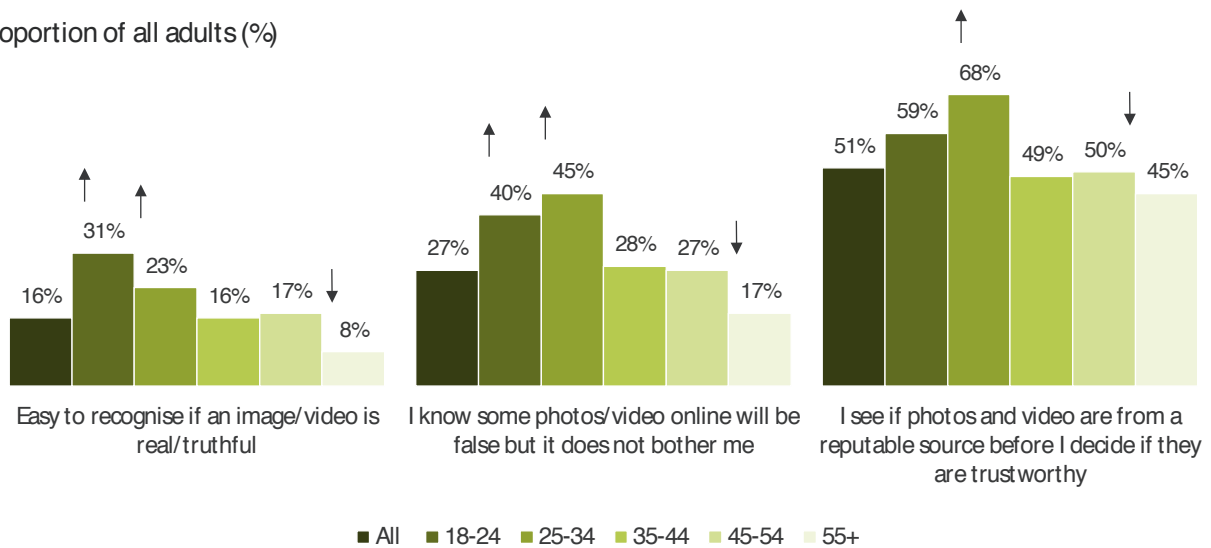
Source: YouGov Reports: The Power of the Image Online 2017
Base: All respondents (1020), 18-24 (115), 25-34 (127), 35-44 (171), 45-54 (169), 55+ (438)
Q24. To what extent, if at all, do you agree with the following statements regarding trusting images/video online?
Note: Arrows indicate statistically significant differences between all adults and different age groups

Four in ten would not know who to complain to if they saw something misleading or untruthful online

In line with our media literacy duties, we wanted to know whether people would be likely to complain to a social media site/ app if they saw misleading or untruthful content online. Thirty-six per cent of respondents say they would complain, while 44% would not. Younger people are less likely to complain; more than half (55%) of 18-24s say that they would be unlikely to complain, compared to 35% of respondents aged 55+. We also wanted to know whether people would know to whom they should complain. Four in ten (42%) respondents say they would not know who to complain to. This increases to 45% among those aged 55+.

Most social media networks and platforms allow users to report or complain about harmful or illegal content. This can be done via the settings or help functions on websites or apps.

1.5.7   Privacy implications of sharing photos and videos online

Half of respondents do not recognise the permanency of online images

Most people (62%) say that they usually accept terms and conditions without reading them on social media and messaging sites. This is more likely to be the case among younger age groups (83% of 18-24s and 88% of 25-34 year olds). Despite not reading terms and conditions, there is a recognition among some respondents that once a post is online, they no longer have control over it. When asked if it was easy to delete photos or videos from the internet once they have been posted, 50% disagreed. However, 17% said that it was easy, a further 17% neither agreed nor disagreed and 16% said they did not know.
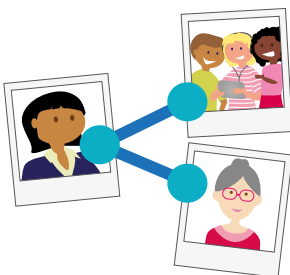
Younger people tend to feel more confident about using social media privacy settings to control who sees their photos and videos

More than half (56%) of respondents say that they are confident in using the settings on their social media accounts to control who sees the photos and videos they share. Younger people feel more confident in using the security settings on their social media apps (18-24, 81%; 25-34, 75%), and this confidence decreases with age.

Seven in ten people think that photos and images of people should not be shared without the permission of the people in the photo/video (70%) and three-quarters of respondents feel that personal photographs and video should only be shared with friends and followers (75%). Younger people tend to be more relaxed about who they share their online images with.

70% do not think that it is ok to share a photograph or video of other people without their permission .

36% strongly agree that personal photographs should only be shared with friends and followers

Figure 1.24: Opinions on privacy settings and sharing personal photos/videos
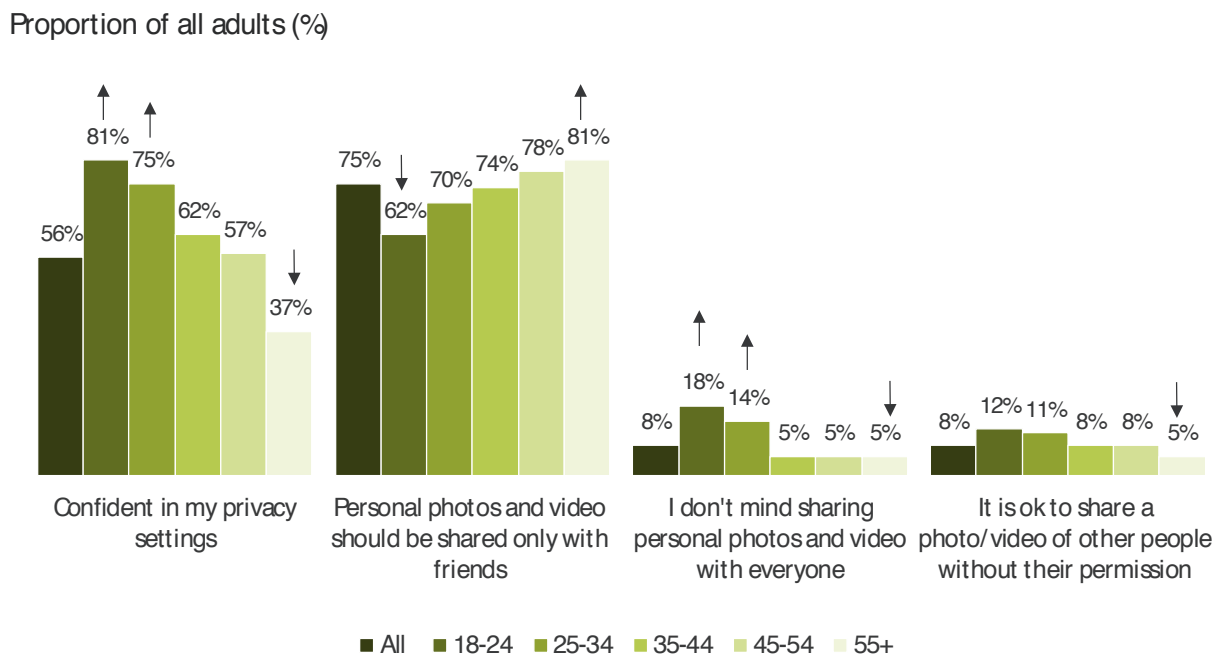
Proportion of all adults (%)

Source: YouGov Reports: The Power of the Image Online 2017
Base: All respondents (1020), 18-24 (115), 25-34 (127), 35-44 (171), 45-54 (169), 55+ (438)
Q8. To what extent, if at all, do you agree with the following statements?
Note: Arrows indicate statistically significant differences between all adults and difference age groups

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More than half of parents say that they do not share, post or blog about their children

Fifty-six per cent of parents say that they do not use social media to share, post or blog photos or videos of their children. Of those parents who do not do this, an overwhelming majority agreed that their children's lives should remain private (87%). Seven in ten (67%) agreed that it would be inappropriate to do this, and 38% said that their children would not want them to do it.

Of the parents who say they do share, post or blog photos or videos of their children online (42%), half (50%) say that they do this at least once a month. More than five in ten (52%) say that their children are happy for them to share photos or videos online, and more than eight in ten (84%) say that they only share photos or video that they know their children will be happy with. The majority say that they are careful about who has access to the photos or videos that they share of their children (85%), and

perhaps because of this, few agreed that they worry about what their children will think about the shared content when they are older (15%).

"the only other people I have in my pictures would be my mum and dad and my boys [sons]. They're not bothered whether I upload them to Facebook or not because they're not on Facebook. So the boys wouldn't know, which is bad isn't it!"

(Female, aged 43, Essex)

1.5.8 Emojis in communication

It's not just photos and videos people are using in communications, emojis are also popular

Emojis are small digital images or icons used to express an idea or emotion in electronic communication e.g. a smiley

More than two-thirds of respondents (79%) say that they use emojis, and 55% of users agree that they use them more than they used to (67% of 18-24s and 64% of 25-34s).

Just over a quarter of respondents (27%) say that they use them every day, while a further fifth (21%) of people use them on a weekly basis. Daily use rises to nearly six in ten (57%) of 18-24s

and 46% of 25-34s. Despite this increase in popularity, just 27% of respondents agree that they are important in their communications, while 47% of people disagree.

27% use emojis at least daily.

21% agree that emojis are important in their communications.

33% agree that emojis are quicker than writing

Capturing a public mood was top choice for using an image rather than words
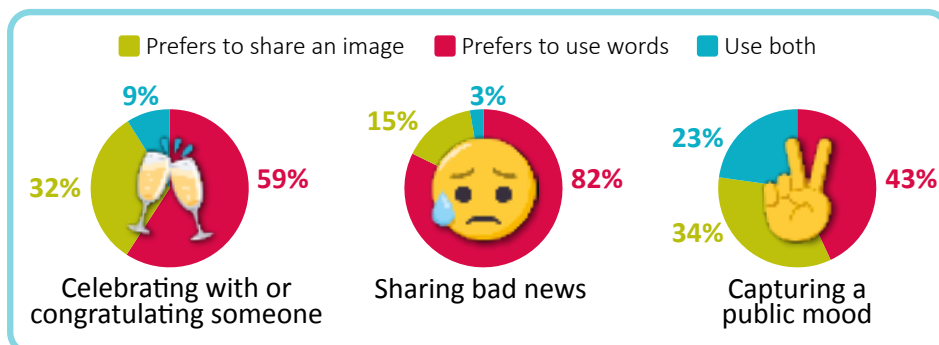
Eight in ten (80%) emoji users say they use for fun, while 54% use them because they are humorous. A similar proportion do so because they will make the recipient smile (53%) and four in ten (40%) because they are quicker than text. However, emojis can also bring the risk of misinterpretation; two in five (39%) agree that they find

them hard to understand. Over-54s are more likely to feel like this; 49% agree that it can be difficult.

Although the use of emojis is growing, there are some circumstances in which people say they prefer to use words than images. The majority say they prefer to use words when sharing bad

news (82%), when sympathising with somebody (81%) and when expressing an emotion (59%). Capturing a public mood was the top choice for using an image rather than words, with 23% saying they would use an image to do this.

Figure 1.25: People who prefer to use words, images or both for specific messages

Prefers to share an image   Prefers to use words   Use both

Celebrating with or congratulating someone — 9%, 32%, 59%

Sharing bad news — 3%, 15%, 82%

Capturing a public mood — 23%, 34%, 43%

2 Television and audio-visual content

2.1 Key market developments in TV and audio-visual

2.1.1   Sector overview

The reach of broadcast TV remained high in 2016, with 91% of the TV population watching TV at least once in a typical week in 2016.

The time spent watching broadcast TV continued to decline in 2016, although to a lesser extent than in previous years, decreasing by four minutes since 2015 to an average of 3 hours 32 minutes a day across all individuals aged 4+.

Within that overall decline, there is a widening gap between the viewing activities of the youngest and oldest audiences. The steepest decline in average viewing of broadcast TV was among children (4-15) and adults aged 16-24, while average viewing for over-64s increased slightly. Furthermore, new research from Ofcom found that 66% of teens use YouTube to watch TV programmes/films compared to 38% of all adults in 2017.

Despite the threat from online services, revenues for the broadcast TV industry increased by 1.0% in real terms to £13.8bn in 2016, with further revenue of £1.7bn generated by online AV services. Within this, net advertising revenue in the traditional TV sector exceeded £4bn for the second consecutive year. Despite fundamental changes in the advertising market over the last ten years, the television advertising market has remained very resilient due to its primacy in providing mass audiences.

Pay-TV platform operators (Sky UK, Virgin Media, BT TV and TalkTalk TV) increased their revenues by 2.8% in real terms in 2016 to £6.4bn, accounting for 46% of broadcast industry revenue. On-demand and streaming services such as Netflix, Amazon Prime and NOW TV are mainly complementary to these traditional pay-TV platforms: 74% of subscribers to on-demand and streaming services also have a pay-TV subscription.

Viewers have more choice than ever before, but the main public service broadcast channels (BBC One, BBC Two, ITV/STV/UTV, Channel 4 and Channel 5) continued to retain more than half of the total broadcast TV audience in 2016, maintaining their 51% share over the past four years. Including their portfolio channels, the PSB broadcasters accounted for more than two-thirds of viewing. The spend on UK-originated programming by the main five PSB channels was at its highest level since 2012, and more than half of the channels' output (52%) was first-run UK-originated content in 2016.

In the rest of section 2.1 below we look at two key market developments: the growth of on-demand and streaming services, and innovations in the TV advertising market.

Section 2.2 looks at the sector from an industry perspective. It outlines overall revenues and spend, provides an overview of the independent production sector and looks at developments in local TV.

Section 2.3 examines trends from the viewer's perspective. It looks at take-up by platform and examines how people are watching television, including through connected TVs and digital video recorders. It then looks at broadcast TV viewing, including by channel and how viewing varies by age group. It concludes by examining consumers' attitudes to television.

Figure 2.1: Industry metrics

UK television industry	2011	2012	2013	2014	2015	2016
Total broadcast TV industry revenue (£bn)	13.3	13.1	13.1	13.3	13.7	13.8
Proportion of revenue which is BBC income allocated to TV	21%	21%	20%	21%	19%	18%
Proportion of revenue generated by advertising	29%	28%	29%	29%	30%	30%
Proportion of revenue generated by subscriptions	44%	44%	46%	45%	45%	46%
Total online TV industry revenue (£bn)	0.3	0.4	0.6	0.9	1.3	1.7
Broadcaster share of total display advertising spend	31%	31%	31%	31%	30%	30%
Spend on first run originated output by main five PSB channels (£bn)	2.7	2.7	2.5	2.6	2.6	2.7
Spend on network content by UK broadcasters (£bn)	5.9	5.9	5.9	6.4	6.6	7.3
Multichannel take-up/TV homes	94%	96%	95%	93%	95%	96%
Minutes spent watching TV per day (per person aged 4+)	242	241	232	220	216	212
Share of the main five PSB channels in all homes	54	52	51	51	51	51

Source: Ofcom/broadcasters/Ampere Analysis/Advertising Association/Warc/BARB/. Note: Financial figures are expressed in real terms (adjusted for 2016 CPI prices). BBC income allocated to TV includes the proportion of the licence fee that goes to S4C. Broadcaster share as a proportion of total display advertising spend excludes direct mail and classified ads and is based on Advertising Association/Warc Expenditure Report. The AA/Warc data are net of discounts, and include agency commission, but excludes production costs. Spend on originations includes spend on nations and regions programming (not Welsh or Gaelic language programmes but some Irish language). TV viewing based on BARB analysis of viewing to scheduled TV programmes on TV sets up to seven days after first broadcast. Multichannel take-up/TV homes are from BARB's Establishment survey. Data for 2011 and 2012 refers to multichannel take-up. After DSO in October 2012, all homes were required to have digital TV. From 2013, data refers to the proportion of UK homes that had a working TV set as defined in BARB's Establishment Survey. Data refers to Q4 of each year. BARB changed the methodology for defining a TV set home from Q4 2015 and data comparisons to previous years should be treated with caution.

2.1.2 On-demand and streaming services

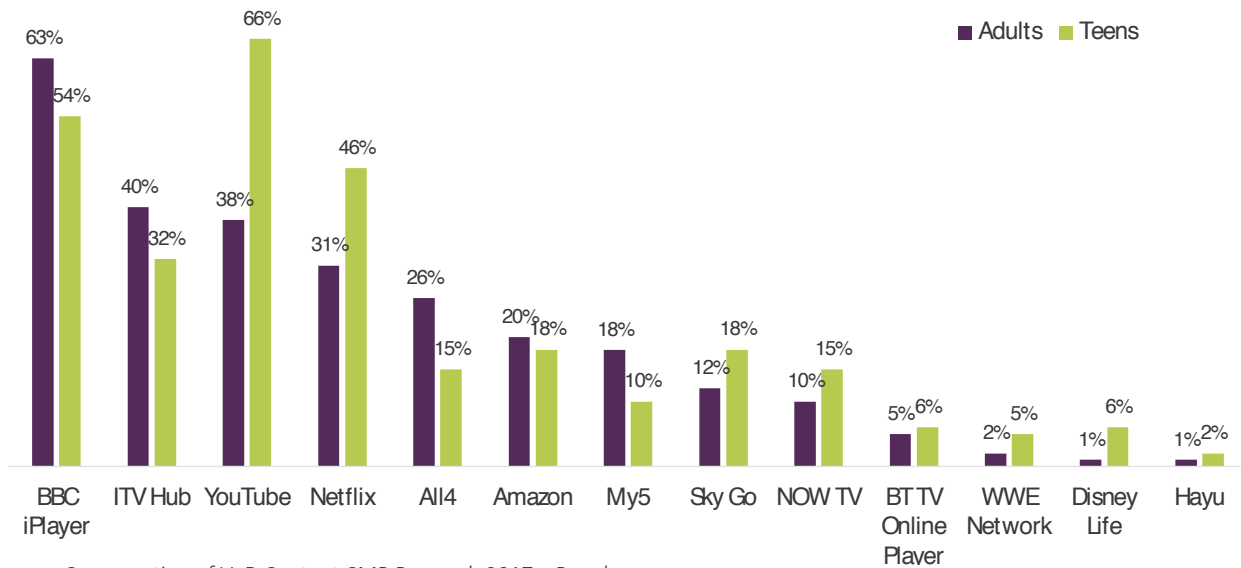### BBC iPlayer is the most popular on-demand/streaming service in the UK among adults

Ofcom research asked adults aged 16 and over, and teens aged 12-15, about the type of on-demand and streaming services they use to watch TV programmes and films in 2017. BBC iPlayer was the most popular service across all adults, with 63% of respondents saying

they use it. Among teens, YouTube was the most popular service, with 66% saying they used this to watch TV programmes and films compared to 54% using BBC iPlayer.

Of the services that require payment (excluding the licence-fee funded iPlayer), Netflix was the

most popular among both adults and teens. While 31% of adults claimed to use Netflix, nearly half of all teens said they used it (46%), making it the third most popular on-demand and streaming service overall among that age group.

Figure 2.2: Use of on-demand and streaming services to watch TV programmes/films

■ Adults ■ Teens

Service	Adults	Teens
BBC iPlayer	63%	54%
ITV Hub	40%	32%
YouTube	38%	66%
Netflix	31%	46%
All4	26%	15%
Amazon	20%	18%
My5	18%	10%
Sky Go	12%	18%
NOW TV	10%	15%
BT TV Online Player	5%	6%
WWE Network	2%	5%
Disney Life	1%	6%
Hayu	1%	2%

Source: Consumption of VoD Content CMR Research 2017 – Populus
Q5. Thinking about when you watch TV programmes/films, do you use any of the following?
**Base:** Adults (2356) Teens (505)

Amazon's subscription growth outpaced that of Netflix in 2016

The two leading pure subscription on-demand and streaming services in the UK continued to be Netflix and Amazon Prime in 2016. Netflix had nearly 6.0 million subscribers by the final quarter of the year, according to estimates from Ampere Analysis, with year-on-year growth of 17%.

Amazon's video service is rolled up into the Amazon Prime product which offers free next-day delivery on eligible purchases. Amazon more than doubled its subscription base over 2016, to an estimated 3.8 million subscribers to Amazon Prime by the end of the year.

Figure 2.3: On-demand/streaming service subscription numbers: 2014-2016 (000s)

■ 2014 ■ 2015 ■ 2016

	2014	2015	2016
Netflix	3,631	5,111	5,995
Amazon Prime	1,052	1,673	3,841
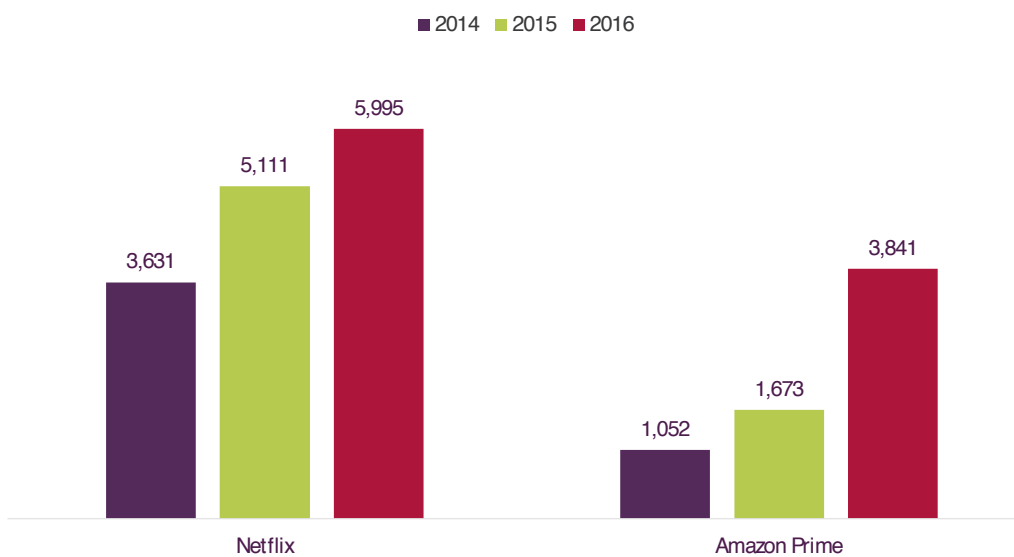
Source: Ampere Analysis
**Note:** Data points are from Q4 each year.

Many people subscribe to more than one on-demand /streaming service

By the end of 2016, four in ten users of Netflix, Amazon Prime and NOW TV had access to more than one of these services. The most popular combination was Netflix and Amazon Prime, with 26% of users using both services in the final quarter of 2016.

Eight per cent of all users of Netflix, Amazon Prime and NOW TV had access to all three services in the final three months of 2016.

Figure 2.4: Subscription on-demand and streaming services overlap
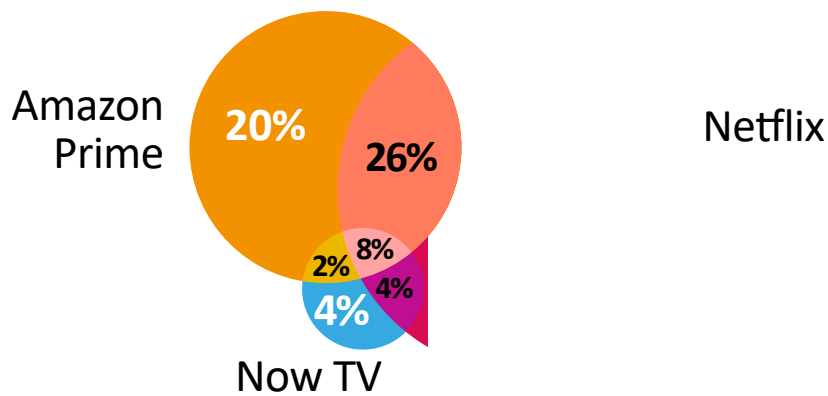
Source: GfK SVoD Tracker, Q4 2016 October-December 2016
Notes: EW1: Reasons for signing up for/ using service
Base: Netflix users (n=1670 (138 triallists)), Amazon Prime Video users (n=1255 (156 triallists)), NOW TV users (n=423 (80 triallists))
Note: Users include those who either subscribe to or are trialling each service and use it at least once a fortnight.

2.1.3 Behaviours and attitudes of on-demand and streaming service users

Free trials and promotional periods are key subscription drivers

GfK's SVoD tracker looks at the behaviours and attitudes of Netflix and Amazon Prime users as well as those of the pay-TV service NOW TV.

The most popular reason reported by Netflix and NOW TV users for signing up to these services was

to take advantage of a free trial or promotional offer (35% and 38% of respondents respectively).

As mentioned above, Amazon's video service is bundled with its Amazon Prime product which offers free next-day delivery among other

services; this appears to be a key driver of take-up. In the last quarter of 2016, 66% of users said one of the reasons they signed-up/used the service was to obtain free shipping.

Figure 2.5: Selected reasons for signing-up/ using Netflix, Amazon Prime and NOW TV
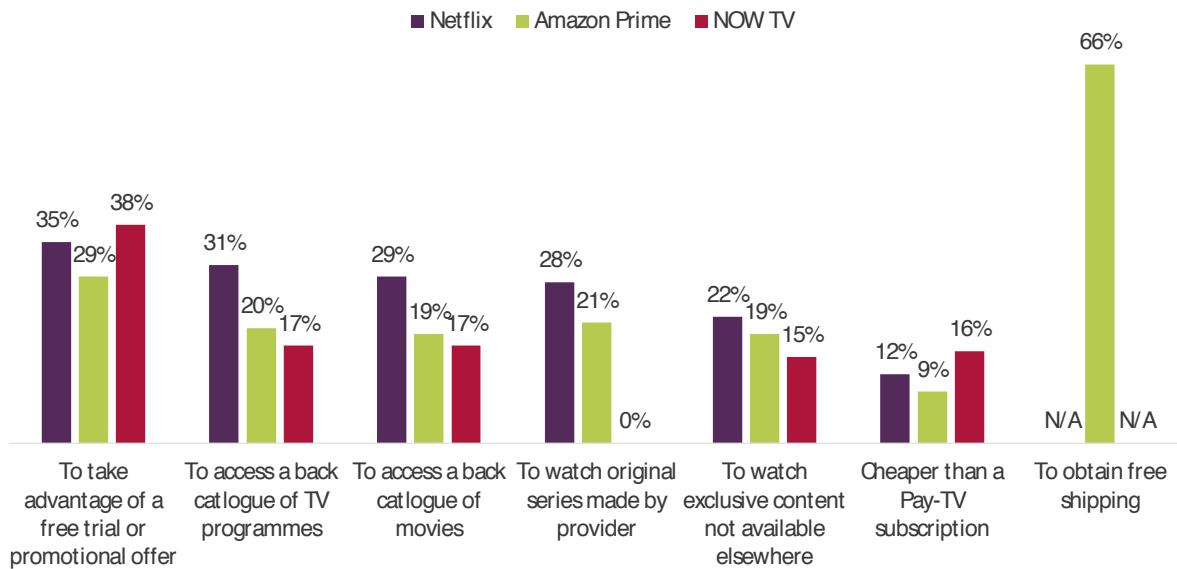
Source: GfK SVoD Tracker, Q4 2016 October-December 2016
Notes: EW1: Reasons for signing up for/ using service
Base: Netflix users (n=1670 (138 triallists)), Amazon Prime Video users (n=1255 (156 triallists)), NOW TV users (n=423 (80 triallists))
Note: Users include those who either subscribe to or are trialling each service and use it at least once a fortnight.

Nearly three-quarters of Netflix, Amazon Prime and NOW TV users also have a traditional pay-TV subscription

There has been very little movement in the proportion of Netflix, Amazon Prime and NOW TV users who also take a traditional pay-TV service (e.g. services offered by Sky, Virgin Media and BT that are provided through a set-top box). The 74% reported at the end of 2016 was only slightly down on 75%, 12 months earlier.

At 71% at the end of 2016, fewer NOW TV users had a traditional pay-TV subscription than did Netflix and Amazon users (both at 75%). However this was a slight increase on the 69% reported at the end of 2015 and could be a sign that some users are taking NOW TV to make up for a reduced package through their traditional pay-TV service.

For the most part, consumers do not sign up to these services because they are cheaper than a traditional pay-TV service. As Figure 2.5 shows, between 9% and 12% of Netflix and Amazon users cite cost saving as a reason, although this is higher among NOW TV users at 16%. These findings suggest that such services are largely complementary to traditional pay-TV services rather than a replacement for them.

Figure 2.6: Proportion of online TV service users with a traditional pay-TV service
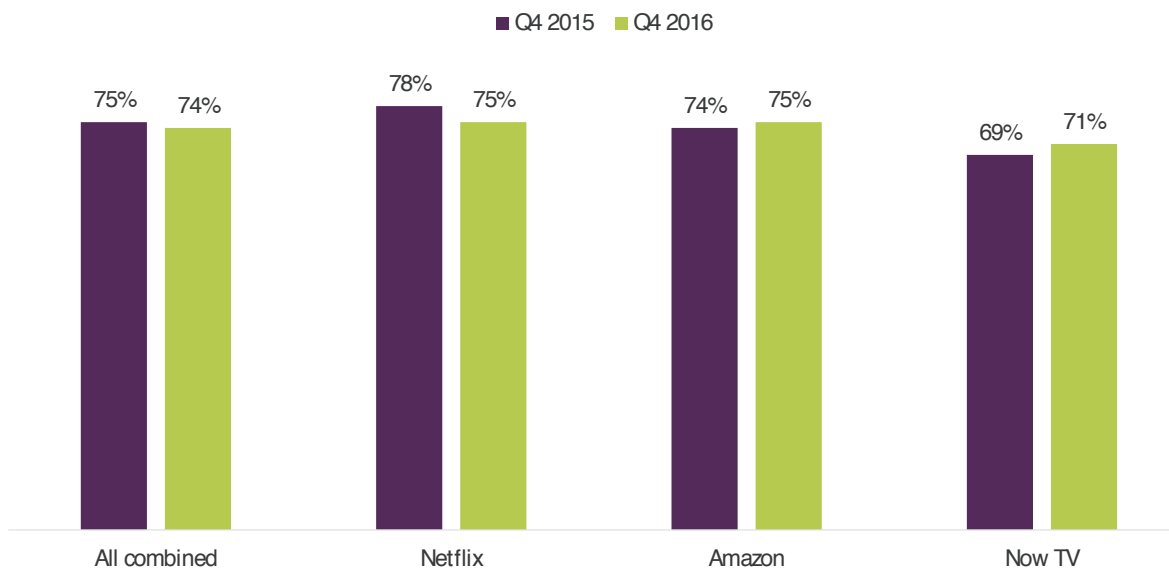
Source: GfK SVoD Tracker, Q4 2016 October-December 2016
P7: Services currently have.
Base: Netflix users (n=1670 (138 triallists)), Amazon Prime Video users (n=1255 (156 triallists)), NOW TV users (n=423 (80 triallists))
Note: Users include those who either subscribe to or are trialling each service and use it at least once a fortnight.

In the UK, seven of the top ten most-viewed shows across these services in the final quarter of 2016 were Netflix and Amazon originals

Netflix and Amazon have both invested in an increasing number of high-profile productions in recent years, around which they have focused much of their marketing. These typically use high-profile talent and have high production values, and as such are among the most expensive television shows

being produced. This strategy has been successful in attracting audiences: the top four most-viewed shows by Netflix, Amazon Prime and NOW TV users in the final three months of 2016 in the UK were all original productions exclusive to either Netflix or Amazon.

Orange is the New Black, Marvel's Luke Cage and Narcos proved popular on Netflix, while Amazon's The Grand Tour was the third most-watched show over this time period, despite Amazon having considerably fewer users than Netflix

Figure 2.7: Top ten television programmes viewed on subscription on-demand and streaming services in the UK (Q4 2016)

	Rank	Service	Commission Type
Orange is the New Black	1	Netflix	Original
Marvel's Luke Cage	2	Netflix	Original
The Grand Tour	3	Amazon	Original
Narcos	4	Netflix	Original
Breaking Bad	5	Netflix	Acquisition
Stranger Things	6	Netflix	Original
The Crown	7	Netflix	Original
The Man in the High Castle	8	Amazon	Original
Lucifer	9	Amazon	Acquisition
American Horror Story	10	Netflix	Acquisition

Source: GfK SVoD Tracker, Q4 2016 October-December 2016
Notes: All users of Netlfix, Amazon Prime and NOW TV at least once a fortnight. Rankings are based on total minutes consumed.

2.1.4 Innovations in the TV advertising market

The current advertising landscape

The advertising market has undergone a fundamental change in the last decade. The fragmentation of media consumption across platforms, and the pluralisation of devices, has challenged the viability of the traditional media advertising business model. Online advertising, with its wide, albeit patchy reach, 'infinite' inventory and low prices has tried to lure advertisers away from 'old' media. And it has in part succeeded. Print budgets have consistently migrated away from newspapers and magazines to online display, search, and classified formats, due to falling print circulation levels[1] and the relatively high costs of placing print advertisements. However, the decline of print is not the only driver of the rise of online advertising budgets. The large online platforms have also swept up the 'long tail'

of small businesses which had not previously bought advertising, and have benefited from the rise in the mobile economy (particularly through the promotion of mobile app-install ads). According to GroupM, a subsidiary of advertising agency WPP, 70% of online advertising revenues come from small and local businesses, many of which only sell digital products[2]. In Q1 2017, Facebook reported five million active advertisers, yielding revenue per advertiser of $1,571 (£1,162), globally. The company claimed that its top 100 advertisers represented less than a quarter of the company's ad revenue in Q4 2016, indicating Facebook's reliance on smaller businesses.

Figure 2.8 below shows how advertising spend has changed in the UK over the last decade. Some of the changes are cyclical;

mature advertising markets such as that of the UK move in cycles, highly correlated with economic indicators like GDP growth, private consumption and industrial production in the long-term and consumer spending and the corporate profit levels of major consumer facing brands, in the short to mid-term. The 2009 economic recession shrank the UK advertising market by 14% in real terms. However, since 2011 the overall advertising market has grown at a compound annual growth rate (CAGR) of 3% a year in real terms (2011-2016), in line with, and sometimes above, GDP increases.

There have also been structural changes in the UK advertising market in the last decade. Online has grown, while print advertising has declined.

Figure 2.8: **UK advertising expenditure (£m)**
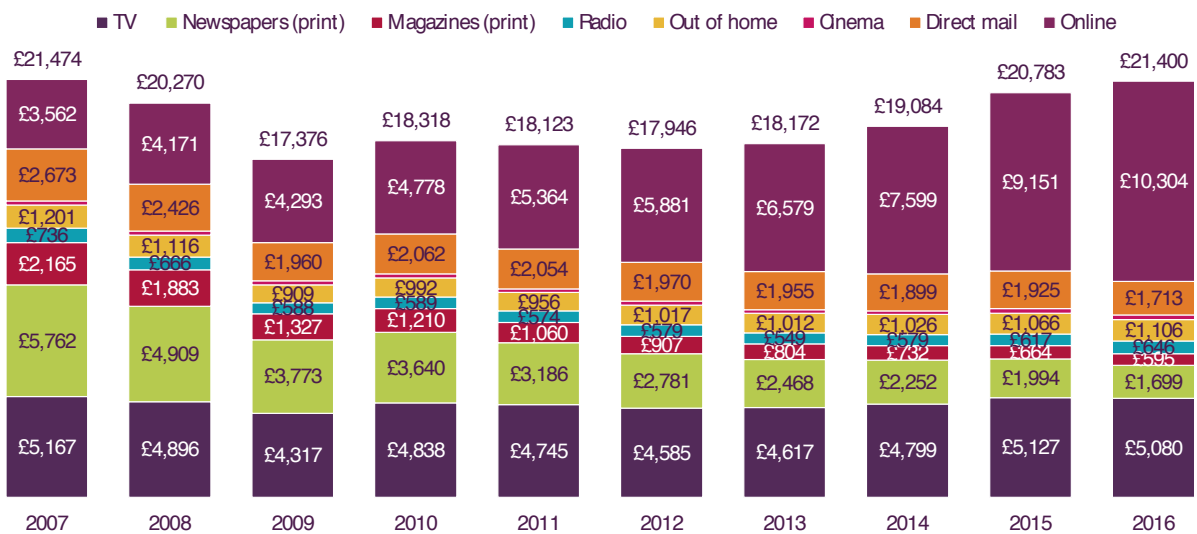
Source: AA/WARC Expenditure Report for TV, newspapers, magazines, radio, out of home, cinema, and direct mail; IAB UK for online advertising (search, display excluding video, video and other). **Notes:** all digital ad expenditure (e.g. broadcaster video advertising and publisher display and classifieds) has been removed from TV, newspapers and magazines to avoid double-counting between these categories and online. TV includes spot advertising, sponsorship, and placement revenue. Figures expressed in real terms (adjusted for 2016 CPI prices).

[1] See circulation figures in "News Consumption in the UK: 2016", https://www.ofcom.org.uk/__data/assets/pdf_file/0017/103625/news-consumption-uk-2016.pdf

[2] http://www.wpp.com/wpp/press/2017/may/01/interaction-2017-digital-advertising-investment-will-surpass-tv-in-five-more-countries/

During this time, TV has remained resilient in terms of revenue. It was overtaken as the largest advertising medium by online in 2011, following the global economic recession, and has been stable ever since. No single online advertising format surpassed TV spot advertising until 2016 (when search overtook TV). However, comparing television to online can be misleading. Television employs a consistent, standardised advertising format (most advertisments are 15-, 30- or 60-second audiovisual spots) whereas online comprises a plethora

of formats including banners, rich media, search, classified, video, pop-ups and others. Much of the growth in online has been driven by the pay-per-click model of search, which is a direct-response format, focused on driving immediate actions (sales, clicks, views etc.) rather than creating brand awareness. Comparing TV to search and other performance-based online ad formats is therefore not pertinent as they are derived from two separate marketing budgets: brand awareness and direct marketing.

Online video, which is the most similar online advertising format for TV advertisers and is sometimes used to repurpose and repackage 30-second TV ad spots (e.g. adapt a TV advertising spot into a shorter desktop or mobile-friendly format) is still relatively small, at 19% of the size of TV spot advertising in 2016. However, online video is also often used as a direct-response format and therefore cannot be compared and may not directly compete with TV advertising budgets.

Figure 2.9: UK TV and online advertising expenditure (£m)
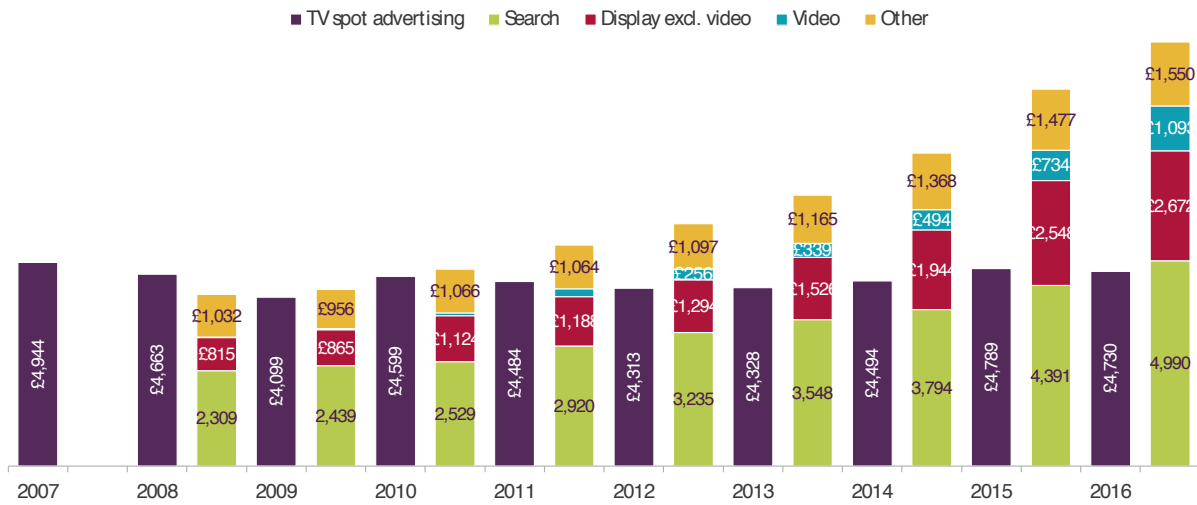
Source: AA/WARC Expenditure Report for TV spot advertising; IAB UK for online advertising (search, display excluding video, video and other).
Notes: TV spot advertising includes all expenditure generated from TV advertising spots (typically 30 or 60 second spots). This figure excludes TV sponsorship, product placement and other forms of TV revenue. Search advertising is a form of advertising that seeks to promote websites by increasing their visibility in search engine results pages. Display advertising is a type of online advertising that comes in several forms including banner ads, rich media and more. Video advertising is the digital recording of a physical event that have been encoded into a digital video format. Other includes all online ad formats which are not covered in search, display and video such as online classifieds and directories. Figures expressed in real terms (adjusted for 2016 CPI prices).

Potential future threats to TV advertising

The TV advertising model has faced a number of obstacles in recent years.

The increasing importance of a clearly measurable return on investment: following the global recession of 2009, there has been a shift in the way some brands are run; advertisers have become more prudent with their expenses, and require clear return on investment (ROI) metrics to justify their spend. TV advertising remains resilient, but had had to work harder to justify its prowess. Thinkbox, the marketing body for UK TV companies, released a study in 2014, quantifying the ROI in monetary terms of TV advertising compared to other media, to show the value of television campaigns to advertisers[1].

Declining linear audiences: declining linear TV audiences in other markets such as the Nordic countries have challenged the long-term sustainability of the TV advertising model. In the UK so far, TV audiences have been stable or slightly declining, mainly driven by falls in the youngest demographics. However, audience falls do not always translate into declines in revenue, as audience is only one of three key variables feeding into advertising revenue. TV advertising revenue is a function of:

- reach (audience as measured by BARB and referenced throughout this report);
- volume (the length and number advertisements); and
- price (the value of each advertisement).

Migration of younger demographics: BARB data show (see section 1.3 of this chapter, TV and the audiovisual consumer) that 16-24 year-olds are watching increasingly less linear broadcast TV, turning instead to online and mobile platforms (subscription-based services like Netflix, Amazon Video and Disney Life, or ad-funded platforms like YouTube, Facebook and Snapchat). This has been a cause for concern for brands, which want to reach younger audiences, but are finding it harder to reach them due to platform fragmentation and the lack of availability of mass advertising inventory (e.g. on subscription-based services which are ad-free).

The rise of data-driven advertising technologies and the re-architecture of the advertising ecosystem: the advertising ecosystem used to be represented in terms of adual market in which the demand side (advertisers and agencies) bought advertising from the supply side (sales houses and broadcasters/publishers). With the proliferation of data in the digital space (through log-in data from companies like Facebook, Google and Apple and cookie-collected third-party data), the ecosystem is evolving towards a more complex networked system of trade with more intermediaries. Broadcasters have to adapt and innovate in order to benefit from new technologies, protect revenues and compete with new media firms.

Figure 2.10: Evolution of advertising ecosystem

[1] https://www.thinkbox.tv/Research/Thinkbox-research/Payback-4-pathways-to-profit
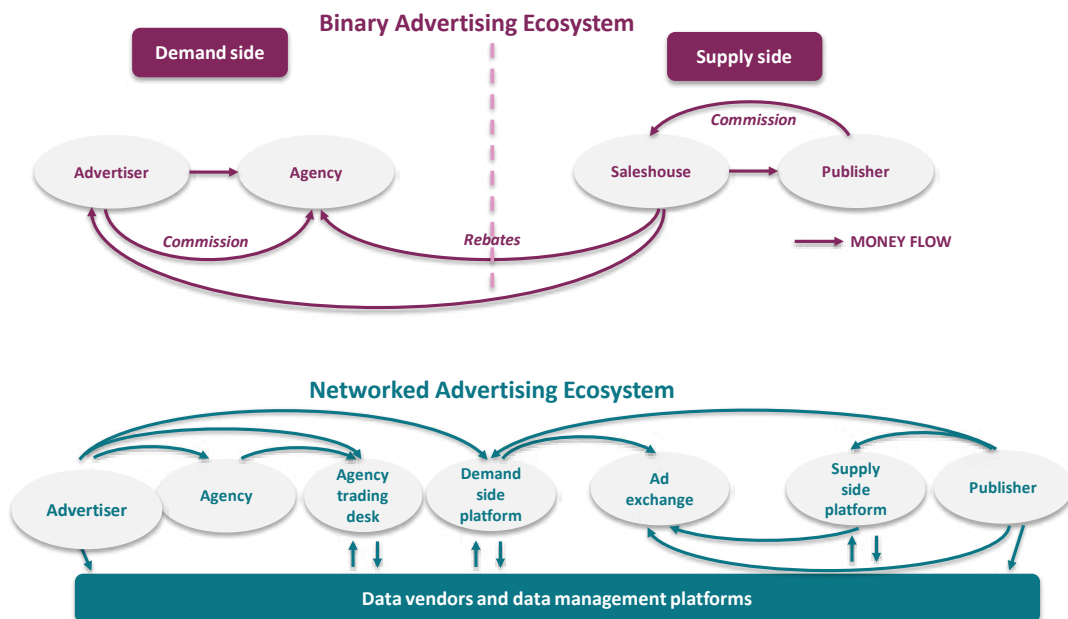
TV remains the medium of choice for large brand advertisers

Despite some of the challenges outlined above, the TV advertising model remains in a strong position for brand advertising, as it continues to deliver mass audiences, high-impact advertisements with consistent measurement and established sales structures.

Primacy in providing mass audiences with consitent measurement: TV remains the preferred medium for mass marketing due to its large, verified audience: although advertisers are pushing for more efficiency in their advertising spend, their main concern continues to be advertising effectiveness. TV can offer advertisers mass reach at a single point in time which the online medium is still unable to achieve. As mentioned above, in the TV market, advertisers and broadcasters agree on the BARB measurement system (although BARB is evolving and innovating using agreed standards as viewing on different devices grows through the BARB Project Dovetail[1]) and are happy to trade against it

as a common currency. This does not yet exist to the same degree in the online advertising space, which makes it more difficult for agencies to understand and communicate to advertisers the value of one online publisher/platform against another.

High-impact advertisements: TV provides advertisers with high production value video advertising formats, which allows them to showcase their products, particularly when introducing a new one to the market. The production value of TV advertisements continues to outpace that of online, which still relies primarily on low-cost desktop and mobile display advertising formats.

Established sales structures: agencies are incentivised to continue buying TV for two reasons. Firstly, it is established and well-understood and hence quite an easy choice for agency executives who often have targets with limited flexibility. Secondly, due to their long-established relationships, they can get considerable discounts

from TV ad sales houses, which are beneficial for their clients and their own businesses. However due to the high degree of auditing in TV advertising, it is difficult to achieve high growth in agency margins. The lack of transparency and consistency in price setting in the digital advertising value chain has therefore given agencies motivation to move some TV ad spend to online channels, Conversely, online channels can be quite challenging for agencies to navigate. The pluralisation of digital advertising intermediaries means that they often do not get the same value for money online and their revenue can be dispersed and shared among numerous, new players. This can make agencies inclined to revert to TV.to navigate. The pluralisation of digital advertising intermediaries means that they often do not get the same value for money online and their revenue can be dispersed and shared among numerous, new players. This can make agencies inclined to revert to TV.

[1] http://www.barb.co.uk/project-dovetail/

Online advertising faces a number of challenges in attracting TV ad spend:

So far, the strong growth in online advertising expenditure has not posed any significant threats to the traditional TV advertising model, and has surged independently of TV advertising budgets. There are a few challenges which have tended to separate online from the TV advertising space:

Inconsistent, non-transparent and often inaccurate measurement:
In digital advertising, unlike TV, there are many measurement tools, employing different methods, often covering some but not all relevant market players. Tools can under-represent the mobile space, which is increasingly significant, and may not agree on the terms and definitions of viewability of an ad. Furthermore, many of the large online platforms have their own proprietary measurement systems, which they use to evaluate advertising campaigns with a varying degree of accuracy. For example, in 2016, it was revealed that Facebook had over-estimated average viewing time for its video advertisments by accounting for video advertisments viewed for more than three seconds. The fragmentation of measurement across companies causes challenges in comparing a Facebook video ad to a YouTube video ad or a Snapchat video ad, which are different in format, context, and length, but vying for the same budgets. Online ad measurement can be inconsistent, flawed, and with caveats, making it difficult for advertisers and agencies to compile a unified picture of the landscape and compare the price of one ad against the other, which may in turn hinders further investment.

Brand safety: the most important element of an advertising campaign for a brand is reaching the intended audience. However, the context within which the ad is placed also matters. At the end of 2016, numerous large brands withdrew their advertising spend from Google's YouTube platform in protest at their advertisments appearing against 'extremist' content without their permission. Online is not subject to the same degree of content regulation as TV, posing a risk for advertisers. They invest large budgets to build their brand equity, a positive consumer perception of their product or service, which takes time to build, but can be lost very easily. The guarantee that an ad will appear against brand-appropriate content is much weaker in the digital space compared to TV.

Ad fraud: although online claims to offer an actual rather than panel audience, it is heavily plagued with fraudulent, bot-generated traffic. The US Association of National Advertisers estimated that $7.2bn was lost globally due to ad fraud in 2016[1]. This remains a substantial concern for advertisers, particularly as they try to become more efficient in how they allocate ad spend.

Ad blocking: another source of trepidation for advertisers buying online inventory is the advent of ad blocking, the use of software which hides or stops the loading of adverts. According to a Pagefair report[2], the global number of devices that used ad blockers amounted to 615 million in 2016, and UK ad block penetration per person online is 16% (or 11 million devices), mostly accounted for by ad blockers installed on a desktop. The main motivations for using ad blockers are individuals' irritation with interruptive formats and concern about security of viruses and malware. This may have made some advertisers apprehensive about buying online formats because of the negative predisposition of audiences toward online ads, and fear that their ads will never be seen. However, unlike ad fraud, detecting ad blocking software is more straightforward, and many broadcasters and publishers have adopted the policy of preventing users from viewing content with an active ad blocker (for example if an ad blocker is activated, ITV Hub will not allow a user to consume ITV content, until it has been switched off or removed). Ad blockers can be deployed in two ways: through user-installed apps which act a plug-ins for browsers (e.g. Ghostery or Adblock Plus) or publisher-implemented (e.g. Three's proposed implementation of a network-wide ad blocker, which did not come to fruition in the UK, but has been launched in other markets, e.g. by Digicel in the Caribbean).

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[1] The Bot baseline: fraud in digital advertising, 19 January, 2016, http://www.ana.net/content/show/id/botfraud-2016

[2] The state of the blocked web, 2017 Global Adblock Report, February 2017, https://pagefair.com/downloads/2017/01/PageFair-2017-Adblock-Report.pdf

Innovation in TV: addressable and programmatic advertising

The continued value and prevalence of the traditional TV advertising model does not, however, mean that TV companies have focused solely on sticking to tried and tested ways of selling and delivering advertising. Broadcasters and TV companies have also innovated in the advertising products and technologies that they offer their clients. To compete with and capture online budgets, TV companies have introduced new advertising formats and technologies.

Addressable TV advertising is the use of audience data (often from the set-top box) to serve different ads to different households (or different people in the same household) against the same content. An example of this format is Sky AdSmart, which uses customer billing and geographic data to tailor advertisements to a specific viewer. This has mostly been used by luxury car companies to target affluent individuals and customise the ads to include information about the dealership nearest to each viewer. A viewer in York will

see a different ad from a viewer in Cardiff, from the same advertiser. According to Sky, the majority of the budgets which go through Sky AdSmart are new to Sky, usually cannibalising digital budgets, and hence incremental to Sky's traditional TV advertising revenue.

Beyond addressable, and often following from it, is **programmatic TV advertising**; the use of data to algorithmically create new audience segments and automate their sale in both the planning and execution stage of a campaign. For example, in 2016, through programmatic technology, a US advertiser working with Dish TV chose to target left-handed nurses, a demographic not offered by traditional measurement systems, and bought across many programmes rather than against just one. Programmatic advertising can be executed in video on demand, AVOD (e.g. Channel 4's All4 or ITV's ITVHub) or linear TV (not yet implemented in the UK, but launched by Dish TV and DirecTV in the US and Corus in Canada, in 2016). Similarly, to

addressable advertising, this targets digital budgets and aims to help broadcasters get rid of unsold inventory (replacing the function of an ad network) and increase the price of their digital video and remnant TV advertisements.

Addressable and programmatic are not substitutes for mass audience advertising, but can be a useful tool for broadcasters to increase their revenue in particular slots and during particular times of day, which are not in high demand.

They are still very small portions of TV companies' total revenues, but are increasingly significant and growing rapidly. As broadcasters look for new avenues for growth, they will continue to expand their digital offerings and invest in addressable and programmatic advertising. The challenge for them will be deciding which advertising technology companies to partner with, and how to differentiate between them in an increasingly crowded space.

2.2 The TV and audio-visual industries

This section looks at a range of metrics from the broadcast television industry, including revenues, content spend and broadcast hours.

It also provides commentary on consumer choice in the pay-TV market. It then goes on to provide an update on recent developments in the local TV sector.

2.2.1 Overview of TV industry revenue

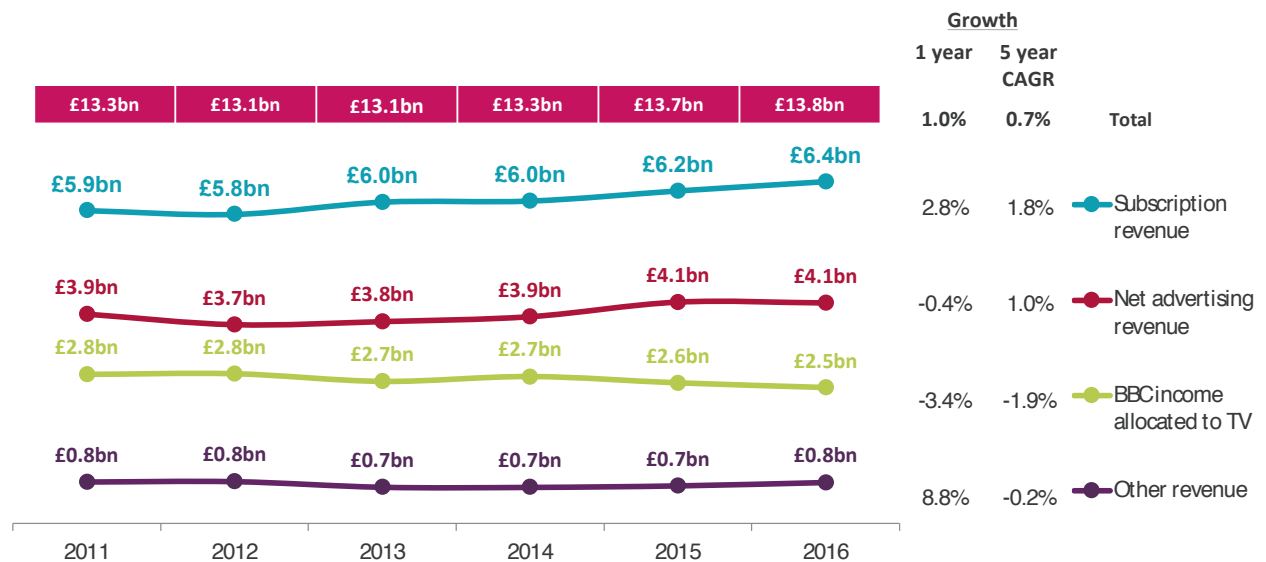### The UK TV industry grew by 1% in real terms in 2016 and was worth £13.8bn

The UK broadcast television industry generated £13.8bn in revenue during 2016, a £0.1bn (1.0%) rise on 2015 in real terms. This was primarily driven by an increase in pay-TV subscription revenue, up by 2.8% year on year to reach £6.4bn. In recent years, there has been a small rise in the

average revenue per unit (ARPU) in television subscription data Ofcom has collected, which may partially explain this rise. Net advertising revenue remained flat (analysed in more detail in section1.1.4).

Ofcom estimates that the BBC allocated £2.5bn to television in 2016, a drop of 3.4% on the

previous year in real terms. This is a continuation of the slight decline in BBC television revenue in real terms over the past five years. Revenue from other sources such as TV shopping, sponsorship and interactive services was up by 8.8% in real terms year on year at £0.8bn, the same as it was in 2011.

Figure 2.11: Total broadcast TV industry revenue, by source

	Growth		
	1 year	5 year CAGR	
	1.0%	0.7%	**Total**
	2.8%	1.8%	Subscription revenue
	-0.4%	1.0%	Net advertising revenue
	-3.4%	-1.9%	BBC income allocated to TV
	8.8%	-0.2%	Other revenue

2011	2012	2013	2014	2015	2016
£13.3bn	£13.1bn	£13.1bn	£13.3bn	£13.7bn	£13.8bn
£5.9bn	£5.8bn	£6.0bn	£6.0bn	£6.2bn	£6.4bn
£3.9bn	£3.7bn	£3.8bn	£3.9bn	£4.1bn	£4.1bn
£2.8bn	£2.8bn	£2.7bn	£2.7bn	£2.6bn	£2.5bn
£0.8bn	£0.8bn	£0.7bn	£0.7bn	£0.7bn	£0.8bn

Source: Ofcom/broadcasters.
Note: Figures expressed in real terms (2016 prices) and replace previous Ofcom revenue data for TV industry, owing to restatements and improvements in methodologies. 'Subscription revenue' includes Ofcom's estimates of Sky UK, Virgin Media, BT TV and TalkTalk subscriber revenue as well as, in previous years, that of ESPN and Top Up TV in the UK (Republic of Ireland revenue is excluded). It also excludes revenue generated by broadband and telephony. BBC income allocated to TV includes money allocated to S4C as well as BBC television broadcasting. 'Other' includes TV shopping, sponsorship, interactive (including premium-rate telephony services), programme sales and S4C's grant from the DCMS. Totals may not equal the sum of the components due to rounding.

## Pay-TV platform operators generated 46% of total industry revenue in 2016

The pay-TV platform operators – in 2016, Sky UK, Virgin Media, BT TV and TalkTalkTV – generated 46% of total TV industry revenue in 2016, up by one percentage point on the previous year. The £6.4bn they generated in 2016 was a 3% year-on-year increase in real terms, with an annual average rate of growth of 2% since 2011.

Over the past five years, commercial PSB channels' revenue has declined at an average rate of 2% per year in real terms, totalling £2.4bn in 2016. Revenue for commercial multichannels was £2.5bn in 2016, having grown at an average of 5% each year since 2011. Public funding was £2.5bn in 2016, following a modest real-terms decline in public funding of the TV industry since 2011 in real terms (around 2% a year).

Figure 2.12: Total broadcast TV industry revenue, by sector
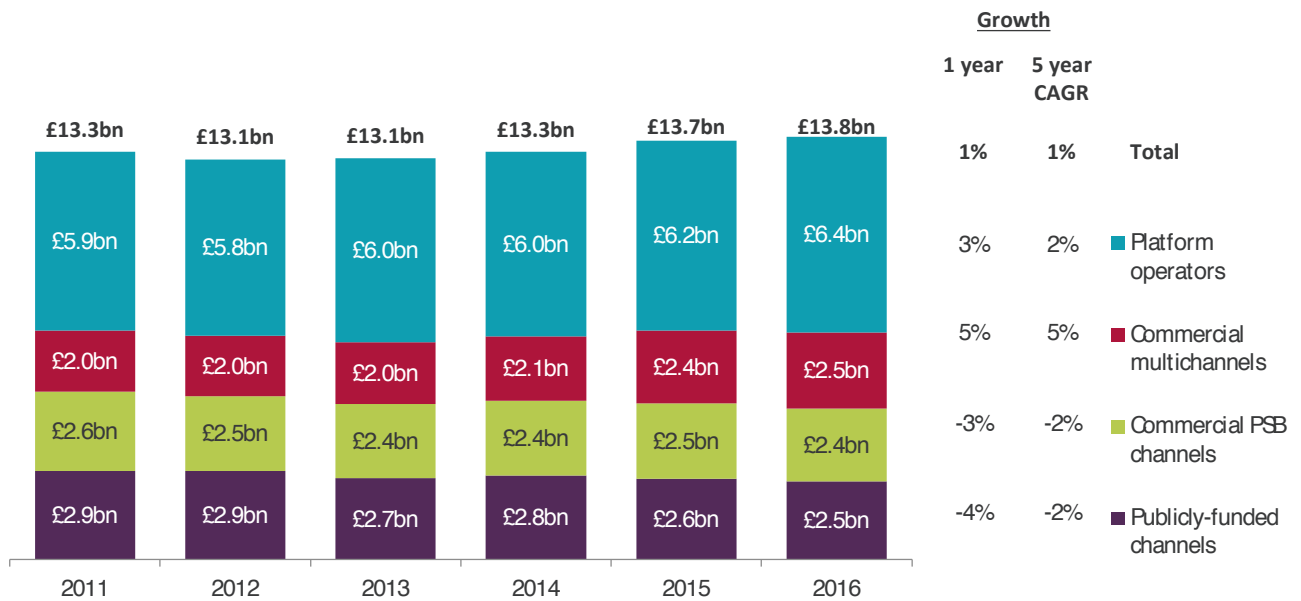
Source: Ofcom/broadcasters.
Note: Figures expressed in real terms (2016 prices) and replace previous Ofcom revenue data for TV industry, owing to restatements and improvements in methodologies. The platform operators are Sky UK, Virgin Media, BT TV and TalkTalkTV as well as, in previous years, ESPN and Top Up TV in the UK (Republic of Ireland revenue is excluded). Commercial PSB channels comprise ITV/ITV Breakfast, STV, UTV, Channel 4, Channel 5 and S4C. Commercial multichannels comprise all multichannels including the commercial PSB broadcasters' portfolio channels. Publicly-funded channels comprise BBC One, BBC Two, the BBC portfolio channels and S4C. The commercial revenues of S4C are included with the main commercial PSB channels while their licence fee revenue and DCMS grants come under publicly-funded channels. Totals may not equal the sum of the components due to rounding.

Online audiovisual revenues grew by 23% in 2016 but remain small compared to traditional television revenue sources

According to Ampere Analysis, online audio visual revenues generated by subscriptions, advertising, rental and retail grew by 23% year on year in real terms, to reach £1.65bn.

Online advertiser-funded video, including services such as YouTube, the ITV Hub, All4 and My5

generated £700m in 2016, up 15% on the previous year. Subscription revenue from services such as Netflix and Amazon Prime Video was the second largest contributor to revenues in 2016, at £664m. This represented annual growth of 43% and a compound annual growth rate of 117% over the last five years. Digital retail (download to own)

and digital rental both experienced single digit percentage growth.

We discuss how the take-up of on-demand and streaming services, including subscription services such as Netflix and Amazon Prime, is changing the TV landscape in the *Market in Context* section of this report.

Figure 2.13: Online audio visual revenues
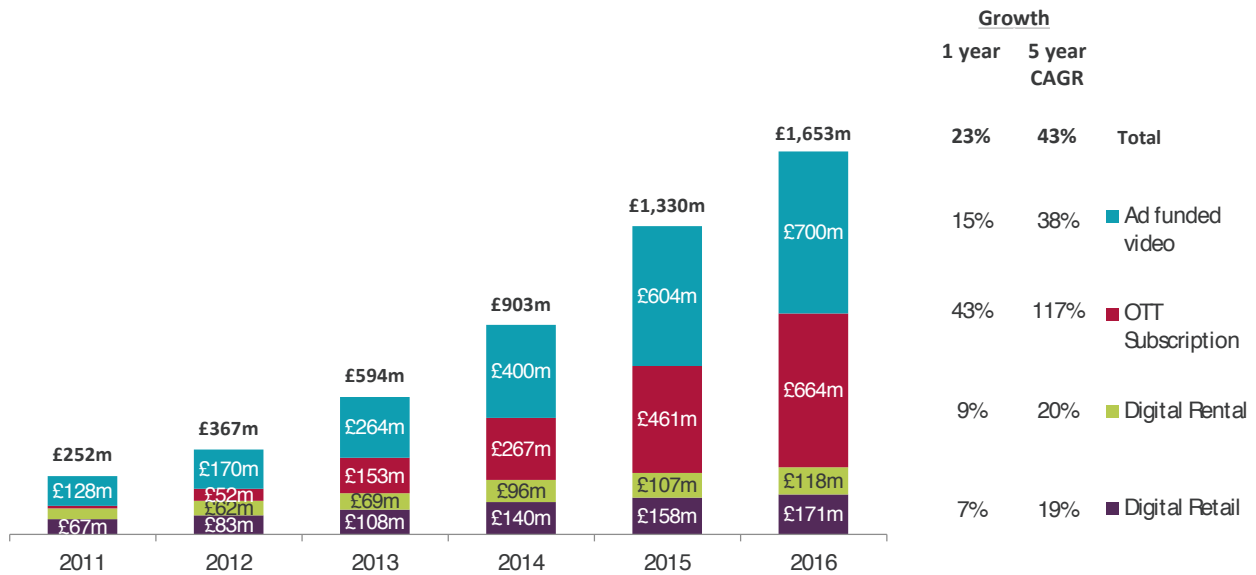
Source: Ampere Analysis / ZenithOptimedia. Ad-funded video includes catch-up services, YouTube and other ad-funded video spend. OTT Subscription includes Netflix, Amazon Prime Video, Disneylife and NowTV. Digital rental includes one-off pay-per-view of films and video but excludes sport. Digital Retail figure is based on the British Association of Screen Entertainment spend figures exclusive of VAT and covers 'download to own' purchases. All figures are in real terms (2016 prices).
Note: Figure for 2011 ad funded video is an estimate as actual figures are not available.

2.2.2 Commercial television revenues

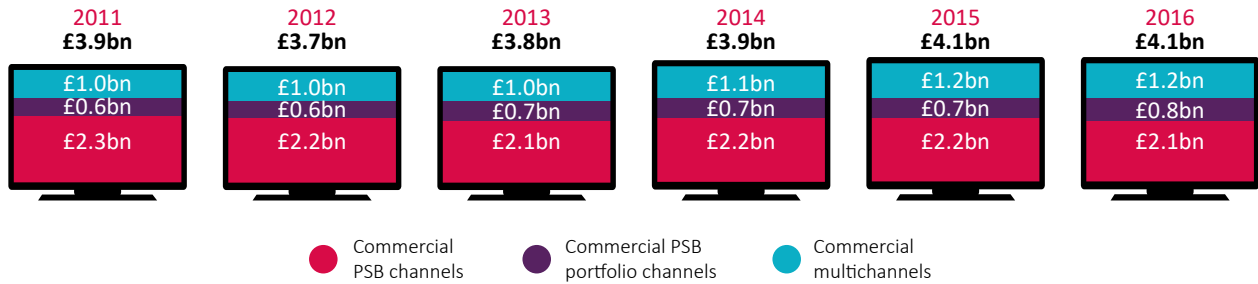### Television advertising revenues were flat in 2016

In real terms, TV advertising income in 2016 was in line with the previous year, at £4.1bn. The net advertising revenue (NAR) of commercial PSBs makes up just over half of commercial television advertising revenues. There was a 4% real terms fall in 2016 but this was offset by 6% growth in revenue for the same broadcasters' non-PSB portfolio channels, and a 2% gain in the rest of the commercial multichannel sector.

PSB broadcasters' advertising revenue on their non-PSB portfolio channels has grown by an average of 6% per annum in real terms over the past five years, helping them to maintain overall revenues around £2.9bn as their PSB channels have seen slight declines. Commercial channels' NAR has grown at an average of 5% each year over the past five years.

Figure 2.14: TV net advertising revenues, by source: 2011-2016

2011 **£3.9bn**	2012 **£3.7bn**	2013 **£3.8bn**	2014 **£3.9bn**	2015 **£4.1bn**	2016 **£4.1bn**
£1.0bn	£1.0bn	£1.0bn	£1.1bn	£1.2bn	£1.2bn
£0.6bn	£0.6bn	£0.7bn	£0.7bn	£0.7bn	£0.8bn
£2.3bn	£2.2bn	£2.1bn	£2.2bn	£2.2bn	£2.1bn

● Commercial PSB channels   ● Commercial PSB portfolio channels   ● Commercial multichannels

Source: Ofcom/broadcasters.

Note: Figures expressed are in real terms (2016 prices) and replace previous data published by Ofcom. Commercial PSB channels comprise ITV, STV, UTV, ITV Breakfast, Channel 4, Channel 5 and S4C (and their '+1' channels); Commercial PSB portfolio channels include, where relevant, ITV2, ITV3, ITV4, CITV, ITVBe, ITV Encore, E4, More 4, Film 4, 4Seven, Five USA, 5* and Spike (and their '+1' channels). For previous years closed channels have also been included. Sponsorship revenue not included. Totals may not equal the sum of the components due to rounding.

Television advertising revenues are growing in line with the overall display advertising market

According to Warc, total display advertising expenditure stood at £17.9bn in 2016, of which television display advertising spend accounted for £5.2bn (30%). In recent years television advertising revenue as a proportion of all display advertising has remained consistent at around 30%. In real terms it has generated an average of £5bn per annum in advertising revenues. For further information on the UK advertising market please refer to section 1.1.4.

Figure 2.15: Television percentage share of all display advertising expenditure
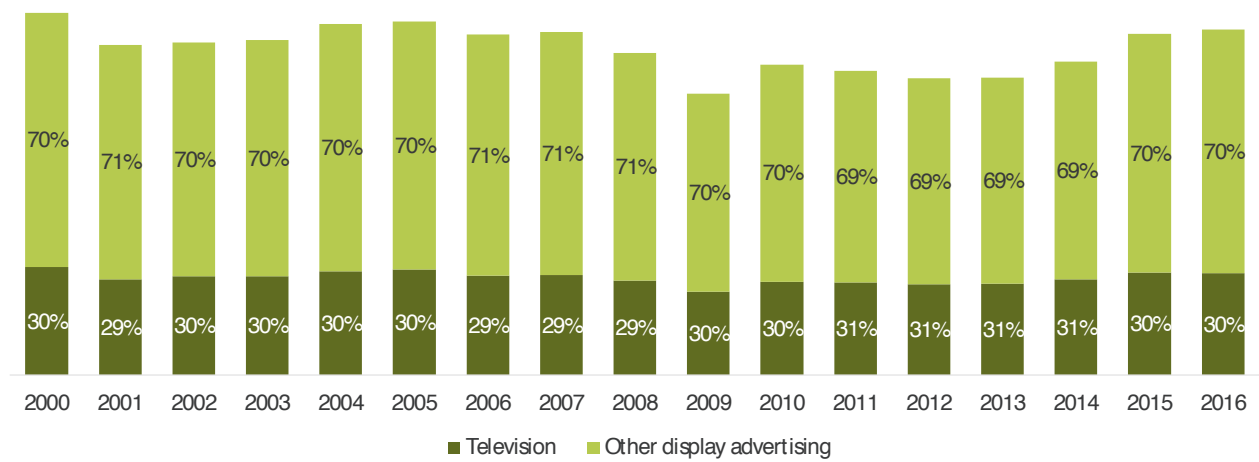
Source: AA/Warc Expenditure Report.
Note: Other display advertising expenditure includes radio, out of home, cinema, national and regional press display, internet, mobile and magazines but does not include response advertising such as direct mail. Television display include spot ads, sponsorship, product placement, advertiser funded programming and VoD. Figures are real terms.

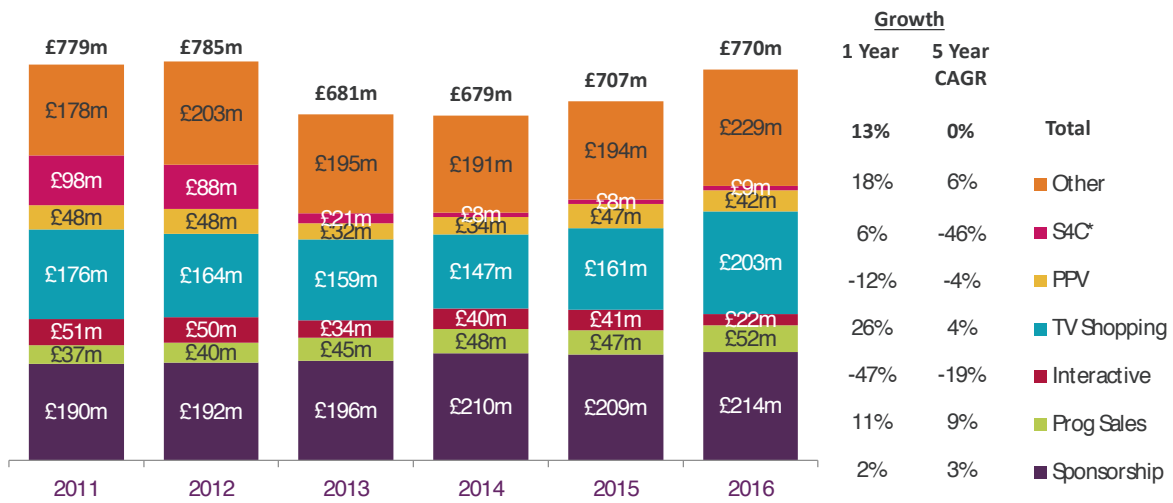## Broadcaster revenue raised from other sources increased by 13% in 2016

Television revenue raised from sources other than subscription income or advertising revenue increased by 13% in real terms in 2016 to total £770m.

Broadcasters revenues generated by TV shopping jumped by 26%

in 2016 to £203m, the sector's highest level in the past five years as more channels offered this service. 'Other revenues', which can include revenue streams such as product placement, rights sales and commissioned productions for third parties also increased, rising

by 18% to £229m. Programme sales increased by 11%. After a flat 2015, sponsorship revenues returned to their previous growth trajectory. Since 2013 S4C has received most its funding from the BBC licence fee (Figure 2.12).

Figure 2.16: Breakdown of 'other' commercial TV channel revenue; 2011-2016

	2011	2012	2013	2014	2015	2016	1 Year Growth	5 Year CAGR	
Total	£779m	£785m	£681m	£679m	£707m	£770m	13%	0%	
Other	£178m	£203m	£195m	£191m	£194m	£229m	18%	6%	Other
S4C*	£98m	£88m	£21m	£8m	£8m	£9m	6%	-46%	S4C*
PPV	£48m	£48m	£32m	£34m	£47m	£42m	-12%	-4%	PPV
TV Shopping	£176m	£164m	£159m	£147m	£161m	£203m	26%	4%	TV Shopping
Interactive	£51m	£50m	£34m	£40m	£41m	£22m	-47%	-19%	Interactive
Prog Sales	£37m	£40m	£45m	£48m	£47m	£52m	11%	9%	Prog Sales
Sponsorship	£190m	£192m	£196m	£210m	£209m	£214m	2%	3%	Sponsorship

Source: Ofcom/broadcasters. TV shopping represents aggregate operating margin of products sold via television. Totals may not equal the sum of the components due to rounding. Owing to the nature of these revenue components, annual changes may be a function of a higher number of broadcaster returns being made by the time of writing, rather than material changes in the contributions that these revenue components are making to total industry income. Figures are in real terms (2016 prices).
*A funding agreement which was reached in April 2013 meant that as of 2013 the majority of S4C funding comes out of the BBC's licence fee income and is therefore included in Figure 2.12.[1]

[1] See http://www.bbc.co.uk/bbctrust/news/press_releases/2013/s4c_op_agreement

2.2.3 Spend on UK television programmes

Broadcasters spent £7.3bn on network programming in 2016

Spend[1] in key genres[2] by channels broadcasting in the UK was £7.3bn in 2016, an increase of 11% year on year in real terms. Much of this increase was driven by the 24% rise in spend on sports channels in the multichannel sector. 2016 marked the start of the new English Premier League Football broadcast rights deals, for which Sky and BT paid a higher price than in previous years. The two companies together paid a record £5.136bn for live Premier League TV rights for three seasons starting from 2016-17[3]. This is a 59% increase on the £3.018bn they paid for three seasons in 2012. Sports channels accounted for 40% of spend on UK

programming, up from 36% in 2015.

The BBC portfolio channels reported a real-terms decrease in spend for the second year running. Some of this may be attributable to BBC Three's move online in February 2016, which was carried out partly to make broadcast savings[4]. The channel's budget was reduced from £85m to £25m as part of the move[5].

Spend on BBC One programming overtook ITV spend in 2016, rising by 10% in real terms after a dip in 2015, when there was no Olympics or World Cup/European Championship football. Another factor is the cost of the first showing of programmes which, in previous years, would

have been first shown on BBC Three; spend is now recorded against the channel on which programmes are first broadcast. ITV's investment in programming fell by 5% in real terms year on year.

The PSB channels made up 37% of all network programme spend in 2016, down by three percentage points on 2015. The increase in spend in sports rights meant that film and sport channels combined (principally Sky Sports, Sky Cinema and BT Sport) made up 44% of the total, up by 4pp on the previous year. Channel 4, Channel 5, and the commercial PSB portfolio channels, all invested significantly more on programming than in 2015.

Figure 2.17: Spend on network TV programmes: 2015 – 2016
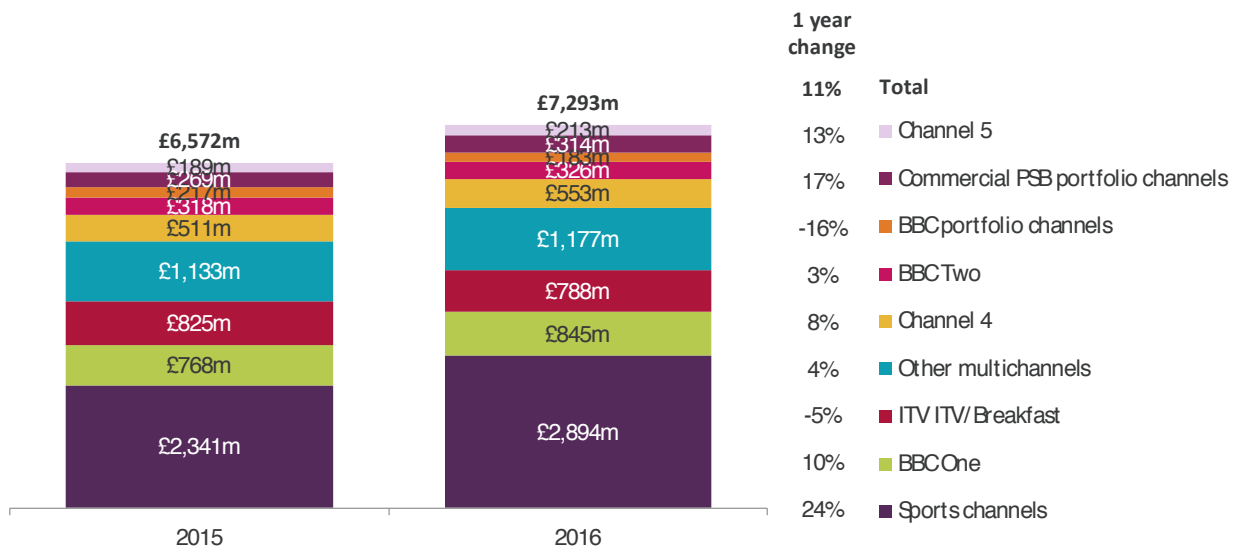
Source: Ofcom/broadcasters.
Note: Figures expressed in real terms. Figures do not include spend on nations' and regions' output. BBC portfolio channels includes BBC Three, BBC Four, BB C News, BBC Parliament, CBBC and CBeebies (but not BBC HD). 'Other multichannels' include all genres (excluding sports and films). Programme spend comprises in-house productions, commissions from independents, acquired programmes and repeats (originations and acquisitions).

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[1] Spend figures here do not represent the entire cost of programme production in the UK as they do not include third-party funding or the full cost of co-productions with overseas broadcasters.

[2] See Figure 2.19 for detailed spend analysis of key genres.

[3] Source: http://www.bbc.co.uk/sport/football/31357409

[4] Source: http://www.bbc.co.uk/news/entertainment-arts-35578867

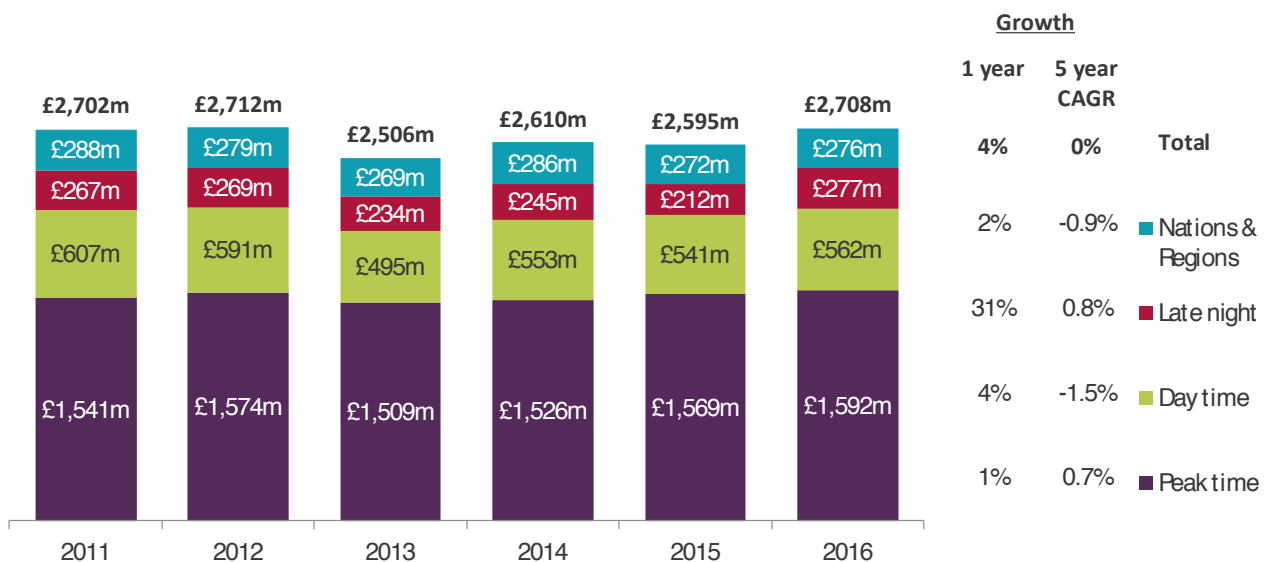[5] Source: http://www.bbc.co.uk/news/entertainment-arts-34932688

Spend on UK-originated programming by the main five PSB channels was at its highest level since 2012

Overall spend on first-run UK-originated programming (including nations' and regions' programming) by the main five PSB channels – BBC One, BBC Two, ITV (including ITV Breakfast)/STV/UTV, Channel 4 and Channel 5 – increased by 4% in real terms to £2,708m in 2016.

Spend on peak time programming and nations' and regions' programming was broadly stable, while spend on late-night and daytime programming grew by 31% and 4% respectively in real terms. This may be due in part to broadcasters increasing spend on

original sports content in daytime and late night when covering the 2016 UEFA European Football Championships and the Rio Olympic and Paralympic Games.

Figure 2.18: Spend on first-run UK originated output on the five main PSB channels

		Growth		
		1 year	5 year CAGR	
		4%	0%	Total
		2%	-0.9%	Nations & Regions
		31%	0.8%	Late night
		4%	-1.5%	Day time
		1%	0.7%	Peak time

Chart data:
- 2011: £2,702m total (Nations & Regions £288m, Late night £267m, Day time £607m, Peak time £1,541m)
- 2012: £2,712m total (Nations & Regions £279m, Late night £269m, Day time £591m, Peak time £1,574m)
- 2013: £2,506m total (Nations & Regions £269m, Late night £234m, Day time £495m, Peak time £1,509m)
- 2014: £2,610m total (Nations & Regions £286m, Late night £245m, Day time £553m, Peak time £1,526m)
- 2015: £2,595m total (Nations & Regions £272m, Late night £212m, Day time £541m, Peak time £1,569m)
- 2016: £2,708m total (Nations & Regions £276m, Late night £277m, Day time £562m, Peak time £1,592m)

Source: Ofcom/broadcasters.
Note: Figures are expressed in real terms (2016 prices). They include ITV breakfast, spending in the nations and regions on English-language programming (and a small amount of Irish-language programmes) but do not include the BBC's portfolio channels, BBC Alba or S4C.

Sports rights proportion of spend on content in the multichannel sector increases

In 2016 there was a real-terms increase of 24% to £2,894m in spend on content for sports channels in the multichannel sector, mostly as a result of the new Premier League football rights deal. Programming for sports channels accounted for 66% of total content spend across the multichannel sector in the eight key genres shown in Figure 2.20, an increase of 3pp since 2015.

Year on year, content spend also increased for the entertainment (+7%), films (+10%), children's (+22%) and news (+7%) channels, but decreased for factual (-6%), music (-3%) and leisure (-19%) channels.

We focus on the eight key genres shown below as they best reflect the broadcasters active in the UK TV industry.

Figure 2.19: Multichannel content spend in key genres: 2011 – 2016
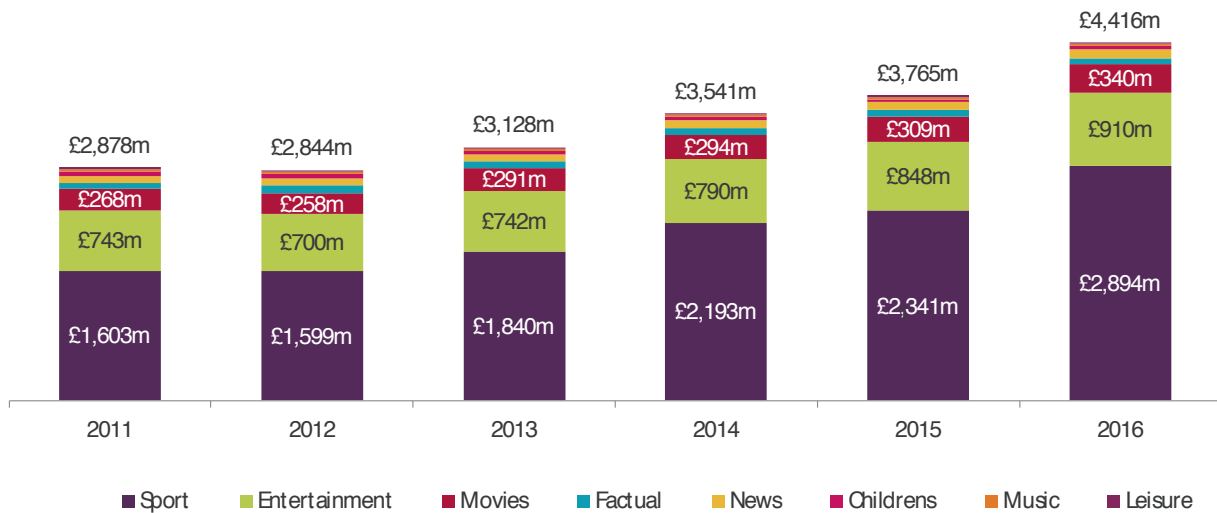
Source: Ofcom/broadcasters.
Note: Spend expressed in real terms (2016 prices). Excludes BBC portfolio channels but includes commercial PSB portfolio channels.

Figure 2.20: Multichannel content share of spend in key genres, 2016

	Sport	**Entertainment**	**Movies**	**Factual**	**News**	**Children's**	**Music**	**Leisure**
Spend (£m)	2,894	910	340	83	105	42	27	15
Share (%)	66	21	8	2	2	1	0.6	0.3
Growth (%)	24	7	10	-6	7	22	-3	-19
Change in share (YoY)	3pp	-2pp	-1pp	-	-	-	-	-

Source: Ofcom/broadcasters.
Note: Excludes BBC portfolio channels but includes commercial PSB portfolio channels.

## 2.2.4 UK independent production sector

Independent producers' TV revenue saw a real-terms decrease in 2016

According to Pact's annual census of independent production companies in the UK, TV revenues within the independent sector were £2,504m in 2016, a 2% decrease on 2015 levels in real terms.

While primary UK commissions continued to make up the bulk of overall revenue at £1,503m, this was a 4% decrease in real terms on 2015 levels. Other international income – which includes primary commissions

and co-productions from non-UK broadcasters – saw impressive growth of 6% in real terms, to generate revenue of £623m in 2016.

Figure 2.21: Independent producer TV-related revenues
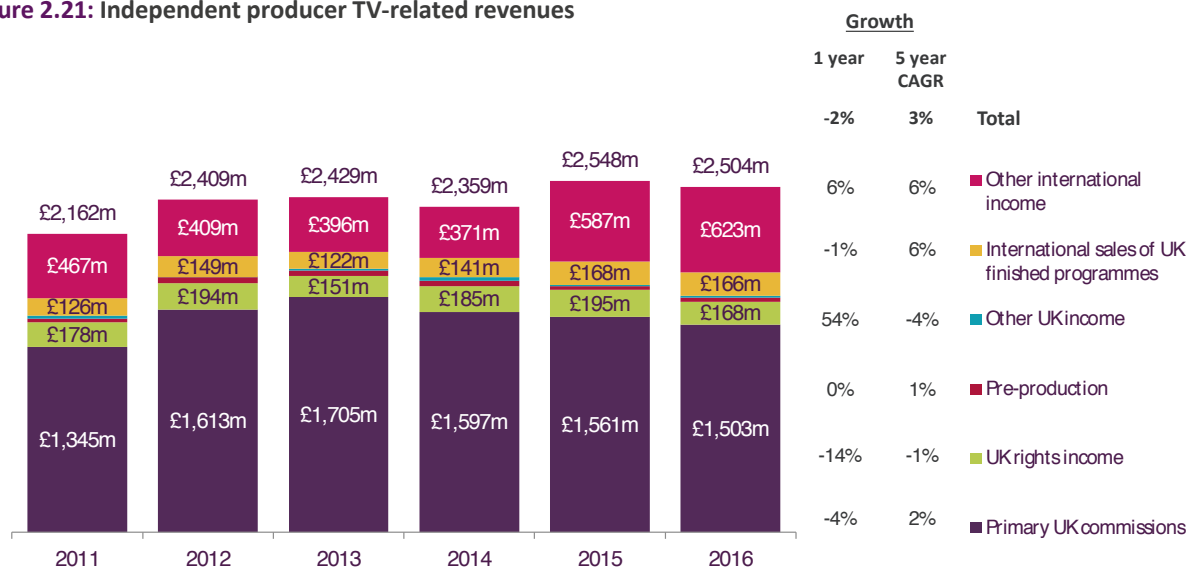
Source: Pact UK Television Production Census 2017, Oliver & Ohlbaum analysis
Note: Figures expressed in real terms (2016 prices).
'UK rights income' – UK secondary sales, publishing, formats, DVD sales etc.; 'International sales of UK finished programmes' – sales of first run UK programming sold as finished product abroad; 'Other international income' – primary commissions received from non-UK broadcasters and any revenue from companies' overseas operations. International revenue numbers from past years have been restated to reflect recent changes in methodology; this has affected the reporting of revenues from international subsidiaries of UK producers.

The proportion of spend on first-run UK originations by the PSB channels that went to external producers increased by two percentage points between 2011 and 2016

As in 2015, in 2016, across all genres, 48% of spend on first-run UK-originated content by the PSB channels (excluding nations' and regions' spend) was spent on external commissions. This 2pp increase on the 2011 figure of 46% equated to a £33m

increase in commissioning from external producers in real terms.

Of the £2.6bn spent by PSBs on new original content in 2016, £2.1bn was attributable to four genres: drama and soaps; factual; entertainment and comedy; and sport. In factual, and entertainment and comedy,

70% or more went towards external commissions, whereas in sport, 86% of spend was on internally-produced programming. Drama and soaps was more evenly split; 52% of spend was on internal productions and 48% was on external commissions.

Figure 2.22: Relative share of spend on first-run originated content by genre, in-house vs. external producers: 2011 and 2016
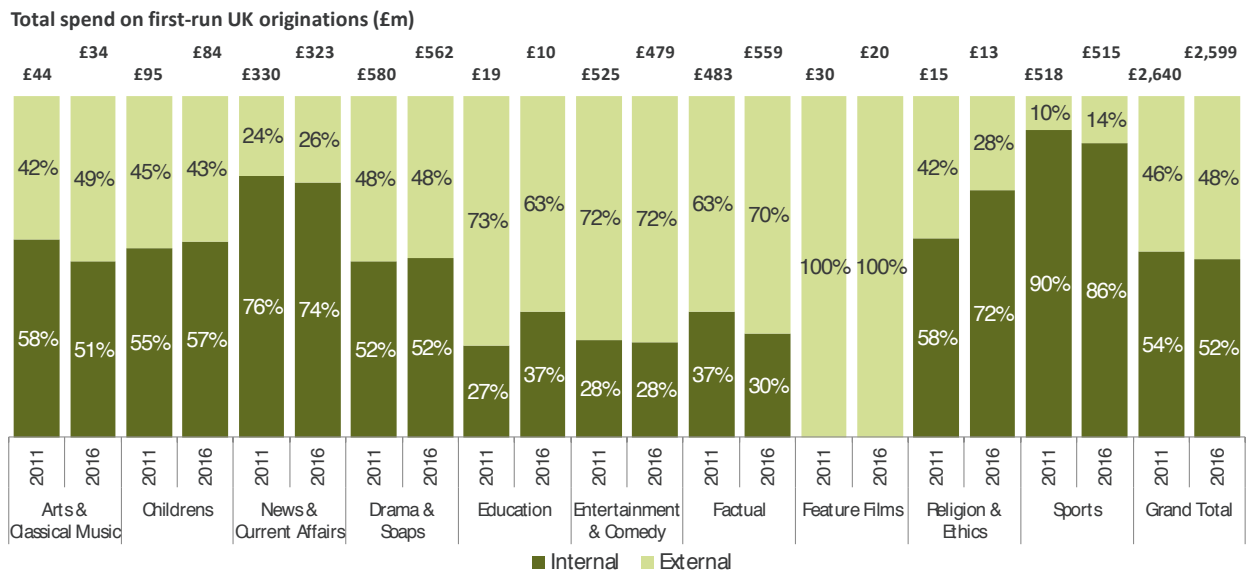
Source: Ofcom/broadcasters.

Note: Figures are expressed in real terms. Includes spend by the five main PSB channels and BBC portfolio channels on first-run originated content broadcast all day, and excludes nations/regions output.

2.2.5 UK television output

More than half the PSB channels' output was first-run UK-originated content in 2016

There were 84,539 hours of content broadcast by the PSB channels (including programmes for the nations and regions) in 2016, a small drop on the previous year, partly attributable to the moving of BBC Three to the BBC's online platform. Fifty-two per cent of PSB broadcast hours were first-

run UK originations, produced either in-house or commissioned from external producers, a 2pp increase year on year.

Despite the move of BBC Three to online only, and the resulting 6% fall in the total number of hours broadcast on the BBC portfolio channels, the number of hours

of first-run broadcasting across these channels actually increased by 2%. The total number of hours, including repeats, broadcast on the five main PSB channels was the same as last year, but first-run hours increased by 4%, with a small fall in the number of repeat hours.

Figure 2.23: Total and first-run UK originated hours of output on the PSB channels: 2016
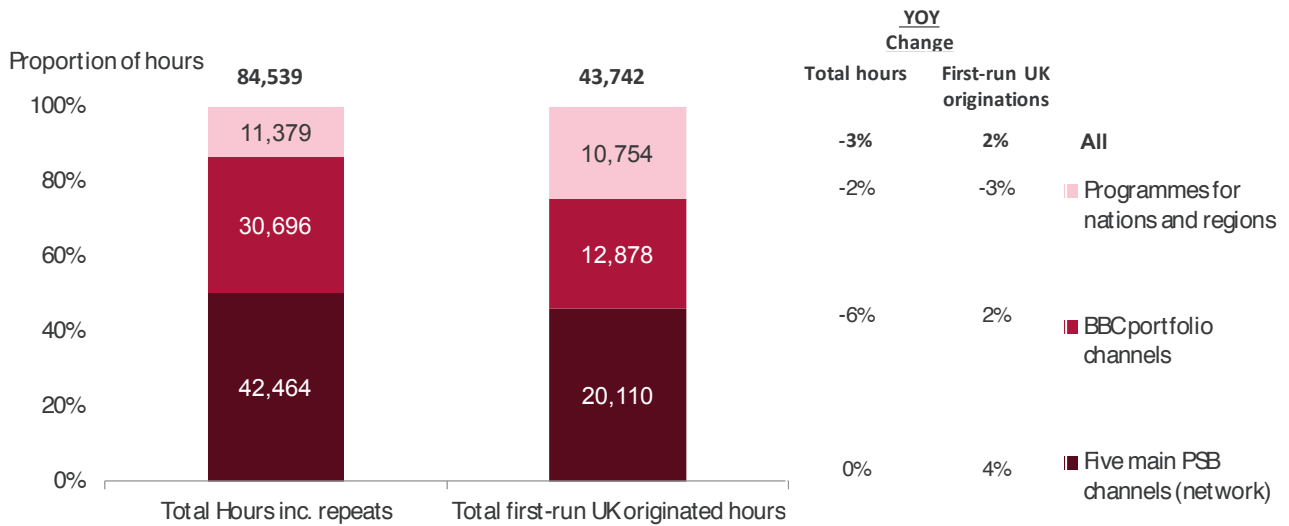
Source: Ofcom/broadcasters.
Note: ITV Breakfast is included within the figures for the five main channels. Regional hours exclude Welsh and Gaelic-language programming but include a small amount of Irish-language programmes.
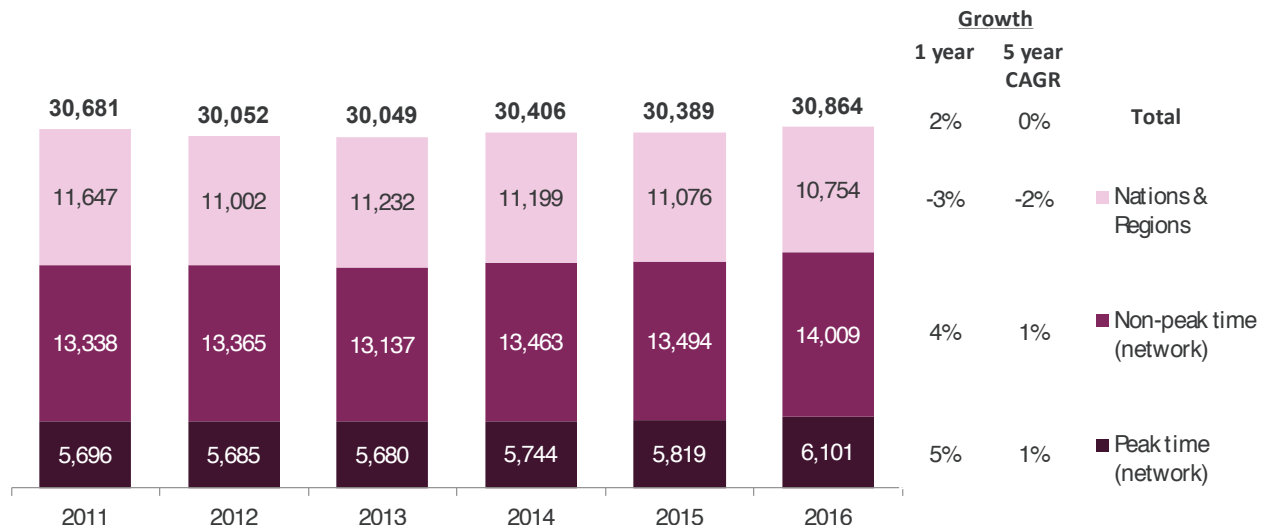
Hours of first-run UK-originated content in peak time broadcast by the main five PSB channels increased by 5% to their highest in five years

Overall, there was a 2% increase in the number of hours of original UK programming broadcast by the PSB channels (including programming for the nations and regions) in 2016. At 30,864, this is the highest number of original hours in the past five years.

Programmes broadcast during peak hours (between 6pm and 10.30pm) tend to have larger budgets and larger audiences. Hours of original network output in peak time have increased steadily since 2014 and rose 5% in 2016 to more than 6,000 hours, partly because ITV, the BBC and Channel 4 broadcast

more sports events in 2016 than in 2015 (the UEFA European Football Championships, the Olympic and Paralympic Games) and partly because some programmes that would have premiered on BBC Three in the past appeared instead on BBC One or BBC Two.

Figure 2.24: Hours of first-run UK originated output on the five main PSB channels

	Growth		
	1 year	5 year CAGR	
Total	2%	0%	Total
	-3%	-2%	Nations & Regions
	4%	1%	Non-peak time (network)
	5%	1%	Peak time (network)

Source: Ofcom/broadcasters.
Note: Figures include ITV breakfast and a small amount of Irish-language programmes but do not include the BBC's portfolio channels, BBC Alba or S4C.

First-run originations/acquisitions made up 17% of all hours broadcast in key genres on the non-PSB channels in 2016

The multichannel sector consists of all television channels, other than the PSB main and portfolio channels, that broadcast to the UK and are licensed by Ofcom. Figure 2.25 shows the number of hours broadcast in key genres in 2016. Of the 1.88 million hours broadcast by these channels in 2016, 17% were first-run originations or acquisitions, up from 13% in 2015. The highest proportions of first-run originations were on sports (45%) and news (40%) channels, as, by their nature, both genres broadcast significant quantities of live content.

Figure 2.25: Total and first-run originated/acquired hours of output in key genres in the multichannel sector: 2016
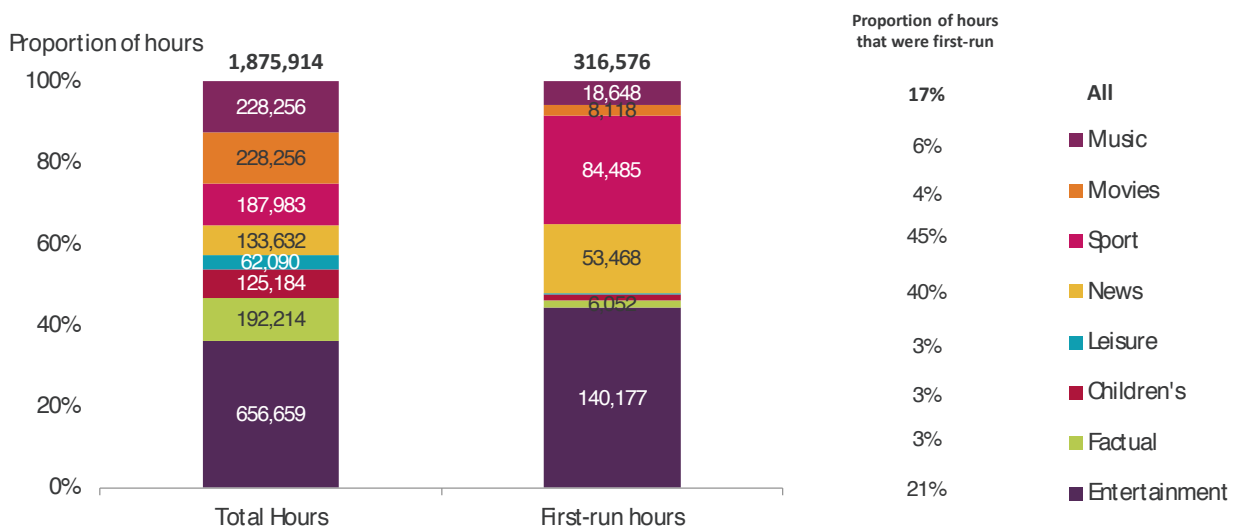
Source: Ofcom/broadcasters.

Note: Broadcast hours exclude Sky Box Office and 'barker' channels which promote TV content. First-run hours include first-run in-house, commissioned and acquired content.

Consumer choice in the pay-TV sector

Pay-TV consumers have a wider range of options than ever before, with an increasing choice of service provider and content. The retail offerings of the four largest traditional pay-TV providers are summarised below, while the pay-TV services offered by on-demand and streaming services are covered in section 2.1.2.[1]

Figure 2.26: Summary of retail offerings from traditional pay TV providers

Provider	Retail offering
BT TV YouView	• **Overview:** BT TV only available when part of a triple play or quad play package. YouView box included. Choice of three main TV packages, all including the AMC channel. • **Movies:** Sky Cinema can be added to all TV packages. • **Sports:** All packages include BT Sport channels[2] and Box Nation. Customers can add Sky Sports 1 & 2. • **VoD/out-of-home:** All packages include catch-up TV. BT TV App allowing out-of-home viewing included in some packages.
Sky (DSat)	• **Overview:** Range of DSat TV options available including standalone, triple and quad play packages. All packages include Sky entertainment channels. Packages come with a Sky Q box. Sky also retails OTT through NOW TV, which is available on a standalone or triple play basis. • **Movies:** All Sky Cinema channels available. • **Sports:** All Sky Sports channels available. Sky customers can also access BT Sport through a separate subscription with BT. • **VoD/out-of-home:** All TV bundles include catch-up TV and out-of-home viewing through Sky Go or the Sky Q app.
TalkTalk YouView	• **Overview:** TalkTalk TV packages only available when part of a triple play or quad play package. YouView box included. Choice of two TV packages, one of which includes six Sky channels. Various content "Boosts" available through both packages. • **Movies:** Sky Cinema channels available through Sky Cinema Boost. • **Sports:** Sky Sports channels available through Sky Sports Boost. TalkTalk customers can access BT Sport through a separate subscription with BT. It also offers a Box Nation boost. • **VoD/out-of-home:** Both packages include catch-up TV and out-of-home viewing through TV2Go App.
Virgin Media	• **Overview:** Range of TV options available including standalone, dual, triple or quad play packages. TV V6 TiVo box included. • **Movies:** Sky Cinema channels available. The VIP package offers Sky Cinema channels as standard, whereas other packages allow add-on purchases. • **Sports:** All Sky Sports and BT Sport channels available. Some packages include them as standard, whereas other packages allow add-on purchases. • **VoD/out-of-home:** All TV packages include catch-up TV and out-of-home viewing through Virgin TV Anywhere.

Source: Providers' websites.

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[1] We note that EE also provides a hybrid DTT/IPTV service via its EE TV box and Plusnet also offers a pay TV service on YouView.

[2] As of 31 July 2017, BT Sport will cost BT TV subscribers £3.50 per month.

Sports content availability

As can be seen in Figure 2.27, both Sky Sports and BT Sport content are widely available to customers on the main traditional pay TV platforms.

Sky Sports and BT Sport channels are also accessible in other ways. For example, with a Sky DSat subscription, viewers can watch Sky Sports channels on the go

with the Sky Q or Sky Go apps. Consumers can also watch Sky Sports channels through NOW TV. In addition, it is possible to access BT Sport channels through BT broadband and BT and EE mobile.

In recent years, both BT and Sky have built relationships with social media partners to bring sports

content to a variety of audiences. For the second year running, BT has shown the Champions League and Europa League finals on YouTube, while Sky reached an agreement with Twitter to livestream UK football's transfer deadline day.

Figure 2.27: Summary of Sky Sports and BT Sport availability from pay TV providers

	BT TV (YouView)	Sky (DSat)	Virgin Media	TalkTalk (YouView)	Other
Sky Sports 1&2	✓	✓	✓	✓ (no HD)	✗
Sky Sports 3,4,5 & F1	✗	✓	✓	✓ (no HD)	✗
NOW TV (Sky Sports passes)	✗	✗	✗	✗	✓ (EE TV)
BT Sport Pack (all BT Sport channels)	✓	✓ (BT retails)	✓	✓ (BT retails)	✓ Plusnet TV

Source: Providers' websites.

2.2.6 The local TV sector

As of 31 May 2017, there were 28 local television channels on air in the UK, offering different approaches to programming for local viewers. Local television channels have adopted a range of business models, ranging from not-for-profit community ventures to new commercial partnerships between local newspapers,

television production companies and educational institutions.

The local television sector has contributed new local programming to the UK media landscape, particularly local news, but some channels have found their original output commitments difficult to deliver. Given some channels'

reliance on the three-year local television funding from the BBC[1], which ends in 2020, they may face a challenge to generate sufficient income in the longer term.

As we found last year, this year's analysis indicates that some channels may have to continue to diversify their revenue streams.

[2] See http://www.bbc.co.uk/corporate2/insidethebbc/howwework/reports/localtv.html.

In 2011 the Government set out its plan for introducing local TV services

Writing in its January 2011 Local Media Action Plan, the Government said that local media "has an important part to play in drawing communities together". It went on: "it reflects back communities' stories and information of direct interest and relevance".[1] The government committed to introduce local television services in locations across the UK.

In 2012 a statutory framework was established to enable local television services to be introduced.[2] Under this framework, Ofcom was tasked with licensing individual services in locations around the UK, and with licensing a new digital terrestrial television (DTT) multiplex that would broadcast all local services.

As well as guaranteed access to DTT spectrum, local television services benefit from appropriate prominence on the electronic programme guide (EPG), and can access some protected funding from the BBC in return for the supply of news items. In 2016 it was confirmed that all local television services which had launched by 31 July 2017 would continue to be able to access this three-year protected funding in their first three years. This would provide them with predictable earnings in those first years of broadcasting. No further BBC protected funding will be available after 31 July 2020.

Local TV licences have been awarded via a competitive process in which applicants propose programming commitments to reflect the type of service they propose to broadcast.

Applications are considered against specified statutory criteria, including the extent to which a proposed service would meet the needs of its local area and increase the number of television programmes made in or about the local area.

To ensure that licensees deliver the services they propose in their licence applications, programming commitments submitted in the applications are transposed to form part of the conditions of the licence when it is issued. Licence obligations therefore vary by service. They typically include a number of hours of first-run and repeated local programming. Within this local programming there is a set minimum number of hours of news and current affairs programming, which is measured both across the whole day and in peak time.

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[1] See paragraph 2.1 of the DCMS document 'Local Media Action Plan' dated 19 January 2011.

[2] By means of the Local Digital Television Programme Services Order 2012.

Twenty-eight local TV services are now on air in the UK

The first local television service launched in 2013, and as of 31 May 2017 there were a total of 28 local television services in operation. The below map displays the spread of local services and their launch dates.

In addition to the 28 services already on air, a further six licences have been awarded, with these services expected to have launched by the end of July 2017. As noted above, the individual local services are broadcast via a single DTT multiplex, which Ofcom also licenses. The multiplex is operated by Comux, a company which is collectively owned by the local service providers.

In April 2017 STV decided to brand all its local services as STV2, and launched this brand as a national commercial television channel in Scotland. STV2 programming now meets all the local programming commitments for the five local television licences which STV holds.

Figure 2.28: Launch dates of local TV services up to 31 May 2017
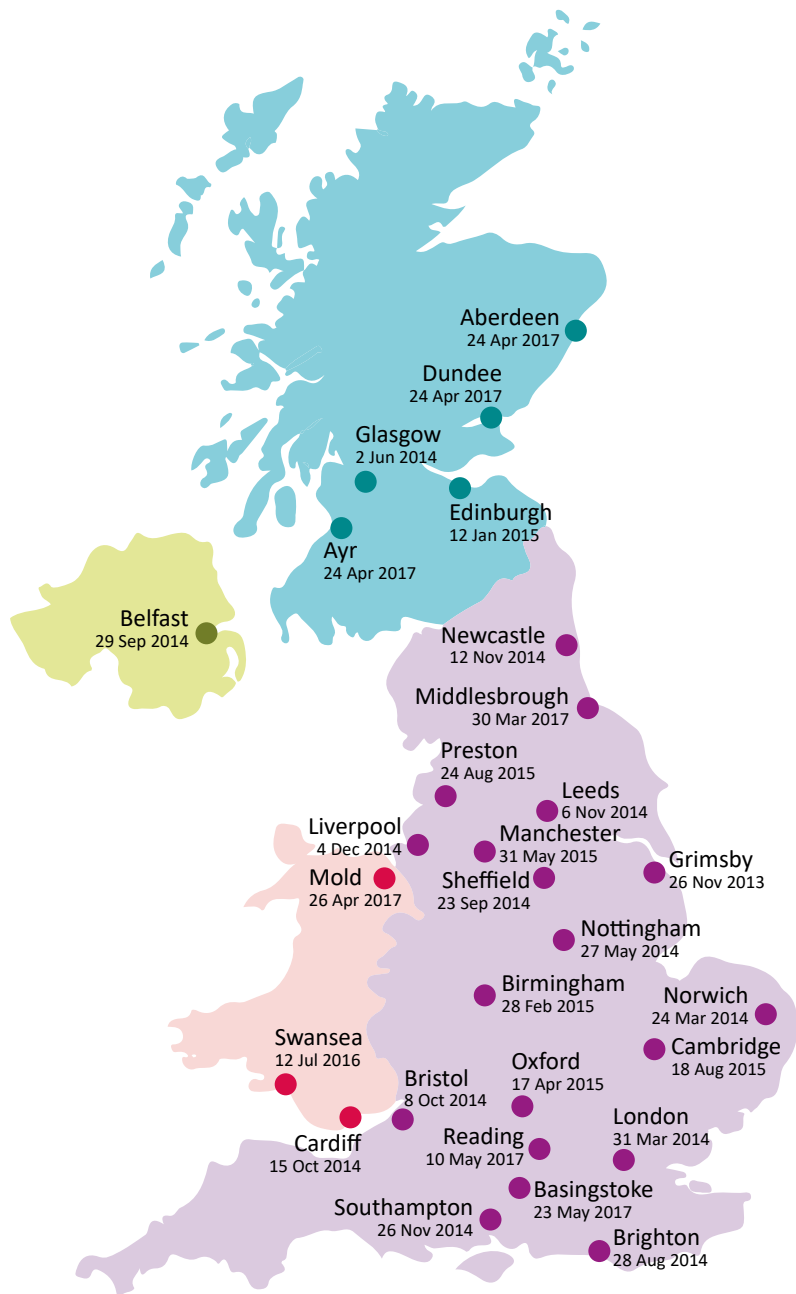
Source: Ofcom

Many local TV services are facing challenges in generating income

As in 2015, spend by local television services outweighed income in 2016[1]. Total expenditure for all services broadcasting in 2016 was £18.3m. The total income for all

21 services broadcasting in 2016 was £10.5m, compared with £8.8m for 20 services in 2015. Three of the 21 local television services in operation in 2016 made a profit.

Of the 20 services broadcasting in 2015 one was in profit and one broke even in the year.

Figure 2.29: Local TV services' income and expenditure, 2015 - 2016

■ Sector income   ■ Sector expenditure

£20m

£9m

£11m

£18m

2015

2016

Source: Ofcom / broadcasters. Includes all channels operating in the year. Figures expressed in real terms (2016 prices).

Local television services are funded primarily through a mix of advertising, BBC funding (primarily protected funding through BBC purchase of local news items), other commercial and non-commercial income, and teleshopping. The
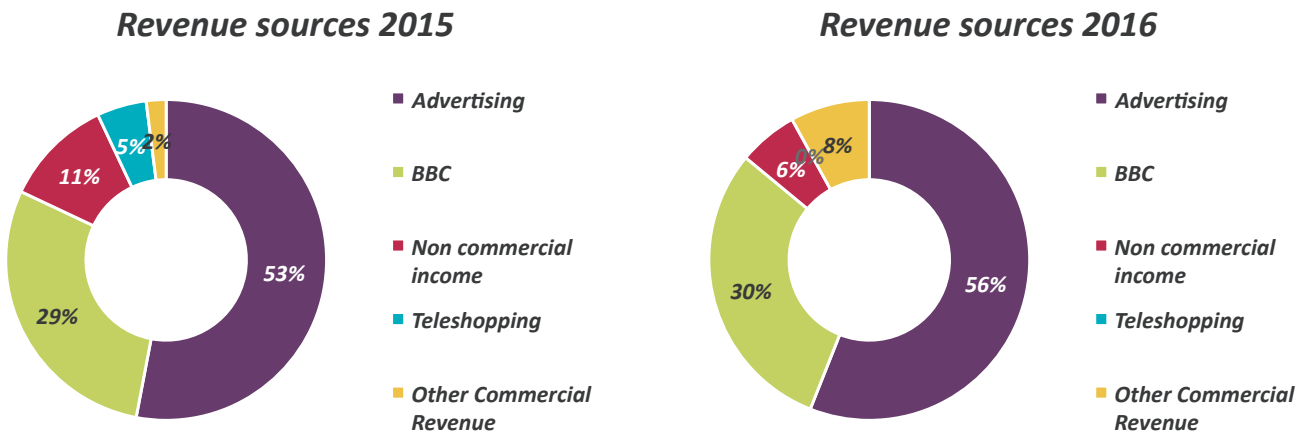
protected BBC funding was intended "to provide the new local television services with some funding certainty".[2] Figure 2.30 shows the total income broken down by source in 2015 and 2016. Advertising revenue as a proportion

of all funding increased by three percentage points year on year. Other commercial revenues grew by 6pp, while teleshopping no longer accounted for any revenue in 2016.

[1] Analysis based on the income and expenditure declared by services to Ofcom for 2016 in their local return forms. One service was only able to provide income and expenditure figures for the last quarter of 2016 despite being on air for the full year. The other 20 services provided full year figures for 2016.

[2] http://downloads.bbc.co.uk/aboutthebbc/insidethebbc/howwework/reports/pdf/bbc_local_content_acquisition_january2017.pdf

Figure 2.30: Local television revenue by source

Revenue sources 2015

- Advertising
- BBC
- Non commercial income
- Teleshopping
- Other Commercial Revenue

Revenue sources 2016

- Advertising
- BBC
- Non commercial income
- Teleshopping
- Other Commercial Revenue

Source: Ofcom/broadcasters. Includes all channels operating in the year.

Advertising income comprises national and local advertising. Non-commercial income is self-defined by the services in their local return form. It includes, for example, grants and revenue from media training services. Other commercial income is also self-defined by the services in their local return form. It includes commissions, production services, content sales, sponsorship, telephone competitions, digital sales and training fees.

One service was only able to provide income and expenditure figures for the last quarter of 2016 despite being on air for the full year. All other services provided full year figures for 2016.
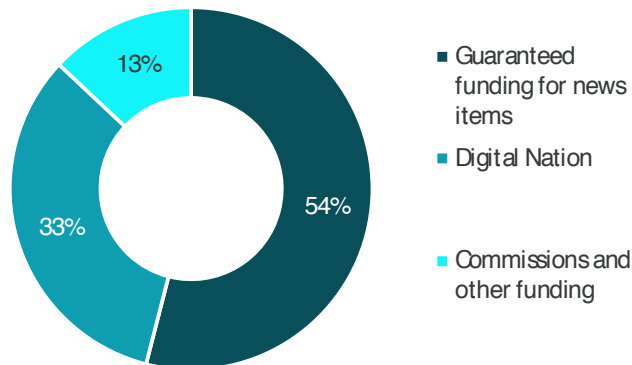
BBC funding accounted for almost a third (30%) of local television income in 2016, up by 1pp on the previous year in real terms. The income generated from the BBC comes from three sources: guaranteed funding for news items, the Digital Nation programme[1] and BBC commissions/ other BBC funding. As Figure 2.31 shows, for the sector as a whole, guaranteed funding accounted for 54% of the income generated from the BBC, and Digital Nation accounted for 33%. Both these sources have a strict end date: the Digital Nation funding programme finished on 31 March 2017 and protected BBC funding for news items ends when a service has been broadcasting

for three years, and must come to an end by 31 July 2020. This funding for news items is front-loaded, so that the guaranteed sums in the first and second years (£150k and £110k respectively) are considerably greater than that in the third year (£40k). This means that channels are supported in their initial start-up phase, but need to further diversify their business models in the future. As a result, in the course of 2017, 14 services will stop receiving the guaranteed BBC funding stream reserved for the local television sector, although they will still be able to bid for commissions and participate in other competitive BBC initiatives.

Some services remain reliant on funding from the BBC for a significant amount of time after launch. More than half (11 of 21) of local television channels received more than 50% of their income from the BBC in 2016, however the reliance on BBC funding varies considerably: in 2016, BBC funding made up 4% of total income for one service and 99% for another. There is no significant correlation between launch date and the level of reliance on BBC funding.

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[1] Digital Nation was a showcase for reports from around the local TV sector. Eighty weekly episodes were acquired for online use by the BBC, whose fees were shared among stations that contributed to, or helped produce, the programme. The programme ran for 18 months and finished on 31 March 2017. The episodes are available online http://www.bbc.co.uk/programmes/p04rrf9c/episodes/guide

Figure 2.31: Local television income derived from the BBC: 2016

- Guaranteed funding for news items
- Digital Nation
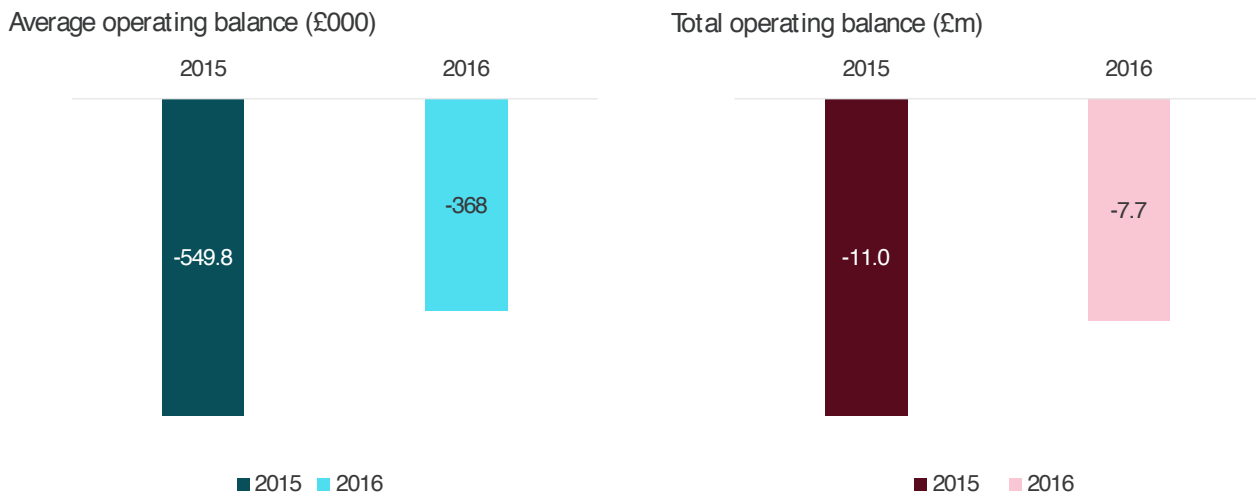- Commissions and other funding

54% 33% 13%

Source: Ofcom/broadcasters. Includes all channels operating in any part of the year

Given the need for local television services to become self-sustaining, as guaranteed funding comes to an end, this overview of income sources demonstrates that the sector as a whole still faces challenges in diversifying income sources. Some new diversification methods have been tried in 2016, such as showing content from other content providers which are willing to provide their content for free or even pay for the additional exposure. These programme

supply arrangements are allowed only under certain conditions, for example, L-DTPS services need to consider the implications of their arrangements on their ability as L-DTPS services to comply with Rule 9.1 of the Broadcasting Code. This rule requires broadcasters to maintain independent editorial control over their programming.

Although the sector continues to show an overall net debt, there was some improvement in

performance in 2016, when the overall sector debt was reduced by 30% (from £11m to £7m) as shown in Figure 2.32. Many services have found ways to increase income and reduce outgoings. Ofcom has helped facilitate cost saving in the sector by being flexible and responsive to requests from local television services, for example when they have requested reductions to statutory programming commitments.

Figure 2.32: Average and total local TV sector operating balances: 2015 - 2016

Average operating balance (£000)

2015	2016
-549.8	-368

■ 2015 ■ 2016

Total operating balance (£m)

2015	2016
-11.0	-7.7

■ 2015 ■ 2016

Source: Ofcom/broadcasters. Includes all channels operating in the respective year
One service was only able to provide income and expenditure figures for the last quarter of 2016 rather than for the full year that they were broadcasting. All other services provided figures for the full year. All figures expressed in real terms.

Channels have contributed new local programming to the UK media landscape, but many continue to find their output commitments challenging

As part of the licence application process, applicants are required to submit proposals for the number of hours of first-run and repeated local programming they plan to broadcast. These commitments are then transposed into the licences of all successful applicants. Ofcom has a minimum expectation of seven hours per week of local news programming for all local channels. Beyond this, applicants are free to decide the level of commitment they wish to provide.[1]

Figure 2.33 shows the number of hours of first-run local programming broadcast by local television services in 2016. The average volume of first-run local programming

broadcast by a service fell to 1,625 hours (or 31.2 hours per week) from 1,732 hours (33.3 hours per week) in 2015. However, there was an increase in the average number of first-run local news and current affairs hours. In 2015 the average was 734 hours per year (14.1 per week) compared to 805 hours (15.4 per week) in 2016.

Some services have established partnerships with newspapers and radio broadcasters to jointly produce content that helps meet these programming commitments.

To date most channels have asked to reduce their programming commitments after they started broadcasting. By 31 May 2017, 21 of

the 28 services on air had submitted a programming commitment change request to Ofcom. In most cases this was because the service providers felt unable to deliver the required programming hours and wished to reduce the commitment. Ofcom may agree to such requests so long as it is satisfied that the service continues to meet its obligations as set out in The Local Digital Television Programme Services Order 2012[2]. In total, Ofcom had considered 42 requests to change programming commitments by the end of May 2017 (some channels have submitted more than one change request), of which 30 have been approved.

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[1] See paragraph 1.47 of Ofcom's statement Licensing Local Television- How Ofcom would exercise its new powers and duties being proposed by Government, https://www.ofcom.org.uk/consultations-and-statements/category-1/local-tv

[2] http://www.legislation.gov.uk/ukdsi/2012/9780111518212/contents?view=plain

Figure 2.33: Hours of first-run local programming on local television services: 2016

Number of hours

■ TOTAL hours of first-run news & CA in 2016 (hours)   ■ TOTAL hours of first-run local programming in 2016 (hours)
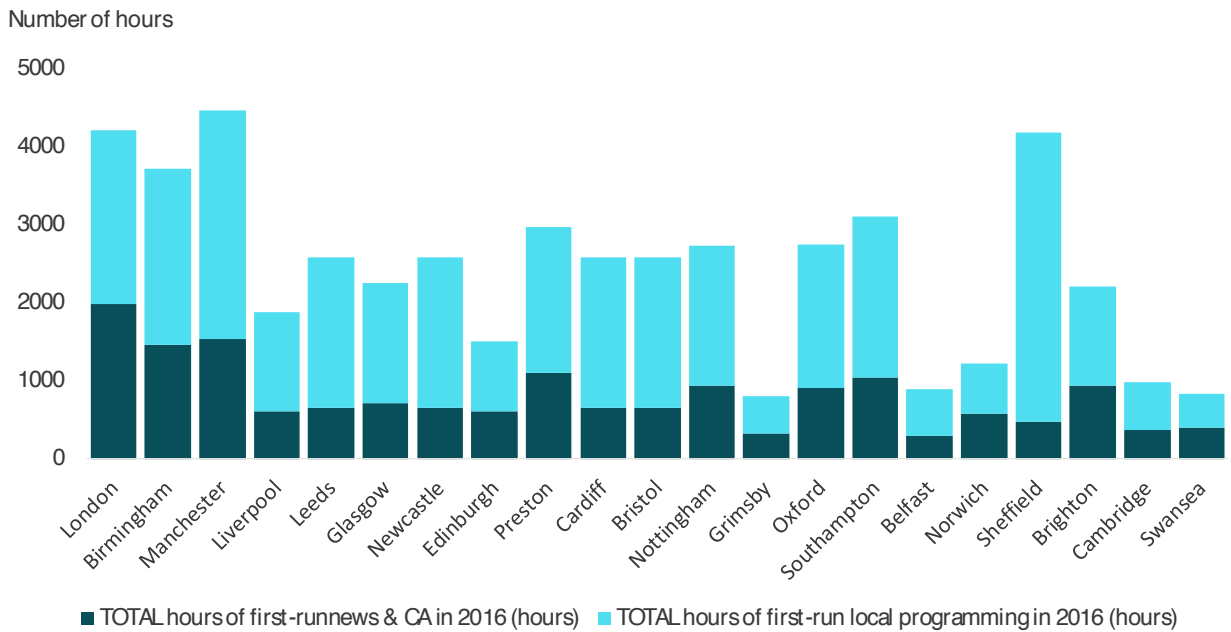
Source: Ofcom/broadcasters. Figures calculated based on the hours that were required in 2016 according to the respective licences, with the addition of the average weekly under- or over-delivery reported by the service in its annual local return. Swansea launched 12 July 2016, all other channels broadcast during the full year

The majority of local television channels are available across multiple platforms

In its initial framework for the sector, the Government focused on bringing about local television on DTT, and considered it best to allow services to make their own decisions about non-DTT transmission platforms.[1] As a result, the presence of a local television service on cable or satellite is not covered by the local television licence; if a local television channel wishes to broadcast on Virgin Media or Sky, it

can do so provided it has obtained the relevant Ofcom licence.

Audience figures are important in the local television sector as they can be used to drive advertising revenue. To increase their audiences, many operators have chosen to make their channels available on other platforms, as outlined in Figure 2.34. The table shows that of the services

broadcasting in 2016, their presence on other platforms was similar to 2015; 17 were present on Virgin Media and available online either through streaming or catch-up services. Of these channels, eight were also available on Sky. Sky charges for carriage of local TV services, whilst Virgin Media offers it for free to those local TV services that are not available on Sky.

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[1] See paragraphs 29 to 31 of the document Local TV: Making The Vision Happen:Government response to the consultations on the Local TV Framework and Pioneer Locations, dated December 2011, http://old.culture.gov.uk/consultations/8699.aspx

Figure 2.34: Platform availability of local TV services broadcasting in 2016

Channel location	Sky	Freesat	Virgin Media	Internet	DIT
London	✓		✓	✓	✓
Birmingham			✓	✓	✓
Manchester					✓
Liverpool			✓	✓	✓
Leeds	✓		✓	✓	✓
Glasgow	✓		✓	✓	✓
Newcastle	✓		✓	✓	✓
Edinburgh	✓		✓	✓	✓
Preston					✓
Cardiff	✓		✓	✓	✓
Bristol	✓		✓	✓	✓
Nottingham	✓		✓	✓	✓
Grimsby			✓	✓	✓
Oxford					✓
Southampton					✓
Belfast			✓	✓	✓
Norwich			✓	✓	✓
Sheffield			✓	✓	✓
Brighton			✓	✓	✓
Cambridge			✓	✓	✓
Swansea			✓	✓	✓

Source: Ofcom/ broadcasters.

An average of over 1.8 million UK households per week (7.0%) watched a local television channel between April 2016 and April 2017

Viewing figures for local television channels in the UK are reported by BARB as a collective 'local TV network' and 'Made TV network'. The exceptions to this are London Live, reported separately, and the STV channels (Glasgow and Edinburgh) which are reported together as 'STV City'. Our analysis combines all the measured local television channels into a single group to give an overall picture of local television viewing. However, not all local television services subscribe to BARB audience measurement. The table below outlines the channels that do subscribe and which are included in our analysis.

Figure 2.35: Channels included in BARB reporting, 2016

Channel group	Channels	Start reporting date
Local TV network	Estuary TV	20 April 2015
	Latest TV	20 April 2015
	Notts TV	20 April 2015
	NVTV Belfast	20 April 2015
	Sheffield Live TV	20 April 2015
Made TV network	Made in Bristol	20 April 2015
	Made in Leed	20 April 2015
	Made in Cardiff	20 April 2015
	Made in Newcastle	20 April 2015
	Made in Liverpool (was Bay TV Liverpool)	15 June 2015
	Made in Birmingham	13 June 2016
STV City	STV Glasgow	02 June 2014
	STV Edinburgh	12 January 2015
London Live	London Live	31 March 2014

Source: BARB reported channels across the analysis period of 20 April 2015 to 23 April 2017. No channels ceased reporting across the analysis period. The channel groupings are as of May 2017.

Figure 2.36 shows the absolute number of households which watched any local television service between the launch of the local television network group on 20 April 2015 and 23 April 2017. This includes viewing on digital terrestrial television (i.e. the Freeview platform, whether through YouView, BT TV, TalkTalk, Plusnet or Freeview itself) and on the Sky and Virgin Media platforms. Local television channels can choose to be carried on the Sky and Virgin platforms, although not all of them do so (see Figure 2.34).

Unlike other channels, local television services are not available nationally, and the size of the coverage area for the channels varies by platform. The total population able to receive the reported local television channels is not available in BARB, and therefore we compare their total viewing figures to the entire UK television population. We do, however, know

how many people can receive the reported local television channels through DTT, as we have data on the coverage that each transmitter achieves. We estimate that a total of 13.1 million households[1] across the UK could receive a local television service through digital terrestrial reception in 2016. It is not possible for us to estimate the coverage areas for local television for Sky or Virgin, as these vary for each service and region.

Between April 2016 and April 2017, 1.8 million UK households (7.0%) watched at least one of the local television channels for at least three consecutive minutes, on any platform, in an average week. This was up from 1.5 million viewers (5.8%) a week the year before. In 2015 viewing peaked during the Christmas and New Year weeks, at just under two million households. This increased to just under 2.5 million during the Christmas period in 2016. Weekly viewing reached

a high in the same weeks, with just over a million households in the New Year week in 2015 and around 1.6 million households in the Christmas week in 2016. The highest number of households watching any local TV channel for the entire period was during Christmas week in 2016 (26/12/2016- 01/01/2017).

Looking at the analysis period by year, since the local TV channels were first reported by BARB on 20 April 2015, the average weekly reach of the collective local TV channels has increased by 23% on all platforms and by 36% on the DTT platform. When compared to the estimated DTT coverage area of just the BARB measured services (9.5 million households in year one[2] and 10.5 million households in year two), the average weekly three-minute reach of local TV services through the DTT platform has increased from 8.6% to 10.6% year on year.

Figure 2.36: **Average weekly three-minute reach (000s) of local TV stations: April 2015-April 2017**
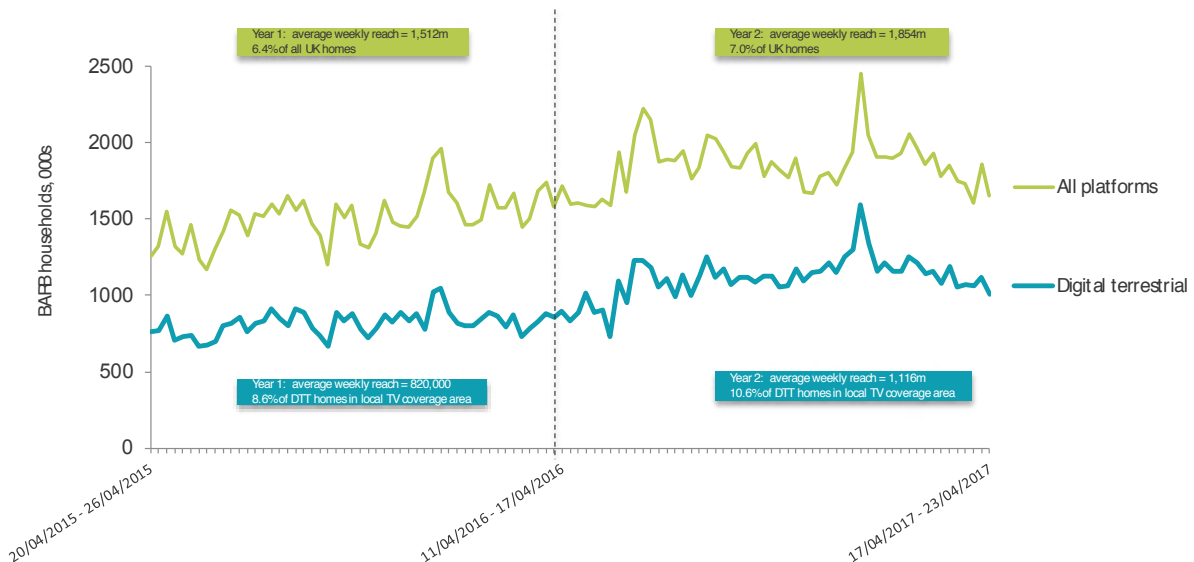
Source: BARB, all UK homes, 20/04/2015 to 23/04/2017. Based on viewing through the reception mode of DTT and all platforms (DTT/DSAT/DCAB and online via TV and peripherals). Reach criteria of 3 minutes or more consecutive viewing. Full weeks used for the correct calculation of averages. The DTT homes weekly reach % in the local TV coverage area has been calculated by using Ofcom estimates of the DTT homes population for the BARB measured local TV channels combined on 20 April 2016 and 20 April 2017.

[1] Not all of these services are reported by BARB.

[1] The combined estimated household coverage for all services that were BARB measured on 20 April 16 was 9.5 million and on 20 April 2017 it was 10.5 million.

2.3 The TV and audio-visual consumer

This section examines the availability and take-up of digital TV platforms, and trends in television consumption, including some categories of non-broadcast TV viewing. It also analyses viewers' attitudes to television.

2.3.1 Platform take-up

The proportion of all UK homes that own a TV set able to receive broadcast television was 95.5% in the final quarter of 2016, according to BARB's Establishment Survey. The remaining 4.5%, homes without a TV set, either choose to watch audio-visual content using an internet connection only, or do not use a television, or the television does not receive a broadcast signal.

Homes that only have digital terrestrial TV make up the largest

number of homes, reaching the 11 million mark for the first time in 2016. The number of homes with pay-digital satellite has plateaued, following peak take-up in 2010, and while households with free-to-view satellite services such as Freesat have grown slowly over time, take-up has stayed constant over the past few years. The Freeview service has been available through a number of OTT providers since 2012. In Q4 2016, 6.4% of homes had any

one of BT TV/ TalkTalk/ YouView/ PlusNet only (without satellite, cable or other platforms). While only a small proportion of households currently take any of these services, they are gaining ground on the proportion that have free satellite (7.2% of homes in Q4 2016).

In addition to the platform take-up highlighted below, many consumers are subscribing to paid-for VoD services, as outlined in section 2.1.3, on various platforms.

Figure 2.37: Platform take-up: 2001-2016, TV households (m)

Legend:
- Analogue Terrestrial Only
- Hybrid DTT and IPTV digital terrestrial only
- Digital Terrestrial only
- Digital cable
- Free to view digital satellite
- Pay digital satellite
- Analogue cable

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
38.5%	39.4%	45.3%	52.9%	61.8%	69.4%	77.3%	84.3%	88.2%	91.5%	94.4%	95.5%	94.7%	92.9%	95.4%	95.5%

Multichannel take-up/ TV homes* (%all households)

Source: BARB Establishment Survey. Household-level data based on all TV sets in homes. Data points are based on Q4 of each year.
Notes: From Q4 2015 BARB changed its methodology and its definition of a TV-set-owning household. The main change was that up to Q4 2015 a home was defined as a TV home if it owned a TV set which had been used to watch TV programmes in the last six months. Since Q4 2015 the claimed usage element was removed, which led to an increase in the TV set homes population. BARB did not re-state the TV homes population before the methodology change, so comparisons with previous data should be made with caution.
*Digital switchover was completed across the UK in October 2012. Data from 2013 therefore refer to TV households as a % of all households.
Digital terrestrial TV = digital TV through an aerial (this could include Freeview, BT TV/ TalkTalk/ YouView/ PlusNet) and not through DSAT/DCAB or other platforms.
IPTV digital terrestrial only = receives digital terrestrial TV through any of BT TV/ TalkTalk/ YouView (but may have Freeview-integrated TV) and not DSAT /DCAB/ other platforms.

Households with Freeview TV only have an older age profile than those with satellite or cable TV

Figure 2.38 compares households that only have Freeview television services with those that have satellite or cable. In terms of age profile, households with satellite or cable television services are more likely to be younger compared to Freeview-only homes. There are also differences according to socio-economic group; Freeview-only homes have a greater proportion of DE consumers compared to both the overall UK population and households with satellite or cable TV services. These demographic differences influence the amount of time households with different TV platforms spend watching TV each day (as, for example, older people are more likely to be Freeview-only and older people also spend more time on average watching television): Freeview-only households watch 15 minutes more each day compared to households with satellite TV, and 25 minutes more than those with cable TV.

Figure 2.38: Platform demographics by age, socio-economic group and viewing hours
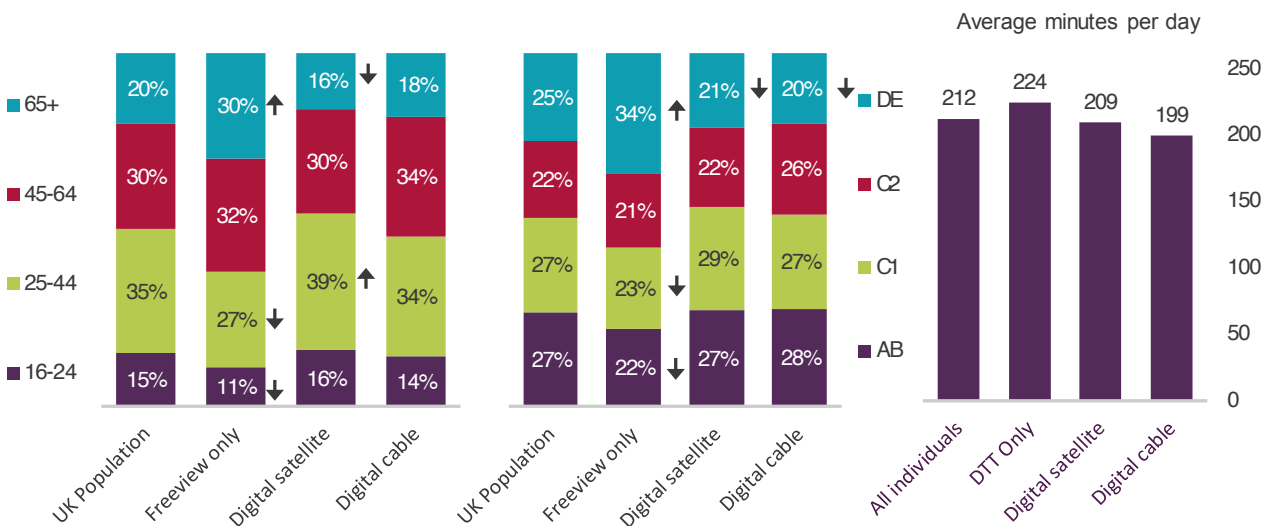
Source: Platform profile: Ofcom Technology Tracker H1 2017. Average minutes: BARB 2016 data
Note: Arrows indicate any significant differences at the 95% confidence level between UK population and the TV platform

Smart TV:

'Smart TV' refers to a stand-alone television set with inbuilt internet functionality. Users connect to the internet via a broadband router or modem. Smart TVs are produced by consumer electronics manufacturers including Samsung, Sony, Panasonic and LG. The definition does not include television sets connected to the internet via a third-party device such as a set-top box, a games console or a laptop/PC.

Connected TV:

'Connected TV' refers to a television that is broadband-enabled to allow viewers to access internet content. This includes smart TVs as well as a TV connected by an external device such as a set-top box, games console, tablet, Blu-ray/DVD player or internet-connected dongle.

## The number of homes that have a smart TV has increased three-fold in the past three years

Although around three-quarters of homes have had TV sets capable of screening high definition programmes for a number of years, it is only in the past couple of years that many have started to take advantage of this; 63% of households now claim they have access to HDTV programmes compared to 50% in 2013. As HDTV channels are now available through all television platforms, including Freeview, it may be that many households are receiving HDTV services but are not aware of it.

Ownership of digital video recorders (DVRs), devices that allow viewers to record and store content as well as pausing live TV, has plateaued since 2014: 62% of households now have one[1]. This is likely to be influenced by the growth in consumption of catch-up TV services as well as online video services as these are instant access services that don't rely on DVR functionality. In line with this, smart TVs are increasing in popularity; 38% of households now own at least one, three times more than in 2014.

Figure 2.39: Take-up of HDTV sets and HD services, smart TVs and DVRs
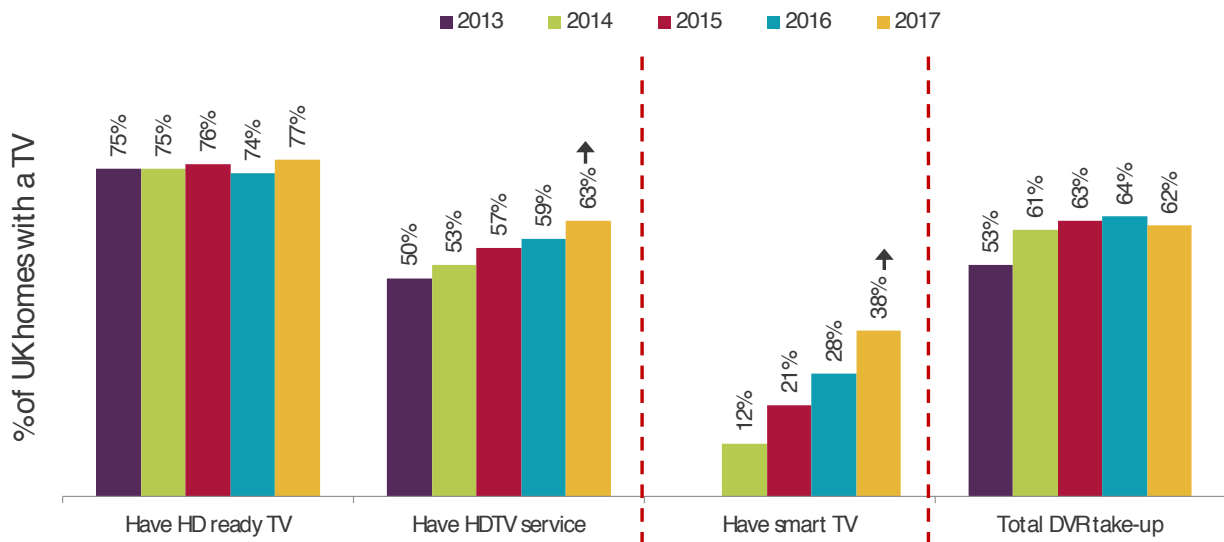
Source: Ofcom Technology Tracker, data as at Q1 2014, then H1 2015-2017
Base: All adults aged 16+ with a TV in the household: 2013 (3661), 2014 (3635), 2015 (3616), 2016 (3606), 2017 (3564)
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
QH3 (QH53): Is the main TV in your household an HDTV set or HD ready?/ QH4 (QH54): Although you have an HDTV-ready set, to actually watch TV channels and programmes that are broadcast in high definition, you need an HD set-top box or a TV with built-in HDTV receiver. For the main TV set, does your household have an HDTV service- from either Sky, Virgin Media, Freesat or Freeview?/
QH17 (QH62): Are any of your TV sets 'smart TVs'?
QH11A/B (QR1A/H): Does your household have Sky+/ Sky Q?/ QH11C (QR1B): Does your household have Virgin TiVo (pronounced tee-vo) or V+?/ QH11D/E/G (QR1C/D/E): Does your Freesat/ Freeview box of Freeview TV/ broadband TV service allow you to record and store TV programmes, and also pause and rewind live TV programmes?

[1] Data that has been used for this analysis is based on adults 16+ and where the DVR take-up is based on claimed availability of DVR devices in home, on a fieldwork period of January to February of each year. The data from our Technology Tracker is different to BARB data which is based on individuals 4+ from BARB's viewing panel taking account of every TV set in home and as an average across each year. Data therefore are not directly comparable because of the different methodologies applied and the different sample bases used.

## An estimated two-thirds of households have a connected TV

In addition to being able to access the internet through a smart TV, consumers can connect their TV to the internet using other means. As detailed above, 38% of homes have at least one smart TV; a similar proportion of households have connected their TV to the internet using another type of device (36%).

Figure 2.40 shows some of the activities most commonly undertaken by adults using their connected TV. Half of all adults (51%) have undertaken any internet activity on their TV, with 35-54 year olds the most likely to do this (62%).

Around four in ten adults (43%) with a connected TV watch TV programmes or films through

a catch-up service provided by a broadcaster. Of these, three-quarters of adults (73%) said they did this to catch up on a programme/film which they had missed when it was originally shown. Paid-for or subscription service content is more popular among those aged under 65 than those aged 65+ (31% vs. 10%).

Figure 2.40: Activities undertaken on a connected TV, by age
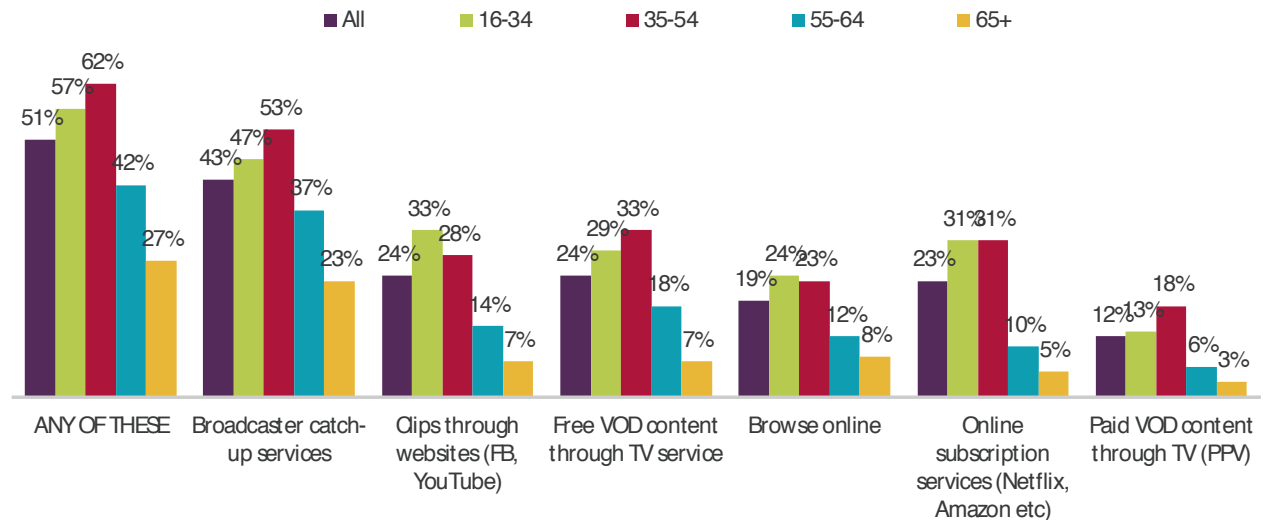
Source: Ofcom Media Tracker 2016.
Base: All respondents in 2015 (2,069); aged 16-34 (596), 35-54 (640), 55-64 (342), 65+ (491).
Q7/ Q9C/ Q10C/ Q11C/ Q13- And which, if any of these devices have been connected to your home broadband service as well as a TV set in the home in the last 12 months to view something on the TV screen?
Q14A-H/ Q15 – Which, if any, of these activities have you used your device for in the last 12 months when connected to a TV?

2.3.2 Broadcast TV viewing trends

Broadcast TV viewing

BARB analysis is based on viewing of scheduled TV programmes such as those listed in TV listings magazines or on electronic programme guides (EPG) on TV sets. It includes time-shifted viewing of these programmes. Together these make up the official industry measure of viewing, on which our analysis is based. Viewing is reported for people aged 4 and above.

Time-shifted viewing

'Time-shifted' viewing is defined by BARB as viewing of programmes recorded and subsequently played back on a television set within seven days of live broadcast, as well as viewing after pausing or rewinding live TV. Recording devices included in BARB analysis include video cassette recorders (VCR); DVD recorders (which store programmes on writable DVDs); digital video recorders

(DVRs) which use a hard disk to store programmes chosen from an electronic programme guide, and combination devices (which use a combination of internal hard disk and removable DVDs to store programmes).

Viewing any catch-up TV player services through the television set is also captured under 'time-shifted viewing' if the content has been broadcast live in the past seven days. This includes catch-up player services accessed through apps on smart TVs and games consoles, and viewing on any device such as laptops, personal computers or tablets, so long as they are connected to the television set.

Viewing outside the seven-day window, viewing catch-up services on devices that are not connected to the TV set, and video on-demand (VoD) services (such as Amazon Instant Video and Netflix) which have not been scheduled

on a television channel, are not reported as time-shifted viewing.

Non-industry standard data

Besides the industry standard data sets, BARB also makes available other data that it collects. One of these is time-shifted viewing between eight and 28 days after the initial broadcast. Another is unmatched data which refers to activities when the TV set is in use but the content cannot be audio-matched or otherwise identified. This would include the TV being used for gaming, viewing DVDs/box-sets/ archives, subscription video-on-demand (SVoD), time-shifted viewing beyond 28 days, apps on smart TVs and navigation around EPG guides where there is no in-picture live content. Unmatched viewing has been reported by BARB since July 2013.

We include some analysis of non-standard data to put the measured TV viewing analysis into context.

Time spent watching broadcast TV continued to fall but the pace of decline has eased, and weekly reach remains high

The average time spent watching TV in 2016 was 3 hours 32 minutes a day, four minutes less than in 2015. This was a slowing of the decline which began in 2012, when daily viewing time fell

after holding steady at around four hours a day since 2010.

The majority of people continue to tune in to TV. Ninety-one per cent of the TV population watched TV

at least once in a typical week in 2016, broadly the same as a decade ago. The year-on-year decline was slightly less than the fall between 2014 and 2015, but weekly reach has dipped each year since 2012.

Figure 2.41: Average weekly reach and average daily minutes of total TV: 2006-2016
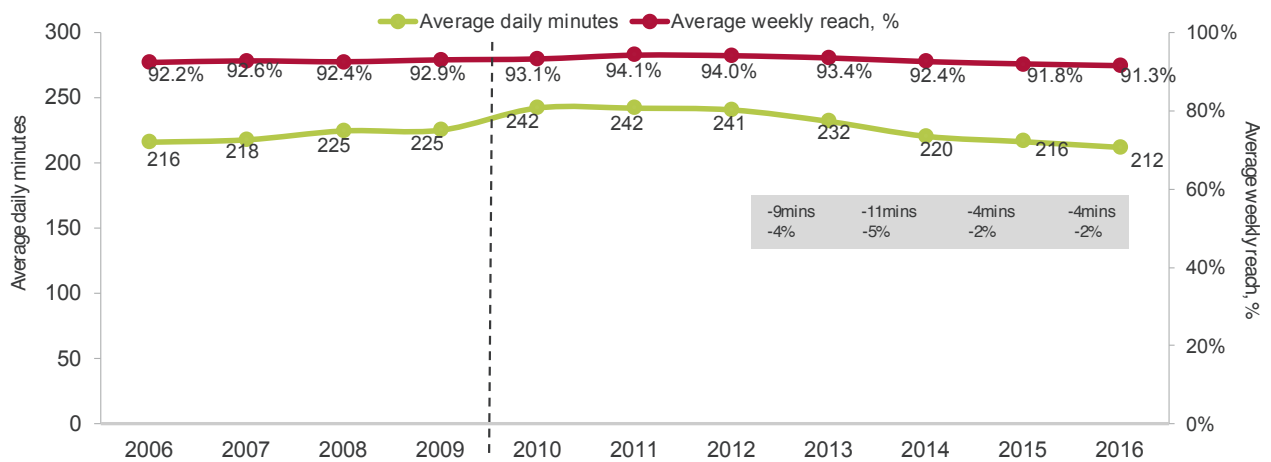
Source: BARB, individuals 4+, network, total TV. Reach criteria: 15+ consecutive minutes of viewing at least once in the average week. Full weeks used for the correct calculation of averages.
Note: New BARB panel introduced 1 Jan 2010. Therefore pre- and post-panel change data must be treated with some caution (see dotted line).

Viewing differences by age have widened in the past five years

In five years, average viewing time has dropped markedly; people are watching 30 minutes (12%) less TV a day than they were in 2011.

Viewing fell across almost all age groups across this period, but the decline has been greatest, proportionally, among adults aged 16-24 and children aged 4-15, for whom viewing dropped by around a third. As the heaviest viewers to TV generally, viewing held stable among the over-64s.

Compared to a decade ago, average daily viewing across the population as a whole in 2016 was just four minutes less than in 2006. But behind the average, this apparent resilience in television viewing is driven by older audiences. The profile of TV viewers has become older with adults 55+ now making up just under half (48%) of the total TV audience compared to 38% in 2006. Adults aged 65 and over watched an average of 344 minutes a day in 2016, up from 294 in 2006; 16-24s watched an average of 114 minutes compared to 155 in 2006.

More recently, in 2016, the biggest proportional falls in daily viewing time compared to 2015 were among children and 16-24s (by 9% and 8% respectively). But while the rate of annual decline in viewing among 16-24 year olds slowed for the first time since 2012, the proportional decline for children increased, after slowing between 2014 and 2015. The only other age group to have an accelerated decline in 2016, compared to a slowing or constant decline, were adults aged 35-44. In contrast, viewing among adults 65 and over increased by two minutes a day.

Figure 2.42: Average daily minutes to total TV, by age group: 2006-2016
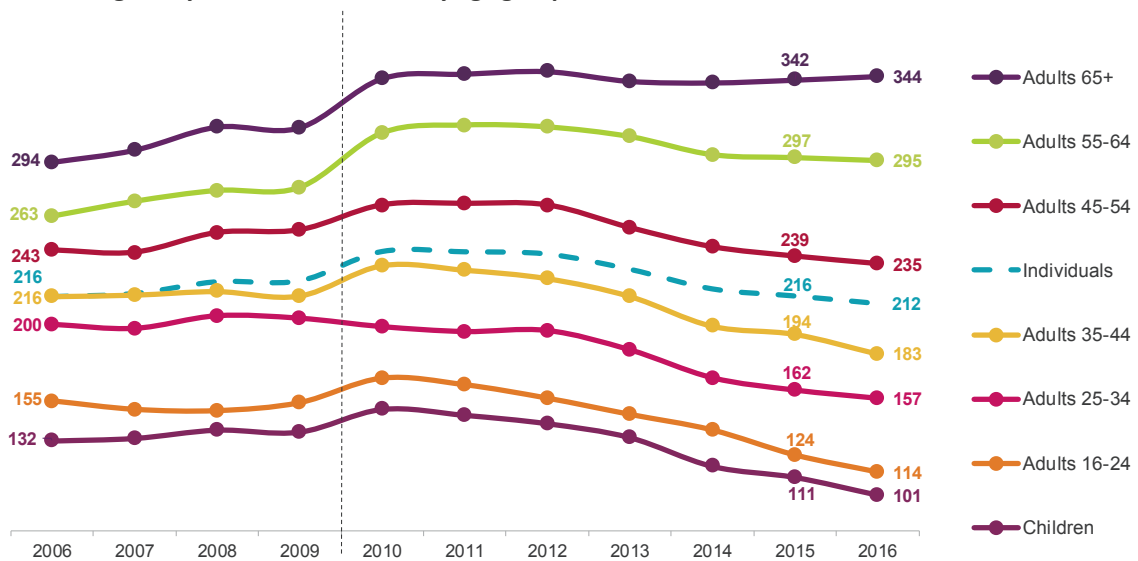
Source: BARB, network. Average minutes of viewing per person per day. New BARB panel introduced 1 Jan 2010. As a result pre- and post-panel change data must be treated with some caution.

TV reaches 91% of the TV population in a typical week, but fewer people in the youngest groups

Nine in ten people watch TV at least once in a typical week. By age group, weekly reach is higher among the older TV population than among younger age groups (under 35).

Weekly reach ranged from 80% among 16-24s to 97% or more among 45s and over in 2016. Year on year, the proportion of 16-24s and children who tune in weekly has fallen, while it has remained the same for all other age groups. Like time spent viewing, weekly reach has fallen among the under-65 age groups since 2011, with the steepest decline among 16-24s and children.

Figure 2.43: Average weekly reach of total broadcast TV, by age group: 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Individuals 4+	92%	93%	92%	93%	93%	94%	94%	93%	92%	92%	91%
Children (4-15)	89%	91%	90%	91%	90%	92%	92%	91%	88%	87%	86%
Adults 16-24	83%	83%	82%	83%	85%	87%	86%	85%	83%	82%	80%
Adults 25-34	92%	92%	91%	92%	91%	93%	93%	92%	90%	89%	89%
Adults 35-44	94%	94%	94%	94%	95%	95%	95%	94%	94%	93%	93%
Adults 45-54	94%	95%	95%	96%	96%	96%	96%	96%	95%	95%	95%
Adults 55-64	95%	96%	96%	96%	96%	97%	97%	97%	96%	96%	96%
Adults 65+	96%	96%	96%	96%	97%	97%	97%	97%	97%	97%	97%

Source: BARB, network, total TV. Reach criteria: 15+ minutes of consecutive viewing. A new BARB panel was introduced in 2010 therefore pre and post panel change must be treated with some caution.

The combined reach of the main five PSB channels is larger than the combined reach of all non-PSB owned channels in the UK

Despite increased competition from other broadcast channels on TV, and other sources of programmes and films beyond the TV, eight in ten people continued to watch at least one of the five PSB channels in a typical week in 2016. This was higher than the combined weekly reach of all channels that were not PSB-owned ('others'), and higher than the collective reach of the PSB portfolio channels (which include the main PSB '+1' channels and channels such as BBC Four, ITV2 and E4). In ten years, the weekly reach of the main PSB channels has decreased by only 6pp, although

this is higher than the fall in weekly reach to TV as a whole (1pp).

With an increasing selection of non-terrestrial channels available to consumers, viewing of the PSB portfolio channels and 'others' has grown progressively over time. In 2009, as more PSB portfolio channels were launched, weekly reach of the PSB portfolio group of channels matched that of the 'others' group, and then exceeded it the following year. After a peak weekly reach of 77% in 2012 and 2013, reach of the PSB portfolios fell between 2-3pp each year to

70% in 2016. The weekly reach of 'others' has held steady since 2011, at 71%. In 2016, a higher proportion of the TV population watched BBC One than either of the PSB portfolio or 'others' channel groups.

Among the main PSB channels, in the last decade the biggest losses in weekly viewing were to Channel 4 and ITV. The most stable, comparatively, were BBC One and Channel 5. More recently, weekly reach for each main PSB channel held steady or dipped slightly year on year.

Figure 2.44: Average weekly TV reach, by channel: 2006-2016
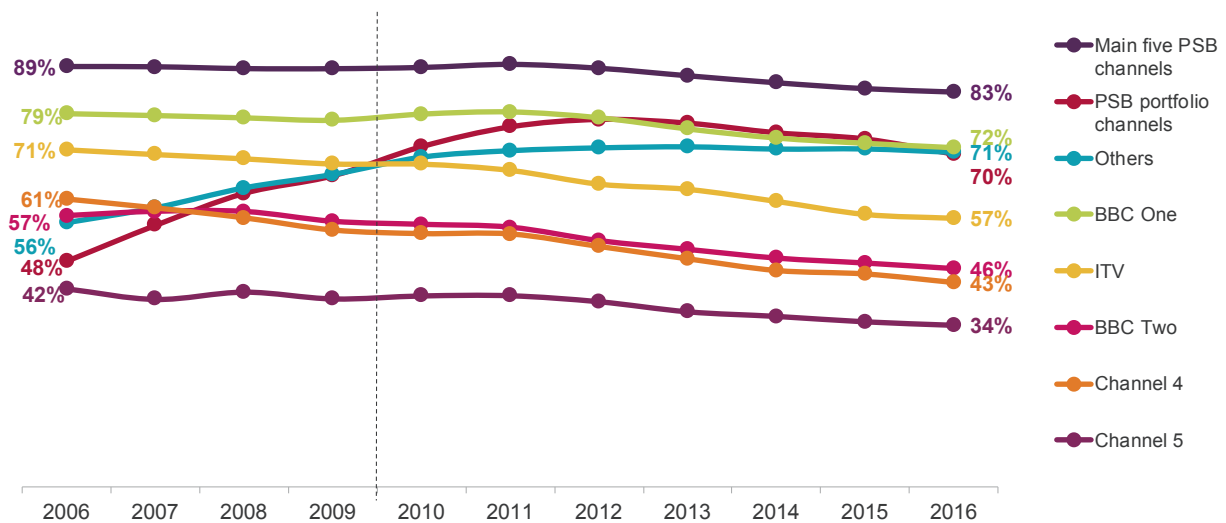
Source: BARB, individuals 4+, Network, Reach criteria:15+ minutes of consecutive viewing.
Note: A new BARB panel was introduced 1 Jan 2010. Therefore pre- and post-panel change data must be compared with some caution. Note: Following digital switchover in Wales in 2010 S4C ceased to carry Channel 4 content. S4C is therefore included in the Channel 4 figure in and before 2009 but not from 2010 onwards. S4C (inc HD) weekly reach in 2016 was 0.4% (all homes). The main five PSB channels include viewing to their HD channel variants but exclude viewing to their +1 channels (which are part of the PSB portfolio group). 'Others' = all channels apart from the main five PSBs and their portfolio channels.

## The main five PSBs continue to retain a majority share of viewing

From five channels in 1988 (BBC One, BBC Two, ITV, Channel 4 and S4C) to 328 BARB-reported channels in 2016, consumer choice on conventional TV has expanded greatly. However, the main five PSB channels continued to retain over half of the total broadcast TV audience in 2016, maintaining their 51% share over the past four years. When their portfolio of channels is added, the PSB broadcasters accounted for over two-thirds of viewing.

The year-on-year share of viewing to BBC One, BBC Two, Channel 4 and Channel 5 has been stable, as it has been over the past few years. In February 2016, BBC Three ceased as a broadcast TV channel, reducing the BBC portfolio share from 5.2% in 2015 to 4.3% in 2016. The shares of the ITV and Channel 4 portfolio channels also dipped year on year, but this fall was partially offset by small growth in the Channel 5 portfolio share.

The overall PSB portfolio loss in share was 1pp, accounting for 19% of TV viewing in 2016.

As shown in Figure 2.45, ten of the PSB portfolio channels were in the top 20 most-watched channels (ranked by share) in 2016, along with the main five PSBs.

Figure 2.45: Channel shares in all homes: 1988-2016
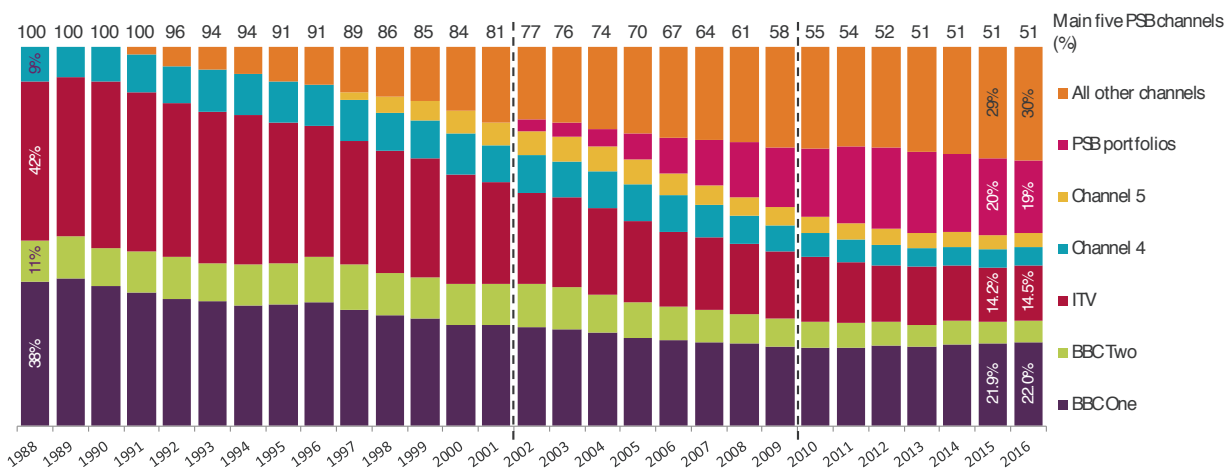
Source: BARB, TAM JICTAR and Ofcom estimates, individuals 4+.
Notes: new BARB panels were introduced in 2002 and 2010, therefore pre- and post-panel change data must be compared some with caution (see dotted lines); following digital switchover in Wales in 2010 S4C ceased to carry Channel 4 content, S4C is therefore included in the Channel 4 figure in and before 2009 but not from 2010 onwards (S4C share in 2016 = 0.1% of all homes); the main five PSB channels include viewing to their HD channel variants but exclude viewing to their +1 channels.

The top 20 channels reflect the older profile of traditional TV

Figure 2.46 plots the age and socio-economic (SEG)[1] profile of the 20 most-watched channels in 2016, relative to the 35+ age and ABC1 SEG profile of all viewers to total TV. It also shows the share of each channel, depicted by the size of the bubbles. The profile of a channel gives an indication of its target audience, and for commercial channels, this is used to sell advertising.

Reflecting the older profile of TV overall, most of the top 20 channels in 2016 had audiences that were older or the same as the average. This was particularly the case for those channels with the largest share of viewing, including BBC One, ITV and BBC Two. Apart from CBeebies (the dedicated children's channel for 0-6 year olds from the BBC), the channel with the youngest profile was E4 (43% of its audience was aged under 35) while the channels with the oldest profile were ITV3 and Drama (95%

and 94% of whose audiences respectively were aged 35 and over).

Channels from the BBC, Sky and Channel 4 attracted higher proportions of ABC1 audiences than TV generally (45%). Of the top 20 most-watched channels, BBC Four had the biggest ABC1 profile, at 59%.

Reflecting their greater reach, all the top 20 channels apart from Sky One and Sky Sports 1 are available without a pay-TV subscription.

Figure 2.46: Age and socio-economic audience profile of the 20 most-viewed channels: 2016
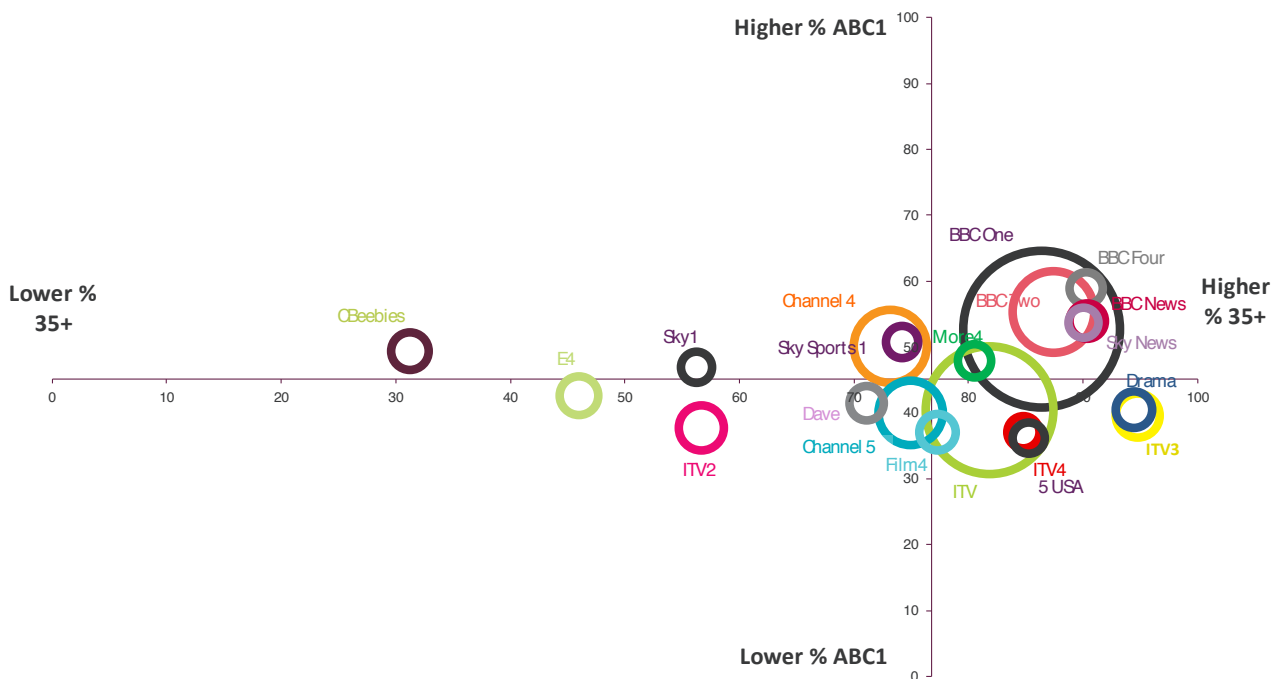
Source: BARB/TRP Research. Individuals 4+. Based on the top 20 channels ranked by share, excluding individually reported +1 channels. Size of bubble relates to share among individuals 4+. Profile based on age: % 35+, social: % ABC1 individuals. Axes cross at the average age/SEG profile of Total TV. Includes HD variants where applicable, excludes +1 variants.

[1] A classification of household social status based on the occupation of the chief income earner. BARB reports the following social grades: AB – higher (A) or intermediate (B) managerial, administrative or professional; C1 – supervisory or clerical and junior managerial, administrative or professional; C2 – skilled manual workers; D – semi-skilled and unskilled workers; E – state pensioners, casual or lowest grade workers;

Growth in time-shifted viewing has slowed, particularly in the last three years

In 2016, the proportion of time-shifted viewing that takes place within seven days of broadcast increased slightly (to 13.8%) but was the smallest annual growth since 2007. Even with increased adoption of DVRs and devices such as smart TVs and games consoles, which offer access to catch-up services without the need for a recording device,

this trend of slowing growth has been apparent among the general population in the past three years.

DVR take-up continued to increase, to reach 75.5% of the TV population in 2016[1], but take-up has grown at a much faster rate than the increase in time-shifted viewing among people who own a DVR. The large increases in DVR ownership has not translated

into a radical shift in DVR individuals' viewing habits; the majority of their viewing time (82.2%) is still to live TV and is similar to the proportion of their viewing time in 2006 (85.0%). The growth in the proportion of viewing that is time-shifted among those with DVRs has been slower in the past three years than in earlier years.

Figure 2.47: DVR take-up and time-shifted viewing: all individuals, and individuals in DVR homes: 2007-2016
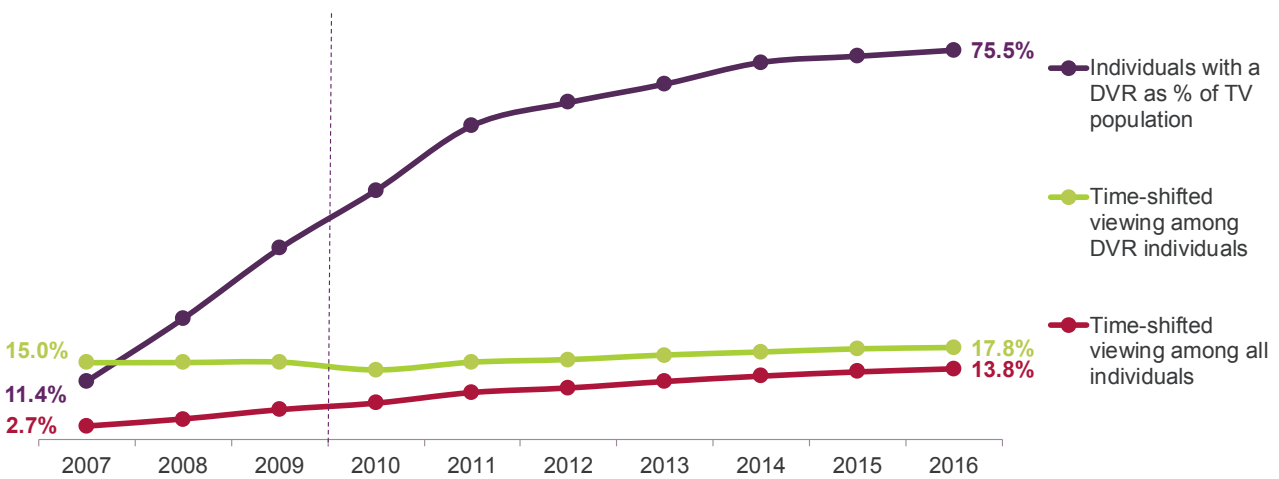
Source: BARB, network, individuals 4+. New BARB panel introduced 1 Jan 2010. Therefore pre- and post-panel change data must be treated with some caution. Based on viewing up to seven days after initial transmission.

[1] Data that has been used for this analysis is based on individuals 4+ from BARB's viewing panel taking account of every TV set in home and as an average across each year. This is to align the time-shifted viewing analysis to a comparable base. The data from BARB is different to our Technology Tracker data which is based on adults 16+ and where the DVR take-up is based on claimed availability of DVR devices in home, on a fieldwork period of January to February of each year. Data therefore are not directly comparable because of the different methodologies applied on different sample bases.

Live viewing minutes down, but not compensated by increase in time-shifted viewing

The analysis above focuses on the proportion of viewing that is time-shifted (up to seven days), rather than the absolute minutes of time-shifted viewing. Figure 2.48 breaks down the types of viewing that take place on the TV set in minutes, including the industry

standard datasets of live viewing, and viewing that takes place up to seven days after transmission (boxed in dotted lines), as well as non-industry standard data. Focusing on the seven-day industry data, it shows that live TV viewing time fell between 2015 and 2016,

continuing the trend of the past three years (and beyond)[1]. But while the proportion attributed to seven-day time-shifted viewing increased slightly year on year (+0.6pp to 13.8% in the chart above), absolute time-shifted viewing minutes was steady at 29 minutes a day in 2016.

The 2016 decline in viewing may have been replaced by other activities on the TV set

Earlier in this section we looked at the trend in daily viewing time, noting particular declines since 2012. Besides the industry standard data sets, BARB also makes available other data that it collects. One of these is time-shifted viewing between eight and 28 days after the initial broadcast. Another is unmatched data which refers to activities when the TV set is in use but the content cannot be matched to broadcast TV programmes and films (this can include subscription VoD like Netflix, apps on smart TVs and gaming). Both of these

were introduced in July 2013. These additional data allow us to identify what type of viewing or activities might be driving the decline in seven-day viewing.

In 2016 there were 35 minutes of unmatched TV activity time each day, on top of the 3 hours 32 minutes seven-day industry data from BARB. The four-minute loss to live TV between 2015 and 2016 was not offset by increases in either seven-day or eight-28 time-shifted viewing, both of which stayed the same, but the lost minutes

were offset by a corresponding increase in unmatched viewing (+5 minutes). This suggests that all of the decline in measured viewing may have migrated to other activities on the TV set rather than to other screens. The data also show that in the past three years all TV screen time has stayed constant, at 251 to 252 minutes, with a growing proportion of this to unmatched viewing. All of this indicates that it is not that people are not watching less on the TV set, but that what is being watched on the TV set appears to be changing.

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[1] Live viewing minutes has fallen in each year since 2010 when it was 225 minutes a day.

Figure 2.48: Average daily minutes of TV screen time, total TV, by activity type: 2014-2016
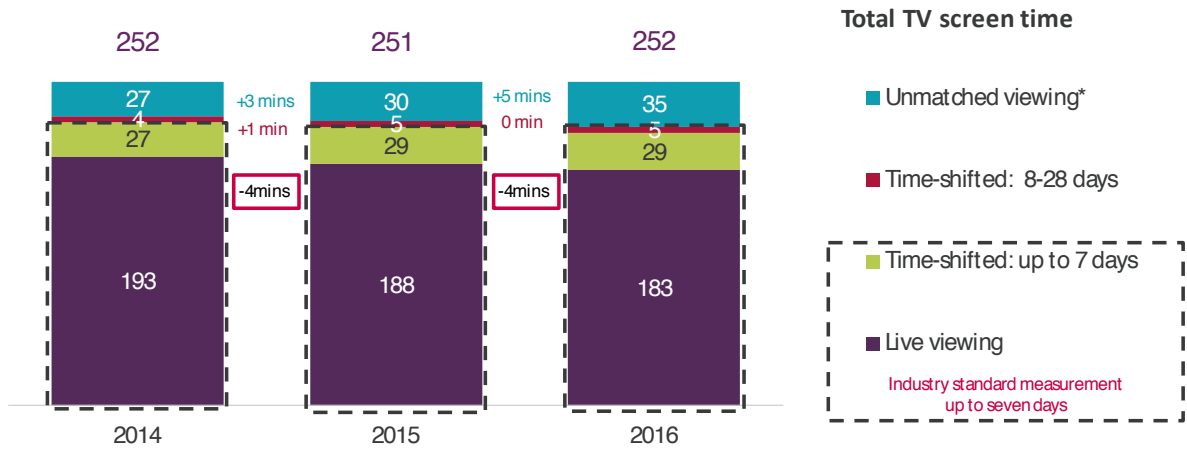
Source: BARB, individuals 4+,

*Note: Unmatched viewing = TV in use but content cannot be audio-matched or otherwise identified. Includes gaming, viewing to DVDs/ box sets/ archives, SVoD, time-shifted viewing beyond 28 days, apps on smart TVs and navigation around EPG guides where there is no in-picture broadcast content. Audio-matched digital radio stations (which accounted for 2 minutes of viewing time per person a day in 2016) are excluded. Unmatched viewing has been reported by BARB since July 2013. Dotted line marks difference between BARB standard industry data and the eight-28 day time-shifted and unmatched viewing.

Connected TV is the most-used device for unmatched content on the TV screen, but there are differences among the youngest and oldest adults

An additional reporting enhancement from BARB in December 2015 allows us to analyse the devices used for measured and non-measured TV. It can provide clues about the types of activity people might be using their TV screen for, apart from what is known from the industry standard data.

Of the 35 minutes a day spent on unmatched activity among all people, the largest proportion came from the TV set (such as using apps) at nine minutes a day, and from games consoles at ten minutes a day (this might be gaming or on-demand content accessed through an internet connection). Together, they make up a combined 55% of

unmatched TV screen time. The proportion of time spent on the TV set was lower for young adults than for the general population, while the share of time attributed to games consoles was markedly higher, making up almost half of the 50 minutes a day that 16-24s spend on unknown activities on the TV set. The spread of use of the remaining devices, such as Sky DVR, were broadly similar between all individuals and young adults.

Adults 65 and over spend the least amount of time on unmatched activities, at 15 minutes per day. Their use of the TV set accounted for a slightly higher proportion of their time than among the 16-24

year olds and the average, and made up the largest share of their unmatched TV screen time. Their use of the TiVo DVR (used by Virgin Media pay-TV customers) was also above average, at 10%, but the second-largest proportion of their unmatched screen time was spent using digital TV recorders (DTRs) (18%). 'Other' devices, which includes other types of DVRs and set-top boxes, made up 15% of their viewing time; Freesat (3%), cable PVRs and set-top boxes (4% combined) accounted for most of this. over-64s spent on average just 3% of their unmatched TV screen time on games consoles (i.e. an average of about 22 seconds a day).

Figure 2.49: Unmatched activity on the TV set, by device used: 2016

Proportion of unmatched daily viewing minutes
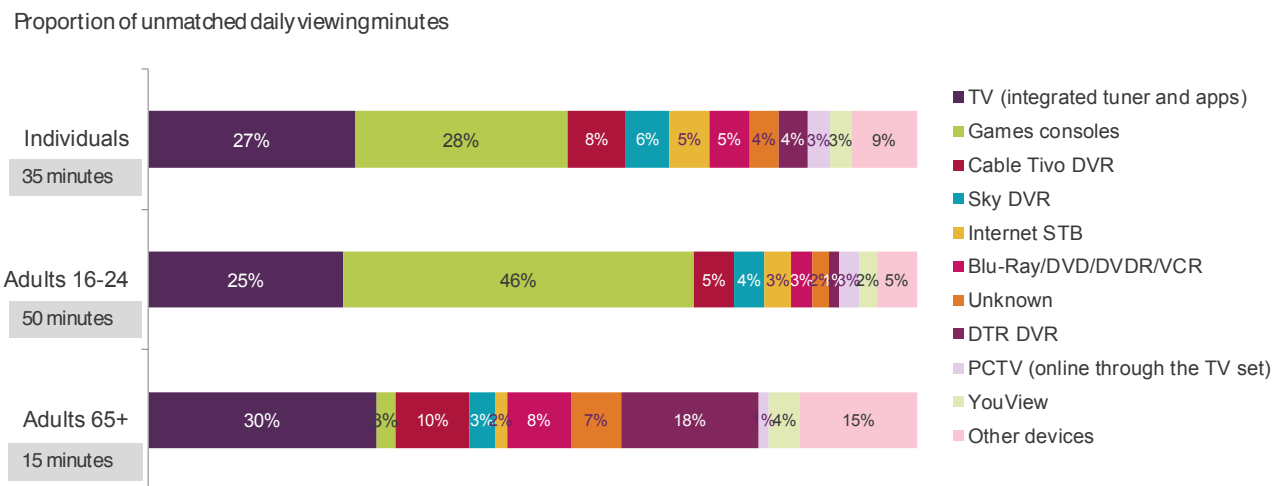
Source: BARB. Unmatched viewing by device use, based on average daily minutes of viewing in 2016. Unmatched: TV in use but content cannot be audio-matched or otherwise identified. Includes gaming, viewing DVDs/ box sets/archives, SVoD, time-shifted viewing beyond 28 days, apps on smart TVs and navigation around EPG guides where there is no in-picture broadcast content. Chart figures may not add up due to rounding.

Live broadcast TV accounts for 80% of programme viewing time across all screens, but has diminished over time

There is currently no industry standard measure of viewing to all programmes and films across all devices beyond the TV set. We therefore use a range of sources (such as our Digital Day research in previous years, and industry estimates) to understand consumption across live, recorded and on-demand (catch-up and paid) content.
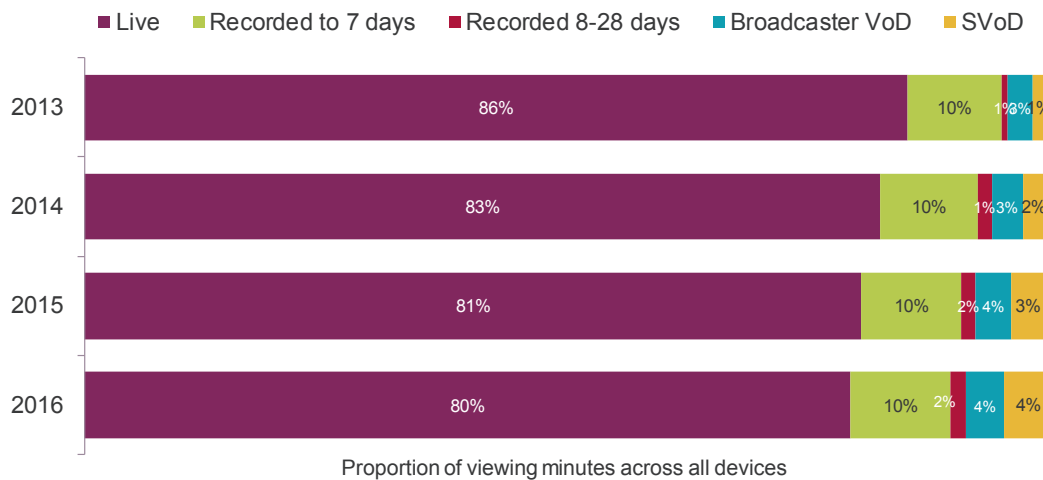
3 Reasons' estimates of legal, long-form viewing across all devices show that people spend most of

their viewing time watching live TV (80%) with recorded viewing (12%) accounting for more of their time than on-demand (8%).

With people connected to the internet more than ever, and take-up and use of video on-demand (VoD) services growing, time spent watching live TV has fallen from an estimated 92% of viewing in 2010. At the same time, the proportion of time spent watching recorded programmes has been flat over the past four years, while on-demand

viewing has doubled, although from a low base. Of VoD viewing, an equal proportion of time was spent watching on-demand programming from broadcasters across all platforms and from subscription video on demand (SVoD) providers in 2016. In the last few years, SVoD (e.g. Netflix, Amazon Prime) has grown at a faster rate than broadcasters' VoD (e.g. BBC iPlayer, ITV Player, Sky on demand).

Figure 2.50: Proportion of all AV viewing: live, DVR and VoD: 2013-2016

Proportion of viewing minutes across all devices

Source: 3 Reasons estimates (including BARB data). 8-28 day time-shifted viewing was introduced by BARB in July 2013. Base: All devices, legal, long-form professional AV content, Live includes simulcast. Excludes physical consumption (e.g. DVDs), short-form, pirated and adult content.
Broadcaster VoD = all broadcaster on-demand including catch-up and archive across all platforms (e.g. Sky and Netflix).
SVoD = on demand from Netflix, Amazon Prime Instant Video, non-broadcast VoD from Now TV and other SVoD providers.

2.3.3 Consumers' attitudes to television

**More than half of adult viewers feel that the quality of programmes has stayed the same over the past year**

Ofcom's annual PSB report[1] found that, in 2016, over three-quarters (78%) of regular or occasional viewers of any PSB channel[2] claimed to be either very or quite satisfied with PSB broadcasting, an improvement of 5pp since 2015. This is supported by findings from Ofcom's 2016 Media Tracker which showed that more than half of adult viewers in the UK (54%) felt that the

quality of television programmes has stayed the same over the past 12 months and 14% felt there had been some improvement. However, three in ten adults (29%) said they felt that quality had worsened.

As shown in Figure 2.51, there was a split between the youngest and the oldest viewers as to whether programme quality had improved

or worsened. The youngest viewers (16-34) were the least likely of all age groups to say that programme quality had got worse (20%) compared to 42% of viewers over 65. Viewers in the ABC1 socio-economic group were more likely than those in the C2DE group to say that the quality of programmes had improved (16% vs. 12%).

Figure 2.51: Opinion on the quality of programmes over the past 12 months (% of adults with a TV)
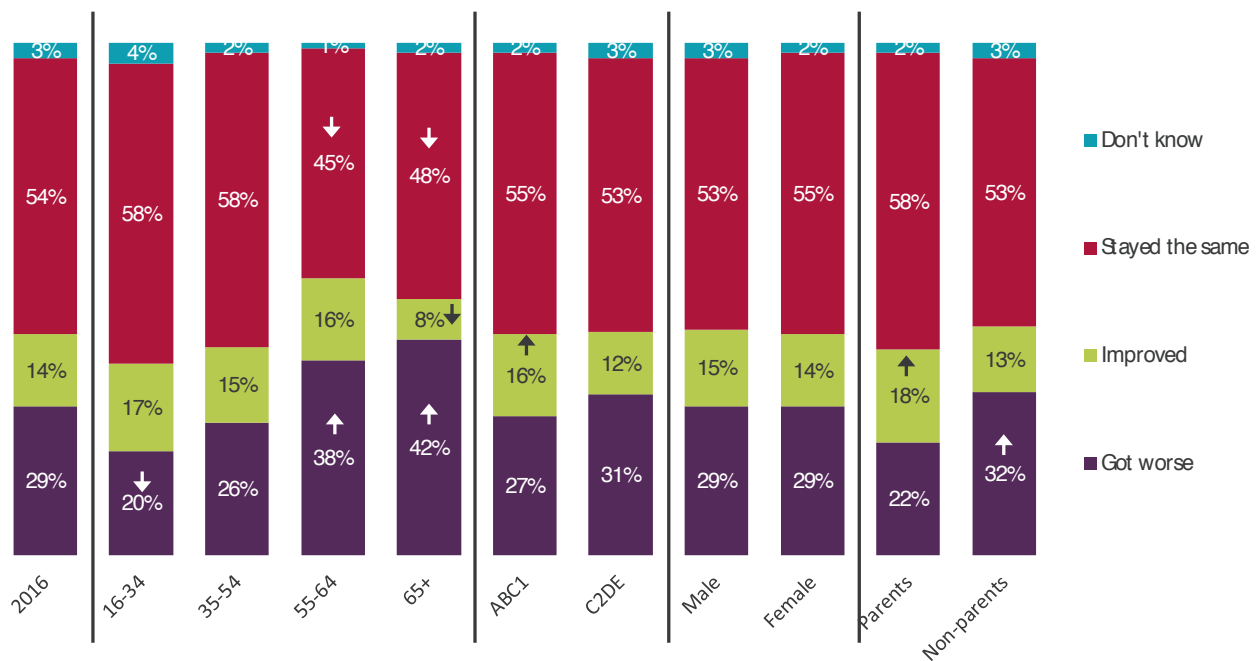
Source: Ofcom Media Tracker, 2016.
Q20 - Do you feel that over the past year television programmes have improved, got worse or stayed about the same?
Base: All with any TV sets in 2016 (2022); aged 16-34 (573); 35-54 (628); 55-64 (336); 65+ (485); ABC1 (1038); C2DE (983); male (950); female (1072); parents (576); non-parents (1446). Significance testing shows any difference between any age group and all adults in 2016, between socio-economic groups, by gender and between parents and non-parents in 2016

[1] Ofcom PSB Annual Report 2017, https://www.ofcom.org.uk/tv-radio-and-on-demand/information-for-industry/public-service-broadcasting/psb-annual-report-2017
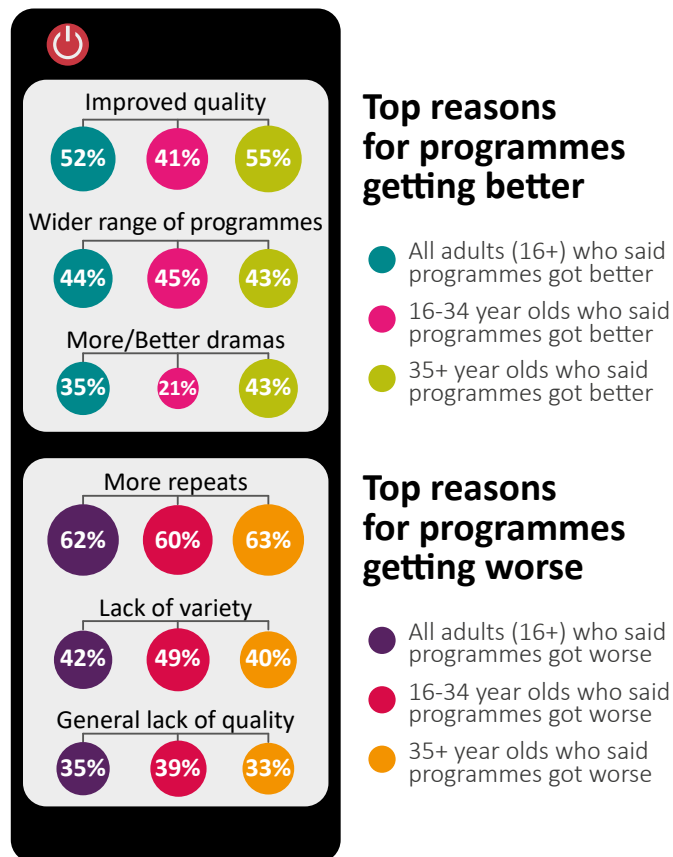
[2] BBC One, BBC Two, the Channel 3 Services (ITV/STV/UTV), Channel 4 and Channel 5 including their HD variants but excluding their +1s

Among those who felt programmes had got worse, repeats were the most common reason given

Among those who said that they felt programmes had 'got worse', the most commonly stated reason was 'more repeats' (62%). Younger adults (16-34 year olds) were more likely than those aged over 35 to cite 'lack of variety' influencing their perceptions of programmes having got worse (49% v 40%). Other common problems associated with worsening of programmes included 'general lack of quality' (35%) and 'too many reality shows' (29%). Around one in ten adults who thought programmes had got worse associated this decline in quality with bad language, sex or violence.

Among those who thought that programmes had improved, about half felt that there had been 'improved quality' (52%) and a 'wider range of programmes' (44%). Other popular answers included 'more/better dramas' (35%) and 'more interesting/ entertaining' programmes (30%).

Figure 2.52: Top reasons given for programmes having improved or got worse

Top reasons for programmes getting better

- All adults (16+) who said programmes got better
- 16-34 year olds who said programmes got better
- 35+ year olds who said programmes got better

Top reasons for programmes getting worse

- All adults (16+) who said programmes got worse
- 16-34 year olds who said programmes got worse
- 35+ year olds who said programmes got worse

Source: Ofcom Media Tracker, 2016.
Q21- In what ways do you think that the television programmes have improved over the past year?
Q22- In what ways do you think that the television programmes have got worse over the past year?
Base: All saying programmes 'improved' over past year (274); 16-34 (104); 35+ (170); All saying programmes 'got worse' over past year (634); 16-34 (121); 35+ (513). Unprompted, multicode.

More than a third of adult viewers believe there is too much violence on television

Figure 2.53 shows the opinions of viewers on the amount of sex, violence and swearing on

TV. It shows that around a fifth viewers (22%) believe that there is too much sex on television

while a higher proportion say that there is too much violence (37%) or swearing (33%).

Figure 2.53: Opinion on the amount of sex, violence and swearing on TV among viewers
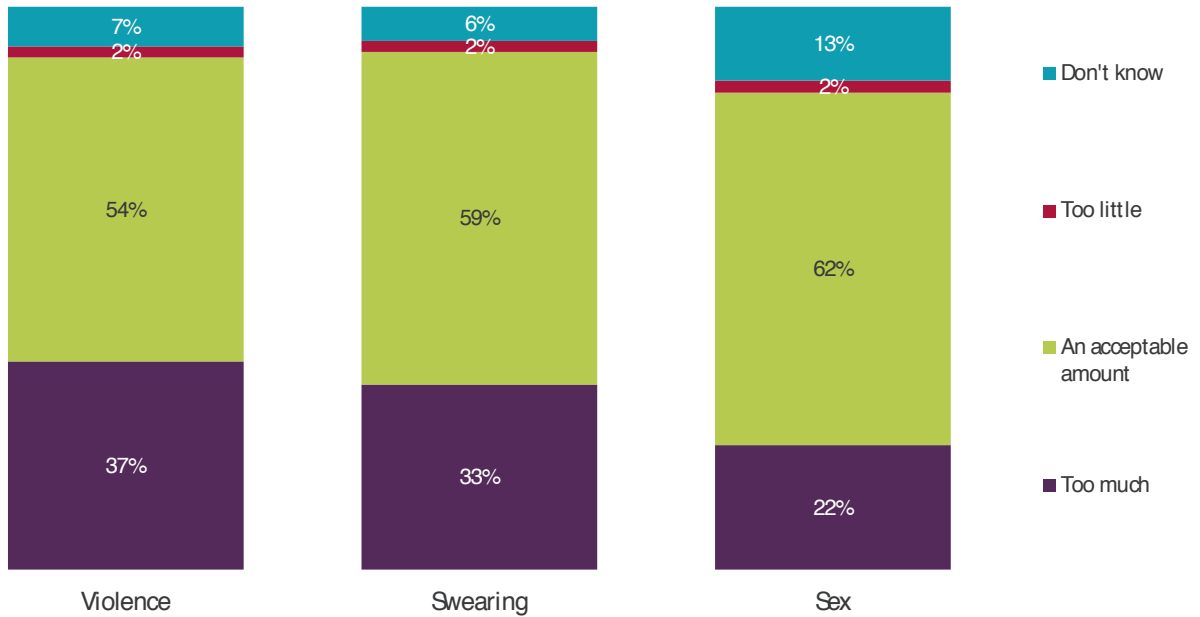
Source: Ofcom Media Tracker, 2016. Q46- Do you think, in general, that there is too much, too little or an acceptable amount of each of the following on television: a) sex? b) violence? c) swearing?
Base: All with any TV sets (2,022). Prompted, single code.

3 Radio and audio content

3.1 Key market developments in radio and audio

3.1.1 Sector overview

People in the UK consume a range of audio content including live radio, streamed music, recorded music and podcasts, on a range of devices.

Overall, 63% listen to music-focused radio stations, while 38% listen to radio stations that are mainly speech-based. Three in ten say they use an online music service, while 16% have listened to podcasts.

Despite the range of ways in which audio content can now be consumed, the reach of live radio remains extremely high. Nine in ten people (89.6%) in the UK listen to the radio at least once a week – listening has remained at this level for the past five years.

While the proportion of people who listen to the radio has not changed year on year, people are listening to the radio for longer. Average listening per week increased by six minutes in the 12 months to Q1 2017 compared to the previous year, rising to 21 hours 24 minutes. This increase was driven by those in the middle of the age range; the youngest and oldest age groups decreased their average radio consumption by 18 minutes a week.

The BBC's share of all radio listening, including network and nations/local radio, was 52.5% in the 12 months to Q1 2017, down by 0.9 percentage points (pp) compared to the previous year. Commercial radio's share of listening grew by 0.9pp to 44.9%, driven by an increase in listening to national commercial stations. Fifteen new national digital radio services were launched in 2016, following Ofcom's granting of further spectrum in March 2015.

In the 12 months to Q1 2017, 57% of homes had DAB radio, compared to 54% the previous year. More than 45% of radio listening is via digital platforms, up from 42% the previous year; the majority of digital listening continues to be via DAB.

Overall reported commercial radio revenues rose 1% in real terms to £526m in 2017. Radio maintained its share of total advertising expenditure at 3.0% in 2016, helped in part by internet brands increasing their radio budgets. Overall estimated BBC expenditure on radio in 2016 was 2% lower in real terms than in the previous year.

The number of community radio stations has continued to increase, rising from 239 in May 2016 to 251 in May 2017.

In section 3.2 below we look at key changes in the ways people are listening to radio content, focusing in particular on podcasts and speech-based radio.

Section 3.3 looks at the radio sector from an industry perspective. It looks at revenues and expenditure and provides an overview of how radio service are provided. It concludes by outlining trends in the provision of community radio.

Section 3.4 examines trends from the listener's perspective. It looks at the reach of radio, and how radio listening varies by demographic. It then examines the reach of digital and analogue radio, and of different national radio stations.

Figure 3.1: UK radio industry: key metrics

	2010	2011	2012	2013	2014	2015	2016
Weekly reach of radio (% of population)	90.8%	90.5%	89.6%	90.4%	89.4%	89.5%	89.6%
Average weekly hours per listener	22.3	22.6	22.0	21.4	21.3	21.3	21.4
BBC share of listening	54.8%	54.7%	54.8%	54.5%	53.7%	53.4%	52.5%
Total industry revenue*	£1280m	£1255m	£1261m	£1203m	£1257m	£1256m	£1245m
Commercial revenue*	£509m	£492m	£498m	£471m	£516m	£522m	£526m
BBC expenditure	£760m	£751m	£751m	£721m	£730m	£722m	£707m
Community radio revenue	£11.3m	£11.3m	£11.3m	£11.1m	£11.6m	£11.7m	£11.6m
Radio share of advertising spend	3.2%	3.2%	3.3%	3.1%	3.1%	3.0%	3.0%
DAB digital radio take-up (adults)	36.2%	40.3%	42.6%	46.3%	48.8%	53.4%	56.8%
Digital radio listening share	25.2%	28.4%	32.5%	36.3%	38.0%	42.2%	45.7%

Source: RAJAR (all adults age 15+) 12 months to Q1 of the following year. Ofcom calculations based on figures in BBC Annual Report and Accounts 2016-17 (www.bbc.co.uk/annualreport), AA/WARC, broadcasters. Revenue figures are adjusted for CPI (2016 prices). *Commercial and total revenue figures for 2010-2013 are not wholly comparable to 2014-2016 data due to an amendment to the data collection methodology.

3.1.2 Audio content consumption

In this section we look at the range of ways in which people consume audio content, in particular speech-based content on the radio and via podcasts. While the reach of broadcast radio remains high among all demographics, research shows that people, particularly those in younger age-groups, are also accessing speech and music content on a range of connected devices including computers, mobiles and tablets.

Broadcasters including the BBC and major commercial radio groups are repurposing some of their speech-based radio output as podcasts; the distinction between radio content and podcasts is starting to blur. Other media outlets are also creating and distributing their own speech-based content. Newspapers and magazines including the Guardian, the Economist, the Sun and Monocle are creating and distributing their own podcasts to expand their reach and deepen their relationship with their audiences. There are also examples of stand-alone podcasts created independently of other media.

While the measurement of broadcast radio is well established in the UK, the same cannot be said for podcasts, given the challenges of defining and measuring this relatively recent form of audio content. To understand more about podcasts, and how they fit into broader categories of audio content, we commissioned consumer research; our key findings appear below.

## The number of people listening to podcasts is increasing

The reach of speech radio has been stable for the past five years. According to RAJAR, about a third (34%) of adults listen to speech radio each week; two-thirds of these are aged over 44.

RAJAR also measures listening to podcasts: this is shown to have grown in popularity over the same period, from 19% of adults who claimed to have ever listened to one in the 12 months to Q1 2013, to 24% in the latest figures.

Unlike audiences of broadcast speech radio, 61% of those who ever listen to podcasts are aged under 45. There is some cross-over; just over a third (37%) of those who listen to speech radio also listen to podcasts and just over half (55%) of those who ever listen to podcasts also tune in to speech radio.

Figure 3.2: **Listening to podcasts and speech radio**

Proportion of UK adults (%)

Legend: ■ Ever listen to podcasts   ■ Listen weekly to podcasts   ■ Listen weekly to speech radio
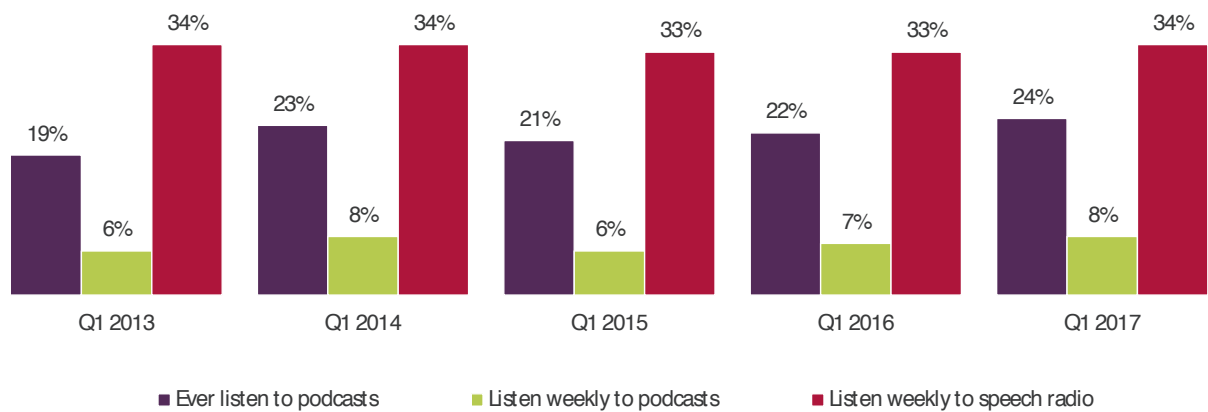
Source: RAJAR, all adults (15+), 12 months to Q1 each year
Speech radio includes: Radio City Talk, Talk 107, talkRADIO, talkSPORT, talkSPORT2, LBC Network (UK), BBC Radio 4, BBC Radio 4 Extra, BBC Radio 5 live, BBC Radio 5 live sports extra, BBC World Service.
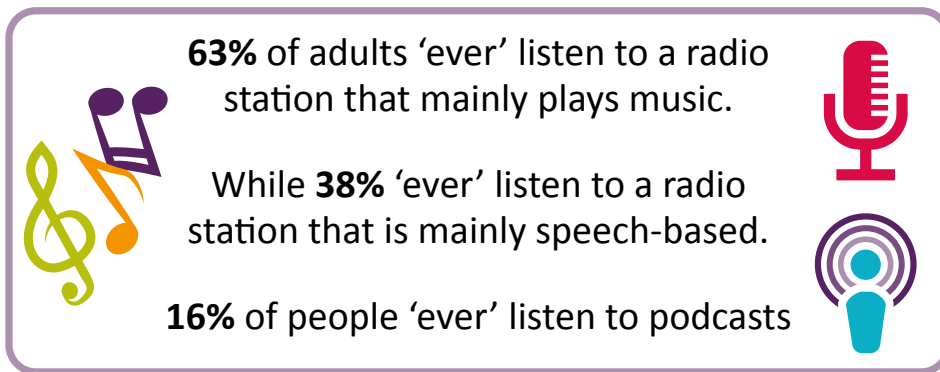**Note:** List current as of Q1 2017 – not all stations available in previous years

Music-based radio is the most popular listening activity among all UK adults

When we asked people what types of listening activities they ever did, the most popular answer was "a radio station that plays music" (63%). This was followed by "personal music collection on CD, vinyl record or cassette tapes" (48%) and "personal music stored on a digital device" (41%). Radio stations that are mainly speech-based, and podcasts, were less popular (38% and 16% respectively). Three in ten say they have used an online music service (29%).[1]

Figure 3.3: Types of listening activities

63% of adults 'ever' listen to a radio station that mainly plays music.

While **38%** 'ever' listen to a radio station that is mainly speech-based.

16% of people 'ever' listen to podcasts

Source: Ofcom research, 2017. Base: all adults (n = 1062)
Q11: How often, if at all, do you listen to any of the following…? [MULTICODE]

There were some significant differences by age group, in particular in the type of listening activities people said they did. For example, those aged 35-44 and 45-54 were more likely than most other age groups to say they ever listened to a radio station that played music (70% and 76% respectively).

And 45-54s and 55-64s were more likely than 16-24s to say they ever listened to a mainly speech-based radio station (43% and 44% vs. 28%).

With regard to personal music collections, the older age groups were more likely to ever listen to music on physical media such as CDs, vinyl records and cassette tapes (e.g. 30% for 16-24s vs. 63% for 55-64s). The 16-34 age group were more likely to say they ever listen to personal music on a digital device than the 35 and over age group (58% vs. 33%) and were more likely to say they ever listen to an online music service (44% vs. 21%).

The 16-24 age group were also more likely than those aged 65-74 and 75+ (23%, 3% and 4% respectively) to say they ever listened to podcasts.

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[1] Differences in methodology between RAJAR and the Ofcom 2017 research mean that activity reach figures are not directly comparable.
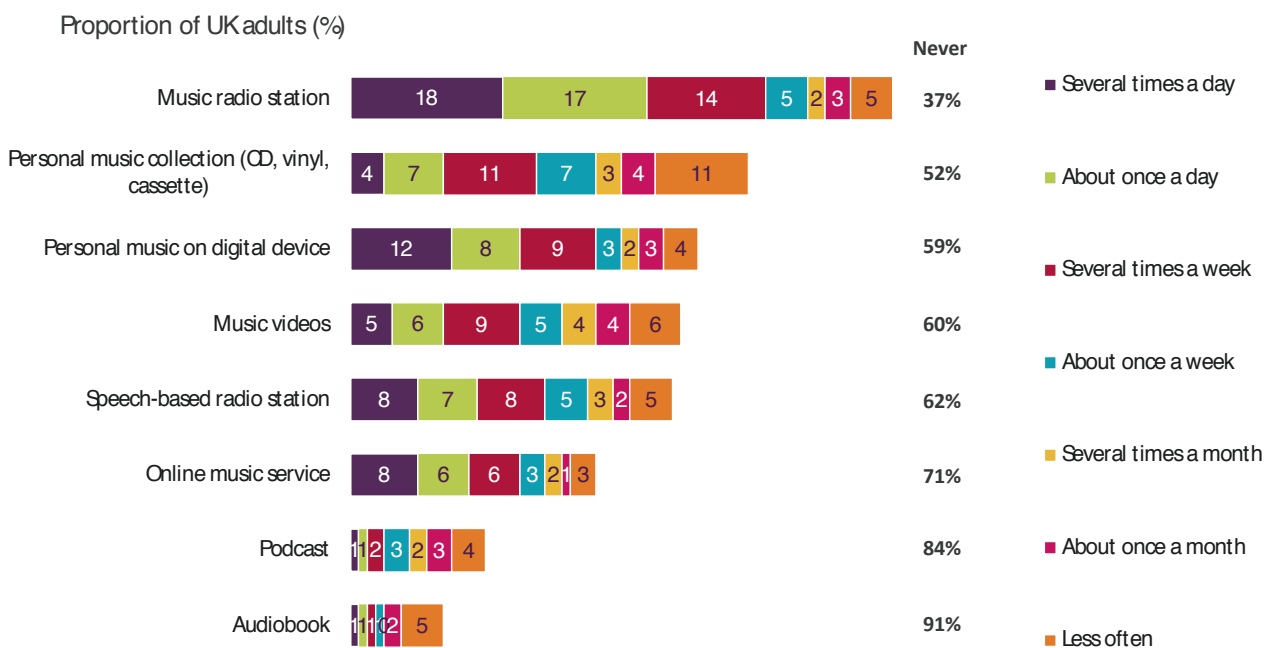
Listening to music-based radio stations is a frequent activity

We also asked participants how often they did the various types of listening activities. Listening to music radio stations is something people do often; 18% said they did it several times a day, and 17% said they did it about once a day.

Similarly, listening to a personal music collection on a digital device is a frequently-done activity; 12% do it several times a day. This compares to 8% who said they listened to a mainly speech-based radio station several times a day

Although 11% of participants said they listened to their physical music collection several times a week, a similar proportion also said they did this less often than once a month. People tend to listen to podcasts less often than the other activities.

Figure 3.4: Frequency of doing different types of listening activities

Proportion of UK adults (%)

	Never
Music radio station	37%
Personal music collection (CD, vinyl, cassette)	52%
Personal music on digital device	59%
Music videos	60%
Speech-based radio station	62%
Online music service	71%
Podcast	84%
Audiobook	91%

Legend: Several times a day · About once a day · Several times a week · About once a week · Several times a month · About once a month · Less often

Source: Ofcom research, 2017. Base: all adults (n = 1062)
Q11: How often, if at all, do you listen to any of the following…? [MULTICODE]

## Four in ten podcast listeners say they listen to podcasts more than they did a year ago

For most of the listening activities, people were more likely to say they listen to them more often than less often compared to a year ago. Four in ten (42%) podcast listeners said they were listening to podcasts more often, while 13% said they were doing it less often.

Similarly, 39% of online music service users said they were doing this more, compared to 8% doing it less.

The exception was physical music collection listeners, more of whom said they listen less (25%) than said they listen more (13%) compared to a year ago

However, for the majority of the listener groups, listening "about the same as last year" was the most popular response.

Figure 3.5: Change in frequency of listening activities, compared to a year ago
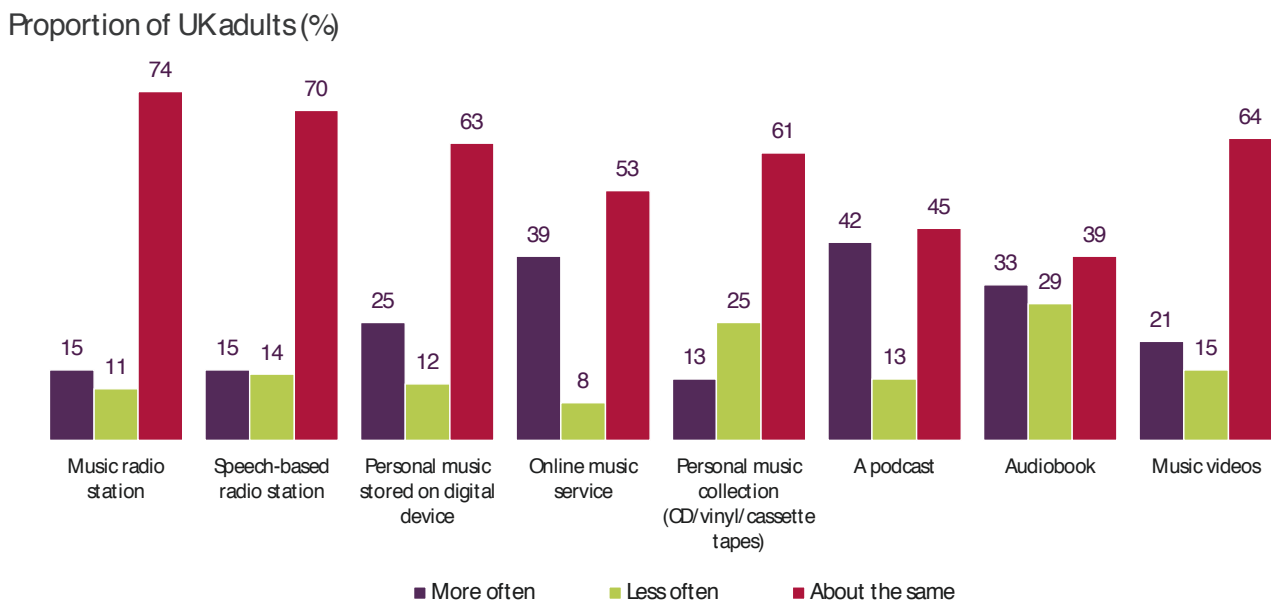
Proportion of UK adults (%)

More often   **Less often**   **About the same**

Source: Ofcom research, 2017. Base: all who have listened to a different type of service (n = 661)

Q14: Thinking about the different types of activities you listen to, would you say you listen to them more or less often than a year ago?

The car radio is most popular for listening to music-based and speech-based radio stations

Listening to music-based and speech-based radio stations are both most likely to be done through a car radio. Half (49%) of the people who said they listened to a music radio station said they did so through an analogue car radio, while 25% said they did it through a DAB car radio.

The figures were similar for those who said they listened to speech-based radio stations (42% for analogue car radio and 21% for DAB car radio).

Mobile phones were the most popular medium for most other listening activities we asked about: 66% of those who said they ever listened to a personal digital music collection said they used their phone, as did 59% of online music service users, 53% of audiobook listeners, 48% of podcast listeners and 39% of music video users.

Just under eight in ten (77%) of those who said they ever listened to a physical music collection said they did so through a stereo/ hi-fi/ sound system.

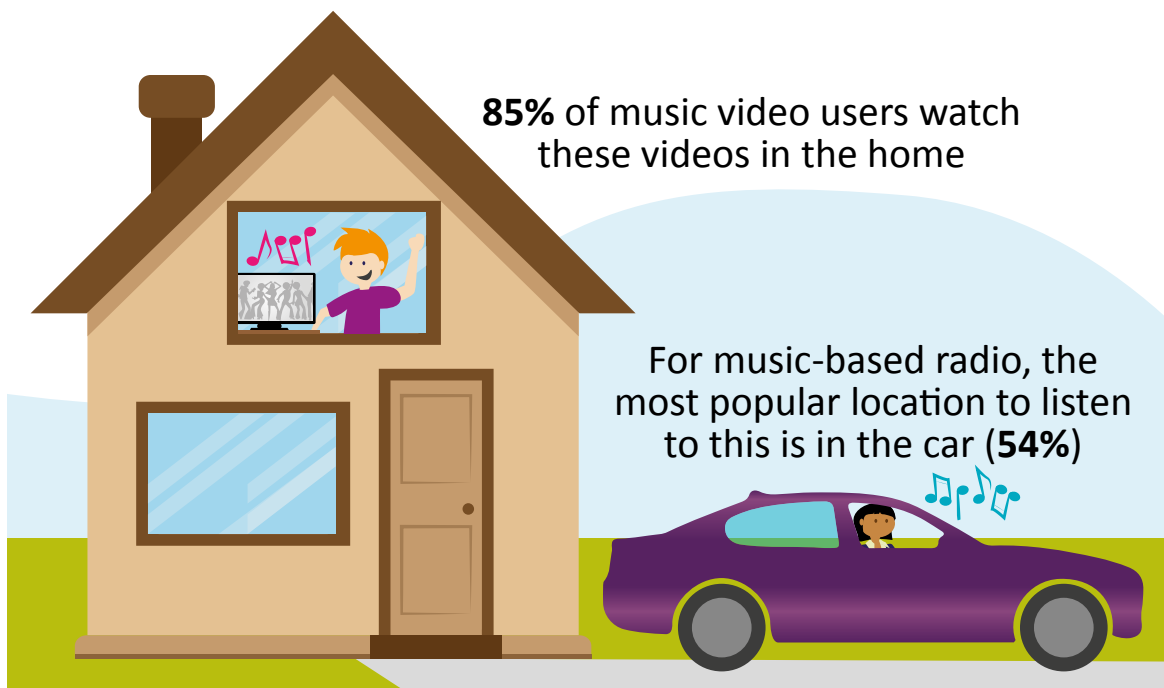**Figure 3.6:** Ways in which listening activities are listened to

The car radio was most popular for listening to the radio

Mobile phones were most popular for most other listening activities

66% of those who listen to a personal digital music collection, **59%** of online music service users, **53%** of audiobook listeners, **48%** of podcast listeners and **39%** of music video users said they did so through their phone.
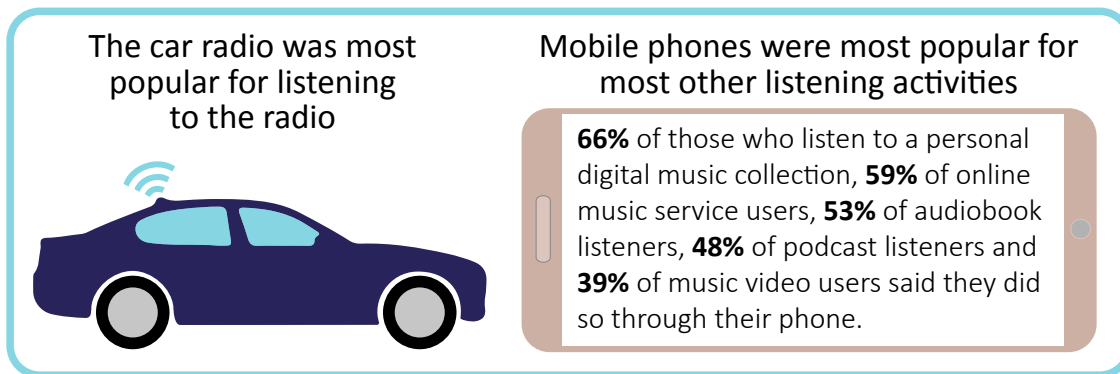
Source: Ofcom research, 2017. Base: all those who have listened to a different type of service (n = 661)
Q12: Which of these ways do you listen to [types of listening activity listened to]? [MULTICODE]

The home is the most common location for most listening activities

In general, respondents to our research prefer to do most of their listening at home (e.g. 85% of music video users watch these videos in the home).

The only type of listening for which 'at home' was not the most popular location was music-based radio, which was most often listened to in the car (54%).

Figure 3.7: Listening activities, by location

85% of music video users watch these videos in the home

For music-based radio, the most popular location to listen to this is in the car (**54%**)

Source: Ofcom research, 2017. Base: all who have listened to a different type of service (n = 661)
Q12: Now think about the location where you do the various listening activities. Where would you say you do this activity most often?

People most commonly do all types of listening activity alone

We also asked people whom they are with when they listen to audio content. For all listening activities, the most popular response was 'alone'.

Listening with family was a fairly popular answer for most activities; e.g. a fifth (21%) of music video users said they listened to music videos with family members.

Podcasts and audiobooks were overwhelmingly a solitary activity (85% and 83% said they did these activities alone).

People listen to music-based radio stations for background listening and relaxation, but listen to speech-based radio and podcasts because they find them interesting

There are many different reasons why people listen to audio content. For those who listen to radio stations that mainly play music, the most popular reasons for doing so are 'for background listening' (41%) and 'because they find it relaxing' (39%). For speech-based radio stations it was 'because they find them interesting' (41%) and 'in order to keep up with the news' (40%). More than half of podcast listeners said they listened to podcasts because they are interesting (51%), and around a quarter said it was to learn something new (26%).

Figure 3.8: Reasons for doing different types of listening activities

The most popular reasons why people listen to:

Music radio
41% for background listening
39% because they find it relaxing

Speech-based radio
41% because they find it interesting
40% in order to keep up with the news

Podcasts
51% because they find them interesting
26% to learn something new
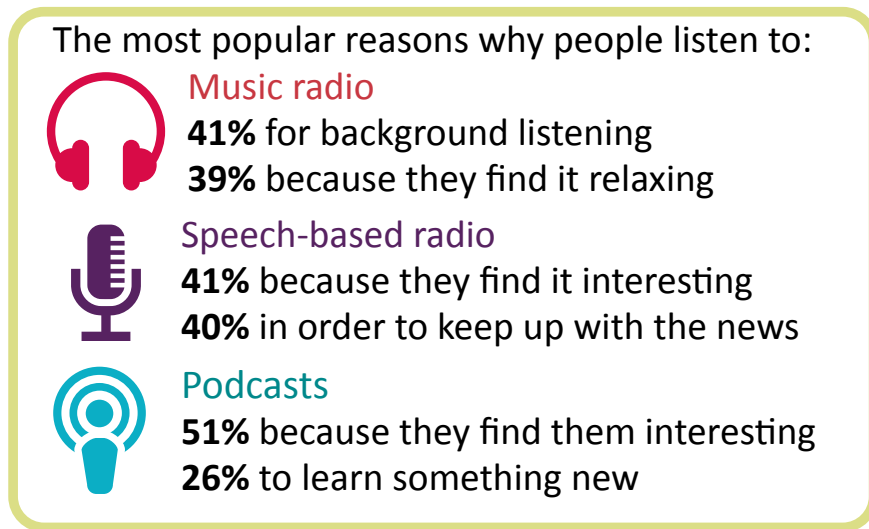
Source: Ofcom research, 2017. Base: all who have listened to a different type of service (music radio station 661, speech radio station 398, podcast 144)
Q13: In general, what are your main reasons for listening to [ask for each code selected not as 'never' in Q1 [MULTICODE]

The most popular reason given for doing all the other types of listening activities was that they found them relaxing (e.g. 48% of people who said they ever listened to physical music collections gave this answer). While 40% of audiobook users also gave this response, an equal proportion said they used audiobooks because they found them interesting.

We also asked those who said they never listened to speech-based radio stations, and podcasts, about their reasons for not doing so. The most popular response for both was "I'm not interested" (62% of non-speech radio users and 42% of non-podcast users). "I prefer music" was also a popular answer for both. Sixteen per cent of non-podcast users said "I've never heard of them".

Users of speech-based radio like to listen to news-related programmes, while podcast users like comedy/entertainment and factual

In line with the previous finding that 40% of speech-based radio station listeners said they did this listening activity in order to keep up with the news, 46% said they listened to programmes about current affairs, 42% said they listened to UK/international news and 33% said they listened to news/information about their local area.

Music, arts and culture, weather and sport were also popular types of programmes that speech-based radio station users said they listened to.

The types of programmes that podcast users were most likely to say they listened to were comedy/entertainment (35%), other factual and educational (35%) and music/arts/culture (34%).

Differences in the types of content litstened to as podcasts, as opposed to speech radio, reflect their specific characteristics. For example, time-critical content such as news and travel information is less suited to on-demand, episodic podcasts. But the fact that a large proportion of people listen to factual and

educational genres on podcasts, rather than on speech-based radio stations, may reflect the availability of more niche content on podcasts, such as academic lectures.

Figure 3.9: Programmes listened to on speech-based radio stations and podcasts

Proportion of those who do each listening activity (%)
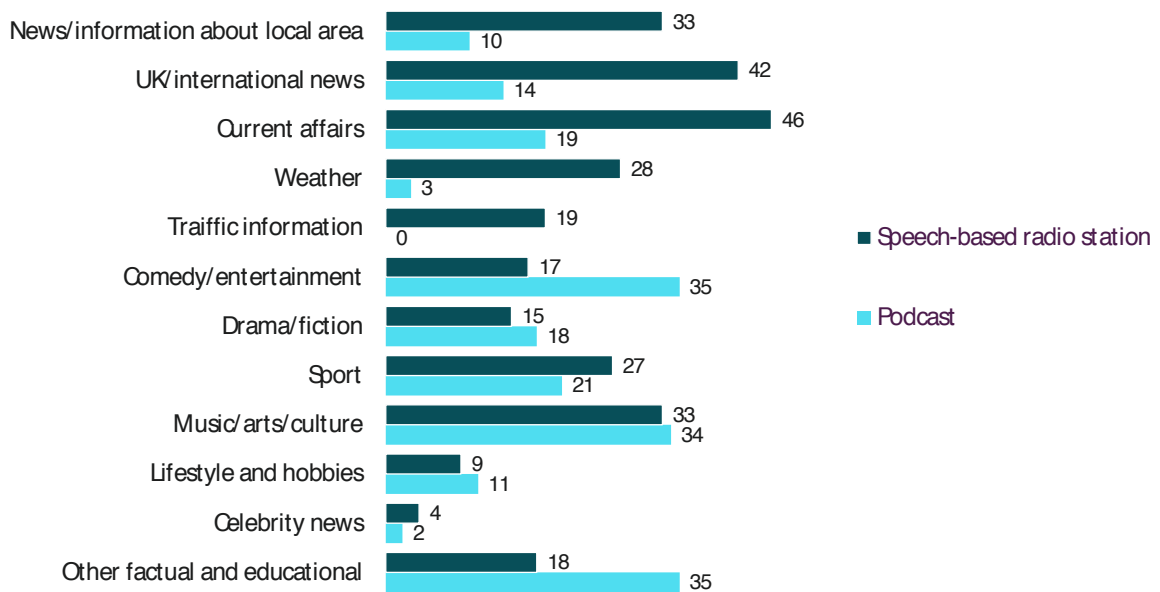
Source: Ofcom research, 2017. Base: all who have listened to speech-based radio stations (n = 398), All who have listened to podcasts (n=144)
Q5,7: You said that you listened to [speech-based radio stations/podcasts], what are the types of programmes that you listen to? [MULTICODE]

Podcast listeners typically listened to between three and five programmes a month, and the BBC website or app is the most popular source of podcasts

When we asked podcast listeners how many programmes they had listened to in the past month, the majority had listened to between three and five (30%). A further 27% said they had listened to one, while 16% said they had listened to two. One in seven (14%) claimed to have listened to between 6-10 programmes, while the same proportion claimed to have listened to more than 10.

The most popular source of podcasts was the BBC website or app (36% of podcast listeners), while a quarter of podcast users chose YouTube or iTunes (26% and 25% respectively).

Figure 3.10: Number of podcasts listened to in the last month

One - **27%**
Two - **16%**
Three to five - **30%**
Six to ten - **14%**
More than ten - **14%**
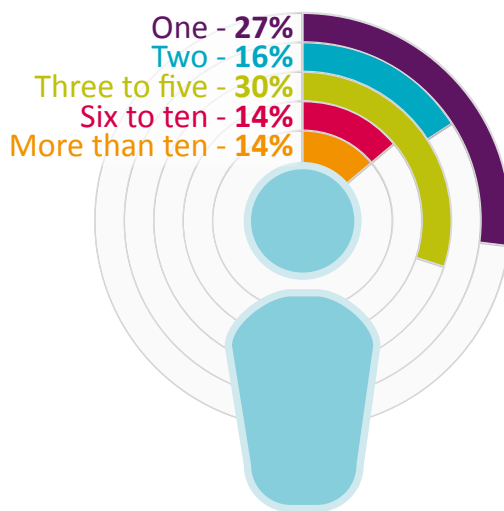
Source: Ofcom research, 2017. Base: all who have listened to a podcast once a month or more (n = 110)
Q8: How many different podcasts would you say you listened to in the last month? By different podcasts titles (so listening to several episodes of the same product would count only once)

Figure 3.11: Where listeners source their podcasts

Proportion of podcast listeners (%)

Source	%
BBC website or app	36
YouTube	26
iTunes	25
Website or app of the podcast itself	17
Streaming service	9
Google Play	7
Website/app of a non-BBC radio station/TV channel	7
Website or app of a newspaper/magazine	7
Other website/app	7
RadioPlayer	5
Specialist podcast website/app	4

Source: Ofcom research, 2017. Base: all who have listened to a podcast (n = 144)
Q9: Where have you obtained podcasts from in the past? These can be both downloaded and streamed podcasts. Please select all which apply thinking about how/where you accessed the podcast, rather than who created it (as some podcasts are available from multiple sources) [MULTICODE]

In terms of particular podcasts listened to, a third of people had listened to TED talks and BBC Radio 4 podcasts (both at 31% of podcast listeners).

Seventeen per cent had listened to other BBC podcasts, while 15% had listened to podcasts made by newspapers or magazines and 14% had listened to podcasts from non-BBC radio stations or TV channels. In total, 40% of podcast listeners had previously listened to a BBC podcast.

3.2 The radio industry

3.2.1 Introduction

In this section we examine the characteristics of the UK radio industry.

Focusing on commercial and community radio station revenue and BBC expenditure, together with the audience shares of the main players.

3.2.2 Radio revenue and expenditure

Radio industry revenue and spend

Commercial radio revenue per listener fell in real terms from £15.11 in 2015 to £15.04 in 2016 as the increased audience of commercial radio offset real terms revenue growth.

Radio advertising expenditure grew faster than overall advertising expenditure between 2015 and 2016. Based on Advertising Association/ WARC figures, total UK advertising expenditure grew by 3% in real terms (based on 2016 prices) while total radio

advertising expenditure grew by 5%[1] to £649m. Radio's share of total advertising expenditure was 3% in 2016 (equivalent to 5% of total display advertising).

Accounting for 16% of headline radio advertising expenditure, the motor sector was the largest advertising sector for radio in 2016.[2] The largest growth by sector was online retail, which increased its expenditure by 89% in real terms between 2015 and 2016. In particular, eBay is reported to

have increased its radio advertising budget by 500% in 2016[3], and in May 2017 it started to sponsor Capital's breakfast show.

The BBC's radio services in the UK are funded via the licence fee. We estimate the BBC spent £707m in 2016 (£10.77 per capita) on services these in 2016, compared to £722m (£11.09 per capita) in 2015, reflecting both population growth and a real terms decline in total radio expenditure.

Reported sponsorship revenues grew by 5% in real terms between 2015 and 2016

Commercial revenues reported to Ofcom by licensees reached £526m in 2016, up 1% in real terms from the 2015 level.[4] Revenue from commercial sponsorship grew by £4m in real term terms to reach £100 million in 2016, partially offsetting the losses in reported national advertising revenue.

At £266m, national advertising was the largest source of commercial revenue reported to us for 2016, though this fell by 1% in real terms. In contrast, local commercial advertising revenues rose by 1% to £134m.

The year-on-year revenues of some stations varied considerably, in part due to local advertising conditions, or due to the practice of optimising national advertising slots against audiences across groups of stations.

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[1] Including spot advertising, branded content and digital revenues. NB: Due to differences in methodology, this figure is not directly comparable to the industry revenue figures collected by Ofcom and presented in [Figure 3.12]

[2] Source: Nielsen/WARC. Due to methodology, advertising sector-specific data are not directly comparable to total sector expenditure or Ofcom industry revenue figures.

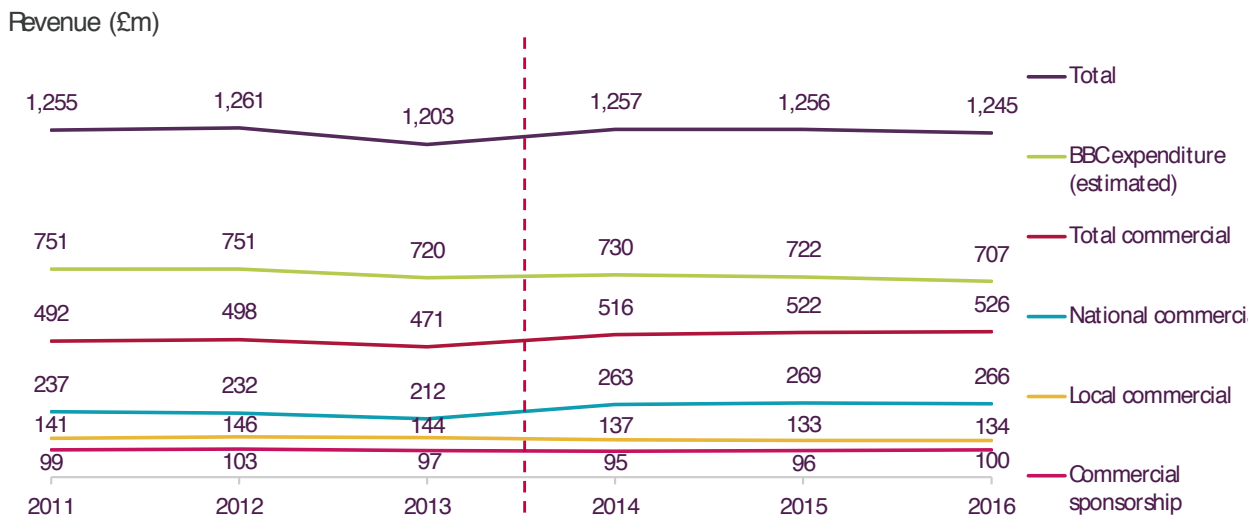[3] See http://www.campaignlive.co.uk/article/ebay-sponsor-capital-breakfast-show/1431905

[4] Due to differences in methodology this figure is not directly comparable with the radio advertising expenditure figures set out above,

Between 2015 and 2016 the share of total commercial revenues reported by the groups with the five largest overall revenues rose from 86% to 89%, in part due to M&A activity within the sector.

Examples of M&A activity in the sector include Bauer's acquisition of Orion Media, a midlands-based radio group in May 2016, and more recently Celador's acquisition of Anglian Radio in January 2017.

Divestment has also taken place- in August 2016 UKRD sold Juice 107.2 in Brighton back to its previous owners, having originally acquired the station from them in 2015.

Figure 3.12: Radio industry revenue: 2011-2016

Revenue (£m)

	Total	BBC expenditure (estimated)	Total commercial	National commercial	Local commercial	Commercial sponsorship
Total	1,255	1,261	1,203	1,257	1,256	1,245
BBC expenditure	751	751	720	730	722	707
Total commercial	492	498	471	516	522	526
National commercial	237	232	212	263	269	266
Local commercial	141	146	144	137	133	134
Commercial sponsorship	99	103	97	95	96	100
	2011	2012	2013	2014	2015	2016

Source: Ofcom / operator data / BBC Annual Report 2010-2017. **Note:** BBC expenditure figures are estimated by Ofcom based on figures from the BBC Annual Report (www.bbc.co.uk/annualreport); figures in the chart are rounded and are adjusted for CPI (2016 prices). Total includes community radio, but community radio is not shown on the chart. Total commercial includes all sources of revenue- national, local, sponsorship and 'other', but 'other' is not shown on the chart.

The BBC spent £471 million on radio content in 2016-17, a decline of £11 million in real terms since 2015-16

Overall, content expenditure on BBC radio fell by £11m in real terms between 2015-16 and 2016-17, the largest decline being BBC radio in England, where content expenditure fell by £9.6m (at March 2017 prices) to £112.9m, a fall of 8%.

The largest decline in proportionate terms was at Radio Scotland, where content expenditure fell by 10% in real terms to £21.1m.

BBC 1Xtra and BBC 6 Music enjoyed the largest proportionate increase in content expenditure between

2015-16 and 2016-17, with real terms increases of 40% and 35% respectively, while at £5.2m (at March 2017 prices), BBC Radio 2's increase in content spend was the largest in absolute terms, at £5.6m.

Figure 3.13: Radio content expenditure and revenue percentage change, year on year
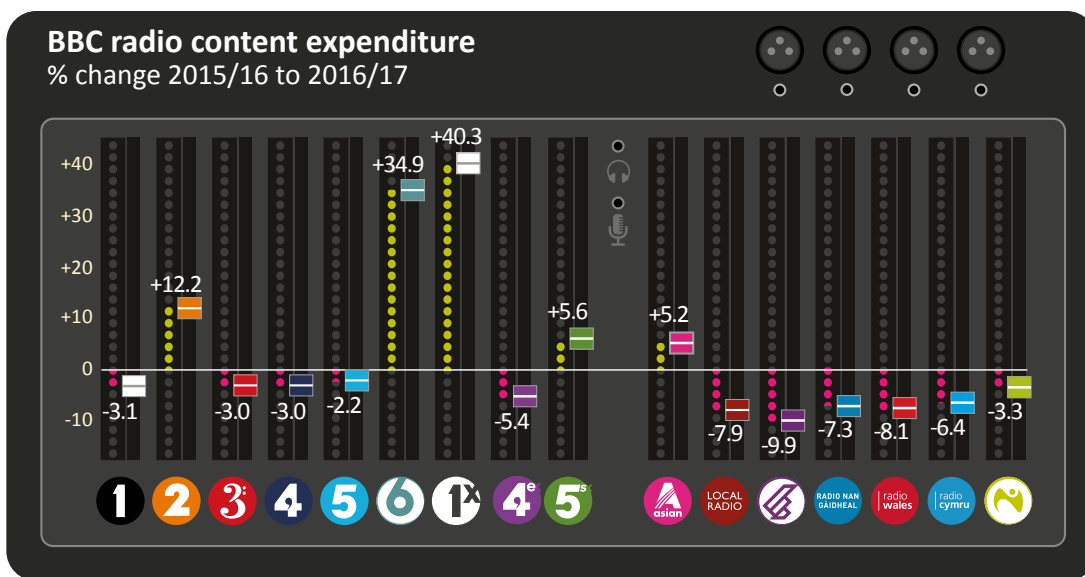
Source: Broadcaster returns, BBC Annual Report and accounts 2016-17. Figures adjusted for CPI. Commercial radio advertising revenues at 2016 prices, BBC expenditure at March 2017 prices.

3.2.3 The radio market

Broadcast radio services in the UK are provided by the BBC, commercial radio stations[1] and the community radio sector, on analogue (i.e. AM/FM), DAB (digital audio broadcasting) and TV platforms. These radio services are licensed and regulated by Ofcom.

In addition, radio services are streamed online to connected devices and in some places, in particular Northern Ireland, people are able to access radio stations broadcast from outside the UK. Neither online streaming[2] nor radio services broadcast from foreign countries are regulated by Ofcom.

DAB services are transmitted via a multiplex, which can carry multiple radio services. These multiplexes are licensed by Ofcom[3]. There are 55 local multiplexes and two commercial multiplex networks which cover large parts of the UK, in addition to a BBC national multiplex transmission network. BBC local and nations' services are carried on local multiplexes alongside commercial stations.

[1] i.e. those services broadcast under a commercial Broadcasting Act licence. Some services broadcast under these licences are run on a not-for-profit basis.

[2] With the exception of the BBC's services

[3] The individual non-BBC services on DAB multiplexes are also required to hold a Broadcasting Act licence. BBC radio services are covered under the BBC's operating licence framework.

Figure 3.14: Digital audio broadcasting UK radio services: May 2017

	UK commercial 90% coverage	UK commercial 75% coverage	BBC UK-wide	Local commercial	Total
Multiplexes	1	1	1	55	**58**
Services	13	18	11	394*	**435***

Source: Ofcom, May 2017
*Includes simulcast services (216 services are either unique or 'out of area' simulcasts). Excludes BBC local radio services

In total, 286 analogue local commercial radio licences are on issue; more than 80% of these are for FM radio broadcasting. Ofcom has completed its third round of community radio licensing, and there are currently 251 licensed community radio stations broadcasting.

Figure 3.15: Analogue UK radio stations broadcasting: May 2017

Type of station	AM	FM	AM/FM Total
Local commercial	51	235	286
UK-wide commercial	2	1	3
BBC UK-wide networks	1	4	5
BBC local and nations*	35	43	43
Community radio	10	241	251
TOTAL	**99**	**524**	**588**

Source: Ofcom, May 2017
Note: licence conditions determine the amount of programming that may be shared between licensed services. Here we have listed the number of services providing at least four hours a day of separate programming. * Includes simulcasts

3.2.4 Community radio

Total community radio sector revenue was flat in real terms between 2015 and 2016, although average income per station fell by 5%

At £11.6m, total revenue for the community radio sector was flat in real terms[1] (0.1% YoY decline). However, due to an increase in the number of stations that submitted financial information for 2016 (227, up from 216 in 2015), the average income per station fell by 5% in real terms to £51,251. The median, or mid-point, income level for the 227 stations fell by 3% in real terms to £31,890.

Figure 3.16: Average real-terms income for community radio stations: 2014-2016

Income	2014	2015	2016
Average (mean) income	£56,273 -1%	£53,933 -4%	£51,251 -5%
Median income	£35,899 +5%	£32,837 -9%	£31,890 -3%

Source: Ofcom analysis of community broadcasters' returns. Adjusted for CPI (2016 prices)

The majority of community radio stations continue to have annual income of less than £50k

As in previous years, most community radio stations' nominal income was less than £50,000 in 2016 (69% of all stations). Nineteen per cent of stations reported total income between £50,000 and £100,000, with the remaining 12% earning more than £100,000.

Figure 3.17: Distribution of total nominal income across the community radio sector

Proportion of stations (%)
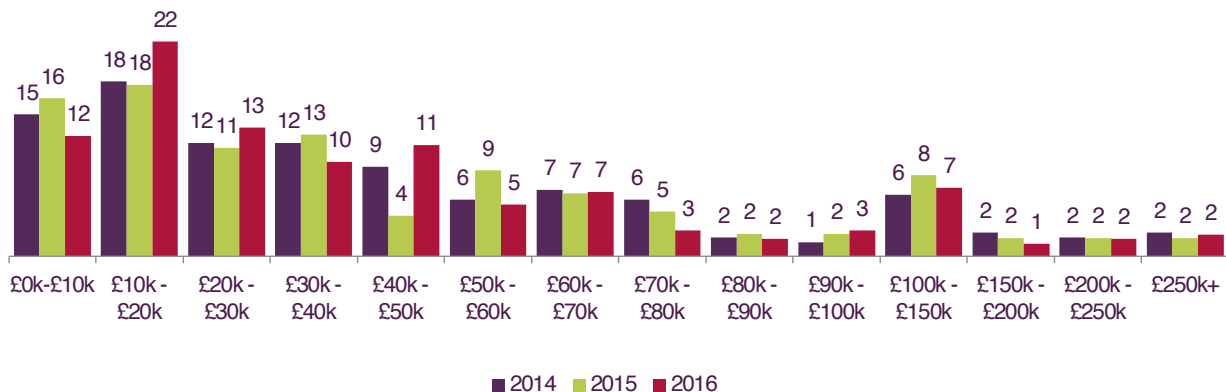
Source: Ofcom analysis of community broadcasters' returns. Figures relate to nominal income

[1] As in the rest of this report, for this year we have restated historic financial data in 'real' terms, which adjust for the effect of inflation. We have restated historic community radio data in real terms for the past 3 years. For Figure 1.15 we have retained nominal income in order to reflect the distribution of 'headline' station income.

On-air advertising and sponsorship continued to grow in importance as a source of income for the community radio sector

On-air advertising and sponsorship accounted for a third of sector revenues in 2016, an increase of three percentage points since 2015.

Total on-air advertising and sponsorship revenues grew by 8% in real terms to £3.8m. In contrast, total grant income, which accounts for a quarter of the sector's income, fell by 0.4% in real terms.

'Other' income, which includes revenue from the provision of training, fundraising and events, and merchandising income, continued to decline in absolute and proportional terms, falling by 13% in real terms to £2.6m.

Figure 3.18: Average real-terms income for community radio stations: 2014-2016

Income by source (%)
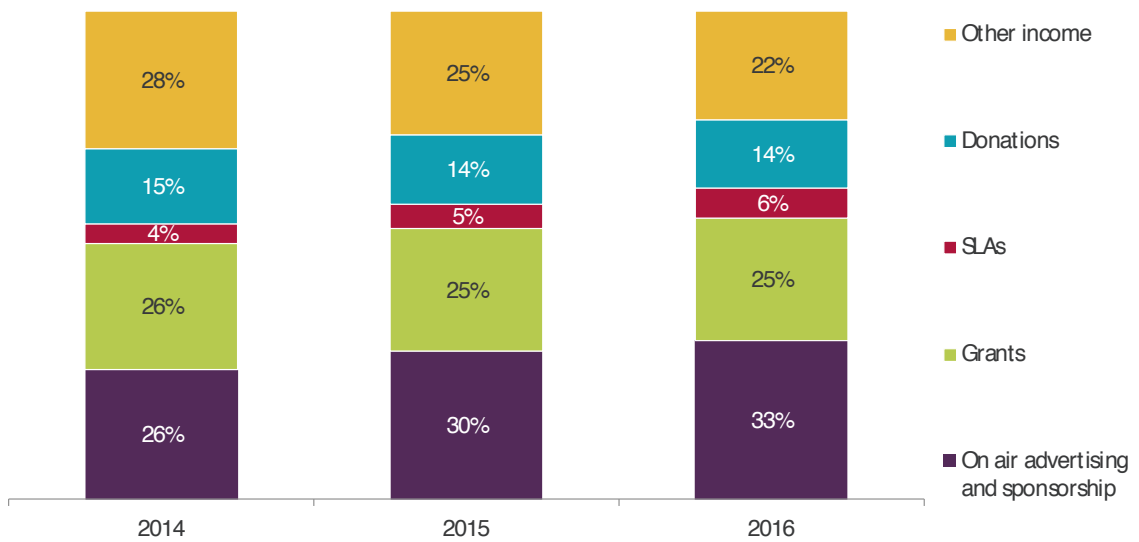
Source: Ofcom analysis of community broadcasters' returns. Figures relate to nominal income

Stations representing communities of interest had the highest average income in 2016

With an average income of over £80,000, stations broadcasting to religious communities of interest had the highest average income among community radio stations in 2016.

Among these stations, donations accounted for a third (34%) of income and advertising for 27% of income. In contrast, on-air advertising and sponsorship accounted for almost half (48%) of the income of stations which serve

minority ethnic audiences. These stations may appeal to advertisers wanting to target a particular demographic, especially if there are relatively few other ways they can do this in a given geographic area.

Figure 3.19: **Average income, by type of community served**
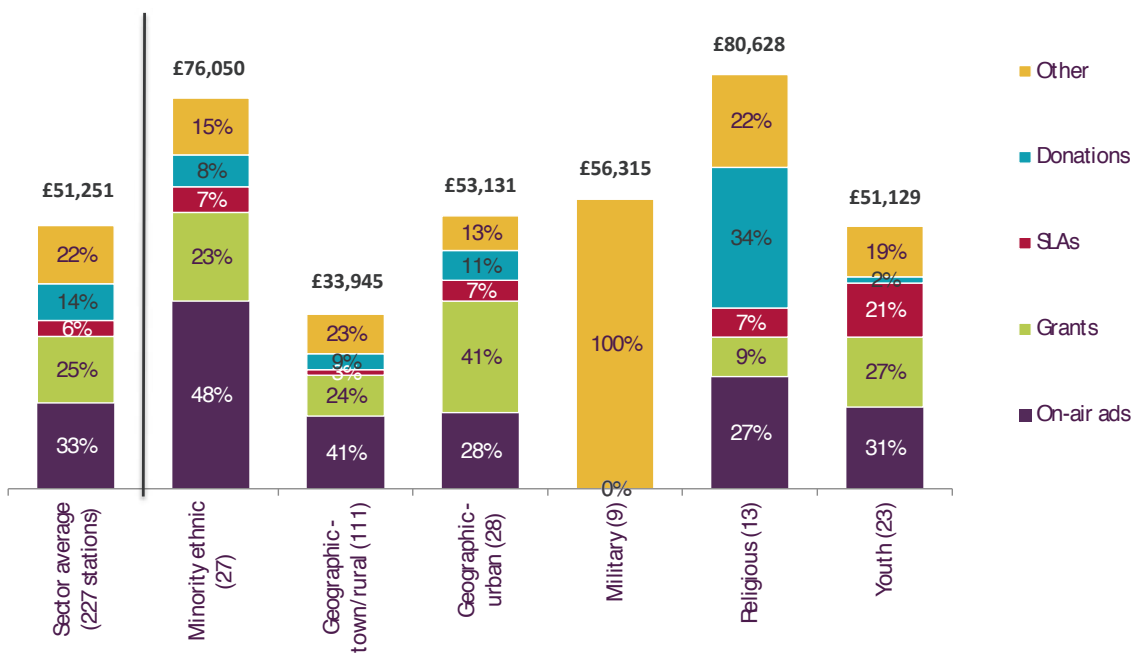
Source: Ofcom analysis of community broadcasters' returns.

Average station expenditure fell by 8% in real terms between 2015 and 2016

Between 2015 and 2016 average station expenditure fell by 8% in real terms to £50,663.

Total expenditure fell by less than this in real terms (4%) to £11.5m, reflecting the increase in the number of stations reporting.

Figure 3.20: Average real-terms expenditure of community radio stations: 2014-2016

Expenditure	2014	2015	2016
Average (mean) expenditure	£53,946 -4%	£55,201 2%	£50,663 -8%
Median expenditure	£33,440 -8%	£33,454 0%	£31,662 -5%

Source: Ofcom analysis of community broadcasters' returns. Adjusted for CPI (2016 prices).

Staff-related costs continue to account for half of the sector's expenditure

At £5.7m in total, staff costs continued to account for half of the sector's expenditure in 2016, although total staffing costs fell

by 8% in real terms from their 2015 levels. 'Other' expenditure accounted for 14% of total sector expenditure, and includes

programming costs as well as other costs which may relate to activities to promote social gain.

Figure 3.21: Community radio station expenditure, by type

Expenditure by source (%)
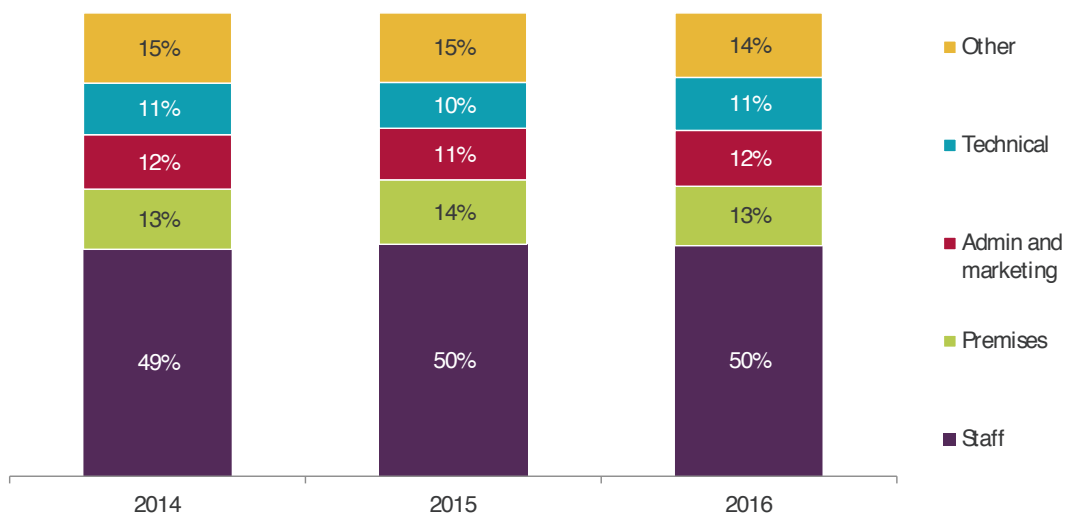
Source: Ofcom analysis of community broadcasters' returns

In 2016 stations serving religious communities of interest had the highest average expenditure; those serving town or rural communities the lowest

Stations serving religious communities of interest had the highest average expenditure in 2016, at £75,357, compared to £32,798 for stations serving towns or rural areas.

Expenditure patterns differ considerably within the community radio sector, reflecting differences in funding and purpose.

For example, stations which rely on advertising as a key source of income may use paid staff to sell advertising and arrange sponsorships. Paid staff may perform other roles in stations, for example, providing training programmes. In 2016 staff costs ranged from 43% of the total for religious and minority ethnic stations to 81% for military stations.

Premises costs ranged from 20% for minority ethnic stations to 1% for military stations, potentially because being located on military bases means they do not need to pay rent to a commercial landlord.

Figure 3.22: **Average expenditure, by type of community served**
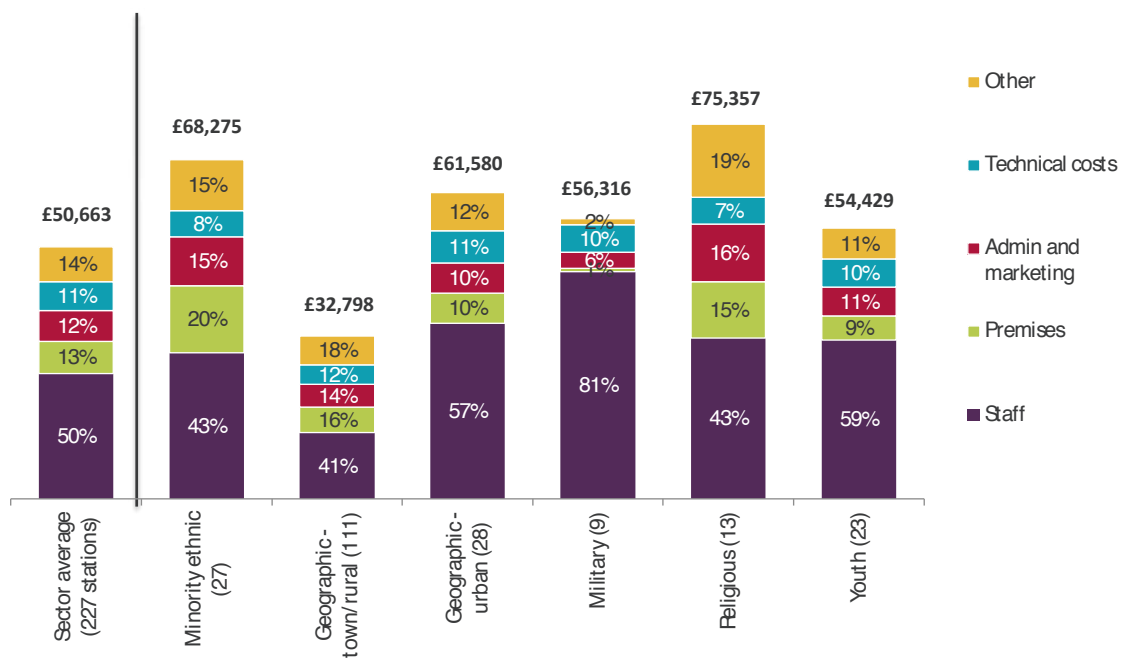
Source: Ofcom analysis of community broadcasters' returns

Community radio stations broadcast original content for just over half of the time

On average, community radio stations broadcast 89 hours of original live or pre-recorded content in a week, a slight decline since 2015 (90 hours).

Each station had on average 72 volunteers, working a total of 187 hours a week.

Figure 3.23: **Community radio hours and volunteers: 2016**

	Sector average
Total original hours per week	89
Number of volunteers	72
Total volunteer hours per week	187
Number of volunteers trained	48

Source: Source: Ofcom analysis of community broadcasters' returns

3.3 Radio and the audio listener

3.3.1 Introduction

The following section examines how patterns of radio and audio listening have changed in the UK, both in the past year and over the longer term.

It uses audience data to analyse listening by sector and by age group, as well as drawing on consumer research.

Figure 3.24: Overview of radio listening

An overview of radio listening

46% of radio listening is now through a digital platform such as a DAB set, online or through a TV set

Radio reaches almost 90% of UK adults

Adult population
53.6 million

Radio listeners
48.4 million

The average listener listens for over **21 hours** per week

On average over **1 billion** hours of radio are consumed every week
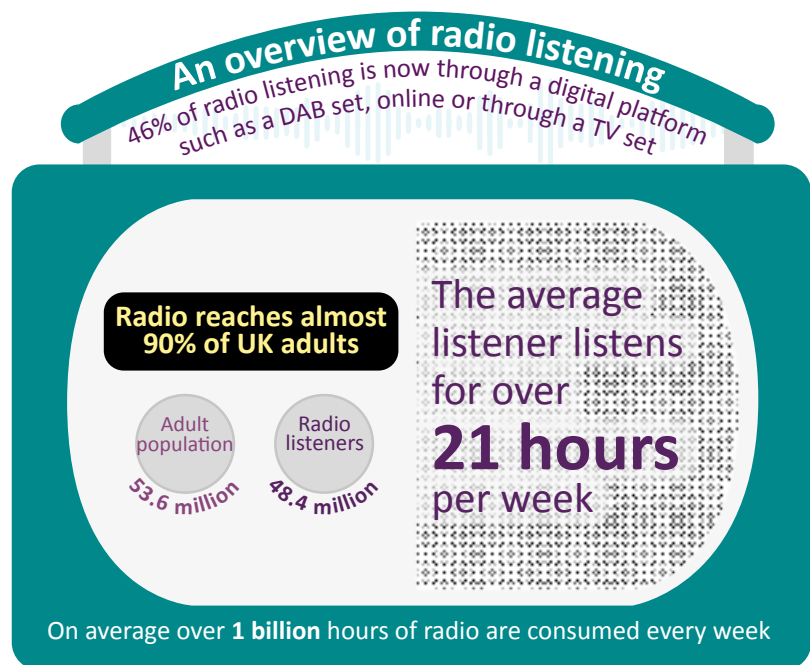
Source: RAJAR, 12 months to Q1 2017

3.3.2 Weekly radio listening in the UK

Almost nine in ten adults listen to the radio each week

The reach of all radio stations has been stable across the past five years, reaching 89.6% of all adults in the UK each week. The reach of the BBC stations is lower than four years ago, down by 2.2pp compared to an increase in weekly reach of 1.2pp for commercial radio stations.

This has been driven by an increase of 4.3pp since 2013 and 1.4pp over the past year in the reach of national commercial stations, the equivalent of 900,000 listeners each week. This is likely to be linked to the increase in DAB ownership and the growth in listening this way,

especially to national commercial stations (see Figure 3.38 and Figure 3.30), and also because of the launch of new services on the Sound Digital multiplex.

Figure 3.25: **Reach of radio, by sector**

Proportion of population (%)
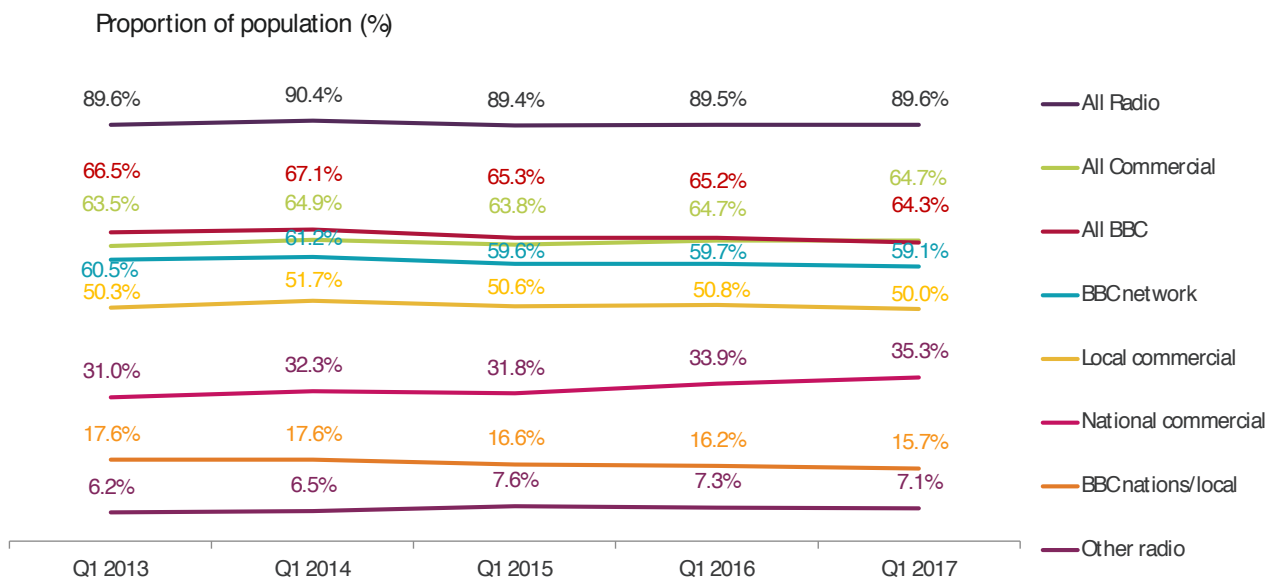
Source: RAJAR, All adults (15+), 12 months to Q1 of each year

National radio services continue to gain in popularity

The shares shown in Figure 3.26 are calculated from the total listening time of all the services in each sector.

As outlined above in the discussion about reach, national commercial stations have increased their market share over the past five years (+3.2pp) and the past 12 months (+1.4pp) with all other sectors losing as a result.

Figure 3.26: **Share of listening hours, by sector**

Percentage of listening hours
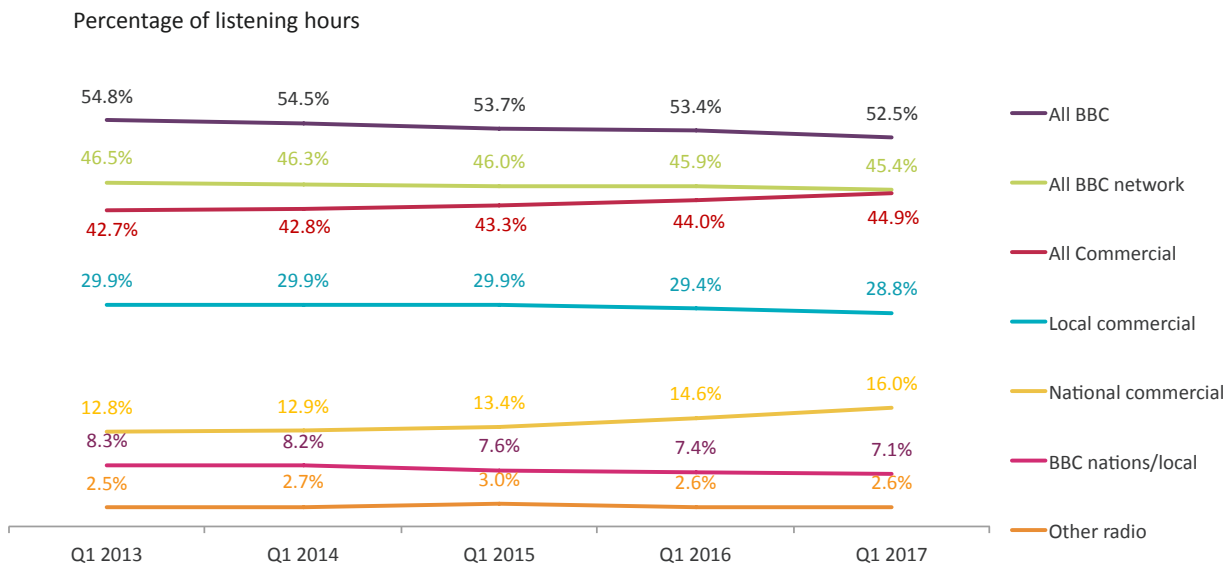
Source: RAJAR, All adults (15+), 12 months to Q1 of each year

Young people spend less time listening to the radio than a year ago

Adults spent an average of 21 hours 24 minutes listening to the radio each week in 2016, a slight increase of around 6 minutes compared to the previous year.

There are differences by demographic; listening time increases as people get older, men generally listen for longer than women and those in socio-economic group C2DE listen for longer than ABC1s. Those at either end of the age spectrum (15-24

and 65+) listen to the radio for 18 minutes less each week than they did last year. In contrast, those aged between 35 and 64 listen for longer – on average 18 minutes per week longer than a year ago.

Figure 3.27: Average weekly listening, by demographic

Annual change (mins)	-18	-18	+12	+18	+30	-18		-6	+6		-6	+12

Adults 15+ = 21.4 hrs

(+6 mins yr on yr)

Weekly listening hours per listener

15-24	25-34	35-44	45-54	55-64	65+		Men	Women		ABC1	C2DE
14.2	17.6	20.4	23.7	25.0	25.2		22.4	20.4		20.1	23.0
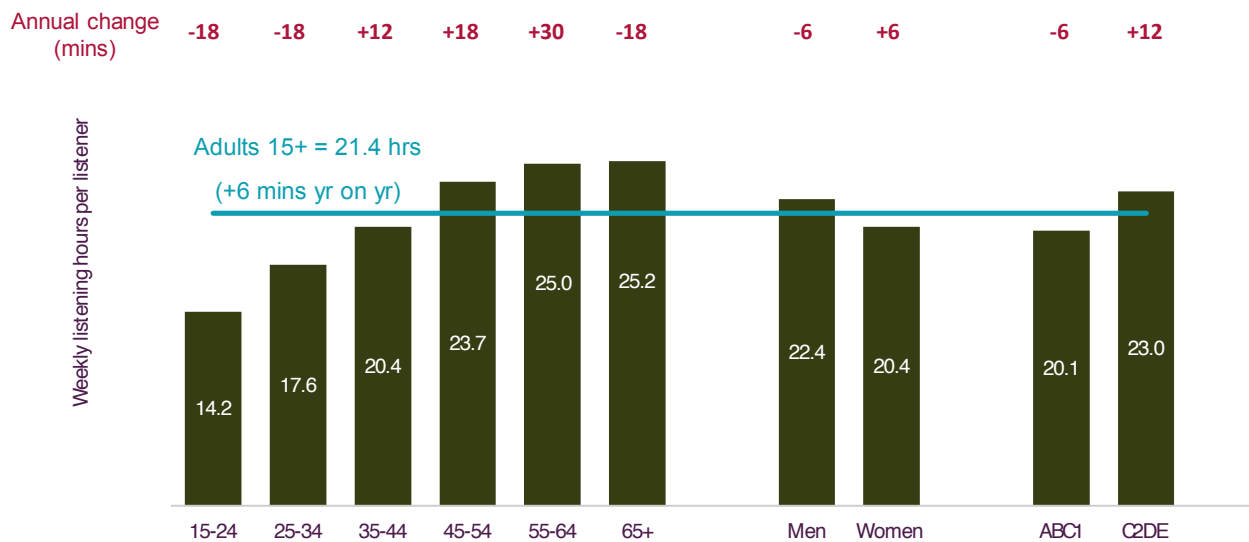
Source: RAJAR, all adults (15+), 12 months to Q1 2017

3.3.3 Digital radio listening trends

DAB ownership continues to increase

Ownership of DAB radio sets continues to increase, with around 57% of adults now claiming to own one, or have a set in the household.

There are some significant differences in take-up by age; those aged 45-54 are most likely to have access to a DAB radio (64.6%) compared to 46.9% of 25-34s.

There are also differences depending on where in the UK people live. 58% of adults in either England or Wales say they own or have a DAB set in the home, compared to just 37% of adults in Northern Ireland.

Figure 3.28: **Ownership of DAB sets**

Percentage of adults who claim to own a DAB set / have a DAB set in the home
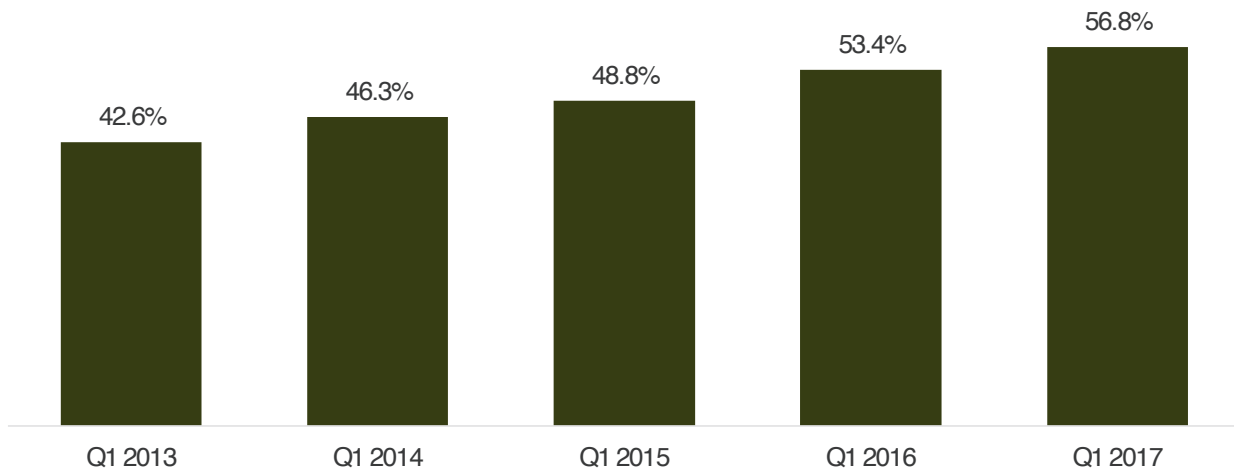
Source: RAJAR, All adults (15+), 12 months to Q1 of each year
Note: In previous CMR reports we have used figures from Ofcom's Tech Tracker

DAB is driving the increase in digital listening

The amount of radio listening which is on digital platforms is now almost 46%. Seventy two percent of digital listening is through a DAB set (33% of overall listening hours).

When looking at the figures by age group, 17% of listening by 15-24 year olds is via the internet compared to 49% through analogue and 24% through DAB.

For older listeners, however, analogue is still the leading platform, with 61% of over-64s' radio listening via AM or FM, and just 2% online.

Figure 3.29: Share of radio listening, by platform

Share of all radio hours by platform

	Q1 2013	Q1 2014	Q1 2015	Q1 2016	Q1 2017
DTV	4.9%	5.2%	4.8%	5.4%	5.2%
Internet	4.6%	5.9%	6.4%	7.5%	7.8%
DAB	21.1%	23.6%	24.9%	29.2%	32.8%
Total analogue (AM/FM)	67.5%	63.7%	62.0%	57.8%	54.3%
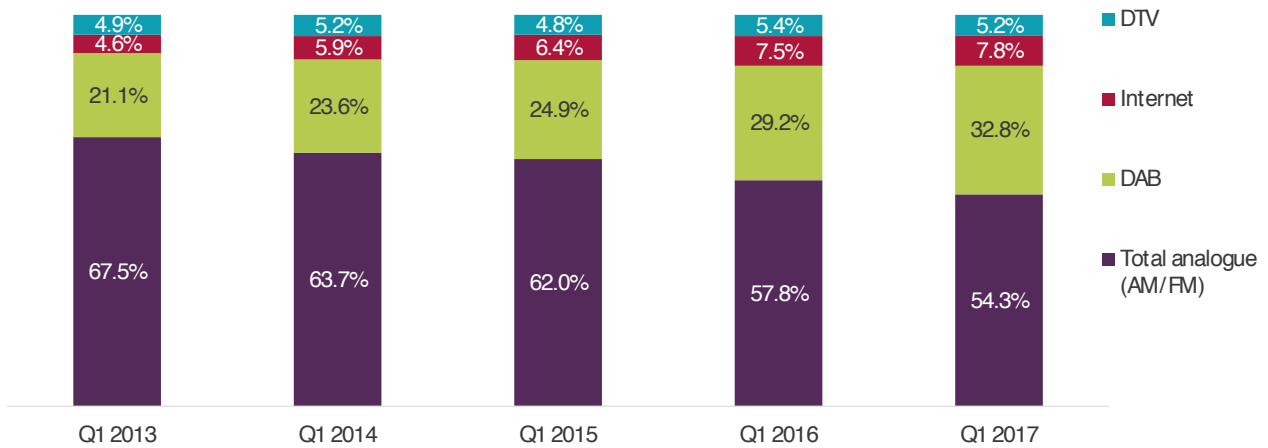
Source: RAJAR, all adults (15+), 12 months to Q1 of each year

Levels of digital radio listening vary by sector

Comparing share by platform across the radio sector shows some wide variations. In particular, only 28% of listening to national commercial stations is through analogue, due to the range of digital-only commercial stations available across the UK. In contrast, the majority of listening to local services continues to be through AM/FM. This is likely to be driven in part by in-car listening, as 27% of listening to any local station is done in the car, compared to just 20% of listening to a UK-wide station.

Figure 3.30: Platform split, by sector

Share of radio listening

	DTV	Internet	DAB	Total analogue (AM/FM)
All Radio	5.2%	7.8%	32.8%	54.3%
All BBC	4.3%	6.4%	34.8%	54.6%
All Commercial	6.3%	8.4%	31.3%	54.0%
BBC network	4.5%	7.0%	36.8%	51.7%
National commercial	11.5%	12.4%	48.2%	27.8%
BBC nations/local	2.5%	2.9%	21.9%	72.7%
Local commercial	3.4%	6.1%	22.0%	68.5%
Other radio	4.5%	25.0%	17.8%	52.7%
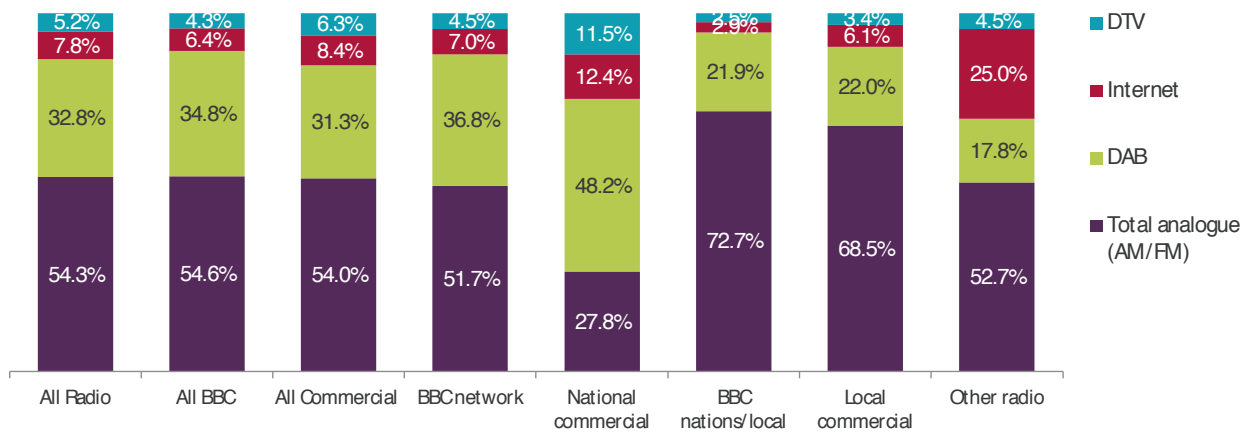
Source: RAJAR, all adults (15+), 12 months to Q1 2017

3.3.4 Listening by ownership group

The BBC's share of all radio listening, including network and local/ nations' radio, was 52.5% in the 12 months to Q1 2017, down by 0.9pp compared to the previous year.

Two major groups make up the bulk of the commercial radio market share: Global and Bauer. They own and operate a range of local and national stations and together take almost 35% of the radio market in terms of listening hours.

Figure 3.31: Share of all radio listening hours

Percentage share of listening hours

Celador, 0.5%
Other, 6.1%
UKRD, 0.7%
Communicorp, 2.4%
Wireless, 3.2%
Bauer, 14.8%
BBC network, 45.4%
Global, 19.8%
BBC nations/local, 7.1%
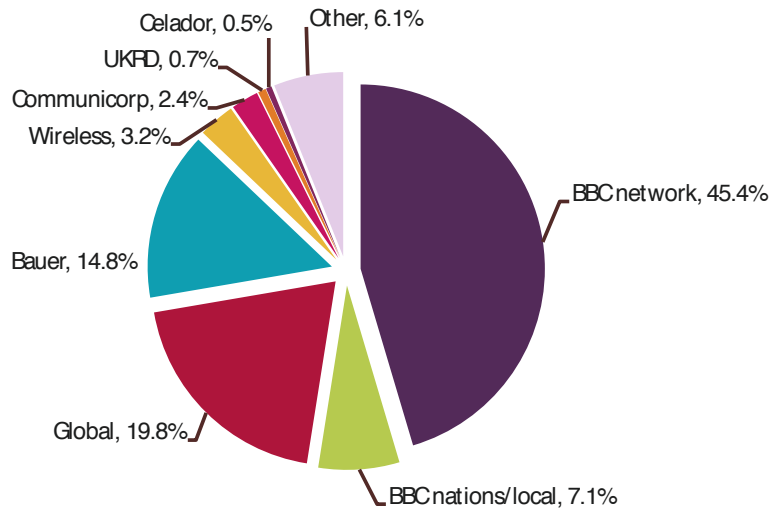
Source: RAJAR, all adults (15+), 12 months to Q1 2017

The two largest commercial radio groups together reach more than 30 million listeners each week

Most commercial radio groups increased the number of people they reach each week, compared to the previous year,

with Bauer stations seeing the biggest increase (+1.1pp, equivalent to 775,000 adults).

Taking both groups' listener populations together, Global and Bauer reach more than half the UK adult population (56.6%).

Figure 3.32: Commercial radio, by weekly audience reach

	Global	Bauer	Wireless	Communicorp	UKRD	Celador
Weekly UK audience reach	42.2%	32.2%	8.6%	6.3%	1.6%	1.4%
Annual change in reach	+0.8pp	+1.1pp	+0.7pp	+0.3pp	-0.2pp	+0.2pp

Weekly reach (thousands)

Global	Bauer	Wireless	Communicorp	UKRD	Celador
22,802	17,424	4,629	3,409	864	782
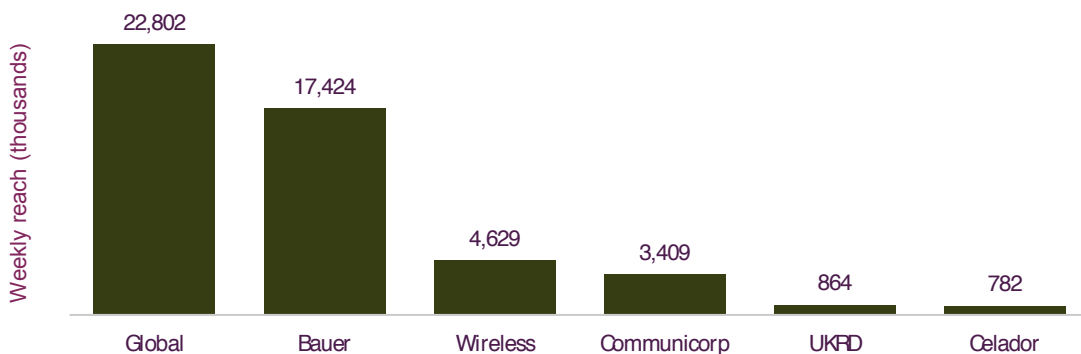
Source: RAJAR, all adults (15+), 12 months to Q1 2017

There are now 50 national radio stations available across the UK

According to RAJAR there are now 50 radio stations available nationally across the UK: 39 commercial and 11 from the BBC. This has increased from 38 (27 commercial, 11 BBC) in 2013.

There are some demographic variations between the audiences that UK-wide services from different owners appeal to. For example, as Figure 3.33 shows, the majority of BBC services (apart from 1Xtra, Radio 1 and Asian Network) are

more likely to appeal to older men, Global national services, such as Heart, tend to have a greater appeal to female listeners, and Bauer stations, such as Absolute Radio, largely appeal to male audiences.

Figure 3.33: Reach profile of national stations, compared to all radio

Comparison of age and gender reach profile (%) to national stations indexed against all radio
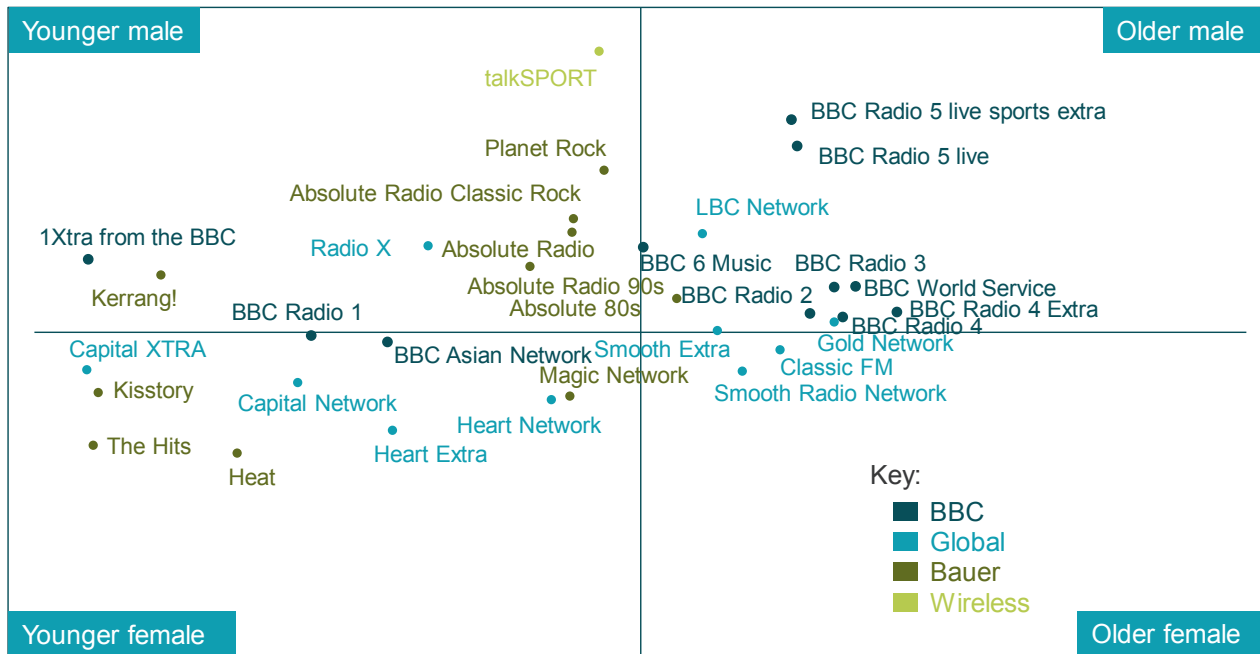
Source: RAJAR, all adults (15+), 12 months to Q1 2017
Reach (%) for each station has been indexed against all radio reach for males and 35+
Only stations with a weekly reach greater than 500,000 listeners are shown

4 Telecoms and networks

4.1 Sector Overview

UK consumers are benefiting from faster fixed and mobile networks.

By June 2016, 44% of all fixed broadband connections were able to receive actual download speeds of 30Mbit/s or more, up from 38% a year previously. Nearly two-thirds of mobile subscriptions were enabled for 4G, up from 46% in 2015. Consumers are also using these networks more – average data use per fixed line residential broadband connection increased by 36% year on year to 132GB in June 2016, and average data use per mobile connection increased by 44% to 1.3GB.

Most households have both fixed broadband and a smartphone, and consumers are moving seamlessly between fixed and mobile connections. Our mobile-app-based research shows that around two-thirds of data connections made by our panel of Android smartphone users are via a Wi-Fi network, with the remaining third via a mobile network.

UK telecoms revenues grew by 0.4% in real terms (i.e. adjusted for inflation) in 2016 to £35.6bn.[1] This has been driven by the growing take-up of superfast broadband services, which resulted in a 9.5% increase in the average monthly price of a residential fixed broadband connection, to £20.45, in 2016.

Average monthly household spend on telecoms services increased by 0.9% and accounted for 3.8% of total household spend for the year.

Average retail revenue per fixed line increased by 0.9% in real terms to £21.13 in 2016, as

providers increased line rental and bundled calls prices to offset the decline in fixed voice call volumes (down by 11.9% to 65 billion minutes). The number of fixed lines, however, remained relatively stable at 33.5 million, probably because most households in the UK need a landline to access fixed broadband services.

Average monthly retail revenue per mobile subscription increased in 2016 after years of decline (up by 1.1% in real terms to £15.19), as pre-pay consumers continued to migrate to post-pay services, and consumers used more data. Increasing use of over-the-top (OTT) instant messaging services such as WhatsApp and Facebook Messenger has led to a decline in total SMS and MMS messaging volumes, which fell by 5.5% in 2016 to 96 billion messages. Mobile-originated call volumes, however, increased to 151 billion minutes during the year (up by 5.7%).

In section 4.2 we use insight collected from our app-based research into Android smartphone users to discuss the convergence of Wi-Fi and mobile connectivity.

Section 4.3 provides an overview of the telecoms market including industry revenues, household spend and take-up of different technologies.

Section 4.4 examines trends in fixed telecoms, looking first at fixed voice and then at broadband.

Section 4.5 looks at mobile voice and data services.

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[1] In a change from previous years, the total industry revenues shown here exclude those generated by corporate data services.

Figure 4.1: UK telecoms market: key statistics

	2011	2012	2013	2014	2015	2016
Total operator-reported revenue (£bn)	39.7	38.4	36.5	35.1	35.4	35.6
Operator-reported retail revenue (£bn) (excl. CDS)	30.1	29.7	28.8	28.4	28.9	29.6
Operator-reported wholesale revenue (£bn)	9.6	8.7	7.7	6.6	6.5	6.0
Average monthly household telecoms spend (£, 2016 prices)	84.72	83.74	81.26	82.03	84.46	85.26
Fixed access and call revenue (£bn)	9.7	9.2	8.9	8.5	8.4	8.5
Fixed internet revenue (£bn)	3.8	3.9	4.1	4.6	5.2	5.7
Fixed lines (millions)	33.3	33.4	33.4	33.6	33.7	33.5
Fixed broadband connections (millions)	20.7	21.8	22.8	23.7	24.7	25.3
Superfast broadband connections (≥30Mbit/s, millions)	1.0	3.1	5.3	7.1	9.2	10.8
Fixed voice call minutes (billions)	111	103	93	82	74	65
Average actual residential fixed broadband download speeds (Mbit/s)	7.6	12.0	17.8	22.8	28.9	36.2
Mobile retail revenues (£bn)	16.6	16.6	15.8	15.3	15.3	15.3
Mobile voice call minutes (billions)	131	132	134	137	143	151
SMS & MMS messages sent (billions)	150	151	129	110	102	96
Average monthly mobile data per active connection (GB)*	0.1	0.2	0.4	0.5	0.9	1.3
Active mobile subscribers (millions)*	86.5	88.4	88.8	90.3	91.9	92.0
4G subscribers (millions)	-	-	2.7	23.6	39.4	52.4
M2M subscribers (millions)	4.1	5.0	5.7	6.3	6.7	7.6

Source: Ofcom / operators / Ofcom Connected Nations Reports 2011- 2016
Notes: Connection figures are at year-end; in a change from previous years, the total industry revenues shown here exclude those generated by corporate data services; household spend data includes VAT and is CPI adjusted; All revenue data is adjusted for CPI (2016, prices); fixed voice minutes shown here are likely to be understated as they do not fully capture the use of VoIP services; fixed and superfast broadband connection figures include business connections; *average monthly mobile data per active connection for 2011 as of March, 2012-2016 as of June of each year; **active mobile subscribers include machine-to-machine subscriptions.

4.2 Key market developments

4.2.1 The convergence of mobile and Wi-Fi connectivity

In today's connected world, people increasingly expect to be able to access online services whenever they want and wherever they are.

There are two main ways in which users of mobile devices such as smartphones and tablets can access online services on their device: over a cellular network connection or using a Wi-Fi network.

Most UK homes use both fixed and mobile broadband services, although increasing mobile data allowances and faster connection speeds over 4G mean that cellular connectivity has become a viable alternative to fixed broadband for some households. The widespread provision of Wi-Fi routers by fixed broadband providers, and the increasing use of mobile devices such as tablets, smartphones and laptops which automatically switch to Wi-Fi where available, offer a comparable user experience inside and away from the home.

To investigate the networks that people using smartphones connect to, and the services they use, Ofcom set up a panel of mobile users who downloaded an app to their Android smartphone that captures a range of technical and behavioural metrics.[1] We published some of these findings in our report *Measuring Consumer Experience of Using Mobile Services*.[2]

In this section of the report we look in particular at how people use their smartphones to connect to both Wi-Fi and cellular networks.

Ofcom mobile research app

Last year we piloted a new methodology to measure the consumer experience of using mobile services across the UK. This approach involved establishing a panel of UK consumers who installed an Ofcom-branded research app on their Android smartphone.

The app, provided by our technical partner P3, passively measures the consumer experience of using mobile services, as panellists use their phones. The data used in this report was collected between 27 September 2016 and 23 December 2016.

More information about this research can be found at https://www.ofcom.org.uk/research-and-data/telecoms-research/mobile-smartphones/consumer-mobile-experience.

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[1] The app is currently only available on Android as the operating system used on Apple iPhones (iOS) has restrictions on apps running in the background and ability to access network performance data.

[2] https://www.ofcom.org.uk/about-ofcom/latest/features-and-news/consumer-mobile-experience

More than two-thirds of data app connections were to Wi-Fi rather than a cellular network

Our research indicates that Wi-Fi is a fundamental part of consumers' use of smartphones. Among consumers who had a 4G mobile handset and contract, 69% of connections to data applications on their mobile phone were to a Wi-Fi connection.

WiFi **69%**   **31%** Mobile data

4G 65%   3G 30%   2G 5%

Mobile data breakdown
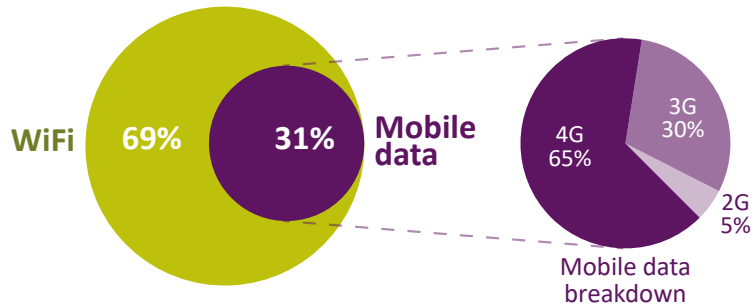
Most consumers favour a Wi-Fi connection for using YouTube

Video streaming is one of the most data-hungry online activities that consumers undertake, and YouTube is a popular video streaming app. Data recorded by the Ofcom mobile research app indicate that consumers typically wait until they are connected to the internet via Wi-Fi to use YouTube: 76% of panellists'

YouTube app sessions were over a Wi-Fi connection in Q4 2016,[1] while 8% of the sessions used a 4G mobile connection and 7% were over 3G (the remainder of the sessions either used a mixture of technologies, 2G or had no data transfer).

Over **75%** of YouTube sessions were over a Wi-Fi connection

…and consumers use YouTube for longer when connected to Wi-Fi

Similarly, the average duration of YouTube app sessions varied by network technology. Average YouTube session duration, when connected to 3G and 4G, was 3.1 and 4.2 minutes respectively, while the average session time over a Wi-Fi connection was longer, at 5.5 minutes.

This suggests that users may adapt their behaviour according to the type of data connection that they are using.

The duration of YouTube app sessions differs widely by technology

Session duration (minutes)

Wi-Fi
4G
3G

3.1
4.2
5.5

[1] The analysis is based on test results run between 27 September and 23 December 2016

Consumers appear to be aware of which activities consume the most data

There are a number of reasons why users may prefer to use Wi-Fi to access YouTube. First, the majority of smartphone users purchase their mobile service on a pay-monthly basis,[1] paying a fixed monthly fee for an allowance of calls, messages and data.

The inclusive data allowances offered with fixed broadband services tend to be more generous than those offered with smartphones; tariff data collected by PurePricing in May 2017 show that just over half (55%) of pay-monthly plans offer a data allowance of 5GB or less, while most fixed broadband plans (94%) offered 'unlimited' data.[2] Video streaming is data-hungry; an hour of 1080p full-HD video viewed on YouTube requires around 750MB of data, so users may wait until they can access a Wi-Fi network before using YouTube, to conserve their mobile data allowance.

Second, streaming video content requires a reliable connection, and benefits from higher connection speeds, as these allows better-quality video to be delivered with fewer buffering events. Wi-Fi connections offer higher average speeds than mobile data connections, with data collected by the Ofcom mobile research app in Q4 2016 showing that the average speed recorded when using YouTube over Wi-Fi was 6.6Mbit/s, compared to 3.8Mbit/s over 4G and 2.7Mbit/s with 3G.[3] It is therefore likely that Wi-Fi, rather than a mobile data connection, will provide a better user experience for YouTube viewing.

The proportion of use that is over Wi-Fi varies by app

The proportion of use that takes place over Wi-Fi varies by application. For example, while 76% of YouTube use was over Wi-Fi, just 57% of WhatsApp sessions were, with 30% of WhatsApp sessions over mobile networks[4] (in the remainder of cases there was no data transfer, or a mixture of technologies was used).[5] For RingGo, a cashless parking app, just 22% of sessions were over Wi-Fi, 32% over 4G and 29% over 3G. This is probably because there is likely to be lower Wi-Fi availability in places where cars are parked (i.e. outdoors and or in private multi-storey car parks). The remainder of the RingGo sessions either had no data transfer, or were on 2G or mixed technologies.

Variations in the proportion of an app's use over Wi-Fi may be due to a variety of factors, including when and where the app is used, and the data and bandwidth requirements. Apps that are used more by younger people may also be more likely to be used over a mobile network; young people are heavier users of data services on smartphones.

[1] Data from Ofcom's Technology Tracker showed that 84% of smartphone users used a pay-monthly contract in H1 2017

[2] Mobile data are from PurePricing monthly mobile pricing database, June 2017 and represent tariffs for post-pay handset and SIM-only plans offered by BT, EE, iD, O2, Plusnet, Sky, TalkTalk, Tesco, Three, Virgin Mobile, Vodafone in May 2017. Fixed broadband data are from PurePricing monthly broadband pricing database, May 2017, and represent dual-play and triple-play tariffs offered by BT, TalkTalk, Sky, Virgin Media, EE, Plusnet and Vodafone.

[3] https://www.ofcom.org.uk/research-and-data/telecoms-research/mobile-smartphones/consumer-mobile-experience

[4] Use of some apps (including WhatsApp) may be understated as the research does not capture apps running in the background or if the app is open for less than 5 seconds.

[5] 'No data transfer' refers to a session for which there was no measured connection on any technology.

The number of Wi-Fi hotspots connected to per day varied widely between panellists

The increasing availability of public Wi-Fi hotspots allows consumers to connect to Wi-Fi networks in a wide variety of places, and analysis of Ofcom mobile research app data shows that, on average, panellists connected to 1.9 unique Wi-Fi hotspots per day,[1] although the range of unique hotspots used varied widely, from less than one hotspot per day to more than 30.

Virgin Media recently began enabling Wi-Fi hotspot functionality on routers in its residential customers'

premises, allowing access to more than a quarter of a million hotspots across the UK. BT has offered a similar service for a number of years, and many other providers offer either free or paid-for Wi-Fi hotspot services in public spaces.

Additionally, a number of town and city centres offer Wi-Fi connectivity, either through sponsorship by local businesses, or funded by town and district councils. This process was kick-started by the Government's SuperConnected Cities Programme,

On average panellists connected to **1.9** different Wi-Fi hotspots a day

which lead to the roll-out of public Wi-Fi in over 1,000 public buildings, across city centres and in over 1,200 buses, trains and trams in cities across the UK.[2]

Most data still transmitted over fixed networks

Despite the widespread use of mobile data services, there is still a large disparity between fixed and mobile data consumption; in June 2016 just 4% of total UK data volumes were transmitted over mobile networks.[3] While average mobile data use per connection is increasing, reaching 1.3GB per month in June 2016 (up from 0.9GB in June 2015)[4], it is significantly lower than the 132GB per month average recorded over residential

fixed broadband connections.

Differences in average use per connection are due to the greater capacity constraints that exist in mobile data networks, partly due to the finite availability of radio spectrum. It is therefore beneficial for both consumers and the mobile networks to offload data use from mobile to fixed data networks, as this relieves capacity problems on mobile networks and, typically,

provides a better user experience. For YouTube app use, around 83% of the measured data volumes were over a Wi-Fi connection, with 6% over 4G, 4% over 3G, and 7% over a mix of technologies. This closely matches the proportion of app sessions over each technology.

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[1] This figure is an estimate, based upon location data measured in the mobile research app. It should be taken as indicative only.

[2] https://www.gov.uk/government/publications/2010-to-2015-government-policy-broadband-investment/2010-to-2015-government-policy-broadband-investment#appendix-3-investing-in-superconnected-cities

[3] Ofcom Connected Nations Report 2016, https://www.ofcom.org.uk/__data/assets/pdf_file/0035/95876/CN-Report-2016.pdf

[4] https://www.ofcom.org.uk/__data/assets/pdf_file/0035/95876/CN-Report-2016.pdf

4.3 Telecoms market overview

4.3.1 UK telecoms services generated £35.6bn in revenue in 2016

Total revenues generated by UK telecoms services increased by £0.1bn (0.4%) in real terms to £35.6bn in 2016.

The increase was largely due to a 4.3% real-terms increase in fixed retail revenues to £14.2bn, mainly due to the growing take-up of superfast broadband services. Revenues from retail mobile services have been stable over the past three years at £15.3bn, while wholesale service revenues fell in 2016.

Figure 4.2: **Summary of UK telecoms revenues (£bn)**

	2011	2012	2013	2014	2015	2016
Total	£39.7	£38.4	£36.5	£35.1	£35.4	£35.6
Retail mobile	£16.6	£16.6	£15.8	£15.3	£15.3	£15.3
Retail fixed	£13.4	£13.1	£12.9	£13.1	£13.6	£14.2
Wholesale Services	£9.6	£8.7	£7.7	£6.6	£6.5	£6.0

	2016 change	5 year CAGR
Total	0.4%	-2.2%
Retail mobile	0.3%	-1.6%
Retail fixed	4.3%	1.1%
Wholesale Services	-7.6%	-9.0%

Source: Ofcom / operators
Notes: In a change from previous years, the total industry revenues shown here exclude those generated by corporate data services; data have been adjusted for CPI (2016 prices).

Average household spend on telecoms services increased to £85.26 per month

Average household spend on telecoms services, comprising fixed voice, fixed internet and mobile voice and data services, increased by £0.80 (0.9%) in real terms in 2016, to £85.26 per month. This increase was primarily due to an 11.8% increase in average monthly spend on fixed internet access, caused mainly by the continued migration to superfast broadband services. Overall, spend on telecoms services accounted for

3.8% of average total household spend during the year, the highest proportion recorded since 2012.

Spend on fixed voice services was flat in 2016, despite a significant fall in use (outbound fixed call volumes declined by 11.9% during the year). This was due to increasing line rental and call prices (our analysis attributes line rental to fixed voice services, although it is also required

for most fixed broadband services). Average spend on mobile voice and data fell in 2016, down £1.03 in real terms to £45.60 per month, following a shift in the pricing of mobile services away from voice and towards data services.[1]

Figure 4.3: Average household spend on telecoms services (£ per month)
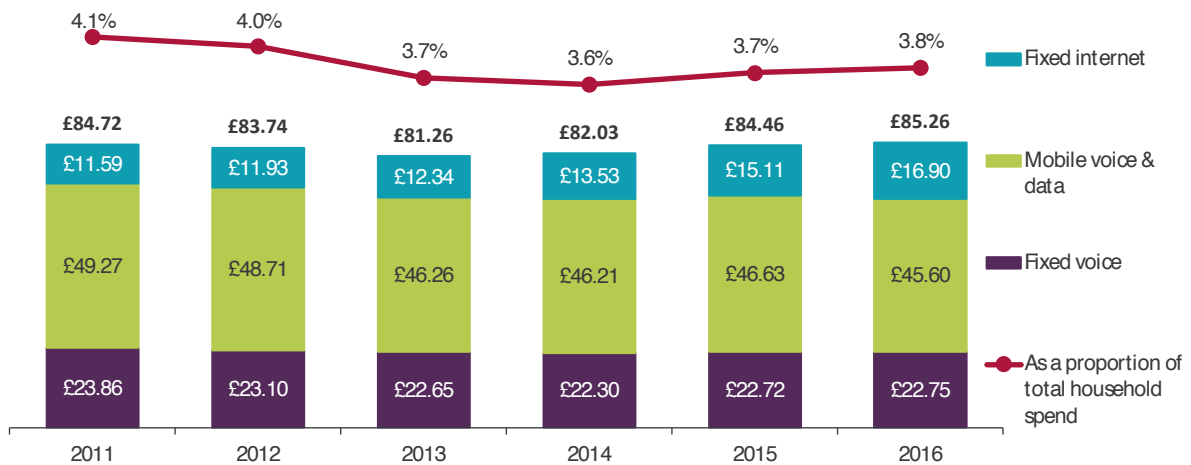
Source: Ofcom / operators / ONS

Notes: Includes estimates where Ofcom does not receive data from operators; adjusted for CPI (2016 prices); includes VAT. Average household spend is calculated by dividing residential telecoms service revenues by the number of UK households.

[1] In the Pricing trends for communications services in the UK report, published in March 2017, Ofcom analysed the pricing of mobile voice and data services, noting that most post-pay tariffs now offer large allowances of calls and texts, with tariffs tiered according to the inclusive data allowance- https://www.ofcom.org.uk/__data/assets/pdf_file/0028/98605/Pricing-report-2017.pdf

The proportion of households with fixed broadband increased to 82% in 2017

There were two statistically significant changes in the take-up of telecoms services in 2017: the proportion of respondents who had a fixed broadband connection at home increased by 3pp to 82%, while the proportion who used a dedicated mobile data service (i.e. who used a mobile network to access data services on a device other than a mobile phone, such as a laptop or tablet computer) halved, to 2%. The decline in the take-up of mobile datacards/ dongles may be due to increased smartphone take-up, and the ability to use a smartphone to create a personal Wi-Fi hot spot to 'tether' a laptop or tablet computer to the smartphone's mobile data subscription.

The proportion of respondents who used a mobile phone to access the internet was unchanged at 66% in 2017, despite smartphone take-up having increased by five percentage points during the year, to 76%.

Figure 4.4: Take-up of key telecoms technologies (proportion of households / adults)

Source: Ofcom Technology Tracker. Data from Q1 of each year 2007-2014, then H1 2015-2017.
Base: All adults aged 16+ (2017 n=3743).
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
QC1: Is there a landline phone in your home that can be used to make and receive calls? QE1: Does your household have a PC or laptop computer? / **QE2:** Do you or does anyone in your household have access to the internet/ world wide web at home (via any device, e.g. PC, laptop, mobile phone etc.)? / **QE12 (QE9):** Which of these methods does your household use to connect to the internet at home?
Note: Use of internet on mobile is personal take-up measure, whereas the other data relate to household take-up.

Most UK households use a combination of fixed and mobile services

Using Ofcom Technology Tracker data, we can see how UK households use fixed and mobile voice and data services. Our analysis shows that 7% of households were mobile-only (i.e. they solely used mobile voice and data services, and did not use any fixed-line services) while 4% only used fixed telecoms services. Most UK households used a combination of these services, with more than two-thirds (69%) taking a landline, fixed broadband and mobile voice service.

Figure 4.5: Take-up of telecoms services

Legend:
- Mobile (voice)
- Landline
- Mobile broaband
- Home broadband

| 1% | 1% | 3% | 7% | 7% | 10% | 69% |
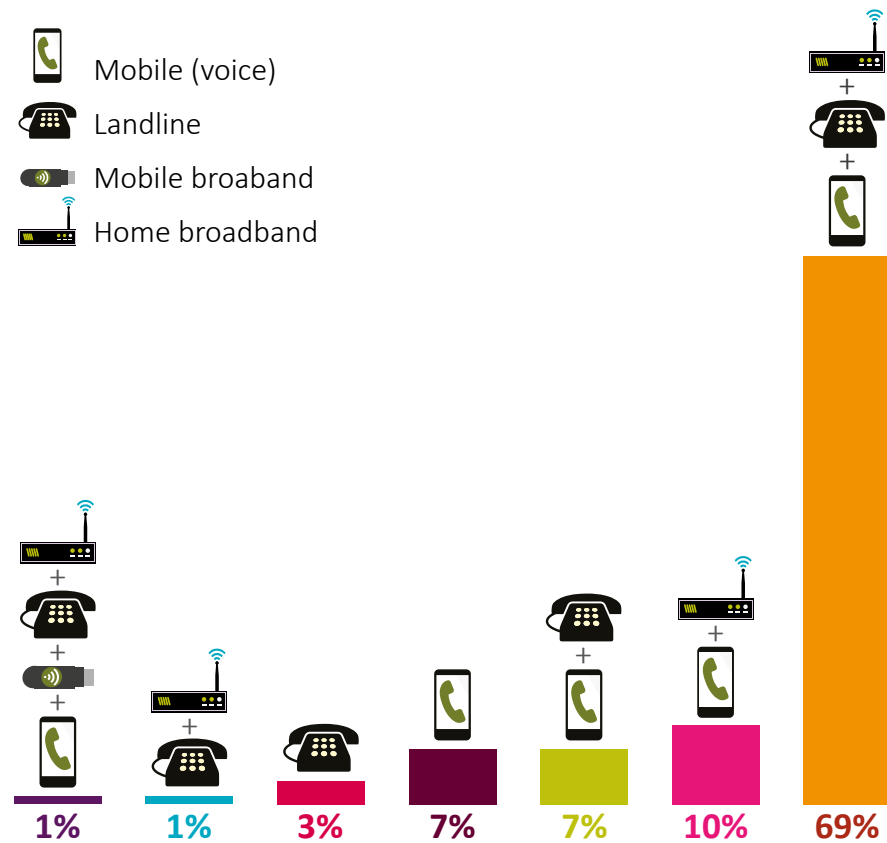
Source: Source: Ofcom Technology Tracker H1 2017

4.4 **Fixed voice and data services**

4.4.1 Average revenue per fixed line increased in 2016, despite falling call volumes

Despite falling call volumes, average retail revenue per fixed line increased in real terms in 2016, up by 20 pence (0.9%) to £21.13 per month.

The main driver for this was a 5.0% increase in average line rental and bundled call revenue, to £15.76 per month, equating to 75% of total average monthly spend. Average line rental prices have increased by 34% in real terms over the last decade, despite a fall in the underlying wholesale costs related to providing these services.[1]

These increases have come as operators have sought to maintain fixed voice revenues as call volumes decline, and to offer cheap broadband prices in order to attract new customers (line rental is required for most fixed broadband services).[2] While line rental increases have affected all fixed-line users, the impact of fixed voice price increases is likely to have been disproportionately high for those who purchase fixed voice-only services, as they do not benefit from the discounts that are available when buying service bundles.[3]

On 31 October 2016, new Advertising Standards Authority (ASA) guidelines on broadband advertising came into force: these require broadband advertising to show an all-inclusive monthly price for the service, so that the price of the line rental is not shown separately from the broadband service price. As a result, some operators which do not offer a standalone fixed voice service (i.e. those who only sell fixed voice services as part of a bundle), such as TalkTalk, have stopped identifying a separate line rental price.

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[1] See Ofcom, Pricing trends for communications services (March 2017), p15

[2] See Ofcom, Pricing trends for communications services (March 2017), p14

[3] See Ofcom, Pricing trends for communications services (March 2017), p14

Figure 4.6: Average monthly retail voice revenue per fixed voice connection (£ per month)

	2016 change	5 year CAGR
Total	0.9%	-2.7%
Other calls	0.4%	-5.0%
Calls to mobiles	-20.4%	-16.9%
International calls	-13.0%	-14.6%
UK Geographic calls	-9.1%	-12.0%
Line rental and bundle	5.0%	2.0%
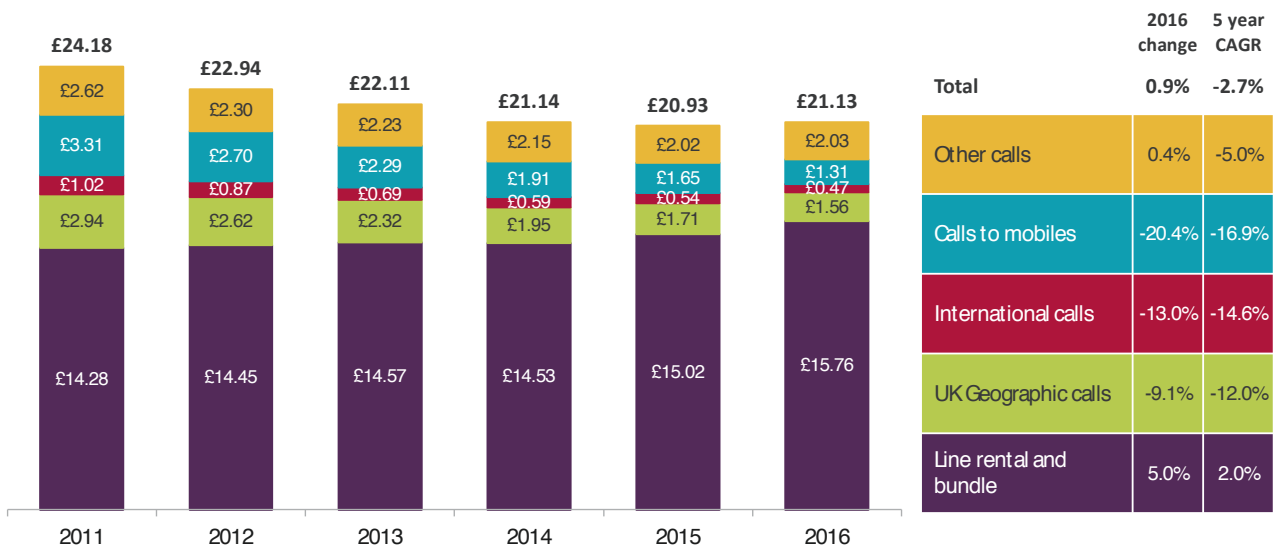
Source: Ofcom / operators
Notes: Adjusted for CPI (2016 prices)

The price of a basket of fixed voice services increased by 1.8% in real terms in 2016

In order to monitor residential landline prices, we track the price of a basket of residential telephony services over time. The basket consists of a landline with average use of outgoing UK geographic calls, international calls and calls to mobiles in 2016. Our analysis shows that the price of this basket increased by 1.8% (38 pence per month) in real terms in 2016, and by an average of 2.0% a year in the five years to 2016.

Figure 4.7: Real price of a basket of residential fixed voice services (£ per month)
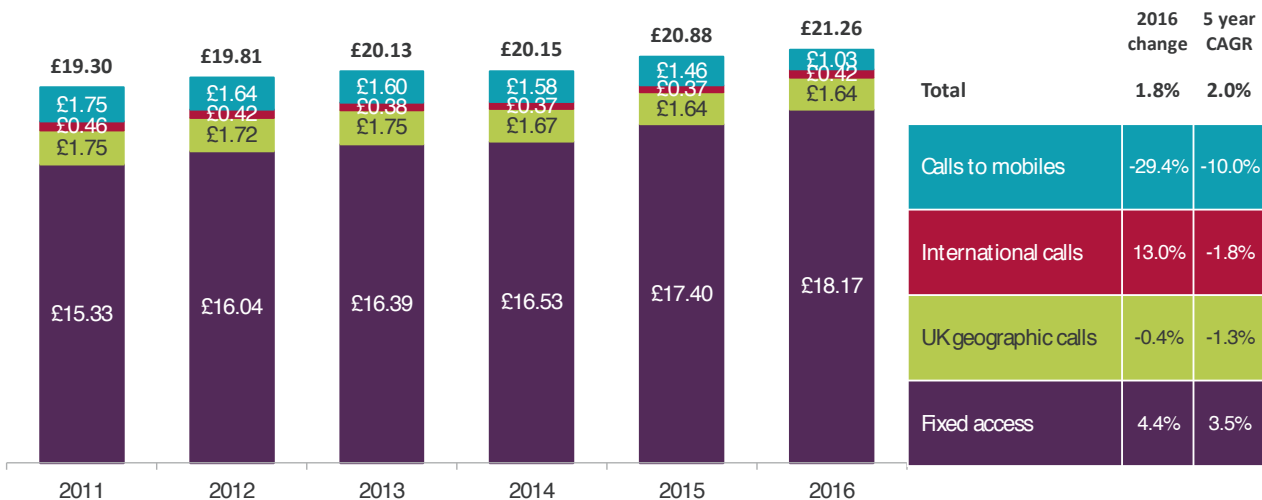
	2016 change	5 year CAGR
Total	1.8%	2.0%
Calls to mobiles	-29.4%	-10.0%
International calls	13.0%	-1.8%
UK geographic calls	-0.4%	-1.3%
Fixed access	4.4%	3.5%

Source: Ofcom / operators
Note: Includes estimates where Ofcom does not receive data from operators; excludes non-geographic voice calls; adjusted for CPI (2016 prices); includes VAT.

Outgoing fixed call volumes fell by 12% in 2016

Total outgoing fixed call minutes fell by 11.9% to 65 billion minutes in 2016 as consumers increasingly used

mobile and internet-based voice and messaging services instead of fixed-line calls. As in previous years, calls to

UK geographic numbers made up the largest proportion of total outgoing fixed call volumes in 2016 (65%).

Figure 4.8: Outgoing fixed call volumes, by type of call (billions of minutes)

	2016 change	5 year CAGR
Total	**-11.9%**	**-10.2%**
Other calls	-10.5%	-8.1%
Calls to mobiles	-2.8%	-7.9%
International calls	-18.4%	-12.6%
UK geographic calls	-13.0%	-10.9%
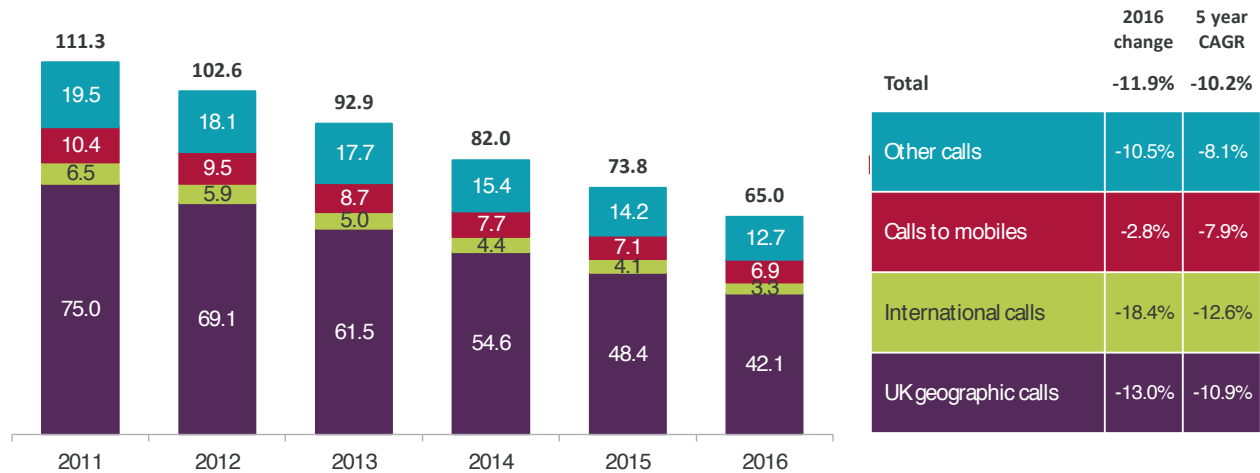
Source: Ofcom / operators
Note: VoIP call volumes are not fully captured in this chart and so totals may be understated.

The number of residential landlines increased in 2016

In contrast to the large decline in fixed-originated call volumes, the total number of fixed lines remained relatively stable in 2016, at 33.5 million (down 0.6% since the previous year). The total number of fixed lines comprised 26.4 million

residential lines and 7.1 million business lines (78.8% and 21.2% of the total respectively). The number of residential fixed lines increased by 0.3 million (1.3%) in 2016, due to an increase in the number of households, and because most UK

homes require a fixed line to access broadband services. Conversely, the number of business lines fell by 7.0% in 2016, largely due to the increasing use of managed VoIP services (which is not fully captured in our data).

Figure 4.9: Number of fixed lines (millions)

	2016 change	5 year CAGR
Total	**-0.6%**	**0.1%**
Business	-7.0%	-5.4%
Residential	1.3%	2.0%
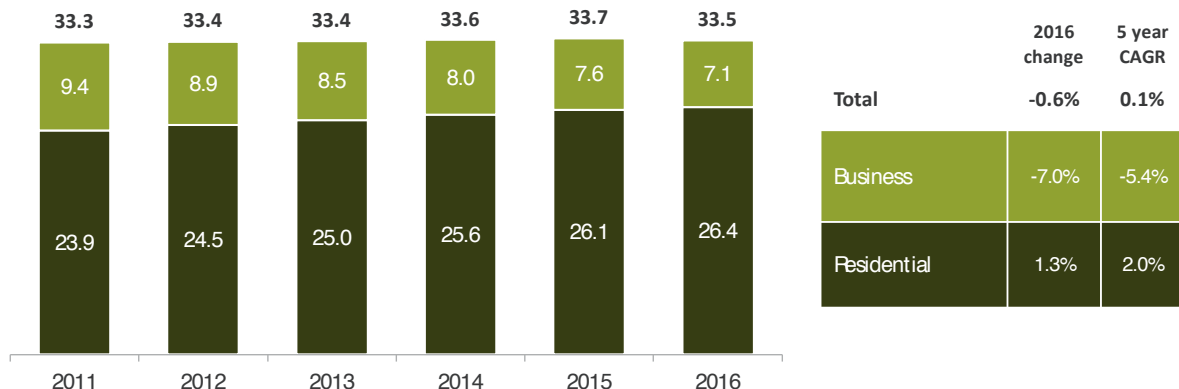
Source: Ofcom / operators

Satisfaction with fixed voice services remained stable in 2017

Satisfaction levels among fixed voice users have remained largely flat over the past year; almost

nine in ten (88%) users said they were 'very' or 'fairly' satisfied with their service in 2017.

Figure 4.10: Overall satisfaction with residential fixed voice services
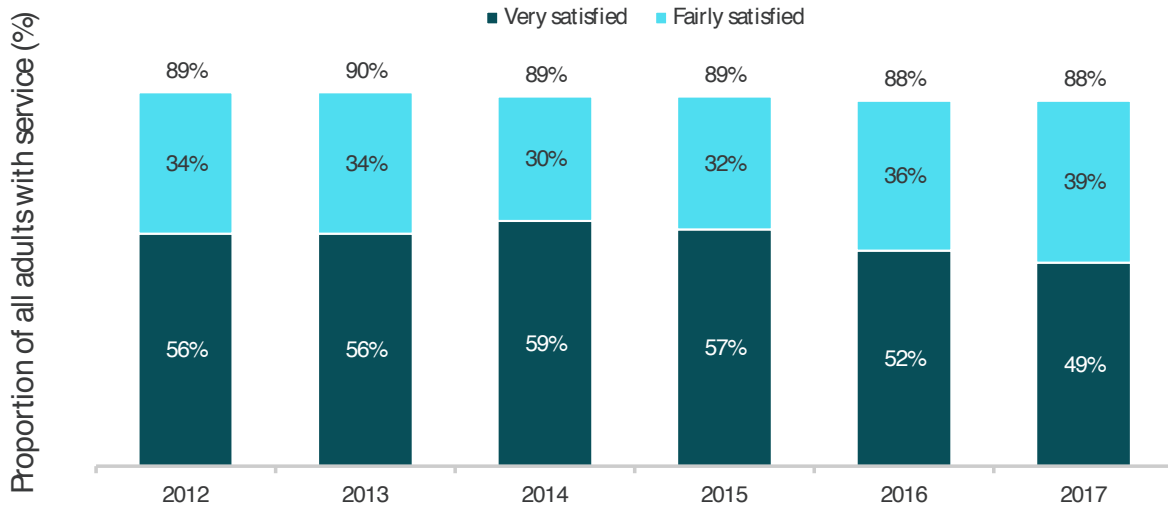
Source: Ofcom Technology Tracker. Data from Q1 2009-2014, then H1 2015-2017
Base: All adults aged 16+ with a fixed line phone (2017=3074)
Note: Includes only those who expressed an opinion.
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
QC8A (QC13A): Thinking about your home phone service only, please use this card to say how satisfied you are with the overall service provided by (MAIN SUPPLIER)?

Increasing superfast broadband take-up is driving fixed internet revenue growth

The continued migration to superfast fixed broadband services resulted in a 9.9% real-terms increase in fixed internet revenues in 2016, to £5.7bn. Superfast products are generally more expensive than their standard broadband equivalents- at the end of 2016, across the leading residential providers, the price of the lowest-cost dual-play bundle that includes superfast broadband was £4 higher per month than the lowest-cost standard broadband dual-play bundle.[vi] Fixed internet revenues increased by an average of 8.6% a year in the five years to 2016, driven both by an increase in the overall number of broadband connections and by an increase in the proportion of these which are superfast.

Figure 4.11: Retail residential and SME fixed internet revenues (£bn)
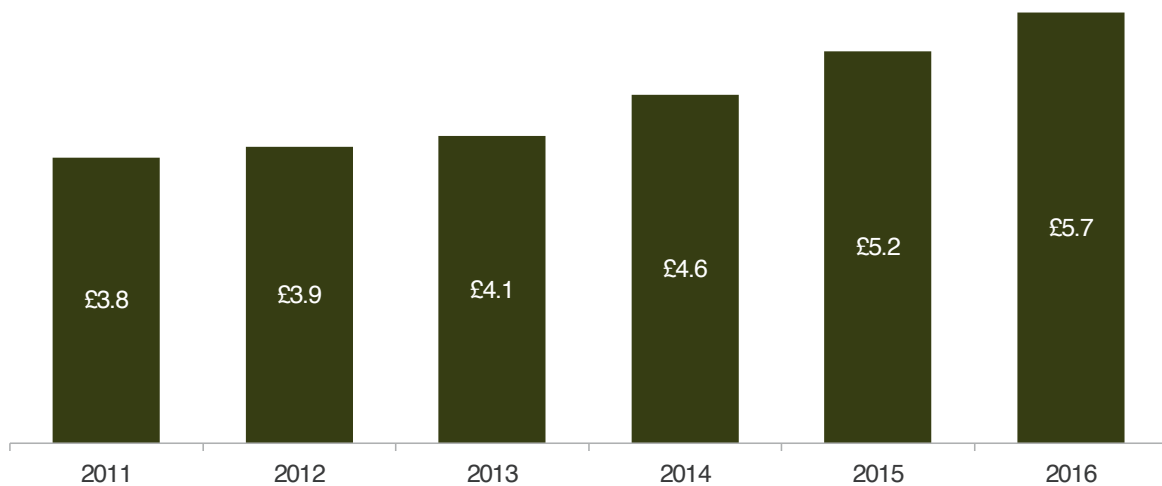
Source: Ofcom / operator data
Note: all revenue data includes VAT and is adjusted for CPI (2016, prices)

[1] Ofcom, Pricing trends for communications services (March 2017), p34

The number of fibre broadband connections increased by 21% in 2016

The migration to superfast broadband is reflected in a changing mix of technologies used to deliver fixed broadband services. The total number of fibre broadband lines, predominantly fibre-to-the-cabinet (FTTC) but also some fibre-to-the-premises (FTTP), increased by 21% to 6.7 million in 2016, while the

number of cable broadband lines reached 4.9 million (up 4.8% since 2015). Conversely, the number of standard (ADSL) broadband lines fell to 13.6 million in 2016 (down 6.2% year on year).

Cable and fibre lines accounted for 46.0% of all fixed broadband lines

in 2016, a 4.7 percentage point increase on 2015. In 2016, for the first time, we also collected satellite fixed broadband connection figures from the UK's largest satellite service providers (included in the 'others' category); these data indicate that there were around 80,000 such connections at the end of the year.

Figure 4.12: Retail fixed broadband connections (millions)

Total	2016 change	5 year CAGR
	2.2%	4.0%
Others	n/a	n/a
Fibre	21.4%	78.5%
Cable	4.8%	3.6%
LLU-ADSL	-2.9%	0.8%
Non-LLU ADSL	-11.1%	-8.5%
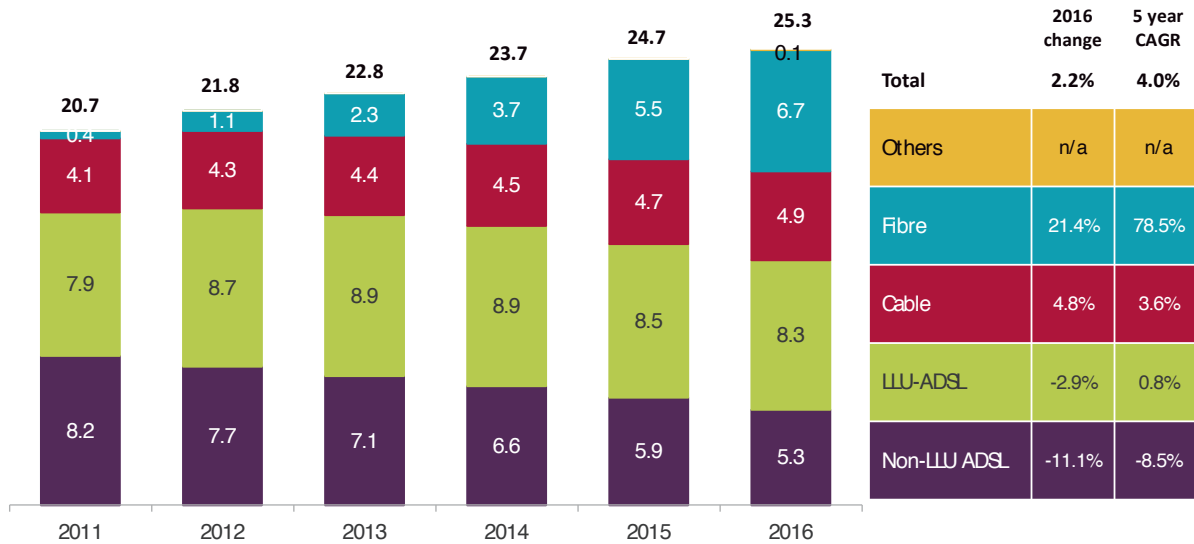
Source: Ofcom / operator data

Forty-four per cent of residential fixed broadband connections received an average download speed of 30Mbit/s or higher in 2016

Ofcom's UK home broadband performance research[1] measures the performance of UK residential fixed broadband connections using a panel of volunteers who connect a measurement unit to their home broadband router. The research shows that 44% of residential connections received an average speed of 30Mbit/s or higher in 2016 (up from 38% in 2015 and from less than 1% in 2011), while 8% of connections had an average speed of 100Mbit/s or higher.

Conversely, 29% of residential connections had an average download speed of less than 10Mbit/s (the download speed that we regard to be the minimum required to fulfil the basic needs of the average UK household)[2] in November 2016, a 10pp year-on-year decrease.

Figure 4.13: Distribution of average actual residential broadband download speeds
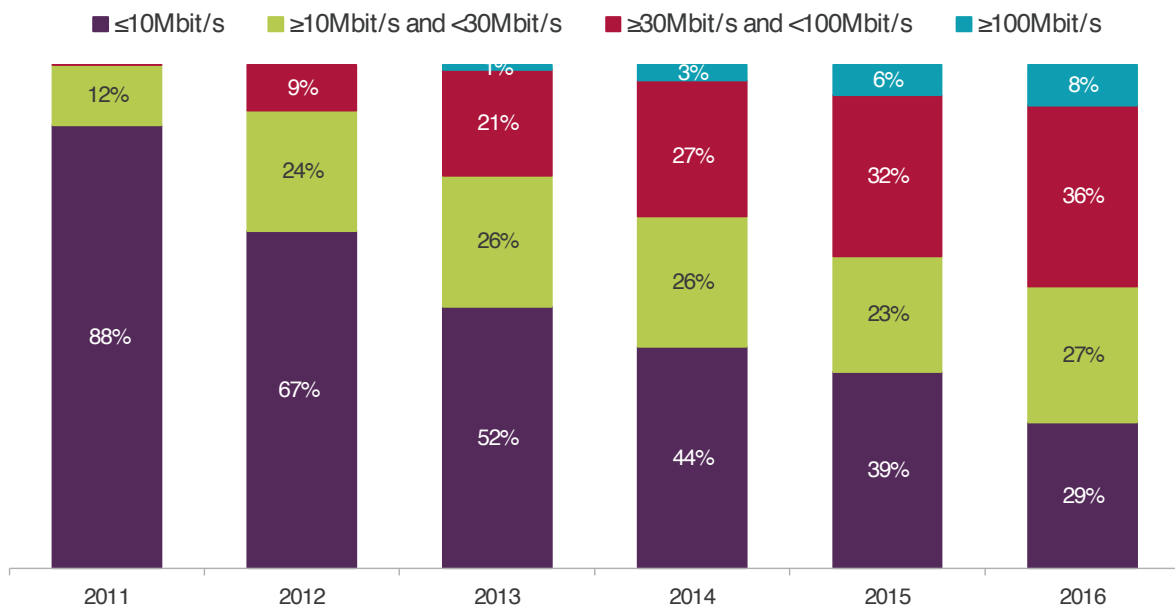
Source: UK home broadband performance reports 2011- 2016

Faster connection speeds contributed to a 36% increase in average data use in 2016

In June 2016, the average residential fixed broadband line used 132GB of data per month, a 36% rise from the 97GB average in June 2015.[1] This increasing data use has coincided with an increase in broadband speeds; our UK home broadband performance research found that average residential connection speeds were 36.2Mbit/s in November 2016, up from

28.9Mbit/s in November 2015.[2] Faster connection speeds enable better connectivity for multiple devices on the same connection, and this, combined with the increasing popularity of video-on-demand services, has boosted average broadband data use.

While average broadband revenue per connection has been increasing year on year, the average revenue per GB has been falling; from almost £1 per GB in 2011, to £0.15 in 2016 (a negative 5-year CAGR of 31%).

Figure 4.14: Average fixed broadband revenue per connection and data use per month

| Average actual speed (Mbit/s) | 6.8Mbit/s (May 2011) | 9Mbit/s (May 2012) | 18Mbit/s (May 2013) | 23Mbit/s (May 2014) | 28.9Mbit/s (November 2015) | 36.2Mbit/s (November 2016) |
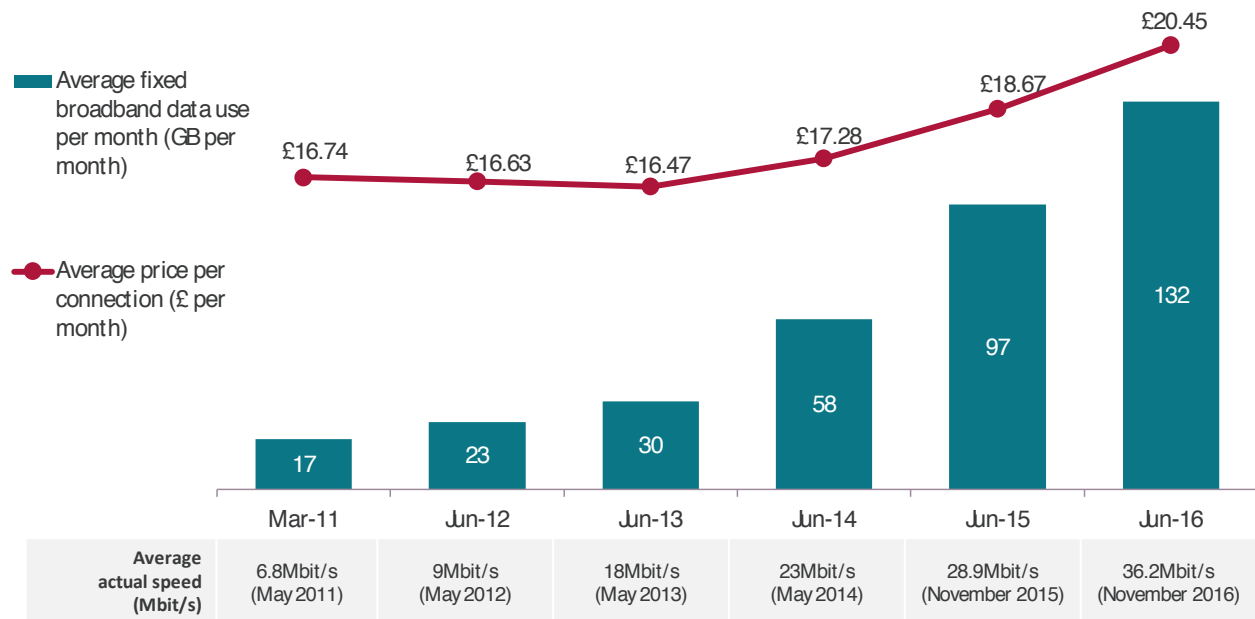
Source: Ofcom Connected Nations Reports 2011- 2016 / UK home broadband performance reports 2011- 2016
Note: Average price adjusted for CPI (2016 prices)

[1] Ofcom, Connected Nations, 2016

[2] Ofcom, UK fixed-line broadband performance, November 2016

BT's acquisition of EE helped increase its fixed broadband share to 37% in 2016

BT's retail market share increased by five percentage points to 37% following its acquisition of EE in 2016. Sky's and Virgin Media's market shares increased by one percentage point each in 2016, while TalkTalk's share declined by one percentage point over the same period.

Figure 4.15: Retail fixed broadband market share (%)
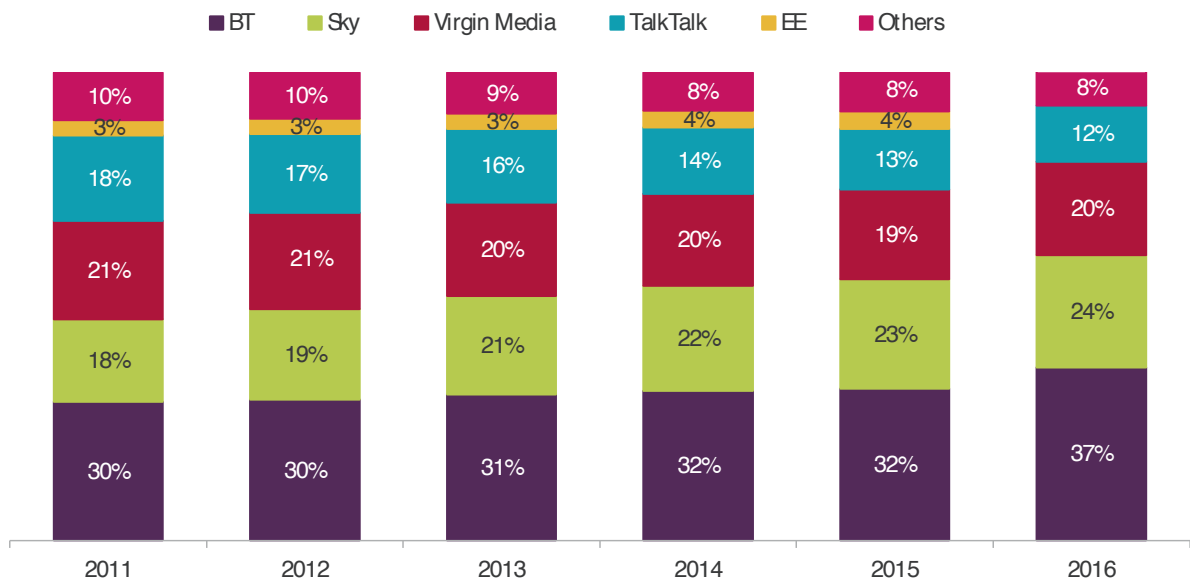
Source: Ofcom / operator data
Note: BT and EE are shown separately up to 2015, as the merger between these two organisations was not completed until 2016.

Overall satisfaction with fixed broadband services declined in 2017

The proportion of respondents who said they were 'very' or 'fairly' satisfied with their overall fixed

broadband service was 84% in 2017, down 3pp from 2016, while the proportion of users who were

'very' or 'fairly' satisfied with the speed of their fixed broadband service was unchanged, at 82%.

Figure 4.16: Satisfaction of all adults with a fixed broadband service
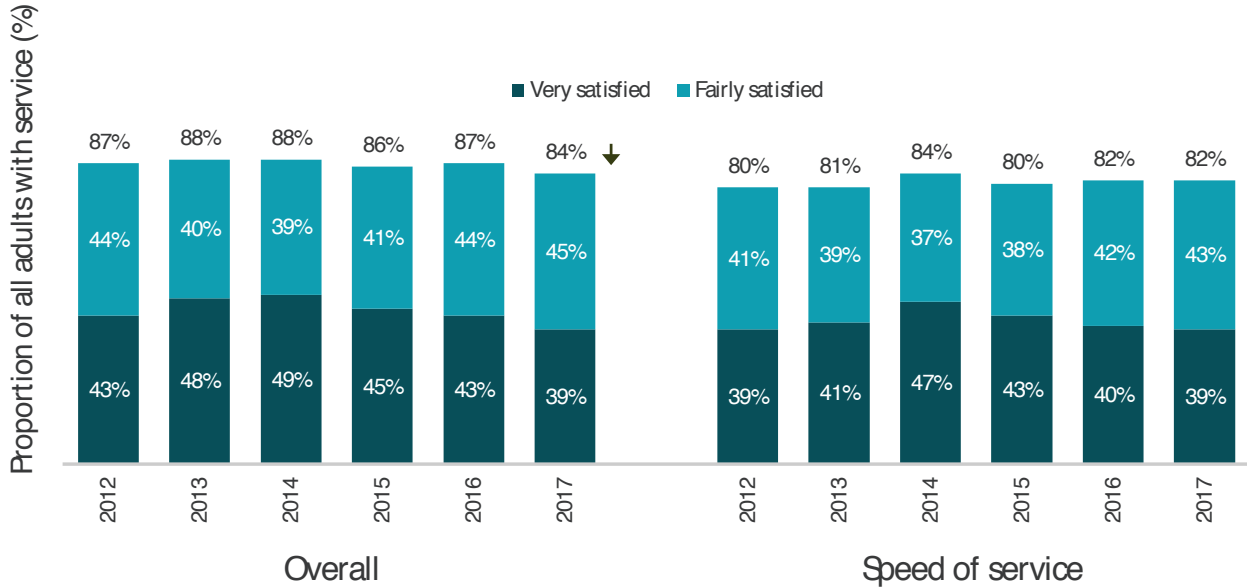
Source: Ofcom Technology Tracker. Data from Q1 2009-2014, then H1 2015-2017
Base: All adults aged 16+ with a fixed broadband connection (2017=2928)
Note: Includes only those who expressed an opinion.
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
QE29A/B (QE8A/B): Thinking about your fixed broadband internet service, please use this card to say how satisfied you are with your main supplier for... The overall service/ The speed of your service while online (not just the connection) provided by MAIN PROVIDER/

4.5 Mobile voice and data services

4.5.1 Mobile retail revenues remained flat at £15.3bn in 2016

Retail mobile revenues were flat in real terms for the third consecutive year in 2016, at £15.3bn, despite growing use of mobile voice and internet services.

An increase in revenue from access and bundled services (up £0.5bn to £10.9bn), due to the continued migration from pre-pay to post-pay services, was offset by a £0.4bn fall in revenue from out-of-bundle calls and a smaller fall in out-of-bundle messaging revenue.

Figure 4.17: Mobile retail revenue, by service (£ billions)

Total	2016 change	5 year CAGR
	0.3%	-1.6%
Out-of-bundle data	0.2%	-5.2%
Out-of-bundle messaging	-8.2%	-23.6%
Out-of-bundle calls	-15.6%	-14.0%
Access and bundled services	4.5%	8.1%
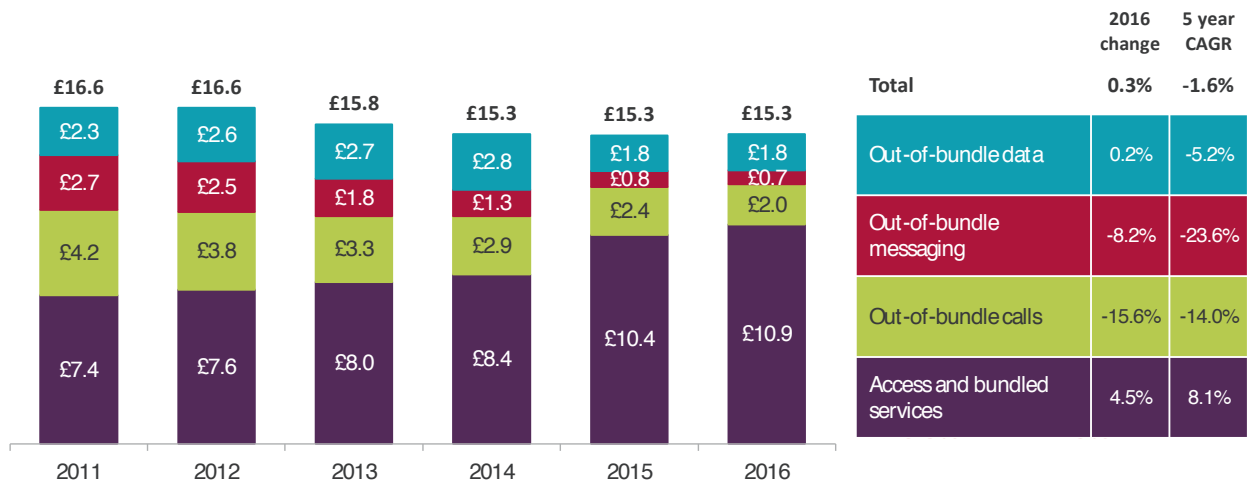
Source: Ofcom / operators
Notes: In 2015 one of the major operators redefined how it reported bundled and out-of-bundle revenues, this way of reporting continued in 2016, so figures not directly comparable before 2015; adjusted for CPI (2016 prices)

Average monthly retail revenue per mobile subscription increased slightly in 2016

Average post-pay monthly revenues continued to fall, from £21.99 in 2015 to £21.25 in 2016 (down 3.3% in real terms), mainly due to the migration of pre-pay customers (who, on average, have lower levels of use) onto post-pay services. There was a small (0.1%) increase in average pre-pay monthly spend in real terms, to £4.74.[1]

After years of decline, the average monthly retail revenue per mobile subscription increased in 2016, up 17 pence (1.1%) in real terms, due to the increasing proportion of post-pay mobile subscribers, who typically have higher average spend than pre-pay customers.

Figure 4.18: Average monthly retail revenue per mobile subscription (2016 prices)

	2016 change	5 year CAGR
Post-pay	-3.3%	-6.1%
Blended	1.1%	-2.2%
Pre-pay	0.1%	-5.9%
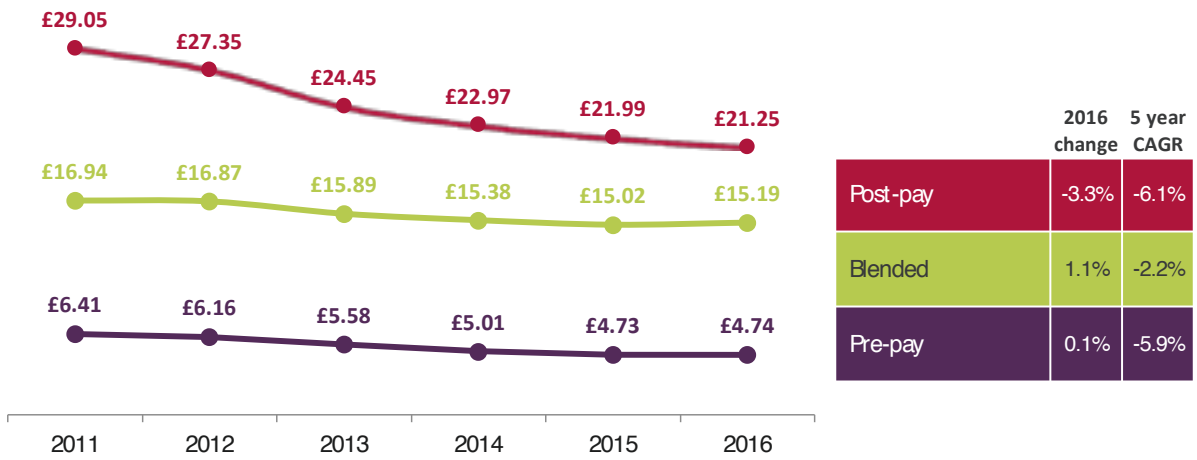
Source: Ofcom / operators
Notes: Mobile voice revenues include revenues from bundled messaging and data services; adjusted for CPI (2016 prices); revenue from handsets included in the monthly post-pay cost will be included in revenues, while up-front handset costs will not be.

[1] Changes in revenue over time do not take into account improvements in quality of service

Outgoing calls from mobiles increased by 5.7% to 151 billion minutes in 2016

Total outgoing mobile call volumes increased by 8 billion minutes to 151 billion in 2016; the largest increase was in call volumes to on-net mobiles (up 8.6%). Calls to mobiles continued to account for the majority of outgoing mobile call minutes in 2016, at 68.6% of the total (67.0% in 2015). The only decrease was in international calls, down 8.5% in 2016, which may be due to the growing use of OTT services such as Skype and Apple Facetime to make these more expensive calls.

Figure 4.19: **Outgoing mobile call minutes, by type of call (billions)**

Total	2016 change 5.7%	5 year CAGR 2.9%
Other calls	4.0%	0.6%
International	-8.5%	-2.5%
Off-net mobile	8.0%%	7.8%
On-net mobile	8.6%	-0.1%
UK geographic	1.7%	1.2%
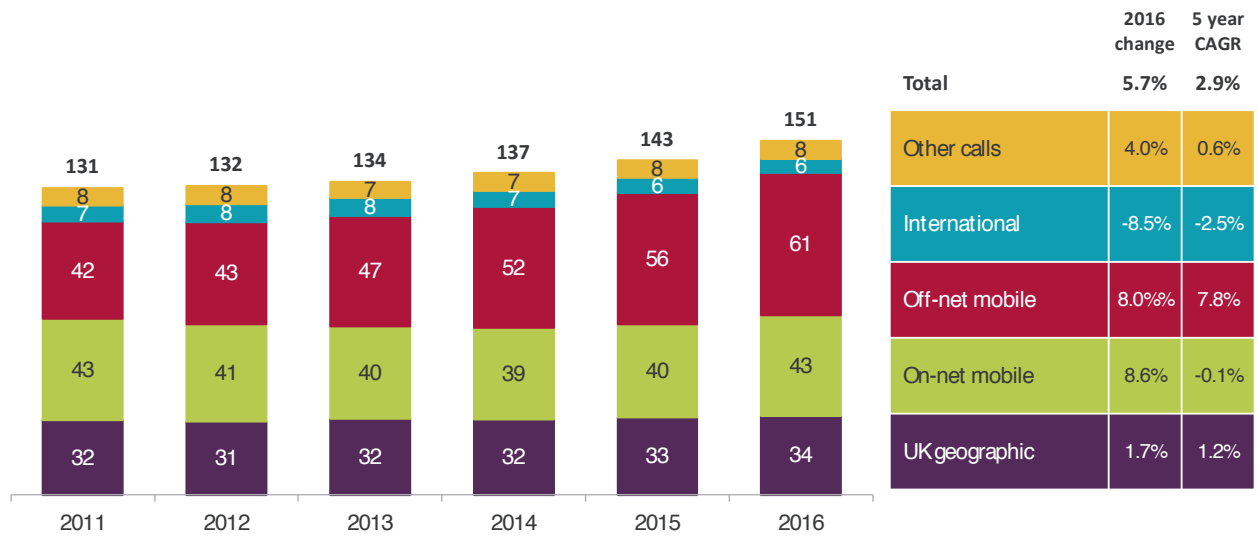
Source: Ofcom / operators

Average outgoing mobile call minutes per subscription continued to increase in 2016

On average, post-pay customers made 221 minutes of outbound calls per month in 2016, an increase of 1.1% compared to 2015. This may be partly due to the inclusion of large or 'unlimited' inclusive call allowances

with pay-monthly services, as monthly prices are increasingly structured according to the volume of inclusive data. Pre-pay customers, on average, made 59 minutes of calls per month (up 8.8%), with higher use

associated with a switch away from per-minute pre-pay charges towards pre-pay 'add-on' packs; top-ups for these include an allowance of data, messages and calls that typically expires after a period of time.

Figure 4.20: Average monthly outbound mobile call minutes, by subscription type (minutes per month)
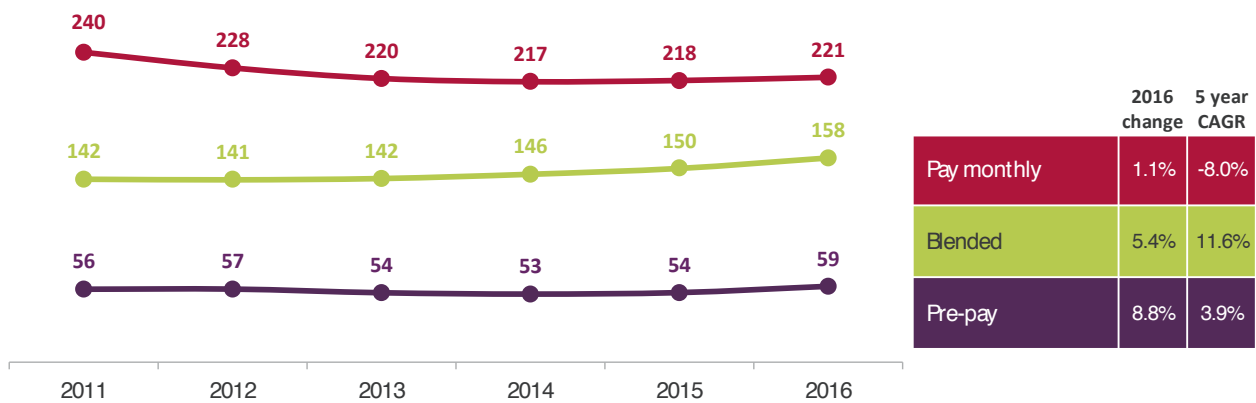
	2016 change	5 year CAGR
Pay monthly	1.1%	-8.0%
Blended	5.4%	11.6%
Pre-pay	8.8%	3.9%

Source: Ofcom / operators
Note: Includes estimates where Ofcom does not receive data from operators.

Use of traditional mobile messaging services continues to decline

Use of SMS and MMS continued to decline in 2016, down by 5.6 billion (5.5%) to 96.4 billion messages in 2016, despite a slight increase of 1.9% in pre-pay mobile messaging, which may be due to the increasing popularity of 'add-on' pre-pay

services that offer an inclusive allowance of messages. The main reason for declining traditional message volumes is the increasing take-up of smartphones, which give easy access to alternative communication methods such

as email and instant messaging (e.g. WhatsApp and Facebook Messenger). The total number of SMS and MMS messages dropped by 35.6% between 2011 and 2016.

Figure 4.21: Outgoing SMS and MMS messages (billions)

	2016 change	5 year CAGR
Total	-5.5%	-8.4%
Post-pay	-7.1%	-6.2%
Pre-pay	1.9%	-15.4%
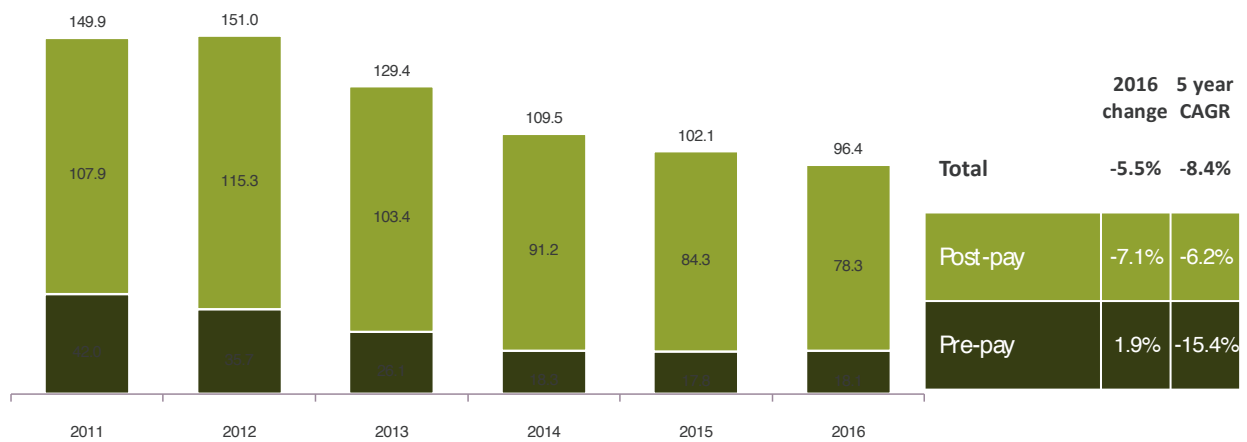
Source: Ofcom / operators

Increasing 4G mobile coverage is driving consumers' demand for, and use of, mobile data

The increase in 4G availability and take-up, along with the availability of mobile tariffs with generous inclusive data allowances, contributed to a

44% year-on-year increase in average mobile data consumption – 1.3GB per connection in June 2016.

 Figure 4.22: Average monthly mobile data per active connection (GB)
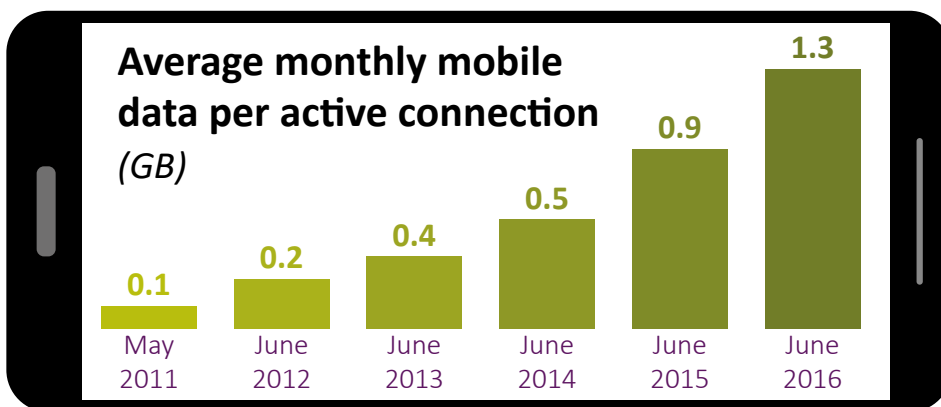
Source: Source: Ofcom / operators / Ofcom Connected Nations Reports 2011- 2016

Mobile customers continued to switch from pay-as-you-go tariffs to pay-monthly tariffs in 2016

The total number of mobile subscriptions continued to increase in 2016, reaching 92.0 million at the end of the year. While the total number of post-pay subscriptions increased by 6.1% to 62.1 million in 2016, mainly due to the increasing popularity of low-cost SIM-only pay-monthly deals, but also due to a 0.9 million increase in M2M subscriptions, the number of pre-pay subscriptions continued to fall during the year, down by 3.5 million (10.4%) to 29.9 million. The proportion of mobile subscriptions that were post-pay increased by 3.8 percentage points to 67.5% in 2016.

Figure 4.23: Mobile subscriptions, pre-pay and post-pay (millions)

	2016 change	5 year CAGR
Total	**0.1%**	**1.2%**
Post-pay	6.1%	7.2%
Pre-pay	-10.4%	-6.8%
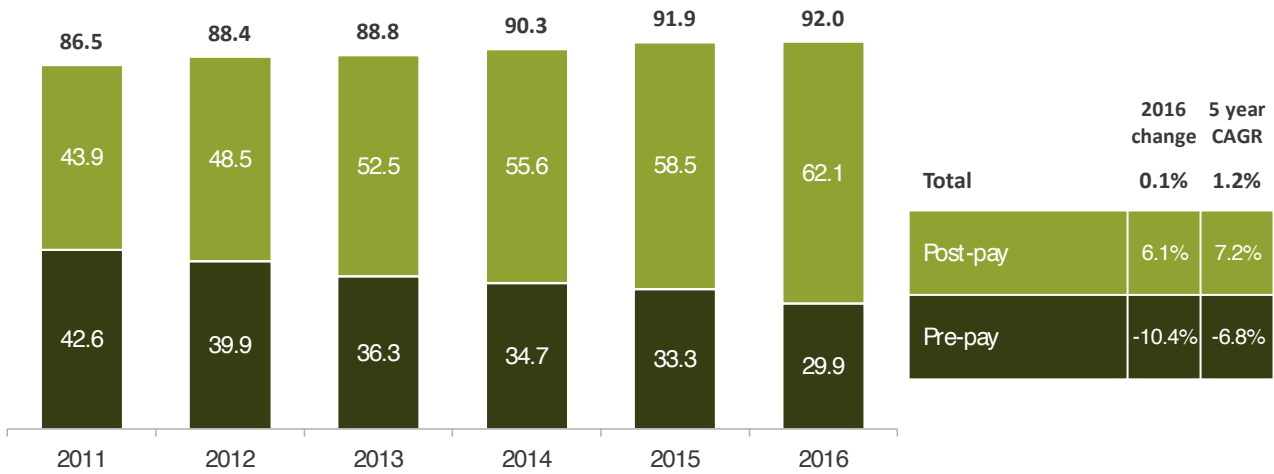
Source: Ofcom / operators
Note: Includes M2M

More than half of new mobile contracts had a minimum period of 12 months or less in Q1 2017

Post-pay mobile connections with a minimum contract period of 24 months are the most popular way for consumers to acquire a new handset with their mobile service; the device cost is paid off over the course of a contract as part of the monthly fee.

However, an increasing number of consumers are either keeping their old handset or buying a

SIM-free handset (i.e. purchasing one without a mobile service), and using it with a SIM-only post-pay mobile service. SIM-only post-pay services typically have a minimum contract period of either one month or 12 months, and sales data from GfK Retail and Technology indicate that more than half of new mobile contract sales (53%) were

for a minimum contract period of 12 months or less in Q1 2017, compared to 43% a year previously. Consumers may do this to save money, or because they do not feel that the latest smartphone models provide a sufficient increase in functionality to warrant an upgrade.

Figure 4.24: Contract lengths for new post-pay mobile connections (proportion of sales)
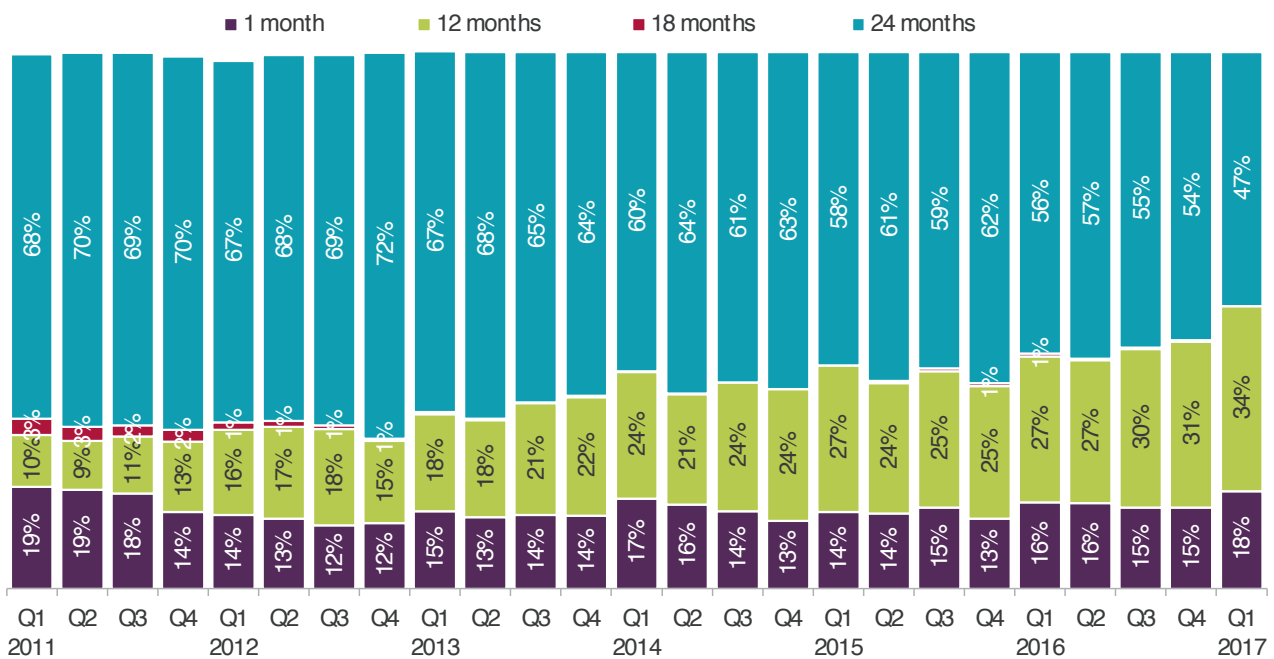
Source: GfK Retail and Technology UK Ltd, Contract Handset Acquisitions: price segments.
Notes: England, Scotland and Wales only (excludes Northern Ireland); based on GfK's coverage of 95% of the consumer market; based on new post-pay connections; excludes contract renewals; only represents sales through consumer channels (excluding Apple Store and eBay).

Increasing mobile subscription numbers are being driven by M2M

Growth in the total number of mobile subscriptions was driven by a 14.2% increase in the number of machine-to-machine (M2M) connections in 2016, to 7.6 million. The number of mobile handset connections fell

marginally during the year, by 0.4%, while the number of dedicated mobile data subscriptions (such as mobile broadband dongles and data-only SIMs) fell by 9.8% to 5.0 million, as consumers increasingly

use a smartphone to access mobile data services, including tethering or using Wi-Fi to access data services on tablets and laptop computers.

Machine-to-machine:

M2M stands for 'machine-to-machine'. The general definition of a M2M connection is a connection between devices, often wireless, where human

input is not necessarily required. Commonly used examples of M2M are in smart metering (where the meter reports energy use back to a central billing database) and burglar alarms, which may contain a SIM card

to enable communication with monitoring offices. Vending machines are another common example, as some use M2M to keep a central computer up to date with stock levels.

Figure 4.25: Mobile subscriptions, by connection type (millions)

	2016 change	5 year CAGR
Total	**0.1%**	**1.2%**
M2M	14.2%	13.4%
Dedicated mobile data	-9.8%	-1.0%
Mobile handset	-0.4%	0.6%
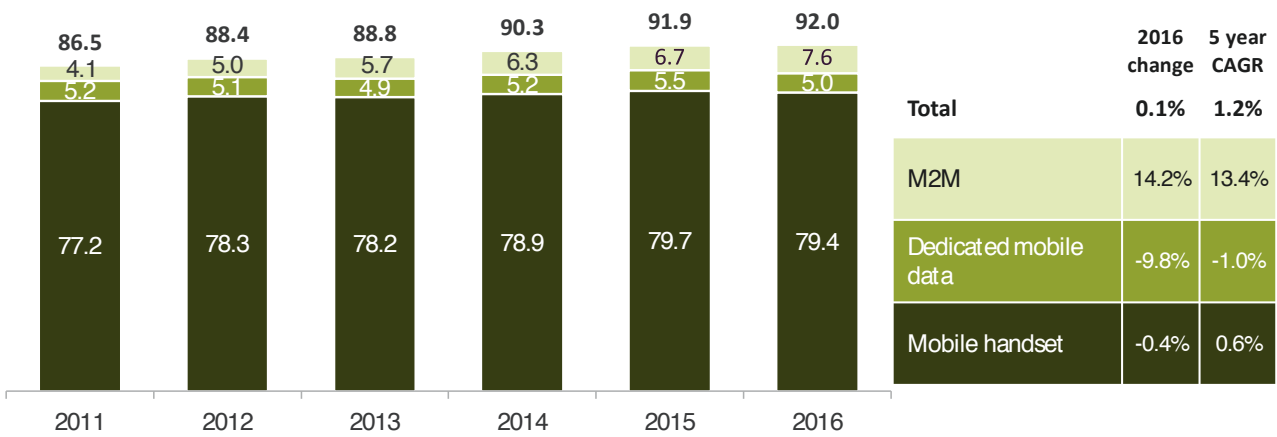
Source: Source: Ofcom / operators

Nearly two-thirds of mobile connections were 4G-enabled at the end of 2016

The growing demand for faster connectivity, as consumers embrace mobile data services, resulted in the number of mobile subscriptions with access to 4G services increasing by 32.9% to 52.4 million in 2016. This equates to 62.1% of all UK mobile connections, up by 16pp since 2015. Conversely, over the same period the number of 3G connections fell, by 30.4% to 31.5 million. It should be noted that these figures are likely to overstate 4G use as they include all SIMs than can access 4G services, regardless of whether they are used with a 4G-enabled device, or in an area where their host network has 4G coverage.

Figure 4.26: Number of mobile connections with access to 4G services (millions)
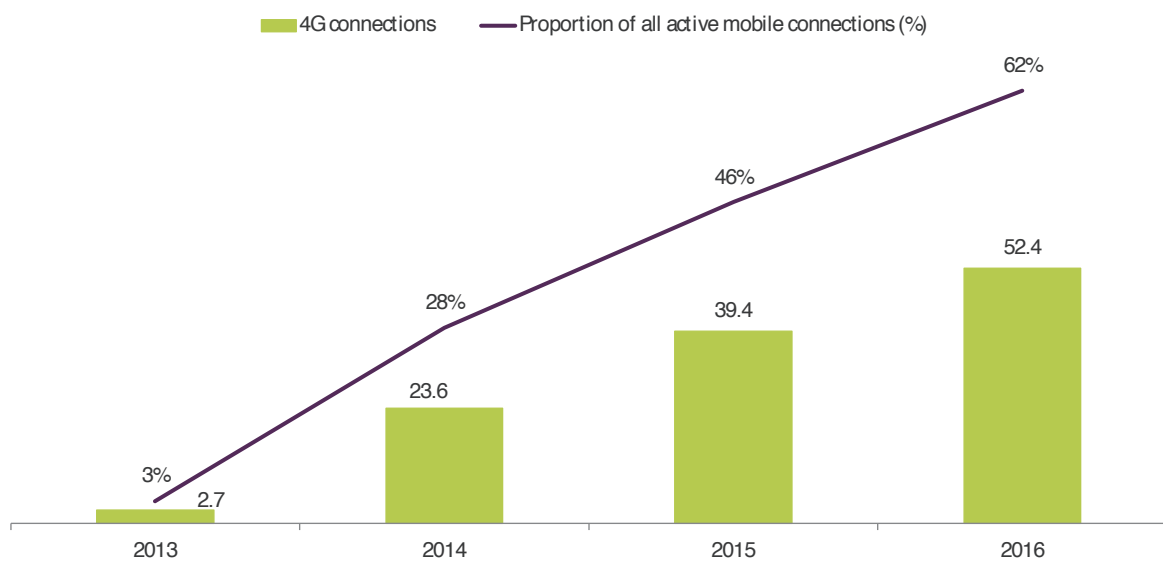
Source: Operator data

Note: Includes all consumers whose tariff allows them to access 4G mobile services, even those without a 4G-enabled device or in areas where their provider has no 4G coverage.

Take-up of 4G services increased across demographic groups in 2017

Almost six in ten (58%) adults aged 16+ said they had a 4G mobile service in 2017. Those in the youngest age group (16-24s) had the highest take-up (83%),

while take-up was lowest among over-54s (28%). In line with the previous year, take-up was higher in the ABC1 socio-economic group (64%) than in the C2DE group

(51%), and was similar among male and female respondents, at 59% and 57% respectively.

Figure 4.27: 4G take-up overall, by age, gender and socio-economic group (% of respondents)
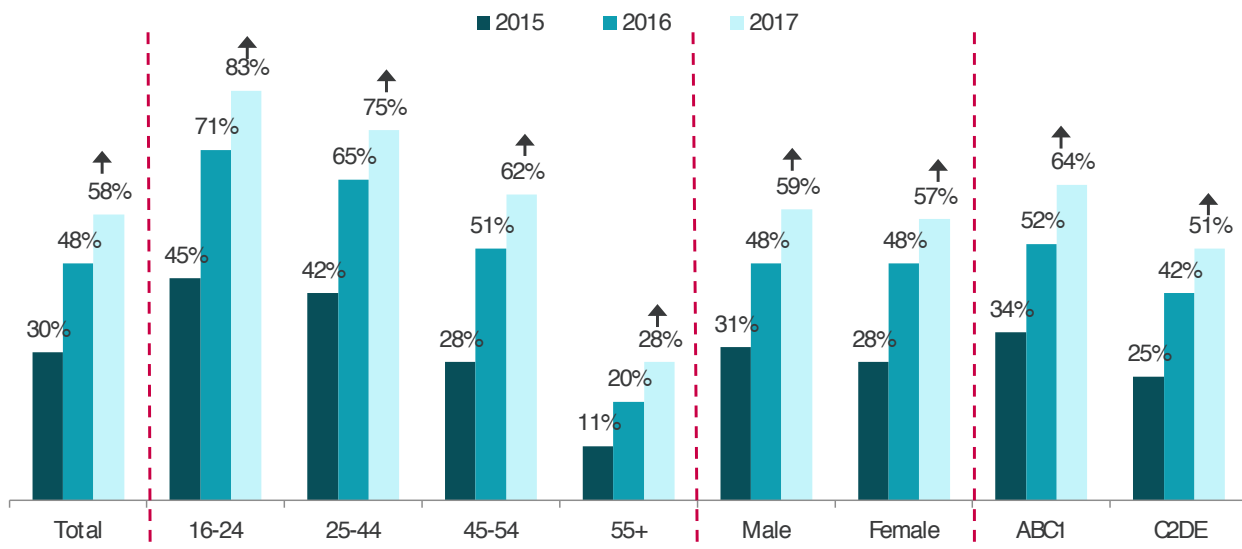
Source: Ofcom Technology Tracker. Data from H1 2015-2017
Base: All UK adults 16+ 2017 (3743), 16-24 (519), 25-44 (1206), 44-54 (570), 55+ (1442), male (1790), female (1947), ABC1 (1919), C2DE (1813)
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017, between each age group in 2016 and 2017, between each gender in 2016 and 2017 and between each socio-economic group in 2016 and 2017.
QD6 (QD41): Do you have a 4G service?

No change in the proportion of adults using mobile data services

Two-thirds (66%) of adults aged 16+ said that they accessed data services on a mobile handset in 2017, in line with the figure recorded in 2016. Nine in ten respondents aged 16-24 (89%) and 25-35 (87%) used data services on a mobile phone, compared to 22% of over-64s. The proportion of data users was higher among more affluent socio-economic groups (74% of ABC1s compared to 54% of DEs).

Figure 4.28: Use of data services on mobile phones, by age and socio-economic group (proportion of adults)
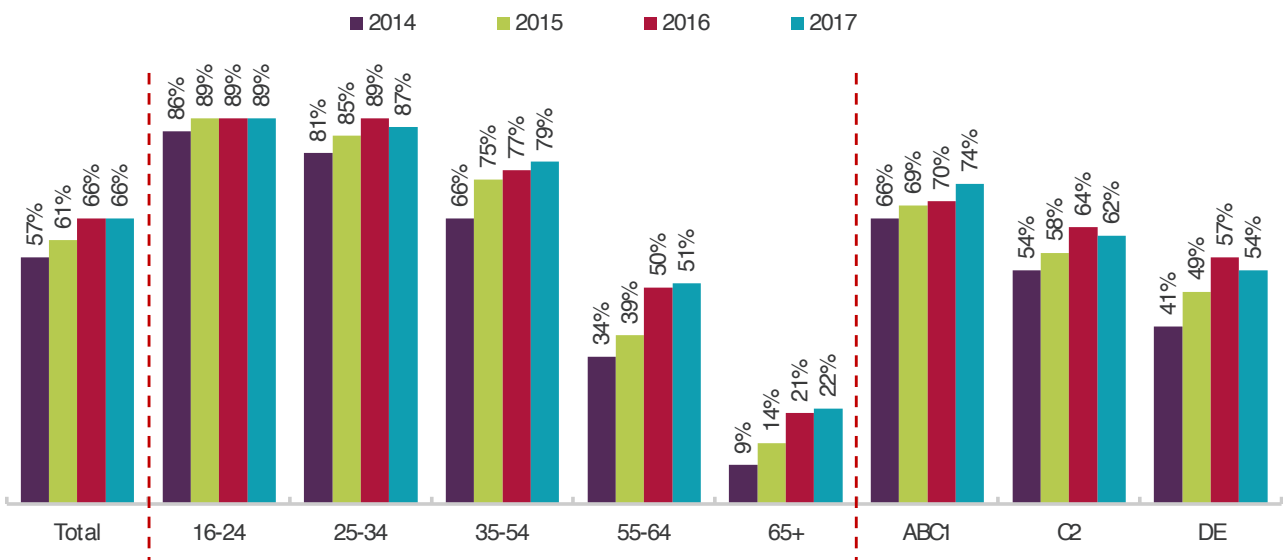
Source: Ofcom Technology Tracker. Data from Q1 2014, then H1 2015-2017
Base: All adults aged 16+ (2017 n=3743)
Note: Internet use includes accessing the internet, downloading and streaming content, connecting using Wi-Fi and using VoIP.
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017, between each age group in 2016 and 2017 and between each socio-economic group in 2016 and 2017.
QD12 (QD28A): Which if any, of the following activities, other than making and receiving voice calls, do you use your mobile for?

Use of non-traditional communications services is high among smartphone users

Ofcom mobile research app

Last year we piloted a new methodology to measured the consumer experience of using mobile services across the UK. This approach involved establishing a panel of UK consumers who installed an Ofcom-branded research app

on their Android smartphone.

The app, provided by our technical partner P3, passively measures consumers' experience of using mobile services, as panellists use their phones. The data used in this report were collected between 27 September 2016 and 23 December 2016.

More information about this research can be found at https://www.ofcom.org.uk/research-and-data/telecoms-research/mobile-smartphones/consumer-mobile-experience.

We used data collected by our mobile research app in Q4 2016 to analyse use of alternatives to traditional mobile services among Android smartphone users. Our analysis shows that email had the highest reach among our panellists, (89% of our nationally representative panel checked their email at

least once during the fieldwork), followed by instant messaging (83%) and using social networking sites (80%). Traditional mobile messaging (SMS/MMS) services were used by 71% of panellists.

Analysis of the number of app sessions per day shows that social networking was the most

frequently undertaken activity, with an average user recording seven social networking app sessions per day, followed by instant messaging and email at around four a day. VoIP had the lowest reach (45%) and frequency (less than one session a day) among the five app categories included below.

Figure 4.29: Use of methods of communication other than traditional voice telephony
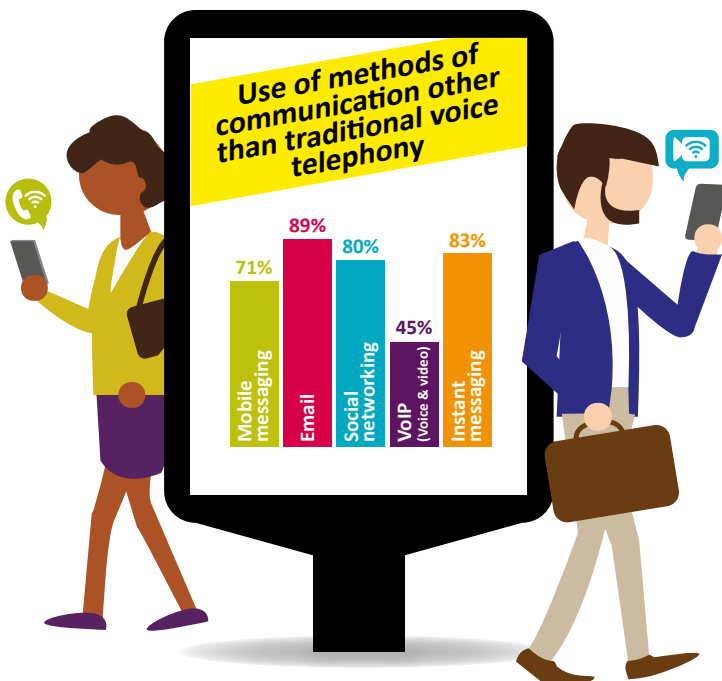
Source: Ofcom mobile research app, 27 September 2016- 23 December 2016
Base: Behavioural panel (1200 panellists)

Note: Includes use over Wi-Fi as well as mobile data. Usage of some apps may be understated as the research does not capture apps running in the background or if the app is open for less than 5 seconds (e.g. may impact WhatsApp). While the results below are representative of the UK Android mobile population, they are likely to be higher than those for the UK population as a whole (Android users make up around 46% of all smartphone owners, and in the UK, three in four adults own a smartphone).[1]
Mobile messaging category includes traditional messaging service; email- various email apps (Outlook, Gmail, Yahoo Mail, Email, Inbox, etc); Social networking – LinkedIn, Facebook, Google+, Instagram, Twitter, Snapchat and Pinterest; VoiP – Skype, Duo, Hangouts and Viber; Instant messaging – Facebook Messenger, WhatsApp, Kik and Allo.
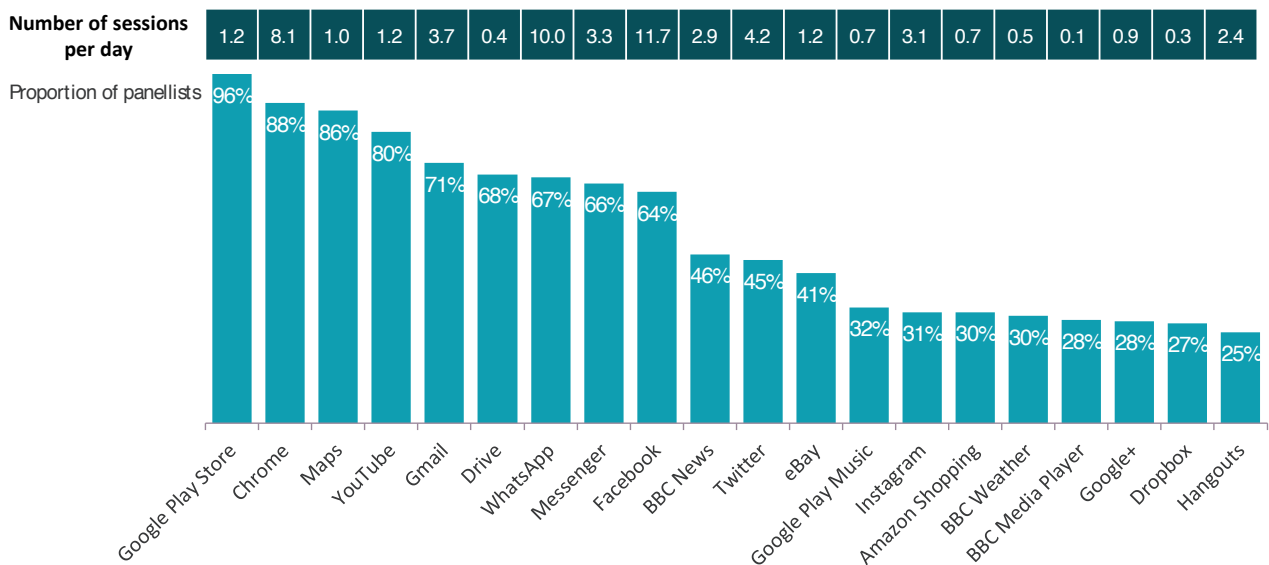
[1] Ofcom Technology Tracker, H1 2017

Google Play Store has the highest reach, while Facebook is used most frequently

The Google Play Store, which is the main way in which Android users download and update apps, had the highest reach among our panellists, with 96% using this app at least once during the fieldwork, followed by Chrome (88%), Maps (86%) and YouTube (80%).

Seven of the top 20 apps were for messaging and/or social networking (WhatsApp, Messenger, Facebook, Twitter, Instagram, Google+ and Hangouts). These apps were also among the most frequently used, with Facebook being opened almost 12 times a

day, on average. WhatsApp also had very high levels of use (averaging ten sessions a day), followed by Chrome (just over eight per day).

Figure 4.30: Top 20 apps used by Android users, by reach

| Number of sessions per day | 1.2 | 8.1 | 1.0 | 1.2 | 3.7 | 0.4 | 10.0 | 3.3 | 11.7 | 2.9 | 4.2 | 1.2 | 0.7 | 3.1 | 0.7 | 0.5 | 0.1 | 0.9 | 0.3 | 2.4 |

Proportion of panellists: Google Play Store 96%, Chrome 88%, Maps 86%, YouTube 80%, Gmail 71%, Drive 68%, WhatsApp 67%, Messenger 66%, Facebook 64%, BBC News 46%, Twitter 45%, eBay 41%, Google Play Music 32%, Instagram 31%, Amazon Shopping 30%, BBC Weather 30%, BBC Media Player 28%, Google+ 28%, Dropbox 27%, Hangouts 25%

Source: Ofcom mobile research app, 27 September 2016- 23 December 2016
Base: Behavioural panel (1200 panellists)
Note: Includes use over Wi-Fi as well as mobile data. Use of some apps may be understated as the research does not capture apps running in the background or if the app is open for less than 5 seconds (e.g. may impact WhatsApp).

More than nine in ten mobile data downloads were successful

What is data service availability?

This metric measures the percentage of cases when the user can connect to the network and download data. It is measured via an automated test run in the

background every 15 minutes, which attempts to download a small file and logs whether this is done successfully.

For this metric we only look at results when the screen was

on during the test, i.e. when the panellist was using their phone. We do not take into account connection tests that happened while the phone was not in use ('screen off').

The mobile research app measures data service availability and found that in most cases (95.6%), 4G users were able to access a mobile network (be it 2G, 3G or 4G), and successfully download data when they used their phone. This proportion was slightly lower among 3G-only users (92.4%).

Figure 4.31: Data service availability

People able to access a mobile network and successfully download

3G
⬇
92.4%

4G
⬇
95.6%
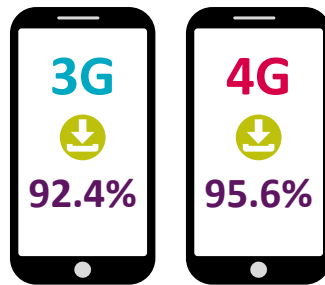
Source: Source: Ofcom mobile research app, 27 September 2016- 23 December 2016
Base: Nationally representative panel (c4300 panellists

Overall satisfaction with mobile services was stable in 2017

There were no significant changes in satisfaction with mobile services in 2017; more than nine in ten

mobile phone users (92%) said that they were 'very' or 'fairly' satisfied with their mobile service.

Satisfaction with accessing the network was 86% in 2017, also in line with the previous year's figure.

Figure 4.32: Satisfaction with mobile service, all adults
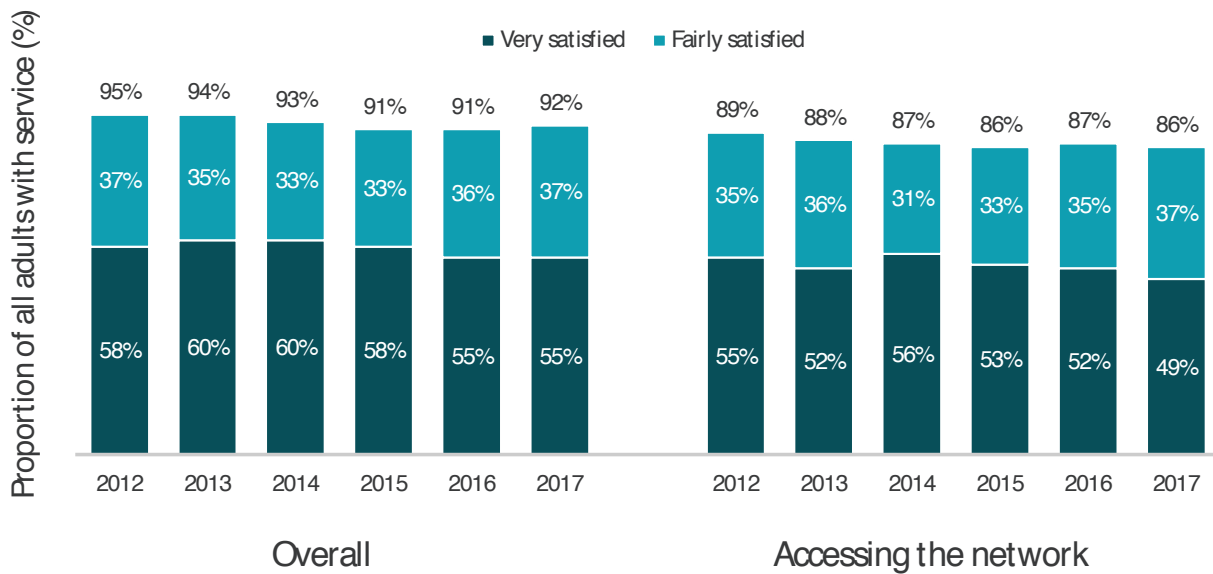
Proportion of all adults with service (%)

■ Very satisfied   ■ Fairly satisfied

Overall

Year	Very satisfied	Fairly satisfied	Total
2012	58%	37%	95%
2013	60%	35%	94%
2014	60%	33%	93%
2015	58%	33%	91%
2016	55%	36%	91%
2017	55%	37%	92%

Accessing the network

Year	Very satisfied	Fairly satisfied	Total
2012	55%	35%	89%
2013	52%	36%	88%
2014	56%	31%	87%
2015	53%	33%	86%
2016	52%	35%	87%
2017	49%	37%	86%

Source: Ofcom Technology Tracker. Data from Q1 2009-2014, then H1 2015-2017 **Base:** All adults aged 16+ with a mobile phone (2017=3471) **Note:** Includes only those who expressed an opinion. **Significance testing:** Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017. **QD19A/J (QD21A/J):** Thinking about your mobile phone service, please use this card to say how satisfied you are with your main supplier for… The overall service/ reception/ accessing network provided by MAIN PROVIDER/?

5 Internet and online content

5.1 Key market developments in internet and online content

5.1.1 Sector overview

The internet is essential to the way in which people in the UK communicate, find information, seek entertainment, shop and participate in society;

Eighty-eight per cent of adults now have internet access at home. Reach is highest among younger age groups, but over half (53%) of over-74s are internet users.

For most people, mobile devices are their most important device for accessing the internet. Consistent with high take-up, more than four in ten (42%) UK internet users, including nearly two-thirds of 16-34 year olds and 44% of 35-54s, regard their smartphones as their most important device for accessing the internet. For those aged 55 and above, fewer (13%) consider smartphones their most important device for internet access. Just under a third of over-54s consider laptops to be their most important device (31%), followed by tablets (27%) and desktops (22%).

The smartphone is the device that adults are most likely to own (76%); ownership is higher than for laptops (64%) and tablets (58%). Smartphone ownership is highest among younger adults; more than nine in ten 16-24s and 25-34s (both 96%) own one. Desktop PC ownership is now 29% across the UK, and ranks lowest of the most important devices for internet access in 2017 (11%).

Entertainment is a powerful driver of online media consumption; video content sites such as YouTube provide a medium for individuals and organisations to share video content with others. According to comScore, YouTube had a cross-platform reach of 42 million users in March 2017, with viewers logging 728 hours' worth of total viewing time, at an average of 18 hours per viewer. Many of the most popular YouTube partners are major media networks such as Warner Music and Sony Music Entertainment.

The popularity of using mobile devices for online activities is also reflected in increased expenditure in mobile advertising. Overall, UK expenditure on internet advertising increased by 20% year on year to £10.3bn in 2016. Mobile is driving much of this growth. Total mobile advertising expenditure grew by 44% to £3.9bn in 2016, amounting to 38% of total internet advertising, and mobile display advertising accounted for more than half (51%) of all internet display advertising.

Figure 5.1: UK internet and online content market: key statistics

UK internet and online content market	2010	2011	2012	2013	2014	2015	2016	2017
[1]Internet take-up (%)	75	77	79	80	82	85	86	88
[1]Smartphone take-up (%)	n/a	27	39	51	61	66	71	76
[1]Tablet take-up (%)	n/a	2	11	24	44	54	59	58
[1]Laptop take-up (%)	51	55	61	62	63	65	64	64
[1]Consideration that the smartphone is the most important device for internet access (%)				15	23	33	36	42
[2]Total digital audience (million)	n/a	n/a	n/a	n/a	48.2	47.5	50.3	50.4
[3]Digital advertising expenditure (£bn)	4.8	5.4	6.0	6.6	7.6	9.2	10.3	n/a
[3]Mobile advertising expenditure (£m)	94	219	554	1,044	1,642	2,678	3,866	n/a

Source: [1]Ofcom consumer research, [2]comScore MMX multi-platform, UK, data for March 2015, March 2016 and March 2017; [3]IAB/PwC Digital Adspend Study
Note: Caution is advised in comparing values before and after February 2011 because of a change in comScore methodology.
Note: Revenue and expenditure figures are adjusted for CPI (2016 prices).

In this chapter we examine developments in internet and online content. Reflecting the reality of convergence, aspects of some of these developments are discussed in more detail in other sections of this document, in particular those relating to audio-visual content and audio content.

- **Section 5.2** examines consumers' use of mobile applications. The section primarily draws on the findings from Ofcom's research among a panel of consumers who have downloaded a mobile research app on to their smartphone.

- **Section 5.3** considers internet access. We examine the proportion of adults who have internet access, the devices they use to access the internet and the main activities they use the internet for. We also consider those who do not use the internet at all, and their reasons for not having an internet connection.

- **Section 5.4** provides an overview of consumption of online content. Here we examine the most popular online services, websites and apps. We look at consumer behaviour unique to the internet, including a 'deep dive' into online video, focusing on YouTube. Finally, we look at changes in advertising revenues.

5.2 Use of mobile apps in the UK

In summer 2016, Ofcom launched a mobile research app on the Android platform.

The app was provided by our technical partner P3, and it logs the apps people use and how often they use them (but not what they are using them for). In this section, we analyse the data collected from this research, to compare the ways in which users access different types of apps on their mobile devices. We have calculated the average number of sessions for the top 20 apps, within a number of categories defined by Ofcom.[1]

Ofcom mobile research app

Last year we piloted a new methodology to measure the consumer experience of using mobile services across the UK. This approach involves establishing a panel of UK consumers who then install an Ofcom-branded research app on their Android smartphone. The app, provided by our technical partner P3, passively measures the consumer experience of using mobile services, as the

panellists use their phones. The data used in this report were collected between 27 September 2016 and 23 December 2016.

The data used in the section below are based on the behavioural panel which comprised 1,200 panellists selected to be representative of the UK population in terms of gender, age and geography. The results, however, may not be representative of the UK

population as a whole, as they are based on Android users who chose to opt in to the research (Android users make up around 46% of all smartphone owners[2]). More information about this research can be found at https://www.ofcom.org.uk/research-and-data/telecoms-research/mobile-smartphones/consumer-mobile-experience.

Users on social networks opened their apps close to 13 times a day

Our data show that, on average, apps in the social networking category (such as Facebook and Twitter) were used most frequently, with a daily average of 12.61 sessions

per user across the category as a whole, compared to 12.35 sessions for communications apps (e.g. WhatsApp and Skype). Analysis of individual app use showed that

Facebook was the most frequently-used single app of those included in our research, with an average of 11.73 sessions per user per day.

Facebook users on Android averaged fewer than twelve sessions a day

x12

[1] For detailed list of apps found in categories see the online data viz tool at https://www.ofcom.org.uk/research-and-data/multi-sector-research/cmr/cmr-2017/interactive
[2] Ofcom Technology Tracker, H1 2017

Those using gaming apps opened an app 4.29 times a day, on average. Pokémon GO was the most frequently-used gaming app, and users opened it an average of 4.82 times a day. Video and streaming apps such as YouTube and Spotify were less frequently opened by users, logging an average of 2.62 sessions per day. Spotify users opened the app an average of 2.01 times a day. But the number of times an app is opened may not reflect its use: Spotify users, for example, may keep the app running in the background and very rarely close and re-open it.

Figure 5.2: Average number of sessions per day, by category
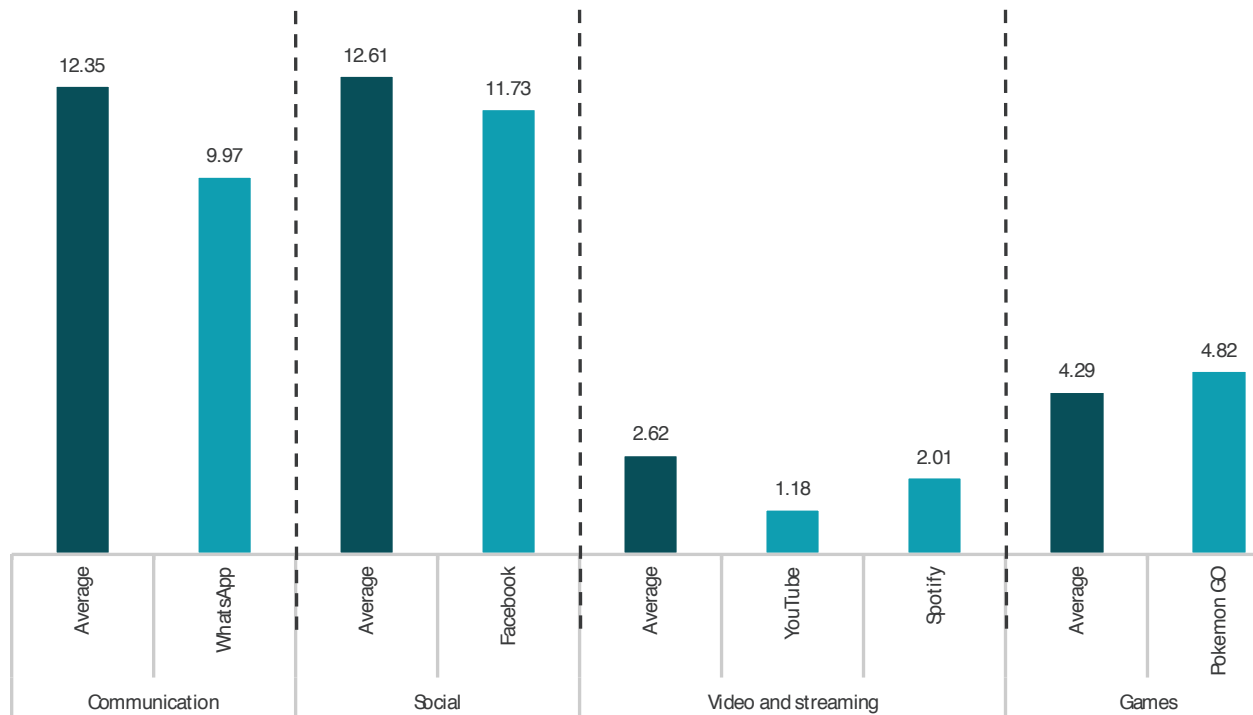
Source: Ofcom mobile research app, 27 September 2016- 23 December 2016
Base: Behavioural panel (1200 panellists)
Note: Includes use over Wi-Fi as well as mobile data. Use of some apps may be understated as the research does not capture apps running in the background, or if the app is open for less than five seconds (e.g. this may affect WhatsApp).

Use of social and communications apps was high among all age groups

About 90% of panellists used apps in the communications category. Use of WhatsApp, one of the most frequently used communications apps, was highest among adults aged 25-34 (74%). Overall, more than half of all age groups used WhatsApp during the period of our research.

Nine in ten younger users were using social media apps
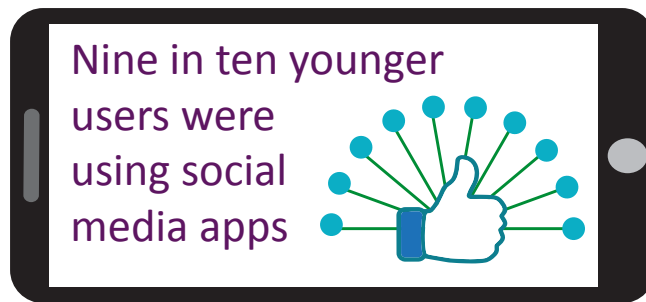
The use of social media apps declines with age; nine in ten (91%) 18-24s use at least one app compared to 69% of over-54s. Similarly, Facebook, the most frequently-used app, has the highest reach among 18-24s (74%) and the lowest among over-54s (46%).

At least six in ten users were using YouTube, among all age groups

The use of video and streaming apps was highest among those aged 18-24 (94%), with a high proportion accessing YouTube (93%), which was the most frequently-used video and streaming app across all age groups. Almost five in ten (49%) 18-24s used Spotify compared to just one in ten over-54s.

Almost half of 18-24 year olds had Spotify, compared to just one in ten among 55+
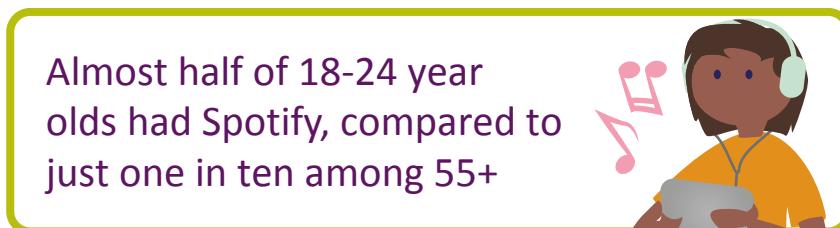
People aged 18-24 were more likely than 25-34s to have used at least one gaming app during the research period (43% vs. 39%). The high reach of Pokémon GO among 25-34s (23%) may be explained by Pokémon nostalgia; people in this age group are likely to remember the first Pokémon games that were released more than 20 years ago. Just 4% of over-54s used Pokémon GO.

Figure 5.3: Selected social, communication and entertainment apps, by age of users
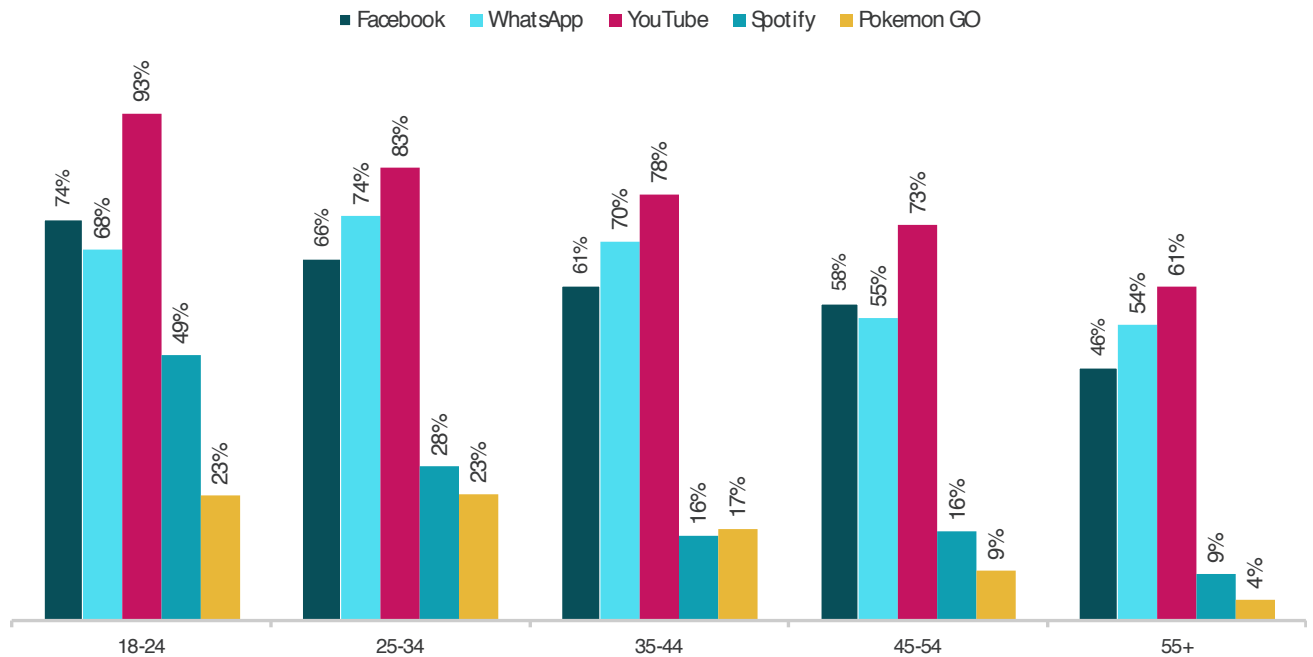
Legend: ■ Facebook ■ WhatsApp ■ YouTube ■ Spotify ■ Pokemon GO

Age group	Facebook	WhatsApp	YouTube	Spotify	Pokemon GO
18-24	74%	68%	93%	49%	23%
25-34	66%	74%	83%	28%	23%
35-44	61%	70%	78%	16%	17%
45-54	58%	55%	73%	16%	9%
55+	46%	54%	61%	9%	4%

Source: Ofcom mobile research app, 27 September 2016- 23 December 2016
**Base:** Behavioural panel (1200 panellists)
Note: Includes use over Wi-Fi as well as mobile data. Use of some apps may be understated as the research does not capture apps running in the background, or if the app is open for less than five seconds (e.g. may affect WhatsApp).

Eight in ten users aged 18-24 use at least one finance-related app

The finance category includes banking as well as point-of-sale apps. These include apps such as Android Pay, which allows users to add a card from any bank to use for contactless payment. Eighty per cent of users aged 18-24 used at least one finance app during the fieldwork period, compared to just 46% of over-54s. Almost half of users aged under 55 used a finance app on their device.

Almost two-thirds of users aged 18-24 used a fitness app, compared to a third of over-54s. There was a similar trend for use of the Fitbit app, with almost 11% of 18-24s using this app compared to 5.5% of over-54s.

Older consumers were more likely to use smart home apps: about 4% of over-44s had used Hive, a smart home app, compared to just 1% of 18-24s, who are less likely to own property to make use of a smart home app.

29%
🚕 TAXI
18-24

Use of on-demand transport apps was highest among 18-24s. Close to three out of ten 18-24 year olds had Uber, an on-demand app for cab services.

For food apps, Just Eat was most popular among 18-24 and 25-34 year olds, reaching 14% of users that age

14%
🍴
25-34

Figure 5.4: **Selected finance, health and on-demand apps, by age of users**
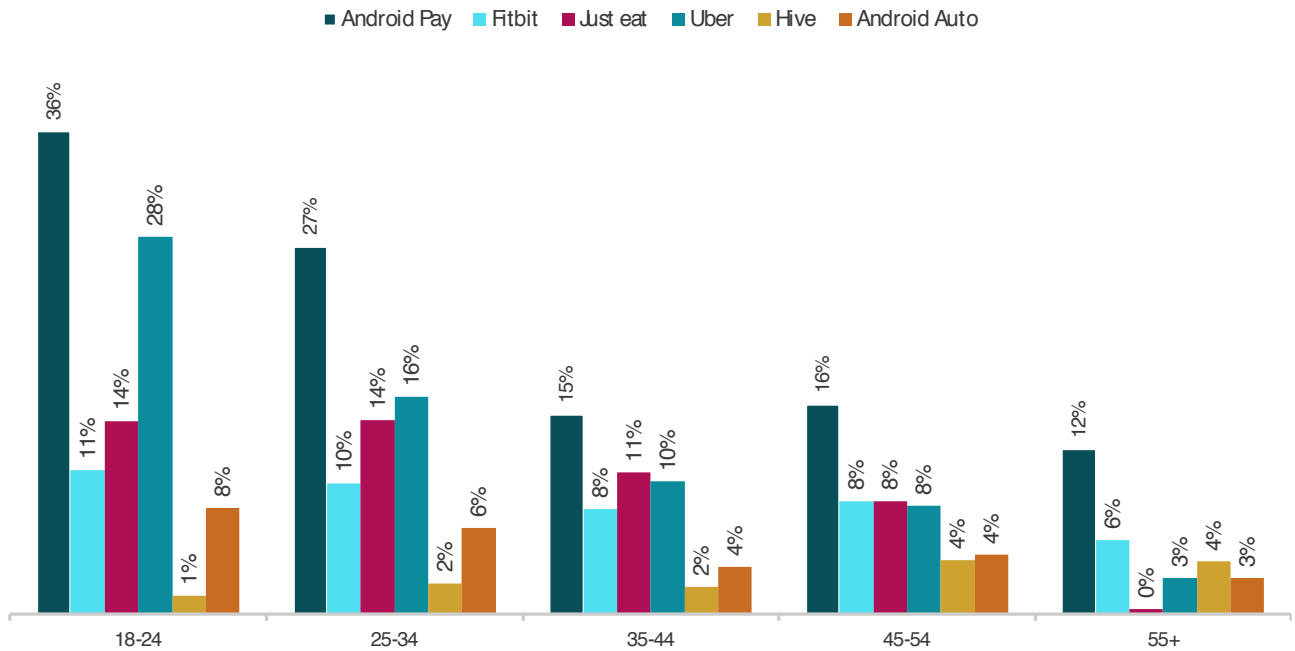
■ Android Pay   ■ Fitbit   ■ Just eat   ■ Uber   ■ Hive   ■ Android Auto

Source: Ofcom mobile research app, 27 September 2016- 23 December 2016
Base: Behavioural panel (1200 panellists)
Note: Includes use over Wi-Fi as well as mobile data. Use of some apps may be understated as the research does not capture apps running in the background, or if the app is open for less than five seconds (e.g. may affect WhatsApp).

WhatsApp and Facebook apps are used most at the end of the working day

Use of WhatsApp totalled 451,631 opened sessions, by the 771 users who had the app across the research period. Analysing this by time of day shows that use of the app climbs gradually throughout the morning, and does not fall until 7pm. The highest proportion of use (7%) occurred between 5pm and 6pm.

Facebook use peaks in the late evening
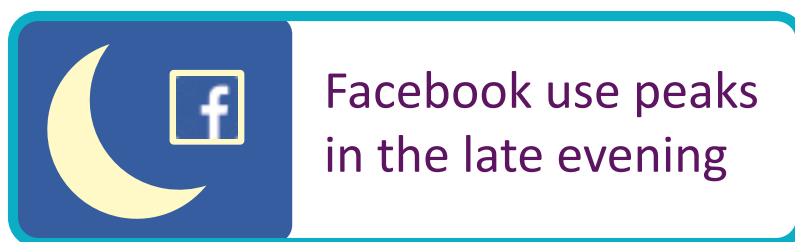
Facebook was the most popular app in the social media category- the application had 215,623 sessions in total across the period, by 721 users. Use of the app was highest between 5pm and 10pm, and peaked during 9pm and 10pm, at 7% of total sessions. Overall use of social media apps remains high throughout the late evening until after midnight.

Use of video and streaming app YouTube was most popular during the evening. For YouTube, 65,064 sessions were made by 915 users across the research period. Use of YouTube was highest between 5pm and 11pm, with the highest proportion of sessions occurring at 10pm (7.5% of total sessions). The Spotify app was opened 32,644 times by 255 users across the research period. In contrast to YouTube, the app was opened a greater number of times from the start of the typical working day (8am) and throughout the afternoon, peaking at 5pm. The surge at 8am is likely to be due to users opening the app to listen to music during their commute.

Highest use of the YouTube Android app occurred in the evening

For the 177 users of Pokémon GO in our panel, the app was opened a total of 58,423 times. Use was high throughout the day, with a drop in the late evening. The highest proportion of sessions for Pokémon GO came at 1pm (8%), where those hoping to be catching the pocket monsters were likely on their lunch break.

63% of Pokemon GO sessions occurred within the hours of 8am and 6pm
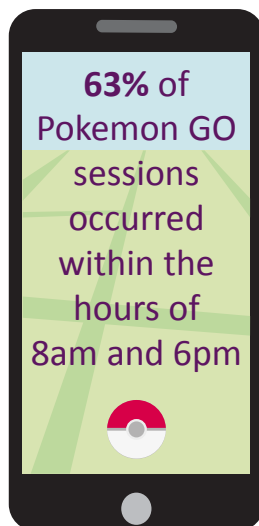
Figure 5.5: Selected apps: daily breakdown of sessions
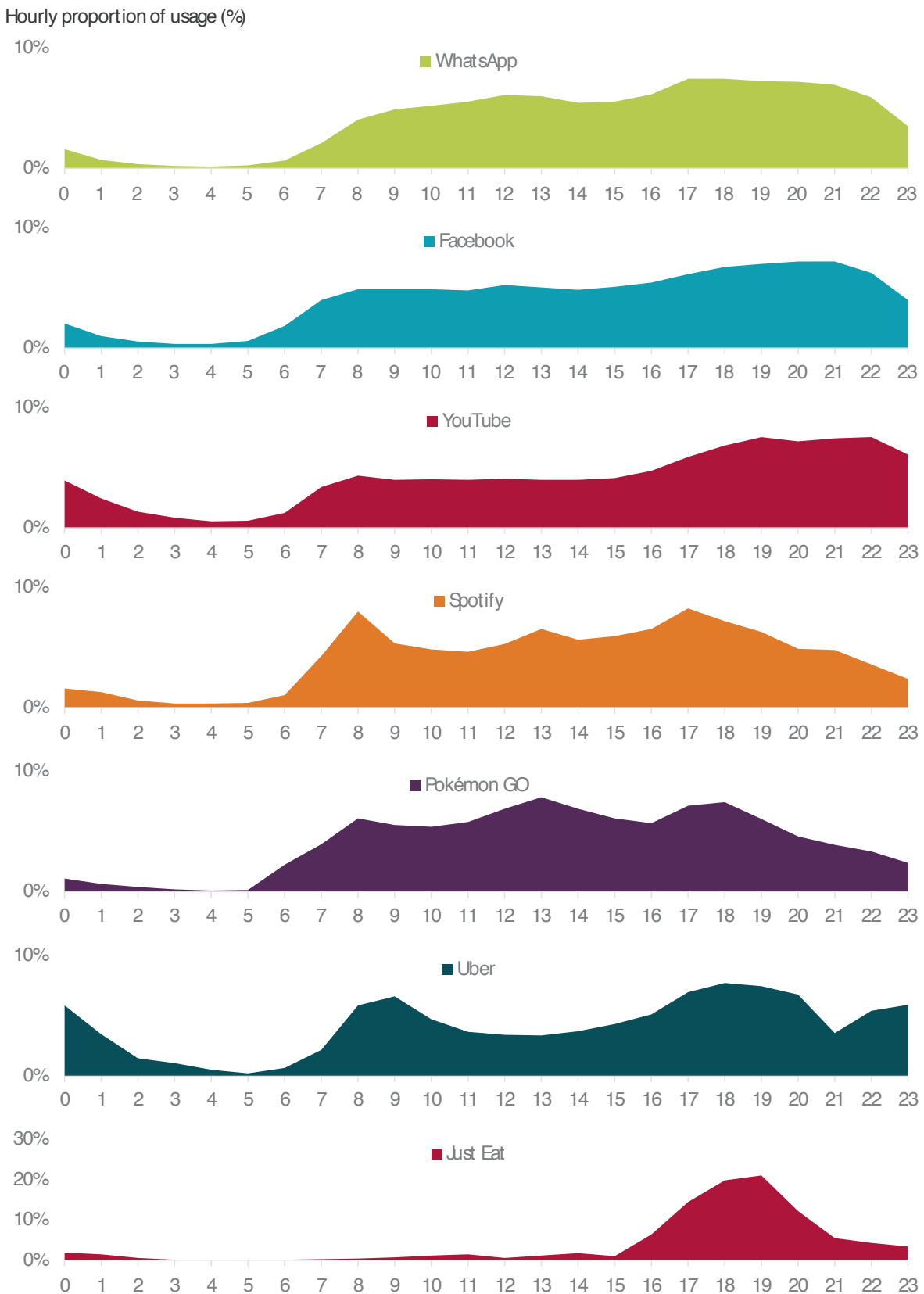
Hourly proportion of usage (%)

5.3 Internet and devices

5.3.1 Introduction

In this section We consider internet access as a whole, as well as the take-up of internet-enabled devices.

5.3.2 Take-up and use of internet-enabled devices

Almost nine in ten UK adults have home internet access in 2017

In 2017, 88% of UK adults claimed to have internet access at home, via any device, and more than 90% of under-55s had access, in line with previous years. More

than half of over-74s (53%) now have internet access at home, up from 45% in 2016.

Figure 5.6: **Proportion of adults with home internet access**
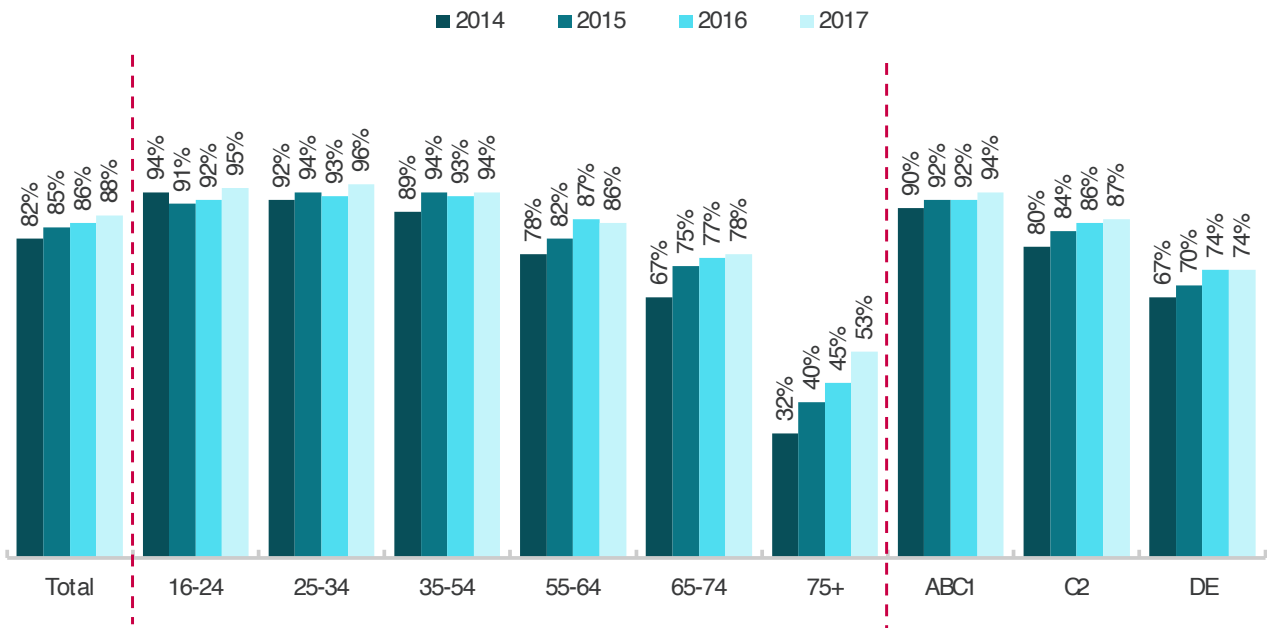
Source: Ofcom Technology Tracker, H1 2017
Base: All adults aged 16+ (n=3743)
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017, between each age group in 2016 and 2017 and between each socio-economic group in 2016 and 2017.
QE2: Do you or does anyone in your household have access to the internet/ world wide web at home (via any device, e.g. PC, laptop, mobile phone etc.)?

## Smartphones are the most widely owned internet-enabled device

In 2017, 76% of UK consumers owned a smartphone, up 5pp year on year. Laptops were the second most commonly-owned internet-enabled device in households (64%), followed by tablets (58%).

The largest increase in take-up was of smart TVs; ownership increased by 9pp to 36% of households. Ownership of internet-connected dongles (e.g. a device such as Chromecast or Roku) also increased, up by 5pp since 2016 to 10%.

Ownership of smart watches is up by 4pp since 2016, to 9% of households.

Tablet (58%), laptop (64%) and desktop (29%) ownership remained flat between 2016 and 2017.

Figure 5.7: Ownership of internet-enabled devices
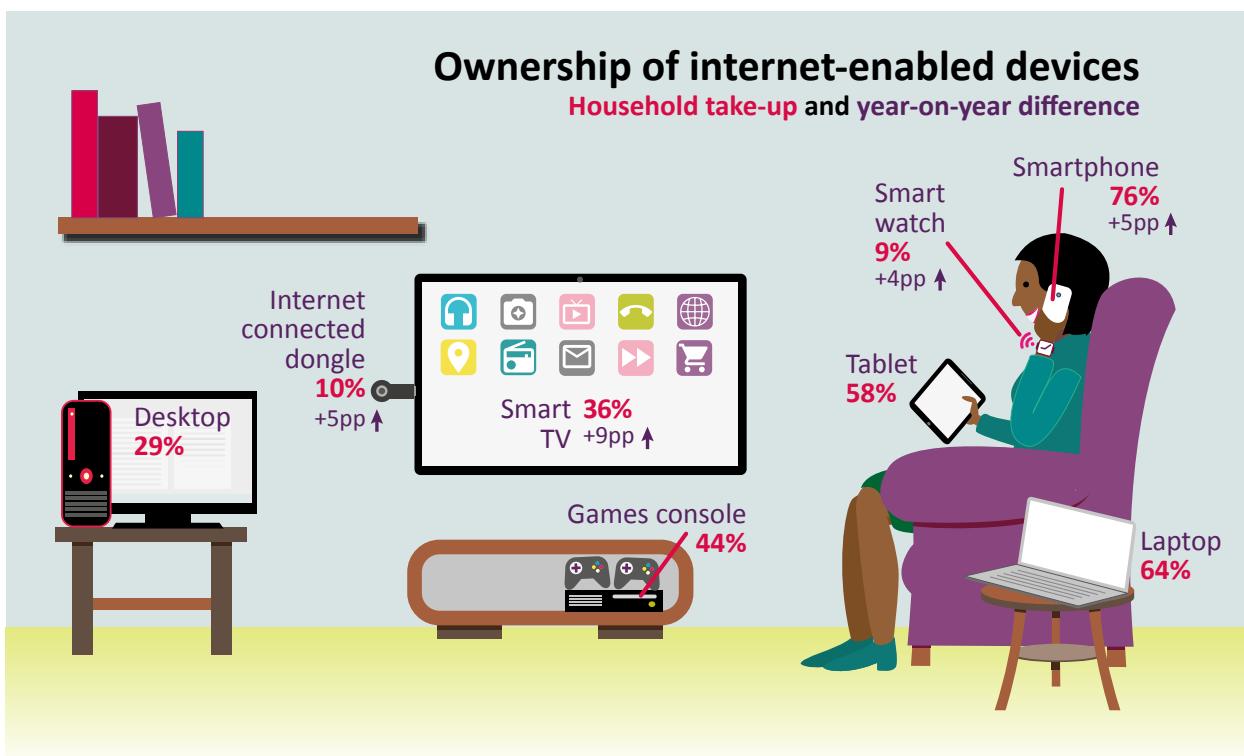
Source: Ofcom Technology Tracker, H1 2017.
Base: All adults aged 16+ (2017 n=3743).
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
Note: The question wording for DVD Player and DVR was changed in Q1 2009 so data are not directly comparable with previous years.
* Internet-connected dongle or set-top box includes NOW TV set-top box, Roku, Google Chrome, Amazon Fire TV stick, Amazon Fire TV, Apple TV.

Close to four in ten under-55s own an internet-enabled smart TV

Less than half of under-55s own an internet-enabled smart TV. Those aged 35-44 are significantly more likely than over-54s to own one, at 44% compared to 26%.

There is a significant difference in smartphone ownership between over-54s and younger adults; almost all 16-24s and 25-34s own a smartphone (both 96%) compared to less than half of over-54s (47%).

For 16-24s, ownership of games consoles overtook ownership of tablets in 2017 (at 62% and 60% respectively). Almost half of over-54s own either a laptop, tablet or smartphone, but they are less likely than other age groups to own internet-enabled devices, with the exception of a desktop, where they are level with 35-54s.

Figure 5.8: Take-up of internet-enabled devices, by age
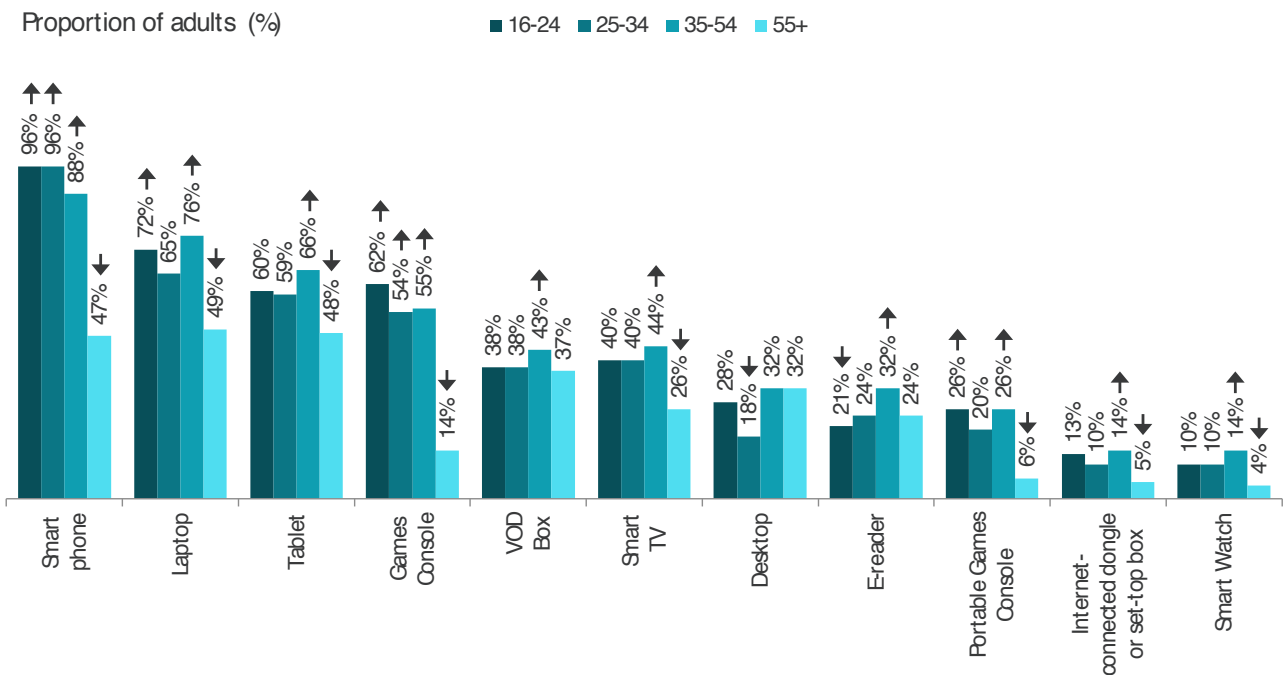
Source: Ofcom Technology Tracker, H1 2017
Base: Adults aged 16+, 16-24 n = 512, 25-34 n = 544, 35-54 n = 1202, 55+ n = 1485
Note: Ranked by overall household ownership
Internet-connected dongle or set-top box includes NOW TV set-top box, Roku, Google Chrome, Amazon Fire TV, Apple TV
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK adults overall'and each age group

AB households are more likely than the UK overall to own internet-enabled devices

Households in the higher socio-economic groups are more likely than the UK average to own internet-enabled devices, with the exception

of games consoles, where the figure is comparable across socio-economic groups. Smartwatch ownership is significantly higher among AB

groups than any other group, at 15%. The AB and C1 groups are more likely than average to own smartphones, laptops and desktops.

Figure 5.9: Take-up of internet-enabled devices, by socio-economic group
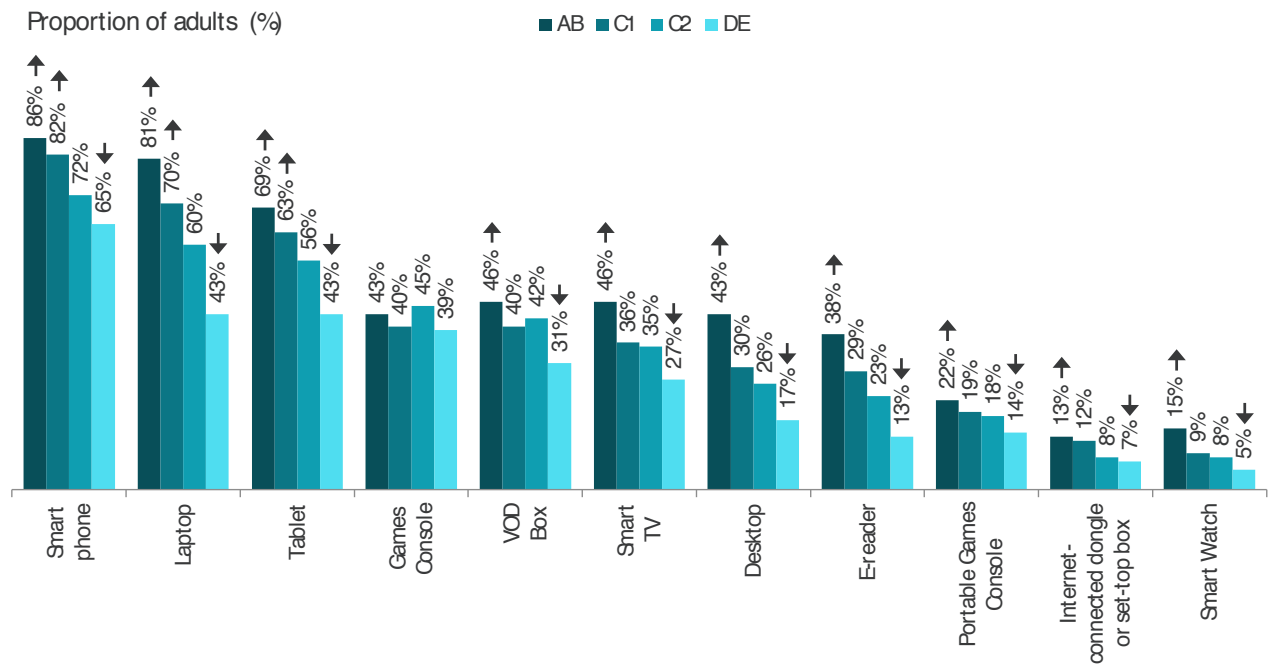
Source: Source: Ofcom Technology Tracker, H1 2017
Base: Adults aged 16+, AB n = 826, C1 n = 1109, C2 n = 81, DE n = 994
Note: Ranked by overall household ownership
Internet-connected dongle or set-top box includes NOW TV set-top box, Roku, Google Chrome, Amazon Fire TV, Apple TV
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2017 and each socio-economic group

Smartphones are the most important device for internet access

Four in ten UK internet users considered smartphones to be their most important device for accessing the internet in 2017. This is a significant increase since 2016 (Figure 5.11). Only around one in ten considered a desktop PC to be the most important way to access the internet, while there was a drop in

the proportion considering a tablet to be most important (from 20% to 16%), despite flat take-up levels.

UK internet users aged 16-24 and 25-34 were more likely than the average user to choose the smartphone as their most important device for internet access. By contrast, over-54s were more likely

than average to consider laptops, desktops and tablets their most important device for internet access. This age group was the least likely to own a smartphone, and the least likely to consider it their most important device for internet access.

Figure 5.10: Most important device for internet access

UK internet users aged 16-54 considered the smartphone to be the most important device for internet access...

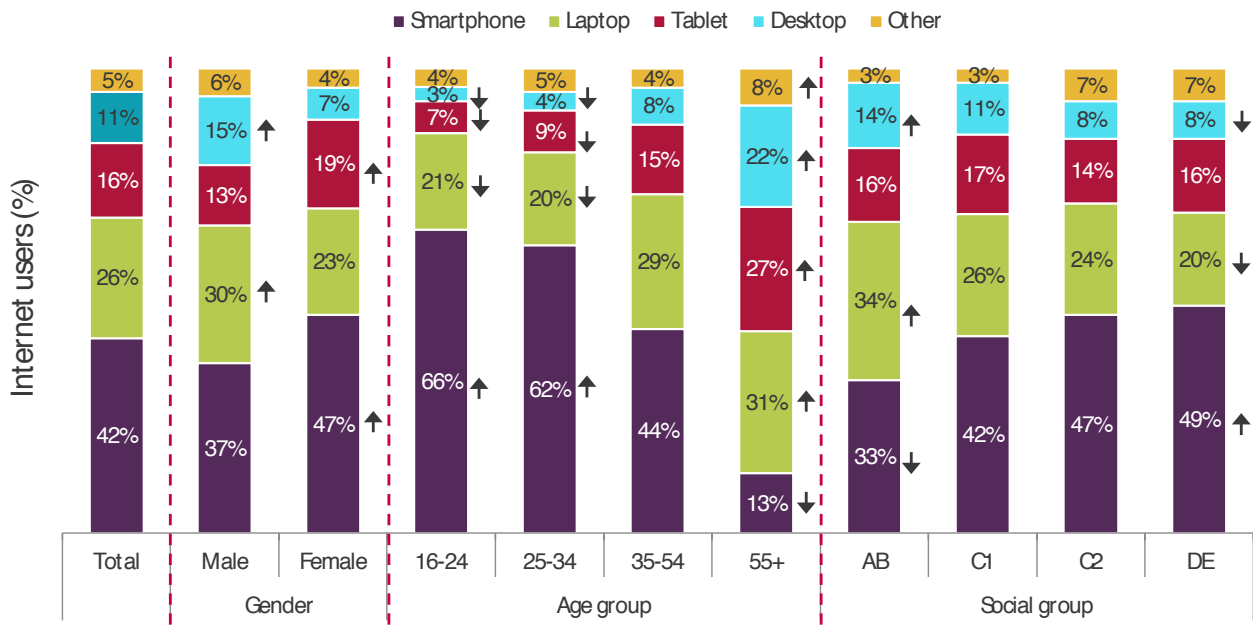...while UK internet users aged 55 and over considered the laptop to be the most important device.
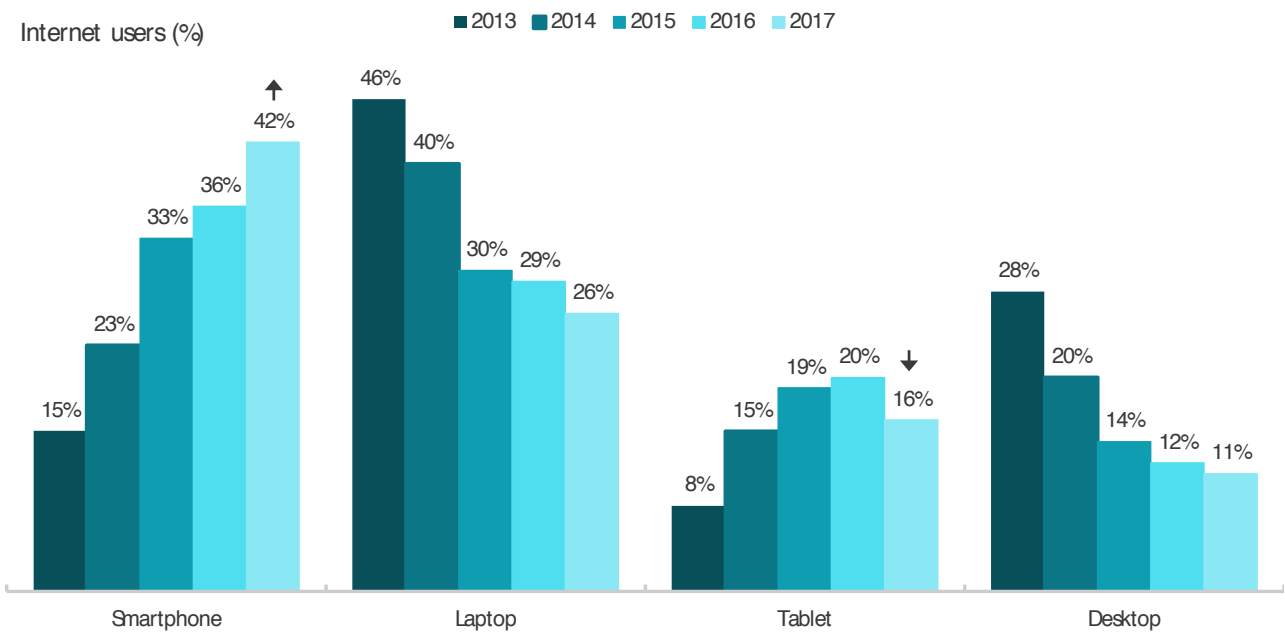
Figure 5.11: Most important device for internet access

Legend: Smartphone Laptop Tablet Desktop Other

	Total	Male	Female	16-24	25-34	35-54	55+	AB	C1	C2	DE
Other	5%	6%	4%	4%	5%	4%	8%	3%	3%	7%	7%
Desktop	11%	15%	7%	3%	4%	8%	22%	14%	11%	8%	8%
Tablet	16%	13%	19%	7%	9%	15%	27%	16%	17%	14%	16%
Laptop	26%	30%	23%	21%	20%	29%	31%	34%	26%	24%	20%
Smartphone	42%	37%	47%	66%	62%	44%	13%	33%	42%	47%	49%

Gender / Age group / Social group

Source: Ofcom Technology Tracker, H1 2017
Base: All adults aged 16+ who use the internet at home or elsewhere (n = 3221 UK).
Significance testing: Arrows indicate any significant differences at the 95% confidence level between males and females, between UK 2017 and each age group and between UK 2017 and each socio-economic group.
QE11 (QE40): Which is the most important device you use to connect to the internet, at home or elsewhere? 'Other' responses include: 'netbook', 'games console', 'e-reader', 'TV set', 'smart watch', 'other portable/handheld device', 'other device', 'none' and 'don't know'.

Figure 5.12: **Most important device for internet access: 2013 to 2017**

Internet users (%)

■2013 ■2014 ■2015 ■2016 ■2017

Smartphone: 15%, 23%, 33%, 36%, 42% ↑

Laptop: 46%, 40%, 30%, 29%, 26%

Tablet: 8%, 15%, 19%, 20%, 16% ↓

Desktop: 28%, 20%, 14%, 12%, 11%

Source: Source: Ofcom Technology Tracker, data from Q1 2014, then H1 2015-2017
Base: All adults aged 16+ who use the internet at home or elsewhere (n = 3221 UK).
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
QE11 (QE40): Which is the most important device you use to connect to the internet, at home or elsewhere? 'Other' responses include: 'netbook', 'games console', 'e-reader', 'TV set', 'smart watch', 'other portable/handheld device', 'other device', 'none' and 'don't know'.

5.4 Communications functionality in cars

Almost a third of UK households (31%) had a car with a DAB digital radio in 2017, while one in five could make and receive hands-free calls via a mobile phone.
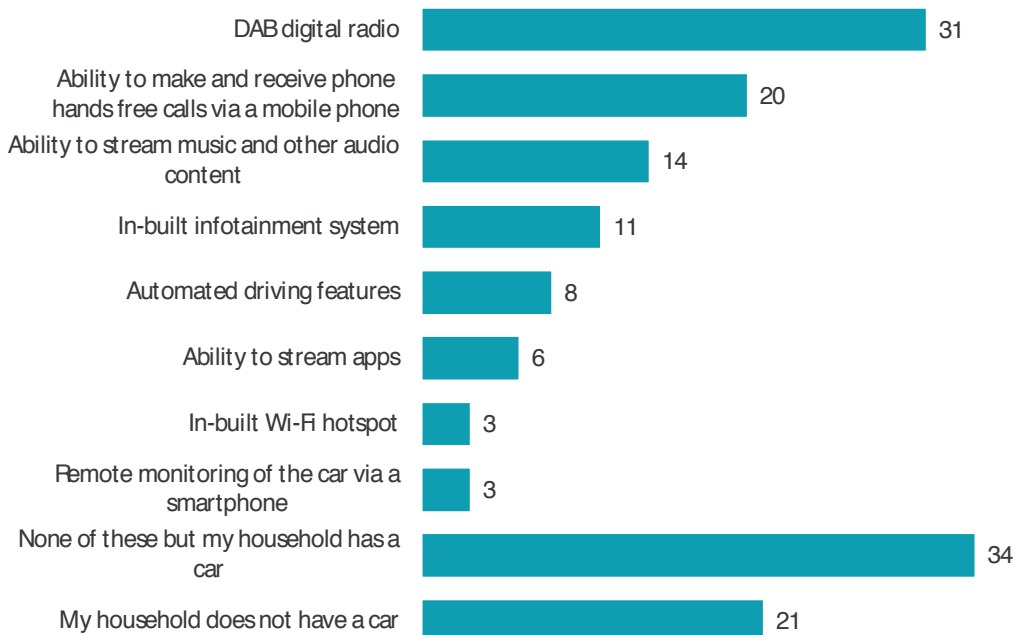
Slightly fewer reported being able to stream audio content from their smartphone to their car (14%) or having an in-built infotainment system (11%).

Take-up of more integrated connectivity services is lower; 3% have a car with a built-in Wi-Fi hotspot, the same proportion as say they have remote monitoring of their car via their smartphone. These features may be offered as options with new cars, and may require the user to pay a monthly subscription.

The proportion of cars with at least some of these features is likely to rise, and features may become increasingly standard in cars, as has happened with DAB radios- the proportion of new cars sold with a DAB as standard was 84.5% in 2016.[1] And from April 2018, new cars sold in the EU will have embedded SIMs as a result of the requirement to have the 'eCall' emergency service contact system installed as standard. Some manufacturers may see this as an opportunity to offer additional services using this system.

Figure 5.13: Features in car(s) used by household

Proportion of UK adults (%)

DAB digital radio	31
Ability to make and receive phone hands free calls via a mobile phone	20
Ability to stream music and other audio content	14
In-built infotainment system	11
Automated driving features	8
Ability to stream apps	6
In-built Wi-Fi hotspot	3
Remote monitoring of the car via a smartphone	3
None of these but my household has a car	34
My household does not have a car	21

Source: Ofcom research,2017
Base: All adults (n = 1062)
Q14: Which of the following features does the car (or cars) used by your household have? Select all that apply, even if you do not personally use the feature [MULTICODE]
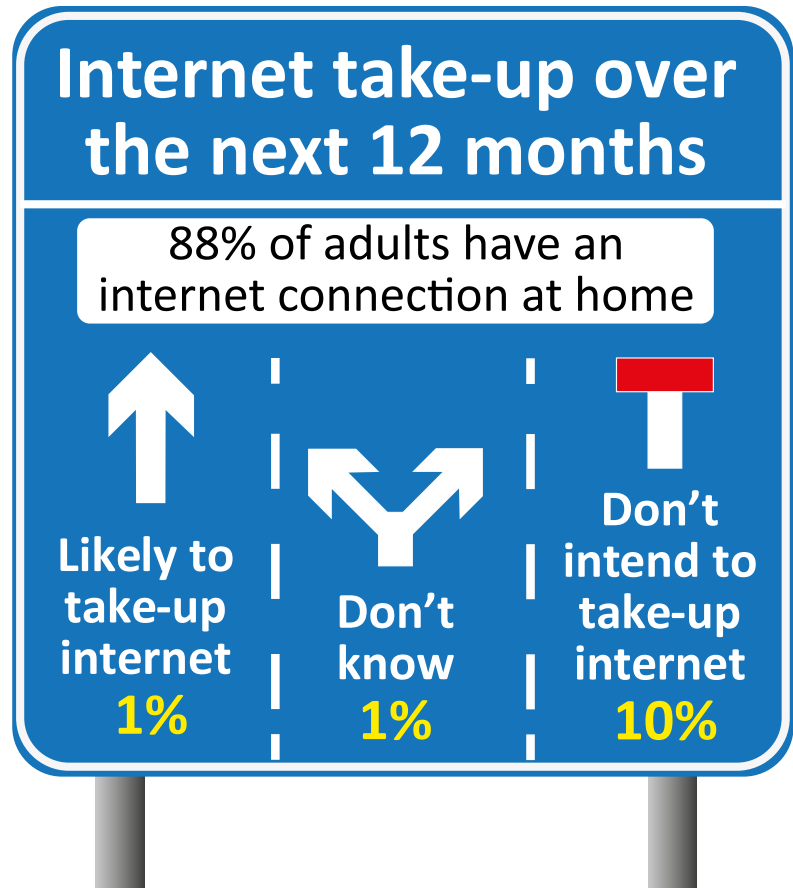
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[1] See https://www.smmt.co.uk/2017/01/widest-ever-choice-of-listening-for-uk-motorists-as-2-3-million-new-car-buyers-tune-into-digital-radio-in-2016/

5.4.1 Digital inclusion

One in ten UK adults have no intention to get access to the internet in 2017

Twelve per cent of UK adults did not have access to the internet at home in 2017, and 10% of adults said they did not intend to get it in the next 12 months (the same as in 2016).

Figure 5.14: **Internet take-up and intentions: 2017**

Internet take-up over the next 12 months

88% of adults have an internet connection at home

Likely to take-up internet **1%**

Don't know **1%**

Don't intend to take-up internet **10%**

Source: Ofcom Technology Tracker, H1 2017
Base: All adults aged 16+ (n = 3743).
Significance testing: Arrows indicate any significant differences at the 95% confidence level between 2016 and 2015.
QE2: Do you or does anyone in your household have access to the internet / world wide web at home (via any device)?/ QE32 **(QE24):** How likely are you to get internet access at home in the next 12 months?

More than half of UK adults without internet access do not think they need it

More than half of UK adults who did not have access to the internet at home in 2017 said they did not think they needed it. This was the most frequently-cited reason, and was driven by over-54s, the most likely group to say this (90%).

Other frequently-cited responses for not having home internet access were that the respondent did not have a computer, or thought that broadband was too expensive (both 18%).

Figure 5.15: Main reason for not having a home broadband connection

Proportion of those without broadband (%)
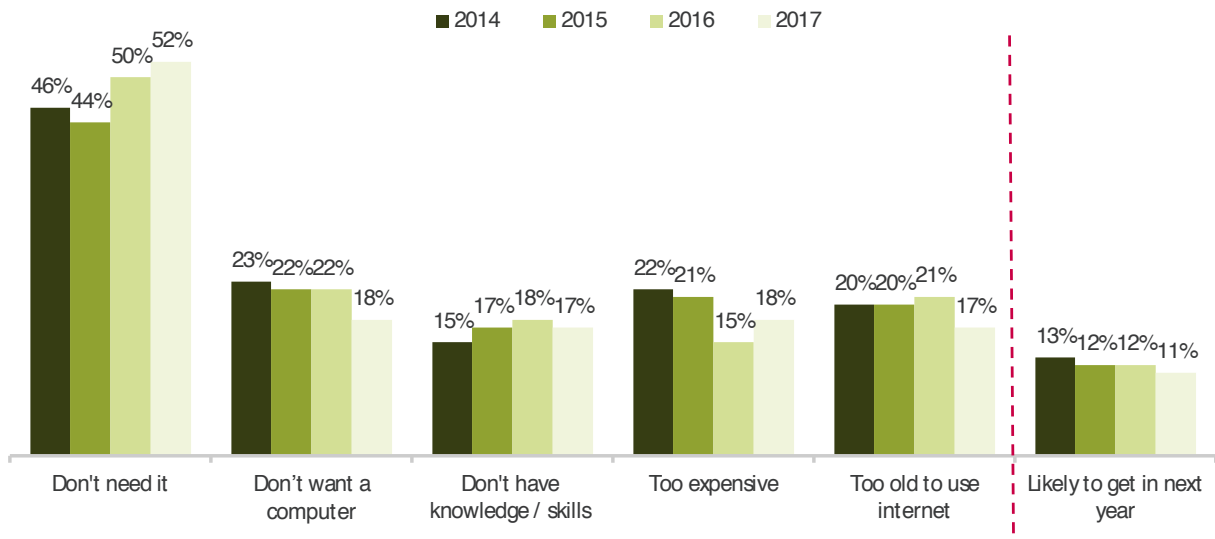
Source: Ofcom Technology Tracker. Data from Q1 2014, then H1 2015-2017
Base: All adults without the internet aged 16+ (n=597)
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
QE33 (QE25A): Why are you unlikely to get internet access at home in the next 12 months?

5.5 Online content

This section explores the content and services that people access and use online, including social media, online video-sharing services and mobile payment services.

5.5.1 comScore

To inform our analysis of people's use of online content and services in the UK, we have drawn on data collected by comScore, a media measurement and analytics company.

The UK Online Measurement Company (UKOM) was formed in 2009 with a mandate from the advertising industry to establish measurement standards for digital media. UKOM appointed comScore as their exclusive partner for online media audience measurement in the UK in 2012. comScore will continue as UKOM's exclusive data supplier until at least March 2018.

This chapter predominantly draws on three comScore sources:

1. For analysis of laptop and desktop computer internet activity only, we use comScore Media Metrix (MMX) which employs comScore's Unified Digital Measurement (UDM) methodology, explained below.

2.   For analysis of mobile internet and app activity only, on Android and iOS smartphones, iPads and Android tablets, we use comScore Mobile Metrix which also employs comScore's Unified Digital Methodology for Android and iOS smartphones and iPads. Android tablet use is captured on tagged entities.

3. For analysis of internet activity across platforms, we use comScore MMX Multi-Platform which provides metrics on desktop video.

Finally, smartphone and tablet user behaviours are supplemented by consumer research from comScore MobiLens Plus (this is not part of the data suite endorsed by UKOM).

Methodology

comScore's Unified Digital Methodology (UDM) combines panel and census measurement techniques to obtain digital audience measurement statistics. UDM uses comScore's global measurement panel to determine audience reach and demographics. Census-level activity is captured from publishers' digital content, such as on websites, videos and computer and mobile applications. comScore combines census-level data with those captured from the panel to help provide a more accurate view of audiences and their consumption habits. This approach allows comScore to capture more accurate consumption activity from

publishers, and attribute this to audience demographics in a way that is not affected by cookie deletion, blocking, and rejection.

Video

VMX measures across the entire spectrum of web surfing and buying behaviour, including details of streaming media consumption. It uses the same UDM methodology that is used in MMX to combine the detail of person-¬centric panel insights with the coverage of census-¬based, site-¬centric or app-based video measurement. VMX uses the same dictionary as MMX.

VMX reports streaming / downloaded video on PCs (home and work) and census-only based measurement on mobile platforms. There are two technical methods of delivering video, both measured by comScore: streaming requires a live client/server connection maintained during transmission, and progressive download covers videos that are downloaded before playback. Both user-initiated and auto-launched videos are counted.

Metrics

Throughout this report we make reference to a number of metrics, defined below:

Unique audience *– the total number of unique persons who visited a website or used an application at least once in a given month. Persons visiting the same website more than once in the month are therefore counted only once in this measure.*

Active audience *– the total number of people who visited any website or used any application at least once in a given month; i.e. the number of people online and using any specific platform in a given month, no matter which website or app they used.*

Digital audience *– the total number of people who visited any website or used any application at least once in a given month; i.e. the number of people online and using any specific platform in a given month, no matter which website or app they used.*

Active reach *– the proportion of the active audience made up by the unique audience of a website.*

Time spent per month *– the average time spent browsing a website per unique visitor per month (excludes time spent watching online video and listening to streamed music).*

Dictionary

Each of the entities reported by comScore is attributed to a level in comScore's Client Focused Dictionary. Several entities (including apps) can exist within one service (e.g. BBC Sport and BBC iPlayer) and comScore's dictionary defines how these entities are structured and related to each other. It is client-focused because comScore's clients define how their brands and websites appear in reports according to this dictionary. All comScore reports use the same six-tiered dictionary structure, as explained below:

Property [P] - *The highest level of reporting within the dictionary. Properties represent*

all full domains (i.e. felmont. com), pages (i.e. sports.felmont. com/tennis), applications or online services under common ownership or majority ownership for a single legal entity. A property may also contain any digital media content that is not majority-owned but has been legally signed over for reporting purposes by the majority owner.

Media Title [M] - *A Media Title is an editorially and brand-consistent collection of content in the digital landscape that provides the marketplace with a view of online user behaviour. This may represent a domain, a group of domains, online service or application.*

Channel [C], SubChannel [S], Group [G] and SubGroup [SG] - *Within a Media Title there may be grouped URLs of editorially consistent content that make up a Channel. For some of the largest Media Titles, Channels themselves may be broad, and Subchannels, Groups and Subgroups within the larger Channels may prove useful for categorisation within the comScore Dictionary.*

5.5.2 Overview

### The UK's online audience stood at 50.4 million people in March 2017

The total UK digital audience (i.e. the online audience active on laptops, desktops or mobile devices[1]), was 50.4 million in March 2017. The audience for laptop and desktops was 46.5 million in March 2017, while the mobile audience (i.e. those accessing the internet via Android and iOS smartphones and/ or tablets) stood at 36.2 million.

Figure 5.16: Active digital audience: March 2017

Unique audience (millions)
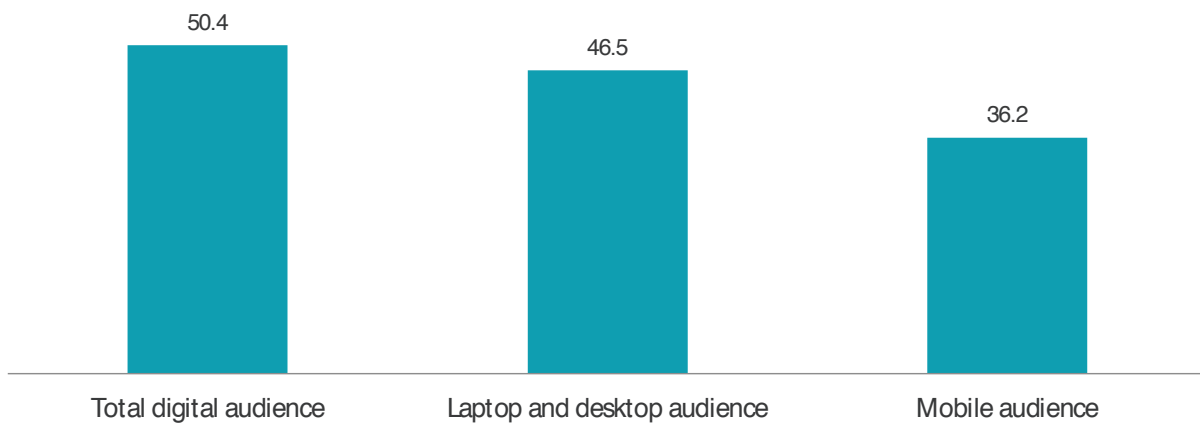
Source: comScore MMX Multi-platform, UK, home and work panel, March 2017;
Note: 'Digital audience' is the unique audience across desktop/laptops and mobile. 'Mobile audience' includes Android smartphones and iOS smartphones and tablets. Only those entities that have been tagged as part of the census network report Android tablet usage data.

The UK digital audience spent an average of 83 hours online per person in March 2017

Overall in March 2017, the average time spent online by smartphone internet users was 65.3 hours. This is greater than the average time spent online by internet users on laptops and desktops (34 hours in March 2017). A great deal of consumption is likely to come from work use, or those who regularly use the internet in a professional capacity.

Figure 5.17: Average time spent online: March 2017

Hours
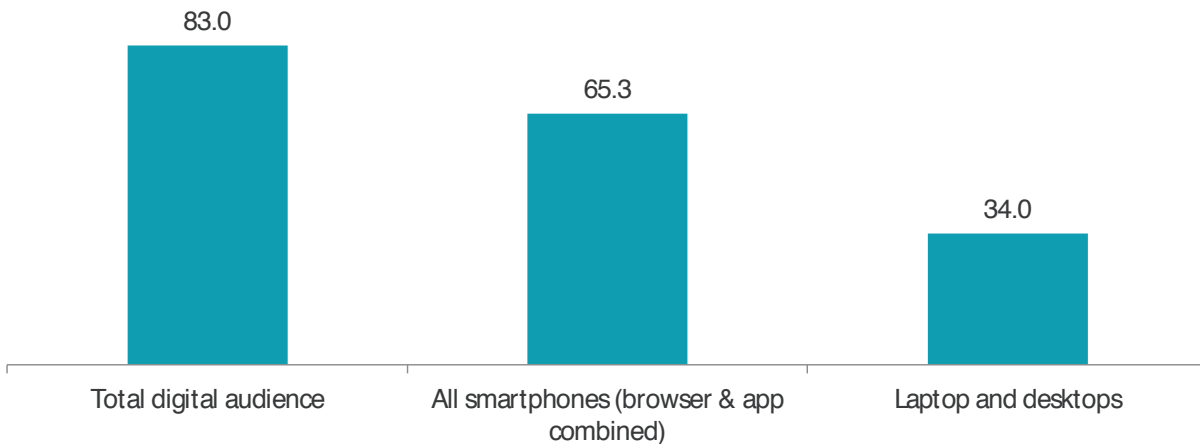
Source: comScore MMX Multi-Platform, UK, March 2017, (bases include ages 6+ for desktops/laptops, 18+ for mobile devices).

[1] This includes smartphones and tablets.

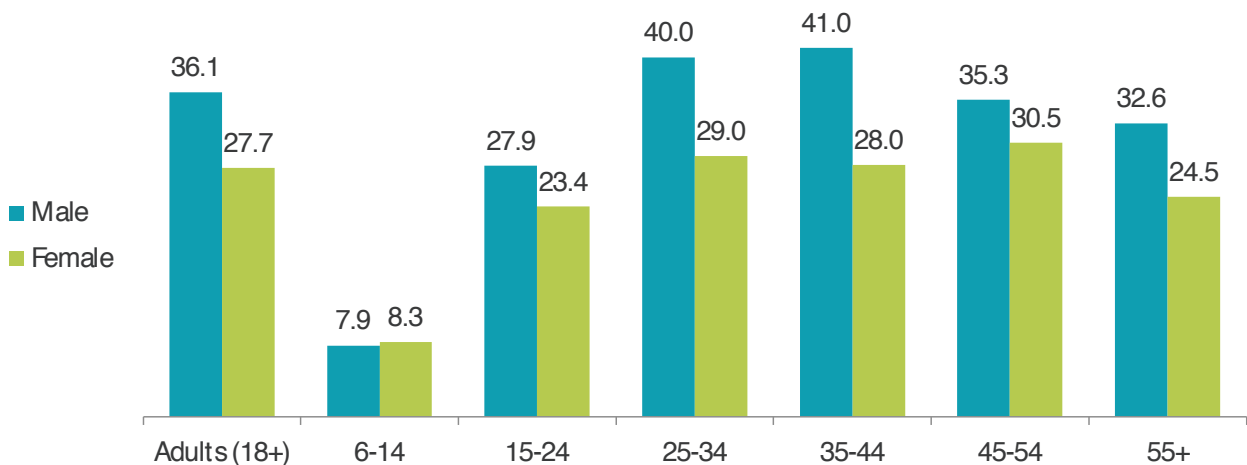## Men spend more time than women online on laptops and desktops

Across all users aged 18+, men spent more time than women online on a laptop or desktop computer in March 2017. Male users aged 25-34 spent the greatest amount of time online at work and home, at 40 hours. Among female users, those aged 25-34 spent the most time online on a laptop or desktop computer, at 29 hours.

Figure 5.18: **Average time online on laptop/desktop, by age and gender: March 2017**

Average hours per visitor

Source: comScore MMX, Demographic Profile Report, home and work panel, UK, March 2017
Note: Time spent online is a measure of time spent browsing web pages on laptop and desktop computers only.

Younger women spend more time than men online using smartphones

Women aged 18-34 spent more time than men online on their smartphones in March 2017. For men and women, the 18-24 age group spent the most time online, at 77.9 hours for men and 88.5 hours for women. Adults aged 55 and over spent the least amount of time online using their smartphones.

Figure 5.19: **Average time online on a smartphone, by age and gender: March 2017**

Average hours per visitor
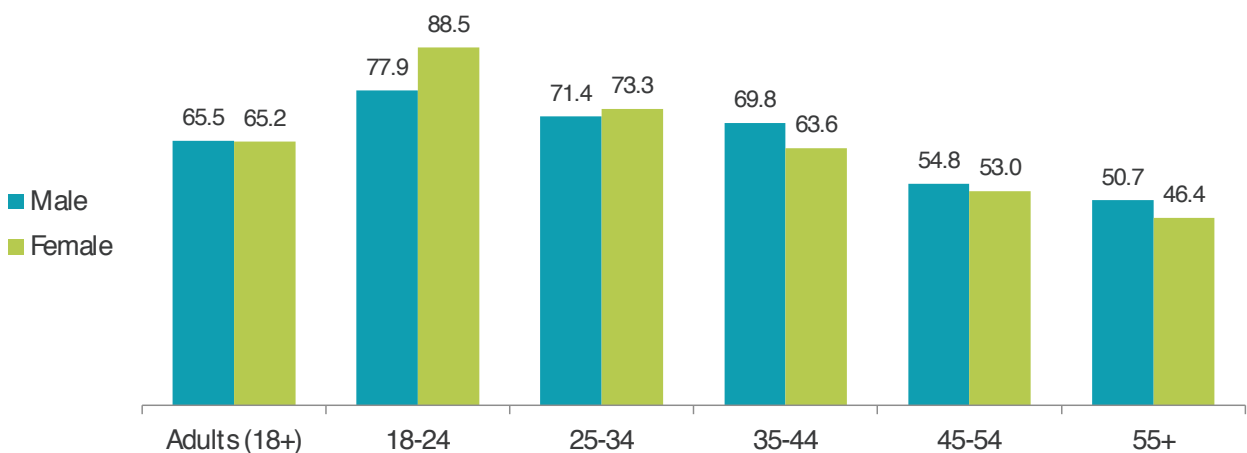
**Source:** comScore Mobile Metrix, Demographic Profile Report, Total Internet, March 2017, UK.
Note: Includes Android and iOS smartphones

General surfing and browsing is the most popular internet activity in 2017

In 2017, general browsing was the most popular internet activity, with 80% of adults claiming to have browsed the internet in the past week. Sending and receiving emails was the second most commonly-cited activity; 76% of adults claimed to have done this in the past week. Around half of adults in the UK had used the internet for banking or online shopping in the past week.

Figure 5.20: Claimed use of the internet for selected activities
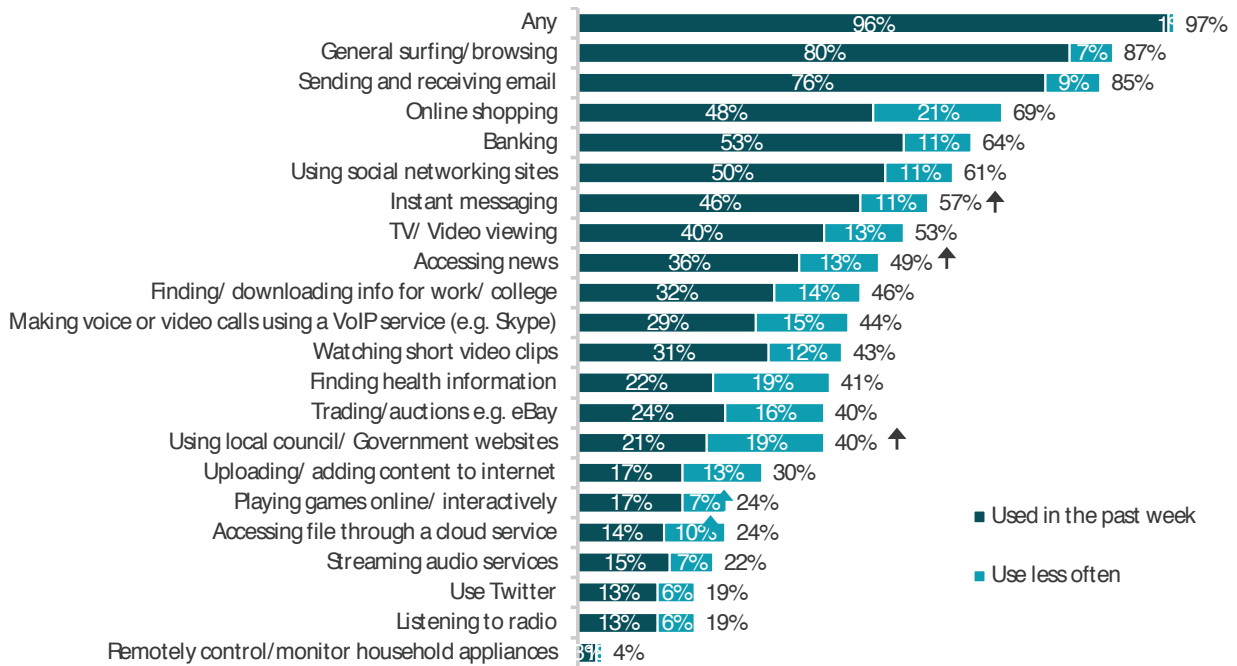
Source: Ofcom Technology Tracker. Data from Q1 2014, then H1 2015-2017
Base: All adults without the internet aged 16+ (n=597)
Significance testing: Arrows indicate any significant differences at the 99% confidence level between UK 2016 and UK 2017.
QE33 (QE25A): Why are you unlikely to get internet access at home in the next 12 months?

Google websites attracted more than 48 million UK visitors in March 2017

To identify the organisation with the largest total online audience, across all its services, we report on an organisation's comScore 'property' (all the sites and apps owned by the organisation).

Google websites (including Google Search and YouTube) were visited

by 48.3 million users in the UK in March 2017, with Facebook and Microsoft attracting a similar number of users (41.9 million and 40.6 million unique users respectively).

Four of the ten most popular comScore internet properties in the UK were organisations based in the

UK: the BBC, Sky sites, Trinity Mirror Group and Mail Online/Daily Mail. The four UK organisations in the top ten were all related to media and communications, including traditional media companies such as broadcasters (BBC sites and Sky sites) and print businesses (Trinity Mirror Group and Mail Online/Daily Mail).

Figure 5.21: **Top ten most popular comScore properties among the total digital audience: March 2017**
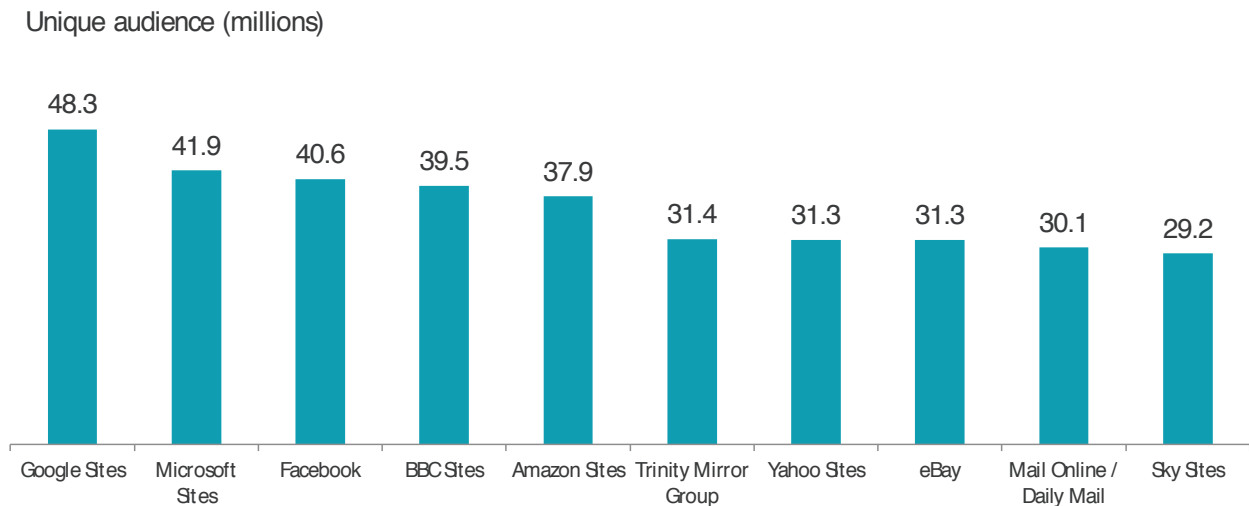
Unique audience (millions)

Source: comScore MMX Multi Platform, UK, March 2017
All sites listed are at the property level [P]. Please note MMX multi-platform includes laptop/desktop browsing, laptop/desktop video streams, on-network and Wi-Fi mobile browsing and app use.

More than 40 million people visited YouTube and Google search in March 2017

As shown in Figure 5.22, Google websites were visited by 48.3 million users in the UK in March 2017. The unique audience of the Google Sites comScore property reflects the large audience for the services that are captured within this group, including Google Search and YouTube.

In March 2017, YouTube and Google Search had similar unique visitor counts at around 40 million, far more than the third highest, Google Maps (30.9 million unique visitors). Gmail, Google's email service, had 23.2 million unique visitors in the same month. Google's Blogger

service, which allows users to create and share blogs free of charge, had close to 10 million unique visitors across the Blogger domains.

Figure 5.22: **Most-used apps and services within the Google Sites property, by unique audience: March 2017**

Unique audience (millions)
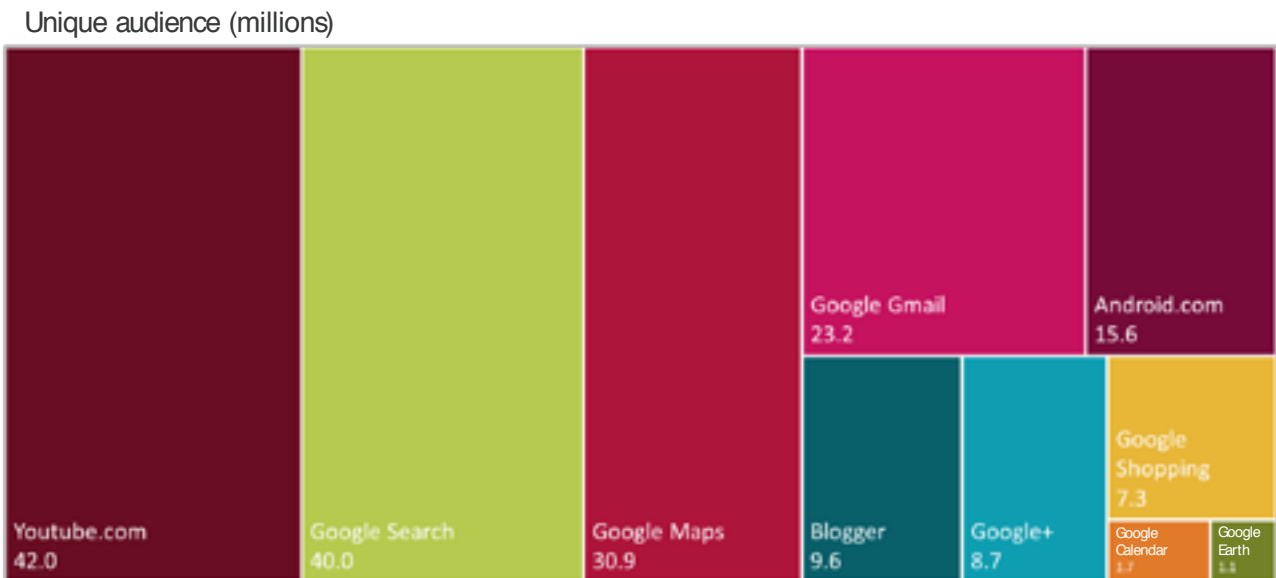
Source: comScore MMX Multi Platform, UK, March 2017
All sites listed are recorded under Google Sites [P] Please note; only sites which have recorded more than a million unique audience visits are shown. Figures are unduplicated across sites. comScore entities are [M] YOUTUBE.COM, [C] Google Search, [C] Google Maps, [C] Google Gmai, [M] ANDROID.COM, [M] Blogger, [C] Google+, [C] Google Shopping, [C] Google Calendar, [C] Google Earth (App)
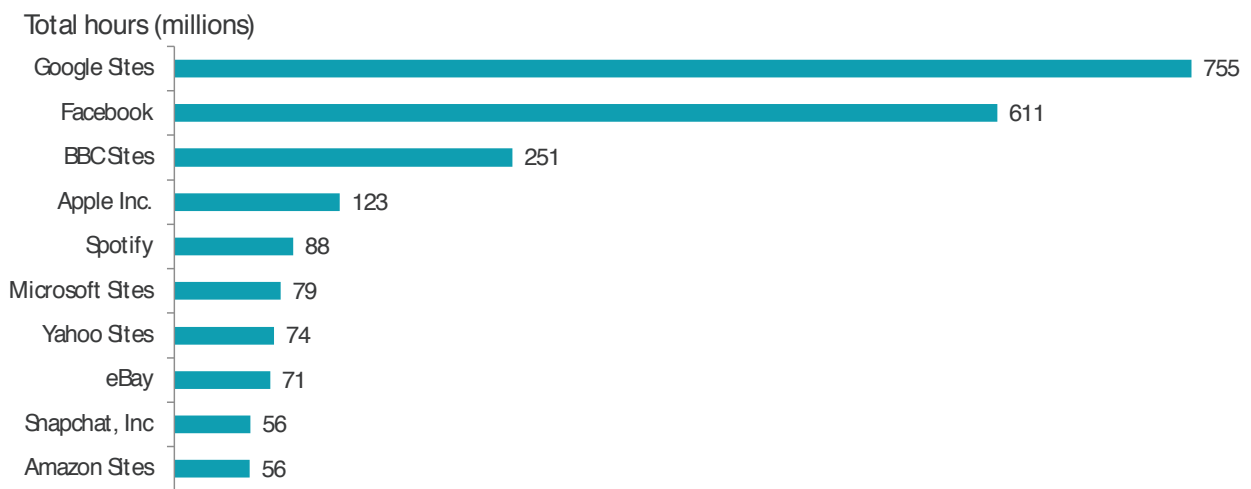
People spent more than 700 hours browsing Google websites and apps in March 2017

In March 2017, UK visitors to Google-owned sites[1] and apps spent nearly 755 million hours on them across laptops, desktops and mobile devices. Per person, visitors spent on average 16 hours a month browsing Google-owned

sites and apps. The second most popular property, by time spent, was Facebook (611 million hours), which includes Facebook, Messenger, Instagram and WhatsApp.

There were three properties that were not among the ten most popular, in terms of their digital audience size, but were among the ten most popular by time spent: Snapchat, Apple Inc. and Spotify.

Figure 5.23: **Top ten comScore properties among the total digital audience, by time spent: March 2017**

Total hours (millions)

Property	Total hours (millions)
Google Sites	755
Facebook	611
BBC Sites	251
Apple Inc.	123
Spotify	88
Microsoft Sites	79
Yahoo Sites	74
eBay	71
Snapchat, Inc	56
Amazon Sites	56

Source: comScore MMX Multi Platform, Key Measures, UK, March 2017, UK.
Note: All sites listed are at the property level [P] . Time spent online is a measure of time spent laptop/desktop webpage browsing, and on-network and Wi-Fi mobile browsing and application data.

[1] Google-owned sites include Google Search, Google Maps, Gmail and YouTube.

5.5.3 Social media and messaging

Facebook continues to have the highest audience reach among social networking sites

Facebook continues to be the largest social network service in the UK. In March 2017, it attracted a digital audience of 39.7 million (more than three-quarters of active internet users). This was larger than next biggest sites, Twitter (21.9 million) and Instagram (19.4 million).

For the majority of social networking sites there has been growth in unique audience since March 2016, with the exceptions of Google+ and LinkedIn. As of March 2017, Google+ (8.7 million) and LinkedIn (15.9 million) were both down by around 4 million unique visitors since the

previous year. Snapchat had the largest growth in unique audience since 2016, up by 3.1 million to 10.3 million in March 2017.

Figure 5.24: Digital audience of selected social networking sites: March 2016 and March 2017
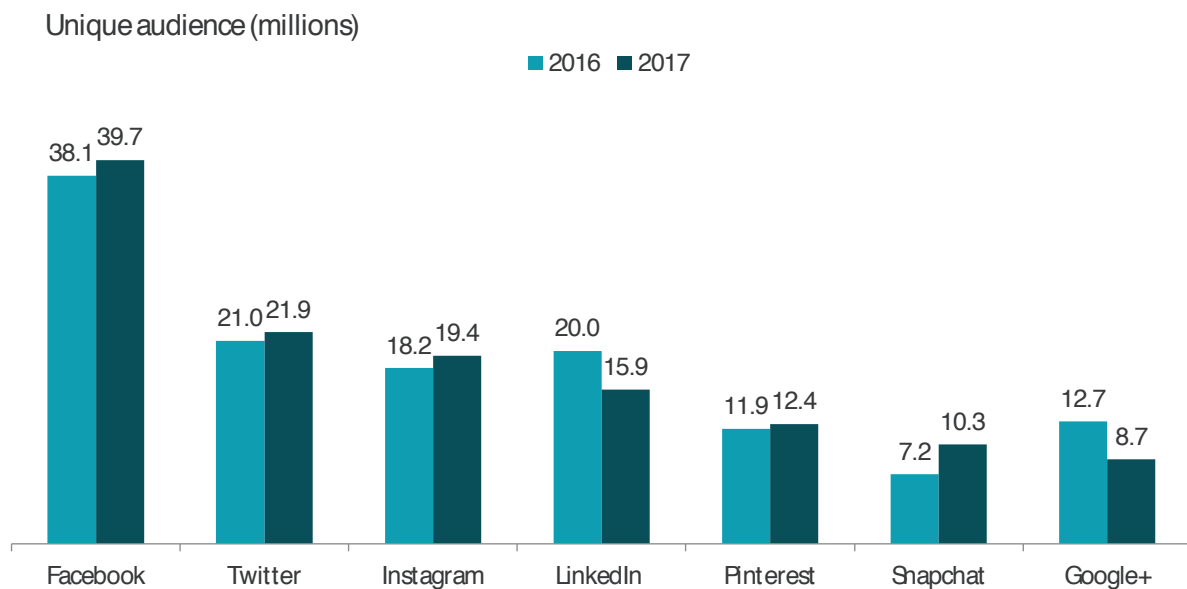
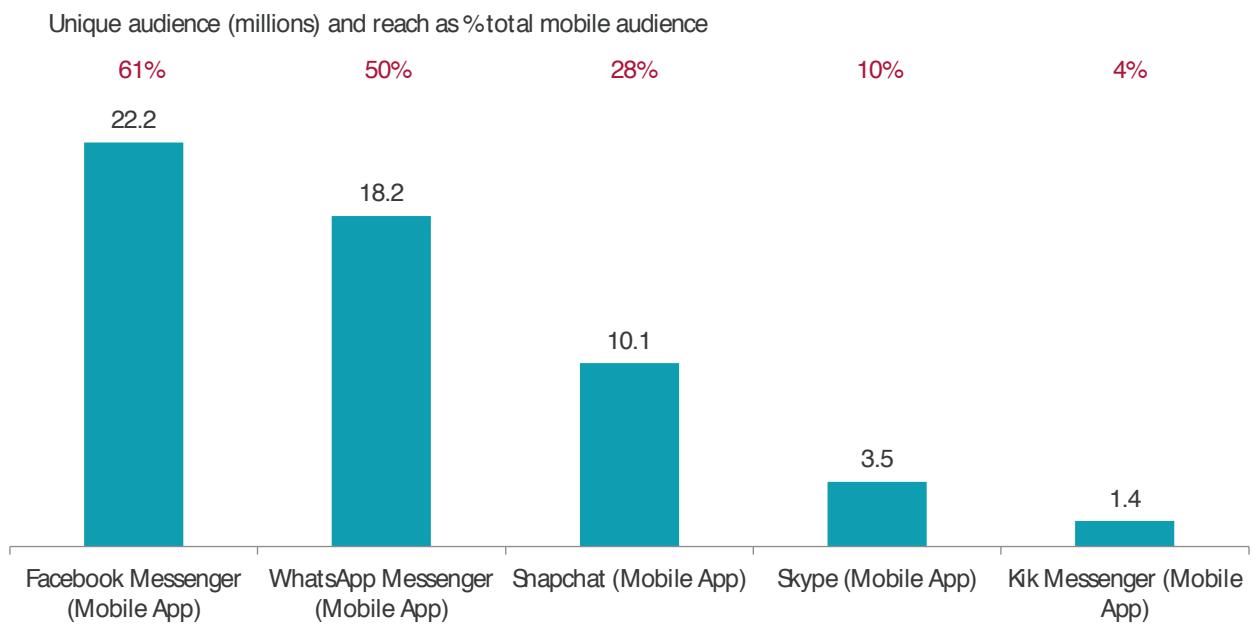**Source:** comScore MMX Multi Platform, UK, March 2017
Note: comScore entities used were [C] Facebook.com, [P] Linkedin, [P] Twitter, [M] Instagram.com, [P] Pinterest.com, [P] Snapchat, Inc, [C] Google+.

Two of the most-used messaging apps are owned by Facebook

More than half of the total mobile audience used Facebook Messenger (61%) and half used WhatsApp (50%) in March 2017. Both properties are owned by Facebook. The Snapchat mobile app had a reach of 28%, with 10.1 million unique visitors in March 2017.

Figure 5.25: **Mobile audience of selected mobile messenger apps: March 2017**

Unique audience (millions) and reach as % total mobile audience

App	Reach	Unique audience (millions)
Facebook Messenger (Mobile App)	61%	22.2
WhatsApp Messenger (Mobile App)	50%	18.2
Snapchat (Mobile App)	28%	10.1
Skype (Mobile App)	10%	3.5
Kik Messenger (Mobile App)	4%	1.4

Source: comScore Mobile Metrix, Key Measures, UK, March 2017

Note: Mobile use includes Android smartphones and iOS smartphones and tablets. Only those entities that have been tagged as part of the census network report Android tablet usage data. comScore entities used were [S] Facebook Messenger (Mobile App), [C] WhatsApp Messenger (Mobile app). [M] Snapchat (Mobile App) (w/history), [S] Skype (Mobile App), [M] Kik Messenger (Mobile App)

5.5.4 Online video-sharing services

In this section, we examine take-up and use of online video sharing sites in the UK, such as YouTube and Vimeo. These online video sites generally include other features and functionalities as well, such as the ability to comment on videos or share them on other social media sites such as Facebook and Twitter.

YouTube had more than three times the audience reach of the next most popular video-sharing website

Of all the selected online video-sharing sites, YouTube had the largest digital audience in the UK, at 42 million in March 2017 (an active reach of 83% across the total digital audience). The laptop and desktop audience for YouTube was 4.8 million higher than the total mobile audience (33.7 million and 28.9 million respectively).

Vimeo had the second largest unique audience in March 2017, at 12.1 million. Of the selected entities, Dailymotion.com was the only video-sharing site which had a greater audience among those accessing via a mobile device (2.2 million) than among those using laptops and desktops (1.7 million).

Twitch.TV had a unique audience of 1.8 million (4% active reach) and had a similar unique audience across mobile devices and laptop and desktops (1.2 million and 0.8 million respectively).[1]

Figure 5.26: **Unique audience for selected online video-sharing sites: March 2017**

Unique audience (millions) and reach as a % of total digital audience
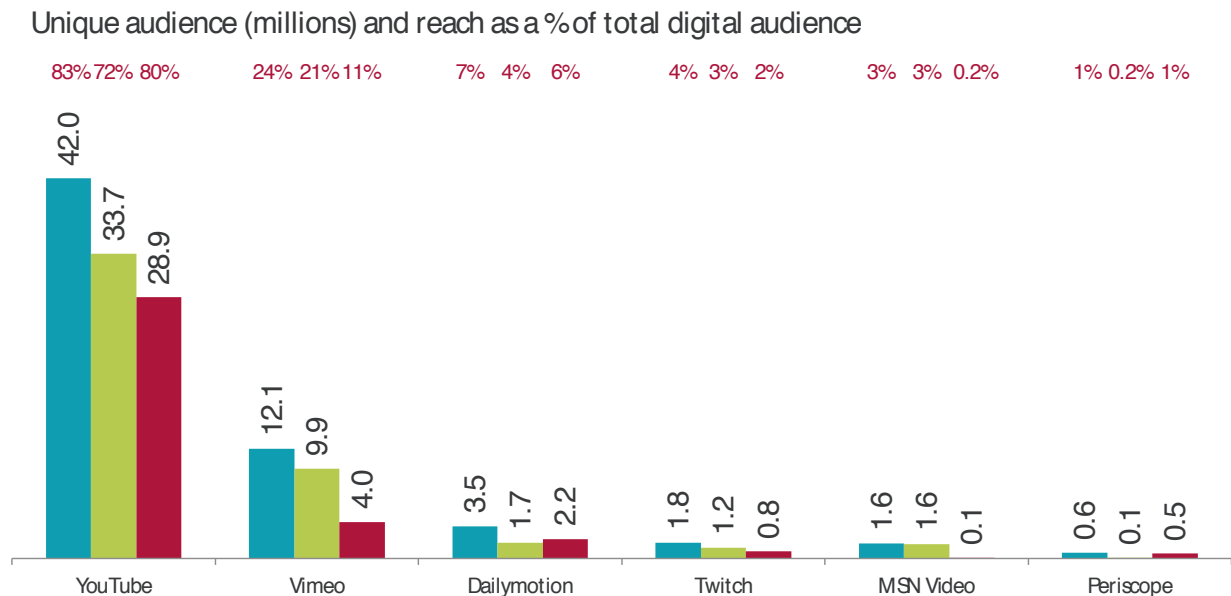
Source: ComScore MMX Multi Platform, Key Measures, UK, March 2017.
Note: MMX multi-platform includes laptop/desktop browsing, laptop/desktop video streams and mobile use. Mobile use includes Android smartphones and iOS smartphones and tablets. Only those entities that have been tagged as part of the census network report Android tablet usage data. ComScore entities used were: [M] YOUTUBE.COM, [P] Vimeo, [P] DAILYMOTION.COM, [M] PERISCOPE.TV, [c] MSN Video (w/history),[P] TWITCH.TV

[1] Twitch.TV is a live streaming video platform targeted at video gamers. It allows users to watch live streams of users playing video games, or stream content themselves. The service has a particularly high reach among the younger age groups; in March 2017, 45% of its digital audience was aged 15-24. Reach for Twitch was particularly high among males aged 18-24, at 38% (compared with 7% of females aged 18-24). Source: ComScore MMX Multi Platform, UK, March 2017

Viewers aged 18-24 spent more time watching YouTube videos than any other age group
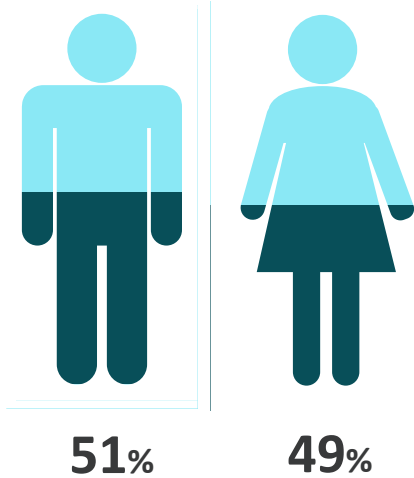
Twenty-two per cent of YouTube's total audience are aged 55 and over, while 20% are 25-34, and 13% are 18-24. The gender split is close, at 51% male vs. 49% female.

Time spent per viewer is higher among younger adults. Of the age groups below, 18-24s made up the lowest number of viewers on YouTube in March, but spent more time on average per viewer
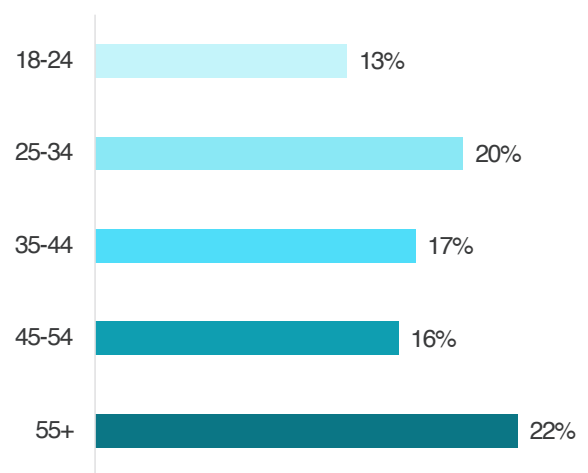
watching than any other age group (32 hours). Over-54s had the lowest levels of engagement, spending 7 hours on average per person.

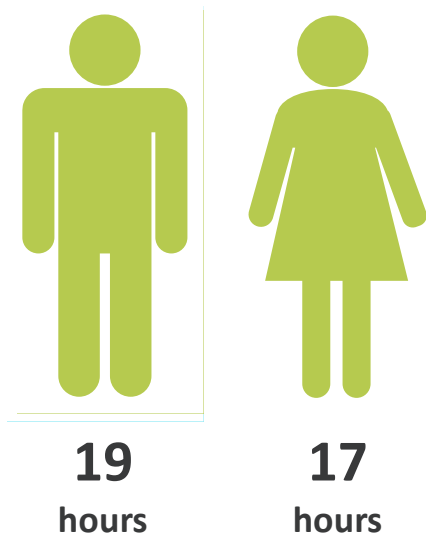**Figure 5.27:** **YouTube viewer profile, by gender and age: March 2017**
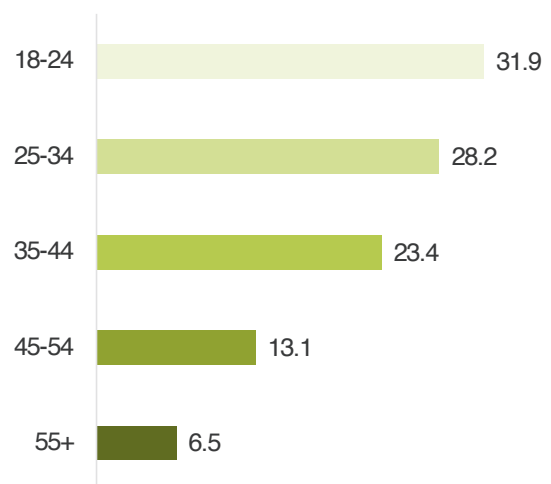

Breakdown of audience (%)

51%   **49**%

Breakdown of audience (%)

18-24	13%
25-34	20%
35-44	17%
45-54	16%
55+	22%

Average hours per viewer

19 hours   **17** hours

Average hours per viewer

18-24	31.9
25-34	28.2
35-44	23.4
45-54	13.1
55+	6.5

Source: comScore Video Metrix Multi Platform, Demographic Profile, UK, March 2017

The most popular YouTube partners are backed by major media networks
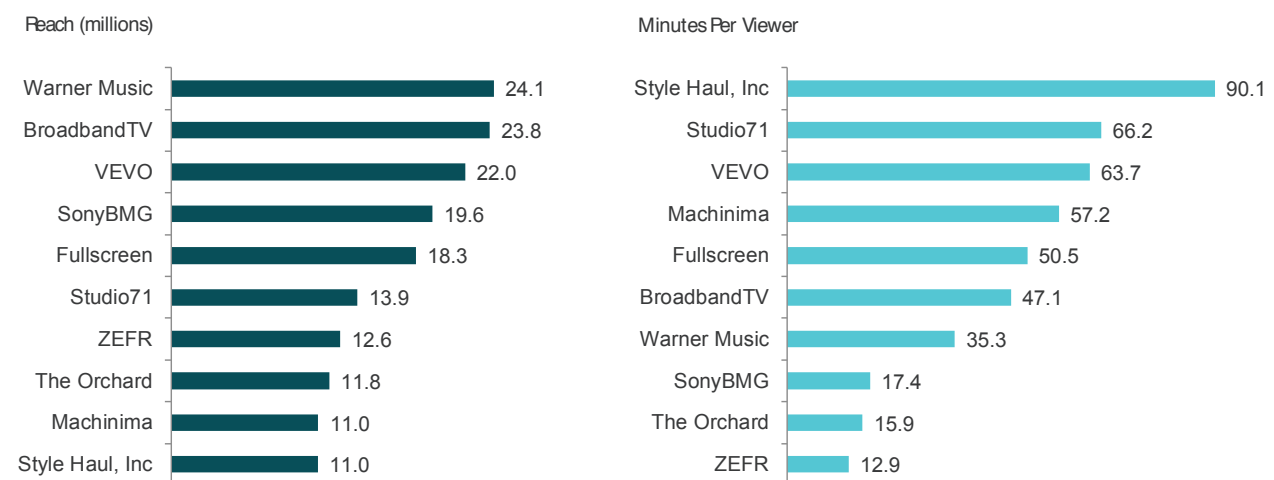
Of the ten most popular YouTube partners[1], almost all are backed by major multimedia networks. Warner Music – owned by Access Industries – had the highest reach of viewers across all of YouTube's partner network. Sony Music Entertainment (previously SonyBMG) also has a presence within its own properties, the Orchard (11.8 million viewers), and through VEVO (22 million viewers), a joint venture with Universal Music Group and Warner Music Group. Machinima, Inc. is the only property within the top ten that has a core focus on video games culture, and is a subsidiary of Warner Bros. Entertainment Inc. Broadband TV and Style Haul are both owned by the German network, RTL Television.

The properties found within the top YouTube partners span a variety of different content providers. This is mostly due to the rise of multi-channel networks (MCNs). These are networks made up of a range of media brands or independent content creators. Broadband TV, which has the second highest number of unique viewers, provides services for a broad spectrum of clients, including NBA and Sony Pictures as well as independent creators. This wide choice of channels enables MCNs to reach a high number of viewers.

VEVO is among the highest for average minutes spent per viewer, suggesting that people are watching more videos on VEVO than on Warner Music's channels, possibly because of a wider range of artists and videos being part of VEVO's network.

However, viewer numbers do not always result in high levels of viewing hours. Despite having the largest proportion of viewers in the top ten, Warner Music had the fourth lowest use per viewer; viewers spent 35 minutes on average watching Warner Music content. In contrast, Style Haul ranked the lowest number of viewers among the top ten but had the highest levels of engagement on each video, at 90 minutes per viewer. This could be because the multi-channel network supports creators who produce content that is usually longer than 10 minutes (typically focusing on fashion and lifestyle), compared to the shorter music videos hosted by groups such as Warner Music, VEVO and SonyBMG.

Figure 5.28: Top ten YouTube partners, by reach and minutes per viewer: March 2017

Reach (millions)

Warner Music	24.1
BroadbandTV	23.8
VEVO	22.0
SonyBMG	19.6
Fullscreen	18.3
Studio71	13.9
ZEFR	12.6
The Orchard	11.8
Machinima	11.0
Style Haul, Inc	11.0

Minutes Per Viewer

Style Haul, Inc	90.1
Studio71	66.2
VEVO	63.7
Machinima	57.2
Fullscreen	50.5
BroadbandTV	47.1
Warner Music	35.3
SonyBMG	17.4
The Orchard	15.9
ZEFR	12.9

Source: comScore Video Metrix Multi Platform, UK, March 2017

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[1] YouTube partners are members of the YouTube Partner Programme, which lets creators monetise their content on YouTube. Creators can earn money from advertisements served on their videos.

5.5.5 Mobile payments

In this section we examine take-up
and use of online retail sites and
mobile payment services in the UK.

A third of mobile users accessed their bank account via their mobile phone in March 2017

Thirty-three per cent of mobile
users accessed their bank account
from their mobile phone at least
once a month (across a three-
month average); a 3pp increase
since 2016. Overall, there has been
year-on-year growth in the use of
banking services via a mobile phone;
electronic payments / money
transfers increased by 3pp among
mobile internet users in 2017,
with 23% using their mobile phone
for this at least once a month.

Mobile payments using near-field
communications (NFC) or QR codes
were less popular than banking
services (at 5% and 4% respectively),
but were slightly up on 2016. There
are a range of mobile payment
services that use NFC technology
to allow users to make contactless
payments using their mobile phone.
Apple Pay (launched in July 2015
in the UK) and Android Pay (May
2016) both use NFC technology,
enabling users to make contactless

payments in shops and to pay for
public transport in London. As with
contactless card payments, the
individual banks and vendors that
support Apple Pay and Android Pay
limit the amount of money that
can be paid using these services.
As businesses continue to roll
out next-generation chip and pin
readers with NFC-enabled capability,
we can expect to see a continued
increase in mobile payments.

Figure 5.29: **Selected mobile payments and financial services activities conducted
by total mobile audience: March 2016-March 2017**
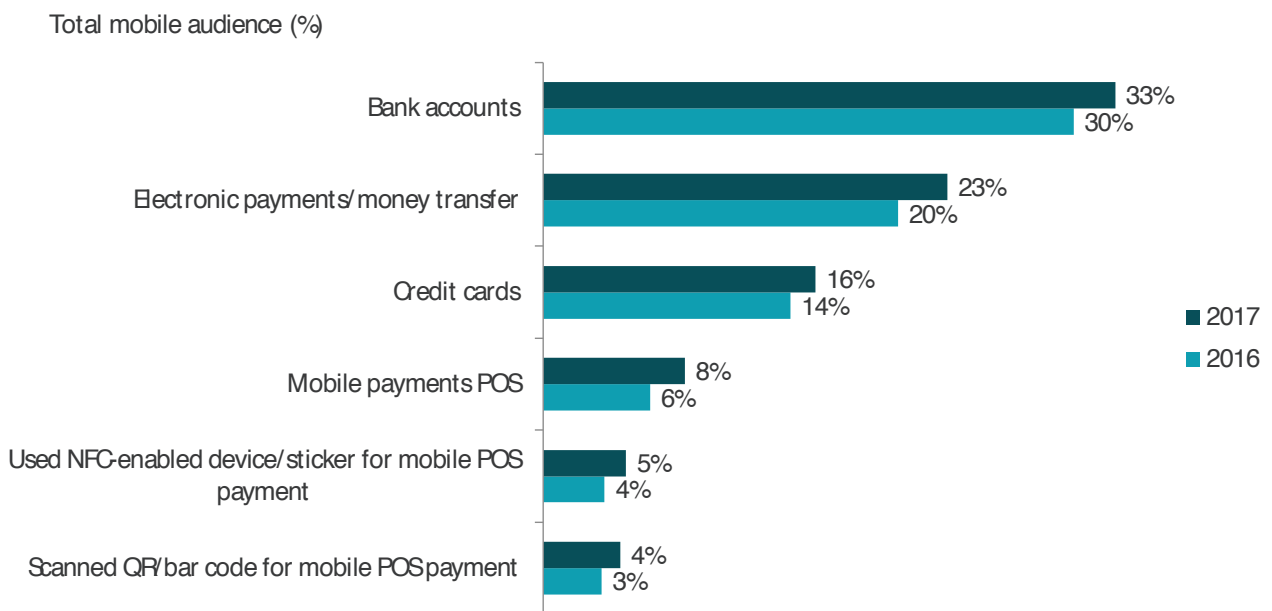
Source: comScore MobiLens Plus, UK, three-month averages ending March 2016
Base: Total mobile audience 13+

5.5.6 Online advertising

In this section we use data reported by the AA WARC Expenditure Report April 2017 and the IAB/PwC Digital Adspend 2016 (data reported by the industry to IAB/PwC).

Internet advertising expenditure exceeded £10bn in 2016

Internet advertising continues to be the largest category of ad spend in the UK,[1] accounting for 46% of total estimated UK advertising spend in 2016. Estimated TV advertising spend in 2016 was £5.3bn (including digital spend[2]), the majority of which (£5.1bn) was spot advertising.

Among the press brands, digital advertising stood at £705m in 2016, exceeding the total ad spend for radio (£592m) and cinema (£238m). Within the press brand category, regional news brands held the lowest share of digital spend at £193m, while national news brands' digital expenditure was £230m, and digital advertising expenditure on magazines was highest at £282m.

Figure 5.30: UK advertising expenditure: 2016
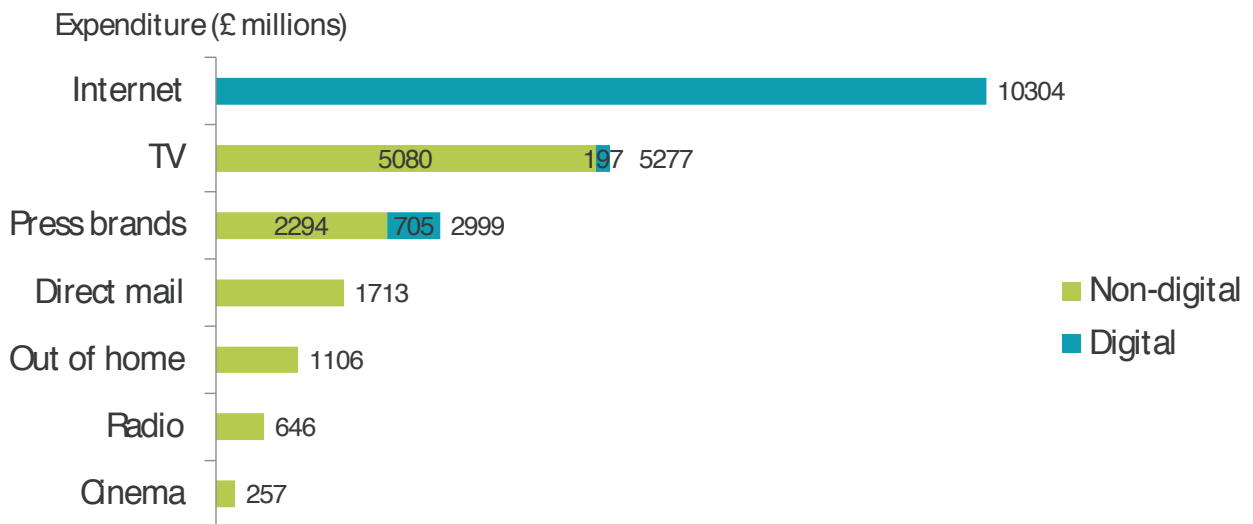
Source: AA/WARC, Expenditure Report, April 2017
Note: 'Press brands' is a consolidation of magazine brands and national and regional news brands.
Broadcaster VoD, digital revenues for news brands and magazine brands, radio station websites are also included within the internet total of £10,304m, so care should be taken to avoid double counting.
Note: The AA/WARC data is net of discounts, and includes agency commission, but excludes production costs.

[1] Internet has been the largest ad channel in the UK since 2011.

[2] Advertising spend from broadcaster video on-demand services

Paid-for search advertising accounted for under half of all digital advertising expenditure

In the following sections, we use data from the IAB/PwC Digital Adspend 2016 report. All figures are in real terms as adjusted for CPI.
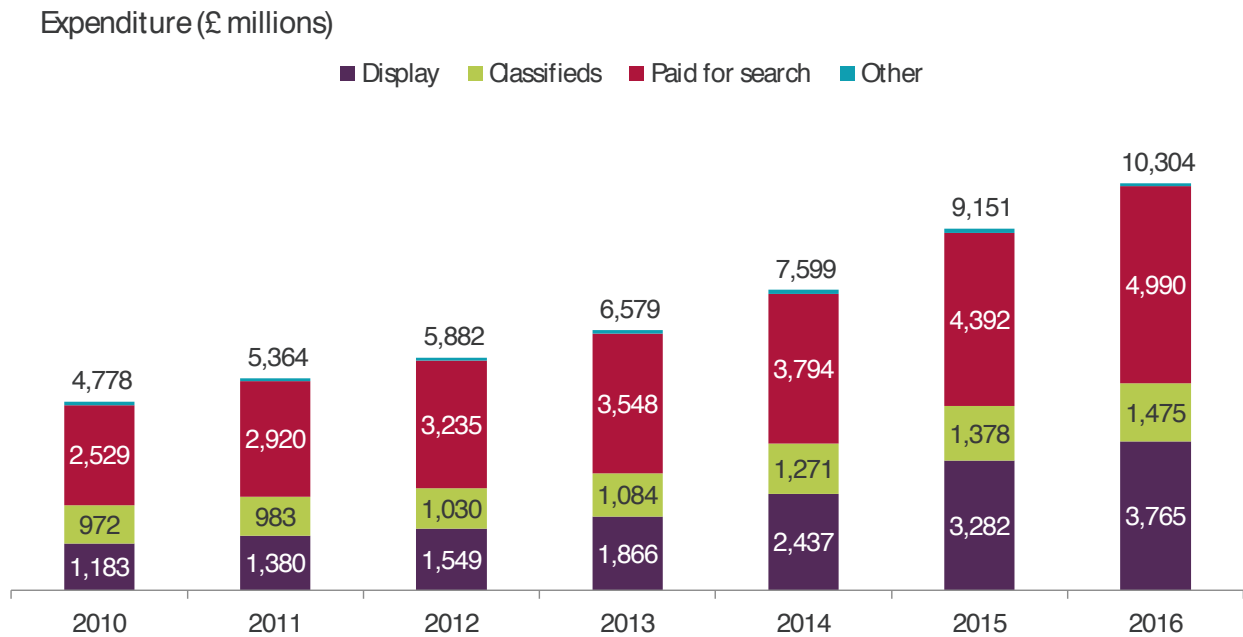
Total estimated digital advertising expenditure grew 12.6% year on year, from £9.2bn to £10.3bn in 2016. Paid-for search advertising was the largest format, and accounted for just under half of digital ad spend, at £5bn (49% of total digital ad spend)

a 13.6% year-on-year increase.

Display advertising was the fastest-growing type of digital ad spend, increasing by 14.7% year on year to £3.7bn in 2016 (a 35% share of total digital ad spend). Banner[1], content and native[2], and online video adverts, hold a similar share of display advertising. Banner adverts, at £1.42bn, accounted for 38% of display advertising spend.

Content and native advertising accounted for 31% of display advertising (£1.17bn, up 27% year on year), followed by online video, at 29% of display advertising (£1.1bn, up 55% year on year).

Figure 5.31: **Digital advertising expenditure, by type: 2010-2016**

Expenditure (£ millions)

■ Display   ■ Classifieds   ■ Paid for search   ■ Other

Year	Display	Classifieds	Paid for search	Total
2010	1,183	972	2,529	4,778
2011	1,380	983	2,920	5,364
2012	1,549	1,030	3,235	5,882
2013	1,866	1,084	3,548	6,579
2014	2,437	1,271	3,794	7,599
2015	3,282	1,378	4,392	9,151
2016	3,765	1,475	4,990	10,304

Source: IAB / PwC Digital Adspend 2016. Figures adjusted for CPI (2016 prices).

[1] Advertisement embedded into a web page

[2] Content includes websites, articles or content areas which are sponsored, or are advertisement features. Native advertising includes discovery tools with third-party links involving revenue shares.
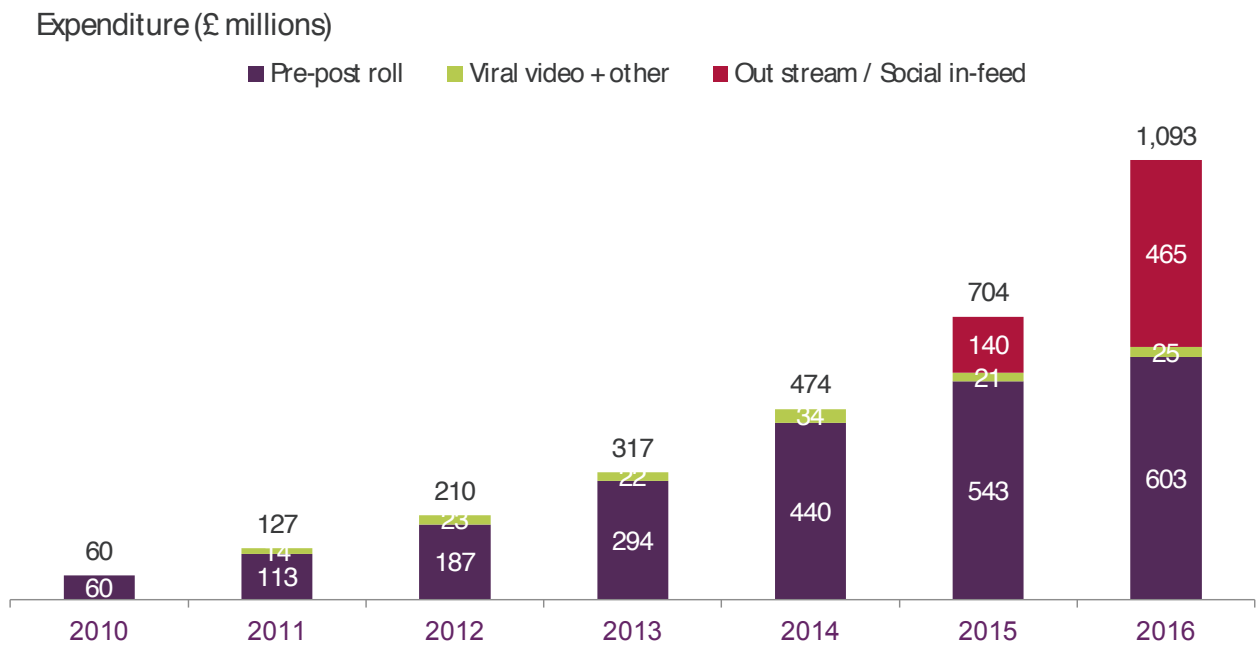
Revenue from out-stream and social in-feed advertising more than doubled in 2016

Pre-post roll advertising[1] remained the highest source of revenue within digital display video advertising, generating £603m in 2016 in real terms (up 11.1% year on year),

although out-stream / social in-feed video[2] was not far behind. Out-stream / social in-feed ad revenue increased from £140m to £465m in 2016, making up 42.5% of total

digital display video advertising revenue. Revenue generated from viral video and other advertising[3] grew from £21m to £25m.[4]

Figure 5.32: Digital advertising expenditure, by type: 2010-2016

Expenditure (£ millions)

Legend: Pre-post roll ■ Viral video + other ■ Out stream / Social in-feed

Year	Total	Out stream / Social in-feed	Viral video + other	Pre-post roll
2010	60			60
2011	127		14	113
2012	210		23	187
2013	317		22	294
2014	474		34	440
2015	704	140	21	543
2016	1,093	465	25	603

Source: IAB / PwC Digital Adspend 2016. Figures adjusted for CPI (2016 prices).
Note: 'Viral video' was originally named 'social video'. It was changed to 'viral video' in 2015 to avoid confusion with video hosted on social media sites. It was also combined with 'other' video in 2015. 'Out-stream / social in-feed' is a new category from 2015, which includes video advertising on social media sites such as Facebook and Twitter.

[1] These are the video adverts that are shown before, during and after a user plays a video on a website or app.

[2] This includes static ads that appear in-feed or in-stream. Two examples of this would be social in-feed (e.g. Facebook) and also within news sites. An out-stream ad is a video ad unit not tied to publisher video content, which runs within a standard ad placement and is designed to be viewable or playing when the user is on screen and moving around the page.

[3] This includes 'viral' video content as well as videos served in a social environment such as Facebook or Twitter.

[4] The drop in 'viral video + other' between 2014 and 2015 is because social revenues were re-categorised from this to 'outstream / in-read' video. The drop could also be due to inconsistencies between the years in terms of the number of media owners submitting revenues into that category. There is some re-classification but a change in submitters will tend to have a more noticeable effect
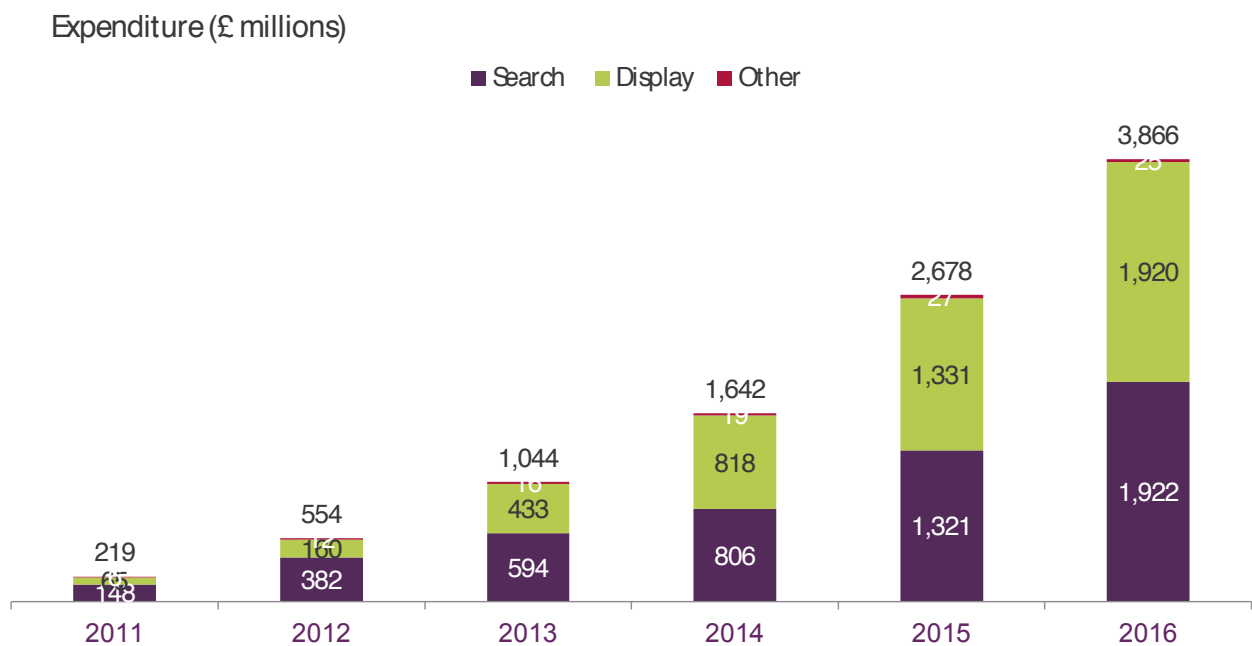
Mobile display advertising expenditure continues to grow substantially each year

Total mobile advertising expenditure grew by 44% (£1.2bn) year on year in real terms, to £3.9bn in 2016. Mobile search advertising spend

grew by 45% in 2016 to £1.9bn, while mobile display advertising spend rose 44% to £1.9bn. Total mobile advertising amounted to

38% of total internet advertising and mobile display advertising accounted for over half (51%) of all internet display advertising.

Figure 5.33: Mobile advertising expenditure: 2011-2016

Expenditure (£ millions)

■ Search ■ Display ■ Other

	2011	2012	2013	2014	2015	2016
Total	219	554	1,044	1,642	2,678	3,866
Other			16	19	27	25
Display	65	160	433	818	1,331	1,920
Search	148	382	594	806	1,321	1,922

Source: IAB / PwC Digital Adspend 2016. Figures adjusted for CPI (2016 prices).

Close to three-quarters of all online display advertising is programmatic

The strong growth in display advertising has also been driven by the advent and adoption of advertising technology.

Programmatic ad buying is the algorithmic (rather than manual or direct) trading of ads powered by data (collected by cookies or

through log-in data). Programmatic advertising accounted for 72% of all display advertising spend in 2016, more than double its 2013 share.

Programmatic advertising accounted for 72% of all display advertising spend in 2016

|				
Share of Programmatic	28%	47%	63%	72%
Display ad spend £m	£1866	£2437	£3282	£3765
	2013	2014	2015	2016
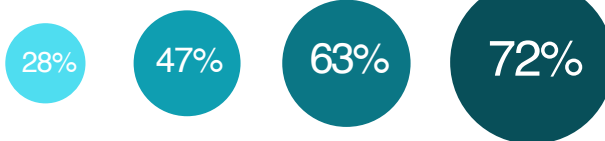
Programmatic ad buying can be executed in an open marketplace through real-time bidding (where numerous advertisers bid for inventory or audience in real time) or in 'programmatic direct', where advertisers buy guaranteed ad impressions in advance from specific publisher sites within private marketplaces. Programmatic direct is most prevalent within the mobile space, accounting for more than 60% of trading across mobile video and display advertising. Open market place real-time bidding accounts for the majority of programmatic desktop display advertising, at 32%.

Figure 5.34: **Share of programmatic advertising against display advertising expenditure**

Expenditure (£ millions)
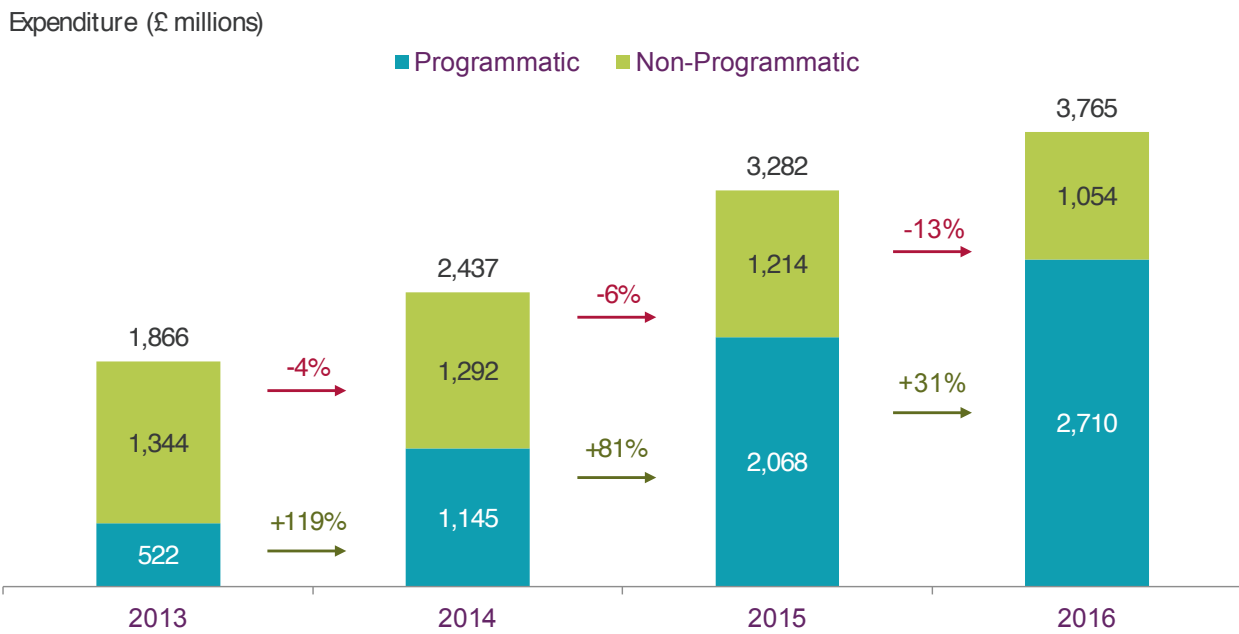
Source: IAB / PwC Digital Adspend 2016. Figures adjusted for CPI (2016 prices).

SMEs' use of the internet for marketing

Overall, 45% of the SMEs we surveyed in 2016 which had a fixed or mobile internet connection used online marketing in one form or another, rising to 69% of medium-sized organisations. More than three-quarters of those who said they did some form of online marketing used social media for marketing on at least a monthly basis. Just under a quarter (23%) advertised via Google, fewer than those who marketed or advertised on a 'vertical' service (such as an online directory or specialist website) or on the website or app of local media such as newspapers, radio stations or hyperlocal websites.

Figure 5.35: Types of online marketing done by SMEs

Proportion of respondents (%)

Social media websites / apps	77%
Advertise / market on a 'vertical' service	38%
Advertise on website / app of local media	30%
Email newsletter	27%
Your own blog or forum	23%
Advertise with Google	23%
Sell / advertise on an online market place such as eBay / Amazon Market	15%
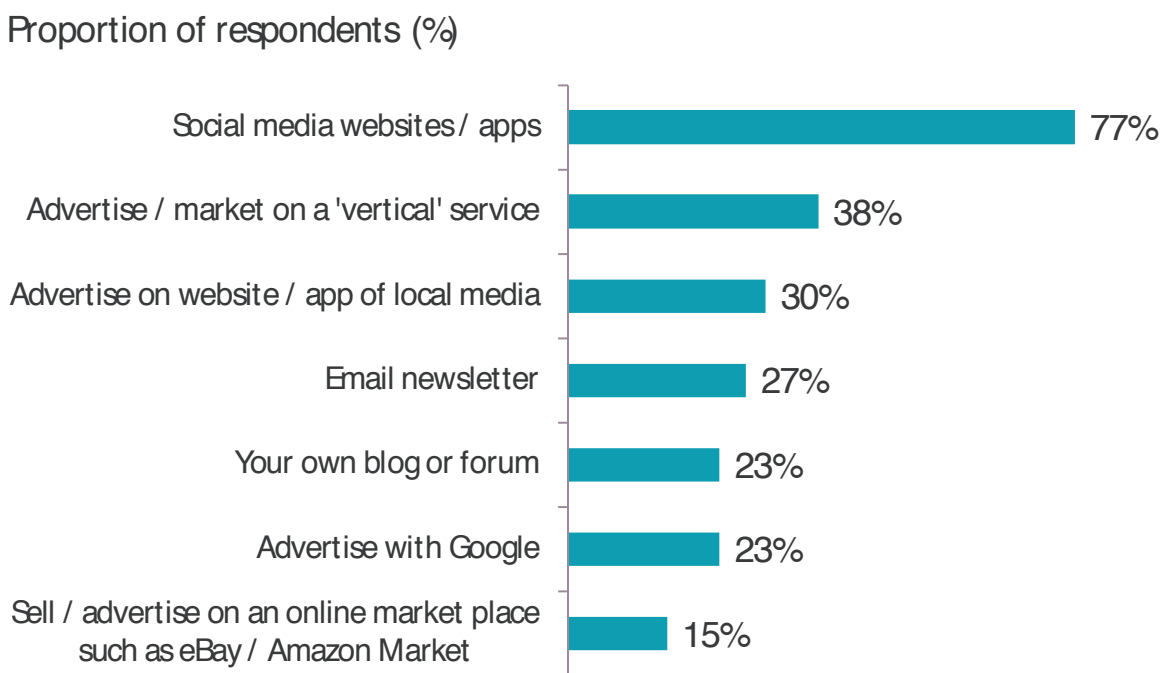
Source: Ofcom SME Tracker. Fieldwork May-July 2016
Base: online marketing users (n=764)
QA7. You said you use the internet for online marketing. Which, if any, of the following websites and tools does your organisation engage with or use on a regular basis – that is, at least once a month?

6 Post

6.1 Key market developments in post, delivery networks and online shopping

6.1.1 Key market developments in post

Total addressed letters volumes continued to decline in 2016, falling by 4% between 2015 and 2016 to 11.8 billion items.

This decline reflects not only ongoing substitution away from letters to electronic communications, but also significant declines in advertising mail volumes in the past year, reported to be as a result of business uncertainty.[1] Access mail volumes (i.e. mail from operators who pay Royal Mail for final delivery to the end customer) continued to grow as a proportion of total letter mail volumes in 2016, reaching 60% of the total (up from 57% in 2015). Letters delivered by operators other than Royal Mail amounted to 0.1% of total volumes, a total of 16 million items (down from 68 million in 2015, largely due to Whistl ending its door-to-door delivery service).

While letter volumes have continued to decline, a trend in recent years has been the increase in parcel volumes[2], driven by the increase in internet shopping. Postal operators have continued to invest in their parcel delivery networks. Firms have invested in new warehouses and distribution centres or installed new technologies to drive greater automation and allow for the more

rapid tracking of packages and greater flexibility in delivery. In addition, some postal operators, including Royal Mail and TNT, have used mergers and acquisitions (M&A) over the past year to develop their parcels delivery businesses in the UK and abroad.

We will publish further updated data on the UK postal market later in 2017 in our Annual Monitoring Update on the Postal Market. This will include letter and parcel volumes and revenues and data relating to Royal Mail efficiency and quality of service.

In section 6.1 we look at selected developments in e-commerce and some of the innovations taking place in postal, and certain non-postal, delivery networks.

In section 6.2 we discuss the letters market in further detail and note some of the M&A developments that have recently taken place in the postal sector.

We conclude this chapter with section 6.3, which examines how people in the UK use postal services.

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[1] See for example Royal Mail 2016 http://www.royalmailgroup.com/sites/default/files/Royal%20Mail%20Full%20Year%202016-17%20Results%20Presentation.pdf

[2] We do not report parcels data in this report; parcels data is reported in Ofcom's Annual Monitoring Update on the Postal Market, https://www.ofcom.org.uk/postal-services/monitoring_reports

Figure 6.1: UK postal services industry: key metrics

UK postal services industry	2011	2012	2013	2014	2015*	2016
Addressed letter volumes	14.6bn	13.5bn	12.9bn	12.7bn	12.2bn	11.8bn
Addressed letter revenues (at 2016 prices)	£4.4bn	£4.4bn	£4.3bn	£4.3bn	£4.3bn	£4.2bn
Proportion of access in total mail	49%	54%	56%	56%	57%	60%
Letter volumes delivered by operators other than Royal Mail	9m	18m	56m	159m	68m	16m
Direct mail share of total advertising spend	11.4%	11.1%	10.9%	10.1%	9.3%	8.0%

Source: Royal Mail Regulatory Financial Statements, Royal Mail Wholesale, Royal Mail Group Annual Reports, AA/WARC.
Note: Royal Mail calendar year volume figures are derived from Ofcom calculations based on financial year figures in Royal Mail's Regulatory Statements and unaudited submissions to Ofcom and are therefore not directly comparable with Royal Mail's published accounts. Royal Mail figures relate to the 'Reported Business'. *Earlier data are not comparable. Figures are adjusted for CPI (2016 prices)

6.1.2 Online shopping and delivery in the UK

Online activity continues to drive developments in e-commerce and delivery networks

UK consumers continue to rely on physical postal delivery networks to provide them with access to a range of goods and services. E-commerce continues to be seen as a driver of parcel volumes in the UK. In its 2017 results, Royal Mail forecast 4% volume growth in the parcels market over the medium term, driven by growth in e-commerce.[1] In response to the growth in parcel volumes, operators have been investing in new facilities and making greater use of automation, to enable them to offer more flexible delivery services to customers, improve tracking capabilities and reduce costs. The widespread adoption of smartphones and connectivity has also been a key enabler of the development of these delivery networks. For those operating the networks, they are allowing the co-ordination of pick-ups and deliveries, and the use of GPS and algorithms to help determine routings. By equipping their delivery staff with smartphones or other connected devices, postal operators can use a single device to record delivery of tracked items in real time, allowing senders to quickly determine when their package has been delivered. For consumers, location-aware smartphone apps connected to online payment systems make it easier to access and book delivery of goods or take-aways, or arrange a pick-up, even at short notice.

[1] See Royal Mail Plc Full Year 2016-17 Results – available from http://www.royalmailgroup.com/sites/default/files/Royal%20Mail%20Full%20Year%202016-17%20Results%20Presentation.pdf [accessed 22/6/2017]

In recent years other, non-postal delivery networks have taken advantage of the widespread availability of connected devices. Many of these networks operate more on a point-to-point basis (i.e. collecting a package from a customer and delivering it straight to the recipient[4]) and/ or may specialise in the delivery of certain things, such as food.

Our previous research, in late 2016, showed that a third of internet users in the UK had used their smartphone to order food from a restaurant or take-away.[2] While these transactions are different from purchasing goods such as books, clothes, music and other physical durable products, some of these food orders will have been delivered to customers via point-to-point delivery networks such as those of Deliveroo or Just Eat.

Although the delivery of food from restaurants requires a different type of network to a traditional postal network, in April 2017 New Zealand Post announced a trial to manage the delivery of fried chicken takeaway to customers in the city of Tauarnga[3]. As part of the trial the postal operator will use its technology platform to manage the deliveries, but the people making the deliveries will use their own transport and smartphones, rather than those of the postal operator.

Almost a quarter of internet users shop online at least once a week for goods

Thirty-eight per cent of internet users say that their online shopping for physical goods has increased in the past year.

In 2017 almost a quarter (23%) of adult internet users said they bought a physical product online at least once a week, while 62%

said that they made an online purchase about once a month or more often. Only 8% said that they never shopped online.

Figure 6.2: Frequency of purchasing products online
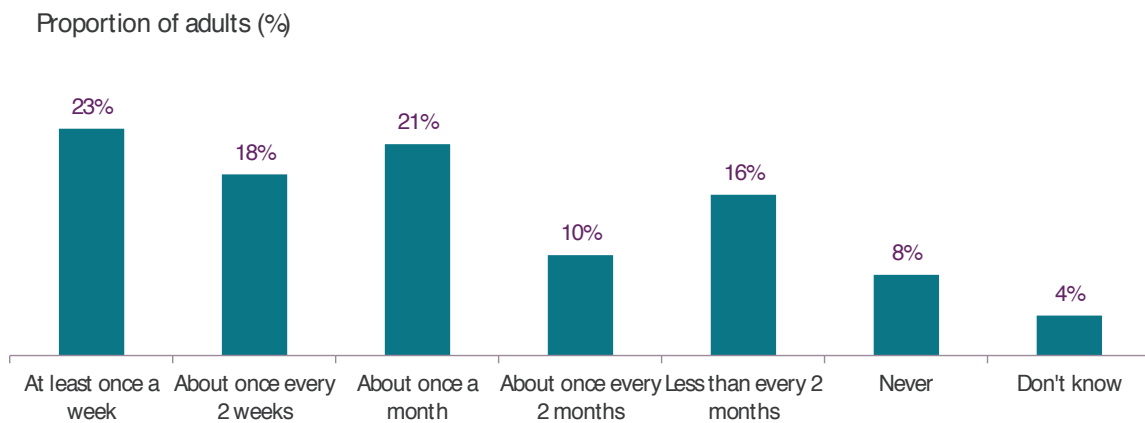
Proportion of adults (%)

Source: YouGov Reports, Innovations in Retailing 2017, fieldwork February 2017.
Base: nationally representative adults aged 16+: 2037
Q4. How often do you purchase products online (including via your mobile)? (2017)
NB: changes in the survey methodology mean that a comparison to previous years is not available.

People are most likely to buy books, DVDs, CDs and video games online

Half of our respondents said that they generally bought entertainment goods such as books, DVDs, CDs and video games online, while a further quarter said that they were equally likely to purchase these physical goods online as in a store. These types of products are typically likely to weigh less than 2kg.

Only 12% said they purchased furniture online, perhaps reflecting most people's desire to see the product before deciding to buy it. Whether they are bought online or in a store, large and
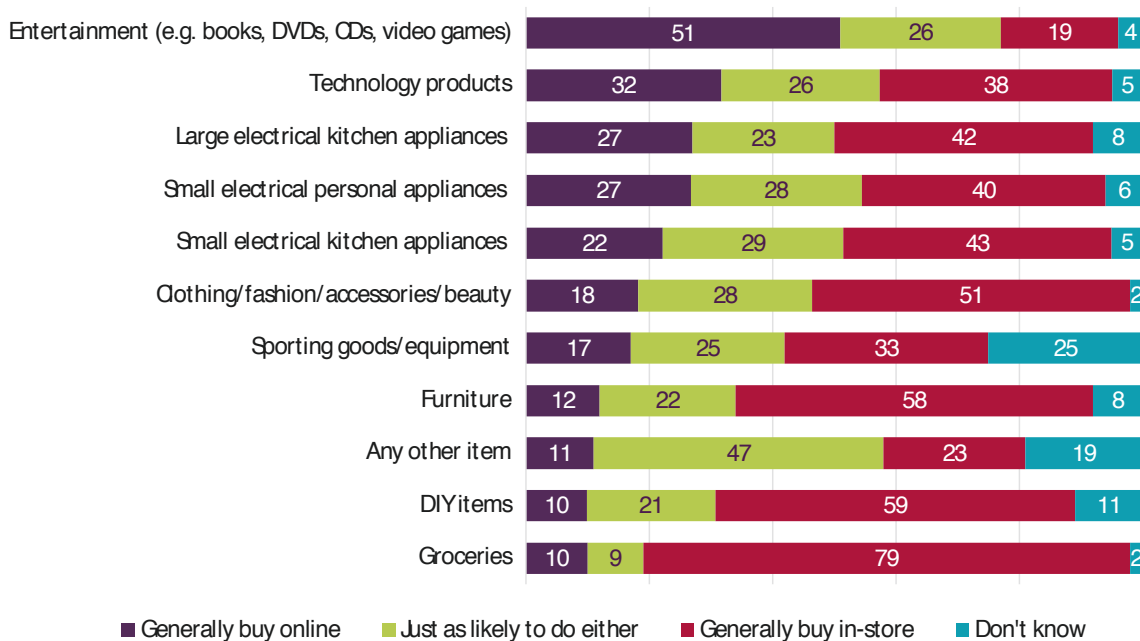
heavy products such as furniture and kitchen appliances are often delivered to the customer's home rather than transported by customers themselves. These deliveries may use parcel or freight carriers which deliver on behalf of multiple retailers[1] or may use the retailers' own delivery networks.[2]

Ten per cent of respondents said they generally bought their groceries online, compared to 79% who said they generally purchased them in store. In the UK, several supermarkets offer a home delivery

service, while food retailer Ocado is delivery-only and does not have a retail network. Amazon also offers grocery delivery via its Amazon Fresh service, using its own delivery network to selected locations in the UK. The time-critical nature of groceries, and the need to keep food refrigerated or frozen, places specific requirements on the delivery network used, meaning that the delivery networks for these may differ from networks used to deliver non-perishable, less time-critical items.

Figure 6.3: Likelihood of online vs. in-store purchase

Proportion of adults (%)

	Generally buy online	Just as likely to do either	Generally buy in-store	Don't know
Entertainment (e.g. books, DVDs, CDs, video games)	51	26	19	4
Technology products	32	26	38	5
Large electrical kitchen appliances	27	23	42	8
Small electrical personal appliances	27	28	40	6
Small electrical kitchen appliances	22	29	43	5
Clothing/fashion/accessories/beauty	18	28	51	2
Sporting goods/equipment	17	25	33	25
Furniture	12	22	58	8
Any other item	11	47	23	19
DIY items	10	21	59	11
Groceries	10	9	79	2

Source: YouGov Reports, Innovations in Retailing 2017, fieldwork February 2017.
Base: nationally representative adults aged 16+: 2037
Q3. Which of the following do you generally buy online (including via your mobile), and which do you generally buy in-store?

[1] Ofcom generally considers deliveries of items above 31.5kg to be 'freight' rather than 'parcels' as they require more than one operative to deliver in the absence of specialist equipment.

[2] We note that retailers delivering their own items are not postal operators.

Drones and autonomous vehicles are being trialled by some operators in the UK

Several companies are developing or trialling new technologies for parcel delivery in the UK and abroad. While many of these are currently in the pilot or prototype stage, they indicate the way in which delivery networks may develop over the coming years to create more agile, faster and cheaper delivery services. By adopting these new automated and autonomous technologies, operators of delivery networks hope to reduce the cost of delivery (by reducing labour costs) while also allowing for faster response times (for example delivery of products from a local area within 30 minutes).

As trials and pilots are launched around the world, policy makers are considering how these new technologies may be promoted and regulated. For example, from December 2016 to March 2017 the UK Government held a consultation on the future regulation of autonomous vehicles (drones)[1] and noted how drones may play a part in delivery to remote areas[2]. In the US, certain states are currently considering how to regulate autonomous delivery vehicles which share pavements with people.

Amazon launched its pilot Amazon Prime drone delivery service in Cambridgeshire in December 2016.

Launching with two clients, the service can deliver items weighing up to 2.6kg.

Hermes announced a trial of autonomous delivery vehicles in Southwark in April 2017. Using Starship Technologies' pavement-based delivery robots, which can carry up to 10kg of parcels within two miles of the control base, Hermes customers will be able to use the robots for parcel pick-up within a 30-minute window. Elsewhere in London, Starship Technologies started trialling its delivery robots on the Greenwich peninsula in 2016, working with Just Eat to deliver takeaway food. Tesco has also carried out a one-off trial in 2017 using Starship's robots.

What are delivery drones and delivery robots?

Delivery drones (sometimes called 'unmanned arial vehicles' – UAVs) are piloted remotely or navigate autonomously using GPS. Current delivery drones can carry payloads of up to several kilos. While some delivery drones (such as those used in Africa to deliver medical supplies) are shaped like small planes, others, especially those used for deliveries in urban areas, have multiple rotors to allow them to take off and land vertically, to deliver goods as close as possible to the end customer.
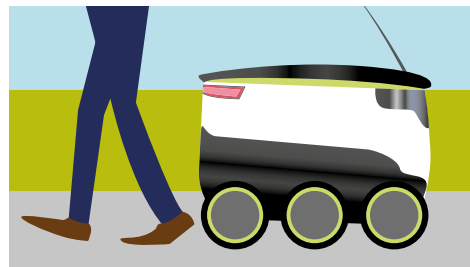
Delivery robots collect or deliver small items over distances of up to a few miles. By travelling on pavements, they avoid traffic jams faced by on-road vehicles, and also avoid the need to send a person out to make a delivery or collection. They use GPS and sensors to navigate and avoid obstacles for themselves, though they may also be remotely monitored by an operator via the robot's data link.

[1] See Unlocking the UK's High tech Economy: Consultation on the Safe use of Drones in the UK https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/579562/consultation-on-the-safe-use-of-drones.pdf
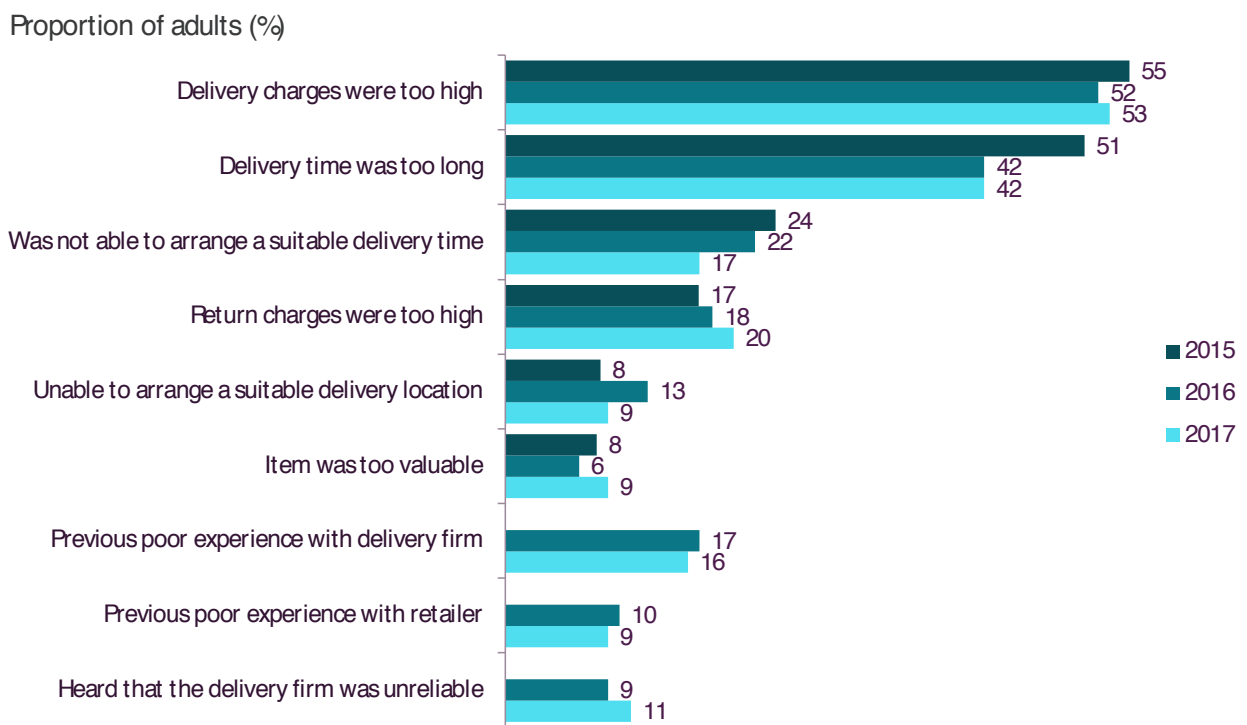[2] Ibid, paragraph 2.3

Price is still consumers' main concern

When asked by YouGov in February 2017, 43% of internet users said that they had at some point not ordered a product because of concerns about its delivery.

In line with previous years, for the majority (53%) of these users, the reason was concern about the cost of delivery. The second most frequently cited concern, as in 2016, was that delivery would not happen soon enough (42%).

Fewer people cited 'inability to arrange a suitable delivery time' (22% in 2016 vs. 17% in 2017) or 'inability to arrange a suitable delivery location' (13% in 2016 vs. 9% in 2017).

Figure 6.4: Reasons for not completing an order

Proportion of adults (%)

	2015	2016	2017
Delivery charges were too high	55	52	53
Delivery time was too long	51	42	42
Was not able to arrange a suitable delivery time	24	22	17
Return charges were too high	17	18	20
Unable to arrange a suitable delivery location	8	13	9
Item was too valuable	8	6	9
Previous poor experience with delivery firm		17	16
Previous poor experience with retailer		10	9
Heard that the delivery firm was unreliable		9	11

Note: Three options were asked in 2016 for the first time and have no 2015 comparison.
Source: YouGov Reports, Innovations in Retailing surveys, fieldwork February 2017, March 2016, March 2015
Base: All adults aged 16+ who have not ordered a product due to delivery concerns, 2017: 907, 2016: 842, 2015: 937
Q20: Why did your concerns regarding delivery stop you from ordering the product? Please choose all that apply.
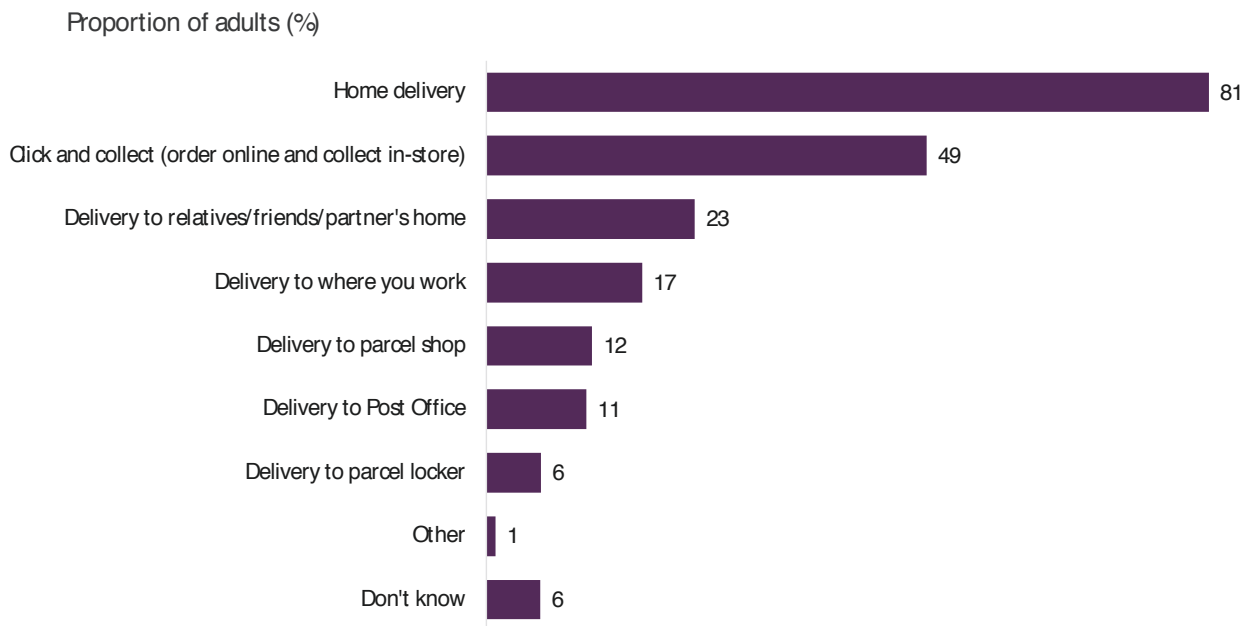
About half of consumers have used a click-and-collect service, but most people prefer home delivery

More than eight in ten (81%) people have had online purchases delivered to their home, while around half (49%) have used a click-and-collect service to pick up their order in a store. Twelve per cent said they had had a purchase delivered to a parcel shop, 11% to a post office, and 6% said they had had a delivery made to a parcel locker.

Figure 6.5: **Use of delivery options for online purchases**

Proportion of adults (%)

Delivery option	%
Home delivery	81
Click and collect (order online and collect in-store)	49
Delivery to relatives/friends/partner's home	23
Delivery to where you work	17
Delivery to parcel shop	12
Delivery to Post Office	11
Delivery to parcel locker	6
Other	1
Don't know	6

Source: YouGov Reports, Innovations in Retailing 2017, fieldwork February 2017
Q21. Thinking again about shopping online (including via your mobile) and the delivery of your purchases, which, if any, of the following have you used?
Base: Adults 16+, n=2037

When asked about their preferred delivery location, 70% chose home delivery, compared to 13% for click-and-collect, the second most popular option. Preference for home delivery was lowest among the 25-39 age group (60%) and highest among the over-54s (77%). Among those who preferred home delivery, 76% said it was most convenient for them, while 46% said that it was perfect for large/heavy deliveries.

Among those who preferred to use click-and-collect, 70% said their main reason was so that they could pick up the item at a time convenient to them, while 51% said it was to avoid delivery charges.

Given the convenience of home delivery, some postal operators have launched services to reduce the incidence of missed home deliveries. For example, Royal Mail's Delivery to Neighbour scheme[1] allows recipients

to nominate a neighbour to receive a package when the addressee is not at home, saving them the need to rearrange delivery or visit the delivery office. Alternatively, people can request that their delivery is made to a designated Safeplace.[2]

Figure 6.6: Preferred method of delivery when shopping online
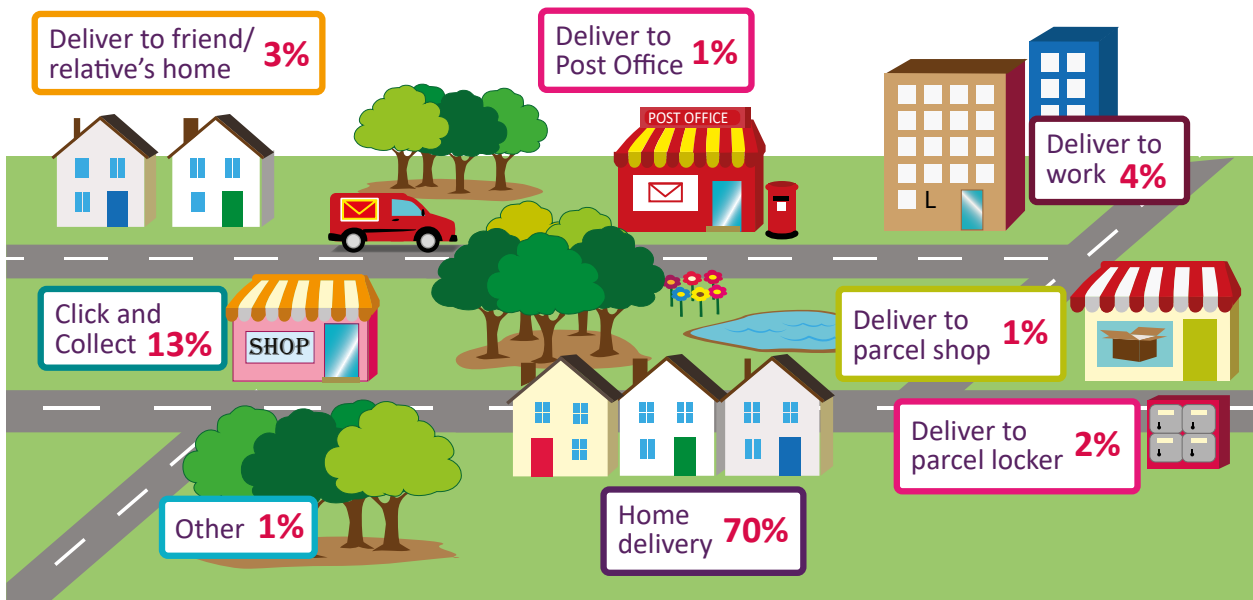
Source: YouGov Reports, Innovations in Retailing 2017, fieldwork February 2017.
Base: nationally representative adults aged 16+, 2017: 2037. 'Don't know' (6%) responses not shown
q_16. Now thinking about shopping online (including via your mobile) and the delivery of your purchases, in general which of the following do you prefer?

[1] See http://www.royalmail.com/personal/receiving-mail/delivery-to-neighbour

[2] See http://www.royalmail.com/corporate/sending-receiving/uk/safeplace

People are more aware of faster delivery options than they were in 2016 - but only a small minority have used Sunday delivery, same-day or within-the-hour services

Between 2016 and 2017, awareness of same-day delivery rose from 69% to 76%, while awareness of within-hour delivery rose from 38% to 43%. Awareness of next-day delivery remained static, at nine in ten people, and awareness of Sunday delivery increased from 58% to 65%. This increased awareness of these options may explain the decline in the numbers of people who cited 'inability to arrange a delivery time' as a reason for not making an order.

More than half (55%) of adults have used next day delivery, 14% have used same-day delivery, and 4% have used within-the-hour delivery.

Consumer expectations of speed of delivery have remained stable. As in 2016, half (51%) of people responded 'between one and three days' when asked how long they would expect to wait for delivery of an online purchase that was not a large piece of furniture or an appliance.

While next-day delivery is available across the UK (except for some remote rural areas), same-day and within-the-hour delivery is generally available only in selected parts of the country close to major cities. Those retailers that offer same-day and within-the-hour delivery may only offer a select product range[1] eligible for faster delivery options, given that warehouses may need to be closer to the end-customer. For example, the Amazon Prime Now two-hour delivery service is available in nine cities in the UK, with a one-hour service available to certain postcodes within these areas. In order to support its delivery services, Amazon is building four new fulfilment centres around the UK, to serve a planned 15 centres by the end of 2017.[2] In June 2017, Tesco launched a one-hour delivery service of its own, Tesco Now, which offers a selected range of products delivered via courier to selected parts of central and inner London.[3]

This follows on from the summer 2016 launch of the Sainsbury's Chop Chop app which allows users in some parts of central and south London to have up to 25 grocery items delivered to them within the hour by bicycle.[4]

The relatively limited use of same-day and within-the-hour delivery may also reflect consumers' unwillingness to pay a premium for delivery. When asked, 16% of adults said that that they would be prepared to pay for faster delivery. Those aged between 16-24 were more likely to say they would be prepared to pay extra (30%) while over-54s were least likely to say this (10%). Amazon Prime Now offers free two-hour delivery for Amazon Prime subscribers, but customers in some postcodes can choose to pay £6.99 for within-the-hour delivery.

[1] Amazon Prime Now offers a selection of around 20000 products from the Amazon product range in the UK https://primenow. amazon.co.uk/onboard?sourceUrl=%2Flearn-more%2Fref%3Dpn_dl_1_prime-now-learn-more
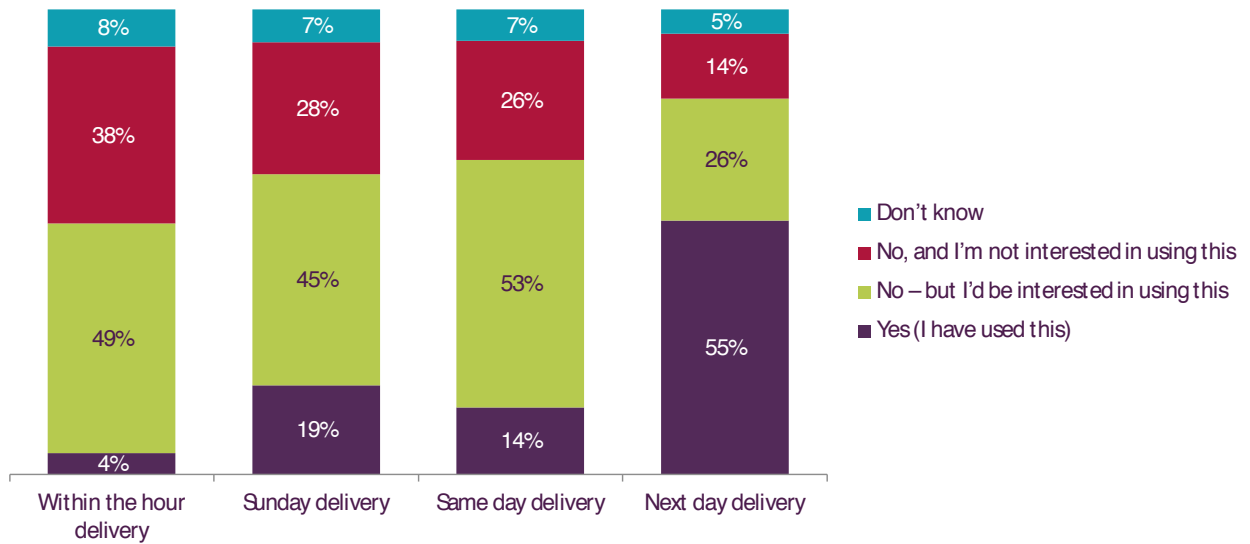
[2] http://uk.reuters.com/article/brief-amazon-to-create-1200-uk-jobs-with-idUKL8N1HZ40M

[3] See http://postandparcel.info/80111/news/tesco-reportedly-testing-one-hour-delivery-app/

[4] See: http://chopchopapp.co.uk/

Figure 6.7: Use of faster or Sunday delivery options

Proportion of adults (%)

Source: YouGov Reports, Innovations in Retailing 2017, fieldwork February 2017.
Base: nationally representative adults aged 16+, 2017 n=2037.
Q24: Have you ever used, or would you be interested in using, same-day delivery, within-the-hour delivery, Sunday delivery, and/or next-day delivery?

6.2 The postal industry

6.2.1 Introduction

This section explores some of the developments and trends in the UK postal sector.

It includes information on volumes, revenues, access and end-to-end competition in the letters market, and letter and parcel prices for Royal Mail's products. It also gives a brief overview of the reasons why letter mail is used and how this is changing over time.

6.2.2 Industry developments

Operators with a presence in the UK are using M&A to build scale and diversify their businesses

While postal operators are deploying new technology to drive efficiencies and promote organic growth, companies in the sector are also using M&A to develop their businesses. FedEx's acquisition of TNT in 2016 for €4.4bn (£3.4bn) was one of the largest and highest profile deals in the sector.

In December 2016 DHL completed its £243m acquisition of UK Mail.

This deal gives DHL's UK parcels business greater scale and access to UK Mail's new facilities, including its Coventry hub, which opened in 2015.

Royal Mail Group has used acquisitions to build its presence in international parcels markets. In April 2017 its international parcels and logistics division, GLS, acquired regional US overnight

parcels operator Postal Express for £10.6m, increasing the group's exposure to the US market. This built on its October 2016 purchase of Golden State Overnight Delivery, another US regional overnight parcels operator. These are the most recent of a number of acquisitions Royal Mail has made in the past two years to support its delivery and growth ambitions.

6.2.3 Addressed letter volumes

Total addressed letters volumes fell by 4% between 2015 and 2016, but access letter volumes remained stable

Between 2015 and 2016 total addressed letter volumes declined by 4% to 11.8 billion items. This decline was driven by a 9% decline in Royal Mail's end-to-end letter volume, to 4.7 billion items, which accounted for 40% of total letter volumes in 2016.

In contrast, the total number of addressed letter items passing through access operators[1] for delivery by Royal Mail was stable year on year, at 7.1 billion items, accounting for 60% of letter volumes in 2016, compared to 57% in 2015, continuing the trend

towards access mail. The overall decline in letter volumes reflects both continued digital substitution (e.g. paperless billing and online banking), and macroeconomic conditions, which are likely to affect marketing and other discretionary mail volumes sent by businesses.

[1] Access competition is where the collection and sortation is handled by an alternative operator which then transports it to Royal Mail's inward mail centres. From there, Royal Mail delivers the mail to the intended recipient. Royal Mail is subject to a regulatory condition requiring it to offer access to other operators for letters and large letters at its inward mail centres. This enables other operators to offer letter postal services to business customers without the need to establish a national delivery network.

The number of letters collected and delivered by competitor operators which do not use Royal Mail's network (other operator end-to-end) fell to 16 million items in 2016, accounting for 0.1% of total letter volumes. The decline reflects Whistl stopping its end-to-end letters delivery service in mid-2015.

These operators are predominantly small operators serving defined geographic areas, some of whom combine their letters delivery business with other activities. The majority of the operators from whom we collect data reported end-to-end volumes of less than half a million items in 2016.

These geographically-focused businesses compete with Royal Mail on the price for letters delivery within the local area. They may also offer other value-added services, such as mail collection from business premises, as standard for their customers[1], while Royal Mail charges for this service if a firm spends less than £15,000 annually[2].

Figure 6.8: Addressed letter volumes: 2011 to 2016
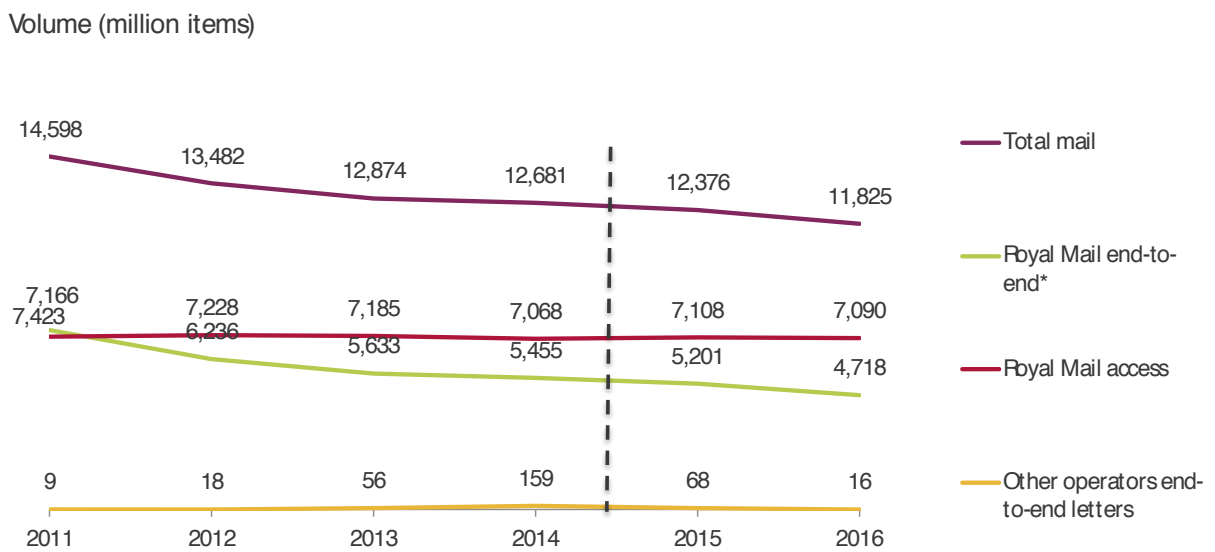
Volume (million items)

Source: Royal Mail Regulatory Financial Statements, operator returns to Ofcom, Ofcom estimates. NB: From 2015 we have changed the way we categorise certain letters products. Earlier data are not comparable.

Royal Mail calendar year volume figures are derived from Ofcom calculations based on financial year figures in Royal Mail's Regulatory Statements and unaudited submissions to Ofcom and are therefore not directly comparable with Royal Mail's published accounts.

Royal Mail figures relate to the 'Reported Business'. *Royal Mail end-to-end is an Ofcom calculation and refers to Royal Mail total letters volumes excepting access. Royal Mail access volumes are as per its Regulatory Financial Statements and include a small amount of parcels. The effect of this is that Royal Mail's access volumes are slightly overstated and its end-to-end volumes are slightly understated.

[1] These smaller operators may sometimes collect all outgoing letters from a business and use their own network to deliver local letters, while posting the business' out of area via Royal Mail's end to end network. Some of the larger operators with end to end volumes are also Royal Mail access customers.

[2] See http://www.royalmail.com/business/services/sending/efficiency/collection-services

6.2.4 Addressed letter revenues

## Addressed letter revenues fell by 3% in real terms between 2015 and 2016

Addressed letter revenues declined by 3% in real terms to £4.2bn in 2016. Overall, Royal Mail continues to account for the vast majority of overall letter revenues (96%). Within this, Royal Mail end-to-end revenues fell by 4% to £2.5bn, while its revenues from access mail (approximately £1.5bn) were stable year on year, falling just 0.2% in real terms.

Access operators generated revenue of £160m in 2016, a decrease of 8% in real terms since 2015, reflecting competition between operators in the letters market. In response, some access operators appear to be shifting their focus towards large letters and parcels products. Other end-to-end operators generated £8m in addressed letter revenues in the same year, a decline of £4m year on year (again reflecting Whistl ending its end-to-end delivery service).

Figure 6.9: **Addressed letter revenues: 2011 to 2016**
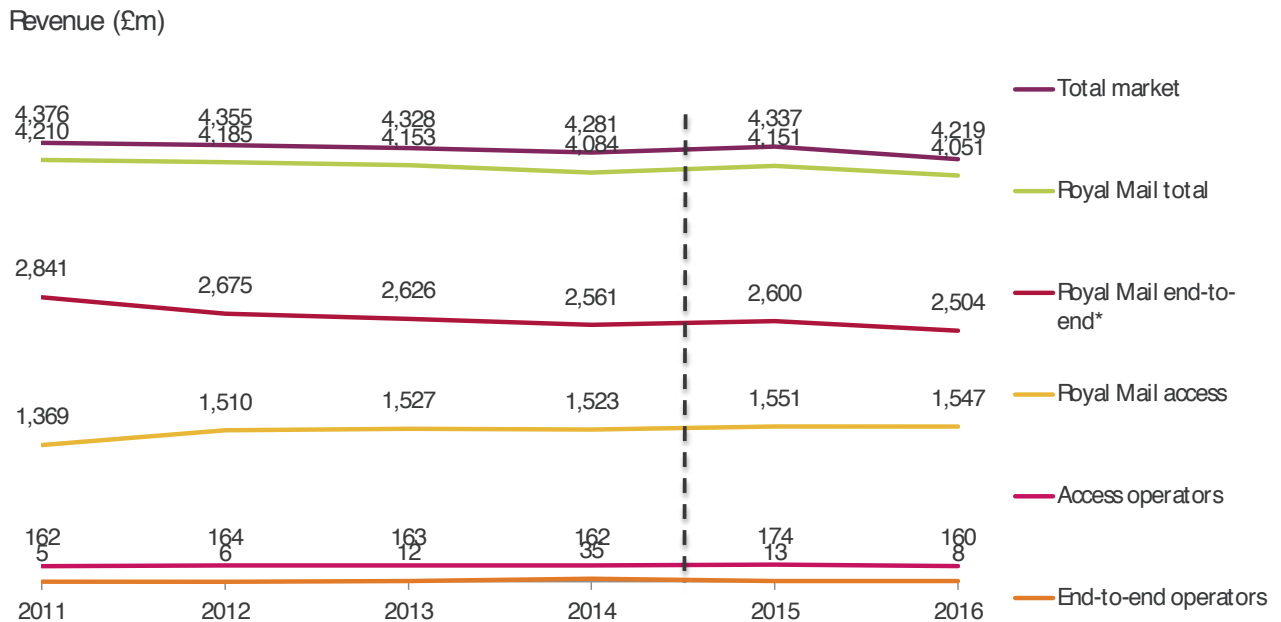
Source: Royal Mail Regulatory Financial Statements, operator returns to Ofcom, Ofcom estimates.
NB: From 2015 we have changed the way we categorise certain letters products. Earlier data are not comparable.
Royal Mail calendar year revenue figures are derived from Ofcom calculations based on financial year figures in Royal Mail's Regulatory Statements and unaudited submissions to Ofcom and are therefore not directly comparable with Royal Mail's published accounts. Royal Mail figures relate to the "Reported Business". *Royal Mail end-to-end is an Ofcom calculation and refers to Royal Mail total letters revenues excepting access. Royal Mail access revenues are as per its Regulatory Financial Statements and include a small amount of parcels. The effect of this is that Royal Mail's access revenues are slightly overstated and its end-to-end revenues are slightly understated. Earlier data are not comparable. Figures are adjusted for CPI (2016 prices).

## 6.2.5 Letter and parcel single-piece prices

The cost of sending a letter has been flat in real terms over the past year

Since March 2017 a domestic First Class letter has cost 65p to send, its Second Class equivalent 56p. Large letters weighing up to 100g cost 98p for First Class and 76p for Second Class, following nominal price increases of 1-2 pence for these products.

In real terms, however, between 2016 and 2017 the price of sending a letter was either flat year on year, or down by 1%, as headline price increases were below the rate of inflation.

This real-terms price stability has followed a steady real-terms increase in the cost of sending a letter between 2008 and 2012: in 2017 it is 47% (first class) and 69% (second class) more expensive to send a letter than it was in 2008.

Figure 6.10: **First and Second Class single-piece stamp prices, adjusted for inflation: 2007 to 2017**
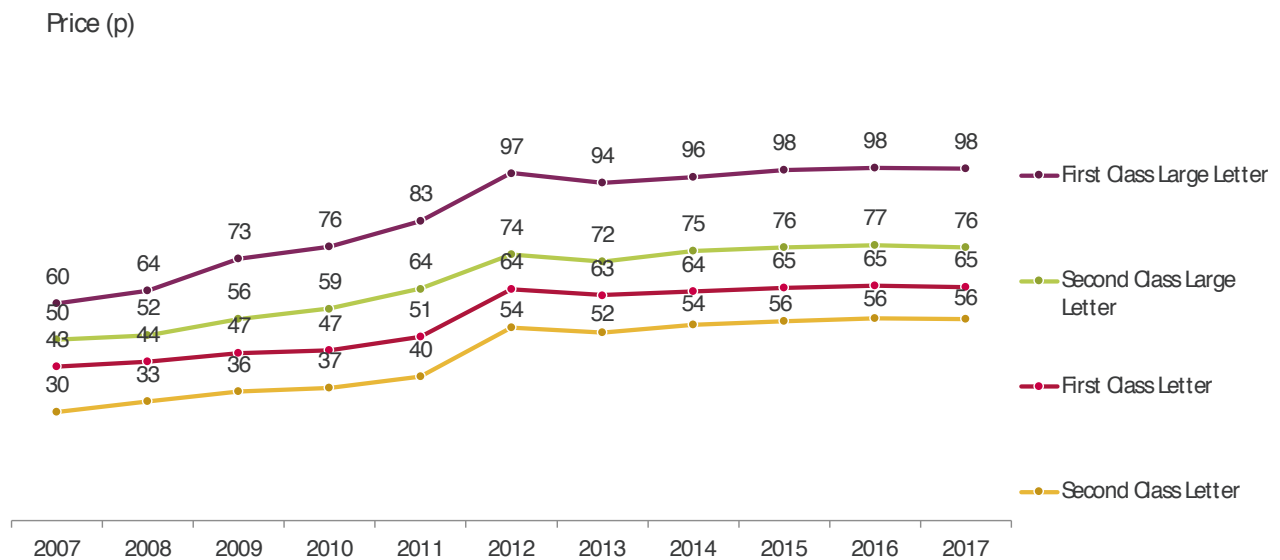
Price (p)

Source: Royal Mail. Figures are adjusted for CPI and reflect prices at March 2017 levels. Prices refer to Royal Mail First and Second Class Standard and Large Letter list prices for letters up to 100g.
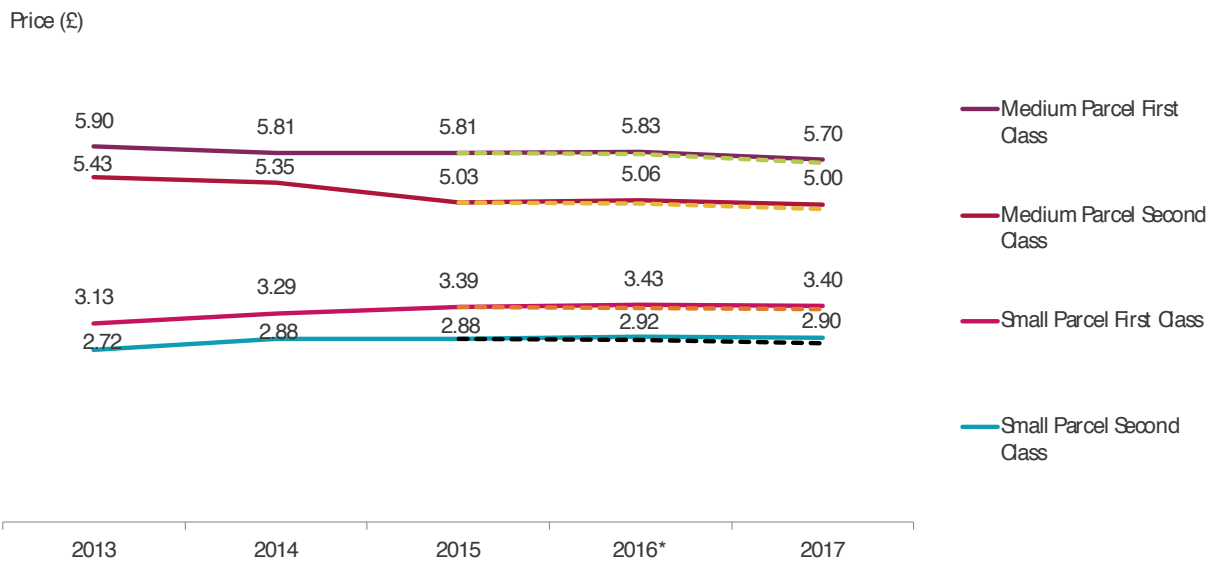
The price of sending a parcel fell in real terms between 2016 and 2017

The price of sending a 1kg small or medium parcel fell by approximately 1-2%, (depending on the size of the parcel and where it was bought[1]) between 2016 and 2017, following below-inflation nominal price rises or,

in the case of a 1kg medium parcel bought at a Post Office or online, no nominal year-on-year price increase, with headline prices remaining at £5.70 and £5.65 respectively.

Pricing trends for parcels reflects the level of competition in the parcels sector; postal users can choose from a range of operators for the delivery of parcels in the UK.

Figure 6.11: Royal Mail First and Second Class small and medium parcel prices, adjusted for inflation: 2013 to 2017

Price (£)

	2013	2014	2015	2016*	2017
Medium Parcel First Class	5.90	5.81	5.81	5.83	5.70
Medium Parcel Second Class	5.43	5.35	5.03	5.06	5.00
Small Parcel First Class	3.13	3.29	3.39	3.43	3.40
Small Parcel Second Class	2.72	2.88	2.88	2.92	2.90

Source: Royal Mail. Figures are adjusted for CPI and reflect prices at March 2017 levels. Prices refer to Small Parcels (up to 45cm x 35cm x16cm) weighing up to 1kg and Medium Parcels (up to 61cmx46cmx46cm) weighing up to 1kg.
*Note: In 2016, Royal Mail introduced a different price for parcel postage bought online rather than in-store. Dashed line shows online prices.

[1] Real-terms YoY price changes varies from -2.2% for 1kg First Class medium parcels (both bought at a post office and online) to -0.5% for a 1kg Second Class small parcel bought at a post office. NB: prices adjusted for March 2017 levels.

6.2.6 Uses of mail in industry

Almost three-quarters of letter revenue comes from business and marketing mail, and less than a tenth from personal letters

The proportion of letter revenue by type continues to be stable. Business mail, which is primarily made up of transactional mail such as bills or statements, accounts for nearly half (48%) of all letter revenue.

Marketing mail, which includes addressed advertising, accounts for 25% of all letter revenue.

Social mail, which is made up of letters sent between consumers,

makes up just under one tenth (9%) of revenue. As social mail is generally sent with stamps, which cost more per item than bulk mail, it would make up a smaller proportion of total mail by volume.

Figure 6.12: Letter revenue, by type of mail: 2013-14 to 2016-17

Proportion of letters revenue generated by each type (%)
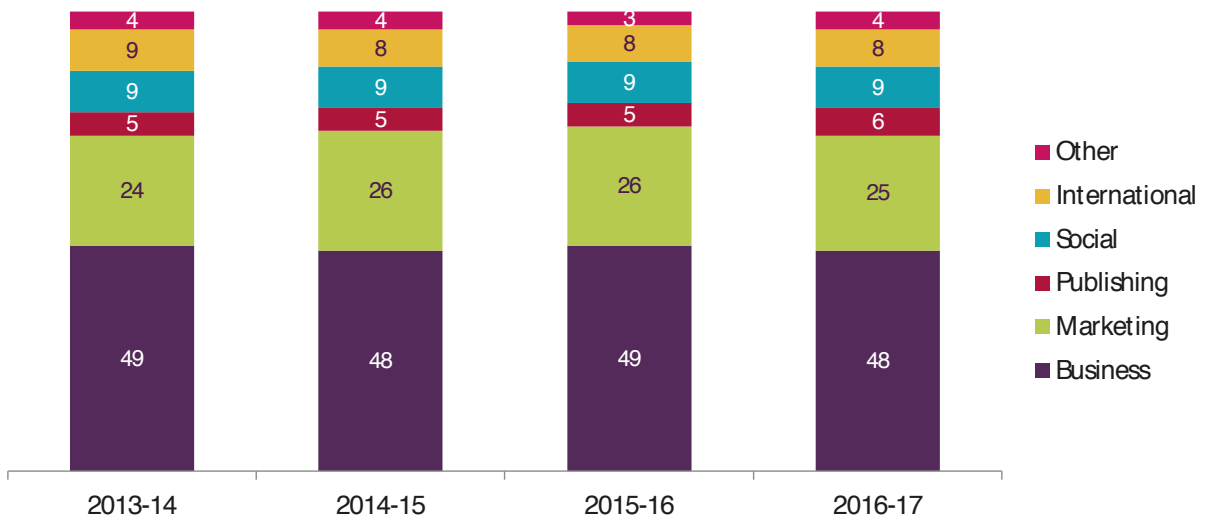
Source: Royal Mail plc, full year 2015-16 results, Royal Mail plc, full year 2014-15 results, and Royal Mail plc, full year 2013-14 results.
Note: relates to Royal Mail revenue and not the total market, so accounts for c.95% of total revenue

Nine in ten businesses have not changed their mail practices in the past year
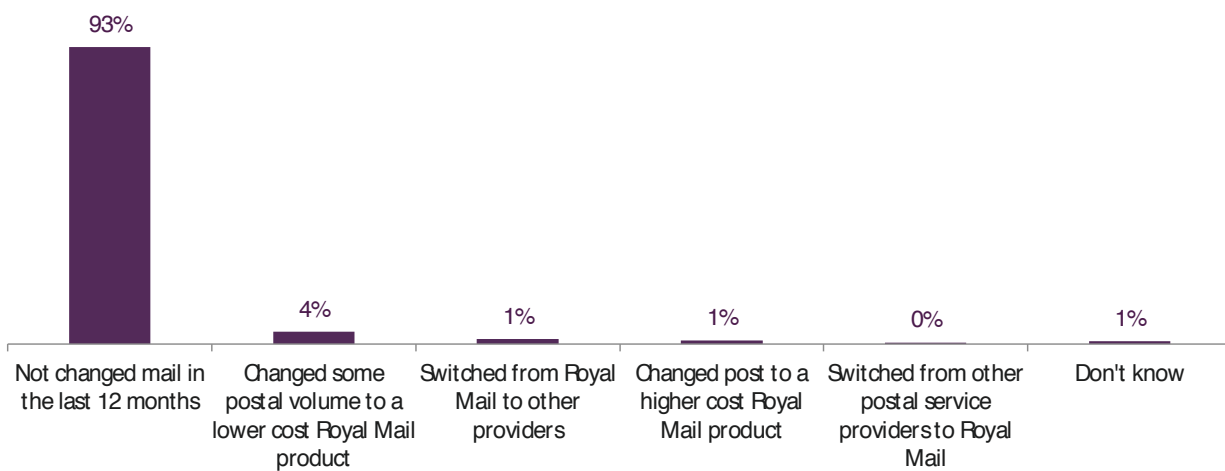
As part of Ofcom's Business Postal Tracker survey, small and medium businesses were asked whether their mailing habits had changed in the past 12 months.

Nine in ten businesses (93%) who used Royal Mail services said they had made no changes to their mail practices, while 4% said that they had moved from higher-cost to

lower-cost Royal Mail products for at least some of their post volumes. Only 1% of respondents said they had switched away from Royal Mail to another service provider.

Figure 6.13: **Businesses' changes in mail practices over the past year**

Proportion of respondents (%)

Not changed mail in the last 12 months	Changed some postal volume to a lower cost Royal Mail product	Switched from Royal Mail to other providers	Changed post to a higher cost Royal Mail product	Switched from other postal service providers to Royal Mail	Don't know
93%	4%	1%	1%	0%	1%

Source: Ofcom SME Postal Tracker 2016
Base: All respondents using Royal Mail (n=1951)
QV7a: In the last 12 months, has your organisation…

Direct mail advertising expenditure fell by 11% in real terms between 2016 and 2017

UK direct mail advertising expenditure (which includes elements of postal and production expenditure) fell by 11% in real terms to £1.8bn in 2017, accounting for 8% of total UK advertising expenditure. Despite a single year of real-terms growth between 2014 and 2015, direct mail expenditure has fallen by 17% in real terms since 2011, and direct mail's share of advertising spend has also declined over this period, by 30%.

This long-term decline reflects structural issues such as the migration of advertising expenditure to other media, in particular to online advertising formats. Short-term issues such as business confidence are also likely to affect direct mail expenditure and may explain the magnitude of the decline between 2015 and 2016[1]. Looking at individual advertising sectors, data from Nielsen/WARC show that the mail order sector,

the government/ social/ political sector and the financial services sector accounted for 23%, 19% and 16% respectively of headline direct mail expenditure.[2] While mail order expenditure fell by 2% in real terms year on year, expenditure in the government/ social/ political sector fell by 16% and expenditure in the financial services sector fell by 20%.

Figure 6.14: Direct mail expenditure and proportion of total advertising expenditure
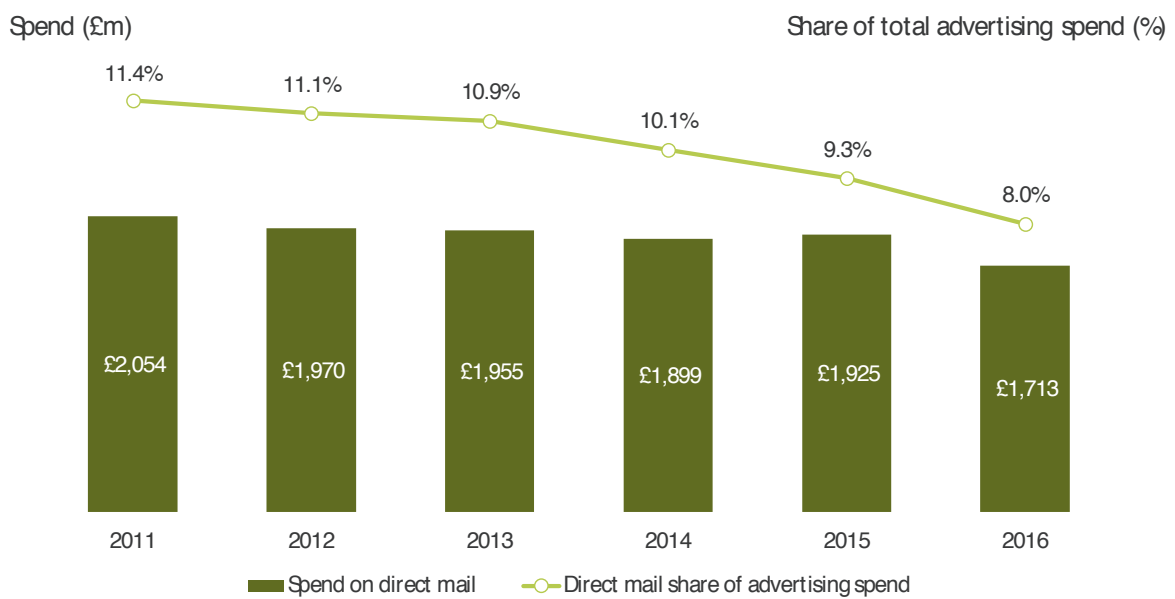
Source: AA/WARC Advertising Expenditure report. Figures have been adjusted for CPI by Ofcom and reflected 2016 prices.

[1] In its 2016-17 results presentation, Royal Mail noted a correlation between marketing mail volumes and business confidence.

[2] NB: due to differences in methodology these figures are not directly comparable to the £1713m overall expenditure figure.

6.3 People's use of post

6.3.1 Introduction

This section presents some of the highlights of Ofcom's research into consumers' use of, and attitudes towards, postal services in the UK.

The data presented here are sourced primarily from Ofcom's Residential Postal Tracker which has been running since July 2012. Due to changes to the methodology and questionnaire, the data are not directly comparable to previous years.

6.3.2 Sending and receiving post

Adults sent more than three invitations/greetings cards/postcards on average in the previous month

Adults were asked how many items of seven different types of post they had sent in the previous month.

On average, they had sent 3.3 invitations/ greetings cards/ postcards, 1.4 smaller parcels (parcels that will fit through a

letterbox) and 1.3 formal letters to organisations or individuals. For each of the other four types of post, they had sent less than one item.

Figure 6.15: Approximate number of postal items sent in the previous month
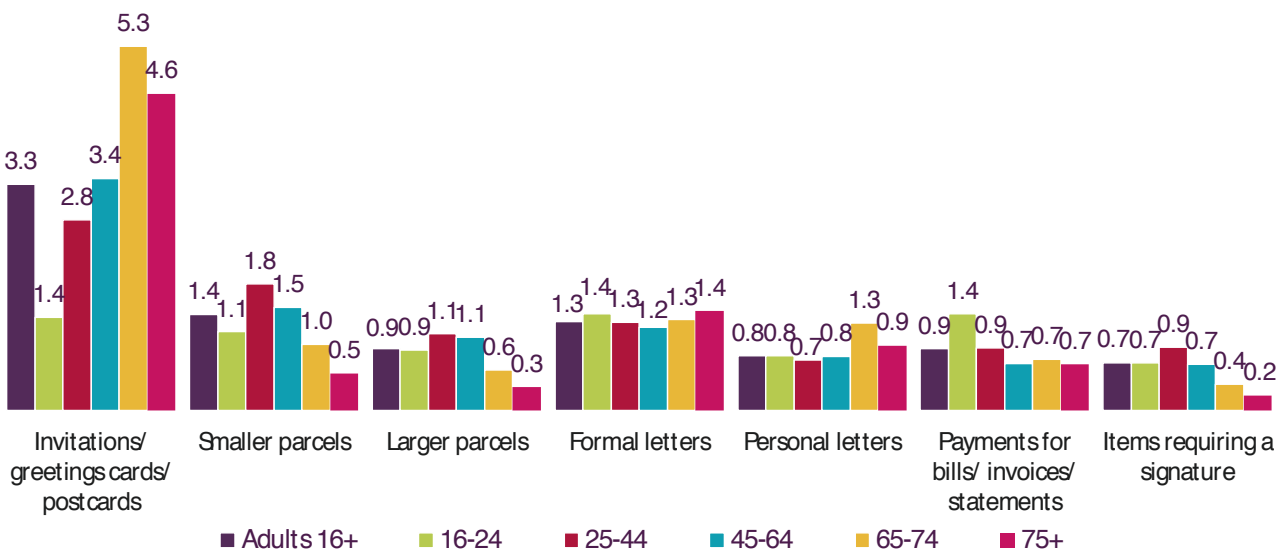
Source: Ofcom Residential Postal Tracker 2016
Base: All adults (n = 6419 16+, 804 16-24, 1966 25-44, 2166 45-64, 945 65-74, 538 75+)
QD1: Approximately how many of the following have you sent in the last month (including international post and Freepost)

Four in five people spent up to £20 in the previous month on postage

When asked about how much they had spent on postage in the previous month, four in five people (81%) gave a value of £20 or less. A higher proportion of over-75s (85%) gave this response.

One in five people (18%) reported they had spent up to £1. This was higher among 16-24s (27%) and lower among 65-74s (13%). Less than one in ten (7%) said they had spent more than £30.

This was less likely among both 16-24s (4%) and over-74s (2%).

Figure 6.16: Approximate amount spent on postage in the previous month
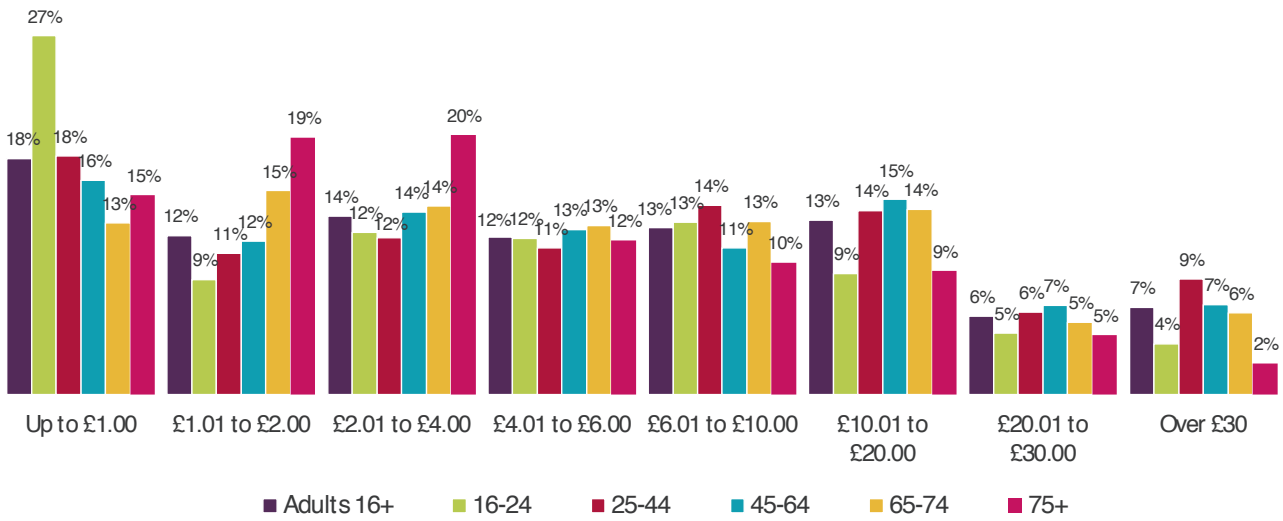
Source: Ofcom Residential Postal Tracker 2016
Base: All adults (n = 6419 16+, 804 16-24, 1966 25-44, 2166 45-64, 945 65-74, 538 75+)
QD4: And in total, how much would you say you've spent on postage in the last month, including all letters, cards and parcels?
Note: Chart does not include the 6% of respondents who answered that they didn't know or would prefer not to say.

Adults in the UK received an average of more than two formal letters in the previous week

Adults were also asked how many items of each of seven postal types they had received in the past week.

On average, they had received 2.2 formal letters, 1.6 bills/ invoices/ statements and 1.1 smaller parcels.

For each of the other four items asked about, they had received on average less than one item.

Figure 6.17: Approximate number of postal items received in the previous week
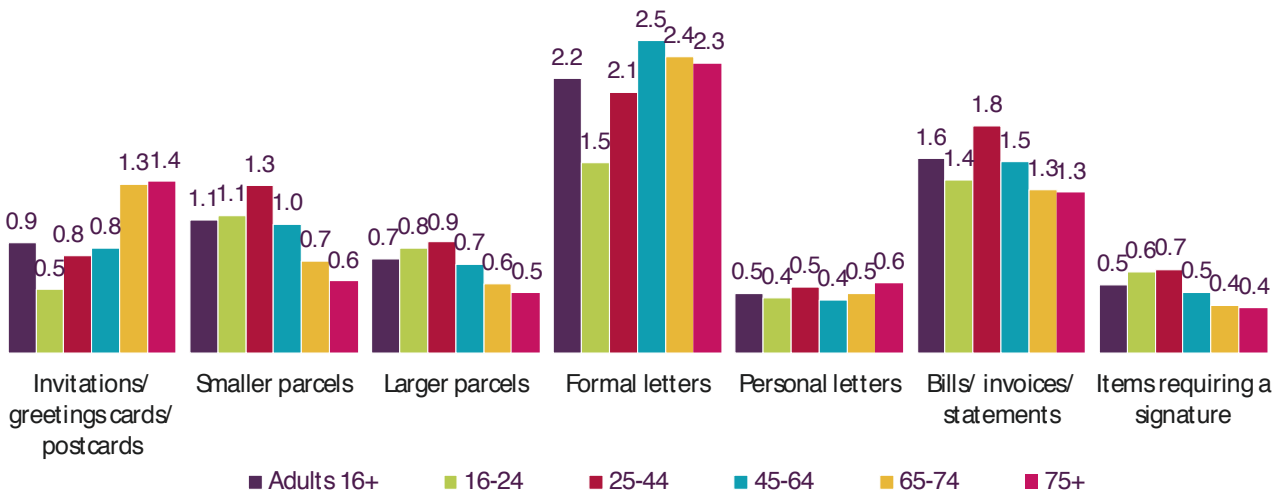
Source: Ofcom Residential Postal Tracker 2016
Base: All adults (n = 6419 16+, 804 16-24, 1966 25-44, 2166 45-64, 945 65-74, 538 75+)
QE1: Approximately how many of the following have you personally received in the last week?

For most adults who received a parcel in the previous month, at least one was delivered by Royal Mail

Adults who had received one or more parcels in the past month were provided with a list of companies and asked from which of these they had received a parcel delivery.

More than eight in ten (83%) said that Royal Mail had delivered a parcel(s) to them, while just over a quarter (27%) had received one or more from Hermes. A further five

companies had delivered a parcel(s) to between 10% and 20% of those who had received one: Yodel (19%), Amazon Logistics (17%), DPD (16%), Parcelforce (13%) and DHL (12%).

Figure 6.18: Companies delivering parcels to consumers in the previous month
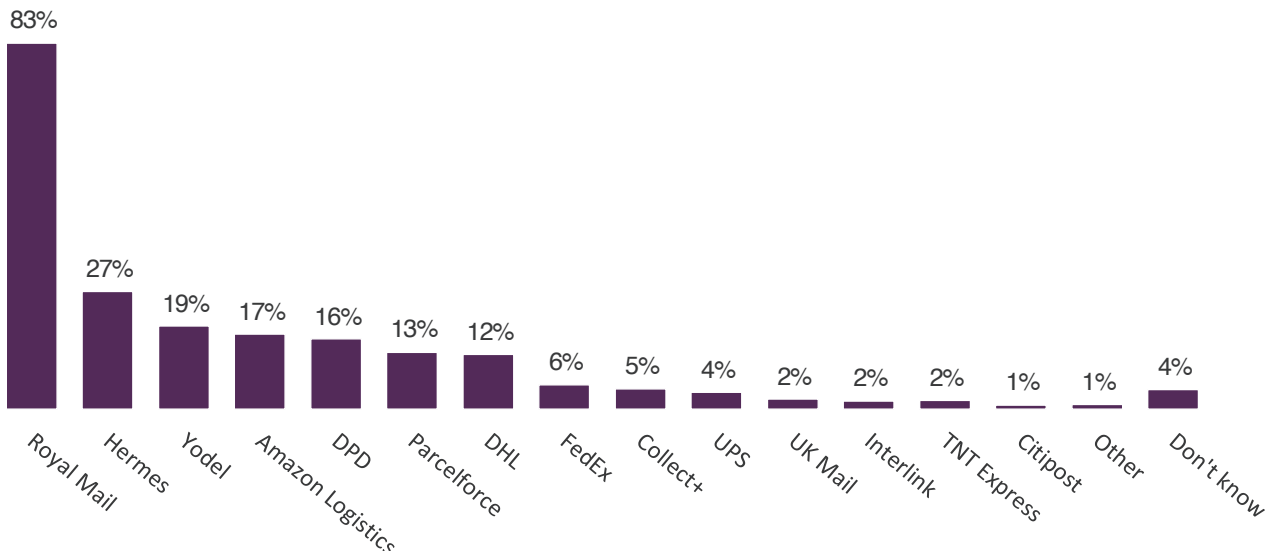
Source: Ofcom Residential Postal Tracker 2016
Base: Adults who received a parcel(s) in the past month (n = 3433 16+, 414 16-24, 1131 25-44, 1186 45-64, 472 65-74, 230 75+)
QE5: Thinking of the parcel(s) that you have received in the last month, which of these companies delivered the parcel(s).

More than six in ten adults say they are using email more instead of post, compared to two years ago

39%

of people in the UK are sending fewer payments for bills, invoices, and statements by post than two years ago

People were asked about what types of communication, if any, they are using more than post, compared to two years ago. More than six in ten (65%) adults said that they are using email more, followed by text messaging/ SMS (40%) and mobile phone calls (39%). Fifteen per cent of adults said that they weren't using any form of communication in particular more at the expense of post; this ranged from 6% of 16-24s to 28% of over-75s.

Compared to the overall adult population, 16-24s are more likely than average to have increased their use of each of the alternative types of communication, apart from landline calls.

This difference is greatest for social networking websites/ apps (47% vs. 27%) and instant messaging (47% vs. 26%). Conversely, over-75s are less likely to have increased their use of each of the communication methods, again, apart from landline calls.
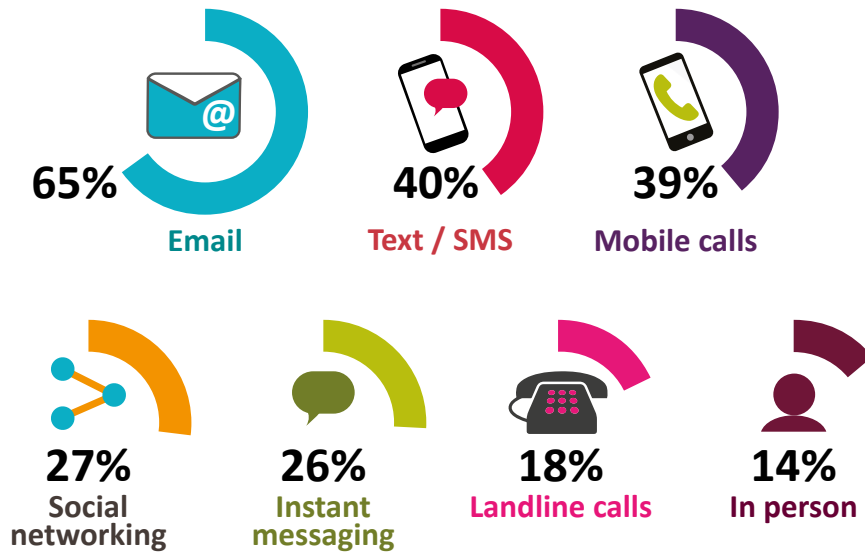
Once again the difference is greatest for social networking websites/ apps (8% vs. 27%) and instant messaging (6% vs. 26%), alongside text messaging/ SMS (23% vs. 40%).

Adults were also asked whether they were sending more, less, or the same amount of eight types of post, compared to two years ago. Four in ten are sending fewer payments for bills/ invoices/ statements (39%) and personal letters (38%). More than three in ten are sending fewer formal letters (34%) and 30% are sending fewer invitations/ greetings cards/ postcards. Around one in five are sending fewer larger parcels (22%), smaller parcels (21%), items requiring a signature (19%) and tracked post (17%).

30% of people in the UK are sending fewer invitations / greetings cards / postcards than two years ago
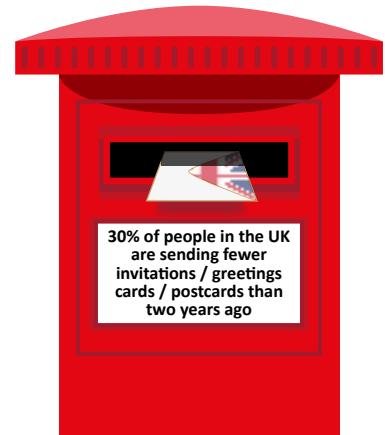
For each of the eight types of post asked about, the percentage of people claiming to be sending more of this item compared to two years ago is significantly lower than those claiming to send less, apart from tracked post. Sixteen per cent of adults are sending more of this, while 17% are sending less. For each of the other types of post, the percentage sending more than they were two years ago is lower than 15%.

Figure 6.19: Communication types used more than post, compared to two years ago

65%
Email

40%
Text / SMS

39%
Mobile calls

27%
Social networking

26%
Instant messaging

18%
Landline calls

14%
In person

Source: Ofcom Residential Postal Tracker 2016
Base: All adults (n = 6419 16+, 804 16-24, 1966 25-44, 2166 45-64, 945 65-74, 538 75+)
QD13: Which, if any, of these types of communication are you now using more instead of post, compared to two years ago?
Note: 15% answered 'none in particular', and 2% answered 'other' or 'don't know'.

6.3.3 Awareness of and attitudes to postal services

### People in the UK tend to overestimate the cost of a First Class stamp

Adults were asked to give their best guess as to what a First Class stamp cost when they took part in the survey. The average response was 88p, demonstrating that people generally overestimate the cost of this type of stamp.

The price of a first-class stamp rose from 63p to 64p in March 2016, and in March 2017 rose again to 65p.

People aged 16-24 gave an average response of £1.06, while for 25-44s this was 96p.

The average for 45-64s was 80p, with 65-74s giving an average response of 75p, and over-75s saying 73p.

Figure 6.20: **Estimated price of a First Class stamp**
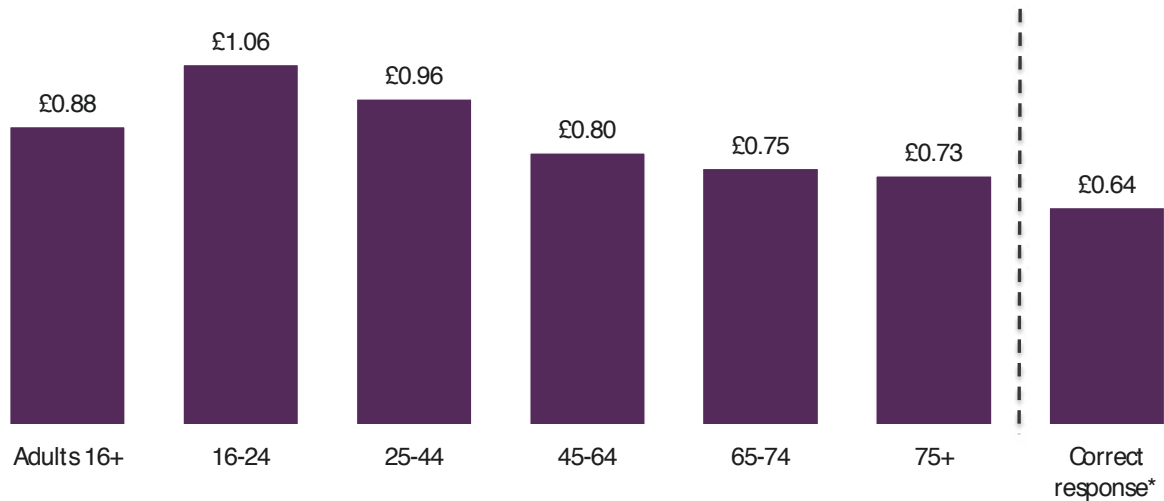
Source: Ofcom Residential Postal Tracker 2016
Base: All adults (n = 6419 16+, 804 16-24, 1966 25-44, 2166 45-64, 945 65-74, 538 75+)
QF2: Giving your best guess, how much do you think a 1st class stamp costs today?
*Note: The price rose from £0.63 to £0.64 at the end of March 2016. The price has subsequently risen again to £0.65 in March 2017.
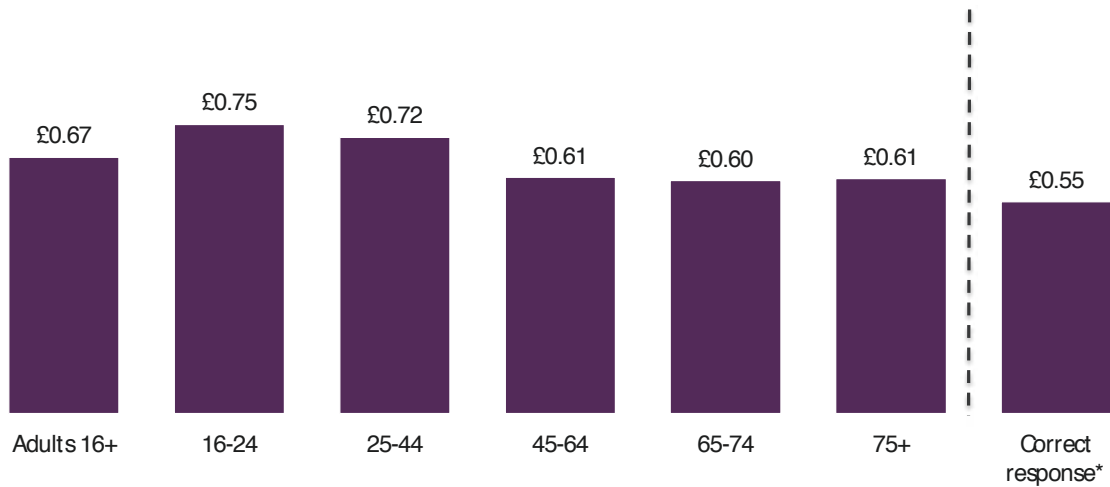
More than six in ten adults think First Class stamps are good value for money

Having been told the correct price, more than six in ten (64%) adults said the cost of a First Class stamp represented 'very good' or 'fairly good' value for money.

Satisfaction is higher among 25-44s (68%) and lower among 65-74s (58%) and over-74s (57%).

Figure 6.22: Perception of value for money for First Class stamps
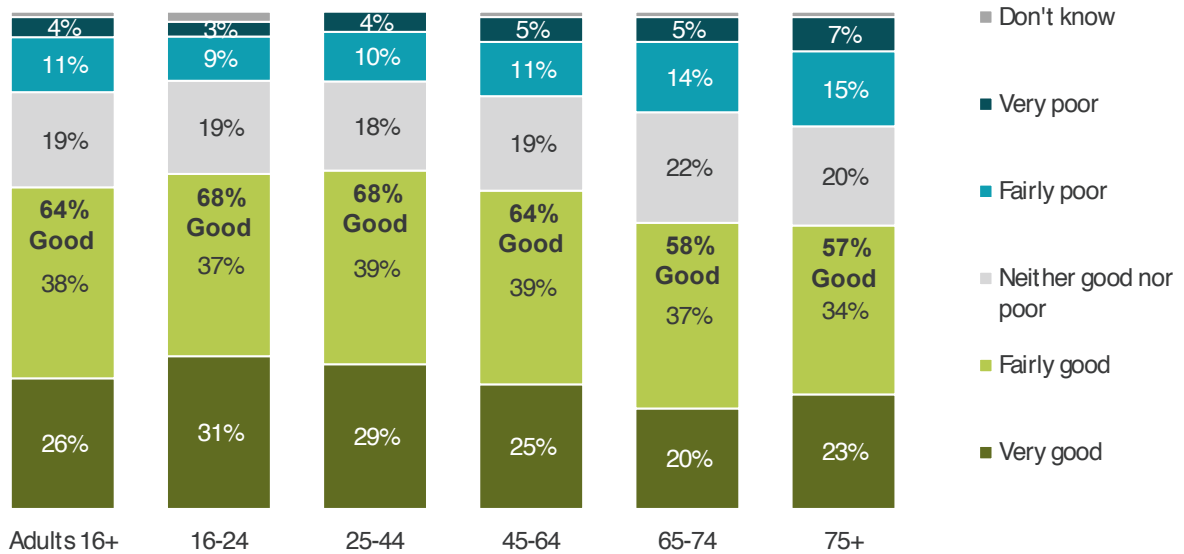
Source: Ofcom Residential Postal Tracker 2016
Base: All adults (n = 6419 16+, 804 16-24, 1966 25-44, 2166 45-64, 945 65-74, 538 75+)
QF4: A 1st class stamp currently costs 63p/64p*. How would you rate Royal Mail's 1st class service in terms of value for money?
*Note: The price rose from 63p to 64p at the end of March 2016. The price has subsequently risen again to 65p in March 2017.

More than half of adults feel Second Class stamps are good value for money

After being told the correct price of a Second Class stamp, more than half (56%) of adults said the cost represented 'very good' or 'fairly good' value for money. This is lower than the proportion of those satisfied with the value for money of a First Class stamp (64%). Satisfaction is lower among 65-74s (52%).

Figure 6.23: Perception of value for money of Second Class stamps
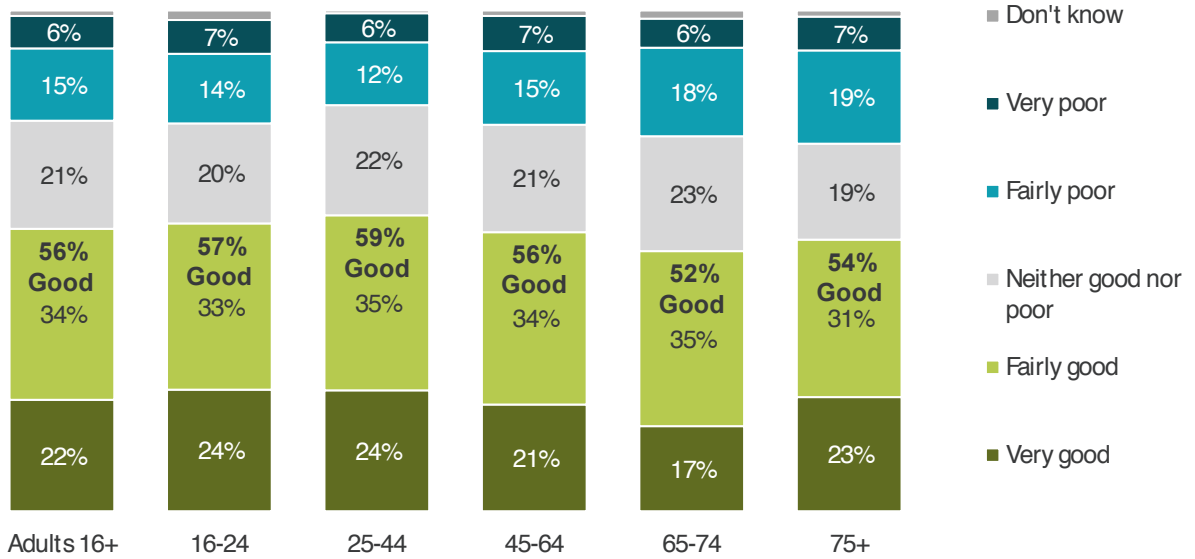
Source: Ofcom Residential Postal Tracker 2016
Base: All adults (n = 6419 16+, 804 16-24, 1966 25-44, 2166 45-64, 945 65-74, 538 75+)
QF5: A 2nd class stamp currently costs 54p/55p. How would you rate Royal Mail's 2nd class service in terms of value for money?
* Note: The price rose from 54p to 55p at the end of March 2016. The price has subsequently risen again to 56p in March 2017.

Half of adults mostly send letters and cards First Class

Half of adults (51%) mostly send letters and cards First Class. This is more likely among 25-44s (59%) and less likely among 65-74s (39%) and over-74s (34%). Just over a quarter (28%) reported that they used First Class all the time; again, this is more likely among 25-44s (34%) and less likely among 65-74s (19%) and over-74s (17%).

More than a quarter of people (28%) mostly send letters and cards Second Class. This is less likely among 16-24s and 25-44s (both 20%) and more likely among 65-74s (39%) and over-74s (34%). Six per cent said that they used Second Class all the time; again, this is lower among 16-24s (3%) and 25-44s (4%), and higher among 65-74s (9%) and over-74s (11%).

Among those who said they used First Class postage all or most of the time, more than seven in ten (72%) said it was because of the speed of delivery. The next highest answer was value for money (19%). Around one in ten said that it was because of the stamps they had to hand (12%), because the items sent would reach their destination intact (11%) and because of the value of the item (11%).

Figure 6.24: **Service used when sending letters or cards**
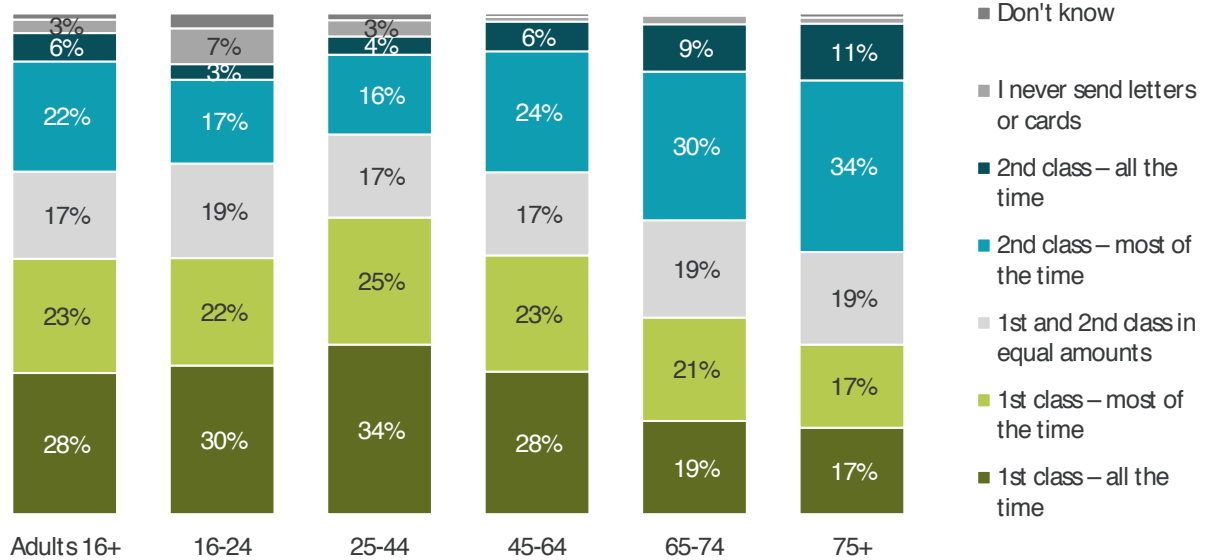
Source: Ofcom Residential Postal Tracker 2015
Base: All adults (n = 6419 16+, 804 16-24, 1966 25-44, 2166 45-64, 945 65-74, 538 75+)
QF7: When sending letters or cards, which service do you tend to use?

Attitudes towards post vary by age

Overall, nearly nine in ten (88%) adults agree that they value the option to be able to use the postal service. This is lower among 16-24s (82%) and 25-44s (85%), and higher among 45-64s (91%), 65-74s (93%) and over-74s (97%). On the other hand, around a third (32%) agree that they only use post when there is no alternative.

This is more likely among 16-24s (42%) and 25-44s (37%), and less likely among 45-64s (29%), 65-74s (23%) and over-74s (25%).

Around six in ten (62%) say that they would feel cut off from society if they couldn't send or receive post. This is less likely among younger people, and more likely among older people.

A similar proportion (60%) say that they prefer to send email rather than letters whenever possible. This is higher among younger people and lower among older people.

Meanwhile, 71% trust Second Class post to get to its destination in a reasonable timeframe. Half (49%) say that they now send fewer letters by post, due to the cost.

Figure 6.25: Attitudes to post among adults in the UK: agreement with proposed statements

	Adults 16+	16-24	25-44	45-64	65-74	75+
I value the option to be able to use the postal service	88%	82%	85%	91%	93%	97%
I prefer to send emails rather than letters whenever possible	60%	75%	69%	55%	46%	41%
I prefer to send letters and emails to companies rather than make a phone call, so that I have a written record	66%	61%	66%	67%	67%	63%
I only use post if there is no alternative	32%	42%	37%	29%	23%	25%
I would feel cut off from society if I couldn't send or receive post	62%	48%	57%	65%	73%	78%
I only use post to send greetings cards	32%	34%	31%	31%	33%	34%
I send fewer letters by post now due to the cost	49%	48%	46%	50%	55%	53%
I trust second class post to get there in a reasonable timeframe	71%	69%	67%	74%	70%	80%

Source: Ofcom Residential Postal Tracker 2016
Base: All adults (n = 6419 16+, 804 16-24, 1966 25-44, 2166 45-64, 945 65-74, 538 75+)
QC3: Agreement with attitudinal statement…

Glossary

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

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

4G
The fourth generation of mobile phone mobile communication technology standards, which provides faster mobile data speeds than the 3G standards that it succeeds.

Access
Allowing other companies operating in the postal market, or other users of postal services, to use Royal Mail's facilities for the partial provision of a postal service.

Access network
An electronic communications network which connects end-users to a service provider; running from the end-user's premises to a local access node and supporting the provision of access-based services. It is sometimes referred to as the 'local loop' or 'last mile'.

Active audience
The total number of people who visited any website or used any internet connected application at least once in a given month.

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

Alternative operator
Refers to service providers, usually in telecoms, other than the incumbent (or established) operator/s (see incumbent operator/s).

AM
Amplitude modulation. Type of modulation produced by varying the strength of a radio signal. This type of modulation is used by broadcasters in three frequency bands: medium frequency (MF, also known as medium wave (MW)); low frequency (LF, also known as long wave (LW)), and high frequency ((HF, also known as short wave (SW)). The term AM is also used to refer to the medium frequency band (see MF, below).

ARPU
Average revenue per user. A measurement used by pay-television or mobile companies to indicate the average monthly revenue earned from a subscriber.

Asynchronous transfer mode (ATM)
A networking technology designed to handle high data volumes and low-latency content such as real-time voice and video.

ATT
Analogue terrestrial television. The television broadcast standard that all television industries launched with. Most countries in this study are planning to phase out ATT in the next ten years.

BARB Broadcasters
Audience Research Board. The pan-industry body that measures television viewing.

Bluetooth
Wireless standard for short-range radio communications between a variety of devices such as PCs, headsets, printers, mobile phones, and PDAs.

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

Bulk mail
High volumes of mail sent in one posting, typically of the same format and weight and often sorted to a predetermined level before being handed to the operator

CAGR
Compound annual growth rate. The average annual growth rate over a specified period of time. It is used to indicate the investment yield at the end of a specified period of time. The mathematical formula used to calculate CAGR = (present value/base value)^(1/#of years) − 1

Communications Act
Communications Act 2003, which came into force in July 2003.

Commercial radio
The broadcasting of radio programming is by privately owned corporate media, as opposed to state sponsorship.

Community radio
They serve geographic communities and communities of interest. They broadcast content that is popular and relevant to a local, specific audience and are operated, owned, and influenced by the communities they serve.

Connected TV
A television that is broadband-enabled to allow viewers to access internet content.

DAB
Digital audio broadcasting. A set of internationally-accepted standards for the technology by which terrestrial digital radio multiplex services are broadcast in the UK.

Data packet
In networking, the smallest unit of information transmitted as a discrete entity from one node on the network to another.

DCMS
Department for Culture, Media & Sport

Delivery office
A facility serving a defined geographical area where postal packets are prepared for final delivery

Digital audience
The active audience across laptop/desktop computers and mobile phones.

Digital switchover
The process of switching over the analogue television or radio broadcasting system to digital.

Direct mail
Addressed advertising mail

Dongle
A physical device, attached to a PC's USB port, which adds hardware capabilities.

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).

DTO
This is a service which makes digital content available for purchase.

DTT
Digital terrestrial television. The television technology that carries the Freeview service.

DVR
Digital video recorder (also known as 'personal video recorder' or 'digital television recorder). A digital TV set-top box including a hard disk drive which allows the user to record, pause and rewind live TV.

Emojis
Small digital images or icons used to express an idea or emotion in electronic communication e.g. a smiley

End-to-end
Operators other than Royal Mail that provide a full postal service from collection to delivery

EPG
Electronic programme guide. A programme schedule, typically broadcast alongside digital television or radio services, to provide information on the content and scheduling of current and future programmes.

E-reader
An electronic, portable device capable of downloading and displaying text such as digital books or newspapers.

Feature phone
A low-end mobile phone that has less computing ability than a smartphone, but more capability than the most basic handsets.

Fibre-to-the-cabinet
Access network consisting of optical fibre extending from the access node to the street cabinet. The street cabinet is usually located only a few hundred metres from the subscriber premises. The remaining segment of the access network from the cabinet to the customer is usually a copper pair but could use another technology, such as wireless.

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

First-run acquisitions
A ready-made programme bought by a broadcaster from another rights holder and broadcast for the first time in the UK during the reference year.

First-run originations
Programmes commissioned by or for a licensed public service channel with a view to their first showing on television in the United Kingdom in the reference year.

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

Format
The type of programme service broadcast by radio stations. Also, the part of a radio station's licence which describes the programme service.

Frame relay
A wide area network technology which is used to provide a continuous, dedicated connection between sites without the need for a leased line.

Fulfilment mail
Requested goods including tickets, brochures, packets and parcels

GPRS
General packet radio service, a packet data service provided over 2.5G mobile networks.

GPS
The GPS (global positioning system) is a 'constellation' of 24 well-spaced satellites that orbit the Earth and make it possible for people with ground receivers to pinpoint their geographic location.

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

Headline connection speed
The theoretical maximum data speed that can be achieved by a given broadband. A number of factors, such as the quality and length of the physical line from the exchange to the customer, mean that a given customer may not experience this headline speed in practice.

Incumbent operator/s
An incumbent operator usually refers to a market's established provider/s, in the UK fixed market this is BT and Kingston Communications.

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

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

Internet-enabled mobile phone
A mobile phone which allows its user to access the internet via in-built access technology such as GPRS or WCDMA.

IP (internet protocol)
The packet data protocol used for routing and carrying messages across the internet and similar networks.

IPTV
Internet protocol television. The term used for television and/or video signals that are delivered to subscribers or viewers using internet protocol (IP), the technology that is also used to access the internet. Typically used in the context of streamed linear and on-demand content, but also sometimes for downloaded video clips.

ISDN
Integrated services digital networks. A standard developed to cover a range of voice, data, and image services intended to provide end-to-end, simultaneous handling of voice and data on a single link and network.

ISP
Internet service provider. A company that provides access to the internet.

LAN (Local area network)
A network for communication between computers covering a local area, like a home or an office.

Large letter
This refers to Royal Mail's definition Large Letter. A Large Letter is any item larger than a Letter and up to 353mm in length, 250mm in width and 25mm in thickness, with a maximum weight of 750g.

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

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

Machine to machine (M2M) –
A connection between devices,
often wireless, where human
input is not necessarily required.
Commonly used examples of M2M
are in smart metering (where the
meter reports energy use back
to a central billing database) or a
burglar alarm, which may contain a
SIM card to enable communication
with monitoring offices.

Mail centre
A facility serving a geographical
area used for the sortation
of postal packets.

MMS
Multimedia messaging service. The
next generation of mobile messaging
services, adding photos, pictures
and audio to text messages.

MNO
Mobile network operator,
a provider which owns a
cellular mobile network.

Mobile broadband
Various types of wireless high-speed
internet access through a portable
modem, telephone or other device.

Multichannel
In the UK, this refers to the provision
or receipt of television services other
than the PSB channels. 'Multichannel
homes' comprise all those with digital
terrestrial TV, satellite TV, digital
cable, or TV over broadband. Also
used as a noun to refer to a channel
only available on digital platforms.

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

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

MW
See FM and AM above.

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

**Network/non-network
programming**
Network programming is shown
by the PSB channels across the UK
whereas non-network programming
is made specifically for viewers in
the nations and regions, and shown
only in particular areas of the UK.

**Next-generation access networks
(NGA)**
New or upgraded access networks
that will allow substantial
improvements in broadband speeds.
This can be based on a number
of technologies including cable,
fixed wireless and mobile. Most
often used to refer to networks
using fibre optic technology.

Non-linear
Content that is delivered
'on demand' as opposed to
linear, broadcast content.

On demand and streaming services
Services that provide access to
audiovisual content exclusively via
an internet connection. Examples
include services that offer access
to content libraries (online original,
commissions and acquired) such
as Netflix and Disney Life and
those that offer access to linear
and live TV channels in addition
to content libraries such as the
BBC iPlayer and Amazon Prime.

'Over-the-top' video
Refers to audio-visual content
delivered on the 'open'
internet rather than over a
managed IPTV architecture.

PACT
Producers Alliance for Cinema
and Television, the UK trade
association for independent
film, television, animation and
interactive media companies.

Pay-per-view
A service offering single
viewings of a specific film,
programme or event, provided
to consumers for a one-off fee.

PDA
Personal digital assistant.

Peak time
The period during which: a radio
station broadcasts its breakfast
show and, on weekdays only, also
its afternoon drive-time show; a
television station broadcasts its early-
and mid-evening schedule, typically
used by Ofcom to refer to the
period between 6pm and 10.30pm
each day (including weekends).

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

Postal packets
A letter, parcel, packet or other
article transmissible by post

Programmatic
Advertising Programmatic ad
buying is the algorithmic (rather
than manual or direct) trading of
ads powered by data (collected by
cookies or through log-in data).

PSB
Public service broadcasting, or
public service broadcaster. The
public service broadcasters in
the UK consist of the BBC, ITV
(including ITV Breakfast), STV,
Channel 4, Channel 5 and S4C.

PSTN
Public switched telephone
network. The network that
manages circuit-switched fixed-
line telephone systems.

Publications
Regularly produced publications
such as periodicals and magazines.

PVR
See DVR

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

Repeats
All programmes not meeting the
definition of first-run origination
or first-run acquisition.

Royal Mail
Wholesale A business unit within
Royal Mail Group that negotiates
with any postal operator or user
who applies for access to Royal
Mail Group's postal network.

Same-day delivery
Parcel delivery scheduled for the
same day that an order was placed.

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

Share (radio)
Proportion of total listener hours,
expressed as a percentage,
attributable to one station within
that station's total survey area.

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

SIM (subscriber identity module)
A SIM or SIM card is a small flat
electronic chip that identifies
a mobile customer and the
mobile operator. A mobile
phone must have a SIM card
inserted before it can be used.

SIM-only
A mobile contract that is
sold without a handset.

Simulcasting
The broadcasting of a television
or radio programme service on
more than one transmission
technology (e.g. FM and MW,
DAB and FM, analogue and
digital terrestrial television,
digital terrestrial and satellite).

Smartphone
A mobile phone that offers more
advanced computing ability and
connectivity than a contemporary
basic 'feature phone'.

Smart TV
A stand-alone television set with
inbuilt internet functionality.
Users connect to the internet via
a broadband router or modem.
Smart TVs are produced by
consumer electronics manufacturers
including Samsung, Sony, Panasonic
and LG. The definition does not
include television sets connected
to the internet via a third-party
device such as a set-top box, a
games console or a laptop/PC.

Smart watch
A wearable computer that provides
features in addition to those to
be expected of a watch. Typically
they are connected wirelessly to a
mobile phone and display incoming
messages, call status and provide
some degree of control over the
phone, including call answering
and control of audio playback.
Other features can include motion
sensors, cameras and GPS.

SME
 Small to medium-sized
enterprise. A company with
fewer than 250 employees.

SMS
Short Messaging Service, usually
used to refer to mobile text
messaging (see text message below).

Social networking site (SNS)
A website that allows users to
join communities and interact
with friends or to others that
share common interests.

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.

Spectrum
A continuous range of frequencies of electromagnetic radiation (for example, radio waves).

Streaming content
Audio or video files sent in compressed form over the internet and consumed by the user as they arrive. Streaming is different to downloading, where content is saved on the user's hard disk before the user accesses it.

Superfast broadband
Sometimes known as next-generation broadband, super-fast broadband delivers headline download speeds of at least 30Mbit/s.

Tablet computer
A mobile computer which is included within a single panel with a touchscreen.

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

Text message
A short text-only communication sent between mobile devices.

Time-shifted viewing
It is defined by BARB as viewing of programmes recorded and subsequently played back on a television set within seven days of live broadcast, as well as viewing after pausing or rewinding live TV.

Transactional mail
Business mail usually sent on a regular scheduled basis, often used in financial transactions, including statements, invoices and credit card bills.

Transmitter
A device which amplifies an electrical signal at a frequency to be converted, by means of an aerial, into an electromagnetic wave (or radio wave). The term is commonly used to include other, attached devices, which impose a simpler signal onto the frequency, which is then sent as a radio wave. The term is sometimes also used to include the cable and aerial system referred to above, and indeed the whole electrical, electronic and physical system at the site of the transmitter.

TSA
Total survey area. The coverage area within which a radio station's audience is measured by RAJAR.

Hybrid DTT and IPTV services
hybrid services that provide the bulk of their channels via the DTT platform and offer additional channels and functionality through a broadband connection (such as access to online video services and programme recordings).

UKOM UK
Online Measurement. A media industry measurement of UK consumers' online activity, specified by UKOM Ltd and delivered by comScore.

UMA
Unlicensed mobile access, a technology that provides roaming between GSM and 802.11 Wi-Fi

Unaddressed mail
Also known as door-to-door and door drops, unaddressed mail is advertising mail with no specified recipient, usually distributed to all households within a targeted geographical area

Unique audience
The number of different people visiting a website or using an application.

VCR
Video cassette recorder.

VHF Very high frequency
The part of the spectrum between 30MHz and 300MHz. FM radio is broadcast on part of this band (87.6MHz to 107.9MHz) and DAB digital radio is broadcast on another (Band III: 217.5MHz to 230MHz in the UK, and over a wider range, but shared with TV services, elsewhere in Europe).

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

WARC
World Advertising Research Centre

Wireless LAN or Wi-Fi
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.

Within-the-hour-delivery
Parcel delivery scheduled for within a few hours of an order being placed.

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