



International Communications Market Report 2015

Research Document

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About this document

This report provides comparative international data on the communications sector. The aim of the report is to benchmark the UK communications sector against a range of comparator countries in order to assess how the UK is performing in an international context. The report compares the availability, take-up and use of services in the UK and 17 comparator countries - France, Germany, Italy, the US, Japan, Australia, Spain, the Netherlands, Sweden, Poland, Singapore, South Korea, Brazil, Russia, India, China and Nigeria, although we focus on a smaller subset of comparator countries for some of our analysis.

This report is intended to be used in a number of ways: to benchmark the UK's communications sector, to learn from market and regulatory developments in other countries, and to provide the context for Ofcom's regulatory initiatives. It also contributes to the richness of the information we draw upon, enabling us to better understand how our actions and priorities can influence outcomes for citizens and consumers, and for communications markets more generally.

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Introduction

This is the tenth year in which Ofcom has published comparative international data on the communications sector. The aim of the report is to benchmark the UK communications sector against a range of comparator countries in order to assess how the UK is performing in an international context.

We are publishing this report as part of our commitment to carry out and publish market and consumer research, including media literacy, as outlined in our 2015/16 Annual Plan¹. This report complements other research published by Ofcom and forms part of the Communications Market Report series, which includes the *UK Communications Market Report* and specific reports for Northern Ireland, Scotland and Wales (all published in August 2015).²

The information set out in this report does not represent any proposal or conclusion by Ofcom in respect of the current or future definition of markets and/or the assessment of licence applications or significant market power or dominant market position for the purposes of the Communications Act 2003, the Competition Act 1998 or other relevant legislation.

Data and methodologies

This report draws on a combination of consumer research data commissioned by Ofcom, data already held by Ofcom, and data sourced from desk or custom research or from third parties, as well as discussions with industry bodies, operators, regulators and commentators.

Consultancy firm IHS provided data that are drawn on mainly for the *TV and audio-visual* and *Telecoms and networks* chapters. IHS has attempted to verify sources and provide market estimates where data are incomplete. Telecoms pricing consultancy Teligen built a bespoke model to enable our analysis of comparative international pricing, and populated it with specifically-sourced tariff data (collected in July 2015).

Among others, we would like to thank the following for their contributions to the data presented in this report: comScore, Deloitte, Ecommerce Europe, Eurodata TV Worldwide, The European Commission, IHS, Kantar Media, PACT, Populus, PricewaterhouseCoopers, The Reuters Institute, Teligen, the World Advertising Research Centre, Wik Consult, WorldDAB and YouGov.

The consumer research undertaken by Ofcom for this report was conducted online with 9,040 consumers in nine countries: the UK, France, Germany, Italy, the US, Japan, Australia, Spain and Sweden. Because the research was undertaken online, samples, and therefore results, may differ from other consumer research conducted by Ofcom, including that published in the *Communications Market Report 2015*, which included face-to-face and telephone interviews. Further information on our online market research methodology is presented in Appendix A.

Comparisons between data in this report and in its predecessors will not always be possible, due to changes in definitions and re-statements over time, the methods of collecting data and the availability of new data sources. For reasons of sampling and definitions, some UK

¹ http://www.ofcom.org.uk/content/about/annual-reports-plans/ann-plans/Annual_Plan_Statement.pdf

² <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr15/>

data published in this report may not be directly comparable with data published in other Ofcom reports, such as the *UK Communications Market Report*. We have highlighted incomparability in a number of key instances in this report.

This report is wide in scope, and because of the reliance on third-party data we cannot always fully guarantee the accuracy of data. We have carried out comprehensive checks as far as is reasonably possible and have acted to ensure that the data in this report are comprehensive and the most accurate currently available.

Data in this report generally cover the 2014 calendar year, although other data – notably from Ofcom’s consumer research – are more recent. We show trends using a five-year historical time series wherever possible.

All currency conversions use the average market exchange rate across 2014, as provided by the International Monetary Fund (IMF).³ We have opted to convert data from every year at this fixed rate, so that currency fluctuations do not obscure market trends. The exception to this methodology is in the international price benchmarking analysis, where we have used purchasing power parity-adjusted exchange rates (more detail can be found in Appendix C). All figures in this report are nominal unless otherwise stated.

Structure of the report

The report is divided into seven chapters:

- **The UK in context** provides a broad overview by looking at comparative international communications markets from an industry and a consumer perspective, with an overview of the main regulatory developments in the past year. We also present findings from our consumer research across nine comparator countries, including a look at main sources used for news, online interaction with public services, use of mobile payments and satisfaction and reasons for choosing 4G mobile telecom services.
- **Comparative international pricing** compares the typical prices people pay, across the UK and five other comparator countries, for a range of ‘baskets’ of communications services.
- **Television and audio-visual** considers developments in broadcast and audio-visual services, and includes analysis of the industries and consumer experience in our comparator countries. This section examines patterns of digital television take-up, including the adoption of high-definition television services, digital video recorders, and internet-connected televisions, and looks at the consumption of audio-visual content online.
- **Radio and audio** compares and summarises key data, including revenue figures, for the radio and audio markets across the UK and our comparator countries. We also include some of the findings from our consumer research on the take-up of digital radio sets and the use of audio services online and via mobile devices.
- **Internet and online content** considers how people have adopted the internet to communicate and consume content, and how this differs across our comparator countries. The section takes a high-level look at aspects of internet use, in terms of

³ <http://www.imf.org/external/index.htm>

platforms and devices, as well as content and consumption. We also look at internet advertising markets and e-commerce.

- **Telecoms and networks** examines the major trends in the telecommunications markets, from an industry and operator perspective, in our comparator countries. We also consider the availability and use of telecoms services in the 18 comparator countries. We provide an overview of the industry as a whole, and individual markets in more depth, including analysis of fixed voice, fixed-broadband, mobile voice and data services.
- **Post** considers key data for the postal services markets in the UK and our comparator countries, including trends in addressed mail volume and revenue. We also examine consumer trends in sending and receiving mail, and consumers' perceived reliance on post as a method of communicating.

We include a list of key points for each chapter; these serve as summaries of the main findings.

Key points: The UK in context

- **The communications sector's total global revenues in 2014 were £1,190bn, growing by 1.5% year on year (incorporating the telecoms, television, postal and radio sectors).** Global television industries had the largest increase in revenue in 2014, up by £12bn (5%), to £244bn. Telecommunications revenue, although the largest by a considerable margin, registered slow growth of 0.5% to reach £846bn.
- **UK communications sector revenues were the fifth highest of our comparator countries and the second highest in Europe.** In 2014, as in recent years, the three largest communications markets by revenue were in the US (£316bn), China (£135bn) and Japan (£110bn). Outside the top three, the total UK revenue of £48bn was second only to Germany (£55bn).
- **The UK generated £748 per head across our communications industries in 2014, the highest of the EU5.** This figure was £244 lower than the US, which once again had the highest revenue per head of our comparator countries at £992 per person.
- **Global advertising expenditure grew to £283bn in 2014,** driven by growth in internet and television advertising revenues. Between 2010 and 2014 expenditure on internet advertising grew at a compound annual rate of 17.9%, to stand at £80bn in 2014. Television advertising revenue growth in the year to 2014 was 5.3%, and it remains the largest advertising medium by revenue, at £99bn in 2014.
- **4G mobile population coverage (from at least one operator) increased in most comparator countries in 2014,** with China having the largest year-on-year increase, rising from 1% to 73%. The UK had 84% 4G mobile population coverage at year-end 2014, an increase of 21 percentage points.
- **The UK had the highest proportion of total mobile connections that were 4G, of the EU5 countries in 2014, at 28%.** Among all our comparator countries, South Korea had the highest proportion of mobile connections that were 4G, at 63% of connections, followed by the US (40%), and Australia and Singapore (both 39%).
- **In most comparator countries 'quicker download speed' was the main reason given by respondents for choosing 4G.** In the UK 35% of people either with, or likely to purchase, a 4G service chose it because of quicker download speeds.
- **Around two-thirds (67%) of UK respondents use a smartphone.** This is in line with France, Germany and Australia. Spain and Italy had the highest smartphone take-up, at 83% and 79% of respondents respectively, and the US reported the lowest take-up of our comparator countries, at 57%.
- **UK smartphone owners are the most likely in the EU5 to use their smartphone to pay a bill; 29% claim to have done so.** They are also the most likely in the EU5 to have transferred money on their smartphones (31%).
- **Spain (45%) and the UK (42%) have the highest levels of ownership of connected TVs** (either smart TV sets, or sets connected to the internet via another device, such as a set-top box, video games console, or other internet-enabled device).

- **Nearly two-thirds (66%) of people in the UK had used an online service to watch TV or films within the past week** (increasing to 81% in the past month); the highest proportion across all of the countries surveyed.
- **Around four in ten (44%) UK respondents had used a catch-up service from a free-to-air broadcaster within the past week**, the greatest proportion of any country surveyed.
- **The growth in use of video-on-demand services corresponds with a claimed decrease in viewing traditional TV as well as in watching DVDs and Blu-ray.** The decrease in DVD/Blu-ray viewing is particularly striking; between 28% and 42% of respondents who view TV in the countries surveyed said they were watching DVDs/Blu-rays less than in the previous year. This figure stood at 32% in the UK.
- **Across most of the European countries in our research, around eight in ten online respondents say they use the internet to read news online.** This is lower in the UK (73%), the US (68%) and Australia (69%). In Italy 87% say they use the internet to read news, the highest among all our comparator countries.
- **In the UK, social media was a source of news for 36% of respondents in 2015, up from 23% in 2014.** In Germany (25%) and Japan (21%) levels remain lower. Respondents in Australia are the most likely to use social media for news (51%).
- **Search engines are used most regularly by respondents in Italy (92%), and least regularly by those in the US (73%).** Four in five (82%) people in the UK say they use a search engine at least weekly. Around six in ten respondents in most countries say that, of the websites returned by a search engine, some are likely to be accurate and some are not: a media-literate response. Around a quarter of people in the UK, Germany and the US think that if a search engine has listed a website then it will have accurate information, rising to 35% in Italy and Spain.
- **Levels of concern about providing personal data are relatively high**, with half or more respondents in each country agreeing that they are worried about unwarranted use of their personal data, with the exception of Sweden, where levels of concern are lower (42%). This figure stood at 51% in the UK.

Key points: comparative international pricing

- **In order to compare the prices available to consumers in different countries we examine the cost of different 'baskets' of communications services.** These are based on tariffs available from the largest communications providers in each comparator country.
- **These baskets have been compiled to be representative of five different household types.** These range from a household with basic needs to one with sophisticated requirements.
- **We consider that this basket-based approach is the best way of comparing prices.** This enables us to compare prices and identify trends in complex markets where consumers often buy services in bundles, where services are often discounted and where installation and hardware are often included as part of the service.
- **Overall, UK communications service prices compare favourably to those in the rest of the EU5 countries and the US.** The UK ranked second in the overall pricing rank (combining stand-alone, bundled and 'lowest available' prices) in 2015, behind France. This was a fall of one place compared to 2014.
- **The UK's average performance across all baskets and metrics was unchanged since 2014.** While the UK's overall rank fell in 2015, its average rank across all of the baskets and metrics used in the analysis was unchanged. In contrast, France's average rank improved, resulting in it overtaking the UK in terms of its overall rank.
- **The UK was cheapest in terms of stand-alone pricing (i.e. when services are not purchased in a bundle).** The UK had the lowest 'weighted average' stand-alone prices for three of the five household usage profiles included in the analysis in 2015.
- **The cheapest stand-alone fixed broadband and mobile phone prices were both found in the UK in 2015.** UK fixed broadband prices fell slightly during the year, and the UK had the cheapest mobile prices in 2015, despite prices having increased.
- **France overtook the UK in terms of lowest bundled service pricing in 2015.** France had the lowest 'weighted average' bundled service prices for three of our household usage profiles, with the UK having the 'lowest available' price for one household.
- **In almost all cases, it was cheaper to purchase a bundle where the household required fixed broadband.** In the UK, the average saving associated with buying a bundle rather than stand-alone services was 18% across the three households that include fixed broadband; the third-lowest proportion among our six countries.
- **The UK performed less well in terms of fixed voice prices.** The cheapest available landline services for our households' requirements were the most expensive among the six countries included in the analysis in 2015, following an increase in prices during the year.
- **The UK improved its ranking in terms of the 'lowest available' prices in 2015.** During the year, the UK overtook Italy to rank second after France, which offered the 'lowest available' prices for two of the five household usage profiles used in the analysis in 2015 (as did the UK).

Key points: TV and audio-visual

- **Global TV revenues (including broadcast advertising, channel subscription and public licence fees only) increased by 5% in 2014 to reach £244bn.** Subscription revenues continue to be the key driver of this growth, rising by 5.4% to reach £125bn, just over half of total revenue. Advertising revenue grew 5.3% (or £5bn) while income from public funding grew at a more modest 1.7% in 2014.
- **The total year-on-year growth of the European comparator countries was 2.3% in 2014, resulting in revenues of £58.3bn.** This was the lowest growth of the four regions included in our analysis, with the BRIC nations (and Nigeria) increasing by 11.3%, the US by 4.1% and the Asia-Pacific countries by 3.3% in 2014.
- **TV revenues in the UK increased by 4.0% year on year; from £13.4bn in 2013 to £14bn in 2014.** Following three consecutive years of decline, Spain recorded the largest annual growth in TV revenues among the European comparator countries in 2014 (9.1%), driven by stronger TV advertising revenues.
- **Revenues from both short and long-form online TV and video in the UK continued to grow, up by £278m to £908m in 2014.** However, the US remains the largest online TV and video market among our comparator countries; between 2009 and 2014, online TV and video revenue grew from £1.3bn to £6.8bn.
- **In 2014, the UK, Italy, Japan, Australia and Singapore had 100% digital television take-up on main TV sets,** with digital take-up exceeding 60% of TV homes in every comparator country for the first time.
- **In the UK, digital satellite (including Freesat) was the country's most popular viewing platform on primary sets in 2014,** (at 45% of TV households) followed by digital terrestrial at 33%.
- **IPTV was the most popular TV platform in France and South Korea in 2014, with take-up of 41% and 30% respectively.** The proportion of UK TV homes with IPTV as their main platform increased by 3pp in 2014 to 8%.
- **Nearly three-fifths (59%) of TV homes in the UK had a pay-TV service in 2014.** The strongest growth in pay-TV take-up was in the developing markets, with 66% of TV households in the BRIC countries having a subscription in 2014, compared to 48% in 2009.
- **Across the comparator countries, audiences watched an average of 3 hours 43 minutes of broadcast TV per person per day in 2014.** Seven of the 15 comparator countries had a year-on-year decline in daily TV viewing minutes per head. The UK had the largest proportional decline, down by 4.9% (11 minutes) to 3 hours 40 minutes. Some of the UK decline may be explained by: increased viewing of online TV content on tablets and smartphones, an increase in SVoD viewing, falling unemployment and the effect of the weather.⁴

⁴ For an in-depth look at the recent decline in TV set viewing in the UK see section 1.4 *Changes in TV viewing habits* in Ofcom's *Communications Market Report 2015*:

http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr15/CMR_UK_2015.pdf

Key points: radio and audio

- **Worldwide radio revenue grew by 3.9% in 2014 to reach £28.1bn.** Revenues have increased each year since 2010. The 18 comparator countries that we study in this report account for the majority of worldwide radio revenue (£22.9bn), which increased by 3.5% in 2014.
- **Revenue growth was due to an increase in all three types of revenue.**⁵ The largest absolute increase in revenue was in the US, where advertising and subscription revenues contributed to a combined growth of £412.3m. In the UK, revenue grew by £42.3m, a 3.6% year-on-year growth. This was due to an increase in national advertising revenue as well as BBC expenditure on radio.
- **The only two of our comparator countries where revenue declined were Japan and Italy.** In Japan, there was a decline of £17.1m, a 2.4% proportional decrease on the 2013 figure, while in Italy revenue decreased by £5.5m, a 1.5% decrease year on year. These declines were mainly due to decreases in advertising revenue.
- **Public radio licence fees contributed the largest proportion of revenues in Germany, Sweden and the UK.** Germany had the highest public funding ratio, with 79% of revenue coming from public radio licence fees. Sweden followed closely with 78%, and in the UK 60% of radio revenues came from public radio licence fees.
- **Digital radio set take-up in the UK was the highest of all surveyed comparator countries in 2015,** at 50% of radio listeners. This is a rise of 9 percentage points from 2014. DAB coverage is also highest in the UK, reaching 96% of households.
- **The UK had one of the largest proportions of digital broadcast stations among the comparator countries.** The 283 digital radio stations in the UK in 2014 represent 33% of all radio stations. Of all the comparator countries in 2014, this proportion is second only to Germany (37%).
- **FM-only radios are the most common type of set owned by radio listeners in all of our comparator countries.** Take-up of FM-only radios was highest in Italy and Spain (84%). The UK had the lowest take-up of FM-only radio sets (60%), although most radio sets with DAB or internet connectivity include an FM tuner.
- **In 2014, the proportion of households listening to radio on a weekly basis was lowest in Nigeria (20%) and Japan (38%), and highest in China (98%), Sweden and Poland (both at 94%).** The lowest reach of radio in Europe was in Germany (68%), while in the UK the reach of radio was 90% of households in 2014.
- **A quarter (25%) of mobile phone users in the UK use their device to listen to music on a weekly basis.** This is second only to the US, where a third (33%) of mobile phone users listen to music on their devices.
- **Between 2013 and 2015 there was an increase in the use of streaming audio services among mobile phone owners,** with around three in ten mobile phone owners using their device in this way in Italy (33%) and the US (31%).

⁵ Radio advertising, public licence fees and satellite radio subscriptions

Key points: telecoms and networks

- **Total comparator country retail telecoms revenues increased by 0.7% in 2014.** These revenues (which include those generated by fixed voice, fixed broadband, mobile voice and mobile data services) increased by £4bn to £589bn during the year, mainly as a result of increasing use of fixed broadband and mobile data services.
- **The UK had the highest number of fixed voice connections per 100 people of all the comparator countries at the end of 2014.** During the year, the number of UK connections per 100 people increased by one, to 61. This represented the highest penetration among our 18 countries and the largest increase during the year.
- **The UK had the highest proportion of fixed broadband lines that were superfast products among the EU5 countries at the end of 2014.** Over a third of UK fixed broadband connections (35%) had an advertised speed ≥ 30 Mbit/s at the end of 2014, the eighth-highest proportion among our comparator countries and higher than in any of the other EU5 countries.
- **The Netherlands had the highest fixed broadband penetration among our comparator countries at the end of 2014,** with 41 fixed broadband connections per 100 population at the end of 2014. By comparison, the UK had 37 connections per 100 population, the fifth highest number among all 18 of our comparator countries.
- **The Netherlands also had the highest proportion of fixed voice connections provided over managed VoIP in 2014.** Managed VoIP connections made up over three-quarters (76%) of total voice connections in the Netherlands at the end of the year. In the UK managed VoIP accounted for 14% of all fixed voice connections, the second-lowest proportion among our EU5 countries.
- **A quarter of UK adults said that they used over-the-top VoIP at least once a week in 2015.** The UK had the second highest level of regular over-the-top (OTT) VoIP use among our comparator countries after Italy, with 25% of respondents saying that they used any OTT VoIP service at least one a week. Twenty-one per cent of UK consumers said that they used OTT video VoIP at least once a week, while 18% said they used OTT voice VoIP services regularly.
- **Total comparator country mobile internet revenues increased by 6.6% in 2014.** Mobile internet revenues (which exclude messaging revenues) continued to grow in 2014, increasing by £11bn to £173bn. This was largely the result of increasing mobile data volumes, which grew by 76% to 16 exabytes during the year.
- **Take-up of mobile internet (excluding messaging) services was highest in Singapore in 2014.** There were 183 mobile internet connections per 100 people (including dedicated mobile internet connections and access on mobile handsets) in Singapore at the end of 2014. By comparison, the UK had 87 connections per 100 people in 2014, the eighth highest proportion among our comparator countries.
- **More than eight in ten UK fixed broadband users were satisfied with their service in 2015.** In the UK, 82% of users were satisfied with their overall fixed broadband service, the highest proportion among our comparator countries. UK satisfaction levels with download speeds (77%), upload speeds (76%) and connection speed/quality with multiple devices (75%) were also the highest among our comparator countries.

Key points: internet and online content

- **The UK and China have the greatest share of all advertising expenditure on the internet; 43% of all spending on advertising was online in 2014.** However, year-on-year growth was higher in China (9%) than in the UK (3%).
- **Mobile internet advertising spend was greatest in the UK, at almost £25 per head,** followed by £23.69 in the US and £17.66 in Australia. All comparator countries experienced year-on-year growth in mobile internet advertising spend, in contrast to fixed spend which declined in the US, Japan, Australia and Spain.
- **The UK had the highest per-capita spend on e-commerce in 2014, at £1591 per head.** E-commerce expenditure per head in the UK was over 50% higher than in the US, the next highest-valued market, which had an average spend of £918 per head.
- **Over a third of smartphone users in the UK shop online once a week or more.** In the UK, over a third (34%) of smartphone owners claimed to use their device to shop online, at least weekly or more often. Online shopping with a smartphone at least weekly was most common in the US, where 38% claimed to do this.
- **Social networking, instant messaging and gaming apps are the most commonly downloaded apps on iPhone and Google Play, across comparator countries.** On iPhone, WhatsApp Messenger was the most downloaded app in Spain, Singapore, Brazil, India and Nigeria. On Google Play, Facebook was the most downloaded app in the UK, France, Germany, Australia, Poland and Nigeria. On both iPhone and Google Play, at least one gaming app featured in 12 countries' top five most downloaded apps.
- **UK tablet users spend nearly 32 hours per month browsing.** In the UK, tablet users spent an average of nearly 32 hours browsing the internet in August 2015. This was slightly exceeded by US tablet users, who spent over 23 minutes longer browsing in the same month.
- **Laptop and desktop active audiences are getting older in the comparator countries.** In the majority of comparator countries analysed, the proportion of laptop and desktop users aged over 55 increased from 2014 to 2015. The highest proportion of over-55 laptop and desktop users was in Australia, at 30%, and in the UK over-55s accounted for a quarter of users.
- **US internet users spend the most time browsing online on a laptop or desktop, at 34 hours per month, followed by the UK, at 33 hours per month.** The least time spent browsing was in Japan, at 18 hours per month.
- **Google is the most popular search engine across all of the comparator countries.** In 2014, Google was the most popular search engine across all comparator countries except Japan. As Yahoo! Search's active reach in Japan declined substantially year on year to August 2015, Google became the most popular search engine.

Key points: post

- **Letter mail volumes across our comparator countries have declined by 10.2% since 2010.** Volumes have fallen from a total of 309.7 billion items in 2010 to 278.2 billion items in 2014. Year on year, total volumes fell by 2.5%. The rate of decline was faster among our European comparators (4.0%).
- **Year on year, letter mail revenues across all our comparators increased by 0.7%.** Revenue across all our comparator countries increased from £71.6bn in 2013 to £72.1bn in 2014. Revenue grew across all our country groups, with the exception of the European comparators, where it fell by 2.3%.
- **Volume decline year on year in the UK was among the lowest of our comparators.** Mail volume in the UK fell by 1.5% in 2014, the slowest rate of decline among our European comparators.
- **The UK was the only country among our European comparators in which revenue did not decline in 2014.** Letter revenue in the UK grew slightly in 2014, increasing by 0.4% year on year. Losses in revenue for our European comparators were more pronounced, particularly in Italy and Spain, where declines in volume contributed to revenue losses of 8.2% and 6.8% respectively.
- **The UK is among the cheapest countries in Europe in which to send a medium-sized letter.** It costs 63p to send a First Class medium-sized (C5 size, 100g or less) letter in the UK. The only European country in which this is cheaper is Poland (45p). With the exception of Spain, it costs over £1 to send a medium-sized letter in all of our other European comparators.
- **Seven in ten (72%) of the online population in the UK had sent an item of post in the past month.** Only in France and in Germany, where nearly eight in ten had sent at least one item, were people more likely to have sent something by post in the past month.
- **The average number of items of post sent per month has remained broadly stable in the UK and has increased in France, Italy and the US.** The average number of items sent per month in 2015 in the UK was 4.2, broadly similar to the average of 3.9 for the previous year. This is lower than in 2013, when the average number of items sent was 4.7.
- **People in the UK are more likely than those in any of the other countries we surveyed to send invitations, cards and postcards.** One-third of those in the UK who had sent any item of post in the past month had sent an invitation, card or postcard in this period, higher than any of the other countries that we researched.
- **People in the US reported receiving the most parcels in the past week.** Among people who had received a parcel in the past week, those in the US reported receiving the most parcels (3.6 on average). The average for the UK was 1.9 parcels.

Key summary metrics: 2014 data

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	NED	SWE	POL	SGP	KOR	BRA	RUS	IND	CHN	NGA	
TV and audio-visual	TV industry revenue (£bn)	14.0	8.4	20.4	6.1	102.9	19.1	4.1	3.1	2.5	1.8	2.1	0.6	5.5	11.4	3.6	5.1	21.9	0.6
	Revenue change (% YOY)	4.0	0.4	2.9	-2.3	4.1	3.1	-0.3	9.1	-2.2	1.9	5.1	0.6	7.2	12.2	7.4	14.7	10.7	14.8
	TV industry revenue per capita (£)	216.4	130.4	247.4	100.2	322.6	150.2	174.3	65.9	146.5	184.3	55.7	101.9	111.7	56.5	25.1	4.0	16.0	3.2
	Largest TV platform	Dsat	IPTV	Dsat	DTT	Dcab	Dcab	DTT	DTT	Dcab	Acab	Dsat	DTT	IPTV	Dsat	Dsat	Dsat	Dcab	Dsat
	Largest TV platform (% of homes)	45	41	43	73	43	50	67	69	47	26	50	37	30	52	36	42	43	69
	TV viewing (min/day)	220.0	221.0	221.0	262.0	282.0	264.0	204.0	239.0	200.0	153.0	260.0	n/a	196.0	224.0	239.0	n/a	157.0	n/a
	DTV take-up (%)	100	95	72	100	96	100	100	99	87	74	86	100	76	72	65	70	84	84
	Pay TV take-up (%)	59	77	55	30	87	69	32	29	99	83	83	63	97	33	66	85	62	22
Radio and audio	Radio industry revenue (£bn)	1.2	1.1	3.0	0.4	12.5	0.7	0.6	0.3	0.3	0.3	0.1	0.1	0.2	0.3	0.3	0.2	1.3	0.1
	Revenue change (% YOY)	3.6%	1.9%	3.4%	-1.5%	3.4%	-2.4%	3.1%	1.9%	1.3%	5.7%	0.4%	4.0%	2.8%	4.3%	7.0%	14.0%	9.8%	4.5%
	Radio industry revenue per capita (£)	18.7	16.7	36.4	5.9	39.3	5.5	26.3	7.4	16.0	29.4	2.7	16.0	3.1	1.6	2.0	0.2	1.0	0.3
	% income from public licence fees	60.0%	38.9%	79.3%	23.5%	n/a	5.2%	n/a	n/a	30.6%	78.1%	6.5%	n/a	22.3%	n/a	n/a	n/a	n/a	n/a
Internet	Online universe (m)	39.8	37.0	51.2	26.5	204.0	73.7	16.0	21.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	Fixed broadband connections per 100 HH	89	92	72	55	77	93	75	75	90	69	59	121	107	35	48	6	n/a	0
	Internet access via a smartphone/ mobile phone (%)	61	59	62	82	53	60	64	83	n/a	69	n/a	n/a	n/a	n/a	n/a	n/a	79	n/a
Telecoms and networks	Telecoms service revenues (£bn)	28.7	19.5	24.5	15.8	171.5	79.5	15.1	13.8	6.8	4.2	6.2	3.2	19.7	29.6	18.9	15.4	110.4	6.2
	Monthly telecoms revenues per capita (£)	37.2	25.4	24.8	21.5	45.0	52.0	53.5	24.4	33.7	36.1	13.5	49.1	33.3	12.3	11.0	1.0	6.7	2.9
	Fixed voice connections per 100 population (inc. managed VoIP)	60.8	60.5	44.8	36.7	41.0	44.5	38.0	40.4	41.5	39.2	16.2	36.2	53.9	22.5	26.6	2.1	19.2	0.1
	Monthly outbound fixed minutes per capita population	131.0	119.0	156.1	76.9	111.7	82.7	120.8	78.9	90.1	100.0	22.7	79.8	99.3	67.0	81.0	4.2	8.2	0.1
	Monthly outbound mobile minutes per capita	178.0	191.3	112.5	226.3	315.3	131.6	161.0	140.9	128.5	230.9	180.1	257.2	208.8	181.2	308.6	132.8	178.8	62.1
	Fixed broadband connections per 100 population	36.8	40.5	35.3	22.9	30.1	38.6	29.2	27.7	40.9	33.6	21.4	33.0	39.2	10.5	19.1	1.4	18.4	0.0
	4G as % of all mobile connections	28.2	13.8	11.5	4.3	39.5	36.8	38.9	12.6	18.9	27.5	7.4	39.3	62.9	2.4	4.7	0.0	7.5	0.2
	Domestic addressed mail revenues (£bn)	4.3	6.7	6.9	2.6	28.9	10.5	1.2	1.1	2.0	1.0	0.7	0.1	1.6	2.1	0.6	0.4	1.6	n/a
Mail revenues per capita (£)	66.0	103.9	83.3	42.0	90.6	82.3	52.3	22.7	118.6	104.6	17.2	21.6	33.2	10.3	3.9	0.3	1.2	n/a	
Domestic mail volumes (bn items)	12.7	13.6	15.7	3.8	150.2	18.1	4.3	3.6	3.5	2.4	1.8	0.6	4.3	8.3	3.1	5.6	26.7	n/a	
Standard (C5) domestic stamp price (£)	0.63	1.53	1.17	1.94	0.98	0.80	0.77	0.74	1.67	1.24	0.45	0.29	n/a	0.48	0.79	0.25	0.59	n/a	



The International Communications Market 2015

1 The UK in context

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1.1 The UK communications industry in context

1.1.1 Introduction

This chapter of the report provides a broad overview that places the UK communications sector in a global context.

- **The UK communications industry in context** (Section 1.1): We compare the size of the UK communications sector to that of other countries, and look at relevant top-line revenues across our comparator countries.
- **The UK consumer in context** (Section 1.2): We compare take-up and use of different services and devices at a broad level across our comparator countries.
- **Pricing of communications services** (Section 1.3): In this section we compare communications service prices in six of our comparator countries and look at how consumers in different countries choose to purchase communications services. We also examine consumer research on bundling of communications services among our comparator countries.
- **Changing viewing habits** (Section 1.4) In the light of the development of the range of audio-visual services available, we explore claimed changes in viewing habits in our comparator countries.
- **Smartphone societies** (Section 1.5): We compare 4G connections, in terms of coverage, take-up and consumer satisfaction, in our comparator countries. We also draw on consumer research and selected third-party sources to compare and contrast how some of our comparator countries are embracing smartphone technology, both inside and outside the home.
- **News consumption: the international context** (Section 1.6): We examine the consumption of digital news, and present findings from Ofcom's consumer research, looking at which platform people say they use as their main source for different types of news.
- **Media literacy** (Section 1.7): In this section we examine some of the issues arising from internet users' access to, awareness of and concerns about today's evolving media environment.
- **International regulatory context and models** (Section 1.8): We highlight recent international developments in communications regulation, to provide regulatory context to some of the topics in the report.

1.1.2 Putting the UK communications industry into context

In this section we discuss the revenue and expenditure associated with the communications sectors, in the UK and globally. Given the complexity and scale of the 'communications industries', there are many potential definitions of the 'communications sector'. It could, for example, include consumer electronics, network equipment, music, the film industry, online, software, games, newspapers, magazine and books, in addition to telecoms and broadcasting.

We focus primarily on the telecoms, television, radio and postal industries, to reflect Ofcom's regulatory remit.

The key findings include:

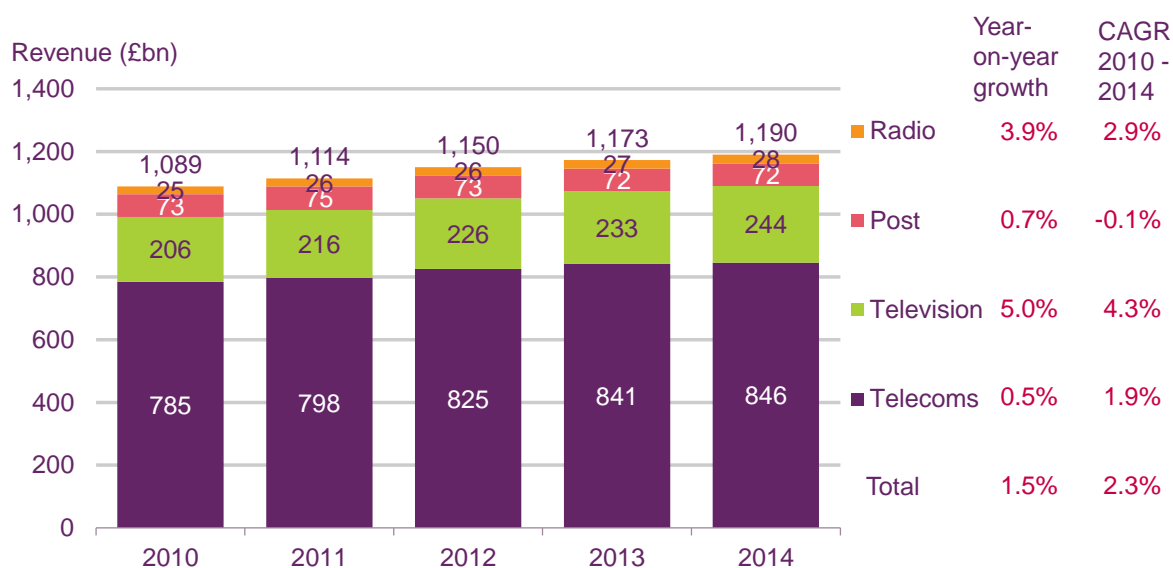
- **The communications sector's total global revenues in 2014 were £1,190bn, growing by 1.5% year on year (incorporating the telecoms, television, postal and radio sectors).** Global television industries had the largest increase in revenue in 2014, up by £12bn (5%), to £244bn. Telecommunications revenues, although the largest by a considerable margin, registered slow growth of 0.5% to reach £846bn.
- **UK communications sector revenues were the fifth highest of our comparator countries and the second highest in Europe.** In 2014, as in recent years, the three largest communications markets by revenue were in the US (£316bn), China (£135bn) and Japan (£110bn). Outside the top three, total UK revenue of £48bn was second only to Germany (£55bn).
- **The UK generated £748 per head across our communications industries in 2014, the highest of the EU5.** This figure was £244 lower than the US, which once again had the highest revenue per head of our comparator countries at £992 per person.
- **Global advertising expenditure grew to £283bn in 2014** driven by growth in internet and television advertising revenues. Over the five year period 2010 to 2014 expenditure on internet advertising grew at a compound annual rate of 17.9%, to stand at £80bn in 2014. Television advertising revenue growth in 2014 was 5.3% and it remains the largest advertising medium by revenue, at £99bn in 2014.

1.1.3 Communications sector revenues

The communications sector (as defined in this report) generated £1,190bn in revenue in 2014, an increase of 1.5% in the year to 2014

Globally, communications services generated £1,190bn in revenues in 2014 (Figure 1.1). Revenues increased by an average of 2.3% per year between 2010 and 2014, the main drivers of this growth being the broadcast television sector and telecommunications sectors. Between 2010 and 2014, telecoms revenue grew by an average of 1.9% per year, generating £846bn worldwide in 2014. Television revenues grew fastest during this period, up by an average of 4.3% p.a. to £244bn, and revenue growth in 2014 was above the five-year average at 5.0%, representing an increase of £12bn (compared to 2013). Radio revenues increased by 3.9% in 2014 to £28bn. Total postal revenues in the countries we measured were relatively stable (up by 0.7% year on year) at £72bn.

Figure 1.1 Global communications revenues



Source: Data derived from various sources: PwC Global Entertainment and Media Outlook 2015-2019 @ www.pwc.com/outlook for television and radio revenues (both include advertising, licence fees and subscription services only), Wik Consult / Ofcom estimates for postal revenues which refers to letter mail only. IHS / industry data / Ofcom for telecoms revenues, which refer to retail revenues for fixed voice, broadband and mobile services. Interpretation and manipulation of data are solely Ofcom's responsibility. All figures are nominal.

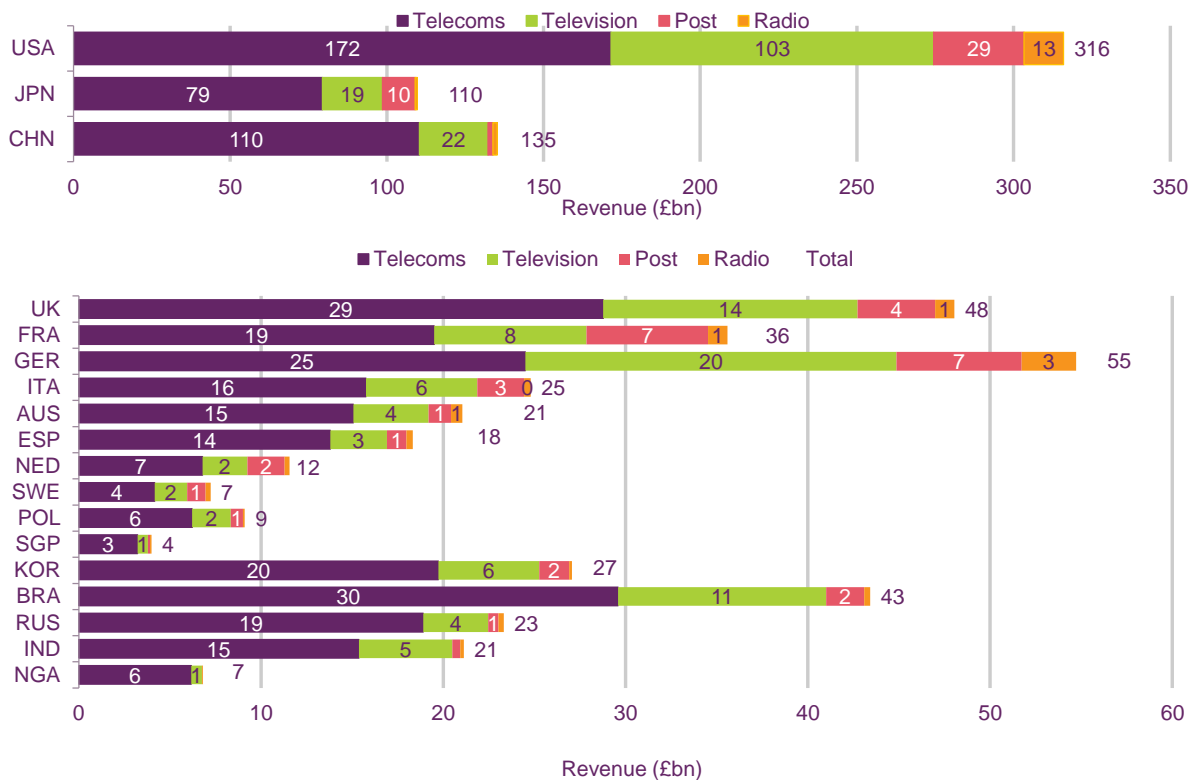
Note: Postal revenues are for our 17 comparator countries and include letters only.

UK telecoms revenues are the second highest in Europe and the fifth highest among all our comparator countries

In 2014, as in recent years, the three largest communications markets by revenue were in the US (£316bn), China (£135bn) and Japan (£110bn). At £172bn, the revenues of the US telecoms industry alone were greater than the combined industries' revenues in any other country (Figure 1.2). The US also commanded the largest revenue among our comparator countries in the other sectors we consider in this report - television (£103bn), post (£29bn) and radio (£13bn).

In the tier below the top three, total revenue across the four industry sectors in the UK was £48bn in 2014. This was second only to Germany (£55bn) and was ahead of Brazil (£43bn). UK television revenues, at £14bn, were second only to Germany at £20bn (both of these countries have a television licensing system that supports public service broadcasting). UK telecoms revenues were the largest among our European comparator countries, generating £29bn in 2014. This made the UK's telecoms sector the second largest outside the US, Japan and China, after Brazil's (which generated £30bn during the year).

Figure 1.2 Communications sector revenues, by country: 2014



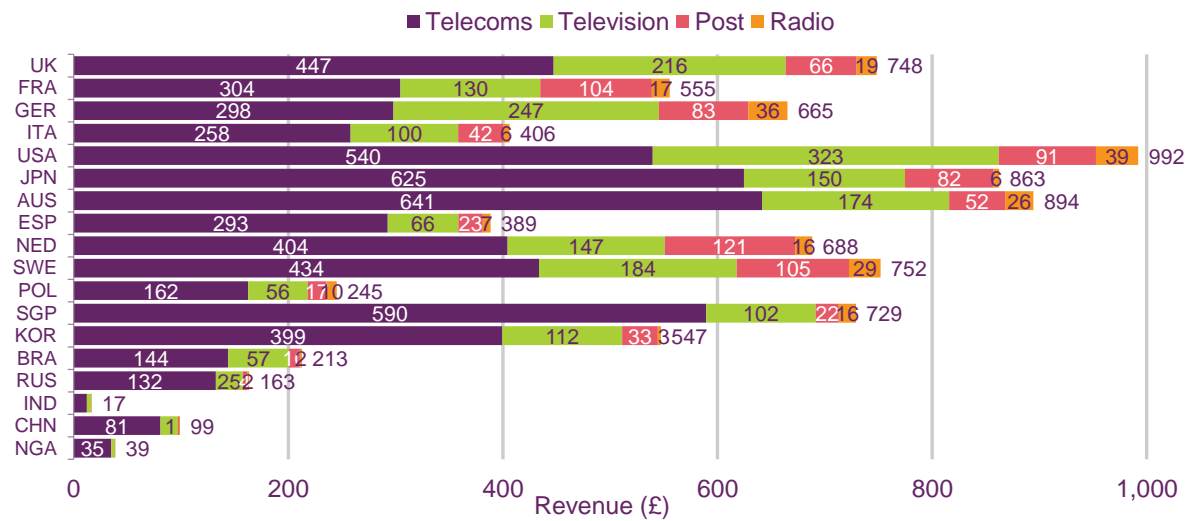
Source: Data derived from various sources: PwC Global Entertainment and Media Outlook 2015-2019 @ www.pwc.com/outlook for radio revenues (include advertising, licence fees and satellite subscription services only), Wik Consult / Ofcom estimates for postal revenues (letters only), IHS / industry data / Ofcom for television and telecoms revenues (telecoms revenues refer to retail revenues). Interpretation and manipulation of data are solely Ofcom's responsibility. All figures are nominal

Note: Postal revenue data are not available for Nigeria.

UK communications revenue per head was the highest of the EU5 countries in 2014

The UK generated £748 in communications service revenues per person in 2014, the highest average spend across the EU5 (Figure 1.3). This figure was £244 (25%) lower than the US, which continued to have the highest revenues per head of our comparator countries at £992 per person. Although telecoms revenue was the highest of the four sectors in the US, it was television revenue which differentiated this market from the others. Television revenue per head was almost 50% higher than the UK, and 30% higher than Germany which had the second highest television revenue per head, at £247. Australia (£894) and Japan (£863) had the second and third highest overall revenue per head, both driven primarily by higher telecoms revenue.

Figure 1.3 Communications sector revenue per head: 2014

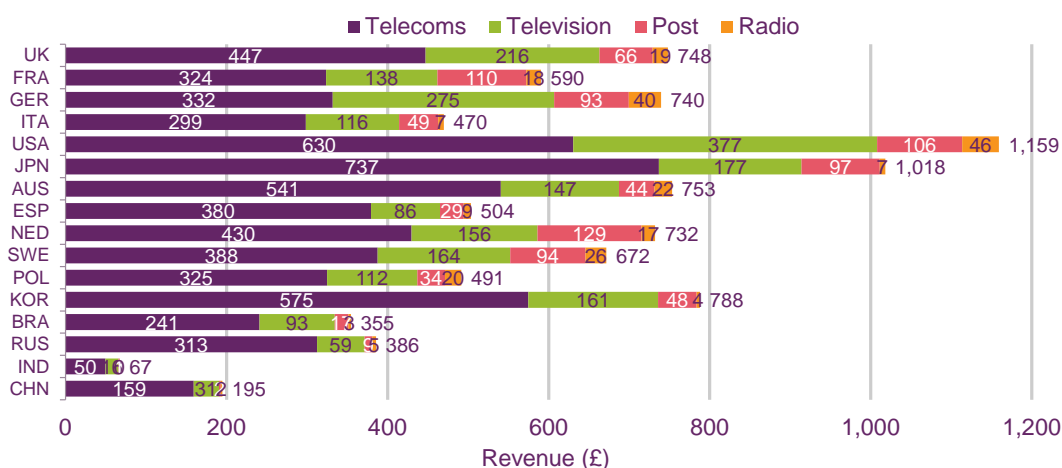


Source: Data derived from various sources: PwC Global Entertainment and Media Outlook 2015-2019 @ www.pwc.com/outlook for radio revenues (include advertising, licence fees and satellite subscription services only), Wik Consult / Ofcom estimates for postal revenues (letters only). IHS / industry data / Ofcom for television and telecoms revenues (telecoms revenues refer to retail revenues). Interpretation and manipulation of data are solely Ofcom's responsibility. All figures are nominal.

Note: Postal revenue data are not available for Nigeria.

Figure 1.4 uses OECD purchasing power parity data to adjust absolute revenue per capita, taking account of varying price levels across countries in order to provide a view of revenue in relation to consumer spending power in each country. After adjustment, the revenue per head in the US increases to £1,159, and Japan (£1,018) and South Korea (£788) overtake Australia as the countries with the second and third highest revenues per head countries respectively, reflecting the higher general cost of goods and services in Australia. The UK revenue per capita remains the fifth highest of our comparator countries.

Figure 1.4 Communications revenues per head, adjusted for comparative price levels: 2014



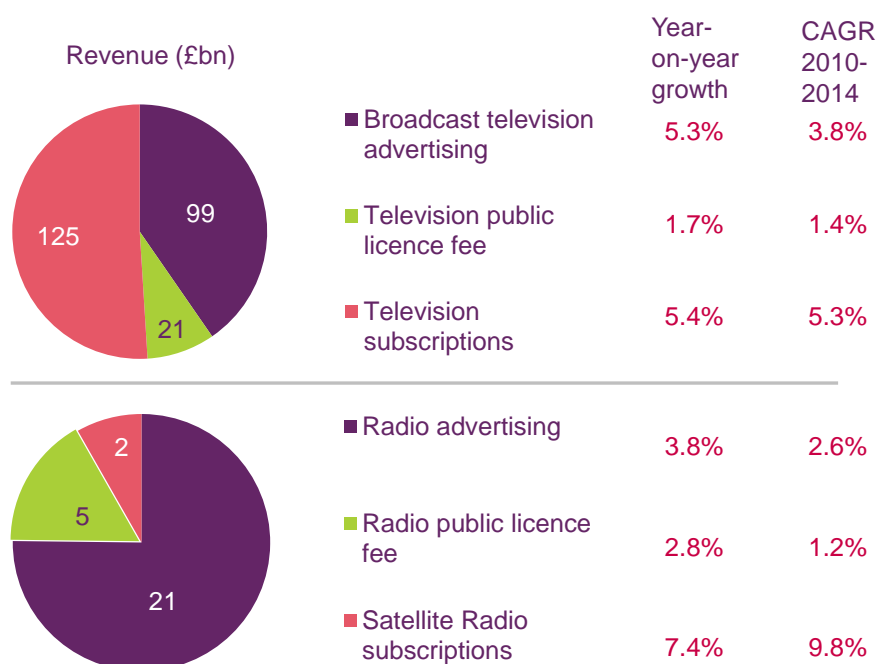
Source: Data derived from various sources: Ofcom analysis based on data from PwC's Global Entertainment and Media Outlook 2015-2019 @ www.pwc.com/outlook for radio revenues (include advertising, licence fees and satellite subscription services only), Wik Consult / Ofcom estimates for postal revenues (letters only). IHS / industry data / Ofcom for television and telecoms revenues (telecoms revenues refer to retail revenues). Interpretation and manipulation of data are solely Ofcom's responsibility. Figures adjusted using data from <http://stats.oecd.org>. comparative price levels (CPL) to adjust for purchasing power parity (PPP). CPLs are ratios of PPP for consumption expenditure to exchange rates. They measure differences in price levels between countries by indicating the number of units of a common currency required to buy the same volume of products in each country All figures are nominal. No PPP data was available for Nigeria.

Subscription revenues continue to grow in the global television industry

Figure 1.5 shows the proportions of global television and radio revenues that came from advertising, public licence fees and subscriptions in 2014. Of the £244bn that the television industry generated in 2014, subscription revenues contributed the largest, and fastest-growing, proportion of total revenue, at £125bn. Year-on-year growth was 5.4%, in line with the compound annual growth rate (CAGR) of 5.3% p.a. across the five year period. Broadcast television advertising revenues grew at a rate of 5.3% year on year, ahead of the five-year CAGR of 3.8%. Public funding remained relatively flat at £21bn.

In the radio industry, satellite subscription has seen the fastest growth, both year on year and across the period 2010 to 2014, albeit from the smallest base. Among our comparator countries, subscription services are currently available in the US, from satellite radio broadcaster Sirius XM Radio. Subscription remains the smallest of our measured revenue streams for the radio industry, at just over £2bn, half as much as public funding (just under £5bn) and just over a tenth of the size of advertising revenue, which stood at £21bn in 2014.

Figure 1.5 Sources of global revenue for radio and television industries: 2014



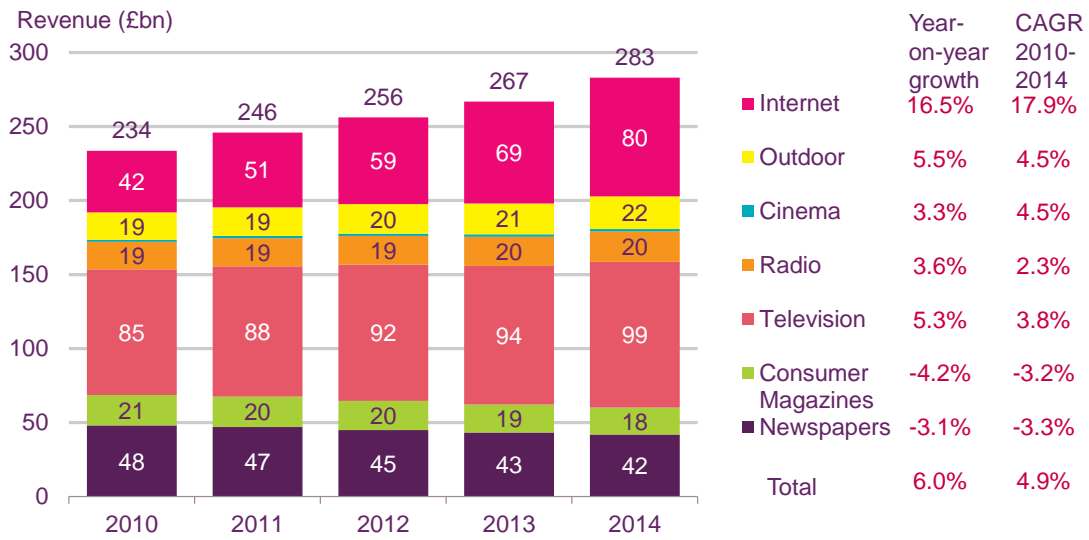
Source: All data derived from PwC Global Entertainment and Media Outlook: 2015-2019 at www.pwc.com/outlook. Notes: Ofcom is responsible for all growth calculations displayed. All figures are nominal.

Global advertising expenditure grew by 6% to £283bn in 2014

In 2014 global advertising expenditure grew by 6% (£16bn) to reach £283bn, driven by growth in internet and television advertising revenues. Over the five-year period 2010 to 2014 expenditure on internet advertising grew fastest among the media depicted in Figure 1.6, at a compound annual rate of 17.9%, to stand at £80bn in 2014. Outdoor and cinema advertising both experienced growth rates above 4% per annum over the five-year period with television falling just short, at 3.8%. Television advertising revenue growth in 2014 was considerably higher than the five-year average, reaching 5.3%, and it remains the largest advertising medium by revenue, with a total of £99bn for the year. Newspaper and consumer magazine advertising revenue (excluding their online advertising revenues, which are included here in the internet total) continued to experience a steady decline.

In 2014, internet advertising contributed 28% of all advertising expenditure by the media shown in Figure 1.6, up from 18% in 2010. Combined newspaper and consumer magazines' share dropped from 29% to 21%. All other media shares remained constant, with television the largest at 35%.

Figure 1.6 Global advertising expenditure, by medium: 2014



Source: Data derived from PwC Global Entertainment and Media Outlook: 2015-2019 @ www.pwc.com/outlook. Notes: Ofcom is responsible for all growth calculations displayed. All figures are nominal.

1.2 The UK consumer in context

1.2.1 Introduction

In this section we examine take-up and use of communication devices and services. We focus primarily on the UK, but also on the other countries where we carried out consumer research in September-October 2015 (France, Germany, Italy, the US, Japan, Australia, Spain and Sweden). The key findings are:

- **The UK had the highest per-capita fixed voice take-up among our comparator countries at the end of 2014.** During the year, the number of UK fixed voice connections per 100 people increased by one, to 61. This represented both the highest penetration among our comparator countries and the largest increase during the year.
- **The UK had the fifth highest number of fixed broadband connections per 100 people at the end of 2014.** UK fixed broadband lines increased by seven connections per 100 people in the five years to 2014 to reach 37 lines, behind Japan (at 39 connections), France (40 connections), the Netherlands (41 connections) and South Korea (39 connections).
- **The UK had the highest proportion of fixed broadband lines with a headline speed of 30Mbit/s or higher, among the EU5 countries in 2014.** At the end of 2014, 35% of UK fixed broadband connections had headline speeds of 30Mbit/s or higher. This was a greater proportion than the other EU5 comparator countries, but a lesser proportion than some smaller EU countries: the proportion in the Netherlands was 46% and in Sweden it was 42%.
- **Growth in smartphone ownership continued in 2015.** Of our comparator countries Spain reported the highest take-up at 83%, an increase of 6pp on 2014. The UK was slightly below the average at 67%, an increase of 4pp on the previous year.
- **Overall, watching television remains the most popular communications activity undertaken on a weekly basis in each comparator country.** However, respondents to our online surveys in Italy, Spain and Sweden were just as likely to say they used a mobile phone every week as to say they watched television every week.

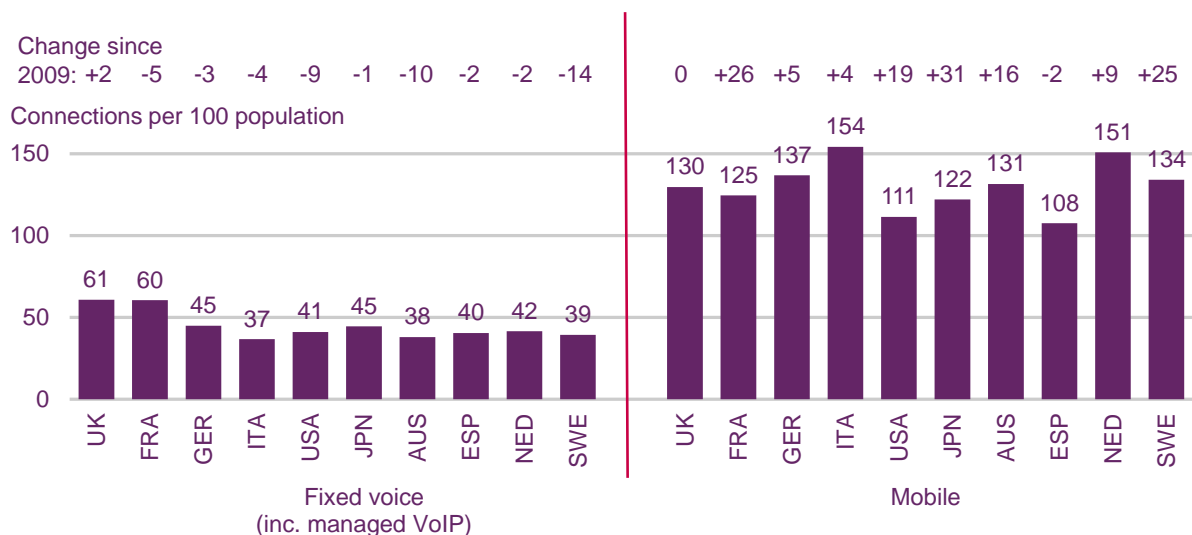
1.2.2 Take-up and use of communications services, devices and media activities

Fixed voice connections per 100 people continue to fall across most comparator countries, but remain stable in the UK

Of our comparator countries, only the UK experienced an increase in the number of fixed lines per 100 people (including PSTN lines and managed VoIP connections) in the five years to 2014, up two connection per 100 people to 61 (Figure 1.7). This increase may be partly due to strong demand for ADSL and fibre-to-the-cabinet (FTTC) broadband services, both of which require a fixed exchange line in the UK. This increase places the UK as having the highest number of fixed voice connections per 100 population out of all our comparator countries.

Outside the UK, the fall in per-capita fixed-line take-up is partly due to the growing use of mobile phones in most countries, alongside increasing use of text-based forms of communication, such as email, mobile messaging and instant messaging services, including those provided by social networking sites. In contrast to fixed, mobile take-up increased in all comparator countries between 2009 and 2014. Spain was the exception, down two connections per 100 people over the period. The number of mobile connections per 100 people in the UK remained mostly stable in the five years to 2014.

Figure 1.7 Fixed voice and mobile connections per 100 population: 2014

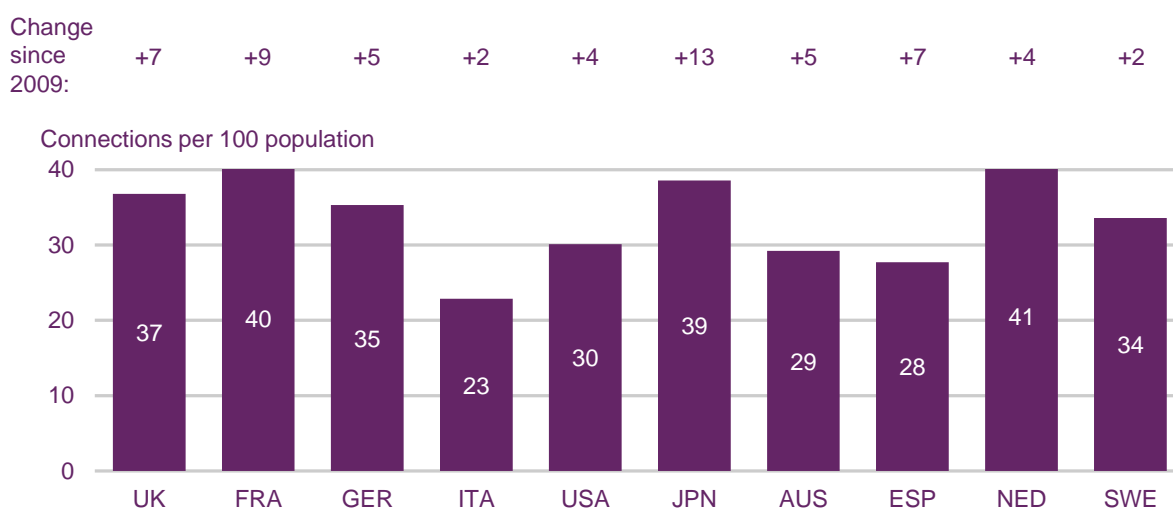


Source: IHS / industry data / Ofcom

Japan had the greatest increase in the number of fixed broadband connections per 100 people over the last five years

Across the ten comparator countries shown in Figure 1.8 below, the Netherlands had the highest fixed broadband take-up at the end of 2014, at 41 connections per 100 people, followed by France at 40 connections per 100 people. Japan, which had the largest increase in fixed broadband connection per 100 people in the five years to 2014, was third with 39 connections per 100 people, followed by the UK with 37. Among the seven European countries included in the analysis, Italy had the lowest fixed broadband take-up (23 connections per 100 population) in 2014, and the lowest rate of growth in the preceding five-year period along with Sweden (both up by two connections). Spain followed with 28 connections per 100 people.

Figure 1.8 Fixed broadband connections per 100 population: 2014



Source: IHS / industry data / Ofcom.

Note: Broadband connections include some SME business connections

The UK has the highest proportion of fixed broadband connections with headline speeds of 30Mbit/s or higher, among the EU5 countries

In 2009, less than 1% of UK residential broadband connections had a headline speed of 30Mbit/s or more, but by 2014 35% fell into this category (Figure 1.9). Included in these were connections with a headline speed ≥ 100 Mbit/s, which accounted for 5% of all residential connections⁶.

The UK had the highest proportion of connections with a headline speed of 30Mbit/s or higher of the EU5 at the end of 2014, although it ranked eighth among the 18 comparator countries included in the analysis. South Korea, Singapore and Japan (where FTTP services are widely available) had the three highest proportions overall, with 89%, 83% and 81% of their respective fixed broadband bases having headline speeds ≥ 30 Mbit/s. In all comparator countries except Nigeria, the proportion of fixed broadband connections with a headline speed of ‘up to’ 30Mbit/s or higher increased in the five years to 2014.

⁶ Some SME connections that use residential packages may be included in the residential connections figure as it is difficult to differentiate between true residential connections and SMEs using residential packages.

Figure 1.9 Fixed broadband connections, by headline speed: 2009 and 2014



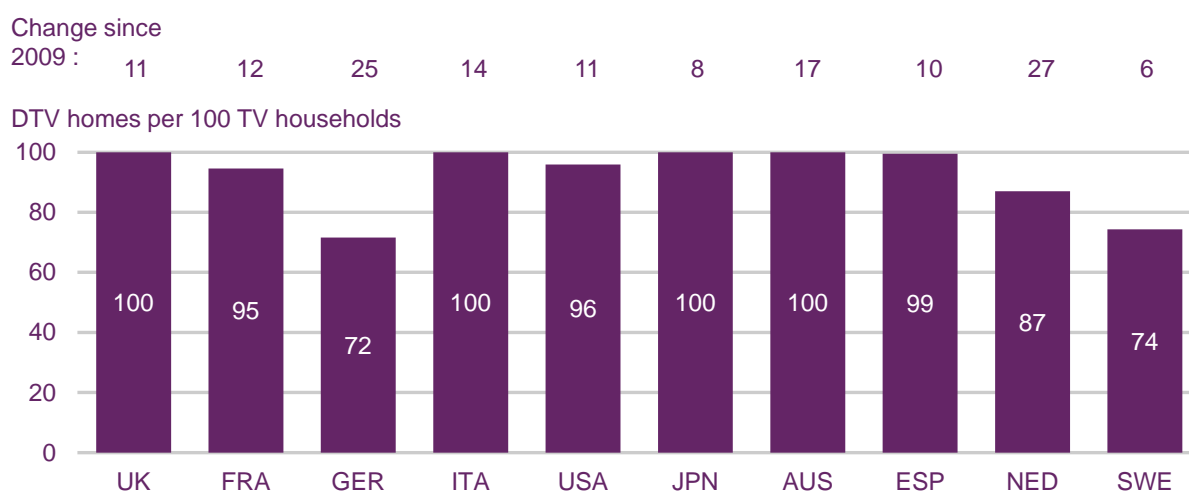
Source: IHS/ Ofcom/ operator data

Digital television take-up in Germany is catching up with other countries

Digital take-up remains relatively low in Germany and Sweden compared to other European comparator countries, as a result of the continuing availability of analogue cable services in both countries. Over the last five years Germany has seen the greater change of the two. The proportion of television homes that were digital television homes in Germany in 2014 stood at 72%, 25 percentage points higher than in 2009 and two percentage points below Sweden in 2014.

The UK reached 100% digital TV homes per 100 TV households in October 2012 when the last analogue signals were switched off.

Figure 1.10 DTV homes per 100 TV households: 2014



Source: IHS / industry data / Ofcom

Ownership of smartphones continues to grow in most comparator countries

As part of our consumer research we asked respondents about their ownership and personal use of a range of communication and media devices.⁷

Growth in smartphone ownership continued in 2015. Of our comparator countries, Spain reported the highest take-up at 83%, an increase of 6pp on 2014. UK smartphone take-up stood at 67%, an increase of 4pp on the previous year. Two countries reported the same levels of take-up as last year; 77% of respondents in Japan and 69% in Australia claimed to use a smartphone. The US had the lowest take-up of smartphones (57%).

Reported ownership of tablets continues to increase in all the comparator countries. According to our survey results, 54% of the UK online population claim to have a tablet computer in their home. Take-up of tablets was highest in Spain (65%) and Italy (63%) and lowest in Japan, where 31% of the online population claimed to have a tablet in their home.

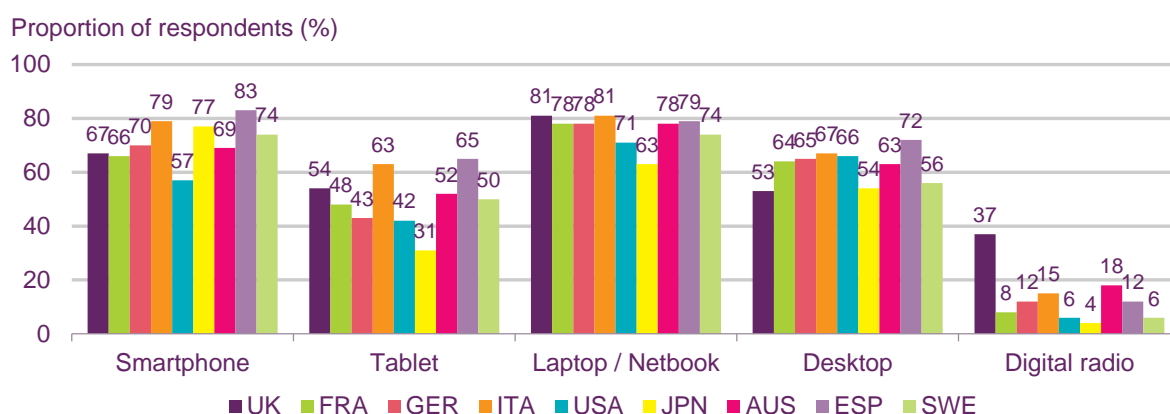
Laptops remain the most popular communication/media device in the home in all countries, with the exception of Japan, where reported laptop ownership was 63%. Smartphones were the most popular device in Japan (with 77% take-up). In all the other countries we surveyed, at least 70% of respondents claimed to have a laptop in their home; the highest take-up was

⁷ The research was carried out online in September-October 2015, which means that results are derived from a different sample, time period and questions from other Ofcom consumer research. Direct comparisons cannot therefore be made between the various surveys.

in the UK and Italy, both at 81%. After Japan, the US had the second lowest take-up of laptops (71%) among the countries surveyed.

People in the UK reported the highest take-up of digital radio sets by a considerable margin; almost four in ten (37%) respondents claimed to have a digital radio in their home.⁸ Take-up in Australia was the next highest (18%). Among the reasons for high take-up in the UK may be the support that UK broadcasters have shown for the technology; in September 2015 there were 25 UK-wide DAB radio stations broadcasting in the UK (including 11 from the BBC) and 214 local commercial stations, 74 of which were not available on analogue radio. DAB coverage is also highest in the UK, reaching 96% of households.⁹

Figure 1.11 Ownership and personal use of devices



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004 Q3a. Which of the following devices do you have in your home? (tablet, laptop, desktop computer, digital radio, DVR, HDTV, smart TV, 3D TV) Q.4a Which of the following devices do you personally use? (smartphone)

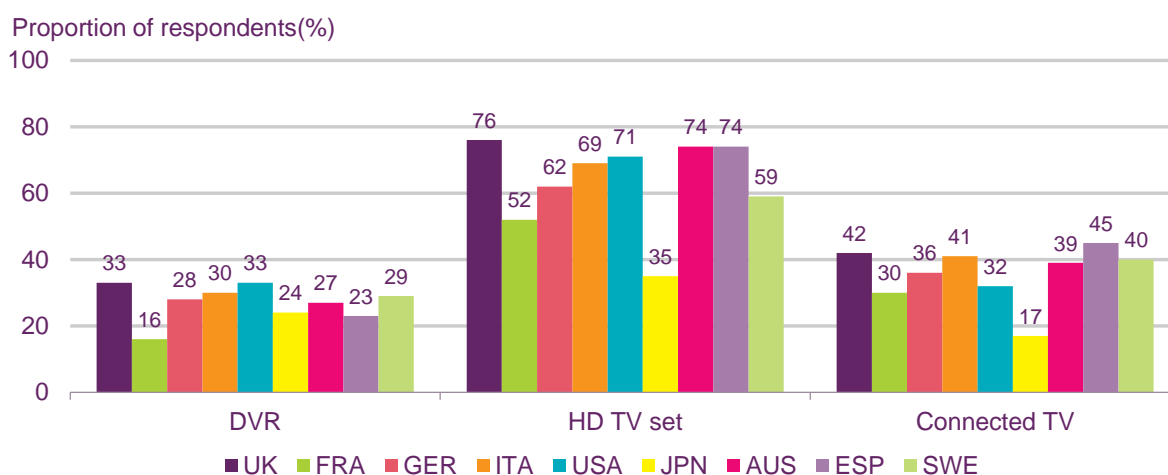
⁸ Our results show lower take-up of DAB radio sets than reported by the UK's radio listening measurement body, RAJAR, which reported that 53.7% of the UK population had a DAB radio in their home in Q3 2015. This is due to methodological differences; our research was designed to compare communications use and attitudes between different countries and not provide a definitive measure of take-up in any one country.

⁹ <http://stakeholders.ofcom.org.uk/market-data-research/other/radio-research/digital-radio-reports/digital-radio-2015/>

Claimed ownership of audio-visual technologies in the UK is among the highest of our comparator countries

Claimed take-up of DVRs in the UK and the US was 33%, the highest among our comparator countries.¹⁰ The UK also reported the highest ownership of HD-capable television sets (76%).¹¹ At 42%, claimed ownership of connected TVs in the UK was the second highest of our comparator countries, after Spain (45%).¹²

Figure 1.12 Claimed ownership of audio-visual devices (DVR, HDTV and connected TV)



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.3a Which of the following devices do you have in your home? (DVR, HD-capable TV, connected TV)

A greater proportion of UK respondents view catch-up services than in any other comparator country

Figure 1.13 illustrates claimed viewing of a variety of online television and film services within the week prior to the survey response. In our survey 66% of respondents in the UK claimed to have viewed an online television or film service during this time. This was the highest of all our comparator countries.

The UK figure was driven primarily by catch-up services provided by both free-to-air broadcasters (44%) and pay-TV providers (29%). At 38%, the US reported the highest

¹⁰ This figure is lower than published data from Ofcom's Technology Tracker in the CMR 2015 which covered Q1 2015. Ofcom's Technology Tracker measures DVR take-up by a series of questions relating to ownership of specific branded set-top boxes. A shorter, non-branded, question is used in the ICMR research for the purposes of international comparison.

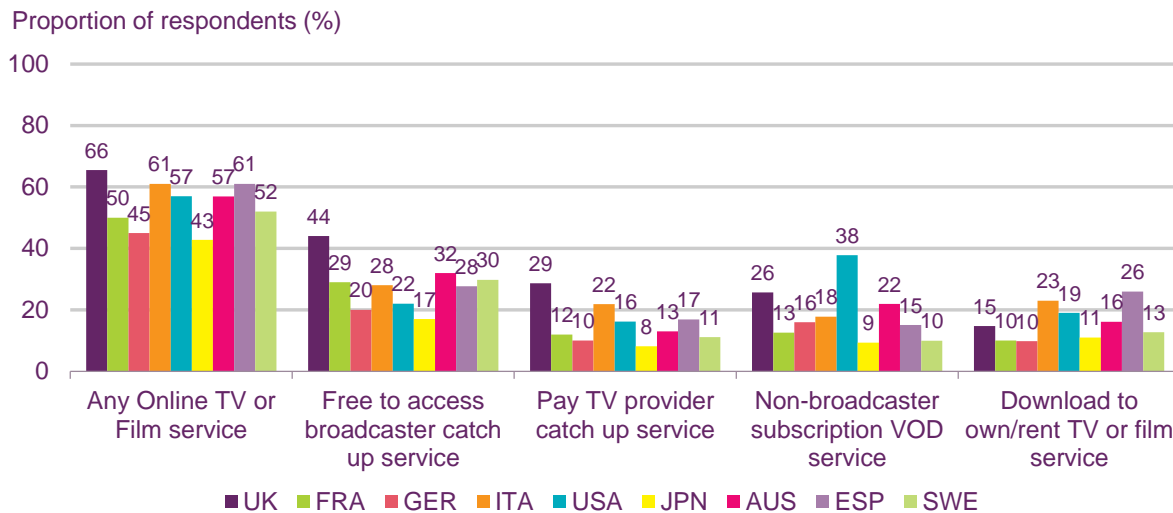
¹¹ Claimed ownership of an HD-ready television set should not be interpreted as having the means of viewing HDTV, which requires an HDTV set, the ability to receive an HD signal via an inbuilt tuner or set-top box, and access to HD transmissions, whether via subscription or free to air. For details on HD platforms and take-up please see the *TV and Audio-Visual* chapter.

¹² This figure is lower than published data from Ofcom's *Communications Market Report (CMR) 2015*. CMR 2015 figures related to Q1 2015 and were based on known penetration of set-top boxes and smart TV sales (media consultancy 3 Reasons). ICMR 2015 used surveys that measured claims of ownership of connected TVs (smart TV sets and TVs connected to the internet via another device, e.g. set-top box, video games console), for the purposes of international comparison.

proportion claiming to have watched non-broadcaster subscription video-on-demand (“SVoD”) services (such as Netflix and Amazon Prime Video) within the last week. This figure was considerably higher than in the UK (26%) which ranked second of our comparator countries.

Downloading to own or rent was considerably more popular in Italy and Spain than in any other countries in our research; 23% and 26% of respondents respectively claimed to have done this in the past week.

Figure 1.13 Online television and film services used in the past week



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.21 When did you last use the following online services to watch TV programmes or films? Answer: Within the last week

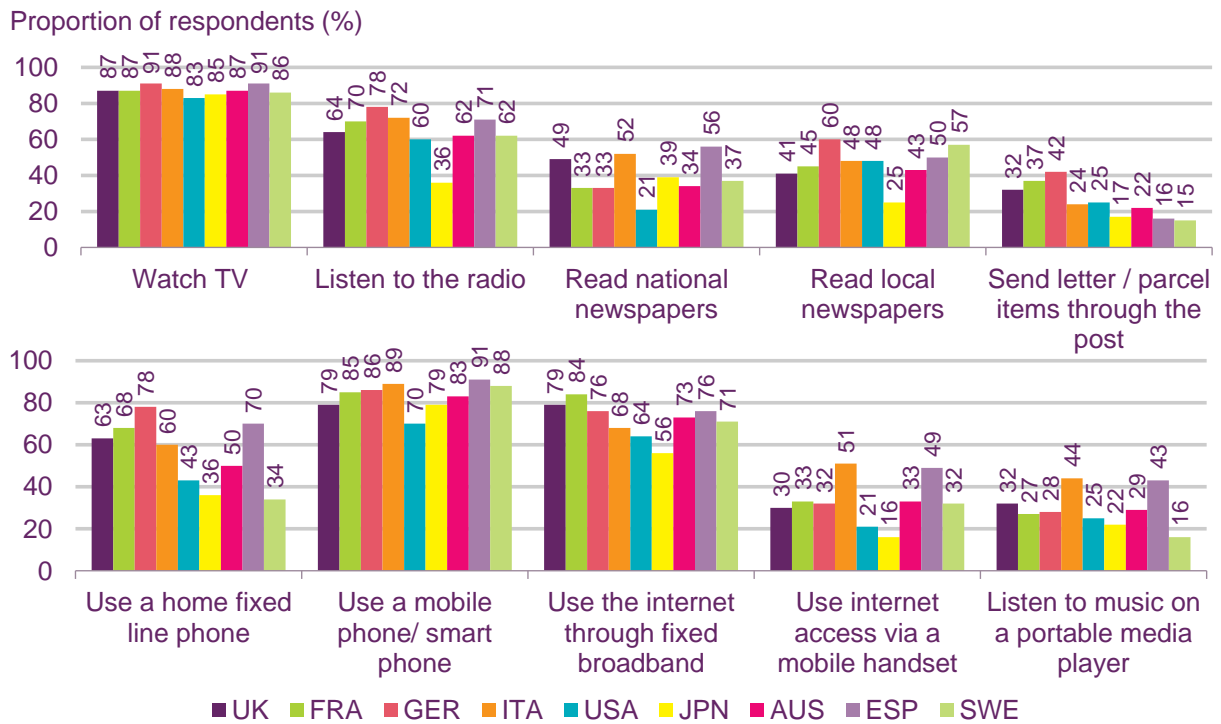
Watching television remains the most popular, regularly-undertaken communications activity in the majority of comparator countries

Figure 1.14 sets out the proportion of the online population regularly engaging (i.e. weekly) in a selection of media and communications activities. Watching television remains the most popular activity overall.

However, in Italy, Spain and Sweden, respondents were just as likely to say they used a mobile phone at least once a week as to say they watched television at least once a week.

Using a mobile handset to access the internet was also significantly higher in Italy (51%) and Spain (49%) than in our other comparator countries. The UK recorded the third-lowest weekly internet access via a mobile handset, at 30%, and the second highest-use of the internet via fixed broadband at 79%, behind France (84%).

Figure 1.14 Regular use of selected communications services / media



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.6 Which of the following do you regularly do (at least once a week)?

1.3 Pricing of communications services

1.3.1 Introduction

In this section we provide high-level comparisons of UK communications service prices with those in five other comparator countries (France, Germany, Italy, Spain and the US) and look at how consumers in different countries purchase communications services. More information on service pricing can be found in Chapter 2 of this report. A detailed description of the methodology used to compile the analysis can also be found in Appendix C.

Overall, UK communications service prices compare favourably to those in the other comparator countries. In 2015 the UK ranked second in the overall pricing rank (combining 'weighted average' stand-alone and bundled as well as 'lowest available' prices), behind France. This was a fall of one place since 2014; although the average of the UK's rankings, across all households and metrics, was unchanged since last year. France's overall average of rankings improved, resulting in it overtaking the UK, to reach first place overall.

1.3.2 Stand-alone service pricing

The UK had the cheapest 'lowest available' mobile phone and fixed broadband prices but the most expensive 'lowest available' fixed voice prices

The analysis presented in Chapter 2 of this report compares stand-alone and bundled service prices for fixed and mobile telecoms and pay-TV services, using five representative baskets of services. These baskets are designed to reflect the usage habits of five 'typical' household profiles¹³. Figure 1.15 looks at the total 'lowest available' stand-alone price that fulfils these households' service requirements, calculated using a pricing model containing the residential tariffs offered by the largest providers in each country in July 2015. This model is provided by pricing consultancy Teligen.

To make comparison easier, we have created an index for each service, where the price in the UK is 100. As such, a value of less than 100 means that the 'lowest available' price is lower than that in the UK, while a value over 100 means that 'lowest available' price is more expensive than in the UK. However, it is important to note that there are a number of limitations to our analysis of stand-alone communications service prices, including:

- take-up of bundled services is high in most countries (see Figure 1.16 below), so stand-alone prices are not directly relevant to many consumers;
- providers increasingly offer only bundled services and have withdrawn stand-alone services, so in many countries the analysis is based on only a few available stand-alone prices;
- our analysis is based on prices offered by the largest providers, so it may exclude smaller operators that are seeking to gain market share by offering low prices.

Figure 1.15 shows that the UK had the cheapest 'lowest available' stand-alone mobile phone and fixed broadband prices among the six countries in 2015. The 'lowest available' stand-alone mobile prices in the UK were 14% lower than in the next cheapest country (France), while the US had the highest prices, partly because mobile users in the US have to pay for

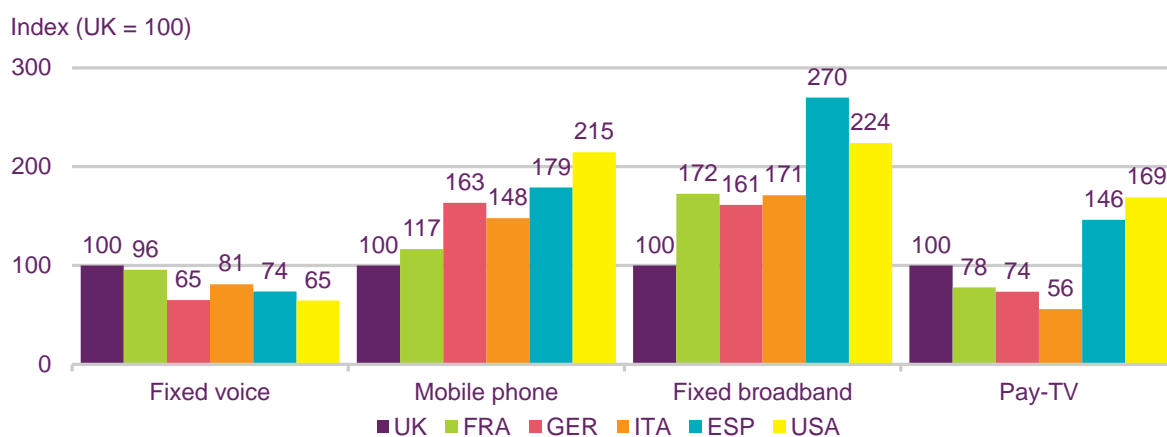
¹³ These five households consist of the "Basic needs", "Late adopters", "Mobile power user", "Connected family" and "Sophisticated couple" households. For further definitions please see Figure 10.4 in Annex C.

incoming as well as outgoing calls. Similarly, fixed broadband prices in the UK were 38% lower than in Germany, the next cheapest country, while Spain had the most expensive 'lowest available' stand-alone fixed broadband prices, more than twice those in the UK.

In contrast, the UK had the highest 'lowest available' stand-alone fixed voice prices among the six countries included in our analysis in 2015, 5% higher than in France (the country with the second highest prices). However, it should be noted that the UK figure refers only to BT's services, as BT was the only provider, out of those included in the Teligen pricing model, to offer stand-alone fixed voice tariffs on its website in July 2015.¹⁴ The cheapest 'lowest available' fixed voice prices in 2015 were found in Germany and the US, both of which were almost a third cheaper than in the UK.

Our analysis found that, excluding the TV licence fee, the UK had the third highest 'lowest available' price for pay-TV services, after the US and Spain (Italy had the cheapest 'lowest available' pay-TV services). It should be noted that, it is difficult to compare pay-TV service prices due to differences (between countries and within each country) in the volume and quality of content included in subscriptions.

Figure 1.15 Comparison of 'lowest available' stand-alone pricing



Source: Ofcom, using data supplied by Teligen

Note: Pay-TV excludes the TV licence fee.

1.3.3 Bundled services pricing

In the UK, 83% of respondents buy more than one communications service from the same provider

Ofcom consumer research asked people in nine countries whether they bought more than one service from the same provider as part of a bundle (Figure 1.16). The benefits of bundling communications services include the convenience of receiving a single bill for multiple services, as well as the fact that bundle prices are typically lower than those available when purchasing the same services on a stand-alone basis. It should be noted that, as this research was conducted online, it is possible that the results will not reflect purchasing habits among the wider population of each country.

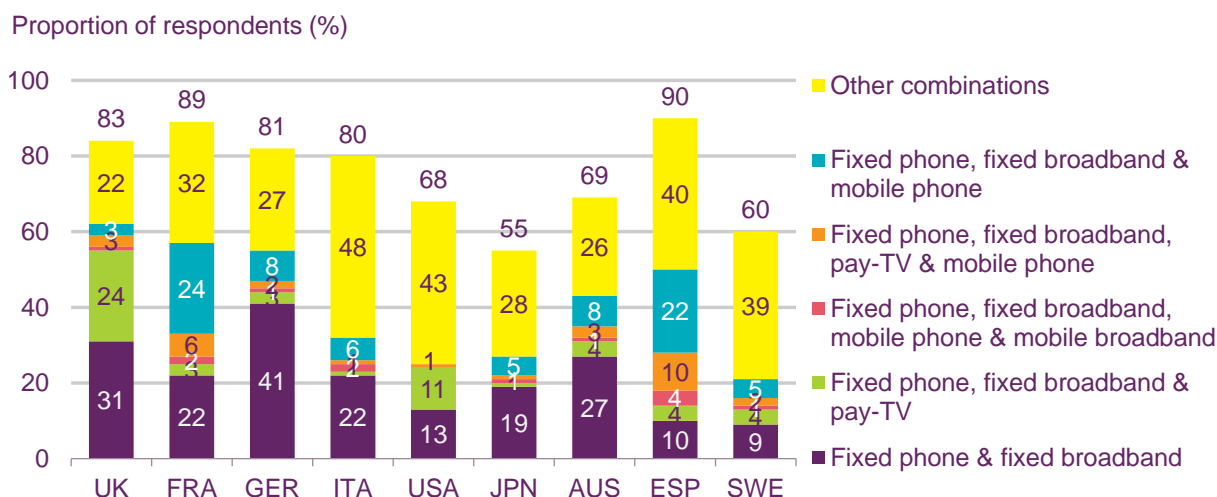
Over half of all consumers in each of the comparator countries purchased more than one communications service from the same provider. Among the EU5 countries, at least eight in ten respondents said they purchased two or more communications services as part of a bundle. This proportion was highest in Spain, at 90%, closely followed by France (89%). In

¹⁴ The Teligen model only includes tariffs that are offered on the respective providers' websites.

the UK, 83% of respondents bought two or more communications services as part of a bundle. Japan had the lowest proportion of respondents who bought bundled communications services, at 55%, followed by Sweden (60%).

In the UK, the most frequently-cited bundle was a dual-play combination of fixed voice and fixed broadband services, which 31% of respondents said that they purchased. This was the second highest proportion for this bundle type, after Germany at 41%. The second most popular combination in the UK was that of fixed phone, fixed broadband and pay-TV (at 24%), significantly higher than in any of the other countries.

Figure 1.16 Proportion of consumers buying more than one communications service from the same provider



Source: Ofcom consumer research September - October 2015

Base: All respondents with more than one service, UK=952, FRA=932, GER=945, ITA=935, USA=829, JPN=831, AUS=907, ESP=928, SWE=924

Q.5 Do you receive a package or bundle of two or more of these services from the same supplier?

We now take a closer look at 'lowest available' prices (including bundles) for two of the five household types that are included in the analysis in the international price benchmarking section of this report (Chapter 2). We have chosen to include these two households as they allow us to compare pricing for households with comparatively high and low use of communications services:

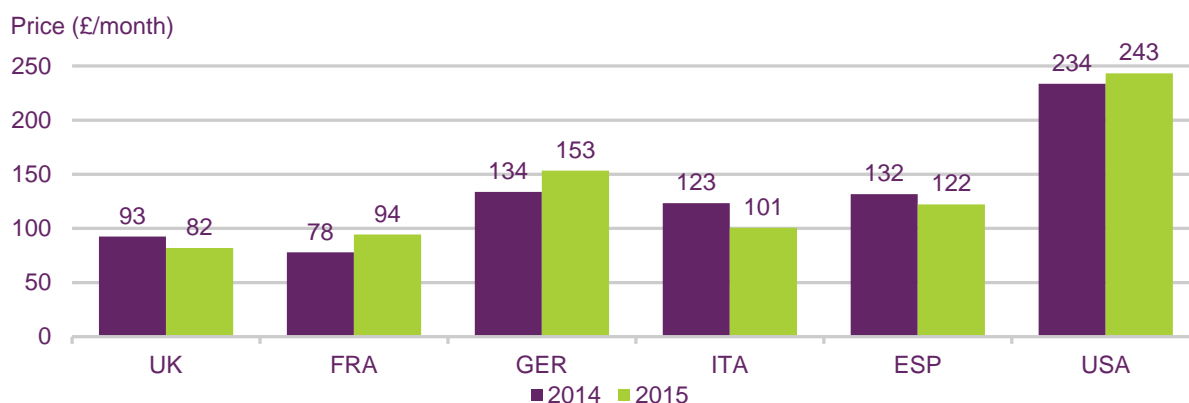
- **The 'connected family' household**, comprising two parents and two teenage children, each with their own mobile handset but with different mobile usage profiles, (the adults using more voice and the children more SMS messages and data). The household is a heavy user of the fixed-line phone and the internet, and subscribes to an entry-level HD pay-TV service with a DVR.
- **The 'basic needs' household**, consisting of a retired low-income couple who have a fixed line and each of whom has a mobile phone which they use to make 50 minutes of calls per month, but do not send any SMS messages or use mobile data services. They watch free-to-air multichannel digital television, which is available in all of our comparator countries.

The UK had the cheapest 'lowest available' pricing for the 'connected family' household in 2015

In July 2015 the UK had the cheapest 'lowest available' price for the 'connected family' household, at £82 per month, £11 per month (11%) down compared to 2014. Italy and Spain

also experienced a decrease in the 'lowest available' prices for the 'connected family' household, down 18% (to £101) and 7% (to £122) respectively. France experienced the largest increase in the 'connected family' household's 'lowest available' price in 2015, up by 21% to £94, while the US had the most expensive 'lowest available' price for the household in 2015, at £243 per month (an increase of 4%).

Figure 1.17 'Lowest available' (including bundles) pricing for the 'connected family' household



Source: Ofcom, using data supplied by Teligen

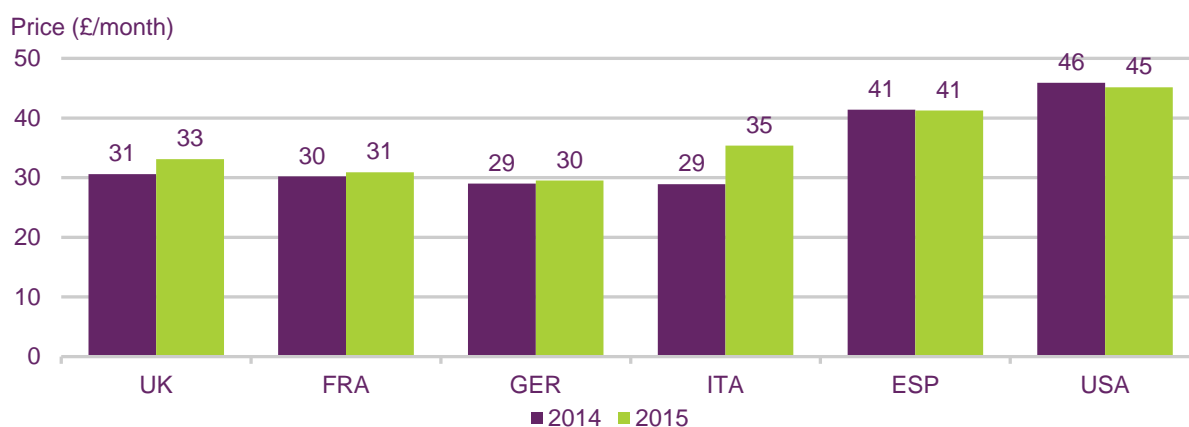
Note: Excludes the TV licence fee

The 'lowest available' price for the 'basic needs' household in the UK increased by 8% in 2015

There was less variation in the 'lowest available' prices for the 'basic needs' household between the comparator countries, largely because it requires fewer services and has lower fixed and mobile voice use than the 'connected family' household. The UK had the third-cheapest 'lowest available' price for the 'basic needs' household in July 2015, at £33 per month; a £3 per month (8%) increase compared to 2014. Germany had the cheapest 'lowest available' price for the 'basic needs' household in 2015, at £30. In contrast, Spain and the US had the highest prices (at £41 and £45 respectively), but they were also the only two of our comparator countries where prices did not increase in 2015. Italy experienced the largest increase in the 'lowest available' prices for the 'basic needs' household in 2015, up by 22%.

It should be noted that low levels of service use (such as those required by the 'basic needs' household usage profile) are likely to be more prevalent among lower-income households that may qualify to receive social tariffs such as *BT Basic* in the UK, which are not included in this analysis.

Figure 1.18 ‘Lowest available’ (including bundles) pricing for the ‘basic needs’ household



Source: Ofcom, using data supplied by Teligen

Note: Excludes the TV licence fee

1.3.4 Summary of international pricing

The UK had the lowest ‘weighted average’ stand-alone prices for three of the five households in 2015

As well as looking at the ‘lowest available’ pricing in our six comparator countries, the international price benchmarking chapter of this report (Chapter 2) looks at ‘weighted average’ stand-alone prices (that is, the sum of the weighted averages of the ‘lowest available’ stand-alone prices offered by the providers of each service, weighted by their market shares) and ‘weighted average’ bundled prices (the weighted average of providers’ ‘lowest available’ bundle prices, including stand-alone services where the bundle does not include all of the services required by a household, weighted by their fixed broadband market shares). Further analysis can be found in Chapter 2 of this report which includes analysis of the five household baskets.

The UK communications service prices compare well across all three of these metrics. The UK had the lowest ‘weighted average’ stand-alone prices for three of the five household baskets, the lowest ‘weighted average’ bundled price for one household, and the ‘lowest available’ prices for two households in 2015 (Figure 1.19). France had the lowest ‘weighted average’ bundled service prices in all the households except the ‘connected family household’, where the UK had lower prices (weighted average bundle prices are not included for the ‘mobile power user’ household, because this household only uses mobile voice and data services, which are seldom provided as a bundle, and because the average is calculated using providers’ fixed broadband market shares, which are not relevant to it).

Notably, all three metrics showed that the UK had the lowest prices for the ‘connected family’ household. More generally, the UK was one of the two cheapest countries in terms of all metrics for all of the household usage profiles included in the analysis, apart from the ‘lowest available’ prices for the ‘basic needs’ and ‘sophisticated couple’ households (the lowest and highest usage household profiles respectively) and the ‘weighted average’ bundled service prices for the ‘sophisticated couple’ household.

Figure 1.19 Comparison of international pricing: 2015

Price (£ per month)	'Basic needs' household			'Late adopters' household			'Mobile power user' household		'Connected family' household			'Sophisticated couple' household		
	Average stand-alone	Average bundled	Lowest available	Average stand-alone	Average bundled	Lowest available	Average stand-alone	Lowest available	Average stand-alone	Average bundled	Lowest available	Average stand-alone	Average bundled	Lowest available
UK	41	39	33	58	43	36	103	87	146	97	82	188	159	154
FRA	45	35	31	74	40	37	102	74	169	102	94	182	130	114
GER	46	44	30	81	54	42	155	110	234	168	153	229	176	161
ITA	49	48	35	86	57	50	111	101	226	112	101	215	153	149
ESP	50	57	41	104	64	57	155	133	274	154	122	261	206	200
US	82	84	45	126	112	99	188	160	303	279	243	288	328	248

Source: Ofcom, using data supplied by Teligen

Note: Green circle indicates the lowest pricing across all six countries included in this analysis

The UK ranked second in price across the five household types used in our analysis, even though its average rank across all of the baskets and metrics was unchanged

Figure 1.20 below shows an overall pricing rank for our comparator countries, which combines their 'weighted average' stand-alone and bundled as well as 'lowest available' (including bundles) pricing rankings, across all five of the household usage profiles shown in Figure 1.19. The UK ranked second among our comparator countries in terms of prices in 2015, a drop of one place compared to 2014. The UK's average ranking across all households and metrics was unchanged during the year, however, France's average ranking improved during the year, mainly as a result of better comparative performance in its 'weighted average' bundle prices, causing it to overtake the UK to reach first place. The US ranked bottom in both 2014 and 2015.

Figure 1.20 Average overall rank based on 'weighted average' stand-alone and bundled and 'lowest available' prices across all five households (Lower is better)

Rank	Country	Average rank 2014	Average rank 2015
1	FRA	2.0	1.5
2	UK	1.8	1.8
3	ITA	2.9	3.3
4	GER	3.9	4.1
5	ESP	4.5	4.4
6	USA	5.9	6.0

Source: Ofcom, using data supplied by Teligen

1.4 Changing viewing habits

1.4.1 Introduction

Developments in the range of audio-visual services available, together with growth in ownership and use of connected devices, mean that many people now have access to audio-visual content across a range of screens.

In this section we draw on consumer research and other sources to explore changes in audio-visual viewing habits. The key findings include:

- **Spain (45%) and the UK (42%) had the highest levels of ownership of connected TVs** (either smart TV sets, or sets connected to the internet via another device, such as a set-top box, video games console or other internet-enabled device).
- **Catch-up TV was most popular among UK consumers with connected TVs;** in the UK, catch-up TV was the type of internet-delivered content most likely to be watched on a connected TV, with 70% of those accessing the internet via a connected TV citing it. This is higher than all other comparator countries.
- **UK tablet owners who access the internet on a tablet are more likely than those in any other comparator country to watch catch-up TV on a tablet;** 40% of UK respondents in our research claimed to do this, compared to 33% for Sweden (the second highest). Tablet owners in the US are more likely than tablet owners in other comparator countries to view video-on-demand/ streamed films on a tablet (39%).
- **Nearly two-thirds (66%) of people in the UK had used an online service to watch TV or films in the last week** (increasing to 81% in the past month); the highest proportion across all of the countries surveyed.
- **Around four in ten (44%) UK respondents had used a catch-up service from a free-to-air broadcaster within the past week,** the greatest proportion of any country surveyed.
- **The growth in use of video-on-demand (VoD) services corresponds with a claimed decrease in viewing traditional TV as well as in watching DVDs and Blu-ray.** The decrease in DVD/Blu-ray viewing is particularly striking; between 28% and 42% of respondents who view TV in the countries surveyed said they were watching these less than in the previous year. This figure stood at 32% in the UK.

Smart TV: definition

'Smart TV' refers to a stand-alone television set with inbuilt internet functionality. Users can either connect a broadband router directly into the TV or to connect wirelessly. 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 an external device such as a set-top box, a games console or a laptop/PC.

Connected TV: definition

The term 'connected TV' covers any television set connected to the internet either directly (such as a smart TV) or via another device such as a set-top box, video games console or other internet-enabled devices. The set-top box might be provided with platforms such as Sky On Demand, Virgin TiVo, BT TV or TalkTalk. Games consoles include Microsoft's Xbox One, Sony's Playstation 4 and the Nintendo Wii. Other internet-enabled devices include Google's Chromecast and Amazon's Fire devices.

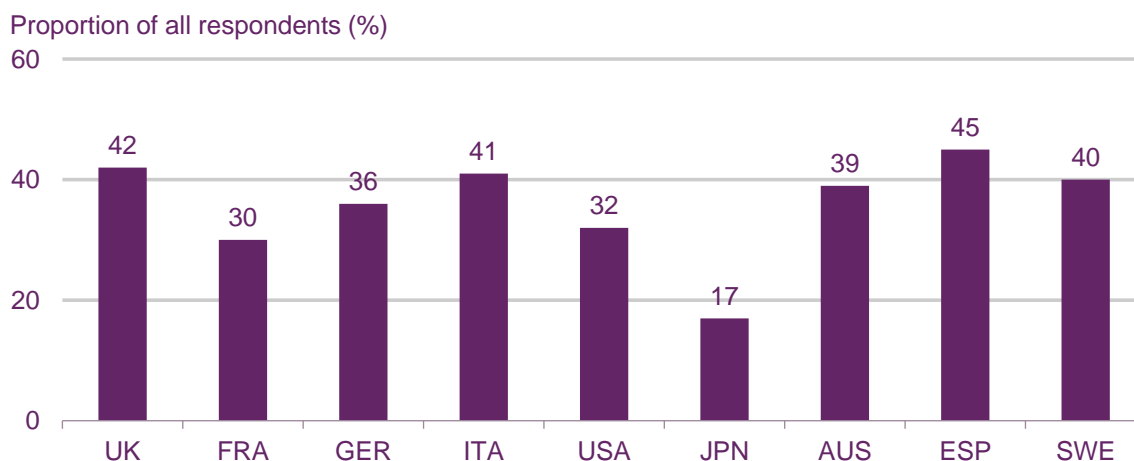
Consumers in Spain and the UK more likely to have a TV set connected to the internet

As Figure 1.21 shows, consumers in Spain (45%) and the UK (42%) had the highest levels of ownership of connected TV sets. Those in Spain are heavier-than-average VoD users which may explain their high ownership of connected TV sets.

The remaining European countries in Ofcom's consumer research recorded take-up of around 40% of households, with the exception of Germany (36%) and France (30%).

Consumers in the US recorded a 32% household figure for ownership of a TV connecting to the internet, while penetration in Japan was at 17%.

Figure 1.21 Household ownership of connected TV sets



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

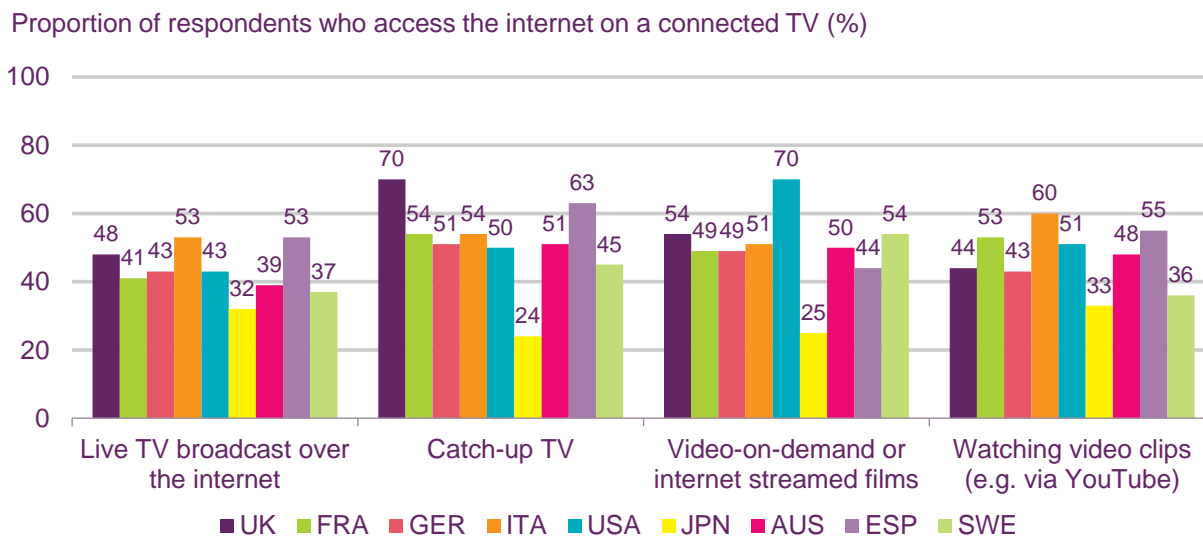
Q.3a Which of the following devices do you have in your home?

Catch-up TV most popular among UK consumers with connected TVs

Figure 1.22 shows the types of content watched by respondents who access the internet on a connected TV. In the UK, catch-up TV was the type of internet-delivered content most likely to be watched on a connected TV, with over two-thirds (70%) of those accessing the internet via a connected TV citing it. This is higher than for all other comparator countries.

In the US, video-on-demand/ streamed films were the most popular type of content viewed on a connected TV (70%), driven by the popularity of SVoD services such as Netflix. The UK and Sweden followed, with 54% of those accessing the internet via a connected TV in each of these countries watching video on demand/ streaming.

Figure 1.22 Types of audio-visual content watched on a connected TV set



Source: Ofcom consumer research September – October 2015

Base: All respondents who access the internet on a connected TV, UK=235, FRA=122, GER=176, ITA=185, USA=195, JAP=98*, AUS=191, ESP=194, SWE=213. *Caution: bases under 100.

Q.9c What sorts of video content do you watch on each of your devices over the internet?

UK consumers are using their tablets to watch catch-up TV

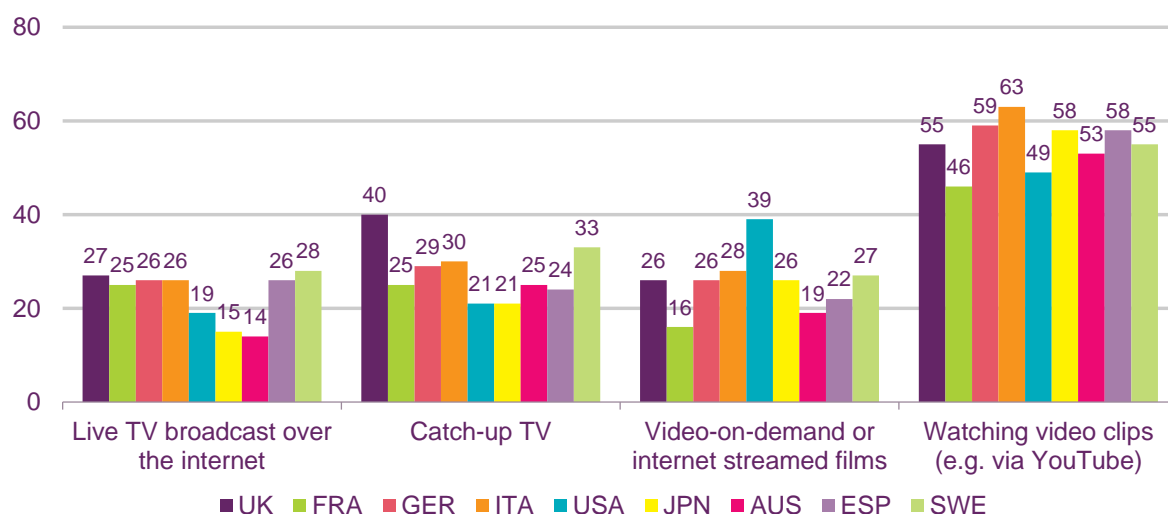
Figure 1.23 shows the types of audio-visual (AV) content watched by tablet owners who access the internet on a tablet, across the comparator countries in Ofcom's research. In all countries, the predominant type of AV content watched on a tablet was video clips (e.g. via YouTube), with over 45% of those who accessed the internet via a tablet in each country watching this type of content on their device.

The UK had the highest level of use of tablets for the purposes of viewing catch-up TV (40%), likely driven by the popularity of free catch-up services from the public service broadcasters (PSBs) such as BBC iPlayer, ITV Hub and All 4, which offer consumers a large amount of originated content. The US had the highest level (39%) of use of a tablet for SVoD and online film streaming, 13 percentage points higher than for tablet owners in the UK (26%).

Among the European countries in our research, there was little variation in the incidence of watching live TV broadcast over the internet via a tablet (at around 26%). This was lower in the US (19%), Japan (15%) and Australia (14%).

Figure 1.23 Types of audio-visual content watched on a tablet

Proportion of respondents who access the internet on a tablet (%)



Source: Ofcom consumer research September – October 2015

Base: All tablet owners who access the internet on a tablet, UK=398, FRA=335, GER=318, ITA=460, USA=319, JAP=234, AUS=370, ESP=435, SWE=343

Q.9c What sorts of video content do you watch on each of your devices over the internet?

Figure 1.24 summarises the proportion of all respondents in each country who claim to watch different types of video content on connected TVs and on tablets.

Figure 1.24 Types of AV content watched on connected TVs and tablets

	Live TV broadcast over the internet	Catch-up TV	Video-on-demand or internet streamed films	Watching video clips (e.g. via YouTube)	Live TV broadcast over the internet	Catch-up TV	Video-on-demand or internet streamed films	Watching video clips (e.g. via YouTube)
	On a connected TV (Proportion of all respondents - %)				On a tablet (Proportion of all respondents - %)			
UK	11	16	12	10	11	16	10	22
FRA	5	7	6	6	8	8	5	15
GER	7	9	8	7	8	9	8	18
ITA	10	10	9	11	12	14	13	29
USA	8	9	13	9	6	6	12	15
JPN	3	2	2	3	3	5	6	13
AUS	7	10	10	9	5	9	7	20
ESP	10	12	8	11	11	11	10	25
SWE	8	9	11	8	10	11	9	19

Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.9c What sorts of video content do you watch on each of your devices over the internet?

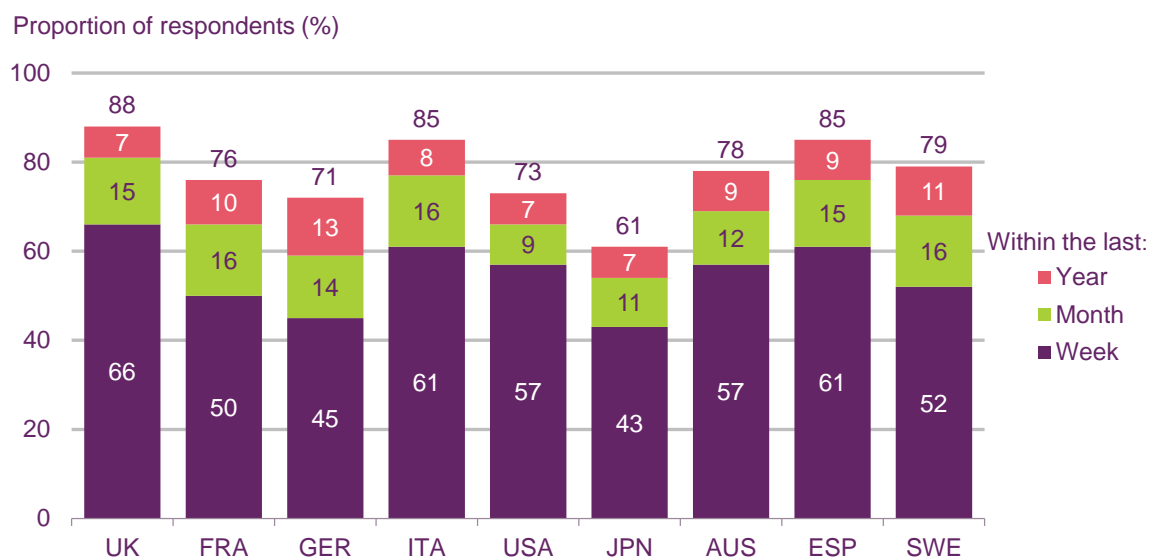
1.4.2 Use of the internet to view TV or films online

Two-thirds of internet users in the UK watch TV or films online on a weekly basis

Figure 1.25 shows the recent use of online services to access audio-visual content, across our surveyed countries. More internet users in the UK (88%) had used at least one such service in the past 12 months than in any other country included in our research.

The UK also led the way in the number of respondents who had used any online TV service within the past week, at 66%, with Italy, Spain, the US and Australia following closely behind.

Figure 1.25 Use of any online services to watch TV or films



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.21 When did you last use the following online services to watch TV programmes or films?

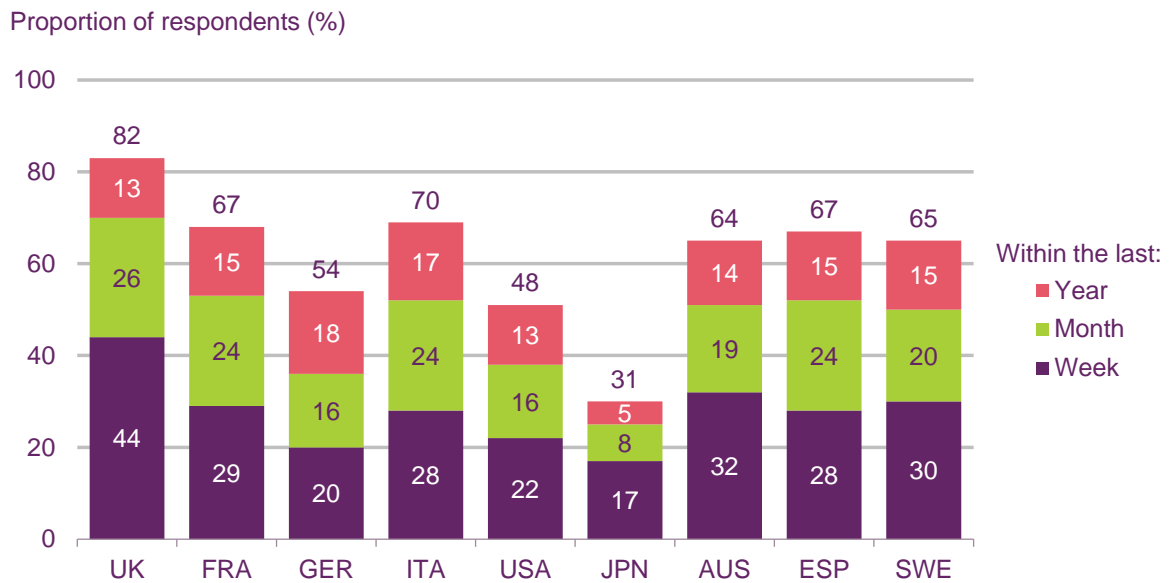
Catch-up services provided by free-to-air broadcasters are the most commonly-used services for accessing TV programmes or films online

Catch-up services provided by free-to-air broadcasters (such as BBC iPlayer in the UK and RAI Replay in Italy) are the most commonly-used services to access TV programmes or films online, across all of the surveyed countries apart from the US.

Eighty-two per cent of respondents in the UK had used a catch-up service from a free-to-air broadcaster within the past year, the highest proportion of any country surveyed. At 31%, Japan saw the lowest penetration of such services in the past year, followed by the US at 48%.

The proportion of respondents who had used such services within the past week was also highest in the UK, at 44%.

Figure 1.26 Use of free-to-air broadcaster catch-up TV services



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

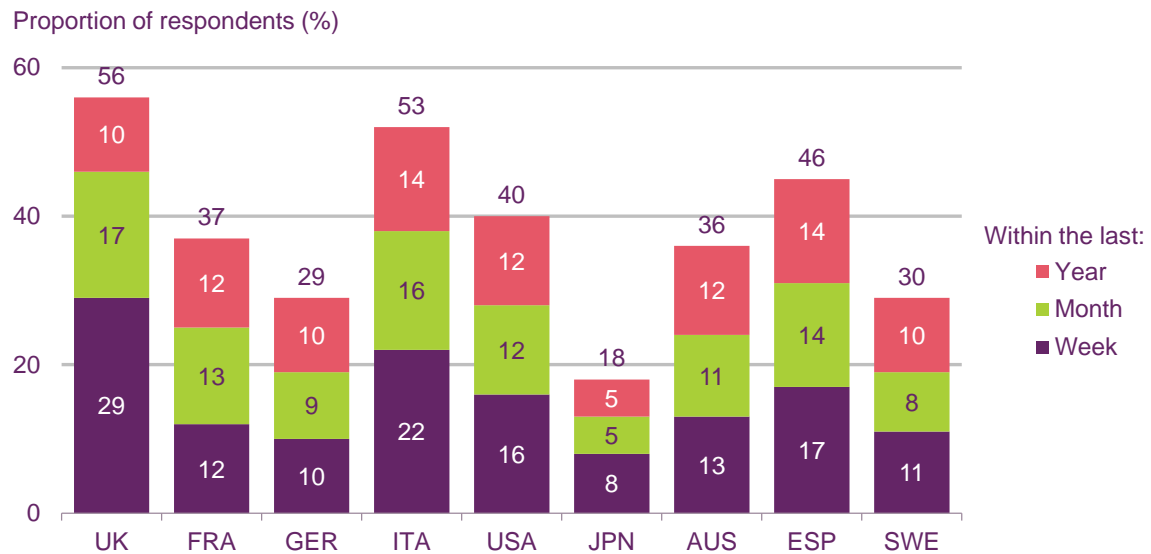
Q.21 When did you last use the following online services to watch TV programmes or films?

Catch-up and on-demand services from pay-TV providers are most popular in the UK, Italy and Spain

Pay-TV providers (such as Sky across Europe and HBO in the US) provide various ways to access their content at the time of a viewer’s choosing.

At 56% and 53% respectively, the UK and Italy saw the highest proportion of respondents using such a service in the year prior to being asked, followed by Spain at 46%. Just as with catch-up services from the free-to-air broadcasters, Japan saw the smallest claimed usage figures among the countries surveyed at 18% in the year prior to being asked.

Figure 1.27 Use of catch-up or on-demand services through a pay-TV provider



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

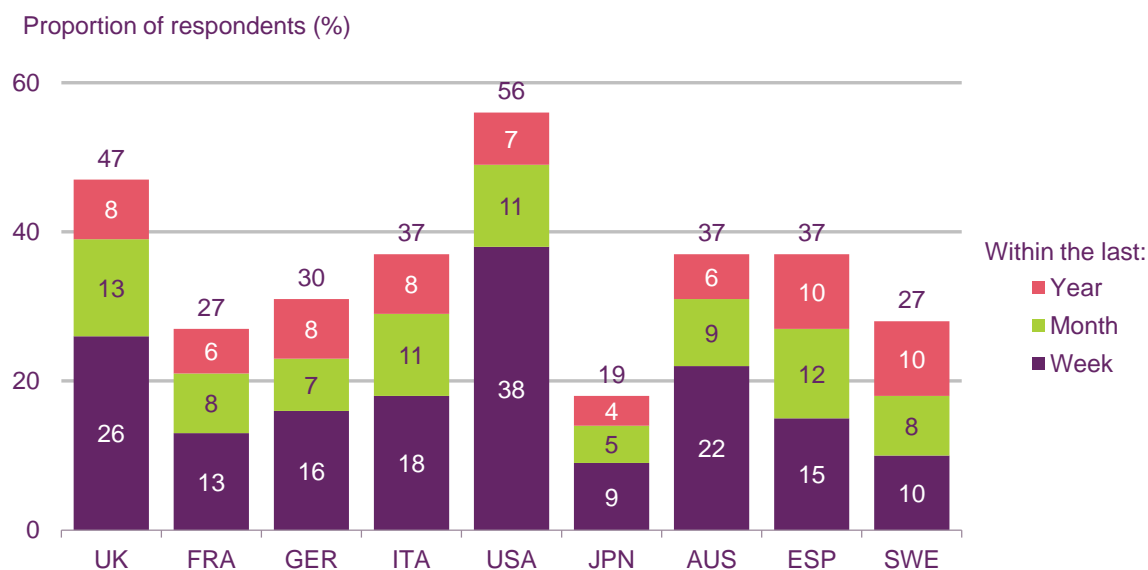
Q.21 When did you last use the following online services to watch TV programmes or films?

Over half of respondents in the US have accessed content via a SVoD service in the past year

In the past year, more people had accessed TV or films online via a SVoD service in the US (56%) than had done so using a free-to-air catch up service (48%), the only country in our research where this was the case. After the US, where use of online SVoD was greatest, the UK had the next-highest proportion of respondents using an online SVoD service in the past year, at 47%.

It is worth noting that the 37% of consumers who had accessed SVoD content in the past 12 months in Italy and in Spain had done so mostly without Netflix, which launched in both countries during the research fieldwork period. Both countries already had popular SVoD services such as Italy's TIMvision and Spain's Wuaki.tv.

Figure 1.28 Use of non-broadcaster SVoD services



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.21 When did you last use the following online services to watch TV programmes or films?

The US leads the way in the number of SVoD subscriptions

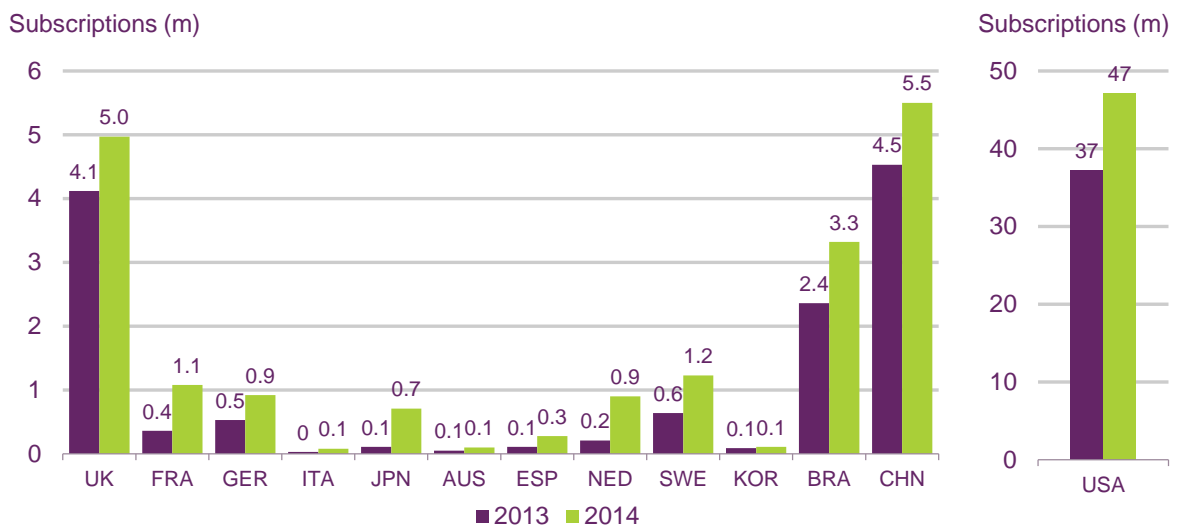
The US continues to lead the way in SVoD take-up in absolute terms, with an estimated 47 million subscriptions by the end of 2014, representing a 10 million increase year-on-year.

There were nearly 5 million SVoD subscriptions in the UK by the end of 2014,¹⁵ while subscription numbers in Sweden almost doubled between 2013 and 2014, to 1.2 million – the second largest number of subscriptions among the European comparator countries.

It is worth noting that the subscription numbers listed below appear low when compared with the claimed usage shown in Figure 1.28. Reasons for this could include strong growth in take-up through 2015, the fact our respondents are all internet users and that multiple users often have profiles within individual SVoD accounts.

¹⁵ Further analysis of SVoD subscriber numbers in the UK can be found on page 54 of the 2015 CMR; http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr15/CMR_UK_2015.pdf

Figure 1.29 SVoD subscription numbers, by country: 2013 and 2014



Source: IHS/ industry data/ Ofcom. Note: Poland and Russia are not charted here as their respective subscriber numbers were less than 0.1m in both years. No data were available for Singapore, India or Nigeria.

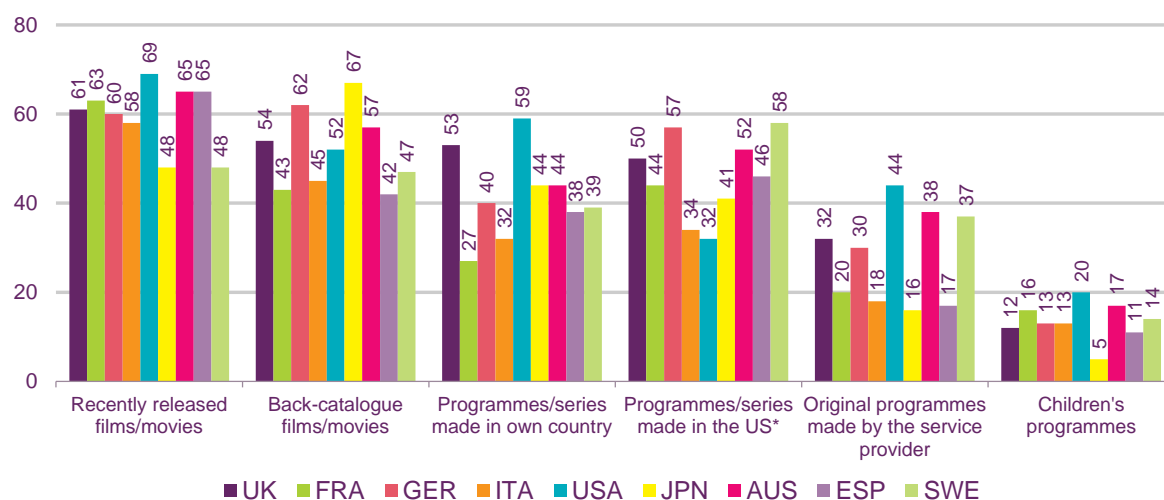
Recently released films/ movies are the content watched most by SVoD users

Although there has been a large investment in original content by SVoD providers in the past few years (such as Netflix's *Narcos* and Amazon's *Transparent*) consumers are more likely to cite the wide range of new and back-catalogue film services as their most-watched content from their SVoD provider.

SVoD subscribers in the US are more likely than subscribers in any other country in our research to watch programmes made by the provider (44%), which is unsurprising, as the majority of this original content is made in the US.

Figure 1.30 Types of content accessed via SVoD services

Proportion of respondents who use a VoD subscription service (%)



Source: Ofcom consumer research September – October 2015

Base: All respondents who use a VoD subscription service, UK=483, FRA=272, GER=320, ITA=371, USA=580, JPN=198, AUS=371, ESP=371, SWE=287

Q.22c Which of the following types of programmes do you or your family watch on Netflix / Amazon Prime / Wuaki / Other subscription service? *US – made in other countries

In most of the surveyed countries, consumers claimed to watch less traditional TV (i.e. at the time of broadcast) than at the same point last year

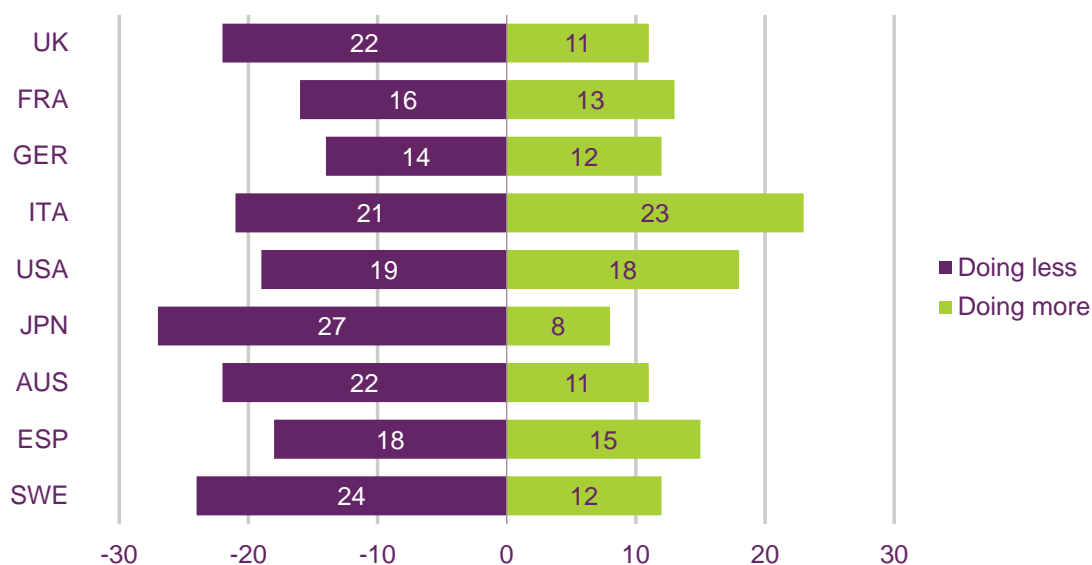
Figure 1.31 illustrates the claimed changes in traditional TV viewing, across all surveyed countries, compared to a year ago. In eight of the nine countries, more people than a year ago claimed to be watching less television at the time of broadcast.¹⁶

The change in behaviour was particularly stark in the UK (22% doing less compared to 11% doing more), and in Japan (27% vs. 8%), Australia (22% vs. 11%) and Sweden (24% vs. 12%).

¹⁶ Analysis of actual TV viewing minutes across the comparator countries can be found in Chapter 3 of the web version, available at <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr15/international>.

Figure 1.31 Claimed changes in watching TV programmes at the time of broadcast

Proportion of respondents who watch TV content (%)



Source: Ofcom consumer research September – October 2015

Base: All respondents who watch TV content, UK=970, FRA=960, GER=965, ITA=967, USA=960, JPN=905, AUS=962, ESP=986, SWE=962

Q.22b For each of the following activities, please say if you are doing this more, the same amount or less compared to a year ago?

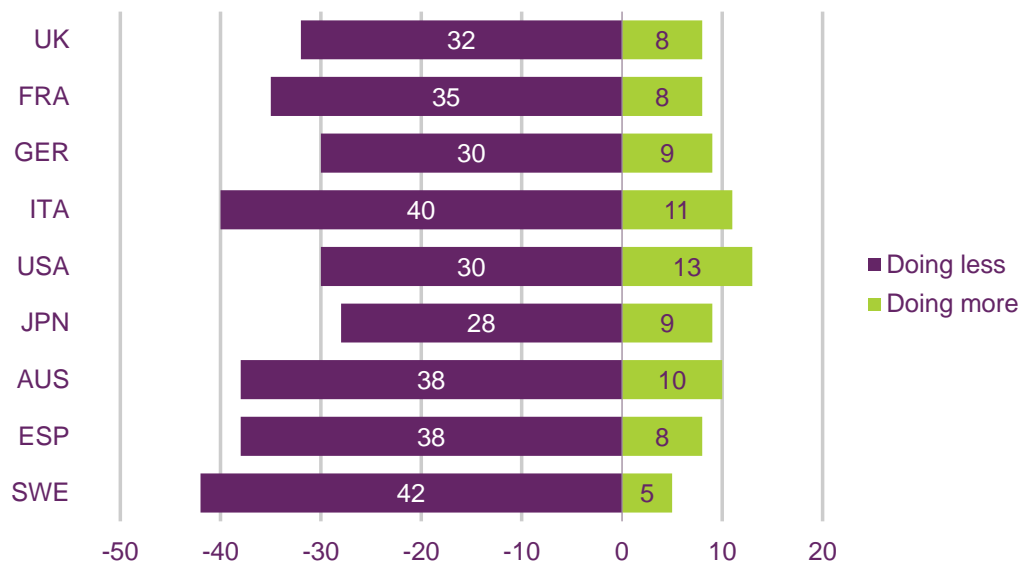
DVD and Blu-ray consumption declines steeply

Looking at the activities that TV viewers are doing more or less of, compared to last year, the most striking is the claimed change in watching DVDs and Blu-ray. This is probably likely driven by the increased take-up and use of on-demand services, outlined above. The proportion of respondents in each surveyed country claiming to do less of this varied from 28% in Japan to 42% in Sweden, while the US had the highest proportion of people claiming to be doing this more (13%).

At 42%, Sweden had the highest proportion of TV viewers watching fewer DVDs and Blu-rays in 2015 than in 2014, with 32% of respondents in the UK claiming the same behavioural shift.

Figure 1.32 Claimed changes in watching DVDs/Blu-ray

Proportion (%) of respondents who watch TV content



Source: Ofcom consumer research September – October 2015

Base: All respondents who watch TV content, UK=970, FRA=960, GER=965, ITA=967, USA=960, JPN=905, AUS=962, ESP=986, SWE=962

Q.22b For each of the following activities, please say if you are doing this more, the same amount or less compared to a year ago?

1.5 Smartphone societies

1.5.1 Introduction

Global smartphone sales now comfortably pass one billion handsets per year. They have become an integral part of life for large swathes of the world's population, particularly in more developed societies.

In many of our comparator countries mobile data network availability is almost universal, there are now more mobile connections than there are people, and the number of fixed lines is dropping. The technologies used to deliver mobile data have also improved, with 4G mobile networks available in all of our comparator countries.

In this section we compare 4G mobile connections in terms of coverage, take-up and consumer satisfaction in our comparator countries, using industry data as well as consumer research carried out in September-October 2015 to do so. This section also explores the take-up of smartphones and how this most convenient device is changing the way societies communicate, entertain and inform themselves.

We draw on consumer research from Ofcom and the Deloitte Global Mobile Consumer Survey in order to see how smartphones are influencing lives - from first thing in the morning to the end of the day. We also take a look at smartphone etiquette in different cultures, how we are integrating the device with personal finance, and the popularity of apps round the world.

A smartphone is a mobile phone with advanced features. In general it has WiFi and mobile connectivity, web-browsing capabilities, a high-resolution colour touchscreen display and runs on an operating system capable of supporting a variety of applications. Most smartphones run on one of the following operating systems: Android, iOS, Windows Phone or Blackberry OS

The key findings include:

- **4G mobile population coverage (from at least one operator) increased in most comparator countries in 2014**, with China seeing the largest year-on-year increase, rising from 1% to 73%. The UK had 84% 4G mobile population coverage at year-end 2014 a year on year increase of 21pp.
- **The UK had the highest proportion of total mobile connections that were 4G of the EU5 in 2014, at 28%**. Among all our comparator countries, South Korea had the highest proportion of mobile connections that were 4G, at 63% of connections, followed by the US (40%), and Australia and Singapore (each 39%).
- **According to our consumer research, the most likely reasons given by respondents for choosing a 4G service were download and streaming speeds.** In the UK 35% of people either with, or likely to purchase, a 4G service chose it because of quicker download speeds.
- **Respondents with 4G services in the UK had the highest satisfaction with price paid for the mobile services among our comparator countries, at 81%**. In the other comparator countries, between 61% and 76% of 4G users were satisfied with price paid, with Sweden the exception at 46%.

- **UK smartphone owners are the most likely in the EU5 to use their smartphone to pay a bill; 29% claim to have done so.** They are also the most likely in the EU5 to have transferred money on their smartphones, with 31% claiming to have done so.
- **Fourteen per cent of UK smartphone owners claim to have ever used their smartphone to make an in-store payment.** In Italy the figure was 23% (the highest reported use in the EU5), and in Australia, the highest of all our comparator countries, it was 33%.
- **Almost a third (30%) of UK smartphone owners claim to be using their devices at work on a regular basis.**¹⁷ In France and Italy the figure was even higher, at 38% and 33% respectively.

1.5.2 4G availability and take-up

The 4G mobile communications standard

4G stands for 4th generation, and relates to the fourth-generation mobile communications standard. It allows internet access at higher speeds than previous standards. Most modern smartphones are able to use 4G services as well as being compatible with the previous standards (2G and 3G).

The first commercial 4G service was launched in the UK in October 2012 by EE, after it secured a licence modification that allowed it to use its existing 1800MHz spectrum for 4G. The auction for 4G spectrum concluded in February 2013, with EE, Telefonica (O2), Vodafone, Three and Niche Spectrum Ventures Ltd (a BT Group subsidiary) being awarded licences. Vodafone and Telefonica launched their 4G services in August 2013, with Three following in December 2013.

4G mobile coverage increased in most comparator countries in 2014

The availability of mobile 4G services tended to be higher in more developed countries with high proportions of the population living in urban areas, such as South Korea, Singapore, the Netherlands and Sweden, at the end of 2014. The higher the proportion of the population located in urban areas of a country, the easier it is to deploy mobile services, as less infrastructure and investment is needed.

4G population coverage growth in Europe and Australia exceeded that in the majority of the other comparator countries, despite these countries' later roll-out of 4G networks. The UK had the fourth-highest gain between 2013 and 2014 (up 21pp to 84%). According to IHS, the UK ranked ninth of our 18 comparator countries and second among the EU5 countries for 4G population coverage at the end of the year (Figure 1.33).

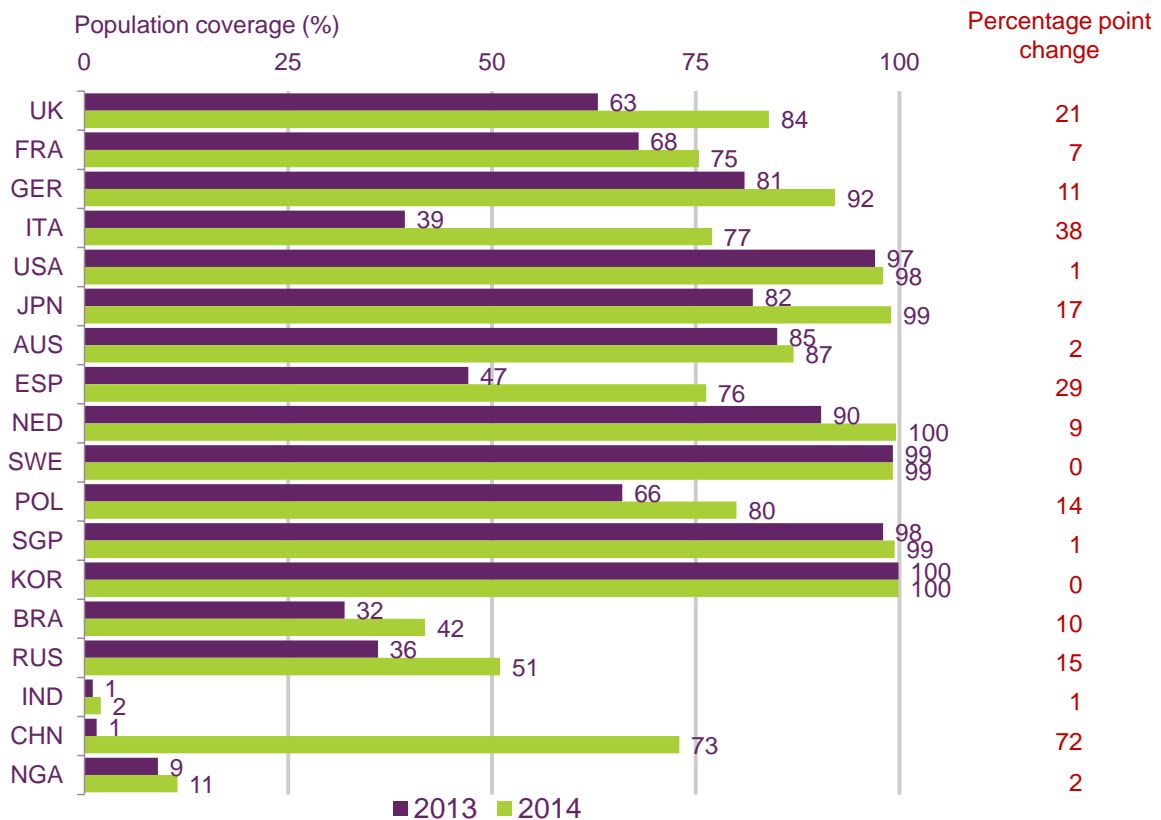
South Korea had 100% 4G coverage on the basis of population by the end of 2012, in part as a result of early 4G roll-out and a relatively high degree of population concentration in urban areas. In 2013 Singapore was reported as having 98% coverage, increasing to 99% in the year to 2014.

The lowest 4G coverage at the end of 2014 was in India, Nigeria and Brazil. This is to be expected, in part due to late commercial deployment of 4G, lower levels of economic prosperity and more rural populations. As shown in Figure 1.33, 4G coverage increased significantly in the majority of our comparator countries in 2014, with the largest change being in China (a 72pp increase to 73% population coverage). This change was due to

¹⁷ i.e. "Very often" or "often"

aggressive 4G network expansion in 2014, with over 700,000 base stations added across China.

Figure 1.33 4G population coverage (%) by country: 2013-2014



Source: IHS

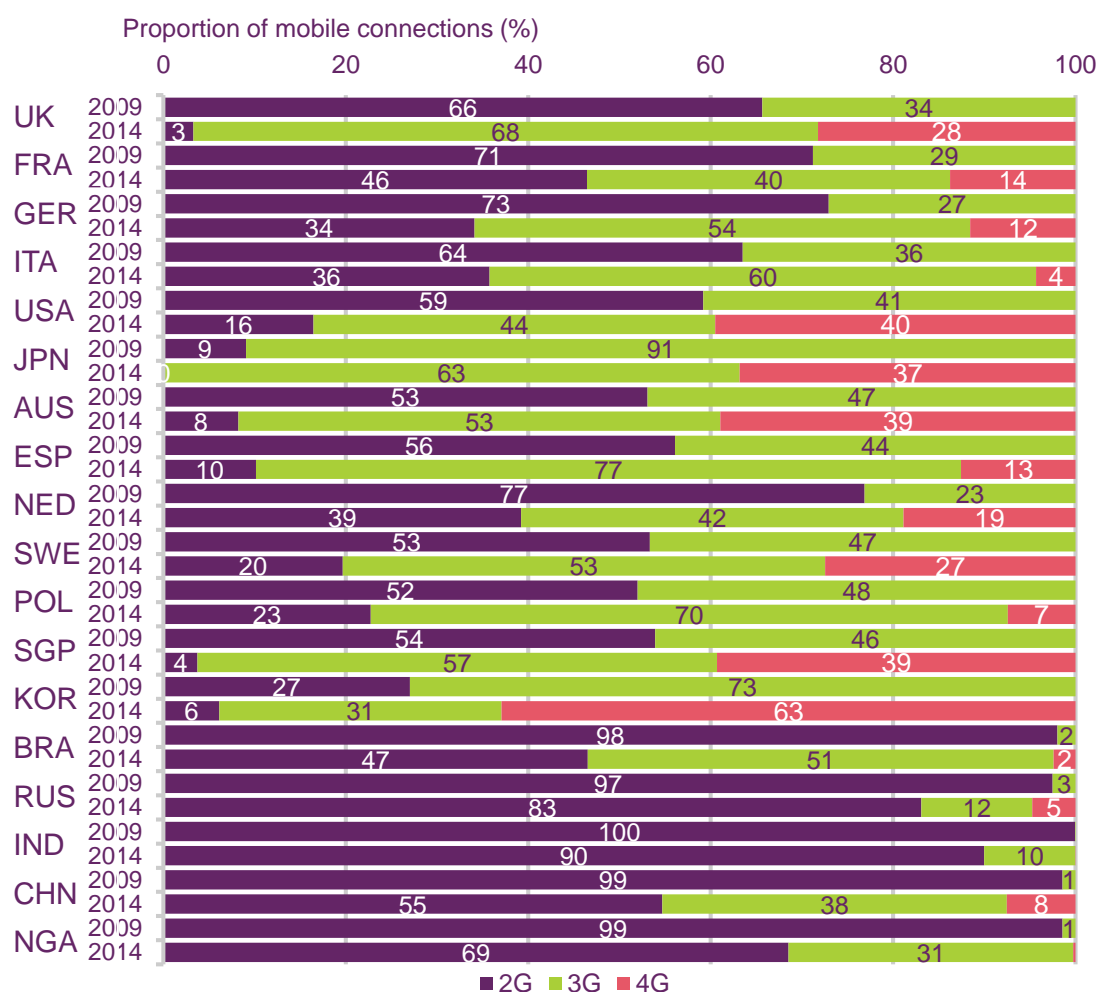
Among the EU5 countries, the UK had the highest proportion of mobile connections that were 4G at the end of 2014

All our comparator countries experienced an increase in the proportion of mobile connections that were 4G in the five years to 2014.

Take-up of 4G was highest in more technologically developed countries such as South Korea and the US, where services are more established (having launched in 2010/11). Among all our comparator countries, South Korea had the highest proportion of mobile connections that were 4G, with 63% of connections, mainly due to heavy government and operator investment in 4G infrastructure, and the relatively early commercial launch of services in 2011. The US also had a higher proportion of 4G connections than most comparator countries, at 40%. Among the EU5 countries, the UK had the highest proportion of mobile connections that were 4G at the end of 2014 (28%), twice as many as France, which was the second highest (at 14%).

Over half of the mobile connections in Russia, India, China and Nigeria were 2G at the end of 2014, and 4G take-up was low among these countries (highest in China, at 8% of mobile connections).

Figure 1.34 Mobile connections, by technology: 2009 and 2014



Source: IHS/Ofcom/operator data

Notes: Notes: 1) 2G – Second-generation digital cellular networks which superseded initial analogue services. Most use the Global Standard for Mobile (GSM) standard, but second generation cellular networks also include TDMA, early CDMA networks that do not meet the standard required to be considered 3G, and PCS in Japan. 2G networks focus on the delivery of voice, but later versions offer packet data through for example GPRS. We consider the evolution of GSM to Edge capability to be a second generation network technology. 2) 3G - A wireless mobile technology which must allow for data transfer speeds up to 2Mbps. W-CDMA, CDMA 2000 1xEV-DO and any of the HSPA family (including HSPA, HSDPA and HSUPA) are considered 3G. IHS does not consider CDMA 2000 1x networks as 3G since the maximum data transfer speed is 144Kbps. Later revisions of the EDGE technology do fulfil this specification, but most EDGE networks are not considered 3G since most EDGE deployments are earlier revisions. 3) 4G - The fourth generation network technology deployed by cellular operators. We limit our definition to those networks using one of the LTE (Long Term Evolution) standards such as FDD-LTE (frequency division duplexing LTE) or TD-LTE (time division LTE) , We do not include HSPA+ networks -- which we consider to be a 3G technology.

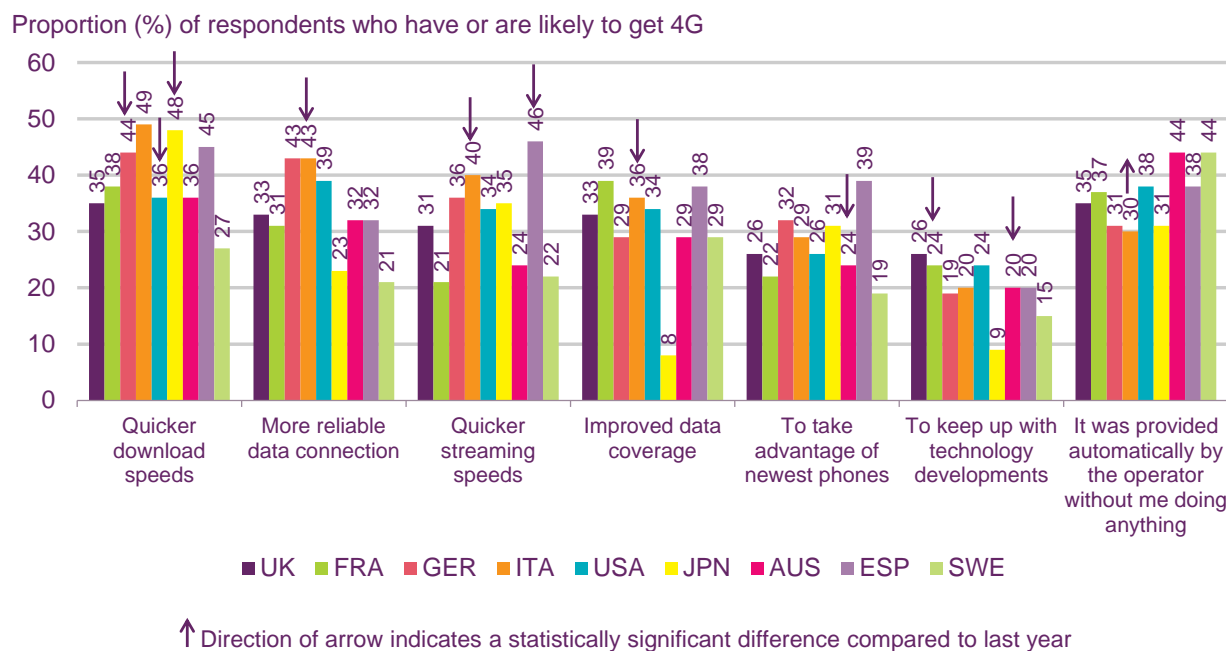
1.5.3 Reasons for choosing 4G, and satisfaction with the service

In the majority of countries the comparatively fast download speeds of 4G are the main draw for consumers

“Quicker download speeds” was the most commonly selected reason for choosing 4G among respondents who either had, or were likely to get, a 4G service (Figure 1.35). Sweden and Australia were the exceptions, where the most popular reason for choosing 4G was that the operator automatically provided the service to them (at 44% of respondents in

both countries). In the UK, a similar proportion of respondents chose 4G for its quicker download speeds as they did because it was automatically provided to them by the operator (both at 35%), with 33% choosing the reasons: “more reliable data connection” and “improved data coverage”. Respondents in the UK were just as likely to choose 4G to take advantage of the latest handsets as they were to keep up with technology developments (both 26%).

Figure 1.35 Reasons for choosing 4G



Source: Ofcom consumer research September - October 2015

Base: All respondents who have or are likely to get 4G/LTE contract, UK=455, FRA=442, GER=298, ITA=551, USA=532, JPN=326, AUS=513, ESP=563, SWE=520

Q.23 You said that you have/ are likely to get a 4G service [in the next 12 months]. Which of the following are reasons why you got/ are likely to get a 4G contract?]

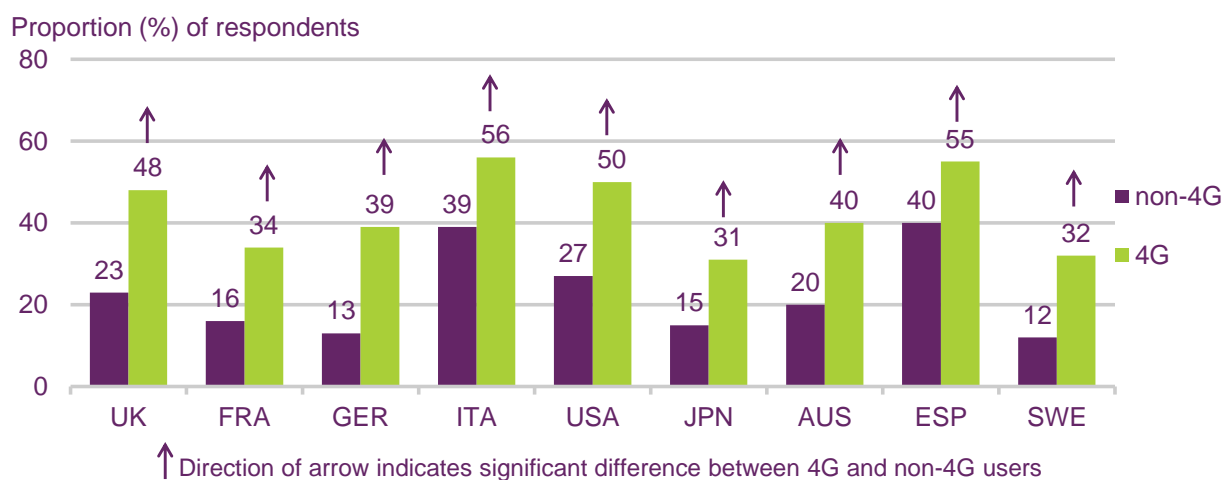
Note: Sweden cannot be tested for significance against last year as 2015 was the first year the country has been included in the consumer research

Respondents with 4G services are more likely than those without 4G to stream or download video on their mobile phone

In all of our comparator countries, 4G users were significantly more likely than non-4G users to use a mobile phone to stream/download video¹⁸ (Figure 1.36). In the UK, 48% of 4G users claimed to download or stream video content at least once a week compared to 23% of non-4G users. It is likely that this is related to the higher streaming and download speeds that are available with 4G technology.

¹⁸ It should be noted, however, that early adopters of 4G are more likely to be heavy users of mobile data services.

Figure 1.36 Proportion of respondents video streaming/ downloading on a mobile phone at least weekly, 4G and non-4G users



Source: Ofcom consumer research September - October 2015

Base: All respondents who don't use 4G/ do use 4G on their phone, UK=631/284, FRA=607/274, GER=742/189, ITA=671/274, USA=427/357, JPN=595/235, AUS=482/342, ESP=615/308, SWE=527/391.

Q.22 Which of the following statements best describes your awareness and use of 4G? Q.27 How often, if at all, do you use your main mobile phone to do each of the following? <At least weekly>

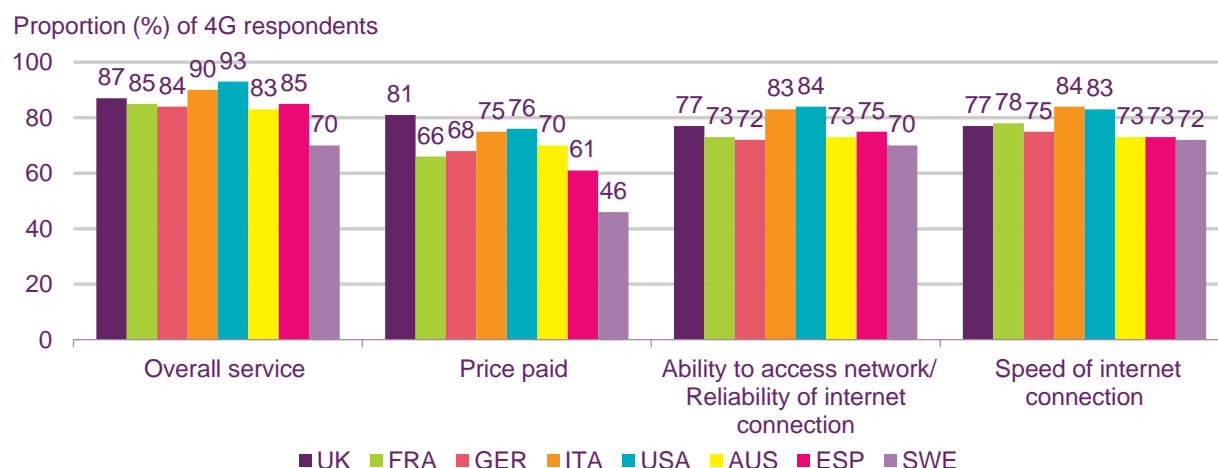
Respondents with 4G services in the UK had the highest satisfaction with price paid for the mobile services among our comparator countries, at 81%

In the majority of our comparator countries, over eight in ten 4G users were satisfied with the overall 4G mobile phone service, only Sweden had lower satisfaction levels (at 70%). In the UK, 87% of respondents said they were satisfied with the overall service, the third-highest satisfaction level among our comparator countries. Respondents in Italy and the US had higher overall satisfaction levels, at 90% and 93% respectively.

The UK had the highest satisfaction with the price paid among our comparator countries (at 81%). In the other comparator countries, over 60% of 4G users were satisfied with price paid, with Sweden the exception at 46%.

There was less variation in satisfaction with the reliability and speed of internet connection among our comparator countries, with around seven in ten respondents in most of the comparator countries saying they were satisfied. Only Italy and the US had higher satisfaction levels (over eight in ten respondents in both).

Figure 1.37 Satisfaction with 4G mobile phone services



Source: Ofcom consumer research September - October 2015

Base: All respondents on a 4G network, UK=114, FRA=162, GER=95*, ITA=165, USA=131, AUS=184, ESP=185, SWE=192. *Caution: bases under 100.

Note: Japan was excluded as the base was too low (77), Japan's results were: overall services - 79%, price paid - 32%, ability to access network/ reliability of internet connection - 68%, speed of internet connection - 64%. These should be taken as indicative only.

Q.25 To what extent are you satisfied or dissatisfied with the following aspects of your mobile phone service?

1.5.4 Smartphone take-up

Background

To understand smartphone take-up and use it is important to look at the context of each nation in order to understand the different landscapes in terms of availability of both mobile data technology and alternative technologies. There are now 87 mobile *data* connections per 100 people in the UK, the highest of the EU5 countries.

The mobile data network is most commonly accessed using a smartphone. Mobile-enabled tablets, USB modems and enabled laptops can access the network, but in each of our comparator countries, 77% of connections or more were via handsets.

4G is the latest and fastest mobile data transfer technology available on a large scale. In all of our comparator countries it is available to 75% of the population or more. The proportion of total consumers with a 4G mobile connection varies widely between comparator countries; from 4% in Italy to 40% in the US.

With higher numbers of data connections, almost universal 4G availability, and high take-up of 4G services, the US and Japan consume the most mobile data per head of our comparator countries; more than double that of any of the other nations.

Italy, Australia and Spain have fewer than 30 fixed broadband connections per 100 people and 40 or fewer fixed voice connections per 100 people, possibly increasing the importance of smartphones among these countries' populations.

Figure 1.38 Contextual data in our comparator countries

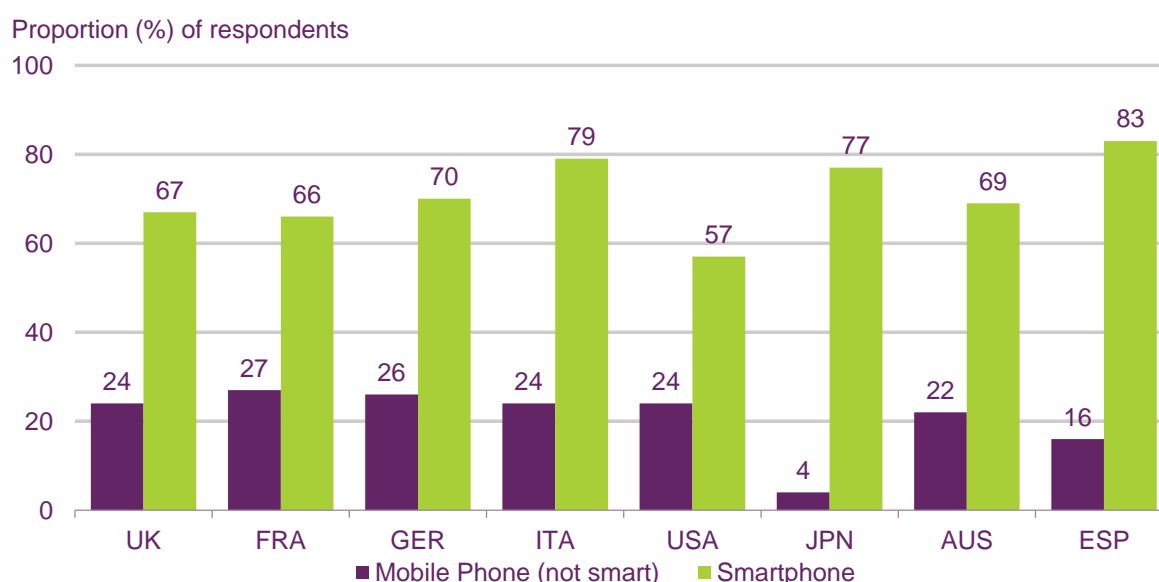
	UK	FRA	GER	ITA	USA	JPN	AUS	ESP
Mobile data connections per 100 population	87	67	64	71	104	124	114	77
Proportion of mobile data connections via handsets (%)	91	90	84	85	92	90	77	95
4G Availability (% population coverage of at least one operator)	84	75	92	77	98	99	87	76
4G as % of all mobile connections	28	14	12	4	40	37	39	13
Average mobile data volumes per person (Mbyte)	362	397	398	684	1771	1495	481	370
Fixed broadband connections per 100 population	37	40	35	23	30	39	29	28
Fixed voice connections per 100 population (incl managed VoIP)	61	60	45	37	41	45	38	40

Source: IHS

In our online survey, 67% of UK respondents claimed to use a smartphone. This was in line with France, Germany and Australia. Spain and Italy had the highest smartphone take-up, at 83% and 79% of respondents respectively, and the US reported the lowest take-up of our comparator countries, at 57%.

Japan reported only 4% take-up of non-smart mobile phones; this country has a relatively long history of feature phones that incorporate many of the attributes of a smartphone. Apart from Japan, Spain seems to be upgrading most quickly to smartphones as, along with its high smartphone take-up, it was the only other nation to report less than 20% take-up of non-smart mobile phones.

Figure 1.39 Mobile and smartphone take-up



Source: Ofcom consumer research September – October 2015

Q.4a Which of the following devices do you personally use?

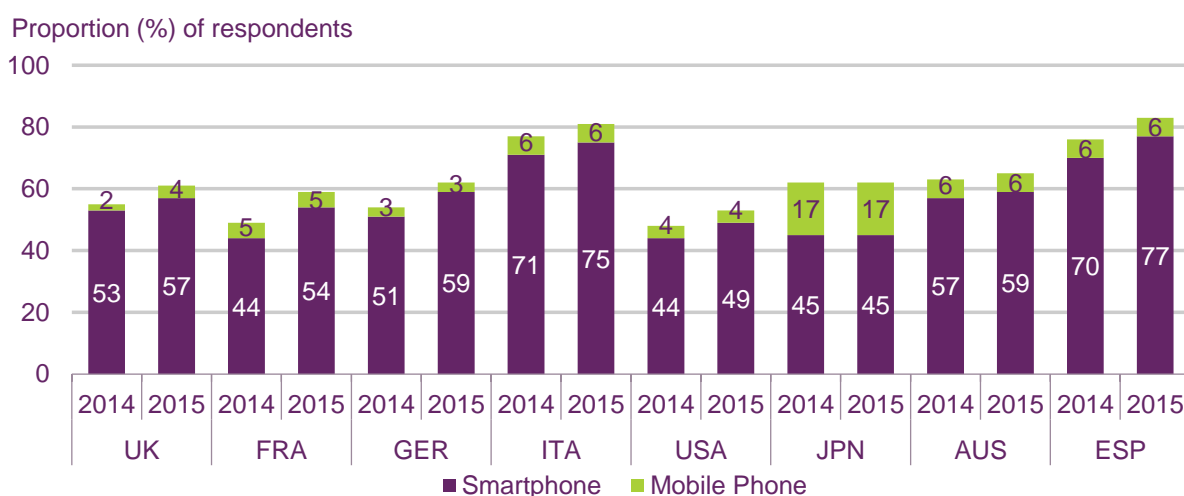
Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002

1.5.5 Everyday smartphone use

Ofcom research conducted in October 2015 found that smartphones were the most commonly used portable device for accessing the internet. Spain (77%) and Italy (75%) led among our comparator countries, having the largest proportion of respondents claiming to use a smartphone to access the internet. The UK figure stood at 57% in 2015.

Figure 1.40 below includes mobiles and smartphones in order to indicate how many people are using any handset to access the internet. Use of smartphones to access the internet increased in all comparator countries with the exception of Japan, which returned identical results year on year and showed the greatest use of ‘non-smart’ phones. This may be because many handsets in Japan are classified as ‘feature phones’. These are handsets which incorporate more functionality than a ‘non-smart’ phone but do not fulfil all the criteria we use to define a smartphone.

Figure 1.40 Use of smartphones and mobile phones to access the internet



Source: Ofcom consumer research October 2014 & September – October 2015

Base 2014: All respondents, UK=1011, FRA=1027, GER=1006, ITA=1006, USA=1000, JPN=1003, AUS=1000, ESP=1002.

Base 2015: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002

Q.7a Which of the following devices do you use to access the internet?

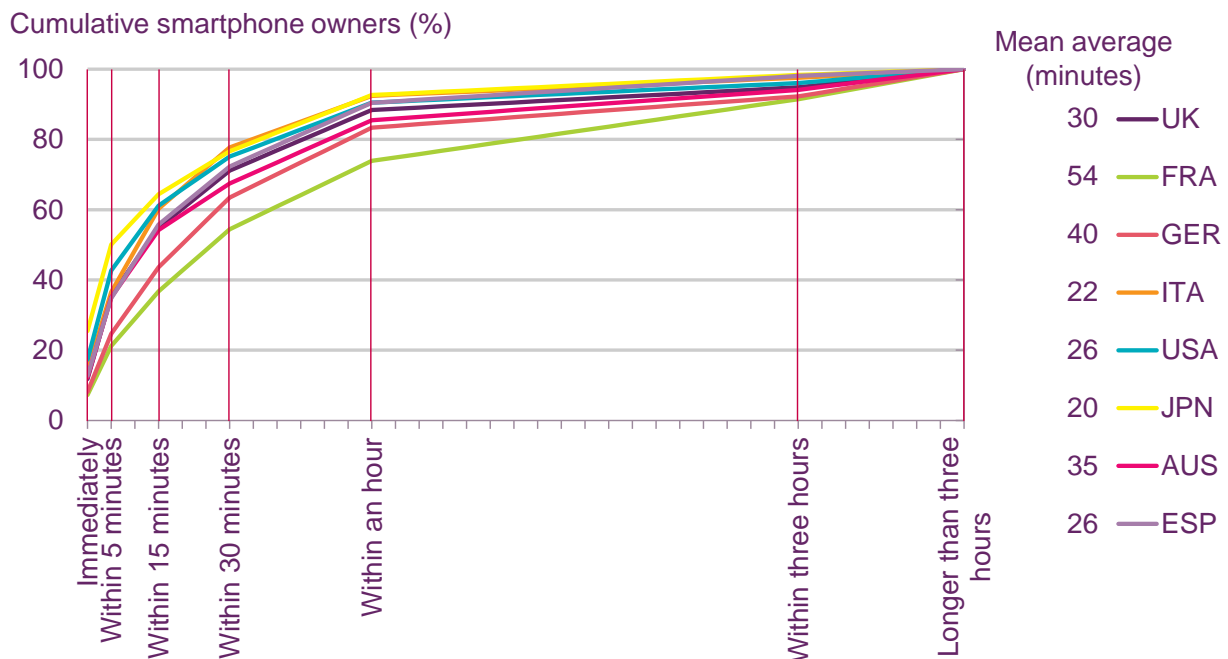
More than half (55%) of UK smartphone owners check their smartphones within 15 minutes of waking up

Figure 1.41 shows the cumulative proportion of respondents who claim to check their smartphones within a certain period after waking up. In Japan, for example, 25% of respondents claimed to check their smartphone immediately and 93% within an hour of waking up, with an average time of 20 minutes.

Smartphone owners in Japan and Italy are typically the quickest to check at the start of the day (averaging 20 and 22 minutes respectively). The comparator country with respondents that were ‘slowest’ at checking their phones in the morning was France, averaging 54 minutes, with only 21% of respondents checking it within 5 minutes of waking. In the UK, 35% of respondents checked their phone within 5 minutes of waking up, and over half (55%) within 15 minutes, with an average time of 30 minutes.

The curve flattens across all nations over the course of the morning. Across all comparator countries, over 90% of respondents have checked their phone within three hours of waking.

Figure 1.41 Checking smartphone at the start of the day



Source: Deloitte Global Mobile Consumer Survey 2015
 Q- Typically how long is the interval between you waking up and looking at your phone for the first time (not including turning off your phone's alarm clock)?
 Base: All adults who own a smartphone, UK=3039, FRA=1407, GER=1491, ITA=1589, USA=1458, JPN=952, AUS=1582, ESP=1755
 Note: Respondents who answered "don't know" have been excluded from this analysis

In the UK text messaging is the service that the highest proportion of people look at first in the morning

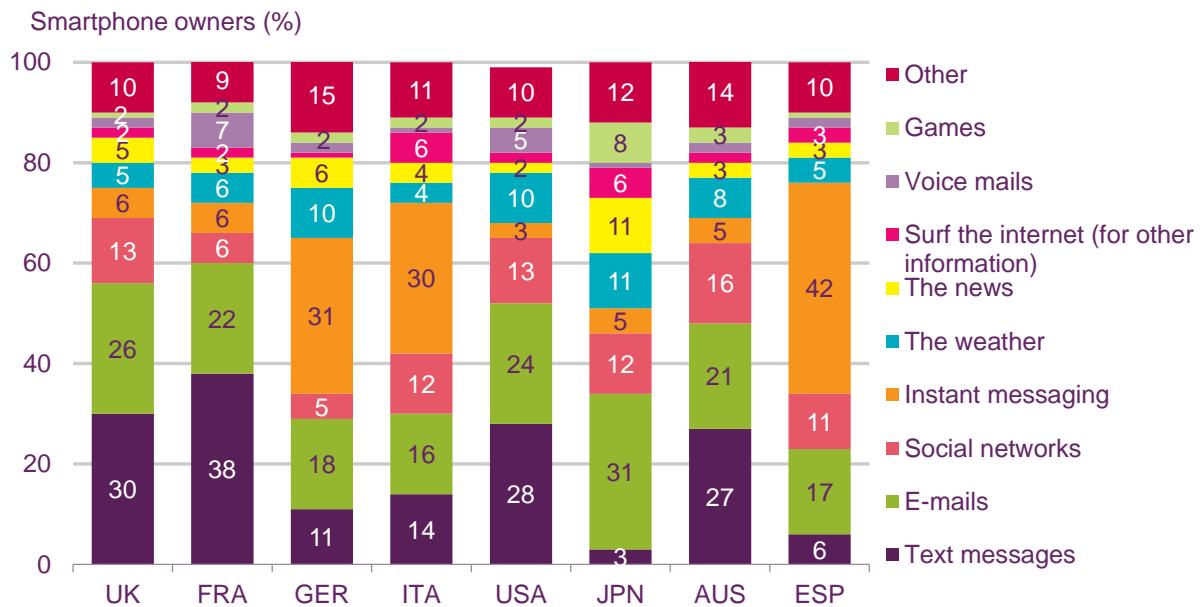
The application that respondents check first after waking varies considerably by country. In the UK, France, the US and Australia, text messages were the most popular choice, selected by between 27% (Australia) and 38% (France) of respondents. In Japan and Spain the proportion of respondents who chose text messaging was 3% and 6% respectively.

Thirty per cent of UK respondents looked at text messaging first, followed by email (26%) and social networks (13%). Email was the only service chosen by a substantial proportion of respondents in all nations, lowest in Italy at 16%. It was the first choice in Japan, and the second most popular choice in every other nation - possibly because it is a long-established communications service.

In Spain 42% of respondents chose instant messaging, the highest proportion of any service across the comparator countries. This may be due to the high penetration of smartphones, allowing greater access to low-cost and free messaging services in a country which has consistently reported below-average use of text messaging in the past. Desk research indicates that mobile operators in Spain promote offers based on inclusive minutes and data. Unlike the UK, inclusive SMS messages are rarely mentioned in promotional material. Instant messaging was also popular in Germany (31%) and Italy (30%) but was cited by no more than 6% in any of the remaining comparator countries.

A combination of text messaging, email, social networks and instant messaging accounted for between 65% and 76% of respondents' choices in all countries except Japan, where the combined total was 51%.

Figure 1.42 First application accessed in the morning



Source: Deloitte Global Mobile Consumer Survey 2015

Q- Typically what is the first thing you access on your phone every day?

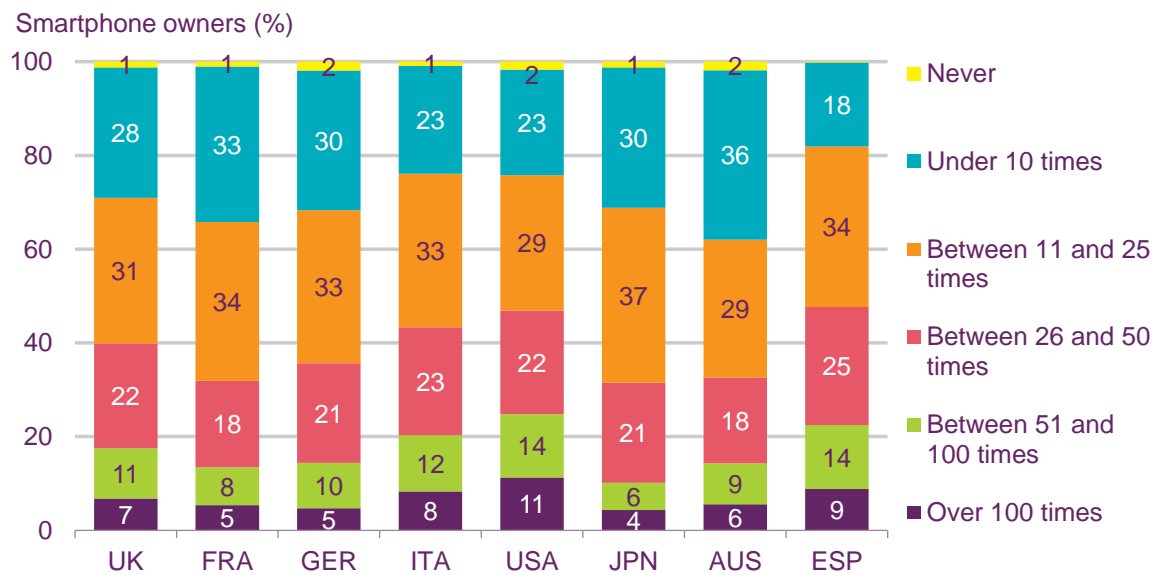
Base: All adults who own a smartphone, UK=3039, FRA=1407, GER=1491, ITA=1589, USA=1458, JPN=952, AUS=1582, ESP=1755

Note: Respondents who answered “don’t know” have been excluded from this analysis

Twenty-eight per cent of UK smartphone owners check their phone less than ten times a day, while 7% check it more than 100 times

Seven per cent of UK smartphone owners claimed to check their smartphone over 100 times a day, the fourth highest of our eight comparator nations. Despite being one of the quicker nations to engage with their smartphone in the morning (Figure 1.41), respondents in Japan eased off over the course of the day, with only 10% of respondents checking their phones more than 50 times. Respondents in the US and Spain reported the greatest levels of engagement, with 25% and 22% checking more than 50 times a day respectively. The US had the highest proportion (11%) of users claiming to check their smartphones more than 100 times a day.

Figure 1.43 Frequency of checking smartphone



Source: Deloitte Global Mobile Consumer Survey 2015

Q- How many times would you estimate you look at your phone in a day?

Base: All adults who own a smartphone, UK=3039, FRA=1407, GER=1491, ITA=1589, USA=1458, JPN=952, AUS=1582, ESP=1755

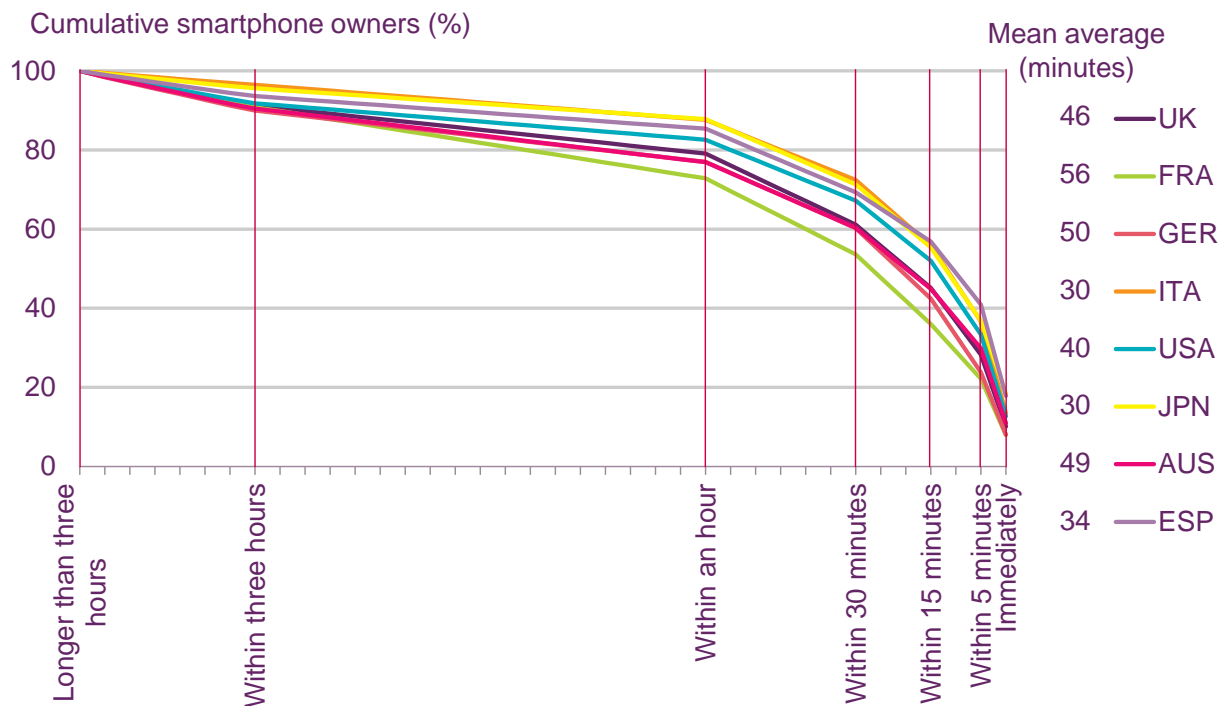
Note: Respondents who answered "don't know" have been excluded from this analysis

Respondents in the UK stopped checking their phone an average of 46 minutes before preparing to sleep

Figure 1.44 demonstrates the period of time between interacting with a smartphone and preparing to sleep. We saw in Figure 1.41 that on average, respondents in France were the last to check their smartphones in the morning; they were also the first to put them away at night. Only 36% of respondents in France stopped checking their smartphones within the 15 minute period before preparing to sleep (with an average time of 56 minutes overall), compared to 45% in the UK (average of 46 minutes) and 55% in Japan (average of 30 minutes).

In Italy and Japan 37% of respondents checked their smartphones within 5 minutes before preparing to sleep; second only to Spain (41%). In the UK this figure was 28%.

Figure 1.44 Checking smartphones at the end of the day



Source: Deloitte Global Mobile Consumer Survey 2015

Q- At the end of the day, typically how long is the interval between you looking at your phone for the last time and preparing to sleep (not including setting the phone's alarm clock)?

Base: All adults who own a smartphone, UK=3039, FRA=1407, GER=1491, ITA=1589, USA=1458, JPN=952, AUS=1582, ESP=1755

Note: Respondents who answered "don't know" have been excluded from this analysis

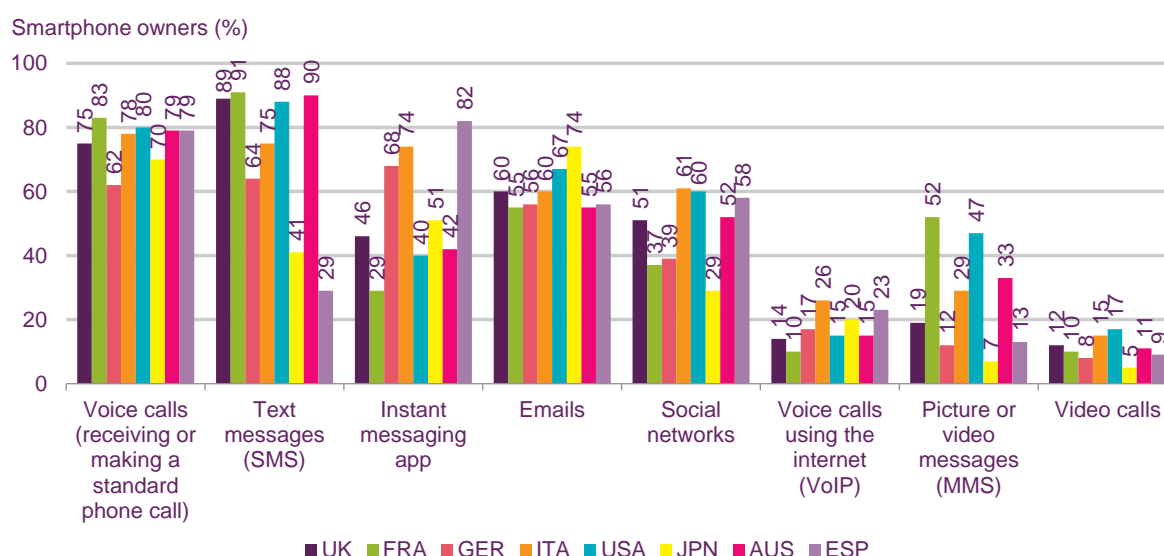
1.5.6 Smartphone activities

In the UK text messaging is the most popular text-based communication service

Despite a growing number of alternative services, text messaging remains popular in the UK, France, the US and Australia. Around 90% of smartphone owners in these countries claimed to have used it in the seven days prior to the survey, a higher proportion than for voice calls across the same countries. At 29%, Spain had the lowest use. Conversely, instant messaging was most popular in Spain, with 82% of smartphone owners claiming to have used it in the seven days prior to the survey. Japan, which also reported low levels of SMS text messaging (41%), reported the highest level of emailing on smartphones; 74% of respondents had used this communication method in the seven days before the survey. Interestingly, MMS messaging was most popular in France, the US and Australia (52%, 47% and 33% respectively), the same three nations which reported the lowest use of instant messaging apps.

In Germany and Spain instant messaging was more popular than voice calling, as was emailing in Japan. Voice calling was the second most popular selection across all the comparator countries except Italy (where it was first), and Germany, where it was third, after text messaging and instant messaging.

Figure 1.45 Regular smartphone communication methods



Source: Deloitte Global Mobile Consumer Survey 2015

Q- In the last seven days, in which, if any, of the following ways did you use your phone to communicate with others?

Base: All adults who own a smartphone, UK=3039, FRA=1407, GER=1491, ITA=1589, USA=1458, JPN=952, AUS=1582, ESP=1755

Figure 1.46 shows a range of smartphone content and media-based activities undertaken in general, and specifically outside the home ordered by their popularity in the UK. The only activity for which UK respondents had higher take-up than other comparator countries was using catch-up television services, possibly a result of the popularity of the free catch-up services offered by public service broadcasters.

Reading the news was the most popular activity among UK respondents, with 42% claiming to do this. Watching short videos was also popular: half of all respondents in Italy and Spain claimed to do this, the same proportion as for reading the news. The US reported significantly higher levels of take-up for streaming music, listening to online radio and streaming films and TV series. Online radio and audio streaming in the US may be driven in part by Pandora, a long established internet radio / streaming service which has 79 million active users¹⁹. As we see elsewhere in the report, take-up of subscription video-on-demand services is highest in the US²⁰.

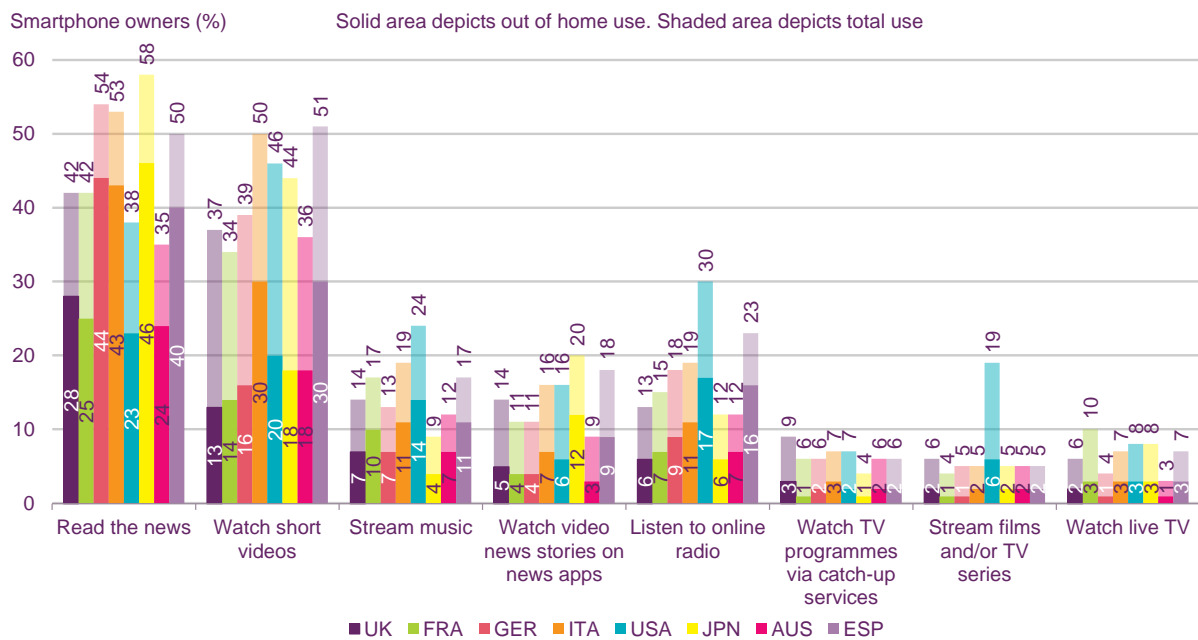
With regard to activities undertaken outside the home, reading the news remained the most popular, followed by listening activities rather than watching activities. There is an inverse correlation between data requirements and participation outside the home, possibly driven by the quality and availability of data coverage and concerns around mobile data costs.

¹⁹ <http://services.corporate-ir.net/SEC.Enhanced/SecCapsule.aspx?c=227956&fid=10233283>

Active users number includes those in Canada and Australia, as well as the US

²⁰ See Chapter 3 of the complete web version, available at: <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr15/international>

Figure 1.46 News and entertainment, use in general and outside the home



Source: Deloitte Global Mobile Consumer Survey 2015

Q- For which, if any, of the following do you typically use your phone for?

Q- And for which, if any, of the following do you typically use your phone for while out and about?

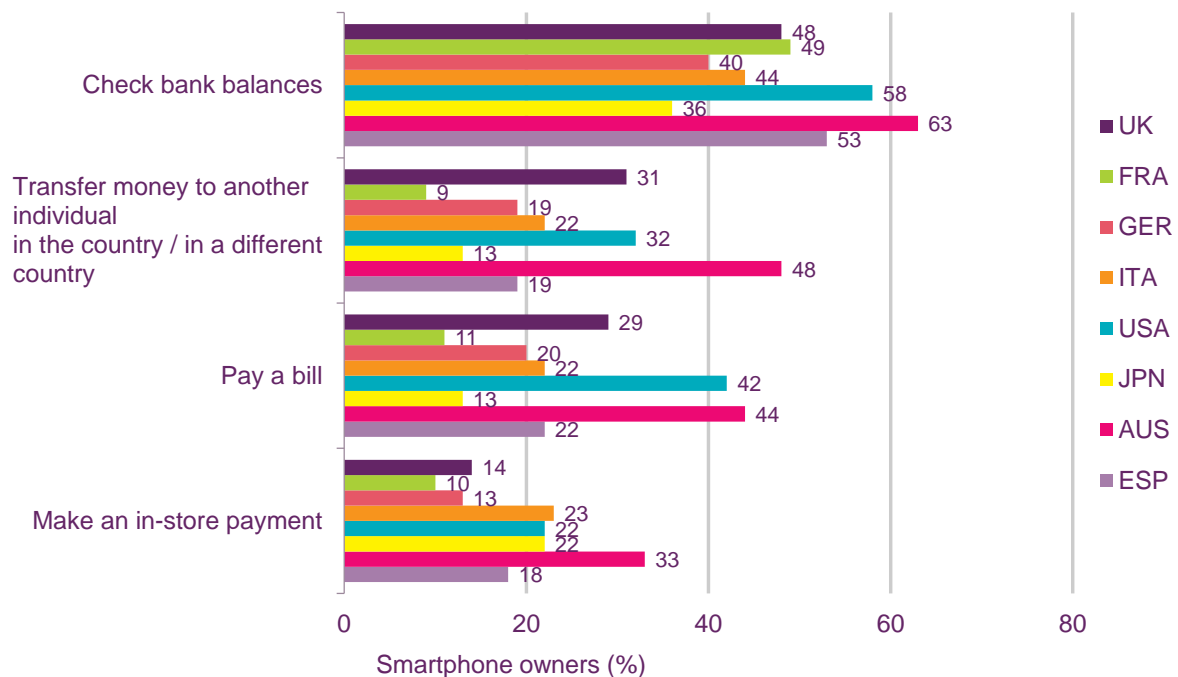
Base: All adults who own a smartphone, UK=3039, FRA=1407, GER=1491, ITA=1589, USA=1458, JPN=952, AUS=1582, ESP=1755

UK smartphone owners are the most likely in the EU5 to use their smartphone to pay a bill

UK smartphone owners were the most likely of those in the EU5 countries to use their smartphone to pay a bill: 29% claimed to have done so. They were also the most likely in the EU5 to have transferred money on their smartphones (at 31%). This figure was highest in Australia, where 44% had used their smartphone to pay a bill and 48% had used it to transfer money.

In the UK 14% of smartphone owners claimed to have ever used their smartphone to make an in-store payment. Australian smartphone owners were more than twice as likely to have done this; 33% claimed to have done so at least once. Italy had the highest reported incidence of the EU5 countries, at 23%.

Figure 1.47 Smartphone use and financial activities



Source: Deloitte Global Mobile Consumer Survey 2015

Q- How frequently, if at all, do you use your phone to do at least one of these things? Chart shows net of 'ever'

Base: All adults who own a smartphone, UK=3039, FRA=1407, GER=1491, ITA=1589, USA=1458, JPN=952, AUS=1582, ESP=1755

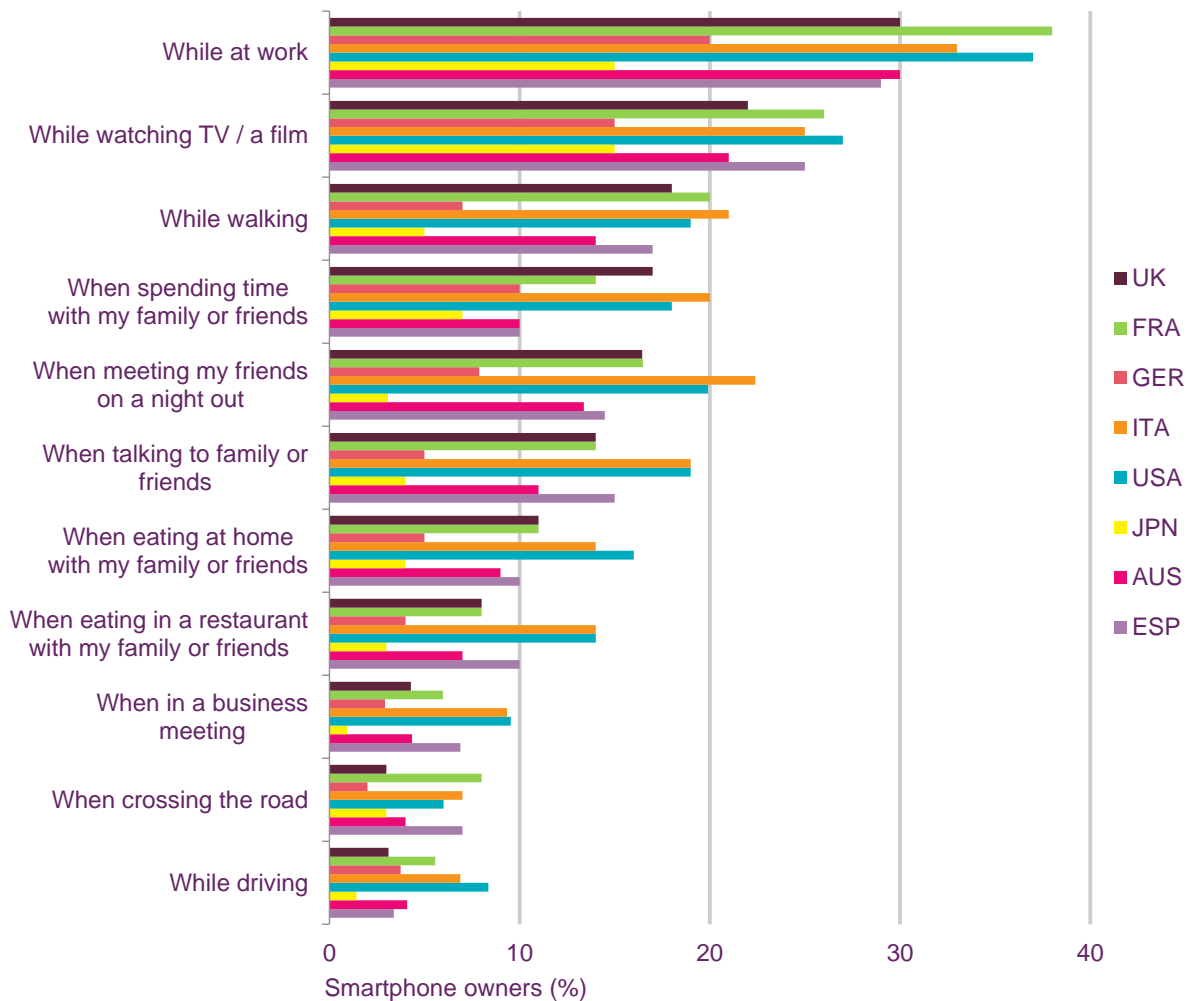
Almost a third (30%) of UK respondents use their smartphones at work on a regular basis

Figure 1.48 illustrates smartphone users' behaviours in a variety of situations, showing the proportion of smartphone owners who claimed to use their smartphone 'very often' or 'almost always' in a specific situation.

Almost a third (30%) of UK respondents claimed to use their smartphones at work on a regular basis. In France and the US this figure was even higher, at 38% and 37% respectively.

In social situations with friends or family, a clear pattern emerges. In each of these situations respondents in the US and Italy were the most likely to claim that they used their smartphones 'very often' or 'almost always'. Respondents in Japan were the least likely to do so.

Figure 1.48 Using a smartphone (very often/almost always) while doing other activities



Source: Deloitte Global Mobile Consumer Survey 2015

Q- How often, if at all, do you use your mobile phone while doing the following?

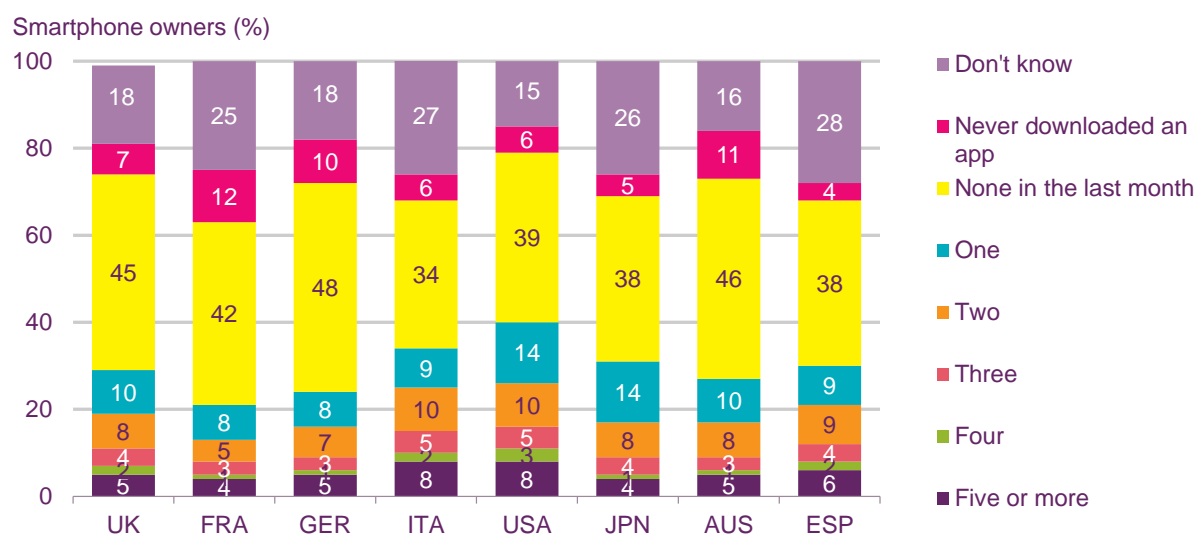
Chart shows answers 'almost always' and 'very often'

Base: All adults who have a smartphone

Twenty-nine per cent of UK smartphone owners download at least one app per month

In all of our comparator countries at least 20% of respondents said they downloaded one or more apps in a typical month. In the US this figure was 40%. Across the UK, Italy, Japan and Spain around three in ten downloaded at least one app in a typical month, falling to just over one in five in Germany and France. Italy and the US reported the greatest proportion of heavy users, with 8% claiming to download five or more apps in a typical month. In France, Australia and Germany about one in ten respondents claimed to have never downloaded an app.

Figure 1.49 Number of apps downloaded per month



Source: Deloitte Global Mobile Consumer Survey 2015

Q- How many apps do you download on your phone in a typical month?

Base: All adults who have a smartphone

Social networking and instant messaging apps are top downloads for both Google Play and iPhone users

The social networking app Facebook appeared in the top five apps downloaded on Google Play, in all countries except Japan. The same was true of Facebook's messaging app, Messenger. WhatsApp was in the top five most commonly-downloaded apps in all the EU5 countries. Antivirus security apps were popular in Germany, Italy and the US, and the Google Photo app featured in five of the eight comparator nations, including the UK.

Gaming apps were very popular in Japan: four of the five most commonly-downloaded apps downloaded from Google Play were gaming apps.

Figure 1.50 Most commonly downloaded apps on Google Play, by country

	1	2	3	4	5
UK	Facebook	Heroes of the Alpha Arena	WhatsApp Messenger	Messenger	Google Photos
FRA	Facebook	Messenger	Snapchat	Google Photos	WhatsApp Messenger
GER	WhatsApp Messenger	Facebook	360 Security	Messenger	Heroes X Mortals: Kriegsarena
ITA	WhatsApp Messenger	Facebook	Messenger	360 Security	COOKING MAMA
USA	Messenger	Google Photos	Facebook	360 Security	Pandora Radio
JPN	RPG Iruna Senki online ¹	Collect the real battleship empire ²	Battered hero – battle game ³	Yahoo! Browser ⁴	Clash of Kings
AUS	Facebook	Messenger	Google Photos	Golden Lion Slots	Instagram
ESP	WhatsApp Messenger	Facebook	Messenger	Google Photos	64 Games

Source: App Annie Top App Charts Aug 31, 2015.

Translation Notes: 1. イルーナ戦記オンライン 2. 戦艦帝国-200艘の实在戦艦を集める 3. 連打英雄—指1本で楽しめる爽快バトルゲーム 4. Yahoo!ブラウザ

The popularity of social networking and instant messaging apps was mirrored among iPhone users. In all the comparator countries except Japan, the top five most commonly-downloaded apps included at least one social networking or instant messaging app, and in most cases both.

At least one gaming app featured in the top five most popular apps in all eight countries. A greater enthusiasm for gaming apps on iPhone might be inferred from the popularity of apps such as *Happy Wheels* and *The Walking Dead: Road to Survival*. However, as data on the most commonly downloaded apps are collated on a daily basis, the popularity of certain gaming apps may be attributable to daily trends.

Figure 1.51 Most commonly downloaded apps on iPhone, by country

	1	2	3	4	5
UK	Happy Wheels	WhatsApp Messenger	The Walking Dead: Road to Survival	Messenger	Facebook
FRA	The Walking Dead: Road to Survival	Happy Wheels	WhatsApp Messenger	Messenger	iMusic Pro
GER	Happy Wheels	WhatsApp Messenger	The Walking Dead: Road to Survival	iMusic Pro	Messenger
ITA	Happy Wheels	WhatsApp Messenger	Messenger	Layout from Instagram	Jusapp – Prank Calls
USA	Happy Wheels	The Walking Dead: Road to Survival	Messenger	Facebook	Instagram
JPN	Happy Wheels	Pokemon Shuffle Mobile	Pirates of war ¹	SUUMO	LINE
AUS	Happy Wheels	Messenger	Layout from Instagram	Facebook	Instagram
ESP	WhatsApp Messenger	Layout from Instagram	Messenger	Instagram	Facebook

Source: App Annie Top App Charts Aug 31, 2015.

Translation notes: 1. 戦の海賊

1.6 News consumption – the international context

1.6.1 Introduction

This section examines the consumption of news. First, we look at digital news consumption, and present a summary of the key findings from the Reuters Institute *Digital News Report*, published in June 2015. Second, we present findings from Ofcom's new research across a number of countries, and look at which platforms people say they use as their main source of different types of news, and the devices they use for accessing online news. The key findings include:

- **When asked how they get to their online news, people in the UK and Denmark are more likely to go straight to an online news brand**, while those in Italy, Japan and Spain are most likely to use search as their means of finding news content. Social media is used as a gateway to news by at least a third of online news users in Italy, the US, Spain and Denmark.
- **Around a third of respondents in the UK (33%) and Japan (36%) only use one source for online news**; in both these countries few people use four or more sources (8% and 12% respectively).
- **In the UK, social media was a source of news for 36% of respondents in 2015, up from 23% in 2014.** In Germany (25%) and Japan (21%) levels remain lower. Respondents in Australia are the most likely to use social media for news (51%).
- **Across most of the European countries in our research, around eight in ten online respondents say they use the internet to read news online.** This is lower in the UK (73%), the US (68%) and Australia (69%). In Italy 87% say they use the internet to read news, the highest of all our comparator countries.
- **In the UK, TV is the main source of international news for 43% of respondents, and the internet for 30%, and there is a similar pattern in France and Germany.** Respondents in Italy are more likely to nominate the internet (42%) than TV (36%), as is also the case in Japan (43% and 29% respectively).

1.6.2 Digital news consumption – a comparative study

This section provides a summary of the key findings from the Reuters Institute *Digital News Report*, published in June 2015.²¹ Ofcom, along with a variety of partners, provided support for this project. The research provides comparisons between the UK, the US, France, Germany, Spain, Italy, Ireland, Denmark, Finland, urban Brazil, Japan, and Australia. To maintain consistency with Ofcom's data, this summary does not include data relating to urban Brazil or Finland.

The report shows how news is perceived quite differently across countries, and how consumption habits differ in terms of how news is accessed, particularly in relation to social media.

²¹ Available at: <http://www.digitalnewsreport.org/>

The survey was completed by an online panel of 2149 UK news users for YouGov in January/February 2015. Online surveys were also conducted in the other countries, with samples ranging from 1501 (Ireland) to 2295 (the US). In this section, we refer to these people as 'online users of news', which means they have online access and said they had used any form of (offline or online) news in the previous month.²²

Online users of news in Australia and Germany are most likely to be interested in international news

Figure 1.52 sets out the relative levels of interest that online users of news have in various types of news, in the countries under comparison. Respondents were asked to choose their five most important types of news.

Levels of interest in politics are lower in the UK (41%) than in many other European countries (50% in Germany and 46% in France, Spain, Italy and Denmark). In the US, 47% of online news users say they are interested in politics, compared to 32% in Ireland. Those in Australia are the least likely to show interest in politics, with 28% nominating it.

Respondents in the UK are more likely than those in most other countries to be interested in news about their country, with 72% nominating this, compared to a lower proportion of respondents in most other countries: 55% in Japan, 57% in the US and 59% in Ireland. Respondents in the US are the most likely to be interested in local news about their town or city, with just over half (52%) nominating this. Around four in ten people in most other countries indicate interest in local news, although this is lower in Spain (34%), France (33%) and Japan (22%).

In terms of international news, online news users in Australia are the most interested, with 75% nominating this, and 70% of those in Germany. Levels of interest are much lower in other countries including the UK (51%), Italy (49%), the US (46%) and Japan (46%).

Finally, entertainment and celebrity news is particularly popular in Japan (29%), but also in Ireland (21%), Australia (20%), Italy and the UK (both at 16%).

²² For further methodological details please see <http://www.digitalnewsreport.org/survey/2015/survey-methodology-2015/>.

Figure 1.52 Levels of interest in types of news

	UK	FRA	GER	ITA	US	JPN	AUS	IRE	ESP	DEN
News about the country	72%	65%	67%	56%	57%	55%	62%	59%	63%	64%
International news	51%	59%	70%	49%	46%	46%	75%	64%	53%	66%
Local news about my town or city	44%	33%	41%	44%	52%	22%	41%	42%	34%	38%
News about my region	37%	40%	54%	35%	28%	26%	29%	29%	41%	25%
Business and financial news	20%	14%	12%	15%	19%	25%	28%	27%	15%	26%
News about the economy	37%	32%	29%	30%	41%	45%	35%	42%	40%	34%
Entertainment and celebrity news	16%	9%	13%	16%	13%	29%	20%	21%	7%	9%
Fun/weird news	14%	12%	12%	19%	17%	18%	15%	18%	16%	18%
Health news	27%	27%	22%	33%	28%	31%	26%	30%	32%	25%
Education news	12%	14%	12%	14%	15%	11%	11%	13%	25%	12%
Arts and culture news	11%	15%	8%	26%	10%	18%	11%	13%	21%	15%
Sports news	30%	21%	28%	30%	21%	32%	29%	33%	30%	28%
News about the country's politics	41%	46%	50%	46%	47%	47%	28%	32%	46%	46%
Science and technology news	24%	23%	25%	35%	28%	26%	28%	27%	31%	33%

Source: Reuters Institute / YouGov research Jan/Feb 2015

Q2: Which of the following types of news is most important to you? Choose up to five.

Base: total sample in each country: UK 2149; Germany 1969; Spain 2026; Italy 2006; France 1991; Ireland 1501; Denmark 2019; Japan 2017; Australia 2042

When asked how they get to their online news, respondents in the UK and Denmark are the most likely to go directly to a news brand

The ways in which people get their online news is becoming increasingly complex and multi-faceted. There are a variety of means, ranging from going direct to a news brand to going through search engines, social media, email and online alerts and notifications.

Respondents in the UK and Denmark are most likely to nominate going direct to a news brand (52% and 54% respectively), while those in Japan (15%), Italy (20%) and Germany (26%) are the least likely to do this.

People in Italy (66%), Japan (54%), and Spain (54%) are the most likely to use search as their means of finding their news content, compared to 29% in Denmark and 32% in the UK.

Social media is most likely to be used to find news stories by respondents in Australia (41%), Denmark (38%) and the US (35%), and email is particularly likely in the same countries – the US (25%), Denmark (24%) and Australia (20%). Levels of using email for news are particularly low in the UK (10%) and Ireland (9%).

Figure 1.53 Starting points for online news consumption, by country

	UK	FRA	GER	ITA	US	JPN	AUS	IRE	ESP	DEN
Direct to news brand	52%	27%	26%	20%	36%	15%	33%	44%	36%	54%
Search	32%	40%	45%	66%	40%	54%	49%	46%	54%	29%
Social media	28%	21%	20%	33%	35%	14%	41%	36%	35%	38%
Email	10%	21%	15%	17%	25%	15%	20%	9%	14%	24%
Mobile notifications/alerts	10%	14%	9%	7%	13%	7%	9%	9%	8%	9%

Source: Reuters Institute / YouGov research Jan/Feb 2015

Source: Reuters Institute / YouGov research Jan/Feb 2015

Q10: Thinking about how you got news online in the last week, which were the ways in which you came across news stories? Please select all that apply

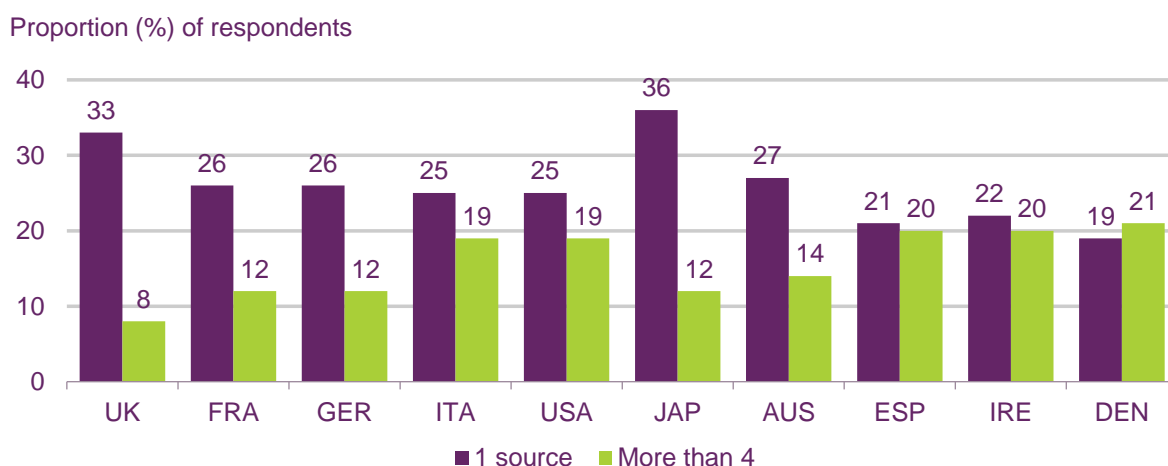
Base: total sample in each country: UK 2149; Germany 1969; Spain 2026; Italy 2006; France 1991; Ireland 1501; Denmark 2019; Japan 2017; Australia 2042

Around a third of respondents in the UK and Japan use only one online news source

Given the array of news available online, it is useful to measure how many sources respondents use. As Figure 1.54 shows, the picture is quite varied. In Japan, respondents are most likely to use only one online news source (36%), and in the UK a third (33%) of online news users use only one source. In both these countries few respondents use four or more sources (12% and 8%).

Conversely, in Denmark, people are more likely to use four or more sources (21%) than just one source (19%).

Figure 1.54 Number of online sources, by country



Source: Reuters Institute / YouGov research Jan/Feb 2015

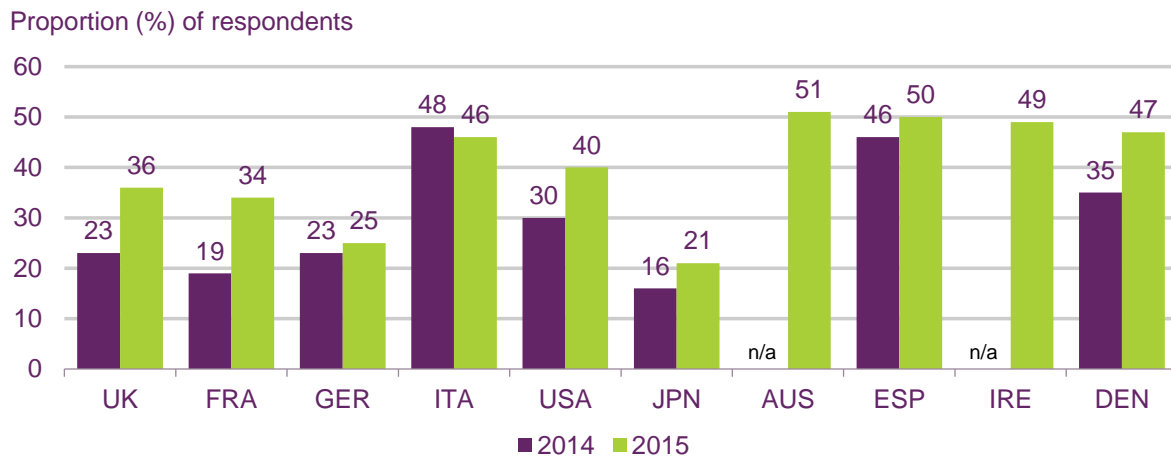
Q5b: Which, if any, of the following have you used to access news in the last week? Please select all that apply

Base: total sample in each country: UK 2149; Germany 1969; Spain 2026; Italy 2006; France 1991; Ireland 1501; Denmark 2019; Japan 2017; Australia 2042

Social media as a source of news has increased considerably since 2014

Social media as a source of news has increased over the past year in a number of countries, and particularly in the UK and France. In the UK, 23% of online news users said they used social media for news in 2014, rising to 36% in 2015. In France, 19% in 2014 and 34% in 2015 said they used social media for news. Levels of use of social media in Germany (25%) and Japan (21%) remain lower.

Figure 1.55 Social media as a source of news, by country



Source: Reuters Institute / YouGov research Jan/Feb 2015

Q3: Which, if any, of the following have you used in the last week as a source of news? Please select all that apply

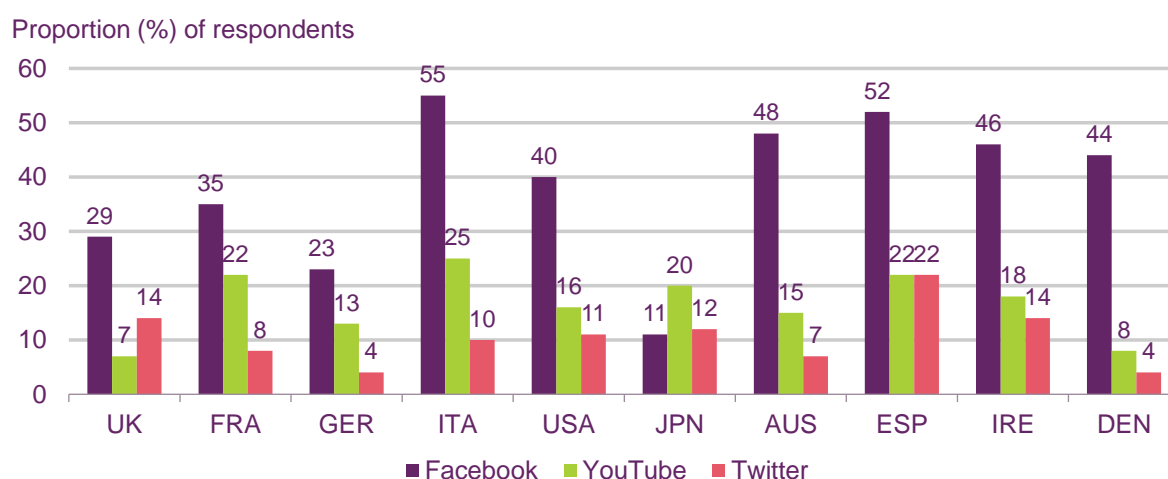
Base: total sample in each country: UK 2149; Germany 1969; Spain 2026; Italy 2006; France 1991; Ireland 1501; Denmark 2019; Japan 2017; Australia 2042

Across the comparator countries there is considerable variation in the popularity of different types of social media as news sources

Facebook is more popular in Italy (55%) than in any other nation. YouTube was more popular in Italy (25%), France and Spain (both 22%) and Japan (20%), but least popular in the UK as a news source (7%).

Twitter is most likely to be used as a news source by news users in Spain (22%), the UK and Ireland (both 14%), and least likely in Germany and Denmark (4%).

Figure 1.56 Top three social networks used as a source of news, by country



Source: Reuters Institute / YouGov research Jan/Feb 2015

Q12b: Which, if any, of the following have you used for reading, watching, sharing or discussing news in the last week?

Base: total sample in each country: UK 2149; Germany 1969; Spain 2026; Italy 2006; France 1991; Ireland 1501; Denmark 2019; Japan 2017; Australia 2042

1.6.3 Main sources for news

The following analysis uses data from Ofcom’s research. While the Reuters Institute findings above relate mainly to online use of news, the Ofcom survey examines respondents’ views about the range of possible platforms for news. Participants were asked what they used as their main source for different types of news: national, international, regional and local, sports, and celebrity news. The news sources comprised TV, the internet, radio, newspapers and magazines and “getting news from other people”. Participants were also asked which online device they used to access news.

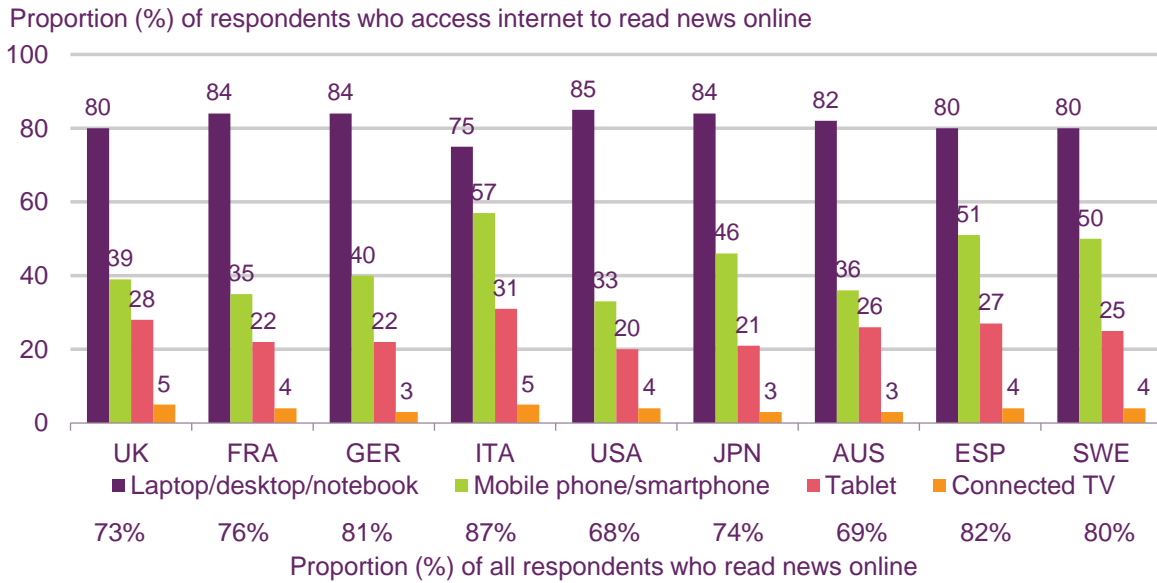
The survey was done online, with around 1,000 respondents in each country. Countries covered were the UK, France, Germany, Italy, the US, Japan, Australia, Spain and Sweden. As the research was carried out online, the sample differs from other Ofcom research and direct comparisons cannot be made. The research methodology is discussed in detail in Appendix A.

Four in ten online news users in the UK use a smartphone for their news

Across most of the European countries in the comparative sample, around eight in ten online respondents say they read the news online. This is lower in the UK (73%), the US (68%) and Australia (69%).

Respondents were asked about the devices they used to access news online. The laptop/ desktop/ notebook remains the most popular device, although the smartphone is also popular, particularly in Italy (57%), Spain (51%) and Sweden (50%). The tablet is relatively popular in Italy (31%), the UK (28%), Spain (27%) and Australia (26%).

Figure 1.57 Devices used for reading news online, by country



Source: Ofcom consumer research September - October 2015

Base: All respondents who read news online, UK= 734, FRA= 759, GER=812, ITA= 868, USA= 686, JPN= 743, AUS= 686, ESP= 819 SWE= 804

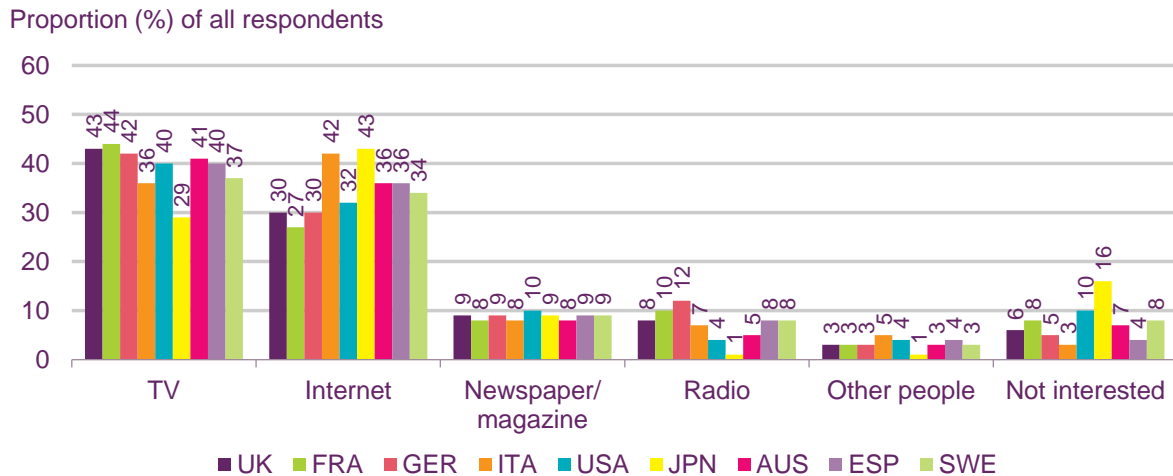
Q.9a Which, if any, of the following internet activities do you use each of your devices for: reading news online?

TV and the internet are the main sources for international news

Looking at news by type, and focusing first on international news, TV or the internet are the main sources, across all countries, with other media far less likely to be nominated.

In the UK, TV is the main source of international news for 43% of respondents, and the internet for 30%. There is a similar pattern in France and Germany. Respondents in Italy are more likely to nominate the internet (42%) than TV (36%), as is also the case in Japan (43% vs. 29%).

Figure 1.58 Main sources of international news



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

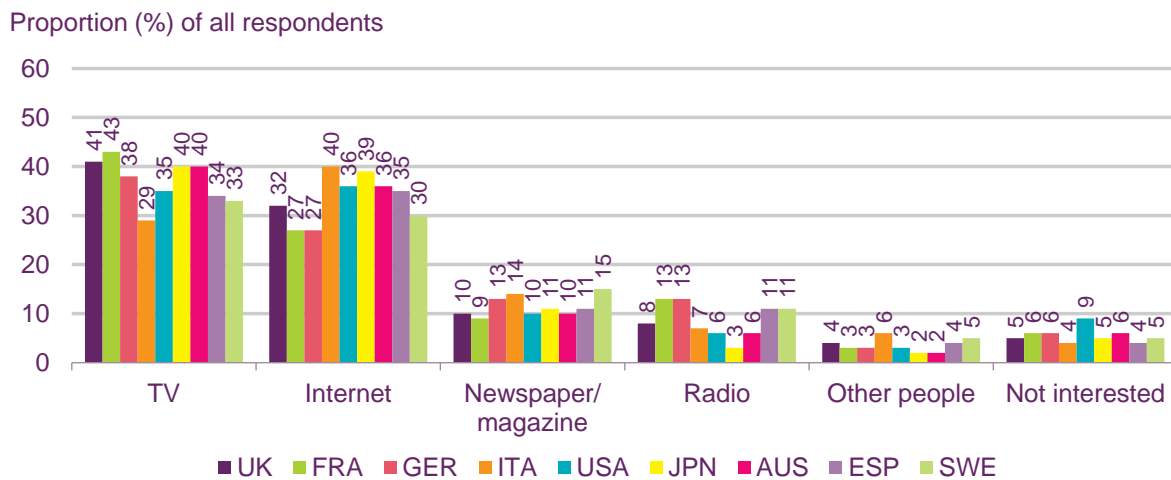
Q.11 Which, if any, is your main source for the following information? International News

One in three UK respondents nominate the internet as their main source of national news

As with international news, TV and the internet are the main two sources of national news for all comparator countries. In the UK, 41% of respondents nominate TV, and 32% nominate the internet, with 10% saying newspapers and 8% choosing radio.

In countries where television is the most popular medium, the difference between platforms is most pronounced in France, where 43% selected television compared to 27% choosing the internet. Where the reverse applied, the greatest difference was in Italy, where 40% chose the internet compared to 29% who chose television.

Figure 1.59 Main sources of national news



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

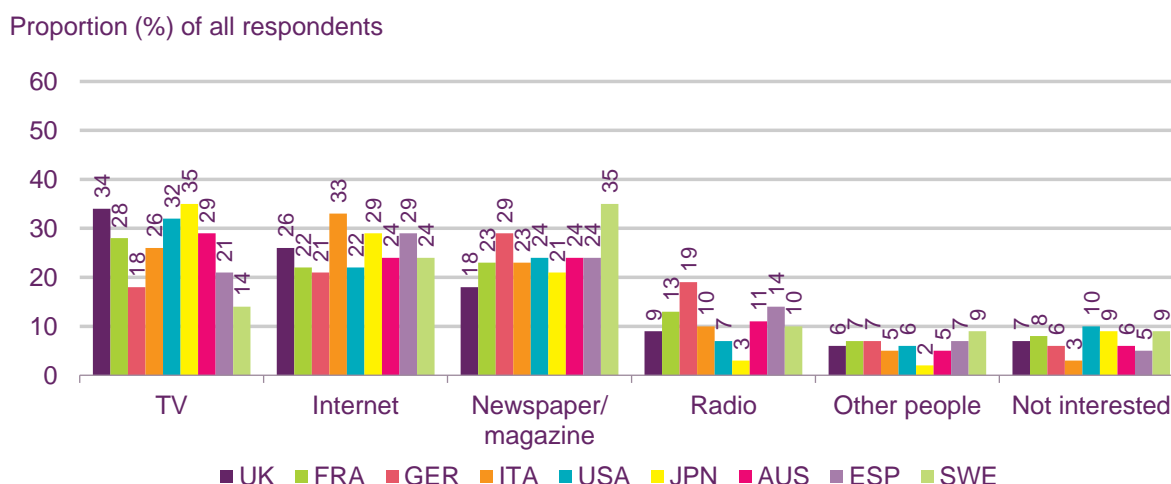
Q.11 Which, if any, is your main source for the following information? National news

TV is the most popular main source of local/regional news in the UK, followed by the internet, and then newspapers

Newspapers continue to be more popular as a main source of regional and local news than as a source of other news. In the UK, 18% nominated newspapers or magazines as their main source for local news, rising to 29% in Germany and 35% in Sweden.

One in five (19%) respondents in Germany nominated radio as their main local/regional news source, and 14% in Spain.

Figure 1.60 Main sources of regional / local news



Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.11 Which, if any, is your main source for the following information? Regional / local news

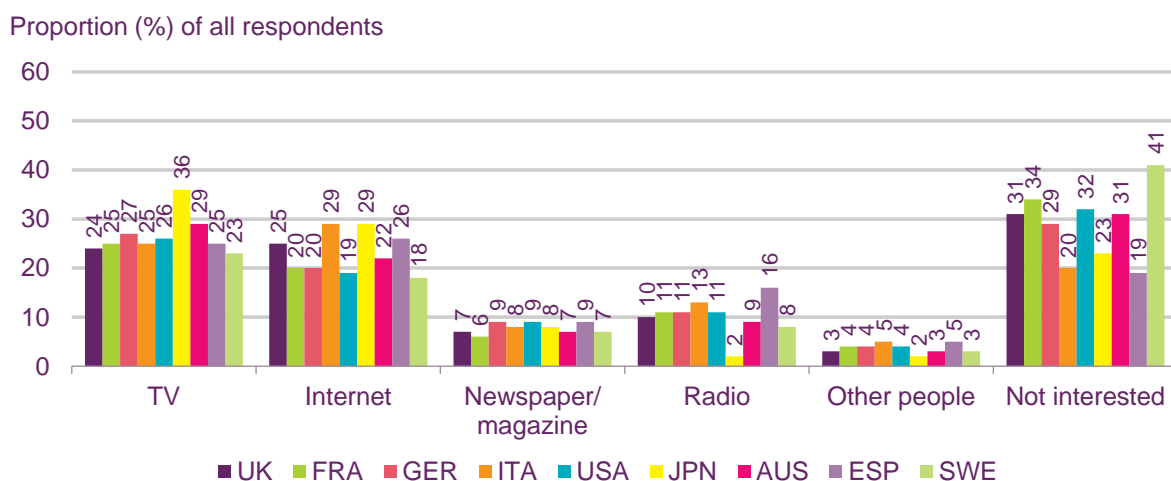
TV and the internet are used equally for sports news in many countries

Respondents were asked about their main source of sports news. Across the countries, TV and internet are the main sources, with radio more popular than newspapers in most countries. In the UK, people are as likely to nominate the internet as TV (25% and 24%).

One in six people in Spain (16%) say their main source of sports news is the radio, and 13% say this in Italy, compared to 2% in Japan.

Around a third of people in the UK, France, Germany, the US and Australia say they are not interested in sports news, although people in Spain (19%) Italy (20%) and Japan (23%) are much less likely to say this. People in Sweden are the least likely to be interested, at 41%.

Figure 1.61 Main sources of sports news



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

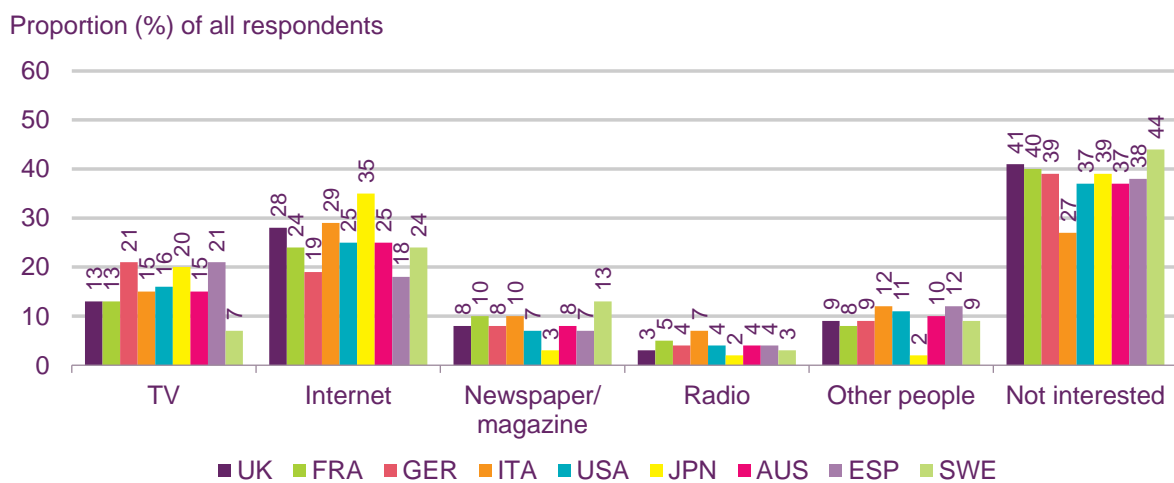
Q.11 Which, if any, is your main source for the following information? Sports news

The internet is the most popular main source for celebrity news and gossip

As in 2014, the internet is the most-cited main source for celebrity news and gossip. For example, in the UK 13% of respondents cite TV, compared with 28% for the internet. In Germany the balance is more even, with 21% nominating TV and 19% the internet. In Japan, 20% use TV and 35% the internet. And in Sweden, only 7% use TV as their main source for this type of news, compared to 24% using the internet. Interestingly, “other people” are used by about one in ten respondents – more commonly in Italy and Spain (both 12%) than in Japan (2%).

Many respondents say they are not interested in this form of news – around four in ten across the countries – although this is less likely in Italy, where only a quarter (27%) say they are not interested.

Figure 1.62 Main sources of celebrity news/gossip



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.11 Which, if any, is your main source for the following information? Celebrity news / gossip

1.7 Media literacy – the international context

1.7.1 Introduction

As more people do more online, it is increasingly important that they have media literacy skills. This means, in the context of this section, that they understand the trustworthiness of the types of information that they access, and are aware of how such information is provided to them; that they have due confidence in the systems and services they are using and are neither overly confident nor too scared to use them; that they think actively about their personal data and how it might be being used by third parties; and so on.

This section sets out some key findings in this area, and for the first time is able to compare results across the various countries in our sample. First, it shows the extent to which people use any online device to access government services, and which devices are used for such access; it is important that such sites are trusted and used widely. It then looks at the use of search engines, and examines how much awareness people say they have about the accuracy of the websites that are provided in results pages. Finally, it provides a comparison of the relative extent of concern that people have about their personal information, and their propensity to provide such information.

- **Respondents in Italy, Spain and Australia are the most likely to say they access either local or national government services online.** The laptop/PC is the most favoured device for accessing such websites.
- **Search engines are used most regularly by respondents in Italy (92%), and least regularly by those in the US (73%).** Four in five (82%) people in the UK say they use a search engine at least weekly. Around six in ten respondents in most countries say that, of the websites returned by a search engine, some are likely to be accurate and some are not: a media-literate response. Around a quarter of people in the UK, Germany and the US think that if a search engine has listed a website then it will have accurate information, rising to 35% in Italy and Spain.
- **People in Sweden are the least likely to be happy to provide personal information to companies,** while people in the US are more likely than in other countries to agree strongly that they are happy to provide such information (13%).
- **Levels of concern about providing personal data are relatively high,** with half or more respondents in each country agreeing that they are worried about unwarranted use of their personal data, with the exception of Sweden, where levels of concern are lower (42%).

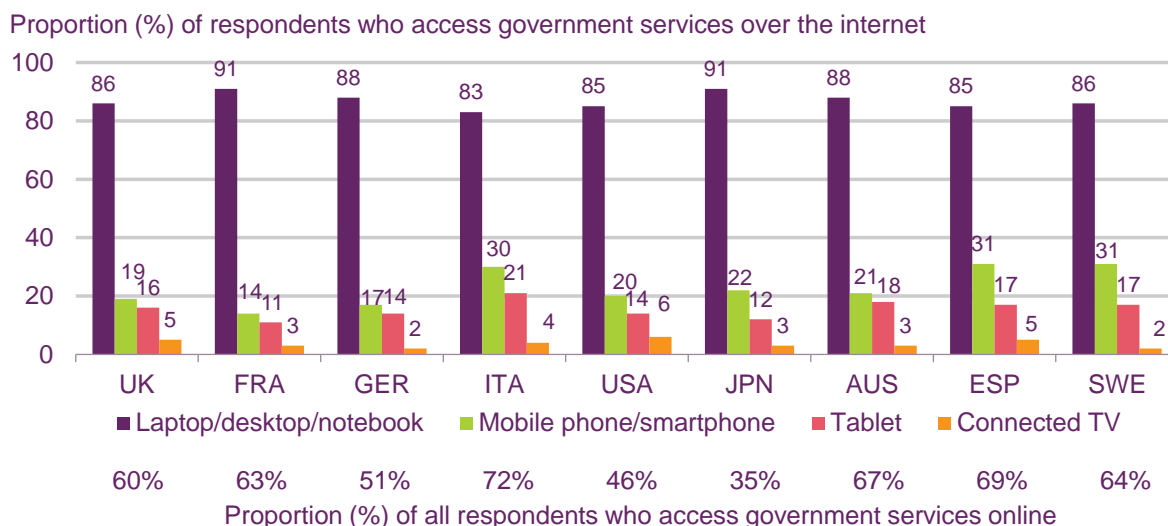
1.7.2 Online access, awareness and concerns

Respondents in Italy, Spain and Australia are the most likely to say they access government services online

The use of online government services is a key component of most countries' online digital strategy, and around six in ten respondents say they access government services, either local or national, in this way. Respondents in Italy (72%), Spain (69%) and Australia (67%) are the most likely to do this, while those in Japan (35%) and the US (46%) are the least likely. Six in ten respondents in the UK (60%) say they access government services online.

The laptop/PC is the most likely means of accessing such websites in each comparator country, although the mobile is cited by about three in ten users in Spain, Sweden and Italy. A tablet is used by one in five respondents in Italy (21%), compared to 16% in the UK, but only by 11% in France.

Figure 1.63 Devices used to access government services, by country



Source: Ofcom consumer research September - October 2015

Base: All respondents who access government services online, UK= 608, FRA= 631, GER=516, ITA= 719, USA= 467, JPN= 352, AUS= 667, ESP= 691, SWE= 638

Q.9a Which, if any, of the following internet activities do you use each of your devices for: accessing government services e.g. local and/or national websites?

Search engines are used most often by respondents in Italy, and least often by those in the US

Search engines are an integral part of the online experience, providing links to the information and services that comprise people's repertoire of online use. Across the countries examined, around four in five online users said they used a search engine at least once a week. People in Italy were the most likely to say they did this (92%), followed by those in Japan and Spain (both 87%). Four in five (82%) in the UK use a search engine at least weekly. Only in the US does this decrease to 73% of people using it once a week or more. Between 2% and 3% of respondents in most countries say they do not use search engines, rising to 5% in the US and 6% in Japan.

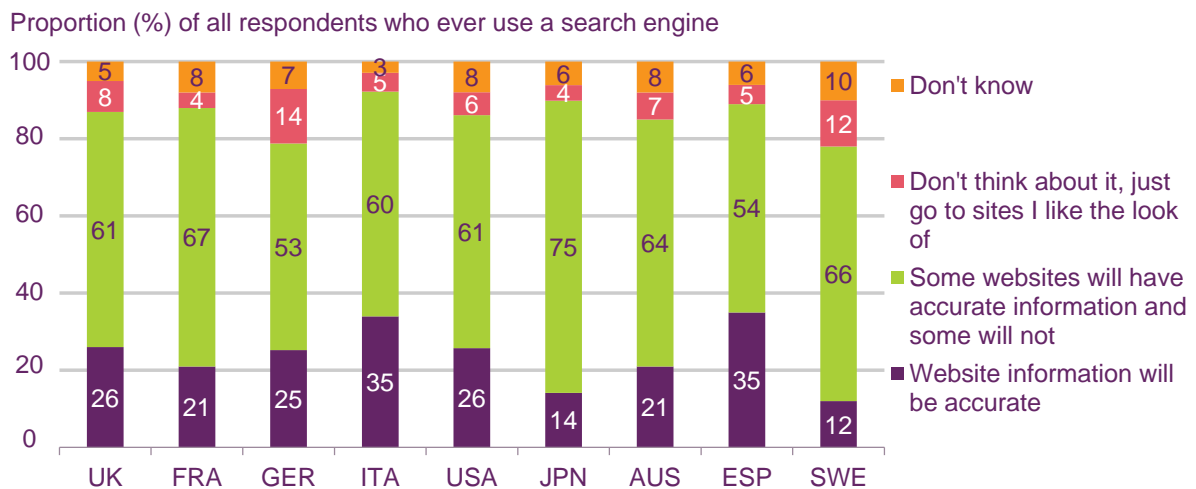
It is useful to examine to what extent people trust the results that appear in search engine results pages, to gauge the extent to which they understand the provenance of the websites they use, and are aware that some will be accurate and reliable while others will not.

As Figure 1.64 shows, respondents in Japan (75%) are most likely to respond with a media-literate response; that of the websites returned by a search engine, some will be accurate and some will not. Across the sample of countries, respondents in Germany (53%) and Spain (54%) are the least likely to give this response, while for most countries including the UK (61%), about six in ten say this is the case.

Respondents in Germany are more likely than those in other countries to say instead that they do not think about assessing the websites they are using, but simply go to the sites they like the look of. Respondents in Spain and Italy are more likely to think that the websites will

have accurate information if they have been returned by a search engine (35%). Around a quarter of those in the UK, Germany and the US gave this response.

Figure 1.64 Perceptions of the accuracy of search engine results pages



Source: Ofcom consumer research September - October 2015

Base: All respondents who ever use a search engine, UK=983, FRA=976, GER=995, ITA=991, USA=963, JPN=948, AUS=975, ESP=985, SWE=982

Q.11a When you use a search engine to find information, you enter a query in the search box and the search engine will then show some links to websites in the results pages. Which of these is closest to your opinion about the level of accuracy of the information detailed in the websites that appear on the results pages?

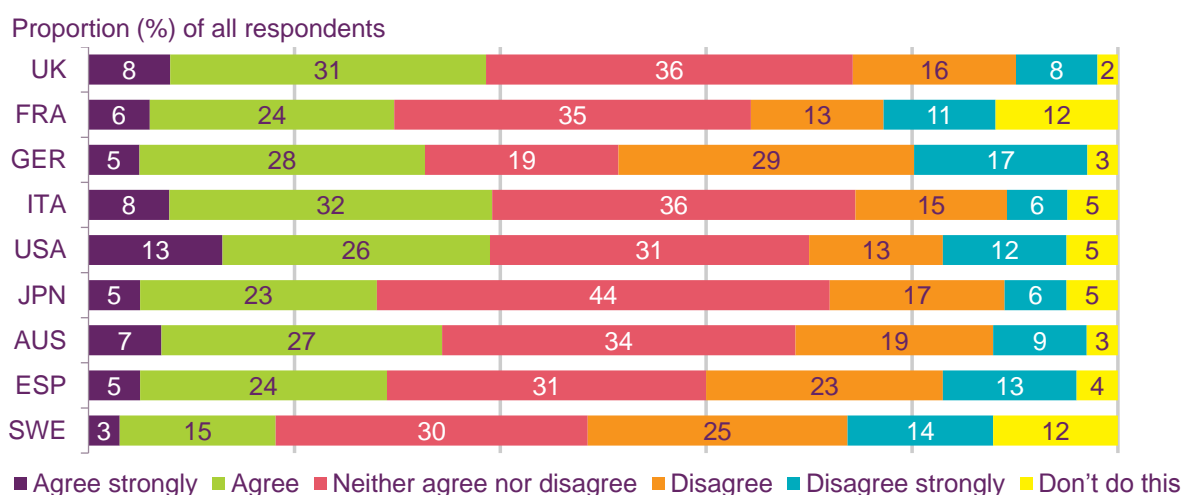
Concerns about security of personal information are highest in Spain and lowest in Sweden

We asked respondents two questions about their attitudes to online security, to see what concerns they had about their personal data, and the extent to which they were happy for the data to be used if they got an adequate 'return' for it.

As the two figures below show, while around 30% - 40% of respondents say they are happy to provide personal information to companies, as long as they get what they want, they are more likely to be worried about the unwarranted use of their personal data.

Online users in the US are more likely than in other countries to agree strongly with the statement: "I am happy to provide personal information online to companies as long as I get what I want" (13%). Those in Sweden are the least likely (3%). Overall, levels of agreement with this statement are lowest in Sweden, Japan, France and Spain. People in Germany and Sweden are more likely to actively disagree with the statement, while those in Italy and France are more likely to be uncertain, and people in France and Sweden are the most likely not to provide this type of information at all (12% for both). Respondents in the UK (39%) are equally likely to agree with the statement as those in the US (39%) and Italy (40%).

Figure 1.65 Attitudes towards providing online personal information to companies



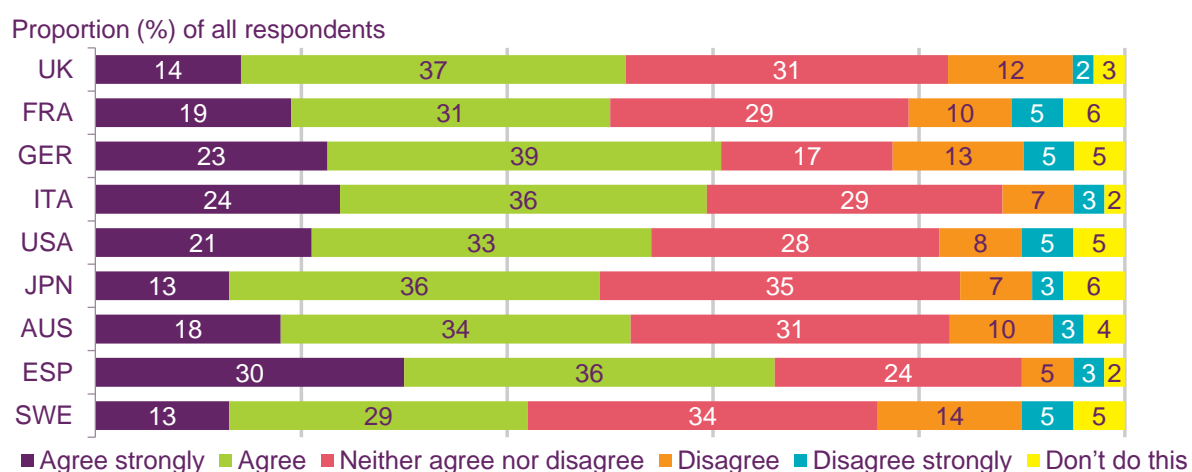
Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004.

Q.31 How much do you agree or disagree with the statement “I am happy to provide personal information online to companies as long as I get what I want”?

When asked whether they agreed with the statement: “I worry that people other than those I have chosen to, could access my personal photos, information etc. online”, around 50% - 60% respondents in most countries agreed (51% in the UK). People in Spain were most likely to ‘agree strongly’ (at 30%), compared with 13% in Japan and Sweden, and 14% in the UK. People in Sweden were least likely to agree at all (42%). While people in Sweden are the least concerned about others accessing their data (Figure 1.66), they are also the least likely to be happy to provide personal data. This is possibly due to their sharing less information online, and therefore having fewer concerns about its misuse.

Figure 1.66 Concern about others accessing personal information



Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004. Q.31 How much do you agree or disagree with the statement “I worry that people other than those I have chosen to, could access my personal photos, information etc. online”?

1.8 International regulatory context and models

1.8.1 Introduction

This section provides regulatory context to the analysis of the international communications market elsewhere in the report. It does not aim to be a comprehensive examination of regulatory frameworks across the comparator countries, but rather focuses on recent developments in:

- the European Commission's Digital Single Market Strategy;
- the EU electronic communications and content frameworks, and latest reviews;
- EU regulatory developments and activities in the postal sector;
- international mobile roaming and net neutrality;
- next-generation access and broadband roll-out;
- audio-visual standards and the online protection of minors; and
- EU and international radio spectrum policy developments.

1.8.2 Key developments in the European regulatory and legislative framework

The Digital Single Market strategy

The European Commission (EC) published a Digital Single Market (DSM) strategy²³ in May 2015, setting out its vision for achieving an internal market in Europe, in which anyone can access and purchase digital goods and services, regardless of their country of origin. The DSM is built on three pillars:

- Access: allow better access for consumers and business to digital goods and services across Europe;
- Environment: create the right conditions and a level playing field for digital networks and innovative services to flourish;
- Economy and society: maximise the growth potential of the digital economy²⁴.

In pursuit of this strategy, the EC has launched a number of legislative and non-legislative initiatives. The following are of particular relevance:

- Review of the *Regulatory Framework for Electronic Communications* (see below).
- Review of the *Audio-Visual Media Services Directive* (see below).
- Consultation: *Regulatory environment for platforms, online intermediaries, data and cloud computing and the collaborative economy*²⁵. The EC is conducting an in-depth

²³ <http://ec.europa.eu/priorities/digital-single-market/>

²⁴ <http://ec.europa.eu/digital-agenda/economy-society-digital-single-market>

²⁵ <https://ec.europa.eu/eusurvey/runner/Platforms/>

analysis of the impact and transparency of search results, platforms' use of the information they collect, relations between platforms and suppliers, constraints on the ability of individuals and business to move from one platform to another, and how to tackle illegal online content, ahead of considering any further action in 2016.

- Legislative proposals for a reform of the copyright regime: Following its consultation on the review of the EU copyright rules²⁶, the EC is expected to issue legislative proposals in relation to online copyright by the end of 2015, in which it is expected to propose ways of improving consumers' access to content when travelling in the EU outside their Member State (portability), and allowing for greater cross-border online access to content.
- Consultation: *Geo-blocking and other geographically-based restrictions when shopping and accessing information in the EU*²⁷. The EC is seeking views on whether geo-blocking by online vendors (to restrict the availability of services to users in other countries) is a barrier to the internal market; and what the EU response should be.
- Consultation on cross-border parcel delivery²⁸: the EC is concerned about high prices, and a lack of transparency and interoperability, between players involved in cross-border online commerce. In its recent consultation, it gathered views on how to facilitate cross-border e-commerce, especially for small and medium enterprises, including a more efficient and affordable parcel delivery. The EC is preparing measures to improve price transparency and enhance regulatory oversight of parcel delivery.

The EU regulatory framework for electronic communications

The EU regulatory framework²⁹ sets the regulatory principles for telecoms network and service regulation, including a suite of remedies that regulators can impose on operators with significant market power, as well as spectrum authorisation and use. It defines the permitted scope of universal service obligations (USO) and includes sector-specific measures on consumer protection. It comprises five Directives, and applies to all electronic communications networks and services, retail and wholesale, as well as associated facilities and services. It aims to ensure effective competition and consumer protection, and constitutes the basis for a consistent regulatory environment across the communications markets of all 28 Member States.

The framework was revised in 2009 to ensure that it continued to serve the best interests of consumers and industry, and to reflect some of the major developments of the sector, such as growth in VoIP and take-up of television services via broadband.

Since then, the EC has continued to monitor the timely and correct implementation of EU rules and Member States' progress towards achieving the targets set out in the Digital

²⁶ http://ec.europa.eu/internal_market/consultations/2013/copyright-rules/docs/contributions/consultation-report_en.pdf

²⁷ <https://ec.europa.eu/eusurvey/runner/geoblocksurvey2015/>

²⁸ http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=8169

²⁹ http://europa.eu/legislation_summaries/information_society/legislative_framework/l24216a_en.htm

Agenda. It has done so via its annual Digital Agenda Scoreboard³⁰ (DAS), the Digital Economy and Society Index³¹ (DESI), and Implementation Reports³².

In September 2015 the EC launched its third *Review of the regulatory framework for electronic communications* (Framework Review) that seeks to assess the current framework and to amend it where necessary. The EC expects to issue legislative proposals in 2016, following responses to a public consultation³³ in late 2015 (Section 1.8.4).

In October 2015 the European Council and the European Parliament formally adopted the *Connected Continent Regulation*³⁴, which should enter into force in April 2016. It introduces new net neutrality rules and sets out a timeline to abolish retail roaming surcharges, described in Section 1.8.3 below.

The EU content regulatory framework

In Europe, the *Audio-visual Media Services Directive* (AVMSD)³⁵ is the common framework for the regulation of television and video-on-demand (VoD) content. Last reviewed in 2007, the AVMSD sets out common minimum rules for television content, focusing on the protection of minors, incitement to hatred, advertising, and the promotion of European works. It also ensures that pan-European broadcasters have to comply only with a single set of rules: those of the country in which they are established (the country-of-origin principle).

The EC considers that it is now time to reflect on the fitness of the rules and update them if necessary. In May 2015, it announced that it would review the AVMSD as part of its DSM strategy and then launched a consultation during the summer of 2015³⁶. The EC is inviting comments on future policy options, including extending the Directive to more internet-delivered services or online services from outside the EU, changing rules on commercial communications and harmonising rules on protecting minors. A legislative proposal is planned for mid-2016. More details on the review, Ofcom's position and wider content issues can be found in Section 1.8.5.

In the meantime, and in part feeding into the AVMSD review process, national regulators in Europe continue to work on implementation at national level, and to co-operate in a number of bodies. One of them is the European Regulators Group for Audio-visual Media Services (ERGA)³⁷, a group of EU audio-visual regulators, set up to advise the EC on the application of the AVMSD. In 2015 it conducted work on regulatory independence, material jurisdiction (i.e. the scope of the AVMSD), territorial jurisdiction and the protection of minors.

National regulators in Europe also cooperate on a wider basis through the European Platform of Regulatory Authorities (EPRA)³⁸, an independent group of regulators that meets twice a year to share best practice.

³⁰ <http://ec.europa.eu/digital-agenda/en/digital-agenda-scoreboard>

³¹ <http://ec.europa.eu/digital-agenda/en/desi>

³² <https://ec.europa.eu/digital-agenda/en/news/implementation-eu-regulatory-framework-electronic-communications-2015>

³³ <https://ec.europa.eu/digital-agenda/en/news/public-consultation-evaluation-and-review-regulatory-framework-electronic-communications>

³⁴ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2015:310:FULL&from=EN>

³⁵ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:095:0001:0024:EN:PDF>

³⁶ <https://ec.europa.eu/digital-agenda/en/news/public-consultation-directive-201013eu-audiovisual-media-services-avmsd-media-framework-21st>

³⁷ <http://ec.europa.eu/digital-agenda/en/audiovisual-regulators>

³⁸ <http://www.epra.org/>

EU regulatory developments and activities in the postal sector

Established in 2010, the European Regulators' Group for Post (ERGP)³⁹ is tasked with creating a body of regulatory knowledge and advice for use by national regulators or by the EC⁴⁰. It has specific tasks aimed at advising and assisting the EC in consolidating and developing the internal market for postal services through consultation with interested stakeholders.

A number of reports are due to be published by the ERGP by end 2015 on issues ranging from the implementation of universal service in the postal sector to quality of service levels in complaint handling and consumer protection as well as legal regimes applicable to European, domestic and cross-border e-commerce parcels.

A joint ERGP/BEREC (Body of European Regulators for Electronic Communications)⁴¹ working group has been set up to identify potential lessons to be learned from the experience of the telecommunications sector for improving regulatory oversight and price transparency for intra-EU cross-border parcels, an issue where the EC wishes to bring forward proposals in 2016 as part of its DSM initiative.

The Committee of European Postal Regulators (CERP)⁴² brings together representatives of the regulatory authorities in 64 states, including EU Member States, candidate countries, the EEA and other Eastern European countries. It has two working groups, one dealing with postal policy and the other working on Universal Postal Union (UPU)⁴³ issues.

1.8.3 Helping communications markets work for consumers

International mobile roaming

The European regulatory framework for international mobile roaming was set out in the 2012 EU Roaming Regulation⁴⁴. This was superseded by measures agreed as part of the negotiations on the Connected Continent Regulation, which will enter into force in April 2016.

The new rules abolish retail roaming surcharges by 15 June 2017, subject to the EC having taken legislative steps to address any wholesale issues by that date. Operators can implement fair-use policies to prevent the abuse of regulated roaming services, and can retain surcharges up to the retail caps if they can demonstrate to their National Regulatory Authority (NRA) that they cannot cover the costs of providing roaming.

As a preliminary step, there will be a substantial reduction in retail roaming surcharges applicable from 30 April 2016, when the current maximum retail surcharges will be reduced to the level of the current wholesale caps.

Existing consumer protection provisions continue, or are adapted to the revised framework: operators will have to provide roaming customers with certain information relating to international roaming charges (unless they have deliberately chosen to opt out of receiving

³⁹ http://ec.europa.eu/internal_market/ergp/documentation/index_en.htm

⁴⁰ As well as the ERGP, a number of international bodies are active in the postal sector. The Universal Postal Union (UPU), a UN body, is the primary forum for cooperation between UN Member States concerning postal services. See <http://www.upu.int/en.htm>

⁴¹ http://berec.europa.eu/eng/about_berec/what_is_berec/

⁴² <http://www.cept.org/cerp/>

⁴³ <http://www.upu.int>

⁴⁴ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:172:0010:0035:EN:PDF>

such information) at key times - for example at each entry into a new EU Member State and when any fair use limit has been used up.

The EC will prepare proposals relating to the wholesale market by summer 2016. BEREC is assisting the EC with some of the data and analysis it needs to perform this task. BEREC will also help the EC to develop guidelines on fair use to accompany the abolition of retail roaming surcharges.

Traffic management and net neutrality

The net neutrality debate (about the extent to which a principle of non-discrimination should apply to internet traffic across networks) has continued to preoccupy national regulators and governments across the world, but particularly in Europe and the US, where new rules have been the subject of extensive discussion during 2015.

In six countries, the principle of net neutrality has been enshrined in law:

- the 2010 Chilean net neutrality law was followed in 2012 by a provision in a Peruvian law on broadband promotion, which requires ISPs⁴⁵ (Internet Service Providers) to respect network neutrality;
- in 2013, legislation was adopted in the Netherlands and Slovenia which prohibited the differentiation of data traffic and sought to prevent operators from charging consumers separately for the use of certain services and applications while using an internet access service;
- in Brazil, the 2014 *Civil Rights Framework for the Internet*⁴⁶ included net neutrality rules; and
- Israel extended its 2011 net neutrality requirements for mobile broadband services to encompass fixed-line services.

In addition to legal requirements, guidelines and rules have been adopted by regulators in Canada⁴⁷ and Norway⁴⁸ in 2009, and Singapore⁴⁹ and South Korea in 2011. Net neutrality is also being considered in India⁵⁰, where the regulator has issued a consultation on over-the-top services (OTTs) and net neutrality.

In May 2015, the Federal Communications Commission (FCC) in the US adopted the *Open Internet Order*⁵¹ which introduced three 'bright line' rules to protect net neutrality, which apply to both fixed and mobile networks. These rules prohibit blocking, throttling, and prioritisation of internet traffic in return for payment on the basis of content; and also include transparency requirements.

In Europe, the *Connected Continent Regulation* introduces rules on net neutrality that will apply from 30 April 2016. These require ISPs (fixed and mobile) to treat all traffic equally and to establish a right for all end-users to access and distribute lawful content, applications and

⁴⁵ Internet service provider (ISP): a company that provides access to the internet.

⁴⁶ <https://www.publicknowledge.org/documents/marco-civil-english-version>

⁴⁷ <http://www.crtc.gc.ca/eng/archive/2009/2009-657.htm>

⁴⁸ <http://www.npt.no/Content/109604/Guidelines%20for%20network%20neutrality.pdf>

⁴⁹ http://www.ida.gov.sg/~media/Files/PCDG/Consultations/20101111_Netneutrality/NetNeutralityExplanatoryMemo.pdf

⁵⁰ <http://traf.gov.in/WriteReaddata/ConsultationPaper/Document/OTT-CP-27032015.pdf>

⁵¹ <https://www.fcc.gov/openinternet>

services of their choice. ISPs may use reasonable traffic management measures, but blocking and throttling will be allowed only in a limited number of circumstances, such as preserving network security and managing network congestion. The Regulation requires BEREC to issue guidelines by August 2016 concerning the implementation of the rules by NRAs.

1.8.4 Promoting effective and sustainable competition

Next-generation access (NGA)⁵² and broadband roll-out

In Europe, Asia and the US, there is broad consensus among all parties (the EC, national and regional governments, regulatory agencies and communication providers (CPs) that the roll-out of NGA networks is a desirable goal. However, there are differences in opinion on how it should be managed, and the speed with which it needs to be undertaken. There are also differences in regulatory approaches.

Communications providers around the world are looking to upgrade networks to make use of more efficient technologies, including fibre, and are migrating from traditional transmission standards to standards used to route data via IP⁵³ (internet protocol). Many CPs in Europe, the US and Asia have migrated their backbone to NGNs⁵⁴ (next generation core networks) by overlaying and upgrading their legacy backbone PSTN⁵⁵ (public switched telecommunications networks) with a single IP-based network. In Europe, the incumbents in Austria and Slovakia have already completed the migration to an all-IP network, while the incumbents in more than ten other EU Member States have announced plans to migrate. Developments in regions such as Latin America, Africa and the Arab States have been slower but are following a similar trend.

In Australia, Brazil, Luxembourg, New Zealand, Singapore and South Africa, governments have created new state-owned operators in order to participate directly in the construction of broadband networks, while in the Czech Republic, the incumbent is undergoing a voluntary structural separation.

⁵² Next-generation access networks (NGA): New or upgraded access networks that can allow substantial improvements in broadband speeds. This can be based on a number of technologies such as fibre-to-the-cabinet, DOCSIS 3.0 (sometimes known as 'cable') and fibre-to-the-premises, all of which are network technologies that use fibre optic technology to varying degrees.

⁵³ Internet Protocol (IP): The packet data protocol used for routing and carrying messages across the internet and similar networks.

⁵⁴ Next-generation core networks (NGN): Internet protocol-based core networks which can support a variety of existing and new services, typically replacing multiple, single service legacy networks.

⁵⁵ Public switched telephone network (PSTN): The network that manages circuit-switched fixed-line telephone systems.

- In 2010, the Australian Parliament took fixed infrastructure into state control in the form of a wholesale national broadband network (NBNC). The original strategy of the government was to favour FTTP⁵⁶ (fibre-to-the-premises) deployment. However, in December 2013, NBNC submitted a strategic review to the government, recommending an alternative multi-technology approach whereby the NBN would be delivered using a range of technologies including FTTC⁵⁷ (fibre-to-the-cabinet), FTTdp (fibre-to-the-distribution point) and hybrid coaxial cable alongside FTTP.
- New Zealand and Singapore have both imposed structural separation in which the state has commissioned and funded a single FTTH⁵⁸ (fibre-to-the-home) network. In New Zealand, a number of measures have been introduced by the government to support the deployment of FTTH to 75% of premises through a series of commercial contracts. This will initially offer active wholesale access, with passive access to be introduced by 2020.
- Singapore aimed to be one of the first countries to deliver a metropolitan fibre network to the home, with speeds of up to 1GB by the end of 2012. It met its initial coverage target of 95% in June 2012 and achieved nationwide fibre coverage by mid-2013. The NGNBN (Next-Generation National Broadband Network) is accessible to retail service providers on an open access basis at prices regulated by IDA, the national regulator.
- The Japanese and South Korean governments have developed national strategies for the provision of high speed broadband, involving nationwide NGA roll-out. These involve a mixture of incentives for operators, including some public support such as seed funding and soft loans. They have also encouraged infrastructure-based competition, which has been particularly successful in South Korea, where there are now three competing providers of broadband internet with nationwide NGA networks.

In Europe, approaches vary to the relative application of passive or active remedies. In France, for example, no active FTTH remedies have been imposed (although there are active VDSL⁵⁹ (Very high bit rate digital subscriber line) remedies), as the French regulator pursues a policy of infrastructure competition. This has required geographic variations in remedies, to take account of the different points in the access network at which NGA investment becomes commercially viable for CPs which are not first movers. Geographic variations have also been proposed in Spain and Portugal, while other countries have applied nationwide remedies.

As broadband technologies deployed by incumbents evolve from ADSL⁶⁰ (asymmetric digital subscriber line) to FTTx⁶¹, some NRAs have concluded that passive access to passive

⁵⁶ Fibre-to-the-premises (FTTP): A form of fibre-optic communication delivery in which an optical fibre is run directly onto the customer's premises.

⁵⁷ Fibre-to-the-cabinet (FTTC): 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.

⁵⁸ Fibre-to-the-home (FTTH): A form of fibre-optic communication delivery in which the optical signal reaches the end-user's living or office space.

⁵⁹ Digital subscriber line (DSL): 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.

⁶⁰ Asymmetric digital subscriber line (ADSL): A digital technology that allows the use of a standard telephone line to provide high-speed data communications. It allows higher speeds in one direction (towards the customer) than the other.

optical networks (PONs) is not technologically feasible, and have therefore opted for VULA (virtual unbundled local access) or bitstream remedies. VULA is an enhanced bitstream solution that allows access seekers to deliver services over the incumbent's NGA access network with a degree of control that is similar to that achieved when taking over the physical line to the customer.

The incumbent's choice of NGA roll-out, and the range of remedies used by NRAs, are dependent on network topography characteristics such as the quality of the duct (very extensive in Portugal, much more limited in the UK), the length of the local loops (relatively short in Italy and dense urban areas in France, longer in the UK and non-urban parts of France), and the existence of street cabinets (e.g. a lot of premises in the UK are linked directly to the local exchange without any street cabinets).

European targets and regulatory framework

In the EU, universal broadband connectivity forms a core part of the EC's Digital Agenda targets - by 2020, every EU citizen should have access to 30 Mbit/s, and 50% should have access to 100 Mbit/s.

The need to incentivise and accelerate next-generation broadband roll-out is a prominent theme of the EC's DSM Strategy and the Framework Review. The EC is consulting on how to accelerate fibre roll-out and ensure universal high-speed broadband coverage. The key issues that the Framework review seeks to address are:

- What type of access should NRAs make available to CPs when they seek access to the incumbent's wholesale network? Should access to the incumbent's passive network infrastructure (ducts, cabinets) be more explicitly stated as a regulatory objective, leading to greater innovation and (end-to-end) competition?
- Alternatively, should symmetric regulation (mandating access to the duct of any CP, not just those designated as having significant market power (SMP) have a more explicit place in the *ex-ante* framework?
- Should fibre to the (customer) premises (FTTP) be incentivised over intermediate, less costly technologies such as fibre to the cabinet (FTTC) as a means of future-proofing investment?

In addition, the EC has adopted a Directive on reducing the costs to deploy high-speed broadband networks⁶². This aims to stimulate the roll-out of NGA, and sets new rights and obligations directly applicable to telecom operators and other utilities (such as electricity, gas, water and transport services). The EC recognises that civil engineering costs account for up to 80% of the cost of installing broadband networks, and the Directive includes provisions to help decrease this significant upfront expense (faced by all network operators) through a co-investment framework.

Regulatory certainty and consistency are crucial in order to foster a competitive environment for long-term investment in NGNs. NRAs should have a broad range of tools which can be applied in a flexible manner and which are appropriate to national circumstances. To encourage a consistent regulatory approach across Europe, in 2013 BEREC adopted a

⁶¹ Fibre-to-the-x (FTTx): This comprises the many variants of fibre optic access infrastructure. These include fibre to the home (FTTH), fibre to the premises (FTTP), fibre to the building (FTTB), fibre to the node (FTTN), and fibre to the cabinet (FTTC)

⁶² http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:JOL_2014_155_R_0001&rid=4

series of broadband 'common positions', which capture best practice. BEREC will report on the implementation of these in 2016.

In the UK, Ofcom is conducting a strategic review of the digital communications sector⁶³, looking at various options for network competition models, and in particular how regulatory intervention can optimise the balance between the service-based and infrastructure models of competition.

1.8.5 Providing appropriate assurances to audiences on standards

Convergence and the future of content regulation

The convergence of audio-visual services and platforms challenges regulation because content is subject to different regulatory regimes, or to none at all, and the consumer may not be aware of this. Questions arise about the best way to protect consumers, both from potentially harmful content, and in terms of their data security; and how to regulate material originating from outside national jurisdictions. Producers and distributors of content, meanwhile, have focused on issues such as ensuring non-discriminatory access to infrastructure, technical standards, and new forms of advertising and content funding.

Ofcom published its response to the EC's AVMSD Review in October 2015⁶⁴. This takes the view that the current approach and scope of the Directive should be broadly retained, with the country-of-origin principle as its cornerstone. Some clarification and improved consistency, as well as refinements in the operation of the Directive, would nevertheless be welcome, and the protection afforded to children in on-demand services should be the same as protection in place for broadcast services (potentially reflecting the strength of the access control provided).

France, Germany and Belgium would like to see an expanded scope for the AVMSD, while others (e.g. the UK and Finland) believe the current scope is appropriate. Overall, there is a clear appetite to improve the way the country-of-origin framework operates.

In 2015 ERGA carried out a programme of work focused on the evolution of the European regulatory framework in a converged media age. It is aiming to publish reports on the scope of the AVMSD (i.e. the types of services and service providers it covers), independence and the protection of minors in the near future.

Outside Europe, there are signs that several other countries, including the US, Singapore, the Russian Federation, South Korea and Canada, are turning their attention towards convergence and its impact on regulation. As in Europe, discussions focus on how far the scope of content regulation can, or should be extended to the internet, and how such regulation might be enforced. These discussions focus primarily on ensuring the protection of minors online, and whether and how public interest content might be secured on online platforms.

Content protection and controls in an online environment

⁶³ <http://stakeholders.ofcom.org.uk/telecoms/policy/digital-comms-review/>

⁶⁴ http://stakeholders.ofcom.org.uk/binaries/international/responses/AVMS_Directive_Consultation_Response_Ofcom_UK_October_2015.pdf

Child online protection⁶⁵ (and the wider protection of audiences online) has in recent years moved up the international political agenda. As the AVMSD applies content regulation to only a limited number of online services, new models of cooperation and participation are emerging, featuring combinations of co- and self-regulatory and media literacy initiatives⁶⁶.

These initiatives continued in 2015, alongside several legislative changes that indicate a trend towards self-regulatory approaches in regulatory frameworks. Since 2014, collaboration has continued between the British Board of Film Classification (BBFC), the Netherlands' regulator NICAM and others, on *You Rate It*, a tool to enable members of the public to age-rate user-generated video content online across different territories and platforms. It covers areas such as violence, language and discrimination, and applies different national ratings according to the location of the user. It is intended for non-commercial content, and can be used both by creators and consumers of content. It will help parents make decisions about what they and their children watch online, and is at an advanced stage of development, following several national pilots.

In July 2015, new legislation on the protection of minors from harmful audio-visual content came into force in Norway. It sets out a range of detailed requirements for age rating, mandatory labelling and restrictions based on the relevant classifications. It applies across media, in a platform-neutral approach to regulation, replacing the previous media-specific legislation.

In January 2015, the Luxemburg government implemented a new law on the protection of minors in AVMS, including a classification system ('signalétique').

In the UK, the country's four largest fixed-line ISPs have introduced network-level filtering services, with one ISP switching to 'default on'. Since the announcement of the scheme, Ofcom has published two reports on the protection of children online. The first,⁶⁷ published on 15 January 2014, looked at how parents protect their children online. The second,⁶⁸ published on 22 July 2014, set out the measures adopted by the UK's four largest fixed line ISPs to introduce family-friendly network-level filtering for new customers. A third⁶⁹ report was published on 12 January 2015, which again looked at how parents protect their children online (*using data from Ofcom 2014 research on Children and Parents: Media Use and Attitudes*). We are due to publish our fourth internet safety report in December 2015, providing an update on the ISPs' filtering, including the extension of the offer to existing customers and reporting on our 2015 media literacy research. In addition, Ofcom continues to publish regular media literacy and viewer research data, to aid understanding and identify areas of concern, including a report on audience understanding and expectations of protection measures and standards across different media⁷⁰.

In Germany, providers of content that is potentially harmful to minors are subject to protection obligations under the German regulations, which they can meet by providing parental controls. KJM, the co-regulator for the protection of minors, has approved two such filters covering content deemed unsuitable for viewers aged under 18.

⁶⁵ The term 'child online protection' in this case relates to the protection of minors (traditionally meaning, in regulatory terms, broadcast content-related rules for the protection of young viewers) in the online space. In many countries, the broadcast related rules for minors are only applicable to broadcast-like services online and not all video and content services online.

⁶⁶ Ofcom defines media literacy as: "the ability to access, understand and create communications in a variety of contexts".

⁶⁷ <http://stakeholders.ofcom.org.uk/binaries/internet/internet-safety-measures.pdf>

⁶⁸ http://stakeholders.ofcom.org.uk/binaries/internet/internet_safety_measures_2.pdf

⁶⁹ http://stakeholders.ofcom.org.uk/binaries/internet/third_internet_safety_report.pdf

⁷⁰ http://stakeholders.ofcom.org.uk/binaries/research/tv-research/protecting-audience-online/Protecting_audiences_report.pdf

In 2015, discussions continued between the Länder (the sixteen federal states in Germany) to deal specifically with the protection of minors on private blogs with user-generated content, including standardising the age classification procedure for games and films on the internet. New legislation is expected by July 2016.

In Spain, the regulator CNMC has adopted new criteria for rating audio-visual content, with seven categories of potentially harmful content, including violence, sex, and drugs. The criteria for classification and age rating were modified and new age ratings adopted.

In Italy, in 2012, the regulator, AGCOM, adopted interpretive guidelines⁷¹ on the application of a co-regulatory code on parental controls, clarifying the application of the film rating system and the access control mechanisms for linear and non-linear⁷² services offered by pay-TV channels. Providers of on-demand services subject to the AVMSD must now ensure that technical measures are in place to ensure that access to content is provided only to adults (via the use of a code). A self-regulatory body, the Committee for Media and Minors, oversees compliance in this area, with AGCOM as a statutory back-stop.

France adopted an age classification system for VoD content in December 2010, with associated scheduling restrictions and signing. In 2012, the broadcasting regulator, CSA, strengthened the rules, outlining additional locking requirements for access to programmes prohibited to under-18s.

Ireland has created a dedicated government department for child welfare and protection and all legislation regarding children is under review.

Singapore has focused its efforts on media literacy and has required fixed and mobile ISPs to offer optional internet filters since 2012. In 2014 the regulator, Media Development Authority, began work to improve awareness of filters, making a number of recommendations to be implemented by ISPs by the end of 2016. A new law (Protection Against Harassment Act) has also explicitly criminalised anti-social online behaviour, such as harassment, stalking and cyber-bullying.

Media pluralism

In 2015 media pluralism continued to rise up the agenda in Europe. A debate had been sparked on media pluralism and freedom, including the role of NRAs, by a report from a high level group (HLG)⁷³ of experts for the EC. The EC consulted on the HLG's recommendations, and separately, on proposals to introduce a requirement for the independence of audio-visual regulatory bodies.

The debate has focused on whether there is a greater need for harmonisation of rules on media pluralism at the European level. On the basis of one of the recommendations, and as an attempt to gather further data, nine EU countries conducted pilot studies in 2014, using the Media Pluralism Monitor developed in 2009, which is a set of indicators to measure 'threats' to pluralism. The study has been extended to all Member States and the EC expects full results by the end of 2015.

⁷¹ http://www.agcom.it/documentazione/documento?p_p_auth=fLw7zRht&p_p_id=101_INSTANCE_kidx9GUnlodu&p_p_lifecycle=0&p_p_col_id=column-1&p_p_col_count=1&_101_INSTANCE_kidx9GUnlodu_struts_action=%2Fasset_publisher%2Fview_content&_101_INSTANCE_kidx9GUnlodu_assetEntryId=915757&_101_INSTANCE_kidx9GUnlodu_type=document

⁷² Non-linear: content that is delivered 'on demand' as opposed to linear, traditionally broadcast content.

⁷³ <http://ec.europa.eu/digital-agenda/en/high-level-group-media-freedom-and-pluralism>

In France, the CSA has issued 15 proposals⁷⁴ which it considers important to implement in future elections, in order to find a better balance between freedom of communication and political pluralism in audio-visual media.

In the UK the government asked Ofcom to consider further the development of indicators to measure plurality. Ofcom consulted on a proposed framework in 2015⁷⁵ and published the results of that work in November 2015⁷⁶.

Australia is considering relaxing its media ownership rules before by the end of 2015; a significant deregulatory move. This change is likely to end the 'two out of three' rule (which restricts media companies from controlling more than two out of three platforms in any market across newspapers, television and radio) and the 'reach rule' (which prevents the creation of national television networks by banning networks from broadcasting to more than 75% of the population).

In the US, the FCC must complete a review of its broadcast ownership rules every four years, and repeal or modify any rules that are no longer in the public interest. It did not complete its 2010 review on time, announcing that it would combine it with its 2014 review. Among the proposals under consideration is whether to count a broadcaster as having an ownership interest in any station in which that owner sells 15% or more of its advertising time, whether to retain the current ban on mergers between the four major TV networks and whether to maintain the prohibition on the cross-ownership of newspapers and television stations. This review is scheduled to conclude in 2016.

Concerns around non-EU broadcasts

In 2015, heightened concerns have arisen about media freedom and threats to a pluralistic media landscape in Europe and at its borders, in part as a result of the ongoing conflict in Ukraine.

A number of EU Member States have been frustrated at their inability to react to Russian-language 'propaganda' receivable in their territories; while outside the European regulatory framework, the Ukrainian authorities have blocked all satellite content originating in Russia.

The OSCE's Representative for the Freedom of the Media has condemned such blocking, urging concerned states to find a solution in increasing access to different media sources and respecting freedom of expression⁷⁷. It is likely that the debates between those favouring a more restrictive approach in the name of national security, and those hoping to focus on alternative methods of counteracting inaccurate information and hate speech within the existing framework, will continue in 2016.

⁷⁴ <http://www.csa.fr/Espace-Presses/Communiqués-de-presse/Propositions-du-Conseil-supérieur-de-l-audiovisuel-relatives-au-principe-de-pluralisme-politique-dans-les-médias-audiovisuels-en-période-electorale>

⁷⁵ http://stakeholders.ofcom.org.uk/binaries/consultations/media-plurality-framework/summary/Media_plurality_measurement_framework.pdf

⁷⁶ http://stakeholders.ofcom.org.uk/binaries/consultations/media-plurality-framework/statement/Measurement_framework_for_media_plurality_Statement.pdf?utm_source=updates&utm_medium=email&utm_campaign=Measurement-framework-for-media-plurality&utm_term=media%2C%20plurality%2C%20broadcasting%2C%20UK%2C%20DCMS

⁷⁷ Communiqué OSCE Representative on Freedom of the Media on blocking television channels <http://www.osce.org/fom/116888>

1.8.6 Radio spectrum: Promoting the efficient use of public assets

Radio spectrum, a key public asset required for communications services, continues to be used more intensively. As transmissions do not stop at international borders, there exists a formal framework of co-operation between countries to minimise cross-border interference within and between services; to achieve the mobile use of wireless services at a European and global level; and to help create economies of scale which drive the availability of services and desirable outcomes such as lower prices for consumers.

Three key international structures co-ordinate spectrum at the European and international levels:

- the European Union, supported by the Radio Spectrum Committee (RSC)⁷⁸ and the Radio Spectrum Policy Group (RSPG)⁷⁹;
- the European Conference of Postal and Telecommunications Administrations (CEPT/ECC)⁸⁰ which has a broader membership than the EU, with 48 Member States; and
- the International Telecommunications Union (ITU)⁸¹ which defines the global framework for spectrum use in the Radio Regulations. This is a UN treaty, revised approximately every four years at the World Radiocommunication Conference⁸² (WRC).

Radio Spectrum Committee (RSC)

The RSC is responsible for developing technical decisions to ensure harmonised conditions across Europe for the availability and efficient use of radio spectrum. It comprises Member States' representatives and is chaired by the EC. Once harmonisation decisions are passed, they are binding upon the 28 EU Member States.

As part of its remit, the EC drafts mandates to the CEPT on which Member States comment and vote. These mandates set minimum technical requirements, in order to ensure harmonised conditions for the viable and efficient use of radio spectrum. They specify the task to be undertaken and the timeframe in which it should be achieved.

Radio Spectrum Policy Group (RSPG)

The RSPG⁸³ is a high-level advisory group of national spectrum regulatory bodies, which assists the EC in its development of radio spectrum policy.

In June 2015 the RSPG welcomed the EC's DSM strategy for a coordinated release of the 700MHz band in the EU. CEPT has been working on determining harmonised technical conditions for the use of this band for international mobile telecommunications, and Member States have been undertaking the re-planning of digital TV spectrum for some time. CEPT is expected to report in 2016, followed by a technical harmonisation Decision from the RSC.

⁷⁸ http://ec.europa.eu/information_society/policy/ecomm/radio_spectrum/eu_policy/rsc/index_en.htm

⁷⁹ <http://rspg.groups.eu.int/>

⁸⁰ <http://www.cept.org/ecc>

⁸¹ <http://www.itu.int/ITU-R/>

⁸² <http://www.itu.int/ITU-R/index.asp?category=conferences&rlink=wrc&lang=en>

⁸³ <http://rspg-spectrum.eu/>

France and Germany have already started the process of awarding the 700MHz band. In the UK, Ofcom decided to release the band for mobile data in November 2014, and is now in the process of implementing the decision. We will publish a consultation setting out our proposed implementation plan, including proposed timescales for change of use of the band, in spring 2016. Ofcom is also consulting on plans to make the 960-1164MHz band available, on a shared basis, to the programme-making and special events (PMSE) sector. The proposal forms part of Ofcom's plans to mitigate the loss of spectrum availability for PMSE as a result of the planned release of the 700MHz band.

The RSPG launched a consultation⁸⁴ in October 2015 on its draft report on efficient awarding and use of spectrum in harmonised bands for electronic communication services (ECS), which identifies best practice in spectrum award design across Member States. A report is expected to be adopted in February 2016.

The RSPG has also adopted a report on spectrum issues related to wireless backhaul. This is concerned with 4G and 5G mobile networks and aspects of their development, such as the densification of base stations and small cells.

Finally, the RSPG is expected to start a new work programme (covering activities until 2018) in February 2016. New spectrum issues to be addressed include 5G, the DSM strategy and the Framework Review, as well as the internet of things (IoT)⁸⁵.

Radio Spectrum Policy Programme

The Radio Spectrum Policy Programme (RSPP)⁸⁶ is a key piece of EU spectrum legislation, formally adopted in March 2012. This was the result of negotiations between the EC, the European Council of Ministers and the European Parliament, and it sets out some fundamental spectrum policy objectives across all 28 EU Member States.

It calls for action to meet the objectives of EU policies; for example, contributing to the functioning of the internal market for wireless technologies and services. A number of these RSPP actions have contributed to the goal set out in the EC's Digital Agenda programme of high speed broadband for all by 2020⁸⁷. Delivery of wireless broadband will form an important part of that programme.

Specific actions in the RSPP, to be completed by 2015 by the EC and the Member States, include:

- ensuring that at least 1200 MHz of harmonised spectrum is identified for wireless data traffic by mid-2013 at the latest, defining the details for the EU's radio spectrum inventory to allow for an analysis of the efficiency of spectrum use, particularly in the 400MHz to 6GHz range;
- the wider adoption of spectrum trading throughout the EU;
- spectrum access opportunities for wireless innovation, through the use of spectrum sharing;

⁸⁴ <http://rspg-spectrum.eu/2015/10/38th-rspg-meeting-15-october-2015/>

⁸⁵ IoT (internet of things) refers to the interconnection [wirelessly] of uniquely identifiable embedded computing-like devices within the existing internet infrastructure.

⁸⁶ <https://ec.europa.eu/digital-agenda/en/radio-spectrum-policy-program-roadmap-wireless-europe>

⁸⁷ All Europeans to have access to basic broadband by 2013 and at speeds of 30Mbit/s or above by 2020; also by 2020, half of all European households to subscribe to broadband connections of 100Mbit/s

- the use of wireless innovations so that Europe can contribute to a low-carbon society; and
- finding appropriate spectrum for wireless microphones and cameras (PMSE).

The current RSPP deals with the period 2011-2015; RSPG has reviewed it and is considering the following issues as part of a revision of the RSPP:

- the increasing role of spectrum sharing;
- flexible approaches to addressing future harmonisation needs for all spectrum sectors, including for WBB;
- encouraging 5G; and
- streamlining the Radio Spectrum Inventory.

World Radiocommunication Conference (WRC) 2015

Ofcom represents the UK at WRCs under a Direction from Government. For WRC-15 we have engaged in the European preparatory process leading to the establishment of European common positions (ECPs) on many of the agenda items. We have also engaged in the preparations of other regional groups outside Europe, and in discussions with other administrations around the world.

Ofcom confirms positions taken on WRC agenda items with the UK Government, to ensure consistency with Government policy, and publicly consults on them⁸⁸. Following consultation, we set out our positions for WRC-15 in a public Statement⁸⁹.

These included:

- supporting the availability of the bands 694-790MHz, 1427-1518MHz and 3.4-3.8GHz for mobile broadband;
- opposing any proposal to make the 470-694MHz band available for mobile broadband in Europe, noting the importance of this band for the provision of digital terrestrial television in the UK and a number of other European countries;
- opposing the identification of dedicated harmonised spectrum for public protection and disaster relief (PPDR); instead, the UK favours a flexible solution that would enable national PPDR agencies (such as the emergency services) to choose the most appropriate solution to meet national needs;
- confirming that we will continue to support the retention of the leap second which is occasionally inserted into co-ordinated universal time (UTC) to maintain the link between astronomical and atomic time;
- proposing a 'no change' position on the use of frequency bands allocated to the fixed satellite service for the control of unmanned aircraft, noting the needs of the authorities responsible for aviation safety and policy;

⁸⁸ <http://stakeholders.ofcom.org.uk/consultations/wrc15/>

⁸⁹ http://stakeholders.ofcom.org.uk/binaries/consultations/wrc15/statement/UK_Positions_for_WRC-15.pdf

- supporting the global use of the 19.7-20.2GHz and 29.5-30.0GHz bands by earth stations on mobile platforms (ESOMPs), which are satellite terminals designed to use spectrum allocated to the fixed satellite service while in motion; and
- confirming our continued support for a future agenda item (at WRC-19) on the availability of spectrum above 6GHz for mobile broadband. Such spectrum is likely to be particularly useful for 5G mobile services.

At the time of this document going to press, WRC-15 was in its final week. WRCs are complex negotiations and national positions can shift rapidly as the negotiations develop and compromises are agreed. We anticipate that a wide range of spectrum harmonisation decisions will have been taken by the time the conference concludes, and Ofcom will publish a report on the outcome of WRC-15 in early 2016.



International Communications Market Report 2015

2 Comparative international pricing

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2.1 Comparative international pricing

2.1.1 Introduction

In this section of the report we compare UK communications service prices to those in France, Germany, Italy, Spain and a representative state of the US (we use Illinois as it is broadly representative of the US as a whole in terms of wealth and rural-urban split).

Our methodology, which has been developed with pricing consultancy Teligen, is based on the use of services by five 'typical' household profiles, and matches their usage requirements to tariffs. It was developed to address the difficulties in comparing prices caused by service bundling, tariff complexity and variations in average use across countries. In order to reflect the full cost of ownership of the relevant services, it also takes into account the cost of installation and hardware (including subsidies) and bundle discounts.

We include an overview of our methodology (which is required in order fully to understand our findings), a summary of those findings by service, followed by analysis on a household-by-household basis. The full methodology can be found in Annex B. The key findings of this chapter include:

- **Overall, UK communications service prices compare favourably to those in the other comparator countries.** The UK ranked second in the overall pricing rank (combining stand-alone, bundled and 'lowest available' prices) in 2015, behind France. This was a fall of one place compared to 2014.
- **The UK's average performance across all baskets and metrics was unchanged since 2014.** While the UK's overall rank fell in 2015, its average rank across all of the baskets and metrics used in the analysis was unchanged. In contrast, France's improved, resulting in it overtaking the UK in terms of its overall rank.
- **The UK was cheapest in terms of stand-alone pricing (i.e. when services are not purchased in a bundle).** The UK had the lowest 'weighted average' stand-alone prices for three of the five household usage profiles included in the analysis in 2015.
- **The cheapest stand-alone fixed broadband and mobile phone prices were both found in the UK in 2015.** UK fixed broadband prices fell slightly during the year, and the UK had the cheapest mobile prices in 2015, despite prices having increased.
- **The UK performed less well in terms of fixed voice prices.** The cheapest available landline services for our households' requirements were the most expensive among the six countries included in the analysis in 2015, following an increase in prices during the year.
- **France overtook the UK in terms of bundled service pricing in 2015.** France had the lowest 'weighted average' bundled service prices for three of our household usage profiles, with the UK having the 'lowest available' price for one household.
- **In almost all cases, it was cheaper to purchase a bundle where the household requires fixed broadband.** In the UK, the average saving associated with buying a bundle rather than stand-alone services was 18% across the three households that include fixed broadband, the third-lowest proportion among our six countries.
- **The UK improved its ranking in terms of the 'lowest available' prices in 2015.** During the year, the UK overtook Italy to rank second after France, which offered the

'lowest available' prices for two of the five household usage profiles used in the analysis in 2015 (as did the UK).

2.1.2 Methodology

The basic principles of the methodology used are as follows:

We constructed five household usage profiles, and for each of these defined an appropriate basket of communications services (Figure 1.1). Taken together, the usage patterns of these households were designed to be representative of average use across all the countries analysed. This addressed the potential for biases associated with the household usage profiles being more closely aligned with the usage profiles of some countries than of others. Full details of the methodology can be found in Annex B.

We made some changes to the household usage profiles used in the analysis this year in order to reflect changes in the use of communications services. This included increasing assumed levels of fixed and mobile data use and decreasing SMS use across the household profiles.

Figure 2.1 Summary of household usage profiles used in the analysis⁹⁰

'Typical' household type		Summary	Fixed voice	Mobile voice	Mobile messaging	Mobile handset data	Fixed line broadband	Mobile broadband	Television
1	Basic needs	A low use household with basic needs	Medium use	Low use	None	None	None	None	Free-to-air
2	Late adopters	A broadband household with basic needs	High use	Low use	Low use	Low use	Low use	None	Free-to-air
3	A mobile 'power user'	A mobile-only household	None	High use	High use	High use 4G	None	High use	Basic pay-TV with DVR
4	Connected family	A family household with multiple needs	Medium use	Medium use	High use	Medium use	Medium use	None	Basic pay-TV with HD & DVR
5	Sophisticated couple	An affluent two person household	Low use	Medium use	Medium use	Medium use	High use superfast	None	Premium pay-TV with HD & DVR

Source: Ofcom

⁹⁰ Note: More detailed summaries of each basket's usage requirements can be found in Figure 2.10, Figure 2.14, Figure 2.18, Figure 2.21 and Figure 2.25.

We included a wide range of variables within the services in each household usage profile, so that they represent actual use by consumers. For example:

- Fixed voice minutes were distributed by whether they were to fixed or mobile lines, by call distance (local, regional, national and international, including a range of international destinations) and by time of day (day, evening, weekend). Non-geographic calls were excluded from the analysis.
- Mobile calls (and messaging) were split between fixed line, 'on-net' and 'off-net' mobiles, selected international destinations (for some users), and voicemail.
- Call set-up costs and unit, per-second and per-minute charging were incorporated where relevant, and a function for averaging cost for different of call lengths was used, based on an approach used for price benchmarking by the Organisation for Economic Co-operation and Development (OECD).
- Incoming calls to mobile phones were included, in recognition of the different charging mechanism in the US.
- The broadband components were defined both by minimum headline speed and by minimum data requirements.
- The television element included the licence fee and hardware cost. Because of difficulties in comparing channels and their programmes, two tiers of pay-TV were considered: the most basic pay service available, over and above the channels available on free-to-air TV; and a premium service defined by high-definition channels and a top-price film/entertainment package combined with the best package of top-tier football matches (NFL in the US). For the most basic households terrestrial TV services were considered.

The cost of mobile handsets, broadband modems and routers, digital set-top boxes and DVRs were included in household usage profiles (and amortised over an appropriate period in order to attribute a monthly cost). This was necessary because such equipment is often inseparable from the service price, as operators frequently include subsidised or 'free' equipment (for example, a mobile handset or a WiFi modem/router), but seek to recoup the cost of these devices from subscriptions and service payments across the life of a contract. For similar reasons, we included connection and/or installation costs.

In July 2015, details of every tariff and every tariff combination (including bundled services) from the three largest operators by retail market share in each country were collected (and from more than three operators, if this was required to ensure that a minimum of 80% of the overall market was represented). Bundled tariffs (i.e. those which incorporate more than one service) were also collected. Only those tariffs which were published on operators' websites were included (i.e. the analysis excludes bespoke tariffs which are only offered to certain customers).

Our model identified the tariffs that offer the lowest price for meeting the requirements of each of the households, with all prices being converted to UK currency using purchasing power parity (PPP) adjustment based on OECD comparative price levels and exchange rates as at 1 July 2015.

Analysis

We undertook three types of analysis for each household usage profile:

‘Average stand-alone’ pricing: This is the average of the lowest stand-alone price for each individual service offered by each operator in each country, weighted by their market shares. This represents a change from the methodology used in previous years, when the average were based only on the prices offered by the three largest providers of each service in each country. Although it provides a useful comparison of the relative costs of communications services, a limitation of this analysis is that an increasing number of providers do not offer stand-alone services.

‘Average bundle’ pricing: This is the average of the lowest bundled service prices (including separate stand-alone services where a bundle does not include all of the services required by the household) offered by each operator that provides a suitable bundled tariff in each country, weighted by their fixed broadband market shares. It is the first time that this analysis has been included in the report, and it should be noted that fixed broadband shares are used to weight the results regardless of whether or not the bundles in question include fixed broadband.

‘Lowest available’ pricing: This was the lowest price that a consumer could pay for this basket of services, including, where appropriate, ‘bundled’ services (i.e. buying more than one service in a package, for example a ‘triple-play’ bundle consisting of fixed voice, broadband and pay TV). This analysis is important in order to provide a true picture of the position of consumers in each market, since they increasingly buy multiple services from single operators. There are, however, two limitations to this type of analysis.

First, ‘bundled’ service offerings are typically not available to all consumers as they are often limited to geographic areas where premises are connected either to a cable network or an unbundled telephone exchange. Second, even in areas where these services are available, take-up may be low. Therefore, although the ‘lowest available’ price provides insight into the lowest prices available to some customers, it is not as good a reflection of the prices that consumers are actually paying as the ‘weighted average’ analysis.

Limitations

We consider that a multi-platform, basket-based approach is the most useful way to compare international pricing of communications services. Nevertheless, in addition to the points raised above, there are some other limitations to our methodology, and the following notes and caveats are important in interpreting the analysis below.

- The analysis assumes a rational consumer with full understanding of their usage requirements, who is prepared to shop around and undertake some complex calculations to identify the best value tariff. In reality, many consumers do not act in this way, and few will be on the lowest-cost combination of services for their usage profile. However, the assumption is necessary in order to provide effective international comparison.
- In looking only at tariffs available from the largest operators in each country, lower prices which might be available from smaller operators are not included. Nevertheless, we believe that using the prices of the largest operators is appropriate, both because they are the best reflection of the general consumer experience and because their pricing both defines, and is defined by, the competitive environment in which they operate.

- Although we have been as comprehensive as possible, tariffs are often highly complicated and there are some components that we have been unable to incorporate into our model. For example, some benefits are available only to certain types of consumers, such as *BT Basic* in the UK, which offers lower-price line rental to low-income consumers in receipt of certain benefits.
- In order to calculate the weighted average, we have used market share calculations based on operators' retail customers. Market share calculations are based on the overall subscriber base, not the subscriber base for the particular tariff (for which figures were not available). In addition, the 'average bundle' pricing calculation uses providers' fixed broadband market shares, regardless of whether or not the bundle includes fixed broadband.
- Pay-TV services are a component of three of the household usage profiles we examined. However, it has not been possible to compare like-for-like subscriptions, principally because of differences in the composition of basic and premium channels across the six countries. As a consequence, quantitative comparison of international TV pricing is arguably less meaningful than for telecoms services. This is also an issue in the pricing of 'triple-play' services, where there is wide variation in the types of TV content.
- For television services there are only two operators with nationwide coverage and/or significant market share in some countries (or only one, for some premium TV offerings). In these instances, we have identified the cheapest tariff from each of them and calculated a blended average based on their market shares.
- Some services (e.g. LLU-based fixed telecoms services) are not available nationally, and some providers operate only in certain areas. This is particularly true for services that are available only where local exchanges have been unbundled, and for IPTV, which requires a high-speed broadband connection. But it is also true for cable TV and all types of broadband.
- We have not defined whether the mobile phone component in a household usage profile is pre-pay or post-pay. We believe this enables better international comparison, given the very different pre-pay/ post-pay splits in different countries (for example, over 75% of mobile connections in Italy, but less than 20% in France, are pre-pay). However, a consequence of this is that the analysis does not recognise the different characteristics of the services; for example, a pre-pay mobile may be the only option available to consumers with a poor credit rating and may also offer advantages to those whose use varies from month to month.
- Representative pricing in the US as a whole is difficult, due to large regional variations as a result of local incumbent telecoms operators and cable operators offering localised prices for fixed-line services. We used tariffs available within the state of Illinois, which we chose because it is broadly representative of the US as a whole in terms of wealth and rural-urban split. Nevertheless, the US pricing data included in this report should not necessarily be viewed as representative of the whole country.
- In order to ensure that the changes we identify within countries have been driven by changes in the market (rather than simply by changes in the currency exchange rate), we have used the same PPP-adjusted exchange rate in 2015 and applied it to 2014 data. This means that there may be some distortions in the relative positions of countries compared to the findings we reported in 2014. The prices are reported in nominal terms.

Report structure

We start the analysis by looking at the individual components of our five household usage profiles, in order to compare the relative prices of services across these countries, both in terms of the lowest prices available when they are purchased on a stand-alone basis, and the 'weighted average' stand-alone cost across the largest operators in each market.

Then we look in more depth at the cost of fulfilling the requirements of each of our household usage profiles, in terms of the 'weighted average' stand-alone and bundle prices in each nation, and also the 'lowest available' price.

2.1.3 Stand-alone pricing, by service

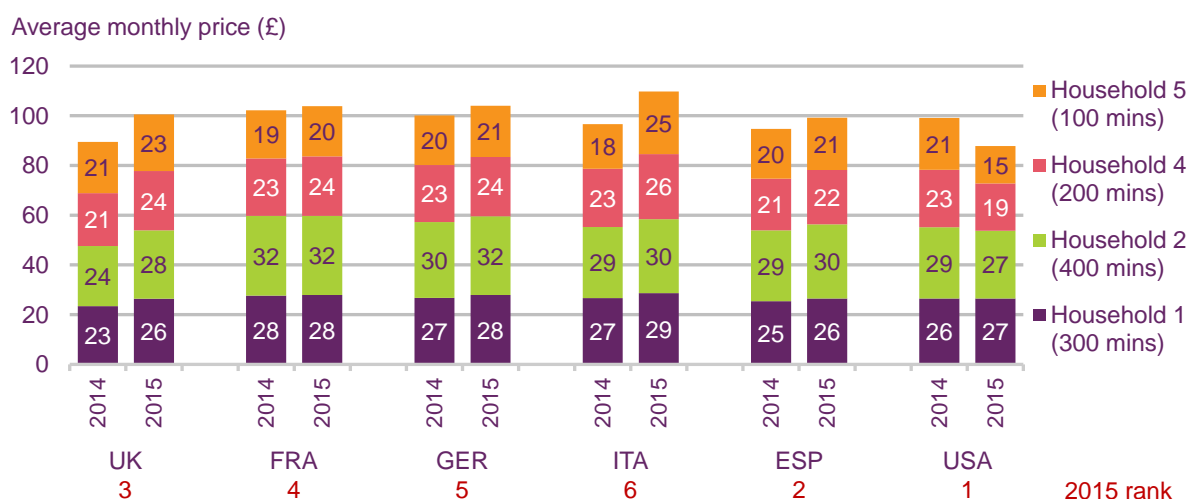
Fixed voice summary

Figure 2.2 and Figure 2.3 show the stand-alone prices of the fixed-line voice components of those household usage profiles that include a fixed-line phone. In the UK, BT was the only provider included in the database that offered stand-alone fixed voice services in July 2014 and July 2015, resulting in the UK's 'weighted average' and 'lowest available' stand-alone prices being identical.⁹¹

The UK had the third lowest total 'weighted average' stand-alone prices for the four fixed voice connections in 2015 (Figure 2.2).⁹² The lowest overall prices were found in the US, which was the only one of the six countries where prices fell between 2014 and 2015; down by 11%, largely as a result of Comcast introducing new tariffs. Among our other countries, increases in the total weighted-average price in 2015 ranged from 2% in France to 14% in Italy (in the UK it was 12%, the second largest increase recorded during the year).

BT's *Home Phone Saver* service was the cheapest UK tariff for all four of our households' connections (with an additional *Friends & Family International* call add-on for the two higher-use connections). A fixed broadband service cannot be used in conjunction with this tariff and neither can line rental pre-payment (which is available on BT's standard line rental services and results in a saving of 10% compared to paying monthly).

Figure 2.2 'Weighted average' stand-alone fixed-line voice pricing



Source: Ofcom using data supplied by Teligen

Note: 'Weighted average' of cheapest tariff from each operator by market share in each country; July 2014 and July 2015; PPP adjusted

The US also had the cheapest total 'lowest available' price for the four fixed voice connections required by our household usage profiles in 2015, following a 6% fall in the total during the year (Figure 2.3). The highest total 'lowest available' price for these connections

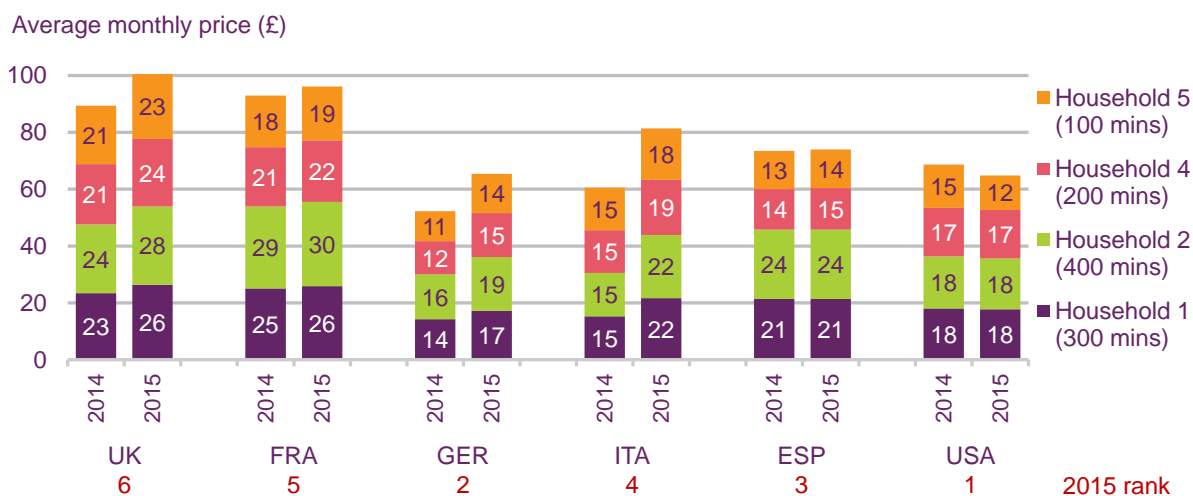
⁹¹ Sky also offers stand-alone fixed voice services but these are excluded from the analysis as they are not offered on its website, and there are other UK operators of stand-alone landline services that are not included in the Teligen model.

⁹² In a change to previous years' reports, the 'weighted average' prices in this report have been calculated using the cheapest tariffs offered by all of the providers included in the Teligen pricing model that offered a suitable service. Previously, the calculation of these had only included the lowest prices offered by the largest three providers in each country.

in 2015 was in the UK, where BT is the only provider included in the pricing model that offers stand-alone fixed voice services.

In the US, the same Comcast service (*XFINITY Voice Unlimited Saver*) was the base tariff for the 'lowest available' price for the three higher-use connections, with AT&T providing the 'lowest available' price for the lower-use connection (requiring 100 minutes of outgoing calls per month). Aggregate 'lowest-available' prices increased in all of the other countries during the year, ranging from a 1% increase in Spain to a 34% increase in Italy, where prices increased as a result of Tele Tu's *Parla Facile* tariff (which was the cheapest service for all four connections in Italy in 2014) being withdrawn, following its acquisition by Vodafone. In the UK, the total 'lowest available' price for all four connections increased by 12% during the year.

Figure 2.3 'Lowest available' stand-alone fixed-line voice pricing



Source: Ofcom, using data supplied by Teligen

Note: July 2014 and July 2015; PPP adjusted.

Mobile summary

Our five household usage profiles include eight mobile phone connections with differing usage profiles, ranging from low use with a basic handset, to high use with an advanced handset. These eight connections (summarised in Figure 2.4 below) also vary in terms of the distribution of call and messaging volumes (e.g. the proportion of calls which are to national mobiles, to national geographic numbers or to international numbers), and for the first time in the analysis we have included the requirement for a 4G service for some connections.

Figure 2.4 Summary of mobile connections used in the analysis

	Basket	Handset type	Outbound voice minutes per month	Outbound SMS per month	Data use per month	4G required
Connection 1	Household 1 handsets 1 & 2	Basic	50	None	None	No
Connection 2	Household 2 handsets 1 & 2	Basic	50	25	100MB	No
Connection 3	Household 4 handset 2	Intermediate	150	200	300MB	No
Connection 4	Household 4 handset 1	Intermediate	250	100	400MB	No
Connection 5	Household 5 handset 2	Premium	200	50	500MB	Yes
Connection 6	Household 4 handsets 3 & 4	Intermediate	100	250	2GB	No
Connection 7	Household 5 handset 1	Premium	300	150	1GB	Yes
Connection 8	Household 3 handset 1	Premium	500	200	5GB	Yes

Source: Ofcom

Our analysis shows that the UK had the lowest overall ‘weighted average’ price for the eight mobile connections in 2015, despite a 12% increase in the total price during the year (Figure 2.5).⁹³

Weighted average prices increased for six of the eight connections used in the analysis in the UK during the year; the largest increases were for those connections that required a premium handset and 4G services (Connections 5, 7 and 8). For all three of these connections, prices increased for all of the providers whose tariffs were included in the UK ‘weighted average’ calculation. As was the case in 2014, the US (which has high average use and where mobile users are also charged for incoming calls) had the highest total ‘weighted average’ price for the eight connections included in the analysis in 2015, despite a 3% fall in the total price during the year. Italy and Germany were the only other countries where the total ‘weighted average’ price of these connections fell in 2015, down by 2% and less than 1% respectively.

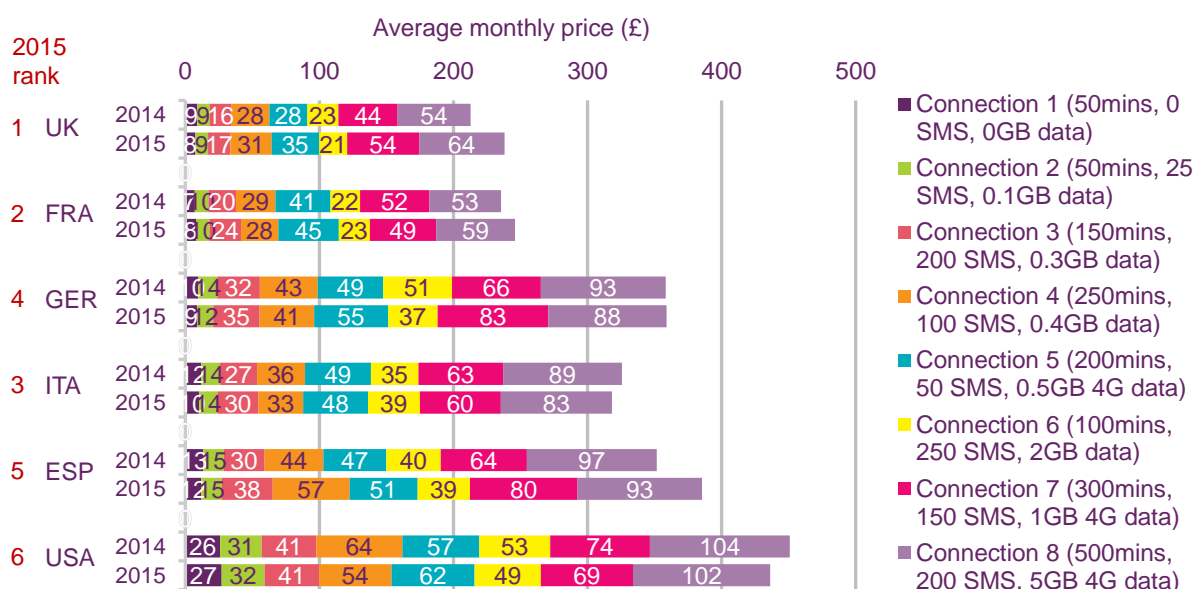
In the UK, 30 of the 45 tariffs (67%) feeding into the average best-pricing analysis were SIM-only contracts, down from 76% in 2014 (where a tariff is SIM-only, our model factors in the cost of buying a mobile handset separately and amortises it over three years)⁹⁴. This proportion was much higher than in the other comparator countries, where it ranged from 4% (one tariff) in Spain to 38% (12 tariffs) in France and the US. This suggests that SIM-only tariffs may be more attractive to consumers in the UK than elsewhere. The proportion of pay-as-you-go tariffs feeding into the UK weighted averages increased from 11% to 24% in 2015. This remained one of the lower proportions across our comparator countries, with only

⁹³ Shifting UK mobile market shares meant that Tesco Mobile’s tariffs were included in the analysis for the first time in 2015. Excluding Tesco Mobile from the analysis shows that the total ‘weighted average’ price of the eight connections increased by 14% in 2015, and remained the lowest among our six countries.

⁹⁴ We amortise the cost of mobile handsets over three years, as mobile users frequently keep existing handsets for longer than their minimum contract term (for example, to take advantage of low-cost SIM-only tariffs) or give an old handset to a family member or friend who continues to use it.

France having a lower proportion of pre-pay tariffs (at 13%). This proportion was highest in Italy, at 82%, followed by the US (at 66%).

Figure 2.5 'Weighted average' stand-alone mobile pricing



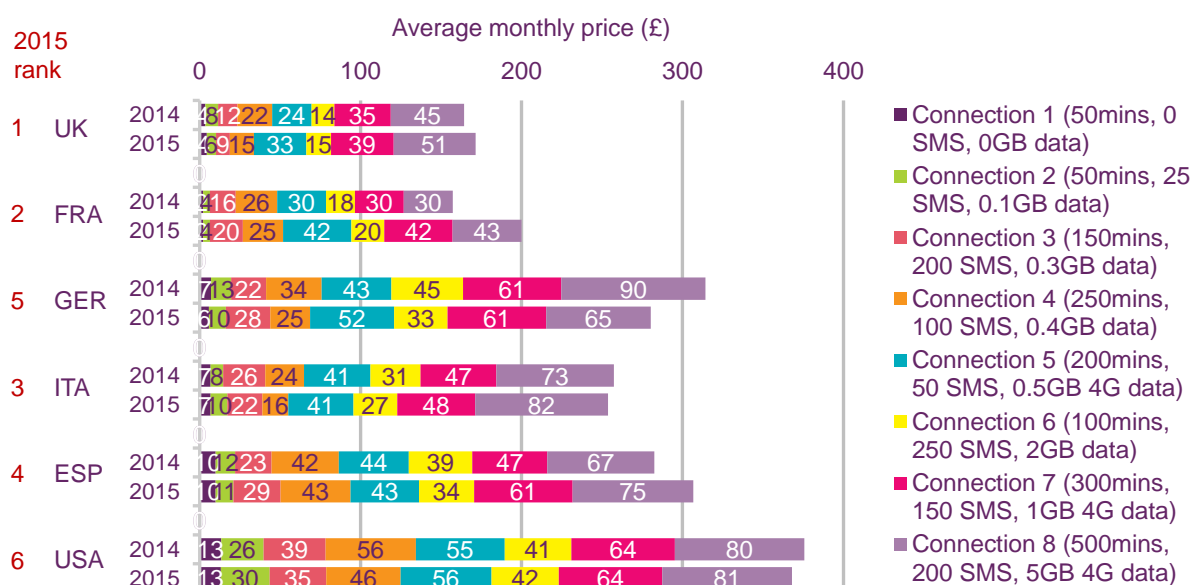
Source: Ofcom using data supplied by Teligen

Note: 'Weighted average' of best-value tariff from each of the largest operators by market share in each country; July 2014 and July 2015; PPP adjusted.

The total 'lowest available' price of our eight connections fell in three of the six countries in 2015: Germany, the US and Italy (down by 11%, 2% and 1% respectively). The largest increase in the total 'lowest available price' for these connections during the year was a 27% increase in France, which was to a large extent the result of increasing premium handset prices. These price increases in France meant that the UK had the lowest overall price in 2015, despite a 4% increase during the year (Figure 2.6). In the UK, just one of the eight 'lowest available' prices was offered by a mobile network operator (MNO) in 2015, with EE having the 'lowest available' price for Connection 7. All of the other seven 'lowest available' prices were offered by MVNOs (mobile virtual network operators), with Tesco Mobile offering six of the eight 'lowest available' prices and Virgin Mobile one (for Connection 2).⁹⁵

⁹⁵ Shifting UK mobile market shares meant that Tesco Mobile's tariffs were included in the analysis for the first time in 2015. Excluding Tesco Mobile from the analysis shows that the total weighted average price of the eight connections increased by 12% in 2015, and remained the lowest among our six countries.

Figure 2.6 'Lowest available' stand-alone mobile pricing



Source: Ofcom, using data supplied by Teligen
 Note: July 2014 and July 2015; PPP adjusted.

Fixed-line broadband summary

It is difficult to compare stand-alone fixed broadband prices, as:

- Fixed broadband is frequently bought as part of a bundle of services from a single supplier (meaning that analysis of stand-alone prices is not representative of the prices paid by many consumers).
- Most fixed broadband services require a landline (although this may not be the case for cable broadband and 'naked DSL' and 'naked-fibre', which is offered by some operators in the UK, France, Italy, Germany and the US).
- Many ISPs no longer offer stand-alone fixed broadband services, so the analysis is often based on only a few tariffs in each country.

The limited availability of stand-alone fixed broadband services in some countries (including the UK) means that we only consider 'lowest available' fixed broadband prices in this report. The stand-alone fixed broadband pricing analysis below excludes telephone line rental, even if this is required (instead, it is included in the fixed voice element of the household usage profiles in question). The inclusion of line rental in this analysis would increase the cost of fixed broadband services in countries which do not have significant naked ADSL/fibre availability, including the UK. In addition, we include the price of the incumbent providers' fixed broadband services in the analysis, even if these are not available on a stand-alone basis.

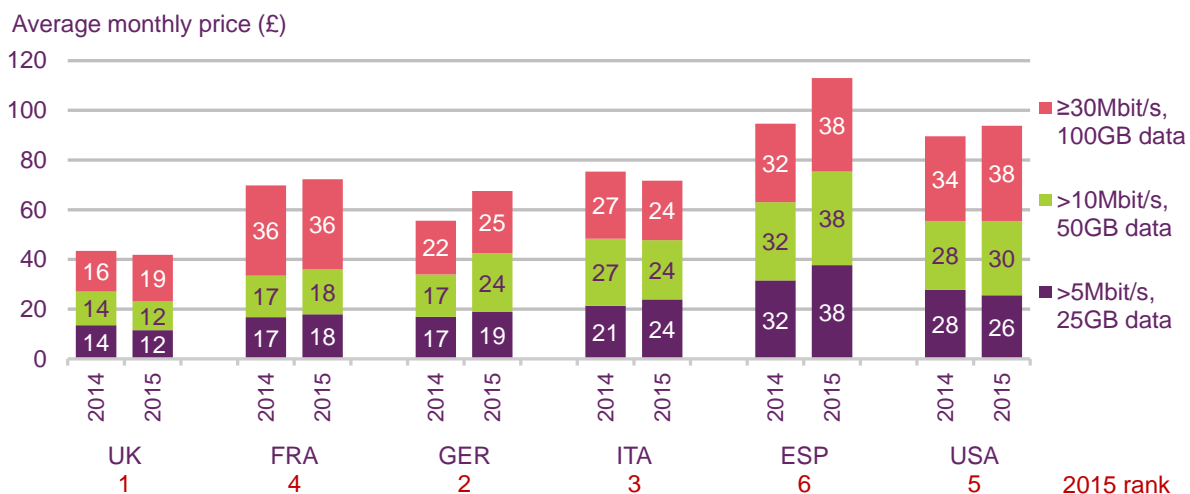
The fixed broadband connections included in our household usage profiles are defined by the advertised 'up to' speed of the connection, and the monthly volume of data use required.

As was the case in 2014, the UK had the cheapest 'lowest available' stand-alone prices for all three of the fixed broadband connections in 2015, while the highest prices were in Spain and the US (Figure 2.7). The 'lowest available' price of the superfast product (i.e. with an advertised speed of 'up to' 30Mbit/s or higher), required by Household 5, increased by £2

per month (15%) to £19 per month in 2015, as a result of the Tesco Broadband fibre service (the cheapest option in 2014) no longer being available, leaving the more expensive BT service (*Unlimited Infinity 1*) as the cheapest on offer. Conversely, the price of the BT fixed broadband service which offered the 'lowest available' price for the two slower connections (*Unlimited Broadband*) fell by 15% to £12 per month in 2015, due to the availability of a bigger discount than was offered in 2014, and despite the service's standard price having increased by £2 to £18 per month during the year. This reflects a wider trend: promotional discounting has become a more important part of UK fixed broadband pricing in recent years.

The total 'lowest available' price of the broadband connections increased in four of our six comparator countries in 2015, ranging from a 4% increase in France to a 21% increase in Germany (there was also a notable 19% increase in Spain during the year). In the UK, the total 'lowest available' price fell by 4% in 2015, a slightly lower rate than the 5% decline recorded in Italy.

Figure 2.7 'Lowest available' stand-alone fixed broadband pricing



Source: Ofcom, using data supplied by Teligen
 Note: July 2014 and July 2015; PPP adjusted.

Mobile broadband summary

For some consumers, a mobile broadband connection can be used as a substitute for fixed broadband services. One of our five household usage profiles (Household 3) is mobile-only and uses a dedicated mobile broadband connection to connect its computer to the internet (using a 'dongle' or data-only SIM).⁹⁶

In the analysis below we do not include smartphone tariffs: we only include dedicated data-only mobile broadband connections which are used to provide a mobile broadband connection to computers. We do not consider whether or not the service bundle includes use of public WiFi hotspots. In addition, we consider only the 'lowest available' service, as the relatively small number of available tariffs in some countries makes it difficult to produce meaningful 'weighted average' mobile broadband pricing analysis.

⁹⁶ Where a service is SIM-only, we factor in the price of a mobile broadband dongle separately (even if a service is intended to be used in another device, such as a tablet computer) and amortise it over three years. We do this to enable a like-for-like comparison with those services that include a dongle as part of the service.

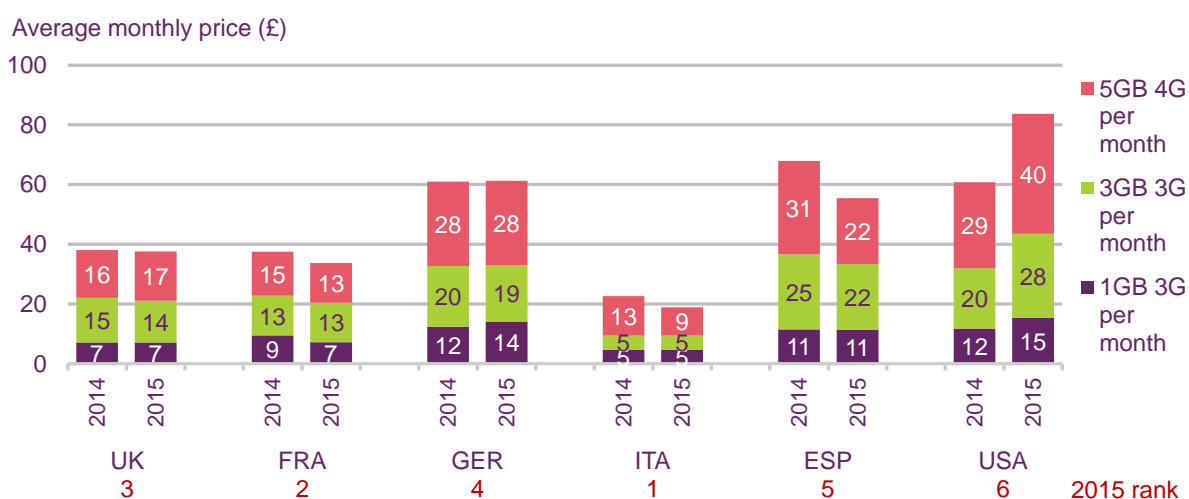
Household 3 includes a connection which requires 5GB of 4G data used over 30 days in a month. In order to be able to compare a wider range of mobile broadband use, we also include two lower-use connections in the analysis below: a medium-use connection requiring 3GB of 3G data over 25 days per month, and a low-use connection requiring 1GB of 3G use over ten days.

Italy had the 'lowest available' stand-alone prices for dedicated data-only mobile broadband services in 2015, as in 2014 (Figure 2.8). The UK had the third cheapest 'lowest available' mobile broadband prices in 2015, after Italy and France.

The price of the lowest-use connection was unchanged in the UK in 2015; the cheapest tariff for this connection (requiring 1GB of 3G use per month) was Three's *Pay as you Go + 12GB* service, which offered 12GB of data that could be used over a year, plus a 3G dongle, for an up-front price of £84.99. The 'lowest available' price of the medium-use connection fell by £1 per month to £14 in the UK in 2015, due to the inclusion of Tesco Mobile's tariffs in the analysis model for the first time (the cheapest tariff, offering 3GB of 3G data in 2015, was its *3GB SIM-Only 12 Months* service with a separately bought dongle modem).⁹⁷ The 'lowest available' price for the highest-use connection (requiring 5GB of 4G data per month) increased by £1 per month to £17, due to Three withdrawing a tariff offering 5GB of 4G data per month (the cheapest option in 2014), leaving O2's *4G Mobile Broadband 6GB* service as the cheapest option for this usage profile.

The total of the 'lowest available' prices of the three connections fell in all but two of our comparators in 2015: the exceptions were Germany (where the total was unchanged) and the US (where it increased by 38%). The declines in the total price recorded in our other comparator countries ranged from 1% in the UK to 18% in Spain, where the drop was mainly due to a fall in the price of the cheapest available tariff for the high-use 4G connection.

Figure 2.8 'Lowest available' stand-alone mobile broadband pricing



Source: Ofcom using data supplied by Teligen

Note: July 2014 and July 2015; PPP adjusted.

Pay-TV summary

It is challenging to produce like-for-like comparisons of TV packages, as a result of differences in the number and types of channels provided by different services. In our analysis we have used the following definitions:

⁹⁷ Excluding Tesco Mobile's tariffs, the price of this connection was unchanged in 2015.

- Basic pay-TV is the lowest subscription required to receive channels that are not available over free-to-view services.
- Premium pay-TV is the subscription required to receive the best package of both top-flight football (NFL in the US) and a top film/entertainment package.

Our analysis includes TV licence fees, where applicable. These were highest in Germany in 2015, at £17 per month (there is no TV licence fee in the US, and in Spain it is not a fixed amount and is embedded in the electricity bill, meaning that it is not visible to the consumer). As with fixed and mobile broadband services, we consider only stand-alone 'lowest available' TV service pricing in this section; it is difficult to produce meaningful 'weighted average' stand-alone pricing analysis because of the relatively low number of services available in most countries.

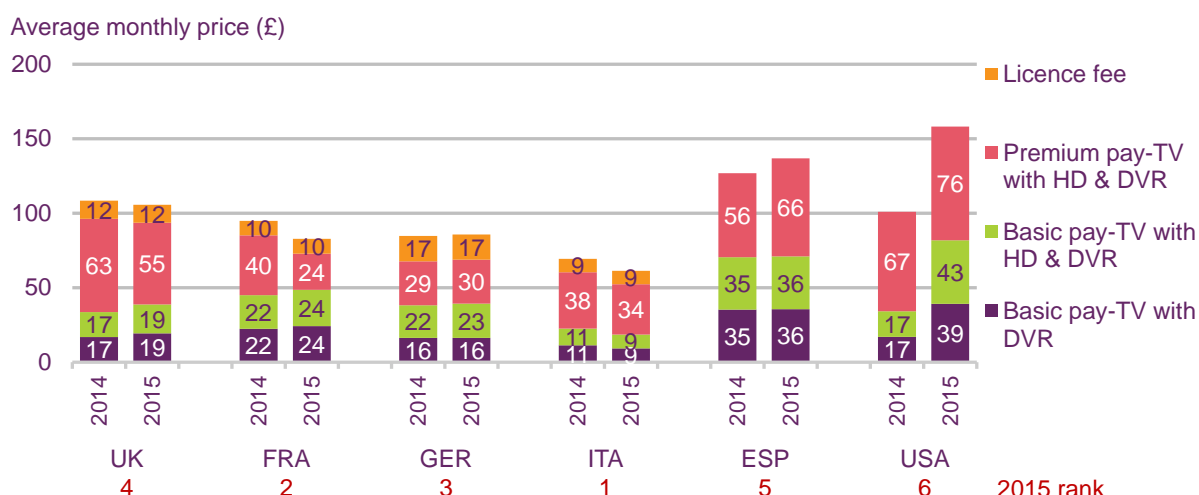
The 'lowest available' retail stand-alone prices for the two basic pay-TV services included in our analysis, both of which require a DVR, and one of which also needs high-definition (HD) content, were both in Italy in 2015 (Figure 2.9). For both connections, the 'lowest available' tariff in Italy was Telecom Italia's *TIM Vision (with decoder)* IPTV service, which offered 14 basic channels and one premium channel for €10 per month (reduced to €5 per month for one month). The UK had the third-cheapest 'lowest available' stand-alone price for the basic pay-TV service without HD, and was second-cheapest for the HD basic pay-TV service in 2015. In both cases, this was Virgin Media's *More TV with TiVo 500GB* (offering 116 basic channels) for £18 a month.

It is difficult to compare the prices of premium pay-TV packages, because of the variations in content in these packages. The UK's 'lowest available' premium pay-TV service in 2015 (Sky's *Original Bundle + Sky Sports & Movies with Sky+ HD Box*) included 374 basic channels and 18 premium channels, almost ten times as many as the cheapest service in France (CanalSat's *Les Chaines Canal+ par TNT* service). As such, there was wide variation in the 'lowest available' prices for the premium HD pay-TV service required by Household 5, ranging from £24 per month in France to £76 per month in the US (the UK had the third-highest price for these services in 2015, at £55 per month).

A comparatively expensive 'lowest available' HD premium pay-TV price, and the relatively high TV licence fee in the UK meant that, when the TV licence fee was included in the analysis, the UK had the third-highest total 'lowest available' price for the TV services included in our household profiles, after the US and Spain. The total UK 'lowest available' price for the three pay-TV services (including the TV licence) fell by 2% in the UK in 2015; France and Italy were the only other countries where the total price fell during the year (by 13% and 12% respectively).

The increases in the other comparator countries ranged from 1% in Germany to 57% in the US, where the prices of both the basic pay-TV services more than doubled as a result of Frontier increasing the price of its *Dish America Top 120* service (which was the cheapest option for both basic pay-TV services in the US in 2014), resulting in more expensive competitor services being the 'lowest available' priced options in 2015.

Figure 2.9 ‘Lowest available’ stand-alone pay-TV pricing



Source: Ofcom using data supplied by Teligen

Note: Basic pay-TV is defined as the minimum price required to purchase a pay-TV package which includes channels not available over free-to-air TV; premium TV is defined as the best package of top-league football (NFL in the US) and a top price film/entertainment package; lowest tariff available for the pay-TV component of each household usage profile from any of the largest operators by market share in each country, July 2014 and July 2015; PPP adjusted.

2.1.4 Analysis of basket prices

Having provided an overview of findings on a stand-alone basis, we now look at the prices of baskets of communications services, which are designed to be representative of five household types.

Household 1: a low-use household with basic needs

Our first basket contains a usage pattern typical of a retired low-income couple who have a fixed line from which they make five hours of calls a month (Figure 2.10). Both have a mobile phone from which they make 50 minutes of calls per month, but they do not send any SMS messages or use any mobile data services. They watch free-to-air multichannel digital television, which is available in all of our comparator countries.

Figure 2.10 Composition of Household 1

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
300 call minutes	None	Connection 1 50 call minutes Connection 2 50 call minutes	None	Free-to-air

Source: Ofcom

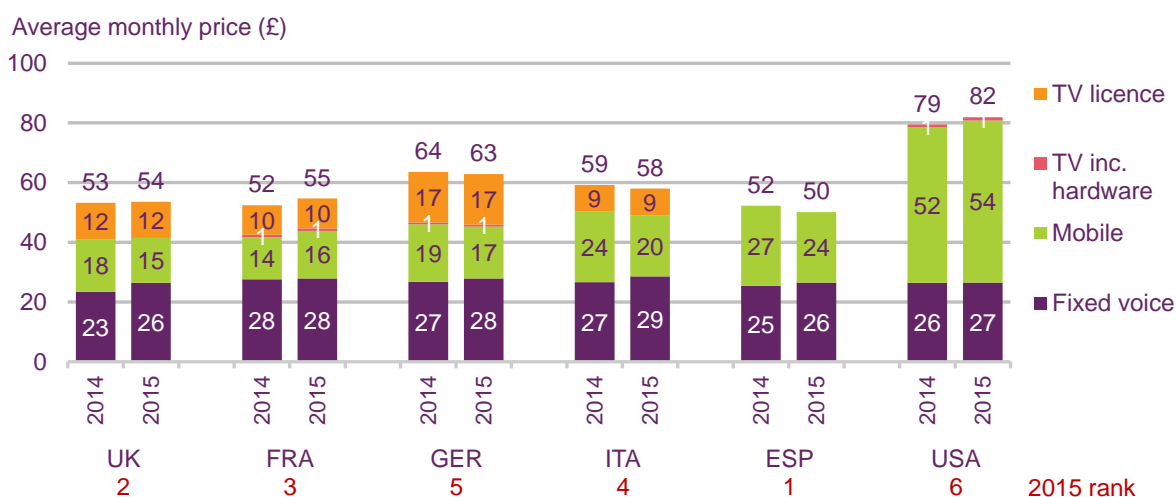
Weighted ‘average stand-alone’ prices

The lowest ‘weighted average’ cost of fulfilling the requirements of Household 1 in 2015 was in Spain at £50 a month, a £2 per month (4%) fall since 2014 (Figure 2.11). The UK ‘weighted average’ stand-alone price was £54 per month, the second lowest in 2015 and a 1% increase on the previous year.

The 'weighted average' price of the fixed voice element of this household's basket ranged from £26 per month in the UK and Spain to £29 per month in Italy among our comparator countries in 2015. The 'weighted average' stand-alone fixed voice price increased in all of our comparator countries in 2015, ranging from a <1% increase in the US to a 13% increase in the UK, due to BT increasing the price of its *Home Phone Saver Friends & Family International* service.

France and the US were the only comparator countries in which the 'weighted average' cost of fulfilling this household's mobile requirements increased in 2015 (by 13% and 4% respectively). Among the other comparator countries the percentage falls ranged from 10% in Germany to 15% in the UK, where the decline was the result of falling prices for the household's two low-use connections across all the providers included in the average calculation. As Household 1 includes only free-to-air TV services, the main driver of the cost of the TV component of the basket is the TV licence fee (although not in Spain and the US, where there is no licence fee). As the basket does not include pay-TV services, the only other TV cost is that related to equipment purchase and installation (we include the cost of a set-top box/decoder, but not the cost of the television).

Figure 2.11 Household 1: 'weighted average' stand-alone pricing



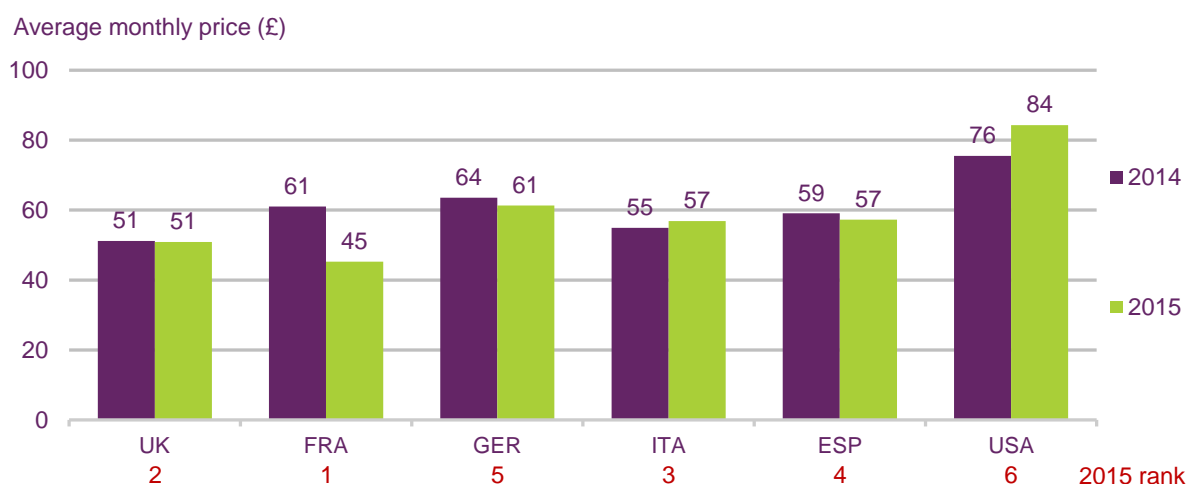
Source: Ofcom using data supplied by Teligen

Note: 'Weighted average' of best-value stand-alone tariff from each operator by market share in each country; July 2014 and July 2015; PPP adjusted

Weighted 'average bundle' prices

The UK had the second-lowest 'weighted average' bundled service price for Household 1 in 2015, at £51 per month. The lowest price was in France (£45 per month) and the highest in the US, at £84 (Figure 2.12). The average bundled price for Household 1's usage profile fell in four of our six countries in 2015, ranging from a 1% drop in the UK to a 26% decline in France; to a large extent this was the result of Orange (one of the more expensive providers in 2014) no longer offering a service that suited this household's requirements. In all of our comparator countries apart from Spain and the US, the total 'weighted average' bundle price for Household 1's use was lower than the total 'weighted average' stand-alone price.

Figure 2.12 Household 1: ‘weighted average’ bundled service pricing



Source: Ofcom using data supplied by Teligen

Note: ‘Weighted average’ of best-value bundled tariff from each operator by market share in each country; July 2014 and July 2015; PPP adjusted

‘Lowest available’ pricing

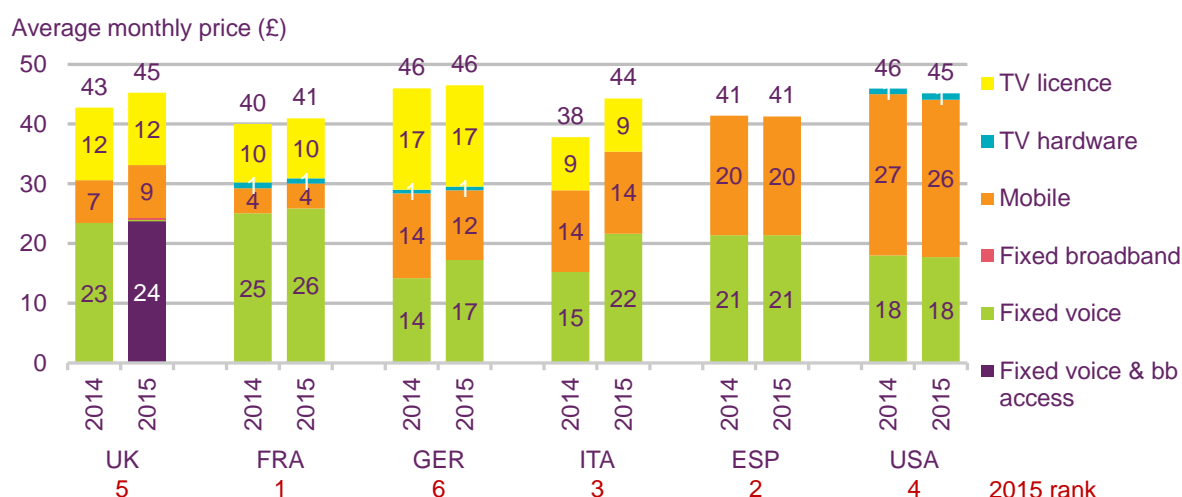
‘Lowest available’ pricing analysis shows the lowest possible cost of fulfilling the household’s usage requirements, using the tariffs of the largest providers in each country, including bundles.

France had the cheapest ‘lowest available’ price to fulfil the requirements of Household 1 in 2015, at £41 a month. This was a £1 a month (2%) higher than in 2014, largely due to an increase in the price of the fixed voice element of the household’s use (Figure 2.13). The UK was the second most expensive overall, at £45 per month (£3 higher than in 2014).

The UK was the only comparator country in which the ‘lowest available’ priced option to fulfil the household’s fixed-line use included a fixed broadband connection, even though the basket does not require one, as buying this bundle was less expensive than the lowest-cost voice-only service. The cheapest combination of services included EE’s *Broadband & Anytime + Mobile Calls (LRS)* service, and was £2 per month cheaper than the cheapest stand-alone fixed voice service for the household’s usage profile. The UK had the second-cheapest ‘lowest available’ price for the household’s mobile use, at £9 per month; among the other comparator countries the ‘lowest available’ monthly mobile price ranged from £4 in France to £26 in the US.

The cost of the television component of the household’s basket is unchanged from the ‘weighted average’ stand-alone price in the ‘lowest available’ analysis, as it includes free-to-air television, where the only costs are the licence fee, hardware and installation.

Figure 2.13 Household 1: ‘lowest available’ pricing



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2014 and July 2015; PPP adjusted; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service

Household 2: A broadband household with basic needs

The second basket is representative of a couple of ‘late adopters’ who are fairly heavy users of the fixed-line phone, have a basic fixed broadband connection, and who both have a mobile phone that they use occasionally for voice and SMS (Figure 2.14).

Figure 2.14 Composition of Household 2

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
400 call minutes	Minimum 5Mbit/s headline speed 25GB data	Connection 1 50 call minutes 25 SMS 100MB data Connection 2 100 call minutes 25 SMS 50MB data	None	Free-to-air

Source: Ofcom

Weighted ‘average stand-alone’ prices

The lowest ‘weighted average’ stand-alone price of fulfilling the usage requirements of Household 2 was in the UK in 2015, at £71 a month, a £1 per month (2%) increase since 2014 (Figure 2.15). The total ‘weighted average’ price of this household’s basket increased in all of our other comparator countries during the year except in Germany (where it fell by 12% as a result of falling fixed broadband and mobile prices) and in France (where it was unchanged).

The fixed-line voice requirement of this basket consists mainly of daytime calls to fixed-line phones within the same country, so it favours tariffs which include these call types within the monthly fee. This was the case with the BT service, which was the sole tariff contributing to the UK ‘weighted average’ stand-alone price in the UK in 2015, *Unlimited Anytime Plan (LRS) + Friends & Family International* (as BT is the only UK provider whose stand-alone

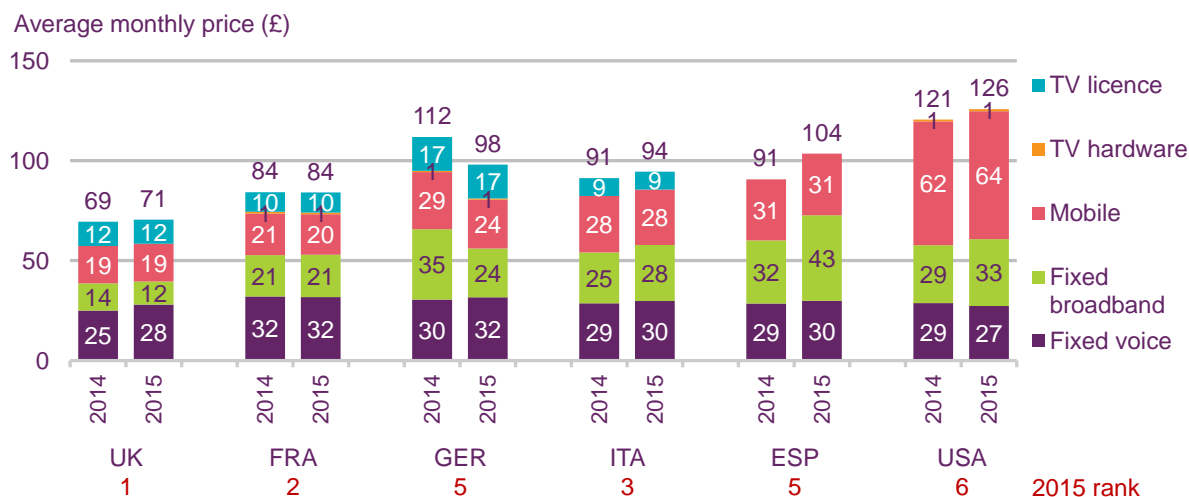
fixed voice services are included in the pricing model). This was the second-cheapest among the countries in our analysis, at £28 a month (the US was £1 a month cheaper). The UK average fixed voice price represents a £3 a month (12%) increase compared to 2014, the largest proportional rise recorded among our comparator countries.

The UK had the lowest ‘weighted average’ price for the fixed broadband element of Household 2’s basket in 2015 in 2015 at £12 a month, £2 per month less than in 2014, mainly as a result of BT offering a greater discount on its *Unlimited Broadband ADSL* service. Across the other comparator countries, the change in the ‘weighted average’ ‘stand-alone’ price for the fixed broadband element of the basket in 2015 ranged from an £11 per month (31%) fall in Germany to an £11 per month (36%) increase in Spain.

The UK had the lowest ‘weighted average’ stand-alone price for the mobile element of the household’s basket (two handsets with low voice, SMS and data use), at £19 per month, a 1% increase on 2014. The highest ‘weighted average’ stand-alone mobile prices were in the US in 2015, at £64 a month, a 3% increase on 2014.

This household uses the same basic free-to-air television service as Household 1.

Figure 2.15 Household 2: ‘weighted average’ stand-alone pricing



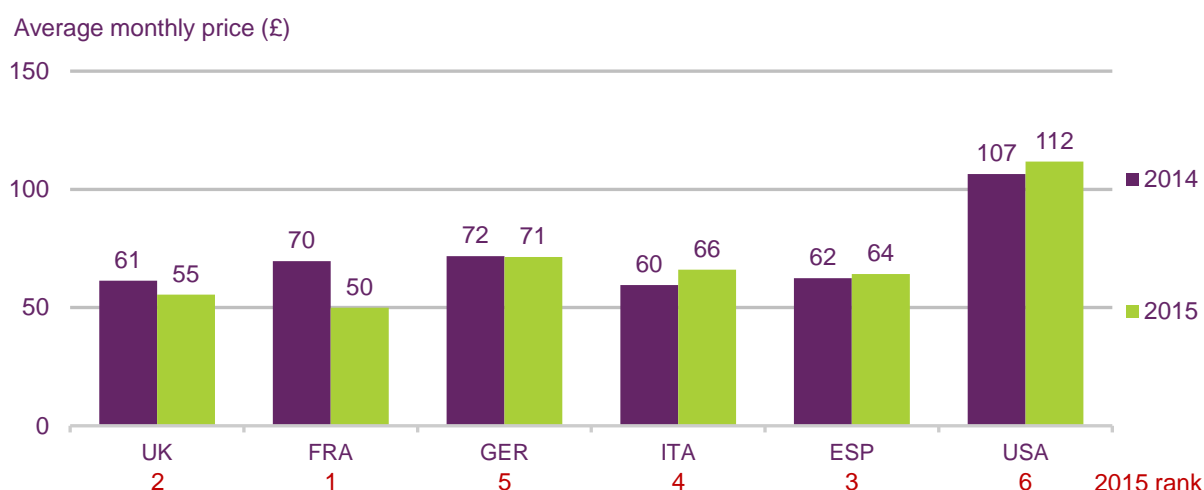
Source: Ofcom using data supplied by Teligen

Note: ‘Weighted average’ of best-value tariff from each of the largest operators by market share in each country; July 2014 and July 2015; PPP adjusted

Weighted ‘average bundle’ prices

As was the case with Household 1, the UK had the second-lowest ‘weighted average’ bundled price for Household 2 in 2015, after France (Figure 2.16). The UK was one of three of our six comparator countries in which the ‘weighted average’ bundle price for Household 2’s usage profile fell in 2015, with these falls ranging from a 1% fall in Germany to 28% in France (in the UK, the decline was 10%). The total ‘weighted average’ bundle price of Household 2’s usage requirements was lower than the total ‘weighted average’ stand-alone price in all of our comparator countries in 2015, suggesting that, in general, it is cheaper to buy bundled than stand-alone services for this usage profile.

Figure 2.16 Household 2: ‘weighted average’ bundled service pricing



Source: Ofcom using data supplied by Teligon

Note: ‘Weighted average’ of best-value bundled tariff from each operator by market share in each country; July 2014 and July 2015; PPP adjusted

‘Lowest available’ pricing

The cheapest ‘lowest available’ price required to fulfil Household 2’s usage requirements was in France in 2015, at £47 a month (Figure 2.17). The UK had the second cheapest ‘lowest available’ price, at £48; this was £4 (8%) lower than in 2014.

In all of our comparator countries, the ‘lowest available’ priced combination of services involved buying more than one service from the same provider. In the UK, France, Germany and Italy this was a dual-play fixed voice and fixed broadband bundle; in Spain it was a triple-play bundle of fixed voice, fixed broadband and mobile services and in the US it was a bundle of mobile and mobile broadband services (which cost the same as buying the included mobile service on its own).

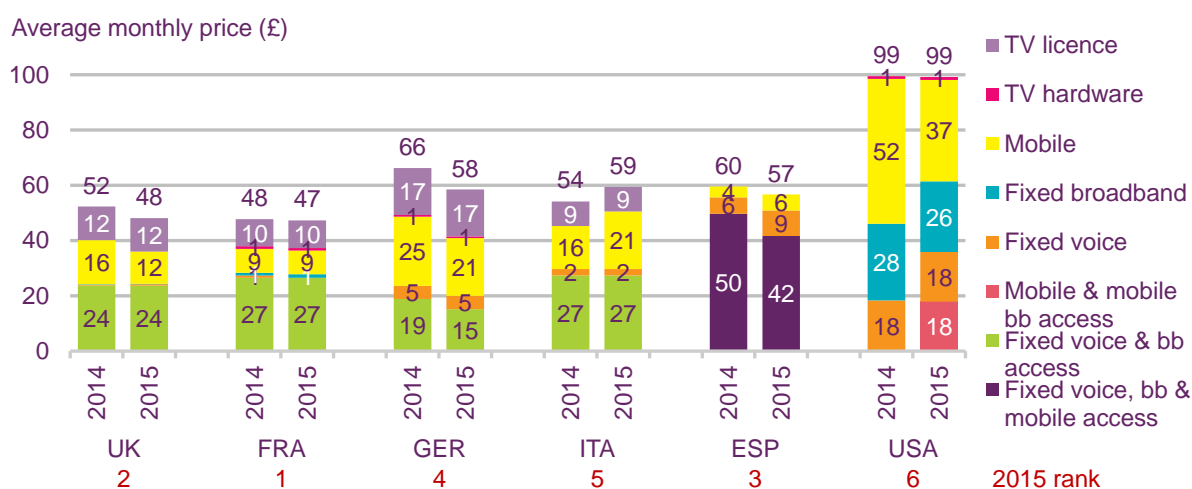
In the UK, the ‘lowest available’ tariff included an EE bundle of fixed voice and fixed broadband services, *Broadband & Anytime + Mobile Calls (LRS)*, which had a promotional discount of £10 a month on its standard monthly fee (£28.70) for six months. The lowest-priced mobile service for each of the mobile connections in the UK was a SIM-only Virgin Mobile tariff (*SIM-Only 250 Mins*) which cost £6 per month for each connection (£1 of which related to the price of the handset). This was £2 per connection (27%) cheaper than the ‘lowest available’ tariff in 2014 (also offered by Virgin Mobile), and resulted in the decline in the total ‘lowest available’ price for Household 2 in the UK in 2015.

The largest proportional fall in the ‘lowest available’ price for Household 2 in 2015 was in Germany, down by 12% as a result of Base launching a new mobile tariff (*Smart T-Mobile Flat*) and Kabel Deutschland’s tariffs being included in the pricing model in 2015. Conversely, Italy experienced the largest increase in the ‘lowest available’ price for this household in 2015, up by 10% due to an increase in the ‘lowest available’ price of the mobile element of the household’s use.

The difference between the ‘lowest available’ price and the ‘weighted average’ stand-alone price for Household 2 ranged from 21% in the US to 45% in Spain (in the UK it was 32%), while the difference between the ‘lowest available’ price and the ‘weighted average’ bundled price ranged from 5% in France to 18% in Germany (it was 13% in the UK). From this we

can conclude that there are benefits to consumers of purchasing bundled services and in shopping around to get the best deal.

Figure 2.17 Household 2: ‘lowest available’ pricing



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2014 and July 2015; PPP adjusted; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service

Household 3: A mobile ‘power user’

The third basket represents a single-person household typical of a young professional person who lives alone (Figure 2.18). This person lives in a mobile-only household and is a heavy user of both a mobile phone and of mobile broadband (using a mobile ‘dongle’ to connect to the internet).

We do not include a ‘weighted average’ bundled service price for Household 3 because it is not as relevant as it is for the other household usage profiles, due to the limited bundling of mobile phone and mobile broadband services, and because the ‘weighted average’ bundled price is calculated using fixed broadband market shares, and fixed broadband is not included in the basket.

Figure 2.18 Composition of Household 3

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
None	None	500 call minutes 200 SMS 5GB 4G data	5GB over 30 days per month	Basic pay-TV with DVR

Source: Ofcom

Weighted ‘average stand-alone’ prices

The cheapest ‘weighted average’ cost of fulfilling the requirements of Household 3 in 2015 was in France, at £112 a month (Figure 2.19). The UK had the second lowest ‘weighted average’ stand-alone price for this household in 2015, at £115 per month; a £12 per month (12%) increase compared to 2014, mainly due to an increase in the price of the mobile phone element of the basket.

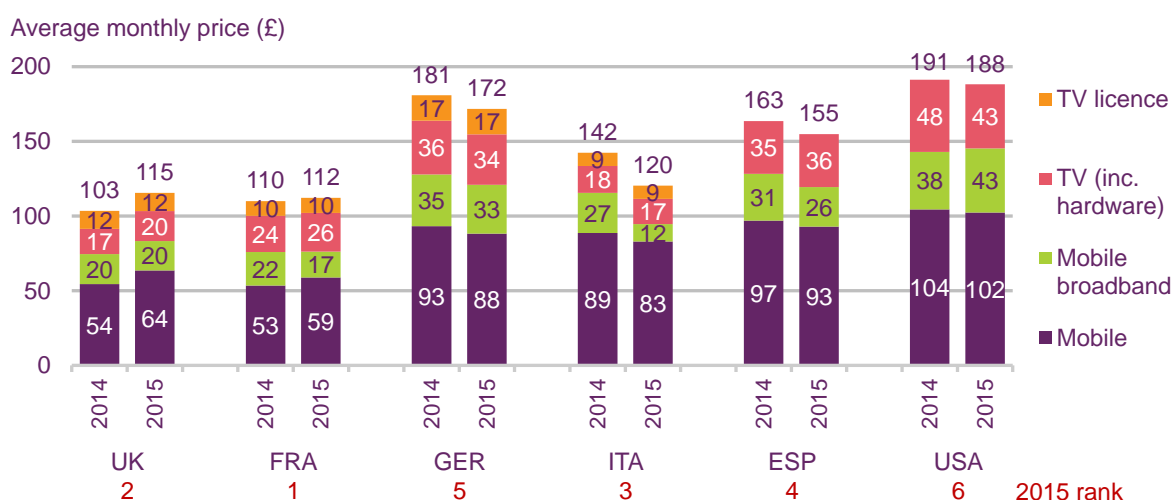
The 12% increase in the UK’s total weighted ‘average stand-alone’ price of this household’s basket was the highest recorded among our countries in 2015, with the corresponding

change in our comparator countries in 2015 ranging from a 15% fall in Italy (largely due to a 57% drop in the ‘weighted average’ price of the household’s mobile broadband connection, to £12 per month) to a 2% increase in France. Italy had the lowest ‘weighted average’ mobile broadband price among our comparator countries, and the US again had the highest ‘average stand-alone’ price at £43 per month (in the UK it was £20 per month, the third-lowest price after Italy and France).

The mobile phone element of the basket accounted for over half of the household’s total ‘weighted average’ stand-alone price in all of our comparator countries in 2015. There were large differences in the cost of the mobile phone connection required by this household (which had the highest use of the eight mobile connections that we use in our analysis), resulting in wide variations in the total ‘weighted average’ stand-alone price of this household’s basket. France had the lowest stand-alone ‘weighted average’ price for Household 3’s mobile phone connection in 2015, at £59 per month, while this was highest in the US at £102 per month (in the UK it was £64 per month, a £9 per month (17%) increase on 2014, and the second lowest average among our comparator countries).

Household 3 includes a basic ‘entry-level’ pay-TV service (defined as the lowest subscription required to receive channels that are not available on free-to-view television), with a DVR. Because of the variation in numbers and types of channels, and the quality of programming, like-for-like comparison is more problematic than for telecoms services, but the lowest ‘weighted average’ pay-TV prices for the household were in Italy and the UK, at £17 and £20 per month respectively in 2015. The US had the highest average price, at £43 per month.

Figure 2.19 Household 3: ‘weighted average’ stand-alone pricing



Source: Ofcom using data supplied by Teligen

Note: ‘Weighted average’ of best-value tariff from each of the largest operators by market share in each country; July 2014 and July 2015; PPP adjusted.

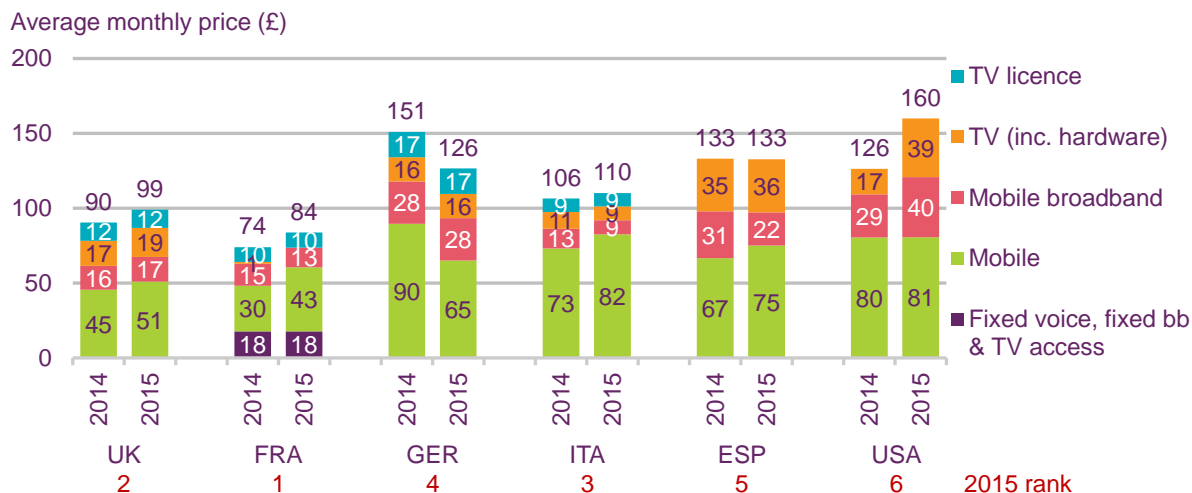
‘Lowest available’ pricing

The cheapest ‘lowest available’ price for fulfilling the requirements of Household 3 in 2015 was in France, at £84 per month, £10 a month (13%) more than in 2014 as the result of an increase in the ‘lowest available’ price for its high-use mobile phone connection (Figure 2.20). The UK had the second-cheapest ‘lowest-available’ price for this household, at £99 per month, a £9 per month (9%) increase on 2014, again largely as a result an increase in the price of the mobile phone connection.

In most countries there is low availability of bundles of mobile phone, mobile broadband and/or pay-TV services offering significant bundle discounts. France was the only country in

which the lowest-priced combination of services to fulfil Household 3's requirements involved buying bundled services. In both years this bundle was Bouygues Telecom's *Offre Bbox en zone dégroupée* service, which includes landline and fixed broadband services, even though these are not required by the household.

Figure 2.20 Household 3 'lowest available' pricing



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2014 and July 2015; PPP adjusted

Household 4: A family household with multiple needs

Household 4 represents usage levels typical of a family of two parents and two teenage children, each with their own mobile handset but with different mobile usage profiles, with the adults using more voice and the children more messaging and data. They are heavy users of the fixed-line phone and the internet, requiring a minimum headline connection speed of 'up to' 10Mbit/s, and they subscribe to an entry-level HD pay-TV service with a DVR.

Figure 2.21 Composition of Household 4

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
200 call minutes	Minimum 10Mbit/s headline speed 50GB data	Connection 1 250 call minutes 100 SMS 400MB data Connection 2 150 call minutes 200 SMS 300MB data Connection 3 100 call minutes 250 SMS 2GB data Connection 4 100 call minutes 250 SMS 2GB data	None	HD basic pay-TV with DVR

Source: Ofcom

Weighted 'average stand-alone' prices

The UK had the lowest 'weighted average' stand-alone price for this household in 2015, at £158 a month. This was a £2 a month (1%) increase compared to 2014 (Figure 2.22).

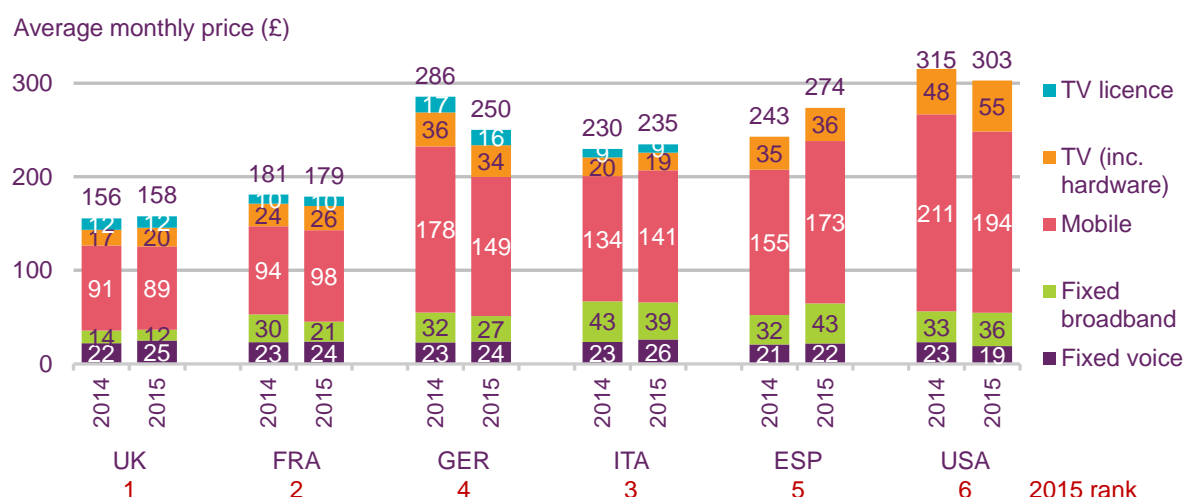
The household's four mobile phone connections is the main reason for variations across countries in the total 'weighted average' stand-alone price. The proportion of the total accounted for by the mobile phone element of the household's basket ranged from 55% in France to 64% in Spain and the US in 2015 (in the UK it was 56%).

The 'weighted average' price of fulfilling the 200 outgoing minutes of fixed voice calls was £25 per month in the UK in 2015, a £3 a month (13%) increase compared to 2014 and the second-highest 'weighted average' price after Italy (£26 per month). The UK had the lowest total 'weighted average' price for the household's four mobile phone connections in 2015, at £89 per month, £2 per month (2%) lower than in 2014. The US (where the total 'weighted average' price for the household's mobile use was more than twice that in the UK, despite an 8% fall during the year) had the highest 'weighted average' monthly mobile price, at £194. Germany had the largest fall in the 'average stand-alone' mobile price in 2015, down 16% (£29 per month) to £149.

The UK had the lowest 'weighted average' fixed broadband price for this basket in 2015, at £12 a month. This was £2 a month less than it had been in 2014, as a result of BT introducing a promotional offer on its *Unlimited Broadband* service and Tesco withdrawing a more expensive service. Spain had the highest 'weighted average' fixed broadband price in 2015, at £43 a month, an £11 per month (36%) increase compared to 2014, due to Movistar withdrawing the tariff that was its cheapest for this household in 2014, and Vodafone and ONO launching new, more expensive services. The largest fall in the 'weighted average' fixed broadband price was in France, where it fell by £9 a month (29%) to £21 per month as a result of the launch of a new Orange service, *Decouverte Internet*, which was significantly cheaper than its equivalent in 2014.

The television element of this basket is the same as that for Household 3 (basic pay-TV), but with the addition of HD channels. This resulted in increases in the 'weighted average' price of the TV element of the household's basket in three of our countries: Germany, Italy and the US, in 2015, with these ranging from just 8 pence per month in Germany to £12 per month in the US. In the UK, France and Spain there was no difference between the prices for Households 3 and 4, as HD channels are included as standard.

Figure 2.22 Household 4: ‘weighted average’ stand-alone pricing



Source: Ofcom using data supplied by Teligen

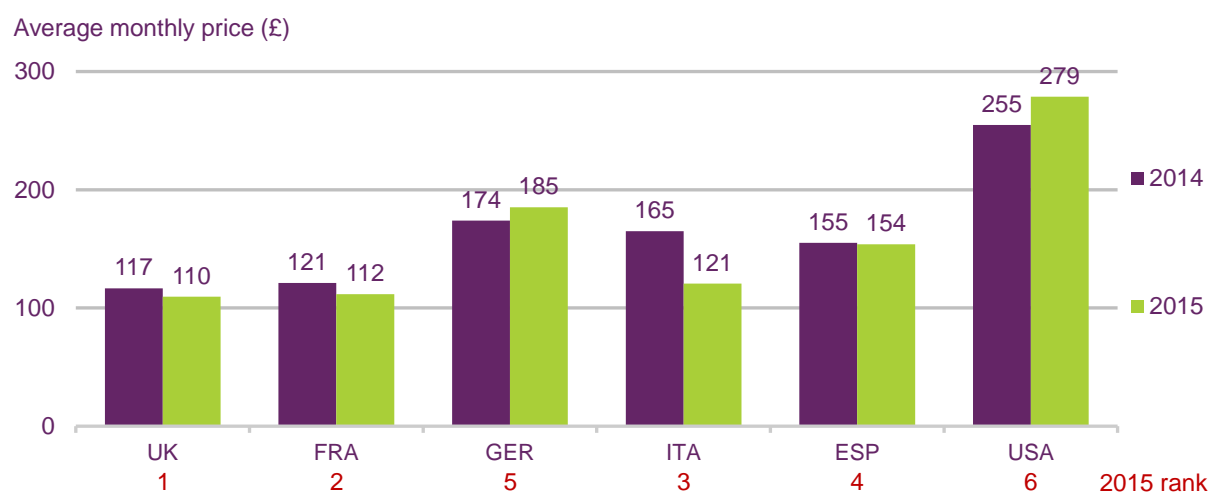
Note: ‘Weighted average’ of best-value tariff from each of the largest operators by market share in each country; July 2014 and July 2015; PPP adjusted

Weighted ‘average bundle’ prices

The UK had the lowest ‘weighted average’ bundled price for Household 4 in 2015, at £110 per month (Figure 2.23); £7 per month (6%) lower than in 2014. Among the other countries the change in the ‘weighted average’ bundled price ranged from a 27% fall in Italy (to a large extent the result of Telecom Italia launching a new quad-play service, *TIM Smart with Subscription Super Internet 10Mbps*, and Vodafone introducing a new low-cost tariff), to a 9% increase in the US.

The total ‘weighted average’ bundle price of Household 4’s usage requirements was lower than the total ‘weighted average’ stand-alone price in all of our comparator countries in 2015, suggesting that, in general, it is cheaper to buy bundled rather than stand-alone services for this usage profile.

Figure 2.23 Household 4: ‘weighted average’ bundled service pricing



Source: Ofcom using data supplied by Teligen

Note: ‘Weighted average’ of best-value bundled tariff from each operator by market share in each country; July 2014 and July 2015; PPP adjusted

‘Lowest available’ pricing

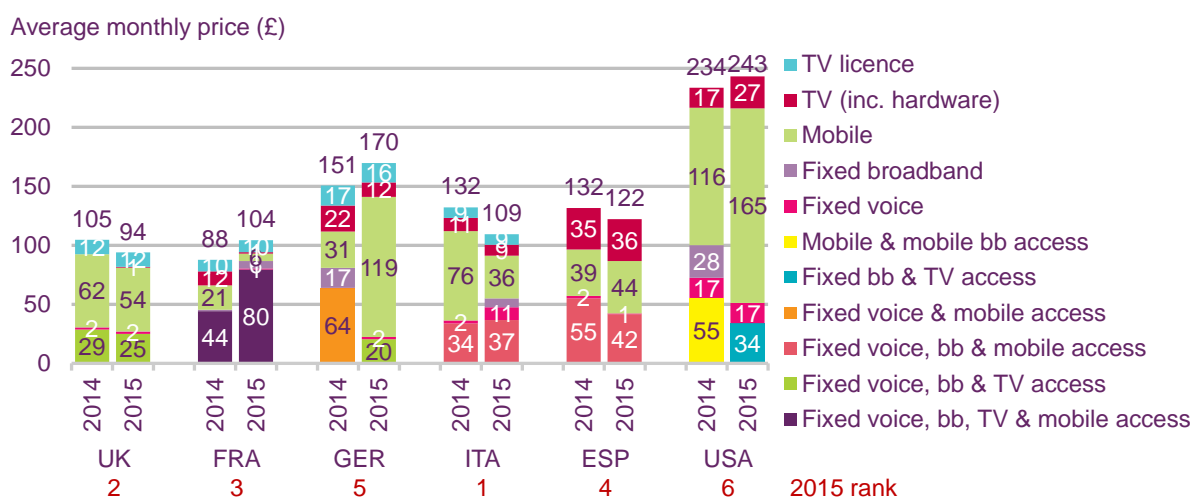
The ‘lowest available’ price for Household 4’s requirements was in the UK in 2015, at £94 per month (Figure 2.24). This was £11 per month (10%) lower than in 2014.

There were substantial savings to be made by buying the services required by Household 4 as part of a bundle in 2015. The difference between the ‘lowest available’ price of Basket 4, including bundles, and the lowest price available using stand-alone services, ranged from 4% (£11 a month) in the US to 47% (£107 per month) in Spain. In the UK it was 23%, or £28 per month). France, with the cheapest ‘lowest available’ price in 2014, had the largest increase in the total ‘lowest available’ price for Household 4 in 2015, up by 19% (£17 per month) to £104). This was due to Numericable withdrawing its *Start 4 10M with HD Box Memory rented* service during the year, leaving a more expensive combination of services, including an Orange quad-play bundle of fixed voice, fixed broadband, pay-TV and mobile services (*Orange Open Jet 4G/H+*) as the ‘lowest available’ priced option.

In all of the other comparator countries except the US (where an RCN dual-play fixed broadband and pay-TV bundle was the ‘lowest available’ option), the cheapest price to fulfil Household 4’s requirements included a triple-play bundle. In Italy and Spain, these bundles included fixed voice, fixed broadband and mobile phone services, while in the UK and Germany they included fixed voice, fixed broadband and pay-TV services (in the UK, TalkTalk’s *Plus TV with Line Rental Saver* service).

Mobile services were the largest component of the total ‘lowest-available’ price in the countries where the bundle in the ‘lowest available’ combination of services did not include mobile services. The US had the highest monthly price for the mobile element of the basket at £165 (68% of the total price of £243 per month).

Figure 2.24 Household 4: ‘lowest-available’ pricing



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2014 and July 2015; PPP adjusted; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service

Household 5: An affluent two-person household with high use of mobile, internet and HD premium TV

Household 5 is typical of an affluent young couple of high-end users. They both have mobiles and are fairly high users of mobile voice and data services and, to a lesser extent,

SMS. They have a fixed line with relatively low use, are heavy internet users with a superfast broadband connection (i.e. with a headline speed of 30Mbit/s or more), have a premium television package for watching HD sport and the latest films, and a digital video recorder (DVR).

Figure 2.25 Composition of Household 5

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
100 call minutes	Minimum 30Mbit/s headline speed 75GB data	Connection 1 300 call minutes 150 SMS 1GB 4G data Connection 2 200 call minutes 50 SMS 500MB 4G data	None	HD pay-TV with sports and movies with DVR

Source: Ofcom

Weighted ‘average stand-alone’ prices

France had the lowest ‘weighted average’ stand-alone pricing for Household 5 in 2015, at £192 a month (Figure 2.24). The UK had the second-lowest ‘weighted average’ stand-alone price for the basket, at £200 a month, a £7 a month (4%) increase compared to 2014.

Basket 5 has the lowest fixed voice use of all the baskets, with 100 minutes of outgoing calls per month. The UK had the second-highest ‘weighted average’ price for this usage profile (after Italy) at £25 a month, £3 a month (13%) higher than in 2014. The lowest ‘weighted average’ stand-alone cost of satisfying the mobile requirements of this basket was also in the UK in 2015, at £89 a month. However, this was £17 per month (23%) higher than in 2014, due to increasing prices for both connections among all of the providers included in the average in both years, and notably for O2 (up by 41%, largely due to increasing international call prices).

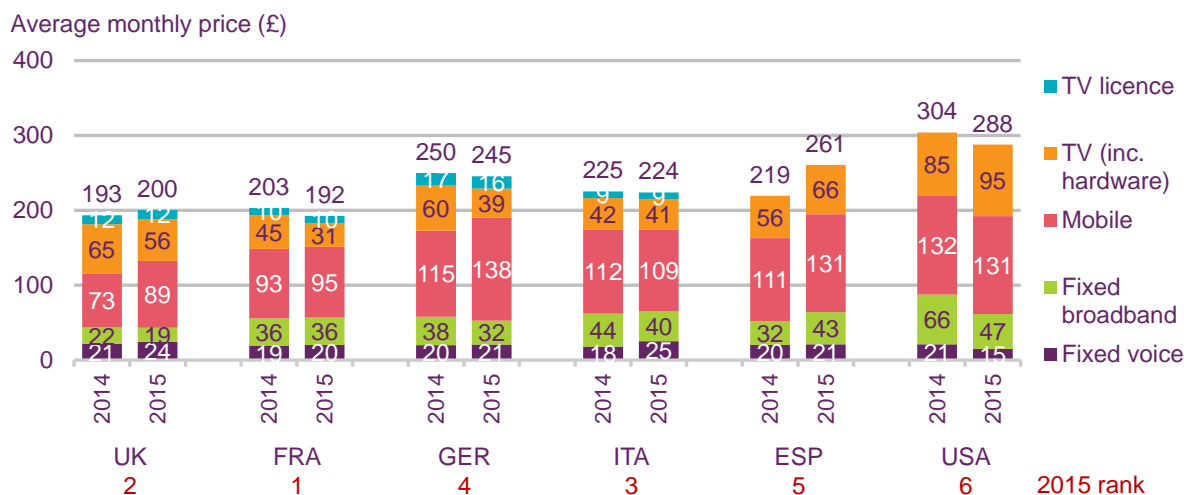
The UK had the second-lowest ‘weighted average’ price (after France) for the household’s higher-use connection, and the lowest ‘weighted average’ price for the lower-use connection, in 2015. The highest ‘weighted average’ prices for these connections were in Germany and the US. The total ‘weighted average’ stand-alone price of the two connections was highest in Germany in 2015, at £138 per month, a £23 per month (20%) increase due mainly to an increase in the average price of the higher-use connection.

Household 5 requires a fixed broadband connection with 75GB of use and a headline (advertised download) speed of at least 30Mbit/s. There was a wide range of ‘weighted average’ stand-alone prices for the superfast broadband connection required by this basket, ranging from £19 a month in the UK (down by £3 per month since 2014, mainly due to greater promotional discounts available to consumers taking BT’s *Unlimited BT Infinity Option 1* service), to £47 a month in the US.

Basket 5 also includes an HD premium pay-TV component. As was the case in 2014, the highest ‘weighted average’ price for this package, which includes top-league football (NFL in the US) and top-price film/entertainment channels, was in the US in 2015, at £95 a month. The lowest was in Germany, at £31 per month. However, comparisons with the US are

difficult to make, as NFL viewing packages are marketed in many different ways⁹⁸ and are offered through a combination of pay-per-view and subscription, and the pricing of the pay-TV element of this basket is largely a result of the way in which channels (and related services) are bundled.

Figure 2.26 Household 5: ‘weighted average’ stand-alone pricing



Source: Ofcom using data supplied by Teligen

Note: ‘Weighted average’ of best-value tariff from each of the largest operators by market share in each country; July 2014 and July 2015; PPP adjusted.

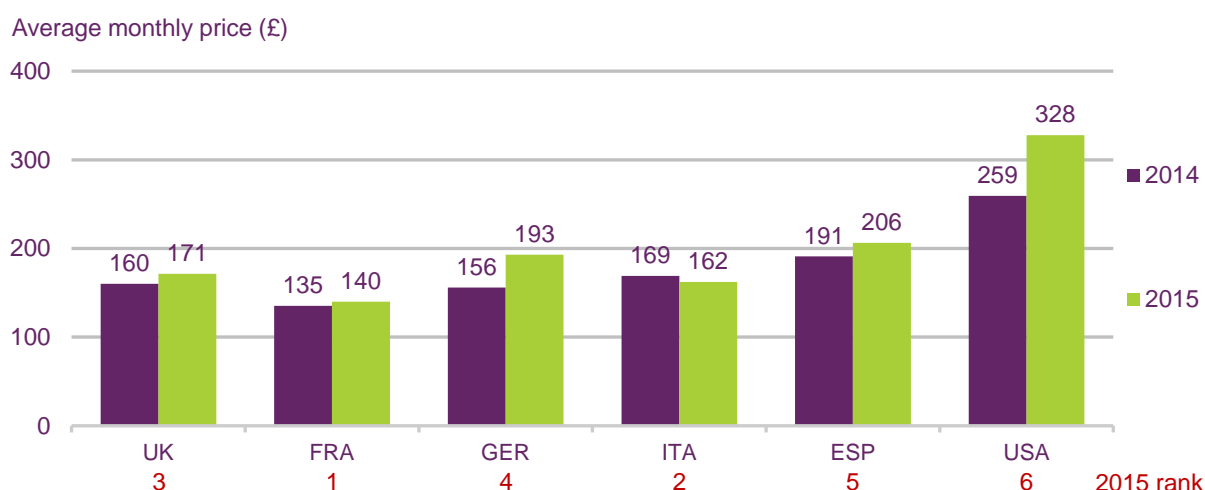
Weighted ‘average bundle’ prices

France had the lowest ‘weighted average’ bundled service price for Household 5 in 2015, at £140 per month, a £5 per month (4%) increase on 2014 (Figure 2.27). The UK had the third-lowest ‘weighted average’ bundled price for this household in 2015, at £171 per month. This was an £11 per month (7%) increase compared to the previous year.

The ‘weighted average’ bundle price increased in all of our comparator countries in 2015 except in Italy, where it fell by 4%. Germany and the US experienced the largest increases in the average bundled price during the year, up by 24% and 26% respectively. The total average bundled service price of this basket was lower than the total ‘weighted average’ stand-alone price in all of our comparator countries except the US in 2015, suggesting that, in most cases, it is cheaper to buy bundled rather than stand-alone services.

⁹⁸ In the US there are also seasonal variations in the availability and price of sports packages, meaning that some packages may not have been offered in the summer, when our tariff data are collected.

Figure 2.27 Household 5: ‘weighted average’ bundled service pricing



Source: Ofcom, using data supplied by Teligen

Note: ‘Weighted average’ of best-value bundled tariff from each operator by market share in each country; July 2014 and July 2015; PPP adjusted

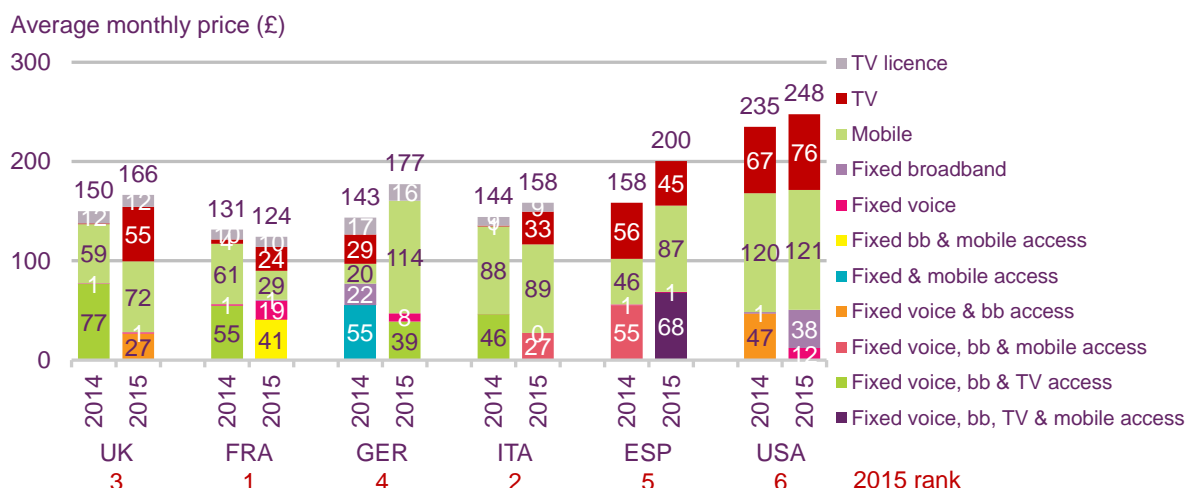
‘Lowest available’ pricing

The cheapest ‘lowest-available’ pricing for Household 5 was in France in 2015, at £124 a month, while in the UK it was £166 per month, £16 a month (11%) more than in 2014 and the third cheapest price among our comparator countries.

The US was the only comparator country in which the ‘lowest-available’ price for Household 5 did not include buying bundled services. In the UK the ‘lowest available’ combination of services included a Virgin Media bundle of fixed voice and fixed broadband services (*Broadband 50MB + Phone Size XL with Line Rental Saver*) along with a stand-alone Sky pay-TV service (*Original Bundle + Sky Sports & Movies with Sky+ HD Box*) and Tesco Mobile and EE mobile phone services.

The largest savings, compared to purchasing the lowest-available combination of stand-alone services, were in France, where the cost of the cheapest bundle of services was £50 a month (29%) less than the cheapest combination of stand-alone services (in the UK this saving was £15 a month, or 8%). France was the only one of our six countries where the ‘lowest available’ price of this basket fell in 2015, down by £7 per month (6%). Among our other comparator countries, the increase in the ‘lowest available’ price ranged from 10% in Italy to 27% in Spain.

Figure 2.28 Household 5: 'lowest available' pricing



Source: Ofcom, using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2014 and July 2015; PPP adjusted; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service.

2.1.5 Conclusion

Figure 2.29 below shows the 'weighted average' stand-alone and bundled service prices as well as the 'lowest available' prices of our five household usage profiles, across the six comparator countries, in 2015. It should be noted that TV licence fees are excluded from this analysis (where applicable).

In general, the UK communications service prices compared favourably to those in the comparator countries. The UK had the lowest 'weighted average' stand-alone prices for Households 1, 2 and 4, but was overtaken by France for Households 3 and 5. France had the lowest 'weighted average' bundled service prices in all the households except Household 4 (where the UK had lower prices), and Household 3 (where 'weighted average' bundle prices are not relevant). The UK and France performed similarly in terms of the 'lowest available' prices (including bundled services), each having the lowest price in two of the five households (the UK in Households 2 and 4, France in Households 3 and 5). The US had the highest price for all of these metrics across all household usage profiles.

The UK's low prices were mainly due to low-priced mobile and fixed broadband services. In 2015, the UK had the cheapest 'lowest available' stand-alone prices for all three of the fixed broadband connections included in our households' usage requirements, as well as the cheapest total 'lowest available' stand-alone mobile prices. In contrast, the UK had the highest total 'lowest available' stand-alone price for the four fixed voice connections used in our analysis in 2015, which had increased by 12% during the year.

Figure 2.29 Summary of ‘weighted average’ stand-alone and bundled, and ‘lowest available’ household usage profile pricing

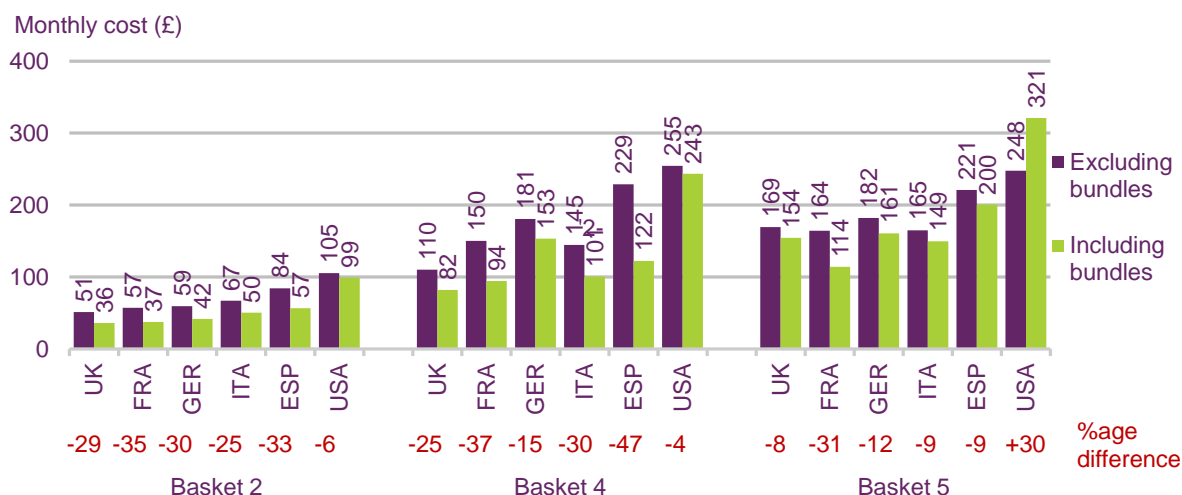
Weighted average stand-alone service pricing (£ per month)					Weighted average bundled service pricing (£ per month)					‘Lowest available’ pricing including bundles (£ per month)					
			Price	Change			Price	Change			Price	Change			
Household 1	1	-	UK	41	0	1	↑	FRA	35	-16	1	↑	GER	30	1
	2	-	FRA	45	2	2	↓	UK	39	0	2	↑	FRA	31	1
	3	-	GER	46	-1	3	-	GER	44	-2	3	↑	UK	33	3
	4	-	ITA	49	-1	4	↓	ITA	48	2	4	↓	ITA	35	6
	5	-	ESP	50	-2	5	-	ESP	57	-2	5	-	ESP	41	0
	6	-	USA	82	2	6	-	USA	84	9	6	-	USA	45	-1
Household 2	1	-	UK	58	1	1	↑	FRA	40	-20	1	↑	UK	36	-4
	2	-	FRA	74	0	2	↓	UK	43	-6	2	↓	FRA	37	-1
	3	↑	GER	81	-14	3	-	GER	54	0	3	↑	GER	42	-8
	4	↓	ITA	86	3	4	↓	ITA	57	7	4	↓	ITA	50	5
	5	↓	ESP	104	13	5	-	ESP	64	2	5	-	ESP	57	-3
	6	-	USA	126	5	6	-	USA	112	5	6	-	USA	99	0
Household 3	1	↑	FRA	102	2	1	-	n/a	-	-	1	-	FRA	74	10
	2	↓	UK	103	12	2	-	n/a	-	-	2	-	UK	87	9
	3	-	ITA	111	-22	3	-	n/a	-	-	3	-	ITA	101	4
	4	↑	GER	155	-9	4	-	n/a	-	-	4	↑	GER	110	-25
	5	↓	ESP	155	-9	5	-	n/a	-	-	5	-	ESP	133	0
	6	-	USA	188	-3	6	-	n/a	-	-	6	↓	USA	160	34
Household 4	1	-	UK	146	2	1	-	UK	97	-7	1	↑	UK	82	-11
	2	-	FRA	169	-3	2	-	FRA	102	-10	2	↓	FRA	94	16
	3	-	ITA	226	5	3	↑	ITA	112	-44	3	-	ITA	101	-23
	4	↑	GER	234	-35	4	↓	ESP	154	-1	4	-	ESP	122	-9
	5	↓	ESP	274	31	5	-	GER	168	11	5	-	GER	153	20
	6	-	USA	303	-12	6	-	USA	279	24	6	-	USA	243	10
Household 5	1	↑	FRA	182	-11	1	-	FRA	130	5	1	-	FRA	114	-8
	2	↓	UK	188	7	2	↑	ITA	153	-7	2	↑	ITA	149	14
	3	-	ITA	215	-1	3	-	UK	159	11	3	↑	UK	154	16
	4	↑	GER	229	-4	4	↓	GER	176	37	4	↓	GER	161	34
	5	↓	ESP	261	41	5	-	ESP	206	15	5	-	ESP	200	42
	6	-	USA	288	-16	6	-	USA	328	68	6	-	USA	248	13

Source: Ofcom, using data supplied by Teligen

Note: Excludes the TV licence fee

In almost all cases, the ‘lowest available’ priced combination of services included a bundled tariff where the household basket included a fixed broadband connection (i.e. for Households 2, 4 and 5). The sole exception was for Basket 5 in the US, where the cheapest available combination of services that included a bundle was more expensive than the stand-alone equivalent. The potential savings available to those buying the services required by Baskets 2, 4 and 5 as part of a bundle rather than on a stand-alone basis varied between countries (Figure 2.30). In the UK, these savings ranged from 8% for Basket 5 to 29% for Basket 2, while among the other comparator countries it ranged from a 4% saving for Basket 4 in the US to a 47% saving for Basket 4 in Spain.

Figure 2.30 Difference between ‘lowest available’ stand-alone and bundled prices



Source: Ofcom, using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, and July 2015; PPP adjusted; excludes the TV licence fee

Error! Reference source not found. ranks our comparator countries in terms of ‘weighted average’ stand-alone and bundled pricing as well as for ‘lowest available’ pricing (including bundles) across all five of the household usage profiles used in our analysis. The UK had the lowest prices among our comparator countries in terms of ‘weighted average’ stand-alone pricing. France has overtaken the UK in ‘weighted average’ bundled pricing, and also had the ‘lowest available’ pricing (including bundles). Nevertheless, the UK has overtaken Italy, coming second in terms of ‘lowest available’ pricing in 2015. Looking at the overall pricing ranking, the UK came second among our comparator countries in terms of prices in 2015, after France.

Figure 2.31 Average overall rank

‘Weighted average’ stand-alone pricing			‘Weighted average’ bundled service pricing			‘Lowest available’ pricing including bundles			Overall pricing rank		
1	-	UK	1	↑	France	1	-	France	1	↑	France
2	-	France	2	↓	UK	2	↑	UK	2	↓	UK
3	-	Italy	3	-	Italy	3	↓	Italy	3	-	Italy
4	↑	Germany	4	-	Germany	4	-	Germany	4	-	Germany
5	↓	Spain	5	-	Spain	5	-	Spain	5	-	Spain
6	-	USA	6	-	USA	6	-	USA	6	-	USA

Source: Ofcom, using data supplied by Teligen

Note: Excludes the TV licence fee



International Communications Market Report 2015

3 Television and audio- visual

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3.1 Key market developments in the TV and audio-visual markets

3.1.1 Industry metrics and summary

The TV and audio-visual chapter focuses on three topics: key market developments in the sector, industry revenue, and trends among TV and audio-visual consumers. It includes a global overview and country-level analyses of the 18 comparator countries.

- *Key market developments* details some of the major TV and audio-visual industry trends during the past year, with analysis of global revenue, trends in value-added services such as high definition TV (HDTV), digital video recorders (DVRs) and 3D TVs.
- The *TV and audio-visual industries* section focuses on key revenue trends among comparator countries, including the financial results of major pay-TV and free-to-air broadcasters.
- The *TV and audio-visual consumer* section examines patterns of digital television take-up as well as how viewers in different countries consume broadcast television and online TV.

Figure 3.1 TV industry metrics: 2014

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	NED	SWE	POL	SGP	KOR	BRA	RUS	IND	CHN	NGA	
TV revenue (£bn)	14.0	8.4	20.4	6.1	102.9	19.1	4.1	3.1	2.5	1.8	2.1	0.6	5.5	11.4	3.6	5.1	21.9	0.6	
Revs change (% YOY)	4.0	0.4	2.9	-2.3	4.1	3.1	-0.3	9.1	-2.2	1.9	5.1	0.6	7.2	12.2	7.4	14.7	10.7	14.8	
Revenue per cap (£)	216.4	130.4	247.4	100.2	322.6	150.2	174.3	65.9	146.5	184.3	55.7	101.9	111.7	56.5	25.1	4.0	16.0	3.2	
from advertising	61	40	64	42	127	66	91	32	46	56	18	60	33	26	18	2	8	0	
from subscription	97	56	71	37	195	55	53	29	76	89	36	42	72	30	7	3	8	2	
From public funds	58	35	113	21	0	29	30	5	24	40	1	0	7	1	0	0	0	0	
TV licence fee ¹	145.50	109.75	174.12	91.59	N/A	80.29	N/A	N/A	N/A	183.91	44.72	N/A	17.31	N/A	N/A	N/A	N/A	N/A	
Largest TV platform	Platform	Dsat	IPTV	Dsat	DTT	Dcab	Dcab	DTT	DTT	Dcab	Acab	Dsat	DTT	IPTV	Dsat	Dsat	Dsat	Dcab	Dsat
	% of homes	45	41	43	73	43	50	67	69	47	26	50	37	30	52	36	42	43	69
DTV take-up (%)	100	95	72	100	96	100	100	99	87	74	86	100	76	72	65	70	84	84	
Pay TV take-up (%)	59.5	76.9	55.2	30.1	87.2	69.0	31.6	28.8	98.6	83.1	83.2	62.8	96.7	32.8	65.9	85.2	62.5	22.4	
DSO date	2012	2011	2008	2012	2009	2012	2013	2010	2006	2007	2013	2020	2012	2018	2018	N/A	2020	2016	
TV viewing (min/day)	220	221	221	262	282	264	204	239	200	153	260	N/A	196	224	239	N/A	157	N/A	

Source: IHS / industry data / Ofcom

Market developments during the past year include:

- **Global TV revenues (comprising broadcast advertising, channel subscription and public licence fees only) increased by 5% in 2014 to reach £244bn.** Subscription revenues continue to be the key driver of this growth, rising by 5.4% to reach £125bn, just over half of total revenue. Advertising revenue grew by 5.3% (or £5bn) while income from public funding grew by a more modest 1.7%.

- The UK had the highest proportion of households with an HD television set, of all the countries included in our research, with 76% of respondents claiming to own one.
- DVR ownership in 2015 was highest in the UK and the US, at 33% of respondents claiming to own a DVR.

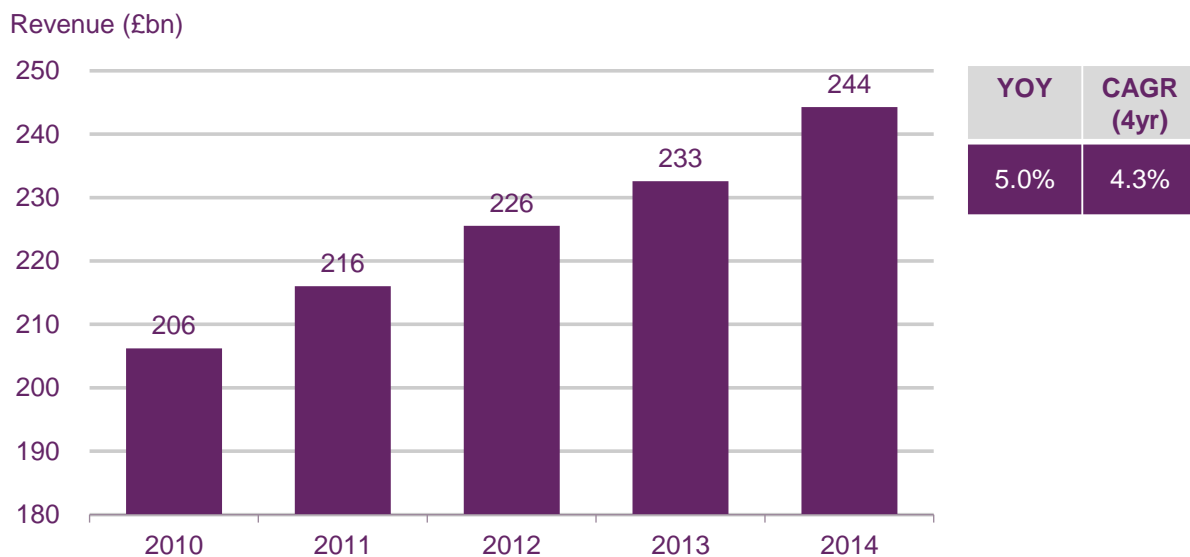
For a detailed analysis of developments in video-on-demand, please refer to Section 1.4 in the *UK in Context* chapter.

3.1.2 Global TV revenues

Global TV revenues increased by 5% in 2014 to £244bn

Ofcom estimates that global TV revenue increased in 2014 by 5.0% year on year, to £244bn: up by 4.3% over the four-year period since 2010. Our analysis of global television revenues incorporates three components: net broadcast advertising revenue, TV licence fees and subscriptions. It excludes revenues generated from pay-per-view (PPV), video on demand (VoD) and over-the-top/streaming (OTT) services.⁹⁹

Figure 3.2 Global TV broadcast advertising, public licence fee and channel subscription revenues



Source: Data derived from PwC Global Entertainment and Media Outlook: 2015-2019 @ www.pwc.com/outlook. Notes: Ofcom is responsible for all growth calculations displayed. Ofcom uses an exchange rate of \$1.646 to the GBP in line with the IMF average for 2014. All figures expressed in nominal terms.

Growth was driven primarily by continued growth in subscription revenues

The 5% increase in global television revenues, to £244bn in 2014, was driven primarily by continued growth in subscription revenues, which made up just over half of the total included revenue. Global subscription revenues increased for the fourth year in a row, from £118bn in 2013 to £125bn in 2014; a year-on-year increase of 5.4%.

⁹⁹ Online TV revenues are shown in Figure 3.20

Global net advertising revenue (NAR) growth has been steady since 2010, as economic conditions have stabilised. The recovery in NAR continued in 2014, with revenues increasing by 5.3% (or £5bn) to £99bn.

As in the three previous years, public funding from TV licence fees was little changed in 2014, at around £21bn. Revenue from this source has changed little over the four-year period, increasing by just 1.4% per year on an average compound basis.

Figure 3.3 Global TV industry revenues, by source



Source: Data derived from PwC Global Entertainment and Media Outlook: 2015-2019 @ www.pwc.com/outlook. Notes: Ofcom is responsible for all growth calculations displayed. Ofcom uses an exchange rate of \$1.646 to the GBP in line with the IMF average for 2014. All figures expressed in nominal terms.

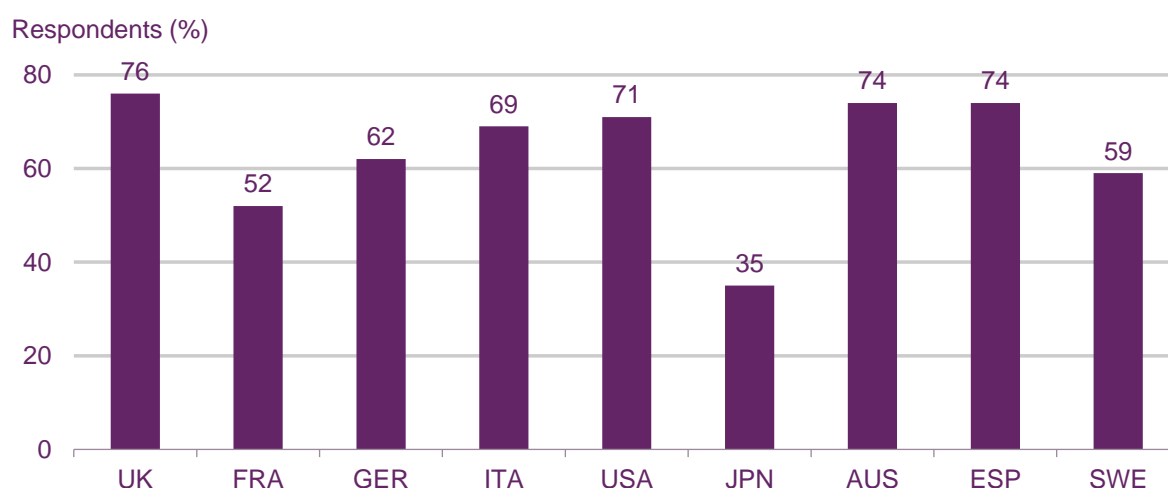
3.1.3 Consumers continue to embrace value-added services

By the end of 2014 the UK, Italy, Japan, Australia and Singapore had 100% DTV take-up. Digital TV enables consumers to take advantage of a number of value-added services, including high-definition television (HDTV) services, which provide the viewer with enhanced picture quality and access to a wide variety of HD channels, and digital video recorders (DVRs), which enable the user to record, pause and rewind live TV.

Ownership of HDTV sets highest in the UK

The UK had the highest proportion of households with HD-ready televisions; 76% of respondents claimed to own a high-definition television set. This was closely followed by Australia and Spain, with respondents claiming 74% take-up of HDTV sets. However, households with a HDTV set do not necessarily have a HDTV service.

Figure 3.4 Household ownership of high-definition TV sets



Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.3a Which of the following devices do you have in your home?

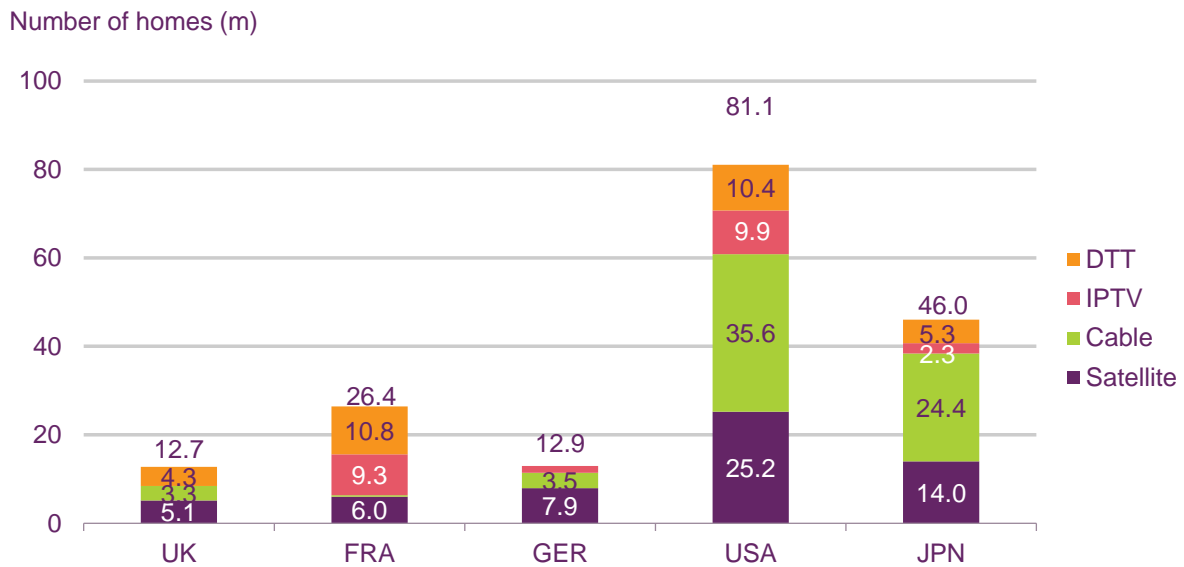
Satellite continues to be the main platform for accessing HD services in the UK

As Figure 3.5 shows, satellite was the leading platform used by households to access HD services in the UK in 2014, at 5.1 million homes, while the second-largest platform was digital terrestrial (DTT) at 4.3 million homes. The leading platform in Germany was also satellite (7.9 million homes), while in France DTT was the largest platform (10.8 million homes). The second largest platform for accessing HD services in France was IPTV¹⁰⁰ (at 9.3 million homes).

This contrasts with the US and Japan, where the leading platform is cable (35.6 million homes and 24.4 million homes, respectively). Satellite is the second largest platform for accessing HD services in the US and Japan (25.2 million homes and 14.0 million homes respectively).

¹⁰⁰ Internet protocol television (IPTV) is the term used for the television platform that delivers channels to viewers using internet protocol (IP) technology over a broadband connection. For the purposes of this report, hybrid systems such as BT TV, which provide television services through both an aerial and an IP connection, are considered IPTV platforms.

Figure 3.5 Number of HD homes, by platform and country: 2014



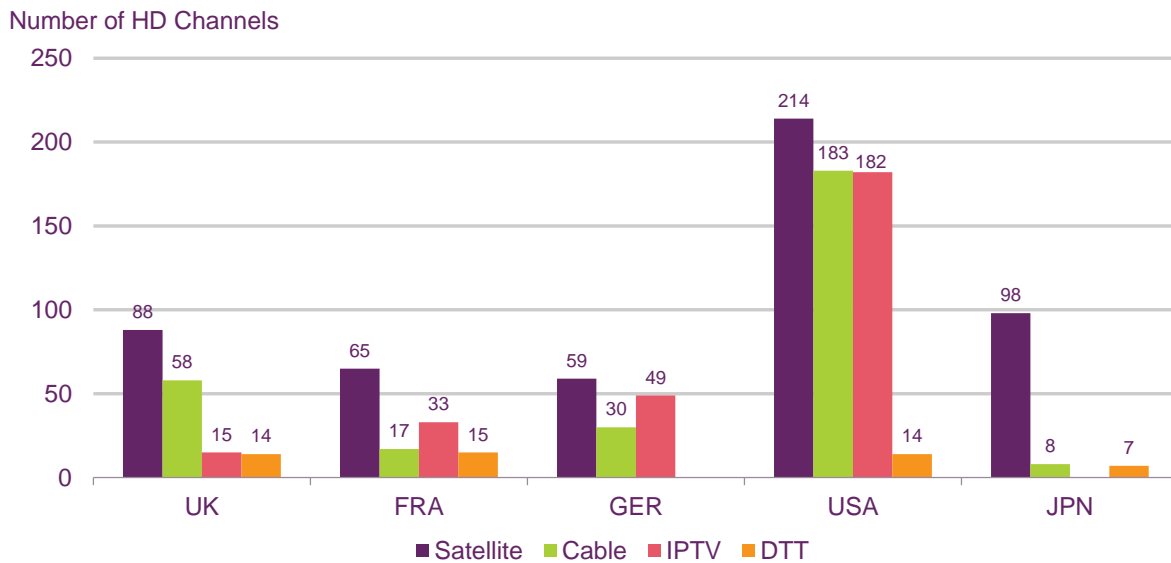
Source: IHS/ industry data/ Ofcom. Note: figures are for HD-enabled homes (those having the technical means to view HD content and access to sources of HD content).

Figure 3.6 shows the number of HD services available across the various platforms in five comparator countries. Satellite and cable platforms offer the greatest number of HD services in these countries.

In the UK, satellite TV offers the most HD services (88 channels), followed by cable (58 channels). In France and Germany, where satellite TV also offers the greatest number of HD services, 65 and 59 channels are on offer, respectively. In the UK 15 HD channels can be accessed over IPTV, while in both France and Germany it is also high, contributing to the increasing popularity of the IPTV platform in these countries.

In the US, the majority of HDTV channels are provided by pay-TV platforms. Satellite offered the most channels in 2014, at 214, while cable provided 183 and IPTV 182. Digital terrestrial TV offered 14 HD channels in 2014 – the same number as the UK, and fewer than in France.

Figure 3.6 Number of HDTV channels: 2014



Source: IHS/ industry data/ Ofcom

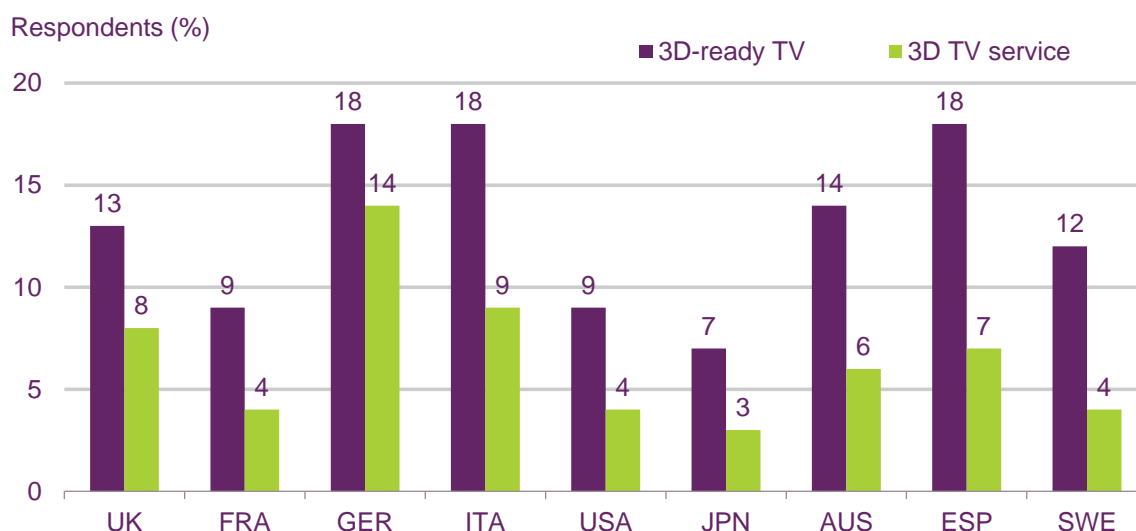
Take-up of 3D TV remains low as providers tend to reduce investment in 3D content

As Figure 3.7 shows, among our European comparator countries, households in the UK, Sweden and France were the least likely to have a 3D-ready TV set, at 13%, 12% and 9% respectively. Although overall take-up of 3D TV in the UK was low, more than half of those with a 3D-ready TV also subscribed to a 3D TV service (62%). In Sweden and France, less than half of those with a 3D-ready TV set subscribed to a 3D service.

The highest take-up of 3D-ready TVs was recorded in Germany, Italy and Spain, at 18% of households. Germany also led the way in take-up of 3D services; over three-quarters of households in Germany with a 3D-ready TV also had a 3D service.

The BBC announced in 2013 that it would put on hold its 3D programming, and it has yet to resume broadcasting in 3D. In 2015, Sky announced that its dedicated 3D channel would close, while maintaining the availability of on-demand 3D content. This followed its decision not to air 2014 Premier League matches on its dedicated 3D channel. There has instead been an increased focus on promoting ultra-HD (4K and 8K) TV sets, which offer screen resolution at least four times the resolution of standard HDTV.

Figure 3.7 Household ownership of 3D-ready TV sets and 3D TV services



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.3a Which of the following devices do you have in your home? Q3b. Which of the following services do you have in your home?

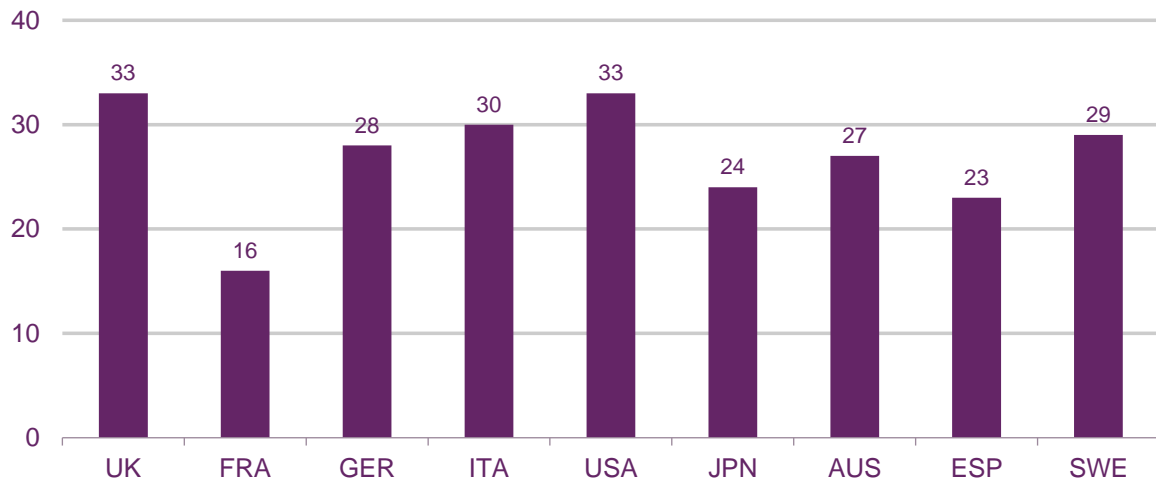
The UK and the US have the highest ownership of DVRs

As shown in Figure 3.8, Ofcom's research shows that DVR ownership in 2015 was highest in the UK¹⁰¹ and the US, at 33% of respondents claiming to own a DVR. Among our comparator countries, France recorded the lowest level of ownership (16%), followed by Spain at 23%.

¹⁰¹ This figure is lower than published data from Ofcom's *Technology Tracker* in the CMR 2015 which covered Q1 2015. The *Technology Tracker* measures DVR take-up through a series of questions relating to ownership of specific branded set-top boxes. A shorter, non-branded, question is used in the ICMR research for the purposes of international comparison.

Figure 3.8 Household ownership of DVRs

Respondents (%)



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.3a Which of the following devices do you have in your home?

3.2 The TV and audio-visual industries

3.2.1 Summary

This section focuses on the TV and audio-visual industries, looking at six years of key revenue trends among our comparator countries, including the advertising revenue of free-to-air broadcasters and the subscription revenues of the major pay-TV broadcasters.

- **Revenues among the 18 comparator countries analysed by Ofcom increased by 4.8% in 2014, to £233bn.** This was driven by year-on-year growth in the BRIC countries and Nigeria, with joint revenues increasing by 11.3% in 2014 to £42.6bn.
- **The total year-on-year growth of the European comparator countries was 2.3% in 2014, resulting in revenues of £58.3bn.** This was the lowest growth of the four regions included in our analysis, with the BRIC nations (and Nigeria) increasing by 11.3%, the US by 4.1% and the Asia-Pacific countries by 3.3% in 2014.
- **Following three consecutive years of decline, Spain recorded the largest annual growth in television revenues among the European comparator countries in 2014 (9.1%),** while Poland and the UK followed at 5.1% and 4.0% respectively. Revenues fell in two of the eight European comparator countries: by 2.3% in Italy and by 2.2% in the Netherlands.
- **In Germany and the UK, increases in revenue between 2009 and 2014 were predominantly driven by pay-TV subscriptions.** In the UK, subscription revenue represented the largest source of TV income in 2014, while in Germany licence fee revenue was the largest source.
- **Net advertising revenue continues to recover in the UK,** with growth of 6.4% year-on-year and 32.4% over the five-year period between 2009 and 2014, reaching £3.95bn. UK year-on-year advertising revenue was the third-highest among our European comparator countries, following Spain at 10.9% and Poland at 6.5%.
- **In 2014, revenues from both short and long-form online TV and video in the UK continued to grow, up £278m to £908m in 2014.** However, the US remains the largest online TV and video market among our comparator countries; between 2009 and 2014, online TV and video revenue grew from £1.3bn to £6.8bn.

3.2.2 Television revenues among comparator countries

Increase in TV revenues driven by strong growth in BRIC countries and Nigeria in 2014

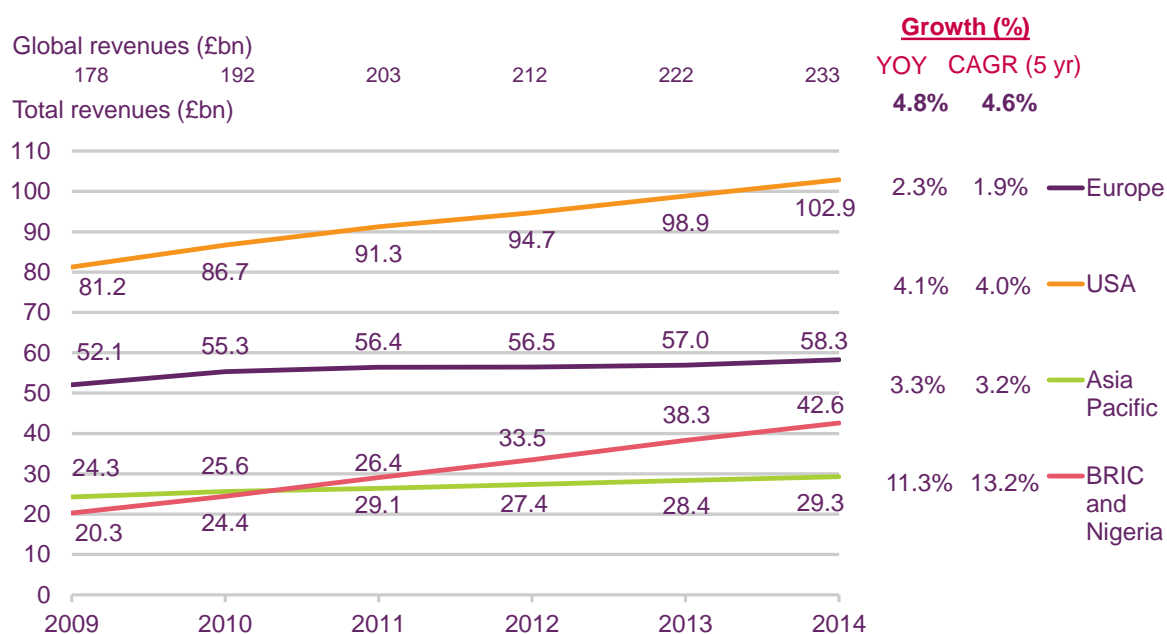
As Figure 3.9 shows, revenue among the 18 comparator countries analysed by Ofcom increased by 4.8% in 2014 to total £233bn. The total year-on-year growth of the European comparator countries was 2.3% in 2014, resulting in revenues of £58.3bn. This was the lowest growth of the four regions included in our analysis.

The BRIC countries, together with Nigeria, experienced the largest year-on-year growth in 2014, their joint revenues increasing by 11.3% (or £4.3bn) to £42.6bn. All five countries had strong compound annual growth between 2009 and 2014, collectively at 13.2%, with Nigeria recording the highest compound annual growth figure at 32.9%, followed by Brazil and China (14.2% and 13.0% respectively).

The revenue gap has widened to over £13bn between the BRIC countries and Nigeria combined, and the Asia/Pacific countries, the two regions in our analysis with the lowest TV revenues. From a broadly similar level in 2011, the Asia/Pacific countries' revenue has increased by around £1bn a year in the subsequent three years, whereas that of the BRIC countries and Nigeria has increased by around £5bn a year.

The region with the next largest growth in revenue was the US, growing by 4.1% to reach £102.9bn in 2014. The US, the country with the largest television market globally in terms of revenue, experienced growth driven by both subscription and income from television advertising. Over the five-year period since 2009, US revenues have increased by an average of 4.0% per annum, more than double the rate of the European comparator countries (1.9%).

Figure 3.9 Total TV industry revenues among comparator countries



Source: IHS / industry data / Ofcom. Notes: Revenues include advertising, subscriptions and sources of public funding only. BRIC is Brazil, Russia, India and China. All figures expressed in nominal terms.

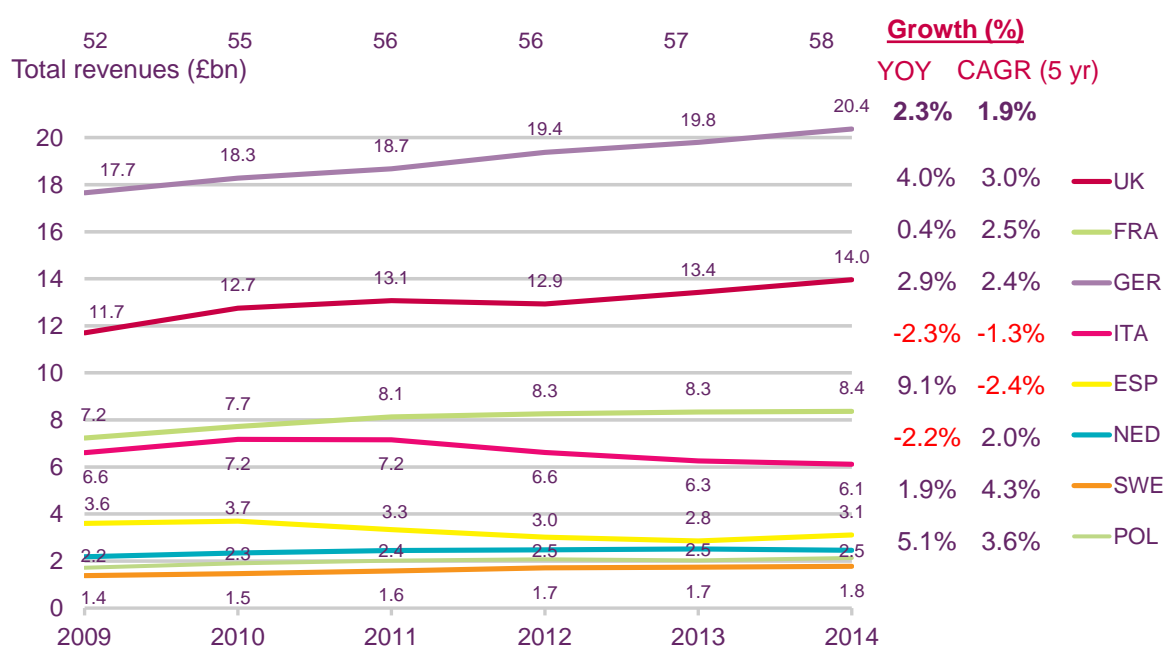
Overall, the total year-on-year growth of the European comparator countries was 2.3% in 2014, resulting in revenues of £58.3bn. This represented the lowest growth rate of the four regions in our analysis

Following three years of consecutive decline, Spain recorded the largest proportional growth of the eight European countries in our analysis, increasing by 9.1% to £8.4bn. This recovery can be explained by strengthening TV advertising revenue. Poland followed, with an increase of 5.1%, increasing its five-year annual growth rate to 3.6%, a figure well above the European group average of 1.9%.

Germany and the UK had the next largest absolute increases in TV revenue among the European comparator countries in 2014, growing by £0.6bn and £0.5bn respectively. Both were driven mainly by subscription revenues, while both countries also maintained an annual increase above the European average. These figures consolidate Germany as Europe's largest TV market in terms of monetary value in 2014.

Declines in revenue were noted for Italy and the Netherlands. For Italy, this year constitutes the fourth year of declining revenues, recording a five-year compound decrease of 1.3%.

Figure 3.10 TV industry figures among European comparator countries



Source: IHS / industry data / Ofcom. Notes: Revenues include advertising, subscriptions and sources of public funding only. All figures expressed in nominal terms.

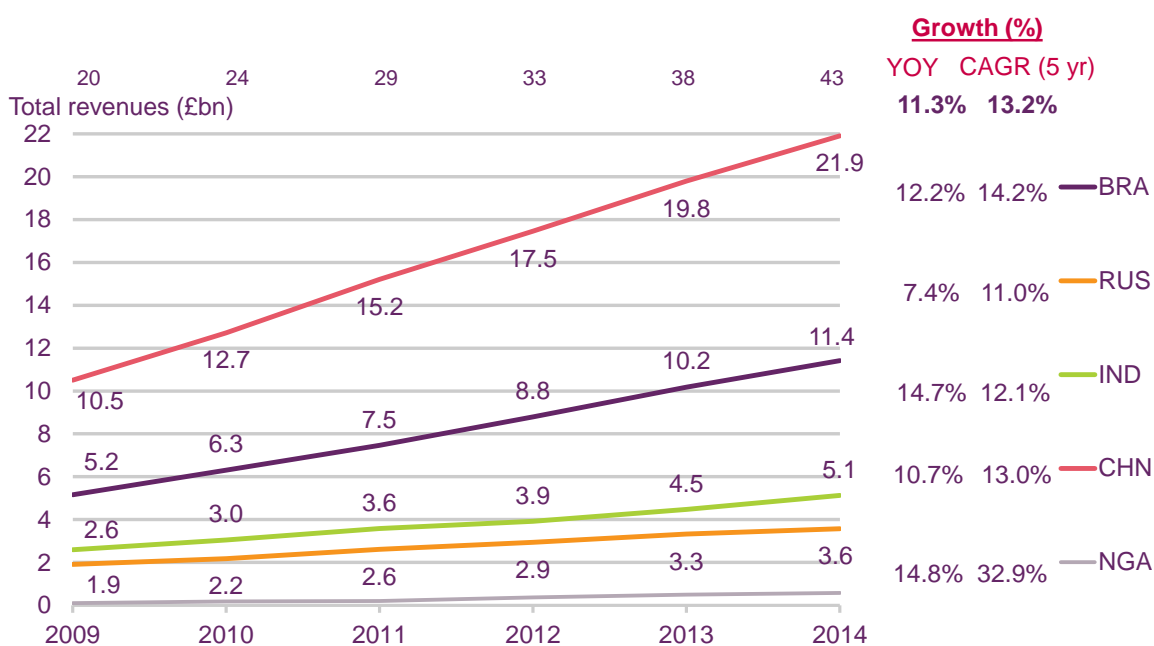
TV revenues increased for each of the BRIC countries and Nigeria in 2014, with combined revenues up at 11.3% year on year and more than doubling since 2009, to reach £43bn.

China and Brazil made up over 75% of the revenue of this group of five countries, recording growth figures of 10.7% and 12.2% respectively. China had the highest industry revenues among the BRIC countries and Nigeria combined, increasing from £19.8bn to £21.9bn in 2014. This growth was due to increased subscription and advertising revenue; the Chinese market is the largest subscription TV market in the world in terms of the absolute number of pay-TV households. Brazil's revenues also increased; from £10.2bn in 2013 to £11.4bn in 2014, and it has maintained the highest compound annual growth rate of the BRIC countries (14.2%).

India has experienced consistent growth over the five-year period since 2009, with a compound annual growth rate of 12.1% and year-on-year growth of 14.7% in 2014. Russia's revenue was up by 7.4% in 2014, while its compound annual growth rate since 2009 is 11.0%.

Significantly, the overall compound annual growth rate of the BRIC countries and Nigeria (13.2%) was driven in large part by Nigeria's 32.9% growth since 2009. Although it has the smallest TV market in this group of comparator countries, Nigeria had greater proportional growth in TV revenue than any of the BRIC countries in 2014, with a 14.8% year-on-year increase to £0.6bn.

Figure 3.11 Total TV industry revenues among BRIC countries and Nigeria



Source: IHS / industry data / Ofcom. Notes: Revenues include advertising, subscriptions and sources of public funding only. BRIC is Brazil, Russia, India and China. All figures expressed in nominal terms.

Figure 3.12 illustrates the changing composition of TV industry revenues, by country, between 2009 and 2014.

Germany, the UK and France maintained their positions as the largest European TV markets, each increasing all three of their revenue sources between 2009 and 2014. These increases were predominantly driven by pay-TV subscriptions. For the UK and France, subscription revenue represented their largest source of TV income. In the UK, strong growth was noted across all three revenue streams.

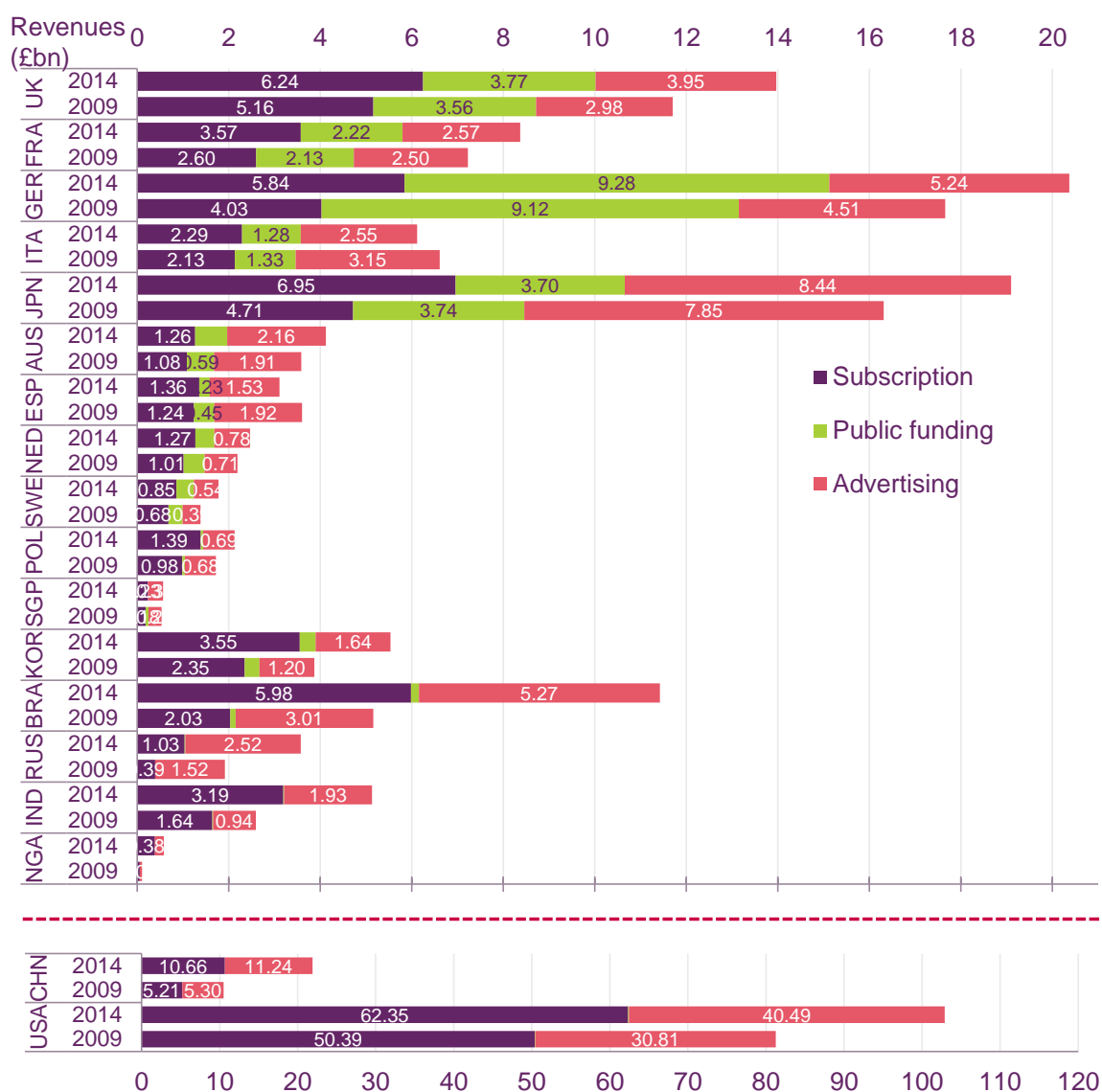
Among our 18 comparator countries, Italy and Spain experienced a decline in TV revenues between 2009 and 2014, predominantly driven by decreases in advertising revenue over the five-year period. In Italy, advertising revenue declined from £3.15bn to £2.55bn, while in Spain it fell from £1.92bn to £1.53bn. This reflects the shrinking of Spain's advertising market between 2009 and 2013,¹⁰² while the market also experienced declines in subscription revenue and public funding over this five-year period.

The US and China are the two largest countries by revenue and are included at the bottom of Figure 3.12 to accommodate the higher scale. The US experienced strong growth both from pay-TV subscriptions and from advertising revenues, both of which increased by more than £10bn during the five-year period between 2009 and 2014. China doubled its figure for advertising revenue (from £5.30bn to £11.24bn) and its subscription revenue (from £5.21bn to £10.66bn).

Robust growth was also recorded in the television markets of the remaining BRIC countries. These increases in total revenue between 2009 and 2014 were driven mainly by an increase in net advertising revenue and in subscriptions.

¹⁰² Advanced Television, 24 July 2013, <http://advanced-television.com/2013/07/24/spain-tv-ad-revenues-still-falling> [Accessed 9 October 2015].

Figure 3.12 TV revenues by comparator countries, by source: 2009 and 2014

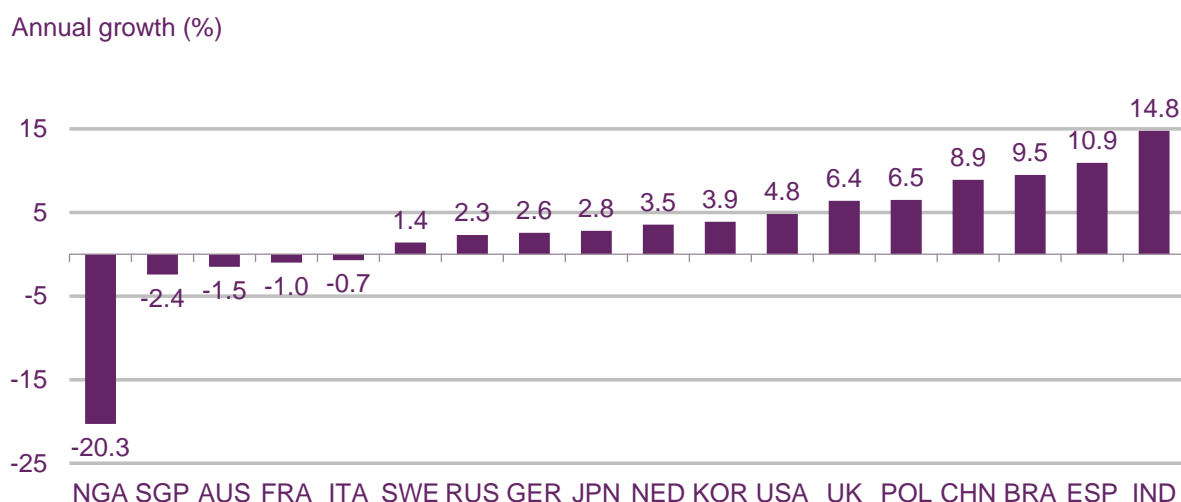


Source: IHS / industry data / Ofcom. Notes: Revenues include advertising, subscriptions and sources of public funding only. Different scale used for the US and China due to larger size of those markets. All figures expressed in nominal terms.

Figure 3.13 shows the annual growth in advertising revenue for each of our comparator countries. India, Spain, Brazil and China showed the highest rates of growth in advertising revenues in 2014, with India reaching 14.8% annual growth.

Among our European comparator countries, Spain, Poland and the UK had the highest year-on-year growth, at 10.9%, 6.5% and 6.4% respectively. Five of our 18 comparator countries recorded a decrease in annual growth, with Nigeria having the highest decrease at 20.3% (although advertising revenue remains low in the country).

Figure 3.13 TV advertising revenue annual growth: 2013-2014



Source: IHS / industry data / Ofcom. All figures expressed in nominal terms.

3.2.3 TV revenue per head among comparator countries

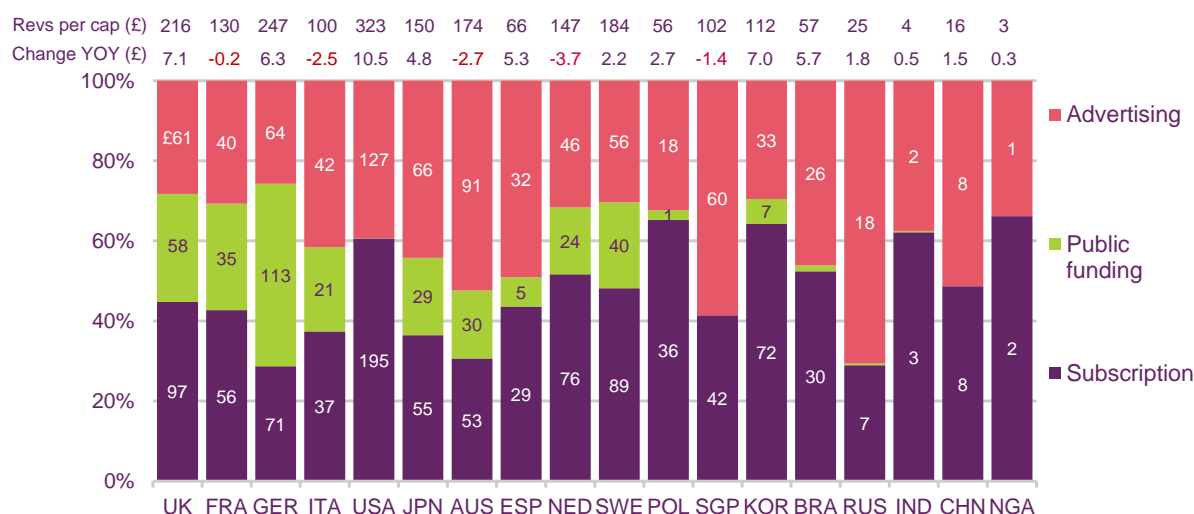
TV revenue per head in the UK increased by £7.10 to £216 in 2014

TV revenue per head in the US was the highest among the 18 comparator countries, generating £323 per head in 2014, an increase of £10.50 year on year, and representing the largest increase among the comparator countries. Germany had the second-highest revenue per head in 2014, at £247, a £6.30 increase on 2013.

Among European countries, the UK recorded the largest year-on-year change (up by £7.10 to £216), followed by Germany (up by £6.30). This increase was mainly generated by subscription revenues. Sweden had the third largest per-capita return among European comparator countries in 2014, up by £2.20 on its 2013 figure to £184. In contrast, France, Italy and the Netherlands noted declines in per-capita revenues in 2014, with the Netherlands down £3.70 to £147 and Italy down £2.50 to £100.

TV revenues per head for the BRIC countries and Nigeria remained significantly lower than in most other comparator countries in 2014: Nigeria was lowest at £3. Brazil was the exception: here per-capita returns reached £57, a £5.70 increase on 2013. Brazil's revenue per head was closely in line with the lower range of our European comparator countries (Poland at £56 per head and Spain at £66 per head).

Figure 3.14 TV revenue per head, by revenue source: 2014



Source: IHS / industry data / Ofcom. Notes: Revenues include advertising, subscriptions and sources of public funding only; figures inside the bars represent industry revenue per head by source. All figures expressed in nominal terms.

The increase in UK subscription revenue per head was larger than advertising revenue per head in 2014

Figure 3.15 details the changes, by country, in revenue per head, split by the three component parts. For the majority of countries, increases in subscription fees were responsible for increased revenues in 2014. The exception was Spain, where increased advertising revenue per head of £3.10 was the main revenue driver.

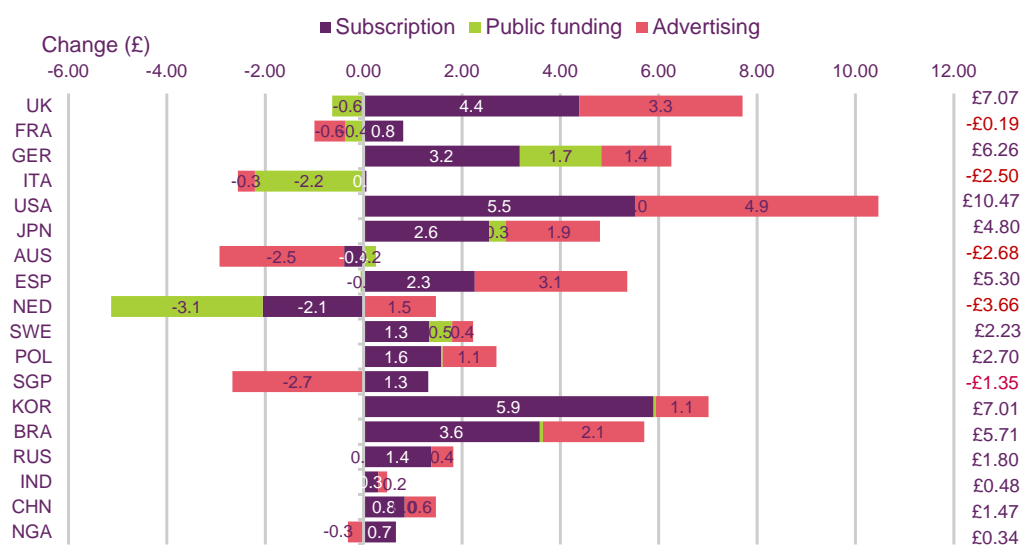
Brazil and the US had the highest increases in per-capita subscription revenue, at £5.90 and £5.50 respectively. There was also a notable increase in subscription fees per head in the UK, up year on year by £4.40 (surpassing £3.30 per head advertising revenue). This increase may be the result of increased take-up of pay-TV in the UK.¹⁰³

Significantly, public funding per head declined in five of our comparator countries, three of which were in Europe (the UK, Italy and the Netherlands). The Netherlands recorded the largest per-capita decrease, down £3.10 on the 2013 figure.

Advertising revenues per head declined in four of our comparator countries in 2014. The greatest falls were in Australia and Singapore, where advertising revenues per head declined year on year by £2.50 and £2.70 respectively.

¹⁰³ See TV and audio-visual consumers: pay-TV take-up.

Figure 3.15 Changes in components of TV revenues per head: 2013-2014



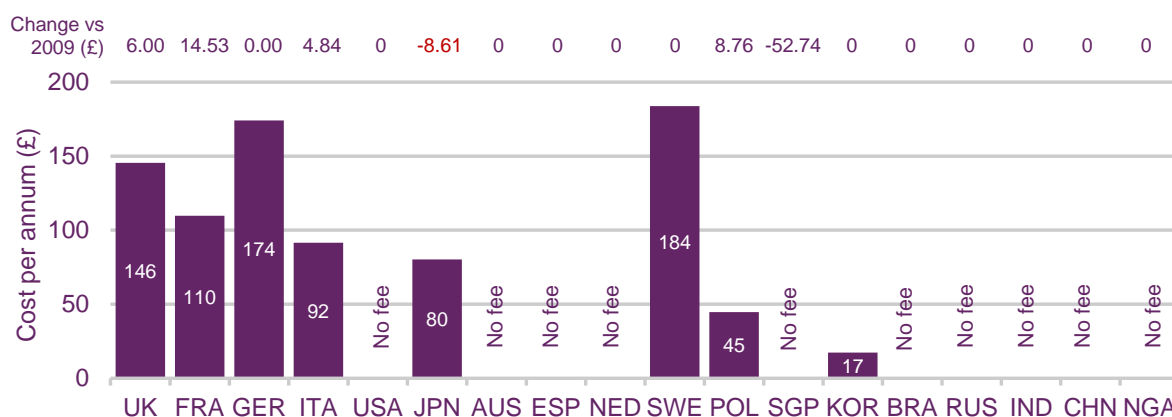
Source: IHS / industry data / Ofcom. Notes: Revenues include advertising, subscriptions and sources of public funding only; the bars represent changes in industry revenue per head, by source. All figures expressed in nominal terms.

3.2.4 TV licence fee in the UK third highest among comparator countries

Public funding, in the form of TV licence fees paid by viewers, is an important element of TV finance in most of the countries included in this analysis. As Figure 3.16 shows, eight of the 18 countries in our analysis require a TV licence.

At £146, the cost of the UK licence fee was the third highest among comparator countries in 2014, behind Sweden (£184) and Germany (£174). France had the greatest increase in its licence fee between 2009 and 2014 (up by £14.53), while the Japanese licence fee fell by £8.61, to £80. In 2011, Singapore abolished TV licence fees.

Figure 3.16 TV licence fees: 2014



Source: IHS / industry data / Ofcom. All figures expressed in nominal terms.

3.2.5 Varied results for advertising revenue among free-to-view broadcasters

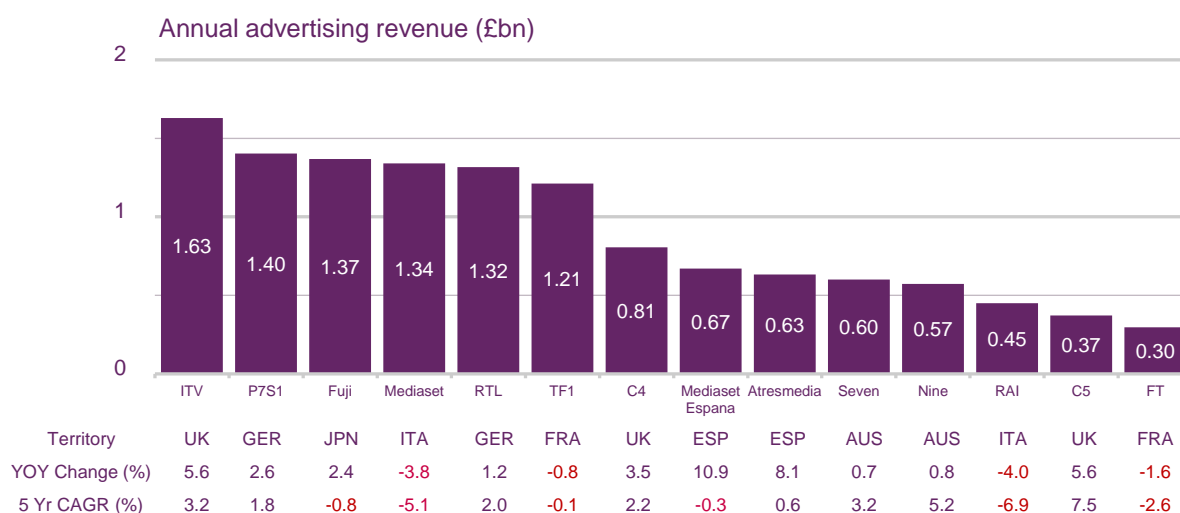
Figure 3.17 shows the reported advertising revenues of selected free-to-view TV operators in 2014. ITV, in the UK, had the largest advertising revenues in 2014 of the selected free-to-air broadcasters in our analysis, with £1.63bn in revenue and 5.6% annual growth. The other

selected UK broadcasters recorded revenues ranging from £0.81bn (Channel 4) to £0.37bn (Channel 5). ProSiebenSat 1 in Germany had the second largest revenues in 2014, with annual growth of 2.6%. The largest year-on-year increase in advertising revenue was for the Spanish Mediaset Espana, which increased by 10.9% in 2014, despite falling by 0.3% during the five-year period between 2009 and 2014.

Advertising revenues declined in Italy and France in 2014 (Figure 3.13). This is illustrated by the declining advertising revenues for broadcasters in 2014, with Italian Mediaset and Rai recording falls of 3.8% and 4.0% respectively, and French TF1 and FT recording declines of 0.8% and 1.6%. New regulations have been put in place since 2009 which prohibit FT from carrying advertising from 8pm to 6am, which may explain the decline shown in Figure 3.17.

The highest compound annual growth rate between 2009 and 2014 was recorded by the UK's Channel 5 (7.5%) and the Australian broadcaster Nine (5.2%).

Figure 3.17 Latest reported advertising revenues for selected free-to-view TV operators: 2014



Source: IHS / industry data / Ofcom. Notes: Comparisons should be regarded as indicative only due to the possibility of differences between broadcasters in financial reporting. All figures expressed in nominal terms.

3.2.6 Increasing compound annual growth among most pay-TV operators

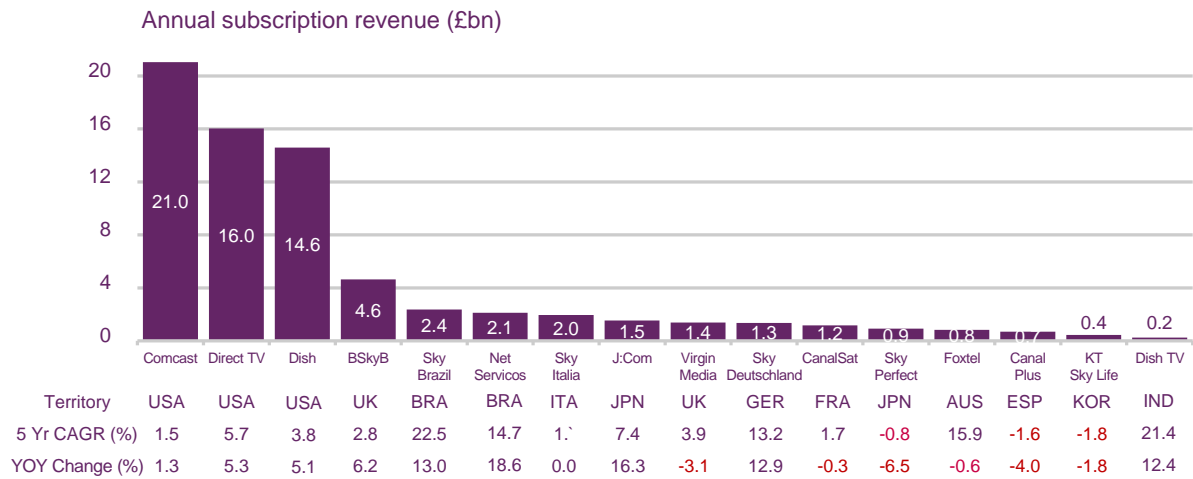
The three pay-TV operators with the highest subscription revenues among our comparator countries in 2014 were all based in the US, the largest global TV market, with annual revenues of up to £21bn (Comcast). All three noted growth both in year-on-year subscription revenues and over the five-year period between 2009 and 2014. Collectively, these operators accounted for £51.7bn in subscription revenue.

The UK's BSkyB recorded the next highest level of subscription revenue among operators in our comparator countries, with a 6.2% increase to £4.6bn in 2014. In contrast, UK's Virgin Media noted a decline of 3.1% in annual growth, despite an average annual growth of 3.9% between 2009 and 2014.

Brazilian operators recorded robust growth, both in annual growth figures since 2013 and in average annual growth between 2009 and 2014: Sky Brazil had 13.0% year-on-year growth on revenue of £2.4bn and Net Servicos had 18.6% year-on-year growth on revenue of £2.1bn. BRIC country operators' compound annual growth rates between 2009 and 2014

was the largest among the comparator countries: Brazil's Sky Brazil and Net Servicos at 22.5% and 14.7% respectively, and Dish TV in India at 21.4%.

Figure 3.18 Latest reported subscription revenues for selected pay-TV operators: 2014



Source: IHS / industry data / Ofcom. Notes: Comparisons should be regarded as indicative only due to the possibility of differences in financial reporting between broadcasters. All figures expressed in nominal terms.

A general upward trend for pay-TV ARPU

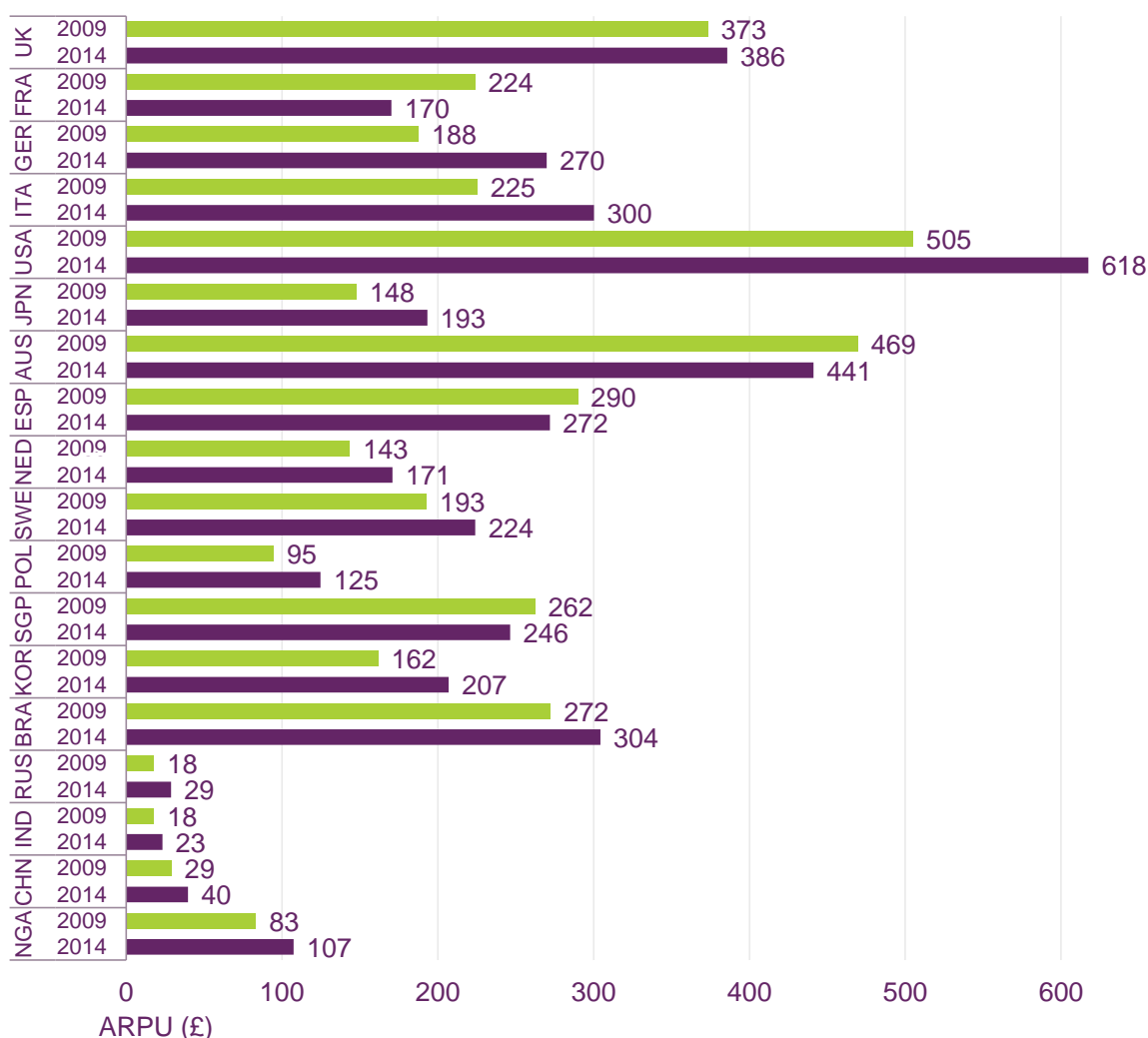
Average revenue per user (ARPU) can provide insights into the relative performance of pay-TV operators by country. Most of our comparator countries had an increase in pay-TV ARPU from 2009 and 2014, despite a levelling-out of subscription numbers over this period. This can be explained in part by the increased 'bundling' offered by pay-TV companies as customers take up broadband and fixed-line services along with their TV subscriptions.

There was a modest increase in the UK, where ARPU increased from £373 to £386 in 2014, remaining the highest among the European comparator countries. Other increases among European comparator countries were in Germany (an increase of £82 to £270) and Italy (an increase of £75 to £300).

The highest figures among our comparator countries in 2014 were in the US (£618) and Australia (£441). The US had the largest absolute increase (£113) between 2009 and 2014.

France, Spain, Singapore and Australia all recorded decreases in pay-TV ARPU between 2009 and 2014. France had the largest decline over this period, down by 24% to £170.

Figure 3.19 Pay-TV ARPU, by country: 2009-2014



Source: IHS / industry data / Ofcom. Notes: ARPU is average revenue per user, representing the average revenue generated per pay-TV subscriber. All figures expressed in nominal terms.

UK online TV and video revenue grew more than threefold from 2011 to 2014

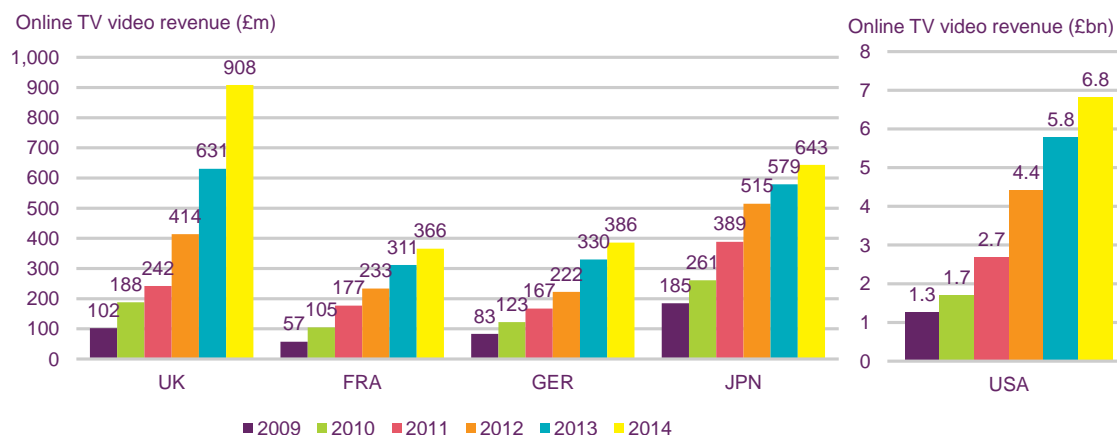
Short and long-form online TV and video revenue is made up of subscription fees and advertising revenue, as well as electronic sell-through retail and on-demand revenue from online services delivering TV and video content. Typically, it includes services such as catch-up TV services, Netflix, Xbox Video, Hulu, Hulu Plus, iTunes and YouTube.

There has been significant growth in this sector since 2009, especially in the five countries featured in Figure 3.20. Although still small relative to the overall TV market in terms of revenue, online TV and video revenue in the UK was £908m in 2014, more than three times the 2011 figure of £242m. This rapid growth is also evident in the US, the country with the largest revenue of this type among our comparator countries in 2014 (£6.8bn).

UK revenues in 2014 were greater than those in France (£366m) and Germany (£386m). The figure for UK revenue remained well above that of Japan, where revenues reached

£643m. In the UK, growth was driven predominantly by the increased popularity of services such as Netflix and Amazon Prime Instant Video.¹⁰⁴

Figure 3.20 Online TV and video revenue among selected comparator countries



Source: IHS / industry data / Ofcom. Notes: (1) Different scale used for USA due to larger size. (2) 'Online TV and video revenue' refers to advertising revenue, subscription revenue as well as retail and rental on-demand revenue derived from online services delivering TV and video content. Typically, it includes short-form and long-form services such as catch-up TV services, Netflix, Xbox Video, Hulu, Hulu Plus, iTunes and YouTube. (3) All advertising revenues are net (after discounts and agency commissions). (4) All figures expressed in nominal terms.

3.2.7 Revenue from UK TV exports at £1.2bn in 2014

UK television industry export revenues decreased marginally by 1% year-on-year to £1.207bn in 2014

The latest annual UK Television Exports Survey, commissioned by Pact, collects and summarises the revenue figures of international television companies, and highlights the popularity of UK programming abroad.

In 2014, the estimated total revenue for international sales of UK television programmes and associated activities was £1.207bn, a 1% decrease on the 2013 figure of £1.214bn. The 2014 figure is more than double that in 2005, when the survey reported an overall figure of £494m. This growth has largely been driven by the 'terms of trade' changes, which enable independent producers to negotiate and sell secondary rights to their programmes, including the rights to the distribution of finished programmes and formats outside the UK.

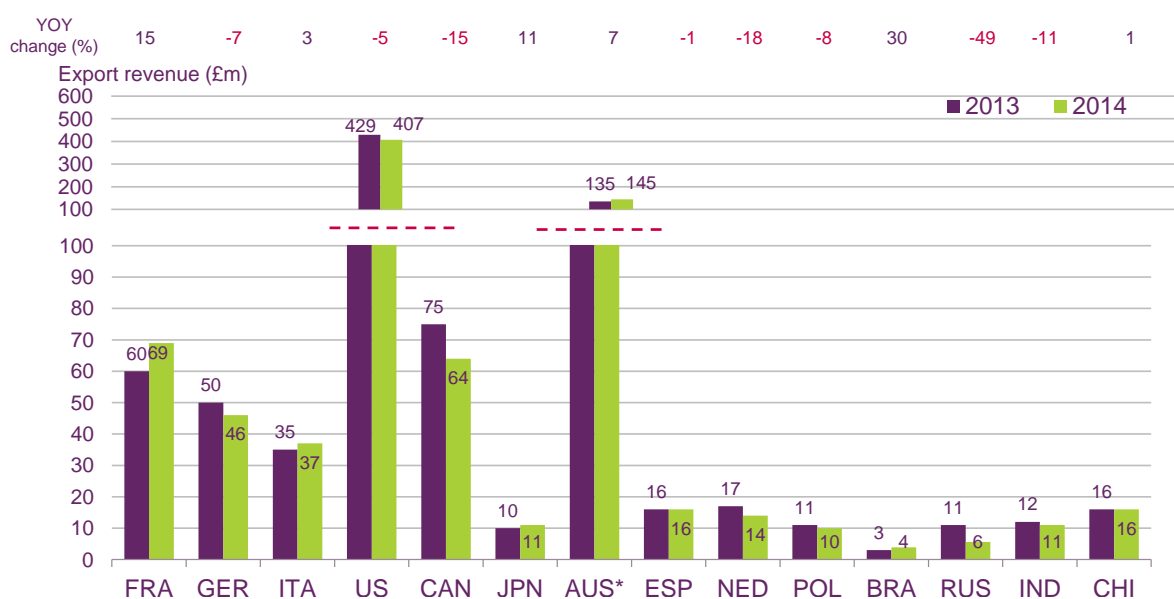
The US remains the UK's largest export market

Figure 3.21 shows the total UK revenues generated from the sale of all programming and associated activities to international markets. It is evident that the US is by far the UK's largest export market. In 2014, total sales stood at £407m; a 4% decrease on 2013. This remains significantly larger than the second largest market, Australasia, which accounted for £145m of total exports in 2014.¹⁰⁵ Exports to Brazil showed the greatest relative year-on-year increase (30%) among the countries shown. Although generating less revenue than European countries, this may be indicative of a growing appetite for UK TV content.

¹⁰⁴ See *The Communications Market Report 2015*, 'Key market developments in TV and audio-visual' p. 148.

¹⁰⁵ Australasia comprises Australia, New Zealand, the island of New Guinea and neighbouring islands in the Pacific Ocean.

Figure 3.21 UK television industry export revenues in selected countries: 2013 and 2014



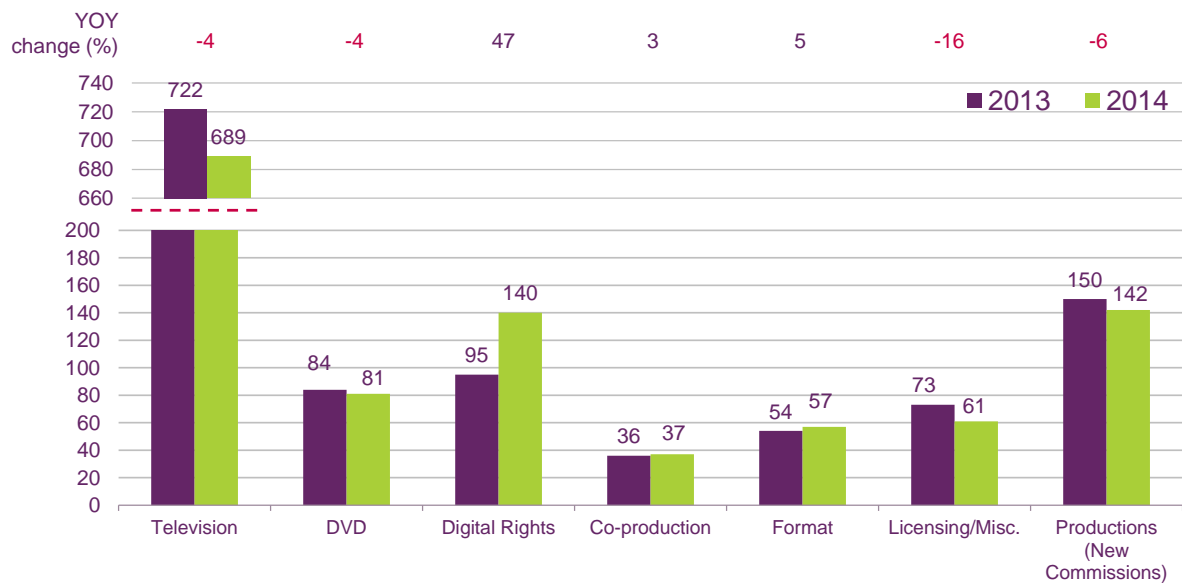
Source: Pact. UK Television Exports Survey 2014/2015. Notes: (1) 24 responses were received in 2014. For comparisons between years to be meaningful, the figures for 2013/2014 have been revised to compare like-for-like company responses. There was some estimation for incomplete or late surveys. (2) AUS in this section is Australasia and includes Australia, New Zealand, the island of New Guinea and neighbouring islands in the Pacific Ocean. (3) All figures expressed in nominal terms.

Finished television programming is the UK's largest source of TV industry export revenue

Figure 3.22 shows the export market for UK programming and associated activities, broken down by the different types of programming and licensing deals. The largest source of TV revenue is in the form of finished television content, generating £689m in 2014; 5% lower than in 2013. This figure is more than four times greater than the sales of productions (new commissions), which is the second largest contributor to TV export revenue (£142m).

Sales of digital rights had the largest growth in the year, with a 47% increase on 2013, to £140m in 2014.

Figure 3.22 UK television industry export revenues, by type: 2013 and 2014



Source: Pact. UK Television Exports Survey 2014/2015. Notes: (1) 24 responses were received in 2014. For comparisons between years to be meaningful, the figures for 2013/2014 have been revised to compare like-for-like company responses. There was some estimation for incomplete or late surveys. (2) All figures expressed in nominal terms.

3.3 TV and audio-visual consumers

3.3.1 Summary

This is the final section of the audio-visual chapter. In Section 3.3.2 we examine patterns of digital television take-up, before considering the platform mix across the comparator countries in Section 3.3.3. We then analyse the number of pay-TV homes in each country in Section 3.3.4, before examining how viewers in different countries consume broadcast television (Section 3.3.5).

- **In 2014, the UK, Italy, Japan, Australia and Singapore had 100% digital television take-up on main TV sets**, with digital take-up exceeding 60% of TV homes in every comparator country for the first time.
- **In the UK, digital satellite (which includes Freesat and Sky TV) was the country's favourite viewing platform on primary sets in 2014** (at 45% of TV households) while digital terrestrial was second highest with 33%. Digital satellite was also the most popular platform in Germany, Poland, Brazil, Russia, India and Nigeria.
- **IPTV was the most popular TV platform in France and South Korea in 2014, with take-up of 41% and 30% respectively.** The proportion of UK TV homes with IPTV as their main platform increased by 3pp in 2014 to 8%.
- **Nearly three-fifths (59%) of TV homes in the UK had a pay-TV service in 2014.** The Netherlands (99%), South Korea (97%) and the US (87%) were the three comparator countries with the highest proportion of pay-TV take-up in 2014 although the characteristics of pay-TV vary across the three countries.
- **Across the comparator countries, audiences watched an average of 3 hours 43 minutes of broadcast TV per person per day in 2014.** The US had the highest level of TV viewing of all of the comparator countries (at 4 hours 42 minutes per person per day) while Sweden had the lowest, at 2 hours 33 minutes. The UK ranked tenth of the 15 ICMR countries, with viewers watching on average 3 hours 40 minutes of television a day in 2014.
- **Comparing 2014 to 2013, the data showed a decline in viewing (by varying degrees) among seven of the 15 ICMR comparator countries**, with the UK showing the largest year-on-year decline of 4.9% (12 minutes). Some of the UK decline may be explained by increased viewing of online content on tablets and smartphones, an increase in subscription VoD viewing, falling unemployment, and the effect of the weather.

3.3.2 Digital television take-up on main sets

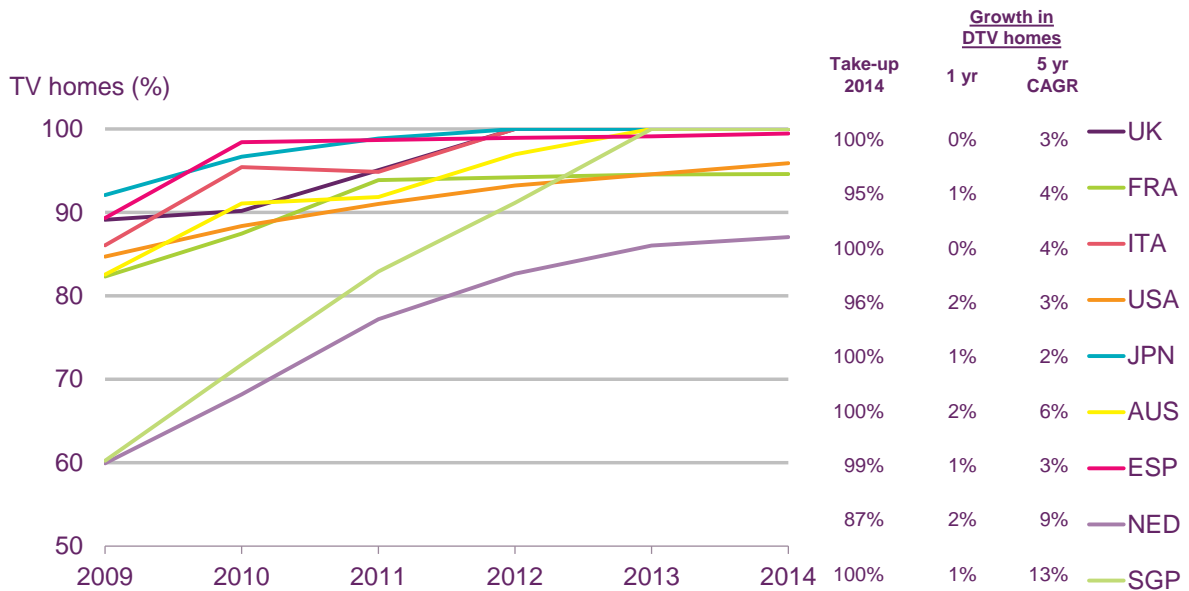
Digital TV take-up exceeds 60% of TV homes across all comparator countries in 2014

Digital TV take-up in 2014 ranged from 100% in five countries to 65% in Russia – the first year in which all 18 of our comparator countries had take-up greater than 60%. Figure 3.23 and Figure 3.24 show growth in DTT take-up, and for ease of interpretation, the countries are illustrated in two charts.

For the second consecutive year, the UK, Italy, Japan, Australia and Singapore were the only five of our comparator countries with 100% DTV take-up on main TV sets. All but one of

the nine countries listed in Figure 3.23 have completed digital switchover, with France, the US, Spain and the Netherlands less than 100% DTV take-up only because of analogue cable services that can be found in a small proportion of TV homes. The exception is Singapore, which has yet to formally complete switchover, despite all TV services being provided digitally since 2013.

Figure 3.23 Take-up of digital television: top nine comparator countries

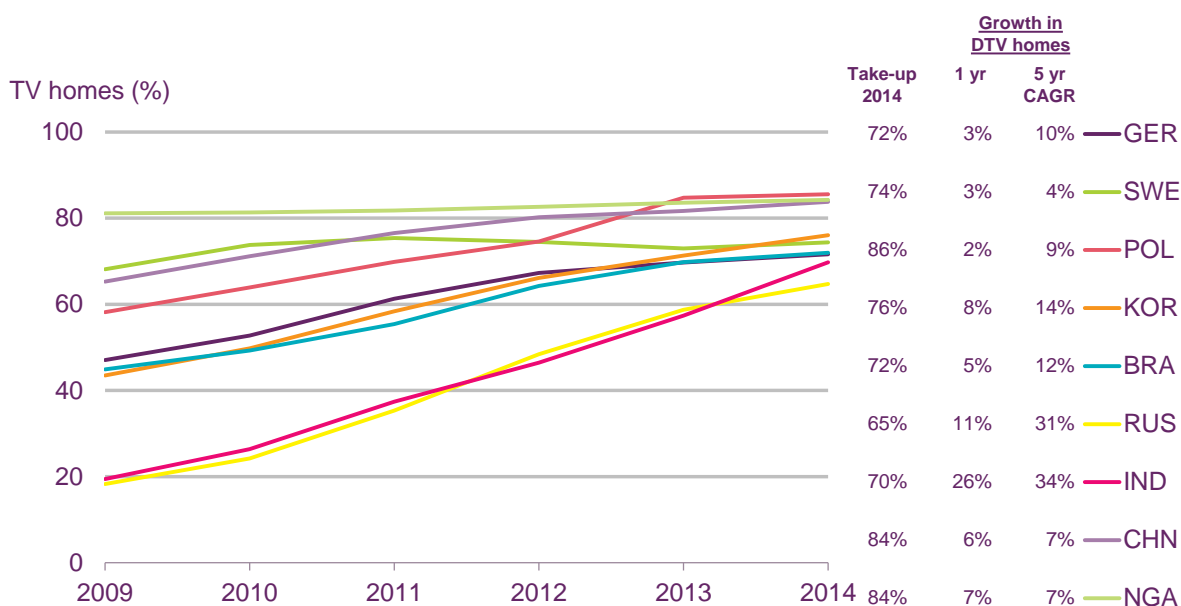


Source: IHS/ industry data/ Ofcom

DTV take-up remains below the 87% average for the next nine comparator countries, although these are inevitably the markets that have the most room for growth. Indeed most of the DTV growth among these countries occurs as the number of overall TV homes goes up.

India has had the greatest year-on-year average growth in the number of DTV homes since 2009 (34%); growth from 2013 to 2014 was 26%, as the third phase of India's cable digitisation programme continues.

Figure 3.24 Take-up of digital television: the next nine comparator countries



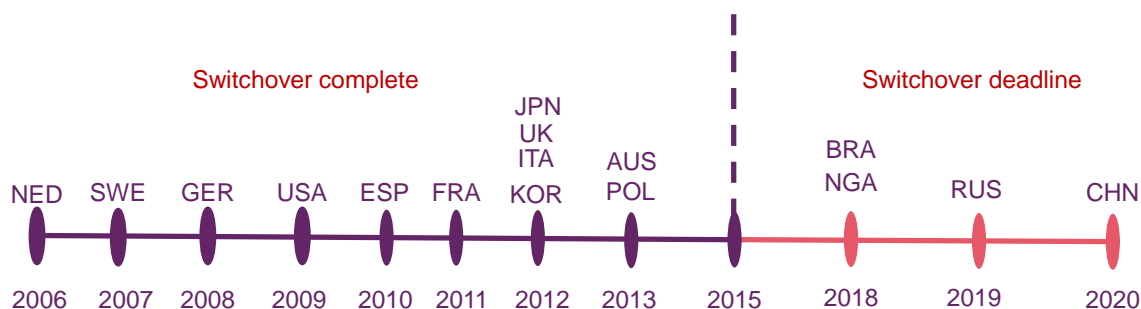
Source: IHS/ industry data/ Ofcom

Most comparator countries have completed digital switchover

Many countries completed digital switchover in 2012 and 2013, and Brazil and Nigeria are the next two comparator countries scheduled to complete digital switchover - in 2018.

India is the only one of our comparator countries which has not yet set a final date for analogue terrestrial switch-off. This is because the Indian Government has prioritised digital switchover for the cable platform; the process is ongoing. Singapore is the other comparator country not featured in Figure 3.25; although it has an official switchover deadline of 2020, all TV services have been provided digitally since 2013.

Figure 3.25 Timeline for digital switchover, by country and date



Source: IHS / industry data / Ofcom

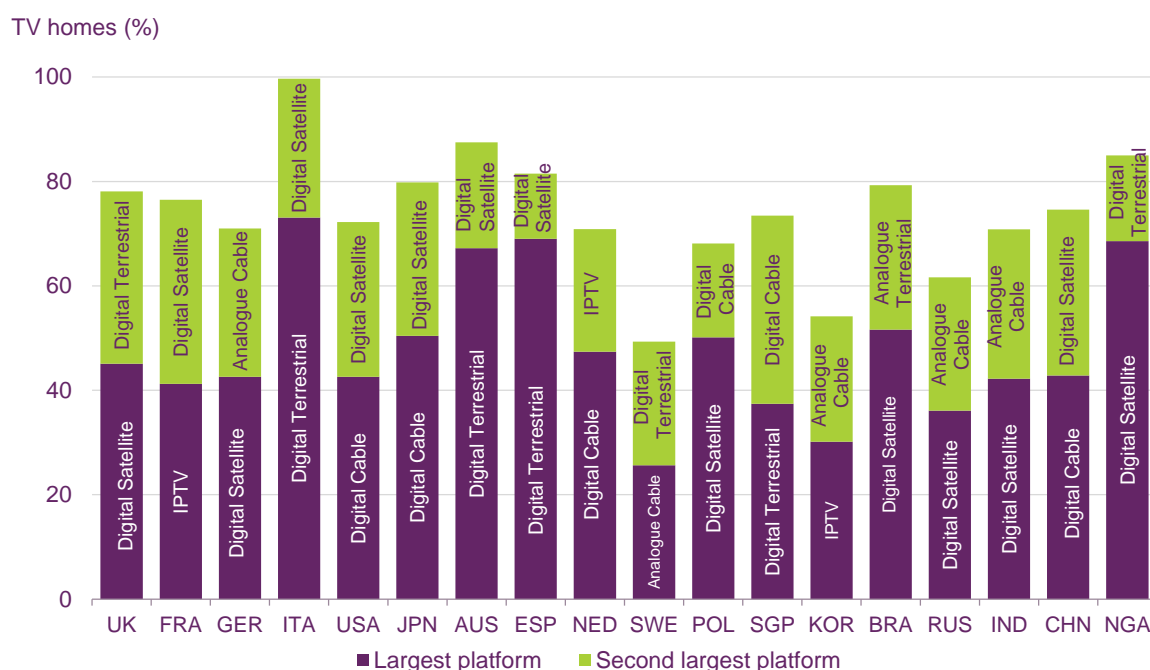
3.3.3 TV platform mix across comparator countries

Digital satellite was the most popular TV platform in seven comparator countries in 2014

In 2014, digital satellite was the most popular TV platform in seven of the 18 comparator countries: the UK, Germany, Poland, Brazil, Russia, India and Nigeria. It was also the second most popular platform in a further seven countries, as shown in Figure 3.26.

Both digital cable and digital terrestrial were the most popular platforms in four countries in 2014, while IPTV was the most popular platform in France and South Korea. Sweden was the only country to have an analogue platform as its most popular method of viewing TV on a main set in 2014, with the cheap analogue cable platform remaining popular there.

Figure 3.26 Most popular TV platform: 2014



Source: IHS/ industry data/ Ofcom

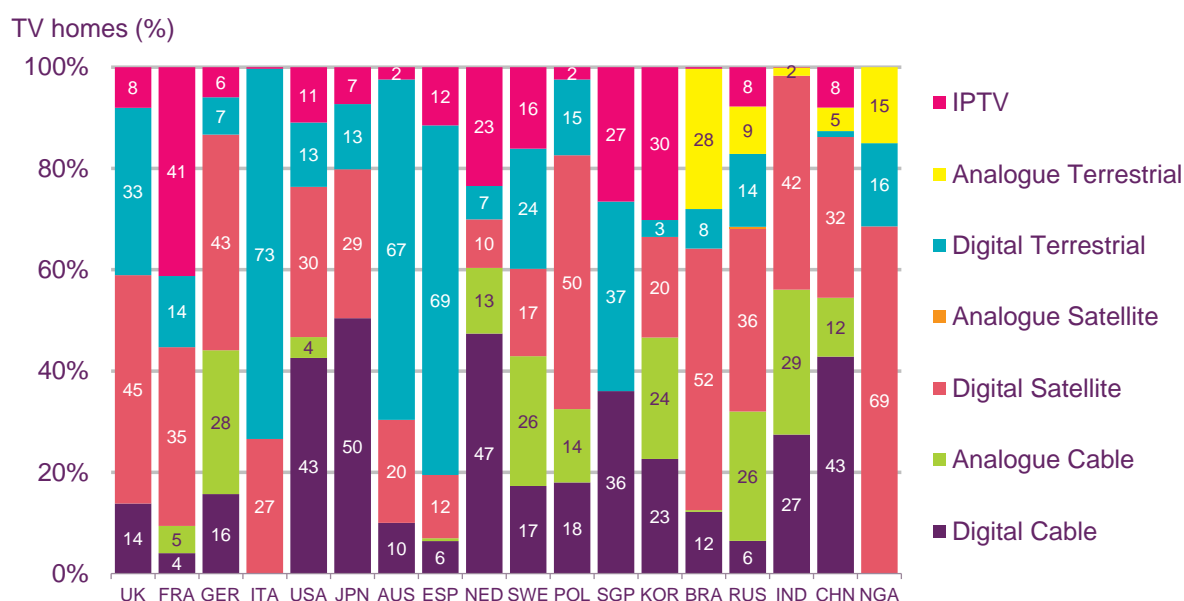
The platform mix on main sets varies across the comparator countries

Digital terrestrial continues to dominate the TV markets in Italy (73% take-up in 2014), Spain (69%) and Australia (67%), while it remains strong in the UK and Singapore, with 33% and 37% take-up respectively.

Digital satellite is the only other platform to dominate main-set TVs in any of the comparator countries: in Nigeria (69%), Brazil (52%) and Poland (50%), while with 50% share of main sets, digital cable is the most popular platform in Japan.

Other than these examples, there is a healthy blend of TV platforms in most of the comparator countries (Figure 3.27), both among those which have completed digital switchover and those which are in the process of doing so.

Figure 3.27 TV platform take-up: 2014



Source: IHS/industry data/Ofcom. Note: Digital terrestrial includes additional paid for services such as Top Up TV. Digital satellite includes free-to-air as well as paid-for services.

There was a clear move from analogue to digital platforms among the BRIC countries and South Korea in 2014

In 11 of our comparator countries there was a greater proportion of digital TV households in 2014 than in 2013. The move to digital platforms came predominantly at the expense of former analogue cable households, while there was also a migration from analogue terrestrial households in countries that are yet to complete their digital switchover.

The greatest overall shift in analogue to digital TV households was in India (a 12pp increase) due to the ongoing digital cable switchover process mentioned above. Russia had the next highest rate of migration, with a 6pp annual increase, digital satellite proving to be the main beneficiary of the move.

Looking at individual digital platforms, the number of UK digital terrestrial homes decreased by 4pp in 2014, mainly to the benefit of IPTV platforms, the number of which increased by 3pp year on year. This can be attributed to the growth in BT TV and TalkTalk subscriber numbers throughout 2014, as the companies developed their triple-play bundles. Spain's IPTV growth is discussed in more detail in the next section.

China saw a shift towards digital cable at the expense of digital satellite in 2014 following support for the sector from the Chinese government, to enable it to compete with the IPTV offerings from the large telecoms companies.

Figure 3.28 Year-on-year changes in platform take-up, by country and platform: 2013-2014

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	NED	SWE	POL	SGP	KOR	BRA	RUS	IND	CHN	NGA
Digital terrestrial	-4	-2	0	0	0	0	-1	-7	-1	0	2	0	-3	2	0	0	0	4
Digital satellite	2	1	0	0	0	0	0	0	0	0	-2	0	0	-1	3	3	-3	-3
Digital cable	0	0	1	0	1	0	0	0	-1	0	0	0	2	1	2	10	4	0
IPTV	3	1	1	0	1	1	1	7	3	2	0	0	5	0	1	0	1	0
Total digital	0	0	2	0	1	0	0	0	1	1	1	0	5	2	6	12	2	1
Analogue cable	0	0	-2	0	-1	0	0	0	-1	-1	-1	0	-5	0	-2	-11	-4	0
Analogue satellite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Analogue terrestrial	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-4	-1	1	-1
Total analogue	0	0	-2	0	-1	0	0	0	-1	-1	-1	0	-5	-2	-6	-12	-2	-1

Source: IHS / industry data / Ofcom. Note: Figures represent percentage point increase across all TV homes

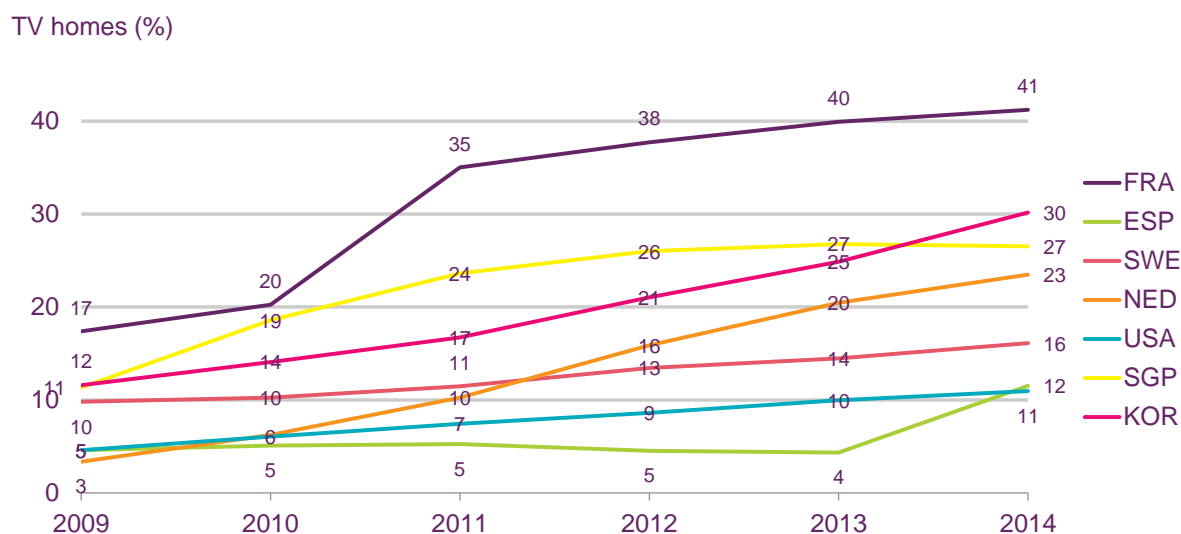
IPTV continued to grow as the primary TV platform in many countries

Internet protocol television (IPTV) is the term used to describe the television platform that delivers channels to viewers using internet protocol (IP) technology over a broadband connection. For the purposes of this report, hybrid systems such as BT TV in the UK (i.e. those that provide television services through both an aerial and an IP connection) are considered as IPTV platforms.

In 2014, IPTV continued to compete with digital platform technologies, encouraged by the growth of triple-play bundled services in countries with high-bandwidth infrastructure. Indeed, in France and South Korea, IPTV was the most popular TV platform, with take-up of 41% and 30% respectively.

Take-up on main TV sets was at least 10% in seven of the comparator countries in 2014, all of which are featured in Figure 3.29. While growth has been gradual in most countries, there was a notable annual increase in take-up in Spain; from 4% to 12%, due to the increased triple-/quad-play offerings from Telefonica under its Movistar brand.

Figure 3.29 IPTV take-up on main TV sets in countries where take-up was at least 10% in 2014



Source: IHS/ industry data/ Ofcom

3.3.4 Pay-TV take-up

In 2014, 66% of the TV households among comparator countries used a pay-TV service

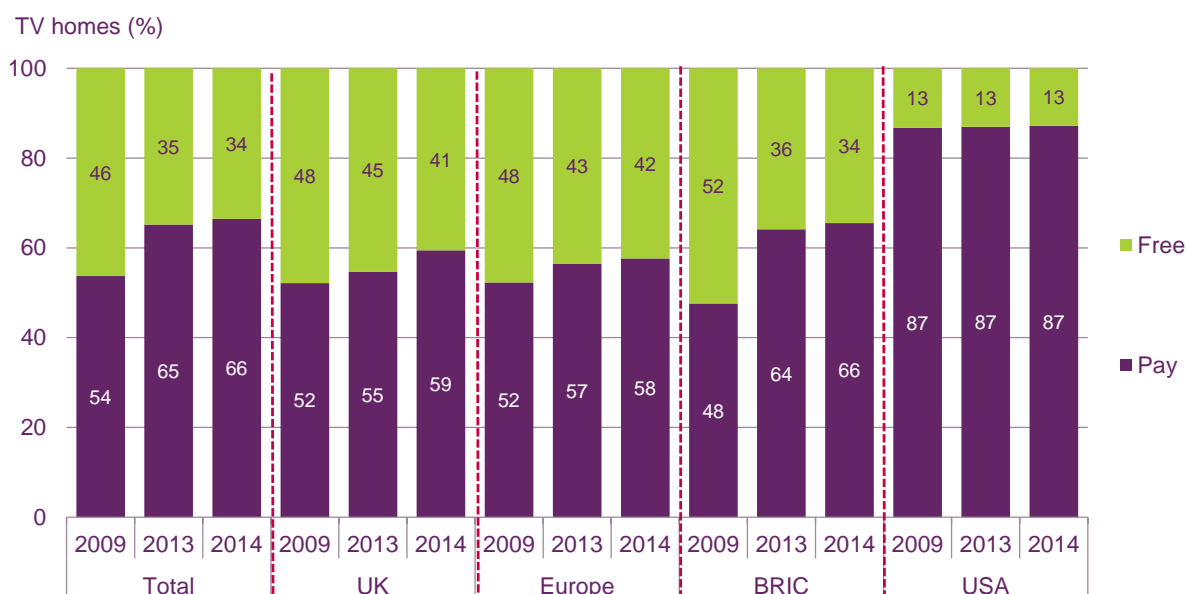
The popularity of pay-TV across comparator countries is influenced by a range of factors, including the availability of free-to-view channels, the exclusive rights that pay-TV operators may have to particular programmes or types of content, and the presence or lack of publicly-funded television channels.

Among the 18 comparator countries in this report, the take-up of pay television has increased by 12pp from 2009, to 66% of all TV households in 2014.

Looking at the European comparator countries, the UK had an above-average take-up of pay-TV in 2014 (59% compared to the rest-of-Europe figure of 58%), in contrast to 2013, when the UK was below average compared to the other European countries (55% vs. 57%). The strong annual growth in the UK pay-TV market has been driven by the jump in IPTV platform take-up for both BT and TalkTalk.

The pay-TV market remains strong in the US, with the 87% rate of take-up remaining the same as it was in 2009, while there continues to be growth across the BRIC countries – from 48% take-up in 2009 to 66% in 2014.

Figure 3.30 Take-up of pay-TV among groups of comparator countries



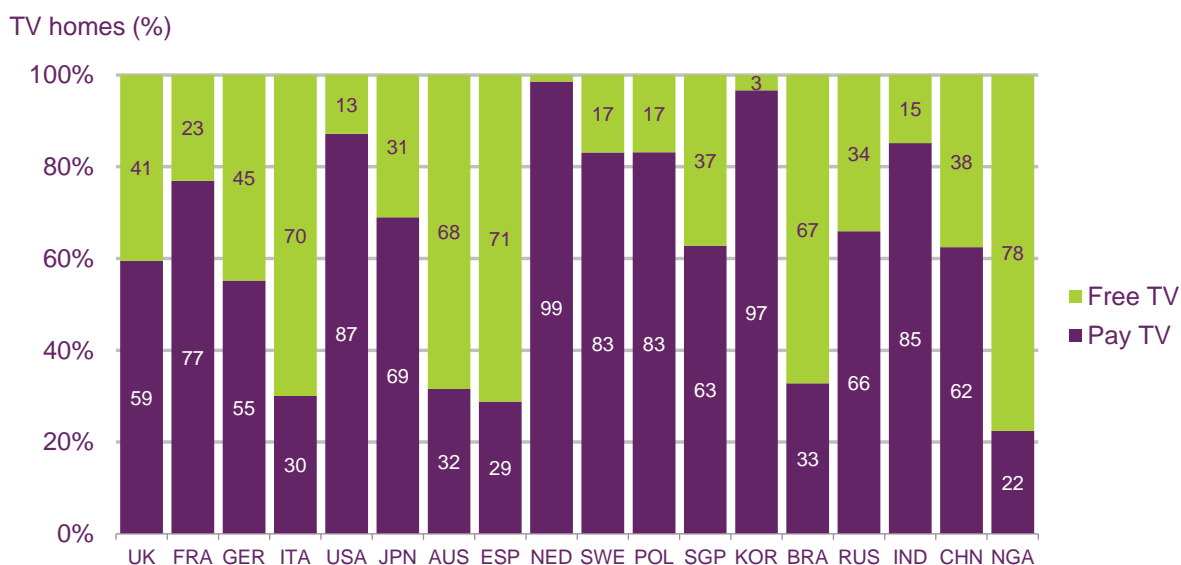
Source: IHS / industry data / Ofcom. Note: 'Europe' in this context means those European countries within our comparator set; France, Germany, Italy, Spain, Netherlands, Sweden and Poland. 'Total' in this context means the 18 countries in this report's comparator set.

In 2014, the majority of the TV homes in 13 of the 18 comparator countries paid for additional TV services

A substantial number of people were willing to pay for additional channels in 2014. but it is worth remembering that the characteristics of pay-TV vary across our comparator countries. For instance, pay-TV in the US and the UK provides access to various bundles of additional channels in exchange for payment, while in the Netherlands and Sweden, consumers can pay a small 'access charge' in return for a limited number of channels on a cable package.

The greatest levels of pay-TV take-up were found in the Netherlands (99% take-up), South Korea (97%), the US (87%), India (85%), Sweden and Poland (both 83%) at the end of 2014. Free-to-air television remained more popular than pay-TV services in five of our comparator countries in 2014: Italy (70%), Australia (68%), Spain (71%), Brazil (67%) and Nigeria (78%).

Figure 3.31 Take-up of pay and free-to-air television: 2014



Source: IHS/ industry data/ Ofcom

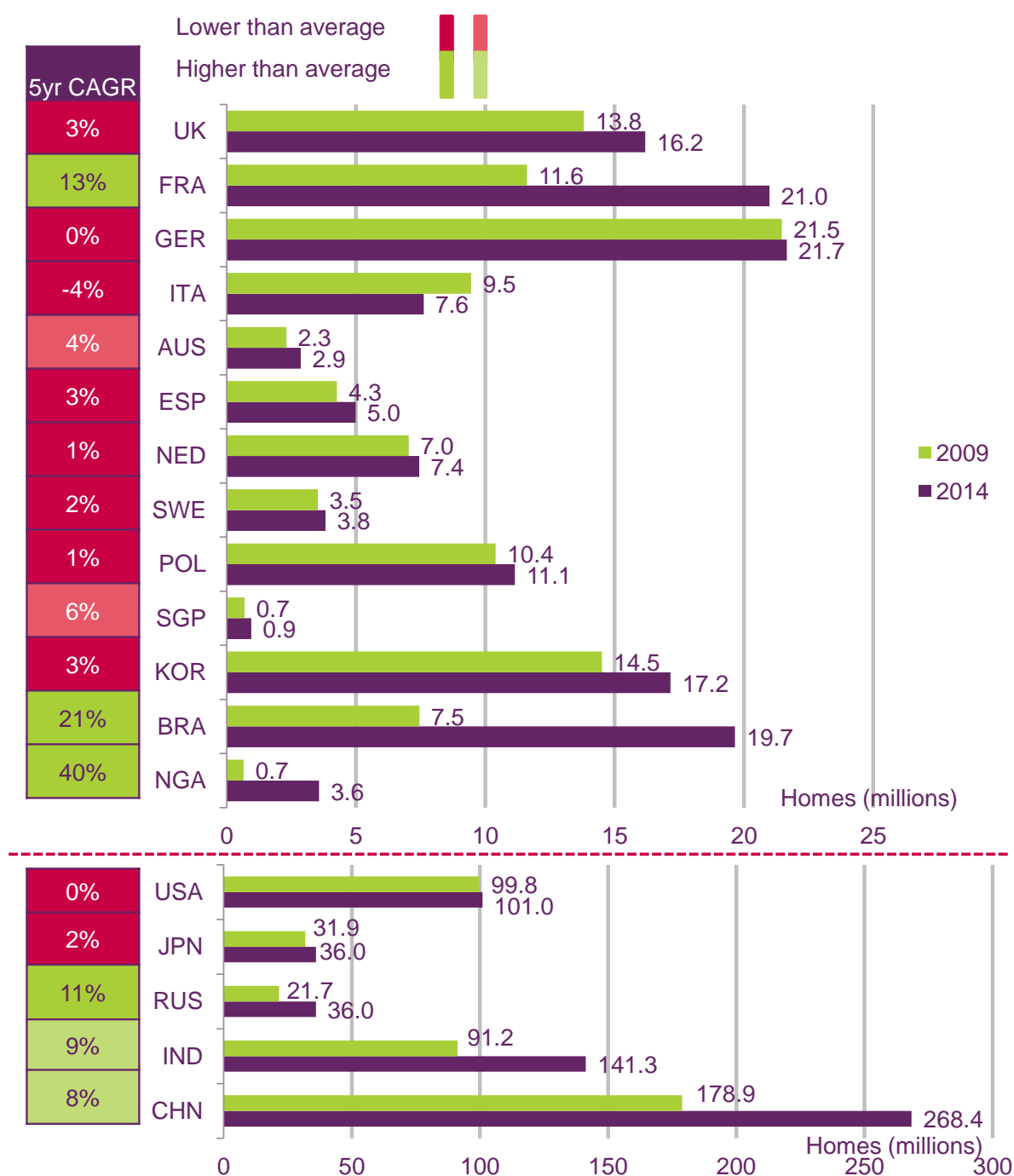
Across the period from 2009 to 2014, Brazil and Nigeria saw the greatest average annual increases in pay-TV take-up

Looking at the five-year picture, it is clear that the greatest levels of growth in pay-TV take up has been in markets where free-to-air TV has traditionally had a stronger hold. Indeed, Nigeria and Brazil had average annual increases of 40% and 21% respectively from 2009 to 2014.

France was the only European country among the comparator countries in which there was an above-average CAGR figure of growth across the same period. This represents the increasing popularity of IPTV in France, which is an entirely pay-TV platform.

Italy had an average annual decrease of 4% in pay-TV households each year from 2009 to 2014. This is linked to the ongoing after-effects of the financial crisis, with new TV households choosing to stick with free-to-air terrestrial services as opposed to the pay-TV alternative.

Figure 3.32 Pay-TV take-up, millions of homes: 2009 and 2014



Source: IHS/ industry data/ Ofcom

3.3.5 Broadcast television viewing

On average, viewers in the comparator countries watched 3 hours 43 minutes of TV per day

Across the ICMR comparator countries¹⁰⁶, each person watched an average of 3 hours 43 minutes of broadcast TV per day in 2014 (Figure 3.33). The UK was broadly in line with the

¹⁰⁶ TV viewing data not included in Eurodata TV Worldwide 2015 report for Singapore, Nigeria or India

average among the ICMR comparator countries, with people watching on average 3 hours 40 minutes of television a day in 2014. The US had the highest level of TV viewing of all the comparator countries (4 hours 42 minutes) and Sweden the lowest (2 hours 33 minutes).

Comparing 2014 to 2013, seven of the 15 comparator countries had a year-on-year decline in daily TV viewing minutes per head. The UK had the largest proportional decline, with TV viewing falling by 4.9% (11 minutes). Some of the UK decline may be explained by increased viewing of audio-visual content on tablets and smartphones and an increase in subscription VoD viewing, as well as falling unemployment and the effect of the weather on TV viewing.¹⁰⁷

The US and Sweden followed the UK, with the joint second largest proportional decline, both down by 3.8% year on year. Daily TV viewing increased in Poland (by 5.3%), Brazil (3.2%), Australia (2.0%), South Korea (0.5%), Italy (0.4%) and Russia (0.4%).

Across the European ICMR comparator countries, four showed a decline in viewing, while in Poland, the Netherlands and Italy viewing increased, and in Germany it remained level. Average daily viewing per head across the European comparator countries was highest in Italy (at 4 hrs 22 mins/day), followed by Poland (4 hrs 20 mins/day), and was lowest in Sweden (2 hrs 33 mins/day). Viewing in the UK (3 hrs 40 mins/day) was in line with France and Germany (both at 3 hrs 41 mins/day).

Among the BRIC countries,¹⁰⁸ Brazil was the only country to have an increase in viewing between 2013 and 2014, with daily minutes increasing by 3.2% to 3 hours 44 minutes. Daily TV viewing remained broadly unchanged in Russia, at 3 hours 59 minutes per person per day, while viewing in China decreased by 1.3% to 2 hours 37 minutes.

Looking at the Asia Pacific countries,¹⁰⁹ daily viewing in Australia¹¹⁰ increased by 2.0% to 3 hours 24 minutes a day while viewing in Japan¹¹¹ and South Korea was broadly unchanged (at 4 hrs 24 mins/day and 2 hrs 16 mins/day respectively).

¹⁰⁷ For an in-depth look at the recent decline in TV set viewing in the UK, see section 1.4 *Changes in TV viewing habits* in Ofcom's Communications Market Report 2015:

http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr15/CMR_UK_2015.pdf

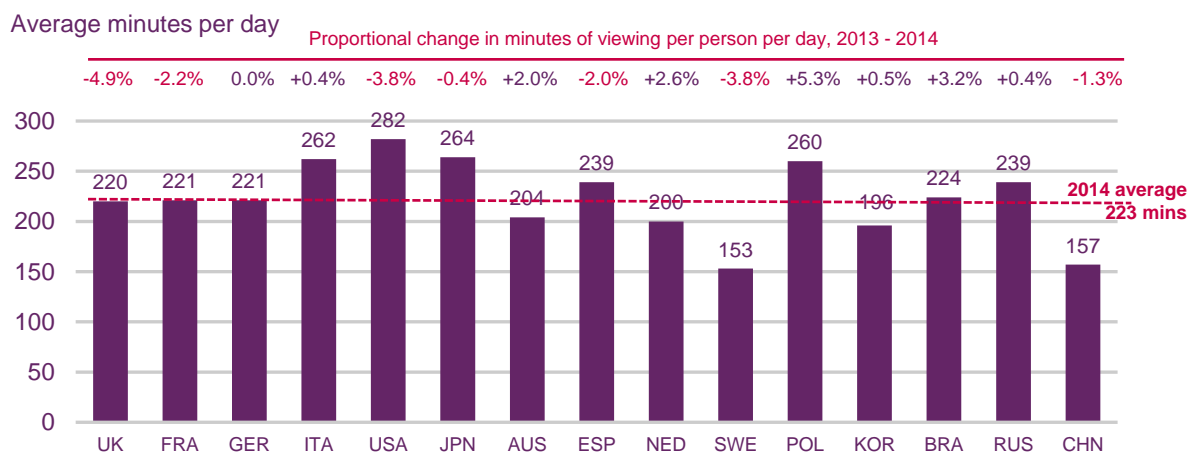
¹⁰⁸ BRIC countries include Brazil, Russia and China. TV viewing data for India were not available.

¹⁰⁹ Asia Pacific countries include Japan, Australia and South Korea. TV viewing data for Singapore were not available.

¹¹⁰ Australia data relates to viewing in the Australia Regional area and is calculated on the regions Queensland, Northern New South Wales (NSW), Southern NSW, Victoria & Tasmania and Regional Western Area. Note: the definition of Australia regional changed in 2014 to include Regional Western Australia. 2013 data for Australia Regional in all charts reflects this change. The 2014 ICMR report was based on Australia Regional excluding Regional Western Australia.

¹¹¹ Japan data relates to viewing in the Japan Kanto region. Japan Kanto is considered the main TV market in Japan, although it is representative of the Japan Kanto region only, and should not be considered as equivalent to nationally representative data.

Figure 3.33 Average minutes of broadcast TV viewing per person per day: 2013-2014



Source: Médiamétrie, Eurodata TV Worldwide – One Television Year in the World 2015. Viewing in France relates to France National. Japan data relate to viewing in the Japan Kanto region. Viewing in Australia relates to Australia Regional which is calculated on the regions: Queensland, Northern NSW, Southern NSW, Victoria & Tasmania and Regional Western Area. The definition of Australia regional changed in 2014 to include Regional Western Australia. 2013 data for Australia Regional throughout all charts reflects this change. The 2014 ICMR report was based on Australia Regional excluding Regional Western Australia.

Most popular national channels

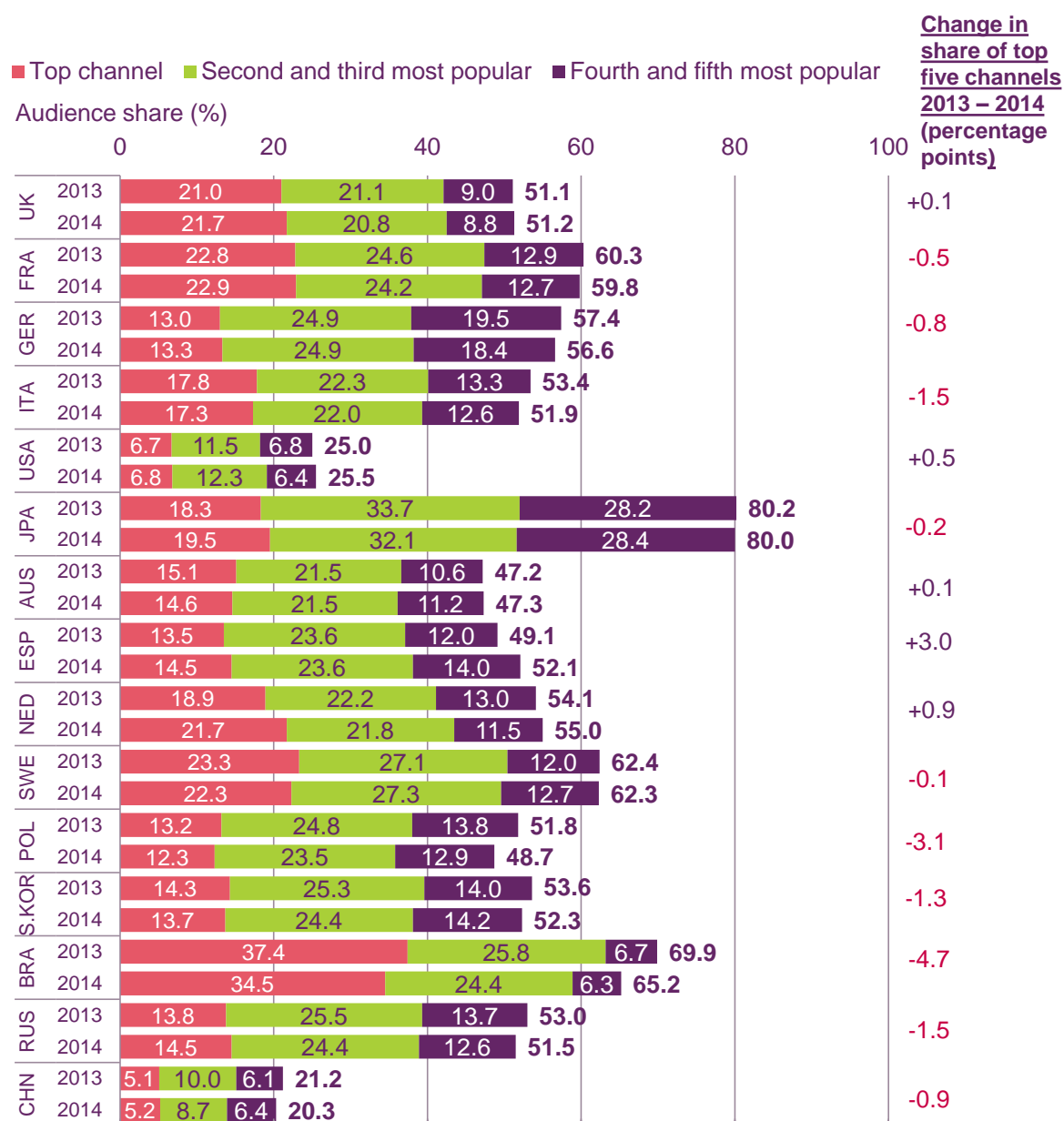
As the number of television channels increases, patterns of consumption change. In order to gauge the impact of channel expansion and choice, we compare the year-on-year performance of the top five highest-ranking channels by market (Figure 1.33).

In the UK the main five public service broadcasters (PSB) channels¹¹² made up the top five TV channels, despite digital TV having reached universal coverage in 2012. Viewing to the main five PSB channels accounted for over half of all viewing (51.2%) in the UK in 2014, in line with 2013 (51.1%). BBC One remains the most-watched channel in the UK, with a 21.7% share of total viewing, followed by ITV, BBC Two, Channel 4 and Channel 5, in that order.

We can see a pattern of reduction in the collective share of the top five TV channels in ten of the 15 comparator countries. Brazil had the largest percentage point (pp) decline in share of overall viewing to its top five channels, down by -4.7pp from 69.9% in 2013 to 65.2% in 2014. Poland had the second-largest percentage point decline in share of overall viewing to its top five channels, down by 3.1pp after having completed digital switchover halfway through 2013. Conversely, the UK (up 0.1pp), the US (0.5pp), Australia (0.1pp), Spain (3.0pp) and the Netherlands (0.9pp) all increased their collective share of viewing to their top five channels.

¹¹² BBC One, BBC Two, ITV, Channel 4 and Channel 5, including HD variants but excluding +1s.

Figure 3.34 Top five channels' audience share: 2013-2014



Source: Médiamétrie, Eurodata TV Worldwide – One Television Year in the World 2015. Viewing in France relates to France National. Japan data relate to viewing in the Japan Kanto region. Viewing in Australia relates to Australia Regional which is calculated on the regions Queensland, Northern NSW, Southern NSW, Victoria & Tasmania and Regional Western Area.

Publicly-owned channels in 2014

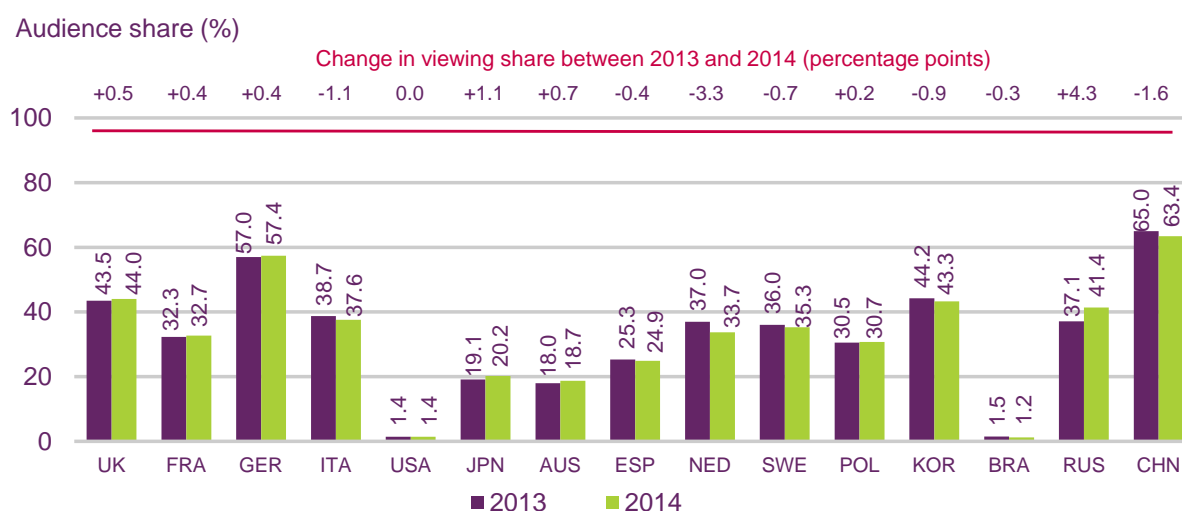
Among the ICMR comparator countries, the share of viewing of publicly-owned channels (including channels owned by other countries where available) was highest in China (63.4%), followed by Germany (57.4%) and the UK (44.0%).¹¹³ Viewing of publicly-owned channels was lowest in Brazil (1.2%) followed by the US (1.4%) (Figure 3.35).

¹¹³ In the UK, 'publicly-owned channels' refers to all BBC and Channel 4 channels as well as S4C, PBS America, PTV Global, Russia Today and Euronews. The 44% share attributed to publicly-owned channels in 2014 were to the domestic broadcasters.

Comparing 2014 to 2013, viewing of publicly-owned channels varied among the 15 ICMR comparator countries; seven countries had an increase in viewing of publicly-owned channels, while seven had a decrease, and the US was unchanged.

Viewing share to publicly-owned channels increased in the UK, France, Germany, Japan, Australia, Poland and Russia. Russia had the largest percentage point increase (4.3pp) followed by Japan, up by 1.1 percentage point. The Netherlands had the largest decline in viewing share to publicly-owned channels between 2013 and 2014 (down by 3.3pp).

Figure 3.35 Viewing of publicly-owned channels



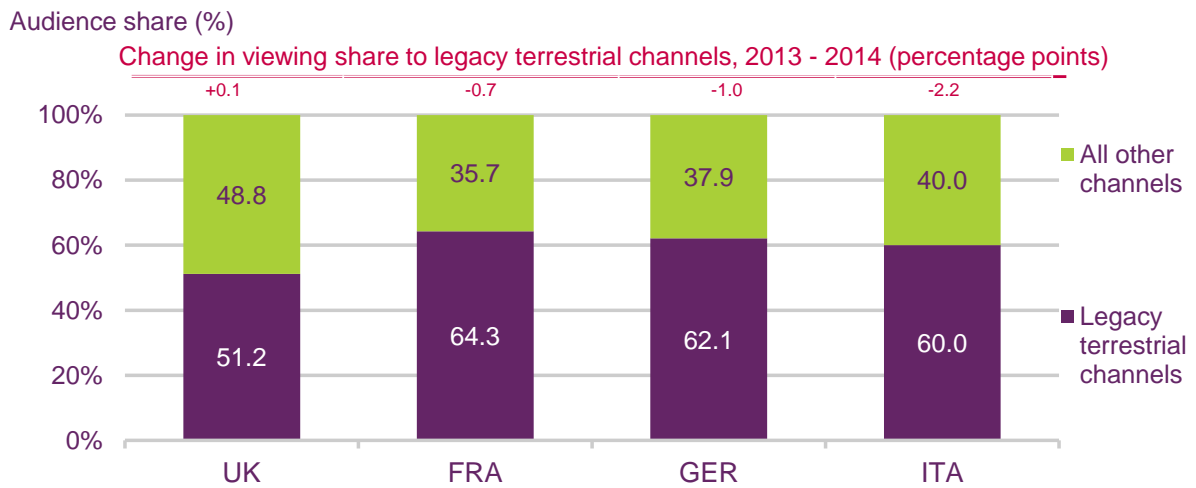
Source: Médiamétrie, Eurodata TV Worldwide - One Television Year in the World 2015. Uses the 'status' flag attributed to each channel by country which relates to state ownership. Includes 'domestic public', 'foreign public', 'public' and 'mixed'. 'Domestic public' refers to channels that broadcast locally and are state-owned. 'Foreign public' refers to international public channels. 'Public' refers to channels that are difficult to label between 'domestic public' and 'foreign public', such as BBC America. 'Mixed' refers to channels with a hybrid status (mix of public and private funding). 'Viewing in France' relates to France National. Japan data relates to viewing in the Japan Kanto region, considered to be the main TV market in Japan (national data are not available). Viewing in Australia relates to Australia Regional, which is calculated on the regions Queensland, Northern NSW, Southern NSW, Victoria & Tasmania and Regional Western Area. Note: Change in viewing share may not appear to add up with y-o-y 2013 to 2014 figures, due to rounding of decimal places.

Legacy terrestrial channels make up the majority of viewing

The legacy terrestrial channels continue to command over half of viewing share in the UK, France, Germany and Italy. In the UK, the legacy terrestrial channels, BBC One, BBC Two, ITV, Channel 4 and Channel 5, together command a share of 51.2%, in line with 2013 (51.1%). For the second consecutive year the largest year-on-year decrease in share of viewing to legacy terrestrial channels was in Italy, where the collective share of RAI 1, RAI 2, RAI 3, CANALE 5, ITALIA 1, RETE 4 and LA7 decreased by 2.2 percentage points compared to 2013.

Among the comparator countries in Figure 3.36, the legacy terrestrial channels in France have maintained the largest share of total viewing (64.3%), followed by those in Germany (62.1%) and Italy (60.0%).

Figure 3.36 Legacy terrestrial vs. all other channels' share



Source: Médiamétrie, Eurodata TV Worldwide - One Television Year in the World 2015. Legacy terrestrial channels are based on MediaMetrie's definition of channels considered to be 'historical leaders'.

UK= BBC One, BBC Two, ITV, Channel 4, Channel 5 (inc HD variants, exc +1s)

Germany = ARD, ARD 3, ZDF, RTL, Sat1, Pro7

France = TF1, France 2, France 3, Canal+, France 5 24/24H, Arte 24/24H, M6

Italy = Rai Uno, Rai Due, Rai Tre, Canale 5, Italia 1, Rete 4, La 7



International Communications Market Report 2015

4 Radio and audio

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4.1 Key market developments in radio and audio

4.1.1 Industry metrics and summary

This section provides a global overview and country-level analysis of radio and audio markets in the 18 comparator countries. It focuses on three topics – key market developments in the sector, industry revenues, and trends among radio and audio consumers.

- The *key market developments* section looks at the growth in radio revenues among our comparator countries.
- The *radio industry* section examines global radio revenues and looks at revenues among our comparator countries in 2014 in detail, and at the availability of broadcast radio in each country.
- The *audio consumer* section presents the findings of our online consumer research into radio set ownership, radio listening and the use of connected devices to listen to radio and other audio content such as audio streaming.

Figure 4.1 Key radio metrics: 2014

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	NED	SWE	POL	SGP	KOR	BRA	RUS	IND	CHN	NGA
Total industry revenue (£bn)	1.2	1.1	3.0	0.4	12.5	0.7	0.6	0.3	0.3	0.3	0.1	0.1	0.2	0.3	0.3	0.2	1.3	0.1
Revenue change (% YOY)	3.6	1.9	3.4	-1.5	3.4	-2.4	3.1	1.9	1.3	5.7	0.4	4.0	2.8	4.3	7.0	14.0	9.8	4.5
Revenues per capita (£)	18.7	16.7	36.4	5.9	39.3	5.5	26.3	7.4	16.0	29.4	2.7	16.0	3.1	1.6	2.0	0.2	1.0	0.3
% income from public licence fees	60.0	38.9	79.3	23.5	N/A	5.2	N/A	N/A	30.6	78.1	6.5	N/A	22.3	N/A	N/A	N/A	N/A	N/A

Sources: Ofcom, PwC. All figures are nominal.

The key developments during the year include:

- **Radio revenue has increased each year since 2010.** Combined radio revenue among the 18 comparator countries analysed in this report grew again in 2014, increasing by 3.5% to reach £22.9bn.
- **Revenue growth was due to an increase in all three types of revenue: advertising, subscription and public radio licence fees.** The largest absolute increase was in the US, where advertising and subscription revenues grew by a combined £412.3m.
- **Among countries with public radio licence fees, absolute revenue growth was highest in Germany.** Revenue grew by £99m in Germany in 2014, an increase of

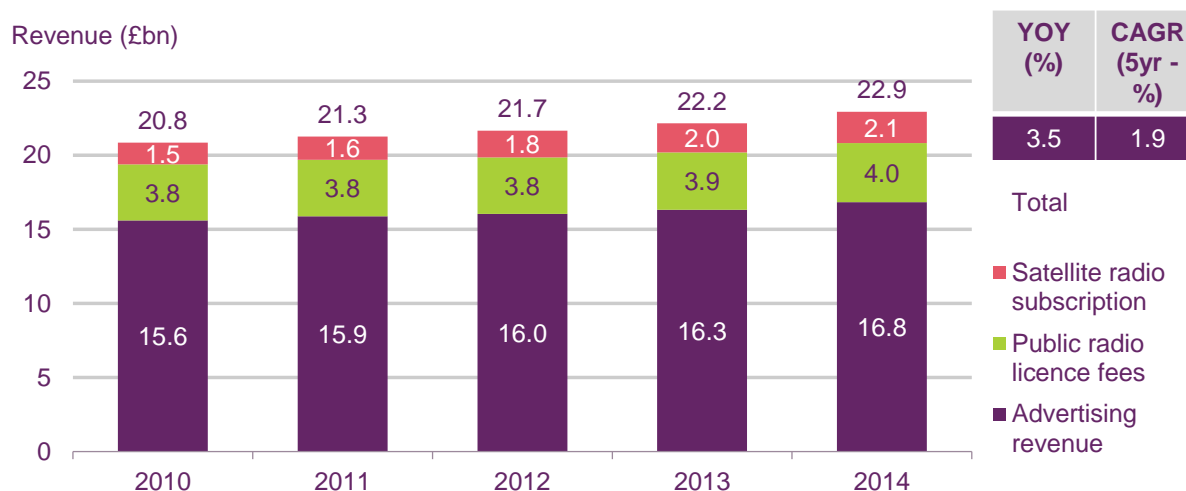
3.4% on 2013. Sweden and the UK also saw significant growth in 2014 for both advertising and public radio licence fee revenue, with total growth of 5.7% and 3.6%, respectively.

4.1.2 Radio revenues among comparator countries was up by 3.5% in 2014

Radio revenue has increased each year since 2010

Total radio revenues among the 18 comparator countries analysed in this report grew again in 2014, increasing by 3.5% (Figure 4.2). All revenue streams increased, particularly advertising revenue, growing by 3.2% to reach £16.8bn, alongside a 3.1% increase in public radio licence fees. The US is still the only one of our comparator countries that has satellite radio subscription as a revenue stream, growing by 7.4% in 2014 to £2.1bn.

Figure 4.2 Total radio revenues for the 18 comparator countries

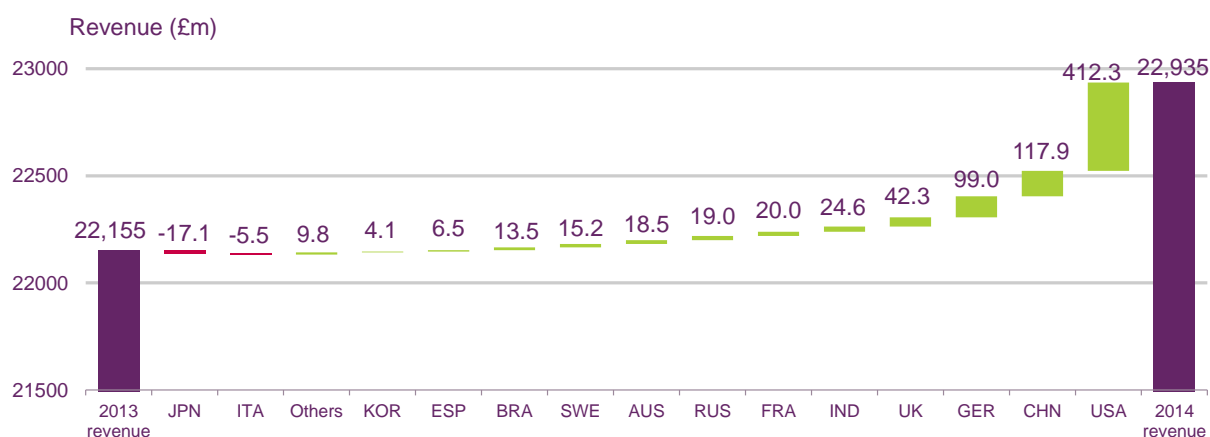


Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.648 to the GBP, representing the IMF average for 2014. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom. All figures expressed in nominal terms.

Revenues fell in Japan and Italy, but this was offset by revenue growth among all other comparator countries

As Figure 4.3 illustrates, ten of the 18 comparator countries reported revenue increases in excess of £10m between 2013 and 2014. The largest absolute increase was in the US, where advertising and subscription revenues both increased. The four BRIC countries were among those reporting increases in excess of £10m. Germany reported the largest increase in revenue among European countries, predominantly arising from an increase in public radio licence fees. The two countries where revenue fell were Italy and Japan; these were both a result of declining advertising revenues. The UK reported a notable increase of £42.3m, following a drop in revenue of £25m in 2013, mainly due to an increase in national advertising.

Figure 4.3 Absolute changes in radio revenue, by country: 2013-2014



Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.648 to the GBP, representing the IMF average for 2014. 'Others' are the comparator countries not set out in the chart where revenue change in each was less than £4m. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom. All figures expressed in nominal terms.

Revenue growth is due to increases across all three types of revenue

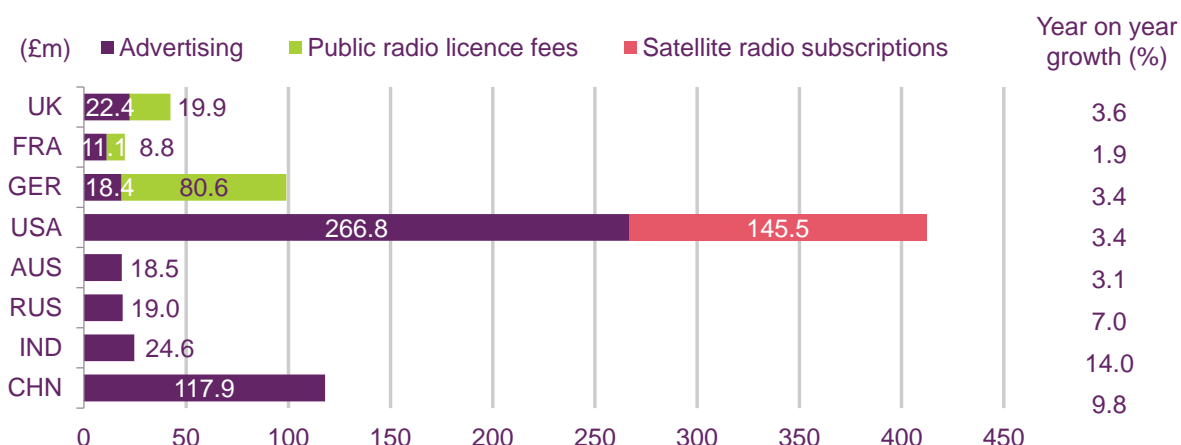
As Figure 4.4 shows, the increase in revenue was led by the US, where advertising and subscription revenues both increased. The increase of £266.8m in advertising subscriptions constitutes 2.6% year-on-year growth. Subscription revenues increased by £145.5m in 2014, with year-on-year growth of 7.4%. Sirius XM, the company that provides satellite radio services in the US, increased its subscriber base by 1.75 million in 2014, totalling 27.3 million subscribers in 2014.¹¹⁴

The next largest absolute growth was in China, where advertising grew by £117.9m, constituting year-on-year growth of 9.8%. Russia and India also reported strong growth in advertising revenue. India, in particular, reported significant year-on-year growth of 14%, reflecting the rapidly growing radio industry.

The largest absolute increase in revenue among our European comparators was in Germany (£99.0m), driven by a 3.5% increase in public radio licence fees.

¹¹⁴ Sirius XM, January 7 2015. *Investor Relations*. <http://investor.siriusxm.com/releasedetail.cfm?ReleaseID=890000> [Accessed 29 September 2015].

Figure 4.4 The most substantial absolute increases in radio revenue, by component: 2013-2014



Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.648 to the GBP, representing the IMF average for 2014. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom. All figures expressed in nominal terms.

The largest increase in public radio licence fee revenues in 2014 was in Germany

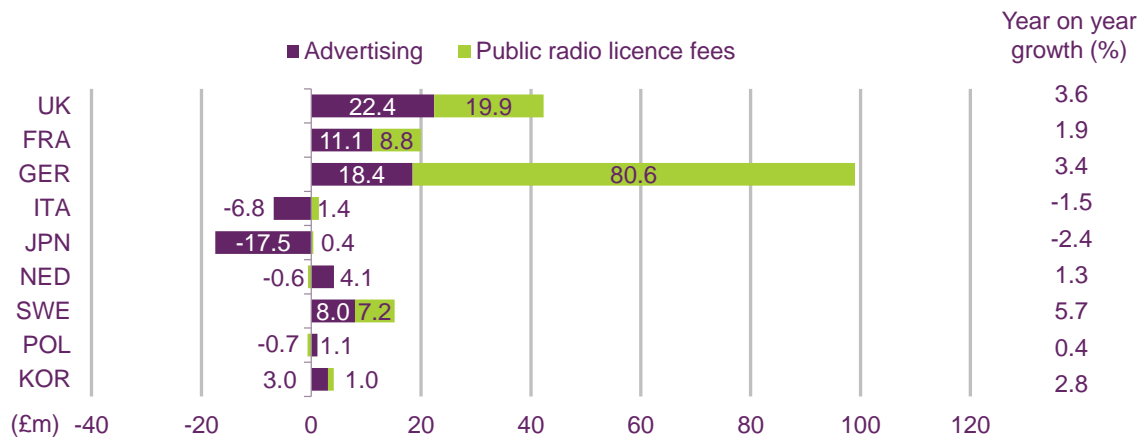
Of the 18 comparator countries, nine of the radio markets are part-funded by public radio licence fees. Year-on-year changes in these countries are set out in Figure 4.5. Germany had the largest absolute growth in revenue among these countries, with £99m growth driven by the £80.6m increase in public radio licence fees. It is possible that this growth in revenue was related to the introduction of the policy of one licence per household.¹¹⁵ Sweden had the largest proportional increase in overall revenue, up by 5.7%.

Of the countries with licence fees, Japan had the largest decline in revenue in absolute terms, with a £17.5m decrease in 2014. Almost of all this is accounted for by a decrease in advertising revenue. This has fallen every year since the start of the global economic downturn in 2009, and is likely to be linked to the ageing radio listenership in Japan, which is not being replaced by the younger generation.¹¹⁶

¹¹⁵ 'Licence fee for citizens', https://www.rundfunkbeitrag.de/e175/e198/Informationsflyer_Buergerinnen_und_Buerger_english.pdf [Accessed 5 October 2015].

¹¹⁶ NHK Broadcasting Culture Research Institute, September 2015. *Present Situation Regarding Television Viewing and Radio Listening: A Summary of the Results of Nationwide Survey on Individual Audience Ratings conducted by NHK in June 2015*, p 8. https://www.nhk.or.jp/bunken/english/reports/pdf/report_15091501.pdf [Accessed 5 October 2015].

Figure 4.5 Absolute changes in radio revenue among comparator countries with public radio licence fees, by component: 2013-2014



Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.648 to the GBP, representing the IMF average for 2014. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom. All figures expressed in nominal terms.

4.2 The radio industry

4.2.1 Introduction

This section looks at the revenues generated by the commercial radio sectors in each comparator country, along with the levels of licence fee funding that are applied to radio services. We also look at the availability of broadcast radio in each country. The main findings include:

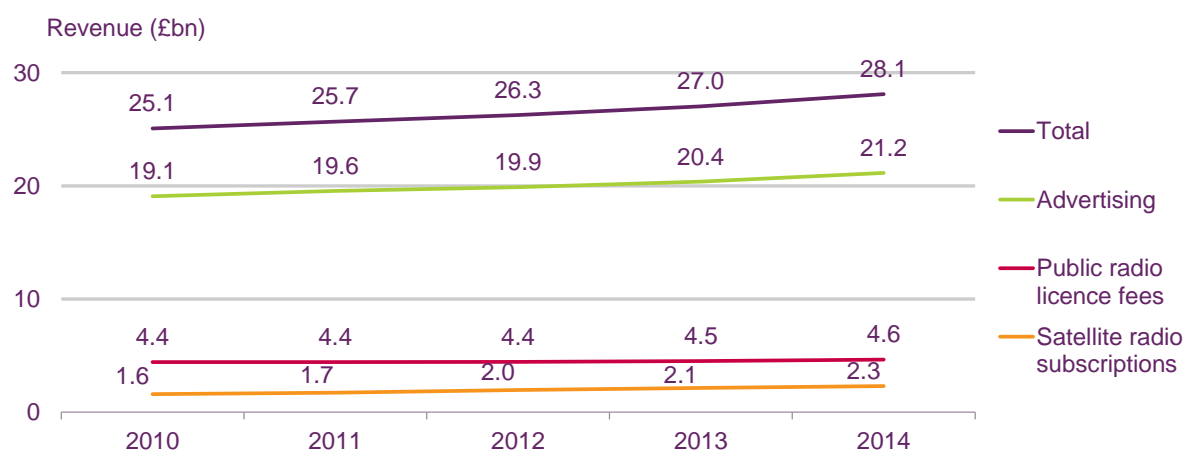
- **Global radio revenues stood at £28.1bn in 2014.** Global radio revenue rose by 3.9% in 2014 to reach £28.1bn. Global revenue has increased each year since 2010, as has each type of radio industry revenue.
- **Sixteen of our 18 comparator countries reported growth in revenue in 2014.** Revenues among the 18 comparator countries featured in this report grew by 3.5%. In the UK, radio revenues increased by 3.6% to £1.2bn, due to increases in national advertising and in public radio licence fees.
- **The only two of our comparator countries where revenue declined were Japan and Italy.** In Japan, there was a proportional decline of £17.1m, a 2.4% decrease on the 2013 figure, while in Italy revenue decreased by £5.5m, a 1.5% decrease year-on-year. These declines were mainly due to decreases in advertising revenue.
- **Revenue growth among the BRIC countries remains high;** India had the highest rate of proportional growth across all of our comparator countries at 14.0%, followed by China at 9.8%.
- **Public radio licence fees contributed the largest proportion of revenues in Germany, Sweden and the UK.** Germany had the highest public funding ratio, with 79% of revenue coming from public radio licence fees. Sweden followed closely with 78%, and in the UK 60% of radio revenues came from public radio licence fees.
- **The number of radio stations broadcasting in China and Nigeria more than trebled between 2009 and 2014,** with increases of 305% and 212%, respectively.
- **The UK had one of the largest proportions of digital broadcast stations among the comparator countries.** The 283 digital radio stations in the UK in 2014 represent 33% of all radio stations. Of all the comparator countries in 2014, this proportion is second only to Germany (37%).

4.2.2 Global radio revenue

Global radio revenues stood at £28.1bn in 2014

Global radio revenue increased by 3.9% in 2014 to reach £28.1bn, as Figure 4.6 shows. Total revenue has increased each year since 2010, and each type of radio industry revenue has also grown year on year. Revenues from advertising, up by 3.8%, continue to contribute the largest proportion of total industry revenue, accounting for just over three-quarters (75.3%) of industry income. Public radio licence fees increased by 2.8% to total £4.6bn in 2014, while satellite radio subscription revenues rose by 7.4% to £2.3bn, representing the largest proportional growth but the smallest share of total revenue.

Figure 4.6 Global radio revenue: 2010-2014



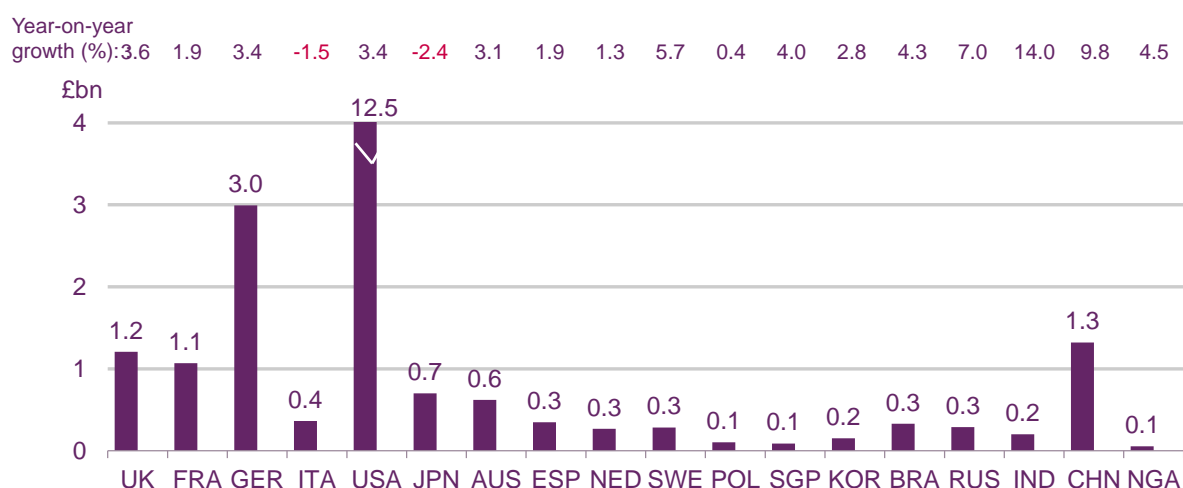
Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.648 to the GBP, representing the IMF average for 2014. All figures expressed in nominal terms.

4.2.3 Revenues among our comparator countries

Sixteen of our 18 comparator countries reported revenue growth in 2014

Revenues among the 18 comparator countries featured in this report grew by 3.5%, as discussed in section 4.1.2. Apart from Italy and Japan, all comparator countries reported an increase in radio revenue in 2014, with the largest proportional growth coming from India (14.0%) and China (9.8%). Overall proportional growth in BRIC countries and Nigeria (8.8%) was greater than overall proportional growth in European comparator countries (2.8%). Revenue growth in the US market, the largest among our comparator countries, grew by £412.3m to £12.5bn, representing a 3.4% increase. The US accounted for 54.7% of the total revenue of the comparator countries as a whole. Revenues in Italy and Japan decreased by 1.5% and 2.4% respectively, predominantly due to a drop in commercial revenue.

Figure 4.7 Radio industry revenues: 2014



Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.648 to the GBP, representing the IMF average for 2014. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom. All figures expressed in nominal terms.

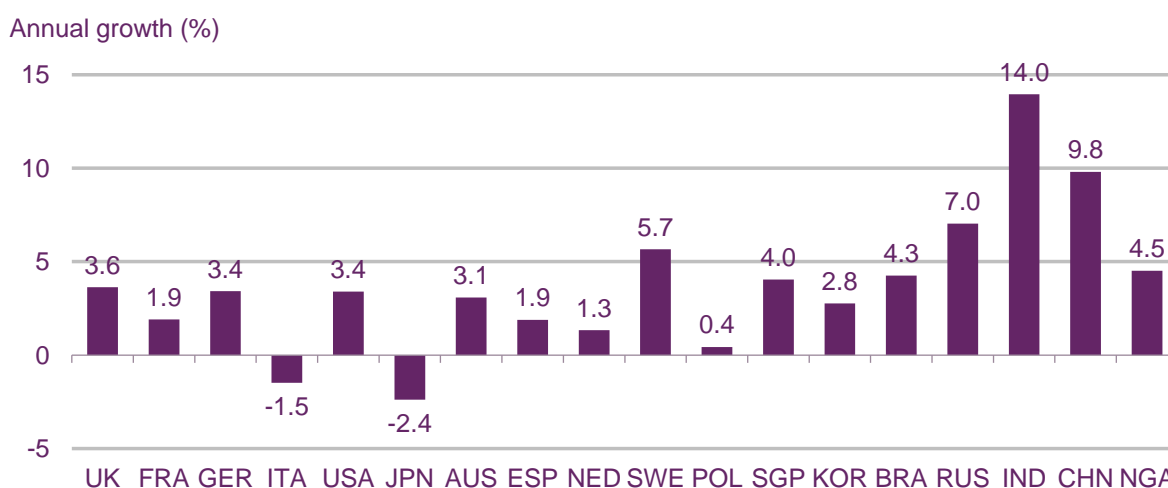
Revenue growth remains high among the BRIC countries and Sweden, while Italy and Japan recorded proportional decline

As Figure 4.8 shows, the BRIC countries include the three fastest-growing markets in 2014. India had the highest rate of growth, at 14.0%, constituting the only double-digit percentage increase in 2014. This growth was a result of the Indian Government's partial auctions across 69 cities, which allowed for a potential of 135 channels, alongside growing demand for radio advertising.¹¹⁷

Of the European comparator countries, Sweden recorded the highest annual growth (5.7%). This may be explained by strong recovery in 2014 following the significant drops in advertising in 2012 and 2013.¹¹⁸

The largest proportional decline was in Japan (2.4%), the only other decline was in Italy (1.5%).

Figure 4.8 Radio industry revenue annual growth: 2013-2014



Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.648 to the GBP, representing the IMF average for 2014. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom. All figures expressed in nominal terms.

Public radio licence fees contribute the largest proportion of revenues in Germany, Sweden and the UK

Of the 18 comparator countries, nine of the radio markets are part-funded by public radio licence fees, and with the exception of South Korea and Japan, all these countries are within Europe. Public radio licence fees constitute the majority of radio revenue in three of these countries: Germany, Sweden and the UK.

Germany has the highest public funding ratio, with 79% of revenues coming from public radio licence fees. Of the markets that are partially public-funded, public radio licence fees contribute the least in Japan (5%) and Poland (7%).

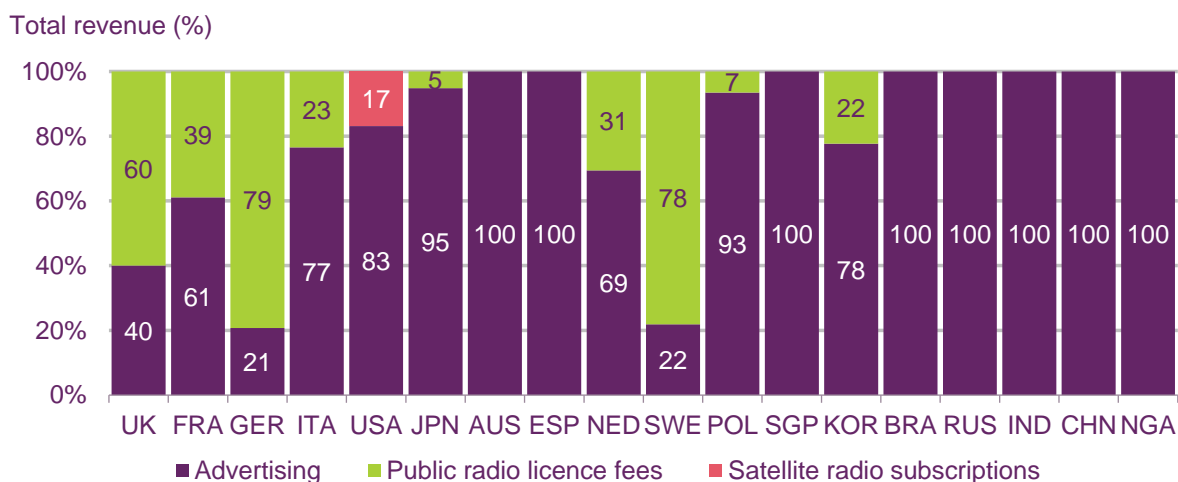
¹¹⁷ See FCCI-KPMG, 2015. *Indian Media and Entertainment Industry Report 2015*, pp 143-155. https://www.kpmg.com/IN/en/IssuesAndInsights/ArticlesPublications/Documents/FICCI-KPMG_2015.pdf [Accessed 30 September 2015].

¹¹⁸ PwC Global Entertainment and Media Outlook 2015-2019 <https://pwc.com/outlook> [Accessed 5 October 2015].

In the UK, three-fifths (60%) of radio revenue comes from public radio licence fees. France and the Netherlands are the only other countries where public radio licence fees account for over 30% of total revenues.

The US is the only comparator country where subscriber-based satellite radio is available; it contributed 17% to total revenues in 2014.

Figure 4.9 Proportion of radio revenue, by source



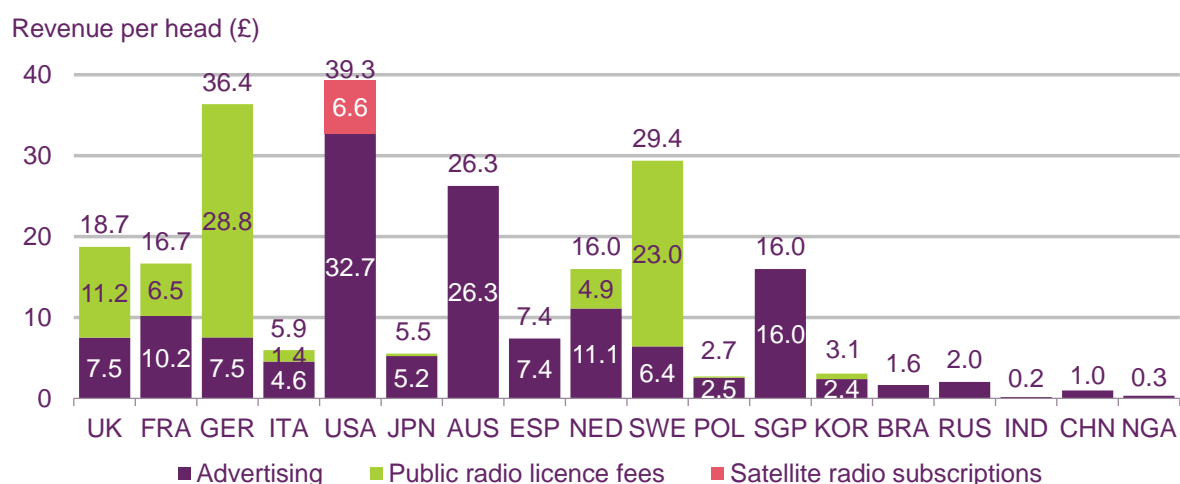
Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.648 to the GBP, representing the IMF average for 2014. Note: (1) The UK radio industry figure is sourced from broadcaster returns made to Ofcom. (2) In Australia, advertising revenue is shown as the sole source of radio revenue. Although there is no licence fee to fund radio or television broadcasting in Australia, the Australian Broadcasting Corporation (ABC) is funded by the Australian Government as part of its budget each year, so publicly-funded radio services are available in Australia.

Radio markets in the US, Germany and Sweden generate the highest revenue per head of population

The highest total revenue per head of population in 2014, including advertising revenue, public radio licence fee revenue and satellite radio subscriptions, was in the US (£39.30), followed by Germany (£36.40). Sweden ranked next, generating £29.40 revenue per head. In Asia, the highest revenue per head of population was in Singapore, at £16.00.

In the UK, revenue per head was £18.70 in 2014, slightly higher than in France (£16.70), the Netherlands and Singapore (both £16.00).

Figure 4.10 Radio industry revenues, per head of population: 2014



Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.648 to the GBP, representing the IMF average for 2014. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

4.2.4 Availability of broadcast radio

The US had the largest number of radio stations broadcasting in 2014

Figure 4.11 shows the number of radio stations broadcasting in each comparator country from 2009 to 2014. The US consistently had the largest number of stations on air, with 22,492 in 2014. The country with the second largest number of broadcast stations in 2014 was Brazil, with 9,629 stations – less than half the US total.

Among the European countries in our analysis, Spain had the most radio stations broadcasting in 2014, with 2,239 stations, followed by Italy with 1,539 stations.

Figure 4.11 Number of radio stations, by country: 2009-2014

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	NED	SWE	POL	SGP	KOR	BRA	RUS	IND	CHN	NGA
2009	769	794	518	-	21,439	372	-	0	349	120	305	19	151	8163	638	477	372	77
2010	745	794	518	-	21,609	372	-	0	349	120	318	19	151	8,601	638	481	465	96
2011	762	794	518	-	21,889	372	273	0	349	134	323	19	151	9,184	638	486	581	120
2012	772	794	518	-	22,080	372	273	0	349	134	326	19	151	9,479	638	522	726	150
2013	803	814	518	1,527	22,173	372	273	2,258	349	134	332	19	151	9,589	638	618	907	188
2014	859	800	561	1,539	22,492	365	273	2,239	360	130	335	18	161	9,629	653	655	1,506	240

Source: IHS/Ofcom

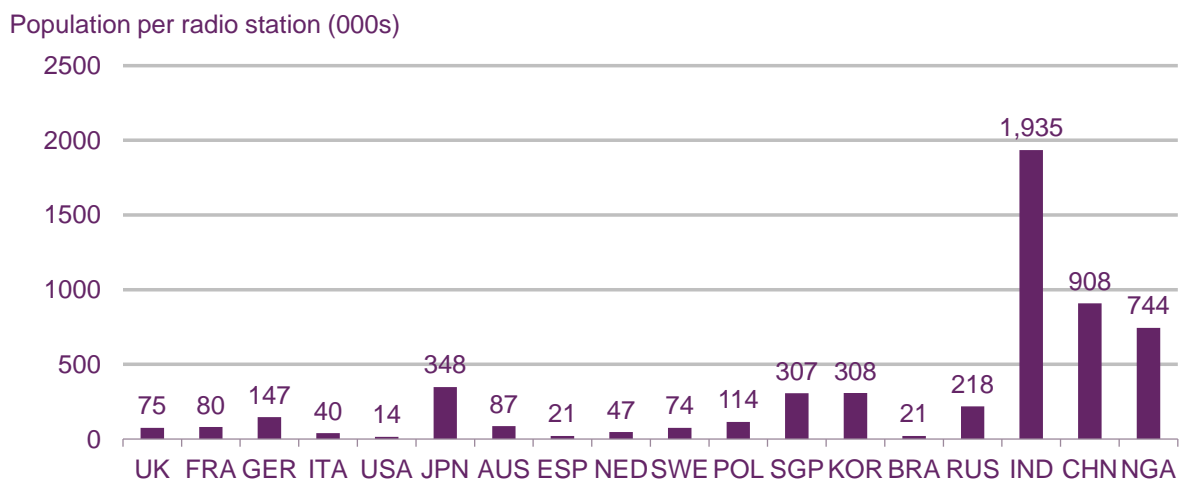
Adjusting for population size shows that there are fewer people per radio station in the US than in any of the other comparator countries

The numbers in Figure 4.12 were calculated by dividing the 2014 population of each country by the numbers of radio stations broadcasting, showing the population of each comparator country per radio station. This provides an indication of the number of stations in each radio market, taking into account variations in country size. However, it does not take into account the relative size of the coverage area of individual stations within each comparator country. Not all broadcasting stations will be available to all inhabitants, as many stations broadcast locally rather than nationally.

The US has the lowest population per radio station among all the countries in our analysis. Despite having the third largest overall population among the comparator countries, it had a radio station for every 14,000 people in the country in 2014. Brazil and Spain had the next lowest figures, each with 21,000 people per radio station in 2014.

India and China, which have the largest populations of the comparator countries, also have the greatest number of people per radio station (1.9 million and 0.9 million people respectively).

Figure 4.12 Population per radio station: 2014



Source: IHS/Ofcom

The number of radio stations broadcasting in China and Nigeria more than trebled between 2009 and 2014

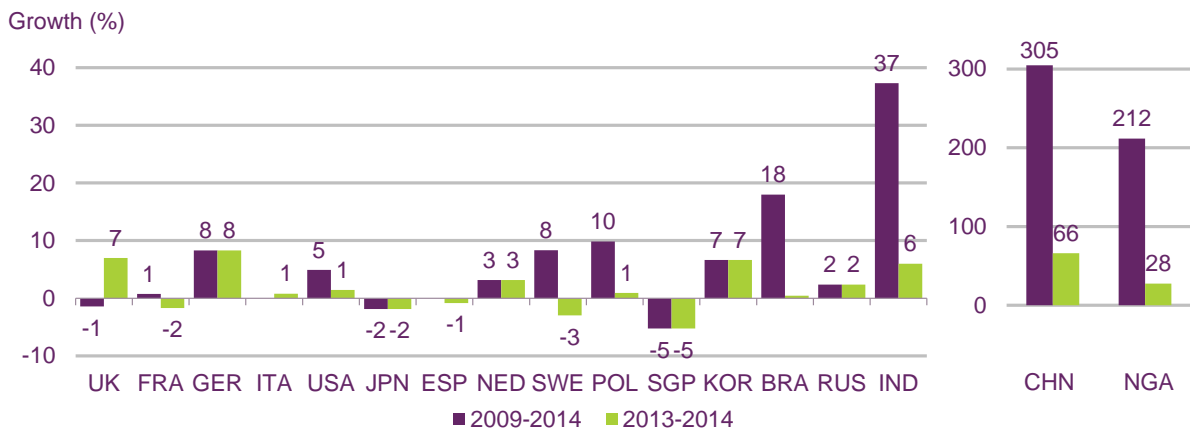
As Figure 4.13 shows, growth in the number of radio stations on-air was greatest in China and Nigeria over the five-year period between 2009 and 2014, with increases of 305% and 212% respectively. A contributor to this growth in the number of radio stations in Nigeria may be increased listenership, related to the rise in ownership of mobile phones which has increased the population's access to the radio.¹¹⁹

Of the two comparator countries recording a decline in the number of stations between 2009 and 2014, the largest decline was in Singapore, at -5%, followed by Japan at -2%. Japan's

¹¹⁹ PwC *Global Entertainment and Media Outlook 2015-2019* <https://pwc.com/outlook> [Accessed 27 October 2015].

failure to recover from the declines in total radio revenue and regular radio listenership between 2009 and 2010 may explain the further reduction in the number of radio stations.¹²⁰

Figure 4.13 Growth in the number of broadcast radio stations: 2009-2014



Source: IHS/Ofcom

Note: Data for ITA and ESP for 2009 were not available. There was no change in the number of stations for AUS so these series are not included on the chart.

Germany, the UK and Australia have the largest proportions of digitally broadcast radio stations among the comparator countries

Digitally broadcast radio stations were available in 12 of the 18 comparator countries in 2014. Of these, Germany had the highest proportion of DAB digital radio stations, with 37% of stations being broadcast digitally. The country with the next-highest proportion of digital stations among the comparator countries was the UK, at 33%.

Of the 12 countries to provide digital radio services in 2014, Spain had the smallest percentage of digital stations, at 1%.

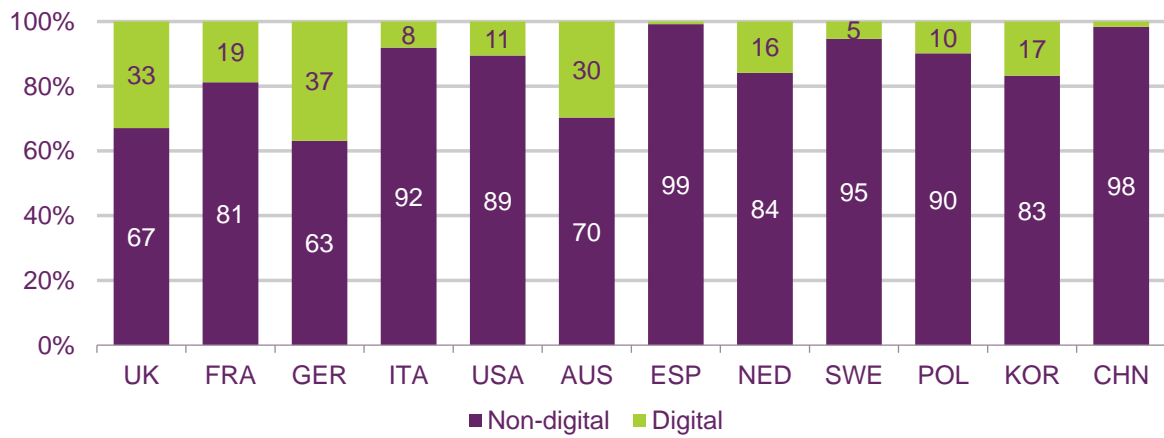
Among the Asian comparator countries, only South Korea and China provided broadcast digital radio services in 2014, with 17% and 2% of all stations respectively being digital.

We note that in some countries, stations are broadcast simultaneously on DAB and on analogue. Where this is the case, both the digital and analogue broadcasts are included in the calculation.

¹²⁰ PwC Global Entertainment and Media Outlook 2015-2019 <https://pwc.com/outlook> [Accessed 27 October 2015].

Figure 4.14 Proportion of digital broadcast stations to analogue broadcast stations, in countries with stations broadcasting digitally: 2014

Proportion of digital / non-digital stations (%)



Source: IHS/Ofcom

Note: (1) Where stations are broadcast digitally as well as on analogue, these are counted twice.
 (2) 'Digital broadcast stations' include DAB, DAB+, DMB and HD Radio.

4.3 The audio consumer

4.3.1 Introduction

The following section examines how people in our comparator countries consume audio services.

- **Digital radio set take-up in the UK was the highest of all the comparator countries surveyed in 2015, at 50% of radio listeners.** This is a rise of 9 percentage points since 2014. DAB coverage is also highest in the UK, reaching 96% of households in 2015.
- **FM-only radios are the most common type of set owned by radio listeners in all of our comparator countries.** Take-up was highest in Italy and Spain (84%). The UK had the lowest take-up of FM-only radio sets (60%), although most radio sets with DAB or internet connectivity will also include an FM tuner.
- **The proportion of households listening to radio on a weekly basis was lowest in Nigeria (20%) and Japan (38%), and highest in China (98%), Sweden and Poland (both at 94%).** The lowest reach of radio in Europe was in Germany (68%), while in the UK the reach of radio was 90% of households in 2014.
- **Listeners in Poland tune in to radio for longer than those in any of our other comparator countries,** averaging 31.9 hours per week. UK listeners tune in for 19.2 hours per week, close to the average figure among the European countries in our analysis.
- **A quarter (25%) of mobile phone users in the UK use their device to listen to music on a weekly basis.** This is second only to the US, where a third (33%) of mobile phone users listen to music on their devices.
- **Between 2013 and 2015 there was an increase in the use of streaming audio services among mobile phone owners,** with approximately three in ten mobile phone owners using their device in this way in Italy (33%) and the US (31%).

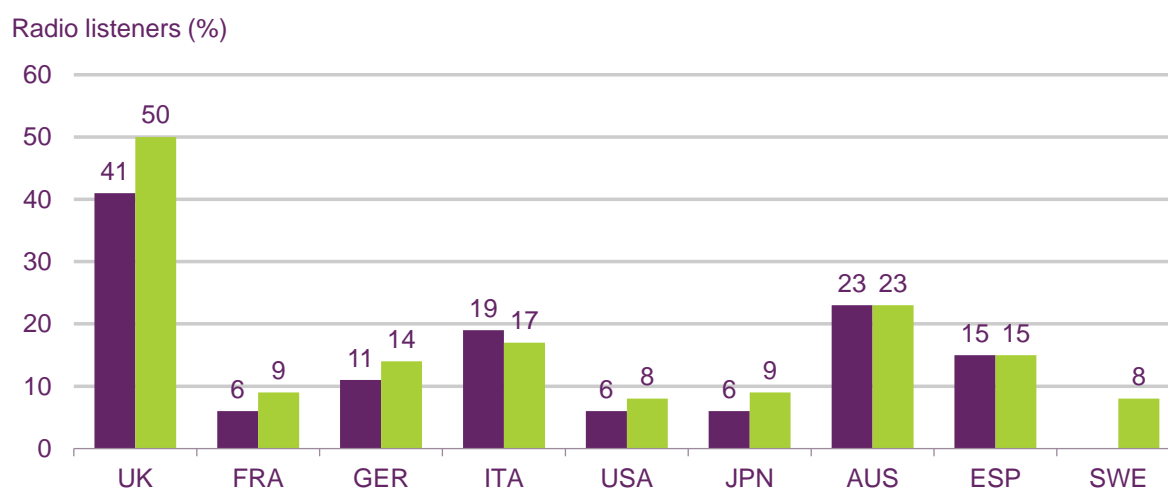
4.3.2 Radio set ownership

Take-up of digital radio sets remains highest in the UK

Take-up of digital radio sets among regular radio listeners in the UK was 50% in 2015, up from 41% in 2014. The next highest take-up was in Australia, where 23% of regular radio listeners said that they owned a digital set.

In Europe, take-up of digital sets among regular radio listeners was next highest in Italy (17%) and Spain (15%). Take-up was broadly comparable year on year in all our comparator countries, with the exception of Italy, where it fell slightly in 2015.

Figure 4.15 Take-up of digital radio sets among adult regular radio listeners: 2015



Source: Ofcom consumer research September – October 2015

Base: Regular radio listeners, UK=648, FRA=709, GER=778, ITA=727, USA=610, JPN=358, AUS=622, ESP=707, SWE=616

Q.3a Which of the following devices do you have in your home?

Notes: (1) Digital radio sets include DAB and DRM. (2) In Japan, digital radio is broadcasted using ISDB radio technology, and in the US, HD radio technology is used.

DAB coverage is highest in the UK

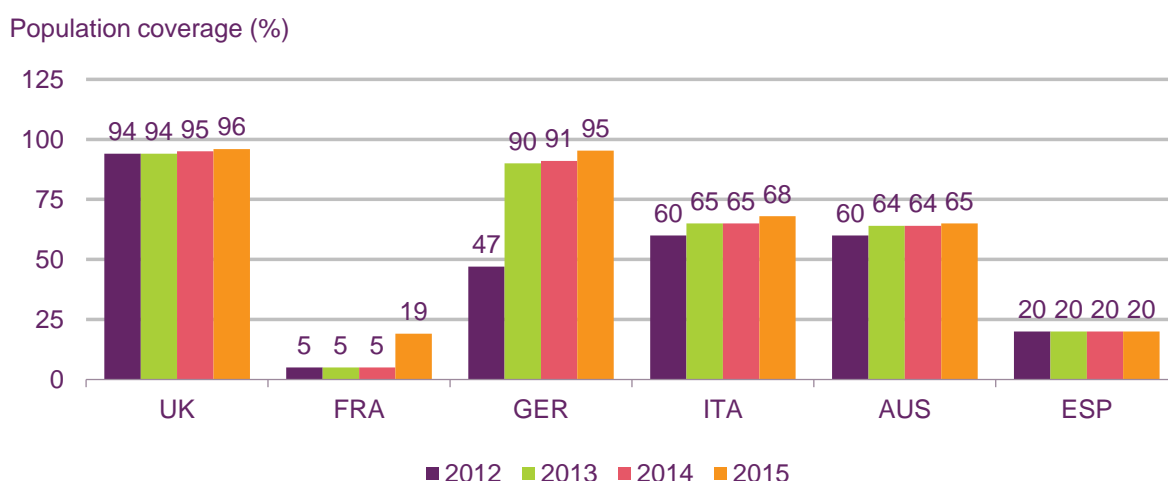
DAB coverage in the UK reached 96% of households in 2015. Both the BBC's national multiplex and the national commercial multiplex are available to at least nine in ten UK households and the BBC is nearing the completion of its two-year programme to expand its national DAB coverage from 95% to 97%. A second national commercial multiplex is due to launch in 2016.

Germany also has widespread DAB coverage, at 95% of the population. The regional and the nationwide networks will be enlarged in 2016 by further sites.

In France, the first regular DAB+ services began broadcasting in June 2014, with launches in Paris, Nice and Marseille. The regulator, CSA, is planning DAB+ services in several additional cities by late 2016, following a public consultation on the deployment of DAB+.

DAB+ rollout in Italy is progressing steadily, with plans for extending coverage of national services to 75% of the population in 2016, the planned licensing of local DAB+ multiplexes reaching 10 regions in Italy, receiver sales growing steadily and with over 22% of cars having DAB+ receivers line-fitted.

Figure 4.16 Population coverage of DAB/ DAB+/ DMB digital radio: 2012-2015



Source: WorldDAB

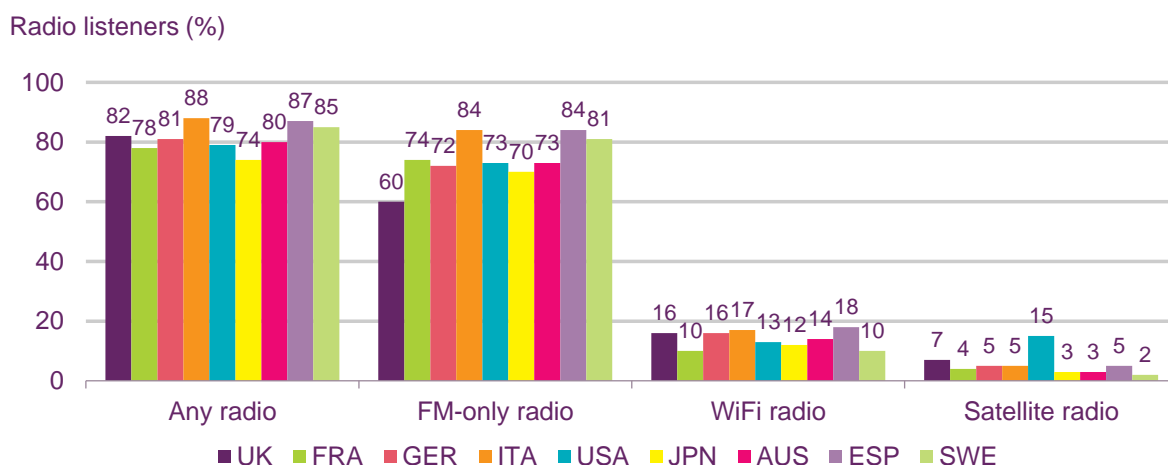
Note: (1) Regular DAB+ services were launched in France in June 2014. From 2012 to 2014 trial services were on air in Lyon and Nantes covering ~5% of the population in DAB+ and DMB. In 2014 regular services started in Paris, Marseille and Nice covering ~19% of the population with regular services (DAB+ and DMB), in addition to the trial services in Lyon and Nantes. Please note that Lyon and Nantes are not included in the 19% coverage calculation. From 2014 to 2015, DMB services moved to DAB+. Then, from summer 2015 all radio services are DAB+. (2) No data for DAB coverage exist for Japan due to digital television and radio services being broadcast over ISBD standards. (3) In the US satellite radio is the country's main digital radio platform, which has grown to become a major component of US radio revenue since its introduction in the mid-2000s.

FM-only radios are the type of radio most commonly owned by radio listeners in all of our comparator countries

Across all of the comparator countries in our consumer research, ownership of FM-only radio sets is higher than ownership of any other type of radio set. Take-up of FM sets was highest in Italy and Spain (84%). The UK had the lowest claimed ownership of FM-only radio sets among radio listeners, at 60%, significantly lower than all of the comparator countries. Overall ownership of any radio in the UK is, however, on par with most other countries (with the exception of Italy, Japan and Spain), at 82%. This is due to the far greater take-up of DAB sets, as set out in Figure 4.15. Most DAB or other types of radio sets will include an FM tuner.

Take-up of WiFi radio sets among radio listeners was highest in Spain (18%) and Italy (17%), and satellite radio set take-up was highest in the US (15%). The US is the only one of our comparator countries where satellite radio services are widely available, as outlined in Section 4.2.3 of this report.

Figure 4.17 Take-up of any radio set, and FM-only, WiFi and satellite radio sets, among adult regular radio listeners



Source: Ofcom consumer research September – October 2015
 Base: Regular radio listeners, UK=648, FRA=709, GER=778, ITA=727, USA=610, JPN=358, AUS=622, ESP=707, SWE=616
 Q.3a Which of the following devices do you have in your home?

4.3.3 Regular listening to radio and other audio content

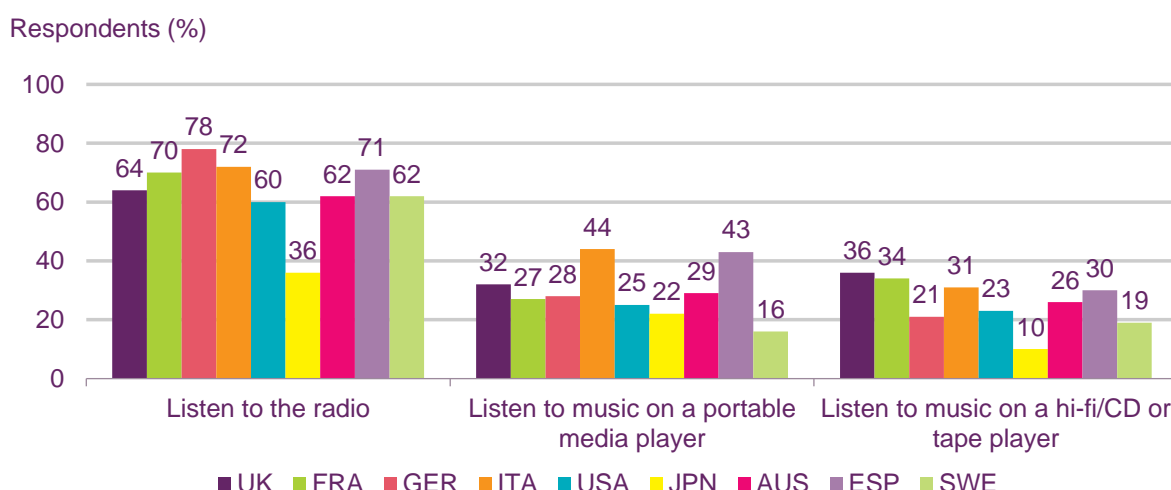
In all the countries we surveyed, listening to the radio is the most common way to regularly consume audio content

In all our European comparator countries except the UK and Sweden, at least seven in ten online adults claimed to listen to the radio at least once a week. Germany had the highest proportion of weekly listeners at 78%, slightly higher than Italy (72%), Spain (71%) and France (70%). Weekly radio listenership was lower in the UK, where 64% of our respondents said they were regular listeners, similar to the levels seen in Sweden (62%), Australia (62%) and the US (60%). Across all of the countries we surveyed, Japan (36%) had the lowest proportion of respondents who claimed to listen to radio at least once a week.¹²¹

We also asked people whether they used a portable media player or a hi-fi system or equivalent device. Italy and Spain recorded the highest portable media player use, at 44% and 43% of all respondents respectively, while listening to music on a hi-fi or equivalent was most popular among respondents in the UK (36%) and France (34%). Despite the differing levels of listening via these latter devices, the radio set was the most popular medium in all of the countries we surveyed.

¹²¹ Our results for the UK show listening figures lower than the average weekly reach of radio reported by the UK's radio listening measurement body, RAJAR, which reported 89.5% of the UK population listened to radio in an average week in 2014. This is due to methodological differences; our research was designed to compare communications use and attitudes between different countries and not provide a definitive measure of the consumption of media in any one country.

Figure 4.18 Proportion of adults who claim to regularly consume audio content



Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.6 Which of the following do you regularly do (at least once a week)?

The reach of radio is lowest in Nigeria (20%) and Japan (38%)

Data from IHS indicate that a majority of households listen to radio in most of our comparator countries. Figure 4.19 shows the proportion of households that listen to the radio weekly, between 2009 and 2014, across our 18 comparator countries. The lowest proportions of radio listeners were in Nigeria (20%) and in Japan (38%).

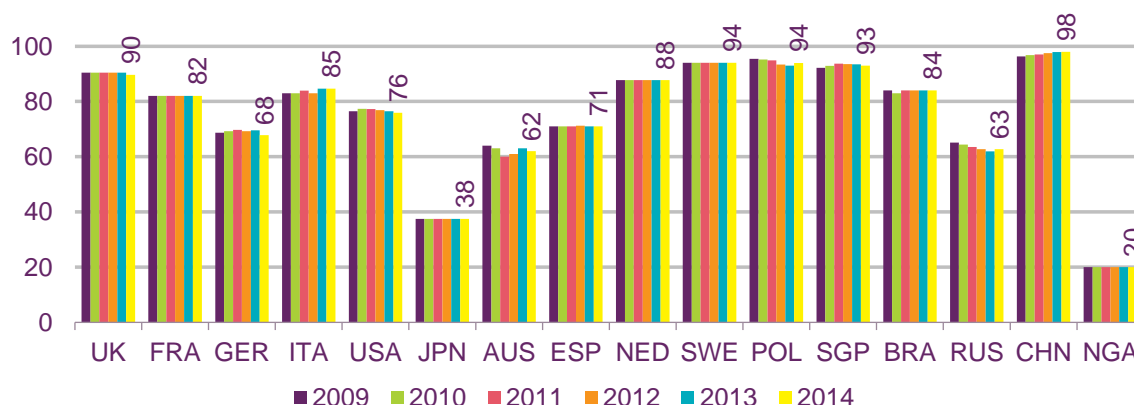
As Figure 4.19 shows, the reach of radio was highest in China (98%), followed by Sweden and Poland at 94%. The lowest reach of radio in Europe was in Germany (68%).¹²²

Between 2009 and 2014, the proportion of the population listening to radio remained relatively stable in the majority of our comparator countries, with the exception of Russia and Poland, where it declined.

¹²² Results in Figure 4.18 and Figure 4.19 are not comparable due to different methodologies used in collecting each data set. Figure 4.18 shows individual respondent consumer research results (based on surveys of online adults), while Figure 4.19 shows household listening figures recorded by industry measurement systems.

Figure 4.19 Reach of radio: 2009-2014

Households (%)



Source: IHS

Note: Measurement systems in different countries are likely to use different methodologies, so comparative data should be treated as indicative only.

Listeners in Poland tune in for the longest time each week

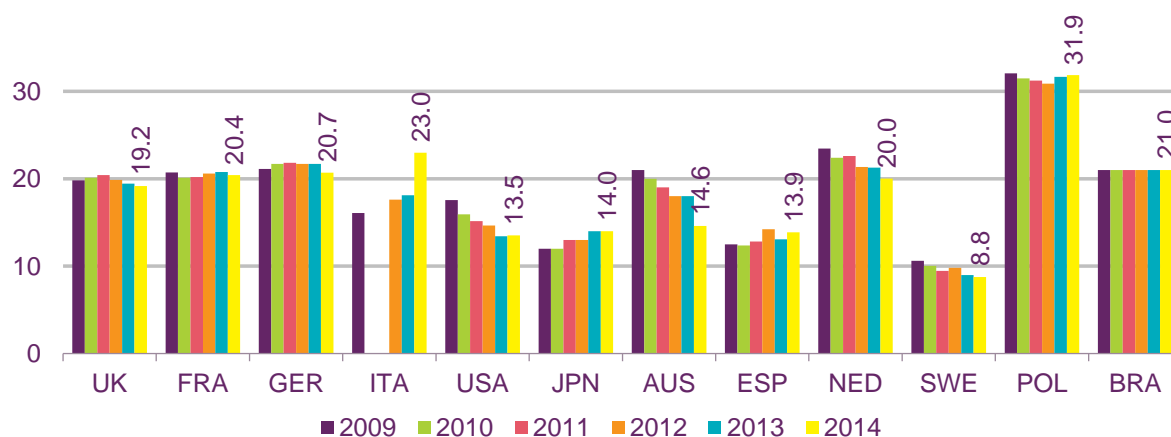
The average time spent listening per week in Poland was significantly higher than in any of our other comparator countries, with listeners tuning in for an average of 31.9 hours per week.

Despite the high reach of radio in Sweden, radio listeners spend far less time listening to radio than in other comparator countries in Europe (8.8 hours per week).

Those in France, Germany, the Netherlands and Brazil listen to radio for a substantial amount of time; average weekly listening is between 20 and 21 hours in each of these countries. The UK is broadly on par with these countries, as the average weekly listening is 19.2 hours. In Italy and Japan, time spent listening to radio has increased significantly since 2009. Conversely, there have been declines in the US, Australia, Germany, Sweden and the Netherlands.

Figure 4.20 Average weekly radio listening hours, by country: 2009-2014

Average weekly listening hours



Source: IHS

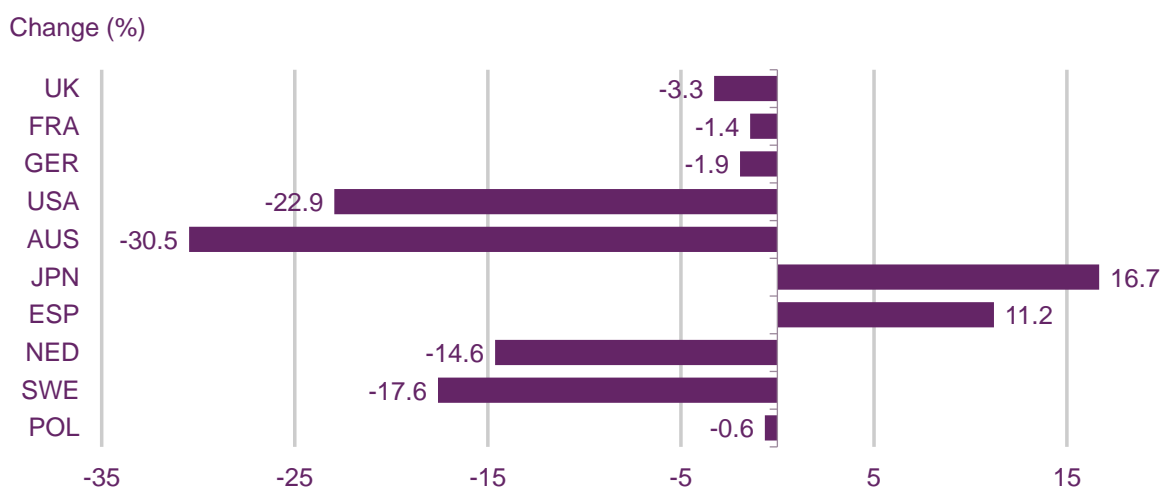
Note: Measurement systems in different countries are likely to use different methodologies, so comparative data should be treated as indicative only. Data unavailable for SGP, KOR, RUS, IND, CHN, NGA and for ITA 2010-2011.

Time spent listening to radio in Australia fell by 30.5% between 2009 and 2014, with radio listening also decreasing in most other comparator countries

As Figure 4.21 shows, between 2009 and 2014, the average time spent listening to radio fell by 30.5% in Australia. The UK recorded a 3.3% decrease.

Among the comparator countries in our analysis, only Japan (16.7%) and Spain (11.2%) had an increase in average weekly radio listening during the five year period between 2009 and 2014.

Figure 4.21 Change in average weekly listening hours: 2009-2014



Source: IHS. Figures for Italy have been omitted as audience measurement systems over the five year period 2009 to 2014 have varied, after Audiradio, the former Italian radio audience measurement company stopped its activities in 2011. There was no change in average weekly listening hours between 2009-2014 in Brazil.

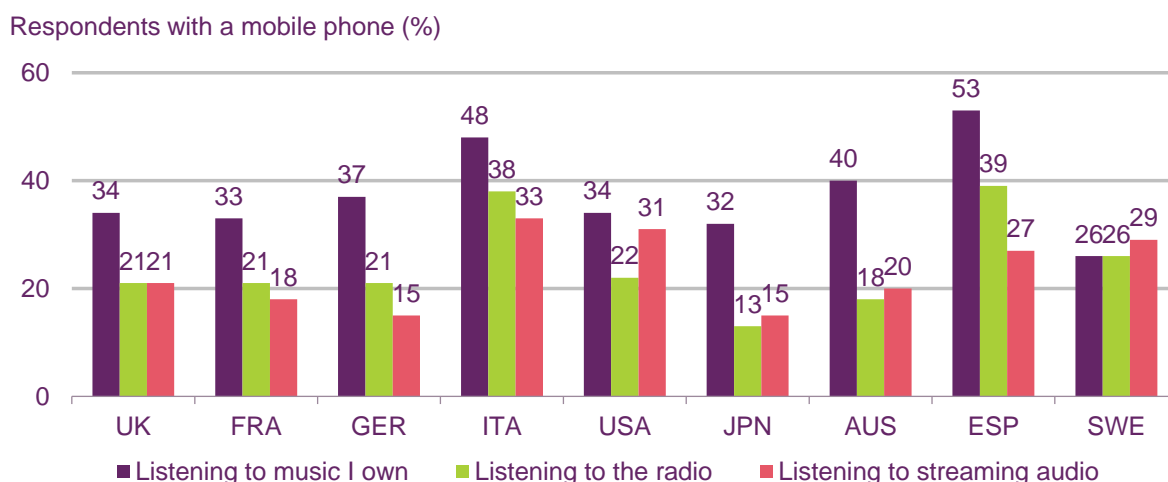
4.3.4 Audio consumption on a mobile phone

Almost four in ten mobile phone owners in Spain and Italy use their mobile phone to listen to the radio

In all of our comparator countries, adult mobile phone owners were more likely to listen to music that they owned on their device, rather than listen to the radio or stream audio. In the UK, 34% of mobile phone owners listened to music they owned, compared to 21% who used their phone to listen to the radio. Twenty-one per cent of mobile phone owners in France and Germany also used their phones to listen to radio; these figures are the lowest among our European comparator countries. In the UK, the same proportion of those who listened to the radio listened to streaming audio services on their mobile phone (21%).

Mobile phone owners in Spain and Italy were more likely than those in our comparator countries to use their mobile phone to listen to the radio, and were also more likely to use their phone to listen to music they owned. More than half (53%) in Spain and 48% in Italy used their mobile phone to listen to music they owned, and almost four in ten in each of these countries used their device listen to the radio (Spain at 39% and Italy at 38%). The incidence of streaming audio was greatest in Italy (33%), closely followed by the US (31%), where online radio services such as Pandora have been available for a number of years.

Figure 4.22 Use of a smartphone / mobile phone to consume audio content



Source: Ofcom consumer research September – October 2015

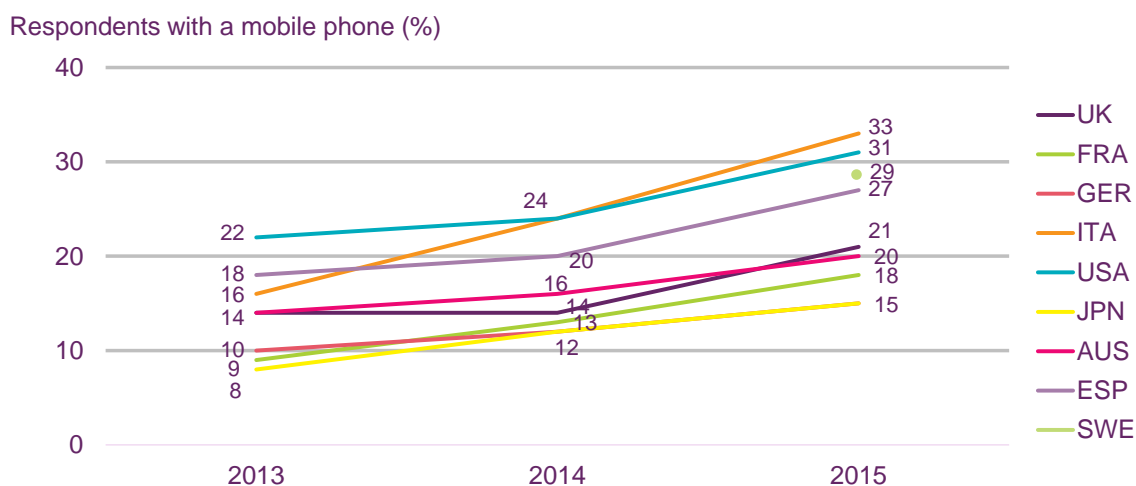
Base: All respondents with a mobile phone/ smartphone, UK=839, FRA=853, GER=882, ITA=865, USA=751, JPN=815, AUS=843, ESP=886, SWE=882

Q.9d Which, if any, of the following audio activities do you use each of your devices for?

Increased use of streaming audio services among adult mobile phone owners

As Figure 4.23 shows, since 2013 there has been an increase in the proportion of adult mobile phone owners who use their mobile phone for streaming audio, across all of the countries in our research. Italy and the US recorded the highest proportions, at 33% and 31% respectively.

Figure 4.23 Listening to streaming audio on mobile phones



Source: Ofcom consumer research September – October 2015

Base: All respondents with a mobile phone/ smartphone, UK=839, FRA=853, GER=882, ITA=865, USA=751, JPN=815, AUS=843, ESP=886, SWE=882

Q.9d Which, if any, of the following audio activities do you use each of your devices for?

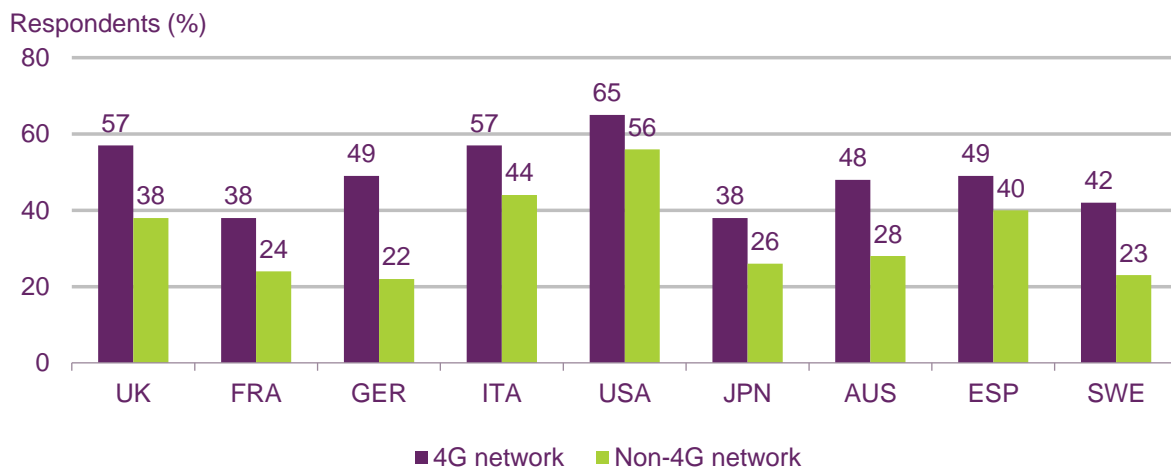
Mobile phone users with a 4G contract are more likely to stream or download music

In all our comparator countries, adult mobile phone users with a 4G contract were more likely than those without 4G to stream or download music on their mobile phone on a regular basis. This may be due to the faster throughput speeds typically offered by 4G technology, or it may be due to the larger data allowances that usually come with the higher-cost 4G

contracts. In most countries, 4G is a relatively new development, so the increased proportion of people downloading or streaming music may reflect the behaviour of early adopters.

Among the European countries in our analysis, the UK and Italy had the highest proportion of respondents on 4G contracts who frequently (at least weekly) used their network to download/stream music on their mobile phones.

Figure 4.24 Frequency of downloading/streaming music on mobile phone (4G vs. non-4G)



Source: Ofcom consumer research September - October 2015

Base: All respondents who use 4G/ don't use 4G on their phone, UK=96*/105, FRA=125/143, GER=67*/146, ITA=108/242, USA=75*/49*, JPN=54*/52*, AUS=101/76*, ESP=114/212, SWE=107/96*. *Caution: bases under 100.

Q.22 Which of the following statements best describes your awareness and use of 4G? Q.27 How often, if at all, do you use your main mobile phone to do each of the following? <At least weekly>

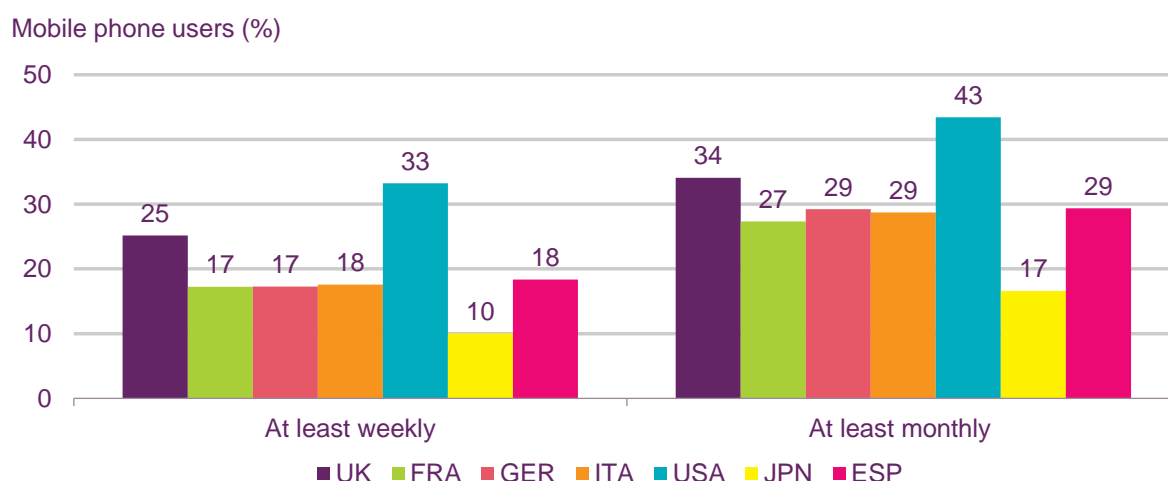
A quarter of mobile phone users in the UK use their device to listen to music at least weekly

Figure 4.25 shows that people in the US and the UK are the most likely to use their mobile phone to listen to music frequently.¹²³ A third (33%) of mobile phone users in the US use their mobile phone to listen to music on a weekly basis, while a quarter (25%) of those in the UK do so.

Mobile phone users in Japan are the least likely to use their phone to listen to music regularly, whether on a weekly or monthly basis. One in ten (10%) of mobile phone users in Japan listened on a weekly basis, and 17% listened on a monthly basis.

¹²³ Figure 4.25 uses data from comScore's MobiLens survey. The methodology and sample size used in the ICMR consumer research differ from the methodology and sample size of comScore MobiLens data.

Figure 4.25 Frequency of listening to music on a mobile phone



Source: comScore MobiLens, August 2015 (three-month average, mobile phone users aged 13+).

4.3.5 The role of radio as a main source of news

Across all our comparator countries, excluding Sweden, radio was more likely to be used to source regional/local news than any other type of news

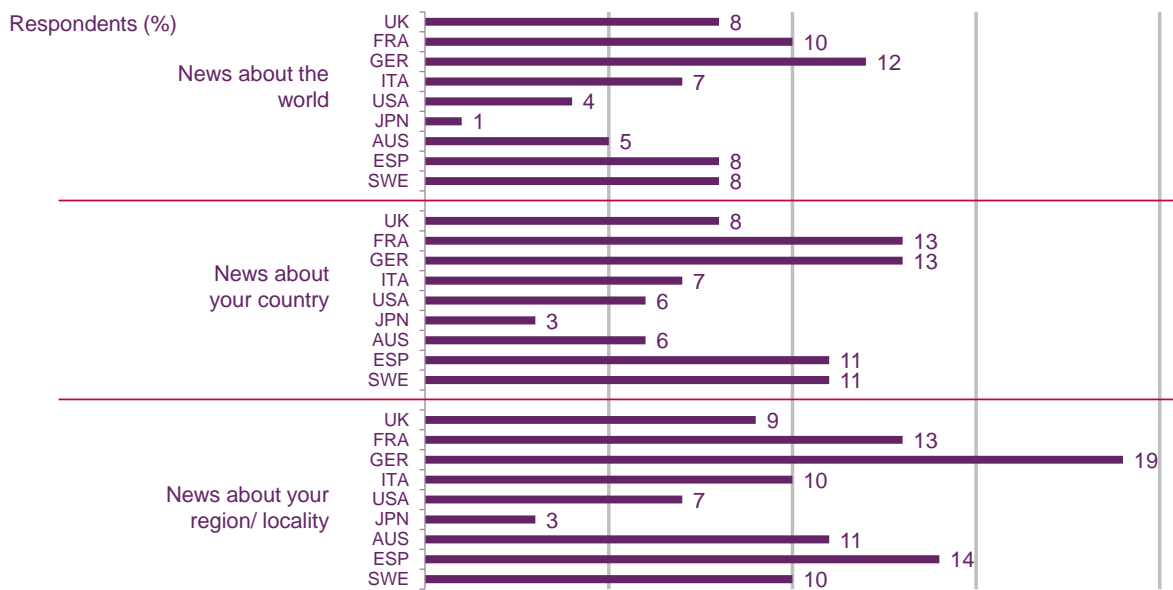
Across our European comparator countries, Germany (12%) had the highest proportion of respondents who used radio for consuming international news. France followed, with 10%. Listeners in Japan were the least likely to use the radio for accessing international news, with 1% of respondents using radio as their main source for this type of news.

The proportion of adults using the radio as their main source of national news was highest in France and Germany, at 13% each, followed by Spain and Sweden at 11%. Adults in Italy were the least likely in Europe to use radio as their main source of national news (7%), close to the UK figure (8%). Across all the comparators, listeners in Japan were the least likely to use the radio for national news (3%).

The type of news which was most likely to be sourced on radio was regional/local news, across all our comparator countries excluding Sweden. This was highest overall in Germany, where 19% of adults claimed to use the radio as their main source of regional/local news; more than double the proportion in the UK (9%).

Section 1.6 examines the general consumption of news across a number of countries, by looking at which platforms people say they use as their main source of different types of news and the devices they use for accessing online news.

Figure 4.26 Proportion who specify radio as their main source of news



Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.11 Which, if any, is your main source for the following information? Tre, Canale 5, Italia 1, Rete 4, La 7



International Communications Market Report 2015

5 Telecoms and networks

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5.1 Key market developments in telecoms and networks

5.1.1 Overview

The telecoms section of this report looks at the fixed voice, fixed broadband and mobile voice and data markets in the UK and our 17 comparator countries. The section is split into three parts:

- **Key market developments** – provides an overall context, and highlights key developments in international telecoms markets, including the growth of next generation access (NGA) networks and the increasing use of VoIP services.
- **The telecoms industry** – provides a ‘top-down’ approach by looking at the telecoms sector from an industry and operator viewpoint, and compares and contrasts trends in revenues and market structures across our comparator countries, before looking specifically at voice and data markets.
- **The telecoms user** – provides a ‘bottom-up’ approach from the point of view of consumers and looks at the overall take-up of communications services, before focusing specifically on consumers’ experience of fixed-line voice, fixed broadband and mobile voice and data use.

5.1.2 Introduction

Availability and take-up of technologies used to access the internet continued to increase in 2014. As the internet becomes increasingly important to both businesses and consumers, the reliance upon and usage of the internet, and the devices used to access it, increase. The internet is used for a large range of purposes, including but not limited to: transactions, entertainment and the procurement of information. Increasing internet access speeds allow the internet to be used in a variety of new ways, and growing demand from consumers for higher speeds has led to a greater availability of 4G and next generation access (NGA)¹²⁴ technologies.

The availability of fixed-line broadband services increased in the majority of our comparator countries in the five years to 2014, with the exception of Australia (which remained stable at 95%). Seven out of our 18 comparator countries had 100% availability in 2014. Take-up of fixed-line broadband services grew across the majority of comparator countries in 2014, with Japan experiencing the largest annual change, from 35 connections per 100 population in 2013, to 39 connections per 100 population in 2014.

¹²⁴ See page 29 for a definition of NGA technologies

Figure 5.1 Key telecoms indicators: 2014

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	NED	SWE	POL	SGP	KOR	BRA	RUS	IND	CHN	NGA
Telecoms service revenues (£bn)	29	19	25	16	172	79	15	14	7	4	6	3	20	30	19	15	110	6
Monthly telecoms revenues per capita (£)	37	25	25	22	45	52	53	24	34	36	14	49	33	12	11	1	7	3
Fixed voice connections per 100 population (inc. managed VoIP)	61	60	45	37	41	45	38	40	42	39	16	36	54	23	27	2	19	0
Monthly outbound fixed minutes per capita	131	119	156	77	112	83	121	79	90	100	23	80	99	67	81	4	8	0
Mobile connections per 100 population	130	125	137	154	111	122	131	108	134	151	151	147	116	140	168	74	94	78
Mobile data connections per 100 population	87	67	64	71	104	124	114	77	69	116	117	183	109	78	66	6	41	43
4G mobile network availability (% of population coverage of at least one operator)	84	75	92	77	98	99	87	76	100	99	80	99	100	42	51	2	73	11
4G as % of all mobile connections	28	14	12	4	40	37	39	13	19	27	7	39	63	2	5	0	8	0
Monthly outbound mobile minutes per capita	178	191	113	226	315	132	161	141	129	231	180	257	209	181	309	133	179	62
Average mobile data volumes per person (Mbyte)	362	397	398	684	1771	1495	481	370	313	3097	529	1537	2024	197	181	18	126	53
Fixed broadband connections per 100 population	37	40	35	23	30	39	29	28	41	34	21	33	39	11	19	1	18	0
Average monthly fixed broadband data volumes per person (Gbyte)	22	13	10	7	19	32	11	9	17	31	5	23	49	3	4	0	4	0
NGA connections per 100 population	13	4	10	1	22	26	10	10	25	22	8	22	34	5	13	0	8	0
Dedicated data-only mobile broadband connections per 100 population	8	6	10	11	9	12	26	4	6	23	15	2	1	3	14	1	1	3
Managed VoIP connections per 100 population	9	39	21	5	16	22	3	7	31	18	4	10	20	4	1	0	1	0

Source: IHS / industry data / Ofcom

5.1.3 Availability and take-up of next-generation access (NGA) services continues to grow

Next-generation access (NGA) technology and 'superfast' broadband definitions

Next-generation access (NGA) networks provide a platform for delivery of superfast broadband. 'Superfast' broadband describes broadband connections with actual modem sync speeds of 30Mbit/s or higher.

These terms (superfast broadband and NGA) are often used interchangeably however NGA connections do not always deliver 'superfast' speeds. For example, premises connected using VDSL technology might receive speed below 30Mbit/s due to long copper lines because of a large distance to the nearest street cabinet, or NGA services may be capped at less than 30Mbit/s.

This distinction becomes more significant as 'superfast' take-up increases and the measurement of broadband services in different countries improves. For this reason, we define 'superfast' broadband as a broadband service providing modem sync speeds of 'more than or equal to' 30Mbit/s (the modem sync speed represents the highest possible speed at which data can be transferred across the line). We also define fixed-line broadband with headline speeds of more than or equal to 30Mbit/s as 'superfast products'.

Availability of NGA networks varied across our comparator countries in 2014

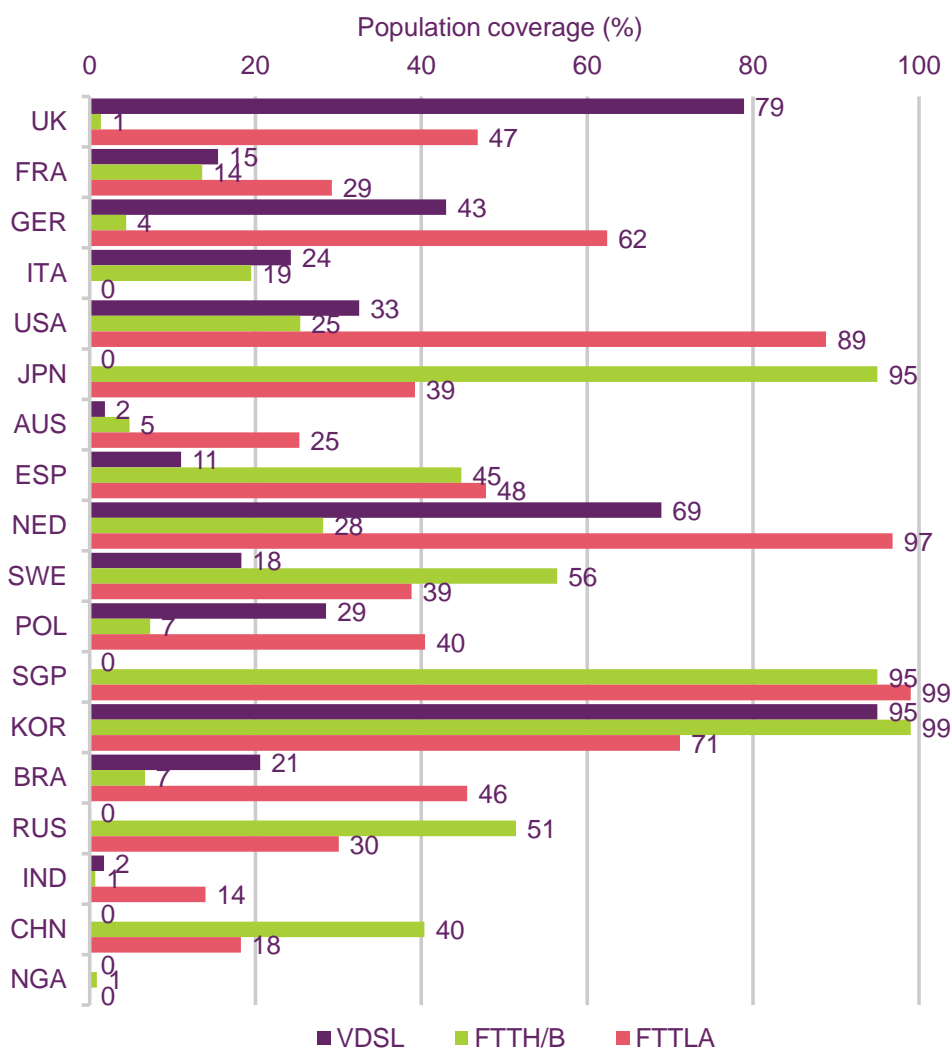
Many factors influence the availability of NGA connections. One of these factors is housing density as it is usually more expensive (per property) to build new NGA networks in low density areas. Availability of funds to invest into new infrastructure could also explain coverage differences between comparator countries, with more developed countries often having higher coverage percentages than less developed ones.

In the UK, VDSL was the NGA technology with the highest population coverage in 2014 (at 79%, up 11pp on last year), while FTTLA connections were available to 47% of the population (Figure 5.2). The UK had the second highest VDSL coverage (after South Korea at 95%) among the comparator countries, while Singapore had the highest FTTLA coverage at 99%, followed by the Netherlands at 97%.

FTTH/B technology was only available to around 1% of the UK population by the end of 2014, a low figure compared to the majority of non-BRIC comparator countries. This is in part due to BT's decision (announced in 2008) to use VDSL rather than FTTH/B for the majority of its fibre broadband network (building the infrastructure for VDSL is less expensive than that of FTTH/B, although it generally provides slower maximum speeds). In contrast to the UK, providers in countries such as Singapore and Japan, which are densely populated, deployed FTTH/B, resulting in the high availability of this technology in 2014, at 95% in each country (VDSL not being present in either).

Overall, superfast products were available to 86% of the population in the UK in 2014. This was the highest availability among the EU5 countries. Germany had the second highest availability of superfast products in 2014, at 75%.

Figure 5.2 Population availability of NGA networks, by country and technology: 2014



Source: IHS

Note: NGA on the left hand side of the chart is the country code for Nigeria, and does not refer to next generation access technologies.

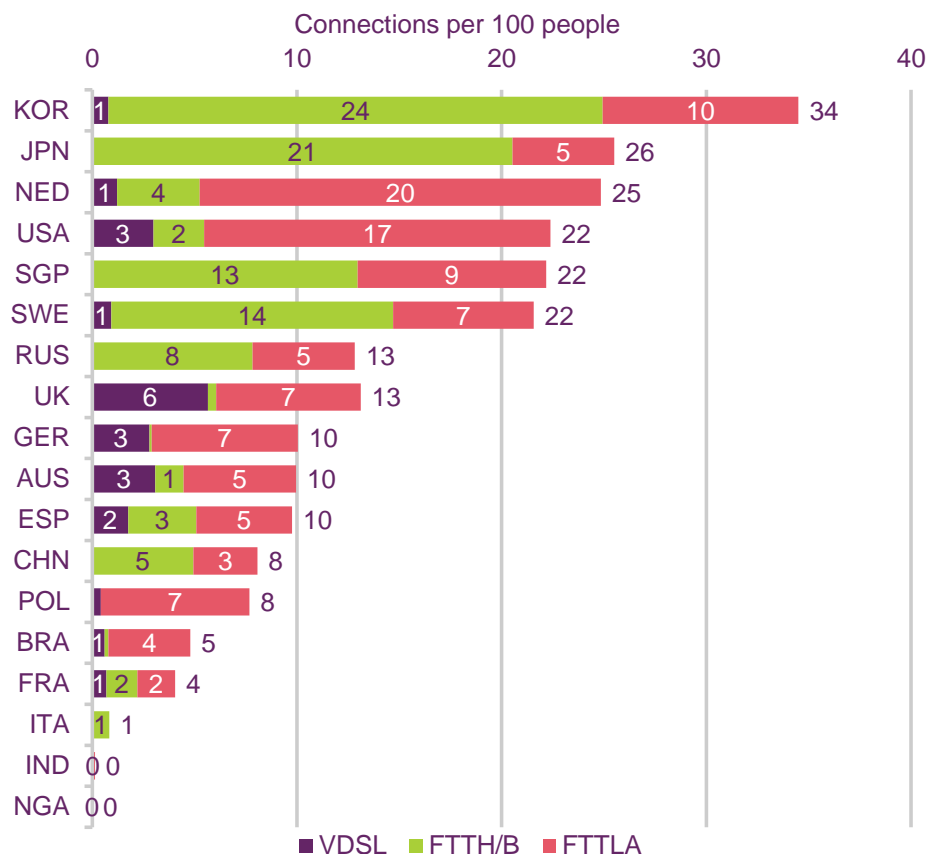
NGA broadband take-up ranged from less than one to 34 connections per 100 people among our comparator countries in 2014

The number of NGA connections per 100 people varied between comparator countries in 2014, from less than one connection in India and Nigeria to 34 in South Korea (Figure 5.3). The early introduction and widespread availability of NGA broadband in South Korea (in particular FTTH/B) are the likely reasons for the country’s high penetration.

Five countries had five or fewer NGA connections per 100 people, including two EU5 countries (France and Italy); this is probably due to low NGA network availability. The other possible reasons for low take-up in Brazil, India and Nigeria include lower economic prosperity and lower levels of investment in infrastructure in these countries. The UK had 13 NGA connections per 100 people at the end of 2014, ranking seventh among the comparator countries. The majority of NGA connections in the UK were FTTLA (54%) and there was less than one FTTH/B connection per 100 people at the end of 2014.

FTTLA and FTTH/B were the most prevalent NGA technologies across the comparator countries at the end of 2014. Out of all technologies, FTTLA had the highest take-up in ten of the comparator countries, including the Netherlands, the US and the UK, which had 20, 17 and seven FTTLA connections per 100 people, respectively. FTTH/B accounted for the highest proportion of connections per 100 people in eight of the comparator countries, including South Korea, Japan and Sweden with 24, 21 and 14 connections per 100 people respectively.

Figure 5.3 NGA broadband connections per 100 people, by technology: 2014



Source: IHS

Note: NGA on the left hand side of the chart is the country code for Nigeria, and does not refer to next generation access technologies.

The UK had the highest take-up of superfast products of the EU5 countries in 2014

The proportion of fixed broadband connections classified as ‘superfast products’ (i.e. NGA connections with a headline speed of 30Mbit/s or higher) continued to grow in all of the comparator countries in 2014 (Figure 5.4). Only three of the countries (Italy, India and Nigeria) had less than 5% of connections with 30Mbit/s or higher headline speed, probably due to the low availability and take-up of NGA networks in these countries (Figure 5.3).

South Korea (89%), Singapore (83%) and Japan (81%) had the highest proportions of 30Mbit/s or higher speed connections at the end of 2014. Japan and South Korea had the highest proportion of connections with a headline speed of over 100Mbit/s, at more than 50% in both. This may be due to the early introduction and high availability of NGA technology in these countries.

Of our European comparator countries, Sweden and the Netherlands had the largest proportion of connections classified as superfast product, at 42% and 46% respectively. In

Sweden, 81% of superfast product connections had a headline speed of over 100Mbit/s (34% of total connections). In the UK, 35% of connections had a headline speed of over 30Mbit/s at the end of 2014, the eighth highest proportion among all comparator countries and the highest out of the EU5 countries. Nevertheless, only 5% of connections in the UK had headline speed of over 100Mbit/s, placing the UK behind Spain (11%) and France (7%) among the EU5 countries.

France had the highest proportion of fixed broadband connections with a headline speed between 8Mbit/s and 30Mbit/s (81%), followed by Spain (68%). Nigeria was the only country among the comparator countries in which more than half of the connections had a headline speed of less than 2Mbit/s (93%), followed by India (46%) and Brazil (33%). Nonetheless, in these countries the proportion of connections with higher headline speeds has increased since 2009. For example, the proportion of connections with headline speeds of less than 2Mbit/s roughly halved in the five years to 2014, in both Brazil and India.

Figure 5.4 Fixed broadband connections, by headline speed: 2009 and 2014



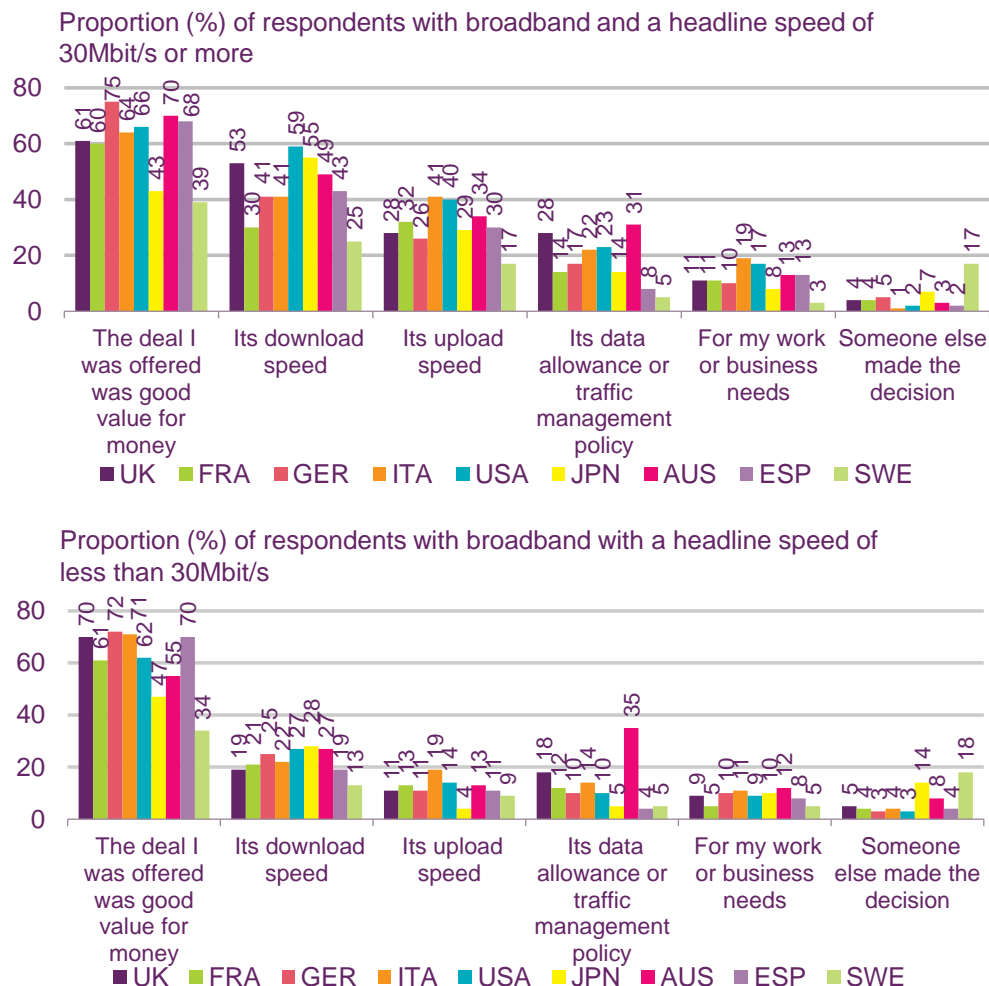
Source: IHS / Ofcom / operator data

Value for money was the most commonly-cited reason for respondents choosing their current broadband service in 2015

Value for money was the most popular reason for respondents choosing their current fixed broadband service, among respondents both with and without a superfast broadband product (a headline speed of 30Mbit/s or more) in the majority of our comparator countries.

Across both groups of respondents, and the majority of comparator countries, download speeds were the second most popular reason for choosing broadband. However, there was a stark difference between those with a superfast broadband product who cited this reason and those without: 53% vs. 19% in the UK for example. This suggests that download speed is a much more important consideration for those who have headline speeds greater than 30Mbit/s. Less than two in ten respondents with a headline speed of less than 30Mbit/s chose a reason other than value for money and download speed, with the exception of Australia, where 35% of respondents chose their current service due to its data allowance/traffic management policy (a significantly higher proportion than in all other comparator countries).

Figure 5.5 Reason for choosing current fixed broadband service



Source: Ofcom consumer research September – October 2015

Base: All respondents with superfast broadband, UK=305, FRA=212, GER=273, ITA=151, USA=170, JPN=327, AUS=128, ESP=316, SWE=358

Base: All respondents with non-superfast broadband, UK=218, FRA=205, GER=229, ITA=334, USA=142, JPN=101, AUS=154, ESP=280, SWE=190

Q.29 Why did you choose your home broadband service?

5.1.4 The use of VoIP as an alternative to traditional telephony is increasing

VoIP definitions

Managed VoIP refers to the provision of a packet-switched¹²⁵ voice over internet protocol (VoIP) service over a fixed broadband network such as xDSL, FTTP and FTTLA. Managed VoIP includes VoIP as a primary service (such as VoIP over FTTP or naked xDSL) and as a secondary service (such as VoIP over xDSL, where the subscriber also pays a monthly fee for a PSTN line). **Over-the-top (OTT) VoIP** services consumed over fixed broadband connections, such as Skype, are not included within the definition of managed VoIP because they do not support emergency calling and are therefore not marketed as landline replacement services.

Over-the-top (OTT) services are provided over the internet rather than a managed network and are delivered directly to the end-user by the service provider, independent of the internet service provider (ISP) which owns the network over which the service is provided. Unmanaged VoIP include services where a separate voice service provider provides the service on an OTT basis over a broadband connection. The provider of the broadband connection routes the traffic to the open internet and there is no guarantee that they will prioritise this traffic over other types of internet traffic. Therefore, quality of service is likely to be more variable than on a managed service.

The Netherlands had the highest proportion of fixed voice revenues that were generated by managed VoIP services in 2014, at 29%

The proportions of fixed voice revenues generated by managed VoIP services have increased across the 17 comparator countries for which we have data since 2009. India is the exception; its revenues have remained stable across this period.

The Netherlands had the largest proportion of managed VoIP revenue in 2014, of all our comparator countries, at 29%, up 14pp in the five years to 2014 (Figure 5.6). This was due to strong cable market share in fixed broadband and voice services, as well as KPN's rapid migration to VoIP services. The US had the second highest proportion, at 24%, followed by Japan (23%). The US had the highest rate of growth of all comparator countries, at 17pp over the five-year period to 2014. For all other comparator countries, growth in managed VoIP revenues as a proportion of fixed voice revenues ranged from less than 1pp in India to 11pp in Japan over the period.

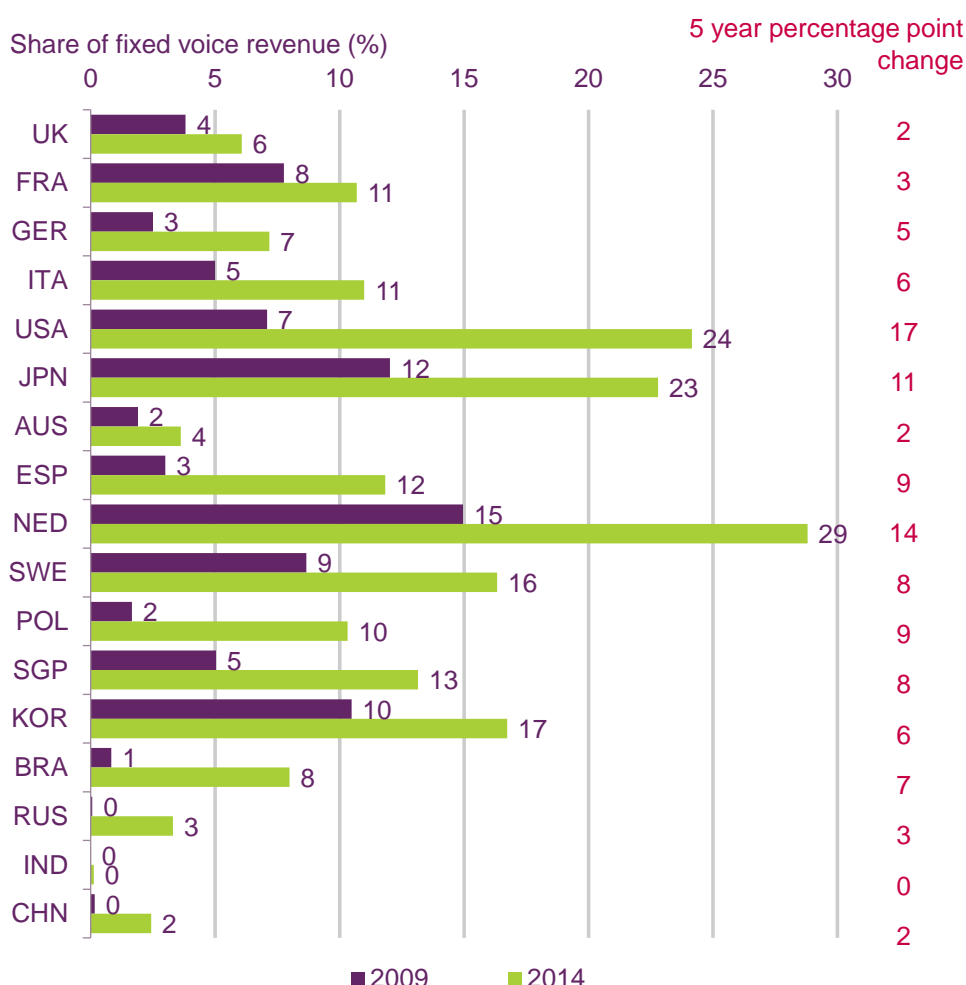
Managed VoIP services represented a small fraction of the fixed voice market among the BRIC countries (Brazil, Russia, India and China). The proportion of fixed voice revenues generated by managed VoIP services were highest in Brazil, at 8% (up 7pp over the five years to 2014).

The UK, together with China and Australia, had the slowest growth in managed VoIP revenues over the five years to 2014; up by just 2pp to 6%. This was the lowest proportion of managed VoIP revenues among the EU5 comparator countries, behind Spain (12%), Germany (7%), France and Italy (both 11%). This was probably because some ISPs either

¹²⁵ 'Packet switching' over internet protocol divides the data being sent into 'packets', each packet containing part of the data being sent over the network. The packets also carry information such as the IP addresses of the packet's source and destination. Instead of being sent across one dedicated route, each packet is sent to the destination along different routes. Once all of the packets are received at the other end, the data are reassembled. Packet switching is an efficient form of data transmission, as the individual packets can be sent across the least congested and cheapest routes.

do not offer, or do not advertise VoIP to consumers in the UK. However, use of OTT VoIP in the UK has grown since 2013 (see Figure 5.12).

Figure 5.6 Managed VoIP revenues as a proportion of fixed voice revenues: 2009 and 2014



Source: IHS / industry data / Ofcom

The UK had the second highest managed VoIP revenue among the EU5 comparator countries, at £8.82 per month

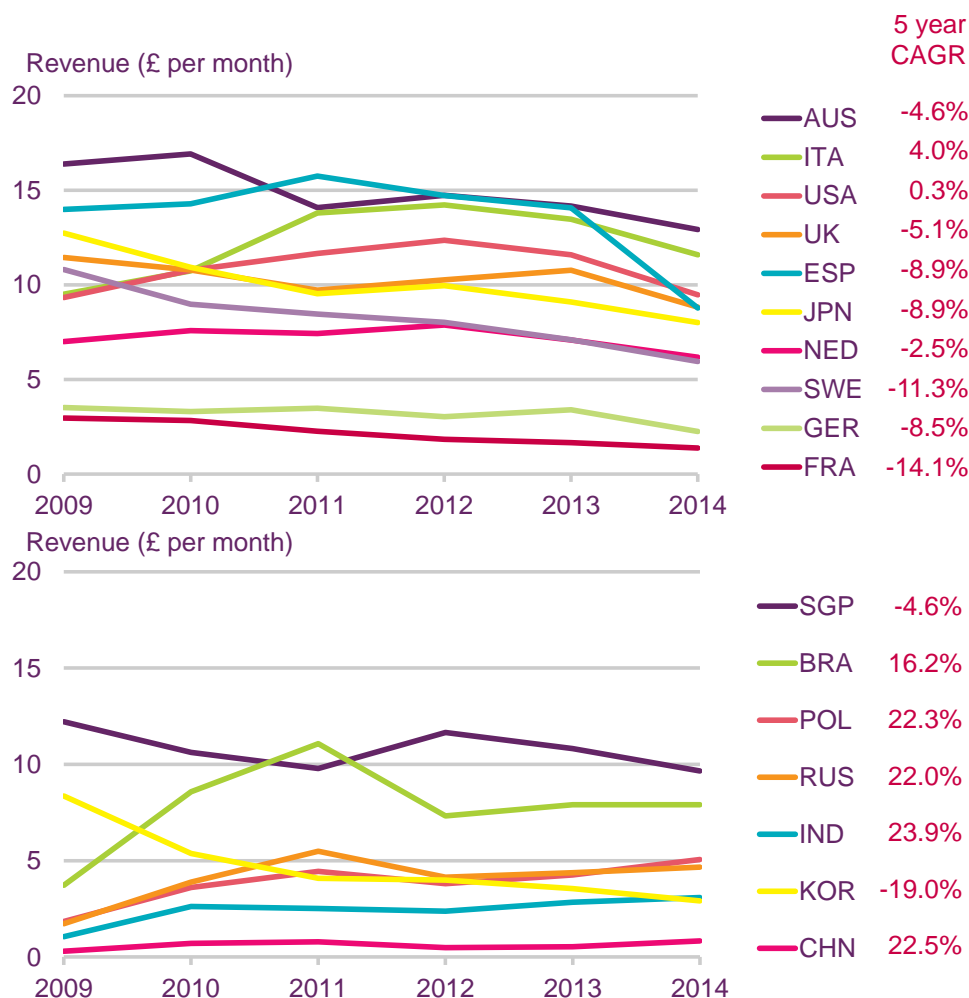
Of all our comparator countries, Australia showed the highest average revenue per managed VoIP connection in 2014, at £12.92 per month, followed by Italy at £11.59 per month (Figure 5.7). China had the lowest average revenue per managed VoIP connection, at £0.84 per month.

In the UK, managed VoIP revenues were £8.82 per month (broadly in line with Spain at £8.78). This was the second highest monthly VoIP revenue among the EU5 comparators (after Italy at £11.59) and the fifth highest overall in 2014. France had the lowest average monthly managed VoIP revenue per connection among the EU5 at £1.38 per month. However, this figure is based on data which include revenue gained from calls only (rather than access), which is why revenues appear lower for France compared to other comparator nations.

In the five years to 2014, the average annual growth rate of VoIP revenues was highest in India, increasing by an average 23.9% per year, while South Korea experienced the largest

decline in VoIP revenue, down by an average of 19.0% per year over the same period. However, in both instances, absolute revenues remained very low in 2014. By comparison, in the UK revenue declined by an annual average of 5.1% over the five years to 2014.

Figure 5.7 Monthly managed VoIP revenue per connection



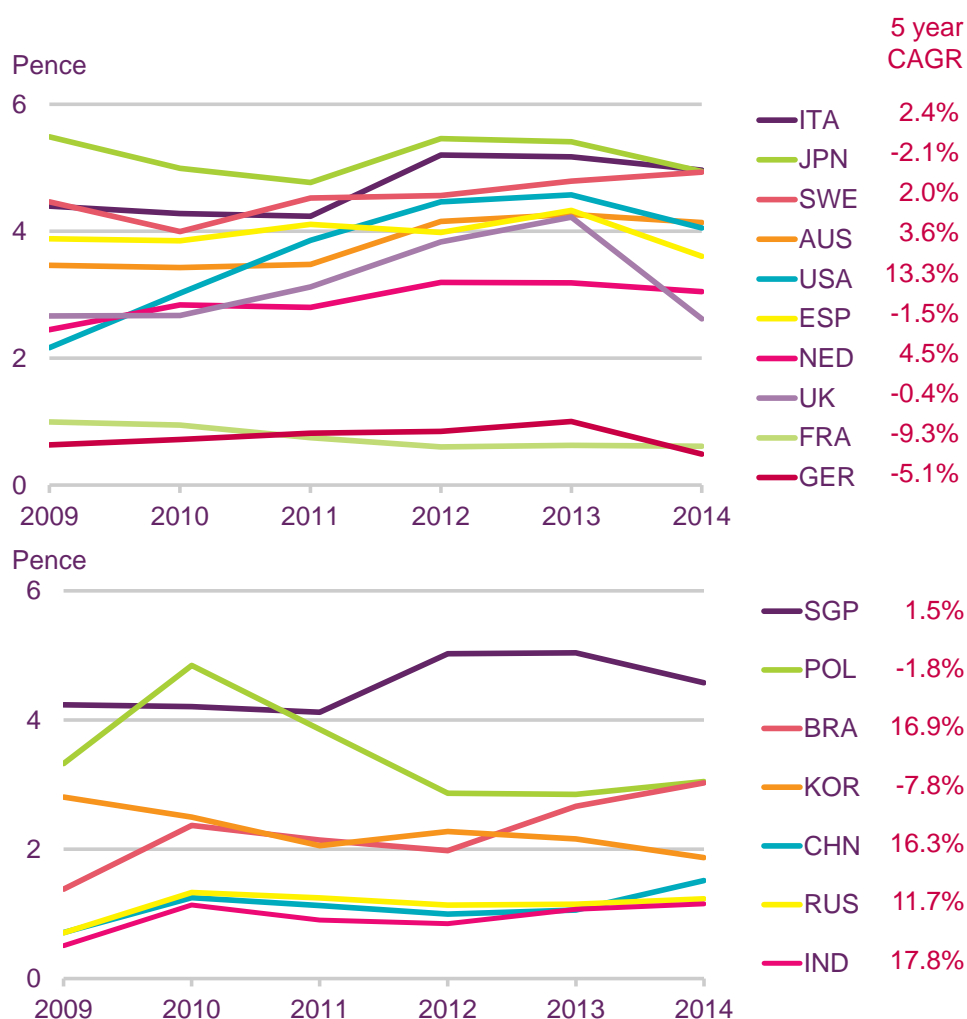
Source: IHS / industry data / Ofcom
 Note: All figures expressed in nominal terms.

Germany had the lowest average price per minute for VoIP calls in 2014, at 0.5 pence

Of all our comparator countries, the average price per managed VoIP call minute was lowest in Germany in 2014, at 0.5 pence per minute, followed by France at 0.6 pence per minute (Figure 5.8). The average price per managed VoIP call minute was highest in Italy (at 5.0 pence per minute), followed by Japan and Sweden (both at 4.9 pence per minute). By comparison, the UK had an average price of 2.6 pence per minute for a managed VoIP call in 2014, down 38.0% since 2013.

In the five years to 2014, India experienced the largest compound annual growth in revenues, up by an average of 17.8% per year. However, in absolute terms, revenues in India remained very low compared to other comparator countries. France had the largest rate of decline over the period, with revenues falling on average by 9.3% per year.

Figure 5.8 Average price per managed VoIP minute



Source: IHS / industry data / Ofcom
 Note: All figures expressed in nominal terms.

Average monthly managed VoIP call minutes per connection in the UK increased by 32% to 337 minutes in 2014.

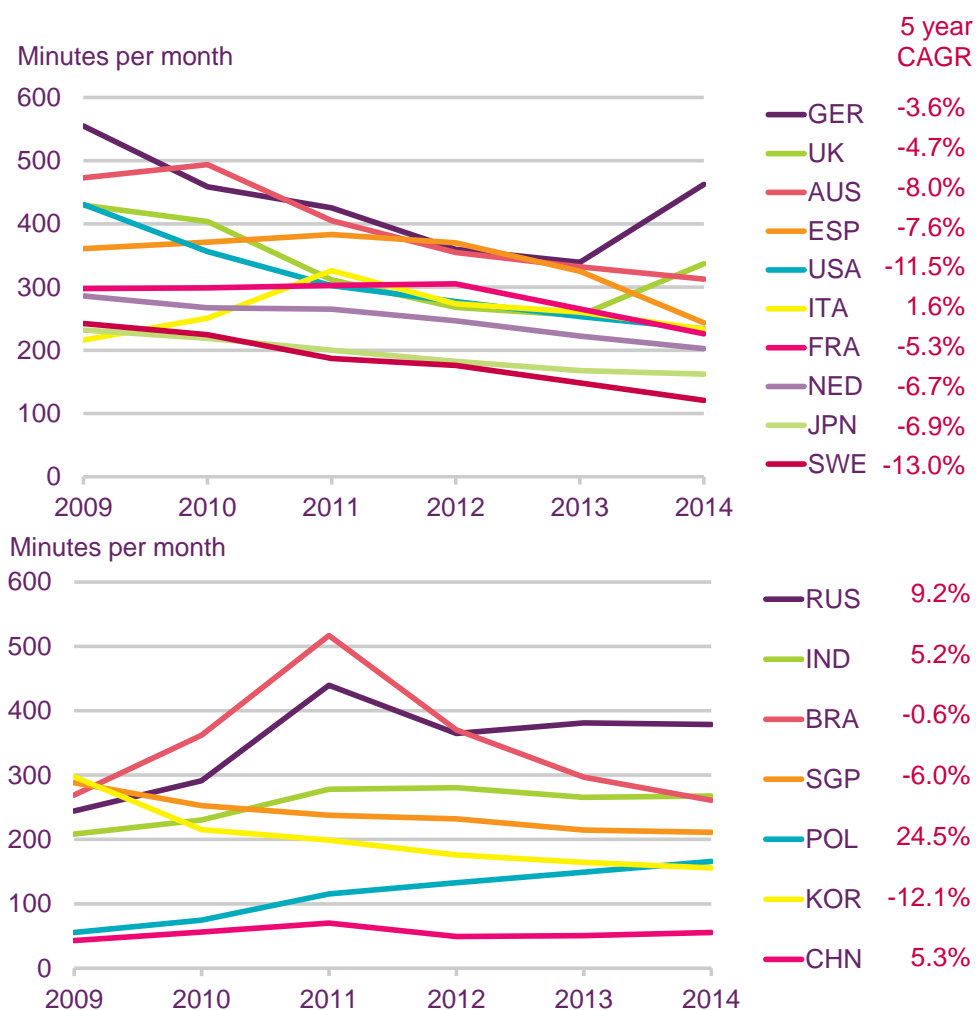
In the UK, (where managed VoIP is used mainly by businesses) the volume of average monthly managed VoIP minutes per connection was 337 minutes, the third highest of all our comparator countries (behind Russia and Germany). The UK was also one of only five comparator countries where the average number of VoIP minutes increased in the year to 2014, up by 82 minutes (32.0%). The other countries which had year-on-year growth included Germany (up 36.4%), Poland (11.2%), China (9.9%) and India (0.8%).

Overall, Germany had the highest level of average monthly managed VoIP call minutes per connection in 2014, at 463 minutes per month (Figure 5.9). This is probably due to the comparatively low cost of VoIP call minutes (see Figure 5.8) and the increased number of VoIP connections per 100 population (see Figure 5.10). The average monthly use of managed VoIP minutes per connection was lowest in China, at 55 minutes.

In the five years to 2014, Poland had the highest average compound annual growth in monthly managed VoIP call minutes per connection, up on average by 24.5% per year. This was 2.5 times more than Russia, which had the second highest growth, at an average of 9.2% per year. Sweden had the largest annual decline over the five years to 2014 (down by

13.0% a year on average). In the UK, average monthly managed VoIP minutes per connection fell at an average rate of 4.7% per year over the same period.

Figure 5.9 Average monthly managed VoIP call minutes per connection



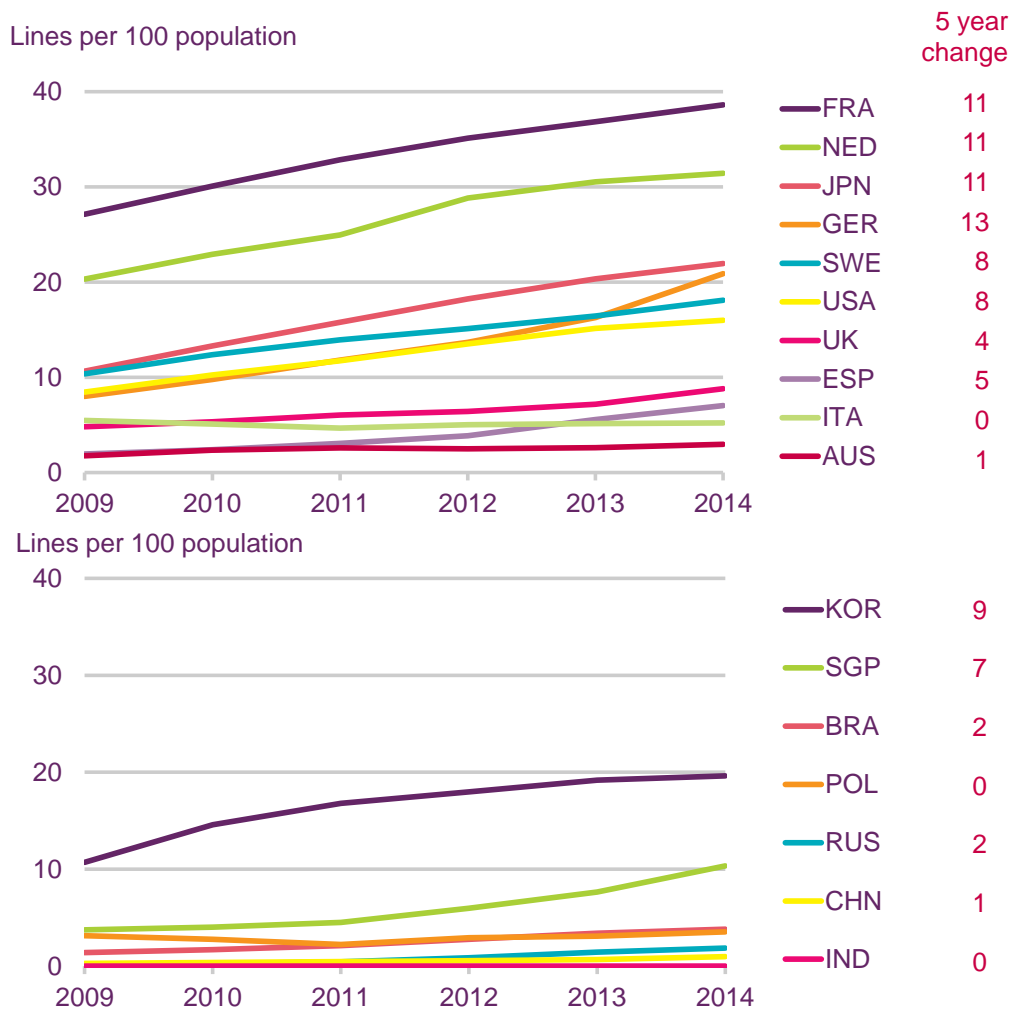
Source: IHS / industry data / Ofcom

The number of managed VoIP connections per 100 people increased in the majority of our comparator countries in the five years to 2014

As shown in Figure 5.10, the number of managed VoIP connections per 100 people was highest in France among our comparator countries in 2014 (39 connections per 100 people), followed by the Netherlands (31 connections) and Japan (22). The three comparator countries with the lowest number of managed VoIP connections per 100 people in 2014 were the BRIC countries: India (less than one connection per 100 people), China (one connection) and Russia (two). The UK had nine managed VoIP connections per 100 people by the end of 2014 (up by two since the previous year).

In the five years to 2014, the number of managed VoIP connections per 100 people increased in all but one of the comparator countries. Russia and India had the highest compound annual growth rates in managed VoIP connections over the five years to 2014 (up 65.2% and 61.7% a year respectively). However, in absolute terms, the number of connections in these countries remained very low. Italy was the only comparator country where managed VoIP connections fell over the same period (down by less than 1% per year).

Figure 5.10 Managed VoIP connections per 100 people



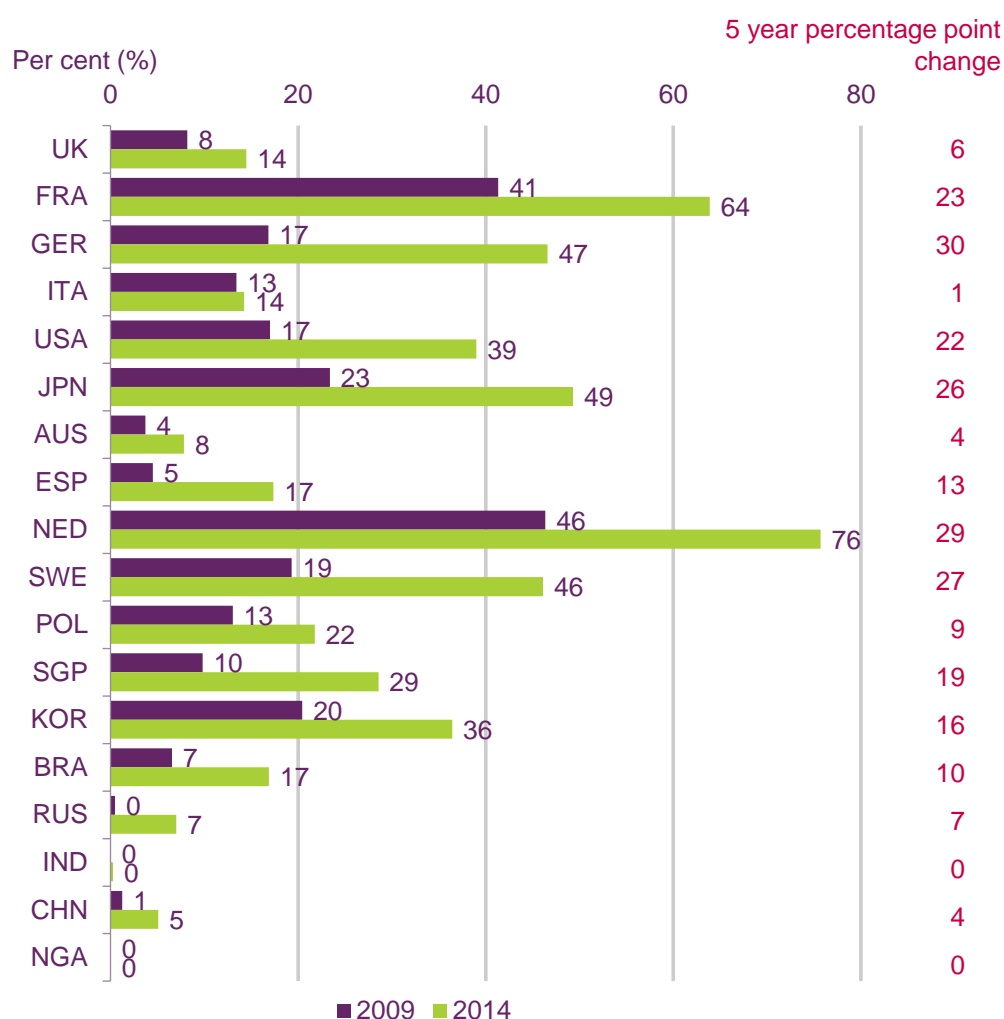
Source: IHS / industry data / Ofcom

Managed VoIP connections as a proportion of total voice connections was highest in the Netherlands in 2014, at 76%

Among our 18 comparator countries, managed VoIP connections as a proportion of total voice connections in 2014 was highest in the Netherlands, at 76%, followed by France (64%); this figure was lowest overall in India (0.3%). By comparison, the proportion of managed VoIP connections in the UK was 14%, the fourth lowest of our EU5 comparator countries (ahead of Italy at 14%) and twelfth lowest overall.

Managed VoIP connections as a proportion of total fixed voice connections increased in all our comparator countries in the five years to 2014. This growth ranged from less than 1pp in India to 30pp in Germany. In the UK, the proportion of managed VoIP connections increased by 6pp in the same period.

Figure 5.11 Managed VoIP connections as a proportion of total voice connections



Source: IHS / industry data / Ofcom

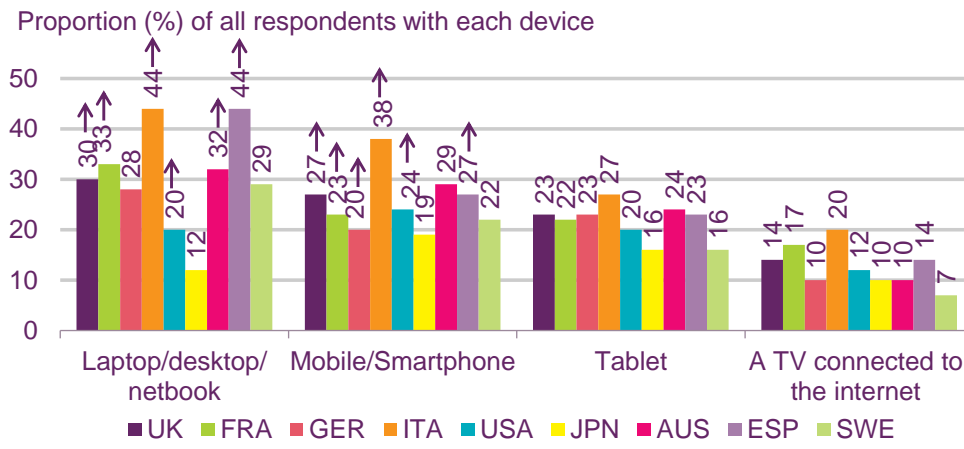
Use of OTT VoIP services by owners of each device type (computers, mobiles, tablets and internet-connected TVs) was highest in Italy in 2015

Of the nine comparator countries for which we have consumer research data, Italy had the highest proportion of respondents who claimed to use OTT VoIP services on each of the four device types: 44% of laptops/desktops/notebooks owners used VoIP, 38% on mobiles/smartphones, 27% on tablets and 20% on an internet-connected TV. For VoIP use on computers, Spain was in line with Italy (44%), while second highest use was in France (33%), followed by Australia (32%). Japan had the lowest claimed use of VoIP among owners of computers, mobiles and tablets (12%, 19% and 16% respectively), while respondents who owned an internet connected TV used VoIP the least in Sweden (7%).

In the majority of our comparator countries, the use of computers and mobiles for OTT VoIP services was significantly higher than in 2014. Computers were the most popular device used for OTT VoIP; more than a quarter of computer owners claimed to use their computer for VoIP in seven of the nine comparator countries in 2014. In the UK, a third of computer owners used OTT VoIP (30%), broadly in line with France, Germany, Australia and Sweden. Italy and Spain had the highest use, with 44% of computer owners using OTT VoIP in both countries. Use of VoIP was also highest in Italy among those who owned mobiles, at 38%. In the UK, 27% of mobile owners used VoIP services (in line with Spain).

There was generally little variation in use of OTT VoIP among owners of tablets or internet-connected TVs, across our comparator countries.

Figure 5.12 OTT VoIP use, by device type



Source: Ofcom consumer research September - October 2015

Base: All who own each device, UK=879/594/398/235, FRA=913/568/335/122, GER=923/623/318/176, ITA=876/779/460/185 USA=904/523/319/195 JPN=840/573/234/98, AUS=906/610/370/191, ESP=897/803/435/194, SWE=879/678/343/213.

(Japan* - Caution low base size less than 100).

Q.9b Which, if any, of the following ways of communicating over the internet do you use each of your devices for?

5.2 The telecoms industry

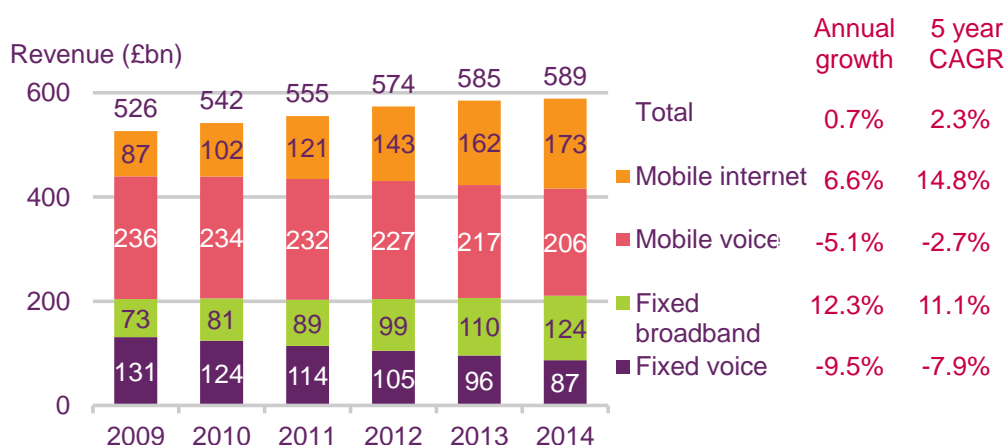
5.2.1 Market overview

Total comparator country retail telecoms revenues increased by 0.7% in 2014

Total retail telecoms revenues across our comparator countries increased by £4bn (0.7%) to £589bn in 2014 (Figure 5.13). Mobile internet and voice services generated the largest proportion of total retail telecoms revenue, at 64.2% (£378bn), a slightly lower proportion than in 2013 (64.8%). Fixed services (broadband and voice) contributed 35.8% (£211bn) to total retail revenue in 2014, up £5bn since 2013. Total fixed voice revenue fell by £9bn (9.5%) to £87bn in 2014, as a result of falling call volumes (see Figure 5.20), while total fixed broadband revenue increased (by £14bn (12.3%) to £124bn) in 2014, due to the increased use of these services (see Figure 5.42).

Mobile internet revenue (including messaging) increased by £11bn (6.6%) to £173bn between 2013 and 2014, almost doubling since 2009 (£87bn). This was partially due to increasing data use. Total mobile voice revenues continued to fall, down by £11bn (5.1%) to £206bn. Mobile voice generated a greater proportion of total telecoms retail revenue than mobile internet at (34.9%) in 2014, although this proportion was lower than in 2013 (37.1%).

Figure 5.13 Total comparator country retail telecoms revenue, by sector: 2009- 2014



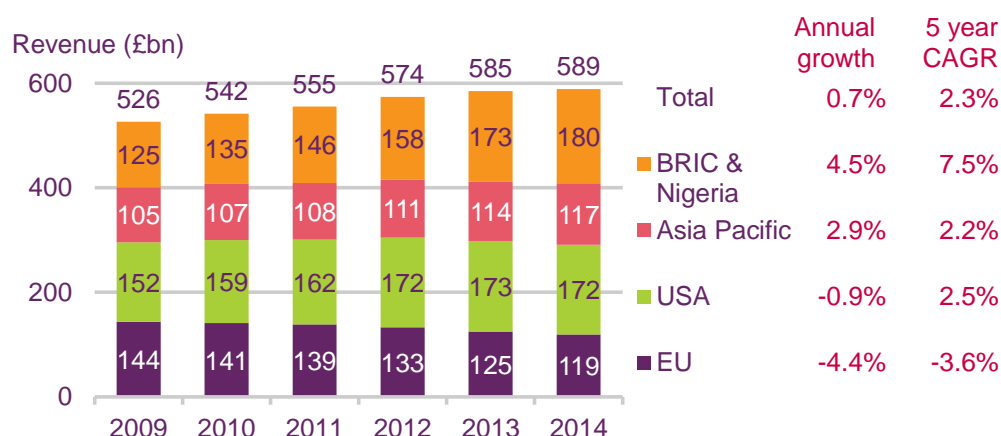
Source: IHS / industry data / Ofcom

Note: Fixed voice revenues include managed VoIP revenues; voice revenues include access/line rental revenues and may include revenues relating to bundled data services. Mobile internet excludes mobile messaging services. All figures expressed in nominal terms.

The BRIC countries and Nigeria generated the largest proportion of retail telecoms revenue of all the comparator nations

The increase in total comparator country retail telecoms revenue in 2014 is likely to have been driven by revenue growth in Nigeria and the BRIC comparator countries, up 4.5% to £180bn, and in Asia Pacific, up 2.9% to £117bn (Figure 5.14). The BRIC countries and Nigeria contributed the largest proportion of total retail telecoms revenue in 2014, at 30.6%, ahead of the US (29.1%) which had previously been the largest contributor to retail telecoms revenue. Total retail telecoms revenue in the US fell for the first time since 2009; by 0.9%, from £173bn in 2013 to £172bn in 2014. Revenue among the European comparator countries declined at an average rate of 3.7% per year in the five years to 2014, while year on year, revenues fell by £6bn (4.4%) to £119bn in 2014.

Figure 5.14 Total comparator country retail telecoms revenue, by country type: 2009-2014



Source: IHS / industry data / Ofcom

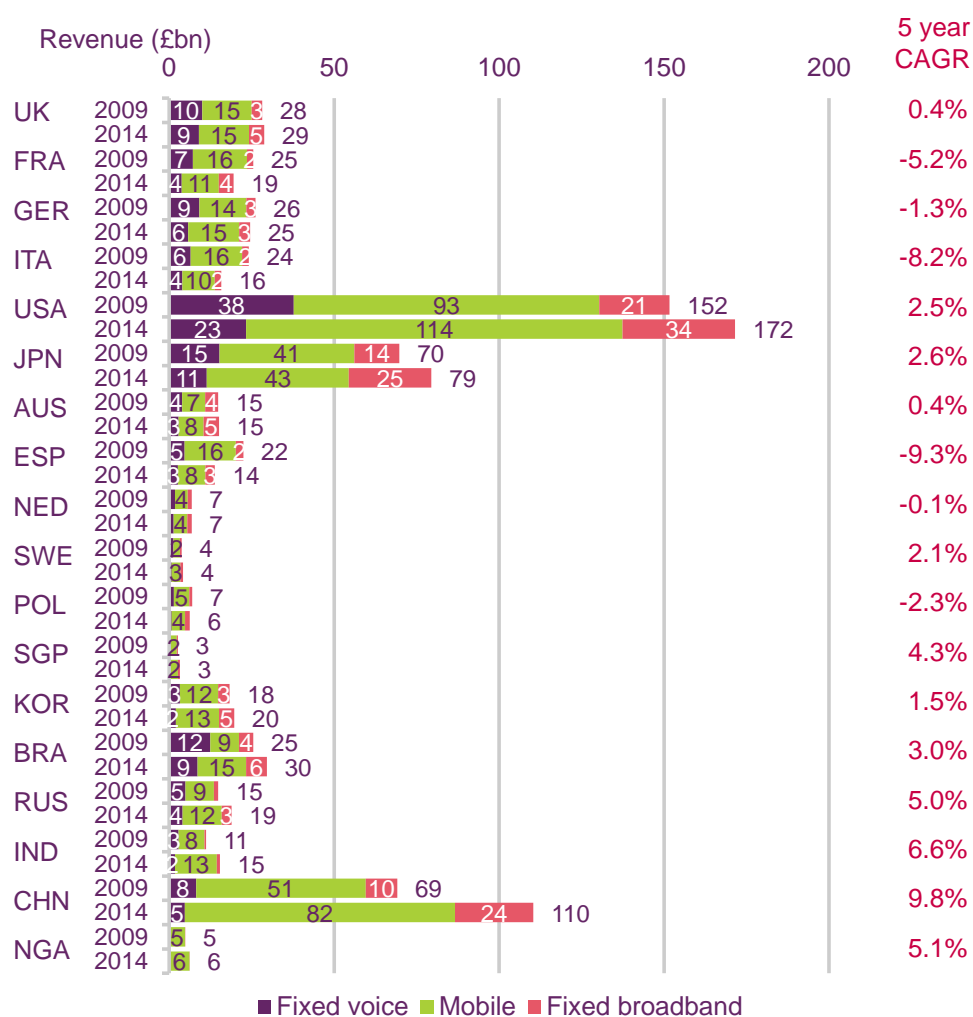
Note: All figures expressed in nominal terms.

The US and China generated almost half the total comparator country retail telecoms revenue in 2014

The US continued to have the highest retail telecoms revenue of all the comparator countries, at £172bn in 2014, followed by China (£110bn) and Japan at £79bn (Figure 5.15). Between them, the US and China generated almost half (48%) of total retail telecoms revenue for all the comparator countries in 2014.

Over the five years to 2014, total retail telecoms revenue increased in the majority of comparator countries; the highest average growth was in China, at 10% per year. The UK had a slight increase over the same period, up by £1bn to £29bn in 2014 (an increase of less than 1% per year on average). Total retail telecoms revenues fell in most European comparator countries; the largest fall was in Spain, down by an average of 9.3% per year over the five years to 2014. The other European comparator countries where telecoms revenues declined over the period were Italy (down 8.2%), France (down 5.2%), Poland (2.3%) and Germany (1.3%).

Figure 5.15 Telecoms service retail revenues, by country and sector: 2009 and 2014



Source: IHS / industry data / Ofcom

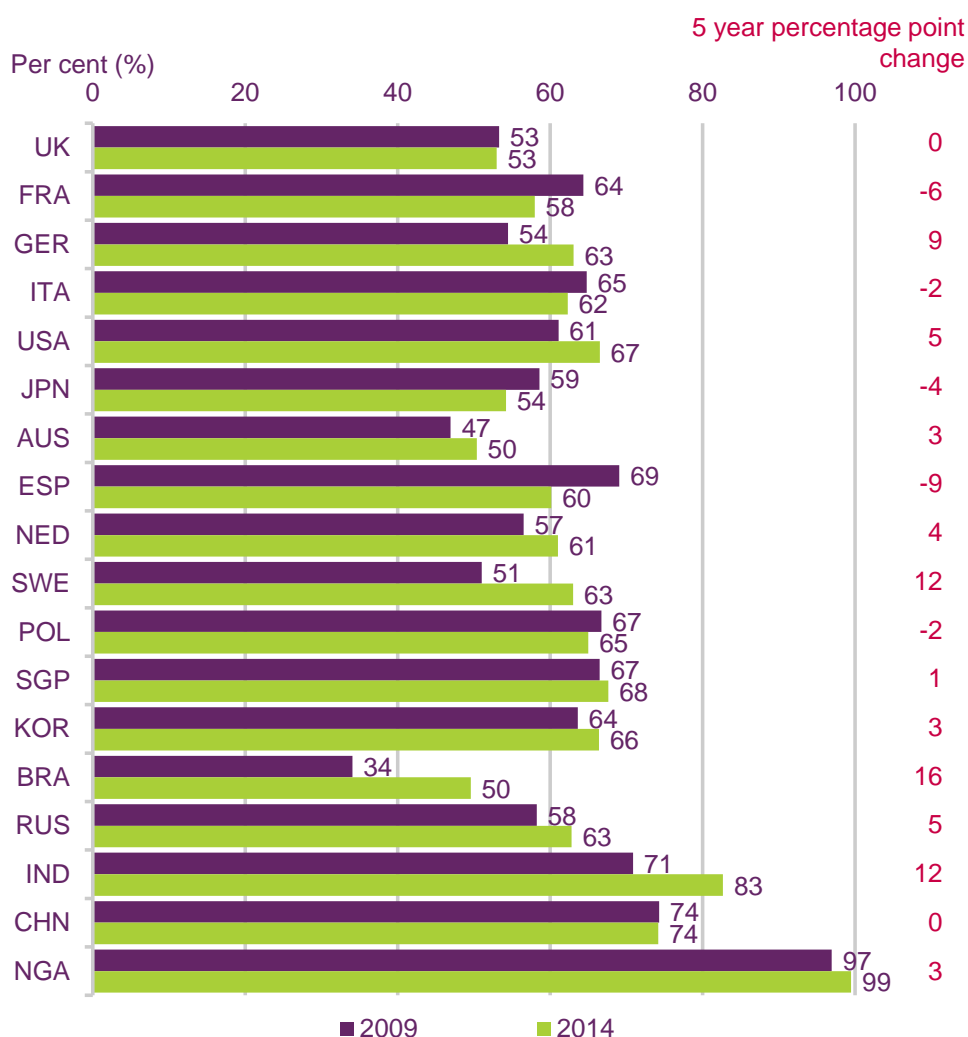
Note: Fixed voice revenues include managed VoIP revenues. All figures expressed in nominal terms.

Mobile services generated at least half of total telecoms revenues in all comparator countries in 2014

Mobile services (comprising data, messaging and voice services) contributed at least 50% of total telecoms revenues in all of our 18 comparator countries in 2014 (Figure 5.16). Nigeria had the highest proportion of total telecoms revenues generated by mobile services, at 99%, followed by India (83%) and China (74%). This is probably a result of the rapid expansion of mobile markets in these countries and the low number of fixed lines, 0.10 and 2.14 per 100 population in Nigeria and India respectively (Figure 5.48). In the UK, mobile services generated 53% of total telecoms revenues in 2014.

Changes in the proportion of retail telecoms revenue generated by mobile services ranged from a 9pp decrease in Spain (to 60%) to a 16pp increase in Brazil (to 50%) in the five years to 2014. The UK and China were the only two comparator countries in which revenues remained stable, at 53% and 74% respectively.

Figure 5.16 Mobile as a proportion of total telecoms revenues: 2009 and 2014



Source: IHS / industry data / Ofcom

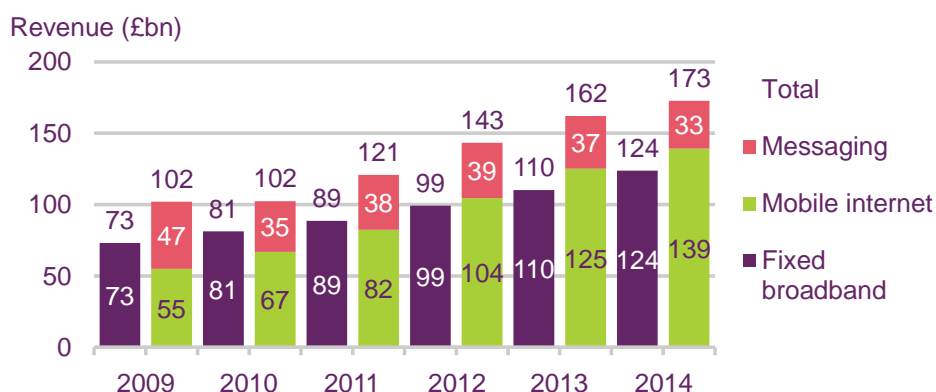
Combined revenues for mobile internet and mobile messaging continued to be higher than fixed broadband revenues

Combined revenues for mobile internet and mobile messaging increased by £11bn to £173bn in 2014, and continued to be higher than fixed broadband revenue (£124bn in 2014) (Figure 5.17).

Mobile internet revenue (excluding messaging) was up by £14bn (11.2%) to £139bn in 2014 and contributed 80.6% of the combined revenues for mobile internet and mobile messaging. By comparison, fixed broadband services generated £124bn in 2014, up £14bn (12.3%) compared to 2013. This increase in fixed broadband revenue was partly due to the growth in fixed broadband connections in 17 of our comparator countries between 2009 and 2014 (Figure 5.27).

The total revenue generated by mobile messaging (including SMS and MMS), which fell for the first time in 2013, continued to drop in 2014, down by £4bn (9.3%) to £33bn. The main reasons for this decline are the substitution of OTT (over-the-top) messaging services for network-based services, and increasing smartphone take-up, as more sophisticated handsets enable mobile users to access alternative communication methods, such as email, instant messaging and social networking sites.

Figure 5.17 Total fixed broadband and mobile data revenue across all comparator countries: 2009-2014



Source: IHS / industry data / Ofcom

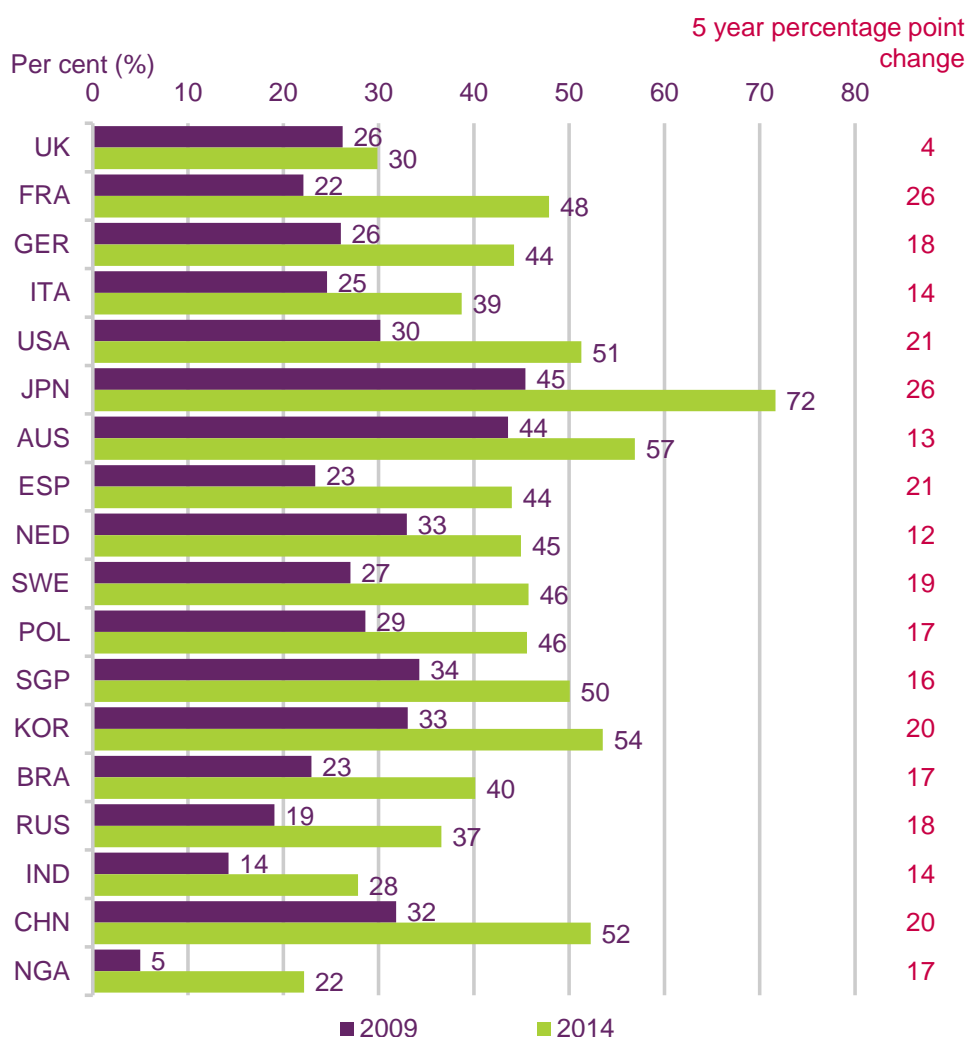
Note: Messaging includes SMS and MMS. All figures expressed in nominal terms.

Data revenue as a proportion of total telecoms revenue was highest in Japan in 2014

Of all the comparator countries, Japan had the highest proportion of total telecoms revenue generated by data services (72%) in 2014, followed by Australia, at 57%, and South Korea, at 54% (0). Nigeria had the lowest proportion, at 22%. The UK had the third lowest data revenue in 2014, at 30%. This is partly because data revenue for bundled mobile data and messaging services in the UK are recorded as mobile voice revenue.

Data revenue increased in all our comparator countries between 2009 and 2014, with the fastest growth rates in Japan and France, both up by 26pp (data revenue in France has more than doubled in the five years to 2014). Growth in data revenue in less developed countries has been comparable to growth in developed ones. For example, revenues in India in 2014 were up 14pp, while in Nigeria, data services have grown rapidly over the five years to 2014; revenues are up by 17pp, from 5% in 2009 to 22% in 2014. The UK was the only comparator where the proportion of revenue generated by data services grew by less than 10pp in the five years to 2014 (by just 4pp). This is partly because in the UK bundled mobile data and messaging revenue is recorded as mobile voice revenue, as stated above.

Figure 5.18 Data revenue as a proportion of total telecoms revenue: 2009 and 2014



Source: IHS / industry data / Ofcom

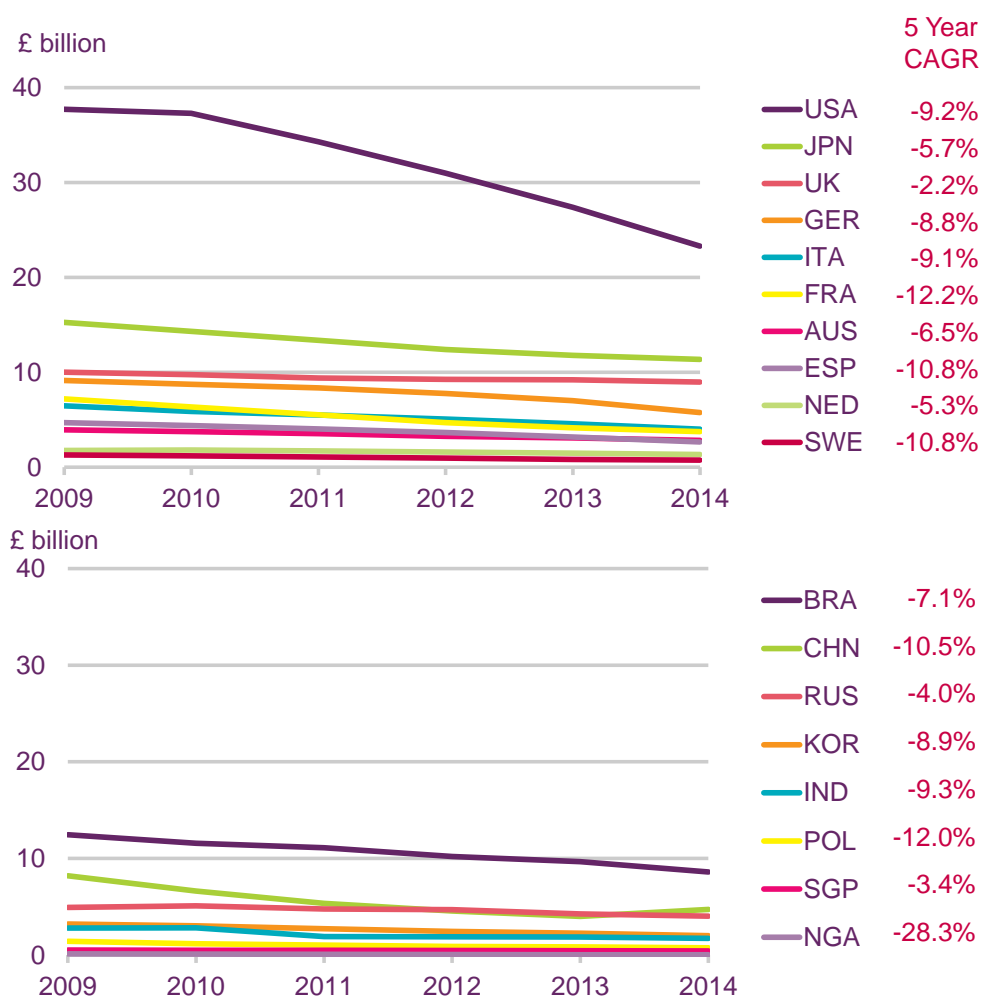
5.2.2 Fixed voice services

Total retail fixed line voice revenues generated across all comparator countries continued to fall in the five years to 2014

Total retail fixed line voice revenues across all comparator countries fell by £9.08bn (9.5%) between 2013 and 2014 (£86.81bn). This continuing decline has been observed since 2009 (over the five years to 2014, retail fixed line voice revenues have fallen at an average rate of 7.9% per year across all countries). The decline in retail fixed-line voice revenue is primarily due to increasing fixed-to-mobile substitution, as well as the growing use of alternative voice and non-voice communication methods such as email and instant messaging.

The US had the highest fixed voice revenue at the end of 2014 (£23.28bn), although revenue has been falling over the last five years at an average annual rate of 9.2%, with a sharp decrease since 2010 (Figure 5.19). Nigeria experienced the fastest rate of decline over the five-year period, down on average by 28.3% per year (although the fixed market in this country is very small), followed by France, at an average rate of 12.2%. In the UK, retail fixed-line voice revenues fell on average by 2.2% per year to £8.93bn in the five years to 2014, the lowest rate of decline among the comparator countries. This drop was mainly due to the decrease in fixed voice call volumes, which fell by an average annual rate of 6.9% (Figure 5.20).

Figure 5.19 Retail fixed line voice revenues: 2009-2014



Source: IHS / industry data / Ofcom

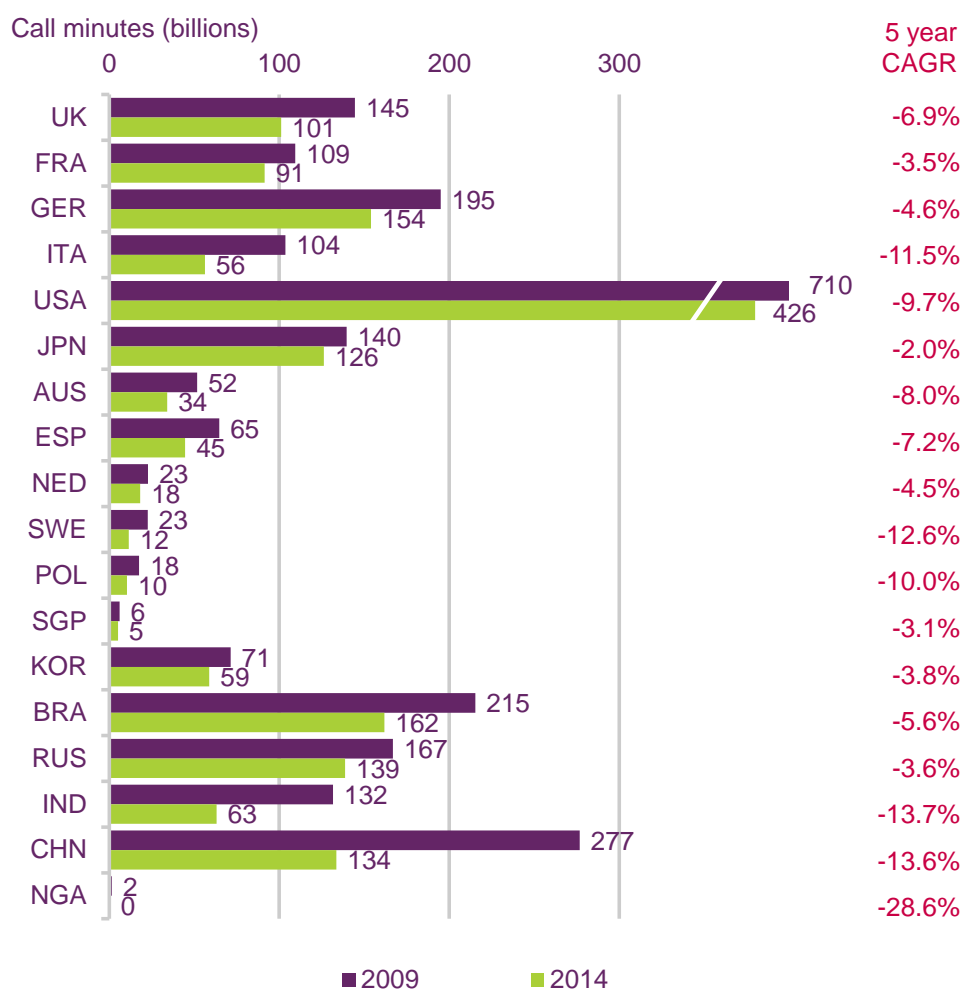
Note: Includes managed VoIP revenues. All figures expressed in nominal terms.

Fixed-line voice call volumes fell in all comparator countries in the five years to 2014

The total fixed voice call volumes across all the countries fell by an average annual rate of 7.8% to 1636 billion (1.6 trillion) minutes in the five years to 2014. This was primarily due to the decrease in fixed voice call minutes, down by an average of 11.3% annually, which was partially offset by increasing managed VoIP call volumes, up by 8.1% a year (further information regarding managed VoIP services can be found in Section 5.1.4 of this report).

In the UK, total fixed line call volumes decreased by an average annual rate of 6.9% to 101 billion minutes between 2009 and 2014 (Figure 5.20). Nigeria had the steepest fall in fixed-line voice call volumes, down on average by 28.6% per year over the period (although this decrease represents only small changes in the absolute figures: call volumes in Nigeria were less than 0.3 billion minutes in 2014), followed by India and China (down on average by 13.7% a year and 13.6% per year respectively). Potential reasons for falling fixed call volumes include consumers migrating from fixed voice services to mobile, as well as an increase in other communication methods, such as social networking and instant messaging.

Figure 5.20 Fixed line voice call volumes: 2009 and 2014



Source: IHS / industry data / Ofcom
 Note: Includes managed VoIP calls.

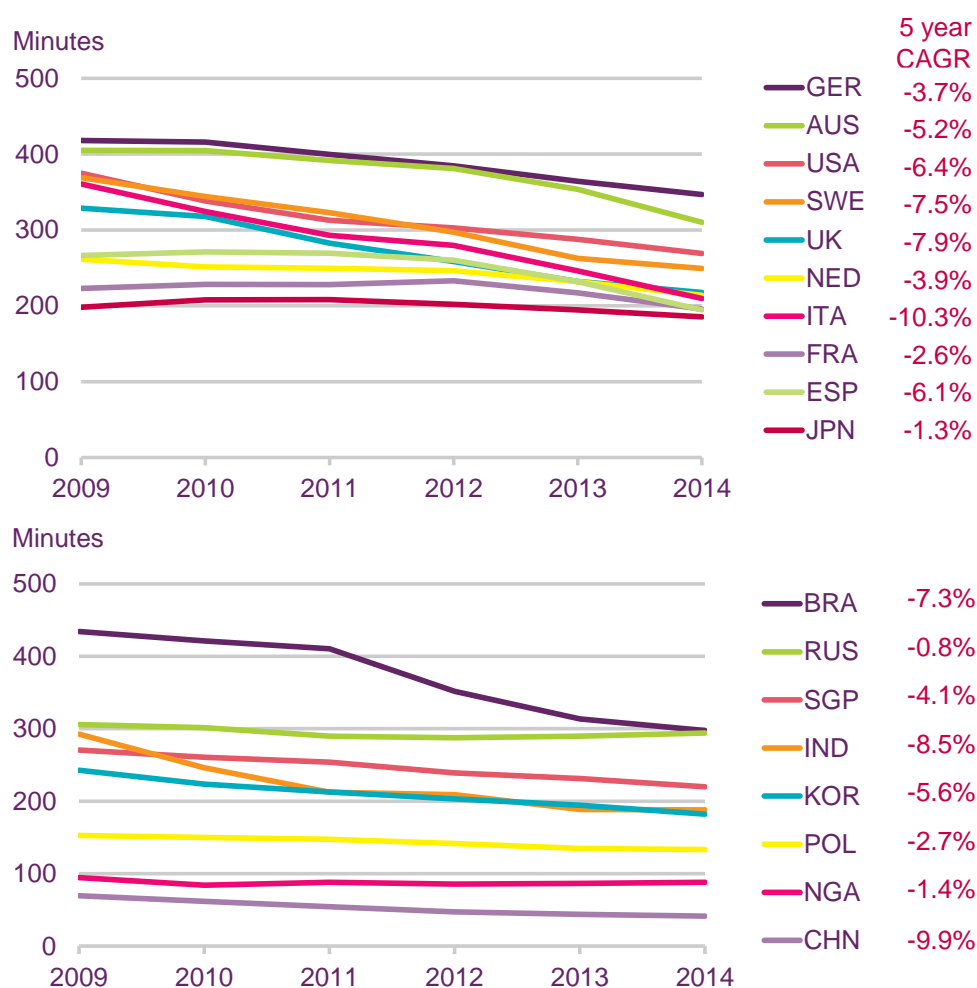
The number of outgoing minutes per fixed line has fallen in all countries in the five years to 2014

The total number of outbound voice call minutes per fixed line fell by an average of 7.5% a year to 213 minutes per month between 2009 and 2014 (Figure 5.21). As stated previously, the main driver behind this decline was growing fixed-to-mobile substitution; fixed voice call minutes fell by an average of 11.3% annually, while mobile minutes increased by an average of 9.5% per year.

The number of outgoing minutes per fixed line was highest in Germany in 2014, at 347 minutes per month, and lowest in China at 41 minutes per month. By comparison, the UK had 218 outgoing minutes per fixed line in 2014.

In the five years to 2014, Italy experienced the largest percentage decrease in outgoing minutes per fixed line, falling on average by 10.3% per year. China followed, with outgoing minutes dropping on average by 9.9% a year over the same period. By comparison, the number of outgoing call minutes per fixed line in the UK fell at an average rate of 7.9% per year in the five years to 2014. This was the fourth highest rate of decline among our comparator countries.

Figure 5.21 Monthly outbound minutes per fixed line: 2009-2014



Source: IHS / industry data / Ofcom

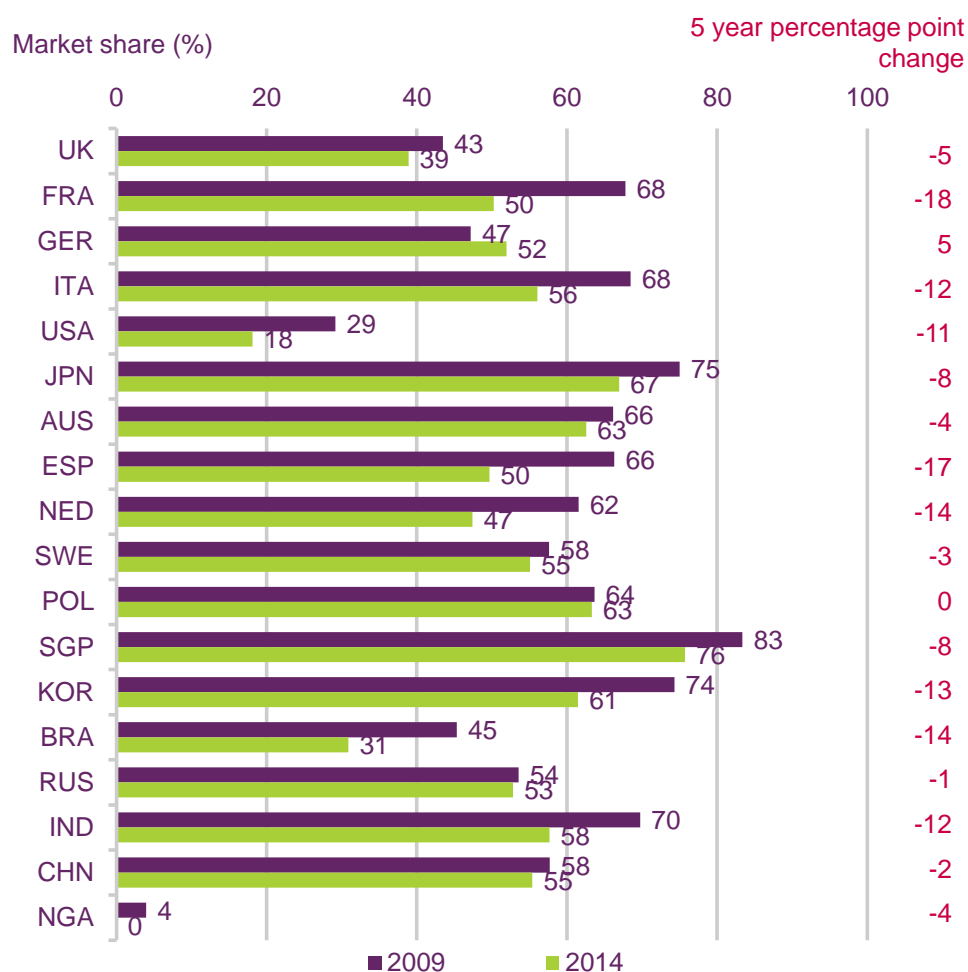
Note: Includes managed VoIP calls.

Germany was the only country in which the incumbent operator’s share of fixed voice call volumes increased in the five years to 2014

The incumbent operator’s share of fixed call volumes fell in all of our comparator countries with the exception of Germany, where the incumbent’s share increased by 5pp to 52% in the five years to 2014, primarily due to growth in its VoIP customer base (Figure 5.22). France experienced the largest decline over the same period; the incumbent’s market share fell by 18pp to 50%. Spain’s incumbent was also at 50% in 2014, down by 17pp over the last five years.

In the UK, BT’s share of fixed voice call volumes decreased by 5pp to 39% over the five-year period. Only in three comparator countries was the respective incumbent’s share lower: Brazil (31%), the US (18%) and Nigeria, where Nitel was declared inactive in 2014 due to being financially unviable and insufficient to support quality of service. The incumbent operator’s share of fixed voice call volumes was highest in Singapore in 2014 (at 76%), followed by Japan (67%), due to the late liberalisation of the fixed-line markets in these countries.

Figure 5.22 Incumbent operator's share of fixed voice call volumes: 2009 and 2014



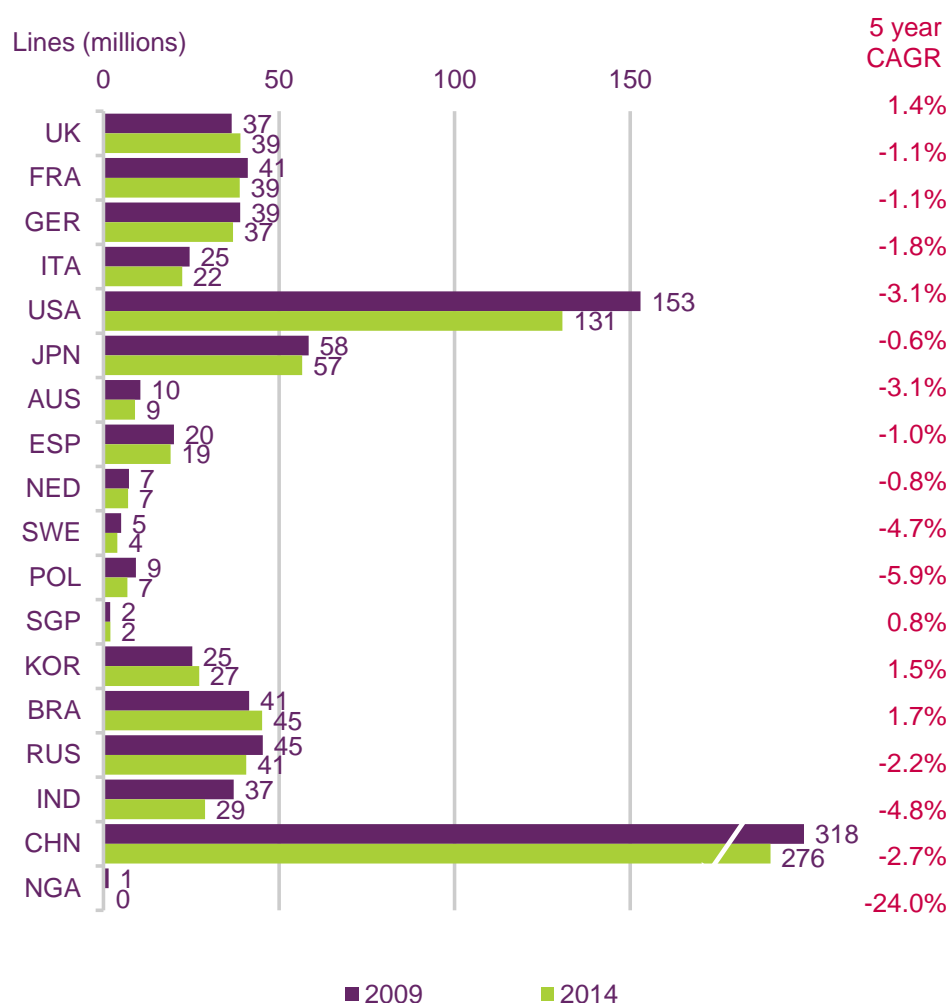
Source: IHS / industry data / Ofcom

The UK was one of four comparator countries to experience an increase in the number of fixed exchange lines in 2014

The total number of fixed exchange lines (including PSTN lines and managed VoIP connections) fell at an annual average rate of 2.0% in the five years to 2014 and decreased by 3 million (0.3%) to 791 million compared to 2013 (Figure 5.23). This was mainly due to the continued substitution of fixed voice services by mobile services and alternative communication methods.

The UK was one of four countries (along with Singapore, South Korea and Brazil) where the number of fixed exchange lines increased in the five years to 2014, up by 2 million to 39 million (an average increase of 1.4% annually). The UK increase was due to strong demand for xDSL access (requiring a fixed exchange line). Over the same period, Brazil had the largest increase up by an average of 1.7% annually. Nigeria had the steepest average annual decline, at 24.0% a year, with the number of fixed lines falling to less than 0.5 million in 2014. The UK was one of two comparator countries (along with Italy) where the number of fixed exchange lines increased in 2014, up by 3.1% compared to a year previously. In the majority of our comparator countries, the number of lines was unchanged during the year.

Figure 5.23 Fixed exchange lines: 2009 and 2014



Source: IHS / industry data / Ofcom
 Note: Includes managed VoIP connections

5.2.3 Fixed broadband services

The US, Japan and China generated over two-thirds (67%) of the total comparator countries' fixed broadband revenue in 2014

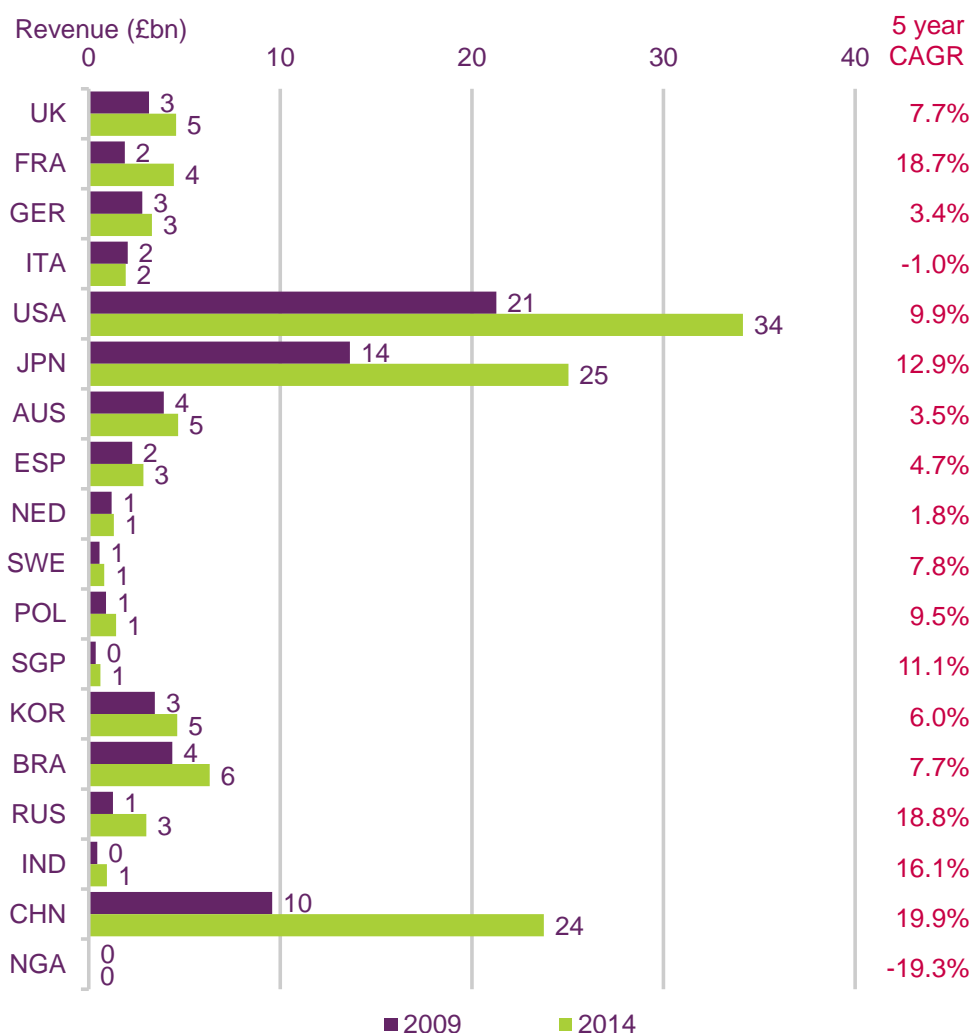
Fixed broadband revenues were highest in the US at £34bn, followed by Japan and China (at £25bn and £24bn respectively). Combined, these three countries accounted for 67% of total comparator country fixed broadband revenue. The UK had the seventh-highest fixed broadband revenue of all the comparator countries in 2014, at £5bn (in line with Australia and South Korea), and the highest among the EU5 countries.

In the five years to 2014, total fixed broadband revenues increased at an average annual rate of 11.1%, from £73bn to £124bn. China had the highest average annual growth, at 19.9% per year, followed by Russia (up on average by 18.8% a year). France experienced the third highest increase, at 18.7% a year, over the period; it also had the second highest year-on-year increase (after Nigeria) in 2014 at 82.6% (partly due to the launch of VDSL services by France Telecom in mid-2013). By comparison, total fixed broadband revenue in the UK went up at an average rate of 7.7% per year in the five years to 2014.

Italy and Nigeria were the only comparator countries in which fixed broadband revenue fell in the five years to 2014, down on average by 1.0% and 19.3% per year respectively (although

these decreases were small changes in absolute terms) (Figure 5.24). Nevertheless, revenue increased in both countries in 2014; in Nigeria it was up by 86.1% (although in absolute terms this was still very low, below £10m), and in Italy it was up by 0.6%.

Figure 5.24 Fixed broadband revenues: 2009 and 2014

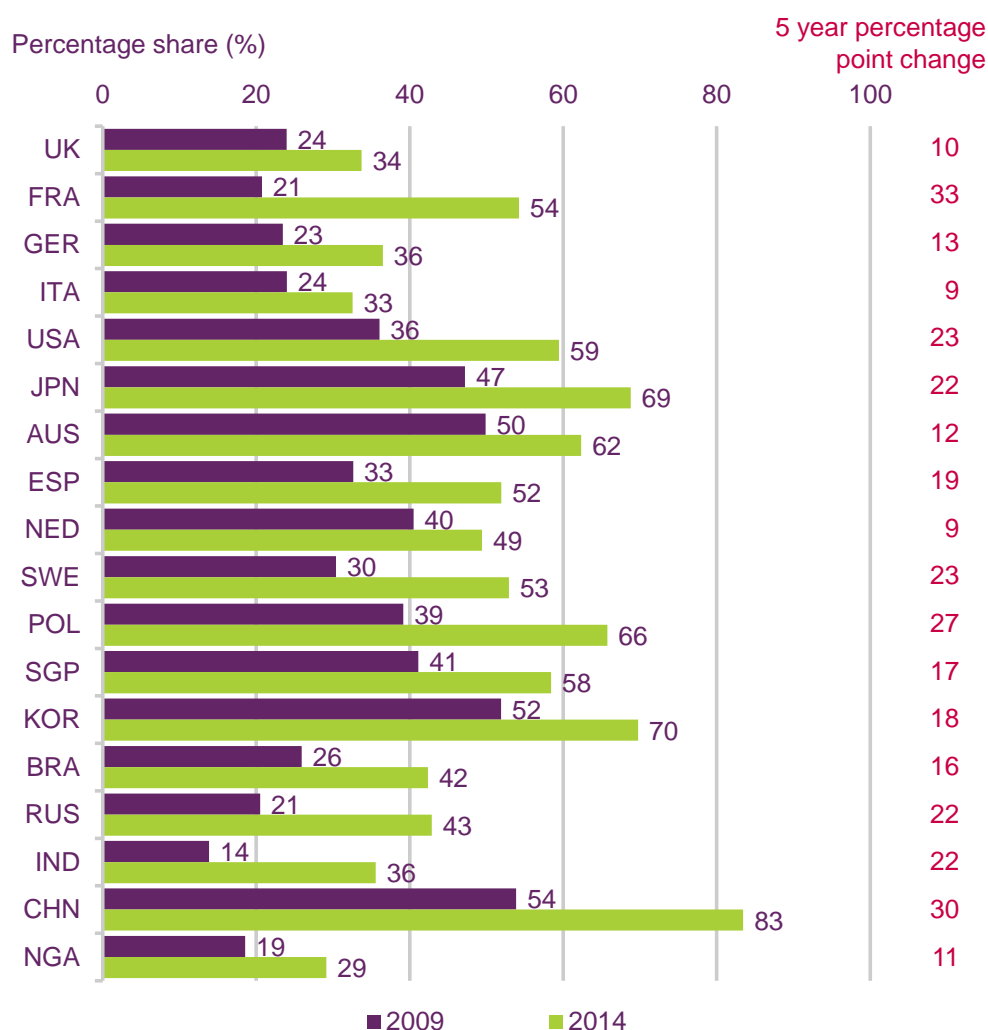


Source: IHS / industry data / Ofcom
 Note: All figures expressed in nominal terms.

The proportion of total comparator country fixed telecoms revenues that were generated by fixed broadband services was 59% in 2014

The proportion of total fixed telecoms revenues generated by fixed broadband services across our 18 comparator countries increased by 23pp to 59% in the five years to 2014. In China, fixed broadband accounted for 83% of total fixed revenues (the highest of all the comparator countries). China also experienced the second highest increase in this proportion in the five years to 2014, up by 30pp. France had the highest increase of all our comparator countries, up 33pp to 54% due to declining fixed voice and VoIP revenues (down by 12.2%) and increasing fixed broadband revenues (up 18.7% - see Figure 5.24). By comparison, in the UK the proportion of total fixed revenues generated by fixed broadband increased by 10pp to 34% over the five years to 2014.

Figure 5.25 Fixed broadband as a proportion of total fixed revenues: 2009-2014



Source: IHS / industry data / Ofcom

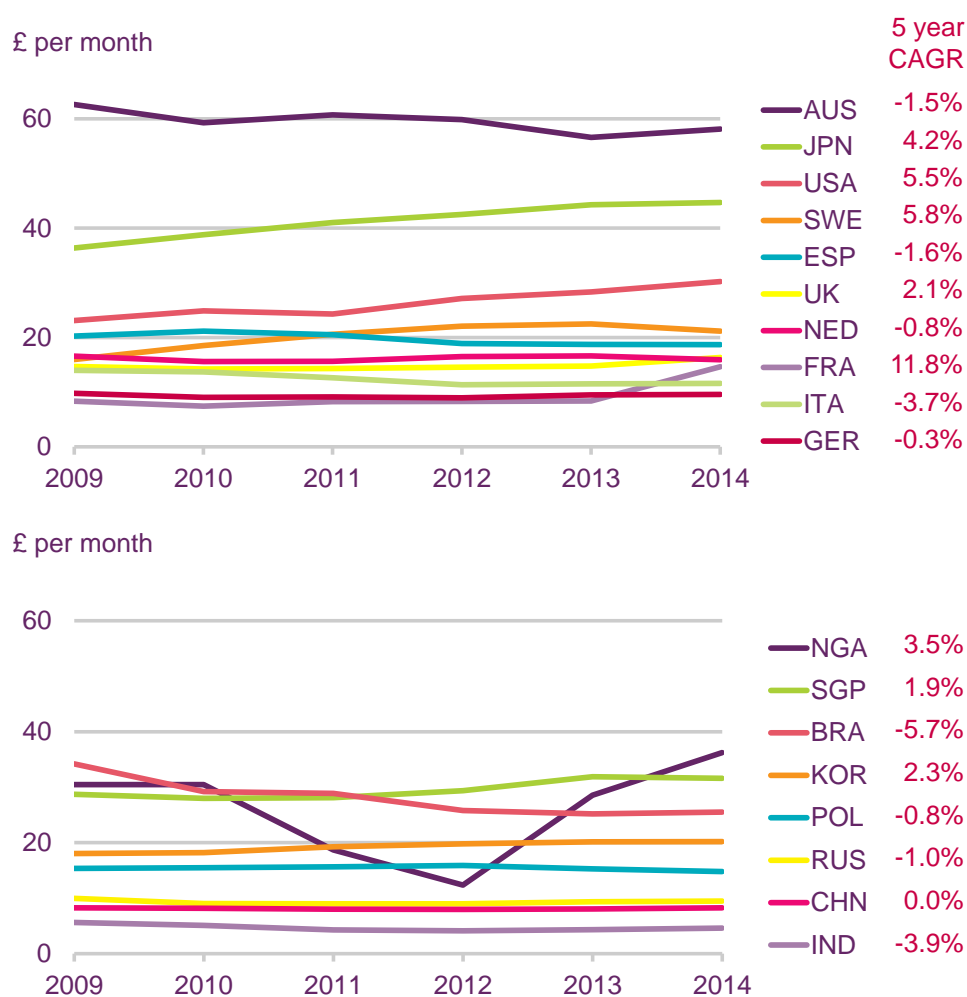
Australia had the highest average monthly retail revenue per fixed broadband connection in 2014, at £58.13

Average monthly retail fixed broadband revenue per connection was up 3.7% to £17.36 across our comparator countries in 2014.

Fixed broadband revenue per connection was highest in Australia in 2014, at £58.13 per month, followed by Japan at £44.68. Nigeria had the third highest average revenue per connection, at £36.24, although it is important to note that this market is highly unstable (for example, revenue dropped to £12.37 in 2012 only to go up by 131% to 28.58 in 2013). Average revenue per connection was lowest in India, China and Russia (at £4.61, £8.26 and £9.49 respectively).

In the five years to 2014, average monthly fixed broadband revenues per connection increased in eight of our 18 comparator countries. France experienced the largest increase over this period, up on average by 11.8% a year to £14.63 (almost double the rate in Sweden, which had the second highest average annual increase, at 5.8% a year). In the UK, revenues grew by an average of 2.1% to £16.34 between 2009 and 2014. Brazil had the largest decrease in monthly retail fixed broadband revenues per connection over this period, down by an average of 5.7% per year, followed by India (down by 3.9% per year).

Figure 5.26 Retail fixed broadband average revenue per connection: 2009-2014



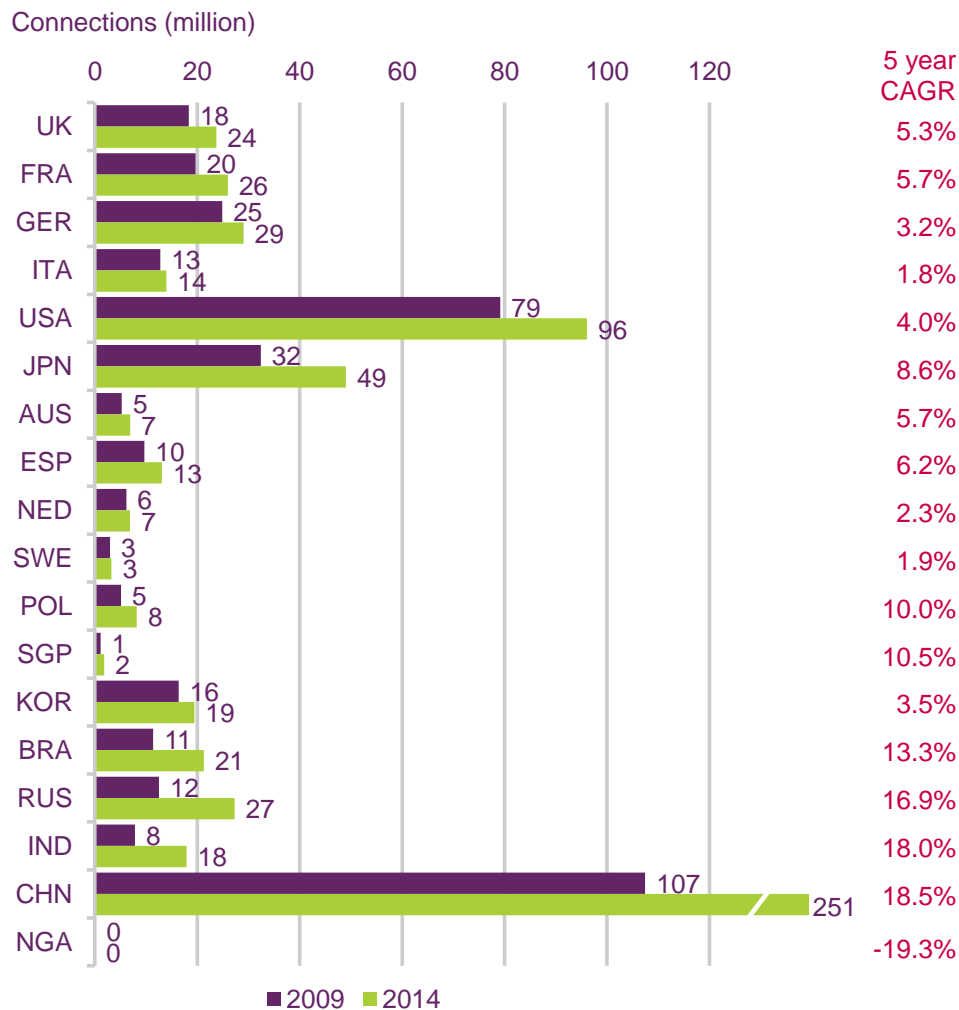
Source: IHS / industry data / Ofcom
 Note: All figures expressed in nominal terms.

China had the highest annual average growth rate of total fixed broadband connections in the five years to 2014

The total number of fixed broadband connections across the comparator countries increased by 242 million to 615 million in the five years to 2014, an average increase of 10.5% a year. The average annual growth rate was highest in the BRIC comparator countries, ranging from 13.3% a year in Brazil to 18.5% a year in China. In the UK, the number of connections increased on average by 5.3% a year to 24 million over the same period. Nigeria was the only comparator country where fixed broadband connections declined over the five years to 2014, down on average by 19.3% per year (although the number of connections is very low; less than 1 million). This fall is probably due to low fixed broadband availability and rapid growth in the use of mobile data services.

China had the largest number of fixed broadband connections in 2014, at 251 million (accounting for 41% of the total fixed broadband connections among our comparator countries); this was more than twice the number of connections in the US, which had the second highest number of connections (96 million). Nigeria had the lowest number of connections, at less than 1 million, followed by Singapore at 2 million.

Figure 5.27 Fixed broadband connections: 2009-2014



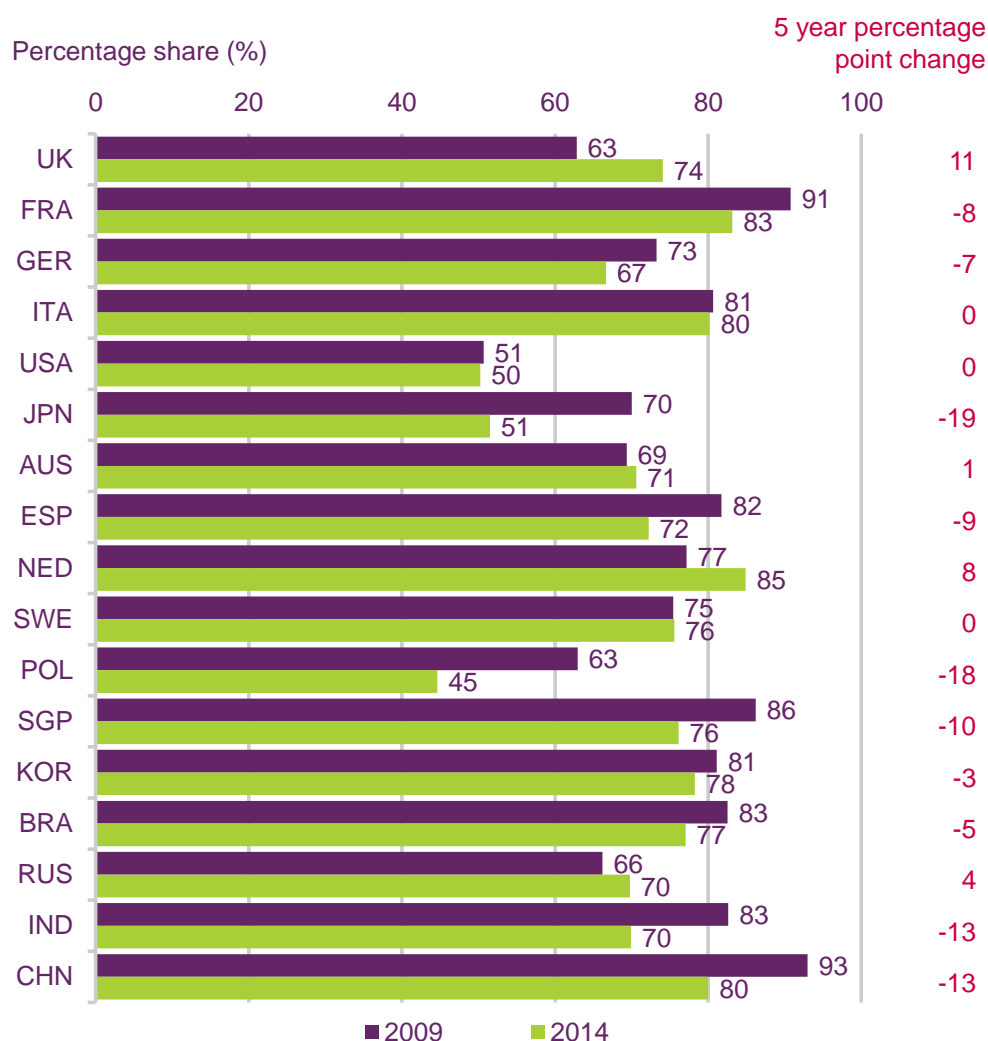
Source: IHS / industry data / Ofcom

The retail connection share of the three largest fixed broadband providers, for each comparator country, was highest in the Netherlands in 2014

The retail connection share of the three largest fixed broadband providers ranged from 45% in Poland to 85% in the Netherlands in 2014. In four of the 18 comparator countries (China, Italy, France and the Netherlands), the share of the three largest fixed broadband providers was 80% or higher. Poland was the only country in which the three largest providers accounted for less than half of connections.

In the five years to 2014, only five of the 17 comparator countries for which data were available saw an increase in the combined fixed broadband connection share of the three largest providers (the UK, the Netherlands, Russia, Sweden and Australia). The largest increase in share was in the UK, up by 11pp in the five years to 74%, mainly as a result of Sky’s success of selling bundled packages and its acquisition of O2 in 2013. Market share fell in all the other comparators; the largest decrease was in Japan (down 19pp to 51%), followed by Poland (down 18pp to 45%).

Figure 5.28 Retail connection share of the three largest fixed broadband providers: 2009-2014



Source: IHS / industry data / Ofcom

5.2.4 Mobile voice and data services

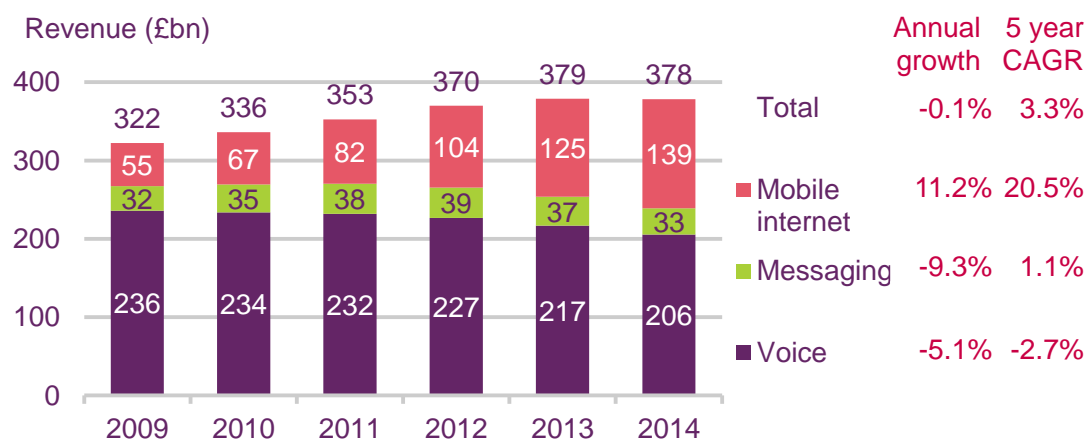
Total comparator country mobile revenues remained relatively stable in 2014

Total mobile telecoms revenues generated in our comparator countries (including voice, messaging and mobile internet services) remained relatively stable in 2014, at £378bn (down 0.1%). The decline was due to falling voice and messaging revenue, which was partially offset by increasing mobile internet revenue, up by 11.2% during the year (Figure 5.29). Total mobile messaging revenue (including SMS and MMS) experienced the largest percentage decrease, down by £3bn (9.3%) to £33bn in 2014, while total voice revenues fell by £11bn (5.1%) to £206bn.

In the five years to 2014, total mobile internet revenue almost tripled, from £55bn in 2009 to £139bn, increasing at an average rate of 20.5% per year. Mobile internet was also the only service to have increased since 2013, up by £14bn (11.2%). The main reason behind this rapid growth was increasing total mobile data volumes, which were up 83.6% a year across our comparator countries in the same period, largely as a result of increasing smartphone use. By comparison, total mobile voice revenues continued to fall, down by an average of 2.7% per year. While total mobile messaging revenue experienced the steepest decline in

2014 (down 9.3%), it increased slightly in the five years to 2014, up on average by 1.1% per year.

Figure 5.29 Total comparator country retail mobile telecoms revenue, by sector: 2009-2014



Source: IHS / industry data / Ofcom

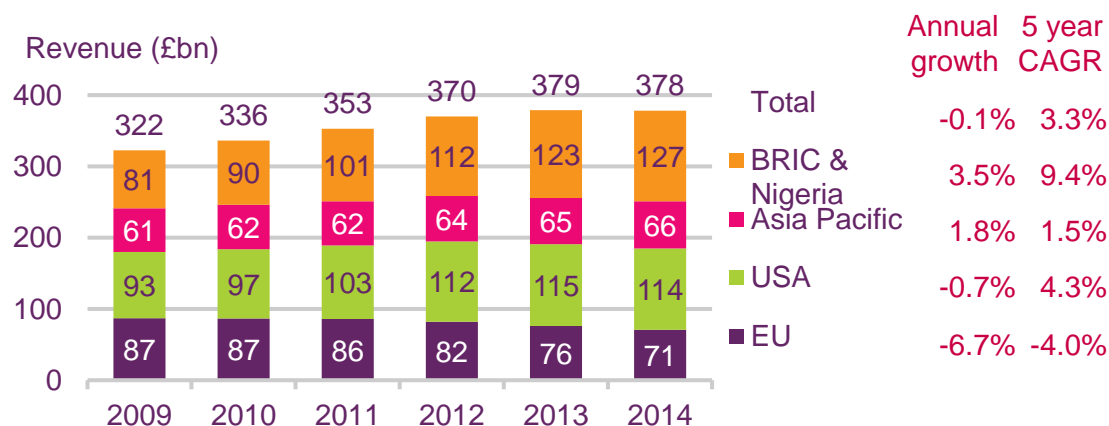
Note: Messaging includes SMS and MMS. All figures expressed in nominal terms.

Total retail mobile telecoms revenue in Europe declined by 6.7% in 2014

The decrease in total comparator country retail mobile telecoms revenues in 2014 was mainly due to a decline in revenues among our EU comparator countries (down by 6.7%), as well as a smaller fall in the US (down 0.7%). In contrast, total retail mobile telecoms revenues continued to increase in the BRIC countries and Nigeria (up 3.5%) and in Asia Pacific comparator countries (up 1.8%).

In the five years to 2014, the only fall in mobile telecoms revenue was in the EU comparator countries, down on average by 4.0% annually. By comparison, the BRIC countries and Nigeria experienced a rapid increase, averaging 9.4% per year over the same period. Mobile telecoms revenues also increased in the US (up 4.3% on average per year) and in Asia Pacific (up 1.5% a year on average) over the same period. This was mainly as a result of increasing mobile internet revenues in these countries.

Figure 5.30 Total comparator country retail mobile telecoms revenue, by country type: 2009-2014



Source: IHS / industry data / Ofcom

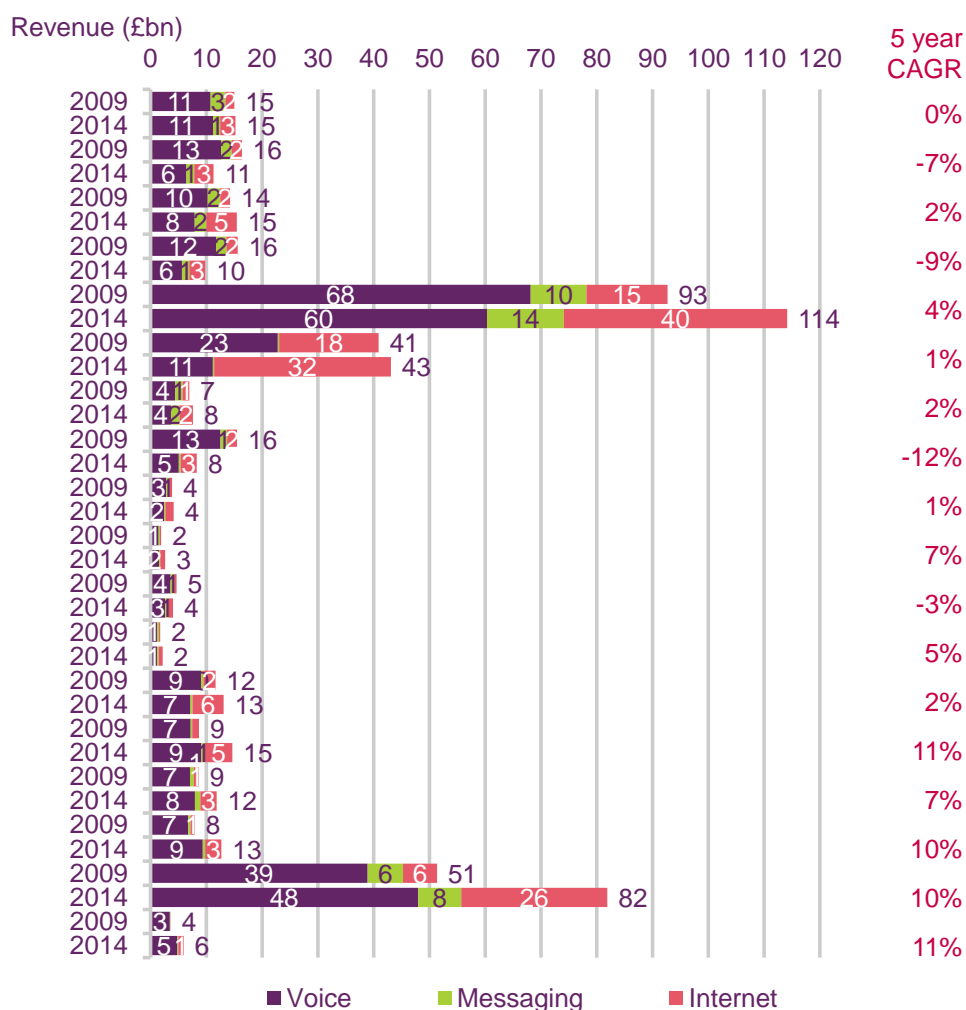
Note: All figures expressed in nominal terms.

The US, China and Japan generated 63% of total retail mobile revenues in 2014

In most of our comparator countries, mobile revenues grew in the five years to 2014 (Figure 5.31). The highest average annual increases over this period were in Brazil and Nigeria (both at 11%), followed by China and India (both at 10%). This was mainly due to large increases in the number of mobile connections, which were up over 12% per year in India, China and Nigeria in the five years to 2014 (see Figure 5.37). Total retail mobile revenues fell in four of our 18 comparator countries (including three of the EU5 countries) over the five years to 2015. The steepest fall was in Spain (down on average by 12% per year), followed by Italy, France and Poland (down on average by 9%, 7% and 3% a year respectively). In the UK, total revenues remained stable over the five years to 2014, at £15bn.

Voice services generated the majority of total mobile revenues in all of our comparator countries, except for Japan, where mobile internet revenue accounted for almost three-quarters (73%) of total revenue. But mobile voice revenue as a proportion of total retail revenue has decreased in 17 of our 18 comparator countries over the five years to 2014 (despite absolute mobile voice revenues having increased in nine comparator countries over the same period). The UK was the exception - voice revenues as a proportion of total revenues were up by 2% in the five years to 2014 (although this is partly because UK voice revenues include revenues from bundled internet and messaging services). By comparison, mobile data revenue increased sharply in all comparator countries in the five years to 2014.

Figure 5.31 Retail mobile revenues, by service and country: 2009 and 2014



Source: IHS / industry data / Ofcom

Note: Messaging includes SMS and MMS. All figures expressed in nominal terms.

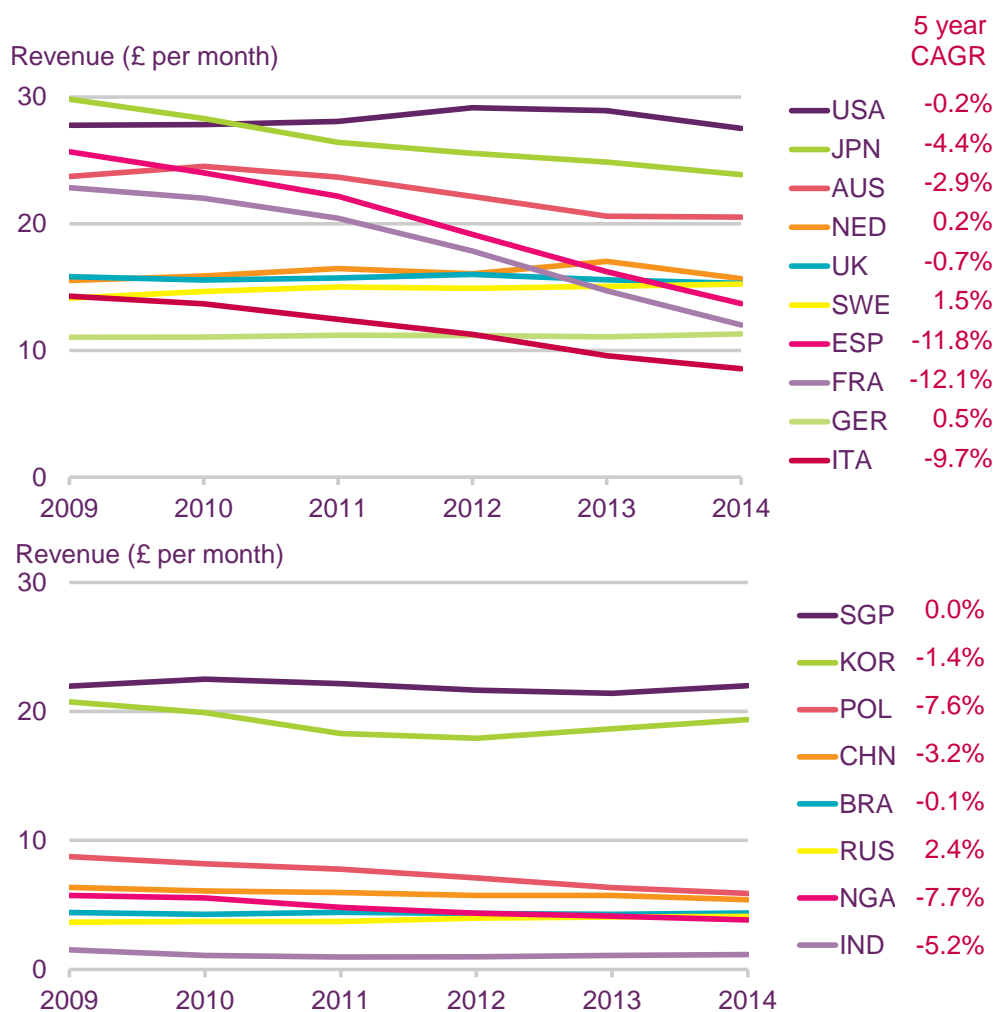
Average monthly revenue per mobile connection in the UK remained relatively stable in the five years to 2014, at £15.27

The average monthly revenue per mobile connection ranged from £1.16 in India to £27.52 in the US in 2014 (Figure 5.32). The UK had the seventh highest average monthly revenue per connection, at £15.27, remaining relatively stable in the five years to 2014.

Average monthly revenue per mobile connection fell in most of our comparator countries in the five years to 2014, with France experiencing the largest decline over this period (down on average by 12.1% per year), followed by Spain and Italy (down on average by 11.8% and 9.7% a year respectively). These countries also had the steepest year-on-year falls in 2014, down 18.3% in France, 15.5% in Spain and 10.6% in Italy.

Average monthly revenues per connection increased in four of our comparator countries (Russia, Sweden, Germany and the Netherlands) in the five years to 2014. Russia had the highest growth, with revenue going up at an average annual rate of 2.4%, followed by Sweden (increasing on average by 1.5% a year). Singapore was the only comparator country where revenues remained relatively stable in the five years to 2014.

Figure 5.32 Average monthly revenue per mobile connection: 2009-2014



Source: IHS / industry data / Ofcom

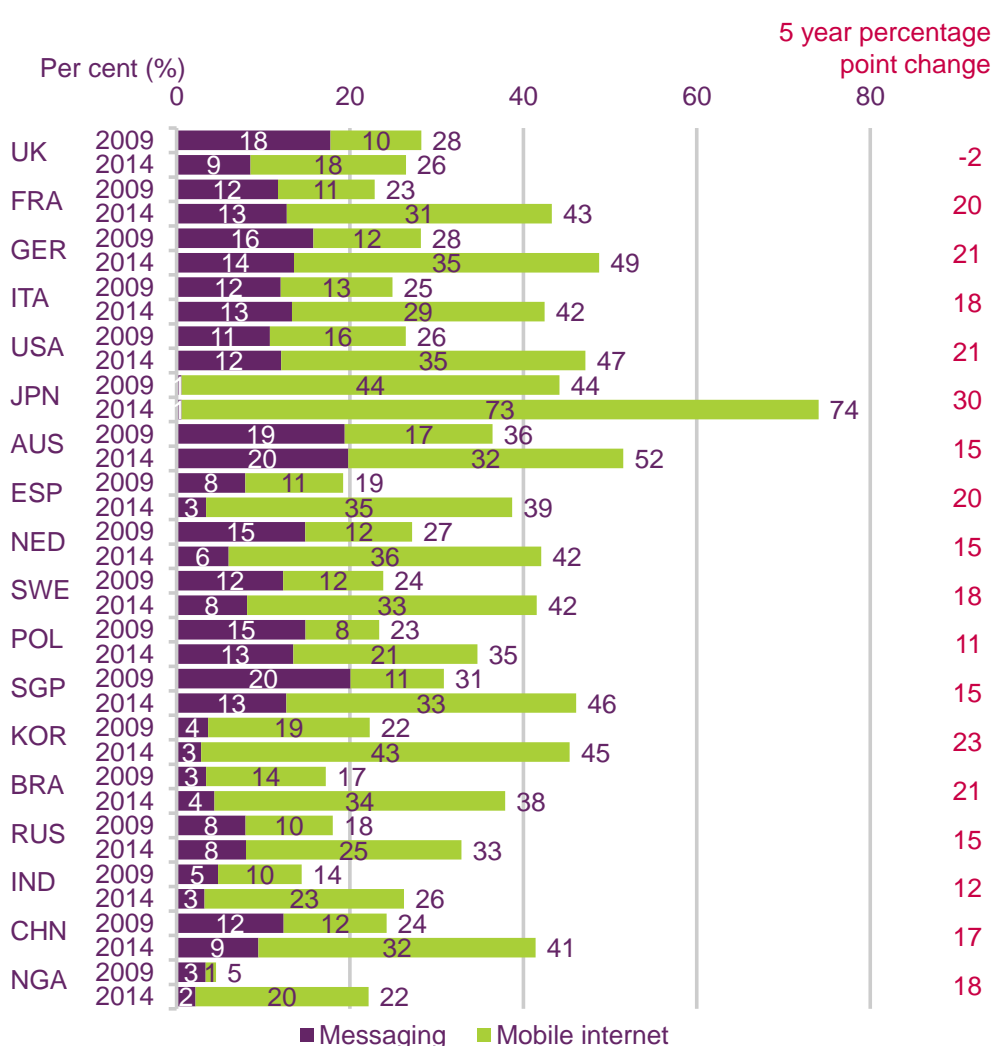
Note: All figures expressed in nominal terms.

All of our comparator countries experienced an increase in mobile internet's contribution to total mobile revenue in the five years to 2014

The proportion of mobile revenue generated by data services (including mobile messaging and mobile internet) ranged from 22% in Nigeria to 74% in Japan in 2014 (Figure 5.33). The UK was the only comparator country where revenues generated by data services fell in the five years to 2014, dropping 2pp per year. It is important to note, however, that figures for the UK will be understated as they exclude revenues relating to SMS and data allowances that are bundled in with monthly line rental fees.

All of our comparator countries experienced an increase in mobile internet's contribution to total mobile revenue in the five years to 2014. Japan had the largest increase in mobile internet's share of total mobile revenue; up by 30pp to 73%. The slowest growth in mobile internet revenues was in the UK, up by 7pp to 18% between 2009 and 2014.

Figure 5.33 Data as a proportion of total mobile service revenues: 2009 and 2014



Source: IHS / industry data / Ofcom

Note: Messaging includes SMS and MMS.

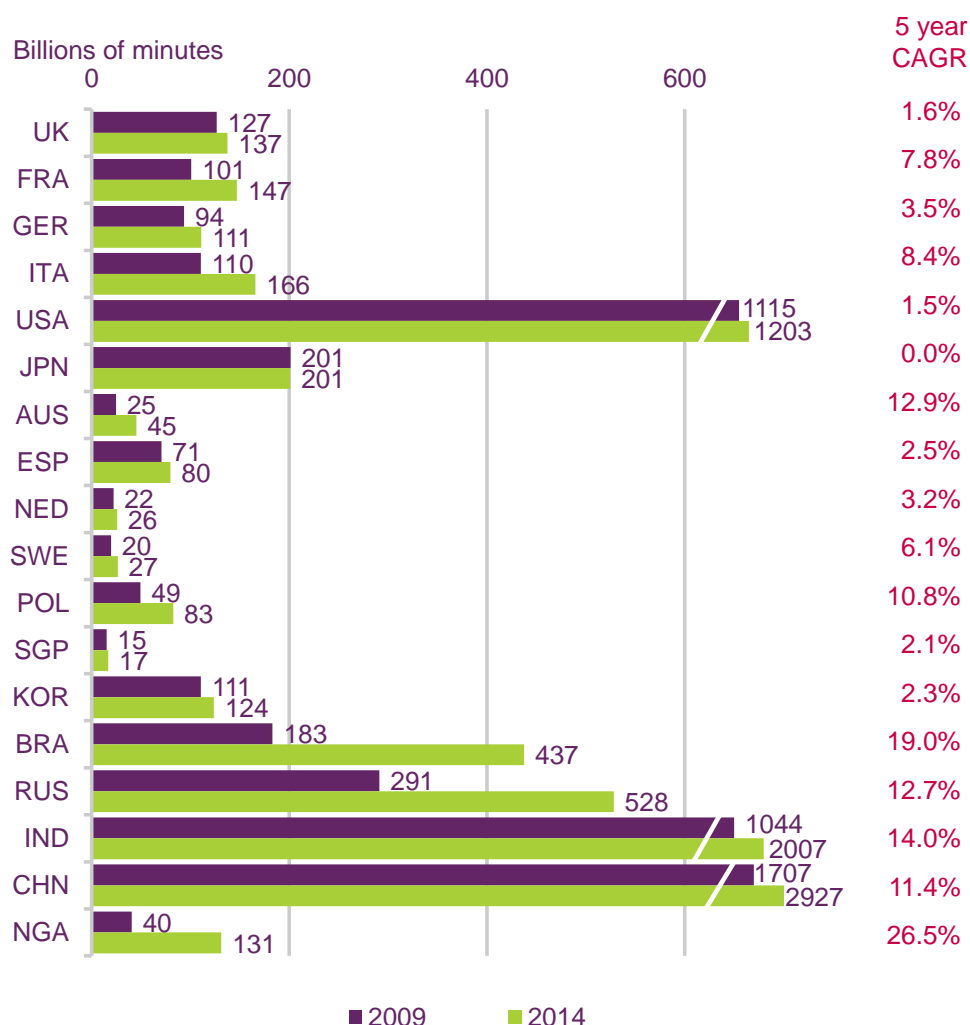
China and India generated 59% of total mobile voice call volumes in 2014

Over the five years to 2014, total mobile voice call volumes increased by an average annual rate of 9.5% across our comparator countries, to 8.4 trillion minutes. China had the highest

mobile voice call volumes in 2014, at 2.9 trillion minutes, followed by India at 2.0 trillion (Figure 5.34). Combined, these countries accounted for more than half (58.8%) of total comparator country mobile voice call volumes in 2014. Mobile voice call volumes were lowest in Singapore at 17 billion minutes. The UK was ninth highest of our comparator countries, with 137 billion mobile voice minutes in 2014.

Mobile voice call volumes increased in all of our comparator countries over the five years to 2014, except for Japan where volumes remained stable (at 201 billion minutes). The UK had the second lowest growth in voice call volumes (after the US), up by an average of 1.6% per year in the five years to 2014. Nigeria and Brazil had the fastest increases in mobile voice call volumes, up on average by 26.5% and 19.0% per year respectively. This is likely to be due to the increasing number of mobile connections.

Figure 5.34 Mobile voice call volumes: 2009 and 2014



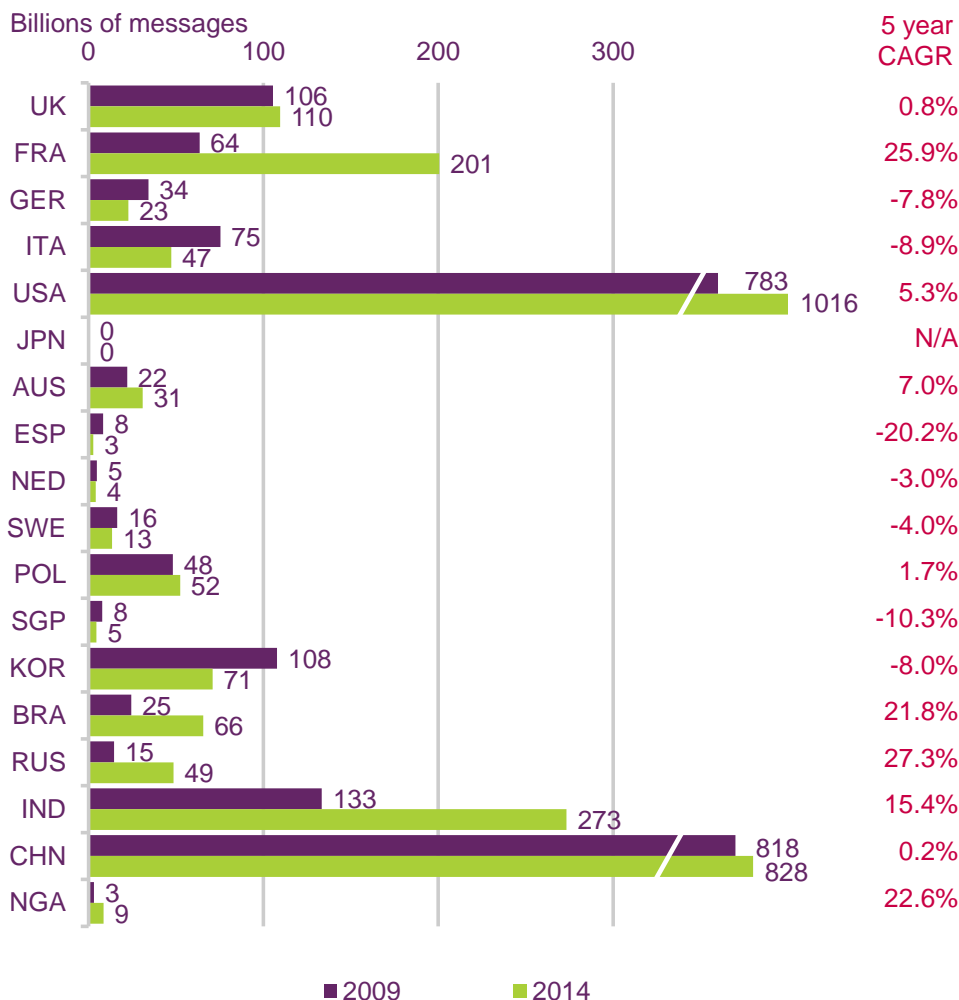
Source: IHS / industry data / Ofcom

The US and China generated 66% of total mobile messaging volumes in 2014

Across all of our comparator countries, the total number of traditional mobile messages (including SMS and MMS) increased by an average annual rate of 4.3% to 2.8 trillion in the five years to 2014. There were variations in growth between the comparator countries, ranging from a 27.3% per year average increase in Russia to a 20.2% per year average decrease in Spain over the period (Figure 5.35). The UK had the second lowest increase in volumes in the five years to 2014, up on average by just 0.8% per year.

The number of mobile messages was highest in the US, at just over one trillion in 2014, followed closely by China, at 828 billion. Combined, these two countries accounted for 65.9% of the total mobile messaging volumes. Japan had the lowest messaging activity (less than 1 billion messages) as consumers there tend to use email and instant messaging rather than traditional mobile messaging services (see Figure 5.57). Mobile messaging volumes declined in 13 out of the 18 comparator countries in the year to 2014, including the UK (down 15.3%). Six countries had decreases of more than 20% in 2014 (Germany, Italy, Spain, the Netherlands, Singapore and South Korea). This fall was a result of increasing use of non-traditional communication methods, such as instant messaging.

Figure 5.35 Mobile messaging volumes: 2009 and 2014



Source: IHS / industry data / Ofcom

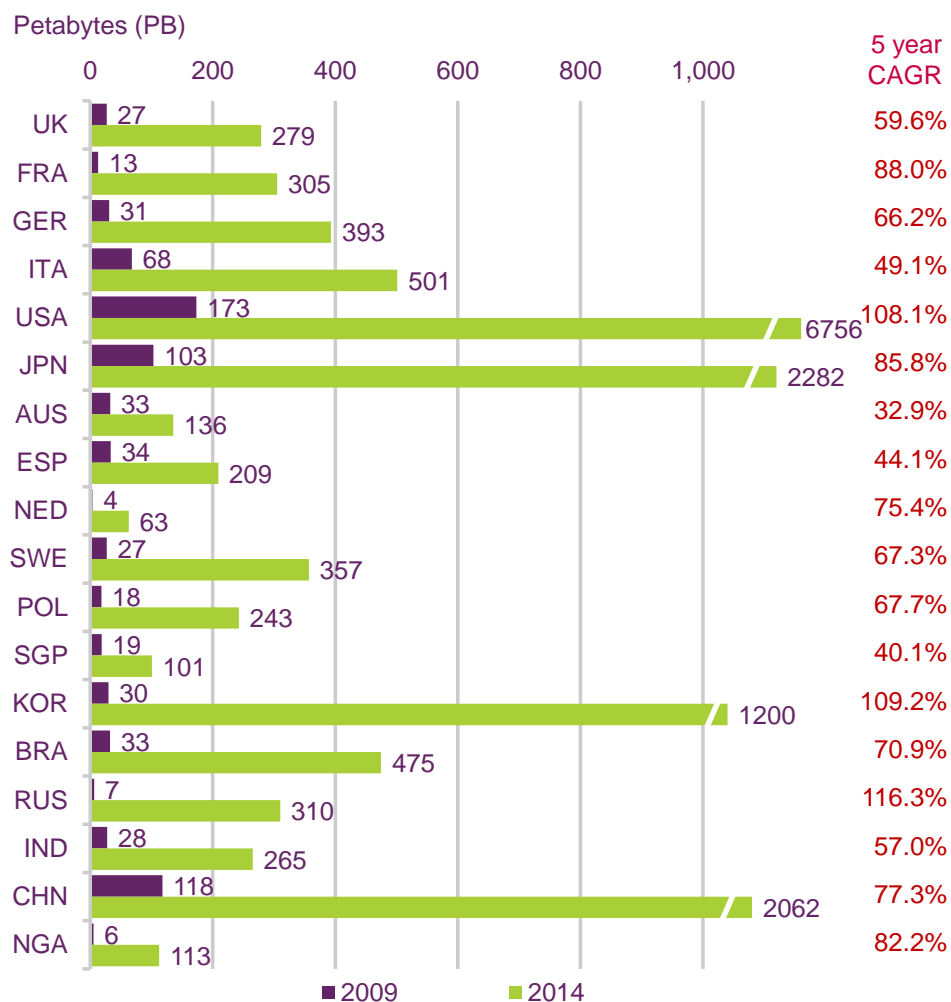
Note: Includes SMS and MMS messages; CAGR for Japan is negligible due very low messaging activity as consumers prefer email and instant messaging services rather than traditional services.

Total comparator countries' mobile data volumes increased by 76% in 2014

According to data provided by IHS, mobile data use among our comparator countries totalled 16,049PB (16.0EB) in 2014, an increase of 6.9EB (75.8%) since 2013 (Figure 5.36). This rate of increase was slightly lower than the average annual increase in the five years to 2014 (83.6%), suggesting that the rate of growth in mobile data use may be slowing as smartphone take-up begins to plateau in some countries (more details regarding smartphone take-up can be found in Section 1.5.4 of this report).

In the UK, mobile data volumes increased ten-fold, from 27PB to 279PB, in the five years to 2014, representing an average annual rate of growth of 59.6% over this period. This was the sixth-lowest average rate of growth among our comparator countries: the average annual rate of growth during this period ranged from 32.9% in Australia to 116.3% in Russia. Information regarding average per-capita mobile data use can be found later in this chapter of the report (see Figure 5.61).

Figure 5.36 Mobile data volumes: 2009 and 2014



Source: IHS

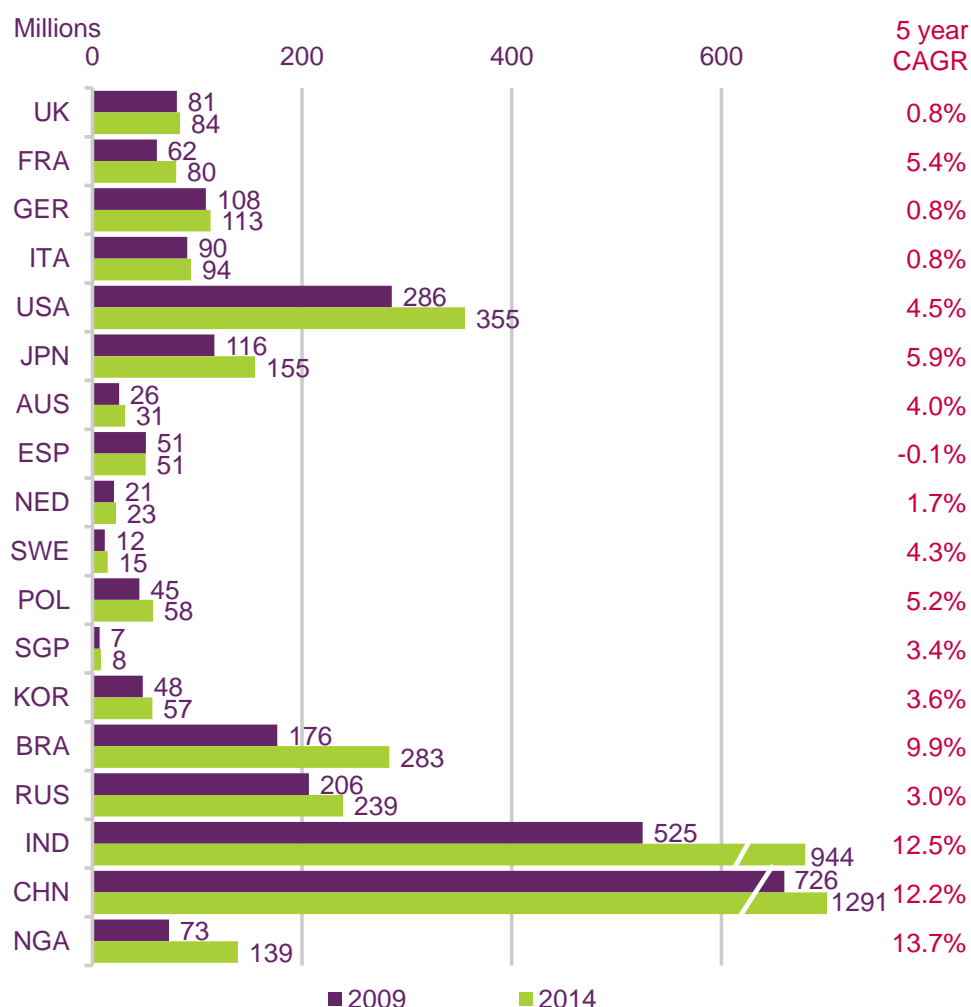
Spain was the only country where mobile connections declined in the five years to 2014

China had the highest number of mobile connections, at 1.3 billion, followed by India, at 944 million. Combined, these countries accounted for 55.6% of total mobile connections in 2014. The US had the highest number of mobile connections, among the developed countries, at 355 million. Singapore had the lowest number of mobile connections in 2014, at 8 million, up on average by 3.4% per year in the five-year period.

The total number of mobile connections increased by an annual average rate of 8.6% to four billion across our comparator countries in the five years to 2014 (Figure 5.37). The average annual increases were highest in Nigeria, India and China (at 13.7%, 12.5% and 12.2% respectively). Among our other comparator countries, where mobile markets tend to be more mature, the increases were much smaller over the same period. The UK (together with Germany and Italy) had the lowest average compound annual growth rate in the five years to

2014 among the comparator countries, at 0.8% a year, to 84 million connections, while Spain was the only country to have a slight decrease (down on average by 0.1% per year).

Figure 5.37 Mobile connections: 2009 and 2014



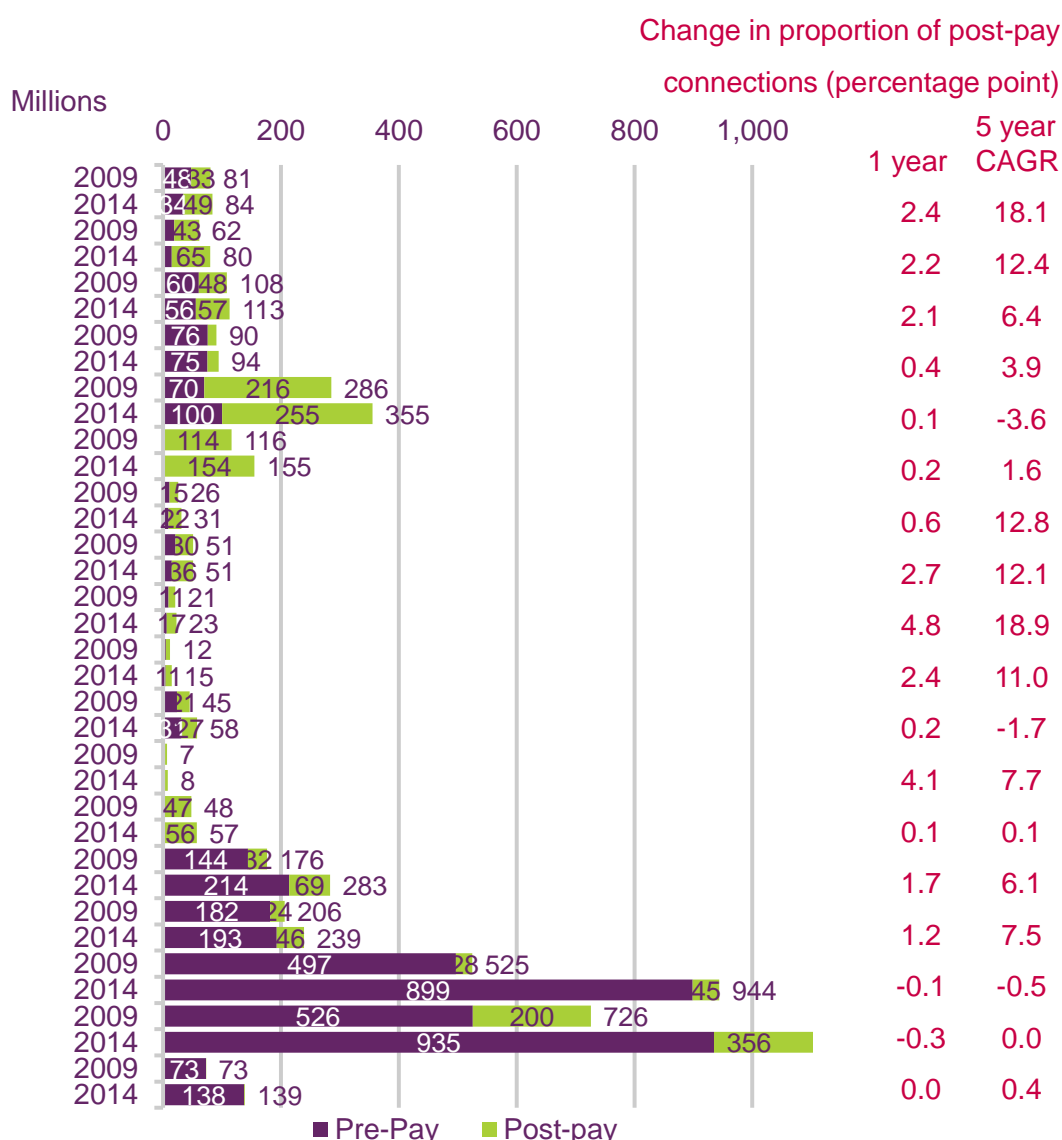
Source: IHS / industry data / Ofcom

The UK had the second largest increase in the proportion of post-pay mobile connections in the five years to 2014

The proportion of mobile subscribers with post-pay (monthly) contracts grew in most of our comparator countries in the five years to 2014 (Figure 5.38). This proportion was highest in Japan, at 99.4% in 2014, followed by South Korea, at 98.0%. In the five years to 2014, the Netherlands had the largest increase in the proportion of mobile connections that were post-pay, up on average by 18.9pp a year to 74%. The UK had the second largest increase in the proportion of connections that were post-pay over the same period, up on average by 18.1pp per year.

The proportion of mobile connections that were pre-pay (pay-as-you-go) was highest in Nigeria, at 99.1% in 2014, followed by India, at 95.2%. In general, pre-pay connections tend to be more popular among developing countries, possibly because they give consumers more flexibility due to the lack of an ongoing financial obligation, as well as the increased likelihood of consumers not having easy access to a bank account.

Figure 5.38 Mobile connections, by type: 2009 and 2014



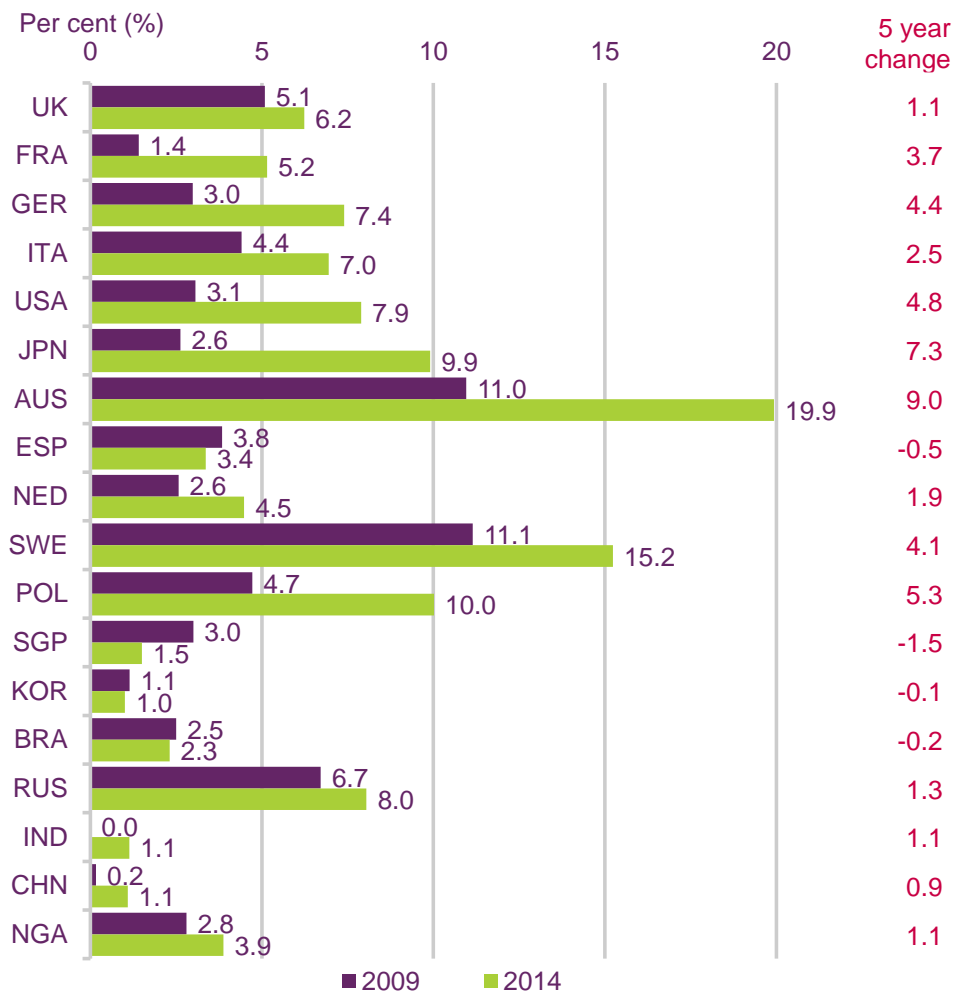
Source: IHS / industry data / Ofcom

Australia had the highest proportion of mobile connections that were dedicated mobile broadband connections in 2014, at 19.9%

The total number of dedicated data-only mobile broadband connections (such as mobile dongles and data-only SIMs) increased by an annual average rate of 20.8%, to 141 million, across our comparator countries in the five years to 2014. As a proportion of total mobile connections, dedicated mobile broadband connections increased from 2.1% in 2009 to 3.5% in 2014 in the comparator countries.

The proportion of mobile connections that were data-only was highest in Australia in 2014, at 19.9%, followed by Sweden, at 15.2%. Australia had the largest increase in data-only connections in the five years to 2014, up by 9.0pp, followed by Japan at 7.3pp. In the UK the proportion of dedicated mobile broadband connections increased by 1.1pp to 6.2% over the same period. By comparison, data-only mobile connections decreased in four countries over this period (Singapore, Spain, Brazil and South Korea). The largest decline was in Singapore, where the proportion of mobile connections that were dedicated mobile broadband connections halved between 2009 and 2014.

Figure 5.39 Dedicated mobile broadband as a proportion of total mobile connections: 2009 and 2014



Source: IHS / industry data / Ofcom

5.3 The telecoms user

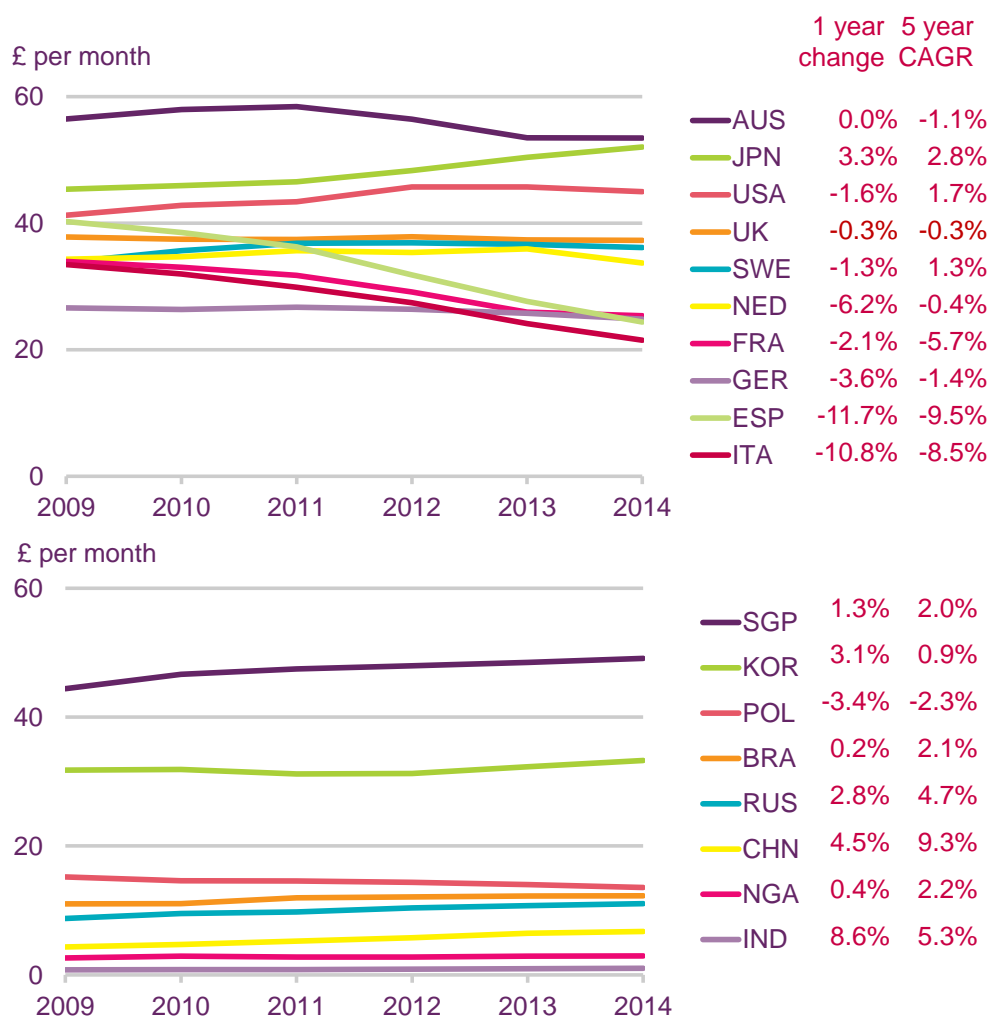
5.3.1 Overview

Per-capita monthly telecoms service revenues in the UK fell on average by 0.3% a year in the five years to 2014

The average monthly telecoms spend per person ranged from £1 in India to £53 per person in Australia among our comparator countries in 2014 (Figure 5.40). Average spend per month fell in nine out of our 18 countries during the year; the largest decline was in Spain, where average per-capita monthly spend fell by 11.7% to £24. Although average spend per head fell in the UK (by 0.3%) it was the fifth highest of all our countries, at £37 per person.

The BRIC comparators were the only countries in which revenues increased both over one year and over the five years to 2014. However, in absolute terms, revenues remained low in these countries. Revenues in the UK were down by an annual average rate of 0.3% over the five years to 2014.

Figure 5.40 Per-capita monthly telecoms service revenue: 2009-2014



Source: IHS / industry data / Ofcom

Note: Includes spend by businesses, and is therefore not representative of average consumer spend. All figures expressed in nominal terms.

Regular use of mobile services was highest in Spain at 91% in 2015

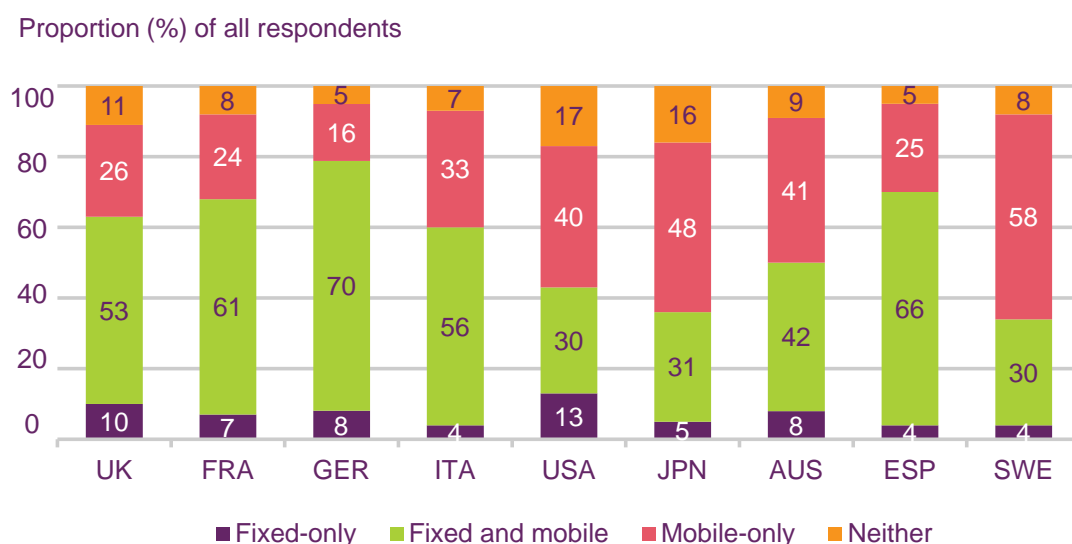
Out of the nine comparator countries in which our consumer research took place, the proportion of respondents who regularly used mobile services (either 'fixed and mobile' or 'mobile-only') was highest in Spain (91%) and lowest in the US (70%). By comparison, in the UK, 79% of respondents regularly used mobile services (in line with Japan).

The use of landline services (either 'fixed-only' or 'fixed and mobile') was highest in Germany (78%), followed by Spain (70%) and France (68%). This figure was 63% in the UK (the fourth highest out of the comparator countries). Only in three countries did less than half of respondents use landline services regularly in 2015: the US (43%), Japan (36%) and Sweden (34%). More respondents regularly used 'mobile-only' services in these countries than in the other comparator countries (at 40%, 48% and 58% respectively).

Regular use of both fixed and mobile voice services ranged from 30% in Sweden and the US to 70% in Germany which, along with Spain (66%), had a significantly higher proportion of use than any of the other comparator countries. Sweden had the highest proportion of 'mobile-only' users, at 58% (this was significantly higher than all other comparator countries). In the UK, just over twice as many respondents regularly used 'fixed and mobile' (53%) services as used 'mobile-only' (26%) in 2015.

The proportion of respondents who used neither fixed nor mobile services was significantly higher in the US and Japan than all other comparator countries, at 17% and 16% respectively. In the UK 11% of respondents did not use either service in 2015. In all other comparator countries, this figure was less than one in ten respondents.

Figure 5.41 Regular use of fixed and mobile telephony services



Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.6 Which of the following do you regularly do (at least once a week?)

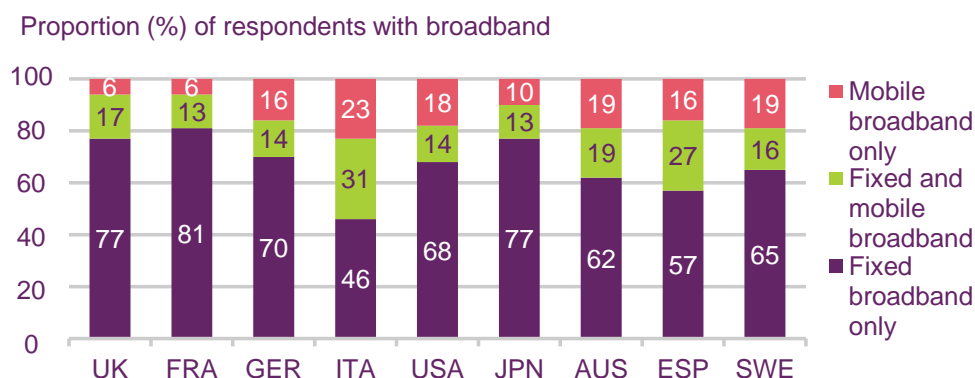
Over half (54%) of broadband households in Italy used mobile data services in 2015

Italy was the only country out of the nine comparator countries where less than half of broadband households (46%) were 'fixed broadband only'. Instead, the majority (54%) of broadband households in Italy used mobile broadband services (either 'fixed and mobile

broadband' or 'mobile broadband only'). By comparison, use of mobile broadband services was lowest in France and the UK, at 19% and 23% of broadband households respectively.

The proportion of broadband households that were 'fixed broadband only' was greatest in France at 81% (significantly higher than all other comparator countries), followed by the UK and Japan (at 77% each). The UK and France had the lowest proportion of households that were 'mobile broadband only', both at 6% (significantly lower than all other comparator countries). By comparison, in Italy this figure is significantly higher than all other comparator countries, at 23%.

Figure 5.42 Household take-up of fixed and mobile broadband data connections



Source: Ofcom consumer research September – October 2015

Base: All respondents with broadband, UK=915, FRA=930, GER=842, ITA=861, USA=723, JPN=740, AUS=894, ESP=879, SWE=915

Q.3b Which of the following services do you have in your home?

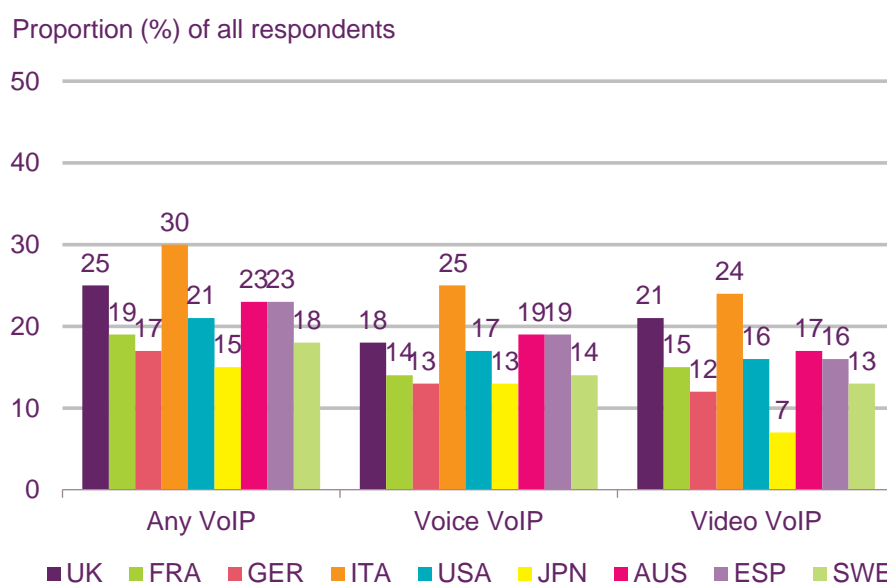
A quarter of UK respondents used any OTT VoIP service at least once a week in 2015

Out of our nine comparator countries, the levels of use of any OTT VoIP services¹²⁶ at least once a week was highest in Italy, at 30% of respondents, with 25% for OTT voice VoIP and 24% for OTT video VoIP. The proportion of respondents in Italy who used any OTT VoIP services, and OTT voice VoIP, was significantly higher than in all other comparators in 2015.

In the UK, a quarter of respondents used any OTT VoIP services at least once a week, while more used video than voice (21% compared to 18% respectively). The UK and Italy had significantly higher proportions of respondents who used OTT video VoIP at least once a week than in any of the other comparator countries.

¹²⁶ Excludes managed VoIP services

Figure 5.43 Use of OTT VoIP services at least once a week



Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.8 How often do you use an internet connection on any of your devices for each of the following activities? Making Voice/VoIP calls (e.g. Skype), Making video calls (e.g. Skype, Face Time): At least once a week.

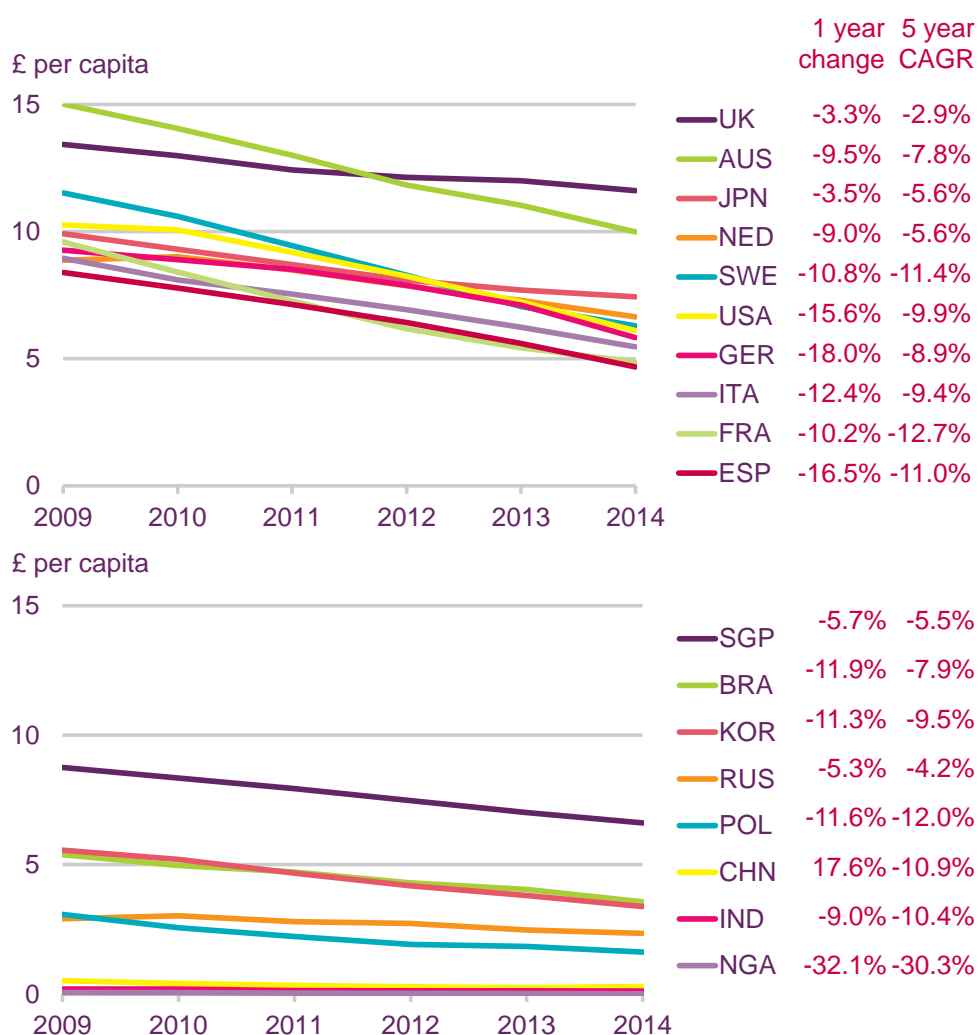
5.3.2 Fixed voice services

The UK had the highest average per capita revenue for fixed voice services in 2014, at £11.57 per person per month

Average per-capita spend on fixed voice services (including managed VoIP) declined in all of our comparator countries in the five years to 2014, with average rates of decline ranging from 2.9% per year in the UK to 30.3% per year in Nigeria (Figure 5.44). Average per-capita spend also fell year on year in all countries (the largest decline was in Nigeria, at 32.1%), except in China, where there was a 17.6% increase (although in absolute terms average per-capita fixed voice revenue in China is very low, at just £0.29 per month). This increase was mainly due to an increase in VoIP connections in 2014 (42.3%) (see Figure 5.10) and an increase in the average revenue per VoIP call minute (Figure 5.8).

The UK had the highest average per-capita revenue for fixed voice services among our comparator countries in 2014, at £11.57 per person per month, down 39 pence (3.3%) year on year. Average monthly fixed voice spend was lowest in Nigeria, at just 1 pence per person, because of low fixed voice service availability and take-up.

Figure 5.44 Average monthly per-capita fixed voice revenue: 2009-2014



Source: IHS / industry data / Ofcom

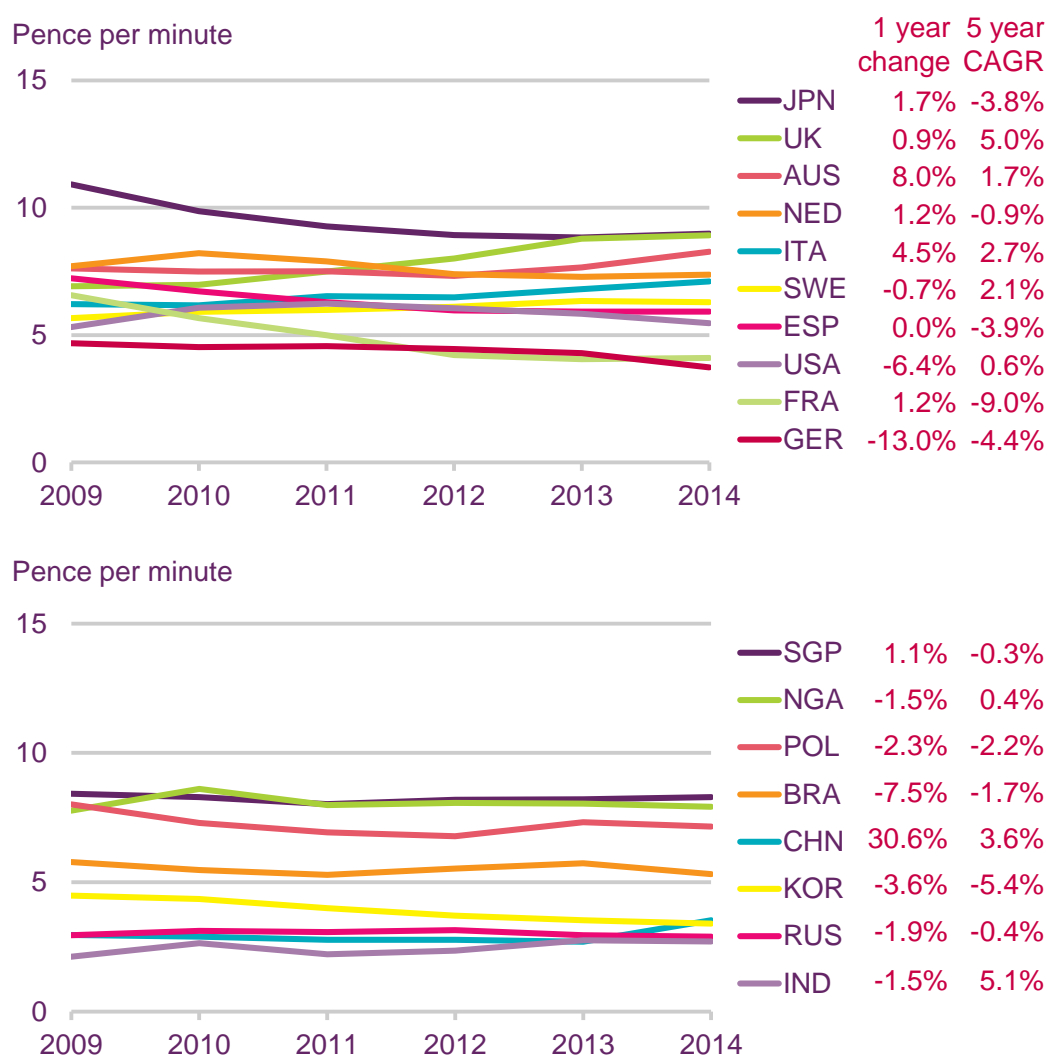
Note: Includes managed VoIP revenues. All figures expressed in nominal terms.

The UK had the second highest average cost per fixed voice call minute among our comparator countries, at 8.8 pence per minute in 2014

The average price per fixed voice call minute ranged from 2.7 pence in India to 9.0 pence in Japan in 2014 (Figure 5.45). The UK had the second highest average cost per fixed voice call minute among our comparator countries, at 8.8 pence per minute, up 0.9% compared to 2013. China had the largest increase in fixed voice prices in 2014 (up 30.6% to 3.5 pence), while Germany had the largest decline (down 13.0% to 3.7 pence per minute).

In the five years to 2014, India experienced the highest growth in fixed voice call prices among our comparators, up on average by 5.1% per year. The UK had the second highest average growth rate, at 5.0% per year over the same period. France had the steepest rate of decline in fixed voice prices, with the cost of a fixed call minute falling by an average of 9.0% a year. France's decline is due to a fall in both PSTN and VoIP volumes, as consumers shift to mobile services. Further information on communications service pricing can be found in Section 2.1 of this report.

Figure 5.45 Average price of a fixed voice call minute: 2009-2014



Source: IHS / industry data / Ofcom

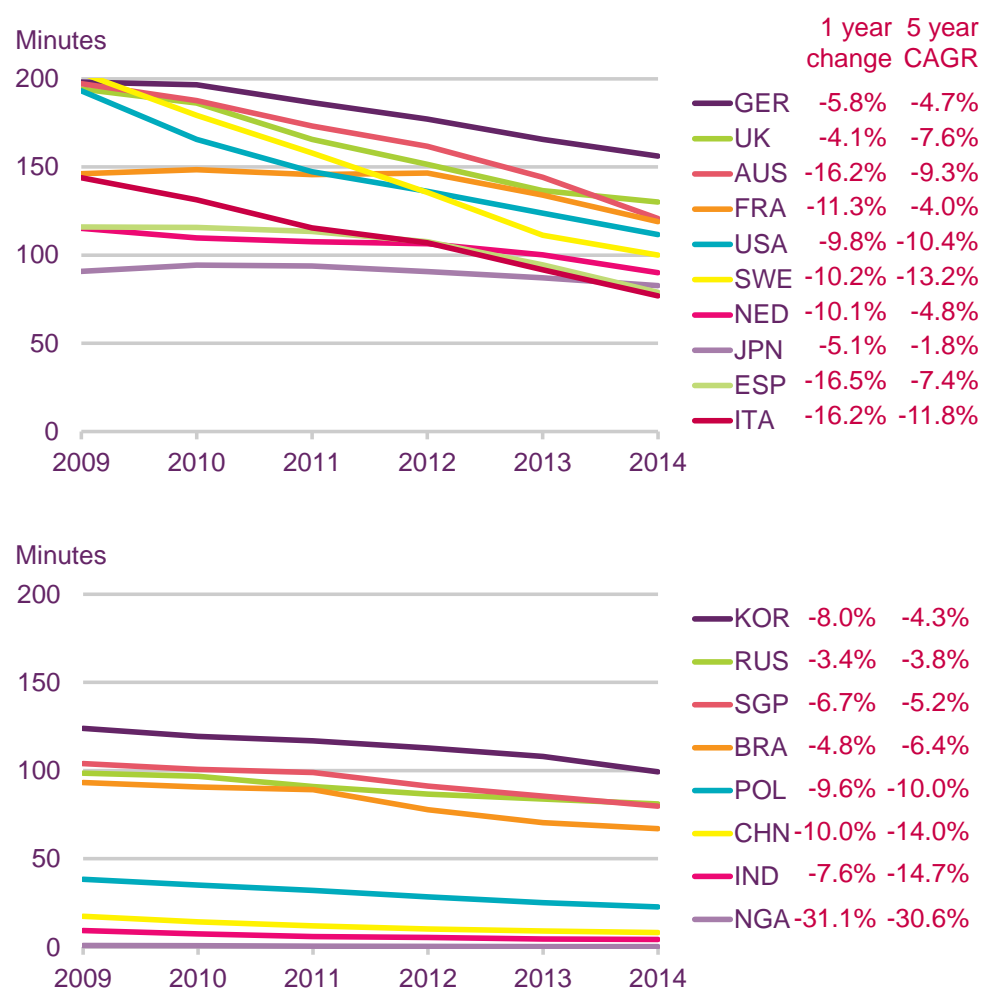
Note: Includes managed VoIP calls. All figures expressed in nominal terms.

Average per-capita monthly fixed voice call minutes fell across the comparator countries

The average number of outgoing fixed call minutes per person ranged from less than one minute in Nigeria to 156 minutes in Germany in 2014 (Figure 5.46). The UK had the second highest average volume of outgoing fixed voice call minutes per person, at 131 minutes, down by six minutes (4.1%) compared to 2013.

Nigeria experienced the largest percentage decrease since 2013 in average per-capita fixed call use (down 31.1%). It also had the highest average annual decline in the five years to 2014 (down 30.6% per year). It is important to note, however, that as the average monthly fixed call use per person did not exceed one minute per month in Nigeria in that period, the large percentage decrease represents a very small decline in absolute terms. Out of all the comparator countries, Japan experienced the smallest average annual decline in per-capita fixed call volumes in the five years to 2014, at just 1.8% (to 83 minutes), while in Sweden volumes fell by 13.2% per year to 100 minutes over the same period.

Figure 5.46 Per-capita monthly fixed voice call minutes: 2009-2014



Source: IHS / industry data / Ofcom

Note: Includes managed VoIP calls.

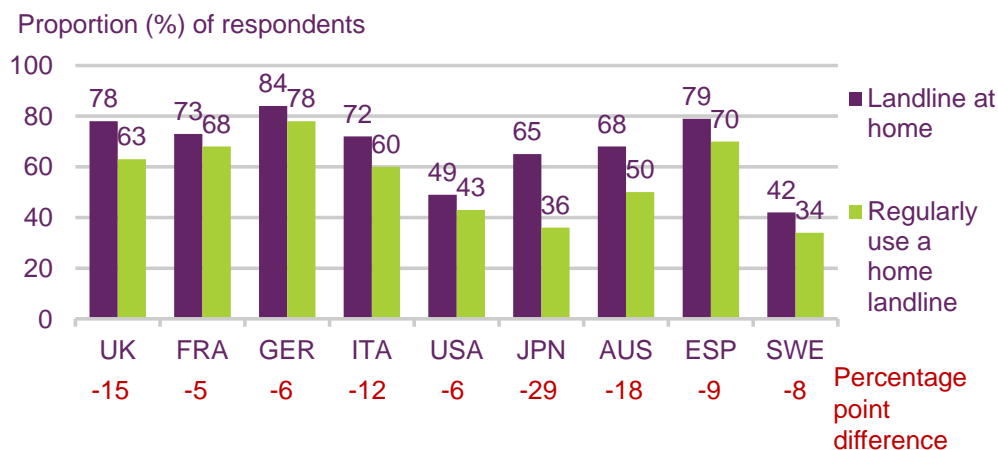
Fifteen per cent of respondents in the UK do not regularly use their household landline in 2015

Figure 5.47 shows the proportion of respondents who had a fixed voice connection at home and those who were regular users of fixed telephony services. The difference between the two is indicative of the proportion of consumers who own a landline service in their household but do not regularly use it. In many countries a landline is often required to buy fixed broadband services, so many people may subscribe to a landline service even if they do not use it (or use it only infrequently). In the UK, Virgin Media (which offers cable broadband services to just under half of UK premises) is the only major ISP to offer fixed broadband without the requirement for a fixed voice connection, whereas in some countries (such as France) naked DSL and fibre services (which do not require a landline of any description) are available.

The proportion of internet users who had a home landline ranged from 42% in Sweden to 84% in Germany, among the nine comparator countries (the UK had the third highest proportion, at 78%). At the same time, the proportion of internet users who regularly (i.e. at least once a week) used landline services at home ranged from 34% in Sweden to 78% in Germany (in the UK it was 63%). Japan had the largest difference (29pp) between the proportion of people who had a home landline and used it regularly, while in France this

difference was just 5pp, implying that a large majority of those who had a landline used it regularly. In the UK, the difference between the proportion of people who had a home landline and who used it regularly was 15pp.

Figure 5.47 Household take-up and personal use of fixed telephony services



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

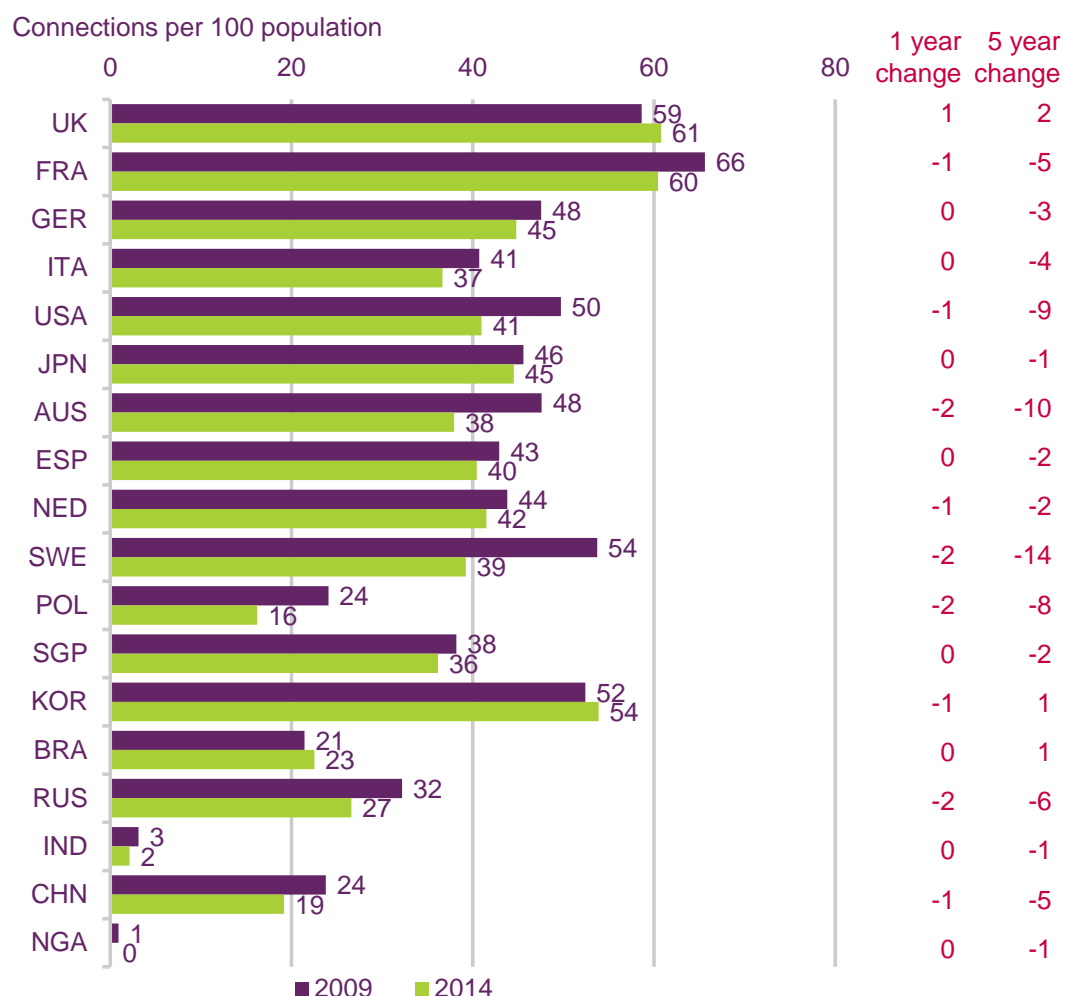
Q.3b Which of the following services do you have in your home? Q.6: Which of the following do you regularly do (at least once a week)?

The UK had the highest number of fixed voice connections per 100 people out of all the comparator countries in 2014

The UK had the highest number of fixed voice connections per 100 people (including PSTN lines and managed VoIP connections) of all the comparator countries at the end of 2014, at 61 connections, up by one connection since 2013 (Figure 5.48). This places it ahead of France, which fell by six connections since 2009 to 60 connections per 100 people in 2014.

Nigeria had the lowest take-up of fixed voice services at the end of 2014, with less than one connection per 100 people, followed by India with just over 2 connections. This is likely to be due to the lower availability of fixed telecoms infrastructure in these countries. The UK was the only EU5 country, and one of three comparator countries (together with South Korea and Brazil), where the number of fixed voice connections per 100 people increased in the five years to 2014 (up by two connections). Sweden experienced the largest fall; the number of fixed voice connections fell by 14 connections per 100 people to 39 connections during this period, mainly as a result of the increasing use of mobile services.

Figure 5.48 Fixed voice connections per 100 population: 2009 and 2014



Source: IHS / industry data / Ofcom
 Note: Includes managed VoIP connections

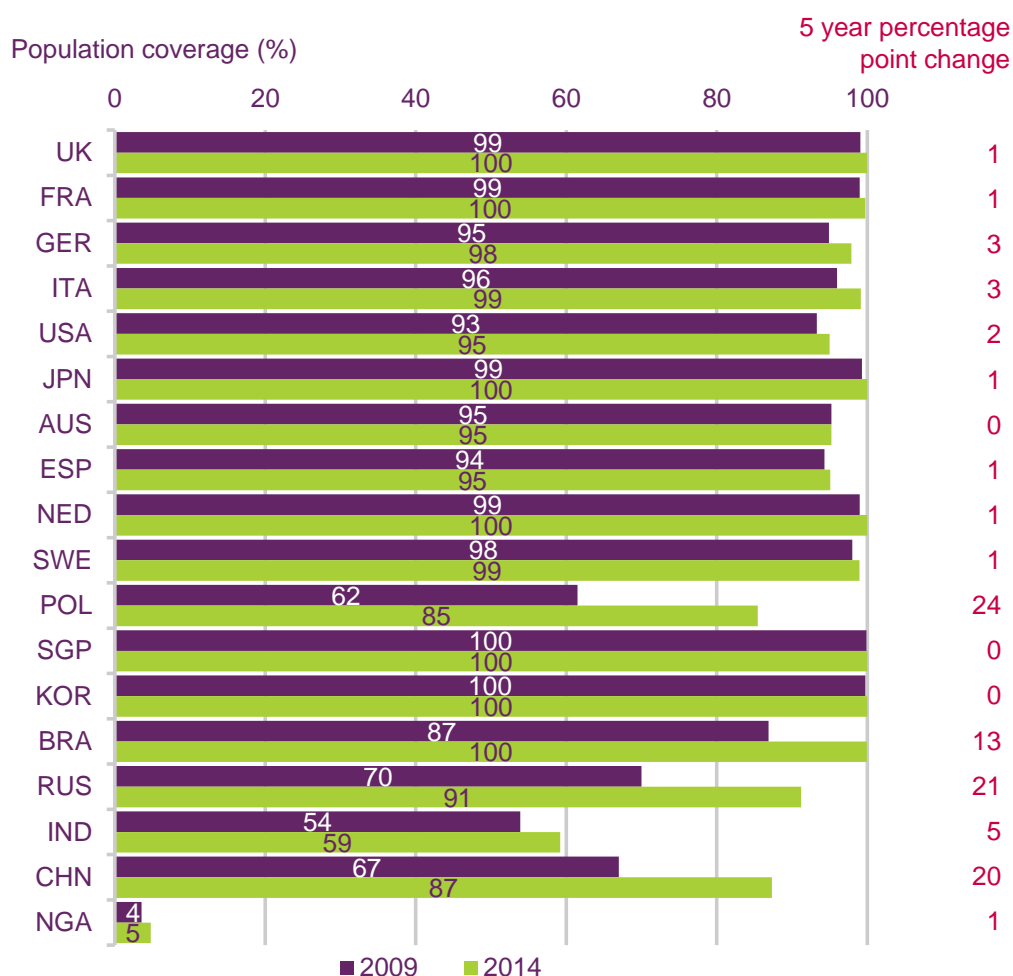
5.3.3 Fixed broadband services

Fixed broadband services were available to at least 95% of the population in most of our comparator countries in 2014

In most of our comparator countries, broadband services were available to the majority of the population at the end of 2014. The exception was Nigeria, where broadband was available to just 5% of the population. The UK was one of seven of our 18 comparator countries (along with France, Japan, the Netherlands, Singapore, Korea and Brazil) where broadband was available to over 99% of the population in 2014.

Fifteen comparator countries experienced an increase in fixed broadband availability in the five years to 2014, while availability in Australia remained unchanged over this period (at 95%). Fixed broadband population availability increased by over 20pp in Poland, Russia and China between 2009 and 2014; the largest increase during this period was in Poland, up by 24pp to 85%.

Figure 5.49 Fixed broadband availability: 2009 and 2014



Source: IHS / industry data / Ofcom

With the exception of Italy and Nigeria, average per-capita fixed broadband revenue increased in all of our comparator countries in the five years to 2014

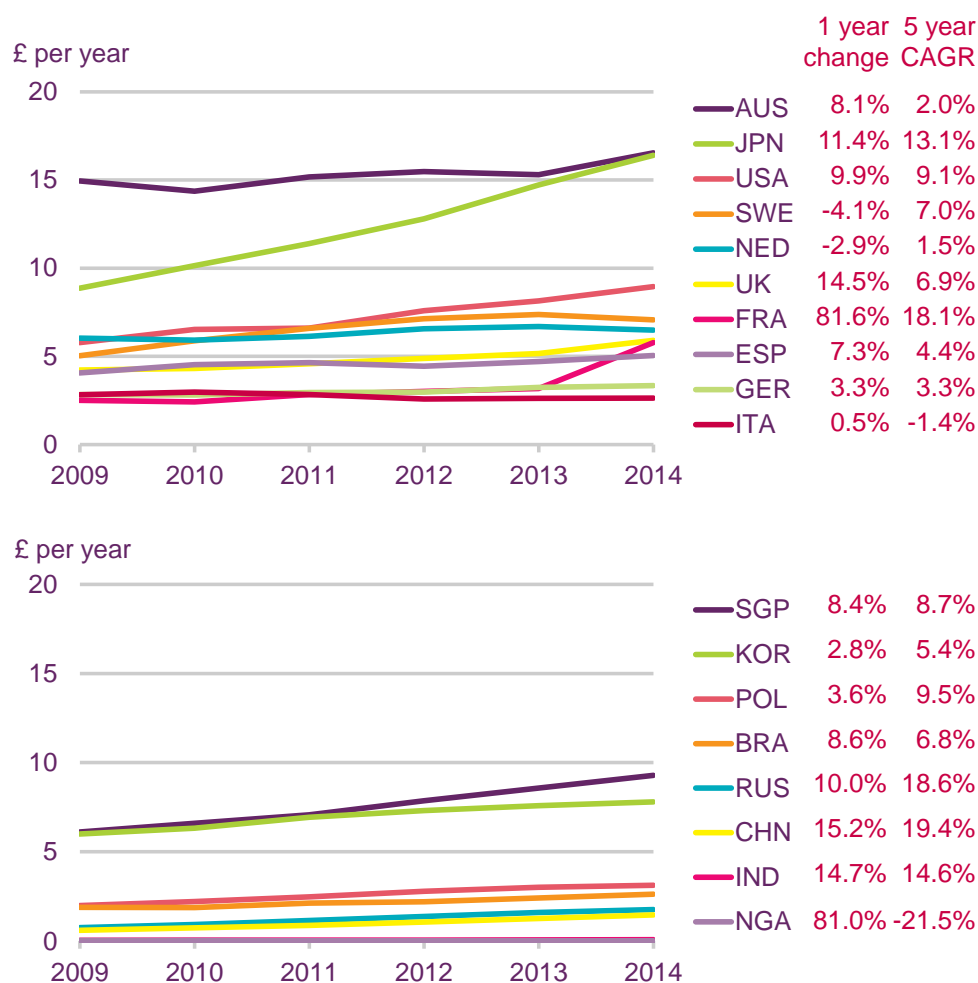
Average per-capita monthly fixed broadband revenue was highest in Australia at £17 per person in 2014, closely followed by Japan at £16 per person. In the UK, average fixed broadband revenue averaged £6 per person, equal with France and the Netherlands.

In the five years to 2014, average per-capita fixed broadband revenues increased in 16 of our 18 comparator countries. China had the greatest increase, up on average by 19.4% per year, although in absolute terms per-capita revenue was still very low, at just over £1 per person. In the UK, average spend per person on fixed broadband services increased by an average of 6.9% per annum over the same period. Average per-capita fixed broadband spend fell in Italy in the five years to 2014, down by an average of 1.4% per year. This was mainly due to the population increasing at a higher rate than the fixed broadband revenue. Average spend also fell in Nigeria, at an average rate of 21.5% per year over the same period.

The majority of comparator countries had an increase in average per-capita fixed broadband spend in 2014, with the largest increase in France, up 81.6% , followed by Nigeria at 81.0% (although in absolute terms this was still less than 1 pence per person). By comparison, the UK had a 14.5% increase in average per-capita revenue in 2014. Sweden and the

Netherlands were the only two comparator countries where average per-capita revenue fell in 2014 (at 4.1% and 2.9% respectively).

Figure 5.50 Average per-capita fixed broadband revenue: 2009-2014



Source: IHS / industry data / Ofcom
 Note: All figures expressed in nominal terms.

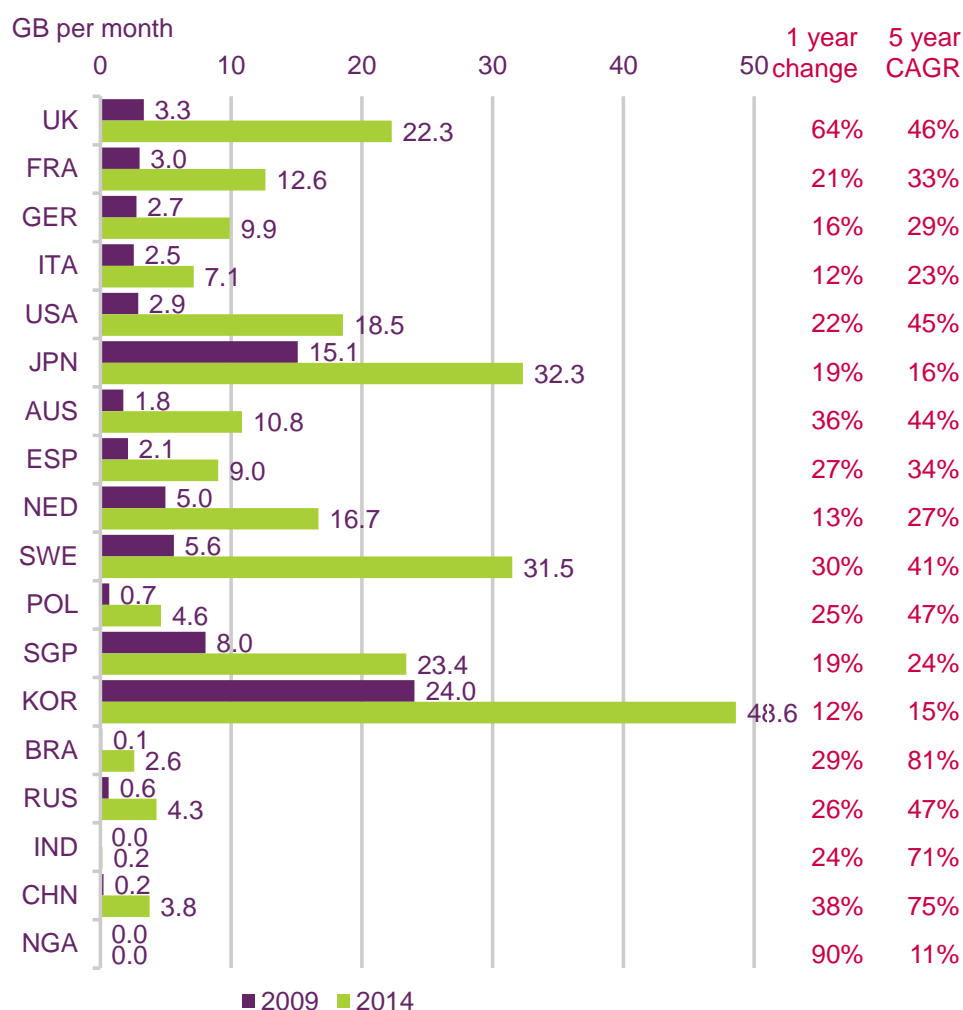
Average monthly fixed broadband data volumes per person increased in all comparator countries in 2014

Average monthly per-capita fixed broadband data use was highest in South Korea at 48.6GB per person in 2014 (over twice that in 2009), followed by Japan at 32.3GB per person (also more than double the 2009 average) and Sweden at 31.5GB per person. Of our 18 comparator countries, the UK had the fifth highest average data volumes in 2014, at 22.3GB per person, up 64% on the previous year. Although Nigeria had the greatest increase in volumes in 2014, at 90.0%, in absolute terms this equates to less than 1MB per person (the lowest volume of all our comparator countries).

All of our comparator countries recorded an increase in average per-capita data use in the five years to 2014. Growth was highest in Brazil (averaging 81% per year) and in China (75% per year); although in absolute terms this translates to low volumes of data use in these countries (2.6GB per person and 3.8GB per person respectively). In the UK, use of data increased by an average of 46% a year per person over the same period. This is likely due to the increasing popularity and availability of video-on-demand (VOD) services, both

free to access services (for example, BBC iPlayer and All4), and subscription services (such as Netflix and Amazon Prime Instant Video).

Figure 5.51 Average monthly fixed broadband data volume per person: 2009-2014



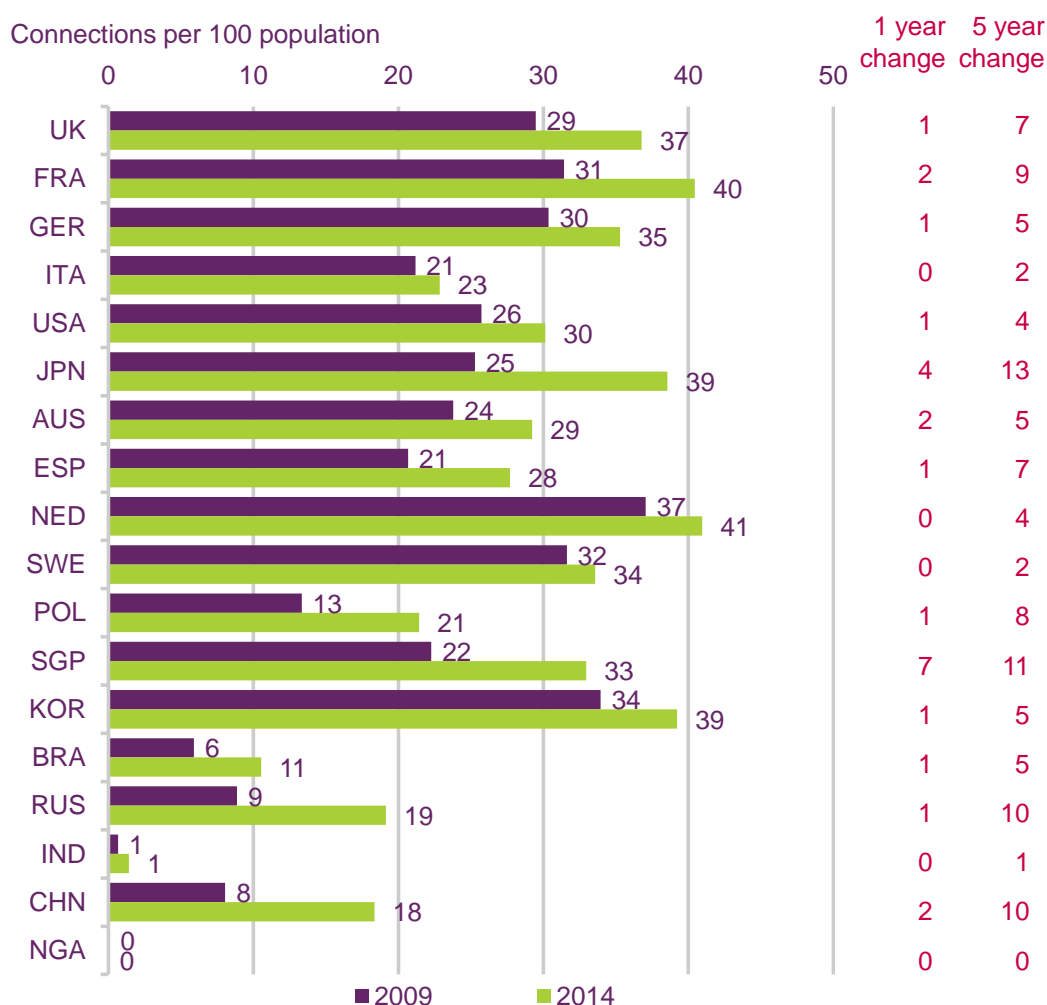
Source: IHS / industry data / Ofcom

The number of fixed broadband connections per 100 people increased in all comparator countries between 2009 and 2014

In 2014, the number of fixed broadband connections per 100 population was lowest in Nigeria (less than one connection), and highest in the Netherlands (at 41 connections). The comparatively low take-up in Nigeria is a result of the low availability of fixed broadband services and Nitel being declared inactive. In the Netherlands, fixed broadband take-up has been the highest among our comparator countries for some time, partly as a result of high cable coverage and take-up. The UK had the fifth highest number of fixed broadband connections out of our 18 comparator countries in 2014, at 37 connections per 100 people (up by one connection per 100 people in a year to 2014), behind Japan and South Korea (both at 39 connections), and France, the second highest, (at 40 connections).

The number of per capita fixed broadband connections increased in all of our comparator countries in the five years to 2014, with the highest growth between 2009 and 2014 being in Japan, up 13 connections, from 25 to 39 connections per 100 population over this period. In the UK, the number of per capita connections increased by seven connections over the same period.

Figure 5.52 Fixed broadband connections per 100 population: 2009-2014



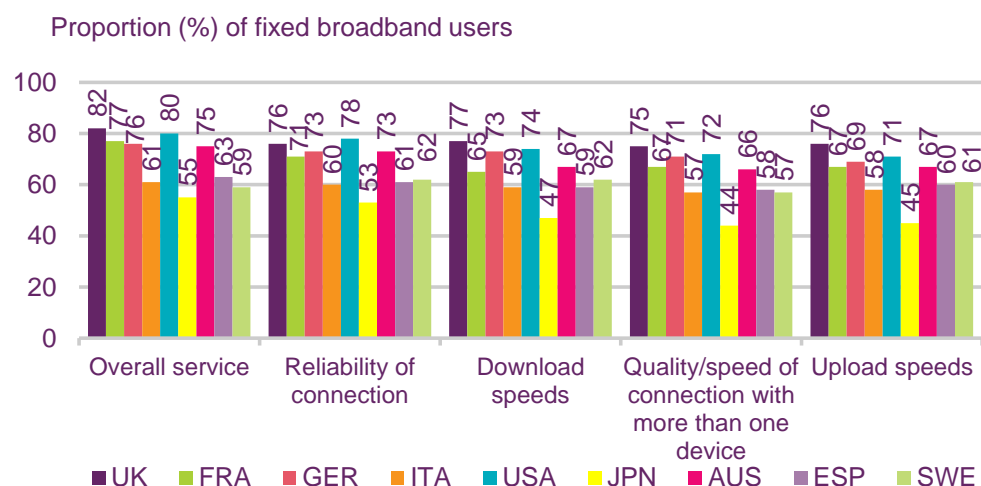
Source: IHS / industry data / Ofcom

Out of all our comparator countries, satisfaction with the overall service of household fixed broadband service was highest in the UK in 2015, at 82%

Figure 5.53 shows the proportion of fixed broadband users in nine of our comparator countries who said that they were either ‘very’ or ‘fairly’ satisfied with various aspects of their service. In the UK, 82% of respondents were satisfied with their overall service, the highest proportion among these countries. At least three-quarters of respondents in the UK were also satisfied with every other measure of fixed broadband service.

Among these nine countries, respondents in Japan were the least satisfied; just over 50% of respondents were satisfied with their service overall and with the reliability of their connection (55% and 53% respectively), while less than half of respondents were satisfied with download and upload speeds and the quality/speed of their connection when using multiple devices at the same time.

Figure 5.53 Satisfaction with fixed broadband service



Source: Ofcom consumer research September – October 2015

Base: All respondents with fixed broadband, UK=862, FRA=874, GER=704, ITA=661, USA=588, JPN=663, AUS=727, ESP=735, SWE=741

Q.30 To what extent are you satisfied or dissatisfied with the following aspects of your current home broadband service?

5.3.4 Mobile voice and data services

South Korea and the Netherlands were the only comparator countries where all three main mobile technologies covered 100% of the population

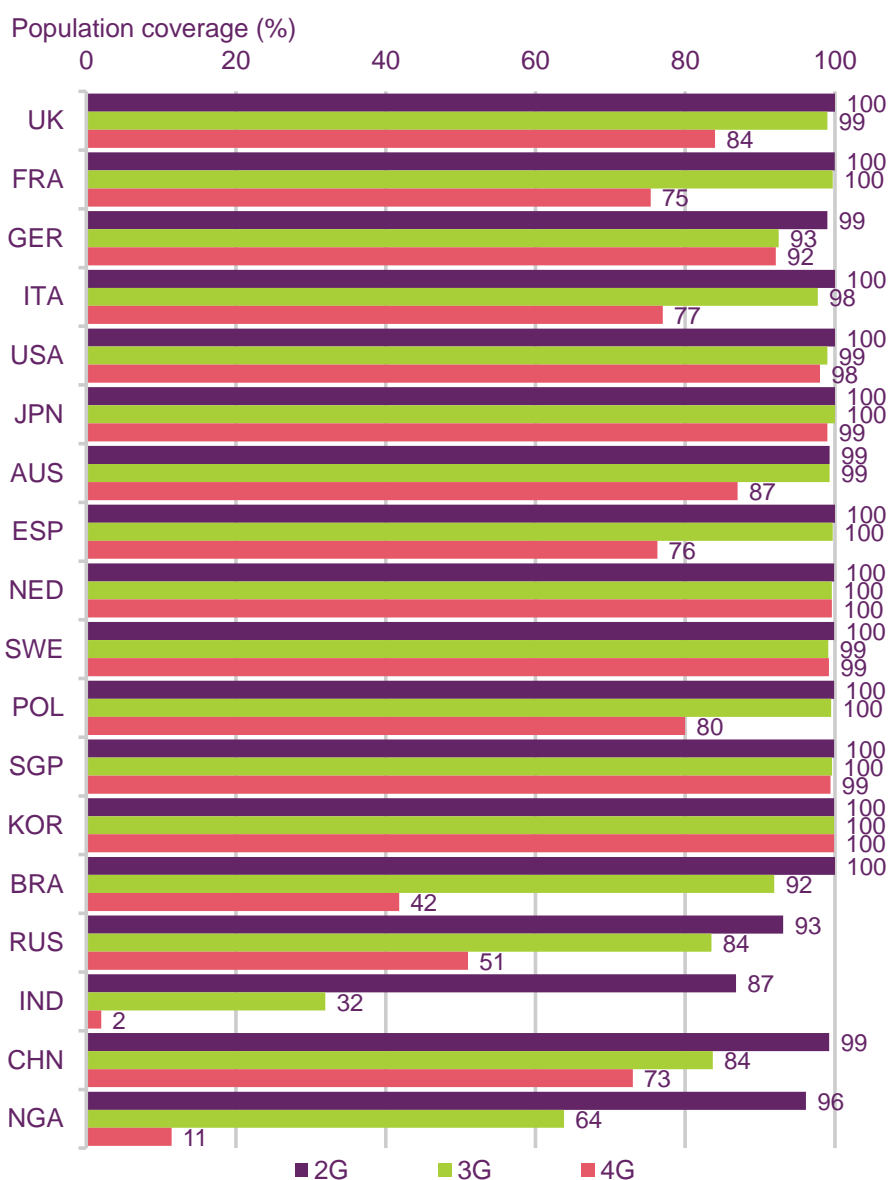
Mobile network availability varied widely across our comparator countries at the end of 2014, with five countries (South Korea, the Netherlands, Japan, Sweden and Singapore) having 99% or higher population coverage of all three mobile network technologies (2G, 3G and 4G; see Figure 5.54). Fifteen of our 18 comparator countries had 2G population coverage at 99% or higher: only in India, Russia and Nigeria was 2G availability lower, at 87%, 93% and 96% of their respective populations.

Third-generation (3G) mobile availability was also high in the majority of comparator countries, with seven countries having population coverage of over 99% at the end of 2014 (it was 99% in the UK¹²⁷). Only in India was 3G coverage available to less than half of the population (at 32%). In Germany, 3G coverage was lower compared to other developed countries (at 93%) as each 3G licence holder has an obligation to cover only 50% of the population, and there is no guidance regarding network overlap.

The availability of 4G long term evolution (LTE) mobile services varied more widely than that of 2G and 3G services, ranging from 2% coverage in India to 100% in the Netherlands and South Korea. This variance is mainly due to the fact that 4G technology is still being deployed in many countries. The UK had the ninth highest 4G population coverage, at 84%. Further information on 4G services can be found in Section 1.5.

¹²⁷ This was based on coverage by at least one operator

Figure 5.54 2G, 3G and 4G mobile network availability: 2014



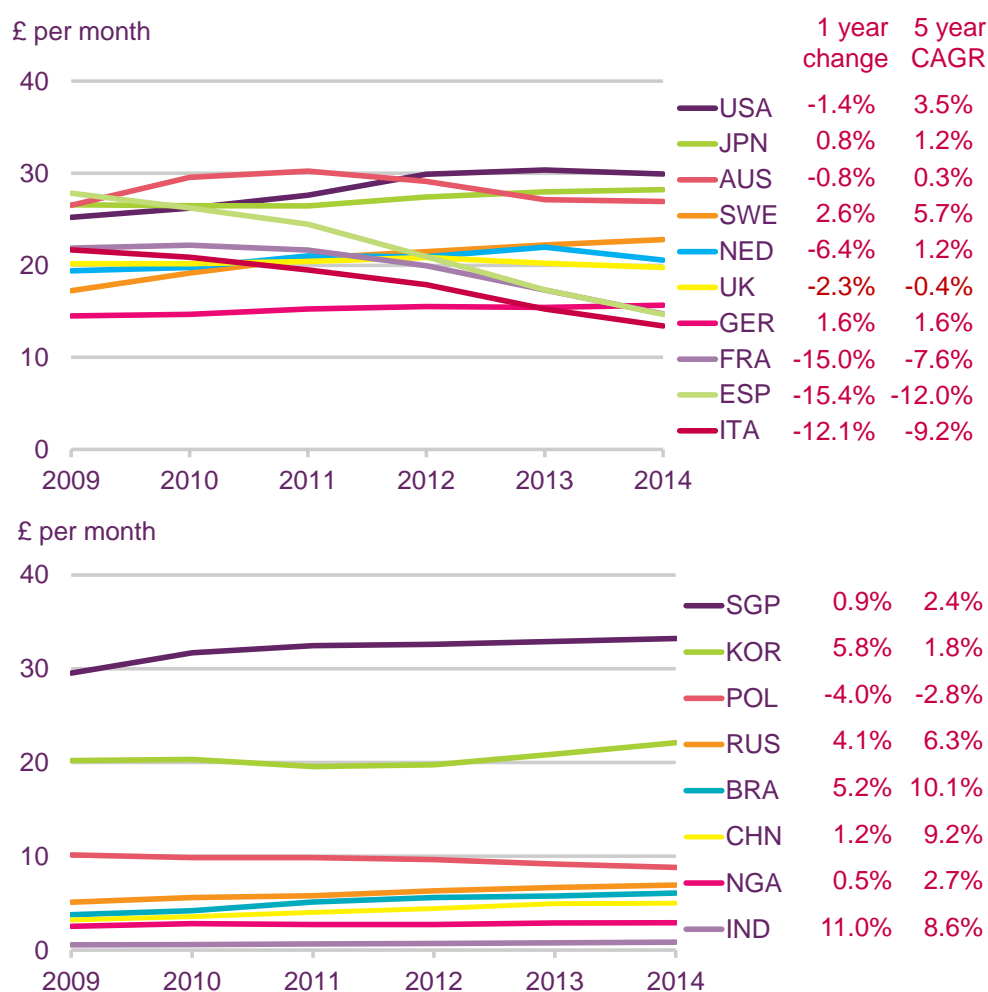
Source: IHS / industry data / Ofcom

Average per-capita retail mobile spend was highest in Singapore in 2014, at £33 per month

Per-capita spend on mobile services ranged from less than £1 per month in India to £33.22 per month in Singapore in 2014 (Figure 5.55). In the UK, spend was £19.75 in 2014, the eighth highest spend out of our comparator countries.

The average annual growth of mobile spend per person varied widely over the five years to 2014, ranging from a 12.0% per year average decrease in Spain to a 10.1% year-on-year average increase in Brazil. In the UK, revenues fell by an average of 0.4% per year over the same period. The UK was one of eight comparator countries where average monthly mobile retail revenue per person decreased since 2013, down 2.3% since 2013. The decrease in the UK was likely to be due to declining messaging revenue (down 28%) and falling data prices. The largest annual decrease in 2014 was in Spain (down 15.4%), while India had the largest increase (up 11.0%).

Figure 5.55 Average per-capita monthly retail mobile revenue: 2009-2014



Source: IHS / industry data / Ofcom

Note: All figures expressed in nominal terms. All figures expressed in nominal terms.

Japan had the highest per-capita mobile data revenue, 99% of which came from mobile internet

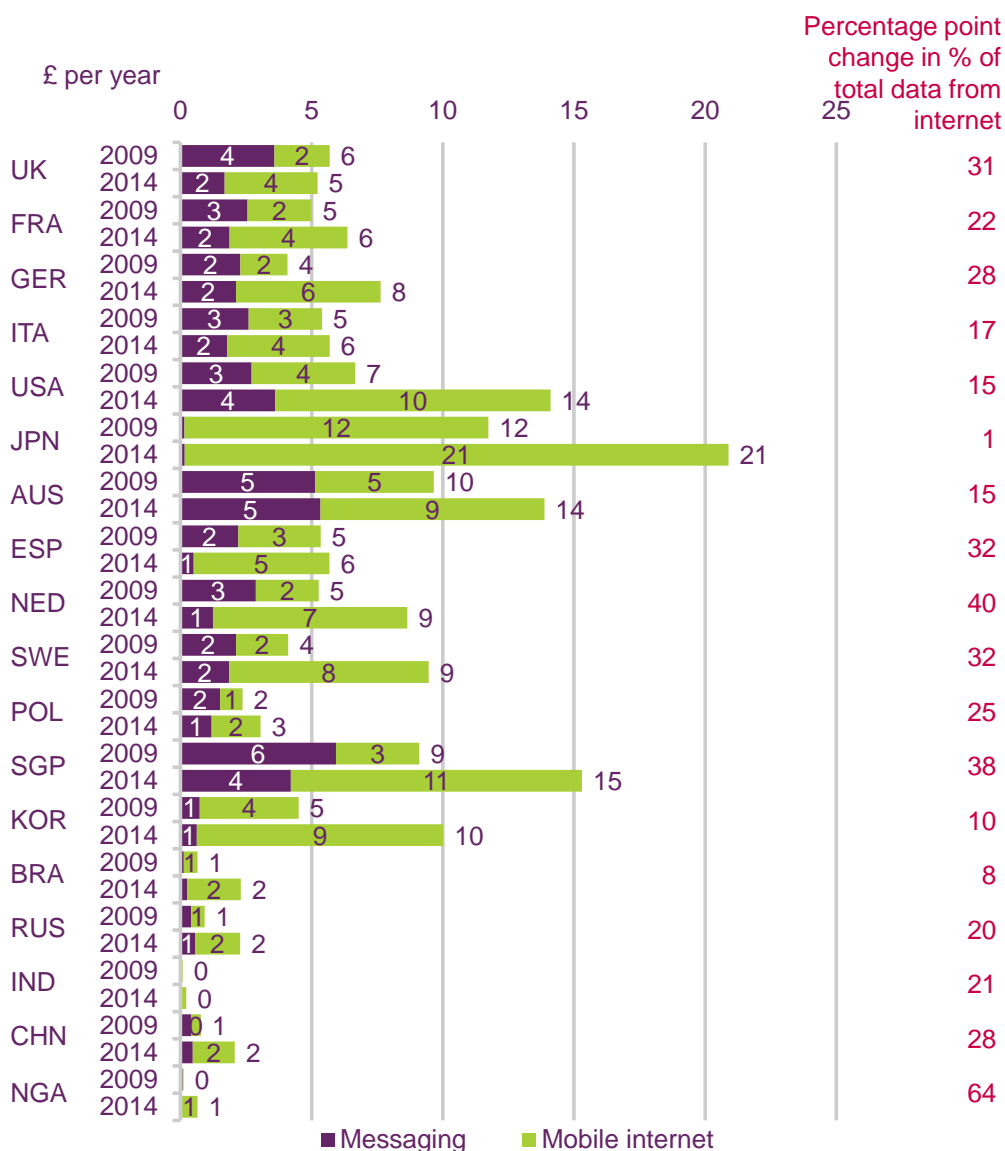
Average per-capita mobile data revenue (which includes spend on mobile messaging and other mobile data services, referred to here as ‘mobile internet’ services) increased in all of our comparator countries in the five years to 2014, except the UK (Figure 5.56). It is important to note, however, that figures for the UK will be understated as they exclude revenues relating to SMS and data allowances that are bundled in with monthly line rental fees.

Average per-capita spend on traditional messaging services (SMS and MMS) fell in 11 of our comparator countries in the five years to 2014, including the UK where it was £2 per person in 2014, half the average in 2009. In contrast, average spend per person on mobile internet services increased in all of our comparator countries over this period, as a result of growing smartphone and mobile broadband take-up, and by 2014 average per-capita spend on mobile internet services ranged from £0.19 per month in India to £21 per month in Japan. In the UK it was £4 per month, although this figure is understated for the reason outlined previously.

The proportion of total mobile data spend that was generated by mobile internet services ranged from 61.2% in Poland to 99.2% in Japan in 2014. In the five years to 2014, mobile

internet revenues increased in all of our comparator countries; the lowest average growth was in Japan (where spend on traditional messaging services has always been low), at 1pp. By comparison, growth was highest in Nigeria (where, in monetary terms, total spend was less than £1 per month), at 64pp. In the UK, revenue generated by mobile internet services accounted for 67.8% of the total mobile data revenue (up by 31pp since 2009), the third lowest proportion among comparator countries.

Figure 5.56 Per-capita mobile data average revenue: 2009 and 2014



Source: IHS / industry data / Ofcom Note: Messaging includes SMS and MMS.

Email and instant messaging were the most popular activities undertaken on a mobile handset across the comparator countries in 2015

With the increased popularity of smartphones (see Section 1.5) many mobile users are able to use their mobile handset to access data services beyond traditional text and instant messaging, such as email and social networking sites (Figure 5.57). Ofcom research, which was conducted in nine of our comparator countries, shows that more than half of mobile

users in these countries used text messaging and email on their mobile handset in September/October 2015.

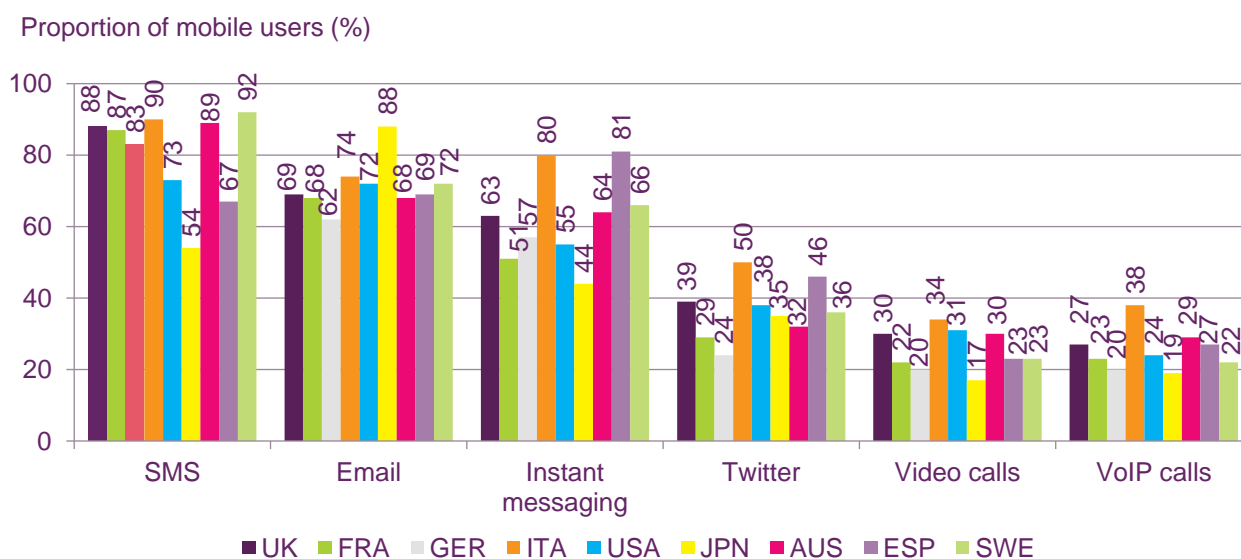
SMS use was high in the majority of comparator countries, at more than eight in ten respondents; the highest reported use was in Sweden (92%). The US was an exception, at 73%. This is probably due to the historically slow adoption of SMS among mobile users in the US compared to other developed markets (partly because operators previously charged for SMS messages to be received as well as sent), as well as the use of alternative forms of texting among mobile users (such as push notifications). Spain was also an exception (67%); sending SMS messages in Spain is relatively expensive. Japan had the lowest text messaging use overall, at 54%. However, the majority of mobile users in Japan use email on their mobile phone (88%, the highest use out all our comparators). In the UK, 88% of respondents said they used their mobile handsets to send texts.

Use of a mobile to send email was also a popular activity, with at least six in ten respondents across all comparator countries claiming to do this. Mobile users in Germany used email services less than any of the other comparator countries, at 62%. Email services were used by just under seven in ten (69%) mobile users in the UK. This is in line with Spain (69%), France and Australia (both 68%).

The percentage of mobile users claiming to use instant messaging services on their handsets ranged from 44% in Japan to 81% in Spain. In the UK, 63% of mobile users claimed to use instant messaging (broadly in line with Australia, at 64%). Data from ComScore shows that in 2015, WhatsApp was one of the most popular instant messaging services among the EU5 comparator countries (most popular in Spain, Italy and Germany (with reach of 41.9%, 40.1% and 31.6%, respectively), second in popularity in the UK (44.5%) and third in France (7.4%). However, in the US other services such as Kik (11.2%), Skype (12.2%) and Messenger (44.0%) were more popular (compared with reach of 8.2% for WhatsApp). Messenger was also the most popular instant messaging service in the UK, with 47.6% reach.

The use of mobile phones for Twitter, video and VoIP calls were all highest in Italy (at 50%, 34% and 38% respectively). Germany had the lowest use of Twitter (24%), while Japan had the lowest use of video and VoIP calls (at 17% and 19% respectively). In the UK, 39% of mobile internet users used their mobile handset to access Twitter (the third highest proportion out of our comparator countries), while 30% used it for video calls and 27% used it for VoIP calls.

Figure 5.57 Activities undertaken on a mobile phone



Source: Ofcom consumer research September – October 2015

Base: All respondents who use a mobile or smartphone/ All respondents who access the internet with each device, UK=SMS 839/ Other services 594, FRA=SMS 853/ Other services 568, GER=SMS 882/ Other services 623, ITA=SMS 865/ Other services 779, USA=SMS 751/ Other services 523, JPN=SMS 815/ Other services 573, AUS=SMS 843/ Other services 610, ESP=SMS 886/ Other services 803, SWE=SMS 882/ Other services 678.

Q. 9b Which, if any of the following ways of communicating over the internet do you use each of your devices for?

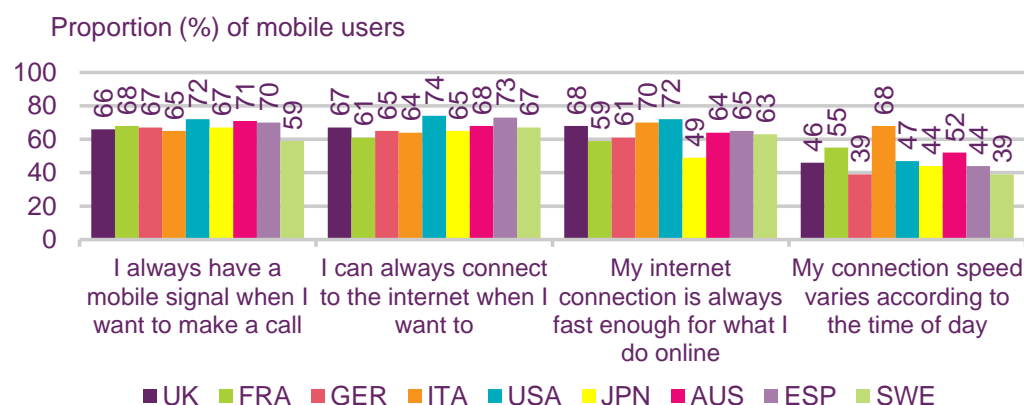
Q. 9e Which, if any, of the following do you use your mobile phone or smartphone for?

Two-thirds of respondents in the UK claimed that they always had mobile signal, internet connectivity and a fast enough internet connection in 2015

Figure 5.58 shows the proportion of mobile users who said that they did not experience difficulties in connecting to voice and data services over their mobile network. The proportion of mobile users who said they always had a signal when they wanted to make a voice call ranged from 59% in Sweden to 72% in the US. Similarly, the proportion of mobile users who said they could access the internet on their mobile network whenever they wanted ranged from 61% in France to 74% in the US. The US, along with Italy, had the highest percentage of mobile users who said that their mobile internet connection was always fast enough (at 70% and 72% respectively).

In the UK, around two-thirds of mobile users claimed that they always had mobile signal, internet connectivity and a fast enough internet connection in 2015 (at 67%, 66% and 68% respectively). Italy had the highest percentage of mobile users who found that speeds varied according to the time of the day (68%), while this proportion was lowest in Germany and Sweden, at 39%. In the UK, 46% of respondents said that connection speeds varied based on the time of the day.

Figure 5.58 Mobile phone connectivity



Source: Ofcom consumer research September - October 2015

Base: All respondents who use a smartphone or mobile phone (Statement 1) / use a smartphone (Statements 2,3 and 4), UK=839/677, FRA=853/666, GER=882/713, ITA=865/791, USA=751/580, JPN=815/779, AUS=843/690, ESP=886/829, SWE=882/748

Q.10 Thinking about when you use your mobile phone, please select an answer to each of the following...

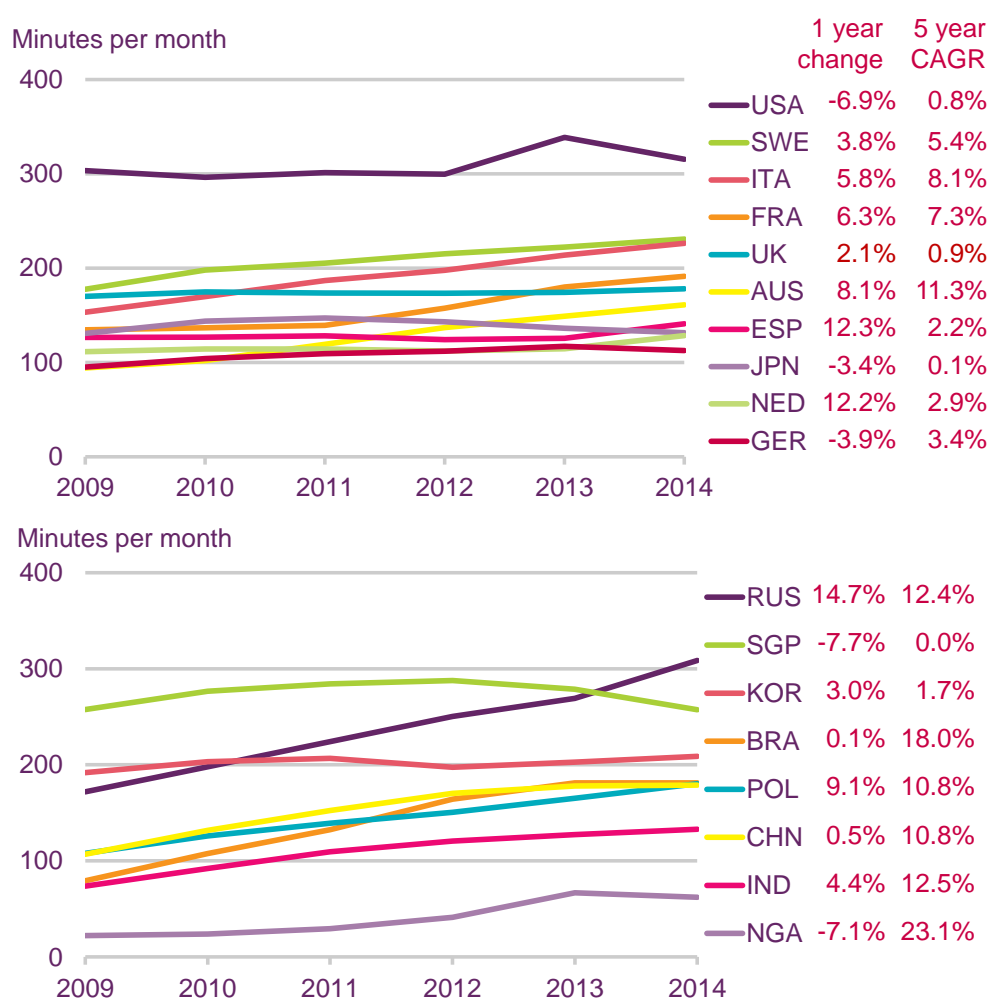
The US had the highest average per-capita monthly mobile voice call minutes, at 315 minutes in 2014

Average per-capita mobile call minutes ranged from 62 minutes per month in Nigeria to 315 minutes per month in the US in 2014 (this excludes incoming calls) (Figure 5.59). Russia had the largest increase in outgoing monthly mobile calls per person in 2014 (up by 14.7%), followed by Spain (up 12.3%). In the UK, average call minutes per person increased by 2.1% during the year to 178 minutes per month.

Average per-capita call minutes fell in five countries in 2014, with Singapore experiencing the largest decrease (down 7.7%). This is probably due to the increasing use of non-voice communication methods. For example, instant messaging volumes were up by 55% since 2013 in Singapore.

The average mobile call minutes per person increased in all of our comparator countries in the five years to 2014, with the exception of Singapore (where this remained stable). The largest increase was in Nigeria, where average call minutes per person increased on average by 23.1% per year (although, in absolute terms, volumes per person were the lowest of all our comparators), followed by the BRIC countries, among which Brazil had the largest average annual increase, at 18.0% a year.

Figure 5.59 Average per-capita monthly mobile voice call minutes: 2009-2014



Source: IHS / industry data / Ofcom

Monthly mobile messaging use was highest in the US, at 266 messages in 2014, although it has decreased since 2013

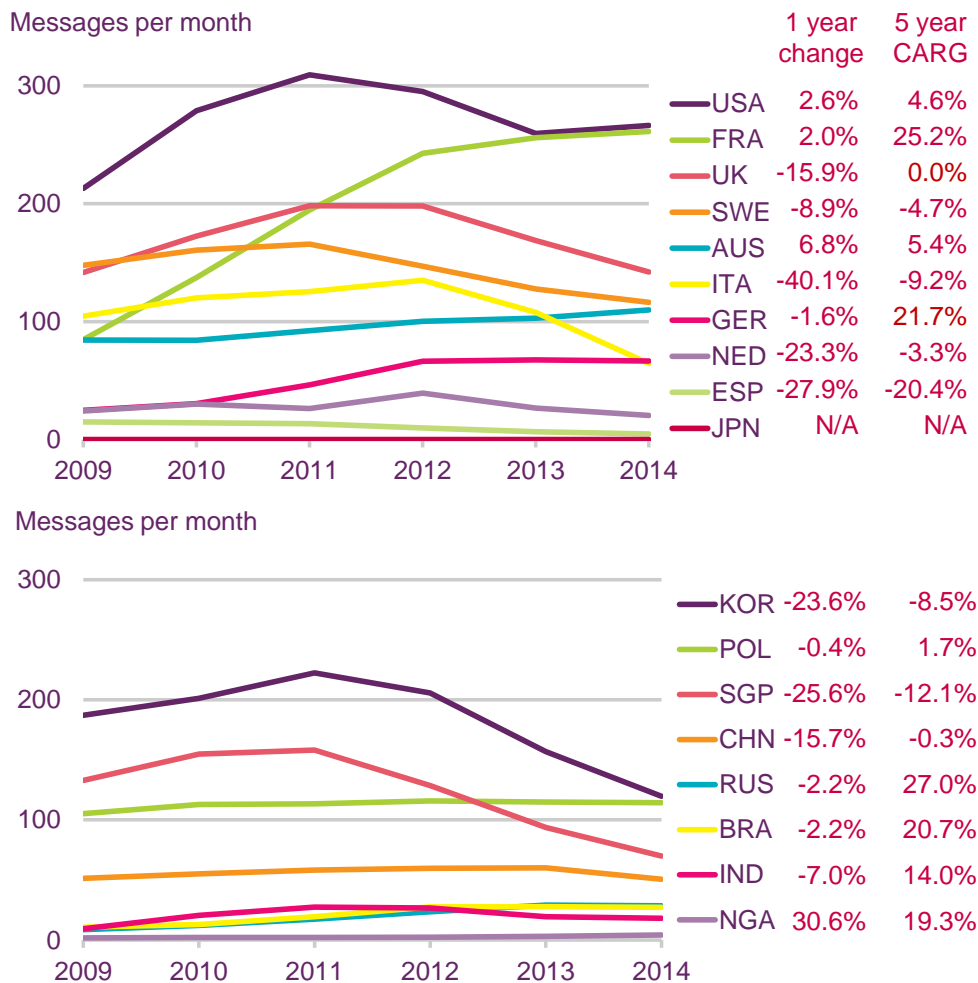
The average number of monthly mobile messages per person (including SMS and MMS messages) ranged from no messages in Japan (where consumers tend to use email and instant messaging rather than traditional mobile messaging services) to 266 messages per month in the US (Figure 5.60). The UK had the third highest average mobile messaging use among the comparator countries, with 142 messages per person per month; however, it was also one of the few more-developed nations to experience a decline in mobile messaging use.

Average SMS and MMS use per person fell in 13 of our 18 comparator countries in 2014. This decline was mainly due to increasing smartphone take-up, as these devices enable consumers to access alternative services, such as email and instant messaging. Italy experienced the largest decline in average messaging use in 2014 at 40.1%. Out of all the comparator countries, Nigeria had the largest increase in average messaging use, up by 30.6%. However, the average number of outgoing messages per person was very low, at just four per month. In the UK, the average number of monthly outgoing messages fell by 15.9% in 2014.

The average number of mobile messages per head decreased in seven of our comparator countries in the five years to 2014; the largest decline was in Spain (down 20.4% year on

year). The largest increase was in Russia (up 27.0% a year), while in the UK, monthly mobile messaging remained stable over this period.

Figure 5.60 Average number of monthly mobile messages per head: 2009-2014



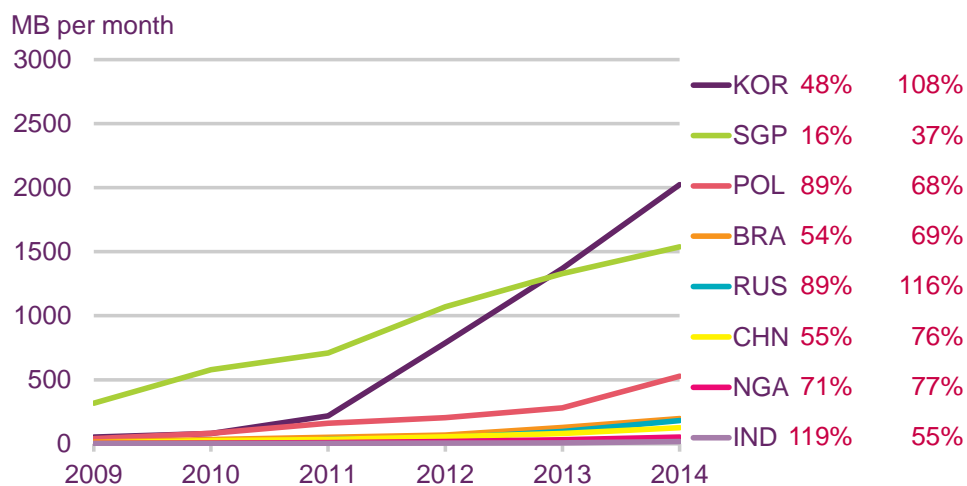
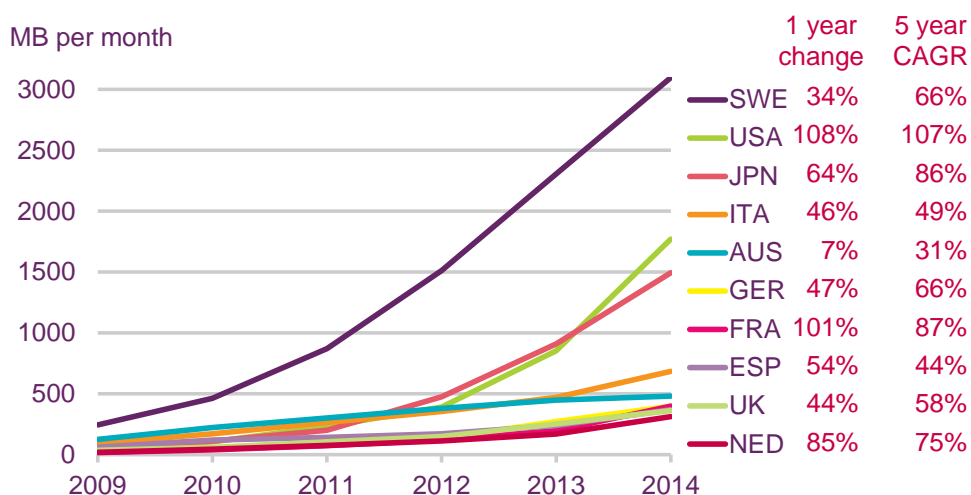
Source: IHS / industry data / Ofcom

Average per-capita data use continued to increase in all of the comparator countries

Average monthly mobile data use per person ranged from 18MB per month in India to 3,097 MB (i.e. 3.1GB) per month in Sweden in 2014. South Korea had the second highest average mobile data use at 2.0GB, 1.1GB (53%) lower than Sweden. Mobile data use in the UK was 362MB per person in 2014.

India had the highest growth in average mobile data use in 2014, up from 8MB in 2013 to 18MB per month in 2014 (up 119%). Australia had the slowest growth rates, with average data use per person increasing by just 7% in 2014, and by an average of 31% a year in the five years to 2014. The fastest growth was in Russia, up by an average of 116% annually over the five-year period. In the UK, average data use increased by 44% in 2014, and was up by an average of 58% a year in the five years to 2014.

Figure 5.61 Average per-capita monthly mobile data use: 2009-2014



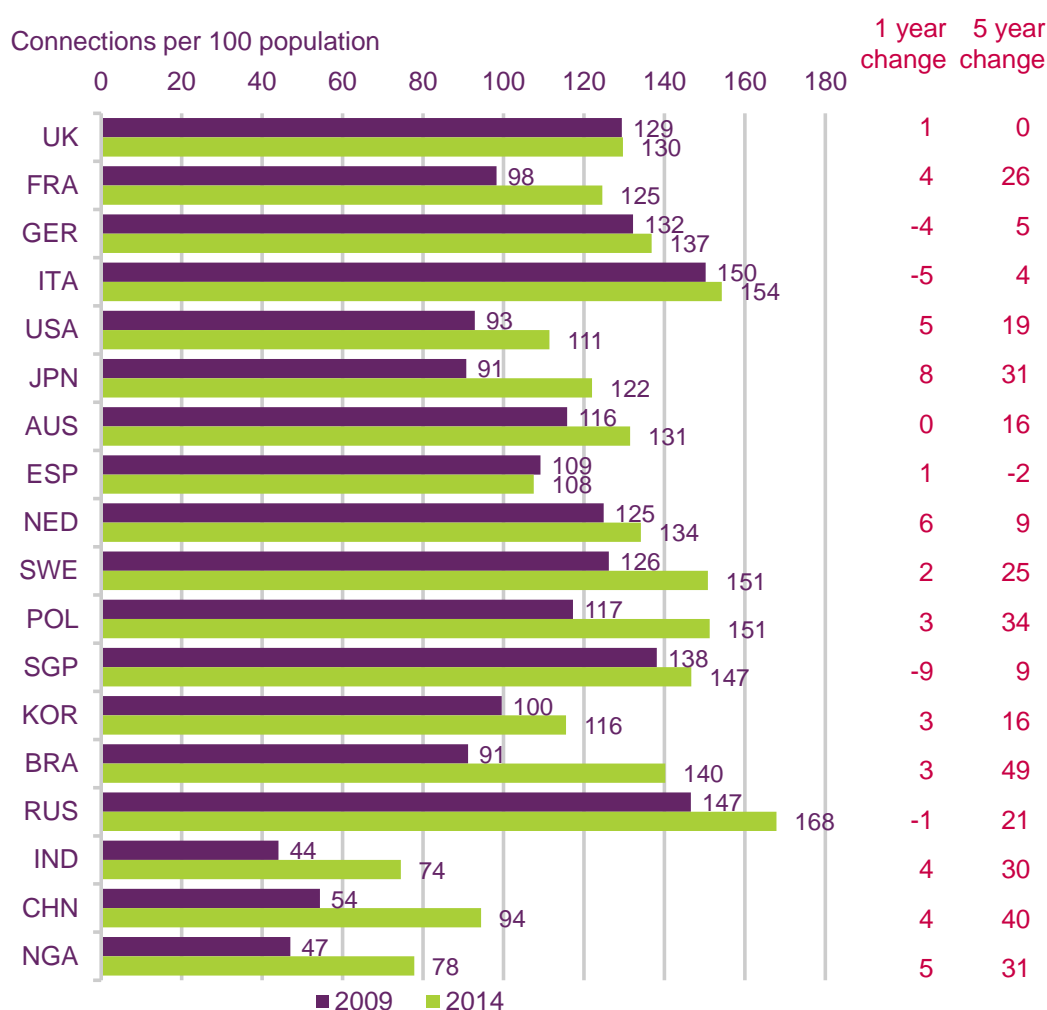
Source: IHS / industry data / Ofcom

Most countries had more mobile connections than people in 2014

The number of mobile connections per 100 people ranged from 74 in India to 168 in Russia in 2014, although Russia was one of four comparator countries (with Singapore, Italy and Germany) where the number of mobile connections per 100 people fell in the year to 2014. Singapore had the largest decline, down by nine connections to 147 connections in 2014, while Japan had the largest increase (up by eight connections). The UK had 130 mobile connections per 100 people at the end of 2014, up by one connection since 2013.

In the five years to 2014, Brazil had the largest increase, up by 49 connections, while Spain was the only country where there was a decrease in the number of connections per 100 people (down by two connections). In the UK, the number of mobile connections per 100 people remained mostly stable during the five-year period.

Figure 5.62 Mobile connections per 100 people: 2009-2014



Source: IHS / industry data / Ofcom

Mobile internet (excluding messaging) connections per 100 people increased in all of the comparator countries in the five years to 2014

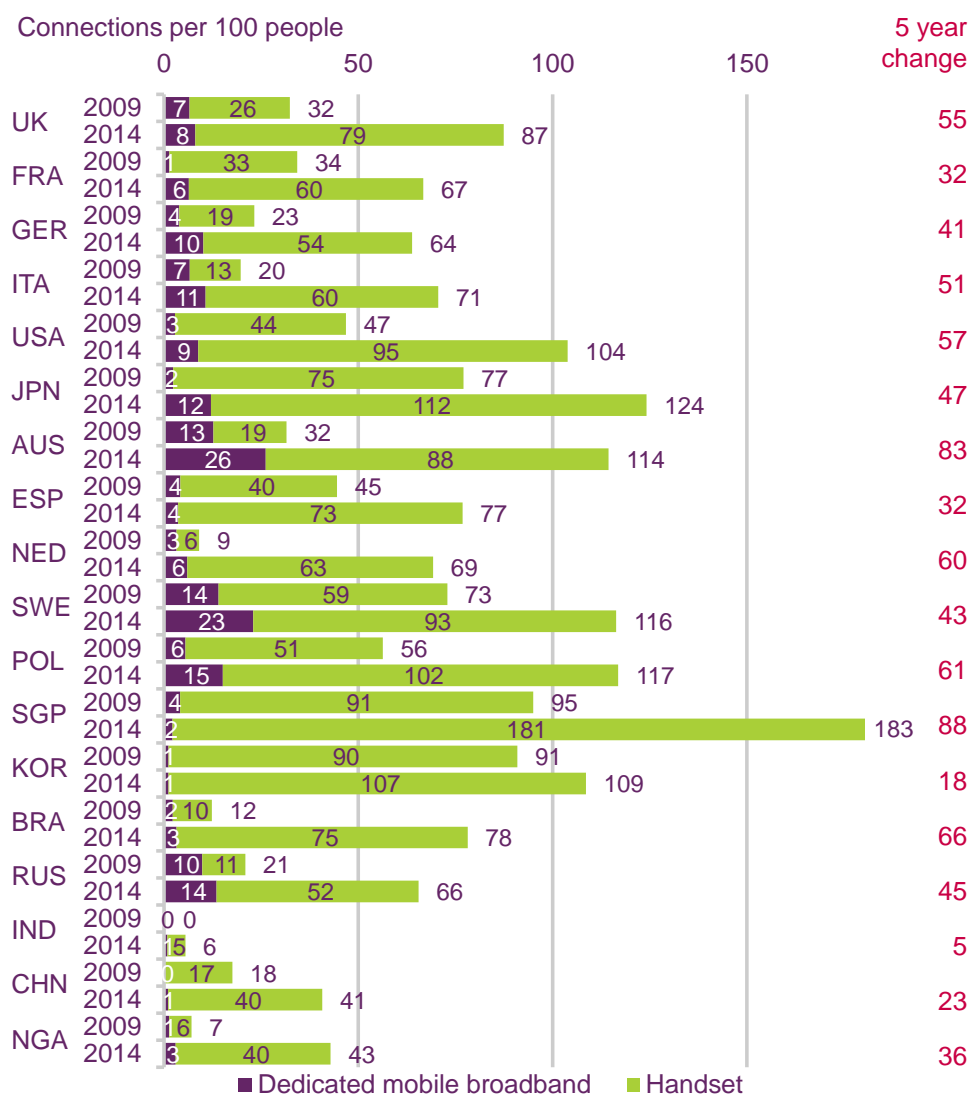
Singapore had the highest number of mobile internet (excluding messaging) connections per 100 people in 2014, at 183 connections. India had the lowest, at six connections, due to low levels of 3G and 4G availability, and because access to mobile data networks is concentrated in metropolitan areas. By comparison, the UK had 87 connections per 100 people, ranking eighth among our comparator countries.

The number of mobile connections per 100 people increased in all of our comparator countries in the five years to 2014. As well as having the largest absolute number of mobile data connections per 100 people, Singapore also had the largest increase, up by 88 connections per 100 people since 2009. India had the smallest increase, up by five connections in the five years to 2014. In the UK, take-up increased by 55 connections per 100 people over the same period.

Australia had the highest number of dedicated mobile broadband connections per 100 people at the end of 2014, at 26, followed by Sweden with 23 connections. Take-up was lowest in India, China and South Korea, where there was less than one connection per 100 people. In the UK there were eight dedicated mobile broadband connections per 100 people at the end of 2014 (up by one connection since 2009).

The number of mobile handset internet connections increased rapidly in most of the comparator countries in the five years to 2014. The number of connections ranged from five connections per 100 people in India to 181 in Singapore in 2014. In the UK there were 79 connections per 100 people, up by 53 connections over the five years to 2014. The main reason for this rapid increase is increasing smartphone take-up.

Figure 5.63 Mobile internet connections per 100 people: 2009 and 2014



Source: IHS / industry data / Ofcom

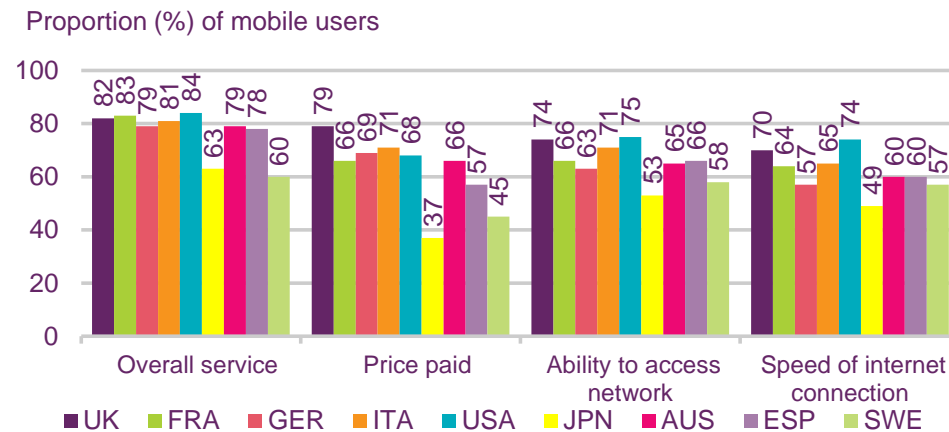
Note: Mobile internet excludes messaging services such as SMS and MMS

The UK had the highest proportion of respondents satisfied with the price paid for their mobile service in 2015, at 79%

Figure 5.64 shows the proportion of mobile data users who were either 'very' or 'fairly' satisfied with the four aspects of their mobile service. Overall satisfaction with mobile services was high in all countries, and was over 80% in four of the nine comparator countries (the UK, France, Italy and the US). The UK had comparatively high satisfaction levels for all four aspects, in particular for price paid, where satisfaction was significantly higher than in the other countries, at 79%.

Satisfaction levels with all of the service aspects asked about were lower in Japan and Sweden than in all other comparator countries, particularly in relation to satisfaction with price paid (at 37% and 45% respectively). While mobile users in Germany had comparatively high levels of satisfaction with overall services (79%), they demonstrated low satisfaction with the speed of their internet connection (57%), the joint second lowest proportion among our comparator countries, with Sweden.

Figure 5.64 Satisfaction with mobile service



Source: Ofcom consumer research September - October 2015

Base: All respondents who access the internet access via a mobile handset, UK=277, FRA=356, GER=323, ITA=546, USA=246, JPN=190, AUS=371, ESP=501, SWE=374

Q.25 To what extent are you satisfied or dissatisfied with the following aspects of your mobile phone service?



International Communications Market Report 2015

6 Internet and online content

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6.1 Key market developments in internet and online content

6.1.1 Introduction

Figure 6.1 Internet and online content: key international statistics

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	SWE	NED	POL	SGP	KOR	BRA	RUS	IND	CHN	NGA
Online universe (m)* (2015)	39.8	37.0	51.2	26.5	204	73.7	16.0	21.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fixed broadband connections per 100 population† (2014)	37	40	35	23	30	39	29	28	34	41	21	33	39	11	19	1	18	0
Dedicated mobile data connections per 100 population† (2014)	8	6	10	11	9	12	26	4	23	6	15	2	1	3	14	1	1	3
Internet access via a smartphone/mobile phone (%)‡ (2015)	61	59	62	82	53	60	64	83	69	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: IHS / Industry data / Ofcom / comScore

*comScore MMX, August 2015, home and work panel, persons 15+

† IHS / Industry data / Ofcom, 2015.

‡ Ofcom consumer research September-October

While the internet has fast become a feature of people’s lives across the world, the way in which they use it and what they use it for can vary significantly. This chapter considers how people have adopted the internet to communicate and consume content, and how this differs between the specific countries compared in this report.

This chapter is split into three sections:

- In this section (6.1) we look at internet advertising markets, e-commerce, mobile payments and connected devices in daily life. As advertising is a significant source of revenue online, we consider the size of internet advertising in relation to other advertising markets. E-commerce has changed the way many businesses function and how consumers purchase goods and services, therefore we note the variation in e-commerce markets across countries. As a feature which has been rolled out on a number of popular handsets, we consider mobile phone payment technology and compare the take-up of mobile payment solutions between countries. We also examine the take-up of a number of connected devices to manage aspects of everyday life.
- In section 6.2 we examine how people access the internet, which devices people use to connect to the internet, the respective size of countries’ online audiences, how long people spend online and how adoption of the internet varies by demographic.
- In section 6.3 we consider what internet users do once they are online, including which websites are most visited, which apps are most downloaded, and how this behaviour varies by demographic and by device.

Key findings

In summary, the key findings from this section of the chapter are:

- **The UK and China have the greatest share of all advertising expenditure on the internet, with 43% of all spending on advertising being online in 2014.** However, year-on-year growth was higher in China (9%) than the UK (3%).
- **Mobile internet advertising spend was greatest in the UK, at almost £25 per head,** followed by £23.69 in the USA and £17.66 in Australia. All comparator countries experienced year-on-year growth in mobile internet advertising spend, in contrast to fixed spend which declined in the USA, Japan, Australia and Spain.
- **The UK had the highest per capita spend on e-commerce in 2014, at £1591 per head.** E-commerce expenditure per capita in the UK was over 50% higher than in the US, the next-highest-valued market, which had an average spend of £918 per head.
- **Over a third of smartphone users in the UK shop online once a week or more.** In the UK, over a third (34%) of smartphone owners claimed to use their device to shop online at least weekly or more often. Online shopping with a smartphone at least weekly was most common in the US, where 38% claimed to do so.
- **The use of connected devices to manage daily life is highest in Italy and the US.** Smartphone users in the US and Italy were most likely to claim to have used connected devices in the home. In both countries, around a third of smartphone owners claimed to have used their device for monitoring their fitness.

6.1.2 Internet advertising

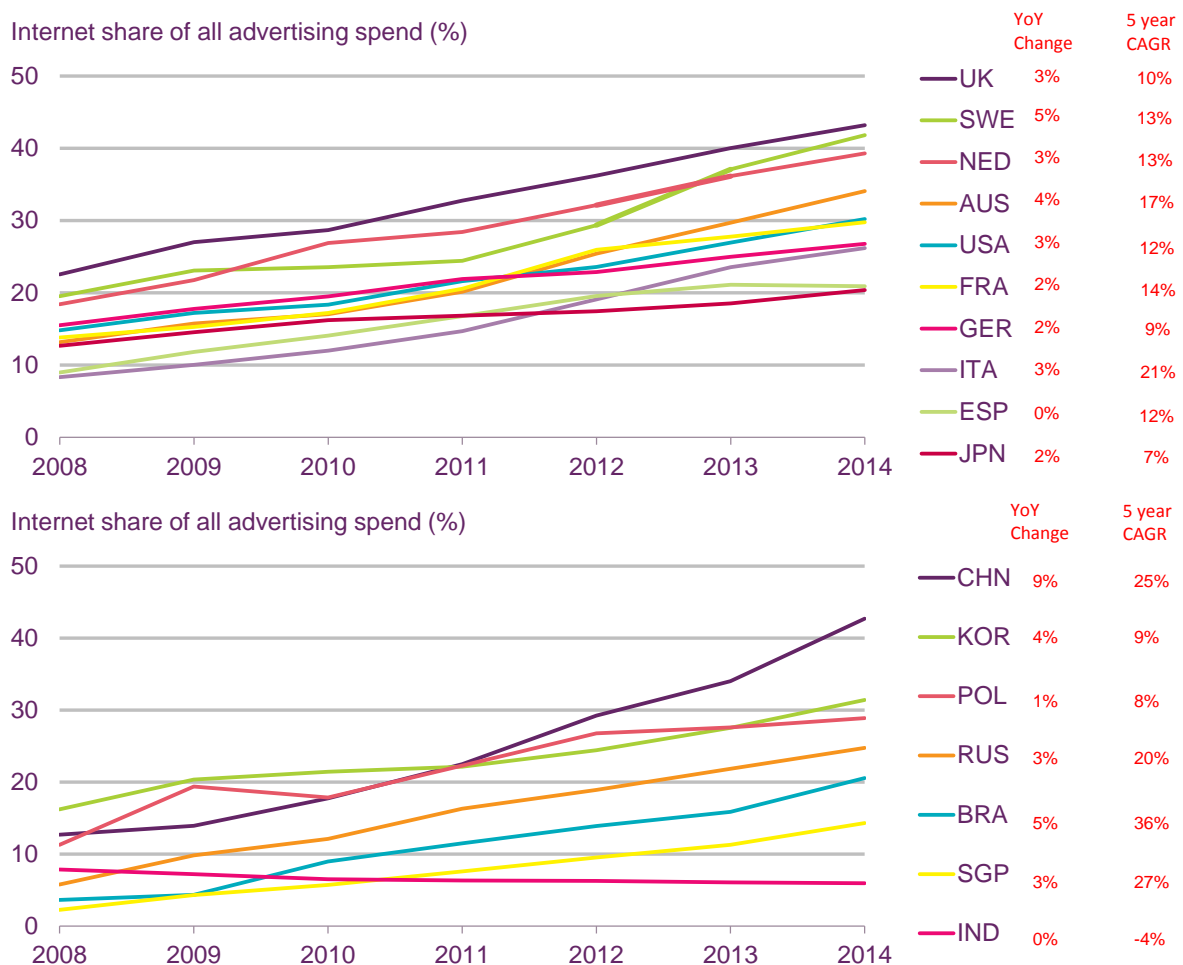
The internet's share of total advertising expenditure is highest in the UK and China

In 2014, the internet accounted for 43% of total advertising expenditure in the UK, equal with China (43%) and just ahead of Sweden (42%). The countries with the lowest share of spending on internet advertising as a proportion of all advertising expenditure in 2014 were India (6%), Singapore (14%) and Brazil (21%).

The fastest year-on-year growth was seen in China (9%) followed by Sweden (5%), while internet advertising share in the UK grew by 3% in the same period. There was growth in the internet's share of total advertising expenditure in all but two of our comparator countries: India and Spain, where internet share remained flat.

Brazil had the highest five-year compound annual growth rate (2009-14), at 36%, starting at a relatively low base, while Singapore came second (27%). Of our comparator countries, only India had a negative five-year compound annual growth rate (-4%).

Figure 6.2 Internet share of total advertising spend



Source: Warc data (www.warc.com)

Please refer to notes on adspend data for further detail and source information.

<http://www.warc.com/NotesOnAdspendData>

Sweden, followed by the UK, had the highest fixed internet advertising expenditure per head in 2014

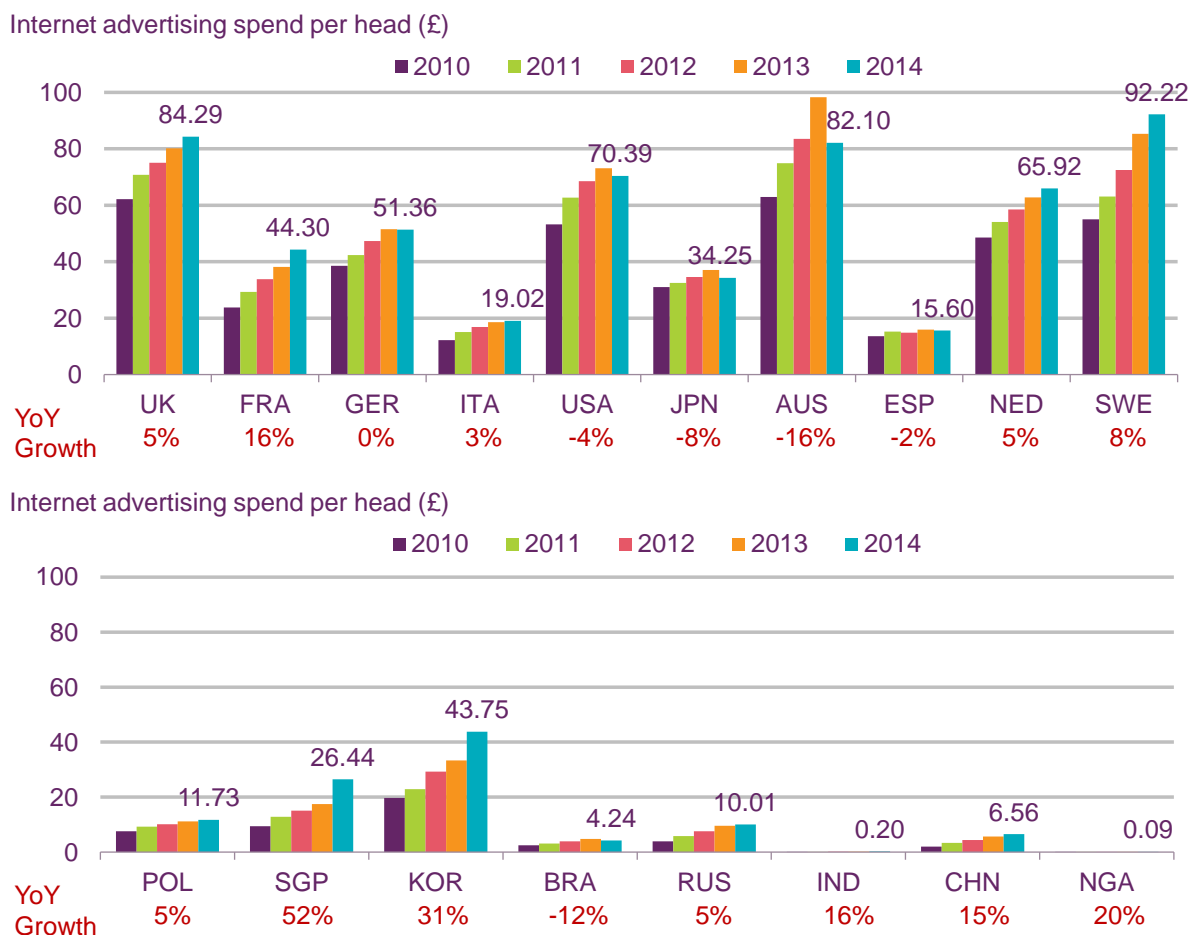
Internet advertising is spending by advertisers on paid search, banner/display, classified, video and other online formats such as email and sponsorship (including mobile advertising). Fixed internet advertising is a subset of internet advertising and refers to spend on adverts viewed on fixed or 'wired' devices, predominantly through web browsers on laptop and desktop computers. Although these devices could access the internet through a mobile rather than a fixed broadband connection, wired advertising remains distinct from mobile advertising, which is advertising viewed on a mobile handset.

Mobile advertising includes all advertising delivered directly to the mobile device, and includes search and display advertising as well as SMS/MMS advertising formats. Mobile display advertising can also be delivered to the device's browser or to a mobile app.

Sweden's spend per head on fixed internet advertising in 2014 was just over £92, the highest among our comparator countries (Figure 6.3). The UK had the second highest spend, at £84, with Australia coming in third, at £82. Australia's spend per head decreased 16% year on year, but this could be attributable to factors such as significant currency fluctuations and a substitution for expenditure on mobile internet advertising, as indicated by strong growth in this sector (see Figure 6.5).

In the BRIC countries¹²⁸, Nigeria, Poland, Singapore and South Korea, there were varying degrees of expenditure on internet advertising per head, from just £0.20 in India to nearly £44 in South Korea. Some countries with low levels of expenditure per head in absolute terms experienced high levels of year-on-year percentage point growth (India 16%, China 15% and Nigeria 20%).

Figure 6.3 Fixed internet advertising expenditure per head: 2010-2014



Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Population figures from Ofcom/HIS. All figures expressed in nominal terms.

Search advertising continues to account for a large share of fixed internet advertising expenditure

Generally, there was little or no change in the share of expenditure on different forms of online advertising across most of our comparator countries between 2013 and 2014 (Figure 6.4). However, there were some exceptions: in Australia spending on classified advertising increased, relative to other forms of advertising, from 20% to 26%, while in Russia paid search's advertising share increased from 68% to 72%.

There was notable variation between countries, with different proportions of revenue attributed to different advertising forms. Yet, in over half of the comparator countries, more was spent on search advertising than on other types. The respective strengths of internet

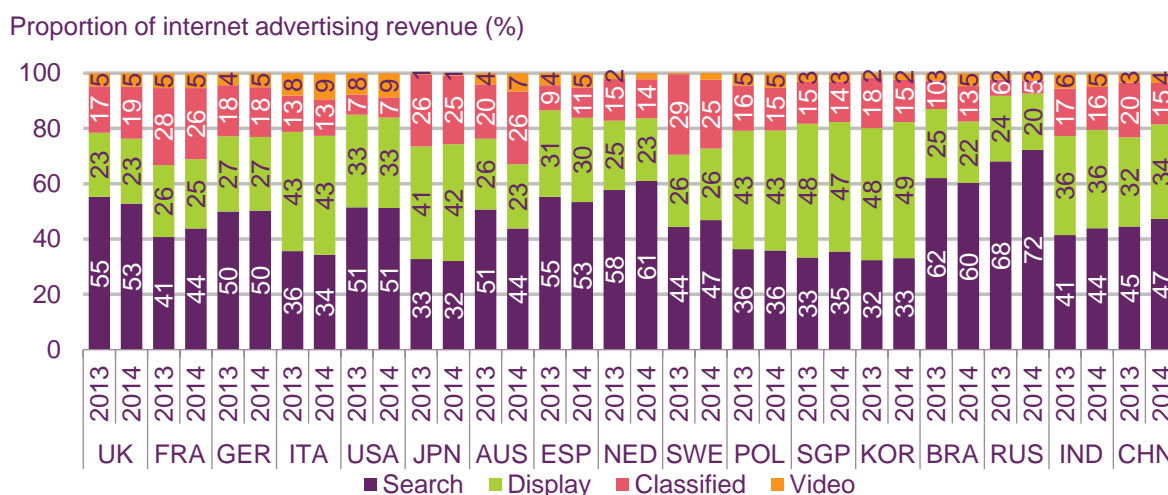
¹²⁸ Brazil, Russia, India and China.

classified, display, search and video advertising are likely to be the result of a number of country-specific factors including broadband penetration, broadband speeds, and the strength of other media competing for advertising spend.

Video advertising continued to account for a small share of fixed internet advertising expenditure. In most of our comparator countries, video growth was flat, or rose by one percentage point. Online video display advertising can take one of two forms. The first is similar to display advertising on websites, but in the form of an audio-visual advert rather than a static image or series of animated images, and like banner advertising, can sit in the page alongside other content. The second is similar to traditional spot television advertising, where adverts are shown either before, after, or mid-way through an online video, and the advert is embedded within the video player.

Online classified advertising is brief adverts, usually in small print, in an online newspaper, magazine or similar publication. In 2014, the US was the only country in which expenditure on video advertising was greater than spending on classified advertising (at 9% and 7% respectively). Classified advertising had a much smaller share of expenditure in the US than in other markets, such as France and Australia, where it accounts for over a quarter of advertising expenditure.

Figure 6.4 Fixed internet advertising expenditure, by category: 2013-2014



Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility

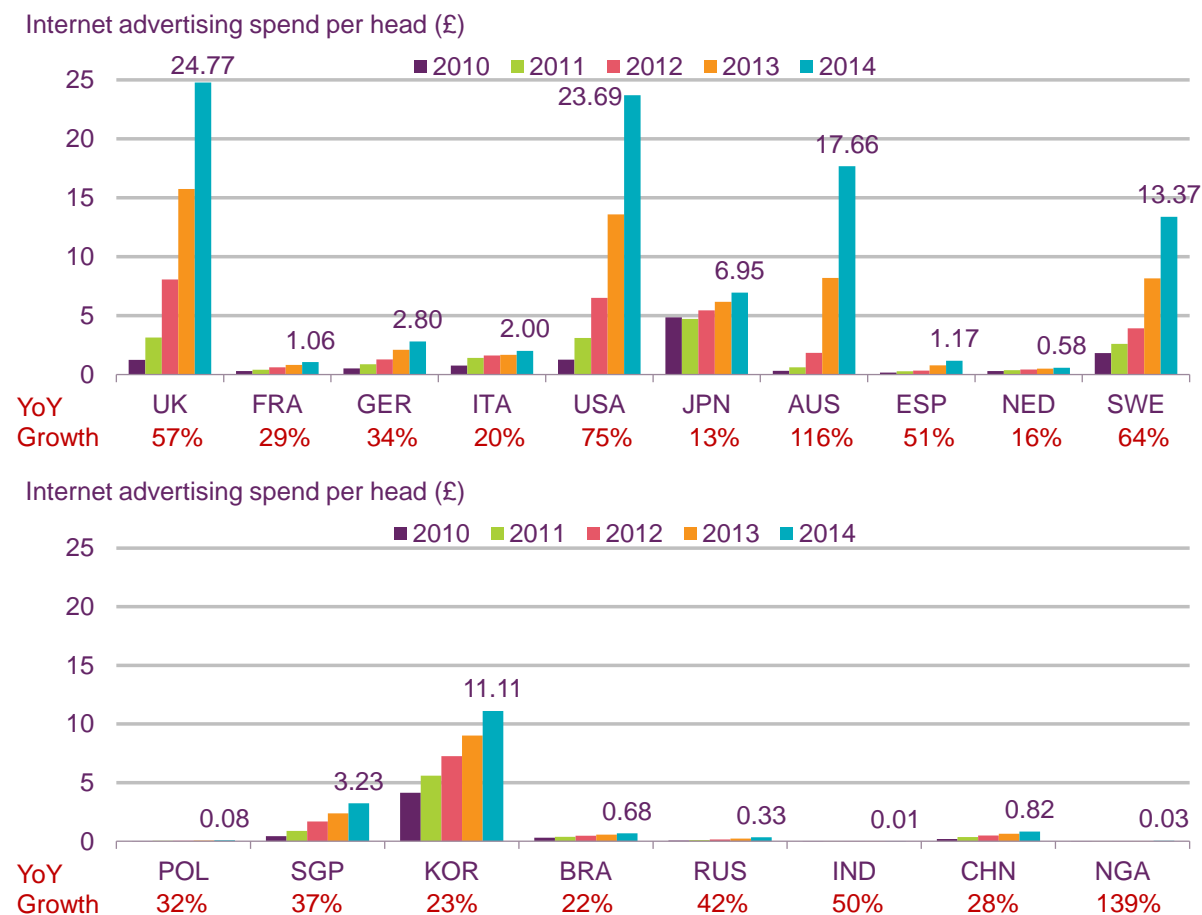
UK had the highest mobile expenditure per head in 2014 (£25), closely followed by the US (£24)

Of our comparator countries, the UK had the highest mobile advertising expenditure per head in 2014, at nearly £25, closely followed the US, at nearly £24. Year on year to 2014, mobile advertising expenditure per head in the UK grew by 57%, in the US by 75% and in Australia by 116%.

In the four years to 2014, mobile advertising spending per head in the UK grew by over £20 in absolute terms. But in some other countries in Europe - Italy at £2 per head, Spain at £1.17 per head, the Netherlands at £0.58 per head - growth was far less substantial. The strong performance of mobile advertising in the UK, the US and Australia was not necessarily related to take-up of smartphones and the mobile internet, as Spain and Italy had higher levels of take-up (see section 1.5.4). The higher spend may be due to a combination of factors, including established e-commerce and high overall advertising spend per head.

Some less economically developed countries saw proportionally high levels of year-on-year growth to 2014, but spending on internet advertising per head remains low in absolute terms. Nigeria experienced growth of 139% and India 50%, but just £0.03 and £0.33 was spent on internet advertising per head in each country, respectively.

Figure 6.5 Mobile internet advertising expenditure, per head: 2010-2014



Source: Ofcom analysis based on data from PwC Global Entertainment and Media Outlook 2015-2019 @ pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Population figures from Ofcom/HIS. All figures expressed in nominal terms.

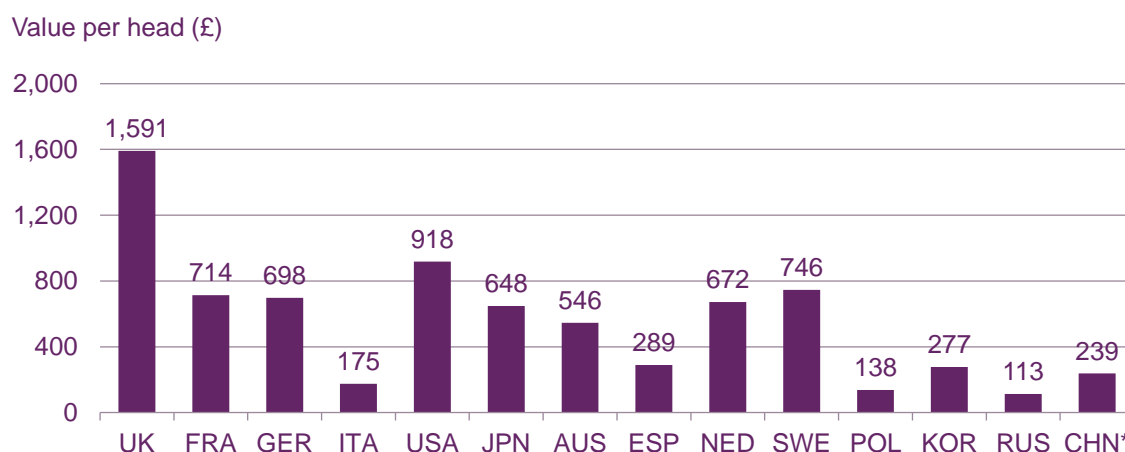
6.1.3 E-commerce

The UK had the highest per-capita spend on e-commerce among our comparator countries in 2014

The UK has a highly-developed e-commerce market, with the value of business-to-consumer (B2C) e-commerce at £1591 per head in 2014. This is substantially higher than the next highest-valued markets: the US (£918 per head), and Sweden (£833 per head). The UK's high per-capita spend on e-commerce may be due to a combination of factors, including trust in the postal service, a traditionally strong appetite for catalogue shopping and high use of debit and credit cards.

The value of e-commerce per head was relatively low in Italy (£175) and Spain (£289), despite high proportions smartphone users claiming to shop online regularly (Figure 6.7).

Figure 6.6 Value of B2C e-commerce, per head: 2014



Source: *European B2C e-commerce report 2015, Ecommerce Europe*

Notes: Values converted from Euros to British Sterling (£1 = €1.23916319291147). Population figures from Ofcom/IHS. *China also includes C2C goods and services.

Nearly two-fifths of smartphone users in the US and over a third of smartphone users in the UK shop online once a week or more

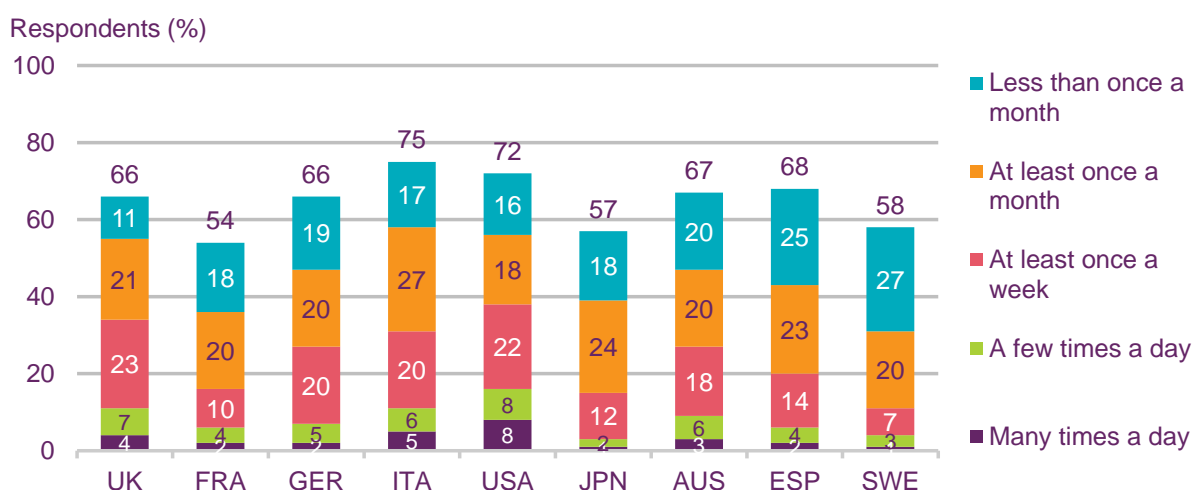
As a proportion of all smartphone users, the US had the greatest share of those who use their phone to shop online many times a day, at 8%, while the countries with the largest proportion of respondents who have used their smartphone to shop online were the US (72%) and Italy (75%)¹²⁹. Two-thirds of UK smartphone owners claimed to have used their device to shop online (66%).

In the UK, over a third (34%) of smartphone owners claimed to use their device to shop online at least weekly or more often, while in the US, 38% claimed to do so. France (16%), Germany (27%) and Spain (20%) had a significantly smaller share of their smartphone users claiming to shop online weekly or more often.

We consider smartphone take-up of our comparator countries in section 1.5.4 on page 60.

¹²⁹ Some countries have a relatively high proportion of respondents who claim to shop online, but relatively low expenditure on ecommerce per head. This might be because buying low-value items online is more common in some countries than in others, or because some respondents might interpret 'shopping online' as including time spent browsing for things to buy.

Figure 6.7 Use of smartphone to shop online



Source: Ofcom consumer research September-October 2015

Base: All respondents with a mobile phone who use a smartphone, UK=631, FRA=602, GER=688, ITA=759, USA=501, JAP=693, AUS=598, ESP=780, SWE=695

Q.27 How often, if at all, do you use your main mobile phone to do each of the following? Shop online

6.1.4 Mobile payments

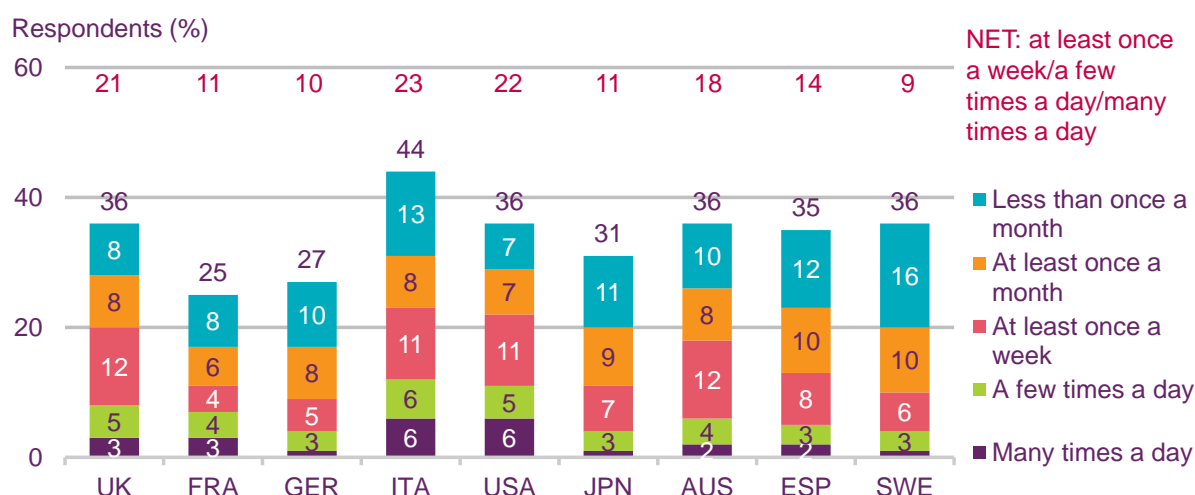
More than a third of smartphone owners in the UK and two-fifths of smartphone owners in Italy have used their device to make a payment

In the UK, more than a third (36%) of smartphone owners have used their device to make a mobile payment. Mobile payments are most popular in Italy, where they are used by 44% of smartphone owners. A mobile payment is defined as a point-of-sale purchase of goods or services with a mobile device. Examples include using an app, mobile wallet or premium-rate text, but exclude paying via a card on a supplier's website that is accessed on a mobile device.

Across all of the comparator countries, a minority of smartphone users had made a mobile payment. Smartphone users in France were the least likely to have used their device to make payments (21%), followed by a quarter (25%) of smartphone users in Germany. In most comparator countries, the largest segment of those who use mobile payments made them less than once a month.

As a proportion of all respondents, rather than of smartphone users, Italy (23%), the US (22%) and the UK (21%) had the highest proportion of respondents who said they had used their smartphone to make a payment.

Figure 6.8 Use of smartphone to make payments



Source: Ofcom consumer research September-October 2015

Base: All respondents with a mobile phone, UK=915, FRA=881, GER=931, ITA=945, USA=784, JAP=830, AUS=824, ESP=923, SWE=918

Q.27 How often, if at all, do you use your main mobile phone to do each of the following? Pay for goods or services (i.e. using an app/mobile wallet, QR code, NFC, premium rate text etc. and not simply paying via a card on a supplier's website)

6.1.5 Connected devices for daily life (internet of things)

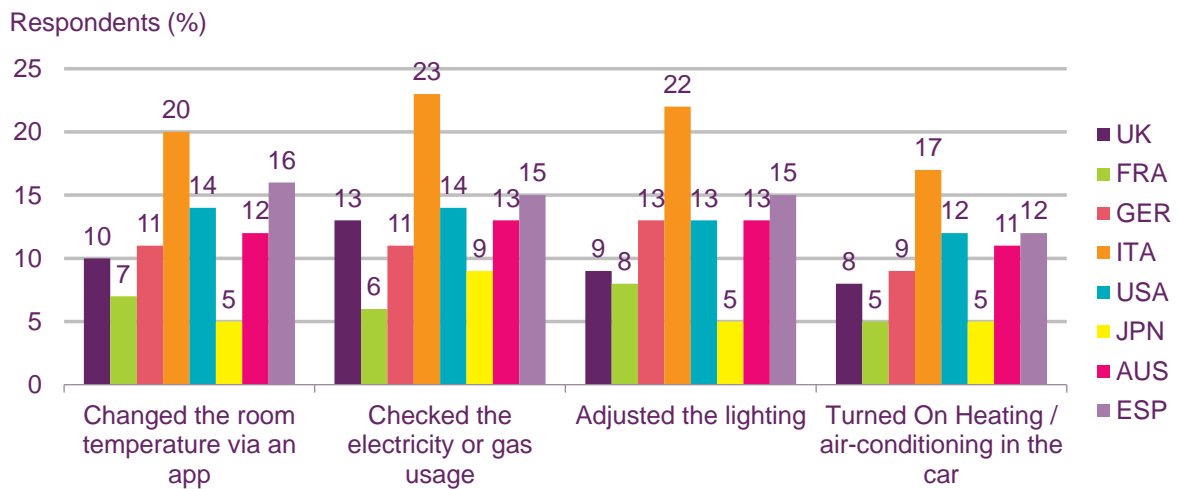
Smartphone owners in Italy are the most likely to have used their phone for home and car control and monitoring

Although take-up of home and car control and monitoring services was not very high in any of our comparator countries, differences by nation in the appetite for these services are evident.

In Italy, 23% smartphone users said they had used an app on their smartphone to check their gas and electricity use, compared to 13% in the UK and 6% in France. Only 9% of smartphone users in the UK had adjusted their lighting using their phone, compared to over a fifth (22%) in Italy.

The proportion of smartphone owners who had turned on the heating or air-conditioning in their car using their phone was 17% among Italian respondents, compared to 8% in the UK.

Figure 6.9 Use of smartphones for selected home and car control and monitoring activities



Source: Deloitte Global Mobile Consumer Survey 2015

Base: All adults who have a smartphone (UK N=3039, FRA N=1407, GER N=1491, JPN N=952, ITA N=1589, USA N= 1458, AUS N=1582, ESP N=1755)

Q: How frequently, if at all, do you do each of the following on your phone? (ever)

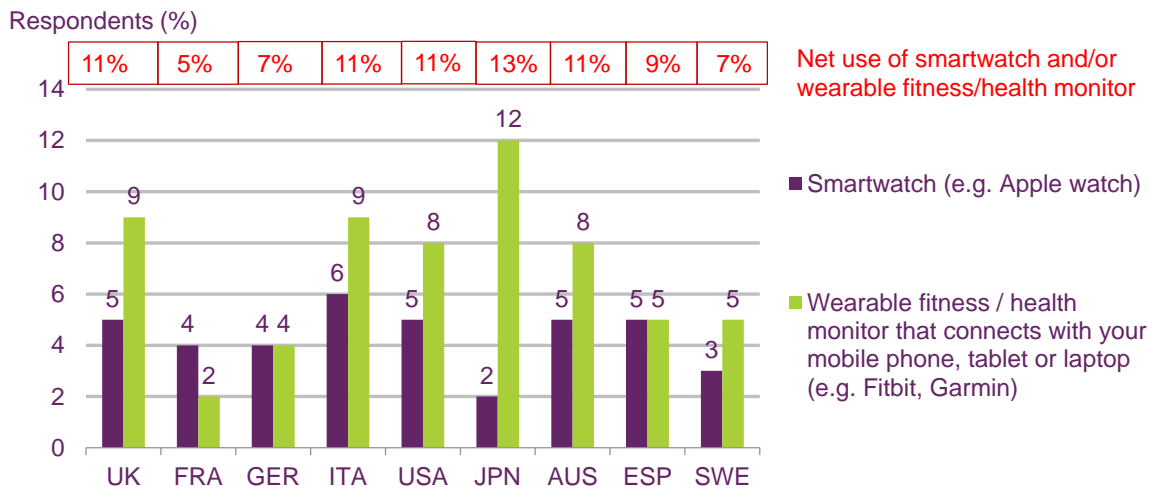
Smartwatch use remains relatively low in our comparator countries

A smartwatch is a computerised device that closely resembles a wristwatch but has functionality beyond timekeeping. Smartwatches are designed - either on their own or when paired with a smartphone – to provide features like connecting to the internet, running mobile apps and making calls.

Ofcom research conducted in October 2015 found that the take-up of smartwatches was relatively low across countries: take-up was less than 10% across all countries, and in the majority of countries it was 5% or lower.

‘Wearable fitness/ health technology’ includes wearable devices that monitor health/fitness, such as heart-rate monitors and sleep trackers. Take-up of wearable fitness/health technology was highest in Japan, with 12% of respondents claiming to use a wearable fitness/health device. The UK (9%) and Italy (9%) were among the countries with the highest levels of take-up of wearable fitness/health devices.

Figure 6.10 Use of wearable devices



Source: Ofcom consumer research September – October 2015
 Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004 Q.4a Which of the following devices do you personally use? 1) smartwatch (e.g. Apple watch) 2) wearable fitness / health monitor that connects with your mobile phone, tablet or laptop (e.g. Fitbit, Garmin).

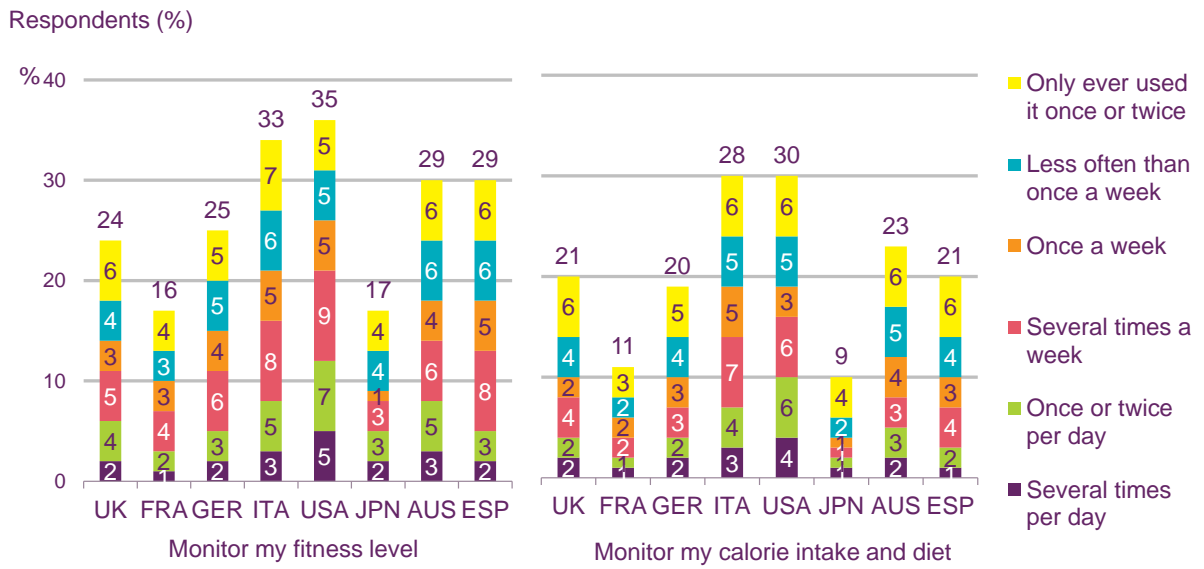
Monitoring diet and fitness on a smartphone is most common in the US and Italy

Monitoring diet and fitness using a smartphone has become possible through the availability of apps such as Moves and Fitbit. Apps can perform a range of functions, such as monitoring steps taken and calories consumed, and may connect to wearable devices and/or phone sensors.

The use of a smartphone to monitor fitness was highest in US and Italy, where 35% and 33% of smartphone owners had used their device to monitor their fitness, compared with 16% in France and 17% in Japan. In the UK, 24% of smartphone owners had monitored their fitness.

The US and Italy had the highest proportion of smartphone owners who had used their device to monitor their diet, at 30% and 28%, respectively. This was higher than in the UK (21%), France (11%) and Japan (9%), where it was lowest.

Figure 6.11 Use of smartphone for diet and fitness monitoring



Source: Deloitte Global Mobile Consumer Survey 2015

Base: All adults who have a smartphone (UK N=3039, FRA N=1407, GER N=1491, JPN N=952, ITA N=1589, USA N= 1458, AUS N=1582, ESP N=1755)

Q: How frequently, if at all, do you do each of the following on your phone?

6.2 Internet and devices

6.2.1 Introduction and key findings

Internet-enabled devices play a large part in defining the consumer experience and the range of content, communications and services accessed on the internet. In this section we examine internet access and the popularity of various devices.

- Section 6.2.2 considers the **technology** used by consumers to access fixed and mobile internet.
- Section 6.2.3 explores how **internet take-up** differs by age and gender among our comparator countries.
- Section 6.2.4 examines take-up of **internet-enabled devices** and how this varies by country;
- Section 6.2.5 delves into the length of **time spent online** on laptop and desktop computers by internet users in a selection of comparator countries.

Key findings

The key findings from this section of the chapter are:

- **Households in the UK and France are the most likely to have a fixed broadband connection.** Ninety-four per cent of households with broadband have a fixed broadband connection in the UK and France, compared with 77% in Italy, where households are least likely to have a fixed broadband connection.
- **Active audiences using laptops/ desktops are getting older in the comparator countries.** The highest proportion of laptop and desktop users aged over 55 was in Australia, at 30%, and in the UK, over-55s made up a quarter of users.
- **Use of tablets grew in the majority of comparator countries.** In five of the nine comparator countries, the use of tablets grew year on year to 2015, including in the UK, where take-up of tablets stands at 44%.
- **UK tablet users spend nearly 32 hours per month browsing.** In the UK in 2015, tablet users spent an average of nearly 32 hours browsing the internet in August 2015. This was slightly exceeded by US tablet users, who spent over 23 minutes longer browsing in the same month.
- **US internet users spend the most time browsing online on a laptop or desktop, at 34 hours per month, followed by the UK, at 33 hours per month.** The least time spent browsing was in Japan, at 18 hours per month.

6.2.2 Internet take-up, by technology

Online households in the UK and France are the most likely to have a fixed broadband connection

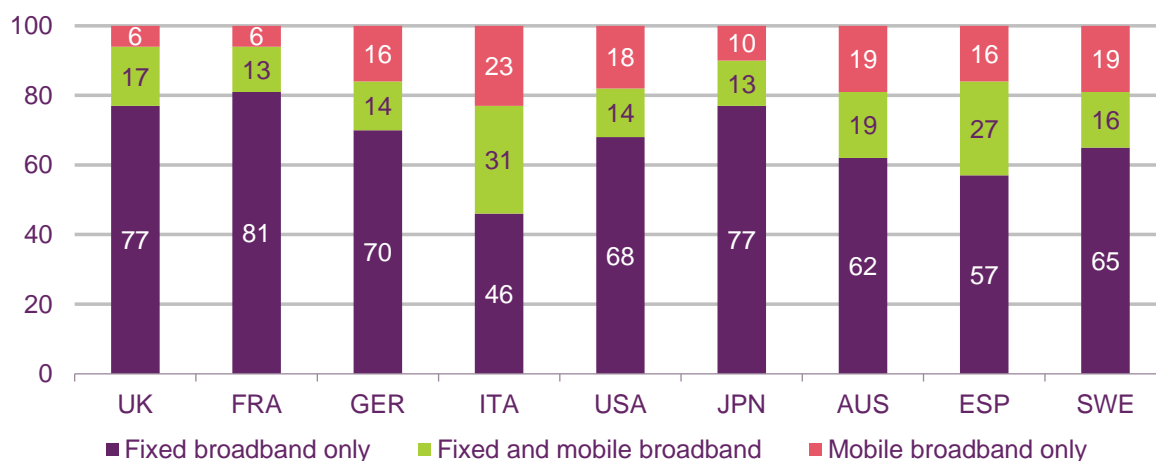
Among households with any broadband connection in the comparator countries, households in France and the UK were the most likely to have a fixed broadband connection (94%).

France had the highest proportion of those with broadband to have *only* a fixed connection, at 81%.

Italy had the highest proportion of mobile-only households in October 2015, at 23%, as well as the highest proportion of households with both fixed and mobile broadband (31%)¹³⁰. Having access to both mobile and fixed broadband connections was also popular in Spain (at 27% of households). The relatively low take-up of fixed broadband in Italy, and the corresponding high take-up of mobile broadband, might be due to a number of factors, such as the lack of widespread high quality infrastructure and the absence of a cable network.

Figure 6.12 Take-up of fixed and mobile broadband

Proportion of respondents with broadband in the home (%)



Source: Ofcom consumer research September-October 2015

Base: All respondents with broadband, UK=915, FRA=930, GER=842, ITA=861, USA=723, JPN=740, AUS=894, ESP=879, SWE=915

Q.3b Which of the following services do you have in your home?

comScore

The UK Online Measurement Company (UKOM) was formed in 2009 with a mandate from the advertising industry to establish measurement standards for digital media. In 2011, comScore was appointed as the sole data supplier for UKOM on a three-year contract from January 2013.

This chapter predominantly draws from three comScore sources. For analysis of laptop and desktop computer internet activity we use comScore MMX, which employs comScore's Unified Digital Measurement methodology, explained below. The comScore MMX panel excludes Apple Mac computers, but census-level activity is captured from both PCs and Apple Macs. comScore MMX is consistent across the six comparator countries for which data are available: France, Germany, Italy, the US, Japan, Australia and Spain.

For analysis of mobile internet activity we use comScore Mobile Metrix. In the US and the UK comScore Mobile Metrix uses comScore's Unified Digital Measurement methodology, with panels of smartphone (iOS and Android handsets) and tablet users (iOS tablets only in

¹³⁰ Mobile broadband access via a dongle, data-card, mobile Wi-Fi modem or data-only SIM.

the UK, but iOS and Android tablets in the US). However, France, Germany, Italy, Japan, Australia and Spain comScore Mobile Metrix is informed only from census-level activity on publishers' digital content.

Finally, mobile phone user behaviour measurement is supplemented by consumer research, comScore MobiLens Plus, for the US and the UK, and comScore MobiLens for France, Germany, Italy, Japan, and Spain. The key differences between MobiLens Plus and MobiLens are: the former reports on tablets as well as smartphones, has an enhanced survey, and is aligned with Mobile Metrix data.

Unified Digital Measurement

comScore's Unified Digital Measurement (UDM) methodology combines panel and census measurement techniques to measure digital audiences. 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 the most accurate consumption activity from publishers, and attribute this to audience demographics in a way that is not affected by cookie deletion, blocking, or rejection.

Metrics

Throughout this report we refer to a number of metrics, defined below:

Unique audience – the total number of unique persons who visited a specific website or used a specific application at least once in a given month. Persons visiting the same website more than once in the month are counted only once.

Active audience – the total number of people who visited any website or used any application at least once in a given month.

Digital audience – the active audience across all platforms (laptop/desktop computers, mobile phones and tablets, for those websites that are tagged in comScore's census network).

Active reach – the unique audience of a website as a proportion of the active audience.

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 are attributed to a level in comScore's *Client Focused Dictionary*. Several entities can exist within one website (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 websites appear in reports, according to this dictionary. All comScore reports use the same six-tier dictionary structure as explained below:

Property [P] - *The highest level of reporting in the Client Focus structure; 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 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, an 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.¹³¹

6.2.3 Internet take-up

Active audiences using laptops /desktops increased in the US and the UK in 2015 but decreased in Spain

In the UK, there was a modest increase of 0.1 million in the active internet audience using laptops and desktops. This is in line with modest changes in the relatively mature fixed broadband markets in almost all of the comparator countries (0); there are fewer new adopters likely to go online. In the US, there was a more significant increase of 7 million active users (an increase of 3.5%).

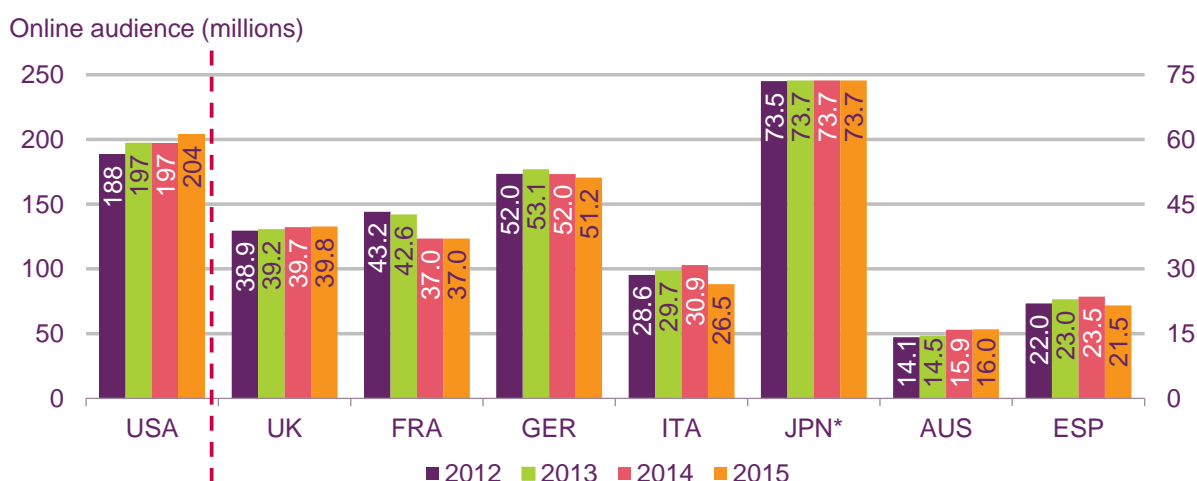
In Spain between August 2014 and August 2015, the active audience using laptops and desktops fell from 23.5 million to 21.5 million. This decline may be a result of an increase in mobile-only households, and the mature laptop and desktop market; there are few homes not online that are likely to get online in the near future.

The numbers of laptop and desktop active users remained stable in France (37.0 million) and Japan (73.7 million). In France, this may be attributable to levelling-off; there had been consecutive decreases over the three previous years¹³².

¹³¹ "Glossary – Key Terms for comScore Dictionary", comScore.

¹³² Active audience for Total Internet is calculated from enumeration surveys and not directly from comScore's panel. Consequently, year-on-year changes in total internet audience are not a reflection of panel-specific behaviour.

Figure 6.13 Active audience on laptop and desktop computers: 2012-2015



Source: comScore MMX, work and home panel, August 2012 to August 2015, persons 15+
 Note: Changes in comScore methodology occurred in September 2014 for Italy, in July 2014 for Germany and in April 2014 for Australia. Data before these dates should be treated with caution and should not be compared directly with current data.

Laptop and desktop active audiences are getting older in our comparator countries

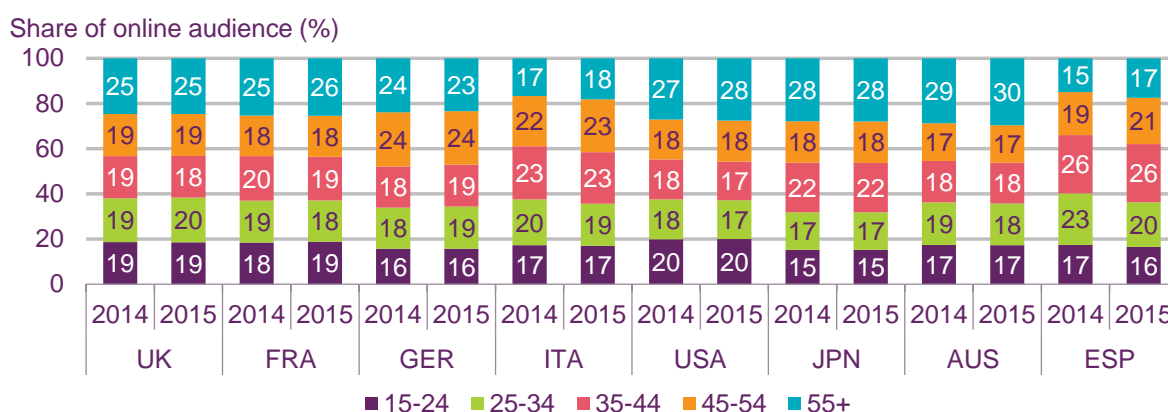
Laptop and desktop internet users aged 55 and over made up the largest proportion of users in most of our comparator countries (Figure 6.14). In the UK a quarter of users (25%) were over 55, compared to 26% in France and 28% in the US. In Australia, 30% of laptop and desktop users were over 55, the highest proportion among the comparator countries¹³³.

Spain and Italy had the highest proportions of laptop and desktop internet users aged under 45 in August 2014. Sixty-two per cent in Spain, and 59% in Italy, were under-45s.

The US had the highest proportion of laptop and desktop internet users aged 15-24, at 20%. In the UK, the active audience was more evenly distributed between the age groups, with 25% aged 55 and over, and the remaining age groups accounting for 18-20% each.

¹³³ Changes in the size and composition of active audiences within countries must be viewed within the context of population change. In many economically developed countries, there is an ageing population:
<http://www.un.org/en/development/desa/population/publications/pdf/trends/Concise%20Report%20on%20the%20World%20Population%20Situation%202014/en.pdf>

Figure 6.14 Active audience on a laptop or desktop computer, by age: 2014-2015



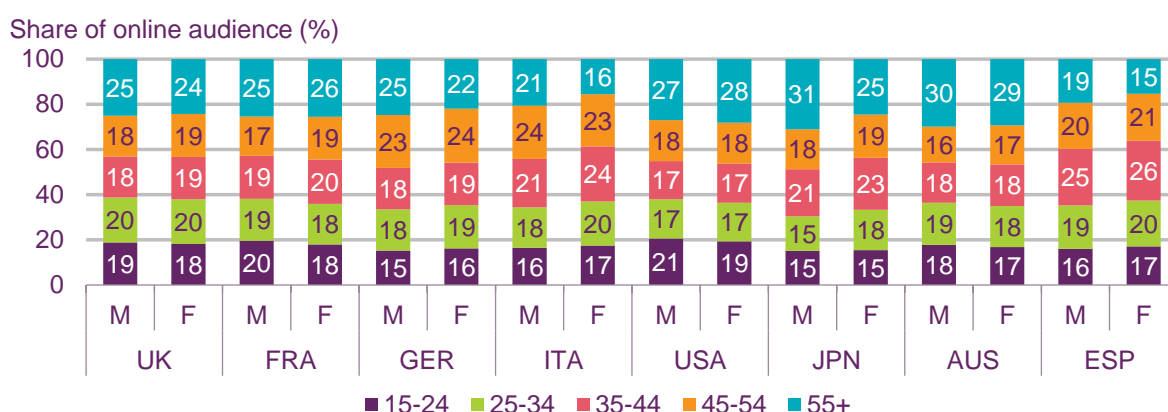
Source: comScore MMX, home and work panel, August 2014 and August 2015, persons 15+
 Note: Changes in comScore methodology occurred in September 2014 for Italy, in July 2014 for Germany and in April 2014 for Australia. Data before these dates should be treated with caution and should not be compared directly with current data.

Unlike Japan and Italy, there is little difference by age in the UK between male and female laptop and desktop users

In Japan and Italy, male laptop and desktop internet users were more likely than female users to be aged 55 or over in August 2015 (Figure 6.15). In Japan, 31% of the male laptop and desktop active audience was in this age group, as was 21% in Italy; in both countries there were proportionally fewer females in this age group. In contrast, the age breakdown by gender was almost equal in the UK and France.

In most of the comparator countries, there was no difference, or a difference of only 1%, between the genders among 15 to 24 year olds. The exceptions were the US and France, where males constituted 2% more than females of the share of online audience among 15-24s.

Figure 6.15 Active audience on a laptop or desktop computer, by age and gender: August 2015



Source: comScore MMX, home and work panel, August 2015, persons 15+
 Note: Changes in comScore methodology occurred in September 2014 for Italy, in July 2014 for Germany and in April 2014 for Australia. Data before these dates should be treated with caution and should not be compared directly with current data.

Japan had the oldest mobile internet users among the comparator countries

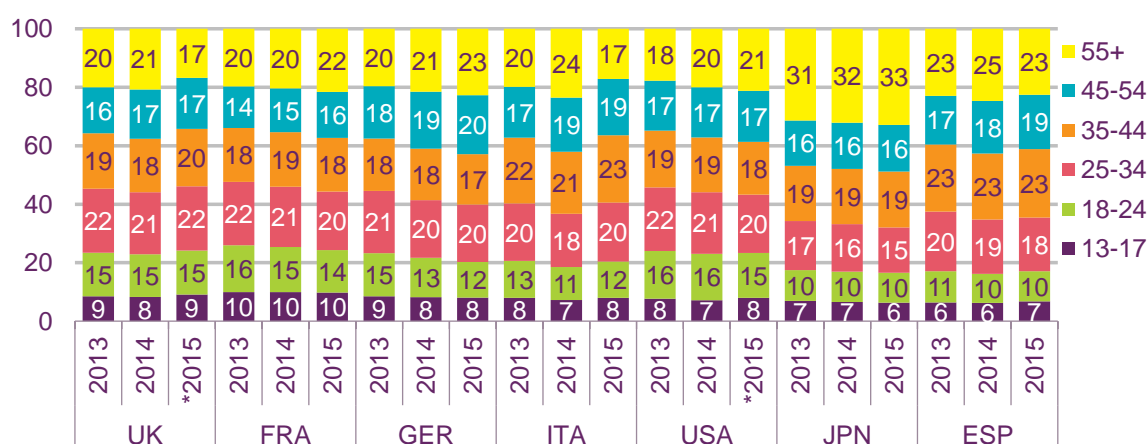
The over-55s make up a third (33%) of Japan's mobile internet users – a significantly larger proportion than in any of the other comparator countries. The next highest share of mobile internet users aged over 55 was in Spain, at 23%.

The largest share of mobile internet users aged 13-17 was in France, at 10%, while the smallest share was in Spain, at 7%.

The largest group of mobile internet users by age varied across countries, although in no country was the largest group the 13-17s or 45-54s. In the UK, the largest group by age was the 25-34s, at 22%, compared with the 35-44s, at 20%.

Figure 6.16 Mobile internet users, by age

Mobile internet users 13+ (%)



Source: comScore MobiLens, August 2013 (three-month average), August 2014 (three-month average), and August 2015 (three month average), mobile internet users aged 13+

Note: *For August 2015 (three-month average) UK and US results are from comScore MobiLens Plus

6.2.4 Internet-enabled devices

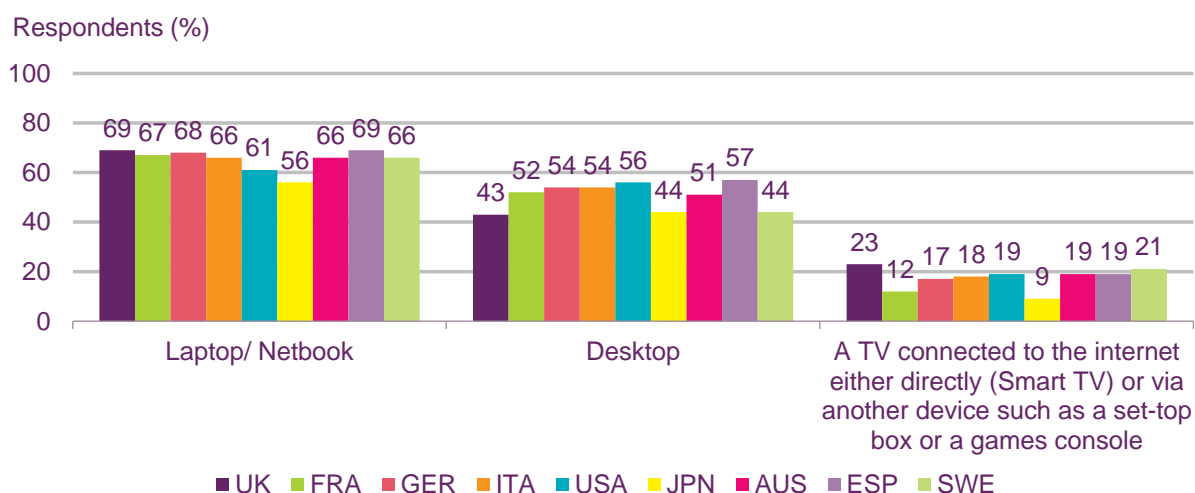
The UK had the highest proportion of people who use a connected TV to access the internet

A TV that is connected to the internet can be connected either directly (a smart TV) or indirectly via another device, such as a set-top box or a games console.

Ofcom research conducted in September – October 2015 found that 23% of respondents in the UK accessed the internet through TVs with an internet connection – the highest of all the comparator countries. However, accessing the internet through internet-connected TVs remains a relatively niche activity across countries. Fewer respondents in France and Germany (12% and 17% respectively), claimed to access the internet using a connected TV. Figure 1.12 shows overall connected TV take-up, which is significantly higher than those who use connected TVs to access the internet.

In all the comparator countries, laptops and netbooks remain the most popular devices through which to access the internet. The country with the highest proportion of respondents accessing the internet via a laptop or netbook was Germany (92%), while the lowest proportion was in Japan (84%). This relatively low proportion might be due to a number of factors including the advanced functionality of feature phones, historically popular in Japan.

Figure 6.17 Fixed devices used to access the internet



Source: Ofcom consumer research September-October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.7a Which of the following devices do you use to access the internet?

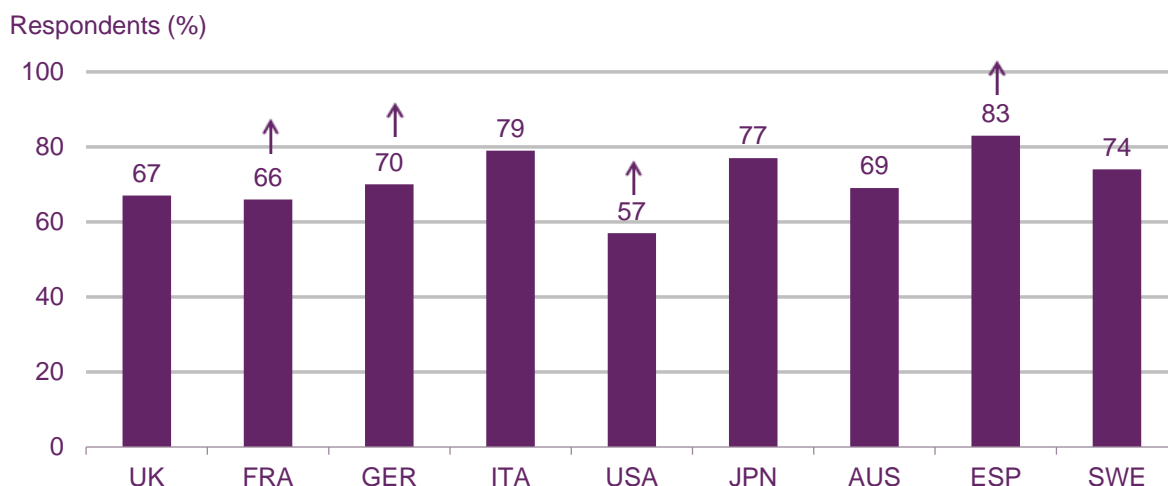
Spain leads in smartphone take-up, while in the UK over two-thirds of respondents claim to have smartphones

The country with the highest take-up of smartphones was Spain, at 83%, followed by Italy (79%) and Japan (77%).

Just over two-thirds of respondents in the UK (67%) claimed to use a smartphone.

Across the majority of the comparator countries, two-thirds of people personally use a smartphone; smartphone use has increased significantly year on year in four of the nine comparator countries, and in no country was there a decline in take-up.

Figure 6.18 Take-up of smartphones



Source: Ofcom consumer research September-October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.4a Which of the following devices do you personally use?

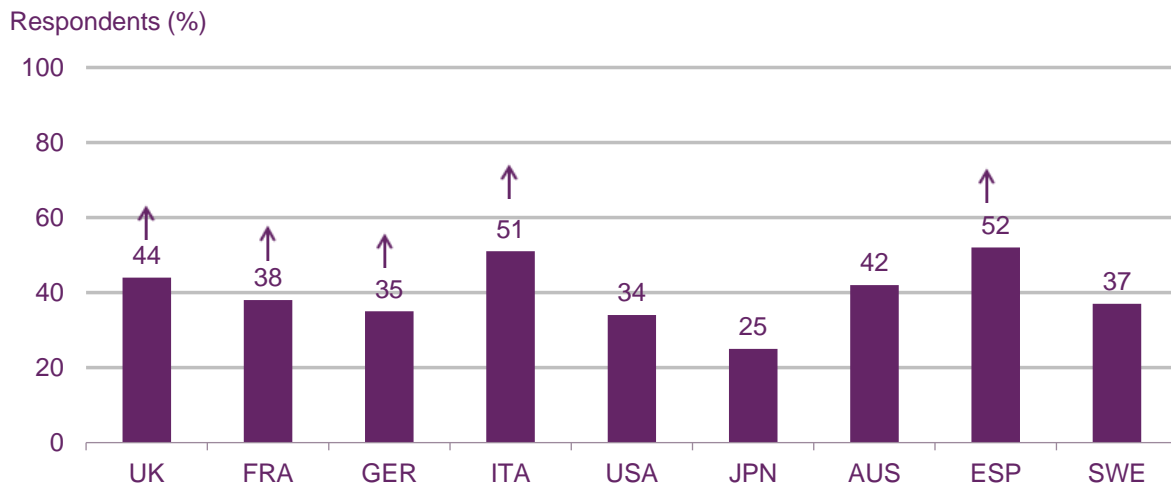
Note: Direction of arrow indicates a statistically significant difference compared to last year.

Take-up of tablets has grown in the majority of comparator countries

In five of the nine comparator countries, the use of tablets has grown significantly year on year. Spain had the highest proportion of tablet users, at 52%. The UK was one of five countries in which the use of tablets increased; up by 44%. Tablet use was also common in Australia, with 42% of respondents claiming to personally use one.

Fewer respondents claimed to use tablets in the US, at 34%, and less still in Japan (25%).

Figure 6.19 Personal use of tablets



Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.4a Which of the following devices do you personally use?

Note: Direction of arrow indicates a statistically significant difference compared to last year.

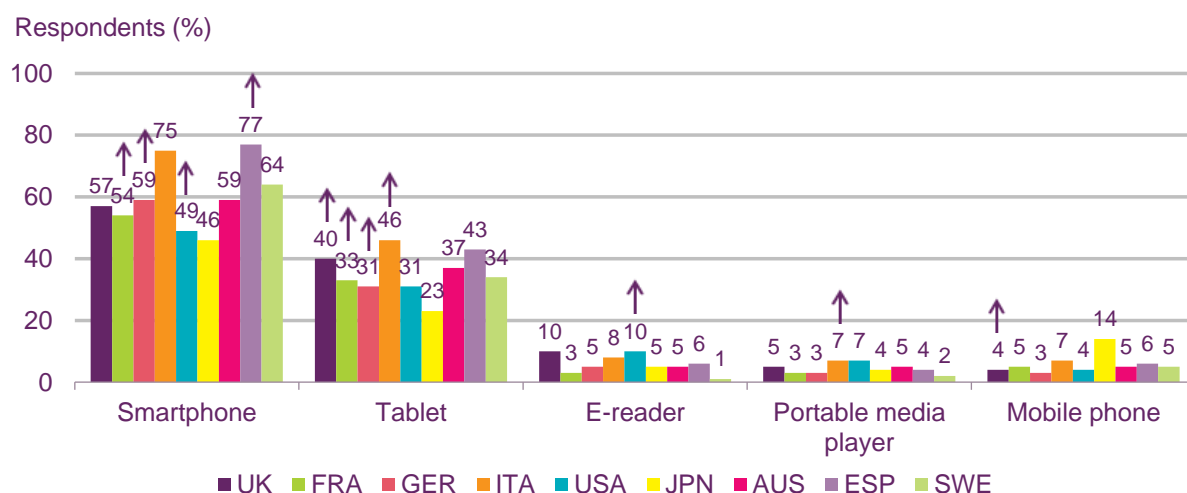
Internet users in Spain and Italy are the most likely to use a smartphone or tablet, of all portable devices

Ofcom research conducted in October 2015 found that out of all portable devices, smartphones and tablets were most commonly used to access the internet. Few people in any of the comparator countries used other portable devices, such as e-readers, portable media players and mobile phones (feature phones that aren't smartphones) to access the internet.

The only exception was Japan, where 14% of respondents accessed the internet through a mobile phone. In contrast, access via a smartphone in Japan was among the lowest (46%) of the comparator countries. This is most likely due to the advanced functionality and historical popularity of feature phones in Japan.

Spain (77%) and Italy (75%) lead among our comparator countries, in having the largest proportion of respondents using a smartphone to access the internet. In the proportion of those using a tablet to access the internet, the UK was third (40%), behind Spain (43%) and Italy (46%).

Figure 6.20 Portable devices used to access the internet



Source: Ofcom consumer research September – October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.7a Which of the following devices do you use to access the internet?

Note: Direction of arrow indicates a statistically significant difference compared to last year.

6.2.5 Time spent online

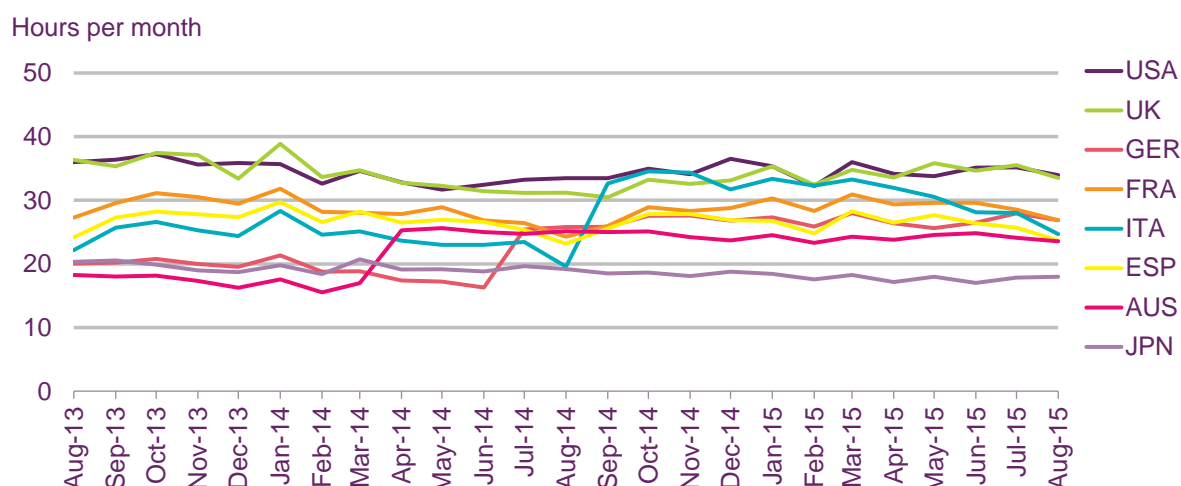
Users in the UK and the US spend the most time browsing on laptop and desktops

Internet users in the UK and the US spent the most time browsing online on a laptop or desktop computer in August 2015 (Figure 6.21), at approximately 33 and 34 hours per month respectively. In August 2014, France ranked third for time spent browsing on laptop and desktop devices, 6.9 hours behind the UK. In August 2015, France was third again, and 6.6 hours behind the UK, indicating a slight narrowing.

In all of our comparator countries except Japan and Australia, there was a year-on-year increase to August 2015 in time spent browsing on a laptop or desktop computer. Time spent in Japan fell by 1.2 hours, to 18 hours, while in Australia it fell by 1.6 hours, to 24 hours per month.

Most of the European comparator countries analysed since 2013 follow a seasonal pattern of internet use, with browsing increasing in the autumn to a peak in January, before falling again as summer approaches.

Figure 6.21 Average time spent browsing on a laptop or desktop computer



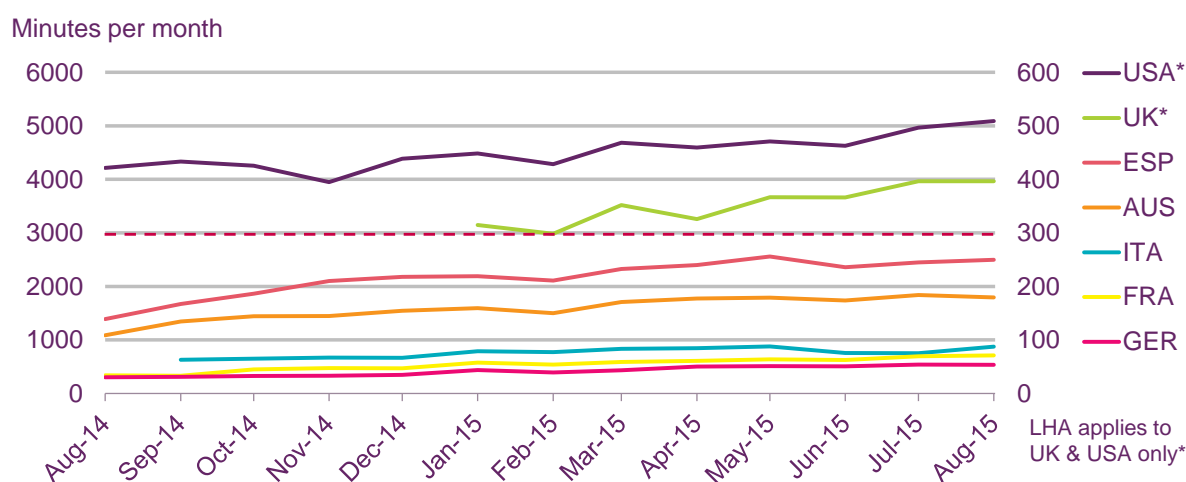
Source: comScore MMX, work and home panel, August 2013 to August 2015, persons 15+
 Note: Comparisons between data before and after January 2013 in the UK, March 2013 in the US, and July 2013 in France, Spain and Italy should be treated with caution due to a change in panel weighting methodology. Changes in comScore methodology occurred in September 2014 for Italy, in July 2014 for Germany and in April 2014 for Australia. Data before these dates should be treated with caution and should not be compared directly with current data.

US smartphone owners spend 85 hours browsing per month, while UK smartphone owners spend 66 hours

In the UK, smartphone owners spent, on average, 66 hours 6 minutes browsing in August 2015. In the US, time spent was higher, at 84 hours 50 minutes.

The US and the UK methodologies include data from a smartphone panel and therefore data cannot be compared with other featured countries. Among the other comparator countries, Spain had the highest time spent, at 4 hours 10 minutes in August 2015, while Germany had the lowest, at 53 minutes.

Figure 6.22 Average time spent browsing on a smartphone



Source: comScore Mobile Metrix, August 2014 to August 2015 (where available), adults 18+, browsing and application combined.
 Note: *Mobile Metrix in the US and the UK is supplemented by panel data and should not be directly compared with the remaining comparator countries which have a related but different methodology. LHA denotes Left hand axis.

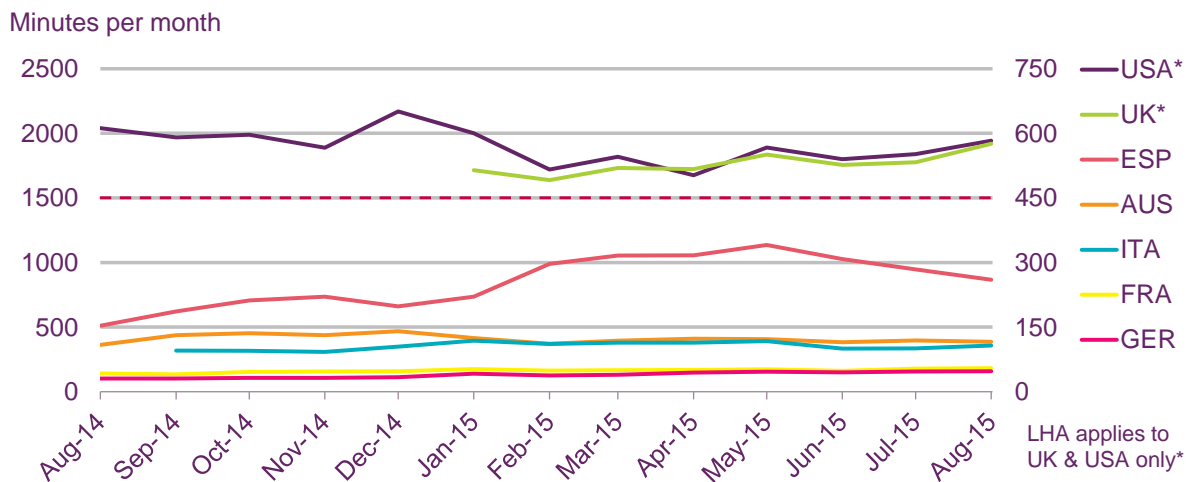
UK tablet users spend nearly 32 hours per month browsing

In the UK in 2015, tablet users spent an average of nearly 32 hours browsing the internet in August 2015. This was slightly exceeded by US tablet users, who spent over 23 minutes longer browsing in the same month.

The US and the UK methodologies include data from a tablet panel and therefore data cannot be compared with other featured countries.

Among the other comparator countries, excluding the UK and the US, Spain had the highest browsing time, at 4 hours 20 minutes in August 2015. The tablet users who spent the least time browsing were in Germany (at 48 minutes per month).

Figure 6.23 Average time spent browsing on a tablet



Source: comScore Mobile Metrix, August 2014 to August 2015 (where available), persons 18+, browsing and application combined.

Note: *Mobile Metrix in the US and the UK is supplemented by panel data and should not be directly compared with the remaining comparator countries which have a related but different methodology. LHA denotes left hand axis.

6.3 Online content

6.3.1 Introduction

This section explores the kinds of content and services that people access on the internet.

- Section 6.3.2 gives an overview of the activities people undertake on the mobile internet, and highlights the most popular web properties across eight of our comparator countries.
- Section 6.3.3 considers which apps are most popular in each of our comparator countries.
- Section 6.3.4 focuses on search, including the leading search engines, and the most popular and fastest-rising search terms in the past year.
- Section 6.3.5 looks at the take-up of social networking using different devices, the popularity of social networking sites, and the use of check-in services.
- Section 6.3.6 looks at the reach of online video sites, the popularity of different services across platforms, and the type of online video consumed.
- Section 6.3.7 examines the use of the internet for the consumption of news services.
- Section 6.3.8 explores the use of online banking services.

Key findings

In summary, the key findings from this section of the chapter are:

- **Social networking, instant messaging and gaming apps are the most commonly downloaded on iPhone and Google Play across comparator countries.** On iPhone, WhatsApp Messenger was the most downloaded app in Spain, Singapore, Brazil, India and Nigeria. On Google Play, Facebook was the most downloaded app in the UK, France, Germany, Australia, Poland and Nigeria. On both iPhone and Google Play, at least one gaming app featured in twelve countries' top five most downloaded apps.
- **Google is the most popular search engine across all of the comparator countries.** In 2014, Google was the most popular search engine across all comparator countries except Japan. As Yahoo! Search's active reach in Japan declined substantially year-on-year to August 2015, Google became the most popular search engine.
- **The UK has the highest proportion of mobile phone users who access social networks on that device almost every day (43%), along with the US (42%).** Japan has the lowest number of respondents to access social networks on a mobile phone almost every day, at 9%.
- **Online banking on a smartphone is most popular in Australia and Sweden, followed by the UK.** Half of smartphone owners in Australia and Sweden, and 40% of smartphone owners in the UK, use their device to bank online.

6.3.2 Overview

Among laptop and desktop users, Google-owned sites were the most popular across all of the comparator countries in August 2015.

A handful of web properties were popular with internet users across all the comparator countries. 'Microsoft sites' appeared in the top ten for every one of our comparator countries, while Yahoo sites featured in the top ten for all except Germany¹³⁴. In every comparator country, Google-owned sites were the most popular.

The popularity of online shopping was also evident: Amazon appeared in the top ten in every country except Australia, while eBay appeared in the top ten of every country apart from Spain and Japan¹³⁵. In Japan, Rakuten was listed, which runs Rakuten Ichiba, one of the largest e-commerce sites in Japan.

The top ten properties on laptops and desktops indicated the popularity of social networking, with Facebook featuring in the top five properties in all the comparator countries except Japan, where it was the ninth most popular property. Wikimedia Foundation Sites - which include Wikipedia - were also popular across countries, appearing in the top ten properties for the majority of our comparator countries, but not in France or Japan.

Alongside these global web properties were popular national websites, such as the BBC in the UK, and CBS in the US. These websites provide regional written and audio-visual content such as news, sport and entertainment. In France, Webedia produces several popular websites under its 'pure' brand. Purepeople, for example, is a popular celebrity news site. CCM-Benchmark's brands include the CCM technology websites, and features the website L'internaute.

A number of media groups and multimedia publishing groups appear among the top ten web properties, such as Axel Springer (which publishes Bild, a German tabloid newspaper), Prisa in Spain and NewsCorp in Australia.

¹³⁴ Yahoo! Japan's largest shareholders are Softbank and Yahoo! Inc, making Yahoo! Japan distinct.

Figure 6.24 Top ten web properties accessed on a laptop and desktop computer, by country

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP
1	Google Sites -	Google Sites -	Google Sites -	Google Sites -	Google Sites -	Google Sites -	Google Sites -	Google Sites -
2	Microsoft Sites +1	Facebook +1	Facebook -	Facebook -	Facebook +2	Yahoo Sites -	Microsoft Sites -	Facebook -
3	Facebook -1	Microsoft Sites -1	Microsoft Sites +2	ItaliaOnline -	Yahoo Sites -1	Microsoft Sites +1	Facebook -	Microsoft Sites -
4	Amazon Sites +1	CCM-Benchmark +1	Amazon Sites -1	Microsoft Sites +1	Microsoft Sites -1	FC2 inc. -1	Yahoo Sites -	Unidad Medios Digitales -
5	BBC Sites +1	Webedia Sites -1	eBay -1	Banzai +1	Amazon Sites +1	LINE Corporation N	News Corp Australia N	Prisa +2
6	eBay +1	Yahoo Sites -	Axel Springer SE -	Wikimedia Foundation Sites +1	AOL, Inc. -1	DMM +2	TripAdvisor Inc. N	Yahoo Sites -
7	Yahoo Sites -3	Orange Sites -	Deutsche Telekom -	Amazon Sites +3	Mode Media -	Amazon Sites -	Wikimedia Foundation Sites -1	Vocento +1
8	Wikimedia Foundation Sites -	Schibsted Media Group -	Hubert Burda Media +1	eBay -	Wikimedia Foundation Sites N	Rakuten Inc -2	eBay -3	Schibsted Media Group +1
9	TripAdvisor Inc. N	Amazon Sites N	United-Internet Sites -1	Yahoo Sites -5	CBS Interactive -	Facebook N	Mode Media N	Amazon Sites N
10	Apple Inc. -1	Solocal Group -1	Wikimedia Foundation Sites -	Gruppo Editoriale Espresso N	eBay -2	Kadokawa Dwango Corporation N	Telstra Corporation Limited -2	Alibaba.com Corporation N

Source: comScore MMX, home and work panel, August 2014 and August 2015, persons 15+. Note: Coloured font indicates brand appears more than once. Web property audience includes relevant internet application audiences where available. A '+' or '-' number denotes change in rank since 2014 comScore data, '-' only denotes no change, and 'N' denotes a new entrant to the top ten.

On mobile phones, media groups and Yahoo sites were among the most popular properties

On mobile phones, Google sites were significantly less popular than on laptop and desktop computers, appearing in the top ten properties in two of the comparator countries. Yahoo sites, however, featured in the top ten properties in all of the comparator countries.

Media groups and multimedia publishing groups were notably popular on mobile phones. RCS MediaGroup was the top property in Italy and Spain, while Axel Spring was the third most popular property in both France and Germany. NewsCorp Australia, Trinity Mirror Group and Schibsted Media Group also featured in the top ten properties.

Some properties were popular across platforms, but were higher up the rankings for mobiles than for desktops and laptops. AOL Inc, for instance, was Japan's most popular property on mobile, featured in the top ten of two other countries. And whereas TripAdvisor featured in two of the comparator countries' top ten properties on desktop and laptop, it was in the top ten for four countries on mobile.

Conversely, some properties were less popular on mobiles than on laptops or desktops. Amazon was in the top ten most-accessed properties on a laptop or desktop in seven comparator countries, but in only three countries for mobile phone access. And eBay was among the ten most popular properties on laptops and desktops in five countries, but for mobile phones it was in the top ten only in the UK.

Figure 6.25 Top ten web properties accessed on a mobile phone, by country

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP
1	Google Sites	CCM-Benchmark	Deutsche Telekom	RCS MediaGroup	Google Sites	AOL, Inc.	News Corp Australia	RCS MediaGroup
2	Facebook	Webedia Sites	AccuWeather Sites	Yahoo Sites	Facebook	TripAdvisor Inc.	Gumtree Sites	Vocento
3	BBC Sites	Axel Springer SE	Axel Springer SE	TripAdvisor Inc.	Yahoo Sites	DAILYMOTION.COM	Yahoo Sites	Prisa
4	Amazon Sites	Groupe Amaury	Shazam Entertainment Ltd	Banzai	Amazon Sites	Indeed	BUZZFEED.COM	Mediaset España
5	Sky Sites	Shazam Entertainment Ltd	Webedia Sites	ItaliaOnline	AOL, Inc.	Rakuten Inc	Mail Online / Daily Mail	Grupo Herald
6	Mail Online / Daily Mail	Cerise Media	AOL, Inc.	Shazam Entertainment Ltd	Comcast NBCUniversal	JJI Press Ltd	AOL, Inc.	Yahoo Sites
7	Microsoft Sites	DAILYMOTION.COM	Spotify	Ciaopeople	Microsoft Sites	Yahoo Sites	Mode Media	Grupo Godo
8	Yahoo Sites	TripAdvisor Inc.	Yahoo Sites	Leonardo ADV	CBS Interactive	FASHIONSNAPE.COM	LIKES.COM	Schibsted Media Group
9	eBay	Orange Sites	TripAdvisor Inc.	Populis	Apple Inc.	Weather Company, The	9NEWS.COM.AU	Zeta Gestión De Medios
10	Trinity Mirror Group	Yahoo Sites	Xing	Gruppo Mediaset	Twitter	AccuWeather Sites	Amazon Sites	Weblogs SL Sites

Source: comScore MoMX, browser and applications (browser only in Japan), August 2015. Note: Coloured font indicates property appears more than once. Web property audience includes relevant internet application audiences where available.

6.3.3 Apps

Social networking, instant messaging and gaming apps are the most commonly downloaded on iPhone and Google Play across comparator countries.

Social networking and instant messaging apps are the most commonly downloaded on iPhone and Google Play across the comparator countries. The social networking app, Facebook, was popular in many of the comparator countries, appearing in the top five apps downloaded from Google Play in all countries except Japan, Singapore, Russia and China. In Russia, VK and its classmates (both social networking apps) were among the top five. Instant messaging apps were also popular, with both WhatsApp Messenger and Facebook Messenger (Messenger) in the top five most commonly downloaded apps in the EU5¹³⁶.

Gaming apps were commonly downloaded in many countries, and at least one gaming app featured in the top five most commonly-downloaded apps in 12 of the comparator countries. In Japan, four of the five most commonly downloaded apps were gaming apps, indicating an enthusiasm for gaming apps that significantly exceeds that in the other comparator countries.

There were notable national differences in the popularity of apps for anti-virus protection, mobile payments and e-commerce. Anti-virus security apps were popular in Germany, Italy, the US, Brazil and India. Russia was the only country to have a specific e-commerce app among its top five most downloaded (Ali Express Shopping App), and the only country to feature a mobile payments app in its top five was Sweden (Swish Payments).

¹³⁶ The EU5 comprises the UK, France, Germany, Italy and Spain.

Figure 6.26 displays the most commonly downloaded apps from Google Play (Android smartphones and tablets). In contrast, Figure 6.27 displays information relating to downloads of apps for iPhones only, excluding tablets. Consequently, they cannot be compared on an exact like-for-like basis.

Figure 6.26 Most commonly downloaded apps from Google Play, by country

	1	2	3	4	5
UK	Facebook	Heroes of the Alpha Arena	WhatsApp Messenger	Messenger	Google Photos
FRA	Facebook	Messenger	Snapchat	Google Photos	WhatsApp Messenger
GER	WhatsApp Messenger	Facebook	360 Security	Messenger	Heroes X Mortals: Kriegsarena
ITA	WhatsApp Messenger	Facebook	Messenger	360 Security	COOKING MAMA
USA	Messenger	Google Photos	Facebook	360 Security	Pandora Radio
JPN	RPG Iruna Senki online ¹	Collect the real battleship empire – 200 boats ²	Battered hero – exhilarating battle game that can be enjoyed with one finger ! ³	Yahoo! Browser ⁴	Clash of Kings
AUS	Facebook	Messenger	Google Photos	Golden Lion Slots	Instagram
ESP	WhatsApp Messenger	Facebook	Messenger	Google Photos	64 Games
NED	WhatsApp Messenger	Facebook	Google Photos	Messenger	Magister 6
SWE	Legend Online	Facebook	Bank ID sakerhertsapp	Swish payments	Messenger
POL	Facebook	Messenger	Fallout Shelter	96% pop polsku	Snapchat
SGP	Pocket Q	Facebook	WhatsApp Messenger	Demons – Xinghai Wings ⁵	Messenger
KOR	Pop-up cache – essential app KakaoTalk users ⁶	Rusty Blood ⁷	CLiP ⁸	Friends Pop for Kakao ⁹	Wonder5 Masters
BRA	WhatsApp Messenger	Facebook	Messenger	Easy Audio Recorder	CM Security Antivirus AppLock
RUS	VK	WhatsApp Messenger	AliExpress Shopping App	Viber	Classmates ¹⁰
IND	WhatsApp Messenger	Facebook	Messenger	SHAREit	360 Security
CHN	Google Play Games	Youtube	Google Photos	Instagram	Chrome Browser
NIG	Facebook	WhatsApp Messenger	Messenger	BBM	Instagram

Source: App Annie Top App Charts Aug 31, 2015. Translation notes: 1. イルーナ戦記オンライン2. 戦艦帝国-200艘の实在戦艦を集めろ3. 連打英雄—指1本で楽しめる爽快バトルゲーム4. Yahoo!ブラウザ5. 伏魔者-星海之翼资料片来袭6. 팝업캐시 - 카카오톡 사용자 필수앱 7. 러스티블러드 8. A mobile wallet service 9. 프렌즈팝 for Kakao 10. Одноклассники. Note: coloured font indicates an App that appears in the top five most commonly downloaded apps in five or more countries.

The popularity of social networking and instant messaging apps was mirrored among iPhone users. In all the comparator countries except Japan, the top five most commonly downloaded apps included at least one social networking or instant messaging app, and in most cases both.

At least one gaming app featured in the top five most popular apps in 12 countries. A greater enthusiasm among iPhone users for gaming apps might be inferred from the popularity of apps such as *Happy Wheels* and *The Walking Dead: Road to Survival*. However, as data on the most commonly downloaded apps are collated on a daily basis, the popularity of certain gaming apps might be attributable to daily trends.

Figure 6.27 Most commonly downloaded iPhone apps, by country

	1	2	3	4	5
UK	Happy Wheels	WhatsApp Messenger	The Walking Dead: Road to Survival	Messenger	Facebook
FRA	The Walking Dead: Road to Survival	Happy Wheels	WhatsApp Messenger	Messenger	iMusic Pro
GER	Happy Wheels	WhatsApp Messenger	The Walking Dead: Road to Survival	iMusic Pro	Messenger
ITA	Happy Wheels	WhatsApp Messenger	Messenger	Layout from Instagram	Jusapp – Prank Calls
USA	Happy Wheels	The Walking Dead: Road to Survival	Messenger	Facebook	Instagram
JPN	Happy Wheels	Pokemon Shuffle Mobile	Pirates of war ¹	SUUMO	LINE
AUS	Happy Wheels	Messenger	Layout from Instagram	Facebook	Instagram
ESP	WhatsApp Messenger	Layout from Instagram	Messenger	Instagram	Facebook
NED	Buienradar	Buienalarm	Happy Wheels	Magister 6	WhatsApp Messenger
SWE	Happy Wheels	Swish payments	Bank ID sakerhertsapp	Layout from Instagram	Geocoaching Intro
POL	Messenger	Yeah Bunny Keyboard	Facebook	Youtube	96% pop polsku
SGP	WhatsApp Messenger	Pokemon Shuffle Mobile	Messenger	Layout from Instagram	Youtube
KOR	Friends Pop for Kakao ²	DomiNations Asia	Collection Itok 4.0 ³	Piano Tiles 2	KakaoTalk
BRA	WhatsApp Messenger	Layout from Instagram	iMusic Pro	Messenger	Facebook
RUS	Layout from Instagram	Music for iPhone and playlists	WhatsApp Messenger	Sberbank online ⁴	VK
IND	WhatsApp Messenger	Facebook	SHAREit	Truecaller	Messenger
CHN	PIP Camera	Lending treasure – acquaintances borrowing money become contacts, easy money ⁵	National Super God – the world's first real-time MOBA gaming 5V5 hand tour ⁶	Ski Adventure 2 – 3D multiplayer version Parkou ⁷	Mango TV – see the good old days ⁸
NIG	WhatsApp Messenger	Instagram	Facebook	BBM	Messenger

Source: App Annie Top App Charts Aug 31, 2015. Translation notes: 1. 戦の海賊 2. 프렌즈팝 for Kakao 3. 코레일톡4.0 4. Сбербанк Онлайн 5. 借贷宝 – 熟人借贷, 人脉变钱脉, 轻松玩出钱 6. 全民超神-全球首款5V5实时MOBA电竞手游 7. 滑雪大冒险2 -- 3D版多人对战跑酷 8. 芒果TV - 看见好时光.
Note: coloured font indicates an app that appears in the top five most commonly downloaded apps in five or more countries.

6.3.4 Search

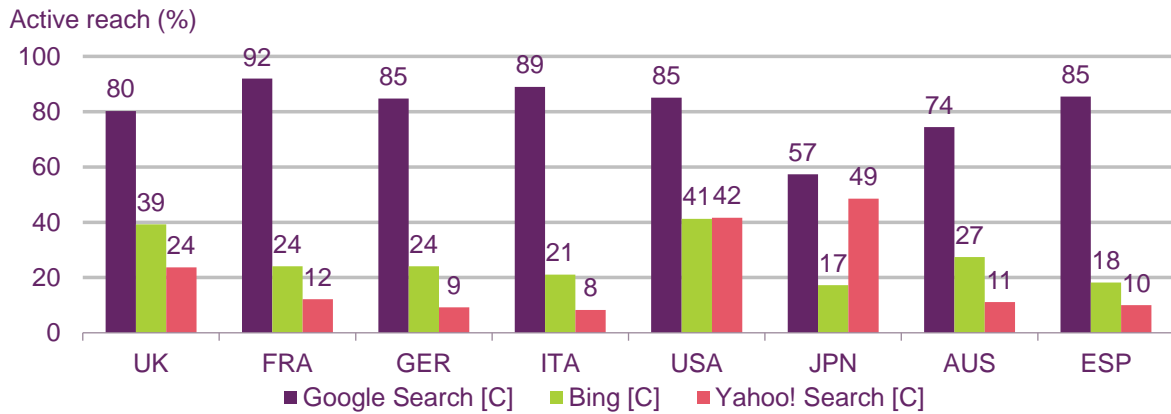
Google is the most popular search engine across the EU5 countries, the US, Australia and Japan

Google was the most popular search engine across all of the comparator countries analysed in Figure 5.20. Google's active reach was significantly greater than its competitor search engines in all countries except Japan, where Yahoo Search! has an active reach only 8% behind Google Search.

Between August 2014 and August 2015 there was a decline in the active reach of Yahoo! Search in all the comparator countries except Germany, where it remained stable at 9%. Bing is now more popular than Yahoo! Search in all the comparator countries except Japan and the US.

Despite the strong history of Yahoo! In Japan, the active reach of Google Search is now greater than Yahoo! Search. In the year to August 2015, the active reach of Yahoo! Search decreased by 20 percentage points, to 49%.

Figure 6.28 Active reach of selected search engines on laptop and desktop computers



Source: comScore MMX, home and work panel, August 2015, persons 15.

Online brands such as Facebook and Google were the most searched-for terms online in the majority of our comparator countries

The most popular search term on Google for 11 of our 18 comparator countries in the year to August 2015 was ‘Facebook’. However, Facebook appeared to be less popular in Russia, where Russian social networks ‘Odnoklassniki’ and ‘VKontakte’ were two of the top three most searched-for terms.

Country-specific search terms remained popular, such as ‘BBC’ in the UK, and ‘bon coin’, the classified listings website, in France. In Nigeria and Singapore, the name of the country itself featured among the three most common search terms, possibly used in addition to other search terms as a way of narrowing the results returned by Google to those more relevant to the respective country.

The search terms which increased in popularity the most varied, but there was a notable increase since 2014 in terms related to geopolitical matters and current affairs. In 2014 many of the most popular search terms were related to the World Cup. But in 2015 ‘Charlie Hebdo’ had the largest increase in France, ‘ebola’ in the US and ‘ISIS’ in Italy. In Singapore, ‘Lee Kuan Yew’ (the name of country’s first and longest-serving prime minister) was the search term that increased most, and in Nigeria it was ‘Buhari’, the name of the nation’s president, elected in 2015.

Figure 6.29 Most popular search terms on Google: August 2014 - August 2015

Country	1 ST	2 ND	3 RD	Largest increase
UK	facebook	bbc	google	showbox
FRA	facebook	youtube	bon coin	charlie hebdo
GER	facebook	google	ebay	kalendar 2015
ITA	facebook	youtube	google	isis
USA	facebook	google	you	ebola
JPN	weather ¹	image ²	youtube	monster hunter 4g ³
AUS	facebook	google	youtube	netflix
ESP	facebook	youtube	hotmail	gran hermano
NED	facebook	google	youtube	popcorn time
SWE	google	facebook	youtube	windows 10
POL	facebook	onet	allegro	olx
SGP	singapore	google	youtube	lee kuan yew
KOR	naver ⁴	torrents ⁵	Net mingki ⁶	angel tv ⁷
BRA	facebook	google	Youtube	bbb15
RUS	vc ⁸	classmates ⁹	yandex ¹⁰	Okay google ¹¹
IND	facebook	video	song	sarkari result
CHN	google	baidu ¹²	grass pomegranate ¹³	youtube
NGA	news	nigeria	download	buhari

Source: Google Insights Search Tool, August 2014 to August 2015. Translation notes: 1. 天気 2. 画像 3. モンハン 4g 4. 네이버 5. 토렌트 6. 밍키넷 7. 천사티비 8. vk 9. Одноклассники 10. яндекс 12. окей google 12. 百度 13. 草榴. Note: orange font indicates 'breakout' status – where the frequency with which a term is searched has increased by >5000%.

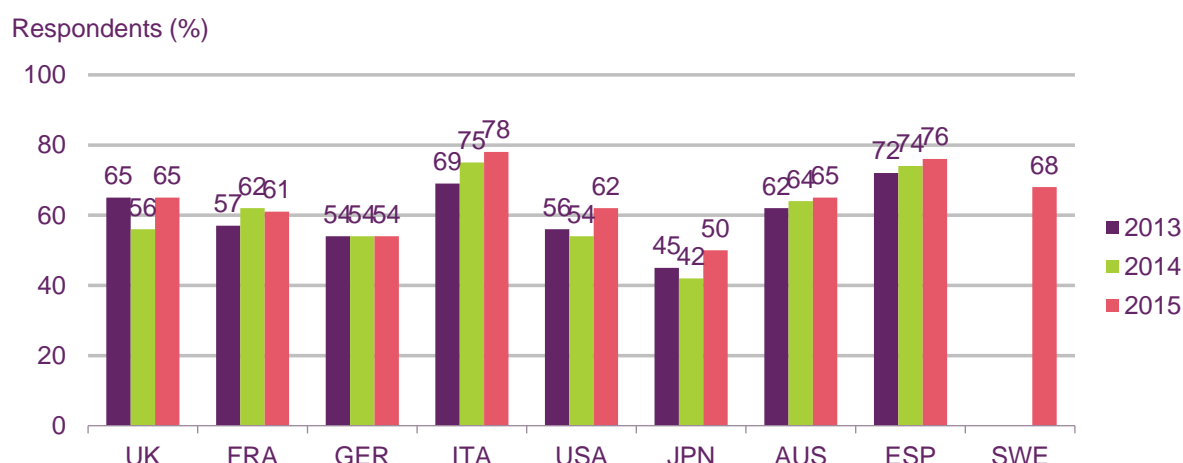
6.3.5 Social networking

Italy and Spain have the highest proportions of people accessing social networking sites weekly

The majority of internet users accessed social networks on a weekly basis in almost all of our comparator countries. The most active social networkers were in Italy and Spain, where three-quarters of internet users accessed social networks at least once a week.

In the majority of the comparator countries, the proportion of weekly social networkers increased from October 2014 to September-October 2015. Year on year, the proportion of weekly social networkers in Germany has been broadly stable since 2013 (54%). In the UK, nearly two-thirds of people claimed to access social networking sites weekly (65%).

Figure 6.30 Weekly access to social networks



Source: Ofcom consumer research September – October 2015, October 2014 and September 2013. Base (2015): All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

2013-14 Q.8 Which, if any, of the following activities do you use your internet connection for at least once a week?

2015 Q.8 How often do you use an internet connection on any of your devices for each of the following activities? 5. Accessing social networking sites (e.g. Facebook, Twitter) <At least once a week>

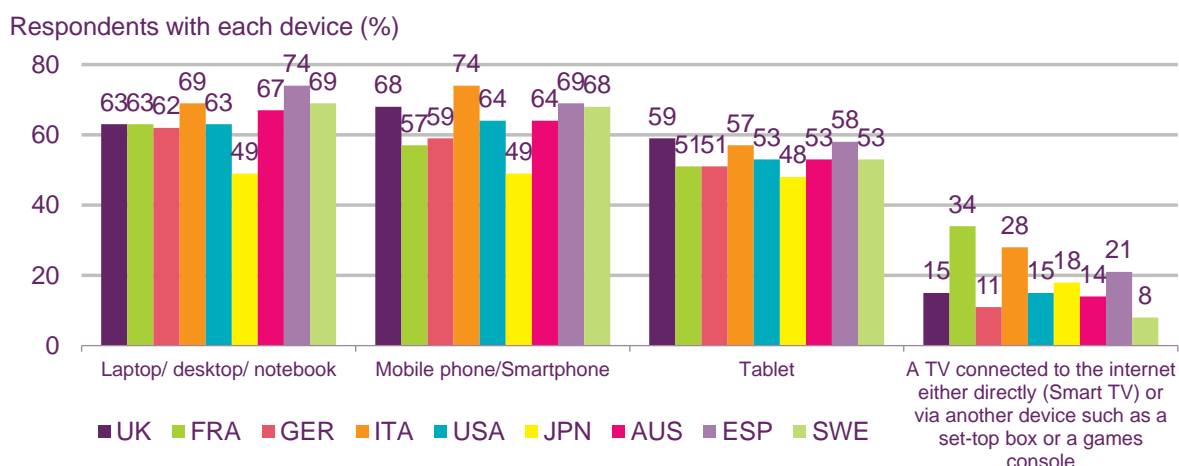
Laptops/desktops and mobile phones are the most popular devices for accessing social networks

Across nearly all the comparator countries, smartphones/ mobiles and laptops/ desktops/ notebooks were the most popular devices for accessing social networks. This was the case in all comparator countries except Japan, where tablets have a similar level of popularity (48% tablet, 49% mobile/smartphone, 49% laptop/desktop/notebook) as a device for accessing social networks.

Italy had the highest proportion of social networkers on smartphones/ mobiles, with 74% of those who owned a smartphone/ mobile phone claiming to have used it to access social networks. In the UK, around two-thirds of respondents with each device type accessed social networks using a laptop/ desktop /notebook (63%), and mobile phone/ smartphones (68%).

In France, over a third of people (34%) accessed social networks using a TV with internet connectivity (directly with a smart TV or via a device such a set-top box), compared to 15% in the UK.

Figure 6.31 Accessing social networks, by device ownership



Source: Ofcom consumer research September - October 2015

Base: All respondents who access internet with each type of device, UK=879/594/398/235, FRA=913/568/335/122, GER=923/623/318/176, ITA=876/779/460/185, USA=904/523/319/195, JPN=840/573/234/98, AUS=906/610/370/191, ESP=897/803/435/194, SWE=879/678/343/213 Q.9a Which, if any, of the following internet activities do you use each of your devices for?

Social networking is most popular among 18-24s in the majority of comparator countries

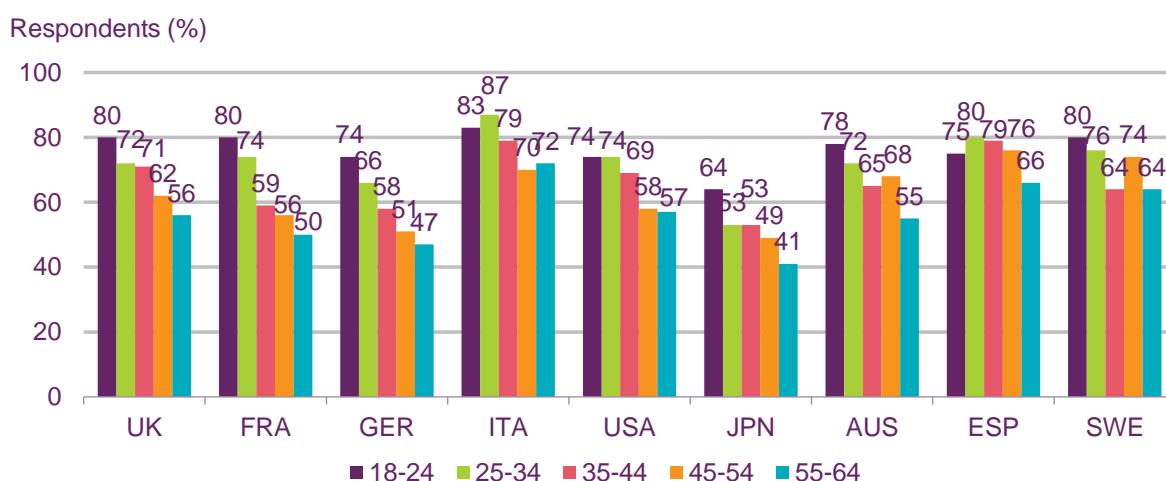
In the UK, as in most other comparator countries, people aged between 18 and 24 are the most likely to use social networks at least weekly, compared with other age groups. Social networking is most popular among 18-24s in six of the nine comparator countries. In Italy and Spain, social networking is more popular among 25-34s, used by 87% and 80% respectively in that age group at least weekly.

Japan had the lowest weekly use of the internet to visit social networks, across all age groups. This reflects the relatively low active reach of sites such as Facebook in Japan relative to other comparator countries (Figure 6.28).

In Italy, use of social networks at least once a week among 55-64s was notably greater, at 72%, than in other comparator countries. And 25 to 34 year olds in Italy were the most active social networkers across all age groups and countries.

The country with the greatest difference between age groups in weekly use of social networks was France, with a 30 percentage point difference between the 18-24s and the 55-64s.

Figure 6.32 Weekly use of internet connection to visit social networks, by age



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.8 How often do you use an internet connection on any of your devices for each of the following activities? <At least once a week>

Facebook is by far the most popular social network in all of our comparator countries, apart from Japan, where it has a more modest lead

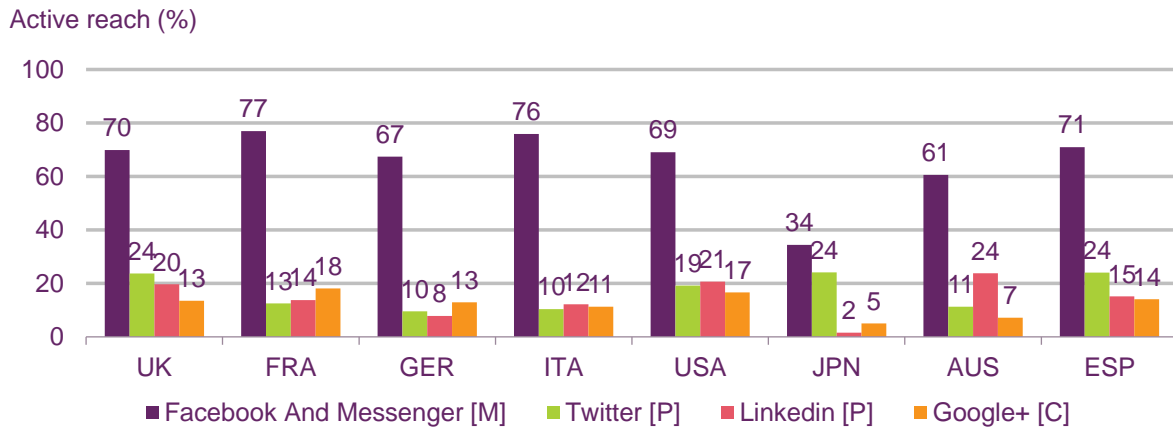
On laptops and desktops, Facebook was the most popular social network - by a significant margin - in seven of the eight comparator countries shown in Figure 6.33. Of these countries, Facebook was most popular in France, where 77% of respondents accessed it at least once in August 2015 on a laptop or desktop computer. Italy (76%), Spain (71%) and the UK (70%) were among the countries where the active reach of Facebook in August 2015 was at least 70%.

Japan was the only country where the difference in active reach between Facebook and its competitors was more modest; 34% compared to 24% for Twitter. Since August 2014, Facebook's active reach in Japan has increased by 9%, while Twitter's has fallen by 6%¹³⁷. The active reach of Facebook in August 2015 was significantly lower in Japan (34%) than in the other comparator countries, where Facebook's active reach ranged from 61% to 77%

There was no consistent second-place social network across the comparator countries. In the UK, Japan and Spain, Twitter was in second place, with a 24% active reach in all three countries. The professional-oriented social network, LinkedIn, was the second most popular social network in Australia (24%), the US (21%) and Italy (12%). Only in France (18%) and Germany (13%) was Google+ the second most popular social network.

¹³⁷ [P] Facebook has been used to measure the change in reach, whereas in Figure 6.33. Facebook and Messenger is used. Similarly, Twitter.com is used to measure change, but [P] Twitter is used in Figure 6.33.

Figure 6.33 Active reach of selected social networks on laptop and desktop computers



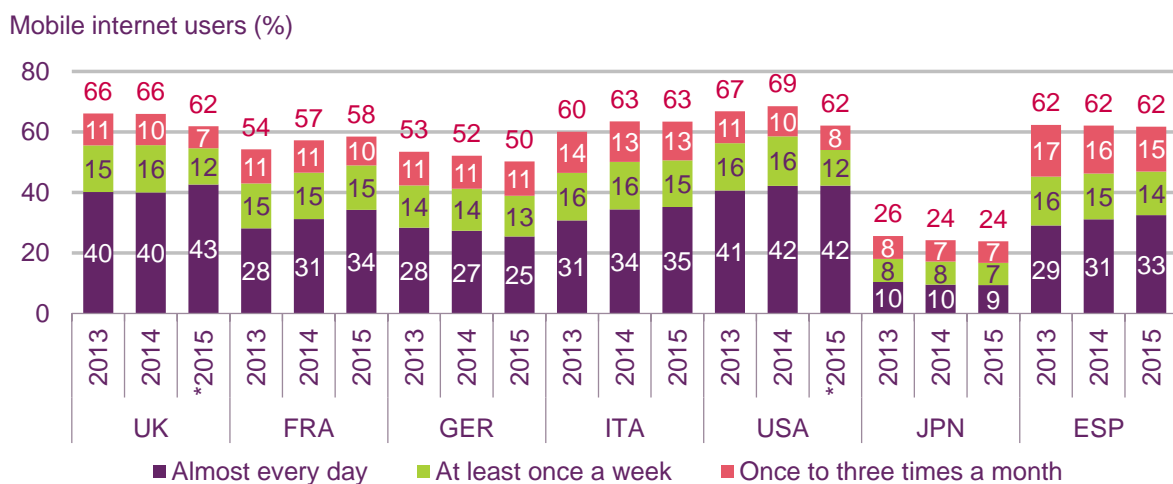
Source: comScore MMX, home and work panel, August 2015, persons 15+

The UK has the highest proportion of mobile phone users who access social networks on that device almost every day (43%), along with the US (42%).

Japan has the lowest number of respondents to access social networks on a mobile phone at least once a month, at 24%. The prevalence of feature phones in Japan - some of which might not have the functionality required to access social networks - might explain why fewer Japanese mobile phone users access social networks.

Spain had the highest proportion of mobile phone users accessing social networks between one and three times a month, at 15% of respondents. France and Italy had the highest proportion of mobile phone users accessing social networks at least once a week (but less than 'almost every day'), at 15%.

Figure 6.34 Monthly access to social networks on mobile phones



Source: comScore MobiLens, August 2013 (three-month average), August 2014 (three-month average), and August 2015 (three-month average), mobile internet users aged 13+ Note: *For August 2015 (three-month average) UK and USA results are from comScore MobiLens Plus which includes an additional response of 'Used before but not in the month' of 5% for both countries.

6.3.6 Online video

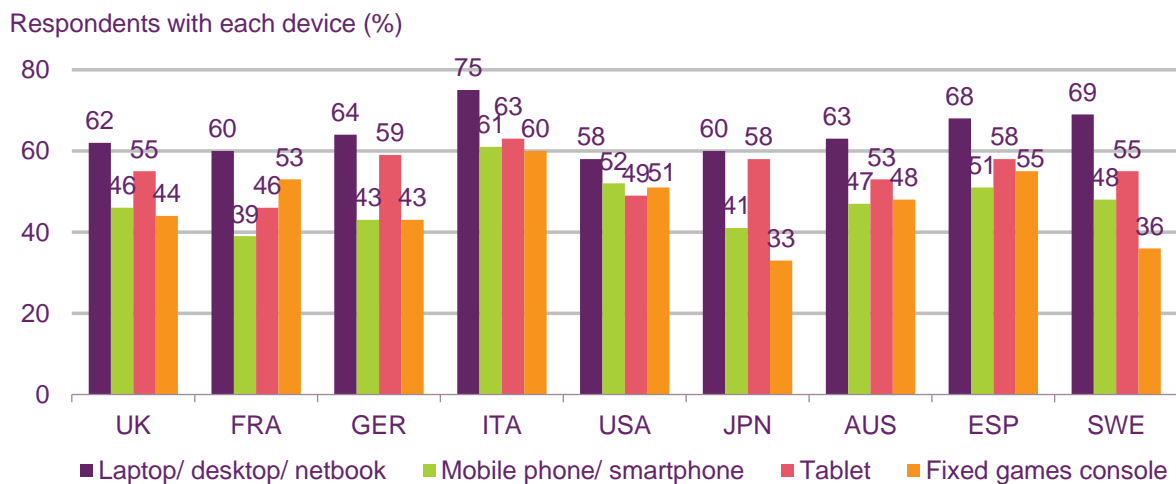
This analysis looks at web-based video, which is defined as free videos or video clips on websites that are accessible using a browser or the website’s application¹³⁸. Information relating to long-form video content can be found in the TV and AV chapter of this report.

Accessing the internet to watch video clips on tablets and computers increased in popularity in the UK in 2015

In the UK, the proportion of tablet owners using their device to watch video clips over the internet increased year on year by 8% (to 55%), while the proportion watching on their computers also increased by 8% (to 62%).

In Italy, 75% of computer owners, and 63% of tablet owners, claimed to view online video clips through each of these types of device in 2015 – the highest among the comparator countries. Watching video clips on a mobile or smartphone was also most popular in Italy, at 61%.

Figure 6.35 Accessing online video clips, by device ownership



Source: Ofcom consumer research September - October 2015

Base: All respondents with each device, laptop/desktop/netbook=840-923 in each market, mobile phone/smartphone=523-803 in each market, tablet computer=234-460 in each market, games console attached to TV=98-235 in each market (Japan* - Caution low base size less than 100).

Q.9c What sorts of video content do you watch on each of your devices over the internet?

YouTube was visited by at least half of all laptop and desktop users in the majority of the comparator countries

In five of the eight comparator countries, YouTube was visited by at least half of all laptop and desktop users at least once in August 2015 (Figure 6.36). YouTube was most popular in Spain, with 60% of its laptop and desktop users visiting the website at least once a month. Across all comparator countries, YouTube was significantly more popular than any of our other selected online video websites. YouTube’s narrowest lead in August 2015 was in France, where 23% of internet users visited Dailymotion, a French video-sharing website with global reach, compared with 52% of users who visited YouTube.

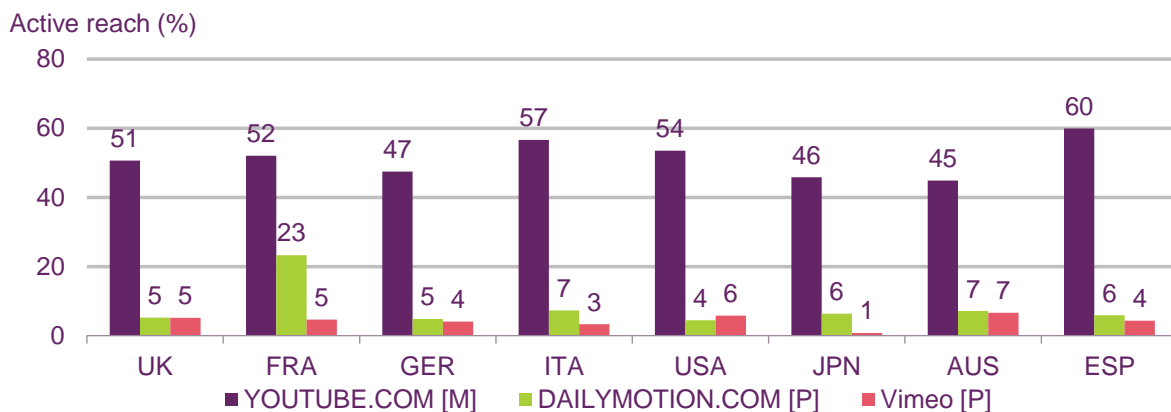
The proportion of laptop and desktop computers accessing YouTube at least once a month declined in all eight comparator countries. The greatest year-on-year decline to August 2015

¹³⁸ This excludes video on demand services such as BBC iPlayer and Netflix.

was in the UK and in Australia; seven percentage points lower in both countries. This is likely to be because online video consumption is shifting from fixed laptop and desktop devices to tablet and mobile devices.

No single selected online video website was consistently the second most popular after YouTube. In the UK and Australia, Dailymotion and Vimeo were tied on 5%. Dailymotion was second most popular in France (23%), Italy (7%), Japan (6%) and Spain (6%). Vimeo was the second most popular online video website in only one country; the US (6%), its country of origin.

Figure 6.36 Active reach of selected online video websites on laptop and desktop computers



Source: comScore MMX, home and work panel, August 2015, persons 15+

6.3.7 Online news

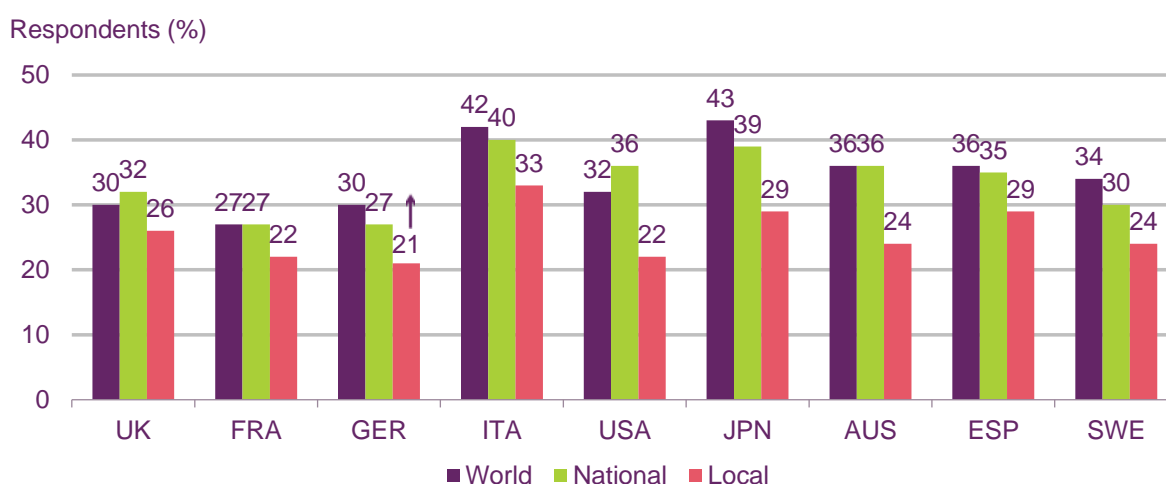
Internet users in Japan and Italy are the most likely to regard the internet as their main source of news

Internet users in Japan (43%) and Italy (42%) were the most likely to regard the internet as their main source of world news. Those in Italy (40%) and Japan (39%) were also most likely to see the internet as their main source of national news. For local news, internet users in Italy (33%) were the most likely to see the internet as their main source of news, followed by Japan (29) and Spain (29%).

In Germany, there was a significant increase (four percentage points) in the number of respondents who regarded the internet as their main source of local news, from 17% in 2014 to 21% in 2015.

Further information relating to the consumption of news can be found in the Section 1.7 of this report.

Figure 6.37 The internet as a primary source of news



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

Q.11 Which, if any, is your main source for the following information?

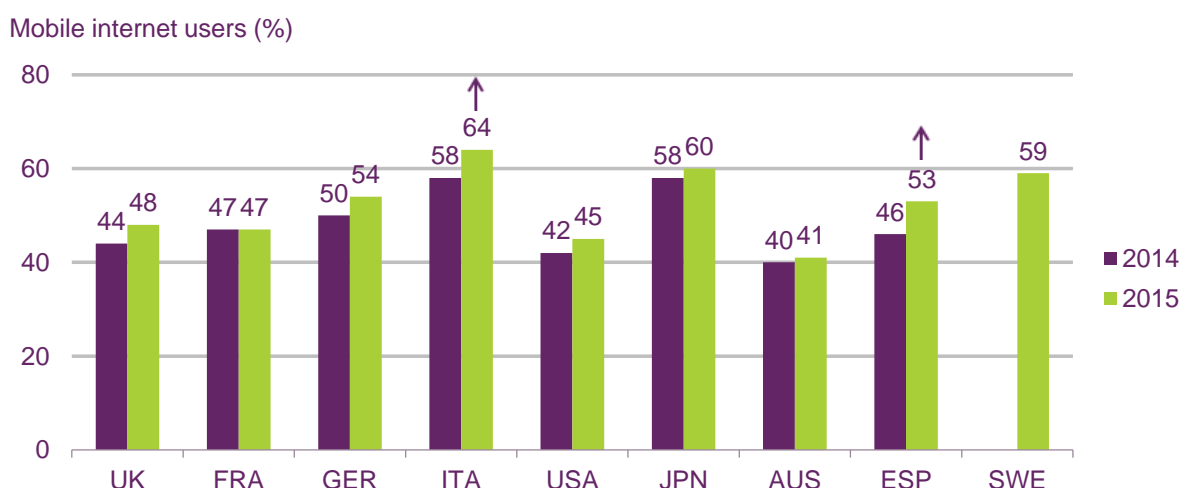
Note: Direction of arrow indicates a statistically significant difference compared to last year.

Reading the news online using a smartphone/ mobile phone is most popular in Italy

Italy has the largest proportion of mobile/ smartphone users who read the news online using their handset, at 64%. The proportion of mobile/ smartphone owners who read the news online in the UK is lower, at 48%.

Mobile online news consumption grew significantly year on year in Italy and Spain. Between 2014 and 2015, the proportion of respondents who read the news on a mobile/ smartphone grew by six percentage points in Italy and by seven percentage points in Spain.

Figure 6.38 Use of mobile phones/smartphones for reading the news online



Source: Ofcom consumer research October 2014 and September - October 2015

Base: All respondents who access internet with a mobile phone/ smartphone. 2015: UK=594, FRA=568, GER=623, ITA=779, USA=523, JPN=573, AUS=610, ESP=803, SWE=678; 2014: UK=540, FRA=469, GER=531, ITA=762, USA=443, JPN=566, AUS=579, ESP=742.

Q.9a Which, if any, of the following internet activities do you use each of your devices for?

Note: Direction of arrow indicates a statistically significant difference compared to last year.

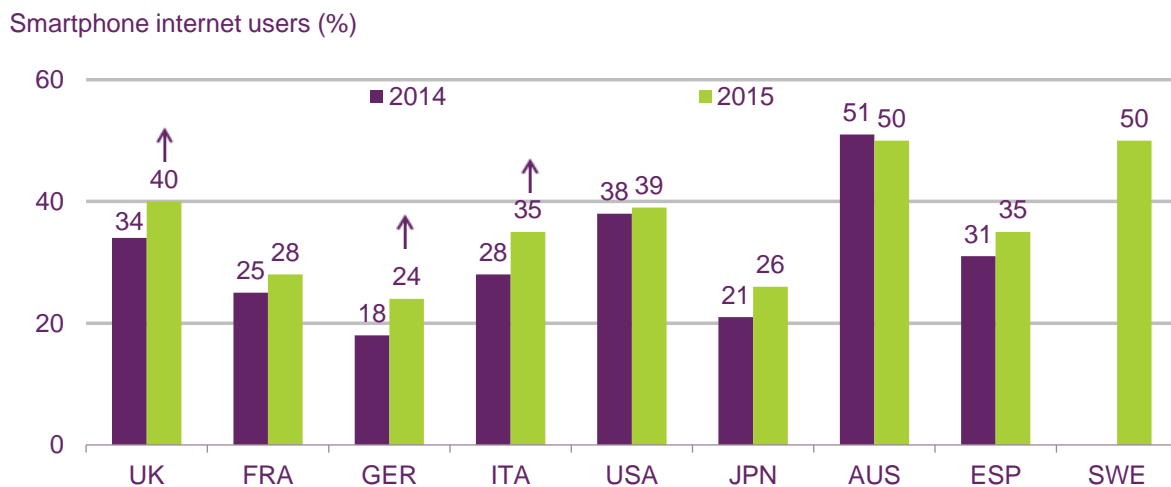
6.3.8 Online banking

Forty per cent of UK smartphone users bank online using their handset

The use of smartphones for online banking in the UK increased by six percentage points, from 34% to 40%, in the year to 2015. The UK was one of three comparator countries to experience significant growth in the use of smartphones for online banking, along with Italy and Germany. But the highest take-up of mobile online banking was in Sweden and Australia, where half (50%) claimed to do this.

The countries with the lowest proportion of respondents using their smartphone for online banking were Japan (26%), and Germany (24%).

Figure 6.39 Use of smartphone for online banking



Source: Ofcom consumer research September 2014 and September – October 2015
 Base: All respondents who access internet using smartphone, UK=529/576, FRA=440/544, GER=513/605, ITA=724/753, USA=425/503, JPN=565/469, AUS=552/583, ESP=709/774, SWE=n/a/650. Q.9a Which, if any, of the following internet activities do you use each of your devices for?: Online banking

Note: Direction of arrow indicates a statistically significant difference compared to last year.

Mobile users in the US and Italy are most likely to make electronic payments and transfer money using their handsets

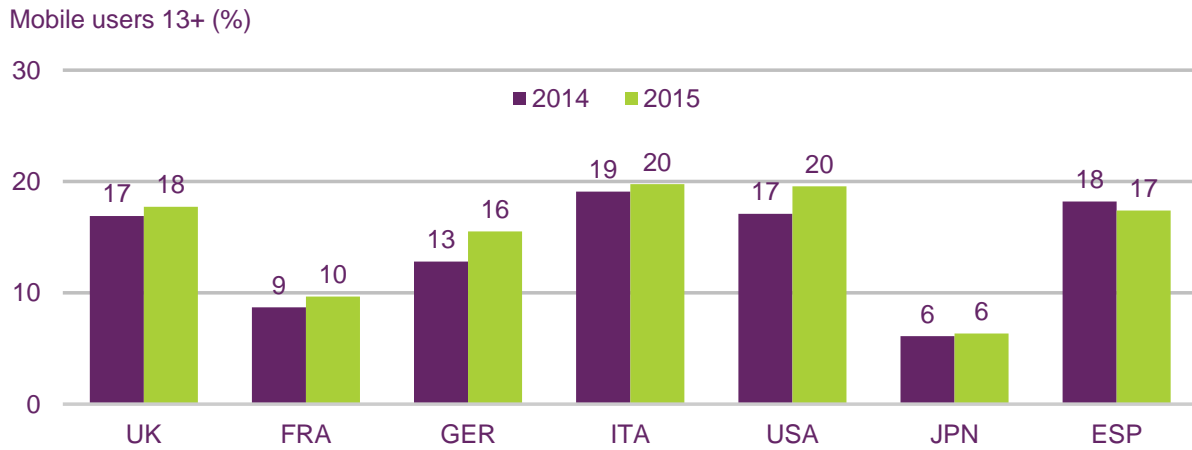
An electronic payment/ money transfer is an online method of transferring money from one account to another without the need for paper documents. Providers of such services include PayPal, Western Union, TransferWise and Azimo.com.

In the US and Italy, a fifth (20%) of mobile users made use of electronic payments or money transfer on their mobile phones. In the US, there was a year-on-year increase of three percentage points to August 2015 and in Italy, an increase of one percentage point. The relatively high level of online banking on smartphones in Italy might be attributable to a number of factors, but Poste Italiane has been at the forefront of innovation in this area, enabling mobile money transfer services in Italy in 2009¹³⁹.

In the UK, 18% of mobile users had made use of electronic payments or money transfers on their mobile phones, up by one percentage point since 2014.

¹³⁹ <http://ir.moneygram.com/releasedetail.cfm?releaseid=779330>

Figure 6.40 Monthly use of electronic payments or money transfer on mobile phones



Source: comScore MobiLens, August 2014 (three-month average), and August 2015 (three-month average), mobile users aged 13+

Note: *For August 2015 (three-month average) UK and USA results are from comScore MobiLens Plus



International Communications Market Report 2015

7 **Post**

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7.1 Key market developments in post

7.1.1 Introduction

The post chapter of this report is divided into three sections. These cover: parcel trends among our comparator countries where parcel data are available, an overview and country-level analysis of letter mail trends among our comparators, and consumer research into the use of post by residential consumers.

- The *Key market developments* section looks at parcels among our comparator countries, using information from WIK and relevant findings from our consumer research.
- The *Postal industry* section looks at letter mail volume and revenue trends since 2010, and presents a comparison of consumer stamp prices in our comparator countries.
- The *Post and the residential consumer* section looks at consumer trends in sending and receiving mail.

Figure 7.1 Industry metrics and summary

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	NED	SWE	POL	SGP	KOR	BRA	RUS	IND	CHN
Letter mail volume (billion items)	12.7	13.6	15.7	3.8	150.2	18.1	4.3	3.6	3.5	2.4	1.8	0.6	4.3	8.3	3.1	5.6	26.7
Letter mail revenue (£bn)	4.3	6.7	6.9	2.6	28.9	10.5	1.2	1.1	2.0	1.0	0.7	0.1	1.6	2.1	0.6	0.4	1.6
Letter mail volume per capita	197	211	191	62	471	143	183	75	210	253	46	118	87	41	21	4	20
Letter mail revenue per capita (£)	66.0	103.9	83.3	42.0	90.6	82.3	52.3	22.7	118.6	104.6	17.2	21.6	33.2	10.3	3.9	0.3	1.2
Standard (C5) domestic stamp price (£)	0.63	1.53	1.17	1.94	0.98	0.80	0.77	0.74	1.67	1.24	0.45	0.29	n/a	0.48	0.79	0.25	0.59

Sources: WIK / Ofcom analysis

7.1.2 Parcel volumes continue to grow

This section looks at parcel volume trends across those countries where parcel data are available.¹⁴⁰ It also highlights some of the findings from our consumer research into sending and receiving parcels.

Comparable data were available for the UK¹⁴¹, Germany, the US, Japan, the Netherlands, Sweden, Poland (2013 and 2014 only) and China. These data include parcels sent to

¹⁴⁰ Although it has not been possible to obtain robust and comparable data on mail volume by type for all our comparator countries, information on the size and growth of the parcel market has been included for all the countries for which this information is available.

¹⁴¹ UK parcel data are sourced from information collected by Ofcom from operators providing UK-wide services. Detailed information on the scope of this data collection is set out in Ofcom's *Annual*

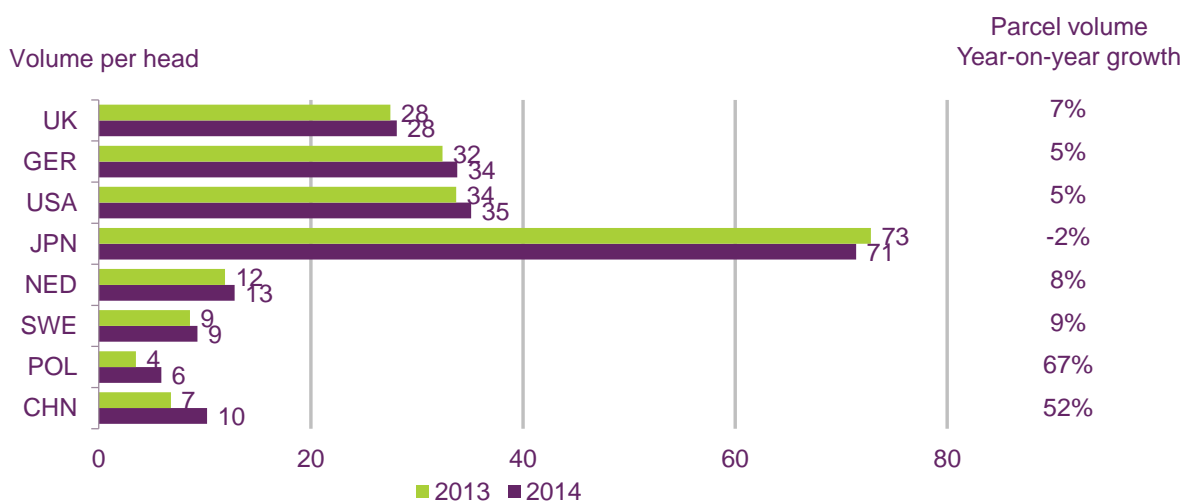
businesses as well as consumers. We conducted consumer research in the UK, France, Germany, Italy, the US, Japan, Australia, Spain and Sweden, where residential consumers were asked about parcels they had received.

Parcel volumes per head of population are highest in Japan

Although China has the largest overall parcel volume, when this is adjusted for population size, it is among the lowest among our comparator countries in terms of parcel volume per person. Japan has the highest parcel volume per head of population (71), followed by the US (35) and Germany (34). The high parcel volumes per head of population in Japan are probably due to a high number of parcels sent from businesses to other businesses. The equivalent figure for the UK is slightly lower at 28, although this is higher than the other European comparators for which we have comparable data (the Netherlands, Sweden and Poland).

Japan was the only country in Figure 7.2 where total parcel volumes declined year-on-year. This is likely to be due to the lack of economic growth in Japan, which has been fallen into recession a number of times since the 2008 global financial crisis. Year-on-year growth was high in Poland, where parcel volume increased by 67% and in China, where parcel volume increased by 52%.

Figure 7.2 Parcel volume per head of population: 2013-2014

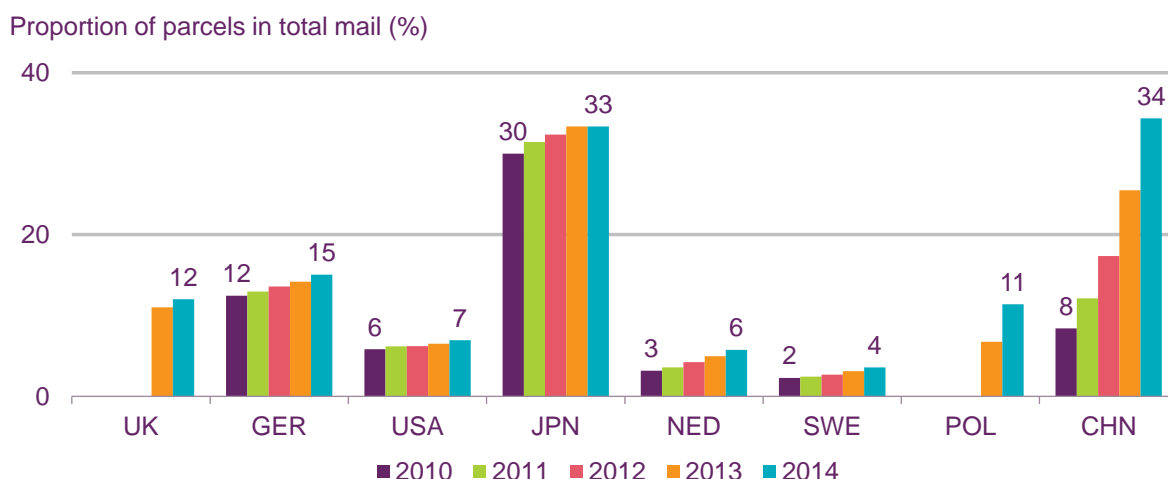


Source: WIK / Ofcom analysis

Parcels are becoming more important

The proportion of total mail volume made up of parcels is highest in China (34%) and in Japan (33%). In all the countries that we have data for, the proportion of total mail volume made up by parcels has increased each year since 2010. In the UK, 12% of mail volumes were parcels in 2014, up from 9% in 2010. This is comparable to Germany, where 15% of total volumes were parcels in 2014, up from 12% in 2010.

Figure 7.3 Proportion of parcels in total mail volume: 2010-2014



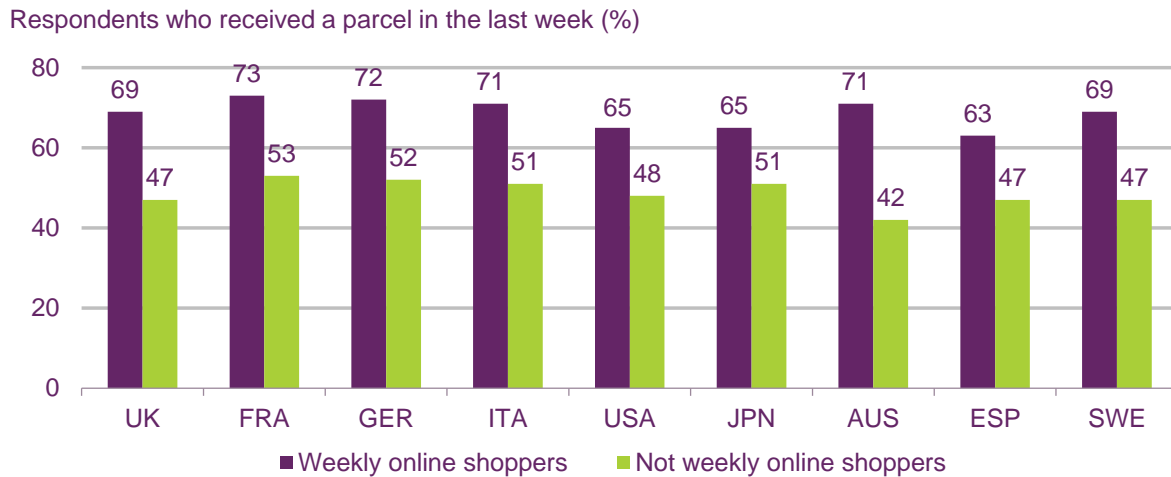
Source: WIK / Ofcom analysis

Around seven in ten online shoppers in most of the countries we surveyed said they had received a parcel in the past week

Parcel volume growth, particularly where items are sent from businesses to consumers, has been driven by continued increases in online shopping. The findings of Ofcom’s consumer research demonstrate this. Figure 7.4 shows the proportion of people who had received a parcel in the past week, split by whether they were a regular online shopper (i.e. shop online at least once a week) or not.

In all of our comparators, regular online shoppers were more likely than those who did not shop online on at least a weekly basis to have received a parcel, which indicates the influence of online shopping on parcel volumes. In most cases, around seven in ten regular online shoppers had received a parcel in the past week. The exceptions to this were Spain, where 63% of online shoppers had received a parcel and the US and Japan, where 65% had received a parcel in the past week.

Figure 7.4 Proportion of regular online shoppers and who had received a parcel in the last week compared to those who are not regular online shoppers



Source: Ofcom consumer research September - October 2015 Base: All weekly online shoppers who have received any items of post in the last week/non-weekly online shoppers who have received any items of post in the last week, UK=361/525, FRA=111/768, GER=257/616, ITA=187/523, USA=256/497, JPN=153/638, AUS=220/593, ESP=115/616, SWE=120/655 Q.16 Which of these types of items would you say you have personally received through the post in the last week? - NET: Any parcels

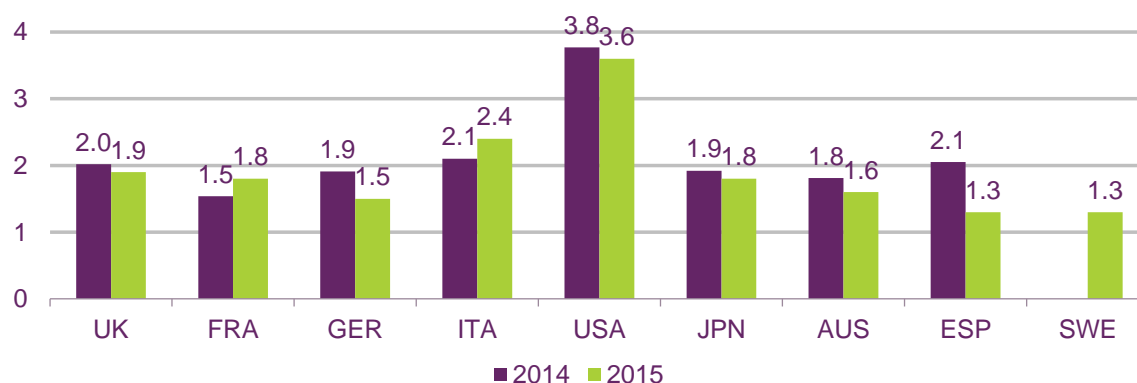
People in the US reported receiving the most parcels in the past week

Among people who had received a parcel in the past week, those in the US reported receiving the most parcels (3.6 on average). The only other country where the reported average was greater than two was Italy (2.4). Respondents in the UK reported receiving 1.9 parcels on average, close to the figure the previous year (2.0), broadly similar to France (1.8) and higher than Germany (1.5).

Although Japan has the highest parcel volume per head, as shown in Figure 7.2, people in Japan reported receiving an average of 1.8 parcels in the past week. The data from the consumer research shown in Figure 7.5 are not comparable with the parcel volume per head, as this is calculated from the total parcel volumes for the year, while the consumer research asks respondents to recall how many parcels they had received in the past week. The difference between the industry and the research data for Japan may be because a high number of parcels are sent from businesses to businesses in Japan.

Figure 7.5 Average number of parcels received in the past week

All respondents who have received any items of post in the last week



Source: Ofcom consumer research September - October 2015 Base: All respondents who have received any items of post in the last week, UK=888/886, FRA=896/879, GER=883/873, ITA=767/710, USA=739/753, JPN=838/791, AUS=865/813, ESP=700/731, SWE=775 Q.15
Approximately how many of these items you received in the last week were parcels i.e. items that wouldn't easily fit through a standard household letterbox?

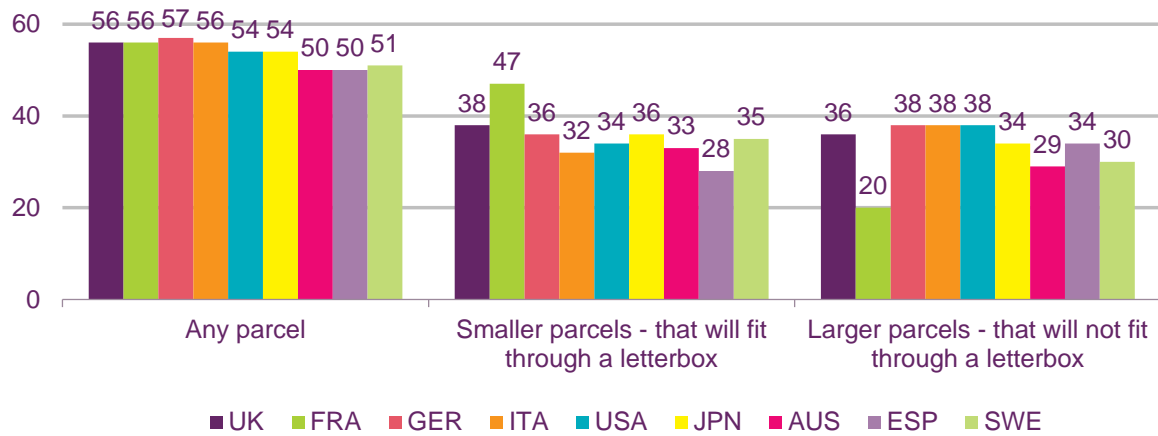
People in France were more likely to receive a small parcel than a large parcel

While at least 50% of all those who had received an item of post in the past week had received a parcel, across all of the countries that we surveyed, there were some differences in the types of parcels that people had received. Those in France were far more likely to have received a small parcel in the past week, with almost half (47%) having done so. People in the UK were the next most likely to have received a small parcel, at 38%, while those in Spain were the least likely to have received a small parcel (28%).

People in France were the least likely to have received a large parcel. A fifth (20%) of those who had received an item of post in the past week had received a large parcel, by far the lowest among the countries we surveyed. Respondents in Australia and Sweden were also less likely to have received a large parcel, with three in ten having received one in the past week. Those in the UK were among the most likely to have received a large parcel in the past week (36%), similar to Germany, Italy and the US (all 38%).

Figure 7.6 Types of parcel received in the past week

All respondents who have received any parcel in the last week (%)



Source: Ofcom consumer research September - October 2015 Base: All respondents who have received any items of post in the last week, UK=886, FRA=879, GER=873, ITA=710, USA=753, JPN=791, AUS=813, ESP=731, SWE=775 Q.16 Which of these types of items would you say you have personally received through the post in the last week?

7.2 The postal industry

7.2.1 Introduction

This section examines letter mail volume and revenue trends, and presents a comparison of consumer stamp prices across the countries analysed in this report. We also look at direct mail volumes in the countries where this information is available. The main findings include:

- **Letter mail volumes across our comparator countries have declined by 10.2% since 2010.** Volumes have fallen from a total of 309.7 billion items in 2010 to 278.2 billion items in 2014. Year on year, total volumes fell by 2.5%. The rate of decline varied among the countries included in this report and was faster among our European comparators (4.0%).
- **Year on year, letter mail revenues across all our comparators increased by 0.7%.** Revenue across all our comparator countries increased from £71.6bn in 2013 to £72.1bn in 2014. Revenue grew across all our country groups, with the exception of the European comparators, where revenue fell by 2.3%.
- **Volume decline year on year in the UK was among the lowest of our comparators.** Mail volume in the UK fell by 1.5% in 2014, the slowest rate of decline among our European comparators.
- **The UK was the only country among our European comparators in which revenue did not decline in 2014.** Letter revenue in the UK grew slightly in 2014, increasing by 0.4% year on year. Losses in revenue for our other European comparators were more pronounced, particularly in Italy and Spain, where declines in volume contributed to revenue losses of 8.2% and 6.8% respectively.
- **Italy is the most expensive country in which to send a small letter, followed by the UK.** At 65p, Italy is the most expensive country in which to send a small letter (DL size, 20g or less), followed by the UK at 63p. The price in the UK is only slightly more expensive than in Sweden (62p) and France (61p).
- **The UK is among the cheapest in Europe in which to send a medium-sized letter.** It costs 63p to send a First Class medium-sized (C5 size, 100g or less) letter in the UK. The only European country in which this is cheaper is Poland (45p). With the exception of Spain, it costs over £1 to send a medium-sized letter in all of our other European comparators.

7.2.2 Letter mail revenues and volumes across our comparator countries

Ofcom commissioned WIK-Consult to provide a range of metrics for the postal industry in our comparator countries. For the majority of the volume and revenue metrics, we have concentrated on addressed letter mail as much as possible. However, differences between countries mean that in some cases the categories of mail that are included are not an exact match.¹⁴² Where information is available only for the financial year, we have used estimates

¹⁴² The way that post is defined and volumes and revenues are recorded differs from country to country. In all of our comparators, addressed letter mail delivered within the country is included. In Australia and Japan, the volume and revenue figures also include unaddressed advertising mail as this could not be excluded from the reported figures. In South Korea, postal parcels could not be excluded from the reported volume and revenue figures.

to provide a calendar year figure. Finally, in the few cases where data are not available, market estimates based on long-term trends and local insight has been used.

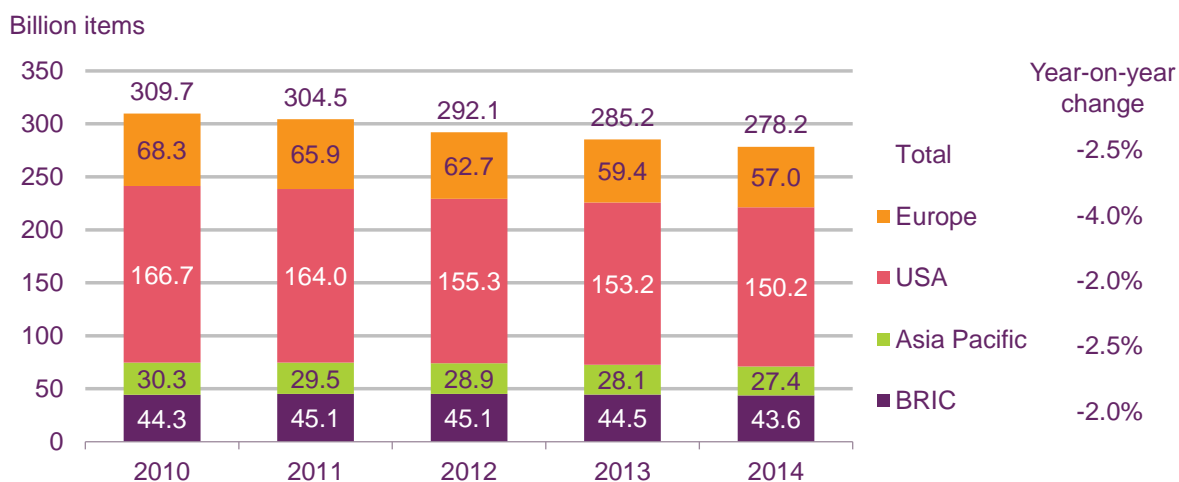
Letter mail volumes across our comparator countries have declined by 10.2% between 2010 and 2014

Across our comparator countries as a whole, mail volumes have fallen from 309.7 billion items in 2010 to 278.2 billion items in 2014. Decline has been fastest in our European comparators, where volumes fell by 16.6%, to 57.0 billion items, between 2010 and 2014.

The rate of decline in the US, which accounts for 54% of mail volumes among our comparators, was 9.9%, similar to the decline among our Asia Pacific comparators (9.7%). Mail volume was more stable among the BRICs, although still in decline, falling by 1.5% between 2010 and 2014.

Between 2013 and 2014, total volumes fell by 2.5%. Again, the rate of decline was faster among our European comparators (4.0%).

Figure 7.7 Total letter mail volumes in our comparator countries: 2010-2014



Source: WIK / Ofcom analysis

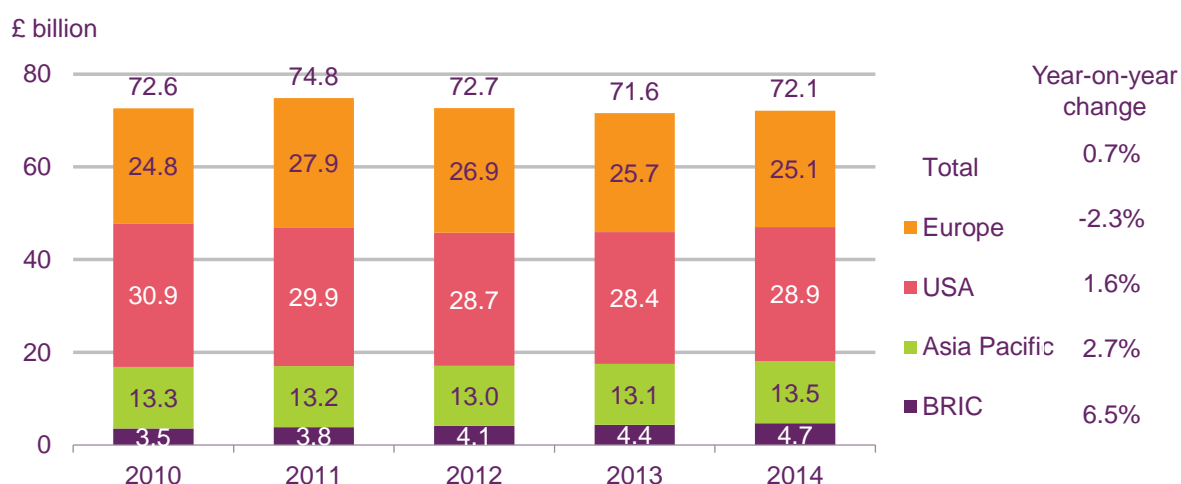
Year on year, letter mail revenues increased by 0.7%

Letter mail revenue across all our comparator countries increased from £71.6bn in 2013 to £72.1bn in 2014. Revenue grew across all our country groups, with the exception of the European comparators, where revenue fell by 2.3%.

Between 2010 and 2014, letter mail revenues across our comparator countries as a whole fell by 0.7%. In our European, Asia Pacific and BRIC comparators, revenues increased in this period, most notably in the BRICs, where revenue grew by 31.6%. For our European comparators the increase was 1.0%; to £25.1bn, and for the Asia Pacific countries there was 1.2% growth, to £13.5bn.

In the US, revenues declined by 6.6% between 2010 and 2014. As the US accounts for 40% of overall revenue among our comparators, the comparatively smaller increases from the other country groups did not fully offset this decline.

Figure 7.8 Total letter mail revenues in our comparator countries: 2010-2014



Source: WIK / Ofcom analysis

Note: Figures are nominal

7.2.3 Letter mail volumes in our comparator countries

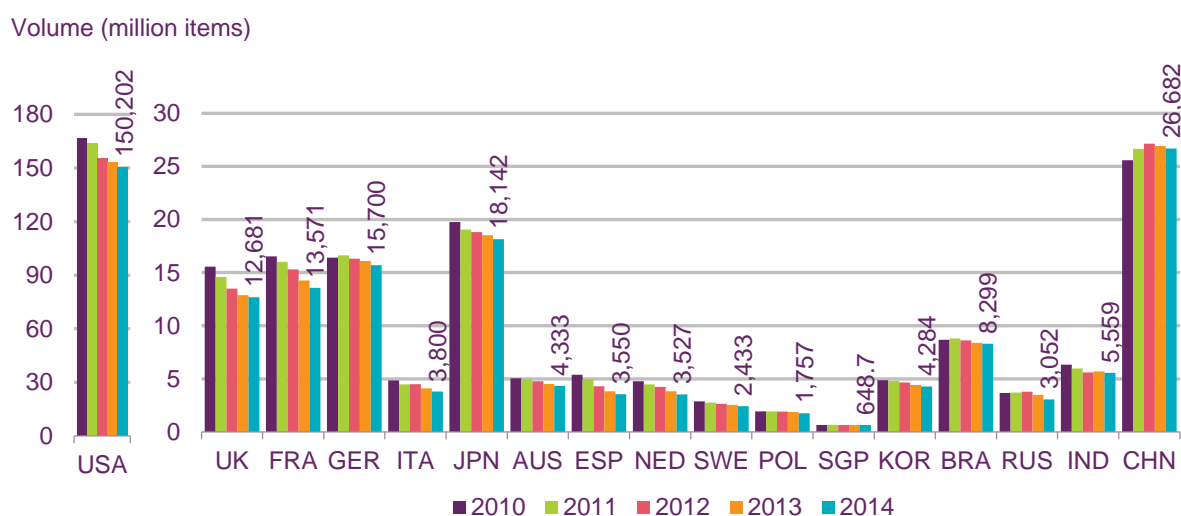
Letter mail volumes declined in all of our comparator countries in 2014

Mail volume declined in all of our comparator countries again in 2014, continuing the trend of structural decline in letter mail as continued growth in broadband take-up encourages the use of digital communications instead of letter mail.

The largest proportional decline was in Spain, where volume has declined by one third (34.2%) between 2010 and 2014. Decline has also been significant in the Netherlands, where volumes have fallen by more than a quarter (26.2%) and in Italy, where they have fallen by more than a fifth (21.8%).

Between 2010 and 2014, decline in the UK (18.5%) has been similar to France (17.9%). In Germany, decline has been much slower. In 2014 there were 700 million fewer items in Germany when compared to 2010; a 4.3% fall. However, there was some growth in Germany over the past four years, as volumes grew between 2010 and 2011, but they have declined each year since.

Figure 7.9 Letter mail volumes: 2010-2014



Source: WIK / Ofcom analysis

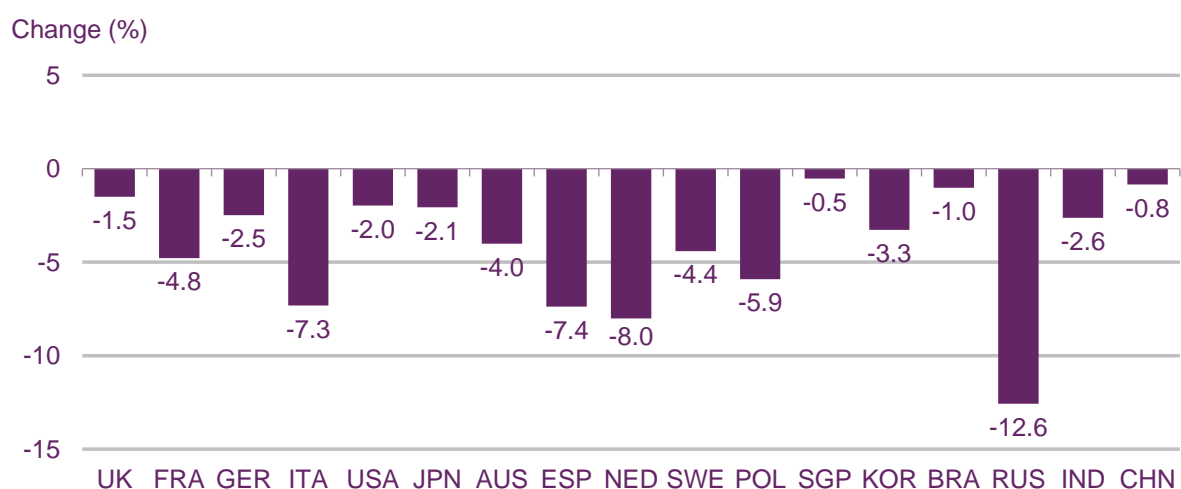
Volume decline year on year in the UK was among the lowest of our comparators

Mail volumes in the UK fell by 1.5% in 2014, the slowest rate of decline among our European comparators. This slower rate of decline may be partly due to the better economic conditions in the UK during 2014, and might also have been affected by the volume of election-related items sent during the Scottish referendum and the European Parliament elections. Only Singapore, Brazil and China had lower rates of decline.

The largest proportional fall among all of our comparators was in Russia, where volumes declined by 12.6%. This is the second year of decline in Russia. Volumes had been broadly stable until 2013, when volumes fell by 7.8% year on year.

The largest proportional declines for our European comparators were in the Netherlands (8.0%), Spain (7.4%) and Italy (7.3%). In Italy and Spain, volume decline is primarily driven by difficult economic conditions.

Figure 7.10 Proportional change in letter mail volume: 2013-2014



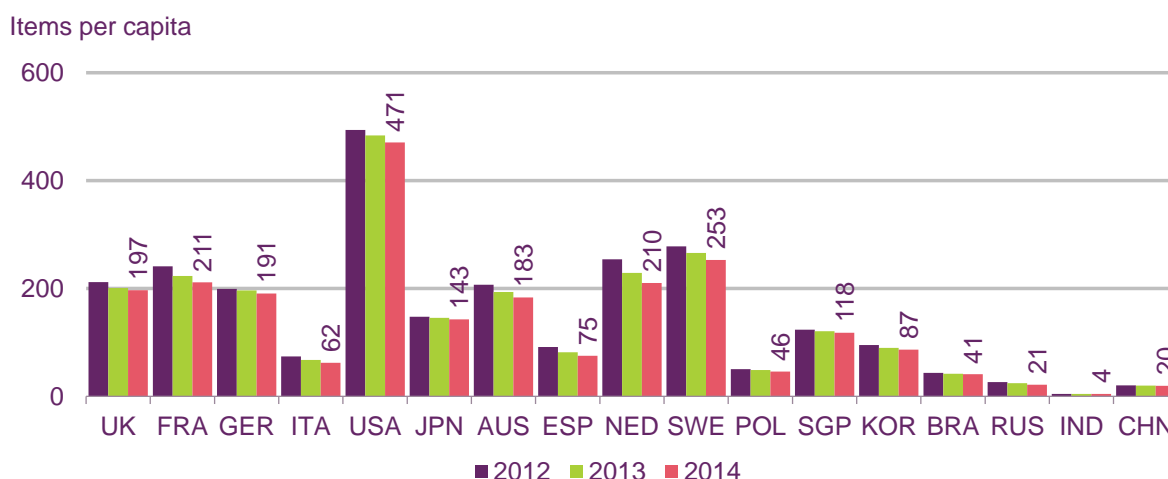
Source: WIK / Ofcom analysis

Mail volume per head of population was highest in the US

Volume per head of population in the US was 471 in 2014, down slightly from 484 in the previous year but still far higher than in any of our other comparators. This was followed by Sweden, at 253 items per head, then France and the Netherlands at 211 and 210 items per head respectively. In the UK, there were 197 items per head of population in 2014, slightly higher than Germany at 191 items.

The lowest volumes per head of population were in the BRIC countries, and Poland had the lowest among our European comparators (46).

Figure 7.11 Letter mail volume per head of population: 2012-2014



Source: WIK / Ofcom analysis

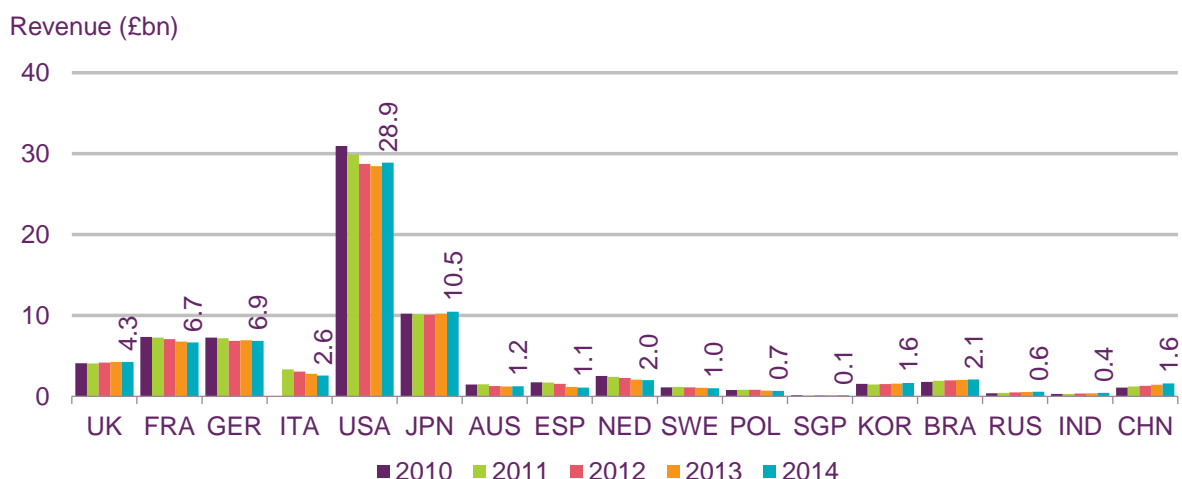
7.2.4 Letter mail revenues in our comparator countries

Despite falling volumes, revenues were more stable

Despite the long-term trend of falling volumes across all of our comparator countries, mail revenue has been more stable. In the US, Australia and Japan, revenues increased in 2014. For the US and Australia, this is the first increase in revenue since 2010 and is partly due to price increases in both countries.

Only the UK, Singapore, South Korea and the BRICs had higher revenue in 2014 than in 2010. In the BRICs, revenue has increased each year since 2010.

Figure 7.12 Letter mail revenues: 2010-2014



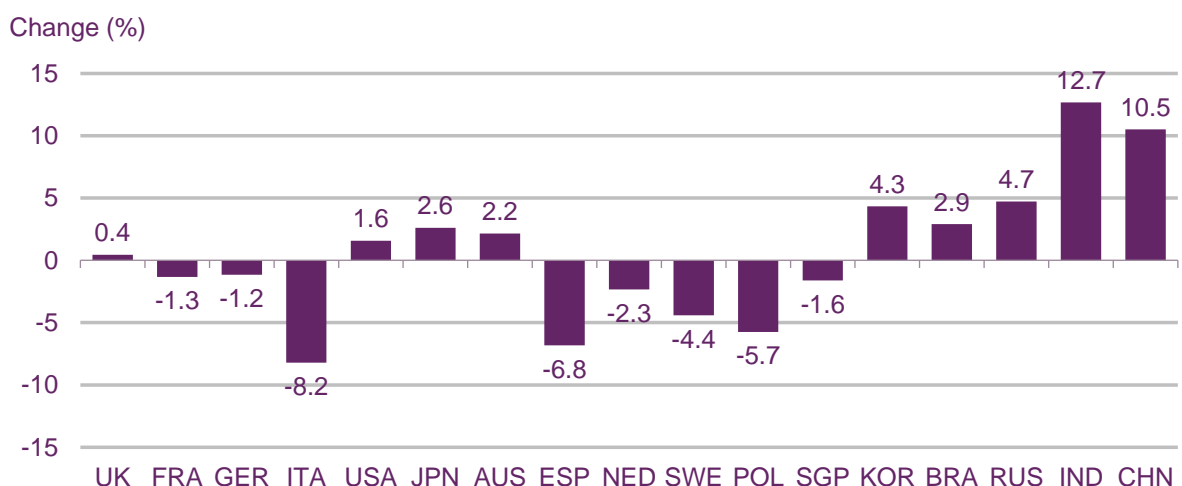
Source: WIK / Ofcom analysis
 Note: Figures are nominal

The UK was the only country among our European comparators in which revenue did not decline in 2014

Letter revenue in the UK grew slightly in 2014, increasing by 0.4% year on year. This slight growth is partially due to the slower rate of volume decline, plus incremental price increases from Royal Mail. Royal Mail’s revenue declined slightly, falling by 0.2%, but revenues from other operators delivering end-to-end¹⁴³ rose from £11m in 2013 to £35m in 2014, offsetting the £7m loss from Royal Mail’s letter revenue.

In France and Germany, letter mail revenue fell by 1.3% and 1.2% respectively. Losses in revenue for our other European comparators were more pronounced, particularly in Italy and Spain, where declines in volume contributed to revenue losses of 8.2% and 6.8% respectively.

Figure 7.13 Proportional change in letter mail revenue: 2013-2014



¹⁴³ Primarily from Whistl, who have now ceased delivery operations and continue to be an access mail provider.

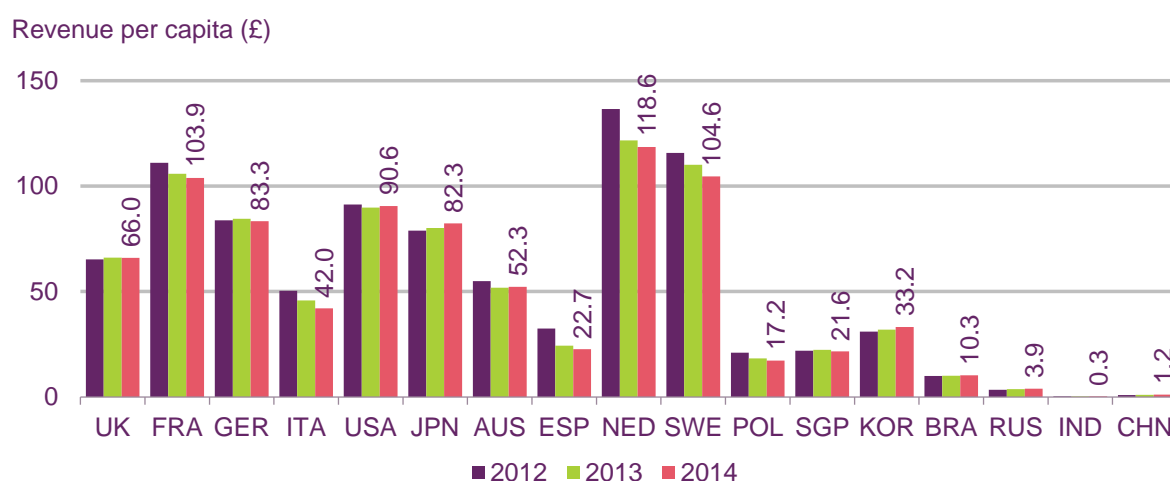
Source: WIK / Ofcom analysis
 Note: Figures are nominal

The Netherlands has the largest mail sector in terms of revenue per head

While the mail sector in the US is the largest among our comparators, in absolute terms for both volume and revenue, the Netherlands has the greatest revenue per head of population. In 2014, this was £118.60 in the Netherlands, followed by Sweden at £104.60 and France at £103.90. In the UK, this was £66.00. In Europe, the lowest revenue per head was in Poland (£17.20) followed by Spain (£22.70). The lowest revenue per head overall was in India (£0.30).

Figure 7.14 shows that revenue per head of population is higher in a number of comparator countries than it is in the US, despite the higher mail volumes per head in the US (Figure 7.11). As shown in our analysis in section 7.2.5, it is cheaper to send mail in the US than in these countries, which goes some way to explaining this difference. The disparity between the high volume per head and lower revenue per head in the US also suggests that the mix of mail in the US includes a higher proportion of lower-priced and pre-sorted bulk business mail.

Figure 7.14 Letter mail revenue per head of population: 2012-2014



Source: WIK / Ofcom analysis
 Note: Figures are nominal

7.2.5 Single-piece stamp prices in our comparator countries

This section looks at domestic stamp prices across the countries analysed in this report. In each case, we have considered the fastest letter mail product, which most commonly has a next-day (D+1) delivery target; although as Figure 7.15 shows, there is some variance by country. The products that we have looked at are all single-piece, domestic tariffs, available to all consumers. In line with other currency conversions in this report, prices have been converted into British Sterling using the International Monetary Fund average exchange rates for 2014. The prices of the products are compared as they were published on the operators' websites on 31 October 2015, and have not been adjusted for purchasing power parity. Where we look at previous years' prices, these are the prices on 31 December of each year.

Figure 7.15 Delivery specifications for the fastest letter mail product

UK	FRA	GER	ITA	USA	JPN	AUS	ESP	NED	SWE	POL	SGA	BRA	RUS	IND	CHN
D+1	D+1	D+1	D+1	D+3	Variable	Variable	D+3	D+1	D+1	D+1	D+1	D+2-5	Variable	Variable	Variable

Source: WIK

Note: Delivery targets in Japan, Australia, Brazil, Russia, India and China are dependent on the point of origin and destination.

We have looked at the prices for three mailings with different characteristics, based on typical envelope sizes. These are:

- **a small letter** – based on a DL envelope, 110mm by 220mm by 5mm, weighing 20g or less;
- **a medium letter** – based on a C5 envelope, 229mm by 162mm by 5mm, weighing 100g or less;¹⁴⁴ and
- **a large letter** – based on a C4 envelope, 324mm by 224mm by 25mm, weighing 101-150g.

In those countries where a Second Class product is available, we have also looked at those prices. However, these products are available to consumers only in the UK, France, Sweden, Poland, South Korea and Russia.

Italy is the most expensive country in which to send a small letter, followed by the UK

At 65p, Italy is the most expensive country in which to send a small letter, followed by the UK at 63p. The price in the UK is only slightly more expensive than in Sweden (62p) and France (61p).

The cheapest country in which to send a small letter is India, where it costs 5p, followed by China (12p). Outside the BRC and the Asia Pacific countries, the US has the lowest price for sending a small letter (30p), followed by Spain (34p). As shown in Figure 7.15, both of these countries have a D+3 delivery standard for their fastest standard letter mail product.

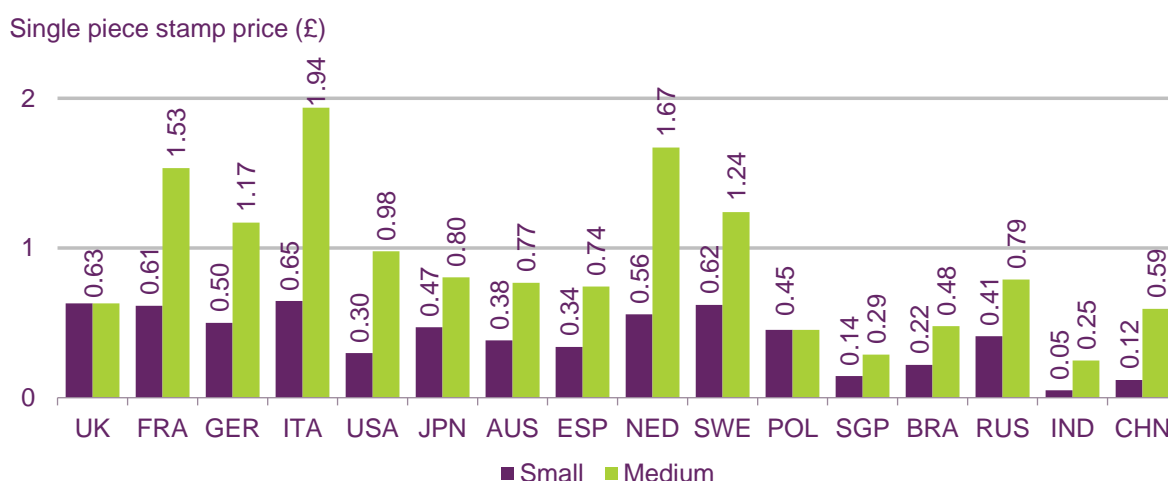
The UK is among the cheapest in Europe in which to send a medium-sized letter

It costs 63p to send a First Class medium-sized letter in the UK. The only European country in which this is cheaper is Poland (45p). With the exception of Spain, it costs over £1 to send a medium-sized letter in all of our other European comparators. The most expensive country is Italy (£1.94), where the price increased by 40% in 2013 and then by a further 14% in 2015. India is the cheapest country in which to send a medium-sized letter (25p), followed by Singapore (29p).

The reason that the UK is more expensive for a small letter and cheaper for a medium-sized letter is due to the different tariff structures that are used in each country. Most postal operators in Europe have a lower price for small letters and postcards weighing 20g or less, and a higher price for items which weigh more than 20g or exceed the dimensions of a DL envelope. In the UK, there is no separate price for a small letter, so the price is the same whether a small or medium-sized letter is being sent.

¹⁴⁴ Most greetings cards in the UK are no larger than a C5 envelope

Figure 7.16 Published stamp prices for small (DL) and medium (C5) domestic letters



Source: WIK / Ofcom analysis

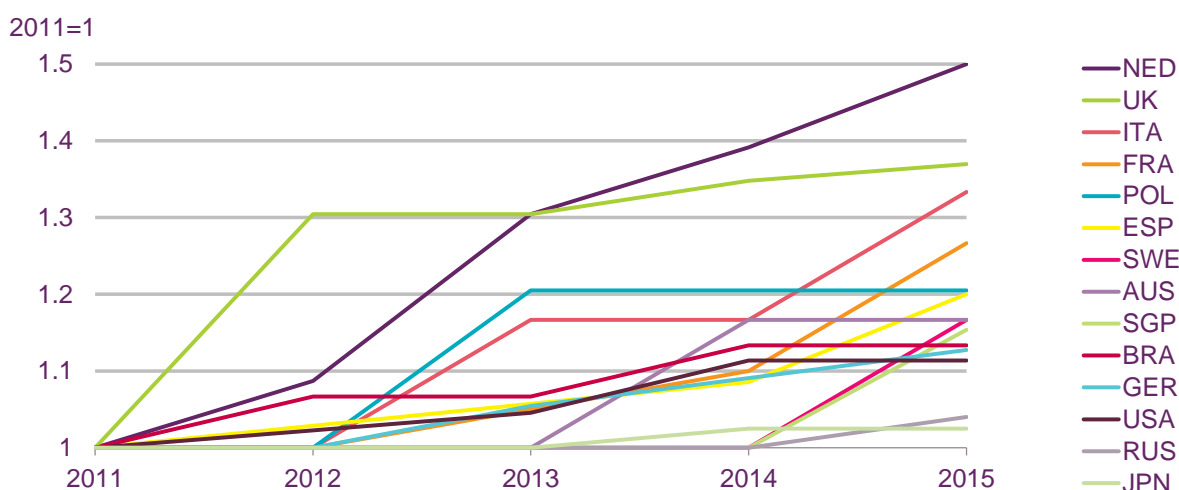
Note: South Korea is not included as the additional charge for the 'Priority Mail' product is not published.

The largest price increases for sending a small letter since 2011 have been in the Netherlands and the UK

On a nominal basis, 14 of our comparator countries have increased the price of the stamp required to send a small letter since 2011, as Figure 7.17 shows. The largest increase has been in the Netherlands, where it is now 50% more expensive than in 2011 to send a small letter. In the UK, it is now 37% more expensive to send a small letter using a First Class stamp.

Prices have risen by at least one fifth in Italy (33%), France (27%), Poland (21%) and Spain (20%). In Spain, the price has increased every year since 2011, and in France prices have risen each year since 2013. The entirety of the 21% increase in Poland took place in 2013 and is due to the reconfiguration of the tariff structure used there. Previously, there was a separate price for small and medium-sized letters. When this was changed, the price of a small letter increased, and the price of medium-sized letter fell slightly, as Figure 7.18 shows.

Figure 7.17 Nominal increase in stamp price for the fastest available small (DL) letter since 2011



Source: WIK / Ofcom analysis
 Note: Figures are nominal

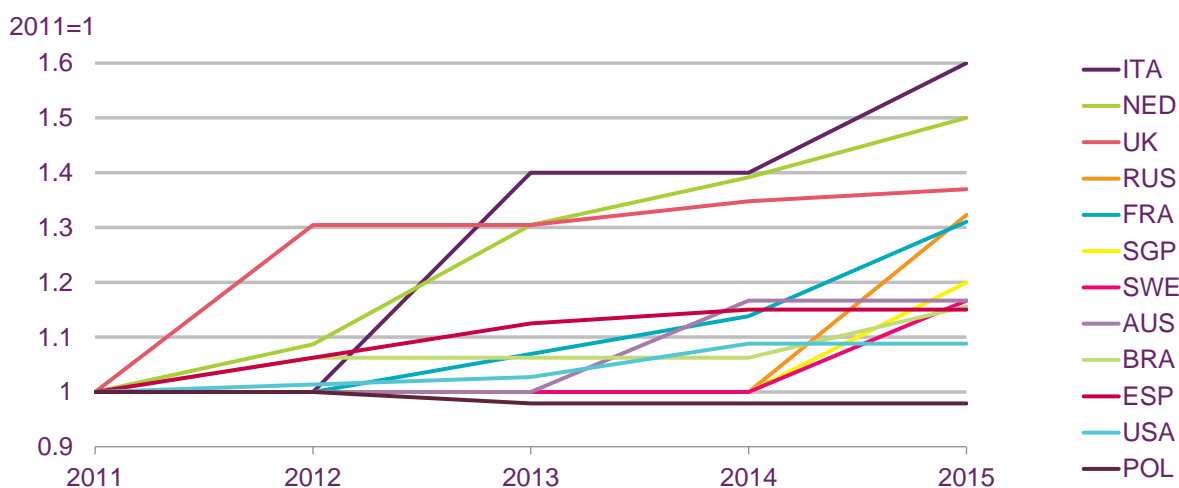
Medium-sized stamp prices have increased in Italy by 60% since 2011

Figure 7.18 shows the nominal trend in the price of sending a medium-sized letter since 2011. Current and previous years are indexed to 2011 prices, on a nominal basis, in each of the comparator countries in which prices have increased.

The highest proportional increase has been in Italy, where the price to send a medium-sized letter is now 60% higher than in 2011. Prices have also risen significantly in the Netherlands, and have increased each year; it is now 50% more expensive than 2011 to send a medium-sized letter in the Netherlands. In the UK, prices increased each year except 2013, and the price of a First Class stamp is now 37% higher than in 2011.

Poland is the only comparator country in which the price of sending a medium-sized letter has fallen. Before 2012, there were separate prices for small letters, weighing less than 20g, and for medium-sized letters. A new pricing structure was then introduced, with a single price for medium-sized letters and anything smaller, similar to the tariff structure in the UK.

Figure 7.18 Nominal increase in stamp price for the fastest available medium-sized (C5) letter since 2011



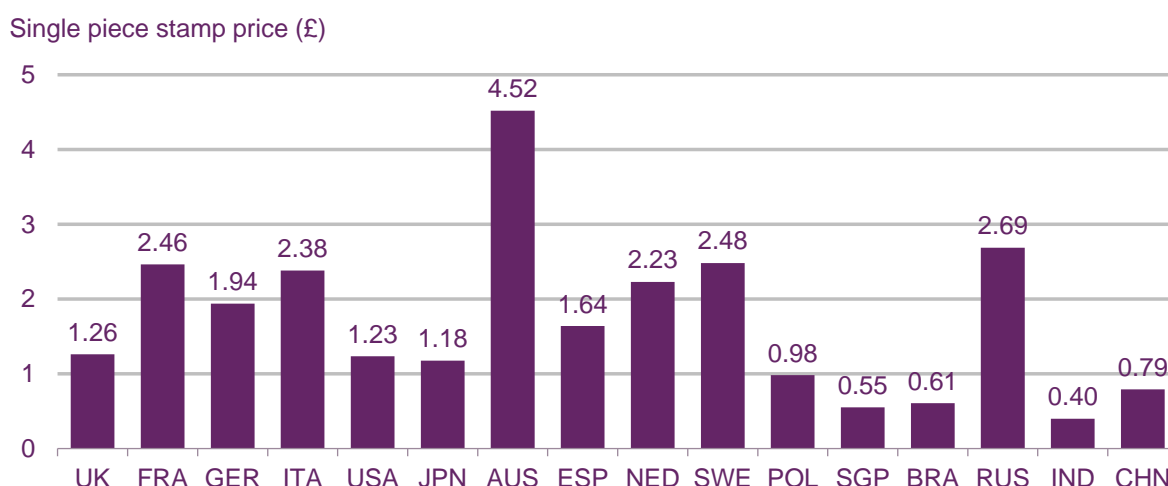
Source: WIK / Ofcom analysis
 Note: Figures are nominal

The UK is among the cheapest countries in Europe in which to send a large letter

Poland is the cheapest country among our European comparators in which to send a large letter (98p), followed by the UK (£1.26). In four of the eight European comparators, it costs more than £2 to send a large letter; Sweden is the most expensive at £2.48, closely followed by France at £2.46. The lowest price overall is in India (40p), followed by Singapore (55p).

The most expensive country to send a large letter is Australia (£4.52). This is because the maximum thickness of a large letter in Australia is 20mm, and as this analysis is based on the prices for letters that are up to 25mm thick, this price represents the 'small parcel' price offered by Australia Post. To send a large letter up to 20mm thick in Australia would cost £1.15. Excepting Australia, Russia is the most expensive country in which to send a large letter, as we have defined it.

Figure 7.19 Published stamp prices for large (C4) domestic letters



Source: WIK / Ofcom analysis

Note: South Korea is not included as the additional charge for the 'Priority Mail' product is not published.

South Korea is the cheapest of our comparators in which to send a Second Class equivalent letter of any size

Not all of our comparator countries offer a lower-priced single piece product with a slower delivery standard, in the same way that First and Second Class are available in the UK. Alongside the UK, this choice is available to consumers in France, Sweden, Poland, South Korea and Russia. These are almost all D+3 products, with the exception of France and Russia, as shown in Figure 7.20.

Figure 7.20 Delivery specifications for the Second Class equivalent letter product

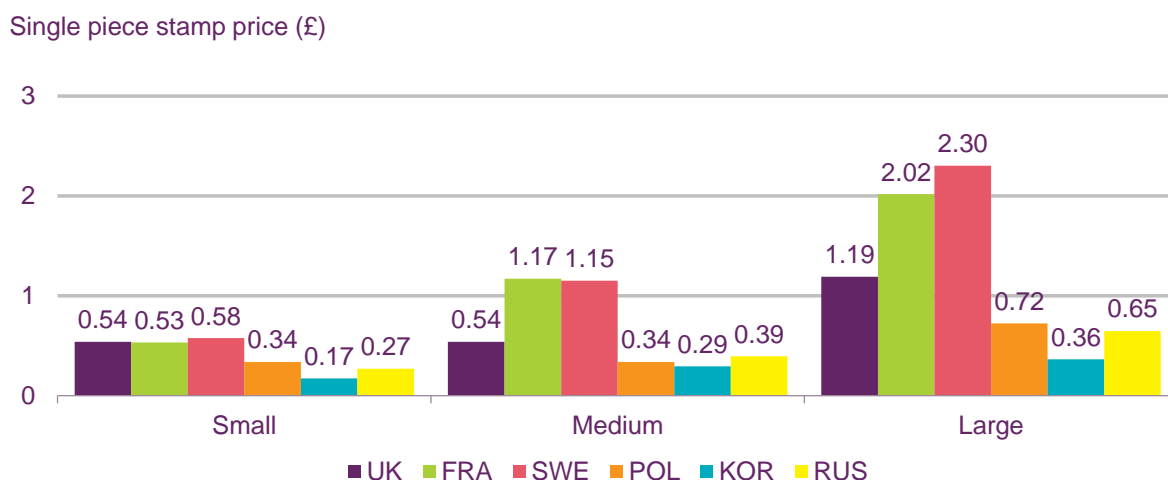
UK	FRA	SWE	POL	KOR	RUS
D+3	D+3-4	D+3	D+3	D+3	Variable

Source: WIK

Note: Delivery targets in Russia are dependent on the point of origin and destination.

South Korea is the cheapest country in which to send a Second Class equivalent letter, regardless of the format. To send a small letter, the price in the UK (54p) is comparable with France and Sweden where it costs 53p and 58p respectively. But it is far cheaper to send a medium-sized Second Class letter in the UK than in France or Sweden, where it costs more than £1. This is because the price to send a medium-sized letter in the UK is the same as a small letter.

Figure 7.21 Published stamp prices for Second Class small (DL), medium (C5) and large (C4) domestic letters: October 2015



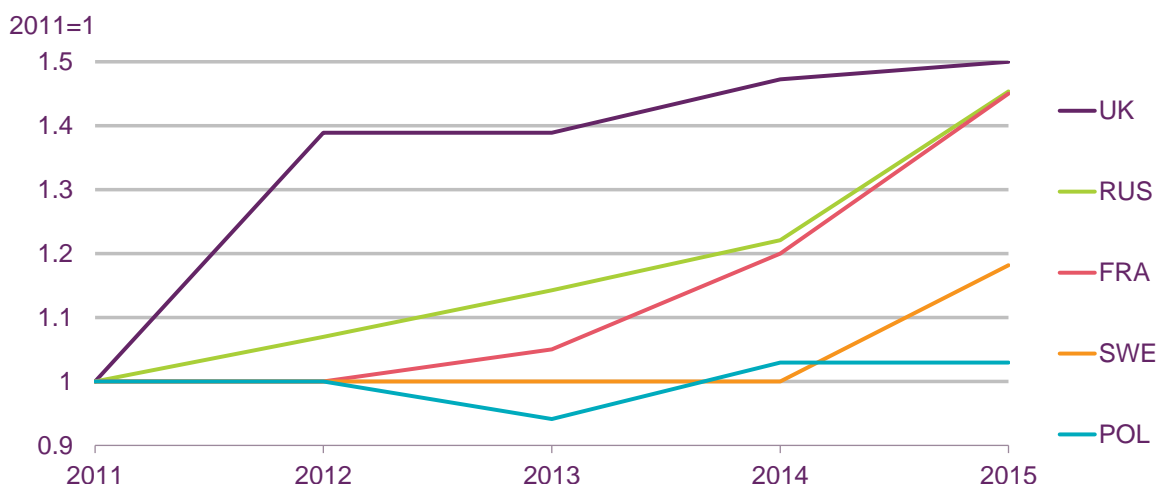
Source: WIK / Ofcom analysis

The price to send a Second Class medium-sized letter in the UK has increased by 50% since 2011

Price increases for the Second Class medium-sized letter in the UK have been the highest among our comparator countries that offer this product. The majority of the increase in the UK occurred in 2012, but smaller increases also took place in 2014 and 2015. Russia and France have also increased the price of a Second Class equivalent stamp, with significant increases in France in 2014 and 2015.

There was no change to the price of a Second Class stamp price in South Korea over this period.

Figure 7.22 Nominal increase in stamp price for Second Class equivalent medium-sized (C5) letter since 2010



Source: WIK / Ofcom analysis
 Note: Figures are nominal

7.2.6 Competition in letters

With the exception of the UK, operators other than those providing the universal postal service have a greater share of letters sector volume than revenue

This section looks at the share of the letters sector, by revenue and by delivered volume, accounted for by postal operators other than the provider of the universal postal service. Among our comparator countries, there are seven European comparators where letters competition exists, as set out in Figure 7.23.

There are two main forms of competition in the letters sector; access and end-to-end. Access competition is where the operator collects mail from the customer, sorts it and transports it to the universal service provider for delivery. This enables other operators to offer letter postal services to larger business customers without setting up their own delivery network. Access competition is well established in the UK and is the most predominant form of competition. Access also exists in Germany, where it is known as 'consolidation' or 'partial services'.

End-to-end competition is where an operator other than the universal service provider undertakes the entire process of collecting, sorting and delivering mail to the intended recipients.

Apart from the UK, in all of the countries in Figure 7.23 where data are available for both revenue and delivered volume from operators other than the universal postal service provider, these operators have a greater share of letters volume than of revenue. The difference is greatest in Poland, where competing postal operators have a 17.3% share of delivered volume and a 7.9% share of revenue. This is likely to be due to competitors to Poczta Polska, the universal postal service provider, primarily competing for lower-value bulk mail, particularly transactional mail from utility companies, and providing an end-to-end service for this mail.

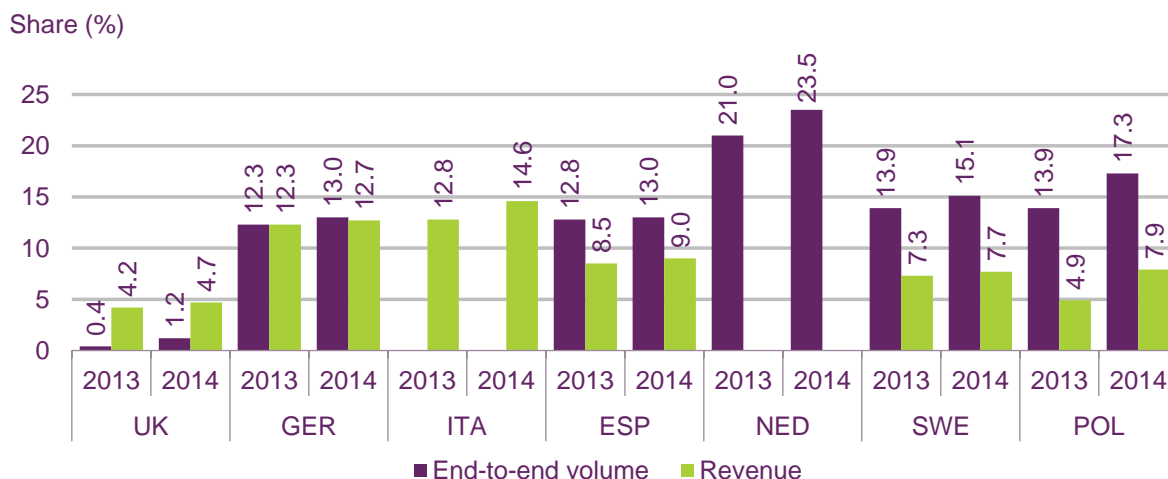
In the Netherlands, operators other than Post NL, the universal service provider in the Netherlands, have the highest share of delivered volume across all of our comparators. Sandd is the largest postal operator in the Netherlands after Post NL and the only other national end-to-end delivery provider. There are also a number of smaller operators offering end-to-end delivery in certain regions. Competition in letter delivery is more established in the Netherlands than in many other countries, and this is reflected in the higher share of delivered volume accounted for by competitors.

For the first time in the UK, the share of delivered letter volumes accounted for by operators other than Royal Mail was greater than 1%. Other operators' share by volume in 2014 was 1.2%, increasing from 0.4% the previous year. However, it is unlikely that this growth will continue. The majority of the increase in delivered volume (and therefore share) was due to Whistl, which began delivering letters end to end in April 2012. Although Whistl had extended its network to deliver to two million addresses, it announced the closure of its end-to-end operations in June 2015 after its investment partner, LDC, announced that it would not fund further roll-out.

In the UK, the higher share of letter revenue than delivered letter volume accounted for by postal operators other than Royal Mail reflects access competition. This is because access operators obtain revenue from providing these services but do not gain any share of delivered letter volumes as Royal Mail is the operator delivering the letters. Operators other than Royal Mail in the UK handled 56% of total letter volume in 2014, accounting for 3.9% of letter revenue. End-to-end competition accounted for 0.8% of total letters revenue.

Although access competition exists in Germany, it is not on as wide a scale as in the UK. Revenues from access operators in Germany accounted for a 1.4% share of the total letters market.¹⁴⁵

Figure 7.23 Revenue and end-to-end delivered letter shares accounted for by operators other than the universal postal service provider: 2013-2014



Source: WIK / Ofcom analysis

Note: 2014 shares for Spain are approximate. Data are not available for volumes in Italy and revenue in the Netherlands

7.2.7 Direct mail

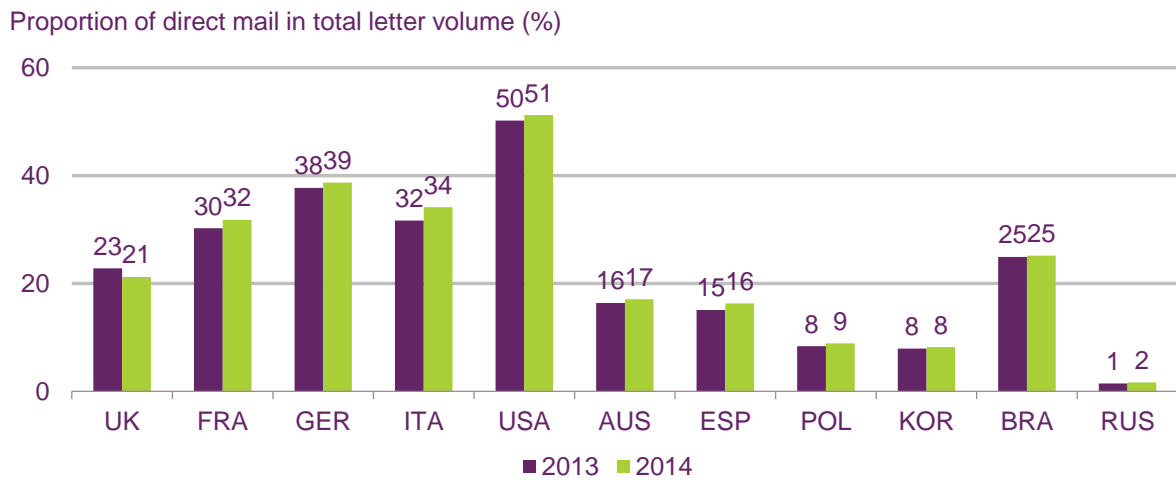
Over half of total mail volume in the US is advertising mail

The importance of direct advertising mail to total volumes is most striking in the US, where 51% of total mail in 2014 was direct mail. Direct mail accounts for 39% of total mail in Germany, the second highest among our comparator countries, followed by France, where 32% of total mail volumes are direct mail. Comparatively, direct mail accounted for 21% of total mail in the UK. The smallest proportion of direct mail in total mail volume was in Russia, where only 2% of total mail was made up of direct mail.

Despite contributing to only 2% of total mail, direct mail volume in Russia increased by 42.2% between 2012 and 2013 and by a further 61.1% in 2014. Russia is the only one of our comparators where the volume of direct mail has increased over the past two years.

¹⁴⁵ Bundesnetzagentur, *Marktuntersuchung Bericht über den lizenzpflichtigen Briefbereich 2014*, March 2015, p.11

Figure 7.24 Proportion of direct mail in total letter volume: 2013-2014



Source: WIK / Ofcom analysis

7.3 Post and the residential consumer

7.3.1 Introduction

This section presents the findings of our consumer research, the methodology of which is detailed in Appendix A. The questions include sending and receiving post, the types of mail sent and received, and respondents' perceived reliance on post as a way of communicating. The key findings in this section are:

- **Seven in ten (72%) of the online population in the UK had sent an item of post in the past month.** Only in France and in Germany, where nearly eight in ten had sent at least one item, were people more likely to have sent something by post in the past month.
- **The average number of items of post sent per month has remained broadly stable in the UK and has increased in France, Italy and the US.** The average number of items sent per month in 2015 in the UK was 4.2, broadly similar to the average of 3.9 for the previous year. This is lower than in 2013, when the average number of items sent was 4.7.
- **Among those that had sent an item, six in ten of those in Spain and over half of those in the UK had sent a parcel.** For the UK, Germany, Italy, Australia and Spain, over half of those that had sent something in the past month had sent a parcel. This was highest in Spain, where 59% had done so.
- **People in the UK are more likely than those in any of the other countries we surveyed to send invitations, cards and postcards.** One-third of those in the UK who had sent any item of post in the past month had sent an invitation, card or postcard in this time period, higher than any of the other countries that we researched.
- **Nine in ten (88%) people in the UK had received an item of post in the past week.** People in the UK were among the most likely of those in our comparator countries to have received an item of post in the past week. Almost nine in ten (88%) had received at least one item, the same proportion as in France and Germany.
- **People in the US report receiving the most post of all our comparators.** The average number of items received by people in the US in 2015 was 9.3, the same as the previous year. The next highest average number of items received was in France (8.4), followed by the UK (6.7).
- **People in the UK and the US consider themselves more reliant in post in 2015 than they did in 2014.** In the UK, the proportion of people considering themselves reliant on post increased by 6 percentage points to 62%. In the US, this increased by 9 percentage points, also to 62%.

7.3.2 The number of items sent

Seven in ten (72%) of the online population in the UK had sent an item of post in the past month

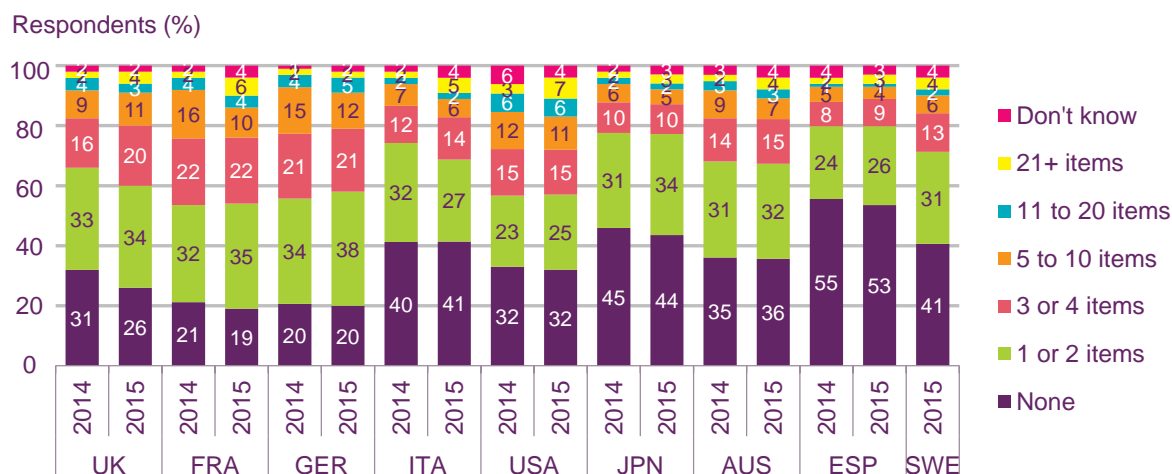
Respondents in the UK were among the most likely of those in all the countries we surveyed to have sent an item of post in the past month. Only in France and in Germany, where nearly

eight in ten had sent at least one item, were people more likely to have sent something by post in the past month.

In Spain, over half of those surveyed said that they had not sent anything by post in the past month, the highest of all the countries in Figure 7.25. Two-fifths of those in Japan (44%), Italy (41%) and Sweden (41%) had not posted anything in the past month.

Where people had sent something in the past month, they were most likely to have sent one or two items only, across all of our comparators.

Figure 7.25 Approximate number of items of post sent per month



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004

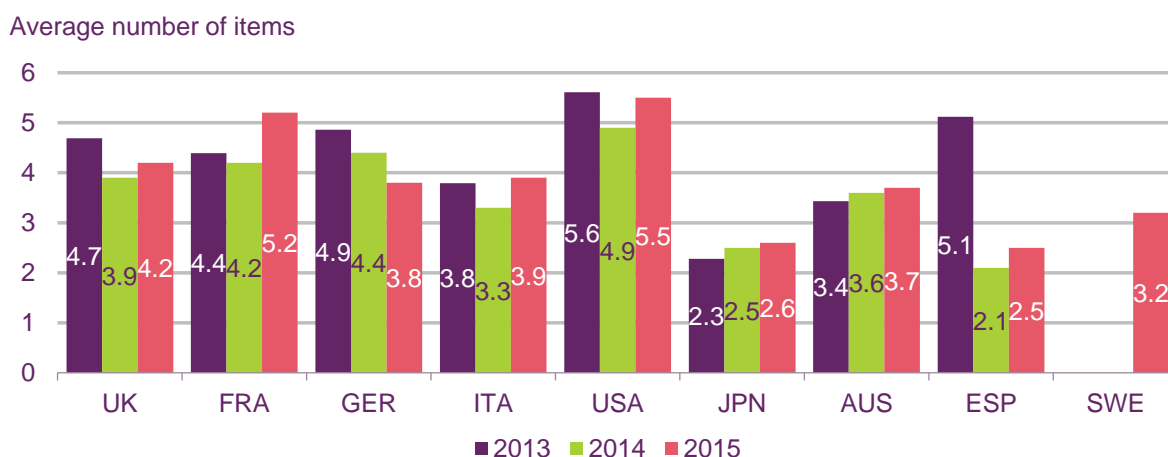
Q.12 Approximately how many items of post - including letters, cards and parcels - have you personally sent in the last month?

The average number of items of post sent per month has remained broadly stable in the UK and has increased in France, Italy and the US

The average number of items sent per month in 2015 in the UK was 4.2, broadly similar to the average of 3.9 for the previous year. This is lower than in 2013, when the average number of items sent was 4.7. The average number of items sent was also broadly stable in Japan, Australia and Spain.

The average number of items sent in France, Italy and the US has increased. In France, the average number of items rose from 4.2 in 2014 to 5.2 in 2015. This was the largest increase, and as Figure 7.25 shows, this is due to a larger proportion of people saying that they had sent more than 21 items in the past month. The increase in France brings the average number of items sent there into line with the US, where the number of items sent per month has been highest of all the countries we survey for the past three years.

Figure 7.26 Average number of items sent per month: 2013-2015



Source: Ofcom consumer research September - October 2015, October 2014, September 2013
 Base: All respondents, UK=1000/1011/1006, FRA=1007/1027/1003, GER=1010/1006/1007, ITA=1010/1006/1003, USA=1004/1000/1009, JPN=1005/1003/1006, AUS=1007/1000/1000, ESP=1020/1002/1002, SWE=1004 Q.12 Approximately how many items of post - including letters, cards and parcels - have you personally sent in the last month?

7.3.3 Types of items sent

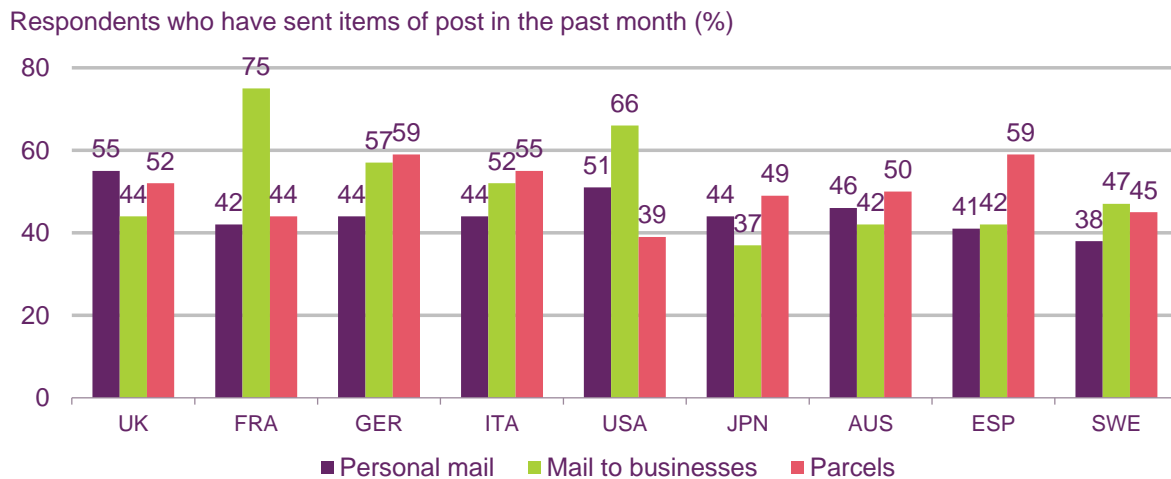
Among those who had sent any item of post, six in ten of those in Germany and Spain and around half of those in the UK, Australia and Italy had sent a parcel

In the UK, Germany, Italy, Australia and Spain, over half of those who had sent something in the past month had sent a parcel. This was highest in Spain, where 59% had done so. This is an increase of 11pp year on year.

People in the UK and the US were the most likely to have sent personal mail, with over half of those who had sent an item in the past month in these countries having sent this type of mail. The UK and the US were the only countries in which a higher proportion of people had sent personal mail than parcels.

In France and the US, the category of post sent most frequently by consumers was mail to businesses. Three-quarters (75%) of those in France and two-thirds (66%) of those in the US had sent this category of post. Over half of those in Germany (57%) and in Italy (52%) had sent mail to businesses. In France, the US and Sweden a higher proportion of people had sent mail to businesses than had sent a parcel. These were the only three countries in which this was the case.

Figure 7.27 Categories of post sent in the past month



Source: Ofcom consumer research September - October 2015

Base: All respondents who have sent any items of post in the last month, UK=731, FRA=772, GER=790, ITA=549, USA=643, JPN=533, AUS=601, ESP=435, SWE=547

Q.13 Which of these types of mail would you say you have personally sent in the last month by post?

People in the UK are more likely than those in any of the other countries we surveyed to send invitations, cards and postcards

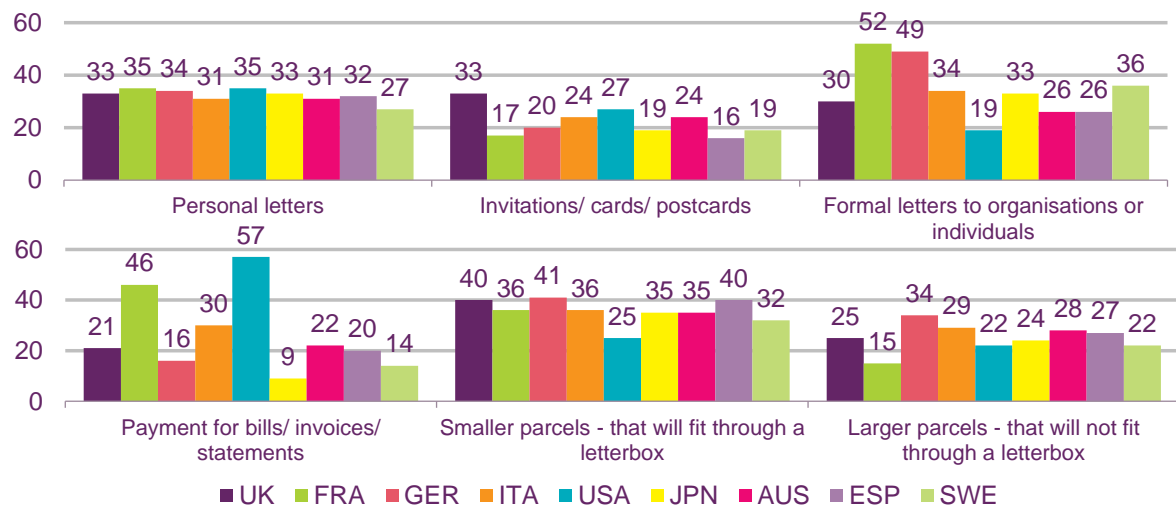
One-third of those in the UK who had sent any item of post in the past month had sent an invitation, card or postcard in this time period, higher than any of the other countries that we researched. This is the same proportion as the previous year. Those in the US were the next most likely to have sent this type of post, with 27% doing so.

As Figure 7.27 shows, people in France and the US were the most likely to send mail to businesses. Looking at the specific types of items sent (Figure 7.28) indicates that this is primarily driven by payments for bills being sent through the post.

People in the UK were among the most likely to have sent a small parcel in the past month, with two-fifths having done so. This is on a par with Germany (41%), and Spain (40%). People in Germany were the most likely to have sent a large parcel; one-third (34%) had sent this type of item in the past month.

Figure 7.28 Type of items sent in the past month

Respondents who have sent items of post in the past month (%)



Source: Ofcom consumer research September - October 2015

Base: All respondents who have sent any items of post in the last month, UK=731, FRA=772,

GER=790, ITA=549, USA=643, JPN=533, AUS=601, ESP=435, SWE=547

Q.13 Which of these types of mail would you say you have personally sent in the last month by post?

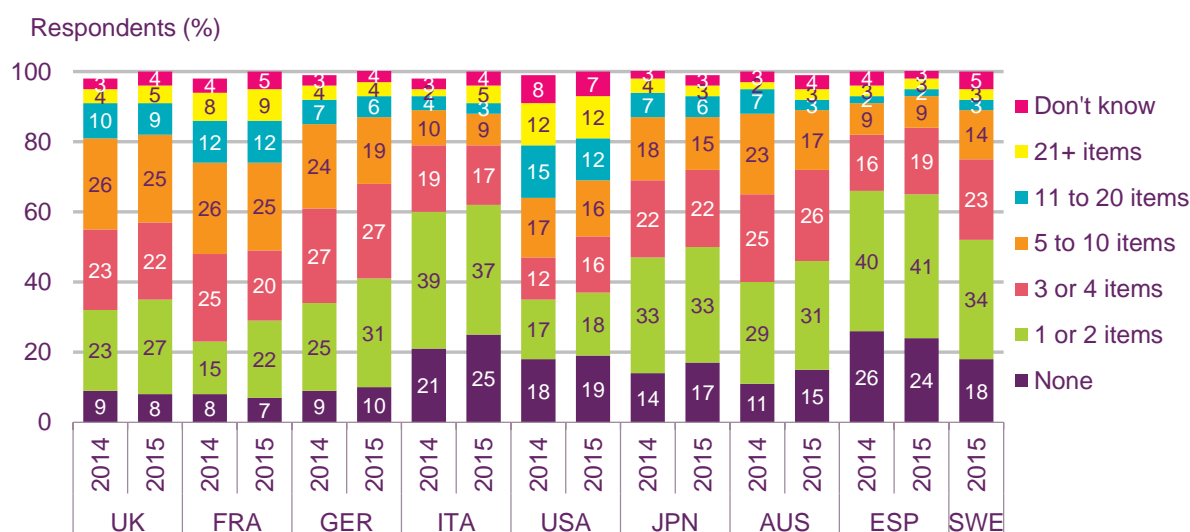
7.3.4 The number of items received

Nine in ten (88%) people in the UK had received an item of post in the past week

People in the UK were among the most likely of those in our comparator countries to have received an item of post in the past week. Almost nine in ten (88%) had received at least one item, the same proportion as in France and Germany.

People in Italy and in Spain were the most likely to have received no post in the past week, with a quarter of respondents in each of these countries saying that they had not received a single item.

Figure 7.29 Approximate number of items of post received in the past week



Source: Ofcom consumer research September - October 2015

Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004 Q.14 Approximately how many items of post - including letters, cards and parcels - have you personally received in the last week?

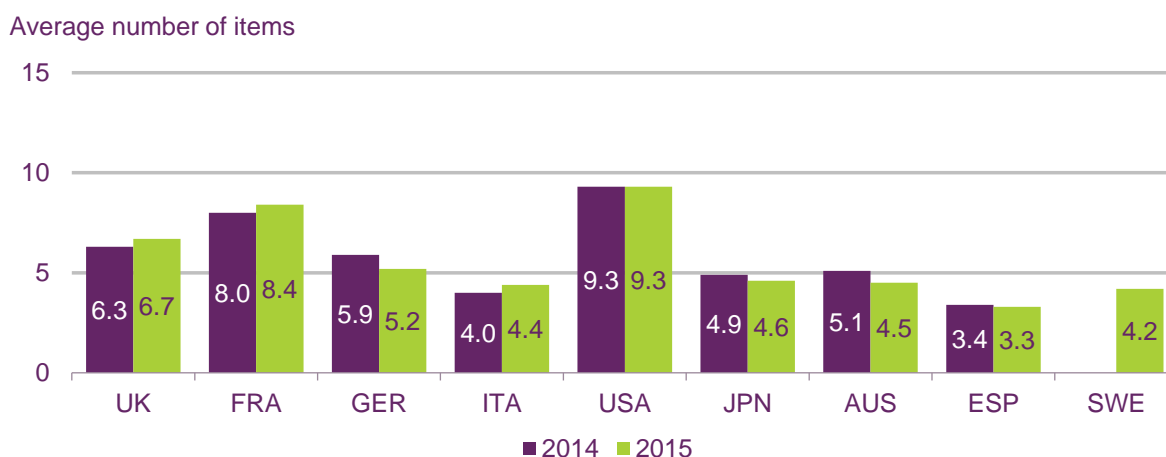
People in the US report receiving the most post of all our comparators

The average number of items received by people in the US in 2015 was 9.3, the same as the previous year. The next highest average number of items received was in France (8.4), followed by the UK (6.7).

This claimed measure is not consistent with the 'volume per head of population' metric, calculated from the industry data and set out in Figure 7.11. This is because the number of items received is sourced from consumer research, in which people are asked how many items of mail they have received in the past week, while the data in Figure 7.11 are derived from the total letter volume for each year divided by the population of each country. The consumer research does not include mail sent to businesses, which may explain why there is a high volume per head of population in Sweden, despite it having one of the lowest average numbers of items received by consumers.

The high number of items received in the US is likely to be driven by advertising mail, which accounts for 51% of total mail volume in that country. As section 7.3.5 shows, people in the US are the most likely among our comparators to have received advertising mail in the past week.

Figure 7.30 Number of items received in the past week



Source: Ofcom consumer research September - October 2015, October 2014,
 Base: All respondents, UK=1000/1011, FRA=1007/1027, GER=1010/1006/, ITA=1010/1006/,
 USA=1004/1000, JPN=1005/1003, AUS=1007/1000/, ESP=1020/1002, SWE=1004
 Q.14 Approximately how many items of post - including letters, cards and parcels - have you personally received in the last week

7.3.5 Types of items received in the past week

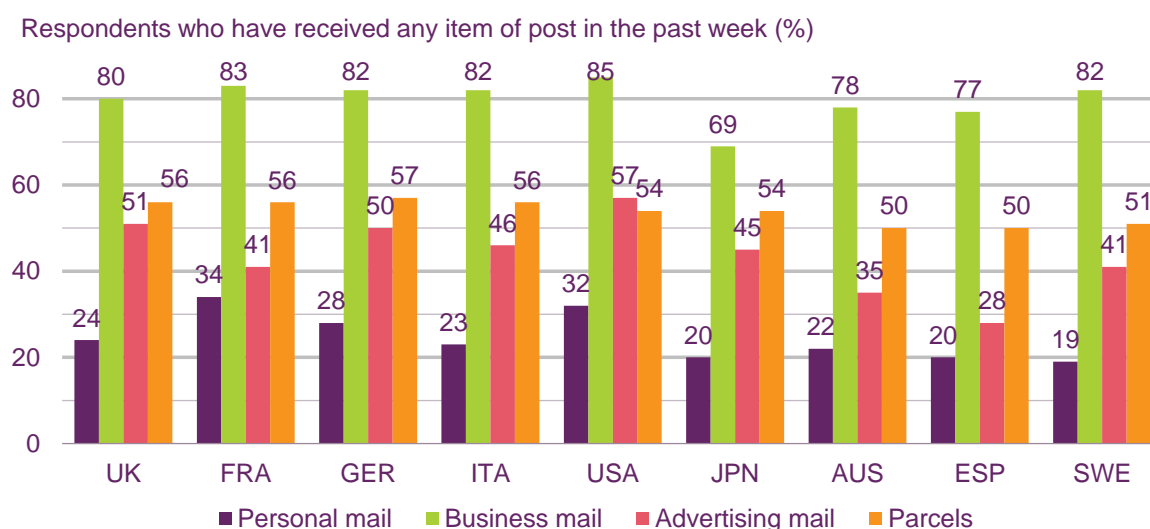
Mail from businesses is the category of mail most likely to be received, in all our comparator countries

With the exception of Japan, in all of our comparators around eight in ten people who had received an item of post in the past week had received mail from businesses. Although a smaller proportion of those in Japan had received this type, it was still the most likely category of mail to be received; seven in ten (69%) said they had received it.

In all of our comparators except the US, parcels were the next most likely category of mail to have been received, with at least half of those in each country who had received any post in the past week saying they had received at least one parcel during this time period.

A quarter (24%) of those in the UK who had received any post in the past week had received personal mail. This was lower than in France (34%) the US (32%) and Germany (28%).

Figure 7.31 Categories of items received in the past week



Source: Ofcom consumer research September - October 2015 Base: All respondents who received at least one item of post in the last week, UK=886, FRA=879, GER=873, ITA=710, USA=753, JPN=791, AUS=813, ESP=731, SWE=775 Q.16 Which of these types of items would you say you have personally RECEIVED through the post in the last WEEK? Please think about items that are addressed to you personally rather than items like leaflets or anything else that may come through your letterbox.

Although people in the UK are the most likely to have sent a card, those in the US are the most likely to have received one

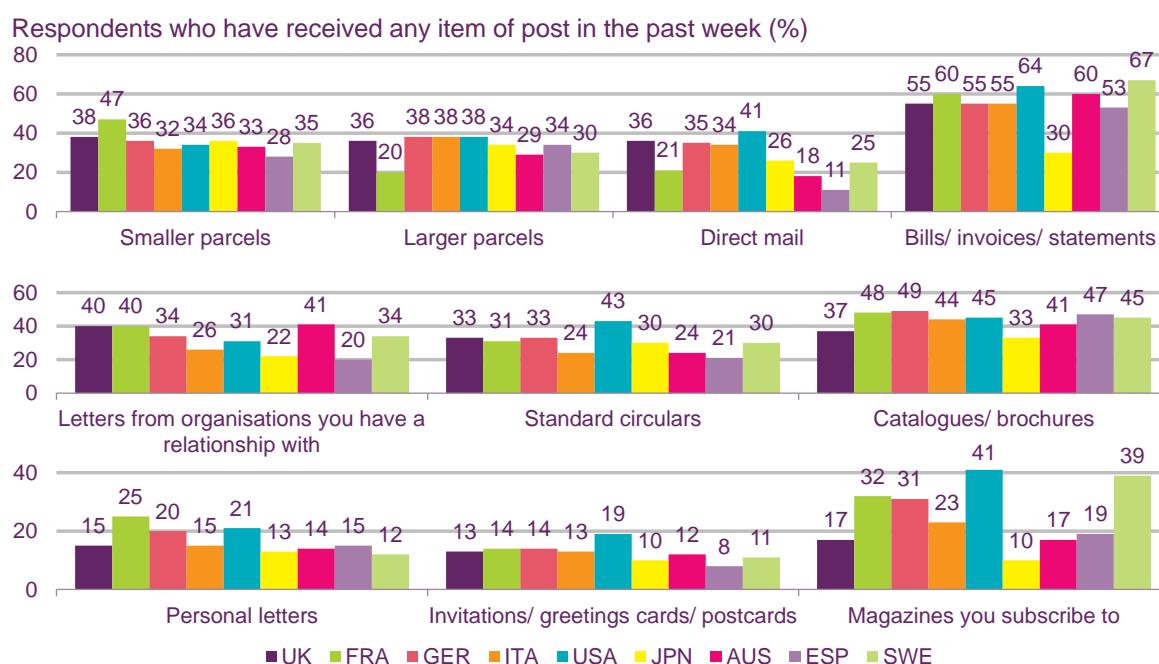
Although one-third of people in the UK who had sent mail in the past month had sent an invitation, greetings card or postcard (Figure 7.28), this type of mail had been received by just 13% of those who had received any mail during the past week. People in the US were most likely to have received this type of mail, with one-fifth (19%) saying that they had. This compares to the 27% who said they had sent a card in the past month.

The difference in the proportions who had sent and received this type of mail may be due to the differing time periods that are asked about in the consumer research. When asked about mail sent, respondents were asked to recall what they had sent in the past month; when asked about mail received, they were asked about the past week.

Those in the US were the most likely to have received direct mail, with two-fifths (41%) saying they had received direct mail in the past week. This was slightly higher than in the UK (36%), which was on a par with Germany (35%) and Italy (34%). Those in Spain and Australia were the least likely to have received direct mail in the past week.

In all countries apart from Japan, bills, invoices or statements were the type of mail that the highest proportion of people reported receiving in the past week. In Japan, the type of mail that the greatest proportion said they had received was a small parcel (36%).

Figure 7.32 Types of mail received in the past week



Source: Ofcom consumer research September - October 2015 Base: All respondents who had received any item of post in the past week, UK=886, FRA=879, GER=873, ITA=710, USA=753, JPN=791, AUS=813, ESP=731, SWE=775Q.16 Which of these types of items would you say you have personally received through the post in the last week?

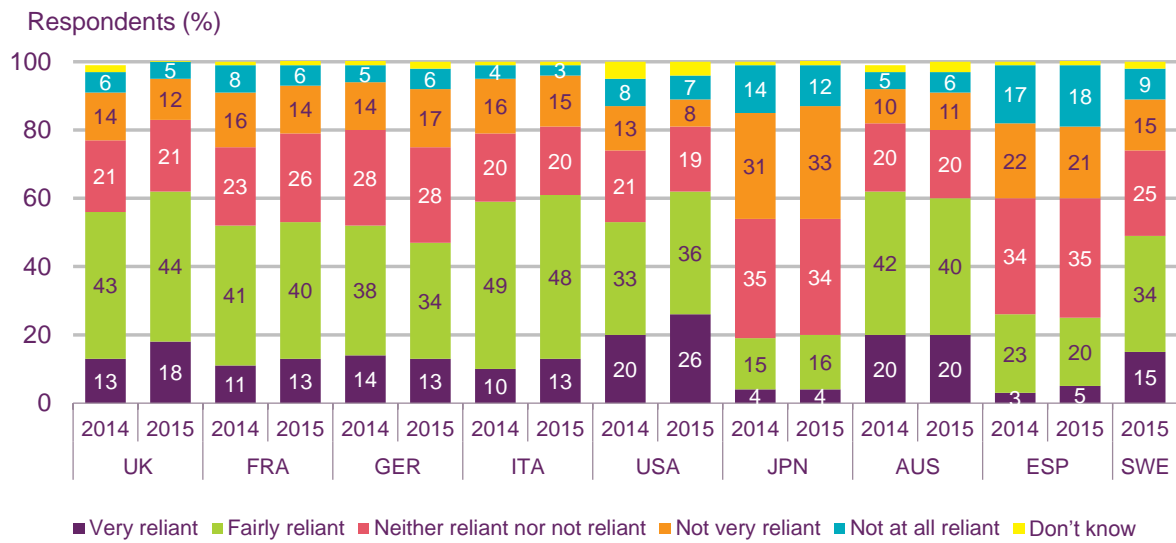
7.3.6 Reliance on post as a way of communicating

The proportion of people in the UK and the US who consider themselves reliant on post as a way of communicating has increased

The proportion of people in the UK who said they were either ‘very reliant’ or ‘fairly reliant’ on post as a way of communicating increased by 6pp in 2015 to 62%. In the US, the proportion of people who said this increased by 9pp, also to 62%. These two countries were the most reliant of all our comparator countries on post, followed by Italy (61%) and Australia (60%). In almost all of the other comparators, the proportion of people who considered themselves reliant on post remained broadly the same year on year. The exception was Germany, where the proportion of people who considered themselves reliant on post fell by 5pp to 47%.

People in Japan were the least likely to consider themselves reliant on post (20%), followed by Spain (25%).

Figure 7.33 Reliance on post as a way of communicating



Source: Ofcom consumer research October 2015, October 2014 Base: All respondents, UK=1006, FRA=1003, GER=1007, ITA=1003, USA=1009, JPN=1006, AUS=1000, ESP=1002, SWE=1004 Q.17 How reliant would you say you are on post as a way of communicating?



International Communications Market Report 2015

Appendix A – Consumer research methodology

Appendix A: Consumer research methodology

Introduction

This section describes the methodology used for the 2015 international communications behaviour research, which was carried out by Populus, an independent market research agency, on behalf of Ofcom.

The survey covered the communications behaviour of internet users in nine markets: the UK, France, Germany, Italy, the US, Japan, Australia, Spain and Sweden. As in previous years, the research looked at the ownership and use of communications services and devices such as TV, mobile, fixed landline and the internet. In addition, it explored the changing nature of communication, and use of connected devices, postal services, online shopping, mobile payments, and take up of 4G and superfast broadband in the various markets.

The 2015 research comprised 9,040 interviews completed between 23 September and 8 October 2015. Eight previous waves of the research have been undertaken (2014, 2013, 2012, 2011, 2010, 2008, 2007 and 2006) and a number of key issues have been tracked across all waves.

In previous years, China was included in the research, however, due to internet take-up being relatively low in China and despite the members of the online panel in China being representative of that country's online population, they were perhaps more likely to be affluent and urban and exhibit the behaviour of early adopters than were the samples from the other eight countries. It was therefore decided to replace China with Sweden in the 2015 study. This provides representation from a Scandinavian country, a region which was not represented in previous years, while the continued inclusion of Japan ensures that the Far East is represented.

Research methodology

Overview

The international communications behaviour research was conducted using an international online consumer access panel. In 2015, as in previous years, the research panel employed was managed by Toluna. The numbers of active panel members in each market are shown in Figure 8.1. A total of 9,040 interviews with internet users were completed – with at least 1,000 in each market. Age and gender quotas in each market were set in line with those employed in earlier waves to ensure historical consistency.

The study was carried out among adults aged over 18. Data for setting quotas for the different online panels came from a range of data sources. Where possible, data from the respective countries' statistical departments was used. This related to Spain (National Statistics Institute), Japan (Japanese Statistical Yearbook 2014), Australia (Household Use of Information Technology) and Sweden (Statistics Sweden). For two countries, data were obtained from centres of research – France (Centre de Recherche pour L'Etude et L'Observations des conditions de Vie: La diffusion des technologies de l'information et de la communication dans la société) and US (The Pew Research Centre). The German quotas came from a survey undertaken by the two largest broadcast companies – ARD/ZDF Onlinestudie 2014 and Spain from Audioweb.

Members of Toluna’s access panel were screened to meet age and gender requirements. Respondents were invited to participate using a random online sampling approach to ensure a representative sample. The following methods were used:

- Email invitation via random sampling from the panel, within qualifying age bands.
- Real-time sampling, allowing visitors to the Toluna website to access the screeners and participate (if they qualified).

Toluna sampled its panel by selecting email addresses randomly within the market and demographic quotas required, taking account of predicted response rates by target demographic, and country, to avoid over-contacting panellists and to ensure that a bias was not introduced in the responses. The sample itself was then automatically randomised for potentially-qualifying individuals. A 25-minute self-completion web-based survey was completed by all respondents in each market.

Quotas

Quotas of 1,000 interviews per market were set to match previous waves and at least 1,000 interviews were completed per country.

The quotas had been set in the previous waves to reflect the age and gender profile of internet users in each market of consumers. For the eight countries previously surveyed, the same quotas were set this year. Quotas were set on the Swedish sample based on data obtained from Statistics Sweden. The data were weighted using proportions comparable to previous waves.

Figure 8.1 Achieved sample, by nation and demographics

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	SWE
Unweighted total	1006	1003	1007	1003	1009	1006	1000	1002	1004
Weighted total	1000	1000	1000	1000	1000	1000	1000	1000	1000
Male	480	490	530	530	480	550	500	510	500
Female	520	510	470	470	520	450	500	490	500
18-24 yrs	140	150	110	140	150	110	140	130	110
25-34 yrs	210	170	160	230	180	200	230	240	160
35-44 yrs	220	180	180	280	180	240	210	270	160
45-54 yrs	170	170	200	220	190	190	190	210	170
55-64 yrs	72	181	225	129	105	188	100	123	150
65+ yrs	188	149	125	1	195	72	130	27	250

Statistical significance

Demographic quotas were employed to match internet use in each market. Results were tabulated and significance testing (at 95% confidence) was applied.

Statistical significance is indicated by the use of directional arrows on some of the figures in the report. An upward arrow indicates a significantly greater proportion and a downward

arrow indicates a significantly lower proportion (see individual figure footnotes for details of years/sub-groups being compared).

Access panel

The 2015 survey used Toluna’s access panel. The panel includes the following number of members in each of the relevant markets:

Figure 8.2 Toluna panel member volumes

	UK	FRA	GER	ITA	USA	JPN	AUS	ESP	SWE
Members	409,000	387,000	283,000	220,000	2,300,000	325,000	135,000	184,000	42,000

Panel members were recruited from a variety of sources, using a ‘double opt-in’ procedure. The process was as follows:

- Step 1 - A prospective panellist completes a panel registration form, which includes contact and demographic information (first opt-in).
- Step 2 - An automatic email is sent to the prospect, requesting verification of their panel registration by clicking a link that confirms their log-in details.
- Step 3 - Once the prospect has clicked the link (second opt-in), he or she is officially a panellist and is presented with an opportunity to complete additional profiling. Another automatic email is sent that includes the panellist’s account log-in information for future reference by the panellist.

For this survey, all panellists completing the survey were paid a small incentive payment for their time



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Appendix B – TV viewing analysis methodology

Appendix B: TV viewing analysis methodology

Introduction

This section outlines the parameters and definitions used in the broadcast TV viewing analysis, within the *TV and audio-visual* chapter.

The source for the analysis is extracted from the *One Television Year In The World 2015* report which is published by Eurodata TV Worldwide.

Data in the report are based on measured viewing, using TV meter technology.

Overview

Eurodata TV Worldwide works with audience measurement and research organisations for each country that is included in its publication, and brings together their respective industry standard viewing data into a single annual review.

We set out the industry standard criteria for reported TV viewing in each of the comparator countries, below.

The information reflects the status and data for each country when the Eurodata TV Worldwide report was published in April 2015.

Figure 9.1 Comparator countries and their industry audience measurement criteria

Country	Audience base	Area	2014 date range	Type of viewing measured
UK	Individuals 4+	National	1st Jan 2014 - 31st Dec 2014	Live + viewing on the same day as live + up to 7 days time-shifted
France	Individuals 4+	National	30th Dec 2013 - 28th Dec 2014	Live + viewing on the same day as live + up to 7 days time-shifted
Germany	Individuals 3+	National	1st Jan 2014 - 31st Dec 2014	Live + viewing on the same day as live + up to 3 days time-shifted
Italy	Individuals 4+	National	1st Jan 2014 - 31st Dec 2014	Live + viewing on the same day as live + up to 7 days time-shifted
USA	Individuals 2+	National	30th Dec 2013 - 28th Dec 2014	Live + viewing on the same day as live + up to 7 days time-shifted
Japan	Individuals 4+	Kanto region (the most selected region for analysis of TV viewing in Japan but should not be considered as equivalent to nationally representative data)	1st Jan 2014 - 31st Dec 2014	Live only
Australia	Individuals 0+	A combination of regional areas to reflect national data: Queensland, Northern New South Wales (NSW), Southern NSW, Victoria and Tasmania and Regional Western Australia.	1st Jan 2014 - 31st Dec 2014	Live + viewing on the same day as live + up to 7 days time-shifted
Spain	Individuals 4+	National	1st Jan 2014 - 31st Dec 2014	Live only
Netherlands	Individuals 6+	National	1st Jan 2014 - 31st Dec 2014	Live + viewing on the same day as live + up to 6 days time-shifted
Sweden	Individuals 3+	National	1st Jan 2014 - 31st Dec 2014	Live + viewing on the same day as live + up to 7 days time-shifted
Poland	Individuals 4+	National	1st Jan 2014 - 31st Dec 2014	Live + viewing on the same day as live + up to 7 days time-shifted
South Korea	Individuals 4+	National	1st Jan 2014 - 31st Dec 2014	Live only
Brazil	Individuals 4+	15 markets - Florianópolis, Campinas, Porto Alegre, Distrito Federal (Brasília), São Paulo, Rio de Janeiro, Curitiba, Grand Belo Horizonte, Salvador, Vitória, Manaus, Goiânia, Fortaleza, Recife, Belém	1st Jan 2014 - 31st Dec 2014	Live only
Russia	Individuals 4+	National. Cities with a population greater than 100,000 inhabitants	1st Jan 2014 - 31st Dec 2014	Live only
China National	Individuals 4+	National	1st Jan 2014 - 31st Dec 2014	Live only

Source: MediaMetrie, Eurodata Worldwide

Live - viewing of broadcast programmes at the time of transmission.

Viewing on the same day as live (VOSDAL) – viewing to broadcast programmes other than at the time of broadcast but on the same day as it was aired.

Time-shifted viewing – for the purpose of the descriptions in Figure 9.1, time-shifted viewing is defined as viewing of broadcast programmes up to the specified number of days after live broadcast, excluding viewing on the same day as live.

Total time-shifted viewing includes VOSDAL plus any subsequent time-shifted viewing.

Time-shifted includes viewing through recording devices (such as a DVR) as well as to catch-up TV services (where applicable to the country). Viewing of catch-up through devices such as PCs and laptops, tablets and smart phones where attached to the TV set and the screen is being used to view programmes, may also be included.

Guest viewing (i.e. people who are not normally part of the household in a panel home) is included where measured by a country.



International Communications Market Report 2015

Appendix C – Comparative international pricing methodology

Appendix C: Comparative international pricing methodology

Introduction and objectives

For the 2015 international price benchmarking analysis we have largely used the same methodology as in previous years, and have made some updates to the household usage profiles to ensure that they more accurately reflect current use of communications services in the comparator countries.

We use a bespoke pricing model commissioned from pricing consultancy Teligen. The model is populated with specifically-sourced tariff data for fixed-line voice, mobile phone, fixed broadband, mobile broadband, television and 'bundled' services (i.e. incorporating more than one service, such as 'triple-play' tariffs) in the UK, France, Germany, Italy, Spain and the US. The key objectives of the work are as follows:

- to identify and compare the pricing that is available for consumers buying fixed-line voice services, mobile services, broadband internet and TV services;
- to identify and compare the pricing that is available by purchasing communications services within 'bundled' tariffs (for example, 'triple-play' services, which typically offer a single bill for the delivery of fixed-line voice, broadband and television services);
- to compare pricing across a wide range of service usage scenarios, from the requirements of those with basic needs to those of consumers with more sophisticated consumption;
- to incorporate the cost of hardware such as set-top boxes or mobile handsets in order to reflect the real prices that consumers pay, and to compare like-with-like by allowing for equipment subsidies when they are included within propositions from service providers; and
- to represent average or typical use as accurately as possible across the five countries in order to avoid biases associated with comparing pricing based on usage characteristics that are more typical of one country than another.

Basic methodology

Further detail is provided below, but the basic principles are as follows. We constructed five 'typical' household types, which collectively may be seen as representative of the average population across our countries, and defined a basket of communications services (fixed-line voice, mobile, broadband, TV) appropriate for each household type. A wide range of components were included within the household usage profiles to ensure as accurate as possible a representation of the real prices consumers pay. For example:

- Fixed voice minutes were distributed by whether they were to fixed or mobile lines, by call distance (local, regional, national and international, including a range of international destinations), and time of day (day, evening, weekend). Non-geographic calls were excluded from the analysis.

- Mobile calls (and messaging) were split between on-net and off-net, and voicemail was included.
- Call set-up and per-minute charging were incorporated, and a range of call lengths were used (distributed around a defined mean based on averages across 30 OECD countries).
- Incoming calls were included, in recognition of the different pricing mechanism in the US.
- The fixed broadband component was defined both by minimum headline speed and by minimum data and time online requirements (in recognition that in some markets some broadband service providers charge by time spent online, in addition to, or in place of data-based charging).
- The mobile broadband component was defined in the same way as the fixed broadband component, although there were no minimum connection speed criteria (as services are seldom marketed in this way).

The television element included the licence fee (where applicable), a digital receiver and, for some household usage profiles, a digital video recorder (DVR). Because of difficulties in comparing programming bundles, two tiers of pay-TV were considered: the most basic service available above the channels available on free-to-air TV; and a premium service defined by a top-price film/entertainment package and the best package of top-tier football matches.

The average monthly use across all of the household usage profiles was adjusted to ensure that it was aligned with average use across the countries included in the analysis.

Mobile handsets, broadband routers, mobile broadband modems, digital set-top boxes and DVRs are included within the household usage profiles (and amortised over an appropriate period in order to attribute a monthly cost). This is necessary because this equipment is often inseparable from the service price, as operators frequently include subsidised or 'free' equipment (for example a mobile handset or a WiFi router) within the monthly subscription. For similar reasons, connection and/or installation costs are included.

In July 2014 and July 2015, details of every tariff and every tariff combination (including bundled services) were collected from the largest three operators in each country by retail market share (and from more than three operators, if this was required to ensure that a minimum of 80% of the overall market was represented). Bundled tariffs (i.e. those which incorporate more than one service) were also collected. Only those tariffs available on the websites of the operators were included (i.e. the analysis excludes bespoke tariffs which are offered only to certain customers).

Across the six countries, the tariff data in 2015 consisted of:

- 443 fixed voice tariffs;
- 342 fixed broadband tariffs;
- 3,202 mobile tariffs;
- 623 mobile broadband tariffs;
- 484 television tariffs; and

- 10,240 bundled tariff options.

Our model identifies the tariffs that offer the lowest price for meeting the requirements of each household. All sales taxes and surcharges have also been included, in order to reflect the prices that consumers actually pay (although we do not account for differences in other areas of personal taxation policy within each country), and all prices are converted back to UK currency using a purchasing power parity (PPP) adjustment based on OECD comparative price levels and exchange rates as of 1 July 2015.

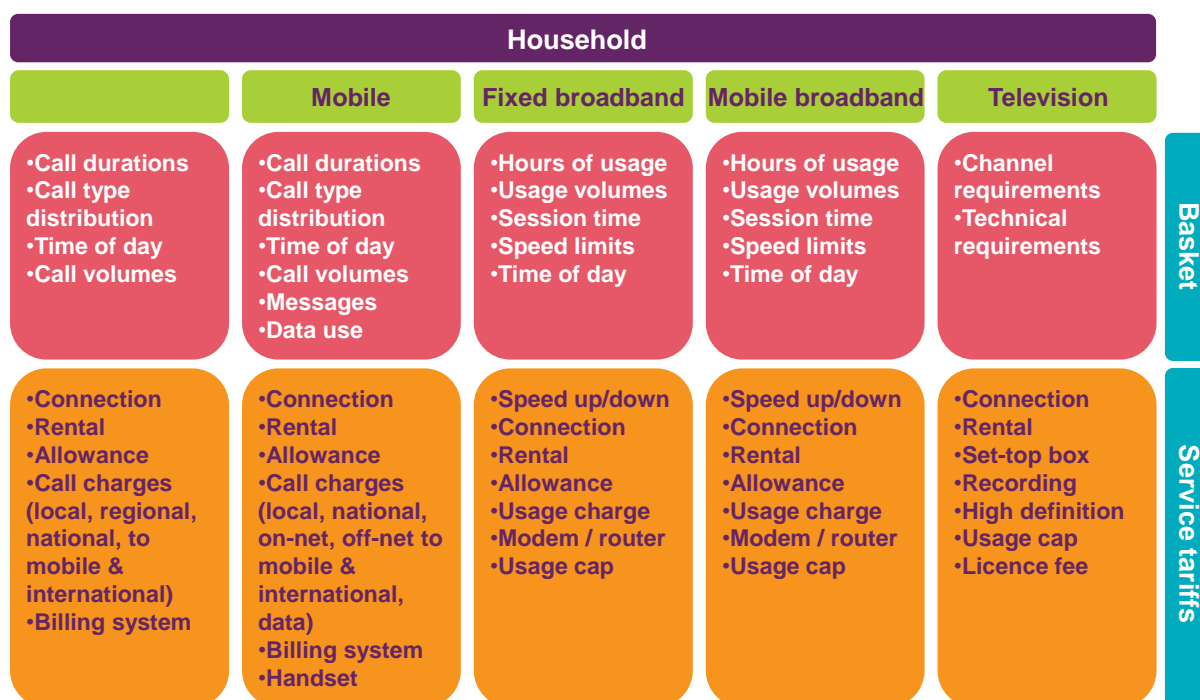
In order to provide an illustration of representative prices for the individual services in each country, and an illustration of the best value that consumers could get for their full 'basket' of services, we have provided three types of analysis for each household usage profile:

- The first, which we call 'average stand-alone' pricing, illustrates the price of each individual service, as defined by the average of the lowest price tariff from each of the operators for each service in each country, weighted by the market share of the service provider in order to ensure fair representation.
- The second, which we call 'average bundle' pricing is the average of the lowest bundled service prices (including separate stand-alone services where a bundle does not include all of the services required by the household) offered by each operator that provides a suitable bundled tariff in each country, weighted by their fixed broadband market shares. This is the first time that this analysis has been included in these reports, and it should be noted that fixed broadband shares are used to weight the results, regardless of whether or not the household in question requires a fixed broadband service.
- The third, which we call 'lowest available' pricing, identifies the lowest price a consumer could pay for this basket of services, including, where appropriate, by purchasing 'bundled' services.

Principles of the model

The model developed for Ofcom by Teligen uses individual consumption baskets for each of the services in the pricing analysis, combined in a structure that allows the definition of household usage profiles of any combination of services.

Figure 10.1 Components of the pricing comparison model



Source: Teligen

Each household usage profile may include any of the four services, with any combination of basket parameters, describing the use of each service within the household. For the mobile service the system allows definitions of multiple users, for each member of the household. The tariff information contains all charges and elements that will typically be part of a service offering. Some costs have been excluded as beyond the scope of the current analysis:

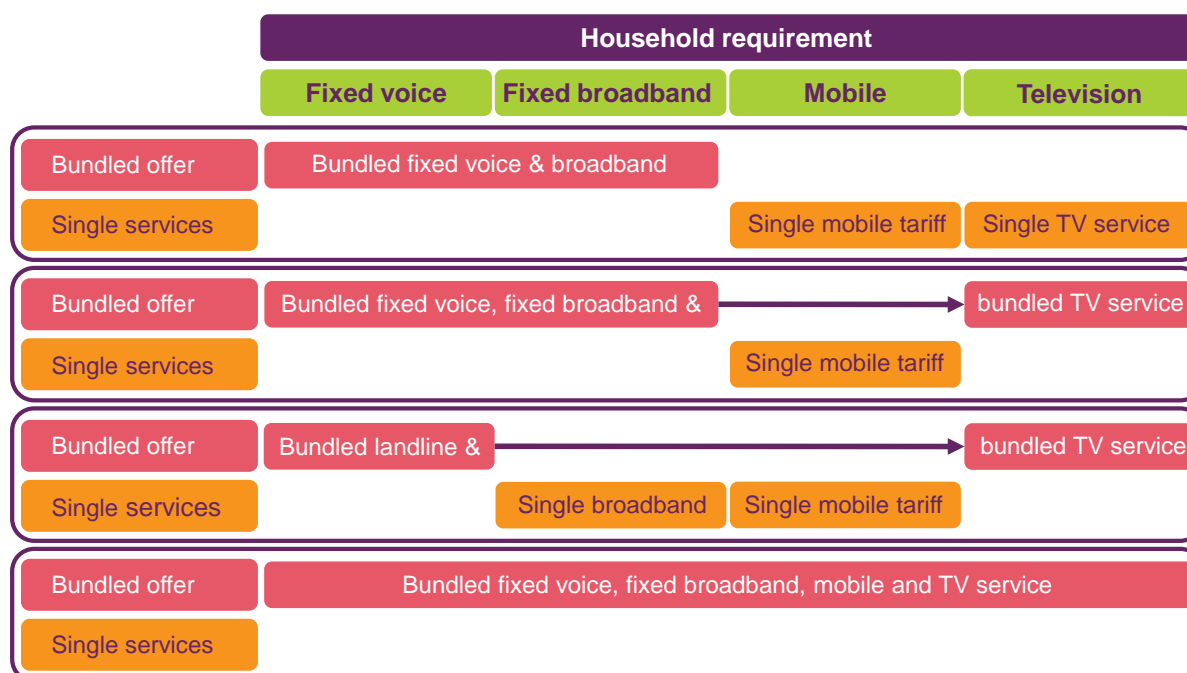
- PC/laptop/s for use with the broadband service
- Television set/s
- Recording equipment beyond those built into digital decoders
- Fixed telephone handset/s

However, mobile handsets, modems/routers and set-top boxes/TV receivers are included as they are an integral part of the service offerings, and are often subsidised by operators who recoup the value of the hardware throughout the course of a contract.

Bundled service offerings

An important part of the analysis is the inclusion of the 'bundled' service offers available in each of the study countries, whereby more than one service is purchased from a stand-alone provider, often at a discount compared with purchasing the services separately. As the household definition determines which services are required by the household, and as this may or may not correspond with the bundled offerings available, it is necessary to combine the bundled offerings with the available stand-alone tariffs in each market. Where the bundled offer does not cover the household requirement for a particular service, a suitable stand-alone tariff is used to fill the gap. In such cases the best possible tariff (the cheapest stand-alone offer that can fulfil the usage requirements) is used.

Figure 10.2 Examples of combinations of bundled and stand-alone offers



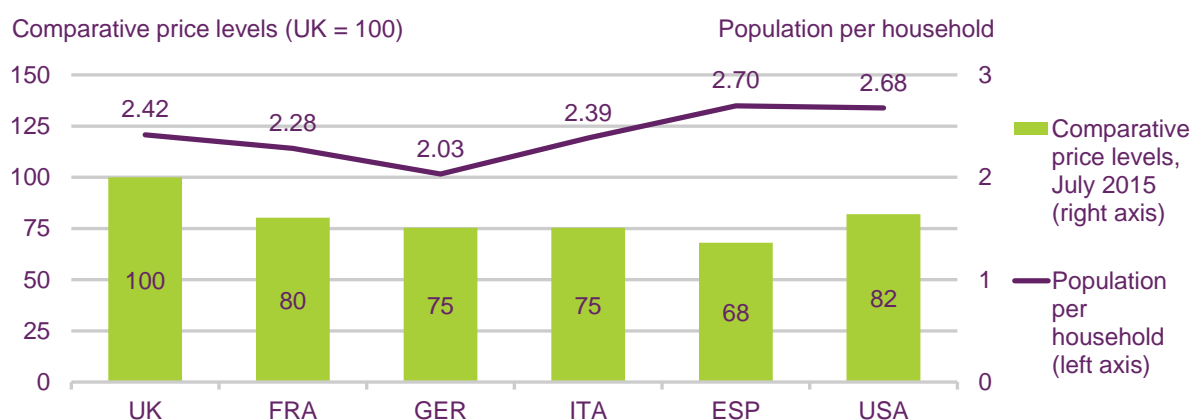
Source: Teligen

Geographic scope

We made pricing comparisons between six countries – the UK, France, Germany, Italy, Spain and the US. These countries have broadly similar socio-demographic, economic and communications-use characteristics. High-level parameters such as population per household and comparative price levels (which is a proxy for cost of living) suggest that fair comparison can be made more easily, as relative prices are not substantially influenced by differences in economic development.

Because of the existence of local markets in the US, we have used tariffs available in the state of Illinois. This was chosen as being reasonably representative of the US as a whole in terms of its relative wealth and rural-urban split. Nevertheless, US pricing should not be viewed as being representative of the whole country.

Figure 10.3 Demographic characteristics and relative price levels across countries



Source: OECD / IMF / US census bureau

Tariff data

For practical reasons, it was not possible to incorporate every tariff from all of the operators in every country. Instead, we set a requirement that the analysis included the three largest operators by retail market share for each service and represented at least 80% of the retail market. Therefore, in markets where the three largest operators had collective market share of over 80%, we limited our analysis to tariffs from these three operators; otherwise we included the fourth and fifth largest operators to ensure that we represented a minimum of 80% of the market. All the operators included by these criteria were also considered for 'bundled' offers. While this methodology excludes smaller operators, which may offer the lowest prices for some services, we believe that using the prices of the largest operators is appropriate, both because they are the best reflection of the general consumer experience and because they are in large part defined by the competitive environment in which they operate.

Research was undertaken in July of each year from 2008 to 2015, and only those tariffs detailed on the websites of the operators were included. Special offers and promotions (for example, reduced line rental for a number of months, or 'free' installation or hardware) were included, but only if they were available to all new customers and were available for the whole month.

Household types

For this study we make reference to five hypothetical 'typical' households, and have defined their requirements for communications services. These household types are designed to be collectively broadly representative of the overall population of the five countries; although in order to provide comparison across the full range, from very basic to advanced communications-service users, we have created significant variation in the contents of the baskets of communications services. The details of the household usage profile composition are provided in Section 2 above.

Figure 10.4 Household types

'Typical' household type		Summary	Fixed voice	Mobile voice	Mobile messaging	Mobile handset data	Fixed line broadband	Mobile broadband	Television
1	Basic needs	A low use household with basic needs	Medium use	Low use	None	None	None	None	Free-to-air
2	Late adopters	A broadband household with basic needs	High use	Low use	Low use	Low use	Low use	None	Free-to-air
3	A mobile 'power user'	A mobile-only household	None	High use	High use	High use 4G	None	High use	Basic pay-TV with DVR
4	Connected family	A family household with multiple needs	Medium use	Medium use	High use	Medium use	Medium use	None	Basic pay-TV with HD & DVR
5	Sophisticated couple	An affluent two person household	Low use	Medium use	Medium use	Medium use	High use superfast	None	Premium pay-TV with HD & DVR

Source: Ofcom

Fixed-line voice services

Fixed-line tariff information

The fixed voice service is assumed to be a home-based fixed telephony service. A household is assumed to have no more than one fixed-line service.

Single fixed-voice services are normally offered on a dedicated analogue line (PSTN services). In the context of bundled services, the fixed voice service may be delivered as a VoIP telephony service over a broadband connection, and these are included in our analysis. From a user point of view, these services are exchangeable, but from a technical point of view they are very different. As connection and line rental charges are covered by the broadband service, the bundled fixed voice services can have zero or very small fixed charges over and above the broadband charges.

Typically, fixed-voice tariffs incorporate some or all of the following types of charging:

- Connection charge and takeover charge.
- Monthly rental charge, plus the monthly charge for any additional options taken.
- Allowances in terms of minutes included per month, or a value deducted from use each month. These allowances are mapped onto the different types of calls and times of day.
- Billing system information.
- Call charges for day, evening and weekend:
 - Local calls
 - Regional calls
 - National calls
 - Calls to mobiles (for each network, weighted)
 - International calls to ten destinations

As such, calls to non-geographic numbers are excluded from the analysis.

The billing system information is used to determine the price elements included in a typical call. Seven types of billing are possible.

Figure 10.5 Types of billing for fixed voice calls

Calculation types	
1	Per second
2	Per unit
3	Per minute
4	Per second with allowance
5	Per second with initial minute
6	Per second capped
7	Per minute capped

Source: *Teligen*

Each tariff is handled individually, and will have the most appropriate call cost calculation system applied.

Fixed voice basket

The fixed voice basket defines the use per month for the household, and calculates the monthly cost of using the fixed voice service. The basket elements are listed below, with values for each of the five households. The cost of customers' equipment is amortised over a five-year period.

Figure 10.6 Components of the fixed voice baskets

	Basket 1	Basket 2	Basket 3	Basket 4	Basket 5	Units
Call durations						
Local	4	4	n/a	4	4	Mins
Regional	6	6	n/a	6	6	Mins
National	6	6	n/a	6	6	Mins
Fixed to mobile	2	2	n/a	2	2	Mins
International	6	6	n/a	6	6	Mins
Destination weights						
Local	67	70	n/a	68	67	%
Regional	10	8	n/a	9	10	%
National	16	13	n/a	14	16	%
Fixed to mobile	7	7	n/a	7	7	%
International	0	2	n/a	2	0	%
Time of day weights						
Day	58.3	58.3	n/a	59.2	58.3	%
Evening	24.5	24.5	n/a	24.9	24.5	%
Weekend	17.2	17.2	n/a	15.9	17.2	%
Depreciation	5	5	5	5	5	years

Source: Teligen

Note: All fixed call types are calculated with five different durations, below and above the number of minutes indicated.

International calls are weighted according to the table below, considering each originating country and each destination country.

Figure 10.7 Fixed voice international call destinations for comparator countries

		Call to									
		CAN	FRA	GER	ITA	JPN	RUS	SAF	ESP	UK	USA
Call from	CAN		2.2%	2.1%	1.7%	1.0%		0.3%		6.5%	86.2%
	FRA	2.8%		25.2%	19.0%	1.4%			13.7%	24.7%	13.2%
	GER	2.7%	21.6%		20.0%	1.7%	2.3%	0.8%	8.6%	20.4%	22.0%
	ITA	3.4%	26.5%	30.3%		1.0%			7.0%	15.6%	16.2%
	JPN	4.4%	5.0%	6.8%	2.5%		1.6%		1.1%	11.5%	67.1%
	RUS	2.2%	8.8%	35.1%	11.8%	2.0%			3.4%	10.6%	26.1%
	SAF	4.4%	5.0%	13.9%	4.4%	1.8%				46.7%	23.7%
	ESP	0.8%	27.6%	23.8%	11.2%	0.7%	0.7%	0.2%		24.0%	10.9%
	UK	6.2%	18.1%	19.5%	8.7%	2.8%		2.7%	8.0%		34.0%
	USA	47.9%	5.6%	12.2%	4.6%	8.7%	1.3%	0.8%	2.2%	16.7%	

Source: Teligen

Note: Vertical axis is the originating country and horizontal is the destination country.

Basket logic

Once the cost of using each fixed voice package is calculated, the cheapest package per provider and per country is identified. These are the packages that are considered in the household cost scenarios. The packages that are part of a bundled offering are identified separately from the single packages.

Fixed voice data issues

Fixed voice services are covered with both direct and indirect services. Any line installation or monthly rental charges incurred by those using indirect services are included in the service costs. Some providers offer a wide range of add-on options for their tariff packages, with possible cost reductions. Where relevant, these have been incorporated in order to identify the lowest prices available for a basket of services.

Mobile services

Mobile tariff information

The mobile service is assumed to be a personal service; a household may have several users with individual usage profiles and requirements. VoIP over mobile networks' services were excluded from the analysis. Typically, the mobile tariffs will use some or all of the following charge categories:

- Connection charge.
- Monthly rental charge, plus the monthly charge for any additional options taken.
- Allowances in terms of call minutes and/or messages included per month, or a value deducted from usage each month. These allowances are mapped onto the different types of calls and times of day.
- Billing system information.
- Call charges for day, evening and weekend:
 - Local calls
 - National calls
 - On-net calls to mobiles
 - Off-net calls to mobiles (for each network, weighted)
 - Voicemail calls
 - International calls to ten destinations
- Data use and technology (3G/4G)
- Messages.

The billing system information is used to determine the price elements included in a typical call. Seven types of billing are possible:

Figure 10.8 Types of billing for mobile voice calls

Calculation types	
1	Per second
2	Per unit
3	Per minute
4	Per second with allowance
5	Per second with initial minute
6	Per second capped
7	Per minute capped

Source: Teligen

Each tariff is handled individually, and will have the most appropriate call calculation system applied.

Mobile basket

The mobile basket defines the use per month for the user, and calculates the monthly cost of using the mobile service. The basket elements are listed below, with values for some of the typical user types. Mobile handsets were assumed to have a three-year life.

Figure 10.9 Components of the mobile baskets

	Basket 1	Basket 2	Basket 3	Basket 4				Basket 5		
	Users 1&2	Users 1&2	User 1	User 1	User 2	User 3	User 4	User 1	User 2	
Call durations										
Local	1.5	1.5	1.7	1.8	1.8	1.5	1.5	1.7	1.8	Mins
National	1.5	1.5	1.7	1.8	1.8	1.5	1.5	1.7	1.8	Mins
On-net	1.6	1.6	1.9	1.9	1.9	1.6	1.6	1.9	1.9	Mins
Off-net	1.4	1.4	1.8	1.7	1.7	1.4	1.4	1.8	1.7	Mins
Voicemail	-	-	1	1	1	1	1	1	1	Mins
International	2	2	2	2	2	2	2	2	2	Mins
Destination weight										
Local	16	16	8	11	13	20	20	13	20	%
National	8	8	5	6	7	10	10	7	10	%
On-net	38	38	37	33	34	30	30	29	30	%
Off-net	38	38	37	33	34	30	30	29	30	%
Voicemail	0	0	7	7	12	10	10	8	10	%
International	0	0	6	10	0	0	0	14	0	%
Time of day weight										
Day	48	48	60	50	50	48	48	60	50	%
Evening	25	25	19	24	24	25	25	19	24	%
Weekend	27	27	21	26	26	27	27	21	26	%

Source: Teligen

Notes: All mobile call types are calculated with five different durations, below and above the number of minutes indicated.

International calls are weighted according to the table below, considering each originating country and each destination country.

Figure 10.10 Mobile voice international call destinations for comparator countries

		Call to									
		CAN	FRA	GER	ITA	JPN	RUS	SAF	ESP	UK	USA
Call from	CAN		2.2%	2.1%	1.7%	1.0%		0.3%		6.5%	86.2%
	FRA	2.8%		25.2%	19.0%	1.4%			13.7%	24.7%	13.2%
	GER	2.7%	21.6%		20.0%	1.7%	2.3%	0.8%	8.6%	20.4%	22.0%
	ITA	3.4%	26.5%	30.3%		1.0%			7.0%	15.6%	16.2%
	JPN	4.4%	5.0%	6.8%	2.5%		1.6%		1.1%	11.5%	67.1%
	RUS	2.2%	8.8%	35.1%	11.8%	2.0%			3.4%	10.6%	26.1%
	SAF	4.4%	5.0%	13.9%	4.4%	1.8%				46.7%	23.7%
	ESP	0.8%	27.6%	23.8%	11.2%	0.7%	0.7%	0.2%		24.0%	10.9%
	UK	6.2%	18.1%	19.5%	8.7%	2.8%		2.7%	8.0%		34.0%
	USA	47.9%	5.6%	12.2%	4.6%	8.7%	1.3%	0.8%	2.2%	16.7%	

Source: Teligen

Note: Vertical axis is the originating country and horizontal is the destination country.

The internet traffic is defined both as megabytes of download volume and minutes of use, as tariffs may be charged according to either of these two methods. Handsets are defined in three categories:

- Basic: 2.5G or basic 3G, above 2MP camera, + MP3 player / FM radio
- Mid-range: 3G smartphone
- High-end: 3G/4G smartphone.

Basket logic

Once the cost of using each mobile package is calculated, the following checks take place:

- Does the package include a handset, or can a suitable handset be included with the package? If not, the cost of a suitable handset, amortised over three years, will be added to the package's monthly usage cost.
- If the basket assumes an amount of data traffic, the package must also be able to offer this. If not, the package will not be considered. In such instances the handset must be compatible with data services.

Then the cheapest package per provider and per country is identified. These are the packages that will be considered in the household cost scenarios. The packages that are part of a bundled offering will be identified separately from the single packages.

Mobile service data issues

Although the model allows for pre-pay and post-pay services to be considered separately, we have not defined whether the mobile phone component in a basket is pre-pay or post-pay. We believe this enables better international comparison, given the very different pre-pay/post-pay splits in different countries (for example, around 90% of Italian mobile connections are pre-pay, while around 90% of US mobile connections are post-pay). However, a consequence of this is that the analysis does not recognise the different characteristics of the services; for example, a pre-pay mobile may be the only option available to consumers with a poor credit rating, and may also offer advantages to those who vary their use month by month.

Allowances or 'free' minutes/ messages/ data are included in the tariffs, and are treated as similarly to the billing system principles as possible (e.g. per-minute or per-second charging). The deduction of minutes and messages will follow the traffic weights defined by the basket profiles.

Broadband services

Broadband tariff information

The broadband services covered may be on any platform typical for home use; the most common are ADSL, cable and fibre. Mobile broadband is included as a separate requirement to fixed broadband for one household basket. Tariffs are categorised by headline speed. Typically, broadband tariffs use some or all of the following charge categories:

Connection charge.

Installation charge, for either self install or engineer install (the cheapest solution is used).

- Purchase price for modem, and possibly router.
- Any specific connection charges paid to the incumbent operator.
- Monthly rental for broadband service.
- Possibly, a monthly price for modem and router rental.
- Any specific rental charges paid to the incumbent operator:
 - Usage time allowance
 - Usage time limit
 - Usage time charge (per minute or hour beyond allowance)
 - Usage data volume allowance
 - Usage data technology for mobile services (3G/4G)
 - Usage data volume limit
 - Usage data volume charge (per MB or GB beyond allowance)
 - Maximum cost per month

Broadband basket

The broadband basket is relatively simple, and basically calculates the monthly cost of using a broadband service in a home environment. The basket parameters are generally given per month. The values below are related to the five defined households.

Figure 10.11 Components of the broadband baskets

	Basket 1	Basket 2	Basket 3	Basket 4	Basket 5
Type of service	n/a	Fixed	Mobile	Fixed	Fixed
Usage time (hours/month)	n/a	100	160	300	500
Usage volume (GB/month)	n/a	25	5	50	75
Session duration (mins)	n/a	20	20	20	20
Minimum speed (Mbit/s)	n/a	5	n/a	10	30
Usage in daytime (%)	n/a	30	30	30	30
Usage in evening (%)	n/a	40	40	40	40
Usage at weekend (%)	n/a	30	30	30	30
Depreciation (years)	n/a	3	1	3	3

Source: Teligen

The 'up to' advertised 'speed of each tariff package is checked against the usage volume, and if the speed is too low to accommodate the traffic indicated, the tariff is excluded from the analysis. The speed of each tariff package is checked against the speed range required by the basket, and if the speed is outside this range the tariff is excluded from the analysis. If the tariff package has a penalty for excess use whereby the speed delivered is 'throttled', the tariff is excluded from the analysis once this penalty takes effect. The resulting cost is presented as connection/set-up cost, rental and use.

- The monthly connection/set-up cost is the sum of all one-off charges (including any discount/promotions), amortised over three years.
- The rental cost is the sum of all monthly charges.
- The usage cost is calculated from any per-minute or per-MB charges. The session durations and usage volumes of the baskets are used for this calculation, along with any time or volume allowances.

Basket logic

Once the cost of using each package is calculated, the following checks take place:

- If the package uses a limiting mechanism that will take effect when the allowance is exceeded, the status of this limit has to be checked. If it turns out that the package is not able to accommodate the traffic defined in the basket within this allowance, and that download speed will be limited as a result, the package cannot be considered.
- If the download speed of the package is outside the range defined by the basket, the package will not be considered.
- The basket will define whether a fixed or wireless package is used, and this will also be checked.
- The resulting total monthly cost of the remaining packages will be compared, and the cheapest package from each provider and also for each country will be identified.

Broadband data issues

Broadband services of different types are covered: ADSL, cable and fibre as well as wireless. The bitrates used are the headline 'up to' speeds published by the provider, not considering any speed reductions caused by local circumstances. Only the download speed is considered, although the upload speed is also covered. Where available, the prices for both self-installation and engineer installation are covered. However, in some cases only one of these may be available. The cheapest option is always used.

It is common to have special offers with reduced rental for the first few months. This is included wherever it applies, given that the promotional offer is valid in the month of tariff data collection (July 2014 and July 2015). The monthly rental is then averaged over the depreciation period of three years. The research shows that some providers will only offer broadband services bundled with other services, as a bundled package. Hence there will not always be stand-alone offers for all providers listed.

Television services

Television tariff information

Television services are probably those where there is most variance between the countries in terms of services' description and quality. In this benchmarking study the television services covered fall into three categories:

- Basic service with a range of free-to-air channels.
- Basic pay-TV service, with a basic set of channels beyond the free-to-air channels.
- Premium service, based on the provider's top-of-the-range offering, including top league football/NFL matches and a top-price film/entertainment package.

Two additional parameters will be considered:

- Whether or not a digital recording (DVR) facility is included in the set-top box.
- Whether or not high definition (HD) services are included.

The basket definitions below will show how these parameters are defined for each of the households.

Television services will cover the most relevant offerings from each provider based on the two broad definitions above. Typically, television tariffs will use some or all of the following charge categories:

- Connection charge.
- One-off charges for the set-top box (STB) and digital video recorder (DVR).
- Monthly rental for basic television service.
- Monthly rental for additional channel packages.
- Monthly rental for hardware (STB, DVR).
- Licence fee.

The cost of the TV set is excluded from the analysis.

Television basket

The television basket is relatively simple, and calculates the monthly cost of having the relevant channel package, together with the cost of installation and/or equipment amortised over three years. The basket parameters are generally given per month. The values below are related to the five defined households.

Figure 10.12 Components of the television baskets

	Basket 1	Basket 2	Basket 3	Basket 4	Basket 5
Free-to-air or pay-TV	Free-to-air	Free-to-air	Pay-TV	Pay-TV	Pay-TV
HD capable	No	No	No	Yes	Yes
DVR included	No	No	Yes	Yes	Yes
Football channels	No	No	No	No	Yes
Movie channels	No	No	No	No	Yes
Depreciation	3	3	3	3	3

Source: Teligen

Basket logic

Once the charges for using each television package are calculated, the following checks take place:

- Is the number of channels offered in the package equal to or above the minimum number of channels defined in the basket?
- Is HD capability required by the basket and offered by the package?
- Are a top price film/entertainment package and top-level football / NFL required by the basket and offered by the package?

If any of these are answered with a “no”, the package will not be considered. The cheapest package is identified for each provider and for each country, and these are used in the household cost assessment.

Television data issues

The television data have been limited to packages offering channels that are within the basket definition, largely resulting in three categories of offers:

- Basic ‘free-to-air’ packages over a digital transmission network.
- Basic pay-TV access with no special programme requirements.
- HD premium pay-TV access, including premium channels with a top-price film/entertainment package and top-level football/NFL matches. This option requires hardware with a DVR capability.

A vast number of optional offers exist, and it is not feasible to cover them all.

Purchasing power parity adjustment

All prices have been converted back to UK currency, using a purchasing power parity (PPP) adjustment based on OECD comparative price levels in July 2015 and exchange rates as at 1 July 2015. Comparative price levels represent the number of specified monetary units necessary to buy the same representative basket of consumer goods and services, relative to any specified country (in this case, the UK), and enable a comparison of relative consumer pricing for any product or service.

In addition, in order to ensure that the changes we identify within countries have been driven by changes in the market, rather than simply by changes in the currency exchange rate, we have used the exchange rate used for 2014 and applied it to 2013 data.

Figure 10.13 Purchasing power parity conversion rates

Country	Currency	Exchange rate August 2013 to July 2014 (£)	Comparative price level (July 2014)	PPP adjusted rate (£)
UK	GBP (£)	1.00	100.00	100.00
FRA	EUR (€)	1.41	80.33	112.99
GER	EUR (€)	1.41	75.41	106.07
ITA	EUR (€)	1.41	75.41	106.07
ESP	EUR (€)	1.41	68.03	95.70
USA	USD (\$)	1.57	81.97	128.93

Source: Teligon, using OECD data

Analysis

Having identified the lowest prices for each single service from each of the three largest operators in each country, and the lowest-price 'bundled' services appropriate to meet the needs of all, or part of, each basket, we performed two types of analysis, which are detailed in the write-up of the findings:

- The 'average stand-alone' price for each of the components in every household usage profile (fixed-line voice, broadband, post-pay mobile, pre-pay mobile, pay TV). This was calculated as the average of the lowest-price tariffs from every provider of each service in each country, weighted by the market share of the service provider in order to ensure fair representation.
- The 'average bundle' price for each household usage profile. This is calculated as the average of the lowest-price tariffs from every provider of suitable bundled services in each country (plus separate stand-alone services where a bundle does not include all of the services required by the household), weighted by their fixed broadband market shares. It should be noted that fixed broadband shares are used to weight the results regardless of whether or not the bundles in question include fixed broadband.
- The 'lowest available' price available for each household. This identifies the lowest price that a consumer could pay for this basket of services, including, where appropriate, by purchasing 'bundled' services. This was calculated by identifying the lowest price from any tariff for each component of every basket, together with the lowest-price bundled services suitable for the basket, and identifying the overall lowest price available.

We believe all three types of analysis are important for providing an overall understanding of comparative pricing.

Stand-alone pricing provides a useful comparison of the relative costs of communications services, and, because it is an average weighted by market share, it provides a good indication of the prices that many consumers are actually paying. However, an important limitation is that stand-alone offers are sometimes not available from leading suppliers. For example, in the UK, TalkTalk offers broadband only with its fixed-voice service.

We believe the inclusion of 'average bundle' and 'lowest available' pricing is also essential to understand the pricing of communications services, which are increasingly being delivered as multi-service propositions (examples in the UK include TalkTalk and Sky's triple-play offers which provide TV, fixed voice and fixed broadband, and Virgin Media's quad-play offer which includes TV, fixed voice, fixed broadband and mobile). However, a limitation is that 'bundled' service offerings are typically not available to all consumers, as they are generally geographically confined to areas where premises are connected either to a cable network or to an unbundled telephone exchange. And although focusing on the 'lowest available' provides insight into the lowest prices available to some customers, it is not as good a reflection of the prices that consumers are actually paying as the 'weighted average' analysis that is possible when looking at stand-alone pricing.

Limitations

One of our key learnings in constructing international price comparison models is that it is a very problematic exercise, which requires assumptions to be made and imposes 'like-for-like' comparisons on markets that are very different. In future years, we will look to continue to improve our methodology, and we welcome any feedback on the research.

We highlight the following limitations to the analysis:

- The analysis assumes a systematic and rational consumer who has a full understanding of his or her usage requirements and is prepared to shop around and undertake some often quite complex calculations to identify the tariff which offers the best value. In reality, few consumers act in this way and will be on the lowest-cost combination of services for their usage profile, but we believe the assumption is necessary in order to provide effective international comparisons.
- In looking only at tariffs offered by the largest operators in each country, lower prices which might be available from smaller operators seeking to disrupt markets are not included, purely for practical reasons. Nevertheless, we believe that using the prices of the largest operators is appropriate, both because they are the best reflection of the general consumer experience and because their pricing both defines and is defined by the competitive environment in which they operate.
- Although we have been as comprehensive as possible, tariffs are often highly complicated and there are some components that we have been unable to incorporate into our model; for example, benefits that are available only to certain types of consumers, such as *BT Basic* which offers lower-price line rental to consumers on income support, and differing levels of customer service.
- In order to calculate the weighted average, we have used market share calculations based on operators' retail customers. Market share calculations are based on the overall subscriber base, not the subscriber base for the particular tariff (for which figures are not available).

- Pay-TV services are a component of three of the baskets we examine. However, it has not been possible to compare like-for-like subscriptions, principally because of differences in the composition of basic and premium channels across the six countries. As a consequence, quantitative comparison of international TV pricing is arguably less meaningful than for telecoms services. This is also an issue in the pricing of 'triple-play' services, where there is a wide variation in the types of TV content.
- For television services in some countries there are only two operators with nationwide coverage and/or significant market share (or only one, for some premium TV offerings). In these instances, we have identified the best-value tariff from each of them and calculated a blended average based on their market shares.
- Some services are not available nationwide. This is particularly true for services which are available only where local exchanges have been unbundled, and for IPTV, which requires a high-speed broadband connection, but is also true for cable TV and all types of broadband.
- We do not define whether the mobile phone component in a household usage profile is pre-pay or post-pay. We believe this enables better international comparison, given the very different pre-pay / post-pay splits in different countries (for example, over 75% of mobile connections in Italy, but less than 20% in France, are pre-pay). However, a consequence of this is that the analysis does not recognise the different characteristics of the services; for example, a pre-pay mobile may be the only option available to consumers with a poor credit rating and may also offer advantages to those who vary their use month by month.
- Representative pricing in the US as a whole is difficult, due to large regional variations as a result of local incumbent telco operators and cable operators offering localised prices for fixed-line services. We use only those tariffs available within the state of Illinois, chosen because it is broadly representative of the US as a whole in terms of its relative wealth and rural-urban split (it incorporates the city of Chicago as well as large agricultural regions). Nevertheless, US pricing should not be viewed as representative of the whole country.
- In order to ensure that the changes we identify within countries have been driven by changes in the market rather than simply by changes in the currency exchange rate, we have used the same PPP-adjusted exchange rate in 2015 and applied it to 2014 data. This means that there may be some distortions in the relative positions of countries compared to the findings in the 2014 report. The prices quoted are in nominal terms.



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Glossary and Table of Figures

Glossary

2.5G In mobile telephony, 2.5G protocols extend 2G systems to provide additional features such as packet-switched connections (GPRS) and higher-speed data communications.

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

3.5G Refers to evolutionary upgrades to 3G services, starting in 2005-2006, that provide significantly enhanced performance. High Speed Downlink Packet Access is expected to become the most popular 3.5G technology (see HSDPA).

3DTV Three-dimensional television. A television viewing system whereby a 3D effect is created for the viewer. The 3D image is generated using red and blue colour tints on two overlaid images intended for left and right eye. Some forms of 3D TV can involve the viewer wearing glasses (stereoscopic) but more advanced systems do not require glasses (auto-stereoscopic).

3G LTE See LTE

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.

802.11 see Wireless LANs (WiFi)

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.

ADSL2+ A technology which extends the maximum theoretical downstream data speed of ADSL from 8Mbit/s to 24Mbit/s/

ADSL Max BT's range of commercial ADSL services.

ADS-RSLs Audio distribution systems restricted service licences. These licences are issued for broadcast radio services using spectrum outside the 'traditional' broadcast bands (i.e. FM and AM). Typically offering commentary and other information for attendees within a stadium or venue on specially-designed radio receivers for sale at the event (as they do not use standard broadcast frequencies).

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 in the UK.

Bit-rates The rate at which digital information is carried within a specified communication channel.

BitTorrent A peer-to-peer file sharing protocol which uses 'trackers' on websites to index content and is used by a number of BitTorrent clients to download and upload content.

Blog Short for weblog. A weblog is a journal (or newsletter) that is frequently updated and intended for general public consumption. Blogs generally represent the personality of the author or the website.

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 $CAGR = (\text{present value}/\text{base value})^{(1/\#\text{of years})} - 1$

Catch-up TV Usually refers to services that allow consumers to watch or listen to content on a non-live basis after the initial broadcast.

Communications Act Communications Act 2003, which came into force in July 2003.

Connected TV Any television set connected to the internet either directly (such as a smart TV) or via another device such as a set-top box, video game console or other internet-enabled devices.

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

CPS Carrier pre-selection. The facility offered to customers which allows them to opt for certain defined classes of call to be carried by an operator, selected in advance and with

whom they have a contract. CPS does not require the customer to dial a routing prefix or use a dialler box.

DAB Digital audio broadcasting. A set of internationally-accepted standards for the technology by which terrestrial digital radio multiplex services are broadcast in the UK.

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 Britain The government report, published in June 2009, outlining a “strategic vision for ensuring that the UK is at the leading edge of the global digital economy”.

Digital broadcast radio Uses digital technology to transmit radio services. This includes the DAB set of internationally-accepted standards, plus other technologies such as HD radio and Integrated Services Digital Broadcasting (ISDB).

Digital switchover The process of switching over the analogue television or radio broadcasting system to digital.

Direct mail Addressed advertising mail

DMB Digital mobile broadcasting. A variant of the DAB digital radio standard for mobile TV services, and an alternative to DVB-H (see DVB, below).

Dongle A physical device, attached to a PC's USB port, which adds hardware capabilities.

Downstream access Access to Royal Mail's postal network at an inward mail centre or at any point in the postal chain after that.

Downstream The activities of inward sortation and delivery.

DRM Digital rights management. The technology that controls access and use of digital content.

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).

DTR See DVR

DTT Digital terrestrial television. The television technology that carries the Freeview service.

Dual-carrier LTE 4G A 4G LTE mobile service which uses double the bandwidth of standard LTE services, resulting in a higher data rate.

DVB Digital video broadcasting. A set of internationally-accepted open standards for digital broadcasting, including standards for distribution by satellite, cable, radio and hand-held devices (the latter known as DVB-H). The DVB Project develops the standards.

DVB-T2. The latest digital terrestrial transmission technology developed by DVB. The technology is being used to facilitate the introduction of HDTV on DTT in the UK. DVB-S2 (satellite) and DVB-C2 (cable) are also available.

DVD Digital versatile disc. A high-capacity CD-size disc for carrying audio-visual content. Initially available as read-only, but recordable formats are now available.

DVR Digital video recorder (also known as 'personal video recorder' and '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.

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.

E-retail Distance shopping, using online services to order and pay for goods

EST Electronic sell-through. For the purposes of this report electronic sell-through is audio visual content that is purchased and a copy permanently kept, ie not rented.

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-last-amplifier (FTTLA) A form of fibre-optic communication delivery in which the last stage of the access network is delivered by Hybrid fibre-coaxial (HFC) cable that is run directly onto the customer's premises.

Fibre-to-the-building (FTTB) A form of fibre-optic communication delivery in which an optical fibre is run directly onto the customer's premises.

Fibre-to-the-cabinet (FTTC) Access network consisting of optical fibre extending from the access node to the street cabinet. The street cabinet is usually located only a few hundred metres from the subscriber premises. The remaining segment of the access network from the cabinet to the customer is usually a copper pair but could use another technology, such as wireless.

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

Fibre-to-the-premises (FTTP) 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.

Free-to-air Broadcast content that people can watch or listen to without having to pay a subscription.

Fulfilment mail Requested goods including tickets, brochures, packets and parcels

GDP Gross Domestic Product.

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.

GSM Global standard for mobile telephony, the standard used for 2G mobile systems.

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

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.

HSPA Jointly, downlink and uplink mobile broadband technologies are referred to as HSPA (high speed packet access) services.

Hyper-local website An online news or content services pertaining to a town, village, single postcode or other small geographically-defined community.

IDTV Integrated digital television set. A television set that includes a digital tuner (as well as analogue) and therefore does not require an additional set-top box to receive digital television. IDTVs are most commonly capable of receiving DTT but also digital satellite (Freesat).

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.

Internet-enabled TV An umbrella term covering any television set connected to the internet via a third-party device, such as a set-top box, a games console, a laptop/PC or other internet-enabled device.

Internet property A full domain (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.

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 the television platform that delivers channels to viewers using internet protocol (IP) technology over a broadband connection. For the purposes of this report, hybrid systems such as BT TV in the UK (i.e. those that provide television services through both an aerial and an IP connection) are considered IPTV platforms.

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.

ITC Independent Television Commission, one of the regulators replaced by Ofcom in 2003

ITV All references to ITV should be read as including STV, UTV and Channel Television.

ITV licensees ITV Broadcasting Limited, STV, UTV and Channel Television.

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.

L-Band A range of frequencies within which an allocation has been made in much of the world for broadcasting (1452 to 1492 MHz), generally by satellite, but in Europe for terrestrial digital sound broadcasting in the range 1452 to 1480 MHz. Some DAB digital radio receivers can tune to this range.

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.

L-RSL See also S-RSLs – Long Term Restricted Service Licences. L-RSLs are a means of providing a radio service for a non-resident population within a defined establishment such as hospital patients and staff, students on a campus, or army personnel. They are available

on demand, provided they meet the licensing criteria and that a suitable frequency is available. Licences are renewable after the initial five-year term.

LTE (Long-term evolution). Part of the development of 4G mobile systems that started with 2G and 3G networks (also see dual-carrier LTE 4G).

Machine to machine (M2M) – wired and wireless technologies that allow systems to communicate with each other.

Mail centre A facility serving a geographical area used for the sortation of postal packets

Micro-blogging short form blogging, where posts are typically small elements of content such as short sentences, individual images or video links.

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.

Modem sync speed The data rate at which a broadband network negotiates with a modem and the maximum data rate that a particular broadband service can support.

MP3 (MPEG-1 Audio Layer-3) A standard technology and format for compressing a sound sequence into a very small file (about one-twelfth the size of the original file) while preserving the original level of sound quality when it is played.

MP3 player A device that is able to store and play back MP3 files.

MPEG Moving Picture Experts Group. A set of international standards for compression and transmission of digital audio-visual content. Most digital television services in the UK use MPEG2, but MPEG4 offers greater efficiency and is likely to be used for new services including TV over DSL and high-definition TV.

Multichannel In the UK, this refers to the provision or receipt of television services other than the main five channels (BBC One and Two, ITV, Channel 4/S4C and Channel 5) before digital switchover took place in 2012. 'Multichannel homes' comprised all those with digital terrestrial TV, satellite TV, cable TV or TV over broadband, excluding analogue terrestrial only homes

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 MF 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.

Near video on demand (NVoD), a service based on a linear schedule that is regularly repeated on multiple channels, usually at 15-minute intervals, so that viewers are never more than 15 minutes away from the start of the next transmission.

Net neutrality The principle that all traffic on the internet should be treated equally, regardless of content, site or platform.

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.

Next-generation core networks (NGN) Internet protocol-based core networks which can support a variety of existing and new services, typically replacing multiple, single service legacy networks

Non-linear Content that is delivered 'on demand' as opposed to live TV

Ofcom Office of Telecommunications, whose functions transferred to Ofcom on 29 December 2003.

'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 18:00 and 22:30 each day (including weekends).

Peer-to-peer (P2P) distribution The process of directly transferring information, services or products between users or devices that operate on the same hierarchical level.

Pipeline Stages involved in the production and distribution process of a good or service from the initiation of the process to the delivery of the final product. In postal services the pipeline refers to the stages from collection to delivery of a postal item.

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

PSB Public service broadcasting, or public service broadcaster. The Communications Act in the UK defines the PSBs as including all BBC channels, ITV (including GMTV, STV and UTV), Channel 4, Channel 5 main channels 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

'Pull' VOD A video-on-demand system where content is delivered in real time to the viewers. The approach is usually favoured on platforms that have a high-speed return path, such as cable or IPTV

‘Push’ VOD A video-on-demand system where content is downloaded to the hard disk of a set-top box rather than streamed in real time via a wired network. The approach is usually favoured on platforms that do not have a high-speed return path, such as satellite or terrestrial.

PVR See DVR

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

Registered items A service of conveying postal packets from one place to another by post which provides for the registration of the packets in connection with their conveyance by post and for the payment of an amount determined by the person providing the service in the event of the theft or loss or damage to the packets

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.

RSL Restricted service licence. A radio licence serving a single site (e.g. a hospital or university campus) or serving a wider area on a temporary basis (e.g. for festivals and events).

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

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

Share (radio) Proportion of total listener hours, expressed as a percentage, attributable to one station within that station’s total survey area.

Share (TV) The percentage of the total TV viewing audience watching over a given period of time. This can apply to channels, programmes, time periods etc

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).

Smart glasses

1. A wearable computer that displays information in the wearer’s field of vision and may support speech interaction. Much of the information is retrieved via a mobile network internet connection, although this link may require use of a mobile phone connected wirelessly to the glasses. Typical applications include mapping and directions, phone call initiation and answering, and taking photographs and videos.
2. A secondary category of smart glasses, designed for use by people with visual impairments, using sensors to provide higher-contrast display of objects in front of the wearer.

Smartphone A mobile phone that offers more advanced computing ability and connectivity than a contemporary basic 'feature phone'.

Smart TV A standalone television set with inbuilt internet functionality, allowing users to either connect a broadband router directly into the TV or to connect wirelessly.

Smartwatch 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.

S-RSLs Short-term restricted service licences (S-RSLs) are issued for temporary local radio stations which usually serve a very localised coverage area, such as an education campus, a sports event, or a music or religious festival site. These licences are also used for temporary trials of community stations, sometimes to gauge interest before applying for a five-year community licence.

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 actual modem sync speeds of 30Mbit/s or higher

Superfast product Fixed-line broadband with headline speeds of more than or equal to 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-shifting In the UK, the recording of programmes by viewers (using DVRs, recordable DVDs or VCRs) to watch at another time, or using catch-up 'player' services through the TV set. It can sometimes refer to the broadcast of a television programme on more than one channel with a specified delay (typically an hour to provide more than one opportunity for viewers to watch the service). These are most commonly known as '+1' channel services. In reported UK viewing data from BARB, time-shifted viewing applies to the former.

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 more simple 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.

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

TVWF Television Without Frontiers. A range of provisions designed to achieve coordination of the legal, regulatory and administrative frameworks of European Union member states with respect to television broadcasting, adopted by the European Council in 1989 and amended in 1997. TVWF was replaced by the Audio Visual Media Services (AVMS) Directive in December 2007.

UKOM UK Online Measurement. A media industry measurement of UK consumers' online activity, specified by UKOM Ltd and delivered by comScore.

UKPIL UK Parcels, International and Letters is a division of Royal Mail Group which comprises parcels, international and media & unaddressed mail services

UMA Unlicensed Mobile Access, a technology that provides roaming between GSM and 802.11 WiFi

UMTS Universal mobile telecommunications system. The 3G mobile technologies most commonly used in the UK and Europe.

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

Unbundled A local exchange that has been subject to local loop unbundling (LLU).

Unique audience The number of different people visiting a website or using an application.

Usage caps Monthly limits on the amount of data which broadband users can download, imposed by some ISPs.

UWB Ultra-wideband A technology developed to transfer large amounts of data wirelessly over short distances, typically less than ten metres.

VCR Video cassette recorder.

VDSL Very High Speed DSL A high speed variant of DSL technology, which provides a high headline speed through reducing the length of the access line copper by connecting to fibre at the cabinet.

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).

VOD Video-on-demand A service or technology that enables TV viewers to watch programmes or films whenever they choose to, not restricted by a linear schedule (also see 'push' VOD and 'pull' VOD).

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.

WAP Wireless application protocol.

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

Widget Widgets are small chunks of code embedded on desktops, web pages, mobile phones and TVs to enable content to be distributed.

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

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

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

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

XHTML (Extensible HTML) A mark-up language for web pages from the W3C. XHTML combines HTML and XML into a single format (HTML 4.0 and XML 1.0).

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