



# International Communications Market Report 2011

Research Document

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# Introduction

## Purpose of this report

This is the sixth year that 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.

The report compares the availability, take-up and use of services in the UK and 16 comparator countries - France, Germany, Italy, the US, Canada, Japan, Australia, Spain, the Netherlands, Sweden, Ireland, Poland, Brazil, Russia, India and China, although we focus on a smaller sub-set of comparator countries for some of our analysis.

We are publishing this report as part of our commitment to continuously research markets and to remain at the forefront of consumer, industry and technological understanding, as we outlined in our 2011/12 Annual Plan.<sup>1</sup> This report complements other research published by Ofcom and forms part of the Communications Market series, which includes the *UK Communications Market Report* and specific reports for Northern Ireland, Scotland and Wales (all published in August 2011).<sup>2</sup>

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, better enabling us to understand how our actions and priorities can influence outcomes for citizens and consumers, and for communications markets generally.

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

Data in this report generally cover the 2010 calendar year. We show trends using a five-year historical time series wherever possible.

All currency conversions use the average market exchange rate across 2010, as provided by the International Monetary Fund (IMF).<sup>3</sup> 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 B). All figures in this report are nominal unless otherwise stated.

This report draws on a combination of desk and custom research, as well as discussions with industry bodies, operators, regulators and commentators. The data were gathered with the support of, among others, consultancy firm IDATE, which 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

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<sup>1</sup> <http://www.ofcom.org.uk/about/annual-reports-and-plans/annual-plans/annual-plan-2011-12/>

<sup>2</sup> <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr11/>

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

international pricing, and populated it with specifically-sourced tariff data (collected in July 2011). 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. Similarly, some UK data published in this report may not be directly comparable with data published in other Ofcom reports, such as the *UK Communications Market Report*.

Among others, thanks are due to Analysys Mason, comScore, IMRG, Kantar Media, Eurostat, Eurodata TV Worldwide, The European Commission, Forrester Research, IDATE, Mediametrie, The Nielsen Company, PricewaterhouseCoopers, Teligen, US Census Bureau and the World Advertising Research Centre.

This report is wide in scope, and because of the reliance on third-party data we cannot always fully authorise the accuracy of data. We have, however, attempted to ensure that the data in this report are comprehensive and the most accurate currently available.

Comments and feedback on this report are very much encouraged and welcomed at [market.intelligence@ofcom.org.uk](mailto:market.intelligence@ofcom.org.uk).

## Structure of the report

The report is divided into six chapters:

- **The UK in context (page 12)** 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 new consumer research, focusing on use of and attitudes towards social networking sites, and a brief overview of plans for a 'Broadband Best In Europe scorecard' which aims to benchmark the UK broadband market against the rest of Europe.
- **Comparative international pricing (page 71)** compares the typical prices people pay across our main comparator countries, for a range of different 'baskets' of communications services.
- **Television and audio-visual (page 109)** considers developments in broadcast and audio-visual services and compares the industries and consumer experience among our comparator countries. This section also examines patterns of digital television take-up, including adoption of high-definition services, digital video recorders, 3DTV and internet-connected televisions; as well as consumption of TV online.
- **Radio and audio (page 151)** compares and summarises key data, including revenue and listening 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 increasing use of audio services online and via mobile devices.
- **Internet and web-based content (page 169)** examines the impact of the internet across our key comparator countries. This section takes a high-level look at aspects of internet use, in terms of platforms and devices, as well as content and consumption.
- **Telecoms (page 217)** examines the major trends in the telecommunications markets from an industry and operator perspective, and in the availability and use of telecoms services, in our 17 comparator countries. We provide an overview of the industry as a whole, and individual markets in more depth, including analysis of fixed voice, mobile voice and data services and fixed-broadband services.

We also include a list of key points for each of the chapters, which serve as a summary of the main findings.

## Key points: the UK in context

- **Global communications sector revenues increased by 3.4% in 2010 to £1,132bn.** Overall, subscription revenues account for the vast majority of global service revenues - representing 87% (£986bn) of total revenue in 2010.
- **The UK communications sector generated £39bn of revenues in 2010, compared to £49bn for Germany and £44bn for France.** The US had the world's largest communications sector revenues, at £249bn, followed by Japan (£110bn) and China (£85bn). The US also had the highest revenue per head, at £949, compared to £630 in the UK.
- **At £119bn, global advertising revenues increased by 9% in 2010, climbing back to 2007 and 2008 levels.** Advertising revenue, at £119bn, accounted for 11% of the total in 2010, marginally down from its 12% share in 2006.
- **TV advertising spend remained the largest single component of advertising revenues (44%), although internet advertising continued to grow, to a record high of £44bn in 2010** (from £37bn in 2009) accounting for over 15% of total advertising expenditure. Internet advertising in the UK is almost on a par with television advertising, representing 29% of total advertising spend compared to 30% for television advertising.
- **Among the markets interviewed in our consumer research the majority of consumers have visited a social networking website.** Just under eight in ten (79%) UK consumers claim to have visited a social networking website. Consumers in Italy are the most likely to have done this, at 91%.
- **The majority of UK consumers with a social networking profile visit it on a daily basis.** Seventy-one per cent of those interviewed in the UK with a social networking profile claimed to visit a social networking site at least once a day. This includes 20% who visit a social networking website five times a day or more.
- **Between 30% and 40% of UK consumers use a mobile phone to access their social network profile page.** UK consumers are the most likely to access a social networking website via a mobile phone, with just over four in ten (43%) accessing their profile page via an app or the web browser on their mobile phone.
- **Over 60% of UK consumers have concerns about their personal privacy online and how their personal data are used by social networking websites.** Just under seven in ten consumers (69%) in the UK with a social networking profile page agreed with the statement "I have concerns about how my personal data is being used by social networking sites"; this is lower than any of the other countries surveyed.
- **Women and younger age groups with a social networking profile are the most likely to first discover breaking news stories via social networking websites.** Forty-three per cent of women in the UK agreed that they often find out about new breaking stories first via social networking sites; compared to just over a quarter of men (27%) who agreed with this statement. Just over half (51%) of 18 to 24 year-olds in the UK with a social networking profile also agreed with the statement (the highest level of agreement among 18-24 years olds interviewed in the other markets was in France and Italy (61%), with the lowest in Germany (30%).

# Key points: comparative international pricing

- **Overall, prices in the UK compare favorably to those in France, Germany, Italy, Spain and the US.** We compared the pricing of five 'baskets' of services representative of the communications use of five typical households, and found that the UK offers the lowest prices for all five baskets when looking at the 'weighted average' of single-service pricing, and for three of the five baskets when looking at 'best-offer' pricing.
- **Much of this difference is due to lower mobile prices in the UK than in the other countries** – with the UK offering the lowest prices for all nine mobile connections included in the analysis
- **In the UK, France, Germany and Italy, prices for the low-use mobile connections increased between July 2010 and July 2011**, indicating an increase in low-use pre-pay services.
- **The UK offered the lowest prices for standalone fixed voice services**, in terms of the weighted average prices. The launch of BT's *Line Rental Saver* service, which offers discounted line rental for those paying 12 months in advance, brought down prices between July 2010 and July 2011, although if this tariff is excluded from the analysis, they increased by 7%.
- **The lowest-price standalone broadband services were available in the UK and France.** However, in most countries broadband is typically bought in a 'bundle' with voice services and/or other communications services. A bundle of basic voice and broadband services (Basket 2) was least expensive in the UK, but a 'triple-play' bundle of voice, broadband and TV services (Basket 4) was least expensive in Germany.
- **Mobile broadband prices in the UK were the second lowest after Italy.** Prices in the UK, Germany and the US increased between July 2010 and July 2011 due to higher prices for high-use connections, as some operators withdrew tariffs with the most generous inclusive data bundles and moved toward tiered pricing based on data use.
- **Prices for 'basic' pay-TV services were lowest in France, Italy and the UK.** Although it is difficult to compare premium pay-TV services (which we define as premium films and football in HD), prices were higher in the UK than in the other European countries, and increased (by 5%) between July 2010 and July 2011.
- **Consumers in all countries could make savings by purchasing multi-service 'bundles'.** The greatest savings, compared to purchasing standalone services, were available in France, where a 'quad-play' bundle including voice, broadband, TV and phone offered the lowest prices for a basket of services typical of a family (Basket 4 - £79). The UK offered the second lowest price for this basket (£103), 10% higher than in July 2010, driven mainly by higher prices for the low-use mobile phones.



## Key points: TV and audio-visual

- **Global TV revenues increased in 2010, by 7.7% year on year to £239bn**, following a recovery in the advertising market (up 9.9% since 2009) and continued growth in subscription income (up 7.1% since 2009). The UK is the largest TV market in Europe, recording an 8.5% increase to 11.3bn, compared to £11.0bn for Germany in 2010 (up 2.0% on 2009).
- **Digital TV penetration during 2010 rose in all the countries included in this analysis**, with take-up highest in the UK (97%), France (93%) and Spain (98%). The largest year-on-year increase in take-up of digital television was among homes in Brazil, where penetration rose by 20 percentage points to 59% of households in 2010.
- **Despite the growing take-up of a range of digital media technologies, minutes per head of TV viewing rose in 2010 in many countries.** TV was most popular among people in the US, who each watched an average of 283 minutes per day, up by 1.1% year on year. The equivalent figure in the UK was 242 minutes – up by 7.6%.
- **Pay-TV take-up at the end of 2010 was highest in the Netherlands (98%) and Sweden (93%), alongside India (82%), the US (88%) and Canada (91%);** this compared to take-up of 52% in the UK (up 0.5pp). Growth in penetration was highest in Russia (up by 6.4pp), Ireland (up by 5pp), France (+4.6pp), Japan (+3.8pp) and Brazil (+3.4pp).
- **Consumers continue to embrace high definition TV as channel line-ups grow.** Penetration in the UK increased by a third in 2010, to 21% of main television sets, while HDTV in France and the US entered the mainstream, with penetration for the first time reaching a majority of households (60% (up by 18pp) and 54% (up by 9pp) respectively).
- **Digital video recorders (DVRs) are increasingly prevalent among homes in comparator countries.** Take-up of these devices was highest in the US, where take-up stood at 41% in Q4 2011 (up by 2pp year on year). The UK ranked second, with penetration rising to 36% over the period (up by 4pp – the largest increase among the countries in this survey).
- **Technologies that have become available more recently are beginning to gather momentum among consumers.** Thirteen per cent of consumers in France claim to have an television that can connect to the internet. In Australia, the comparable figure was 9%; in the UK and the US it was 7%. Ten per cent of viewers in Italy claim their main television set is 3D-ready, alongside 8% of those in Germany, 7% in France and 6% in the UK and Australia.
- **Over a quarter (27%) of UK internet users claim to access TV content over the web** (using any device) **every week, up 3pp in twelve months**, driven by the popularity of online catch-up services such as BBC iPlayer and 4OD. This was the highest claimed usage among the six countries included in our research, with take-up second highest in the US (23%), followed by Australia and France (both 17%). This is in the context of low take-up of IPTV in the UK, where only 1% of homes in the UK claim to have the service on their main television sets (compared to 24% in France and 6% in the US).

## Key points: radio and audio

- **Global radio revenue was up by 5% year on year, reaching £29bn in 2010, following a 9% fall between 2008 and 2009.** Advertising accounted for 68% (£19.7bn), public funding for just over a quarter (26% or £7.5bn) and subscriber revenue for the remaining 6% (£1.8bn).
- **Among the 17 comparator countries analysed in this report radio revenue reached £25bn in 2010 (86% of the global total), up by 5% from 2009.** With the exception of Ireland, Spain, Poland and Japan, radio revenues across the comparator countries experienced year-on-year increases. Russia's market, funded by advertisements, showed the greatest relative increase (12%), followed by China and Brazil, both at 11%. The UK radio revenues rose by £31m in 2010, up 2.8%, to reach £1.1bn year on year
- **By country, the biggest increases were in the radio markets of Brazil, India and China, whose markets rose by an annualised average of 13.1%, 18.9% and 13.4% respectively.** The Russian and Spanish markets each contracted by 4.7% p.a. over the same period, while in the US and Poland they fell by an annual average of 4.1%.
- **Over a four-year period, global radio revenues fell by 4.3%, with advertising revenue declining by 12%.** This was the principal driver of the reduction, and was offset by rising public funding (up by 7.1% over the period) and by subscriber revenues (from radio satellite services) which doubled over the same period.
- **Radio revenue per head was highest in the US, at £38 in 2010.** The Swedish market ranked second at £36 per head, the radio industry of the Republic of Ireland generated £34 per capita, and the UK industry raised £18 per head in 2010.
- **Weekly radio listening remains popular across the five countries surveyed – 75% of consumers in France claim to listen to the radio on a weekly basis, as do 74% of Italians.** In the UK, 67% of consumers claim they listen on at least a weekly basis.
- **Using the internet to download or listen to audio content (such as music tracks or podcasts) was most popular in Italy.** Nearly half of respondents (46%) claimed they used their home internet connection for this purpose. By comparison, the figure was lowest in Germany at less than a third (30%) of respondents. The UK was in line with the average response rate among the six countries as 38% of respondents said they had downloaded audio content online;
- **Listening to MP3 tracks was the most popular audio purpose to which mobile phones were put in 2010.** In Germany, just short of a third (30%) of consumers used their phones for this, followed by 29% of Italian mobile phone users. Just over a quarter (26%) of Australians and French people listen to MP3s on their phone; the comparable figure for the UK is 24%.
- **As a source for news, radio is most popular for news about a region or locality.** It is most popular for this source of news among German listeners, where 11% claimed it as their main source for local/regional news and ranks second in Australia where 7% made the same claim. In the UK, the comparable figure was 5%.

# Key points: internet and web-based content

- **Smartphone take-up is highest in the UK (46% of all mobile users) and Spain (45%) among the big five European economies.** Ownership of smartphones nearly doubled in the UK between February 2010 and August 2011
- **Nearly half (46%) of UK internet users also accessed internet services on their mobile phone in October 2011.** This was more than in the US (41%), Italy (40%), France (39%) and Germany (38%). In all countries surveyed across the period, use more than doubled between 2008 and 2011. UK users are also more likely to use a mobile phone to send text messages, use applications, access social network sites and play games than their counterparts in France, Germany, Italy, the US and Spain.
- **Competition between smartphone platforms intensifies.** Google, Microsoft, Apple and RIM all released at least one new version of their respective smartphone operating systems in the past 12 months, while Nokia and HP abandoned theirs. Europe remains the most heterogeneous marketplace, while Android leads in the US but is on par with iOS in Japan.
- **New internet-connected devices are gaining a foothold.** In the UK, the US and France, more than one in eight internet users use a games console to access the internet, and tablet computers are used by between 6% and 9% of internet users in all six countries surveyed. Use of internet-connected TVs is highest in France, at 6% of internet users (4% in the UK).
- **Average time spent online on computers declined in most countries between 2010 and 2011.** Internet users in the US spent an average of 13 hours 11 minutes online on a computer in August 2011 and UK internet users spent 12h 26m. Time spent online declined perhaps as consumers spent more time on the internet using mobile phones.
- **The Daily Mail and the Guardian websites are the most popular newspaper websites in Europe.** Among the six countries surveyed, consumers in Italy are most likely to use the internet as a primary source of news and UK consumers are most likely to access news on a mobile phone.
- **There are significant differences in levels of internet advertising spend among our comparator countries.** In 2010, the UK continued to have the greatest internet share of total advertising spend (29%), with much lower shares in Ireland (9%), Italy (11%) and Spain (14%). Spend per head on internet advertising was highest in Australia (£68.29), ahead of the UK (£65.53)
- **In 2010, the UK mobile internet advertising market grew by 118% to £83m; the third largest behind the US and Japan.** While the UK's mobile internet ad spend per head (£1.33) is greater than in the US (£1.25), Japan dwarfs both its nearest rivals, spending £6.52 per person on mobile internet advertising.
- **In 2010, the value of B2C e-commerce was almost £1000 per person in the UK.** Four in five (79%) of UK internet users claimed to have purchased online, higher than in any other country in Europe. In January 2011, UK consumers spent an average of 84 minutes on retail sites, which reached 89% of all internet users.

## Key points: telecoms

- **Total retail telecoms revenue generated in the 17 countries covered in this report was £594bn in 2010, 1.9% higher than in 2009.** This growth came following a 0.4% fall in total telecoms revenues in 2009. The UK was one of only three countries where fixed broadband revenues declined in 2010 (by 4.8%).
- **Consumers in Australia spent more on telecoms services than those in any other of our comparator countries in 2010, at £739 per person.** In the UK consumers spent an average of £434 per person during the year.
- **Mobile penetration has increased significantly in most countries since 2005, with very rapid growth in India and China. where there are now nearly two SIMs for every three people.** The number of mobile connections continues to increase at a slower rate in the UK, which had an average of 1.31 mobile connections per person at the end of 2010, partly driven by multiple device ownership.
- **Fixed broadband growth is slowing, due to market saturation, but take-up of mobile broadband (on a PC via a cellular network) is rising quickly in some countries.** The Netherlands led the fixed broadband comparison, with 89 broadband connections per 100 households at the end of 2010, while the UK was fourth of the 17 comparator countries, with 74 broadband connections per 100 households. Sweden was a clear leader in mobile broadband, with 32 connections per 100 people, well ahead of the UK's 7.7 connections per 100 people.
- **Take-up of superfast broadband services (>25Mbit/s) in Europe is generally lower than in Japan and the US.** Around 4% of UK households subscribed to superfast services in June 2011, compared to 40% in Japan and 10% in the US.
- **Overall availability of high-speed networks in the UK compares favourably to that in other European countries.** By June 2011 57% of households had access to Virgin Media's high-speed cable network and/or BT's VDSL network, however, fibre-to-the-premises was available to just 2% of UK households in June 2011, compared to 34% in Sweden, 22% in Russia, 21% in France and 11% in Italy.
- **Superfast mobile broadband networks using LTE technology have launched in many of our comparator countries, including Sweden, the US and Japan.** Services in the UK are expected to launch in 2013 or 2014 following spectrum auctions in the second half of 2012, permitting theoretical speeds of 'up to' 100Mbit/s (although actual speeds are typically much slower than these theoretical speeds). Headline speeds of 100Mbit/s have been available in Sweden since December 2009.
- **More than two-thirds (68%) of voice minutes across the 13 countries we have data for originated on mobile networks in 2010, compared to 48% in 2005.** There was a good deal of variation between countries – in China 96% of calls in 2010 originated on mobile networks, whereas in Germany the figure was just 34%. In the UK, 50% of calls were from mobiles in 2010, up from 32% in 2005.
- **The widespread take-up of mobile data services, including dongle-based mobile broadband and smartphone use, resulted in an increase in global data consumption of 159% in 2010.** Cisco Systems' Visual Networking Index found that UK data volumes increased by 124% to an average of 266MB per mobile connection per month in 2010. This compares to 160MB for the US and 348MB for Japan.

## Key comparator metrics: Summary table

		UK	FRA	GER	ITA	USA	CAN	JPN	AUS	ESP	NED	SWE	IRL	POL	BRA	RUS	IND	CHN
TV and audio-visual	TV industry revenue (£bn)	11.3	10.4	11.0	8.1	94.0	4.0	28.6	4.7	5.0	2.4	1.5	0.9	2.2	10.6	3.5	6.7	9.9
	Change in revenues (%YOY)	8.5	8.8	2.0	6.6	6.3	0.9	6.2	9.9	11.0	0.4	5.8	4.0	10.7	17.6	16.6	17.7	13.6
	Revenue per capita (£)	181	160	135	133	304	119	226	218	106	139	170	189	57	53	25	6	7
	Largest TV platform	DSat	DTT	DSat	DTT	DCab	DCab	ACab	DTT	DTT	DCab	ACab	DSat	DSat	DSat	ATT	ACab	ATT
	Largest TV platform (% of homes)	42%	38%	34%	41%	39%	44%	25%	43%	69%	42%	37%	52%	43%	39%	36%	59%	33%
	TV viewing per head (mins/day)	242	212	223	246	283	230	n/a	188	234	191	166	196	245	222	226	119	158
	Digital TV take-up (%)	97	93	62	78	87	78	66	75	98	68	63	83	56	59	34	29	33
	Pay TV take-up (%)	52	57	63	26	88	91	60	31	28	98	93	77	76	18	55	82	52
	Digital switchover date	2012	2011	2008	2012	2009	2011	2011	2013	2010	2006	2007	2012	2013	2016	2015	2013	2015
Radio and audio	Radio Industry revenue (£bn)	1.1	1.3	2.9	0.4	11.9	1.1	2.7	0.6	0.5	0.4	0.3	0.2	0.1	0.4	0.2	0.1	0.9
	Change in revenue (% YOY)	+2.8	-3	+0.1	+8	+8.3	+6	-1.1	+6.3	-2.2	+2.5	+2.3	-6.8	-4.1	+10.8	+11.8	+11.2	+10.8
	Revenues per capita (£)	18	20	36	7	39	33	21	27	10	23	36	33	3	2	2	0.1	1
	Income from public funding (%)	61	61	79	n/a	n/a	n/a	64	n/a	n/a	43	81	36	9	n/a	n/a	n/a	n/a
	Weekly radio listening (% of pop)	67	75	72	74	71	n/a	n/a	69	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Public radio share (%)	62	61	79	n/a	n/a	n/a	n/a	n/a	n/a	43	81	36	9	n/a	n/a	n/a	n/a
Internet and web	Online universe (m)	38.7	40.6	48.1	28.6	199.9	n/a	61.9	14.8	22.4	n/a	n/a	n/a	n/a	44.9	n/a	n/a	n/a
	Fixed BB conns. per 100 HH	74	77	67	51	70	83	66	66	63	89	64	68	37	25	36	5	32
	Mobile BB conns. per 100 population	8	4	5	10	n/a	3	8	20	7	4	32	12	9	n/a	n/a	n/a	n/a
	Mobile-only broadband HH (%)	5	2	9	14	6	n/a	n/a	19	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Internet access via a mobile (%)	46	39	38	40	41	n/a	n/a	43	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Telecommunications	Telecoms service revenues (£bn)	27.2	31.8	35.5	23.7	188.2	20.9	79.0	16.0	20.0	8.5	4.3	2.2	5.9	34.2	18.6	12.1	65.9
	Telecoms revenues per capita (£)	434	486	435	389	608	615	624	739	429	497	476	482	153	169	134	10	49
	Fixed lines per 100 population	53	33	52	29	48	54	36	50	43	30	51	40	23	21	32	3	22
	Monthly outbound fixed-line minutes per capita	172	145	201	125	148	174	58	209	117	107	156	131	29	87	99	-	11
	Mobile connections per 100 population	130	99	133	148	98	76	92	129	122	121	142	114	121	100	156	64	64
	Monthly outbound mobile minutes per capita	170	132	103	172	603	318	98	287	128	198	204	193	125	102	190	140	270
	Fixed broadband connections per 100 population	31	33	33	21	27	32	27	26	23	39	33	22	15	7	14	1	10



# International Communications Market Report 2011

## 1 The UK in context

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# 1.1 The global communications industry in context

## 1.1.1 Introduction

In the first section of this report we provide a broad overview which places the UK communications sector in a global context.

- **The global communications industry in context:** (Section 1.1): We compare the size of the UK communications sector to that in other countries and look at relevant top-line revenues across our comparator countries.
- **UK consumers in context** (Section 1.2): We compare take-up and use of different services and devices at a broad level across comparator countries.
- **Regulation in context** (Section 1.3): We highlight recent international developments in communications regulation to provide regulatory context to some of the topics in this report.
- **Broadband Best in Europe Scorecard** (Section 1.4): We provide a brief introduction to Ofcom's plans for the development of a 'scorecard' system, which will be used to measure and benchmark the UK's superfast broadband network against those in other European countries.
- **Use and attitudes towards social networking sites** (Section 1.5): We look at the findings from our consumer research on use of and attitudes towards social networking sites, comparing the UK with five other countries (France, Germany, Italy, the US and Australia).

## 1.1.2 Putting the global communications industry into context

In this section we discuss the UK communications sector in the global context, comparing the size and nature of the sector to that of other countries.

Given the complexity and scale of the 'communications industries' there are many potential definitions of the 'communications sector'. These 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 revenues.

Based on Ofcom's regulatory remit, we focus primarily on the telecoms, television and radio industries.<sup>4</sup>

### Key points

- Global communications sector revenues increased by 3.4% in 2010 to £1,132bn. Overall, subscription revenues account for the vast majority of global service revenues - representing 87% (£986bn) of total revenue in 2010.

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<sup>4</sup> As of early October 2011 Ofcom took over regulation of postal services. Due to the production timings of this report, coverage and analysis of postal services industries/markets is not included in this year's ICMR report.



- The UK communications sector generated £39bn of revenues in 2010, compared to £49bn for Germany and £44bn for France. The US had the world's largest communications sector revenues, at £249bn, followed by Japan (£110bn) and China (£85bn). The US also had the highest revenue per head, at £949, compared to £630 in the UK.
- Advertising revenue, at £119bn, accounted for 11% of the total in 2010, marginally down from its 12% share in 2006. However, at £119bn, this has increased by 9% since 2009, climbing back to 2007 and 2008 levels (before the global downturn) indicating a modest recovery in global advertising revenues.
- TV advertising spend remained the largest single component of advertising revenues (44%), although internet advertising continued to grow, to a record high of £44bn in 2010 (from £37bn in 2009) accounting for over 15% of total advertising expenditure. Internet advertising in the UK is almost on a par with television advertising, representing 29% of total advertising spend compared to 30% for television advertising.

### **1.1.3 Communications sector revenues**

**The communications sector worldwide generated £1,132bn in revenues in 2010, a record high across the years covered in this report**

As a major contributor to national economies, the communications sector (i.e. telecoms, television and radio services) generates a large amount of revenue. In 2010, global communications sector revenue stood at £1,132bn, a record high across the years covered in this report, representing an 14.9% increase since 2006 and a 3.4% increase against 2009 levels (Figure 1.1).

As in previous years, revenue from telecoms services accounted for the majority of global communications sector revenue, at £864bn in 2010, representing 76% of the total. Although a record high, and 13.5% higher than the £762bn reported in 2006, its proportion of the total has marginally declined from 77% in 2006. Similarly, television revenues were at their highest absolute amount in 2010, at £239bn - a noteworthy increase of 23% on 2006 levels, and indicating growth in the global television markets. In contrast to telecoms, its share of the total increased marginally; from 20% in 2006 to a high of 21% in 2010. Radio was the smallest of the three sectors, reporting revenues of £29bn in 2010; similar to that of previous years, and accounted for nearly 3% of global revenues (consistent with its share in 2006).

Since 2009 there has been growth across each of the three sectors. Television revenues have increased most; by 7.7%, reflecting the global growth of the market. Radio sector revenues increased by 5% while telecoms increased by 2.2%, although, given the size of the telecoms market, this relatively small percentage change represents a significant increase in absolute terms – at £18bn, the largest across all three sectors. (Figure 1.1)

More detailed analysis of sector revenues can be seen in the relevant sections of this report.

**Figure 1.1 Global communications revenues**



Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook) for television and radio. IDATE / industry data / Ofcom for US and UK TV revenues and all telecoms revenues. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010.

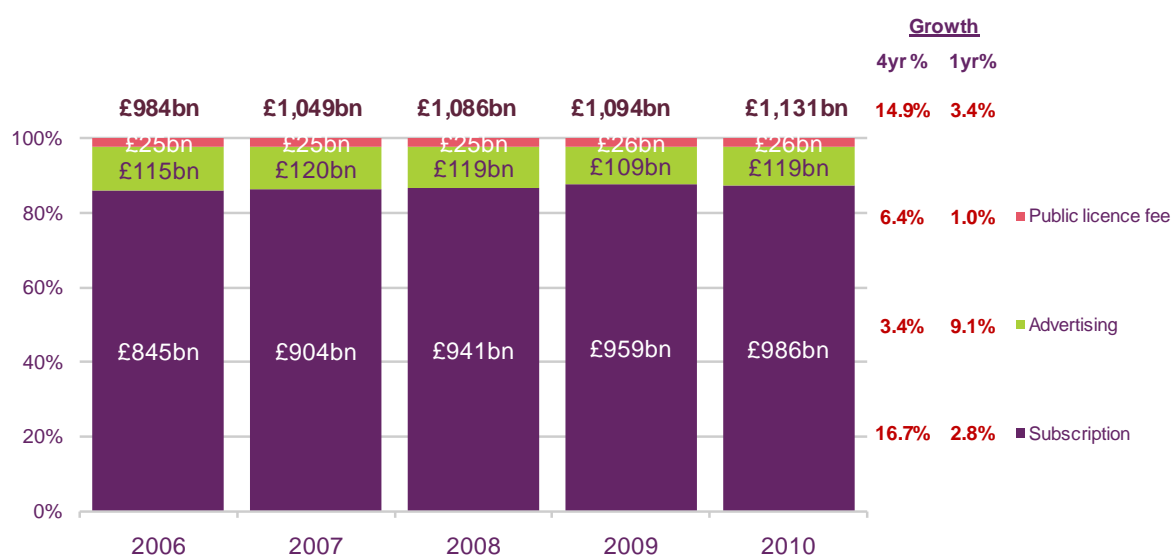
Note: Net TV advertising revenues for Russia have been calculated by discounting 15% of TV advertising spending to remove agency fees and production costs.

### Subscription revenues continue to increase and in 2010 represented 87% of all service revenues

Figure 1.2 below breaks down the three main sources of revenue from communications services: subscriptions revenues (i.e. direct payment for services by consumers and businesses), advertising revenues and licence fees (e.g. funding from government bodies).

In some countries governments and local authorities subsidise communications services directly or indirectly. Given the complexity in measuring and defining subsidies, we have generally not attempted to quantify these. Traditionally, virtually all telecoms revenues are drawn from subscriptions, although some internet service providers (ISPs) are attempting to increase advertising revenue, and some telecoms services receive public funding, as the dynamics of communications markets continue to evolve. Overall, subscription revenues account for the vast majority of global service revenues. In 2010, at £986bn, they represented 87% of the total, a figure which has increased marginally (by 1%) since 2006. Advertising revenue, at £119bn, accounted for 11% of the total in 2010, marginally down from its 12% share in 2006. However, at £119bn, this has increased by 9% since 2009, climbing back to 2007 and 2008 levels (before the global downturn) indicating a modest recovery in global advertising revenues. The smallest contribution comes from public licence fees, which stood at £26bn in 2010, comparable to previous years (although, given the increase in total revenues, its share of the total has decreased).

**Figure 1.2 Sources of global revenues for telecoms, radio and TV services**



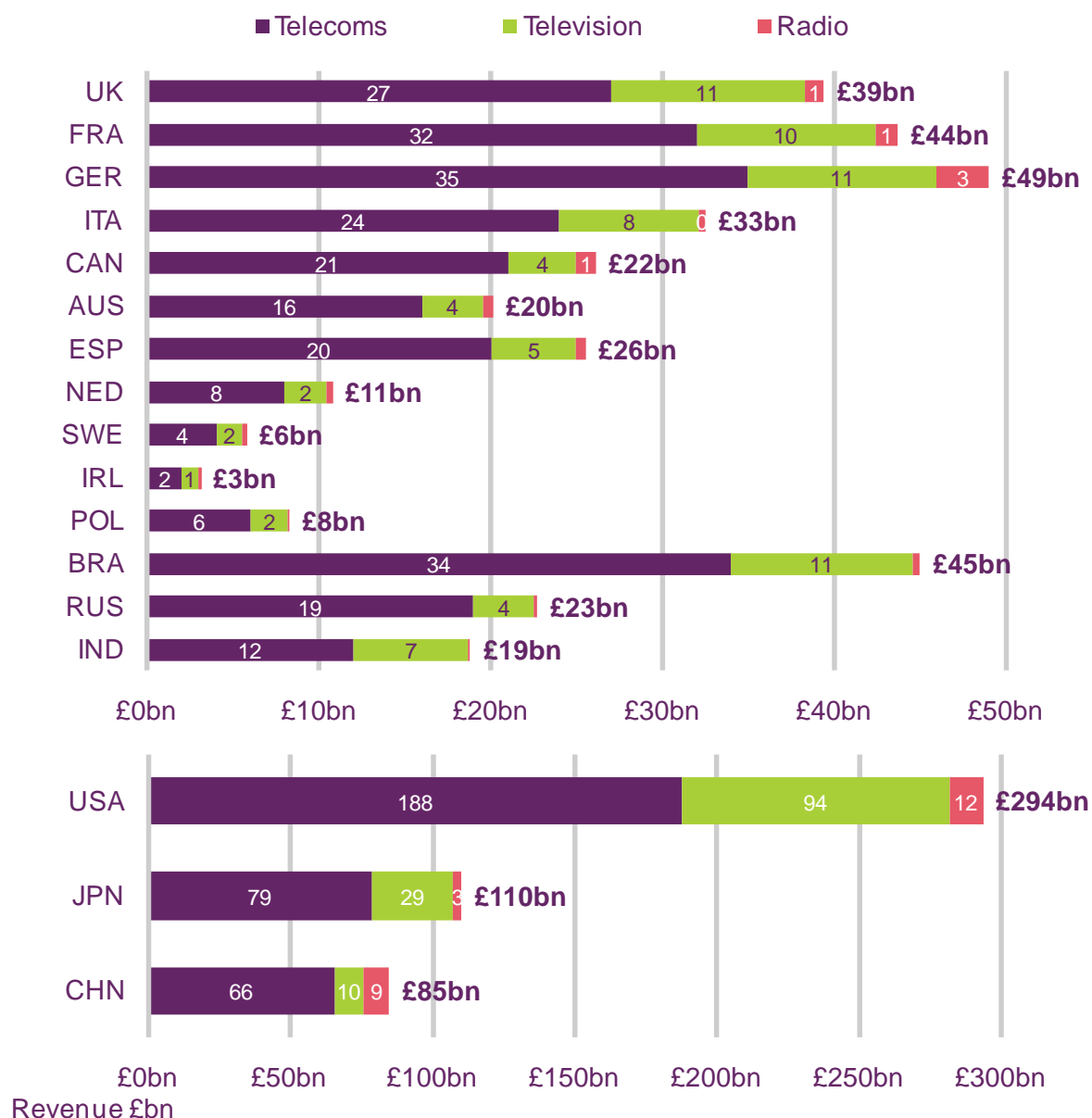
Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook) for television and radio. IDATE / industry data / Ofcom for US and UK TV revenues and all telecoms revenues. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010.

Note: Net TV advertising revenues for Russia have been calculated by discounting 15% of TV advertising spending to remove agency fees and production costs. All telecoms revenues have been allocated as subscription revenues.

### UK communications revenues are third highest in Europe, behind Germany and France

Communications markets vary greatly between individual countries. There are many inter-related reasons for this, reflecting differences in population and size, the role of economic factors such as disposable income, and differences in service take-up and public policy decisions (surrounding, for example, the imposition of licences or the payment of subsidies). Of the 17 countries we include in this report, the US had the largest communications sector, at £294bn, which places it well ahead of the next biggest, Japan, at £110bn (Figure 1.3). UK revenues stood at £39bn, the third largest in Europe, behind Germany (£49bn) and France (£44bn) – similar levels to 2009 for all three countries. These differences can mostly be attributed to the larger telecoms revenues generated in France and Germany compared to the UK. Elsewhere, the BRIC countries' (Brazil, Russia, India, China) revenues continue to grow as these markets develop, and in 2010 total revenues in Brazil (£45bn) exceeded total revenue in the UK for the first time.

**Figure 1.3 Communication sector revenues in 2010**



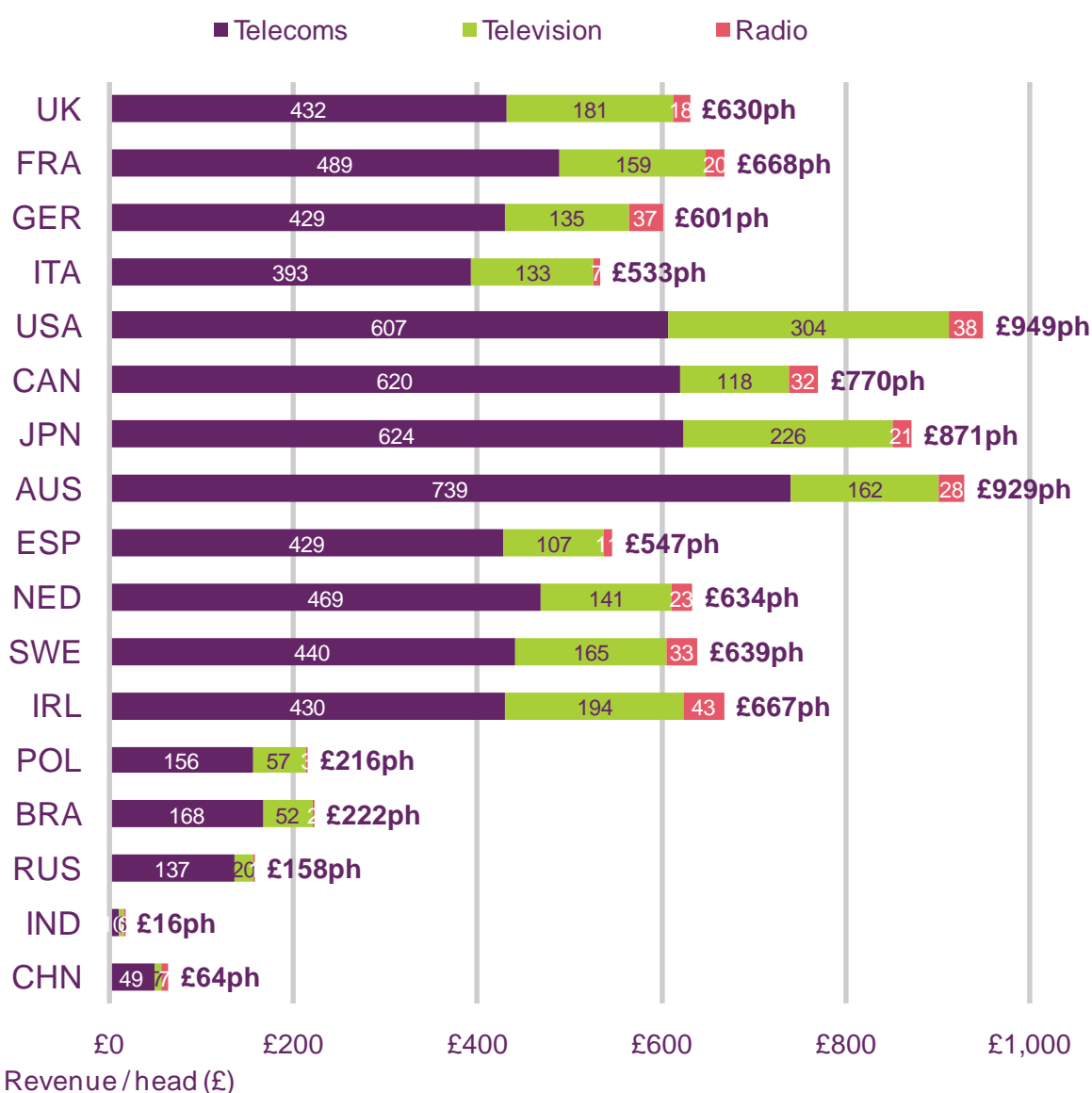
Source: Ofcom analysis based on Ofcom / IDATE data for telecommunications/TV 2010 and Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook) for radio. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010.

Notes: the UK radio industry figure is sourced from broadcaster returns made to Ofcom. Telecoms revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN.

### UK communications revenues per head were fifth highest in Europe in 2010

In terms of communications revenues per head, the UK, at £630 per year, were fifth highest in Europe, with France the highest at £668 per head (Figure 1.4). On a global level, revenue per head was greatest in the US, at £949, followed by Australia, at £929; and while the BRIC countries have shown relatively big growth in overall revenue, their large populations mean their respective per-head figures are small in comparison to the UK.

**Figure 1.4 Communications sector revenue, per head: 2010**



Source: Ofcom analysis based on Ofcom / IDATE data for telecommunications/TV 2010 and Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook) for radio. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010.

Notes: the UK radio industry figure is sourced from broadcaster returns made to Ofcom. Telecoms revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN

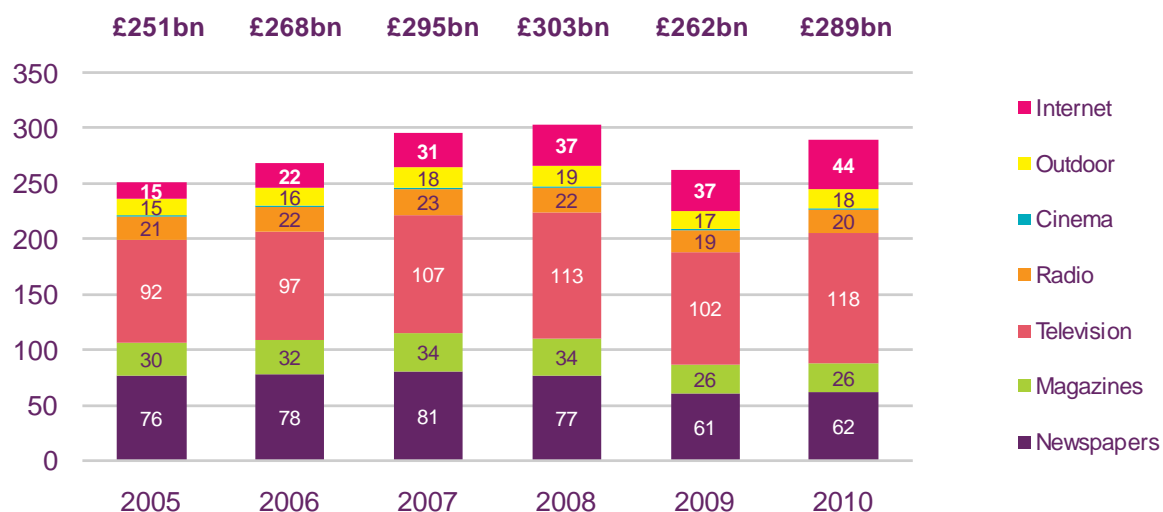
### Global advertising expenditure increased substantially in 2010

While accounting for a relatively small part of total communications sector revenues, advertising remains a key source of revenue for radio and television services. Growth in advertising has historically been linked to growth in GDP, reflecting the interplay and dynamics between advertising, business and consumer confidence, and consumer expenditure. Following a significant decrease between 2008 and 2009 (widely attributed to the effects of the economic downturn), total global advertising revenue increased by 10% during 2010 to £289bn. While this is a marked increase on 2009 (£262bn), it is some way below the £303bn recorded in 2008 (Figure 1.5).

As shown in Figure 1.5, structural changes in advertising have led to a re-distribution of advertising spend. In particular, internet advertising continued to grow, to a record high of £44bn in 2010 (up from £37bn in 2009), accounting for over 15% of total advertising expenditure, compared to just over 6% in 2005. While the current growth of online has been widely predicted and acknowledged, there was a notable increase of television advertising revenues to £118bn in 2010, a substantial increase from the £102bn recorded in 2009. This £118bn accounts for nearly 41% of total advertising revenues – a higher proportion than in any of the previous years reported.

Despite the long-term decline experienced by press advertising, spend on newspaper and magazine advertising remained fairly consistent between 2009 and 2010 (with a marginal increase of £1bn in newspaper advertising revenues). However, as a proportion of total advertising revenues there was a proportional decline from 33% in 2009 to 30% in 2010. More tellingly, looking back to 2005, when press advertising represented 44% of total advertising revenue, illustrates the longer term structural changes across advertising.

**Figure 1.5 Global advertising revenue by source**



Source: Warc data ([www.warc.com](http://www.warc.com)).

Figure 1.6 further illustrates the point about changes in advertising, detailing the variation in the performance of different types of advertising between 2005 and 2010, as well as between 2008 and 2009 versus 2010. Between 2005 and 2010, the total advertising market grew by an average of 2.9% a year – although we can see that this was driven, most significantly by increases in television and the internet, while newspapers, magazines and radio have declined. Between 2009 and 2010, global revenue increased by 10.2%, with increases across each medium. However, when comparing 2010 with 2008, the table shows that total revenues fell by -1.0% per year on average; global revenues did not recover to the (pre-economic downturn) levels of 2008. Again, newspapers (-4.3%) and magazines (-5.0%) have suffered the most, and radio (-1.8%) to a lesser extent.

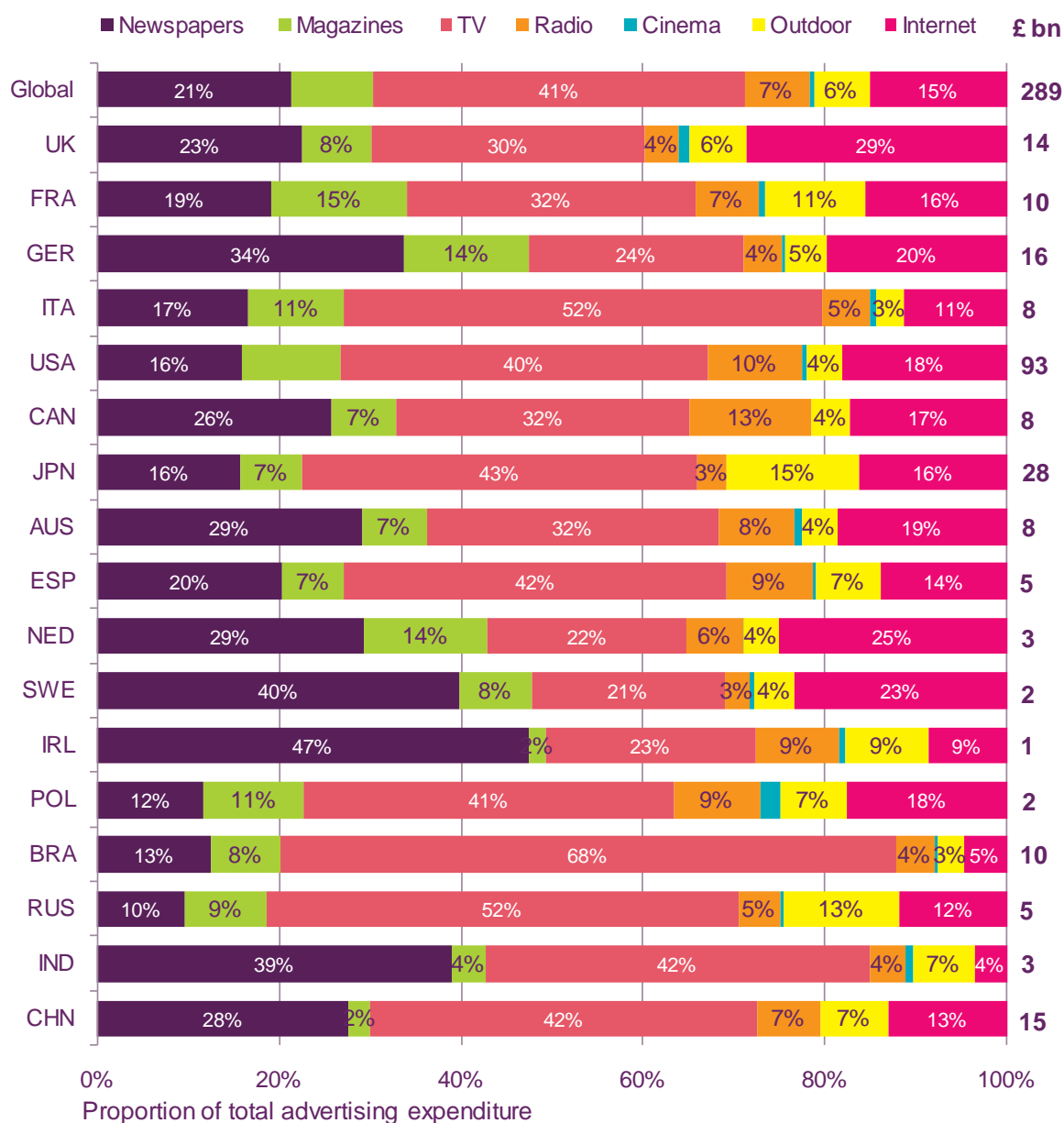
**Figure 1.6 Global expenditure growth rates**

	All	Newspapers	Magazines	Television	Radio	Cinema	Outdoor	Internet
2009-2010 annual growth	10.2%	1.8%	1.0%	15.7%	8.2%	13.2%	6.2%	17.8%
2005-2010 CAGR	2.9%	-4.2%	-3.1%	5.1%	-0.7%	6.4%	3.4%	24.5%
2008-2010 CAGR	-1.0%	-4.3%	-5.0%	0.8%	-1.8%	1.4%	-1.5%	3.5%

Source: Warc data ([www.warc.com](http://www.warc.com))

Looking at revenues across our comparator countries, there are significant differences in the size, as well as mix, of advertising markets (Figure 1.7). At £93bn in 2010, the US was the largest advertising market, more than 6.5 times the size of the UK market (£14bn in 2010). Germany was the largest advertising market among our comparator countries in Europe (£16bn in 2010). In terms of advertising mix, internet revenues accounted for 29% of the total UK advertising market – which represents a greater proportion than in any of our comparator countries.

**Figure 1.7 2010 advertising expenditure analysis**



Source: Warc data ([www.warc.com](http://www.warc.com))

Note: Excludes expenditure on cinema advertising in CAN, JPN and CHN



# 1.2 The UK consumer in context

## 1.2.1 Introduction

### Introduction

In this section we examine and compare take-up and use of communications devices and services. We focus primarily on the UK but also three other countries where we carried out consumer research in October 2011 (France, Germany, Italy, the US and Australia).

### Key findings

- Between 2005 and 2010, the number of fixed-line voice connections fell in all six countries covered in our consumer research, although the UK has been relatively resilient, with a smaller decline. As a result, in 2010 at 53 fixed-line connections per 100 people, the UK had the highest fixed-line penetration across all countries covered.
- At the end of 2010, the majority of households in all six countries covered had broadband subscriptions. The UK, at 74 subscriptions per 100 households, had the second highest penetration, after France (77).
- At the end of 2010, the majority of households in all six countries covered in our consumer research had digital TV. Penetration was highest in the UK, with 97 in 100 TV households having digital TV.
- Smartphone ownership is high in the UK at 50% (joint highest, with Germany). The UK also leads in digital radio ownership (34%), and after the US (41%), was second highest in DVR ownership (36%).
- Accessing the internet via a computer or laptop, and watching television, are the communications services most performed by UK consumers (as they are across all the countries surveyed). The UK reported the highest levels of smartphone use, with 49% claiming to use smartphones at least once a week, more than in any of the other countries covered.

## 1.2.2 Methodology

Please refer to Appendix A for details and information on the methodology.

## 1.2.3 Take-up and use of services and media activities

### Fixed-line voice relatively resilient in the UK, with take-up higher than in all other markets covered

The number of fixed-line connections fell between 2005 and 2010 in all the countries where we carried out our consumer research (the UK, France, Germany, Italy, the US and Australia). However, the fall in the UK (-3 percentage points) was greater than in all other countries, and as a result fixed-line take-up was higher in the UK, at 53 lines per 100 people, than in all the other countries covered in our consumer research. Second-highest take-up was in Germany (53 lines per 100 people), closely followed by Australia (50 per 100 people) and the US (48 per 100). Take-up of fixed-line voice is lowest in Italy, at 29 per 100 people (reflecting a high proportion of mobile-only households) and is also notably low in France, at 33 per 100 people, reflecting the use of VoIP (Figure 1.8).

It is worth stating that fixed bundled services including broadband are not available in the UK without a fixed-line connection, which is likely to explain, at least in part, the relative resilience of fixed-line take-up in the UK, compared to the other countries. As a result, whereas in other countries take-up of fixed-line connections can be under threat from alternative broadband, VoIP and mobile services, in the UK the main competitor is mobile services.

While mobile connections exceed the population in the UK (131 connections per 100 people), growth since 2005 is the lowest of all the markets we cover, at an increase of 18 percentage points. In contrast to its relatively low take-up of fixed-line voice, Italy leads in the number of mobile connections (148 connections per 100 people) reflecting high levels of multiple pre-pay SIM card use. Besides the UK and Italy, mobile connections also exceeded populations in Germany (133 per 100 people) and Australia (130).

When fixed-line and mobile connection numbers are combined, across the countries covered the UK has the second-highest number of phone connections, at 184 per 100 people. Germany, at 185, was highest, with Australia, at 180, also relatively high.

**Figure 1.8 Fixed-line voice and mobile connections per head: 2010**

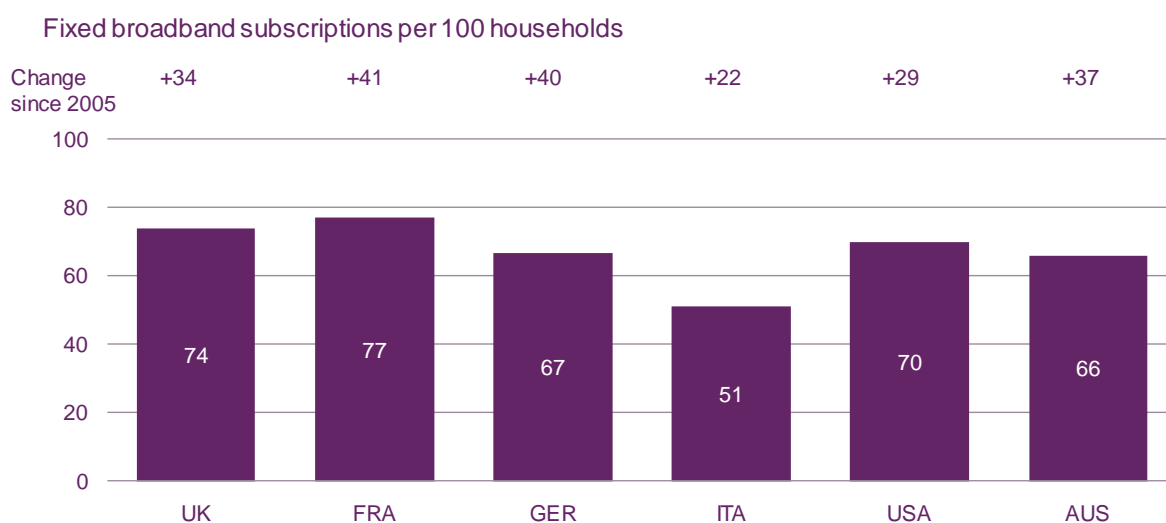


Source: IDATE / industry data / Ofcom

**The UK, at 74%, has the second highest broadband penetration among the countries covered in our consumer research, behind France at 77%**

The UK had the second highest broadband penetration, at 74 subscriptions per 100 households, behind France at 77 (Figure 1.9), with the US not far behind at 70 per 100 households. Since 2005 UK take-up has increased from 40 subscriptions per 100 households, reflecting the steady increase in broadband take-up as a result of the early availability and take-up of DSL and cable services. With 51 connections per 100 households in 2010, broadband penetration was lowest in Italy, reflecting the higher proportion of mobile-only households, as mentioned earlier in this report.

**Figure 1.9 Fixed broadband penetration in 2010**

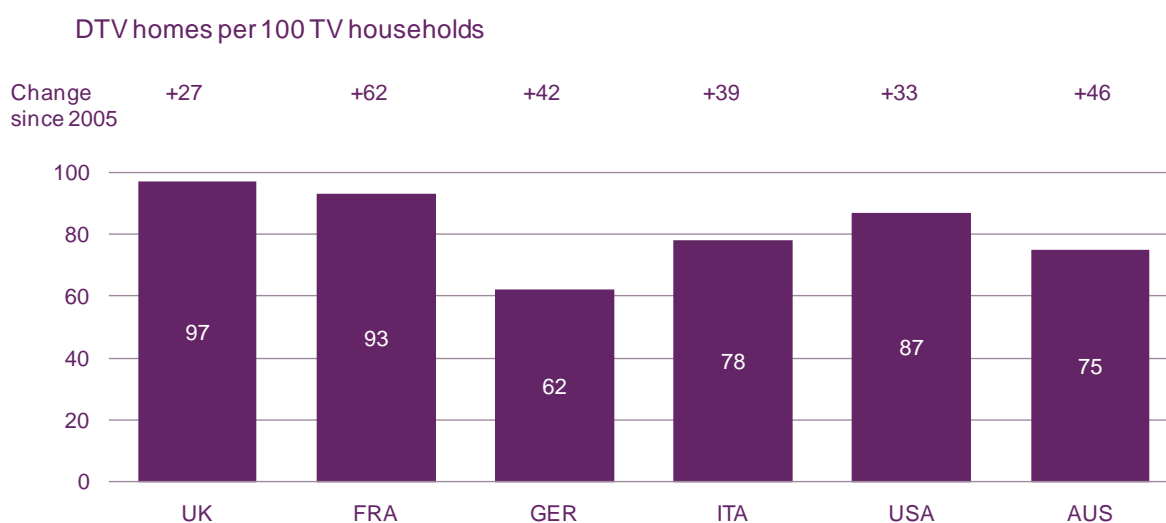


Source: IDATE. Note broadband connections include business connections

**The UK, at 97%, has the highest proportion of digital TV households among the countries covered in our consumer research**

In terms of DTV take-up, the UK, at 97 DTV homes per 100 TV households, has the highest penetration across the countries where we carried out our research (Figure 1.10). France was second highest, at 93, having seen a noteworthy increase from 31 per 100 in 2005 (when penetration in the UK was at 70 per 100 households). Elsewhere, DTV take-up was low in Germany (62 per 100), which may be partly explained by the high levels of analogue cable take-up. In the UK, France and Italy, terrestrial television has traditionally been the largest platform. Digital switchover of terrestrial TV services has been completed in the US and Germany and is under way in the other countries where we carried out our consumer research.

**Figure 1.10 DTV penetration in 2010**



Source: IDATE.

For further information on the penetration of specific communications services across all our comparator countries, please see the relevant section of this report.

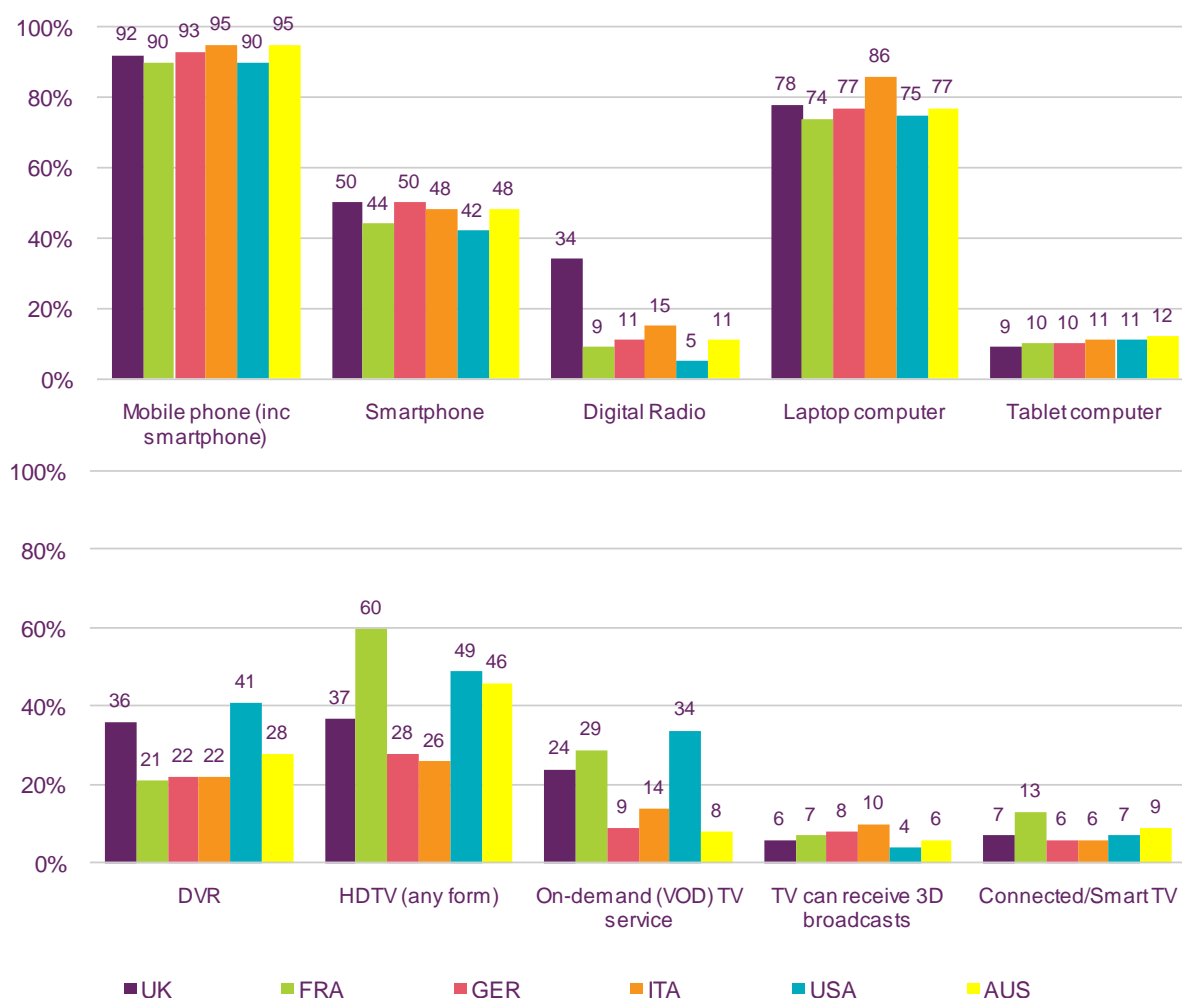
### **Digital radio and smartphone ownership highest in UK**

As part of our consumer research we asked respondents about their ownership and use of a range of devices. The reasons for differences in levels of ownership and use of different communications devices and services are multiple and complex, and may relate to cultural factors, differences in affordability, and local market structures, and also vary by respondents' interpretations of the terminology. We used an online survey, so the results from our consumer research may not fully reflect the behaviours of non-internet users.

The results indicate that ownership of smartphones was highest in the UK and Germany, with one in every two (50%) internet users surveyed claiming ownership (Figure 1.11). More broadly, mobile phone ownership (including smartphones) was 92% in the UK (Italy being the highest at 95%). Relative to ownership of other devices, mobile phone ownership was relatively high across all of our comparator countries, underlining the increasing penetration (and subsequent use) of the devices globally. The UK also has the highest levels of digital radio ownership, at 34%. Italy, at 15%, was the next highest, reflecting a relative advancement of the UK in the digital radio area. Reported ownership of DVRs was also relatively high in the UK, at 36%. This was lower than the highest (41% in the US), but considerably higher than our European counterparts covered in the research (21% in France; and 22% in both Germany and Italy).

In terms of other devices, France, at 60%, leads the way, by some distance, in ownership of (any form of) HDTV, followed by 49% in Australia, with the UK third highest at 37%. Ownership and use of on-demand (VOD) TV services are highest in the US, at 34%, followed by France at 29% and UK again third highest at 24%. Meanwhile, penetration of some of the more recently launched devices - such as tablet computers, TV sets that can receive 3D broadcasts and connected/smart TVs - remain relatively low, with minimal variation across our comparator countries.

**Figure 1.11 Ownership and use of devices**



Source: Ofcom consumer research, October 2011.

Base: All respondents, UK=1015, France=1014, Germany=1014, Italy=1045, USA=1002, Australia = 1012.

Q: Which of the following devices do you own and personally use?

**People in the UK are leading users of smartphones, with nearly half (49%) claiming to use them at least weekly**

Figure 1.12 charts the levels of reported 'regular' use of selected communications services (regular use defined as at least once per week). Our research was conducted among online panellists, who may be more likely than average to use selected communications services (for the example the internet) so data should be treated with this caveat in mind.

In all six countries surveyed, over 90% of consumers surveyed access the internet via a computer/laptop at least once a week on average - the only activity to achieve in the nineties across all countries covered. However, in the UK, watching TV remains the most popular activity, at 93%, marginally ahead of the 91% who access the internet via a computer or laptop. With the exception of France, at 89%, 90% or more respondents in all other countries claimed to watch TV on a weekly basis. Watching TV has historically been the most popular media activity; for internet use to achieve parity of popularity is a particularly noteworthy development.

As stated earlier in the report, the UK reported the highest claimed ownership of smartphones (50%); unsurprisingly, the UK also leads in the proportion claiming weekly use of a smartphone (49%), followed by Italy and Australia at 46% each.

In terms of other media activities, more than two in every three (67%) UK consumers said they listened to the radio at least once a week – lower than in all other countries covered. This figure may be particularly low because our research was conducted among internet users, and it is possible that many radio listeners are non-internet users who were excluded from our research.

Over half (55%) of UK consumers stated that they read a national newspaper at least once a week, the second highest proportion behind Italy, at 60%. Levels in Germany (28%) and Australia (37%) were noticeably lower than the other countries covered, although these countries report relatively high numbers for readership of local newspapers – Germany is the highest at 61%. This compares to the UK's 47%, which was joint lowest with France across the countries covered. The UK also reported relatively low levels of magazine readership; at 43% much lower than our European counterparts and the second lowest overall after Australia (38%). (Figure 1.11)

National variations in newspaper/magazine markets may explain some of the differences in readership between countries. In some countries, including France, and in particular the US, newspapers are, broadly speaking, published on a local/regional basis, and include international and national news stories in addition to those about the local/regional area. In other markets, including the UK, the news stories carried by national and regional/local titles tend to be more distinct.

**Figure 1.12 Regular use of selected communications services / media**



Source: Ofcom consumer research, October 2011.

Base: All respondents, UK=1015, France=1014, Germany=1014, Italy=1045, USA=1002, Australia = 1012.

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

# 1.3 International regulatory context and models

## 1.3.1 Introduction

### **The relationship between market developments and the regulatory landscape**

The communications sector is becoming globalised, and Ofcom's activities and those of the industries we regulate are increasingly influenced by international developments. The regulatory environment can be an important influence on communications markets, by introducing requirements on market players in order to help achieve specific public policy goals. Equally, market developments and technology/consumer trends help to determine the evolution of the regulatory framework.

For these reasons, this section provides some regulatory context to the analysis of international communications markets elsewhere in this report. It does not aim to be a comprehensive examination of regulatory frameworks across the comparator countries. Rather, it is an overview of the main regulatory and policy developments over the past year, structured around the five strategic purposes set out in our 2011-12 Annual Plan<sup>5</sup>. Before looking at specific developments, we introduce the relevant regional and international regulatory institutions.

## 1.3.2 Regulatory authorities

### **Converging markets have led to converging regulatory authorities at the national level...**

Converging technologies allow the same content and services to be delivered over a range of digital distribution networks and devices, and IP-based delivery has revolutionised how consumers receive and make use of text, audio and audio-visual content. For national regulatory authorities (NRAs), this has required an increasingly joined-up approach across the communications sector. In terms of our comparator countries, converged regulators that span both networks and content now exist in the US, the UK, Italy, Australia, Canada and Japan. Other countries with converged telecoms and broadcasting regulators include Finland, Hungary, Israel, Malaysia, Slovenia, South Africa, South Korea and Switzerland.

Technology and market convergence has not always led to full institutional convergence. There are still many instances of separate regulators for broadcast and telecommunications (e.g. France, Ireland, Poland, Sweden and the Netherlands), and the challenges of convergence have been met through increased cooperation between these separate authorities. NRAs also have some spectrum responsibilities in countries including the UK, Italy, US, Germany, Sweden, Brazil, Hungary, Iceland, Egypt and Turkey.

The fast-moving pace of new media markets has strengthened the need to develop flexible tools, and to involve both consumers and market players in the process of regulatory design. This has led to the development of new self- and co-regulatory instruments. For example, the Australian converged regulator, ACMA, has for some years operated a co-regulatory system that spans content and internet services. The German content regulators are also

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<sup>5</sup> Promote effective and sustainable competition; Promote the efficient use of public assets; Help communications markets to work for consumers; Provide appropriate assurances to audiences on standards; Contribute to and implement public policy defined by Parliament.  
<http://www.ofcom.org.uk/about/annual-reports-and-plans/annual-plans/annual-plan-2011-12/>



very supportive of the benefits of self- and co-regulatory approaches, and the UK regulator (Ofcom) has a duty to consider self-regulatory approaches in lieu of formal regulation.

### **...while regional frameworks and authorities have retained distinct sectoral remits...**

At the European level, NRAs work through separate bodies for telecoms, spectrum and broadcasting:

- Body of European Regulators for Electronic Communications ([BEREC](#));
- Radio Spectrum Policy Group ([RSPG](#));
- European Platform of Regulatory Authorities ([EPRA](#)); and
- European Conference of Postal and Telecommunications Administrations ([CEPT](#)).

There is also a growing number of regional bodies in other parts of the world which share experiences and develop common regulatory guidelines and principles, particularly in the area of electronic communications. This reflects the fact that - with content and services increasingly delivered across borders by satellite and internet - national regulators are increasingly dealing with companies legally established outside their jurisdictions, or tackling cross-border issues that span national jurisdictions. Such bodies include [ATRC](#), [REGULATEL](#), [AREGNET](#), WATRA, [CRASA](#) and [ECTEL](#), which respectively represent telecoms regulators in the Southeast Asian, Latin American, Arab, West African, Southern African and East Caribbean regions.

### **...and international bodies play a key role in standardisation and policy development**

In addition to NRAs and regional groups, several international institutions can influence regulatory regimes. Their role is becoming increasingly important as the development of common approaches grows around technology standards, spectrum use, internet governance, international mobile roaming, intellectual property and content standards.

The [International Telecommunication Union](#) is the UN's specialized agency for information and communication technologies (ICT). It is unusual among UN bodies in that it was founded on the principle of cooperation between governments and the private sector. Its membership encompasses telecommunication policy-makers and regulators, network operators, equipment manufacturers, hardware and software developers and regional standards bodies. The ITU has three 'sectors': the Radiocommunication Sector ([ITU-R](#)) allocates spectrum at the global level and has been pivotal in harmonising spectrum for applications; the Telecommunications Standardization Sector ([ITU-T](#)) establishes worldwide standards for telecommunications and ICT equipment; and the Development Sector ([ITU-D](#)) delivers technical assistance to developing countries. In the coming year, ITU-R and ITU-T will hold conferences to define their priorities and review the international treaties: the Radio Regulations and the International Telecommunication Regulations.

The Organisation for Economic Cooperation and Development has an Information, Computer and Communications Policy ([ICCP](#)) Committee which incorporates work on the communications sector. It contributes to the development of the regulatory and economic policies of its member countries through producing reports of analysis and policy recommendations, and holding multi-stakeholder events. It also collects and publishes relevant data, notably in its biennial *Communications Outlook*. In June 2011, the OECD held a high-level two-day meeting to advance the debate on internet governance, which resulted in a communiqué on [Principles for Internet Policy-Making](#).

### 1.3.3 Key developments in the European regulatory and legislative framework

Before discussing specific areas of policy development, it is worth noting that 2011 saw significant changes to the regulatory and legislative electronic communications framework in Europe.

The [EU Electronic Communications Framework](#) 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 as well as constituting the basis for a consistent regulatory environment across the communications markets of all 27 Member States. It was revised in 2009; key changes including the removal of superfluous regulation, strengthening of consumer protection and further liberalisation of spectrum markets.

A key aim of the revised Framework is to strengthen the consistency of regulation across the EU. To that end, the **Body of European Regulators for Electronic Communications (BEREC)** formally came into existence in January 2010, replacing the previous collaborative group, the European Regulators Group (ERG). BEREC now plays an important role in the revised EU Regulatory Framework, by promoting co-operation among NRAs and between NRAs and the Commission; identifying and disseminating best regulatory practice; and providing advice on regulatory matters to the EU institutions, either on request or at its own initiative. The European Commission and NRAs are both required to take the utmost account of BEREC opinions.

BEREC has, in particular, a very important role to play in reviewing and reporting on individual national regulatory decisions, in cases where the Commission has expressed 'serious doubts' about a particular measure. In 2011, the BEREC Office, based in Latvia, became operational and was able to begin providing professional and administrative support to BEREC. BEREC's priorities in 2011 included net neutrality, regulatory remedies for NGA and the promotion of competition in superfast broadband and mobile roaming, many of which will continue during 2012.

The following sections consider key policy areas in which there have been significant developments in 2011, grouped according to Ofcom's strategic priorities.

### 1.3.4 Helping communications markets work for consumers

#### Traffic management and net neutrality

The 'net neutrality' debate (whether, and where, there should be a principle of non-discrimination of internet traffic across networks) has continued to occupy regulators across the world, with the focus particularly on questions of discrimination and transparency.

In **Europe**, the revised EU Regulatory Framework identified net neutrality as a policy objective, in that end-users should be able to access and distribute information, and run applications and services of their choice. Transposition of the revisions into national laws in 2011 introduced requirements for greater transparency and gave NRAs a discretionary power to impose 'a minimum quality of service on the internet'.

In April 2011, the European Commission published a [Communication on the Open Internet and Net Neutrality](#), following its [2010 consultation exercise](#). It concluded that the rules on transparency, switching and quality of service within the Revised Framework should contribute to producing competitive outcomes, and it would be premature to intervene before seeing how the new rules will operate in practice. This was a view echoed in May 2011 in a study commissioned by the European Parliament: [Network Neutrality: Challenges and Responses in the EU and the U.S.](#)

In parallel, the Commission asked BEREC to look into a number of issues that surfaced in the course of its consultation; in particular, barriers to switching and practices of blocking and throttling. The Commission will consider the BEREC findings and the implementation of the new rules before deciding in 2012 whether it needs to issue any additional guidance. If significant and persistent problems are substantiated, the Commission may assess the need for more stringent measures to achieve the necessary competition and choice for consumers.

Net neutrality was a major priority for BEREC in 2011, with much of the work continuing into 2012. In September 2011, BEREC consulted on [Guidelines on Net Neutrality and Transparency: best practices and recommended approaches](#). As set out in its [2012 Work Programme](#), BEREC will produce guidance on when and how to impose minimum quality of service requirements on ISPs, and report on competition issues related to net neutrality. BEREC will also provide the Commission with a report on the traffic management practices of ISPs, analysing how competition and technological developments in the IP interconnection market - including peering and transit agreements between parties – affect net neutrality.

There have also been developments at the national level. In Europe, the Dutch parliament has proposed to prohibit differentiation of internet data traffic and prevents operators from charging consumers separately for the use of certain services and applications while using an internet access service. Revisions to the law would set out the limited circumstances in which traffic management may be used, including for managing congestion, and dealing with spam and viruses. The measure was adopted with a broad majority in the lower house of the Dutch parliament but, at the time of writing, must still pass through the Senate before becoming law.

Looking beyond Europe, there have been significant recent developments in the United States. In December 2010, the FCC adopted three enforceable net neutrality [regulations](#) which introduced new rules on transparency as well as clarifying the types of blocking permitted for fixed and mobile broadband. The restrictions on fixed broadband providers are more detailed than for mobile broadband. Fixed providers are not permitted to block lawful content, services, non-harmful devices or applications, including those competing with their own voice or video telephony services, whereas mobile broadband providers are prevented from blocking lawful websites and VoIP or video-telephony applications which compete with their own voice or video telephony services.

In April 2011, the FCC took a first step to implement these regulations, establishing an Open Internet Advisory [Committee](#) “to track and evaluate the effects of the ... Open Internet net neutrality rules and to provide any recommendations the Committee deems appropriate to the FCC regarding policies and practices related to preserving the open Internet”. The regulations were formally approved in September 2011, clearing the way for full implementation by the end of 2011. However, the regulations may continue to face significant opposition from Republican lawmakers as well as lawsuits on behalf of ISPs calling for the rules to be overturned, which will play out in 2012.

### **International mobile roaming**

The [2007 EU Roaming Regulation](#) aims to ensure that consumers travelling in the EU are not charged excessive prices for making phone calls. In 2009, the Regulation was [extended](#) to cover roaming SMS and data services. In particular, it requires operators to offer all consumers a voice call tariff (the ‘Eurotariff’) and an SMS tariff (the ‘Euro-SMS’) for roaming within the EU, which may be priced up to a maximum cap. The Regulation also places average price caps on the wholesale rates applicable between any pair of operators for voice, SMS and data services. The Regulation has had a significant impact on prices. For

example, regulated voice prices fell by up to 60% when the 2007 Regulation came into force, and SMS prices fell by about the same amount on introduction of the 2009 Regulation.

The EU Regulation also requires operators to provide consumer information on voice, SMS and data roaming prices, and enables consumers of data services to control the amount they spend by setting an upper limit on spending per month, after which the service will no longer be provided or charged for, unless the consumer re-authorises access.

The Commission's 2010 [Digital Agenda](#) included a goal of looking for durable solutions to voice and data roaming by 2012, with the target that the "difference between roaming and national tariffs should approach zero by 2015".

In July 2011, the European Commission published [proposals](#) for a revised roaming regulation to take effect from June 2012, the date when the 2009 regulation is due to expire. This followed findings, supported by [analysis](#) from BEREC, of ongoing weak competition, market failures and unreasonable prices compared to costs at the wholesale and retail levels. Negotiations are currently underway to agree a final text.

In order to increase competition and provide a lasting solution to high roaming prices, the draft Regulation includes "structural solutions". In addition to a wholesale access obligation, consumers would, by 2014, be able to select a different provider for roaming from their domestic carrier, and switch for roaming only. The Commission's proposal also includes price caps until 2022 at the wholesale level and 2016 at the retail level, for voice, SMS and now for data as well.

In August 2011, BEREC published an [analysis](#) which largely supported the Commission's approach. BEREC also stressed that retail price regulation should be removed only when it is demonstrated that market forces are sufficient to deliver reasonable prices, and that the technical means of offering roaming services from a separate provider should not be specified in the Regulation itself, so that it is future-proof. BEREC also suggested that the monthly retail data limit should be extended to cover roaming outside Europe as well.

Roaming regulations have gone furthest within the EU, but over the past two years there have also been bilateral and multilateral initiatives in other parts of the world.

In April 2011, the **Singaporean and Malaysian governments** announced a mutual agreement to bring down roaming prices between their two countries. Under the agreement, roaming charges for voice calls and SMS were reduced by 20% and 30% respectively, with the reduction set to rise to up to 30% (voice) and 50% (SMS) in May 2012.

In May 2010, the **Australian and New Zealand governments** published a joint discussion paper on 'Trans-Tasman mobile roaming'. The preliminary conclusions of the paper were that in both New Zealand and Australia price transparency appeared inadequate and consumer awareness low, while roaming prices seemed relatively high. Discussions are under way at governmental level on how best to reduce roaming charges between the two countries.

Other regional and international organisations that are considering the level of roaming prices, pricing transparency and/or possible regulatory solutions include the **Arab Regulators' Network (AREGNET)**, the **ITU** and the **OECD**. In June 2011, the OECD published a [report](#) which analysed data roaming charges of 68 operators in 34 OECD countries and called on regulators and policy makers to boost competition to reduce the high prices.

### 1.3.5 Promoting effective and sustainable competition

#### Next-generation access networks

Telecoms operators in Europe, Asia and North America have been facing a common challenge: upgrading networks to make use of more efficient technologies, including fibre optic cables, and migrating from traditional transmission standards, designed in the world of the public switched telephony network (PSTN) to standards used to route data via internet protocol (IP). Many operators have now migrated their backbone networks to next-generation core networks (NGNs) by overlaying and upgrading their legacy backbone PSTN networks with a single IP-based network. Developments in other regions, such as Latin America, Africa and the Arab States, have been slower but are following a similar trend. The introduction of next-generation access (NGA)<sup>6</sup>, typically, though not universally, based on fibre optic technology, has been more uneven.

In Europe, Asia and North America, there is a broad consensus that the accelerated roll-out of NGA networks is a desirable goal, but there is a variety of approaches to reaching that goal. In most countries outside the EU, NGA regulatory frameworks are being designed as part of the process of deciding how much public funding to invest in NGA networks. In Europe, public investment remains largely the responsibility of EU Member State governments, although the European Commission has a role to play in promoting the consistency of regulatory approaches across Member States.

With that goal in mind, the European Commission published in September 2010 an [NGA Recommendation](#) so as to bring regulatory certainty for industry and encourage investment while fostering competition in broadband markets. This supports the Commission's ambitious Digital Agenda targets that, by 2020, every EU citizen should have access to 30 Mbps, and 50% should have access to 100 Mbps.

BEREC agrees that regulatory certainty and consistency are crucial in order to foster a competitive environment for long-term investment in NGA, and provided input at various stages to the development of the Commission's NGA Recommendation. In October 2011, BEREC published a [report](#) looking at how the Recommendation had been implemented in Member States by the end of its first year in place. The report concluded that it was still too early to make an assessment; fewer than half of the NRAs had so far notified decisions on NGA, and even once notified, it takes a while until new NGA wholesale products are implemented in the markets. It found that operators in different Member States follow different NGA deployment strategies, involving different degrees of the use of their own infrastructure or of active or passive wholesale products. BEREC committed to further work in 2012 to analyse the effects of the different sets of remedies in order to formulate best practice.

In Europe, public funding of NGA has been provided by regional and local authorities to cover specific areas. These schemes have had to be carefully tailored to satisfy [European state aid rules](#) and are therefore generally based on arguments around market failure and digital inclusion. The Commission has announced a review of the state aid guidelines by September 2012 to ensure they reflect ongoing regulatory, market and technological developments. To this end, the Commission carried out an initial public [consultation](#) in 2011.

Many governments in other parts of the world have published national broadband plans, as detailed in the June 2011 OECD [report](#) on National Broadband Plans. Most of these include

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<sup>6</sup> NGA can be understood as new physical infrastructure relying on new access network technologies enabling a significant improvement in the broadband experience for end-users, through combinations of: higher bandwidths; more equal upstream and downstream bandwidths; and more reliable, higher quality services



targets related to levels of geographic coverage, adoption and minimum or average transmission speeds.

In Australia, Brazil, Luxembourg, New Zealand, Singapore and South Africa, governments have become more directly involved in the construction of broadband networks. Some countries, such as Chile and Norway, have used public private partnerships (PPPs) as a vehicle for interventions. Most OECD countries, however, have chosen not to become involved in the direct supply of telecommunications, preferring to set the regulatory framework and to provide targeted economic support through a variety of forms of public investment.

Australia and New Zealand have both reconsidered their legal and regulatory frameworks in order to meet their NGA goals. The Australian Parliament passed the Telecommunications Legislation Amendment (Competition and Consumer Safeguards) Act in November 2010 to facilitate the achievement of its National Broadband Network project. In New Zealand, a number of measures have been introduced by the government and by the Commerce Commission to support the deployment of fibre to the premises, including the continuing use of operational separation.

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 nation-wide NGN / NGA networks. However, other circumstances and characteristics of the Japanese and South Korean markets have also proved very favourable to NGA roll-out.

Singapore has ambitious plans to be one of the first countries in the world to deliver a metropolitan fibre network to the home – with the aim of achieving speeds of up to 1Gb by the end of 2012. The government, with the support of the regulator IDA, is progressing with their programme to develop a next generation national broadband network (Next Gen NBN), to support new digital industries as key engines of growth for Singapore's economy. An in-depth analysis of some of these issues can be found in the June 2011 OECD report: [Next Generation Access Networks and Market Structure](#).

### **Cloud computing**

Although not directly within the remit of communications regulation, cloud computing is of increasing interest to regulators and policy-makers. It is not a new concept - forms of it, such as webmail, have existed across the majority of the internet's history. Cloud-based software, platform and infrastructure services are available for use by businesses and governments, and, with the launch of cloud-based content services from Amazon, Google and Apple, cloud computing was propelled into the consumer limelight in 2011.

Cloud-based applications offer a number of advantages to users. Businesses and governmental bodies can benefit from lower costs and greater innovation by using cloud services rather than installing and maintaining software and computing equipment of their own. And with files stored remotely, access is typically available from any internet-enabled device.

While many administrations are keen to foster the growth of cloud computing to realise these benefits, questions about privacy and security, including how easily these new services fit with the existing regulatory regimes, must be considered. For example, how will cloud

services that transfer data between servers based in different continents respect data protection regulations that vary between different jurisdictions?

At the 2011 Davos Economic Forum, the European Commission [said](#) that it wanted Europe to be not just cloud-friendly, but cloud-active. It will present a European Cloud Computing Strategy in 2012, and in support of that, the Commission launched a [consultation](#) in May 2011, seeking views on issues such as data protection and liability, in particular in cross-border situations, and standardisation and interoperability.

In the United States, the Cloud Computing Act, a bipartisan bill, was put before Congress in April 2011. It encourages the US government to negotiate with other countries to establish consistent laws related to online security and cloud computing. If adopted, it would form new civil and criminal enforcement tools to investigate and prosecute hackers, and would require all federal agencies to create a 'cloud-computing plan' and monitor progress towards more secure policies.

### 1.3.6 Providing appropriate assurance to audiences on standards

In Europe, the [Audiovisual Media Services \(AVMS\) Directive](#) is the common framework for the regulation of television and video-on-demand (VOD) content (but not for radio). The Directive sets out common minimum rules for television content, with a focus on the protection of minors, incitement to hatred, advertising, and the promotion of European works. It also ensures that pan-European broadcasters have only to comply with a single set of rules, those of the country in which they are established (the country of origin).

EPRA is one forum where regulators are able to discuss certain themes around implementation, such as:

- The scope of VOD: which video delivery services should and should not be regulated?
- Jurisdiction: which regulatory authority is responsible for regulating audio-visual services, and how should concerns about services received in one country but regulated elsewhere (EU or beyond) be addressed?

In Europe and elsewhere in the world, two major challenges for public authorities in terms of content regulation are child online protection and connected TV.

#### Child online protection

In recent years, child online protection<sup>7</sup> has moved higher up the international policy-making and regulatory agenda. In some cases, the starting point has been to ask whether to extend 'broadcast content' rules to new digital content, regardless of the delivery platform. New policy challenges are emerging in approaches to the protection of minors for the non-broadcast regulated content available online. In addition, emphasis is placed on the development of media literacy<sup>8</sup> as a tool for children and parents to be empowered to avoid harmful content or behaviour. There is also an emerging debate, in the context of internet governance, about the role that various participants in the internet value chain should be

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<sup>7</sup> 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.

<sup>8</sup> Ofcom defines media literacy as: "the ability to access, understand and create communications in a variety of contexts".

asked to play in preventing access to harmful activities. There have been a number of developments in 2011 in terms of child online protection.

The European Commission continues to pursue approaches to protecting children online though a number of measures including research, education, media literacy and programmes such as the [Safer Internet Programme](#).

In September 2011, the Commission published a report (Protecting Children in the Digital World) analysing the implementation of the 1998 and 2006 [Protection of Minors and Human Dignity Recommendations](#) in the Member States. The report called for more reporting points for problematic content on social networks and for 'privacy by default' settings for children. The report also recommended the wider use of age-rating systems (like [PEGI](#)) for online games.

The Commission has announced its intention to launch a strategy in this area and, in parallel, there have been a series of cross-industry workshops to develop industry codes of conduct. Meanwhile, the ITU continues to implement its [Child Online Protection](#) initiative, which was launched in 2008. In [its latest phase](#), the ITU is investigating the possibility of developing international telecommunications standards, the widespread application of which it is hoped would help protect children from online threats.

Trade associations and industry players are increasingly lending their weight to international campaigns and agencies promoting online child safety. Examples are the [Family Online Safety Institute](#) (FOSI), which launched a [First Ladies Initiative for Online Safety](#); [Childnet International](#), which manages the [Digizen](#), [KnowITall](#), [Kidsmart](#) and [chatdanger.com](#) online safety advice websites; and the [UK Safer Internet Centre](#).

National regulatory authorities are also playing a more active and strategic role in these fields.

In media literacy:

- **US:** The [National Broadband Plan 2010](#) includes substantial proposals for facilitating and coordinating child online safety and literacy work. The FCC has recently launched [Parents' Place](#) and consulted on filtering and blocking technologies. The FTC has re-launched its [OnGuardOnline.gov](#) website, including a "Net Cetera" [toolkit](#), giving advice on children's online safety.
- **Nordic countries:** The regulators in Sweden, Norway, Finland, Denmark and Iceland play a leading role in national campaigns for child online safety, including providing advice and education on internet safety and privacy and facilitating various national initiatives on young people's security on the internet<sup>9</sup>.
- **UK:** In October 2011, Ofcom published new [research](#) on children and parents' media use and attitudes online as part of its media literacy research programme.

Regarding content and standards regulation and parental controls:

- **UK:** Autumn 2011 saw the launch a website called [ParentPort](#), which brings together communications regulators to provide advice to parents concerned by potentially explicit audio-visual material. In addition, the UK Council for Child Internet Safety - in conjunction with regulators - has achieved an agreement from the top four ISPs that

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<sup>9</sup> See: <http://surfalugnt.se/>, [www.nettvett.no/](http://www.nettvett.no/), [www.mll.fi/en/projects/fias/](http://www.mll.fi/en/projects/fias/), [www.netsikker.dk/](http://www.netsikker.dk/) and [www.saft.is/](http://www.saft.is/)



all customers will receive an active choice at the point of purchase over whether they want to block adult content on their home internet PC or laptops. Lastly, Ofcom published new consumer research [guidance](#) on programmes shown before 9pm.

- **Germany:** Providers of content that is potentially harmful to minors are subject to protection obligations under the German Inter-State Agreement on Young People in the Media. Providers may meet these obligations by providing parental controls for their content. In May 2011, KJM, the co-regulator for online media, issued criteria for the approval of such systems by the regulator.
- **Italy:** In July 2011, the Italian NRA, AGCOM, adopted a co-regulatory code on parental controls, aimed at preventing access by minors to adult content. The controls are opt-out, using a PIN code. Providers must also provide consumer information about the controls and content classifications. AGCOM envisages the establishment of an industry technical board to develop specific rules relevant to connected TV and web TV.
- **France:** In December 2010, the French audiovisual regulator, CSA, adopted rules on on-demand AVMS established in France. These established an age classification system with associated scheduling restrictions and signing. Content for over-18s must also now be subject to technical blocks.

## Connected TV

A connected TV is a television that is broadband-enabled, to allow viewers to access internet content.<sup>10</sup> It may offer a closed environment, allowing users to access certain internet applications only, or an open environment, allowing users to access the whole internet.

The advent of connected TV raises many questions for regulators. In the connected-TV environment, different types of service are subject to different regulatory regimes, but the consumer may no longer be able to distinguish between them. Technological developments also raise questions of how consumers should be protected, both from potentially harmful content and in terms of their data security, and how to regulate third-party material (i.e. from outside national jurisdictions). For the broadcasters, questions arise around ensuring non-discriminatory access to infrastructure, and around technical standards and the presentation of content. Protecting the integrity of content from the alteration of display, or from the insertion of additional advertising, also becomes of crucial importance to broadcasters. Debates have begun over the impact such developments could have on how television content is funded in the future.

In 2006 in Japan, ARIB (the Association of Radio Industries and Businesses) published a series of [recommendations](#), covering advertising and avoiding third-party overlays in the connected-TV environment.

In November 2010, all French free-to-air providers signed an agreement to increase control over their linear content. Under the agreement, no-one can add any services to the screen (on top of the linear service) without prior approval from the channel. In April 2011, the CSA hosted an international conference to explore the regulatory challenges of connected TV and the debate is ongoing.

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<sup>10</sup> Ofcom CMR 2011 definition: Connected TV is different from IPTV (internet protocol television), which is television or video signals delivered to subscribers using internet protocol (IP), the technology that is also used to access the internet.

There have also been significant discussions in Germany, where there are regulations in place around the integrity of programmes, preventing the insertion of additional advertisements or alteration of the screen display.

Finally, in April 2011, the European Broadcasting Union (EBU) published its [principles](#) for internet connected and hybrid television in Europe. Considering the interests of consumers, users, broadcasters and manufacturers, the principles focus on six key areas: links between broadcast and broadband, content integrity, access to broadcasters' content, preserving a safe viewing environment, copyright/piracy, and data protection.

### **1.3.7 Promoting the efficient use of public assets**

The radio spectrum does not recognise international borders and therefore a formal framework of co-operation between countries has been put in place. This minimises cross-border interference between a diverse range of wireless services such as mobile telephony, broadcasting and civil aviation, and can also help countries achieve seamless wireless services at a European or even global level. Harmonisation can also help to create economies of scale which translate to lower prices for citizens and consumers.

As noted in 1.4.2 above, the key international structures which co-ordinate spectrum at the European and international levels are the EU, supported by the [Radio Spectrum Committee](#) and the [RSPG](#); the [CEPT/ECC](#) which has a broader membership (than the EU) of 48 member states, and the ITU.

In 2011, the key developments in European spectrum policy were focused on the release of spectrum for mobile broadband services. A number of countries (Italy, Spain and Sweden) joined Germany - which conducted its award in 2010 - in releasing spectrum in the 800MHz band. Some awards also included the release of spectrum in the 2.6GHz bands, thereby meeting the obligations set out in European Commission Decisions to make these bands available for mobile broadband.

The new Radio Spectrum Policy Programme (RSPP) - proposed by the European Commission in 2010 and subject to negotiation between the European Parliament and European Council - is likely to be adopted in early 2012. This, among other things, will create deadlines for the release of the 800MHz and 2.6GHz bands to ensure a swifter roll-out of high speed mobile broadband services. These initiatives will, in turn, be a key contributor to the goal set out in the European Commission's Digital Agenda programme of high-speed broadband for all by 2020. The RSPP is also likely to lay the foundations for a spectrum inventory to help identify how increased demand for wireless services could best be met in the future.

The focus in 2011 in regional and global spectrum matters has been on preparing for the forthcoming [WRC12](#). This will take place in Geneva in January/February 2012. The agenda will include:

- spectrum allocations for aeronautical and maritime services;
- discussions on future spectrum arrangements for aeronautical mobile satellite communications;
- facilitating the deployment of the new European global navigation system, GALILEO; and
- a forward-looking decision on how to identify spectrum to meet growing mobile broadband demand (which is likely to be added to the agenda for WRC15).

The CEPT, which is mandated by the ITU to represent the European region at the WRC, finalised its position on all of the WRC12 agenda items in November 2011.

### 1.3.8 Contributing to, and implementing, public policy defined by Parliament

#### Online copyright infringement

The creation and distribution of online content and the associated regulatory challenges are at the forefront of debates on content regulation in many countries. Tackling online copyright infringement is a particular challenge.

At the EU level, the European Commission has various initiatives in this area. In May 2011, it published a comprehensive [IPR Strategy](#), which set out a strategic vision to create a single market for intellectual property through a package of measures to be taken forward over the next few years. The strategy included a number of proposals related to online copyright infringement, the main one being a review of the IPR Enforcement Directive. The Commission is expected to launch the review in the first half of 2012, looking at ways to create a framework for more effective enforcement against online copyright infringement. The focus will be on tackling infringements “at their source” by fostering the cooperation of intermediaries, such as internet service providers, while being mindful of broadband policy goals, the interests of end-users and fundamental rights.

Alongside the efforts to tackle enforcement issues, the European Commission has a range of proposals aimed at increasing the amount of legal content that can be accessed online. It is hoped that proposals to reform collecting societies will facilitate cross-border licensing and enable the emergence of rights brokers to license works on a multi-territorial basis. The Commission will also take forward discussions in 2012 on possible codification of the current EU Copyright Directive.

At the multilateral level, an Anti-Counterfeiting Trade Agreement ([ACTA](#)), which had been under negotiation for several years, was adopted by a number of countries in October 2011. The treaty defines common standards on IPR enforcement and increases international cooperation, including in the area of online copyright infringement. It was signed by Australia, Canada, Japan, Morocco, New Zealand, Singapore, South Korea and the United States. The EU, Mexico, and Switzerland, which were parties to the negotiation, also attended the signing ceremony and indicated their intention to “sign the Agreement as soon as practicable”.

In parallel, a number of national legislative and non-legislative initiatives have focused on online copyright infringement.

**UK:** the Digital Economy Act (DEA) 2010 requires Ofcom to make a Code to regulate the process of notifying subscribers when someone using their internet connection appears to have infringed copyright. The final Code is expected to be published in early 2012. In August 2011, the government set out its [next steps](#) for implementation of the DEA. This included a decision - following [advice](#) from Ofcom - not to pursue DEA provisions under which ISPs could be required to prohibit access to internet sites found to be infringing copyright. Instead, the government will look to ISPs to implement voluntary measures in this area.

**France:** two 2009 laws<sup>11</sup> establish a ‘graduated response’ regime targeting online copyright infringement, administered and enforced by an independent public body, HADOPI (High Authority for the Dissemination of Works and the Protection of Rights on the Internet).

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<sup>11</sup> Law promoting the dissemination and protection of creations on the internet (‘HADOPI I’) June 2009 and Law on the criminal protection of literary and artistic property on the internet (‘HADOPI II’), Sept. 2009

HADOPI receives reports of suspected infringements from rights-holders, may send up to two notifications to subscribers, and may then refer cases of repeat infringement to the judiciary for sanctions. It also has a monitoring and reporting role, and a duty to promote the development of legal offers. HADOPI's [2011 Annual Report](#) revealed that 470,935 first notices and 20,598 second notices were sent between January 2010 and June 2011. A government advisor will visit people with a third strike to assess whether they should be prosecuted, with those found guilty [reportedly](#) facing a €1,500 fine or a one-month suspension of the subscriber's internet account.

**Spain:** the March 2011 Sustainable Economy Law created an administrative authority (an Intellectual Property Commission within the Ministry of Culture) empowered to order the suspension of a website or the withdrawal of infringing website content, as well as to conduct dispute resolution between ISPs, rights-holders and broadcasters. The responsible authorities may require providers of information society services to provide the necessary data to identify copyright infringers. The prior authorisation of a judge would be necessary to carry out the measures adopted by the administration when these measures might violate fundamental rights and freedoms. The Ministry of Culture is currently developing secondary legislation to establish the IP Commission and set out the detail of the blocking process, before the law can come into effect, probably in early 2012.

**United States:** The Pro-IP Act of 2008 was passed to address file-sharing; it increased civil and criminal penalties for online copyright infringement, and gave the government powers to intervene. The June 2010 'Operation In Our Sites' initiative targets websites used to distribute copyrighted materials; over 120 websites have since been seized, including sites that link to, but do not directly host, infringing content. In a separate development, a Protect IP Act was proposed in May 2011; this would allow the government and rights-holders to obtain injunctions to effectively block websites that are registered outside the US and are dedicated to infringing activities. It also contains provisions targeting internet intermediaries such as payment processors, and in some circumstances, search engines. The Act is still under consideration by Congress.

**New Zealand:** the Copyright (Infringing File Sharing) Amendment Act came into effect in September 2011 for fixed networks (due in 2013 for mobile networks). It provides for a 'three notice regime' under which ISPs must notify subscribers when rights-holders present evidence of file-sharing infringements via that subscriber's account. Once the subscriber has received three notifications, a rights-holder may seek compensation of up to NZ\$15,000. A separate provision to allow the rights-holder to request that the ISP suspends the account is not currently in force and requires secondary legislation to come into effect, which will not happen unless it is deemed to be necessary. The Act also includes notice and takedown requirements under which, at the request of the rights-holder, ISPs must remove or block access to infringing material stored on networks within New Zealand. ISPs received the [first round](#) of notifications from a music industry group in November 2011.

**South Korea:** Changes to the Korean Copyright Law in 2009 introduced a three strikes-based notice and takedown scheme that targets commercial websites offering unauthorised content as well as individuals who are heavy uploaders of content to these sites. In March 2011, 19 sites with 2-4 million users were shut down and 1000 TB of data were seized.

In 2011, legislative proposals to tackle online copyright infringement were introduced in **Canada, Italy and Norway.**

# 1.4 Broadband Best in Europe Scorecard

## 1.4.1 Ofcom to publish Broadband Best in Europe Scorecard in summer 2012

### Scorecard to measure against aim to have best superfast broadband network in Europe by 2015

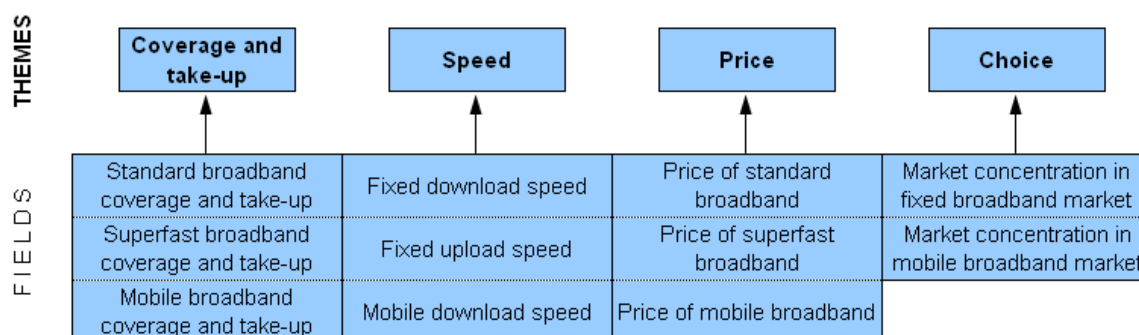
In December 2010 the UK government set out the UK's ambition to have the best superfast broadband network in Europe by 2015.<sup>12</sup> In order to measure this, it said that it would adopt a scorecard based on four headline indicators: coverage and take-up, speed, price and choice.

Ofcom has agreed that it will identify and collate the best data available from European countries in order to compile this scorecard. This data will draw on those collected by the European Commission, the OECD and other agencies. Wherever possible we will use data that is in the public domain; however, in order to have the most robust and up-to-date data it may be necessary to conduct specific data collection or commission specific research.

We plan to publish the first dataset in summer 2012, alongside the next update of the *Broadband Communications Infrastructure Report*.

Figure 1.13 details the proposed indicators that Broadband Delivery UK (BDUK), which is part of the Department of Culture, Media and Sport (DCMS) has identified to be included in the Broadband Best in Europe Scorecard.

**Figure 1.13 Proposed measures to be included in the Broadband Best in Europe Scorecard**



Source: Broadband Delivery UK

Any feedback on proposed measures, or proposals for data sources, should be sent to [market.intelligence@ofcom.org.uk](mailto:market.intelligence@ofcom.org.uk).

### Data in this report provide some comparison of UK broadband against other European countries

Of course, this report is also concerned with benchmarking the UK's communications sector, including broadband networks, against those in other countries. We include eight other EC countries in our comparison: France, Germany, Italy, Spain, Sweden, the Netherlands, Ireland, and Poland. However, the data sources we use are not necessarily the same as

<sup>12</sup> BIS and DCMS, *Britain's Superfast Broadband Future* (December 2010), <http://www.culture.gov.uk/images/publications/10-1320-britains-superfast-broadband-future.pdf>

those we will use for the Best in Europe Broadband Scorecard (for example, for this report we use sources that also allow comparison with the US, Japan, Canada and Australia and are not concerned about the availability of data for all EU countries), and this report does not contain any data on some of the metrics (the price of superfast broadband, fixed broadband upload speeds and market concentration in mobile broadband markets, for example).

Nevertheless, the data in this report do allow us to draw some initial conclusions about how the UK compares against the nine other European countries across these measures:

- **Coverage and take-up.** With 99.9% of UK homes connected to an ADSL-enabled exchange, basic broadband coverage compares favourably to the other European countries in the report (although we do not have comparable data on quality of service; for example, the proportion of households able to access services at 2Mbit/s and above). In terms of the availability of superfast services (i.e. services above 24Mbit/s), the UK also compares favourably, with 48% of households passed by Virgin Media's cable service in June 2010 and around 20% passed by BT's fibre-to-the-cabinet services. Around 4% of UK households subscribed to superfast services in June 2011 (the majority to Virgin Media's 'up to' 30Mbit/s cable service) – this was significantly below Sweden (13%), but level or ahead of our other European comparator countries, including Germany, France, Italy and Spain. In terms of mobile broadband, comparisons of coverage are difficult due to a lack of a common methodology, but HSPA roll-out has extended to 99% of the UK population, further than in many European countries. However, the UK trails in the roll-out of HSPA+ services and LTE services, which potentially offer higher speeds in other countries.
- **Speed.** There is currently no reliable data providing comparison of actual broadband speeds (the European Commission is currently undertaking a project with UK company SamKnows, so data should be available in 2012). Comparing headline 'up to' speeds has limited meaning, but among the eight EC countries in our report at the end of 2010 the UK had the lowest proportion of consumers with fixed broadband headline speeds of 'up to' 2Mbit/s or below (1%), and the fourth highest proportion of consumers with headline speeds of 10Mbit/s and above (45%) - below the Netherlands (57%), France (55%) and Sweden (48%).
- **Price.** Our comparative international pricing compares the prices available in the UK with those in France, Germany, Italy and Spain. It finds that the UK has the lowest prices for basic standalone fixed-line broadband, and also (along with Italy) for mobile broadband. 'Bundled' voice and broadband prices also generally compare favourably in the UK to in other countries, although the availability of 'naked DSL' with voice services delivered by voice over IP means that for some types of consumers lower prices are available for bundled broadband services in France and Germany.
- **Choice.** The widespread availability of LLU services (available to 89% of UK households at the end of 2010) and cable services (48%), means that UK consumers have a wider choice of broadband services than consumers in most other European countries. In all eight EC countries covered in our report, the incumbent operator has the largest retail share of broadband customers, but BT's share (28%) is significantly lower than the incumbent in all other countries. The combined retail share of the UK's three largest providers increased from 54% to 71% between 2005 and 2010, but remains lower than the share of the three largest providers in five of the other seven countries; by this metric, Germany (70%) and Poland (57%) have less concentrated broadband markets.



# 1.5 Use of and attitudes towards social networking sites

## 1.5.1 Introduction

Although social networking sites have been available since the mid-90s they did not become widely used until around a decade later. Generally, they enable users to build a profile, and provide links and other services to use on the site. Users can interact with each other, using these features and a variety of other online methods such as instant messaging and email. Within the market place there are a broad variety of social networking sites catering for a wide amount of needs; some are country-specific sites such as Mixi in Japan and Copains d'Avant in France, while others are global sites that dominate the marketplace, most notably Facebook and to a lesser extent Twitter.

Until recently, social networking sites have mainly been accessed via a computer (laptop/desktop PC) but with the growth of smartphones and the introduction of other devices such as tablet computers, consumers can now access social networking sites in a variety of ways and in more places than ever before.

The research in this section provides a detailed snapshot of who is using social networking sites, how often they access their profile page and what activities they are doing. We also look at people's attitudes to a variety of issues such as privacy, trust and engagement with their community.

## 1.5.2 Summary of key findings

- **Among the markets interviewed in our consumer research the majority of consumers have visited a social networking website.** Just under eight in ten (79%) UK consumers claim to have visited a social networking website. Consumers in Italy are the most likely to have done this, at 91%.

**The majority of consumers with a social networking profile visit it on a daily basis.** Seventy-one per cent of those interviewed in the UK with a social networking profile claimed to visit a social networking site at least once a day. This includes 20% who visit a social networking website five times a day or more.

This level of use, among those with a profile page, is replicated across the other markets interviewed; consumers in Italy are the most likely to visit a social networking site most often (83% visit on a daily basis, of which 24% claim to visit five times a day or more).

**Between 30% and 40% use a mobile phone to access their profile page.** UK consumers are the most likely to access a social networking website via a mobile phone, with just over four in ten (43%) accessing their profile page via an app or the web browser on their mobile phone.

Among the other markets interviewed, 41% of consumers in Australia said they used a mobile phone to access their profile page. Those interviewed in Germany and Italy were the least likely to access their profile page using a mobile phone (30%).

Despite this, laptop and desktop computers are the devices consumers are most likely to use to access their social networking profile page.

**On average, consumers with a social networking profile page have over 100 'friends'** Sixty-four per cent of UK consumers claim to have over 50 connections or 'friends' on their main social networking profile page, including 27% who stated they have over 200. On average, UK consumers have 168 'friends'.

Across the other markets interviewed there is a mixed picture; Australian consumers were most similar to those in the UK. Consumers in both France and Germany were likely to have fewer connections on average (108 and 137 respectively), while US and Italian consumers had on average the most connections or 'friends' (198 in the US and 216 in Italy).

**Over 60% of consumers have concerns about their personal privacy online and how their personal data are used by social networking websites** Just under seven in ten consumers (69%) in the UK with a social networking profile page agreed with the statement "I have concerns about how my personal data is being used by social networking sites"; this is lower than any of the other countries surveyed.

Sixty-four per cent of those interviewed in the UK agreed that they had concerns about their personal privacy online; this was the second lowest level of concern among the countries interviewed, behind Germany (59%).

The markets with the highest level of concern about personal privacy online and how social networking sites are using personal data were in the US (76% and 78%) and France (77% and 76%).

**A minority of consumers do not adjust the default privacy settings on their social network profile** Although just under two-thirds (63%) of UK consumers interviewed claim they do change their privacy settings on their social networking profile page, a minority keep the default privacy settings (30%).

Among the other markets surveyed, between six and seven in ten claimed they do change their privacy settings. Social networkers in France are the most likely to change their settings (75%) with those in Italy the most likely to leave the settings unchanged (37%).

- **Women and younger age groups with a social networking profile are the most likely to discover breaking news stories via social networking websites** Forty-three per cent of women in the UK agreed that they often find out about new breaking stories first via social networking sites; this compares to just over a quarter of men (27%) who agreed with this statement. The UK has the second greatest gender difference, after France (54% female versus 37% male) although, across all the markets interviewed, there was a marked difference by gender in agreement with this statement.

Just over half (51%) of 18 to 24 year-olds in the UK with a social networking profile agreed that they often find out about breaking news stories first via a social networking website. This figure is lower among 45 to 64 year-olds, with just under a quarter (23%) agreeing with this statement.

The highest level of agreement with this statement in the other markets interviewed was among 18 to 24 year-olds in France and Italy (61%), with the lowest level of agreement being among consumers in Germany (30%).



### 1.5.3 Methodology

Please refer to Appendix A for details and information on the methodology.

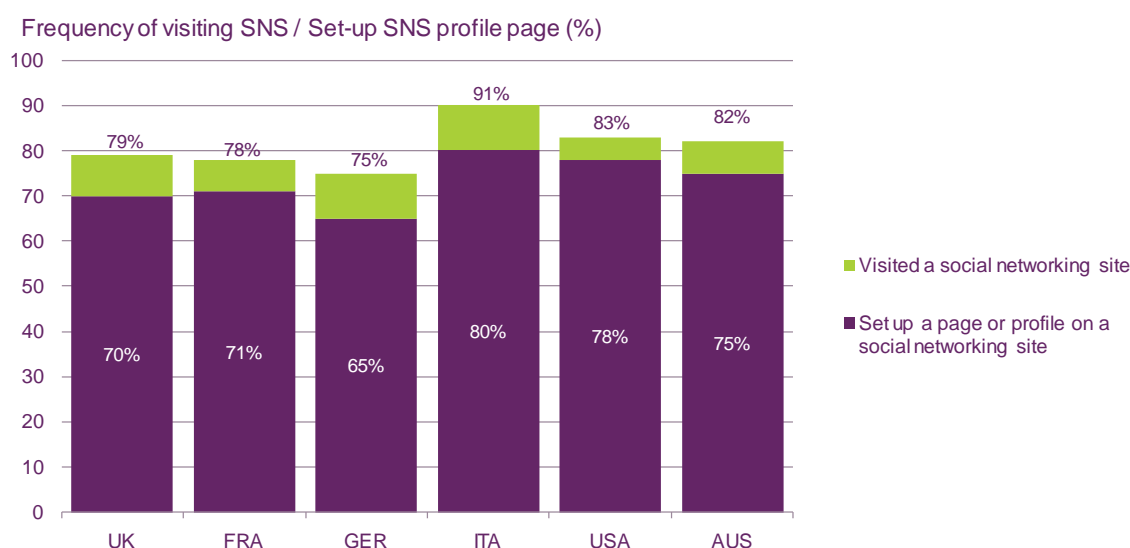
### 1.5.4 Consumer take-up of social networking

**Among the markets interviewed the majority of consumers have visited a social networking website**

Just under eight in ten (79%) UK consumers claim to have visited a social networking website. Consumers in Italy are the most likely to have done this, at 91%. (Figure 1.14)

Of those who have visited a social networking site, around seven in ten have set up a profile page. Germany has the lowest number of consumers with a profile page (65%) while Italy is the highest with 80%. Consumers in the US are the most likely to have both viewed a social networking page and have a profile (83% and 78% respectively).

**Figure 1.14 Consumers who have ever visited a social networking website and have a social network profile page**



Source: Ofcom consumer research, October 2011.

Base: All those who use the internet, UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

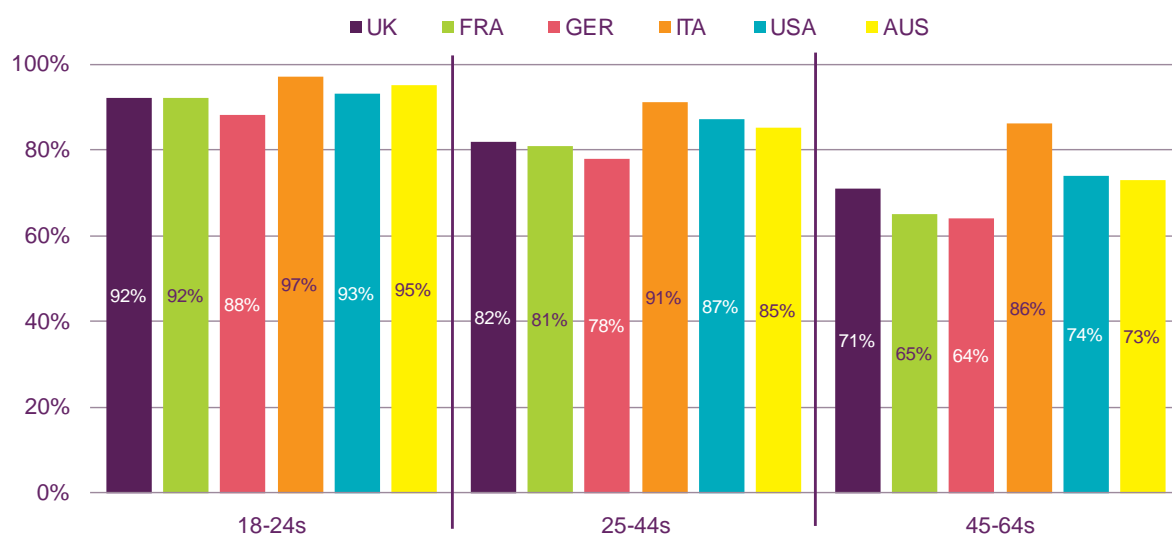
Q: "Have you ever visited a social networking site e.g. Facebook, Myspace, Bebo?"; "Have you set up your own page or profile on any of the following social networking sites?"

**In all the markets interviewed 18-24 year olds were the most likely to have visited a social networking website**

Age seems to play a key role in terms of the likelihood of accessing a social networking website. Over nine in ten consumers aged between 18 and 24 claim to have visited a social networking website in the UK, and this figure is consistent across all the other markets interviewed. This figure drops to 71% among UK consumers aged 45 to 64, a pattern which is reflected in the other markets interviewed (Figure 1.15).

Only in Italy does age seem to be less of a distinguishing factor; here, 86% of 45 to 64 year olds claim to have visited a social networking website.

**Figure 1.15 Consumers who have visited a social networking website, by age**



Source: Ofcom consumer research, October 2011.

Base: For each country - all those with SNS profiles (18-24s, 25-44s, 45-64s): UK=144,474,397; France=197,506,311; Germany= 192,486,336; Italy=201,534,310; US=147,189,366; Australia=152,480,380.

Q: "Have you ever visited a social networking site e.g. Facebook, Myspace, Bebo?"

### **Among those with a social networking profile, consumers are most likely to have a profile page on Facebook**

Across all the markets, consumers who have a social networking profile page are most likely to have it on Facebook, at just over eight in ten (Figure 1.16). Only in Germany does this figure drop slightly; to one in seven.

The nearest competitors to Facebook, among those with a social networking profile page, are Twitter (22%) and Friends Reunited (21%). These proportions are reflected across all the other markets surveyed.

Twitter is the second most common social networking site, after Facebook, in four of the six markets. In France Windows Live is the second most popular (17%), Stayfriends (22%) in Germany and Myspace (18%) in Australia.

Across the markets interviewed, a variety of social networking sites take third and fourth place, including some market-specific websites such as Copains d'Avant in France.

**Figure 1.16 Consumers who have visited a social networking website and have a profile (Top four sites with a profile page)**

	UK	FRA	GER	ITA	USA	AUS
<b>1<sup>st</sup> most popular site</b>	Facebook 83%	Facebook 83%	Facebook 72%	Facebook 84%	Facebook 89%	Facebook 88%
<b>2<sup>nd</sup></b>	Twitter 22%	Windows Live 17%	Stayfriends 22%	Twitter 14%	Twitter 24%	Myspace 18%
<b>3<sup>rd</sup></b>	Friends Reunited 21%	Copains d'Avant 13%	Wer-kennt-wen 21%	Google+ 14%	Myspace 23%	Twitter 16%
<b>4<sup>th</sup></b>	Myspace 12%	Twitter 8%	VZ Netzwerke 20%	LinkedIn 12%	LinkedIn 20%	LinkedIn 12%

Source: Ofcom consumer research, October 2011

Base: All those who have visited a social networking site. Sample sizes: UK=715, France=717, Germany=658, Italy=841, US=778, Australia=755

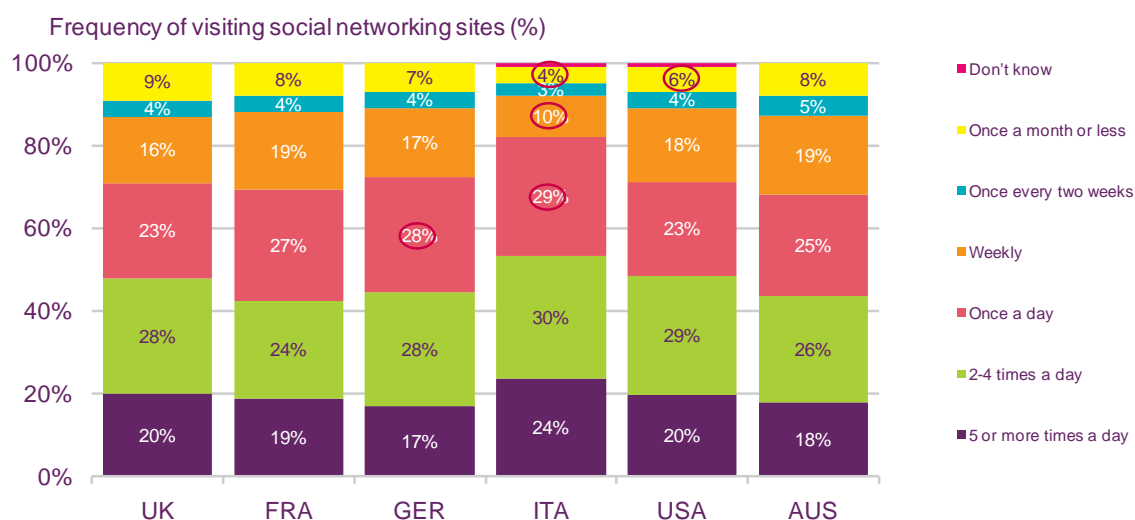
Q: "Have you set up your own page or profile on any of the following social networking sites?"

### **Seven in ten consumers with a social networking profile visit it on a daily basis**

Seventy-one per cent of consumers with a social networking profile in the UK stated they visited a social networking website at least once a day. This frequency of visiting social networking websites was consistent across markets, with Italian consumers the most likely (83%) to visit a social networking website on a daily basis (Figure 1.17).

One in five of UK consumers with a social networking profile said they visited a website five times a day or more. Again, consumption levels of social networking sites in Italy were higher, with just under a quarter (24%) stating they visited a site five times a day or more. Consumers with a social networking profile in Germany were the least likely to say they visited a social networking website five times or more a day (17%) although 73% did say they visited social networking websites on a daily basis.

**Figure 1.17 Frequency of visiting social networking websites, among those with a profile page**



Source: Ofcom consumer research, October 2011

Base: All those who have ever visited a social networking site. Sample size: UK=802, France=791, Germany=753, Italy=946, US=830, Australia=832

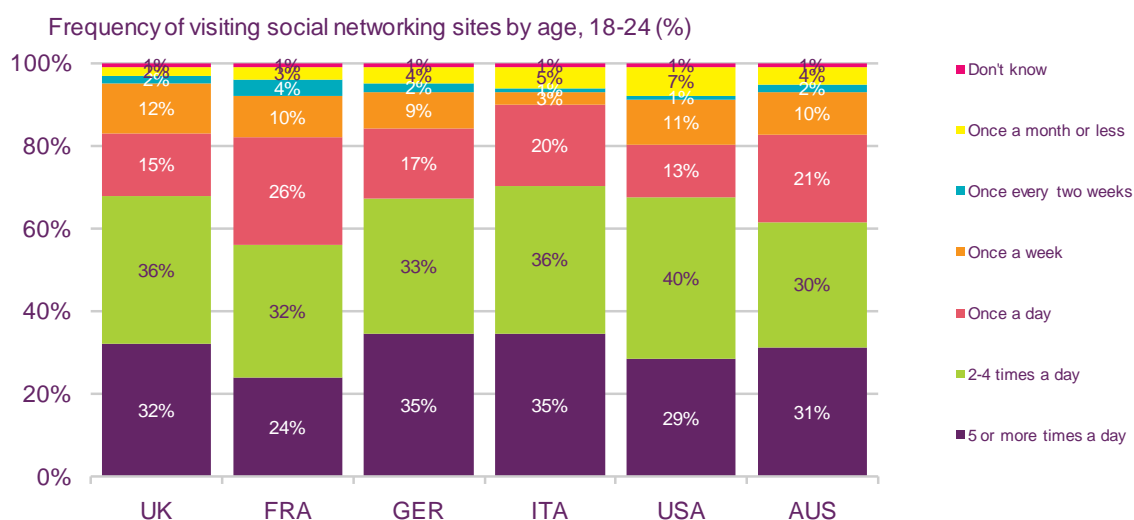
Q: "How often do you visit social networking sites, please think of the site(s) you visit most often?"

### Younger consumers visit social networking websites more frequently

Around eight in ten consumers between the ages of 18 and 24 visit a social networking website on a daily basis (Figure 1.18); this compares to just under half of consumers aged between 45 and 64 (Figure 1.19).

Thirty-two per cent of 18 to 24 year-olds in the UK visit a social networking website five times a day or more; this frequency of visits reduces with age. Just under one in ten (8%) of those aged between 45 to 64 in the UK claim to visit a social networking site five times a day or more. These patterns of frequency are reflected across all the markets in which we interviewed.

**Figure 1.18 Frequency of visiting social networking websites, by age: 18-24**

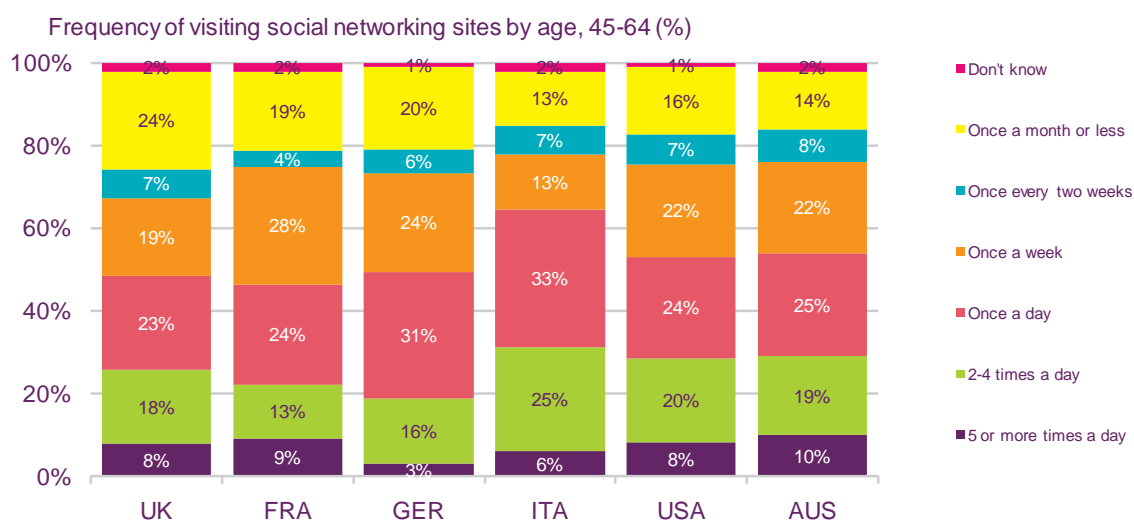


Source: Ofcom consumer research, October 2011.

Base: All those who have ever visited a social networking site. Sample size: UK=802, France=791, Germany=753, Italy=946, US=830, Australia=832

Q: "How often do you visit social networking sites, please think of the site(s) you visit most often?"

**Figure 1.19 Frequency of visiting social networking websites, by age: 45-64**



Source: Ofcom consumer research, October 2011.

Base: All those who have ever visited a social networking site. Sample size: UK=802, France=791, Germany=753, Italy=946, US=830, Australia=832

Q: "How often do you visit social networking sites, please think of the site(s) you visit most often?"

**Between 30% and 40% of consumers use a mobile phone to access their social networking profile page, although laptop and desktop computers remain the most common way of accessing social networking sites**

UK consumers are the most likely to access a social networking website via a mobile phone, with just over four in ten (43%) accessing their profile page via either an app or the web browser on their mobile phone. Just over four in ten (41%) of those interviewed in Australia

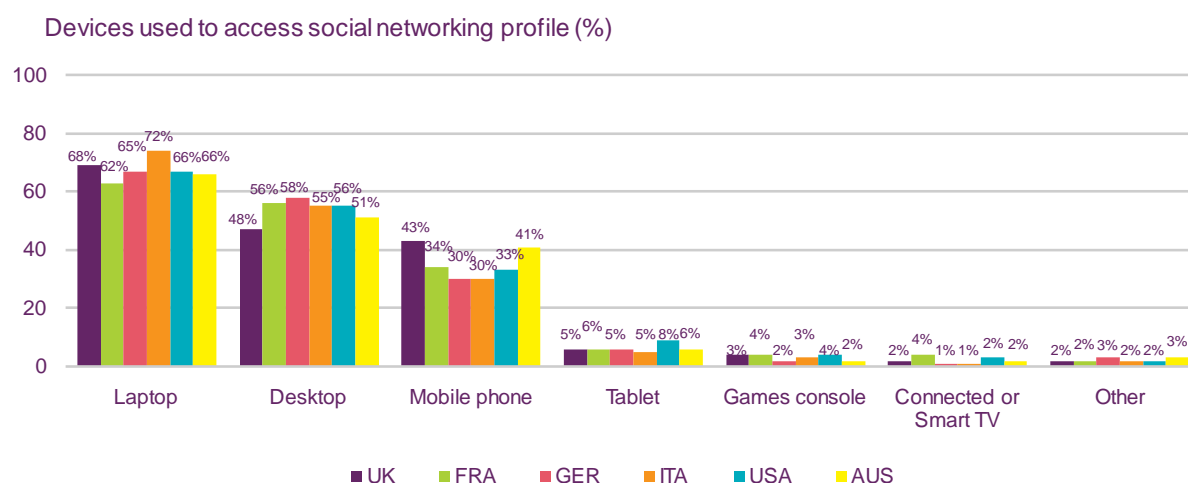
also accessed their profile page in this way. The third highest group who accessed their profile page in this way were French consumers (34%) (Figure 1.20)

Although there has been growth in the number of consumers accessing their social networking profile page via a mobile phone, laptop and desktop computers are still the devices consumers are most likely use.

Just under seven in ten UK consumers (68%) said they used a laptop to access their social networking profile; this is the second highest score, behind Italy (72%).

However, UK consumers were the least likely to access their profile using a desktop computer. At 48%, this is only just ahead of the proportion using a mobile phone to access a profile page. In Germany, consumers with a social networking profile were most likely to access their profile using a desktop computer, at just under six in ten (58%).

**Figure 1.20 Devices used to access social networking profile page**



Source: Ofcom consumer research, October 2011

Base: All those who have a page or profile on a social networking site. Sample sizes: UK=715, France=717, Germany=658, Italy=841, US=778, Australia=755

Q: "Which of the following do you use to access social networking sites?"

Note: Mobile phone includes both "mobile phone via an app" and "Mobile phone via the web browser"

### On average, consumers have over 100 connections / 'friends'

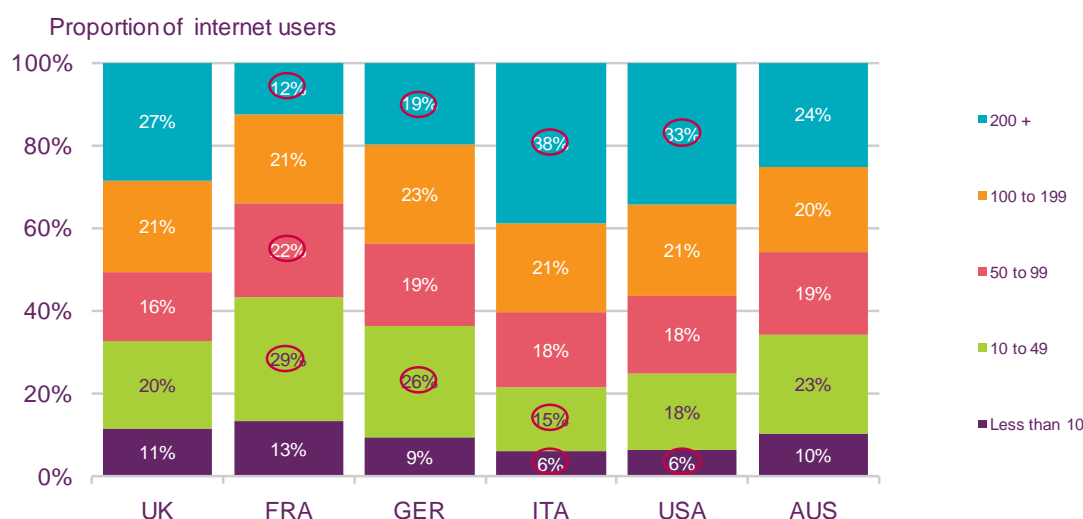
Just under two in three consumers interviewed in the UK (64%) stated they had 50 or more connections or 'friends', with 27% claiming to have over 200. This distribution is very closely reflected in Australia, and is also shown in the average number of 'friends' / connections claimed by those interviewed in the UK (168) and Australia (160) (Figure 1.21 and Figure 1.22).

Consumers with a social networking profile, interviewed in France and Germany, are more likely to have fewer 'friends'. For example, in France 29% of those with a profile page have between 10 and 49 connections; this compares to one in five in the UK. And just over one in ten (12%) of those interviewed in France with a social networking profile claim to have over 200 connections on their main social networking profile, compared to 27% in the UK. Again, this distribution is reflected in the average number of connections in France (108) and Germany (137).

The markets in which users are most likely to have the highest number of connection or 'friends' are Italy and the US. One in three in the US, and just under four in ten (38%) in Italy

with a social networking profile claimed to have 200 or more 'friend's on their main social networking profile page. Only 6% said they had fewer than ten.. Both markets have a higher average number of connections, compared to the UK, with US consumers having just under 200 (198) and those interviewed in Italy claiming to have on average 216 'friends'.

**Figure 1.21 Number of connections / 'friends' on main social networking profile**

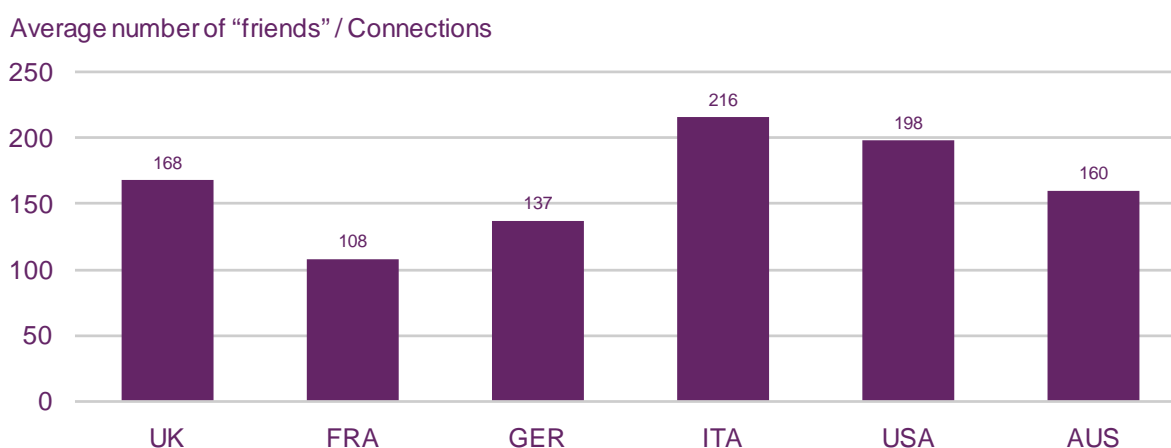


Source: Ofcom consumer research, October 2011

Base: (All Adults who have a page or profile on a social networking site): UK=715, France=717,  
Q: How many connections or "friends" do you have for your social network profile(s) (on average),  
please use the site you visit most often?

Note: Circled data points indicate statistically significant differences to the UK

**Figure 1.22 Average number of connections / 'friends' on main social networking website**



Source: Ofcom consumer research, October 2011

Base: (All adults who have a page or profile on a social networking site): UK=715, France=717,  
Germany=658, Italy=841, US=778, Australia=755  
Q: How many connections or "friends" do you have for your social network profile(s) (on average),  
please use the site you visit most often?

### 1.5.5 Activities carried out on social networking sites

**The most popular function used on social networking sites is communication with friends and family**

Eighty-five per cent of those interviewed in the UK with a social networking profile use it to communicate with existing friends and family. This is also the single highest activity across all the other markets. Around half also use social networking websites to look at comments, photos, other information shared by 'friends/connections' (52%) and to reconnect with people they have lost contact with (49%). The fourth most common activity conducted by those with a social networking profile in the UK is to upload pictures (44%) (Figure 1.23)

Among the other markets interviewed, only in Australia do activities appear in the same order of popularity as in the UK. France, Germany, Italy and the US all have "reconnect with people you've lost contact with" as the second most frequent activity, followed by "looking at comments, photos and other information". "Reconnecting with people you've lost contact with" is particularly popular in both Germany (61%) and Italy (58%).

**Figure 1.23 Activities carried out on social networking sites**

	UK	FR	GER	ITA	USA	AUS
Communicate with existing friends and family	85%	84%	69%	84%	90%	89%
To look at comments, photos, other information shared by 'friends/connections'	52%	45%	50%	48%	59%	58%
To reconnect with people lost contact with	49%	46%	61%	58%	61%	57%
To upload pictures	44%	21%	32%	40%	49%	40%
Communicate with people with similar interests and hobbies	27%	25%	30%	44%	28%	25%
For information on what's happening in my local area	26%	18%	38%	33%	27%	19%
For entertainment news and information	23%	29%	23%	20%	21%	21%
To upload videos	17%	13%	9%	23%	18%	14%
For information about national and global events	16%	13%	19%	30%	15%	21%
To look at campaigns and petitions	16%	10%	13%	26%	10%	13%
To network with business or professional contacts	13%	13%	24%	27%	17%	14%
Advertise to promote business	7%	5%	5%	12%	8%	9%

Source: Ofcom consumer research, October 2011.

Base: All those who have a page or profile on a social networking site. Sample sizes: UK=715, France=717, Germany=658, Italy=841, US=778, Australia=755

Q: "Which of the following activities do you use social networking sites for?"

### 1.5.6 The impact of social networking on use of other media

**A minority of those visiting social networking sites claim to have reduced the amount of texting, TV viewing and talking on the phone**

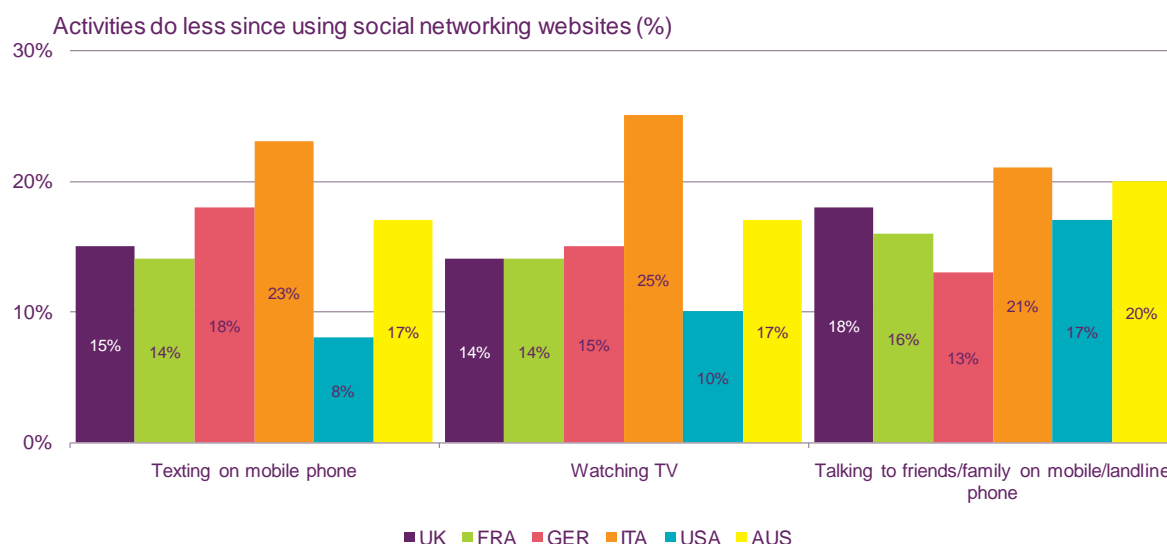
Eighteen per cent of those interviewed in the UK claimed that they talk to friends and family on a mobile phone or landline phone less often since using social networking websites. This number is similar across the other markets surveyed (Figure 1.24).

UK consumers also claimed to be watching less TV (by 14%) and texting on their mobile less (by 15%) since using social networking websites.



Around a quarter of those visiting a social networking website in Italy claimed that they had been texting (23%) and watching TV (25%) less. Consumers in the US were the least likely to claim that they were reducing these activities due to social networking (8% texting less, 10% watching TV less).

**Figure 1.24 Activities do less since using social networking websites**



Source: Ofcom consumer research, October 2011.

Base: All those who have visited a social networking site. Sample sizes: UK=804, France=792, Germany=760, Italy=946, US=833, Australia=832

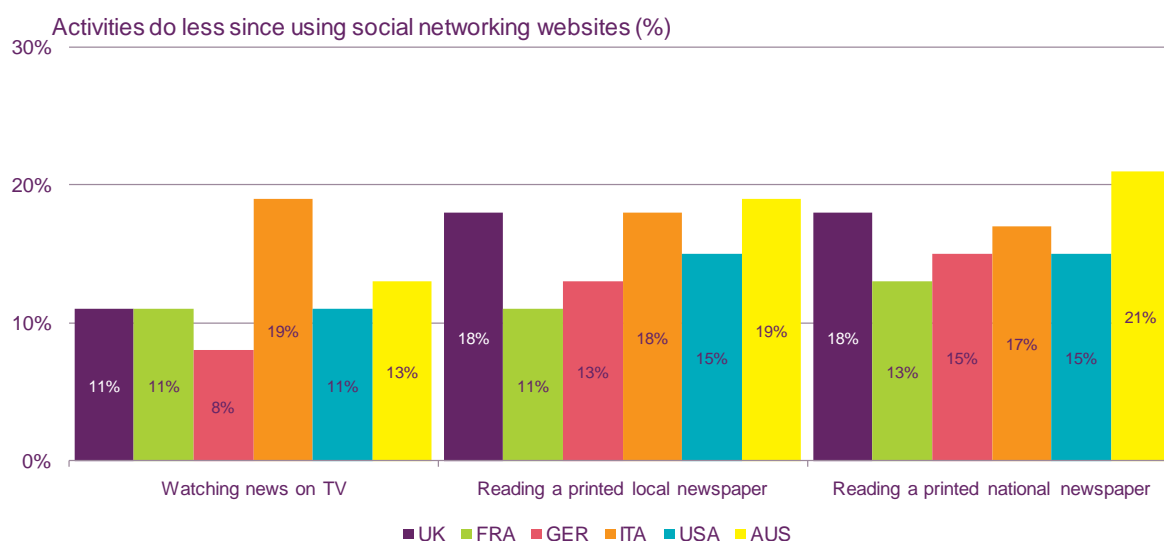
Q: "Since you've used social networking websites, which of the following activities do you now take part in MORE or LESS than you used to?"

### Just under one in five UK consumers who have visited a social networking website claim to read printed newspapers less

Eighteen per cent of UK consumers who have visited a social networking website claimed that they read printed local and national newspapers less often than before they used social networking sites; this claimed behaviour is higher than all other countries, with the exception of Australia (19% local newspaper and 21% national newspaper) (Figure 1.25).

Just over one in ten (11%) of those interviewed said they watched less news on TV since using social networking websites; this is slightly lower than the 14% claiming to watch TV less. This is consistent with the results across the other countries surveyed, with the exception of Italy, where just under one in five (19%) claimed that they watch news on TV less since using social networking websites; again, this is lower than those claiming to watch less TV (25%).

**Figure 1.25 Media used less since using social networking websites**



Source: Ofcom consumer research, October 2011

Base: All those who have visited a social networking site. Sample sizes: UK=804, France=792, Germany=760, Italy=946, US=833, Australia=832

Q: "Since you've used social networking websites, which of the following activities do you now take part in MORE or LESS than you used to?"

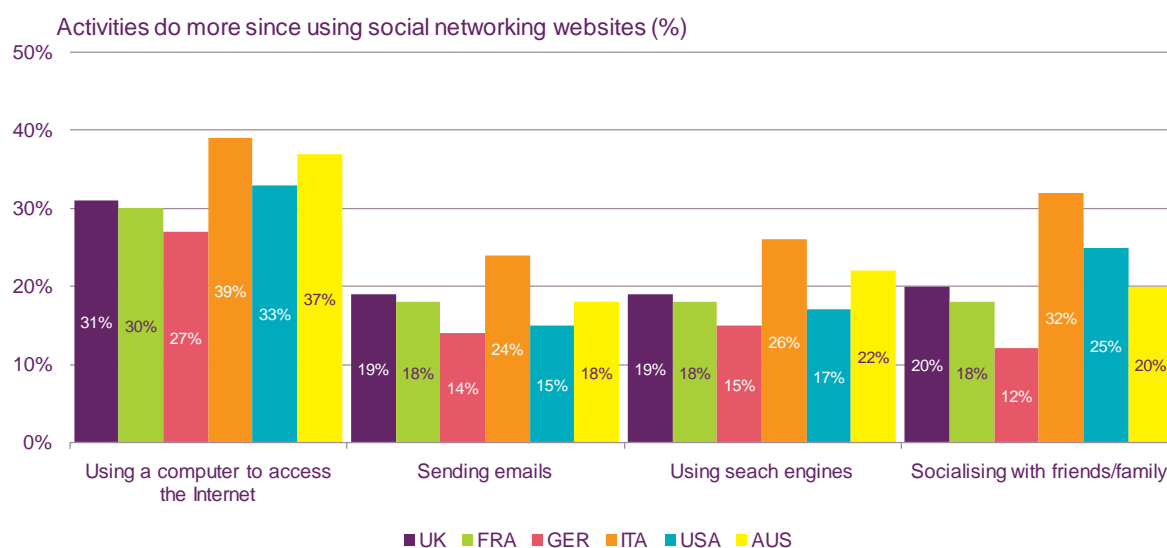
### **Over three in ten in the UK who have visited a social networking website claim to use a computer more to access the internet**

Thirty-one per cent of those in the UK who have visited a social networking website said they use a computer to access the internet more since using social networking websites. With the exception of Germany, over three in ten said they used a computer to access the internet more than they did previously. The most likely groups to say this were users in Italy and Australia (39% and 37% respectively) (Figure 1.26).

Around one in five (19%) of those in the UK who have visited a social networking website also said that they were sending more emails, and using search engines more, than they did before. Among the other markets, those interviewed in Italy were the most likely to do these activities more, with around a quarter claiming to do so.

Another activity that social networkers claimed to do more often was socialising with friends and family. In the UK one in five stated they did this more, and the picture was similar in the other countries surveyed, and highest in Italy, at 32%.

**Figure 1.26 Activities done more since using social networking websites**



Source: Ofcom consumer research, October 2011.

Base: All those who have visited a social networking site. Sample sizes: UK=804, France=792, Germany=760, Italy=946, US=833, Australia=832

Q: "Since you've used social networking websites, which of the following activities do you now take part in MORE or LESS than you used to?"

### 1.5.7 Consumers attitudes to privacy when using social networking sites

#### Privacy in social networking – regulatory context

Privacy remains a prominent policy issue, including in the area of social networking, and there have been several recent noteworthy developments in this area.

The main piece of European Union legislation governing the conditions for the processing of personal data online and offline is the EU Directive on Data Protection. The European Commission considered the need to review the Directive in 2010, and is planning to present proposals to adapt it in the light of technological changes, and the development of new ways of processing data, including social networking sites. Some issues under consideration are:

- ways to strengthen the principle of data minimisation, the right to access and to correct, the right to be forgotten, and data portability (e.g. when switching to another social network);
- a general obligation to notify adverse personal data breaches to the competent national authority and individuals; and
- clarification and strengthening of conditions to guarantee informed consent.

In June 2011, the Commission published an independent report on the implementation of the Safer Social Networking Principles for the EU, a self-regulatory agreement brokered by the Commission in 2009. The report found that the majority of social networking sites give minors age-appropriate safety information, respond to requests for help and prevent minors' profiles from being searched via external search engines. However, most sites lacked default settings to make minors' profiles accessible only to their approved list of contacts.

Separately, the Commission's 2011 *Protecting Children in the Digital World* report called for 'privacy by default' settings for children (see child protection online in section 1.4.6).

In France, a framework law on national security, Loppsi 2, was adopted in 2011. Among other things, the law criminalises the fraudulent use of another person's identity or personal data in electronic communications, disturbing their peace, and harming their honour or reputation, including on social networking sites. And in Germany, the Federal Ministry of the Interior announced in 2011 its intention to develop a self-regulatory code for social networks, with a focus on data security, consumer protection and the protection of minors.

In the United States, a number of Congress and Senate Bills were introduced during 2011, covering areas as diverse as location-based services (The Location Privacy Protection Act 2011), 'Do Not Track' in relation to behavioural advertising, and the gathering and processing of data about minors on social networks. These all combine statutory duties with a prescribed role for self-regulation. In addition, an anticipated White House white paper on consumer protection online is expected to propose a broad, baseline 'bill of rights' for online privacy, based on which companies would develop 'enforceable' codes of conduct.

### **Over 60% of consumers have concerns about their personal privacy online and how their personal data are used by social networking websites**

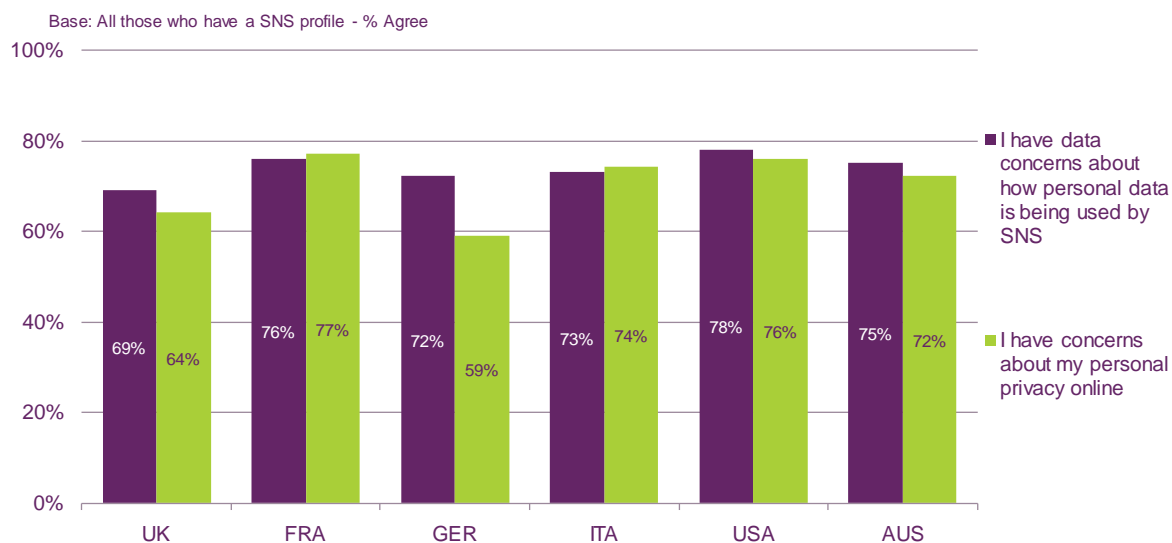
Between six and eight in ten of those interviewed agreed that they had some concerns about personal privacy online, and also how their personal data are used by the social networking websites (Figure 1.27).

Of those interviewed in the UK, just under seven in ten consumers (69%) agreed with the statement: "I have concerns about how my personal data is being used by social networking sites"; fewer than in any of the other countries surveyed.

Around two in three (64%) of those interviewed in the UK agreed that they had concerns about their personal privacy online; this was the second lowest level of concern among the countries interviewed, behind Germany (59%).

The consumers who were most likely to have concerns around personal privacy online and how social networking sites are using personal data were in the US (76% and 78%) and France (77% and 76%).

**Figure 1.27 Those who agree they have concerns about privacy online and how personal data are used by social networking sites**



Source: Ofcom consumer research, October 2011.

Base: For each country - all those with SNS profiles/Base: Total sample size: UK=715, France=717, Germany=658, Italy=841, US=778, Australia=755

Q: "From the statements below can you please confirm how much you agree or disagree with them...." [Respective statements as charted]

Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree.

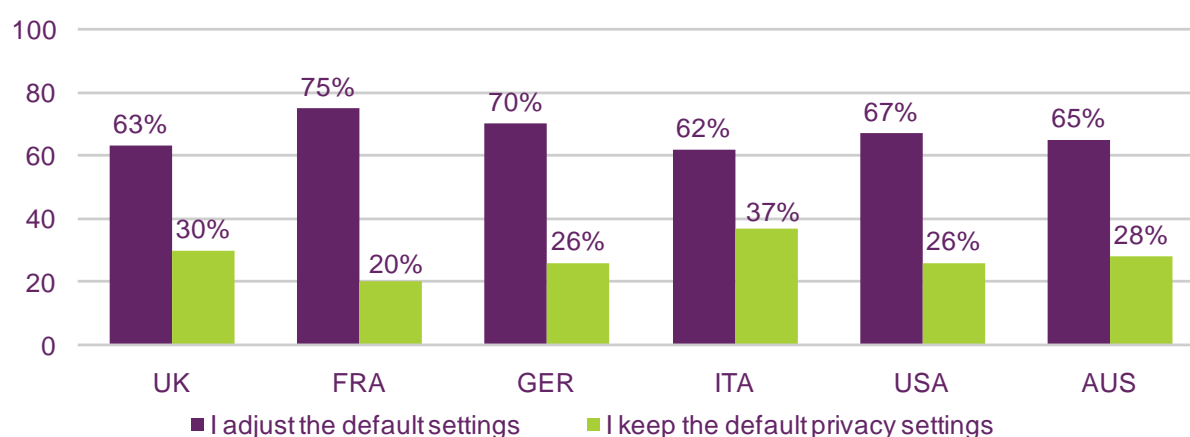
Total 'agree' charted (all those saying 4 or 5)

### **Just under a third (30%) of UK consumers do not adjust the privacy settings on social networking sites**

Although just under two-thirds of UK consumers interviewed (63%) said they had changed the privacy settings on their social networking profile page, a sizable minority have kept the default privacy settings (30%) (Figure 1.28)

Across the other markets interviewed a similar level have changed their default settings, with between six and seven in ten claiming that they do change them. Those in France are the most likely to do this, with three in four (75%) stating that they adjust the privacy settings. Conversely, those with a profile page in Italy are the most likely to leave the settings unchanged, with just under four in ten (37%) stating they do not adjust them from the default settings.

**Figure 1.28 Privacy settings on social networking websites**



Source: Ofcom consumer research, October 2011.

Base: All those who have a page or profile on a social networking site. Sample size: UK=715, France=717, Germany=658, Italy=841, US=778, Australia=755

Q: "Do you generally amend your privacy settings when using social network sites or do you keep the default settings?"

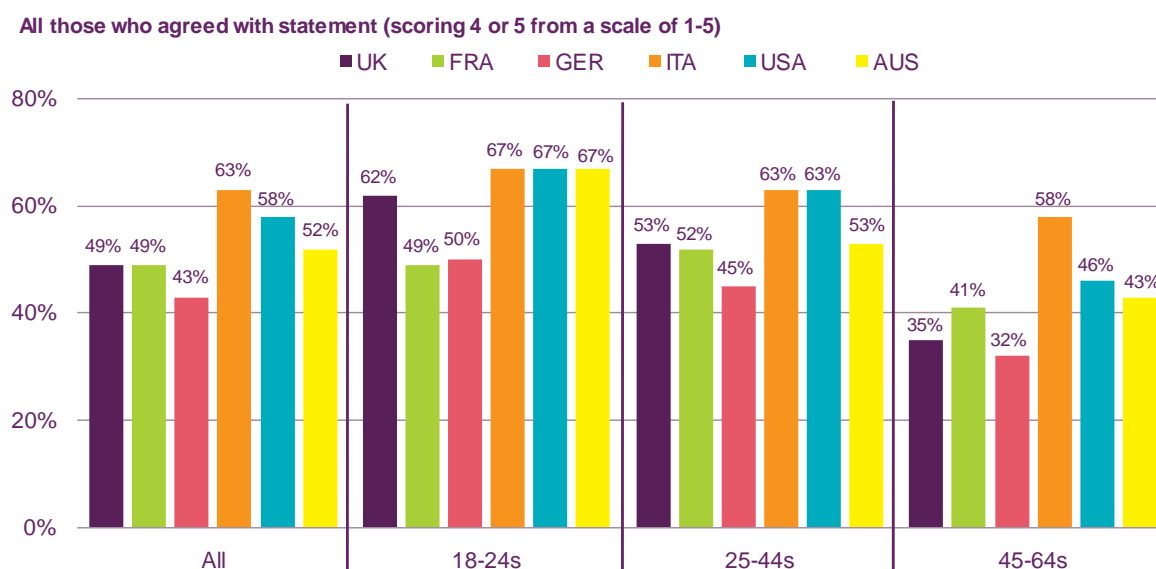
### 1.5.8 Consumers' attitudes towards social networking

**Just under half those in the UK with a social networking profile say these sites have significantly changed the way they communicate with people**

Forty-nine per cent of those with a social networking profile in the UK agreed that social networking had significantly changed the way they communicate with people. This rises to over six in ten (62%) among those aged between 18 and 24. This level of agreement is reduced with age, to 35% of those aged between 45 and 64 (Figure 1.29).

This pattern of level of agreement with the statement is reflected across all the markets, although there is a greater level of agreement among those interviewed in Italy than the other markets, across all age groups.

**Figure 1.29 Those who agree “social networking has significantly changed the way they communicate with people” by age**



Source: Ofcom consumer research, October 2011.

Base: For each country - all those with SNS profiles Base: Total sample sizes (All, 18-24s, 25-44s, 45-64s): UK=715,130,361,224; France=717,175,370,172; Germany= 658,151,334,173; Italy=841,180,431,230; US=778,130,410,238; Australia=755,136,379,240.

Q: “From the statements below can you please confirm how much you agree or disagree with them: Social networking has significantly changed the way I communicate with people”. Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree. Total ‘agree’ charted (all those saying 4 or 5)

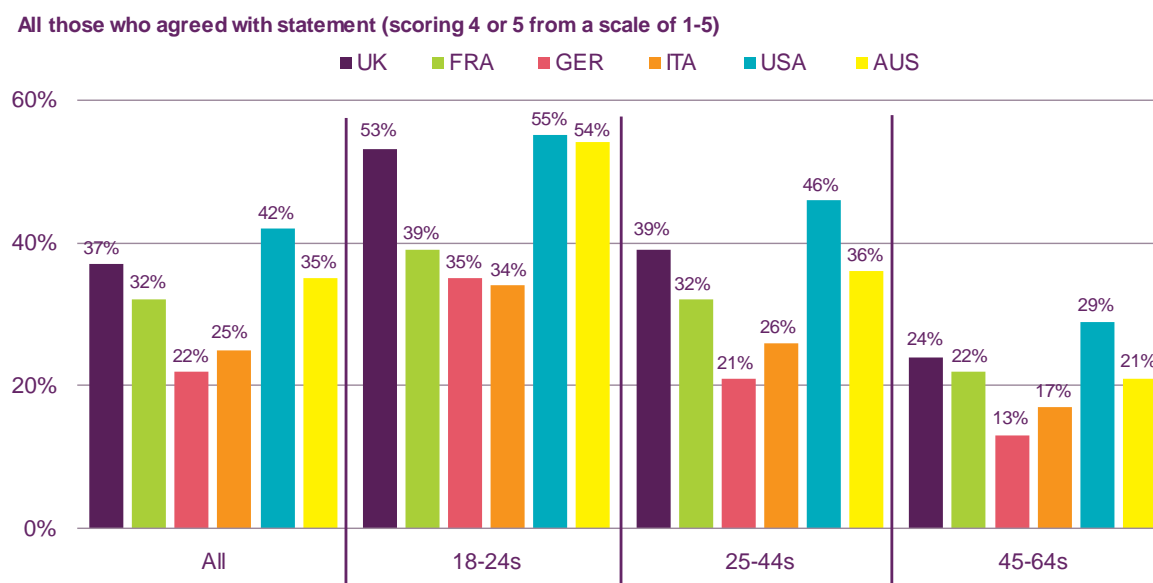
### Over half of 18-24 year olds in the UK would feel out of touch without social networking sites

Fifty-three per cent of those aged between 18 and 24 in the UK with a social networking profile agreed that they would feel out of touch without social networking sites. The number of those with a profile in the UK that agree with this statement reduces with age; just under one in four (24%) of those interviewed between the ages of 45 and 64 agreed that they would feel out of touch without social networking sites (Figure 1.30).

Alongside the UK, over half of those aged between 18 and 24 in the US (55%) and Australia (54%) said they would feel out of touch without social networking websites.

In the US just under half (46%) of those with a social networking profile between the ages of 25 and 44 agreed with this statement, compared to 39% in this age group in the UK (the second highest level of agreement among the other markets).

**Figure 1.30 Those who agree “I would feel out of touch without social networking sites”, by age**



Source: Ofcom consumer research, October 2011.

Base: For each country - all those with SNS profiles. Base: Total sample sizes (All, 18-24s, 25-44s, 45-64s): UK=715,130,361,224; France=717,175,370,172; Germany= 658,151,334,173; Italy=841,180,431,230; US=778,130,410,238; Australia=755,136,379,240.

Q: “From the statements below can you please confirm how much you agree or disagree with them: I would feel out of touch without social networking sites”. Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree. Total ‘agree’ charted (all those saying 4 or 5)

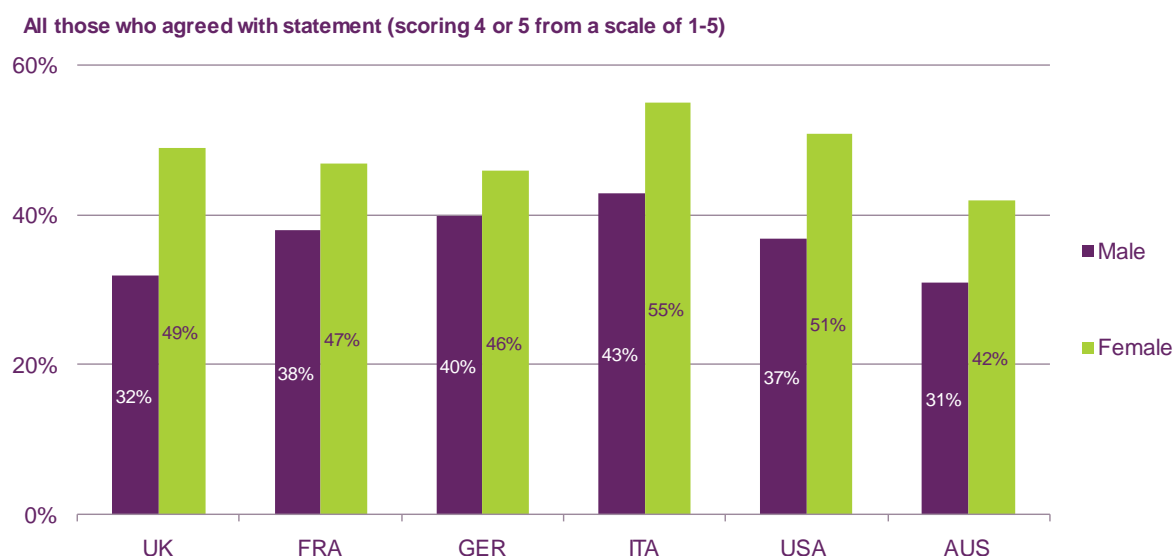
### **Around half of all women regularly update their social networking profile page, compared to just under a third of men**

Forty-nine per cent of women in the UK with a social networking profile agreed that they update it on a regular basis. This compares to just under one in three (32%) men who agreed with this statement (Figure 1.31).

Across the other markets there is the same pattern; women are more likely than men to update their status, although the difference in level of agreement between genders in the UK is the largest among the markets surveyed.



**Figure 1.31 Those who regularly update social networking profile, by gender**



Source: Ofcom consumer research, October 2011.

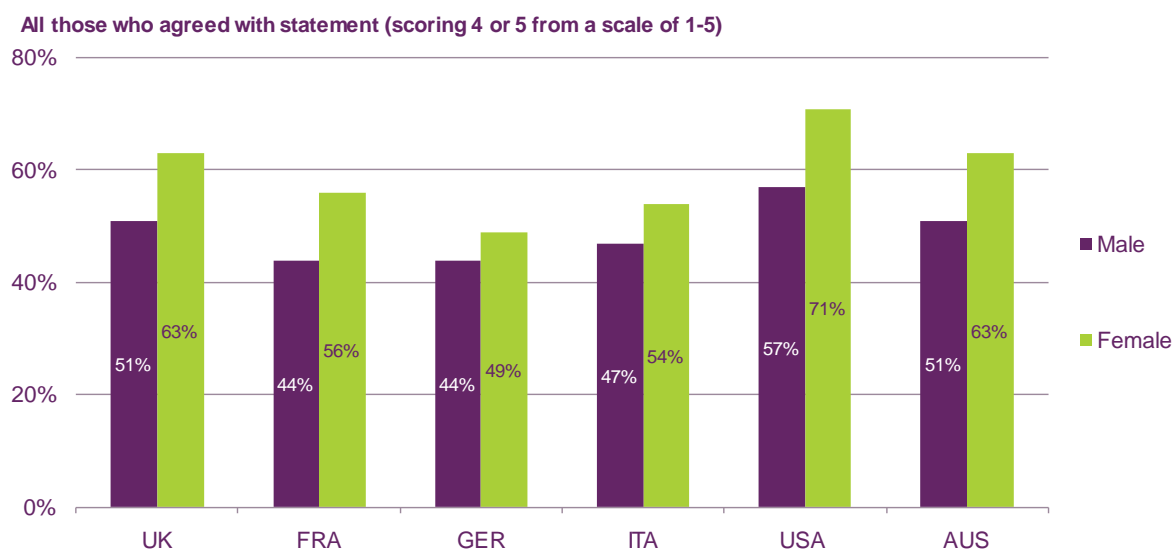
Base: For each country - all those with SNS profiles. Base: Total sample size (Male, Female): UK=345, 370; France=369,348; Germany= 353,304; Italy=426,415, USA=357,421, Australia=365,390.

Q: "From the statements below can you please confirm how much you agree or disagree with them: I regularly update my Social networking site(s)". Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree. Total 'agree' charted (all those saying 4 or 5)

### **Almost two in three women use social networking sites to see what other people are saying and doing**

Sixty-three per cent of female social networkers in the UK agreed that they use social networking sites to see what other people are saying and doing. This compares to just over half (51%) of males who agreed with this statement. The pattern is repeated across the other countries surveyed (Figure 1.32); the greatest difference by gender is in the US, where just over seven in ten (71%) women agreed with this statement, compared to 57% of men.

**Figure 1.32 Those who mainly use social networking sites to see what other people are saying and doing, by gender**



Source: Ofcom consumer research October 2011.

Base: For each country - all those with SNS profiles. Base: Total sample size (male, female): UK=345,370; France=369,348; Germany=353,304; Italy=426,415, USA=357,421, Australia=365,390.

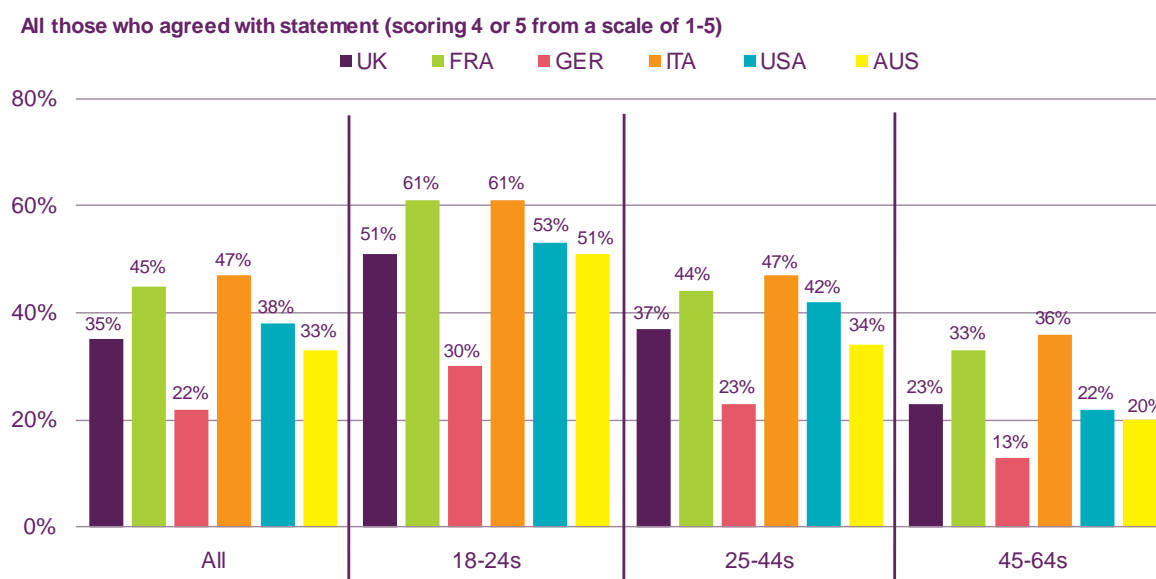
Q: "From the statements below can you please confirm how much you agree or disagree with them: I mainly use Social networking sites to see what other people are saying and doing". Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree. Total 'agree' charted (all those saying 4 or 5)

### **Just over half of 18-24 year olds find out breaking news stories first via social networking websites**

Fifty-one per cent of 18 to 24 year olds in the UK with a social networking profile agreed that they often find out about breaking news stories first via a social networking website. This compares to just under a quarter (23%) of those aged between 45 and 64 (Figure 1.33).

The highest levels of agreement with this statement were in France and Italy, where just over six in ten (61%) of 18 to 24 year olds agreed. The figure was lowest in Germany, where 30% in this age group agreed with this statement. And Germany had the lowest levels of agreement with this statement across all age groups.

**Figure 1.33 Use of social networking sites for breaking news by age**



Source: Ofcom consumer research, October 2011.

Base: For each country - all those with SNS profiles. Base: Total sample sizes (All, 18-24s, 25-44s, 45-64s): UK=715,130,361,224; France=717,175,370,172; Germany= 658,151,334,173; Italy=841,180,431,230; US=778,130,410,238; Australia=755,136,379,240.

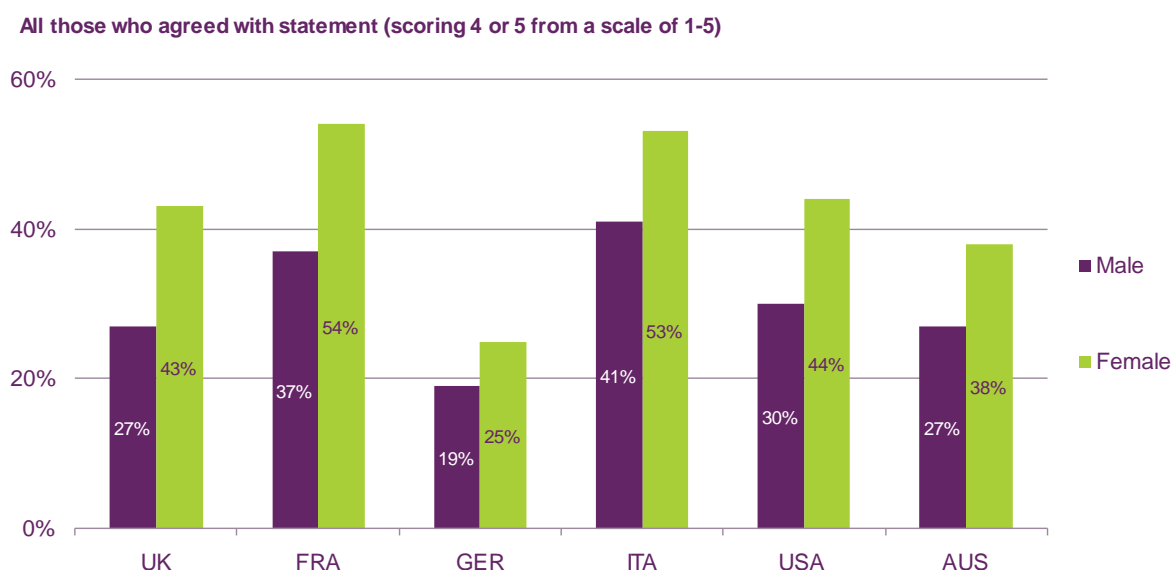
Q: "From the statements below can you please confirm how much you agree or disagree with them: I often find out about new breaking stories first via social networking sites". Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree. Total 'agree' charted (all those saying 4 or 5)

### Women are more likely than men to discover breaking news stories via a social networking site

Just over four in ten women with a social networking profile (43%) in the UK agreed that they often find out about breaking stories first via social networking sites. This compares to just over a quarter of men (27%) who agreed with this statement (Figure 1.34).

With the exception of France (54% female versus 37% male) this is the largest difference in agreement by gender for this statement among the countries surveyed.

**Figure 1.34 Use of social networking sites for breaking news, by gender**



Source: Ofcom consumer research, October 2011.

Base: For each country - all those with SNS profiles. Base: Total sample size (Male, Female):

UK=345, 370; France=369,348; Germany= 353,304; Italy=426,415, USA=357,421,

Australia=365,390.

Q: "From the statements below can you please confirm how much you agree or disagree with them: I often find out about new breaking stories first via Social networking sites". Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree. Total 'agree' charted (all those saying 4 or 5)

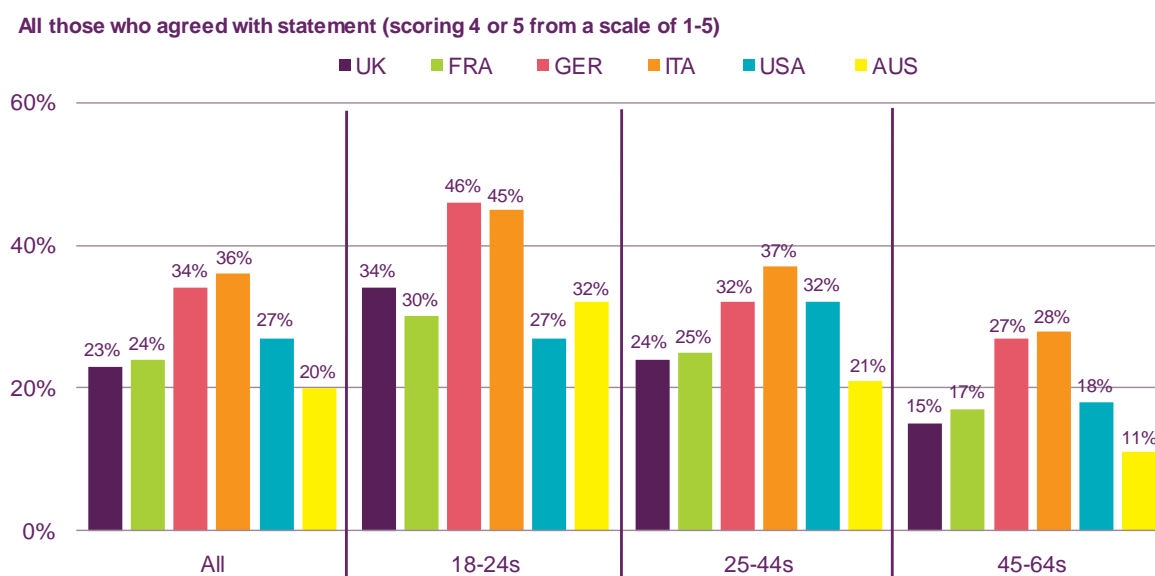
### **Just under a quarter of those with a social networking profile engage more with their community since using a social networking site**

Twenty-three per cent of those interviewed in the UK with a social networking profile agreed with the statement that they engage more with their local community as a result of social networking sites. Younger age groups are the most likely to agree; over one in three (34%) of 18 to 24 year-olds agreed with this statement. Consumers aged between 45 and 64 were the least likely, at 15%, to agree (Figure 1.35).

This pattern of engagement across the age groups is reflected across the other markets interviewed. In both the German and Italian markets it is more prevalent among the 18 to 24 year-olds, with 46% and 45% respectively agreeing, higher than any of the other countries surveyed.

Over one in four of those with a social networking profile in both Germany (27%) and Italy (28%) between the ages of 45 and 64 agreed that they engaged more with their local community, this compares to 15% of those in this age group in the UK.

**Figure 1.35 Those who agree “I engage more with my local community as a result of social networking sites”, by age**



Source: Ofcom consumer research, October 2011.

Base: For each country - all those with SNS profiles. Base: Total sample sizes (All, 18-24s, 25-44s, 45-64s): UK=715,130,361,224; France=717,175,370,172; Germany= 658,151,334,173; Italy=841,180,431,230; US=778,130,410,238; Australia=755,136,379,240.

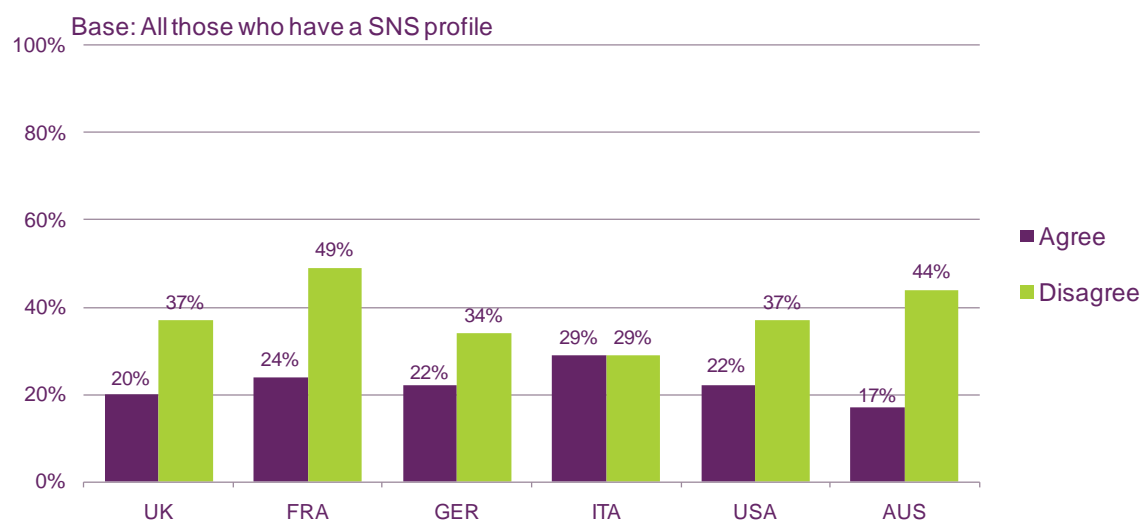
Q: “From the statements below can you please confirm how much you agree or disagree with them: I engage more with my local community as a result of social networking sites”. Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree. Total ‘agree’ charted (all those saying 4 or 5)

### One in five UK consumers trust the information they see on social networking websites

Twenty per cent of consumers in the UK with a social networking profile agreed that they trust the information on social networking websites. This compares to just under two in five (37%) who disagree with this statement (Figure 1.36).

Within the other markets interviewed there is a similar level of agreement with this statement, although just under half (49%) of those with a social networking profile in France disagreed with this statement.

**Figure 1.36 Those who agree / disagree “I trust the information on social networking sites”**



Source: Ofcom consumer research, October 2011.

Base: All those with SNS profiles : UK=715, France=717, Germany=658, Italy=841, US=778, Australia=755

Q: “From the statements below can you please confirm how much you agree or disagree with them....  
“I trust the information on social networking sites”

Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree.

Total ‘agree’ (all those saying 4 or 5) and ‘disagree’ (all those saying 1 or 2)

### **Younger consumers are more likely to trust the information they see on social networking websites**

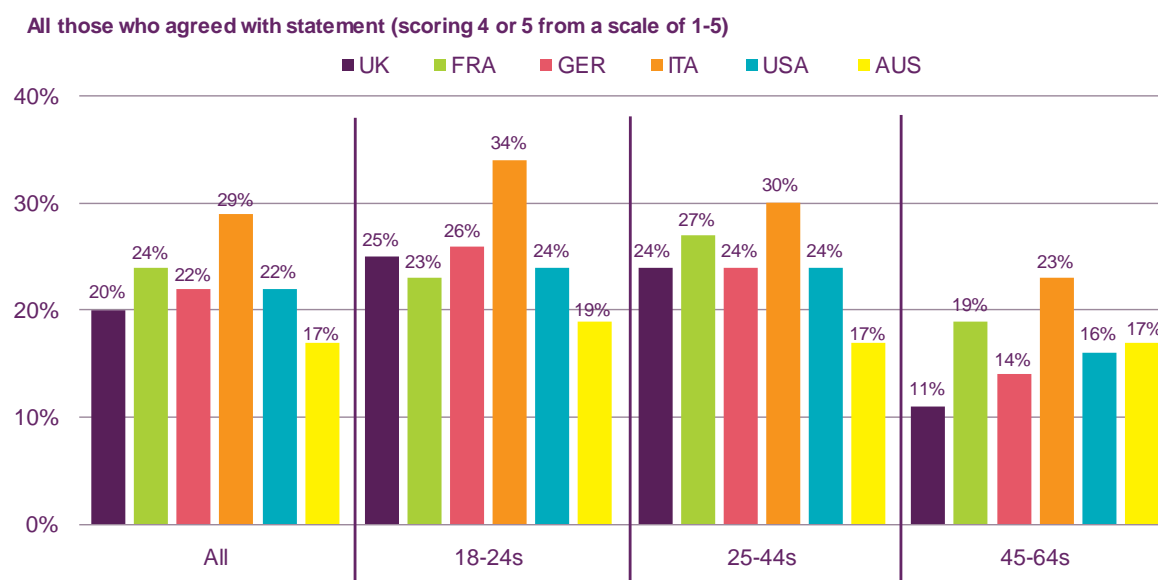
One in four of those aged between 18 and 24 years old with a social networking profile in the UK agreed that they trusted the information they see on social networking sites, compared to just over one in ten (11%) of those aged between 45 and 64 (Figure 1.37).

Among those aged 25 to 44, the number of consumers who agree with the statement “I trust the information on social networking sites” is consistent with the 18 to 24 age group; for example, 24% of those aged 25 to 44 with a profile page in the UK agreed with this statement, compared to 25% of 18 to 24 year-olds.

This pattern of reduced trust in the information on social networking sites in the 45 - 64 age group is shown across all the markets interviewed. But consumers in France with a social networking profile were slightly more likely to agree with the statement if they were aged between 25 and 44 (27%) than if they were aged 18 to 24 (23%). Consumers interviewed in the US with a social networking profile were also as likely to agree with the statement if they were either 18 to 24 or 25 to 44 years old (24%).

With these levels of trust in the information that is shown on social networking websites there still appears to be a potential role for mainstream media sources to act as trusted sources of information.

**Figure 1.37 Those who agree “I trust the information on social networking sites”, by age**



Source: Ofcom consumer research, October 2011.

Base: For each country - all those with SNS profiles. Base: Total sample sizes (All, 18-24s, 25-44s, 45-64s): UK=715,130,361,224; France=717,175,370,172; Germany= 658,151,334,173; Italy=841,180,431,230; US=778,130,410,238; Australia=755,136,379,240.

Q: “From the statements below can you please confirm how much you agree or disagree with them: I trust the information on Social networking sites”.

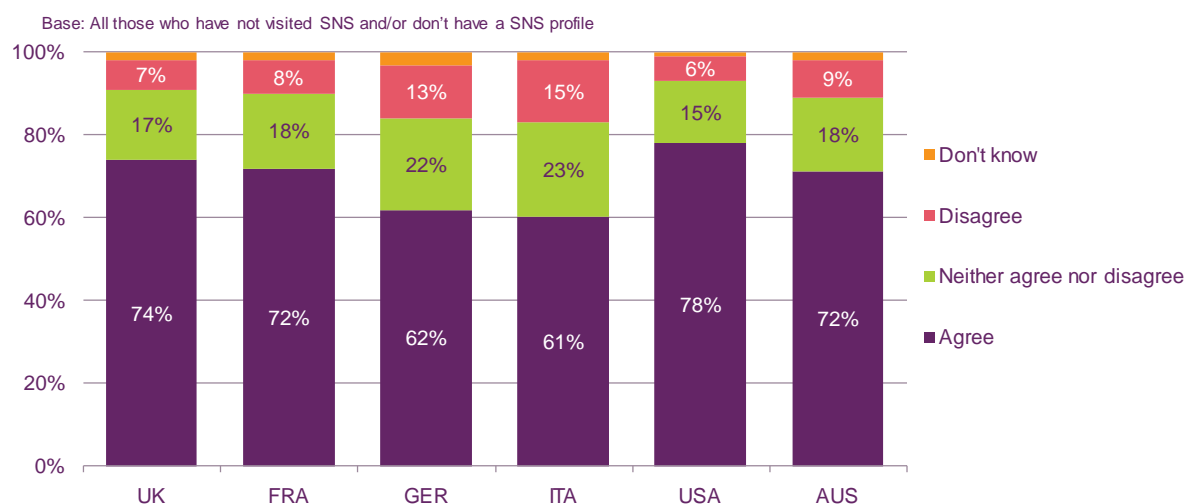
Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree. Total ‘agree’ charted (all those saying 4 or 5)

### Three-quarters of those who have not visited a social networking website, or do not have a profile, are not interested in social networking websites

Seventy-four per cent of those in the UK either without a social networking profile, or who have not visited a social networking website, agreed that they are not interested in social networking websites. Seven per cent disagreed with this statement (Figure 1.38).

Although this pattern is repeated in the French, US and Australian markets, there is some variation in both Germany and Italy, where 13% and 15% respectively disagree with the statement that they are not interested in social networking websites.

**Figure 1.38 Consumers without a social networking profile: attitude towards statement “I don’t have any interest in social networking sites”**



Source: Ofcom consumer research, October 2011.

Base: All those who have not visited SNS and/or don't have a SNS profile. Sample sizes: UK=300, France=297, Germany=356, Italy=204, US=224, Australia=257

Q: “From the statements below can you please confirm how much you agree or disagree with them: I don’t have any interest in social networking sites”. Scale of 1-5 used where 1 = Strongly disagree, 3 = neither agree nor disagree, 5 = Strongly agree.





# International Communications Market Report 2011

## **2 Comparative international pricing**

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## 2.1 Comparative international pricing

### 2.1.1 Introduction

Elsewhere in this report we benchmark the UK against other countries in terms of the availability, take-up and use of services, and the revenue generated from these services. However, when comparing markets for communications services across the world, the metric that is most important to the largest number of consumers is price.

It is extremely difficult to provide meaningful international comparisons due to tariff complexity, the wide range of usage profiles across households within countries, large variation in 'average' use between countries, the increasing bundling of services (where more than one service is offered on a single bill from the same provider), and variations in installation and hardware costs.

To attempt to address these issues, we have developed a methodology for comparing prices based on consumption across 'typical' household types in the UK, France, Germany, Italy, Spain and the US (where we have used Illinois as a representative state), and which considers issues including the impact of hardware subsidies and multi-service discounts. Within this section of the report, we provide an overview of the methodological principles (essential to understanding the basis of the findings), and a summary of findings, followed by a basket-by-basket analysis. Appendix B details our methodology.

### 2.1.2 Methodology

Full details of the methodology are provided in Appendix B, 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 and broadband, mobile voice, messaging, broadband and TV) appropriate for each household type (Figure 2.1).

In order to address potential bias arising because our baskets are more closely aligned with the usage profiles of some countries than of others, we have adjusted the overall average use, across the five baskets, to ensure that it closely matches average use across the six countries.

**Figure 2.1 Summary of baskets used in the analysis**

	'Typical household type'	Fixed voice	Mobile voice	Mobile messaging	Fixed line broadband	Mobile broadband	Television
1	A low use household with basic needs	Low	Low	n/a	n/a	n/a	Basic
2	A broadband household with basic needs	Medium	Low	Low	Low	n/a	Basic
3	A mobile 'power user'	n/a	High	High	n/a	High	Pay-TV
4	A family household with multiple needs	High	Medium	High	Medium	n/a	Pay-TV
5	An affluent two person household	Low	High	Medium	High	Medium	HD premium pay-TV

Source: Ofcom

- We included a wide range of components within the baskets to make them represent as accurately as possible the actual 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 by 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 costs and per-minute charging were incorporated, and a range of call lengths were used (distributed around an average based on figures from 30 OECD countries).
  - Incoming calls to mobile phones were included, in recognition of the different charging mechanism in the US.
  - Broadband components were defined both by minimum headline speed and by minimum data/time online 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.
- The average monthly use across the baskets was adjusted to ensure that it was closely aligned with average use in households across the six countries.
- Mobile handsets, broadband routers, digital set-top boxes and DVRs were included within the baskets (and amortised over an appropriate period in order to attribute a monthly cost). This was 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 wireless router), but seek to recoup the cost of these devices through subscriptions and service payments across the life of a contract. For similar reasons, we included connection and/or installation costs.
- In July 2011, details of every tariff and every tariff combination (including bundled services) from the largest three operators in each country by retail market share 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). Multi-play tariffs (i.e. those which incorporate more than one service) were also collected. Only those tariffs that were published on the websites of the operators were included (i.e. excluding bespoke tariffs that are offered only to certain customers).
- Across the six countries, the tariff data comprised:
  - fixed voice: 613 tariff options;
  - fixed broadband: 282 tariff options;
  - mobile: 3,475 tariff options;
  - mobile broadband: 347 tariff options;

- television: 367 tariff options; and
- multi-play bundles: 1,404 tariff options.
- Our model identified the tariffs that offer the lowest price for meeting the requirements of each of the household baskets.
- All prices have been converted to UK currency using a purchasing power parity (PPP) adjustment based on OECD comparative price levels and exchange rates on 1 July 2011.

## **Analysis**

In order to provide an illustration of prices for the individual services in each country, and show the best value that consumers could get for their full 'basket' of services, we have provided two types of analysis for each basket.

The first ('average single service' pricing) illustrates the price of each individual service, as defined by the average of the lowest-price tariffs offered by the three largest operators that provide the service in each country, weighted by the market share of the service provider in order to ensure fair representation. Essentially, we assume that consumers have a restricted number of choices, and can only obtain their desired combination of services from stand-alone offers. This provides a useful comparison of the relative costs of communications services, although a limitation of this analysis is that some providers do not offer stand-alone services: for example, in the UK, TalkTalk markets broadband only to its fixed voice subscribers.

The second type of analysis ('best-offer' pricing) identifies the lowest price that a consumer could pay for this basket of services, including, where appropriate, purchasing 'bundled' services. Our view is that this type of analysis is essential in order to provide a true picture of the position of consumers in each market, since they increasingly buy multiple services from single operators. Examples in the UK are Sky's TV, broadband and talk 'triple-play' offer, and Virgin's 'quad-play' offer that includes TV, voice, broadband and mobile. There are, however, two limitations to this type of analysis. First, 'bundled' service offerings are typically not available to all consumers as they are generally geographically constrained to areas where premises are connected either to a cable network or to an unbundled telephone exchange. Second, even in areas where these services are available, take-up may be low. Therefore, although the 'best offer' 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 - which is only possible when looking at single-service pricing.

## **Limitations**

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

- 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. It should be noted, however, that alternative measures of consumer choice and the competitive

environment are the complexity of tariff structures (a large range of tariffs is generally beneficial to consumers as it indicates that consumers have choice and are more likely to find an option which meets their needs; but the complexity of tariffs may make it more difficult to compare prices and select the optimal tariff), and the ease of switching to an appropriate tariff.

- 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 which are available only to certain types of consumers, such as *BT Basic* which offers lower-price line rental to consumers on income support, and levels of customer service.
- In order to calculate the weighted average, we have used market share calculations based on operators' retail customers. It should be noted that 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 (or only one, for some premium TV offerings) with nationwide coverage and/or significant market share. In these instances, we have identified the best-value tariff from each of them and calculated a blended average based on their market shares.
- To avoid 'skewing' the average single-service pricing analysis, tariffs which are over 100% higher than those offered by the lowest-price provider are excluded from the weighted average (the aim here is to exclude tariffs which are clearly not targeted at the usage profile we are analysing).
- 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 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, over 80% of Italian mobile connections are pre-pay, while over 80% 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.

- 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 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 2011 and applied it to 2010 data. This means that there may be some distortions in the relative positions of countries compared to the findings in 2010. The prices quoted are in nominal terms.

## **Report structure**

We start the analysis in this section of the report by summarising the ‘best offer’ pricing for our baskets across the six countries covered in this section of the report. This includes analysis of the lowest-cost pricing for single-service offers (where each service element of our baskets is purchased on a standalone basis) and also the ‘best prices’ available when ‘multi-play’ bundled tariffs are also considered.

We then go on to look at the individual components of our five baskets in order to compare the relative prices of services across these countries, both in terms of the lowest prices available when purchased on a standalone basis, and the ‘weighted average’ single-service cost across the largest operators in each market.

Finally, we look in more depth at the cost of fulfilling the requirements of each of our baskets in terms of the ‘weighted average’ cost across the three largest providers in each nation, and also the ‘best prices’ available when ‘multi-play’ bundles are included.

### **2.1.3 Summary of 'best price' analysis'**

#### **Bundles usual provide the lowest prices when purchasing fixed broadband**

In 2011 the least expensive option for purchasing Baskets 2, 4 and 5 (which all include a fixed broadband connection) involved purchasing multiple services in a 'bundle' (rather than buying each service on a standalone basis) in all of our comparator countries, the only exceptions being for Baskets 2 and 5 in the US (Figure 2.2).

For Baskets 1 and 3 (which do not include a fixed broadband connection) the 'best offer' combination of services to fulfil each basket involved purchasing stand-alone services except for Basket 1 in Germany and Italy, where the cheapest combination of services included buying a fixed voice and fixed broadband 'dual-play' bundle, even though this basket does not require a fixed broadband connection.

#### **Prices in the UK are among the lowest across the six countries covered**

Prices in the UK were among the lowest across the countries covered by the research: including the licence fee, the lowest 'best-offer' prices for three of our five baskets (Baskets 2, 3 and 5) were found in the UK, as were the second-lowest 'best offer' prices for the remaining two baskets.

The lowest price available in the UK for Basket 2 (which includes a basic broadband connection, a fixed voice line and two mobile phones with low use) was £42 (Figure 2.2) This involved purchasing a bundled tariff which includes 'unlimited' broadband access at a speed of 'up to' 20Mbit/s, line rental with inclusive anytime calls to UK geographic numbers at a price which can only be obtained when taking a mobile service from the same supplier, and an additional international call bolt-on. This combination of services cost more than £5 a month less than the lowest price achievable by purchasing all the services separately (see Figure 2.3), and the operator in question also offers discounts to broadband consumers taking a pay-monthly mobile contract, although the low use of the mobile in Basket 2 meant that there was no benefit to this, and the lowest price is achieved by purchasing separate pay-as-you-go mobile services.

For Basket 4, which includes basic pay-TV, the lowest price available in the UK involved purchasing a 'fixed line and fixed broadband dual-play' bundle (as was the case in Italy and the US) plus three call bolt-ons and separate pay-TV and mobile services. This was not the case in Germany and Spain, where the cheapest option was a triple-play of fixed line, fixed broadband and pay-TV, or in France where the lowest price was achieved by purchasing a quad-play service which also included mobile services. The greatest savings compared to purchasing the lowest price stand-alone services were in France, where consumers can save £72 a month by bundling services (in the UK, the saving was £4 a month).

Basket 5 includes HD premium pay-TV services (top-league domestic football and a top-price film/entertainment package). In the UK and Italy, the lowest price available for these was achieved by purchasing a 'triple-play' bundle, whereas in France, Germany and Spain the lowest prices were achieved by purchasing a 'dual-play' voice and broadband service, with television purchased separately from a different supplier.

#### **The US is the only country where bundling fixed broadband did not lead to savings**

In the US, for Baskets 2 and 5 there were no savings available by purchasing services in 'bundles' rather than purchasing the lowest-price single services (Figure 2.3). This is likely to be the consequence of less diversification in local markets, with the incumbent provider and the local cable operator typically competing in a duopoly to serve voice, broadband and TV services to customers. In this environment, the bundling of 'free' broadband with voice



and/or TV is value-destroying for operators who generally view voice, broadband and TV as three separate revenue streams.

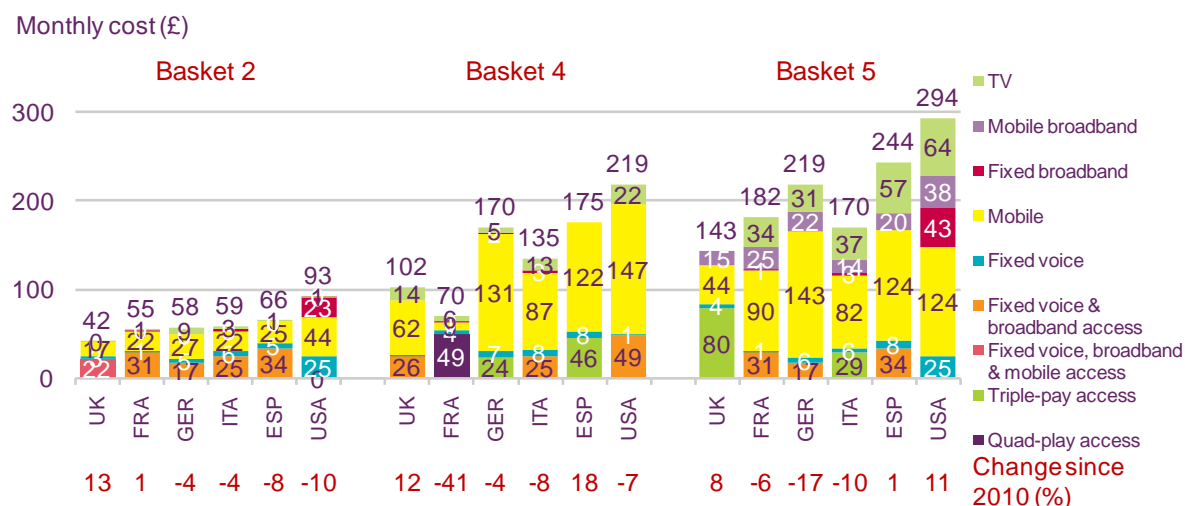
This is not the case in Europe, where local loop unbundling (LLU) and wholesale line rental (WLR) with regulated prices have led to competitive markets where alternative network operators attempt to gain market share by launching bundled services, and incumbents have responded by doing likewise.

### There is evidence that ‘best prices’ in the UK are increasing

In France, Germany, Italy and the US, the best prices for most of these baskets have fallen since 2010. However, the lowest prices for all three baskets increased in the UK, with the greatest increase for the lowest-use basket, Basket 2.

For Baskets 2 and 4, among the European countries the UK has the smallest difference between the best prices available via bundled services and via stand-alone services, indicating that there are fewer potential savings from purchasing bundled services.

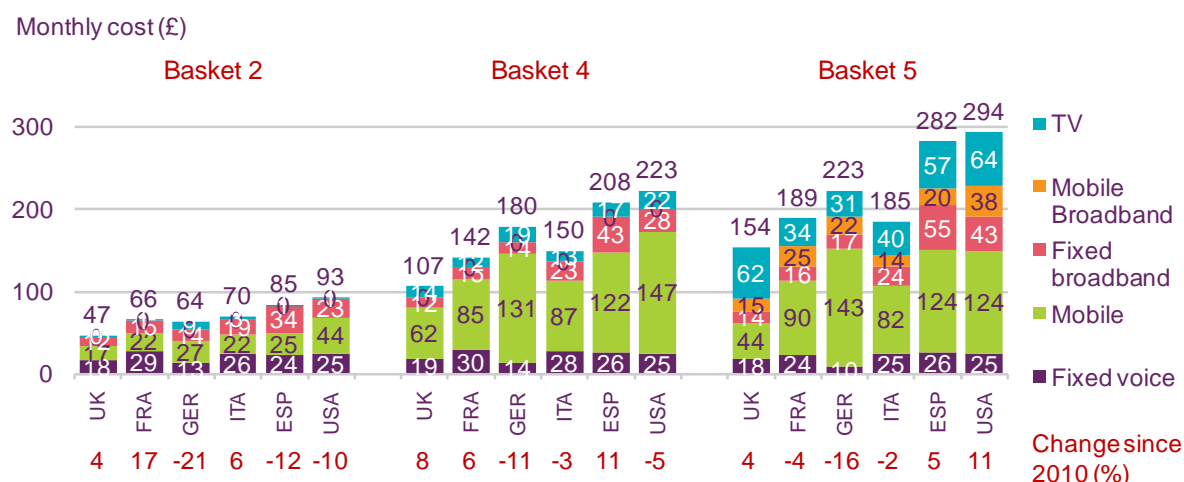
**Figure 2.2 Best prices available for baskets with a fixed broadband connection, including multi-play offers**



Source: Ofcom, using data supplied by Teligen

Note: Lowest tariffs available including multi-play from any of the three largest operators by market share for each service in each country, July 2010 and July 2011; PPP adjusted; TV excludes licence fee; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service

**Figure 2.3 Best stand-alone service prices available for baskets with a fixed broadband connection**



Source: Ofcom, using data supplied by Teligen

Note: Lowest tariff available from any of the largest operators by market share for each service in each country, July 2010 and July 2011; PPP adjusted; TV excludes licence fee; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service

## 2.1.4 Fixed voice summary

**The UK has the lowest weighted average fixed voice prices for all four usage profiles**

Figure 2.4 and Figure 2.5 below look at the costs of the fixed-line voice components of those baskets which include a fixed-line phone, based on the price of standalone services (i.e. not purchased in a bundle with other services).

In 2011 the UK had the lowest weighted average of the best-value tariffs from the three largest operators, among our comparator countries, for all four baskets that include fixed voice services (Figure 2.4). However, part of the reason for this is the introduction of BT's *Line Rental Saver* product, which enables customers to make savings on their line rental by paying £120 a year upfront rather than the £13.90 a month fee; this results in a saving of £3.90 a month. The inclusion of this tariff means that average best-value tariffs fell for all four of these baskets in the UK between July 2010 and July 2011, by an average of 5%; if this tariff were excluded, the weighted average price would have increased by 7%, although the UK would still have lower prices for all baskets than any other country (BT has the most impact on the weighted average pricing, with a 57% market share).

The availability of call 'bolt-ons' is key in A feature of the UK (and other markets) is that even basic line rental usually includes some inclusive calls, and many consumers can further reduce their spend by purchasing 'add-ons' to basic line rental; these provide reduced or inclusive calls for certain call types in return for a fixed monthly payment. All UK operators included in the analysis follow a similar strategy, offering basic line rental prices at around £12-14 and a range of 'add-ons' comprising discounted or lower price calls for a fixed monthly payment. This results in a wide range of tariffs being available to UK consumers, but also increases complexity and the likelihood that consumers may select tariffs that are not the best match for their needs (our fixed voice analysis includes 176 tariff combinations in the UK, 155 in Germany, 117 in the US, 106 in Spain, 34 in Italy and 25 in France).

## Weighted average prices fell for all four usage profiles in the UK and Germany

The UK and Germany were the only comparator countries where the weighted average of the fixed voice element of all four baskets fell in the year to July 2011; the opposite was true in France and the US, where they all increased. In the UK, the largest price fall came for Basket 4, which had the highest use at almost 600 minutes a month, and was as a result of a fall in the cost of BT's service as a result of the cheapest tariff taking the *Line Rental Saver* service (this cheapest service also included two *Friends and Family* bolt-ons).

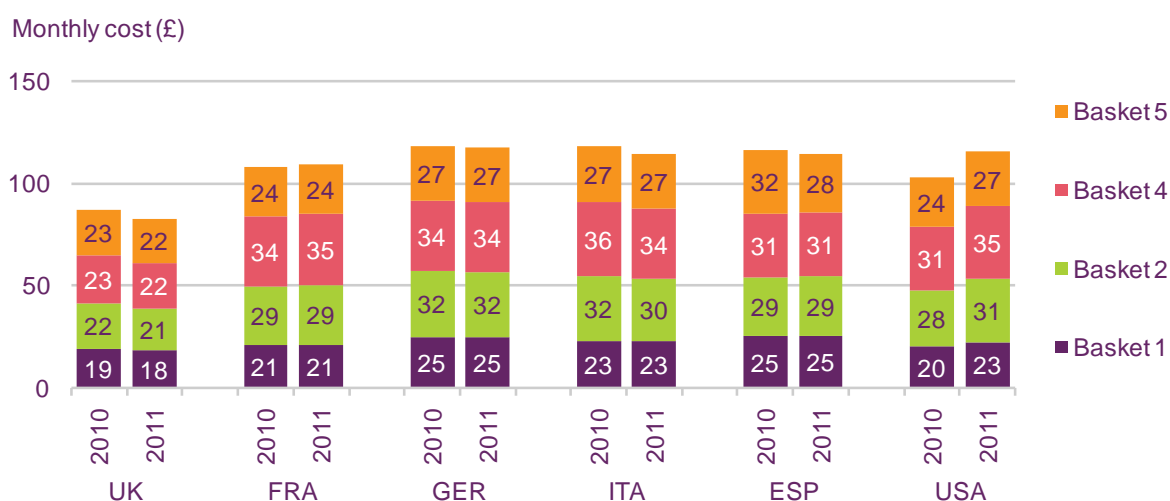
In France, the prices available from incumbent France Telecom (which has 74% market share and is therefore the major component of the weighted average pricing) were unchanged in the year to July 2011. However, Numericable (which had previously provided the cheapest basket costs) withdrew its standalone services, resulting in an increase in average best prices.

In the US, fixed voice tariffs have become less generous, and the cost of fulfilling all of the fixed voice elements of the four baskets that include landline services increased for both AT&T and Comcast, the two providers included in the calculation of the average best price.

In Germany the largest saving was for Basket 5, as Vodafone's standalone fixed voice service was withdrawn (meaning that the average best-value tariff calculation used two providers rather than three as previously) and there was a significant fall in the cost of Freenet's Voice over Internet Protocol (VoIP)-based service, as it no longer required an additional Deutsche Telekom fixed line (as had been the case in 2010).

Basket 5 also provided the only saving compared to 2010 in Spain, largely as a result of incumbent Telefonica's Movistar (market share 75% and the major component of the weighted average pricing) introducing a new, lower-cost, tariff. In Italy the only saving was for Basket 1 (which has low fixed-line use), largely due to Telecom Italia (which has a 52% market share) reducing the cost of out-of-bundle usage charges.

**Figure 2.4 Comparative single-service 'weighted average' fixed-line voice pricing**



Source: Ofcom, using data supplied by Teligen

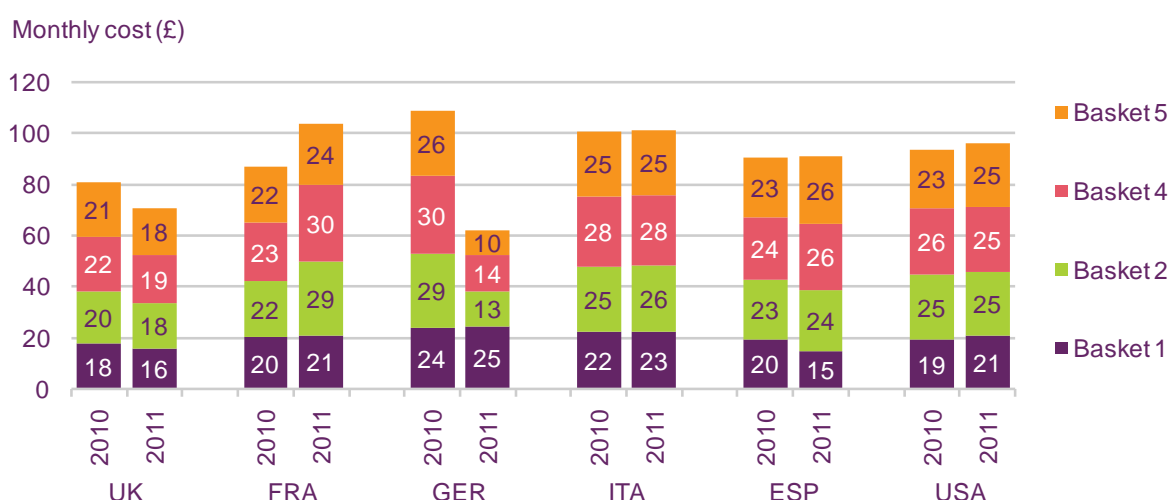
Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2010 and July 2011; PPP adjusted

## Germany has the lowest overall ‘best offer’ fixed voice prices

Unlike ‘weighted average’ analysis, which is to a considerable extent a reflection of incumbent pricing (incumbents have retail market share of over 50% of fixed lines in all our European comparator countries), the ‘best offer’ analysis gives prominence to tariffs from the largest alternative network (alt-net) operators, which typically undercut incumbent pricing as they look to gain market share. The exception is the UK, where BT offers the lowest pricing as a result of the inclusion of its Line Rental Saver product, which offers line rental at £10 a month to those paying 12 months in advance, compared to the £13.90 standard line rental (a similar product is now available from TalkTalk, which launched its Value Line Rental pre-payment product in September 2011, offering line rental at £9.50 a month to those paying 12 months in advance).

In looking at the best tariff available from the largest providers in each country, Germany offered the lowest overall fixed voice prices, because users of Fastweb’s VoIP-based service (which requires a separate fixed broadband connection that can be purchased from any provider) no longer need to pay line rental to Deutsche Telekom (Figure 2.5). As Basket 1 does not include a fixed broadband connection, there was no such price reduction for this basket in 2011.

**Figure 2.5 Comparative single-service ‘best offer’ fixed-line voice pricing**



Source: Ofcom, using data supplied by Teligen

Note: Lowest tariff available for the fixed-line voice component of each basket from any of the three largest operators by market share in each country, July 2010 and July 2011; PPP adjusted.

### 2.1.5 Mobile summary

Across the five households we include in our analysis there were nine mobile phone connections, ranging from high use and an advanced handset, typical of a pay-monthly smartphone user in the UK, to low use and a basic handset, typical of a pay-as-you-go subscriber in the UK. The connections are summarised in Figure 2.6 below. Connections also vary in terms of the distribution of call and messaging volumes (e.g. proportion of calls that are to national mobile, to national geographic numbers and to international numbers); full details are provided in the basket analysis later in this section.

**Figure 2.6 Summary of mobile connections used in the analysis**

	Basket	Handset type	Outbound voice minutes per month	Outbound SMS per month	Data use per month
Connection 1	Household 1 handsets 1 & 2	Basic	55	n/a	n/a
Connection 2	Household 2 handsets 1 & 2	Basic	55	30	n/a
Connection 3	Household 4 handset 4	Basic	55	65	n/a
Connection 4	Household 4 handset 3	Basic	55	70	n/a
Connection 5	Household 4 handset 2	Intermediate	169	160	n/a
Connection 6	Household 5 handset 2	Intermediate	188	20	100MB
Connection 7	Household 4 handset 1	Advanced	280	30	300MB
Connection 8	Household 5 handset 1	Advanced	376	80	300MB
Connection 9	Household 3 handset 1	Advanced	516	150	1GB

Source: Ofcom

### Mobile prices lowest in the UK, followed by France

Our analysis finds that overall, mobile pricing was significantly lower in the UK than in the other comparator countries: the UK offered the lowest ‘weighted average’ prices for each of the nine connections included within our baskets (Figure 2.7). Prices in France were second lowest; the total weighted average cost of fulfilling the nine different connection types included in our baskets fell below that in Italy in the year to July 2011.

Across all the European countries, prices for the lower-use connections are increasing, while the prices for higher-use connections are tending to decrease. There were differences in the extent of this change between countries: in France there were only small increases in the cost of the lower-use connections and proportionally larger falls in the cost of fulfilling the higher-use connections, while in Italy there were large increases in the average best-price cost of fulfilling the lower-use connections and relatively small reductions in those for the higher-use connections. This shift in pricing may be related to operator strategies to migrate customers from pre-pay to post-pay tariffs (for example, during 2010 the proportion of UK mobile connections that were post-pay increased from 41% to 46%<sup>13</sup>, while cuts in mobile termination rates may also be a driver for operators to increase the price of pre-pay mobile.<sup>14</sup>

### The availability of ‘SIM-only’ tariffs is pushing down mobile prices

‘SIM-only’ tariffs have become increasingly popular over the last few years, whereby customers do not receive a new handset when signing up for a mobile contract, but are supplied with a SIM card which they can use in a handset they already own. In the UK around one in five new mobile contracts were SIM-only in Q1 2011<sup>15</sup>, and almost half (44%)

<sup>13</sup> Ofcom *Communications Market Report* 2011, Figure 5.16, p260,

[http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK\\_CMR\\_2011\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK_CMR_2011_FINAL.pdf)

<sup>14</sup> <http://www.zdnet.co.uk/news/mobile-working/2011/07/04/orange-and-vodafone-go-it-alone-with-payg-price-hikes-40093300/>

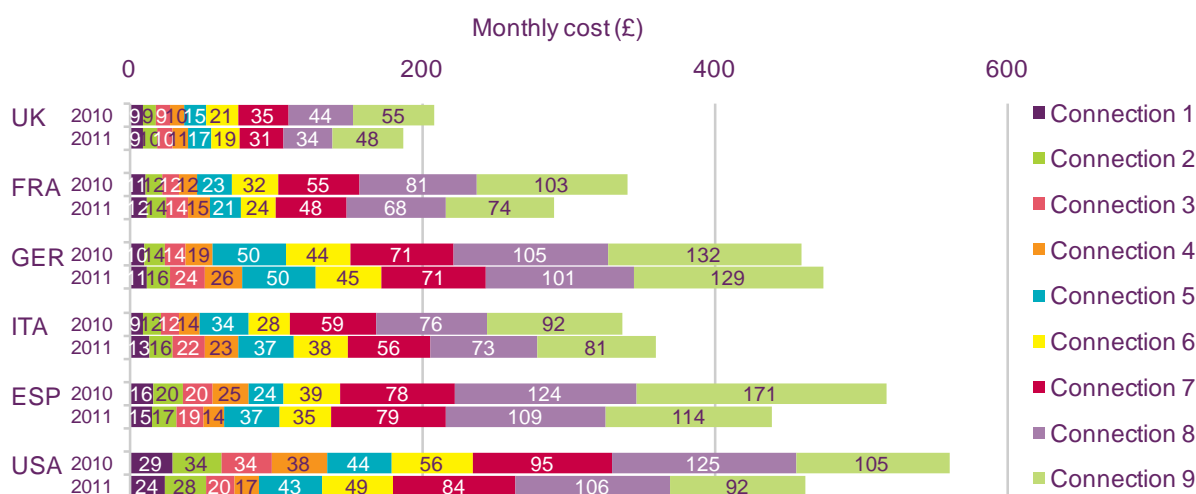
<sup>15</sup> Point-of-sale data from GfK finds that in Q1 2011 19% of new mobile contracts were for one-month duration – these will all be SIM-only contracts. In addition, some SIM-only contracts are for longer

of the tariffs feeding into the UK average best-pricing analysis of our connections for July 2011 were SIM-only, up from 30% in July 2010. Only Germany had a higher proportion of SIM-only tariffs feeding into its July 2011 analysis (48%). Similarly, the proportion of operator best-price offers feeding into the UK connection analysis that were pay-as-you-go increased in the year to July 2011, more than doubling from 15% to 33% (the highest proportion was in the US at 37%).

Although prices in the UK are, overall, lower than in other countries, the gap is narrowing; overall prices for our nine connections fell by 10% between July 2010 and July 2011, compared to falls of 18% in the US, 15% in Spain and 15% in France. However, in Germany and Italy the total cost of fulfilling all nine of our mobile connections increased in the year to July 2011, and in both cases it was only the higher-use connections where the average best-price cost did not increase: in Italy only connections 7, 8 and 9 had a reduction in the cost of fulfilling the required usage, while in Germany it was only connections 8 and 9.

Typically, the best-value mobile contracts are those with a long minimum term, as providers offer lower monthly charges to incentivise consumers to sign up for longer. However, in May 2011 new EU regulations came into force that mandate mobile providers to offer 12-month contracts and place an upper limit of 24 months on new contract lengths. This is likely to have had an upward effect on prices; for example, in July 2010 the cheapest tariff for connections 2, 3 and 4 in the UK had a 36-month minimum term. The withdrawal of this service and its replacement with more expensive alternatives has contributed to the overall average best price of fulfilling these three connections increasing by 7%.

**Figure 2.7 Comparative single-service ‘weighted average’ mobile pricing**



Source: Ofcom, using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2010 and July 2011; PPP adjusted

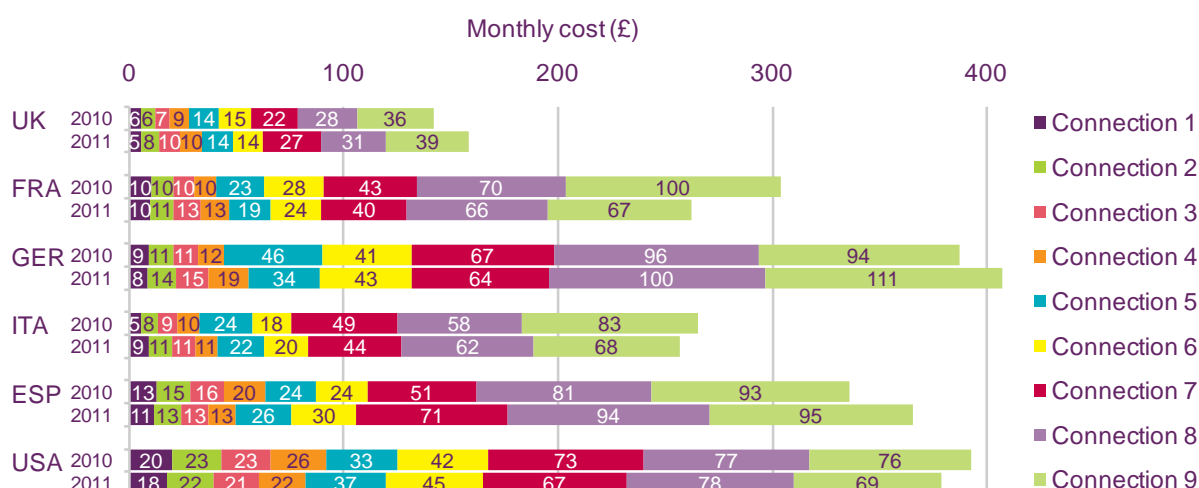
### Smaller operators tend to provide the lowest standalone mobile prices

In looking at the lowest prices available for the mobile phone components of each basket, the pattern was broadly similar to the ‘weighted average’ analysis, although in this analysis Italy’s prices came out lower than those in France (Figure 2.8).



The operators in our analysis with the lower market shares tended to offer the best single-service prices (even lower prices may be available from smaller operators, but these were not included in our analysis). In only four comparator countries outside the US did the operator with the largest market share have the cheapest prices. In the US, AT&T was the cheapest for six of our nine connections. In the UK, Orange offered the lowest price for four of the nine connections, while T-Mobile (which is also operated by Everything Everywhere) was cheapest for three (although it should again be emphasised that smaller operators including Three, and MVNOs, were not included in this analysis).

**Figure 2.8 Comparative single-service 'best offer' mobile pricing**



Source: Ofcom, using data supplied by Teligen

Note: Lowest tariff available for the mobile phone component of each basket from any of the three largest operators by market share in each country, July 2010 and July 2011; PPP adjusted.

### Mobile tariffs in the US tend to bundle large numbers of call minutes

The US differs from our other countries, as its mobile interconnect regime results in mobile users being charged for incoming as well as outgoing calls, and this means that the call minutes bundled with mobile contracts in the US are inbound and outbound totals. As a result, mobile contracts in the US often include a large number of bundled minutes (in July 2011, 47 of the 232 US contract tariffs in our analysis included unlimited voice calls) and often have a high monthly line rental cost.

As a result of generous bundled call allowances, average mobile use in the US is much higher than in Europe, at 635 incoming and outgoing minutes per connection per month in 2010, compared to an average of 111 outgoing minutes per connection per month across the UK, France, Germany, Italy and Spain (average outbound call minutes in the UK in 2010 were 131, with an average of 212 minutes for post-pay connections and 61 minutes for pre-pay connections). Another consequence of this is that in the US there are few mobile contracts aimed at lower use (only 11 of the 232 US contract tariffs in our analysis included less than 450 bundled minutes a month) and pay-as-you-go take-up is relatively low (at 23% of total subscriptions). It is also worth noting that pay-as-you-go tariffs in the US differ from those in Europe, as top-ups typically provide a set number of inbound and outbound minutes to be used in a 30-day period, rather than credit from which per-minute call charges are deducted.

Consequently, although the connection profiles used in our baskets have been formulated to be representative of average use across the six countries included in the analysis, they collectively have a much lower usage profile than the US average, and are less

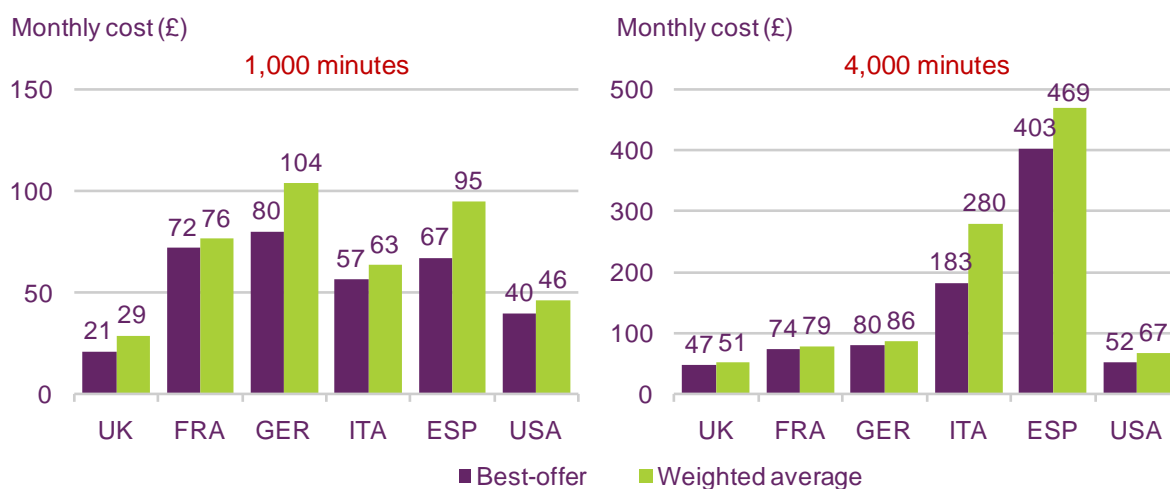
representative of the US market. Because of the high levels of use, prices in the US are relatively low on a per-minute basis (see Section 6.3.5 of this report). Similarly, because of the different tariff structures and the prevalence of ‘unlimited’ tariffs, if our baskets were to contain much higher mobile usage, the US would become relatively less expensive.<sup>16</sup>

### The UK is cheapest for very high voice use mobile connections

In order to examine this, we also compared the best-offer and weighted average pricing for very high voice use connections, in this case defined as having 1,000 and 4,000 minutes of calls and no SMS or data use (Figure 2.9).

This found that the UK was again the cheapest for the basket of 1,000 minutes (where the lowest tariff was a SIM-only deal offering free on-net calls and 600 any-network minutes for £15 a month on a 12-month contract, and delivered an overall cost of £21 a month), and that the US offered the second-lowest pricing. Prices for the 4,000-minute basket should be treated cautiously as this is a highly theoretical basket that does not match any typical usage profile (indeed, it should be noted that some prices in Italy and Spain are more than four times as expensive as for the 1,000 minute basket). Nevertheless, at this extremely high usage level the UK was cheaper than the US, which again offered the second-lowest pricing (the lowest tariff in the UK was a SIM-only deal, offering unlimited any-network minutes for £41 a month on a 12-month contract, and delivering an overall monthly cost of £47 once the cost of the handset was included).

**Figure 2.9 Comparative pricing for mobile tariffs with 1,000 minutes and 4,000 minutes, July 2011**



Source: Ofcom, using data supplied by Teligen

Notes: Includes 1,000/4,000 inbound and 1,000/4,000 outbound minutes and a premium handset; Call split = 17% to fixed-line local, 9% to fixed-line national, 37% to on-net mobile, 37% to off-net mobile, 0% to international; 60% weekday daytime; 19% weekday evening; 21% weekend; calculated from the lowest tariff available for the mobile phone component of each basket from any of the three largest operators by market share in each country, July 2010; PPP adjusted

<sup>16</sup> Differences between the UK and the US markets, and the impact of the ‘receiving party pays’ interconnect regime, are discussed in detail in Ofcom’s consultation into mobile voice termination (May 2009), see: [www.ofcom.org.uk/consult/condocs/mobilecallterm/annex9.pdf](http://www.ofcom.org.uk/consult/condocs/mobilecallterm/annex9.pdf)



### **2.1.6 Fixed-line broadband summary**

#### **The lowest weighted average fixed broadband prices were in the UK and France**

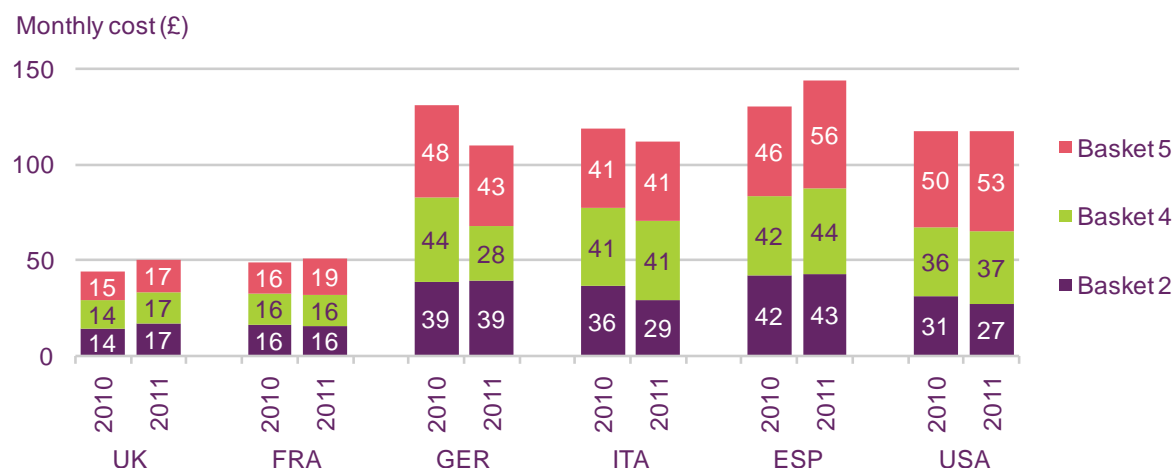
Fixed broadband connections are frequently bought as part of a bundle of communications services from the same supplier, meaning that comparisons of single-service broadband prices should be treated with some caution (in all of the countries, the majority of broadband tariffs included in the analysis were 'bundled' tariffs that included at least one other service, and in the UK, Spain and Italy some operators do not offer standalone fixed broadband services). It is also the case that for most broadband services a fixed-line voice service is also required (although this is not generally true for cable broadband and 'naked DSL'; a DSL-based broadband service with no voice line which is available from some operators in France, Italy, Germany and the US). In our single-service price comparisons we have excluded the cost of telephone line rental, even where this is required, and have included it in the fixed voice element of the basket in question (Figure 2.10). The inclusion of fixed voice line rental in this analysis would increase the cost of fixed broadband services in those countries which do not have significant naked DSL availability (including the UK).

The fixed broadband connections used in our analysis are defined by the headline 'up to' speed of the connection, and require minimums of 4Mbit/s, 8Mbit/s and 16Mbit/s for Baskets 2, 4 and 5 respectively. As such, none of our baskets required a 'superfast' connection (i.e. with a headline download speed of 30Mbit/s or more) because take-up of these services is low in most of the countries covered in this section (it was highest in the US, where 7% of fixed broadband connections were superfast at the end of 2010). However, high-speed alternatives are available in these countries, often at no great incremental cost. It should also be noted that headline 'up to' speeds often do not accurately represent the speeds available to consumers.

#### **The lowest standalone fixed broadband prices were in the UK**

In July 2011 the lowest overall standalone fixed broadband prices were available in the UK and in France, where most of the basic packages from all the leading operators met the requirements of even the highest specification basket (Basket 5, with a minimum 'up to' 16Mbit/s connection and 5GB use per month). In both countries broadband competition is intense: in the UK this is as a result of an environment in which no provider has more than a 30% market share, and there is high availability of LLU (available to 89% of UK homes) and cable-based services (48% of homes), whereas in France broadband competition is particularly intense between incumbent France Telecom's Orange brand (with 46% market share) and alternative network providers SFR/Neuf and Free (both with shares of over 20%). However, it is notable that broadband prices increased in the UK between July 2010 and July 2011 by over £2 a month (on average a 15% increase).

**Figure 2.10 Comparative single-service ‘weighted average’ fixed-line broadband pricing**



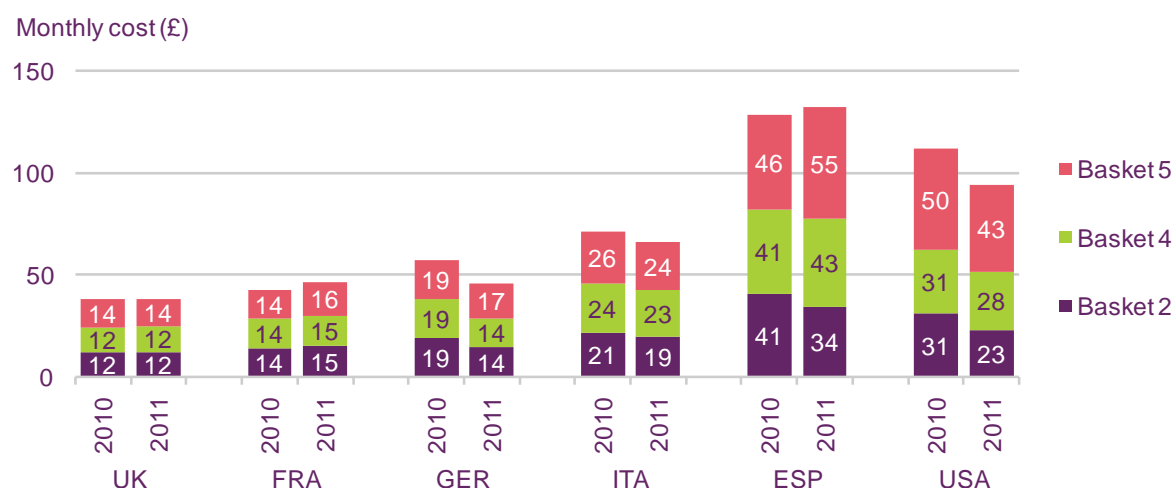
Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2010 and July 2011; PPP adjusted

### A wide range of fixed broadband prices are available in most countries

In the UK, Germany, Italy and the US there were significant differences between the ‘weighted average’ and ‘best offer’ standalone service charges, suggesting that there are substantial differences between the prices offered by the three largest standalone fixed broadband providers (the lowest standalone prices in July 2011 were generally offered by providers with relatively low market share: AOL Broadband and O2 in the UK; Kabel BW and Unity Media in Germany; Wind and Tiscali in Italy; and Orange, Movistar and Jazztel in Spain). This was not the case in France and Spain, where there was little variation between the ‘best offer’ price and the ‘weighted average’ prices (Figure 2.11).

**Figure 2.11 Comparative single-service ‘best offer’ fixed-line broadband pricing**



Source: Ofcom, using data supplied by Teligen

Note: Lowest tariff available for the fixed broadband component of each basket from any of the three largest operators by market share in each country, July 2010 and July 2011; PPP adjusted.

## 2.1.7 Mobile broadband summary

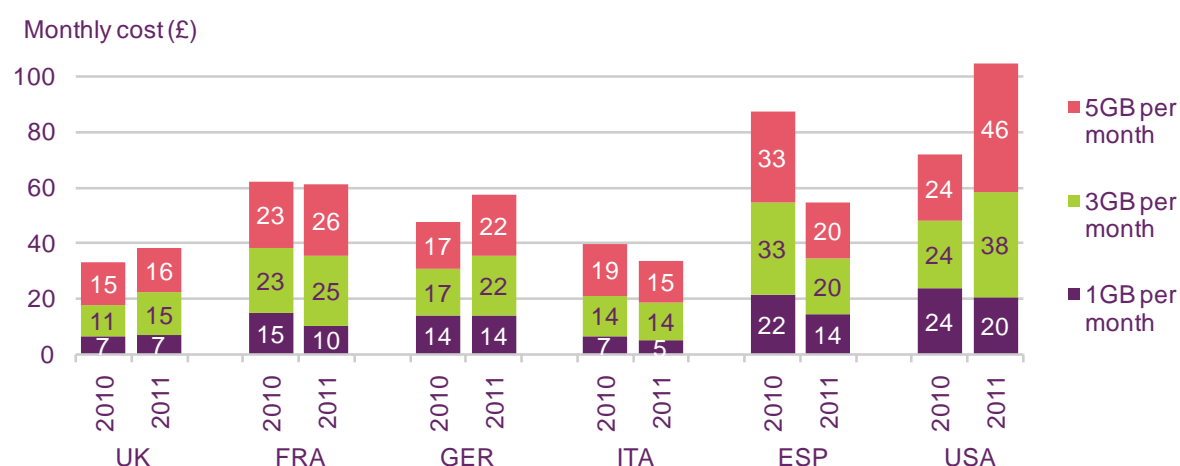
### The lowest 'best offer' mobile broadband prices were in Italy

Our basket analysis included two mobile broadband connections (i.e. using a datacard or 'dongle'), one with high use (5GB of use over 30 days a month, in Basket 3) and the other with medium use (3GB of use over 25 days a month, in Basket 5). However, in order to compare the full range of mobile broadband usage types, we also looked at the cost of a low use connection (1GB of use over 10 days a month). The speed of connection, and whether the tariff in question included the use of public WiFi hotspots, was not taken into account. We also only considered the 'best offer' service available, as the relatively narrow range of tariffs available from operators in many countries makes it difficult to produce a meaningful 'weighted average' figure.

The lowest prices for mobile broadband were available in Italy, where the cost of fulfilling the requirements for each of the three connections fell in the year to July 2011 (Figure 2.12). The UK offered the second lowest prices overall, but the cost of each of the three defined connections increased, due to a mixture of price increases and the withdrawal of tariffs with the most generous inclusive data bundles (in July 2010 18 services included more than 3GB of bundled data, whereas this figure had fallen to 10 by July 2011).

Two factors differentiate the UK and Italy from the other countries covered by our analysis. Firstly, 3G networks launched relatively early in these countries, with three operators offering HSPA networks by the end of 2006, and by early 2008 mobile broadband had become a mass market proposition in both countries. A consequence is that mobile broadband markets are relatively mature compared to other countries, with all of the MNOs and some MVNOs competing to win market share. Secondly, new entrant 3G operator Three offers services in both countries and has used lower prices and mobile broadband to differentiate itself from existing services and gain market share (in the UK Three provided two of the lowest-cost services for our three connections, and in Italy it provided one of the lowest-cost connections).

**Figure 2.12 Comparative 'best offer' single-service mobile broadband pricing**



Source: Ofcom, using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country, July 2010 and July 2011; PPP adjusted

### 2.1.8 TV summary

#### **Germany and the UK had the highest TV licence fees across our six countries**

It is difficult to provide like-for-like comparisons for TV services, due to the wide variations in the numbers and types of channels to which different services provide access. However, we consider that it is important to include TV services, given the wide take-up of bundled services that include a television component, usually as triple-play (fixed voice, fixed broadband and TV) and sometimes as quad-play (the same services plus mobile).

For the purposes of this analysis we have defined basic pay-TV as the lowest subscription required to receive channels additional to those which are available on free-to-view television. We have defined HD premium pay-TV as the subscription required to receive HD channels and the best package of both top-flight football (NFL in the US) and a top-price film/entertainment package.

The highest TV licence fees were in Germany and the UK (which also have the highest investment per head in public service broadcasting), while in Spain and the US there is no licence fee, and public funding for broadcast services is raised by alternative means.

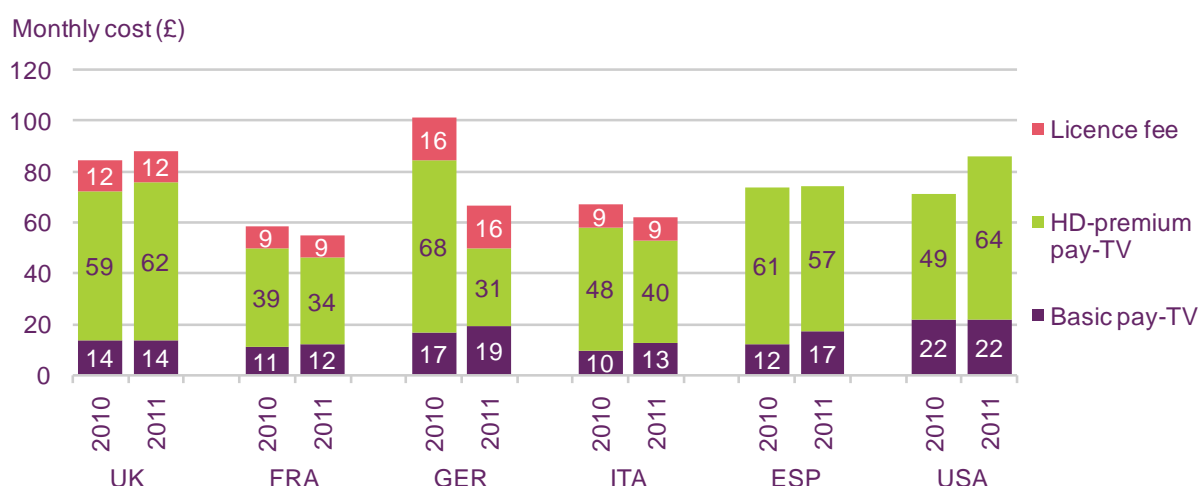
#### **Single-service HD premium pay-TV prices in the UK are comparatively high**

France, Italy and the UK offered the lowest costs for a basic pay-TV 'entry-level' service. In France, the cheapest service was a satellite service, which provided a total of 23 basic and premium channels for €12.90 (£12) a month (excluding the hardware cost). This was the same service that had proved cheapest in 2010, and the majority of the price increase in 2011 was due to the removal of a promotion which discounted the first three months' fees. In Italy, the cheapest standalone basic pay-TV service was a cable service offering 58 channels for €16 (£14) a month (plus installation and access fees) discounted to €4 (£4) for the first six months of the contract. This was more expensive than the cheapest service a year previously, which had a €10 (£9) a month fee and no set-up costs. The cheapest price in the UK in 2011, as in 2010, was Virgin Media's M+ with V HD cable service, offering 65 channels for £13 a month (plus installation costs), up from £12 in 2010 when total set-up costs were higher.

In Spain the lowest-cost service was a satellite service offering 38 channels for €15 (£14) a month. In Germany the lowest-price offer was a cable service offering 80 channels for €16.95 (£15) a month (plus hardware and installation costs), while in the US the best offer was a cable service offering 30 channels for \$25.49 (£16) a month.

It is more difficult to compare premium pay-TV packages due to the variation of content in these packages. The apparent changes in prices in France and the US, in the year to July 2010, are more likely to be the result of channel line-up changes than genuine movements in price. This basket now includes a requirement for high definition (HD) channels (at the end of 2010 an average of just under 40% of homes across our comparator countries took an HD television service). In most countries HD is now a standard element of these premium channel packages, although for the digital satellite single-service best-offer in the UK it costs an additional £10 a month.

**Figure 2.13 Comparative single-service 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 basket from any of the three largest operators by market share in each country, July 2010 and July 2011; PPP adjusted

Having provided an overview of findings on a single-service basis, we now detail the relative total prices for baskets of communications services representative of five household types.

### 2.1.9 Basket 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 almost four hours of calls a month (the majority of which are local, although they occasionally make calls to mobiles and do not make any international calls). They each have a mobile phone which they use to make just under an hour of calls each per month (they do not send any SMS messages or use any data services) and watch free-to-air multichannel digital television (available in all of our countries).

**Figure 2.14 Composition of Basket 1**

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
223 call minutes	n/a	<b>Connection 1</b> 55 call minutes <b>Connection 2</b> 55 call minutes	n/a	Free-to-air

Source: Ofcom

### The lowest weighted average pricing for Basket 1 was in the UK

Using a weighted average of the best-value tariffs from the three largest operators in each country, there is little variation between the prices of the fixed-voice component of this basket. The lowest fixed voice prices were available in the UK and the highest prices were in Spain and Germany (Figure 2.15).

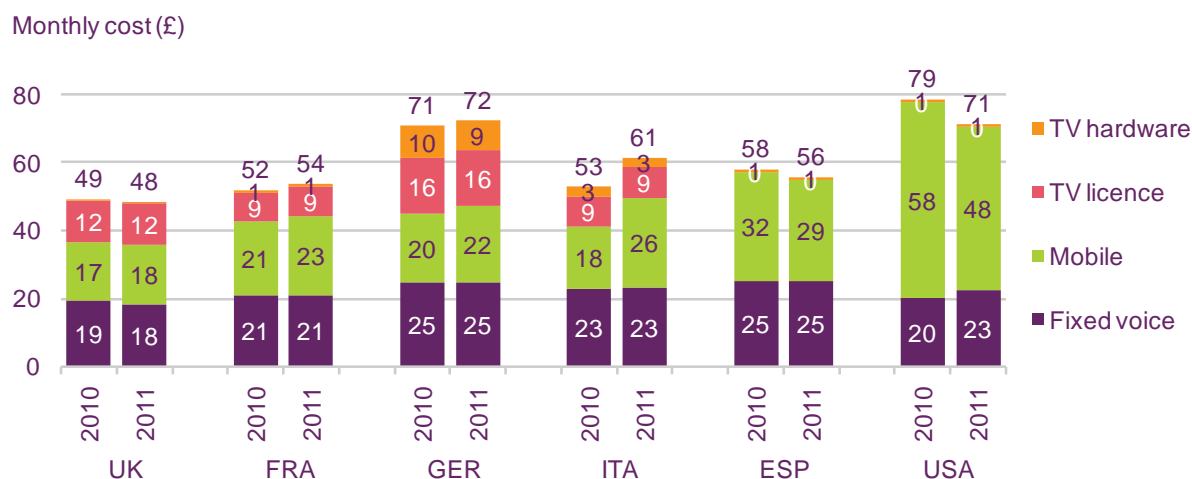
As these data represent an average of the lowest prices available from the largest operators, weighted by the market share of these operators, the fixed voice pricing, to a large extent, reflects the pricing of incumbent operators, which have over 50% retail market share in each of the European countries. The fall in voice pricing in the UK is as a result of BT launching the *Line Rental Saver* tariff, which enables customers to reduce their monthly line rental to £10 a month (it was £13.90 in July 2011) by paying a year's worth in advance (excluding this tariff, the weighted average monthly cost would be £21 rather than £18). The increased cost in the US was as a result of AT&T's cheapest service increasing its call charges to landlines and the line rental on Comcast's lowest cost service increasing from \$24.95 (£16) to \$34.95 (£22).

### Upward trend in weighted average pricing for lower use mobile connections

There was evidence of rising mobile prices for the lower-usage connection included in this basket in the year to July 2011, with Spain and the US being the only countries where the cost of the mobile element of the basket fell. This fall was most pronounced in the US, where the average cost fell by 17% as a result of the monthly fees for AT&T and Verizon's cheapest tariffs falling significantly over the period.

The main driver of the cost of TV services in this basket is the TV licence fee (although not in Spain and the US where there is no licence fee). In fact, as Basket 1 does not include pay-TV services; the only other TV costs were for purchasing and installing the required hardware (we included the cost of a set-top box or decoder, but not the cost of the television). There was significant variation in the cost of the television licence across the six countries; it was most expensive in Germany and the UK (where investment per head in public service broadcasting is highest).

**Figure 2.15 Basket 1: 'weighted average' single-service pricing**



*Ofcom, using data supplied by Teligen*

*Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2010 and July 2011; PPP adjusted*

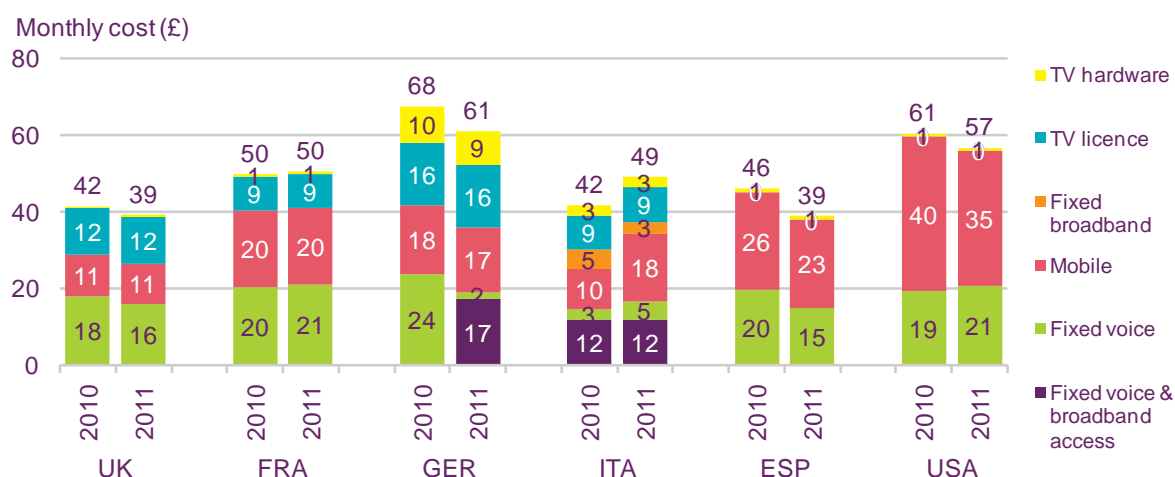
### The lowest 'best offer' pricing for Basket 1 was in Spain

There are some differences by country when looking at the lowest-priced fixed-line voice tariff available from any of the largest operators rather than the weighted average of tariffs, although the television component remains the same, because the basket has free-to-air television - the only TV costs are the licence fee, hardware and installation (Figure 2.16). The biggest difference between the 'weighted average' and the lowest price available from

the three largest operators in 2011 was in Spain, where the lowest-price combination of services needed to fulfil the requirements of the basket cost 30% less than the weighted average best price (in the UK it cost 19% less). By contrast, there was relatively little variation between the 'weighted average' and the best offer prices in France, with the best-offer price being just 6% cheaper than the weighted average.

It should be noted that in France and Italy the lowest-cost option that fulfilled Basket 1's use included a bundled fixed broadband connection, even though this was not required by the basket.

**Figure 2.16 Basket 1: comparative 'best offer' 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 2010 and July 2011; PPP adjusted; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service

### 2.1.10 Basket 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 both have a mobile phone which they use occasionally for voice and SMS.

**Figure 2.17 Composition of Basket 2**

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
428 call minutes	0.5GB per month, minimum 4Mbit/s connection	<b>Connection 1</b> 55 call minutes 30 SMS  <b>Connection 2</b> 55 call minutes 30 SMS	n/a	Free-to-air

Source: Ofcom

### The lowest weighted average pricing for Basket 2 was in the UK

The cheapest weighted average cost of fulfilling the requirements of Basket 2 was in the UK at £70 a month.

The fixed-line voice component of this basket consists mainly of calls to fixed-line phones within the same country, which are mostly made during the daytime, and the basket therefore favours tariffs that include these call types within a standard line rental package. This is the case with the BT, Virgin Media and TalkTalk tariffs, which feed into the UK weighted average price, the lowest among the countries in our analysis, at £21 a month. UK fixed voice costs for Basket 2 are just 15% higher than for Basket 1, despite this basket including almost twice as many outgoing call minutes (fixed-line voice prices in France, Germany and the US were more than 30% higher than for Basket 1). Weighted average best prices also fell by the greatest amount in the UK in the year to July 2011, again as a result of the launch of BT's *Line Rental Saver* scheme (excluding this tariff would mean that the weighted average price would increase from £21 to £23).

The low use of the mobile phones in this basket meant that most of the mobile tariffs (11 out of 18) feeding into the analysis were pay-as-you-go (with a further three being SIM-only contracts). While the lowest weighted average mobile costs for this basket were found in the UK and France, the highest were found in the US, where mobile users are charged for incoming calls in addition to outgoing calls. US contract mobile tariffs are generally expensive as they typically include a large number of bundled (incoming and outgoing) call minutes as operators incentivise customers to take contracts with large numbers of inclusive minutes. In the US, pre-pay is a less attractive proposition for mobile users as the top-ups required are generally of a higher value, and any credit typically expires after 30 days. As a result, pre-pay accounts for less than a quarter of total US mobile subscriptions, compared to an average of 55% across the other five countries covered in this section of the report.

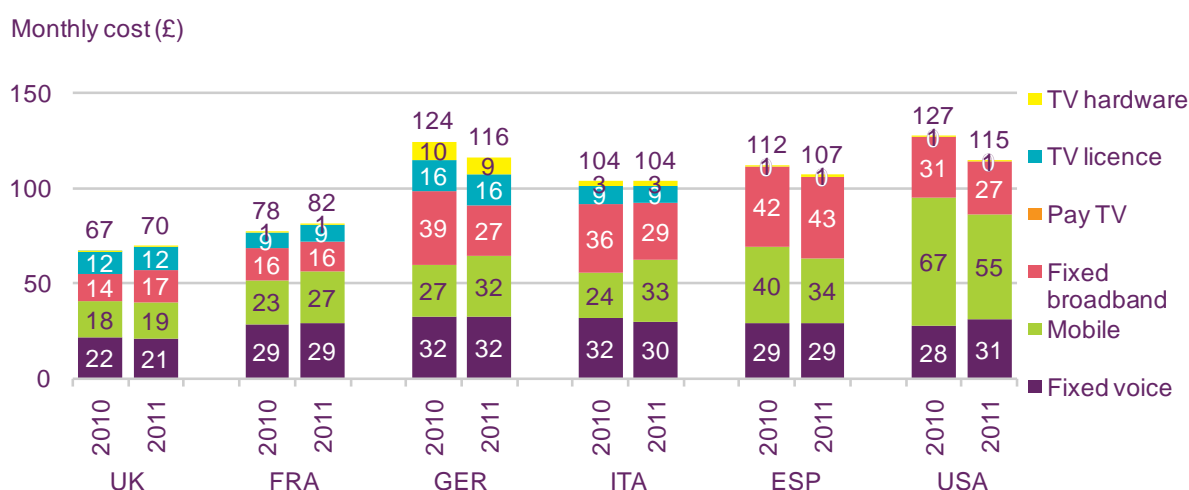
### **Weighted average standalone fixed broadband prices increased in the UK and Spain**

France and the UK offered the lowest pricing for the basic broadband requirements of this basket (it should, however, be noted that single-service broadband pricing comparisons should be treated with some caution, as broadband is very frequently bought as part of a multi-service bundle). Weighted average fixed broadband prices in the UK and Spain increased in the year to July 2011, in the UK largely as a result of the monthly cost price of Virgin Media's cheapest stand-alone fixed broadband service increasing from £15 (for a DSL service) to £19.75 (for a cable service) and in Spain largely as a result of Movistar increasing the monthly rental of its lowest-cost DSL service (and its headline speed from 'up to' 6Mbit/s to 'up to' 10Mbit/s).

This basket contains the same basic free-to-air digital television service as Basket 1.



**Figure 2.18 Basket 2: 'weighted average' single-service pricing**



Source: Ofcom, using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2010 and July 2011; PPP adjusted

### The lowest 'best offer' pricing for Basket 2 was in the UK

The lowest prices available for this basket of services in all of the European countries covered in our research involved buying a fixed broadband connection in a bundle with fixed voice services (Figure 2.19). In the UK this was a combined voice and broadband service (including line rental) which was able to fulfil the basket's requirements for £25 a month, 17% (£5 a month) less than the lowest cost of doing so using standalone services. The greatest difference between the cost of the basket's fixed voice and fixed broadband requirements using standalone and bundled services was in Spain, where bundled services provided by Orange were £19 (33%) cheaper than the lowest-cost combination of standalone products. The lowest cost bundled fixed-line and fixed-broadband service was provided by Unity Media in Germany, and cost £22 a month to fulfil Basket 2's requirements for these services.

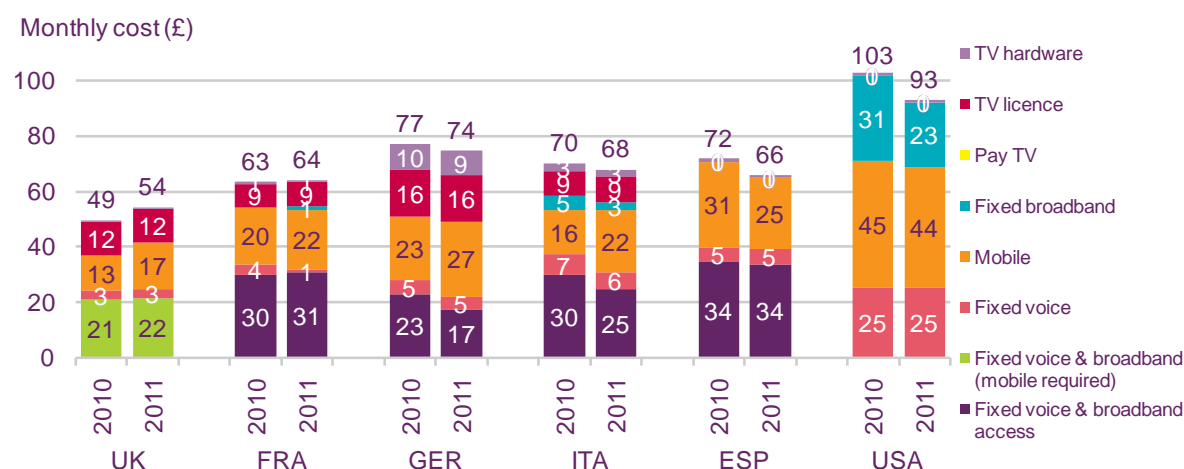
### The US was the only country where the 'best offer' price was obtained using standalone services

The lowest price in the US was achieved by purchasing separate fixed broadband and voice services, reflecting that, in most areas, there is effectively a duopoly of the incumbent telecoms operator and a cable provider. Therefore price competition is less fierce in the US than in our other comparator countries, and as a result operators offer fewer discounts for purchasing services in a 'multi-play' bundle. This is not the case in Europe, where new entrants have used heavy bundle discounts to attract customers and gain market share.

Most of the fixed broadband services in our six countries were sufficient to fulfil the basic fixed broadband requirements of this basket (a connection with an 'up to' 4Mbit/s headline speed and 500MB of data use). In the US and Germany the fixed broadband connections in the 'best-offer' service combinations were provided using cable networks. In the UK, France, Italy and Spain the broadband connections were provided using ADSL, meaning that the actual speeds received by consumers are likely to be significantly different to those advertised; the performance of ADSL connections is highly dependent on the length and quality of the copper telephone line between the local telephone exchange and the customer premises.

The lowest best-offer prices for the mobile services required by this basket were found in the UK, France and Italy, while the highest cost was (for the same reasons as detailed for Basket 1) in the US.

**Figure 2.19 Basket 2: comparative ‘best offer’ pricing**



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 2010 and July 2011; PPP adjusted; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service

### 2.1.11 Basket 3: A mobile ‘power user’

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

**Figure 2.20 Composition of Basket 3**

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
n/a	n/a	516 call minutes 150 SMS 1GB data	5GB over 30 days per month	Basic pay-TV

Source: Ofcom

### The lowest weighted average pricing for Basket 3 was in the UK

The ‘weighted average’ basket analysis in this report includes the ‘best offer’ single service cost of the mobile broadband element of the baskets, because the relatively narrow range of tariffs available from operators in many countries makes it difficult to produce a meaningful ‘weighted average’ figure.

There were larger variations between countries in the total cost of this basket than for any other basket, ranging from £94 in the UK to £193 in Germany, driven primarily by large variations in the cost of the mobile phone element, which was the largest component of total spend in all of our comparator countries (Figure 2.21).

The UK offered significantly lower weighted average mobile phone prices than any of the other five countries included in the analysis for the high usage required by this basket, with the weighted average price being 35% lower than in the next least-expensive country (France). In fact, all three of the best-offer UK largest operators' costs feeding into its weighted average were lower than the lowest in any other country. The US performed better here than it had done for the lower-use connections (when it was most expensive), again because US contract tariffs typically include a large 'bucket' of (incoming and outgoing) minutes; however, it remained the third most expensive country after Germany and Spain, in part because of comparatively high data charges.

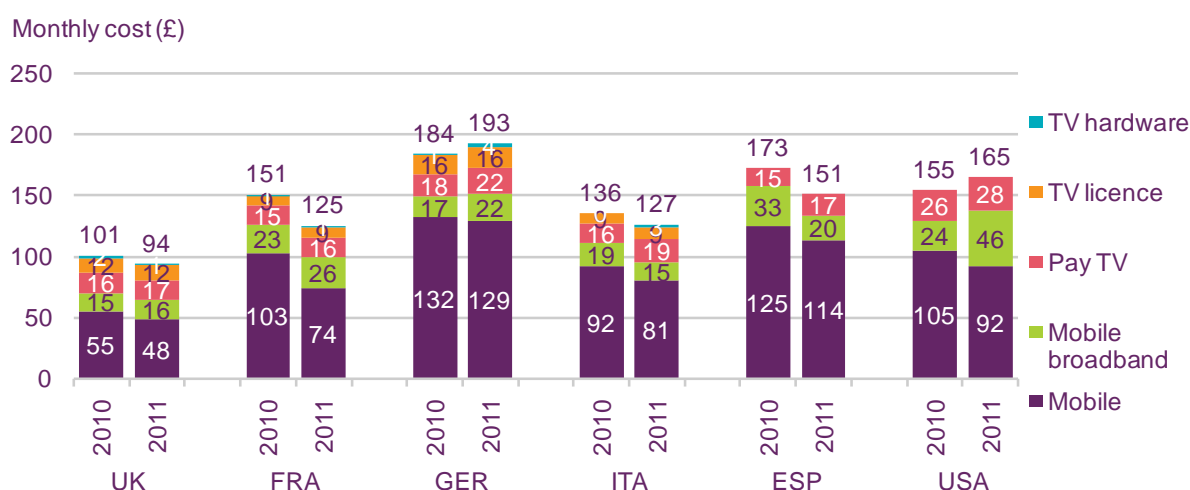
Prices for the mobile phone element of this basket fell by the greatest amount (£29 a month), in France in the year to July 2011 (equivalent to a 28% reduction in the cost of the basket) as new tariffs offering more inclusive calls, messages and data within line rental fees were introduced.

### **Wide variations in the cost of mobile broadband services exist between countries**

There were also large variations in the cost of mobile broadband prices between the countries, with prices for this high-usage connection (5GB over 30 days during the month) being lowest in Italy at £15 a month and highest in the US. Relatively low prices in Italy indicate that the competitive dynamics that are delivering lower prices for mobile phone tariffs are also reflected in mobile broadband (as is the case in the UK, which had the second lowest cost at £16 a month). Mobile broadband prices were highest in the US, where the cost of the 'best-offer' single mobile broadband service sufficient to fulfil the basket's requirement increased by 92% to £46 a month in the year to July 2011, as prices have increased and data allowances have become less generous as a result of providers attempting to monetise mobile broadband services.

Basket 3 also includes a basic 'entry-level' pay-TV service, which is defined as the lowest subscription required to receive channels in addition to those available on free-to-view television. Because of the variation in numbers and types of channels and quality of programming, like-for-like comparison is more problematic than for telecoms services, but the lowest prices were available in France, the UK and Spain. See Section 2.1.8 above for a discussion of TV pricing.

**Figure 2.21 Basket 3: 'weighted average' single-service pricing**



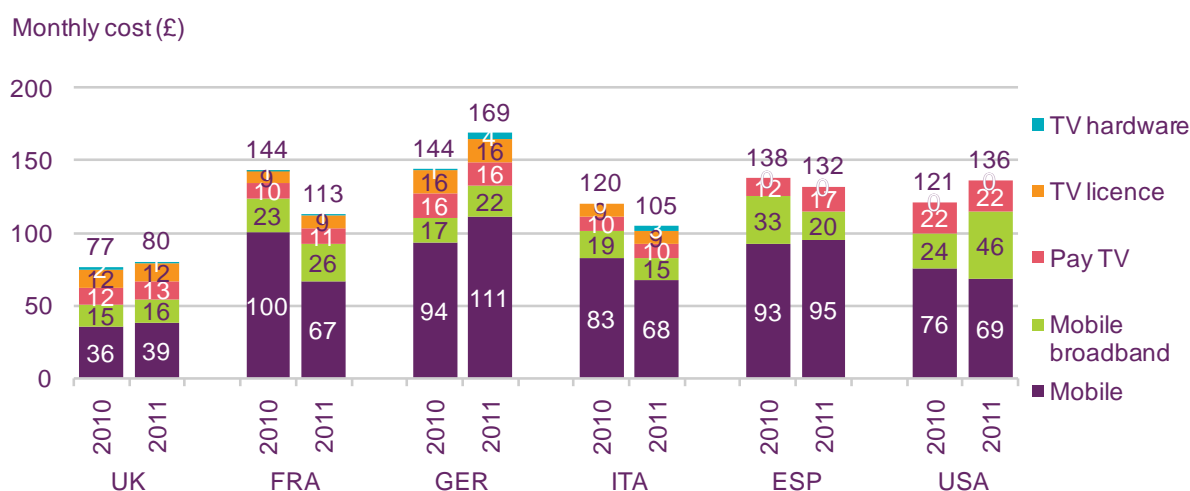
Source: Ofcom, using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2010 and July 2011; PPP adjusted; the figure for mobile broadband is the best-offer single service cost

### The lowest 'best offer' pricing for Basket 3 was in the UK

In none of our countries did the best-offer combination of services to fulfil the requirements of Basket 3 involve buying bundled services, in effect meaning that Figure 2.22 compares the single-service best-offer tariffs discussed previously in this section. There was less variation between the weighted average best price and the best-offer combination than was the case for the other baskets included in this report – this is the result of the basket including a relatively low number of services, and because we have used 'best offer' single service broadband prices in the 'weighted average' data, for the reasons outlined previously.

**Figure 2.22 Basket 3: comparative 'best offer' 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 2010 and July 2011; PPP adjusted

### 2.1.12 Basket 4: A family household with multiple needs

Basket 4 represents a family of two parents and two teenage children, all with their own mobile handset but with different mobile needs, with the adults using more voice and the children more messaging. However, they are also heavy users of the fixed-line phone. The family members are also heavy users of the internet, requiring a minimum headline connection speed of 'up to' 8Mbit/s, and subscribe to entry-level pay-TV services.

**Figure 2.23 Composition of Basket 4**

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
593 call minutes	5GB per month, minimum 8Mbit/s connection	<b>Connection 1</b> 280 call minutes 30 SMS 300MB data  <b>Connection 2</b> 169 call minutes 160 SMS  <b>Connection 3</b> 55 call minutes 70 SMS  <b>Connection 2</b> 55 call minutes 65 SMS	n/a,	Basic pay-TV

Source: Ofcom

#### The lowest weighted average pricing for Basket 4 was in the UK

The UK had the lowest weighted average prices for this basket, while the highest prices were found in Germany. Variations in cost between countries are primarily driven by the mobile phone costs, which accounted for half of the total basket cost in the UK and an average of 60% across the other countries included in this section (Figure 2.24).

This basket has the highest fixed voice call use, at almost 600 minutes a month, and the UK had the lowest weighted average cost among our countries; a result of the fact that all three of the cheapest UK tariffs included bundled anytime calls to UK fixed lines, and additional bolt-ons that enabled savings on the cost of calls to mobile phones and international destinations. Surprisingly, despite the inclusion of these bundled calls and bolt-ons in the UK weighted average, the weighted average monthly line rental in the UK (£15) was not the highest among our comparator countries (this was in Germany at £22), while out-of-bundle usage charges were lowest in the UK at £4 a month.

As with all the fixed-line connections included in our baskets, UK pricing was lower in 2011 than in 2010, solely due to the inclusion of BT's new *Line Rental Saver* product, which offers a £3.90 a month discount to customers who pay for 12 months line rental in advance; the weighted average price of the fixed-line voice component for the UK for this basket was £22, whereas if this tariff were excluded, the weighted average price would be £24.

#### The UK was the only country where the 'best offer' tariff was not from an alt-net provider

In all countries the lowest prices tended to be from alt-net providers, although the 'weighted average', to a large extent, reflected the 'best value' tariffs available from the incumbent in

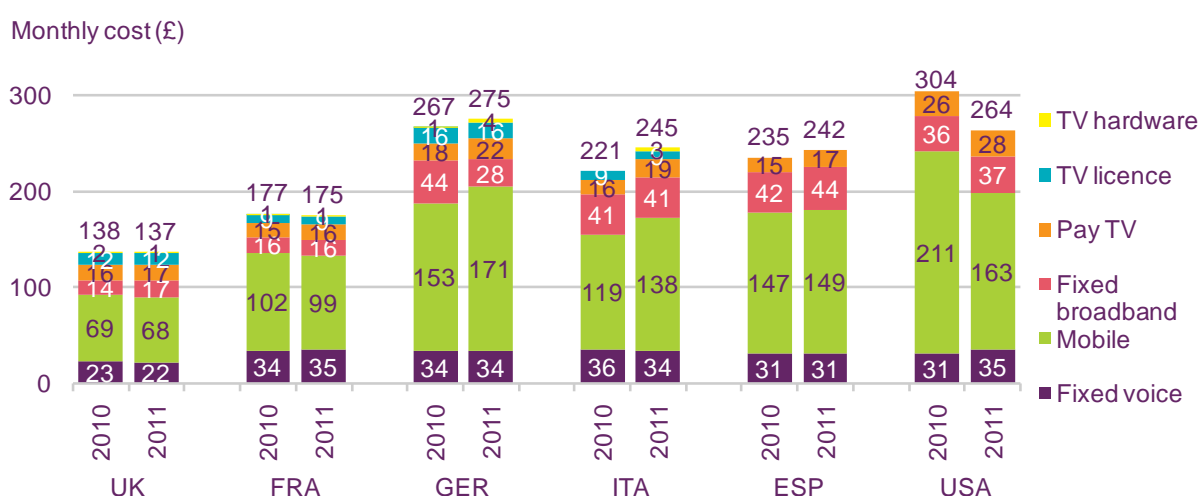
each country (each with a market share of over 50%). For Basket 4 the cheapest price available from BT (which included its *Line Rental Saver* pre-payment option) was 38% less than the next lowest-cost option from an incumbent (Movistar in Spain). The lowest-cost option from any provider was from Freenet in Germany, a VoIP-based service which does not require a fixed line and instead runs over the basket's fixed broadband connection.

This basket includes four mobile phones, one with relatively high voice use, low SMS use and 300MB of data, one with average voice use and high SMS use, and two with low voice use and average SMS use. In most countries the lowest prices were achieved using post-pay tariffs, even for the two connections with the lowest use, and the lowest 'weighted average' prices for all four of the connections included in the basket were found in the UK. The highest overall weighted average cost of fulfilling the mobile requirements of this basket was Germany, where the cost was over two-and-a-half times that in the UK.

The lowest broadband prices for this basket were found in France and the UK, and in both countries the weighted average costs (and the three tariffs feeding into them) were exactly the same as for Basket 2, despite the higher speed and data use requirements. This reflects the fact that most broadband tariffs in these countries offer a headline speed of at least 8Mbit/s and include at least the 5GB data usage sufficient to satisfy the fixed broadband elements of both baskets. Prices for fixed broadband were highest in Germany, Italy and Spain, in each as a result of the incumbents' cheapest offer being relatively expensive, and in Spain as a result of there being a limited choice of standalone services.

The television element in this basket is the same as in Basket 3.

**Figure 2.24 Basket 4: 'weighted average' single service pricing**



Source: Ofcom, using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2010 and July 2011; PPP adjusted

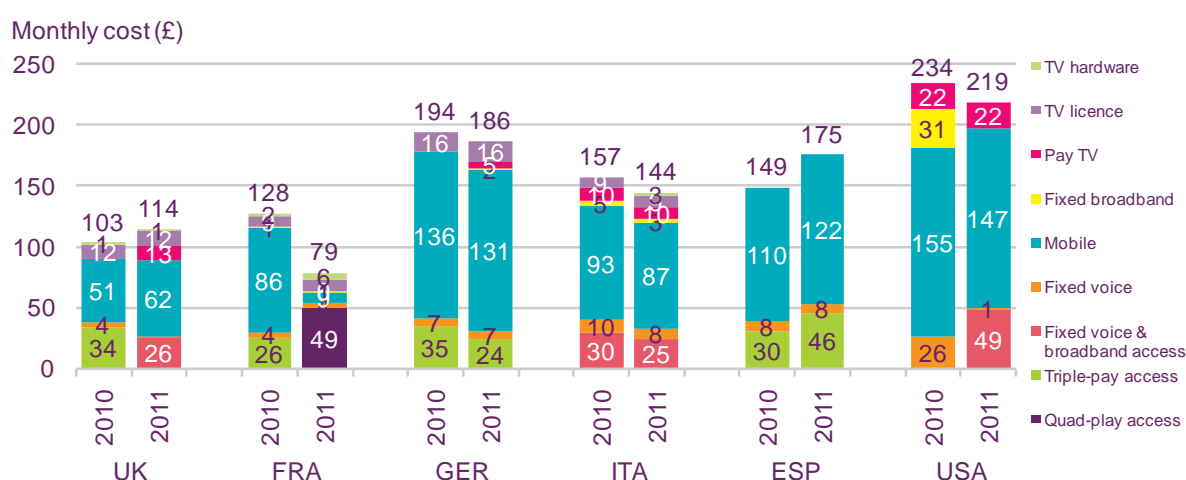
### The lowest 'best offer' pricing for Basket 4 was in France

In common with Basket 2 (which also included a fixed voice line and fixed broadband connection), there were considerable savings to be made by purchasing the services required by Basket 4 within a bundle; unlike for Basket 2, this was also the case in the US (Figure 2.25). The lowest overall prices were available in France, where the least expensive way of fulfilling Basket 4's requirements involved purchasing a Bouygues Telecom quad-play bundle of fixed voice, fixed broadband, mobile and pay-TV. In the UK, Italy and the US the lowest-cost option included a fixed line and broadband dual-play offer, and stand-alone pay-

TV and mobile services. In Germany and Spain the cheapest available option included purchasing a 'triple-play' service incorporating fixed-line voice, broadband and basic pay-TV.

The savings available to consumers purchasing bundled services rather than the lowest price stand-alone services varied between countries. In the US, purchasing the bundled service reduced costs by 2% (£4 a month), whereas in France the quad-play service offered a 48% (£72 a month) saving compared to buying stand-alone services (in the UK the saving was 4% or £4 a month). While the basic requirements of the pay-TV element of Basket 4 are the same as for Basket 3, it is notable that many of these bundled tariffs provide services in excess of the least expensive available on a stand-alone basis. For example, the quad-play offer in France includes 120 channels compared to 18 for the lowest-price stand-alone service, and the triple-play service in Spain includes 70 channels compared to 38 for the lowest-price stand-alone service.

**Figure 2.25 Basket 4: Comparative 'best-offer' pricing including multi-play tariffs**



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 2010 and July 2011; PPP adjusted; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service

### 2.1.13 Basket 5: An affluent two-person household with high use of mobile, internet and premium TV

Basket 5 is typical of an affluent young couple of high-end users who have low price sensitivity. They both have mobiles and are fairly high users of mobile voice and (to a lesser extent) SMS. They have a fixed line with relatively low use, are heavy internet users with a fast broadband connection and have a premium television package for watching HD sport and the latest films, and also a digital video recorder (DVR).



**Figure 2.26 Composition of Basket 5**

Fixed-line voice	Fixed broadband	Mobile	Mobile broadband	Television
246 call minutes	5GB per month minimum 16Mbit/s connection	<b>Connection 1</b> 376 call minutes 80 SMS 300MB data  <b>Connection 2</b> 188 call minutes 20 SMS 100MB data	3GB over 25 days per month	HD pay-TV with recorder, movies and football

Source: Ofcom

### The lowest weighted average pricing for Basket 5 was in the UK

As previously mentioned, it should be noted that the ‘weighted average’ basket analysis in this report includes the ‘best offer’ single service cost of the mobile broadband element of the baskets, as the relatively narrow range of tariffs available from operators in many countries make it difficult to produce meaningful ‘weighted average’ figures.

The UK offered the lowest ‘weighted average’ pricing for Basket 5, at £182 a month, with prices for all services being among the lowest in our comparator countries except for pay-TV, where it was the second highest (Figure 2.27).

Prices for the fixed voice component of Basket 5 were similar to those for Basket 1, as levels of use were similar (at 246 and 223 outgoing call minutes respectively). The additional calls in Basket 5 (coupled with slightly different call patterns) meant that in all countries the cost of the fixed-line component of Basket 5 was higher than that of Basket 1, with the difference ranging from £2 a month in Germany to £4 in the US, and the overall cost of Basket 5’s fixed voice element ranging from £22 in the UK to £28 in Spain. France and the US were the only countries where the cost of the fixed voice element of the basket increased in the year to July 2011 (although in the UK the inclusion of BT’s *Line Rental Saver* product, offering line rental at £3.90 less a month to customers paying 12 months in advance was the driver of this price fall; without this tariff, weighted average prices would show an increase).

### The UK had the lowest weighted average prices for both connections in the basket

The lowest average weighted cost of satisfying the mobile requirements of the basket (connection 1 with 376 minutes of outgoing calls, 80 SMS and 300MB of mobile data use and connection 2 with 188 outgoing call minutes, 20 SMS messages and lower mobile data use at 100MB) was in the UK, at £52 a month. In fact, the UK had the lowest weighted average prices for both connections; 51% and 23% respectively cheaper than the next-lowest cost option available among our comparator countries (both of which were in France). Prices for the mobile component of Basket 5 were highest in the US, where the cost of fulfilling connection 1 (£106 a month) was the second highest among our countries after Spain (£109), and that of connection 2 was greater than anywhere else, at £49 a month. As discussed in Section 2.1.5 above, the cost of our low-use voice mobile connections are comparatively high in the US as a result of the calling-party-pays charging regime, while data prices and international calling prices are also generally higher than in Europe (where calling prices between European countries are capped by EU regulation).

Basket 5 requires a fixed broadband connection with a minimum headline download speed of ‘up to’ 16Mbit/s (compared to 4Mbit/s for Basket 2 and 8Mbit/s for Basket 4) and 5GB of



usage. As with the prices for baskets 1 and 2, the weighted average cost of the fixed broadband element of Basket 5 was lowest in the UK and France.

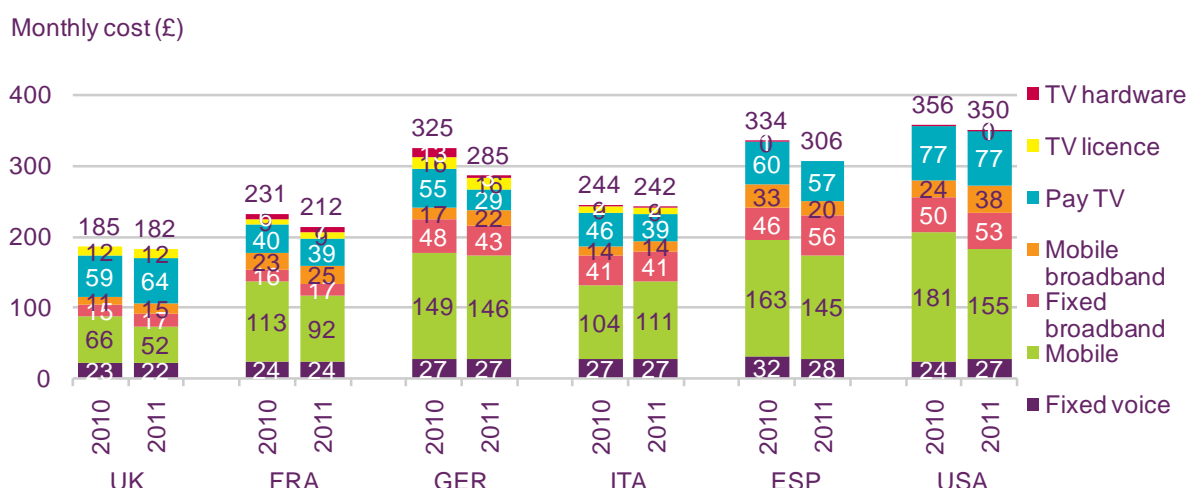
The medium-use mobile broadband connection included in this basket requires 3GB of data and use over 25 days a month. The lowest cost of providing this service was in Italy, at £14 a month, while it was second-lowest in the UK at £15 a month, an increase from £11 a month in 2010. The increase in the UK was as a result of O2 withdrawing the previous cheapest service and replacing it with a more expensive tariff that includes less bundled data, a trend among many of the larger UK mobile broadband providers, which has in part been driven by a perceived need to move to tiered data pricing in order to manage network capacity.

### The lowest HD premium pay-TV single service pricing was in Germany

This basket also includes an HD premium pay TV component. Among our comparator countries the most expensive weighted average costs for the package, including top-league football and a top price film/entertainment package required by the basket, were in the US (£77 a month rental), the UK (£64 a month) and Spain (£57). This is related to how channels are bundled: in the UK and Spain the football and film content needed to fulfil the basket's requirements comes bundled with large amounts of additional programming, whereas in Germany (where the TV rental was £29 a month) consumers can purchase the top matches within a monthly football 'bundle', and in Italy (£39 a month) the total number of matches available for viewing within a package is relatively low. Prices in the UK are also inflated by the requirement for HD services; in all other countries HD is standard within premium packages, whereas in the UK, Sky, the largest provider by market share, charges £10 a month premium for HD services.

Comparisons with the US are hard to make as NFL viewing packages are wrapped up in many different ways and offered through a combination of pay-per-view and subscription.

**Figure 2.27 Basket 5: 'weighted average' single-service pricing**



Source: Ofcom, using data supplied by Teligen

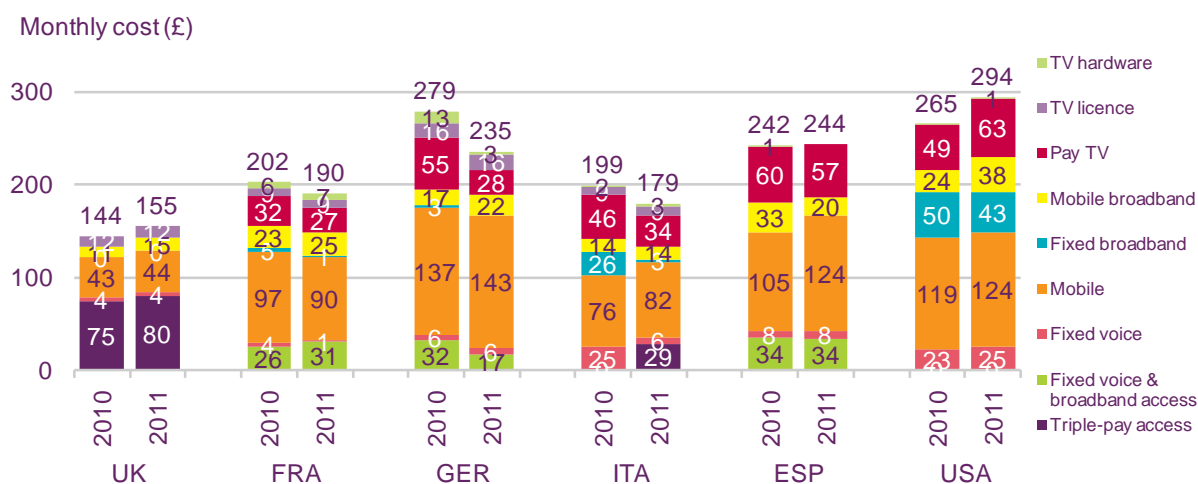
Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2010 and July 2011; PPP adjusted; the figure for mobile broadband is the best-offer single service cost

## The lowest 'best offer' pricing for Basket 5 was in the UK

The lowest best-offer pricing for this basket was in the UK, at £155 a month. The UK and Italy were the only countries where the lowest-cost combination of services for Basket 5 included a triple-play of fixed voice, fixed broadband and pay TV: in the US the cheapest option was to purchase standalone services, while in the other comparator countries it was a dual-play of fixed line and fixed broadband plus standalone pay-TV.

The largest savings, compared to purchasing services on a standalone basis, were found in Spain, where the cost of the cheapest bundle of services was 14% (£39 a month) less than the cheapest combination of standalone services. In the UK this saving was £10 a month (6%). The steepest fall in the best-offer prices for Basket 5 in the year to July 2011 was in Germany, where the best-offer price fell by 16% (£43 a month) with the largest fall in cost being for pay-TV services, as a result of the launch of a new Kabel Deutschland cable service.

**Figure 2.28 Basket 5: comparative 'best-offer' pricing, including multi-play tariffs**



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 2010 and July 2011; PPP adjusted; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service

## 2.1.14 Conclusion

### Prices in the UK are comparatively low

Prices in the UK compared favourably to those in the other five countries covered by our price benchmarking work. Including the TV licence fee, all five of the lowest 'weighted average' single service prices were found in the UK, as were the lowest 'best-offer', including multi-play, prices for three of our five baskets (Figure 2.29). France also performed well, providing the lowest 'best-offer' including multi-play price for Basket 4 and the second-lowest prices for all five baskets on a 'weighted average' basis.

In the UK the relatively low prices were largely due to 'weighted average' and 'best-offer' mobile prices being the lowest among our six countries (all of the five baskets include a mobile element, and the UK had the lowest prices for all nine mobile connections included in the analysis). However, the UK also benefited from comparatively low fixed voice, fixed broadband and mobile broadband prices (it had the lowest 'weighted average' and second

lowest 'best-offer' costs for fixed voice services, the lowest 'weighted average' and 'best-offer' costs for fixed broadband services and the second-lowest 'best-offer' single service mobile broadband prices).

The two baskets for which the UK did not have the lowest 'best-offer' prices were Baskets 1 and 4: Spain was cheaper than the UK for Basket 1, although this was only because there is no TV licence fee in Spain, whereas it is £12 a month in the UK. The Basket 4 'best-offer' price in France was significantly cheaper than in the UK as a result of the availability of a low cost quad-play bundle of fixed voice, fixed broadband, mobile and pay-TV services.

### HD premium pay-TV prices in the UK were high

The main area where the UK did not perform well was for HD premium pay-TV services, which were among the most expensive among our comparator countries, partly as a result of HD costing an additional £10 a month for UK Sky satellite TV customers.

**Figure 2.29 Summary of 'weighted average' and 'best offer' basket pricing, including the TV licence fee**

‘Weighted average’ single service pricing (£ per month)				‘Best offer’ pricing including multi-play (£ per month)			
Basket 1	1	UK	48	1	ESP	39	
	2	FRA	54	2	UK	39	
	3	ESP	56	3	ITA	49	
	4	ITA	61	4	FRA	50	
	5	USA	71	5	USA	57	
	6	GER	72	6	GER	61	
Basket 2	1	UK	70	1	UK	54	
	2	FRA	82	2	FRA	64	
	3	ITA	104	3	ESP	66	
	4	ESP	107	4	ITA	68	
	5	USA	115	5	GER	74	
	6	GER	116	6	USA	93	
Basket 3	1	UK	94	1	UK	80	
	2	FRA	125	2	ITA	105	
	3	ITA	127	3	FRA	113	
	4	ESP	151	4	ESP	132	
	5	USA	165	5	USA	136	
	6	GER	193	6	GER	169	
Basket 4	1	UK	137	1	FRA	79	
	2	FRA	175	2	UK	114	
	3	ESP	242	3	ITA	144	
	4	ITA	245	4	ESP	175	
	5	USA	264	5	GER	186	
	6	GER	275	6	USA	219	
Basket 5	1	UK	182	1	UK	155	
	2	FRA	212	2	ITA	179	
	3	ITA	242	3	FRA	190	
	4	GER	285	4	GER	235	
	5	ESP	306	5	ESP	244	
	6	USA	350	6	USA	294	

Source: Ofcom, using data supplied by Teligen

Notes: TV includes the licence fee

## **The difference between weighted average and 'best offer' prices was lowest in the UK**

Figure 2.30, Figure 2.31 and Figure 2.32 summarise the pricing of each of our baskets, excluding the TV licence, in each comparator country. From these we are able to draw some general conclusions about the pricing of communications services in the six countries covered in this section:

In the UK the difference between the 'weighted average' and the 'best offer' pricing of the single services for our five baskets was the lowest across our six countries, with 'best offer' prices being, on average, 20% lower than the 'weighted average' for our six baskets, compared to a 29% average across all six countries. This indicates that while there is a comparatively narrow range of prices offered by operators in the UK, most consumers will be able to save money by shopping around for the provider and tariff that best suits their needs. The single-service offerings with the largest range of prices available in the UK were for mobile connections.

The difference between the 'weighted average' pricing of the fixed voice component and the best price available in the UK was never more than £4 a month (the greatest difference is in Basket 2, where the best available price was 15% lower than the 'weighted average' price, although in part this is the result of BT's *Line Rental Saver* product offering the lowest price and BT having 57% market share. By comparison, in Germany 'best-offer' prices for fixed-line voice were up to 63% cheaper than the weighted average. Similarly, in mobile the difference between the 'best offer' and the 'weighted average' pricing in the UK was one of the lowest among our comparator countries; the total difference between the 'weighted average' and 'best offer' pricing for the mobile element of all five baskets in the UK was £33, whereas the largest difference was in Italy at over £110.

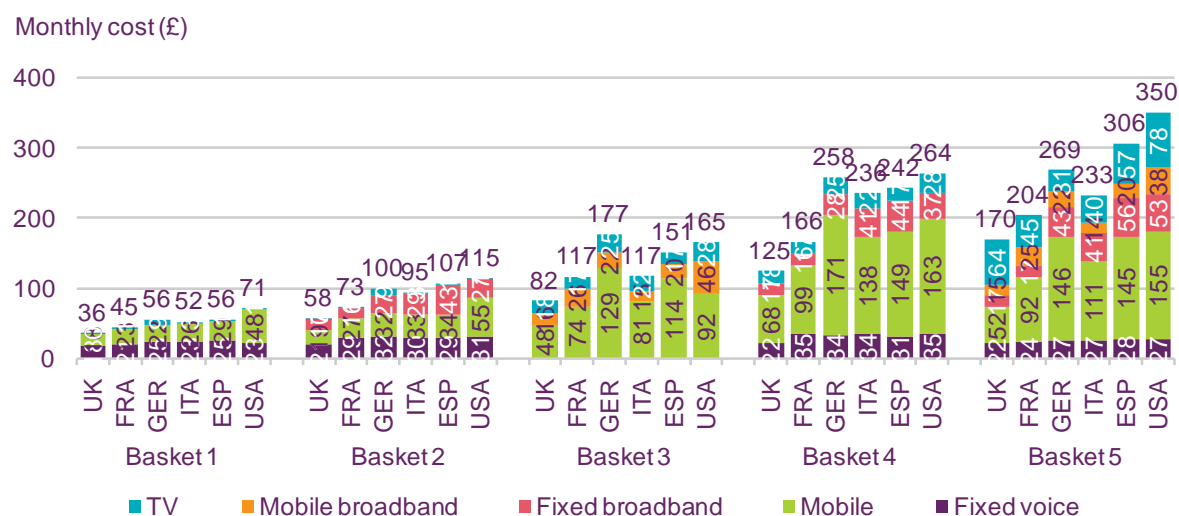
## **The potential savings from bundling are highest when fixed broadband is bought**

Fixed broadband services are frequently bought in conjunction with other communications services, and consumers in all of our comparator countries can make significant savings by purchasing communications services in bundles, compared to purchasing the lowest-price single-service combination. However, the potential savings available by bundling the services required for Baskets 2, 4 and 5 (which all include a fixed-line broadband connection) varied from country to country. In the UK, the savings that consumers get from purchasing these baskets of services in a bundle ranged from 16% for Basket 4 to 29% for Basket 5, while among the other comparator countries it ranged from a 10% saving for Basket 5 in France to a 55% saving for Basket 4 (also in France).

The analysis in the report uses only the 'best offer' single-service cost of the mobile broadband element of the baskets, as the relatively narrow range of tariffs available in many countries make it difficult to produce meaningful 'weighted average' figures. On this basis the UK performed well, having the second-lowest 'best offer' single service prices for all three of the defined usage levels, in all three cases after Italy.

Differences in channel line-ups make it difficult to directly compare TV tariffs, although we included them in our analysis to enable us to include bundled tariffs. 'Triple-play' services delivered the lowest prices for Basket 4 (which includes a basic pay-TV service) in Germany and Spain, while the lowest-cost option in France was a quad-play that included mobile services, and in the UK, Italy and the US the lowest prices were achieved by purchasing fixed voice and fixed broadband dual-play offers. For Basket 5, which includes HD premium pay-TV, triple-play services provided the lowest possible prices in the UK and Italy.

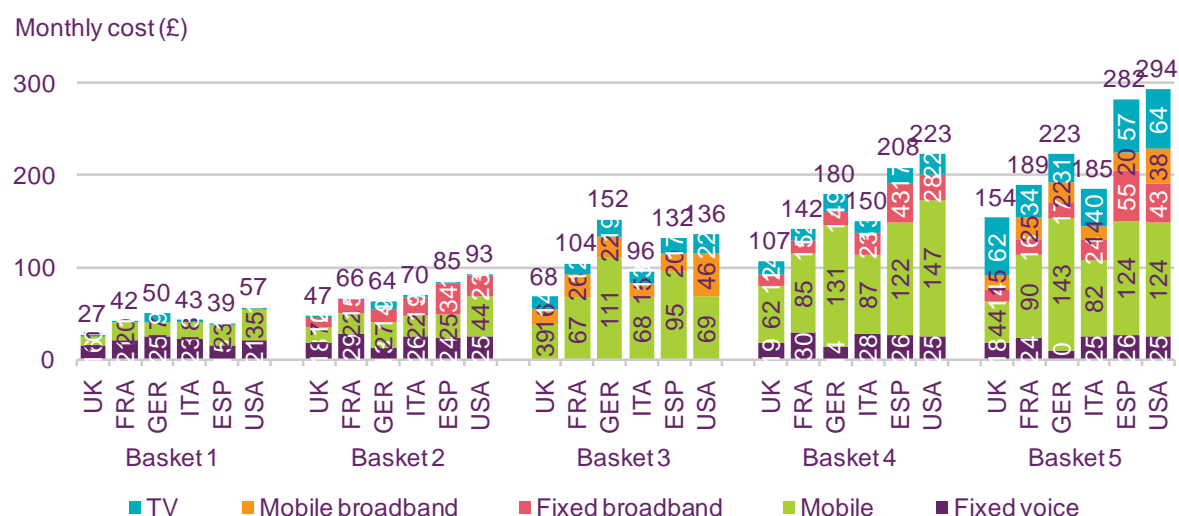
**Figure 2.30 Comparative 'weighted average' pricing of 'single services' for all countries, excluding the TV licence fee**



Source: Ofcom, using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2009; 'single-service' broadband in Spain and Germany includes the best value 'voice and broadband' tariff as single-service broadband was not available from the largest operators; PPP adjusted; TV excludes licence fee

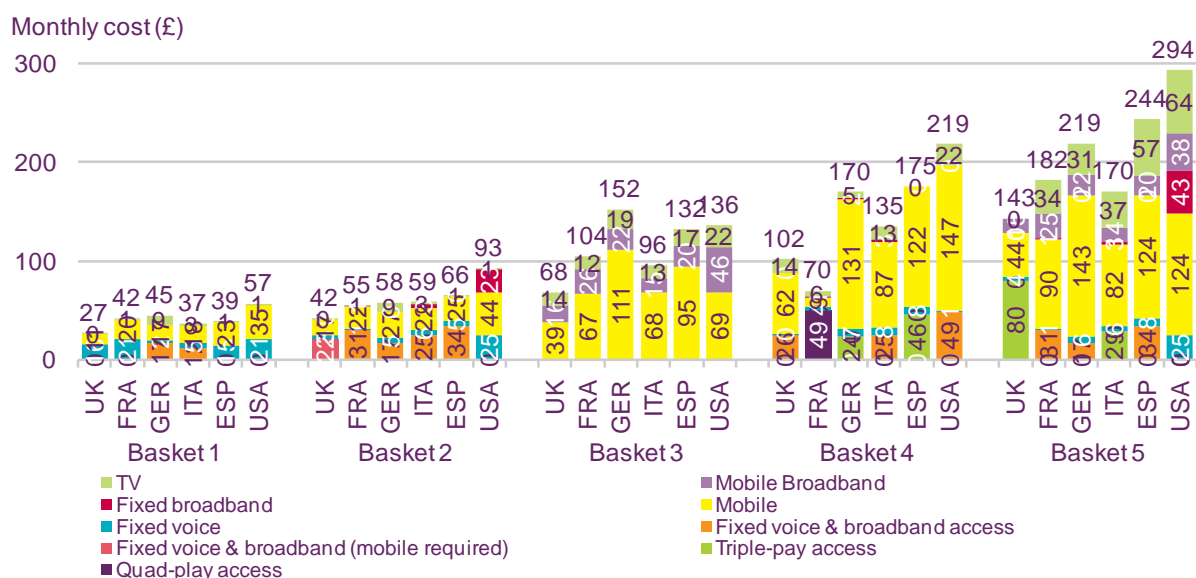
**Figure 2.31 Comparative 'best offer' pricing of 'single services' for all countries, excluding the TV licence fee**



Source: Ofcom, using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2010; PPP adjusted; TV excludes licence fee

**Figure 2.32 Comparative cost of lowest price services, including multi-play, for all countries, excluding the TV licence fee**



Source: Ofcom, using data supplied by Teligen

Note: Lowest cost tariff from each of the largest operators by market share in each country; July 2010; PPP adjusted; TV excludes licence fee; where a service is included in a bundle any additional usage charges are recorded separately against the relevant service



## International Communications Market Report 2011

### **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 analysis of the 17 comparator countries.

- Key Market Developments details some of the major TV and audio-visual industry trends during the past year, covering analysis of global revenue, take-up of digital TV and technology developments.
- The TV and audio-visual industries section focuses on key revenue trends among comparator countries, including financial results for major pay-TV and free-to-air broadcasters.
- The TV and audio-visual consumer section examines patterns of digital television take-up, including adoption of high-definition television services and digital video recorders. This section also examines how viewers in different countries consume broadcast television channels and TV online.

**Figure 3.1 TV industry metrics: 2010**

	UK	FRA	GER	ITA	USA	CAN	JPN	AUS	ESP	NED	SWE	IRL	POL	BRA	RUS	IND	CHN	
TV revenue (£bn)	11.3	10.4	11.0	8.1	94.0	4.0	28.6	4.7	5.0	2.4	1.5	0.9	2.2	10.6	3.5	6.7	9.9	
Revs change (% YOY)	8.5	8.8	2.0	6.6	6.3	0.9	6.2	9.9	11.0	0.4	5.8	4.0	10.7	17.6	16.6	17.7	13.6	
Revenue per cap (£)	181	160	135	133	304	119	226	218	106	139	170	189	57	53	25	6	7	
from advertising	59	46	41	65	116	63	105	109	40	39	51	52	21	32	20	1	4	
from subscription	78	82	46	44	187	42	81	78	25	63	84	99	36	19	5	4	3	
From public funds	44	31	48	24	1	15	39	31	41	37	35	38	1	1	0	0	0	
TV licence fee <sup>1</sup>	146	103	185	93	n/a	n/a	175	n/a	n/a	n/a	185	137	40	n/a	n/a	n/a	n/a	
Largest TV platform	Platform	DSat	DTT	DSat	DTT	DCab	DCab	ACab	DTT	DTT	DCab	ACab	DSat	DSat	DSat	ATT	ACab	ATT
	% of homes	42%	38%	34%	41%	39%	44%	25%	43%	69%	42%	37%	52%	43%	39%	36%	59%	33%
TV viewing (mins/day) <sup>2</sup>	242	212	223	246	283	230	n/a	188	234	191	166	196	245	222	226	119	158	
No.1 channel share (%)	21	25	14	21	7	13	n/a	18	16	22	23	23	19	42	17	9	7	
DTV take-up (%)	97	93	62	78	87	78	66	75	98	68	63	83	56	59	34	29	33	
Pay TV take-up (%)	52	57	63	26	88	91	60	31	28	98	93	77	76	18	55	82	52	
DSO date	2012	2011	2008	2012	2009	2011	2011	2013	2010	2006	2007	2012	2013	2016	2015	2013	2015	

Source: IDATE / industry data / Ofcom / Mediametrie, Eurodata TV Worldwide. Figures have been converted to GBP using IMF 2010 average exchange rates. <sup>1</sup>The Japanese licence fee costs £102 in terrestrial households or £175 to receive a larger number of channels via satellite. <sup>2</sup>Refers to average TV viewing per head, per day.

Some of the key market developments seen during the past year include;

- **Global TV revenues increased in 2010, by 7.7% year on year to £239bn**, following a recovery in the advertising market (up 9.9% since 2009) and continued growth in subscription income (up 7.1% since 2009).

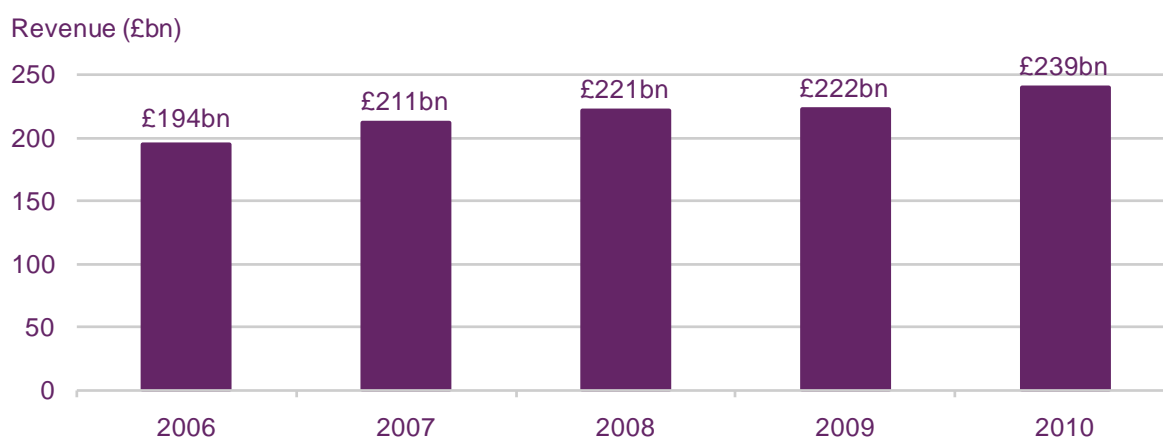
- **Digital TV penetration during 2010 rose in all the countries included in this analysis**, with take-up highest in the UK (97%), France (93%) and Spain (98%). The largest year-on-year increase in take-up of digital television was among homes in Brazil, where penetration rose by 20 percentage points to 59% of households in 2010.
- **Take-up of IPTV in France increased by almost a third in 12 months to reach nearly a quarter (24%) of French main television sets in 2010**, making it the second most popular platform after DTT. No other nation was able to match France for the popularity of the IPTV platform, with the second highest take-up being in Sweden, where penetration stood at one in ten homes.
- **Consumers continue to embrace high definition TV, as channel line-ups grow.** Penetration in the UK increased by a third in 2010, to 21% of main television sets, while HDTV in France and the US entered the mainstream, with penetration for the first time reaching a majority of households (60% (up by 18pp) and 54% (up by 9pp) respectively).
- **Digital video recorders are now widely available in comparator countries.** Take-up was highest in the US at 41%, followed by the UK, where the comparable figure was 35%. Year-on-year adoption in the UK rose fastest, by 4pp, which was also the highest proportional increase over the period.
- **Technologies that have become available more recently are beginning to gather momentum among consumers.** Thirteen per cent of consumers in France claim to have access to an internet-connected television. In Australia, the comparable figure was 9%; in the UK and the US it was 7%. Ten per cent of viewers in Italy claim their main television set is 3D-ready, alongside 8% of those in Germany, 7% in France and 6% in the UK and Australia.
- **Over a quarter (27%) of UK internet users claim to access TV content over the web every week , up 3pp in twelve months**, driven by the popularity of online catch-up services such as BBC iPlayer and 4OD. Internet users in the UK are more likely to watch TV content over the web than users in France, Germany, Italy and the US.

### 3.1.2 Global TV revenues increased in 2010, driven by a recovery in the advertising market and continued growth in subscription revenues

Ofcom estimates that global TV revenues increased in 2010, by 7.7% year on year, to £239bn. This marks a significant recovery in comparison to 2009, when revenues increased only marginally (0.5%), due to the impact of the economic downturn. Despite the recession, global TV revenues have increased by almost a quarter (23.2%) over four-year period since 2006.

Our analysis of *global* television revenue (presented in this section) incorporates three main components – net advertising revenue, TV licence fees and subscriptions. It also includes revenues from pay-per-view (PPV) services and video on demand (VoD), since these products now form an intrinsic part of many pay-TV offers. This methodology differs from our *country-level* analysis (see paragraph 3.2.2) where the focus is on net advertising revenues, public funds/TV licence fee and subscriptions.

**Figure 3.2 Global TV revenues**



*Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). IDATE / industry data / Ofcom for US and UK revenues.*

*Notes: Net TV advertising revenues for Russia have been calculated by discounting 15% of TV advertising spending to remove agency fees and production costs. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010.*

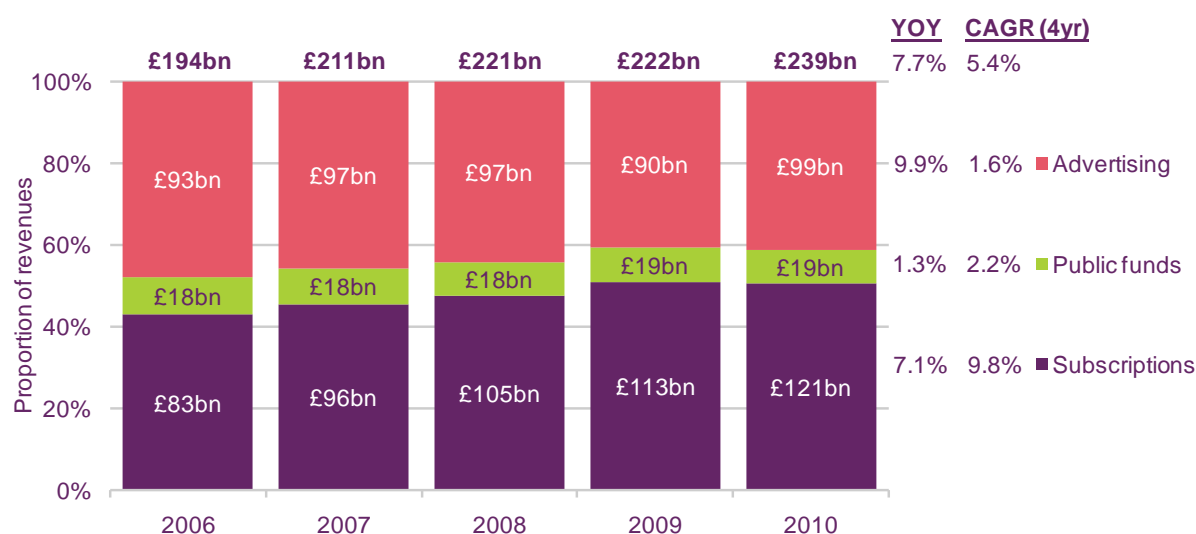
The 7.7% increase in global television revenues to £239bn in 2010 was driven by a recovery in the advertising market, coupled with continued growth in subscription revenues.

Following a decline in 2009, global TV broadcasters experienced a 9.6% increase in net advertising revenues (NAR) in 2010, up £9bn year on year to £99bn. Growth in pay-TV subscriber revenue increased by 7.1% year on year to £121bn in 2010 – the highest level recorded to date.

Growth in pay-TV adoption (see Figure 3.29) has contributed to the increase in subscription revenue, as has the launch of new products and services that platform operators have been able to monetise. The continued take-up of enhancements such as digital video recorders (DVRs), video on demand (VoD), high-definition television (HDTV) and to a lesser extent, three-dimensional TV (3DTV) has helped pay-TV broadcasters increase average revenue per user (ARPU). These products are examined in greater detail in Section 3.3 of this report.

Public funding, usually sourced from TV licence fees or government grants, remained unchanged in 2010 at £19bn. Revenue from this source has also been relatively stable over a four-year period, growing on an average compound basis by 2.2% per year, and bringing revenue up to £19bn in 2010 from £18bn in 2006. Subscription revenues increased by 9.8% on a compound annual basis over the same period, while net advertising revenue (NAR) increased by just 1.6% per annum over the four-year period – the lowest compound annual growth rate of the three revenue streams.

**Figure 3.3 TV industry revenues, by source**



Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). IDATE / industry data / Ofcom for US and UK revenues.

Notes: Net TV advertising revenues for Russia have been calculated by discounting 15% of TV advertising spending to remove agency fees and production costs. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010.

### 3.1.3 Digital television gained ground in many nations during 2010

#### Main TV sets in Spain, UK and France are nearly all digital

Among the comparator countries, digital television (DTV) take-up patterns fell into one of three types in 2010:

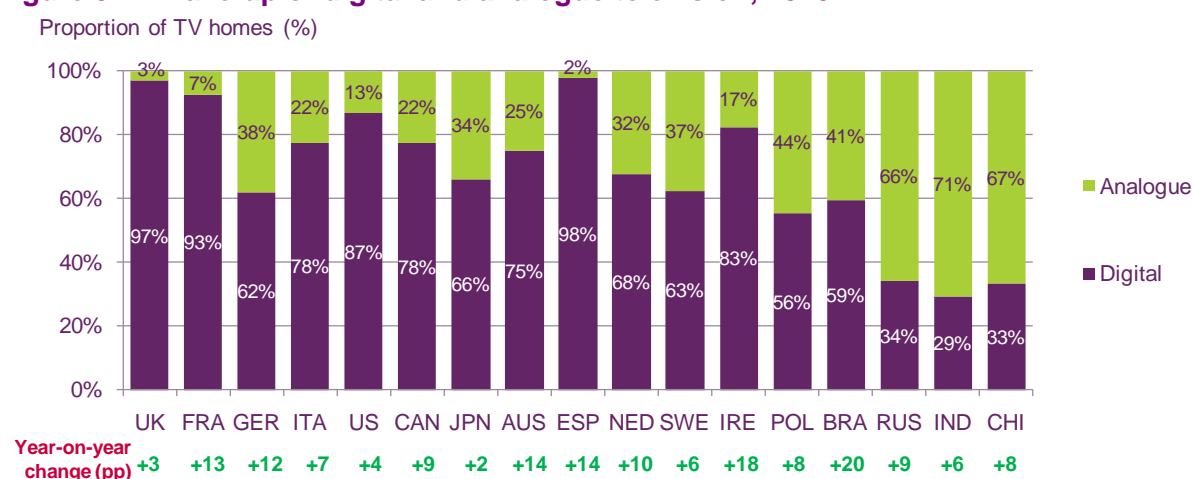
- **Almost complete digital conversion.** People in the UK (97%), France (93%) and Spain (98%) have almost universal access to digital television on their main television sets. This may be explained by the recent (in the case of Spain), or imminent, completion of digital terrestrial television switchover in these countries, coupled with the popularity of the terrestrial television platform in each.
- **Digital television available in 60% to 80% of homes.** In a large number of comparator countries, DTV take-up is below 80% - in some cases well below that figure. There are several drivers behind this, including lower levels of terrestrial television take-up (analogue or digital), rendering the market less sensitive to the effects of terrestrial switchover programmes. With analogue cable services remaining popular in many countries, take-up of digital services is correspondingly lower; for example, Germany (62%), Japan (66%) Sweden (63%) and the Netherlands (68%).
- **Analogue platform predominating.** In Russia (34%), China (29%) and India (33%), analogue television platforms are connected to the majority of main sets. This reflects the developing nature of the television markets in these countries. The onset of digital switchover may well drive DTV take-up in future years.

Year on year, growth in the take-up of digital television platforms was highest in Brazil, where take-up rose by 20 percentage points to 59% of homes in 2010. Households in the Republic of Ireland also embraced digital television in large numbers, with penetration rising

by 18 percentage points to 83%. In Spain, where switchover was completed in 2010, DTV homes grew by 14 percentage points, and the figure was the same in Australia, where the switchover programme began in 2010 and is scheduled to be completed by 2013. There was also a double-digit increase in take-up in France (by 13 pp – switchover will be completed in November 2011) and in the Netherlands (10pp – fuelled by the growing popularity of digital cable services and IPTV).

Elsewhere, DTV growth was more modest. A nine percentage point increase in DTV adoption in Canada was driven by the rapid conversion of analogue cable homes to digital; in Italy a seven point increase came about as a result of rising adoption of digital terrestrial television during 2010 (with DSO having already started in some regions).

**Figure 3.4 Take-up of digital and analogue television, 2010**

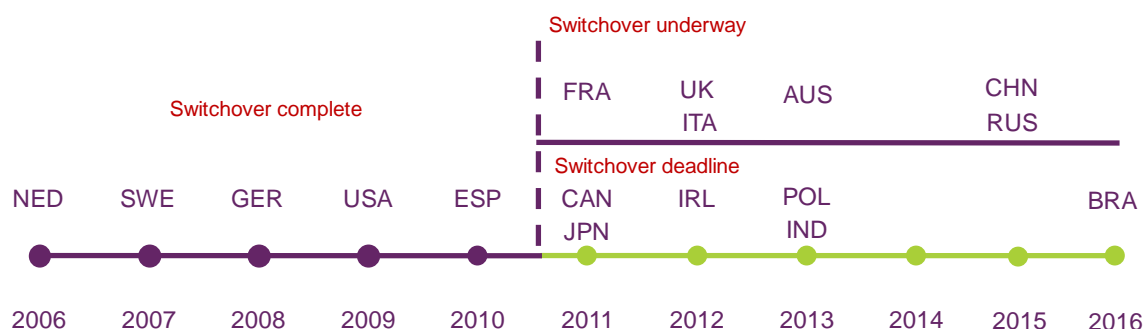


Source: IDATE / industry data / Ofcom.

Since Ofcom began publishing this international benchmarking study, in 2006, seven countries have switched off their analogue terrestrial television service, including the Netherlands, Sweden, Germany, the US, Spain, Canada and Japan.

In Spain, the terrestrial TV platform has always been very popular, unlike other countries where cable or satellite have proved more popular. The completion of DSO in Spain has therefore been a significant achievement. In 2010 terrestrial television accounted for nearly 70% of all main television sets in Spain, with take-up of digital terrestrial having risen by 10 percentage points during 2010.

**Figure 3.5 Timeline for digital switchover, by country and date**



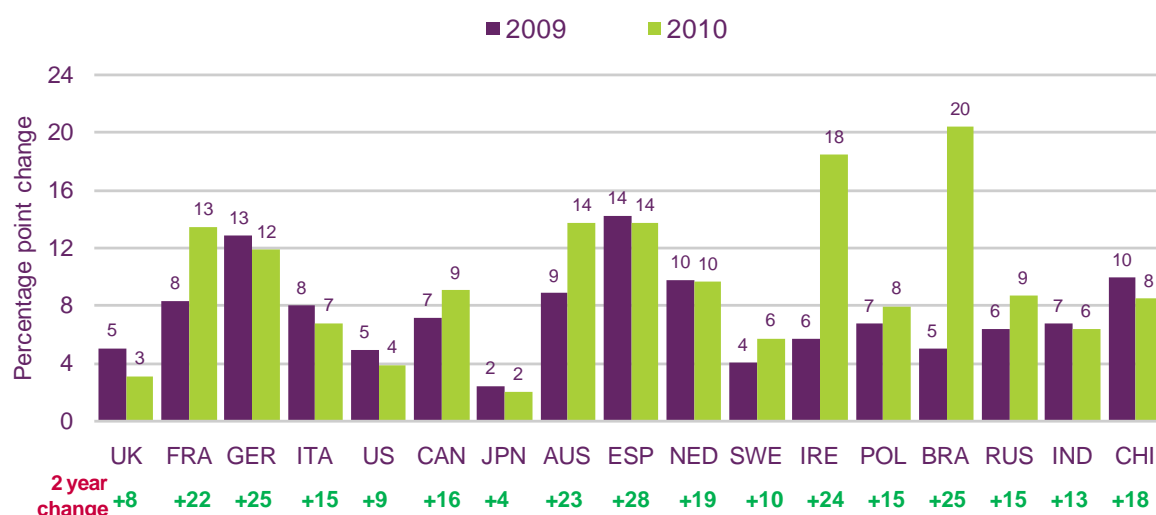
Source: IDATE / industry data / Ofcom.

Three countries experienced a rapid acceleration in household take-up of digital television during 2010. The 13 percentage point increase in France was nearly double the comparable figure in 2009 (8 percentage points); in Ireland, the 18pp rise in 2010 was three times that of 2009. Both are facing the completion of digital television switchover in the next 12 months. But by far the most substantial acceleration in DTV take-up has been in Brazil, where the 20pp rise in take-up during 2010 was five times the 2009 figure.

More modest levels of growth in household take-up were experienced in Canada (9pp, up by 2pp year on year), Sweden (6pp, up by 2pp) and Russia (9pp, up by 3pp). Elsewhere, DTV take-up has begun to slow down in the past twelve months, possibly driven by increasing levels of digital television adoption.

Taken together, the last two years have seen substantial double-digit increases in DTV take-up in many of the countries covered in this report – ranging from 22pp in France and 23pp in Australia to 25pp in Brazil and Germany and 28pp in Spain.

**Figure 3.6 Percentage point change in the take-up of DTV, 2009 and 2010**



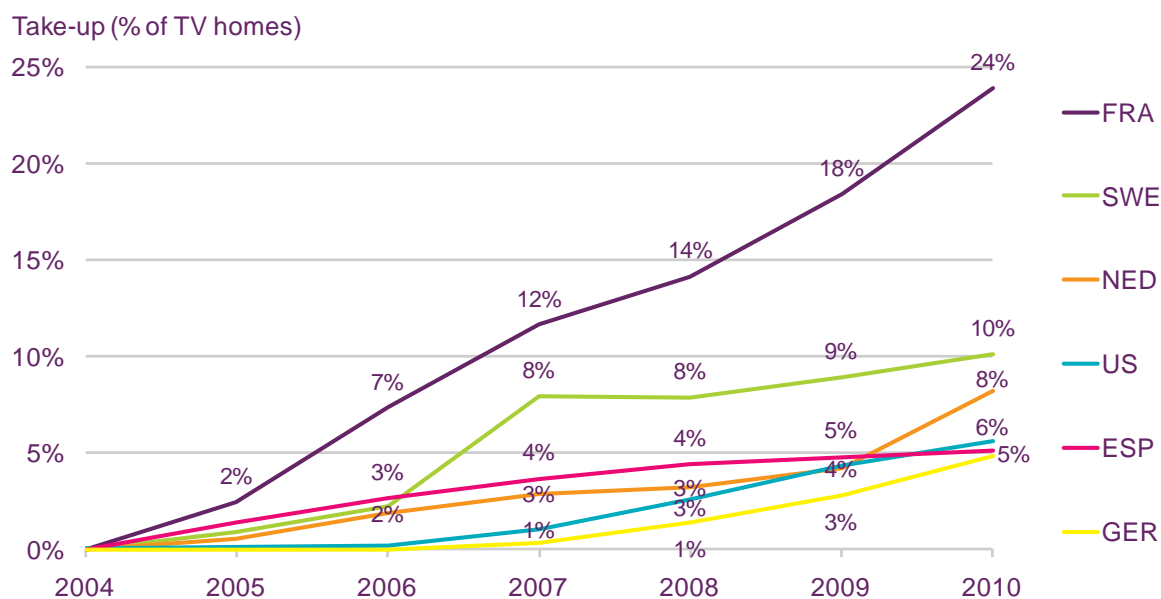
Source: IDATE / industry data / Ofcom.

### **IPTV take-up grew rapidly in France, reaching nearly a quarter of homes in 2010**

This report first highlighted the growing popularity of IPTV (albeit at a relatively low level in many countries) in 2009. As investment in advanced, high-bandwidth telecommunications infrastructures continues, IPTV is becoming a viable alternative in many more homes. But in the face of a range of well-established competing digital platform technologies, it can be challenging for a new technology such as IPTV to gain a foothold. Figure 3.7 illustrates how IPTV has grown in popularity among those countries where take-up exceeded 4% in 2010.

In 2010, the platform entered the mainstream in France, with take-up rising by a third to reach nearly a quarter (24%) of French main television sets in 2010. No other nation was able to match France in terms of IPTV popularity, because the IPTV platform was introduced to the market relatively early, in the context of low cable availability. That said, rates of take-up are high elsewhere; in Sweden, penetration reached 10% in 2010, up by 1pp year on year; 8% of homes in the Netherlands now have the technology, double the figure in 2009. Among US households, the comparable figure was 6% (up by a third) and in Germany 5% (up by 2pp over the period).

**Figure 3.7 IPTV take-up on main TV sets in countries where take-up exceeded 4% in 2010**



Source: IDATE / industry data / Ofcom.

Notes: Only countries where IPTV take-up exceeded 4% of television homes in 2010 are shown in the chart.

### 3.1.4 Value-added services on DTV platforms growing in popularity

The transition to digital television is well under way in most of the countries covered by this report; and it is complete, or nearly so, in several. So the product features enabled by digital technology – wider channel choice; greater interactivity; radio on television – are now, for many people, the default expectation.

But as one particular aspect of the television market becomes mainstream, so the platform operators turn to new, value-added services to ensure that their proposition remains distinctive, and therefore competitive, in comparison to alternative products. High-definition TV (HDTV) services are one example (though many might argue that this is now a mainstream, well established technology); digital video recorders are another; internet-enabled set-top-boxes and 3D-ready televisions also fall into this category.

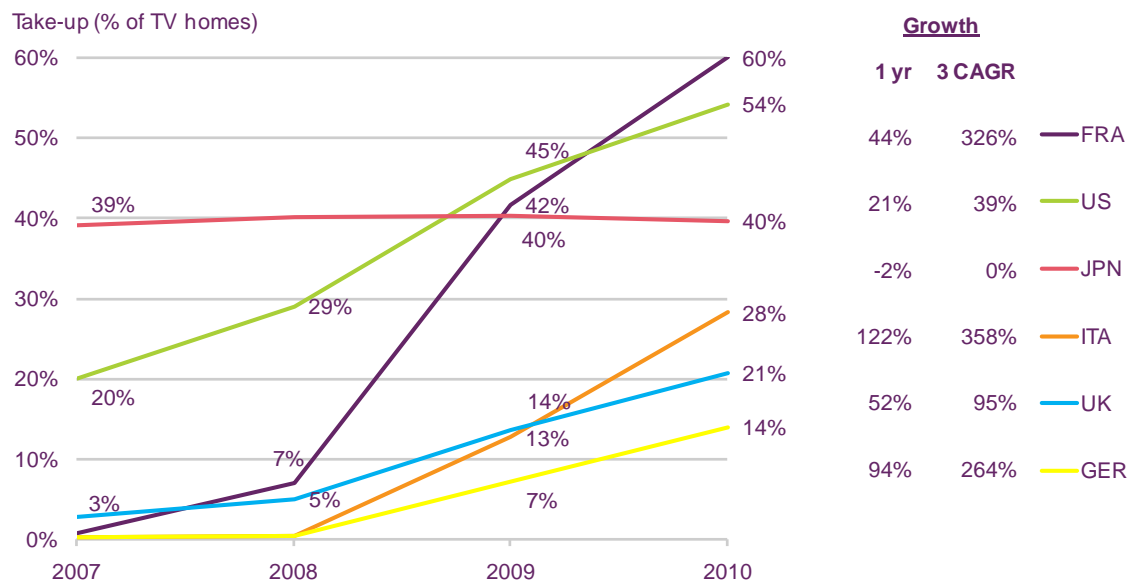
#### HDTV available in a majority of French and US homes for the first time

Among the six countries for which high-definition television subscriber/homes data were available, the story in 2010 was of rapid adoption and high levels of take-up in both France and US, where penetration grew to 60% (up by nearly a half) and 54% (up by a fifth) respectively in 2010.

In Japan, high-definition television has been available, in analogue or digital form, for many years. As a result, the technology is well-established, and around 40% of homes have a high-definition television service available to them. But the Japanese market has not experienced any growth in HD equipment adoption. From a lower base HD take-up in Italy doubled during 2010, rising to 28%, while penetration in the UK rose by a half to 21% of main sets over the same period. In Germany, where HD take-up started slowly, (compared to Italy, for example), take-up nearly doubled over the year to reach 14% of main television sets.



**Figure 3.8 Growth in the number of HD television homes**



Source: IDATE / industry data / Ofcom.

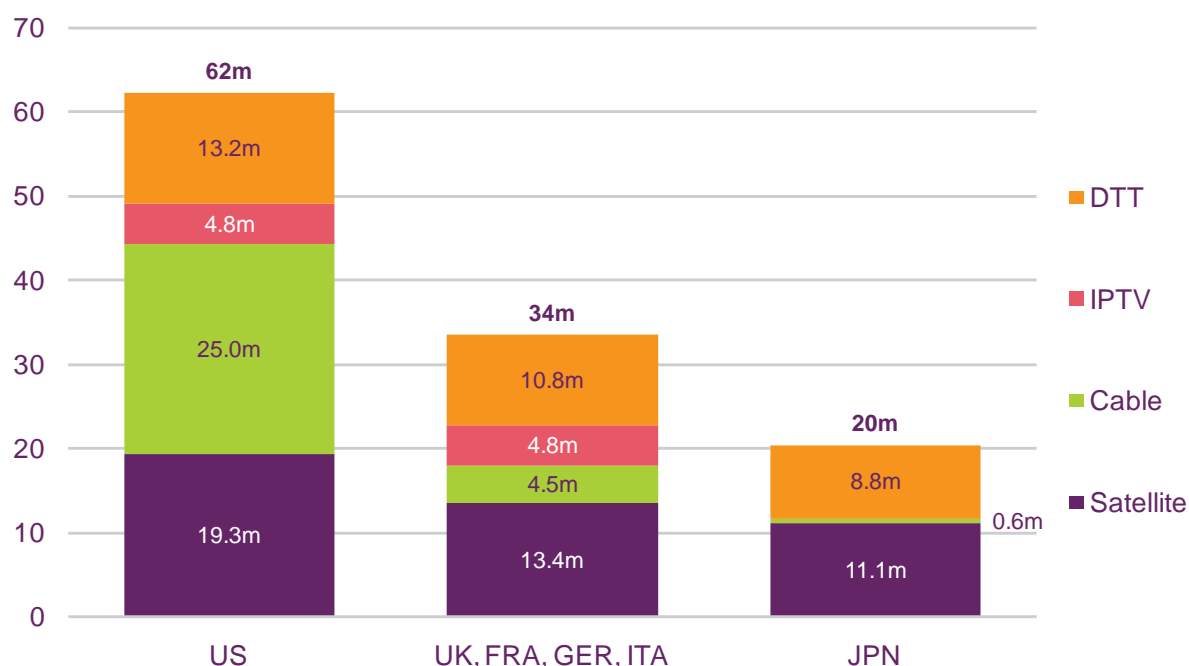
Across countries, a variety of platforms have been responsible for bringing HD content into homes. In the US, cable was the most popular platform, followed by satellite and then DTT. Together with IPTV, there were around 62 million HD US homes in 2010.

Among the larger European territories, DSat was the most popular route to HD, accounting for 13.4 million households. DTT was the second most popular platform, with a further 10.8 million homes; digital cable and IPTV commanded a further 9.3 million between them.

In Japan, cable's contribution to HD homes was very small in 2010. But of the 20 million total, 11 million received HD content through the satellite platform, with DTT accounting for just under 9 million.



**Figure 3.9 Number of HD homes, by platform and country, end 2010**



Source: IDATE / industry data / Ofcom.

Notes: Paying and FTA HD homes; no data available for IPTV take-up in Japan.

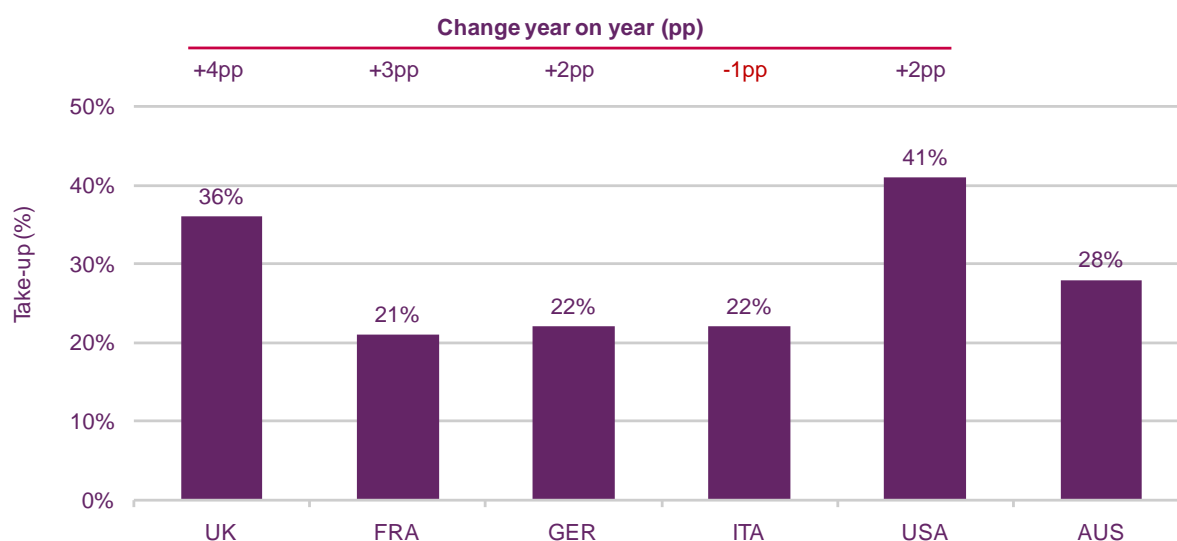
### **Digital video recorders available in nearly three in ten homes across the UK, France, Germany, Italy, the US and Japan**

Digital video recorders (that enable TV programmes to be recorded, paused and rewind) are becoming more widely available. Among homes in France, Germany, Italy, Japan, the UK and the US in 2010, DVRs were connected to the main set in one nearly in three (28%) households.

By country, more than a third (36%) of viewers in UK homes had access to a DVR, along with 41% of those in the US; in both, pay-TV providers have promoted their adoption among existing subscribers. Take-up in Australia was just over a quarter, at 28%, while in France, Germany and Italy take-up was lower, with DVRs connected to the main television set in around a fifth of homes (21%, 22% and 22% respectively).

Year on year, growth in DVR adoption was highest in the UK, where take-up rose by 4pp between 2010 and 2011. In the US, France and Germany, it rose by 2 pp.

**Figure 3.10 Claimed DVR take-up and year-on-year changes in take-up**



Source: Ofcom consumer research, October 2011

Base: All those who use the internet. Total sample size: UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

Q: Which of the following devices do you own and personally use?

### Connected TVs and 3D televisions begin to gather momentum

Digital technologies, introduced more recently to enhance the television-viewing experience, also began to gain in popularity during 2011.

Among television viewers in France, 13% claim to have a television screen that connects to the internet, providing access to, for example, television catch-up services, video sharing applications and social networking sites. Nine per cent of consumers in Australia made the same claim, while take-up in the UK and US stood at 7%, and at 6% in Germany and Italy

### IPTV and connected televisions

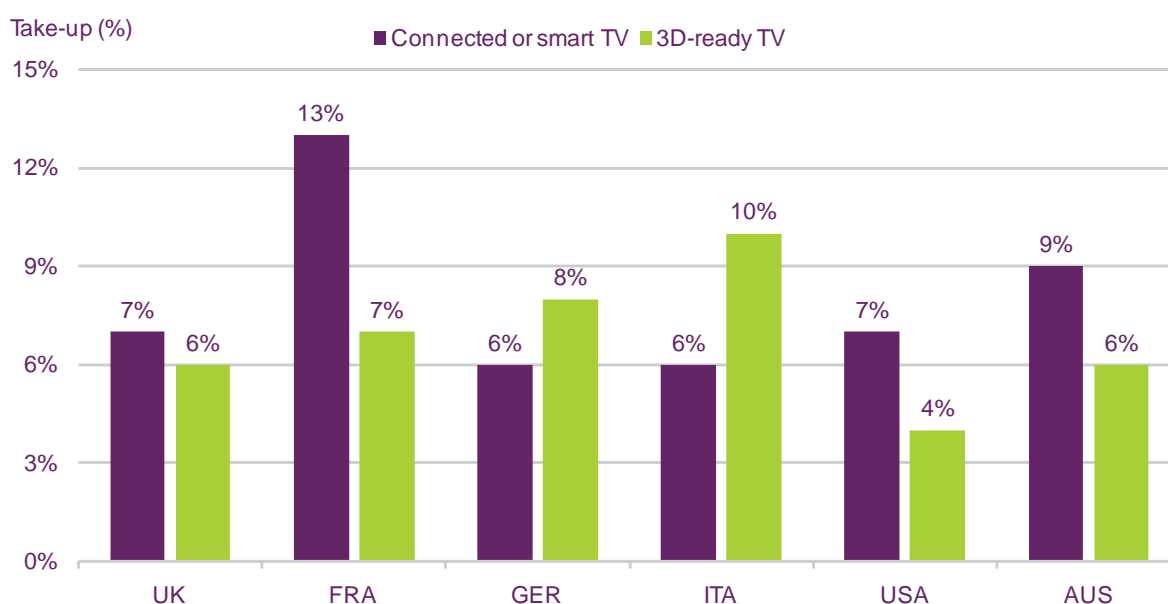
Both IPTV and connected televisions provide a means by which viewers can get access to audio-visual content through internet-based distribution technologies. The distinction between the two comes in the form of both (i) the device that provides the connectivity, and (ii) the quality of service associated with that connection.

An IPTV service is typically supported by a set-top box, which connects to content services offering a guaranteed quality of service – so the AV content is, in terms of picture quality, indistinguishable from a broadcast-based service. A connected TV gains access to the internet through a consumer's broadband connection, for example through a WiFi router. As a result, content is delivered over the open internet, so that picture/service quality will be influenced by the consumer's broadband connection speed and by congestion on the open internet.

Televisions with 3D capability (when the screen is viewed using special glasses) are also growing in popularity. Ten per cent of viewers in Italy claim their main television set is 3D-ready -capable, alongside 8% of those in Germany, 7% in France and 6% in the UK and Australia. The comparable figure for viewers in the US was 4%. These figures should be treated with a degree of caution owing to the comparative newness of the technologies and the possibility of over-claim among consumers (for example, as a result of confusion between connected television and IPTV); moreover, the extent to which consumers actually

connect their internet-enabled television to the web was not explored in the consumer research – i.e. consumers may have the capability to connect their TV to the web, but not actually do it.

**Figure 3.11 Claimed take-up of connected televisions and 3D-ready TVs**



Source: Ofcom consumer research, October 2011

Base: All those who use the internet. Total sample size: UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

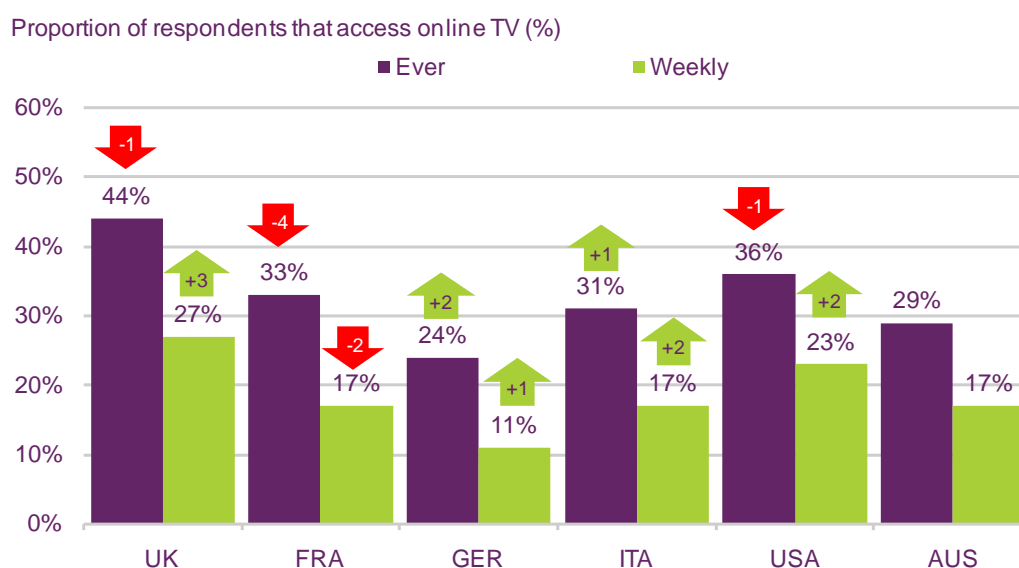
Q: Which of the following devices do you own and personally use?

### 3.1.5 UK consumers most likely to claim they use online TV services

With broadband now in the majority of homes in many of our comparator countries, Ofcom's consumer research shows that people in the UK are the most likely to access TV content over the internet. Over a quarter (27%) claimed to do this *every week*, up 3pp in twelve months (this figure increases to 44% when asked whether they had *ever* accessed TV content over the web.) Despite IPTV failing to gain a foothold in the UK so far (see Figure 3.7), TV catch-up services delivered over the open internet such as BBC iPlayer, 4OD and ITV Player have proved popular. In 2010, 15% of the UK online population visited BBC iPlayer in an average month - four times more than those who visited 4OD, the second most popular online catch-up site.

Consumers in the US were not far behind the UK, with over a fifth (23%) of respondents claiming to access TV content over the internet on a weekly basis, up 2pp since 2009. The growing popularity of accessing TV content over the web, coupled with an increase in the penetration of IPTV on main television sets, may be driving the decline in the proportion of homes in the US taking traditional pay-TV services, which declined 0.6% year on year to 88% of households (see Figure 3.29).

**Figure 3.12 Accessing TV content over the internet**



Source: Ofcom consumer research, October 2011.

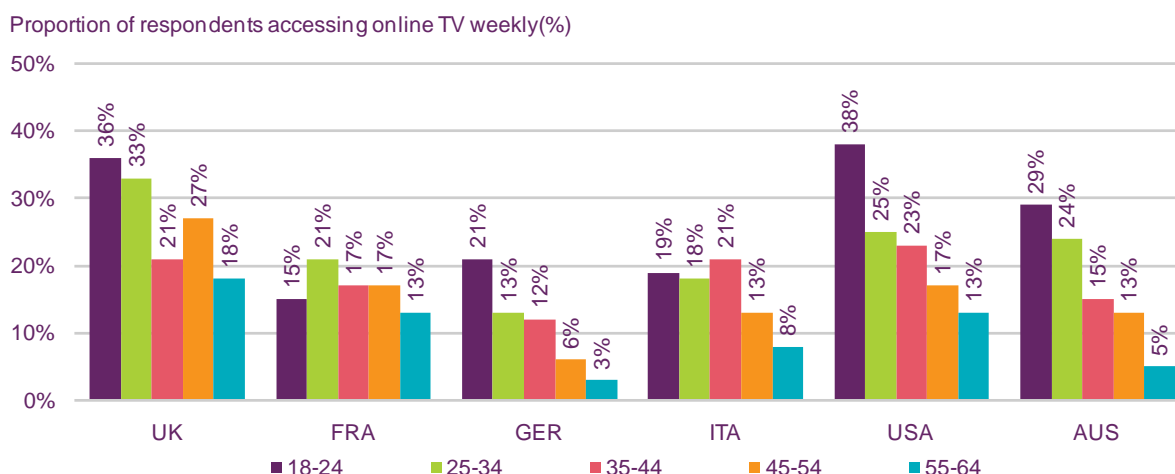
Base: All those who use the internet. Total sample size: UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

Q: Which of the following activities do you use your home internet connection for?

Note: Australia not included in 2010 research.

For the majority of our comparator countries, the propensity of consumers to access TV content online diminishes with age, with people aged 18-24 most likely to access TV content over the web, and those aged 55-64 the least likely to do this. In the UK, over two-thirds (69%) of respondents aged 18-34 claim to access TV content over the internet every week - the comparable figure for the US is 63%. Among those aged 55-64, these figures fall to 18% and 13% respectively.

**Figure 3.13 Accessing TV content over the internet, by age**



Source: Ofcom consumer research, October 2011.

Base: All those who use the internet, UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

Q: Which, if any, of the following activities do you use your home internet connection for?

## 3.2 The TV and audio-visual industries

### 3.2.1 Summary

This section focuses on the TV and audio-visual industries, looking at the key revenue trends among our comparator countries and financial results for major pay-TV and free-to-air broadcasters.

- **Revenue among the 17 countries analysed by Ofcom increased by 7.7% in 2010 to £215bn as all countries experienced increases year on year**, driven by a recovery in advertising revenue as well as continued increases in subscription income.
- **The UK has the largest TV market in Europe by revenue**, recording an 8.5% increase to 11.3bn, compared to revenues of £11.0bn for Germany, the second largest European market in 2010 (up 2.0% versus 2009).
- **All of the nine European markets included in our analysis, as well as Canada, saw revenues increase in 2010, although to varying degrees.** Spain had the strongest growth in percentage terms (up by 11% to £5bn), driven by increases in public funding, while the Netherlands remained relatively flat with a marginal increase of 0.4% in 2010.
- **Collective revenue among the BRIC countries - Brazil, Russia, India and China – increased by 16.2% in 2010, up £14bn to £31bn.** Brazil saw growth of 17.6% to £10.6bn in 2010, making it the largest television market of the BRIC countries. China, the second largest market, grew by 13.6% to £9.9bn.
- **Pay-TV companies continue to out-perform their free-to-air counterparts in terms of revenue generated in 2010.** The pay-TV operator experiencing the most significant increase in earnings was BSkyB in the UK, up £600m (13.2%) to £5.3bn. In contrast, Sogecable of Spain experienced a drop in revenue for the second year running; to 1.4bn in 2010.
- **Pay-TV operators continue to increase average revenue per user (ARPU) as more subscribers trade up to premium products** such as digital video recorders (DVRs) and high-definition TV. In the UK, Virgin Media earned annual ARPU of £570 per customer (up from £538 in 2009) compared to a figure of £508 per customer for BSkyB in 2010 (up from £492 in 2009).

### 3.2.2 Television revenues among comparator countries

**In 2010 revenues increased in all 17 comparator countries**

Revenues among the 17 countries analysed by Ofcom increased by 7.7% in 2010 to £215bn; all 17 countries saw year-on-year increases. The BRIC countries – Brazil, Russia, India and China – saw their joint TV revenue increase by 16.2% in 2010, up £4bn to £31bn. Growth was largely driven by increases in advertising, with the exception of India, where income from subscription revenues outstripped income from advertising.

The gap between the BRIC countries and the combined revenues of Japan and Australia has diminished over the past five years, with the two regions now almost equal in terms of television revenue. While the combined revenues of Japan and Australia increased by 6.7%

year on year (to £33bn), compound annual growth over a five-year period has been relatively flat compared to the other regions, at just 0.9%.

The combined revenues of Europe and Canada still fall some way below the US, which, as the largest television market globally, generated revenue of £94bn in 2010, an increase of 6.3% on 2009.

Our analysis includes revenue generated from pay-TV subscriptions (excluding pay-per-view and video on demand), public funding and licence-fee revenues, and net television advertising revenues. This differs from our analysis of global television revenues (see Figure 3.2) which includes pay-per-view and VoD.

**Figure 3.14 TV industry revenues among comparator countries**



Source: IDATE / industry data / Ofcom.

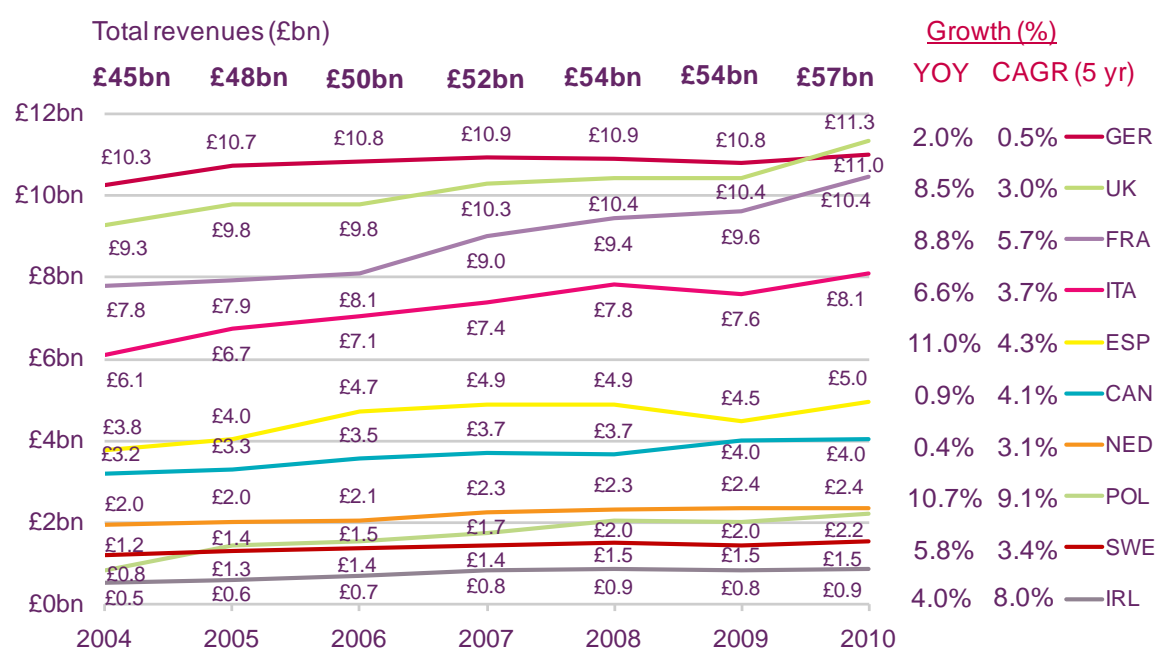
Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Revenues include advertising, subscriptions and sources of public funding only. Europe includes the European countries in this analysis – UK, France, Germany, Italy, Spain, the Netherlands, Sweden, Republic of Ireland and Poland. BRIC is Brazil, Russia, India and China.

All of the nine European markets included in our analysis, as well as Canada, saw revenues increase in 2010, although to varying degrees. Spain saw the strongest growth in percentage terms between 2009 and 2010, up by 11% to £5bn, although this was due to an increase in public funding. The increase for Spain follows a significant decline the previous year, and so represents only a return to 2008 levels. In contrast, TV revenues in the Netherlands remained relatively flat, with a marginal 0.4% increase in 2010.

The UK has the largest TV market in Europe in terms of revenue, generating income in 2010 of £11.3bn, compared to £11.0bn for Germany, the second highest television market in Europe<sup>17</sup>.

<sup>17</sup> Note that the UK TV revenue total differs slightly from our 2011 *UK Communications Market Report*, which included 'other' TV revenues (of £0.7bn). For reasons of consistency, these revenues have been excluded in our international analysis.

**Figure 3.15 TV industry revenues among European countries and Canada**



Source: IDATE / industry data / Ofcom.

Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Revenues include advertising, subscriptions and sources of public funding only. Europe includes the European countries in this analysis – UK, France, Germany, Italy, Spain, the Netherlands, Sweden, Republic of Ireland and Poland.

TV revenues increased in 2010 for all four BRIC countries. For the second year running, India saw the highest proportional growth in revenue, up by 17.7% to £6.7bn. Brazil experienced growth of 17.6%, making it the largest TV market of the BRIC countries, while China, the second largest market, had a 13.6% increase to £9.9bn.

Russia, the only BRIC country whose revenue fell in 2009, returned to growth in 2010, with a 13.6% increase to £3.5bn.

**Figure 3.16 Total TV industry revenues among BRIC countries**



Source: IDATE / industry data / Ofcom.

Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Revenues include advertising, subscriptions and sources of public funding only. BRIC is Brazil, Russia, India and China.

Figure 3.17 illustrates the changing composition of TV industry revenues by country between 2005 and 2010. In all 17 comparator countries, TV revenues rose over the five-year period.

Revenues among the major European television markets of Germany, the UK, France and Italy all grew and generated a relatively consistent revenue mix between subscriptions, public funding and net advertising. In all cases, pay-TV was the fastest-growing source of revenue over the five-year period between 2005 and 2010.

In other European countries, Spain is notable for having increased public funding three-fold over the past five years, from £0.57bn in 2005 to £1.91bn in 2010. It introduced legislation in September 2009 that prohibited TV advertising and other means of generating direct revenue for public broadcaster RTVE. To compensate for this loss, a tax system was introduced. Free-to-air commercial broadcasters and pay-TV operators have to pay 3% and 1.5% of their respective revenues to fund RTVE, while operators of electronic communications have to pay 0.9%. Meanwhile, 80% of the existing levy on radio spectrum used is also granted to RTVE, up to a maximum of €330m. the existing levy on radio spectrum.

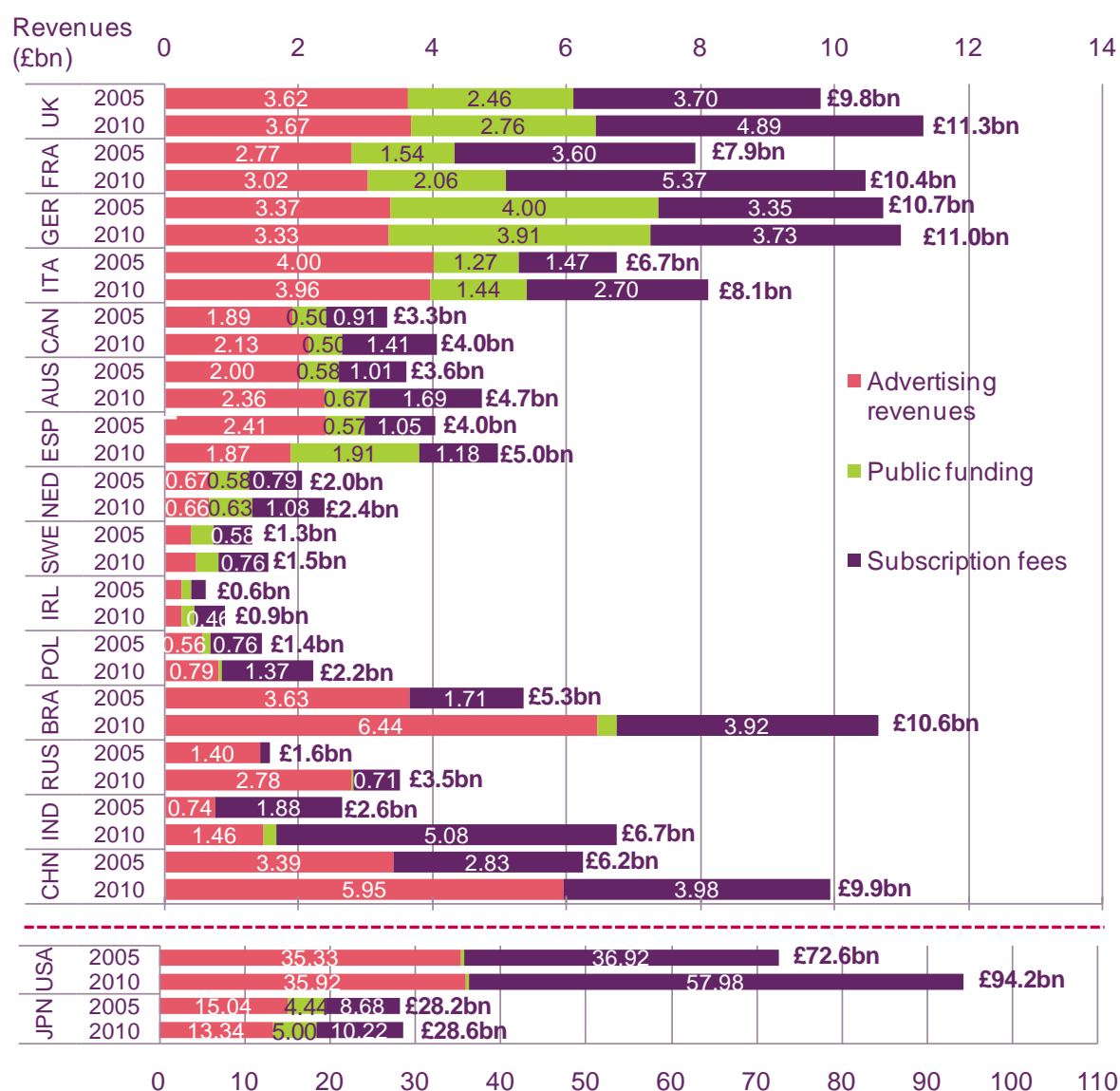
The US and Japan, the two largest countries by revenue, are included at the bottom of the chart to accommodate the higher scale. The US experienced relatively flat TV advertising revenues over the five-year period, with the vast majority of growth coming from pay-TV subscriptions (up from £72.6bn in 2005 to £94.2bn in 2010). In contrast, Japan experienced a decline in advertising revenues (from £15.04bn in 2005 to £13.34bn in 2010) while revenues from pay-TV subscriptions remained constant at around £28bn.

The television markets of the BRIC countries all recorded increases in total revenues between 2005 and 2010, driven by an increase in both net advertising revenue and subscriptions. However, the BRIC countries are notable for a lack of public funding, with



only Brazil and India having any public funds attributed to TV in 2010 – £0.3bn and £0.2bn respectively.

**Figure 3.17 TV revenues among comparator countries, by source 2005 and 2010**



Source: IDATE / industry data / Ofcom.

Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Revenues include advertising, subscriptions and sources of public funding only. Different scale used for USA and Japan due to larger size.

### 3.2.3 TV revenue per head among comparator countries

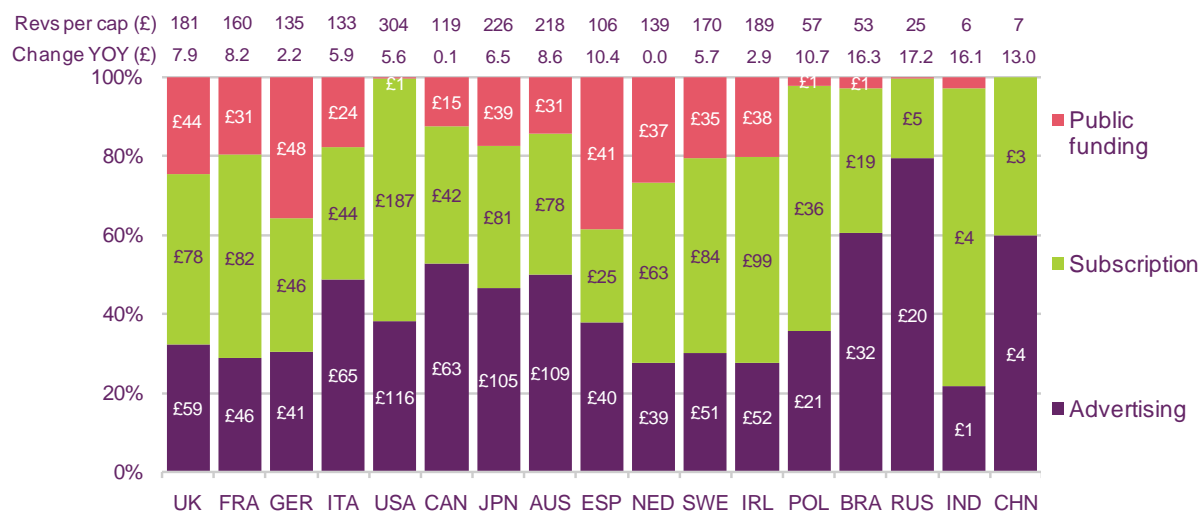
#### The US continues to generate the most revenue per head

Per head, revenue in the US continued to lead the 17 comparator countries, generating £304 per head in 2010, an increase of 5.6% year on year. This is some way ahead of the second-highest, Japan, which has increased by 6.5% since 2009 to £226 per head.

The UK, recorded a 7.9% increase in revenue per head; to £181 in 2010.

Russia experienced the largest growth in revenue per head in 2010 (up 17.2% on 2009), although it is worth noting that, given its large population and lower TV revenues, revenue per head in Russia (together with India and China) is much lower than the other comparator countries.

**Figure 3.18 TV revenue per head, by source 2010**



Source: IDATE / industry data / Ofcom.

Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Revenues include advertising, subscriptions and sources of public funding only; figures inside the bars represent industry revenue per head by source.

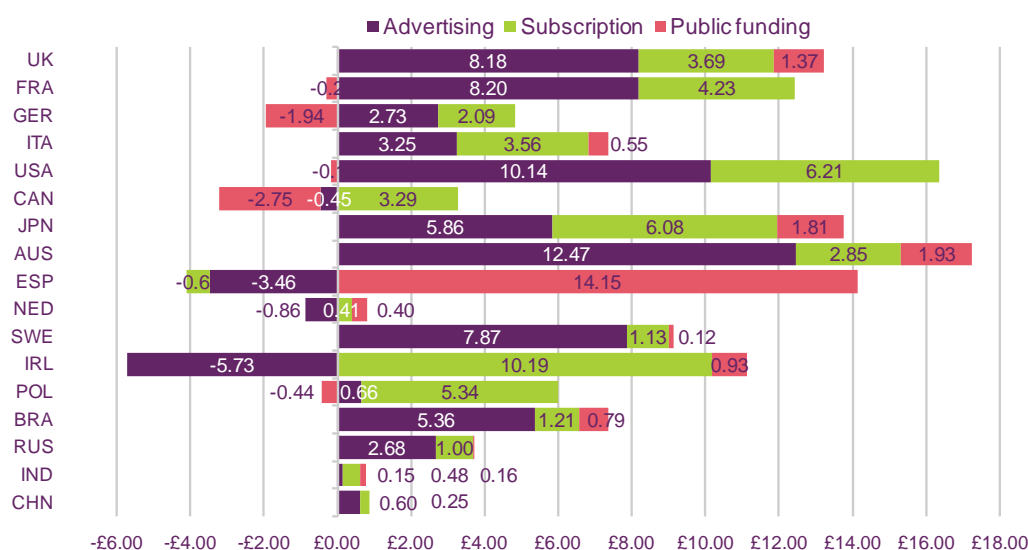
### Advertising and subscriptions revenues per head bounce back in 2010

Figure 3.19 details the changes by country in revenue per head, split by the three component parts. In almost all countries, advertising revenue per head increased year on year as the industry recovered from the declines experienced in 2009 as a result of the economic downturn. The only countries not to recover advertising revenues in 2010 were Ireland and Spain (and to a lesser extent Canada and the Netherlands) where advertising continued to fall on a per-capita basis; by £5.73 and £3.46 respectively.

Declines in advertising revenues per head for Ireland in 2010 were offset by growth in per-capita subscription revenue, which increased by £10.19 on 2009. The US also experienced significant increases in subscription revenues per head, with a £6.21 increase year on year, while in the UK it rose by £3.69.

In terms of public funding the most notable change is a large increase in revenue for Spain (up £14.15 versus 2009). This is due to the Spanish government having changed the funding structure of its main public broadcaster, RTVE. Further information on public funding in the Spanish TV market is provided below.

**Figure 3.19 Changes in components of TV revenues per head: 2009 to 2010**



Source: IDATE / industry data / Ofcom.

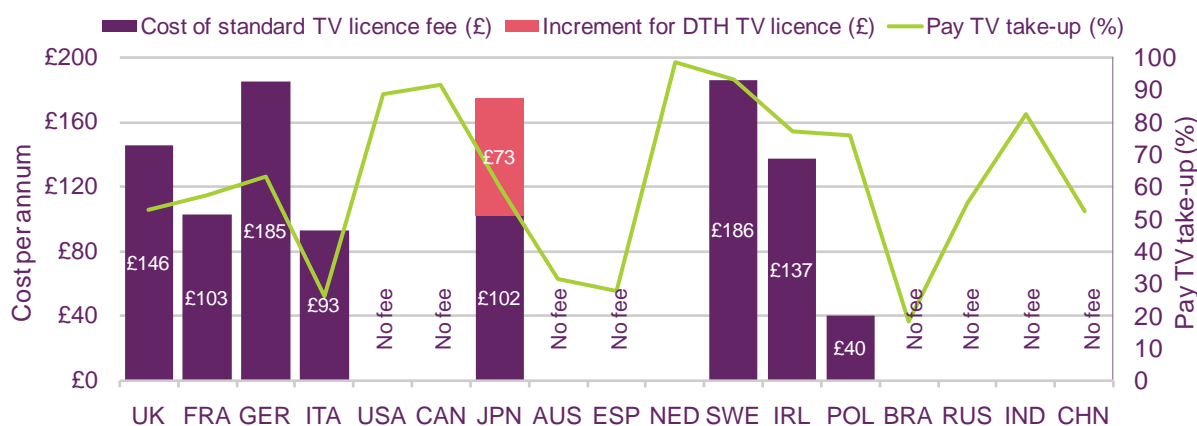
Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Revenues include advertising, subscriptions and sources of public funding only; the bars represent changes in industry revenue per head, by source.

### 3.2.4 TV licence fees most common in Europe

Public funding, in the form of TV licence fees paid for by viewers, remains an important element of TV finance in most of the major European markets included in this analysis. Figure 3.20 illustrates the cost of TV licence fees and the markets in which they operate. It also shows pay-TV penetration, for comparison.

The UK's licence fee was the fourth most expensive, at £146 (up from £143 in 2009), behind Sweden (up from £173 in 2009 to £186 in 2010), Germany (£185, down from £192) and Japan (unchanged at £175 for a satellite TV licence). There does not appear to be any correlation between viewers' propensity to pay a TV subscription and whether or not they are already paying a TV licence fee.

**Figure 3.20 Cost of a TV licence fee**



Source: IDATE / industry data / Ofcom.

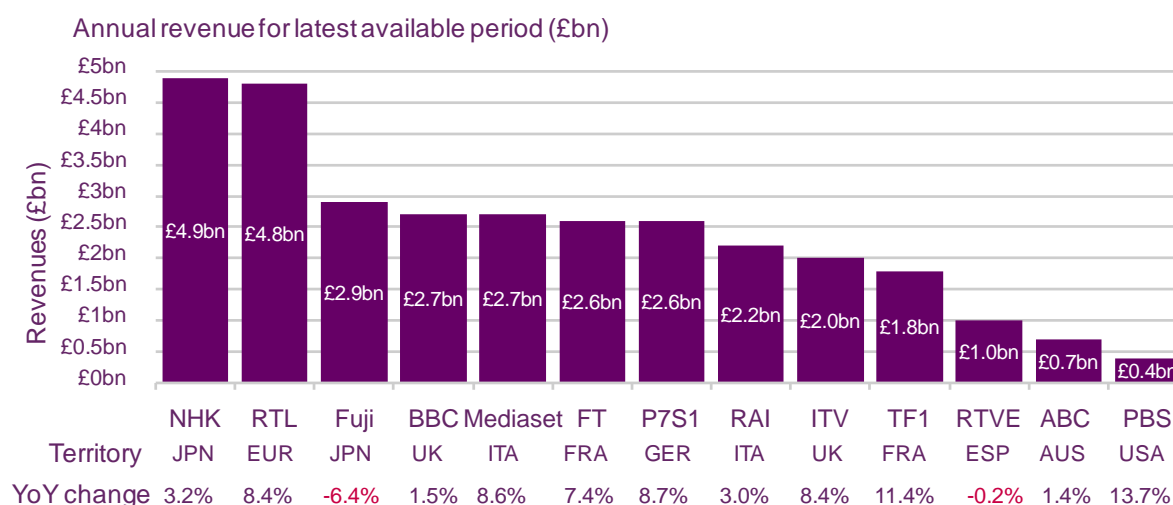
Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010; Prices as of end 2010. Note: The Japanese licence fee costs £102 in terrestrial households or £175 (rounded) to receive a larger number of channels via satellite.

### 3.2.5 Ad recovery drives revenues for many free-to-air broadcasters

In 2009, nine of the 13 free-to-air broadcasters included in our analysis experienced declines in revenue, due the advertising downturn and exposure to cyclical advertising markets. 2010 saw a resurgence in the advertising market, resulting in the major free-to-air broadcasters growing their revenues year on year. In the UK, ITV saw an increase of 8.4% to £2.0bn, whilst ProSieben in Germany recorded an increase of 8.7%. TF1 in France and RTL in the Netherlands both experienced increases of 8.4%.

The only free-to-air broadcasters in our analysis in Figure 3.21 which failed to report an increase in revenues since 2009 were Fuji in Japan (down 6.4%) and RTVE in Spain (down 0.2%).

**Figure 3.21 Latest reported revenues from selected free-to-view operators, 2010**



Source: IDATE / industry data / Ofcom.

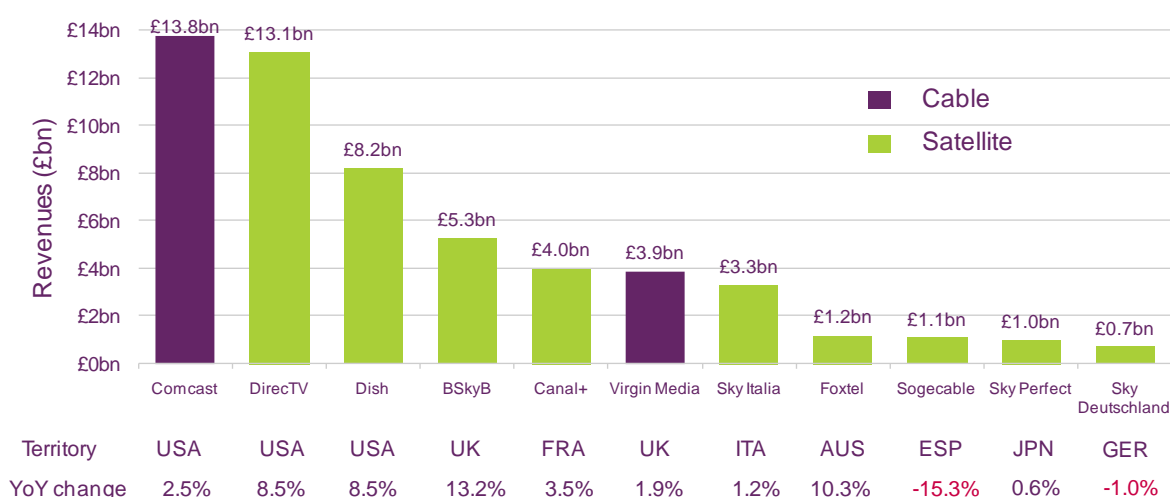
Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010; Comparisons should be regarded as indicative only due to the possibility of differences in financial reporting between broadcasters. From 2009, RTL figure includes its key European markets; Mediaset includes Italian business and from 2005 FTA and pay TV (year ending Dec 31) BBC represents its income allocated to TV; RAI figures include licence fee (split between radio and TV unknown), TV advertising and sponsorship; ProSieben, group revenues (years ended Dec 31); France Televisions is licence fee and advertising; TF1 includes French channels (years ended Dec 31); PBS and the ABC are total revenue to year ending June 30; Fuji TV is broadcasting and production, year ending March 31; RTVE is advertising and public funding (as of year ending Dec 31)

### 3.2.6 Pay-TV revenues up despite tough trading conditions

Pay-TV companies continue to outperform their free-to-air counterparts, with revenues up for all but two operators in our analysis. The pay-TV operator which experienced the most significant jump in earnings, proportionally, was BSkyB in the UK, up £600m (13.2%) to £5.3bn (this also includes revenues from its telecommunications services). Comcast, the largest pay-TV operator in the US, recorded a 2.5% increase, pushing its total reported revenue up to almost £14bn.

Sogecable (which owns the Digital Plus satellite broadcaster in Spain) experienced a drop in earnings for the second year in a row – declining 18.6% in 2009 to 1.4bn, and a further decline of 15.3% in 2010 to £1.1bn. Competition in Spain has intensified in recent years as IPTV operators have entered the market and pay-DTT has begun offering a low-cost means of accessing some premium content.

**Figure 3.22 Latest reported revenues from selected pay-TV operators, 2010**



Source: IDATE / industry data / Ofcom.

Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010; where possible we have reported revenues related to the TV services only (including advertising). Comcast includes video and advertising revenues; Time Warner Cable includes video and advertising revenues; BSkyB include retail, wholesale and advertising revenues; KDG includes cable access and TV/radio revenues; Virgin Media includes consumer and content revenues; Sky Italia revenue based on IDATE's estimate from News Corporation's annual report; Canal+ represents Canal Plus Group pay-TV revenues; Sogecable's platform is Digital Plus.

### Australia generated the most pay-TV ARPU in 2010

Average revenue per user (ARPU) can provide insights into the relative performance of different pay-TV operators (Figure 3.23 focuses on annual ARPU). The Australian television market delivered the highest ARPU level in 2010 at £695, up by 21.5% since 2005.

Figures from Foxtel (Australia's largest pay-TV platform, with 1.54 million customers in June 2010), indicate that a high proportion of the customer base were taking premium services – roughly 250,000 of its subscribers were taking Foxtel's high-definition TV services; 35% opted for the multi-room service, and almost a third (60%) took Foxtel's DVR.

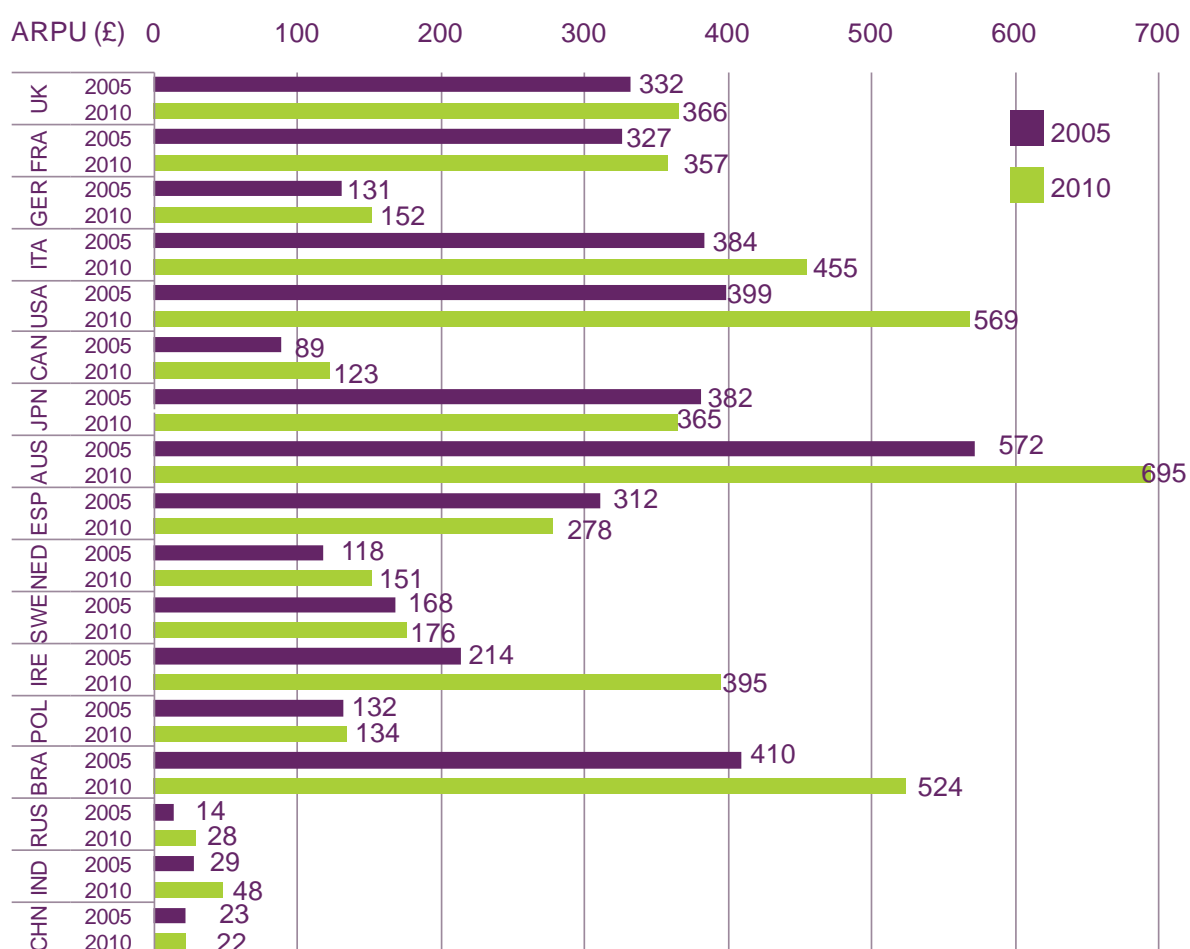
The Australian market was some way ahead of the second highest-ranking ARPU figure, in the US, which stood at £569, representing a 43% increase over five years.

The third-highest market by ARPU was Brazil, where ARPU stood at £524 in 2010, up from £410 in 2009. DirecTV Latin America, the satellite broadcaster that holds a majority stake in Sky Brazil, has cited growing demand for its pre-paid DVR and HDTV services in 2010, driven by a rapidly growing middle market segment.

Japan and Spain were the only countries in our analysis to experience a decline in ARPU over the five-year period, down by 4.5% to £365 and by 10.9% to £278bn respectively, as consumers migrated away from satellite TV to other platforms such as digital terrestrial and IPTV.

The UK was among the countries with higher ARPU, at £332 at the end of 2010, up by 10%.

**Figure 3.23 Pay-TV ARPU, by country: 2005-2010**



Source: IDATE / industry data / Ofcom.

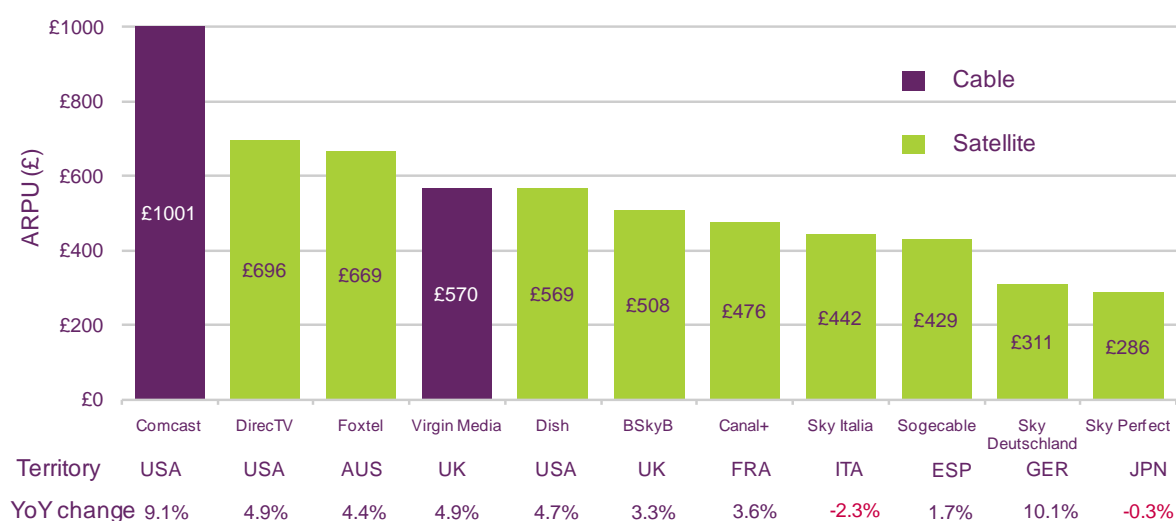
Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. ARPU is average revenue per user, representing the average revenue generated per pay TV subscriber.

### US operators generate the highest ARPU

Figure 3.24 analyses annual ARPU, reported at the end of 2010, for selected pay-TV operators and shows that at £1001, Comcast generated a substantially higher ARPU than other operators in our analysis – although this includes revenues earned from pay-TV and telecommunications products such as telephone and broadband

Virgin Media earned average revenue of £570 per customer, up from £538 in 2009. It is the only UK operator to offer a 'quad-play' product bundle of TV, telephone, broadband and mobile.

**Figure 3.24 Latest reported ARPU for selected pay-TV operators, end 2010**



Source: IDATE / industry data / Ofcom.

Notes: Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010; latest available company reports; ARPU is average revenue per user; figures are indicative only as definitions of ARPU may differ and some operators include telecommunications revenue in annual ARPU (the chart is therefore also not directly comparable to country level ARPU analysis) Platform represents main distribution method.



## 3.3 The TV and audio-visual consumer

### 3.3.1 Summary

This is the final chapter of the audio-visual section. In Section 3.3.2 it examines patterns of digital television take-up, before considering the adoption of high-definition television, digital video recorders and connected televisions (Section 3.3.3). Section 3.3.4 analyses the number of pay-TV homes in each country, before examining how viewers in different countries consume broadcast television channels and TV online (Section 3.3.5). Section 3.3.6 concludes with a consideration of consumers' use of video-on-demand services.

- **In the UK, Spain and France, nine in ten homes had digital television by the end of 2010**, with take-up reaching 97%, 98% and 93% respectively. In the US, the comparable figure was 87%, while 83% of households in the Republic of Ireland had DTV.
- **Year on year, growth in digital television take-up was** greatest in Brazil, where penetration rose by 20 percentage points. In the Republic of Ireland, DTV take-up increased by 18pp, while in Spain and Australia it increased by 14pp. By comparison, take-up in the UK rose by 3pp over the same period, as the digital switchover programme entered its final phase.
- **Despite the growing take-up of a range of digital media technologies, minutes per head of TV viewing rose in 2010 in many countries.** TV was most popular in the US in 2010, where viewers watched an average of 283 minutes per day, up by 1.1% year on year. In Italy, the comparable figure was 246 minutes (up by 3.4% over the year), and in Poland 245 minutes (2.1%). The equivalent figure in the UK was 242 minutes – up by 7.6%.
- **Take-up of high-definition services has entered the mainstream in several countries, reaching 60% of all homes in France** (up by nearly half on the year). In the US the figure was 54% (an increase of one fifth) and 40% in Japan (little changed over the period). In the UK, HDTV was available to a fifth (21%) of homes – up by over half year on year.
- **Digital video recorders are increasingly prevalent among homes in comparator countries.** Across the UK, France, Germany, Italy, US and Spain, nearly three in ten households had a DVR connected to their main set. Take-up of these devices was highest in the US, where take-up stood at 41% in Q4 2011 (up by 2pp year on year). The UK ranked second, with penetration rising to 36% over the period (up by 4pp – the largest increase among the countries in this survey).
- **By country, pay-TV take-up at the end of 2010 was highest in the Netherlands (98%) and Sweden (93%), alongside India (82%), the US (88%) and Canada (91%);** this compared to take-up of 52% in the UK. Growth in pay-TV penetration was greatest in Russia (up by 6.4pp), the Republic of Ireland (up by 5pp), France (+4.6pp), Japan (+3.8) and Brazil (+3.4). In the UK, pay-TV take-up rose by 0.5pp over the same period.
- **In the US, over a third (34%) of consumers claim to personally use a video-on-demand service, compared to 29% in France and just under a quarter (24%) in the UK.** Growth was highest in those countries where use of video on demand has yet to reach a mainstream audience – rising by 33% in Germany and 31% in Italy.



### 3.3.2 Digital television take-up on main sets

#### More than nine in ten homes have digital television in the UK, France and Spain

Figure 3.25 and Figure 3.26 illustrate the growing take-up of digital television across the 17 comparator countries; for ease of interpretation, the countries are illustrated in two charts. Note that the UK digital television figures in this report are compiled using a different methodology to Ofcom's quarterly DTV [report](#); as a result, the two sets of data are not directly comparable.

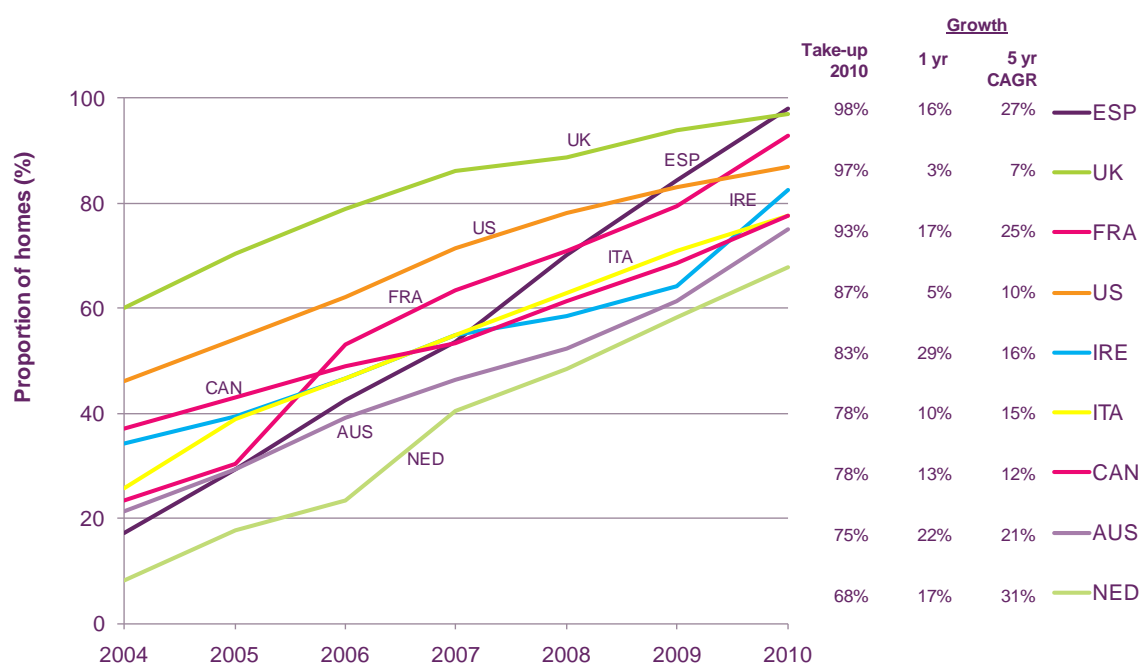
Homes in Spain benefited from near-universal take-up on main sets, as the digital switchover programme was completed in 2010. In the UK, take-up reached 97% by the end of 2010, while in France, where terrestrial switchover will be completed in November 2011, over nine in ten homes (93%) had digital television. In the US, where the analogue terrestrial signal was switched off in 2009, digital television take-up reached 87%; in the Republic of Ireland, penetration reached 83%, and exceeded the 80% threshold for the first time in 2010.

At the opposite end of the spectrum, digital television take-up in Russia, China and India remained well below the average among comparator countries (68%), at 34%, 33% and 29% respectively. But in each case the rates of DTV adoption ran well ahead of the comparator country averages (which stood at 20% year on year, and 28% per annum over a five-year period).

Annual rates of DTV take-up varied substantially among the remaining comparator countries. In the UK, US and Japan, they were in single digits – perhaps less surprising in the UK and US, given the high levels of DTV penetration (97% and 87% respectively); in Japan year-on-year DTV growth was comparatively slow despite DTV take-up of 66%. This might be explained by the comparatively slow digital migration among analogue cable subscribers.

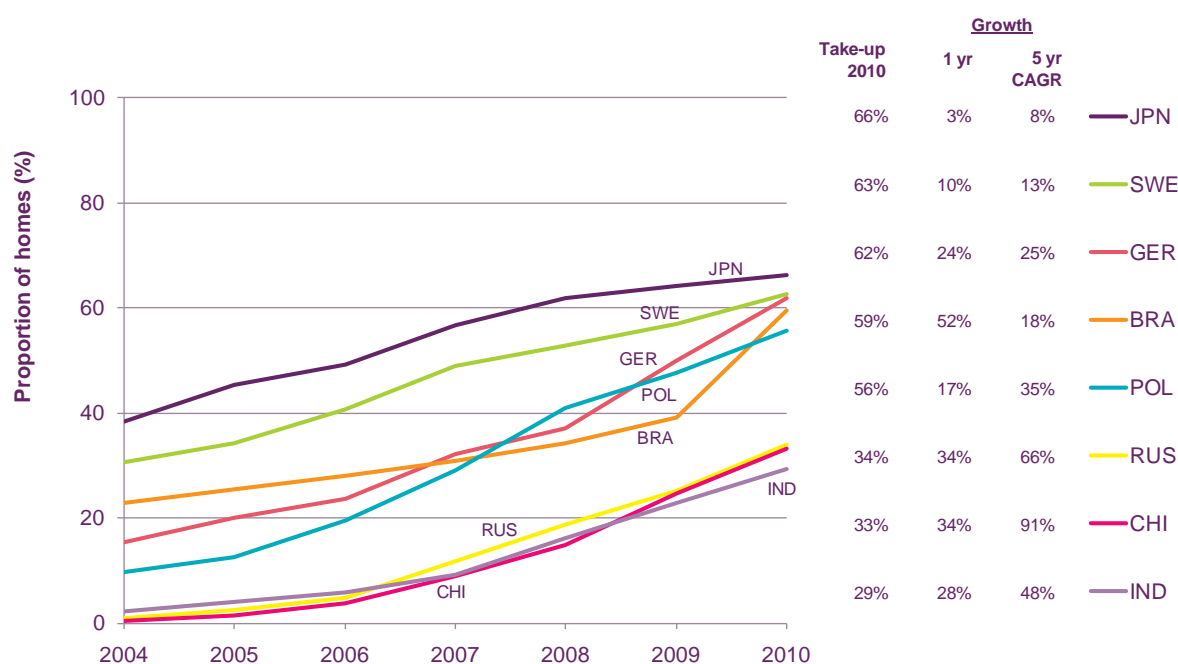
The highest rates of growth in DTV take-up year on year were in the BRIC countries, as a result of rapid DTT migration in Brazil, high rates of digital satellite take-up in Brazil, Russia and India, and high levels of digital cable migration in China. Digital migration rates were also high in the Republic of Ireland (up by nearly a third as a result of increases in digital terrestrial, satellite and, to a degree, cable take-up) and Germany (up by a quarter, brought about by migration to digital on both the cable and satellite platforms)

**Figure 3.25 Take-up of digital television – top nine comparator countries**



Source: IDATE / industry data / Ofcom.

**Figure 3.26 Take-up of digital television – the next eight comparator countries**



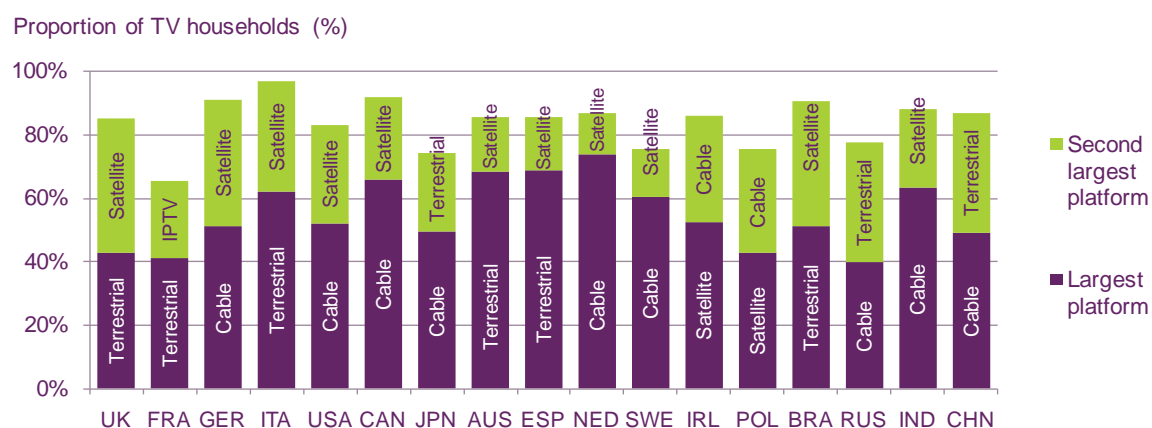
Source: IDATE / industry data / Ofcom.

Taking both analogue and digital technologies *together*, cable is the most popular television platform in more than half (nine) of the 17 comparator countries, comprising Germany, the US, Canada, Japan, the Netherlands, Sweden, Russia, India and China. Terrestrial is most popular in a further six countries, including the UK, France, Italy, Spain, Brazil and Australia.

Satellite is the largest platform in the remaining two countries, Poland and the Republic of Ireland.

While satellite may not be the top technology choice in many countries, it is often the second most popular platform, taking second place in eleven of the 17 countries analysed here. Terrestrial accounts for a further three countries (Japan, Russia and China), cable for two (Poland and the Republic of Ireland) and IPTV one (France).

**Figure 3.27 The two most popular DTV platforms, by country, 2010**



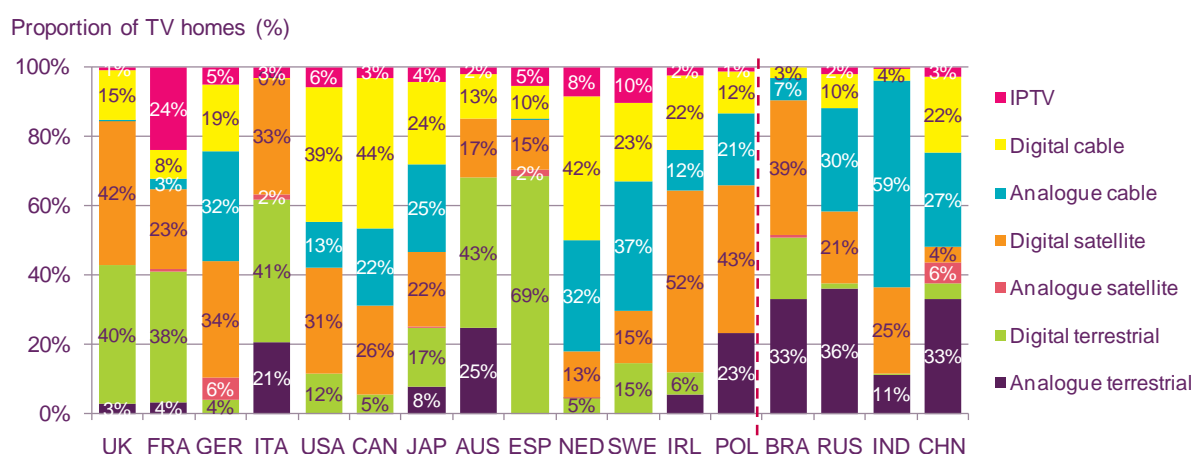
Source: IDATE / industry data / Ofcom.

Splitting the platforms into their analogue and digital components, the *digital* terrestrial television platform continues to be the largest by market share in Spain (69% of main sets), Australia (43%), Italy (41%) and France (38%). It is also a substantial player in the UK (with a 40% share), ranking second to digital satellite (42%). *Digital* satellite is also the leading platform in Germany (with a 34% market share), and in Brazil (39%), Poland (43%) and the Republic of Ireland (52%). *Digital* cable is the most popular platform in the US (with a 39% share of homes), and in Canada (44%) and the Netherlands (42%).

Despite the progress made in many countries in migrating homes to digital television platforms, analogue technologies are still widely used. The analogue cable network is still popular in India, where this is the largest platform with a 59% share of main television sets. The comparable figure in Sweden is 37%, and 32% in the Netherlands and Germany.

Analogue terrestrial technology still has a substantial share of sets in Russia (36%), where it is the largest television platform overall; the same is true in China, where it has a 33% share of homes. While it is no longer the largest platform in many more developed economies, a quarter of Australian homes at the end of 2010 took analogue terrestrial, and nearly a quarter (23%) of Polish homes also had analogue terrestrial tuners connected to their main sets. The comparable figure in Italy is 21%. Analogue satellite has little or no market share in any of the countries in this report. It commanded a 6% share of homes in both Germany and China, and a 2% share in Spain.

**Figure 3.28 Take-up of DTV, by platform and country: 2010**



Source: IDATE / industry data / Ofcom.

Figure 3.29 sets out changes in the percentage point take-up of the different television platforms. The red/green tint provides an indication of the relative change in each platform's take-up, when compared to the other changes set out in the table.

The association of analogue technologies with 'red' tints makes clear the degree of migration from analogue to digital technologies. On average, analogue platforms lost a collective 10pp of share across the comparator countries; this ranged from a 6pp reduction in North America to 11pp in Europe and 11pp in BRIC. In the UK, where digital television migration is at an advanced stage, DTV take-up rose by just 3pp over the year, as the television market approached saturation.

By country, the most substantial change in take-up in 2010 was experienced by homes in Brazil, where the only analogue television technology to lose market share – terrestrial – saw its market share fall by 20pp. Digital terrestrial was the main beneficiary, picking up 15pp share, while digital satellite take-up rose by 5pp. Analogue terrestrial take-up in the Republic of Ireland fell by 15pp, and there were substantial reductions in Australia (-14pp), Spain (-12pp) and France (-11pp), reflecting a combination of DSO initiatives and the widening availability of digital television platforms.

The progressive upgrade of cable infrastructure to digital during 2010 was reflected in the reduction in analogue cable take-up in the Netherlands, Canada and Sweden, which fell by 10pp, 7pp and 6pp respectively, as digital cable take-up rose more or less commensurately. Elsewhere, the cable market lost share – in Germany, analogue cable take-up fell by 9pp while its digital counterpart rose by just 4pp (possibly explained by higher digital cable tariffs).

**Figure 3.29 Changes in platform take-up (pp) by country and technical platform**

	UK	FRA	GER	ITA	US	CAN	JPN	AUS	ESP	NED	SWE	IRE	POL	BRA	RUS	IND	CHI	Av	Av Eur	Av BRIC	Av NA
Digital terrestrial	-2	6	0	5	1	1	-2	12	11	-1	0	6	0	15	1	1	1	3	3	5	1
Digital satellite	4	1	6	1	0	0	-2	0	0	-1	0	8	2	5	5	5	1	2	2	4	0
Digital cable	0	1	4	0	2	7	3	0	2	7	5	3	6	0	2	1	5	3	3	2	4
IPTV	0	5	2	0	1	0	2	1	0	4	1	1	0	0	1	0	1	1	2	1	1
<b>Total digital</b>	<b>3</b>	<b>13</b>	<b>12</b>	<b>7</b>	<b>4</b>	<b>9</b>	<b>2</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>6</b>	<b>18</b>	<b>8</b>	<b>20</b>	<b>9</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>10</b>	<b>11</b>	<b>6</b>
Analogue terrestrial	-3	-11	0	-6	0	-2	0	-14	-12	0	0	-15	-2	-20	-8	-4	-6	-6	-5	-10	-1
Analogue satellite	0	-1	-3	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0
Analogue cable	0	-1	-9	0	-4	-7	-1	0	-2	-10	-6	-4	-6	0	0	-2	-2	-3	-4	-1	-5
<b>Total analogue</b>	<b>-3</b>	<b>-13</b>	<b>-12</b>	<b>-7</b>	<b>-4</b>	<b>-9</b>	<b>-2</b>	<b>-14</b>	<b>-14</b>	<b>-10</b>	<b>-6</b>	<b>-18</b>	<b>-8</b>	<b>-20</b>	<b>-9</b>	<b>-6</b>	<b>-8</b>	<b>-10</b>	<b>-10</b>	<b>-11</b>	<b>-6</b>

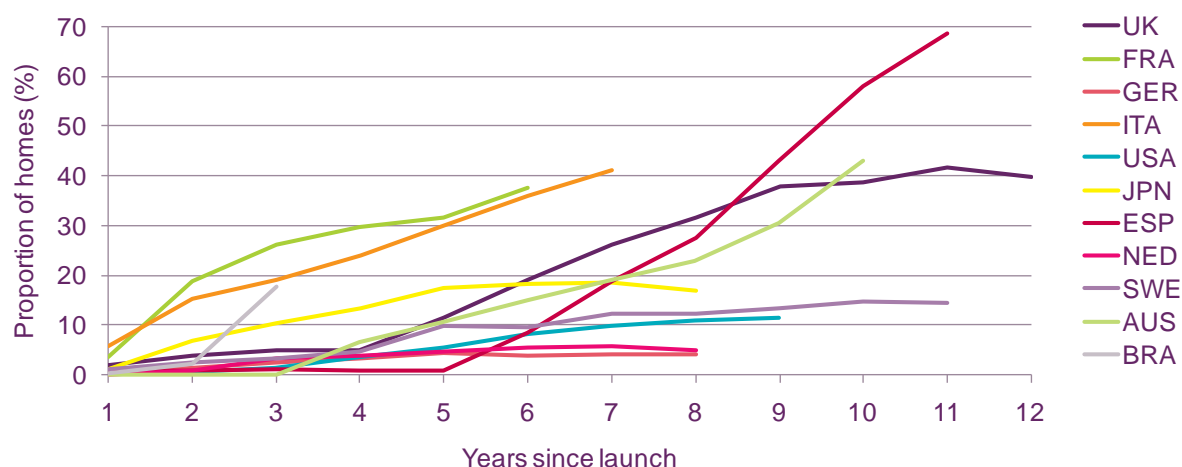
Source: IDATE / industry data / Ofcom.

In many countries, the digital terrestrial platform plays an important role in freeing up analogue broadcast spectrum for alternative uses. As a result, the DTT platform is well established in a range of the comparator countries analysed in this report, including the UK, Spain, Australia, Sweden, the US, Japan and Germany.

Two patterns of adoption have emerged, possibly influenced both by how recently the platform launched in different countries, and by the significance of the platform in each:

- **DTT take-up has begun to plateau.** In the UK, around four in ten homes have DTT connected to their main set, and this figure has remained broadly flat over the past eighteen months. At a lower level, DTT take-up has plateaued in Germany, the Netherlands, the US, Sweden and Japan, at or below 20% of homes.
- **DTT continues to grow in popularity.** In Spain and Australia, where take-up was highest, penetration stood at 69% and 43% respectively in 2010. In both these countries, the platform is long-established, and rising take-up appears to have been fuelled by switchover. In Brazil, Italy and France, the DTT platform launched more recently, yet take-up is at, or near, 40%, in both France and Italy.

**Figure 3.30 Proportion of main sets connected to DTT since platform launch**



Source: IDATE / industry data / Ofcom.

### 3.3.3 Take-up of HDTV services, digital video recorders and connected TVs

#### Take-up of high-definition services has entered the mainstream in several countries

Take-up of high-definition television services on the main television set was highest in France and the US, where take-up stood at 60% and 54% respectively. Such was the year-on-year growth in HDTV take-up (up by 44% in France since 2009, and by 21% in the US) that, for the first time, a majority of households in each country were receiving HD channels.

Growth in HDTV take-up in the US during the past year (21%) was broadly equal to the average annual growth for the past three years (22% per year); in France, however, growth in the past 12 months slowed, to 44%. In Japan, high-definition services have been available for quite some time (beginning with an analogue high-definition standard in the 1980s). But growth in take-up has been modest over the past three years, with the result that having been the leading nation for high-definition take-up, it now lags behind both the US and France.

**Figure 3.31 Number of HDTV homes, by platform and country, end 2010**



Source: IDATE / industry data / Ofcom.

By platform, satellite and cable have together played a significant role in driving HD take-up during 2010. In the UK, satellite (in the form of Sky HD and Freesat HD) was the main driver behind HD growth, accounting for 3.1 percentage points (pp) of HD take-up during 2010 (cable accounted for a further 2.4pp). The same platform (Sky Deutschland in this case) accounted just under a half (3.0pp) of the growth in HD take-up in Germany (cable ranked second, with HD take-up rising by 2.9pp); it also accounted for nearly half of all HD additions in the US (with HD services on satellite rising by 4pp).

In France, by contrast, rising take-up of IPTV widened access in the home to HD channels during 2010, with nearly half of all total growth (8.6pp) in HD coming from IPTV decoders (DTT ranked second, with HD DTT penetration rising by 5.9pp).

The DTT platform not only supported rising HD take-up in France; in the UK, it accounted for a quarter of all new HD additions during 2010, and in Italy, it was a primary driver of rising HD adoption – with take-up there rising by 8.2pp (with satellite accounting for a further 7.5pp).

**Figure 3.32 Percentage point change in the take-up of HD decoders connected to main sets**

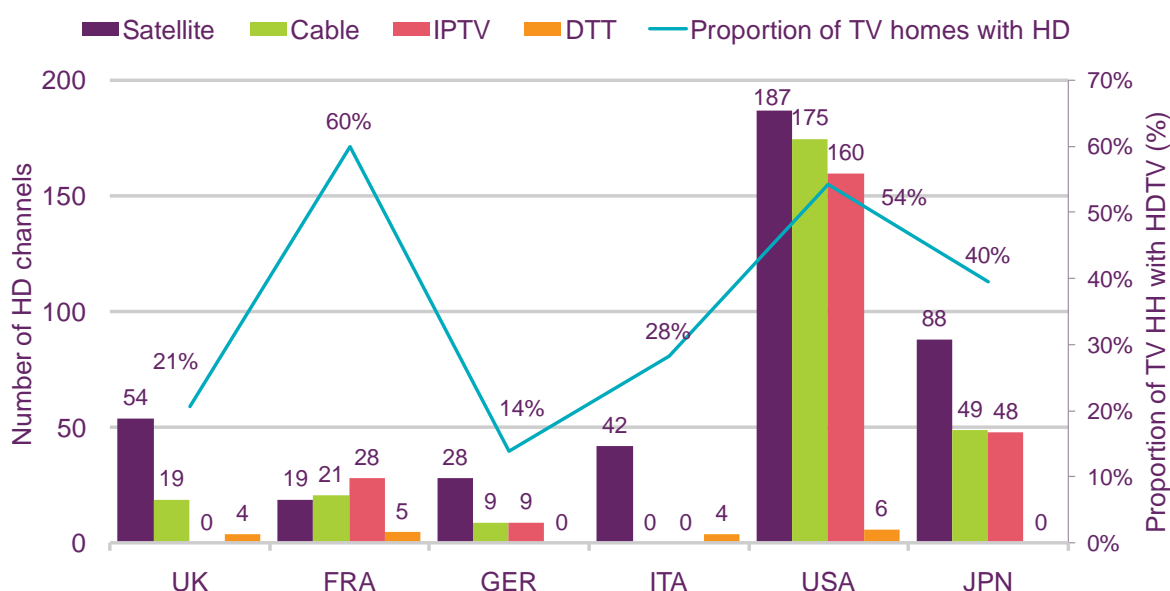
	UK	FRA	GER	ITA	US	JPN
Satellite	3.1	2.8	3.0	7.5	4.0	0.9
DTT	1.7	5.9	0.0	8.2	0.7	-1.4
Cable	2.4	1.2	2.9	0.0	2.8	0.1
IPTV	0.0	8.6	0.9	0.0	2.0	0.0
<b>Net increase</b>	<b>7.2</b>	<b>18.5</b>	<b>6.8</b>	<b>15.7</b>	<b>9.5</b>	<b>-0.3</b>

Source: IDATE / industry data / Ofcom.

Notes: Paying and FTA HD homes; no data available for IPTV in Japan.

With their ability to carry large numbers of high-bandwidth channels, both cable and satellite platforms now tend to offer access to the largest number of high-definition television channels – with satellite platforms typically carrying more HD channels than cable. While DTT has played a role in driving HD take-up in some countries, with less bandwidth on offer, it does, in the main, provide access to only the most well-established free-to-view networks.

**Figure 3.33 Number of HDTV channels and HD penetration, end 2010**



Source: IDATE / industry data / Ofcom.

Figure 3.34 sets out the changes in the number of high-definition channels, available on each platform within the countries where HD data are available. Thanks to the availability of bandwidth, satellite, in the main, continued to add more HD channels to its line-up than any other platform, with double-digit increases in channels in all countries except France during 2010. In France, the IPTV platform added ten HD channels year on year, while satellite added three.

HD viewers in both the US and Japan saw the more substantial increases in HD channel availability across all platforms, with an aggregate increase of 124 channels in the US, and an increase of 64 in Japan.

**Figure 3.34 Increases in the number of HD channels available, by platform: 2009 – 2010**

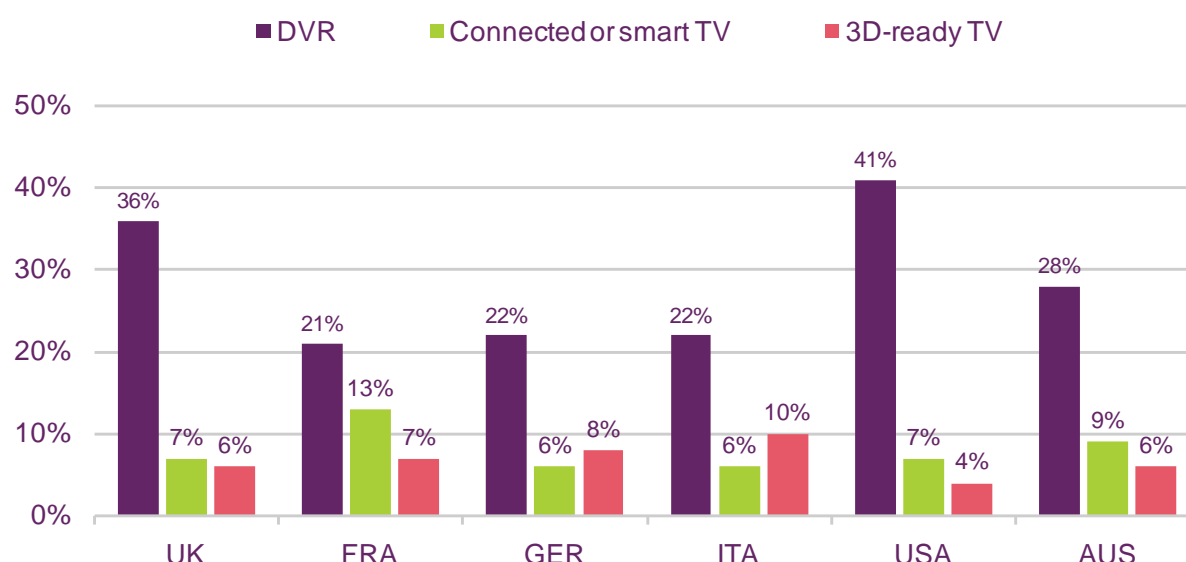
	UK	FRA	GER	ITA	USA	JPN
Satellite	17	3	21	12	37	30
Cable	10	5	2	0	45	17
IPTV	0	10	4	0	42	17
DTT	0	0	0	1	0	0

Source: IDATE / industry data / Ofcom.

### Connected TV and 3D-ready TVs grow in popularity

A range of other digital technologies are now being embraced by television viewers. Digital video recorders (allowing viewers to pause and rewind live television and to store content), were installed in 41% of US homes in 2010 and in 36% of UK homes. Connected televisions are a relatively recent innovation, allowing viewers to connect their television screens to the internet and thereby gain access to, for example, catch-up television services, social networking sites and video-sharing applications. Take-up was highest in France, where 13% of consumers claim to have a connected TV at home; this was followed by Australia (9% penetration) and the US and the UK (7% each). Televisions capable of displaying 3D content are being adopted by a small minority of households, appearing in 10% of homes in Italy, 8% in Germany and 7% in France; the comparable figure in the UK was 6%. The figures for connected TVs should be treated with a degree of caution owing to the comparative newness of the technologies and the possibility of over-claim among consumers (for example, as a result of confusion between connected television and IPTV); moreover, the extent to which consumers actually connect their internet-enabled television to the web was not explored in the consumer research – i.e. consumers may have the capability to connect their TV to the web, but not actually do it.

**Figure 3.35 Take-up of digital video recorders, connected TVs and 3D-ready TVs**



Source: Ofcom consumer research, October 2011

Base: All those who use the internet. Total sample size: UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

Q: Which of the following devices do you own and personally use?



### 3.3.4 Pay-television penetration

The popularity of pay-TV across comparator countries is influenced by a range of factors, including (i) the availability of free-to-view channels, (ii) the exclusive rights that pay-TV operators may have to particular programmes or types of content and (iii) the presence of publicly-funded television channels. Among the 17 comparator countries, six in ten homes (60%) paid for additional television channels in 2010, up by 3pp year on year and up by 14pp since 2005.

At least three patterns of pay-TV adoption have emerged among the comparator countries:

- **High and stable levels of take-up.** In North America, consumers have always been willing to pay for access to additional television channels, and take-up stood at 89% in 2010 – stable year on year and up by 5pp since 2005.
- **Moderate and stable penetration.** Among European countries, take-up of pay-TV has risen – by 7pp – since 2005, although more recently, the proportion paying for additional channels has remained flat, at around 55% of all homes. Within this figure, take-up varies substantially between European nations (see Figure 3.37).
- **Lower adoption levels, but rising.** In the developing economies of BRIC, pay-TV continues to grow in popularity (although this varies substantially by country). Take-up of pay-television rose by 4pp year on year and by 19pp since 2005.

**Figure 3.36 Take-up of pay television among groups of comparator countries**



Source: IDATE / industry data / Ofcom.

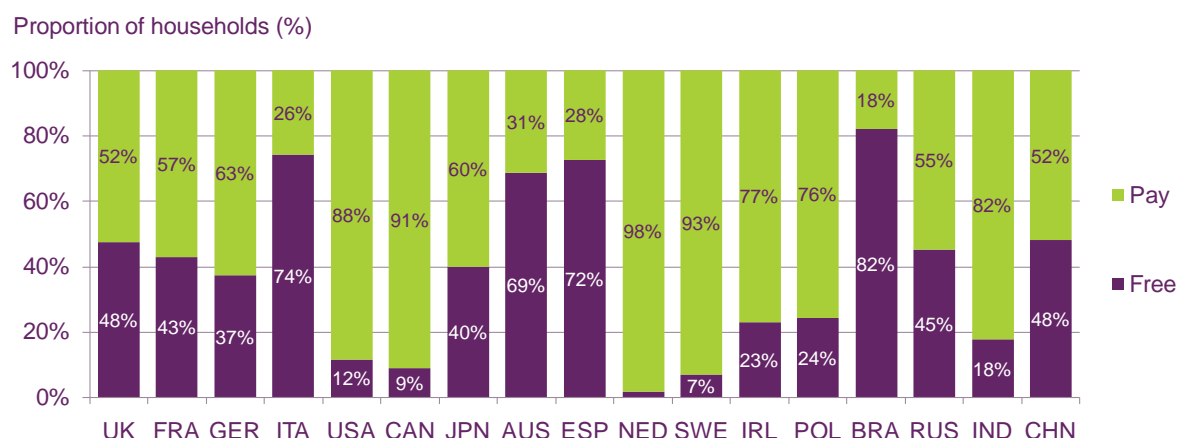
Note: 'Europe' in this context means those European countries within our comparator set. 'Total' in this context means the 17 countries in this report's comparator set.

By country, pay-TV take-up at the end of 2010 was highest in India (82%), the US (88%) and Canada (91%), alongside Sweden (93%) and the Netherlands (98%). However, the characteristics of pay-TV services differ from country to country. In the US and Canada, pay-TV services are similar to those in the UK (providing access to a large number of additional TV channels in exchange for payment). By contrast, the pay-TV fee for some cable packages in the Netherlands and Sweden is more akin to an 'access charge' in return for which consumers receive a limited number of television channels.

Among the remaining comparator countries, the free-to-view television model remained more popular. And in some countries, pay-TV was available in a far smaller proportion of

homes. For example, take-up in Brazil stood at just 18%, and in Italy just over a quarter of homes (26%) took pay-television; the comparable figure for Spain was 28% and for Australia 31%.

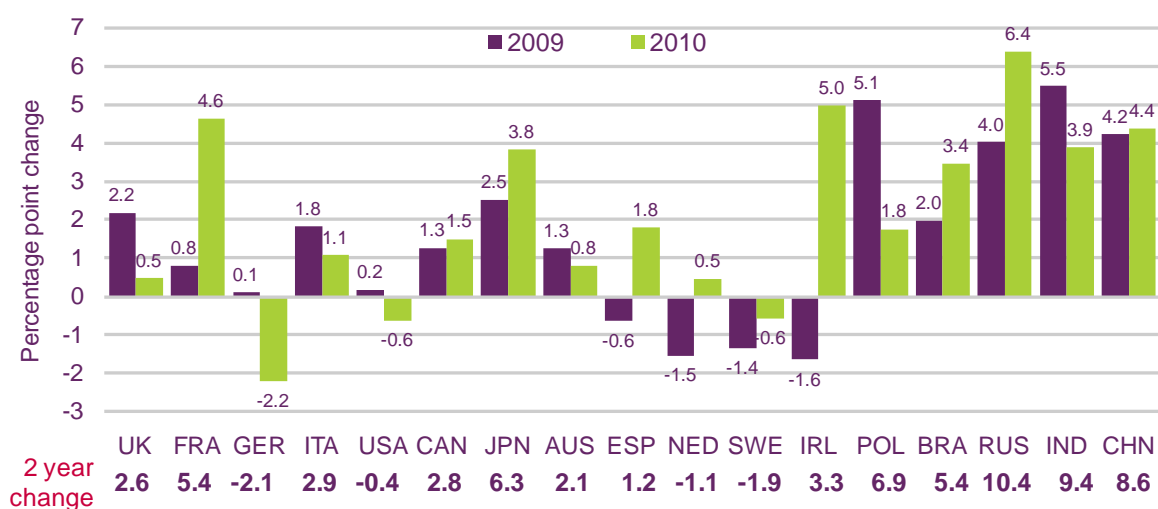
**Figure 3.37 Take-up of pay and free-to-air television: end-2010**



Source: IDATE / industry data / Ofcom.

Year-on-year trends in the adoption of pay-TV varied substantially across our comparator countries, as well as between 2009 and 2010. Growth in pay-TV take-up was most substantial during 2010 in Russia (up by 6.4pp) and the Republic of Ireland (up by 5pp). There was a modest contraction of 2pp in pay-television take-up in Germany. In the UK, take-up in 2010 rose by 0.5pp, following a 2.2pp increase in the previous year.

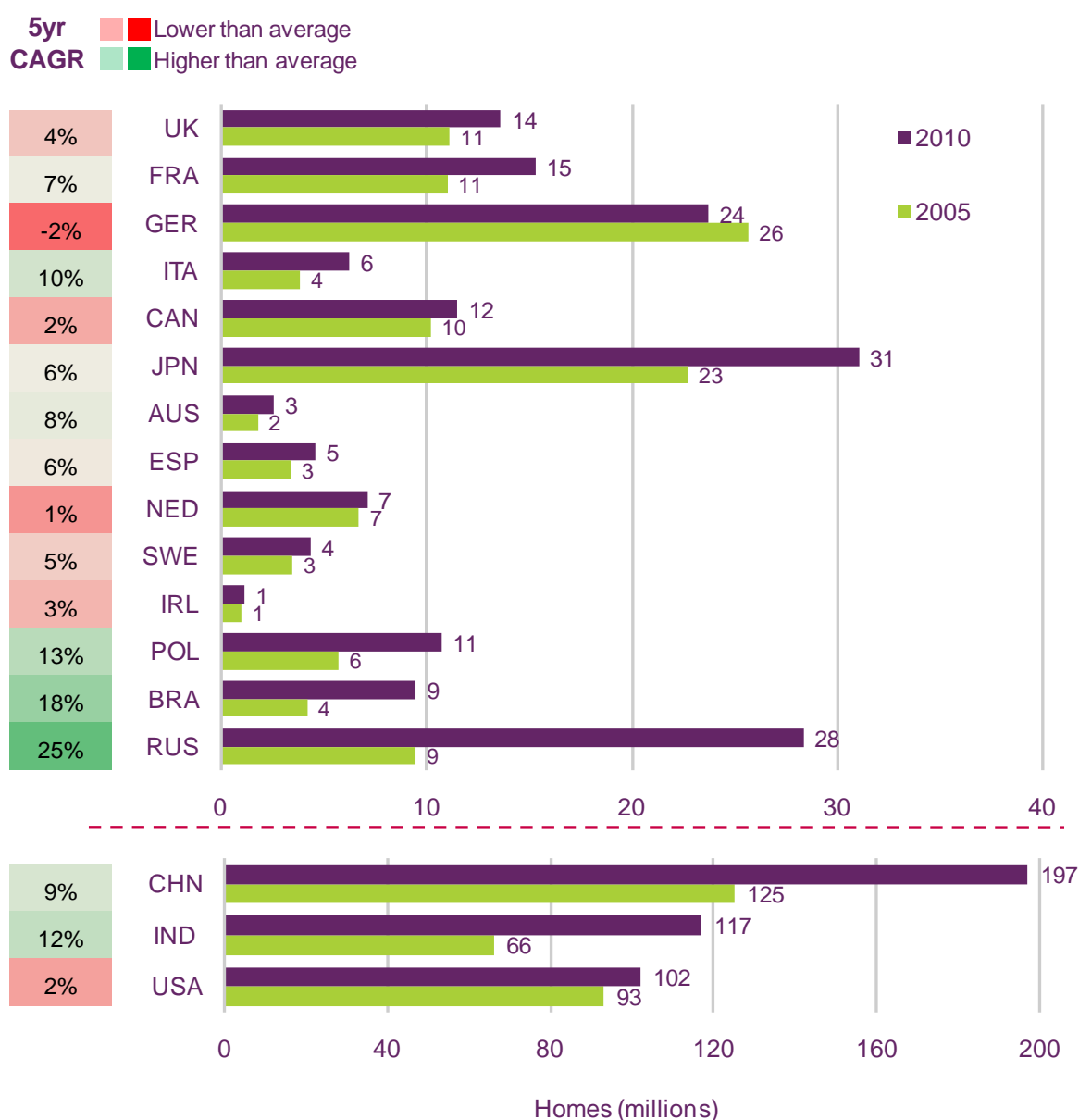
**Figure 3.38 PP increases in pay television take-up: 2009 – 2010**



Source: IDATE / industry data / Ofcom.

Over a five-year time period, the most substantial increases in the take-up of pay-TV were found in Russia (where the five-year annualized average growth rate stood at 25%). In the UK, pay-TV homes rose, on average, by 4% between 2005 and 2010.

**Figure 3.39 Pay television take-up in 2005 and 2010, millions of homes**



Source: IDATE / industry data / Ofcom.

### 3.3.5 Consumption of broadcast television services

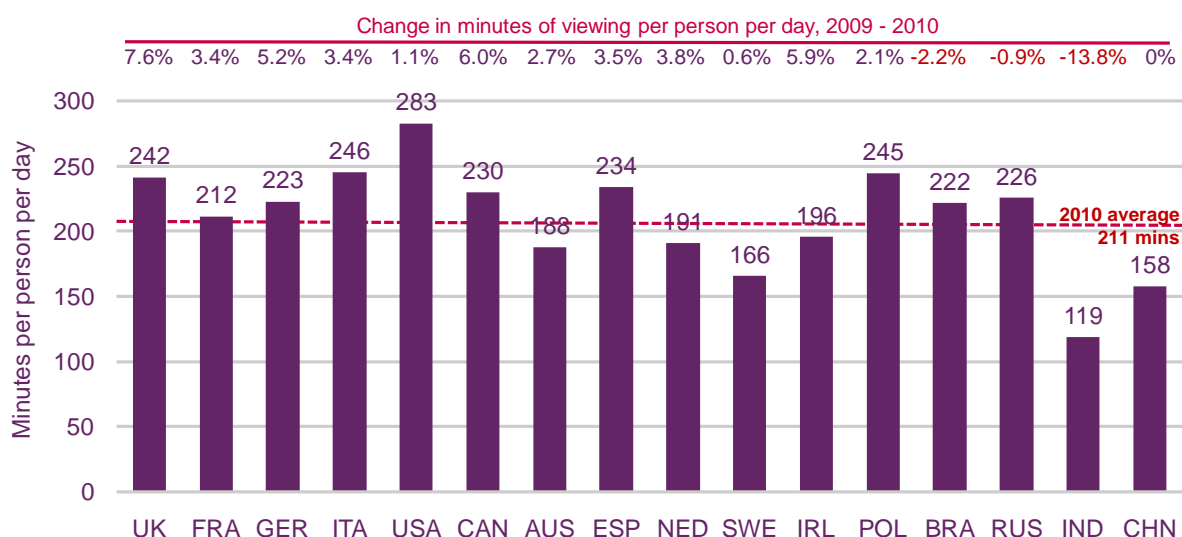
**Television viewing per head rose in many countries during 2010 – and was highest in the US, Italy, Poland and the UK in 2010**

Despite the growing adoption of a wide range of digital media devices and services, viewing of linear television output continues to be popular among consumers – and minutes of viewing per head per day has risen year on year in several comparator countries.

TV viewing was most popular in the US, where it reached 283 minutes per viewer per day, up by 1.1% year on year and over a third higher than the average across all the countries. In Italy, the comparable figure was 246 minutes (up by 3.4% over the year, and 17% higher than average), and in Poland 245 minutes (2.1%, 16% higher than average). The equivalent figure for television viewing in the UK was 242 minutes – up by 7.6% and 15% higher than the average of 211 minutes per head per day.

Year-on-year growth in viewing rose furthest in the UK (by 7.6% over the year), although the BARB panel composition was adjusted during the period, which may explain at least some of the increase. Viewing per head grew by 6.0% in Canada, by 5.9% in the Republic of Ireland, and by 5.2% in Germany. Among the BRIC countries, viewing contracted – by 13.8% in India (which may be explained by the rising numbers of households with televisions, and perhaps by lower levels of viewing among those who are new to the technology).

**Figure 3.40 Daily TV viewing, per head: 2009 – 2010**



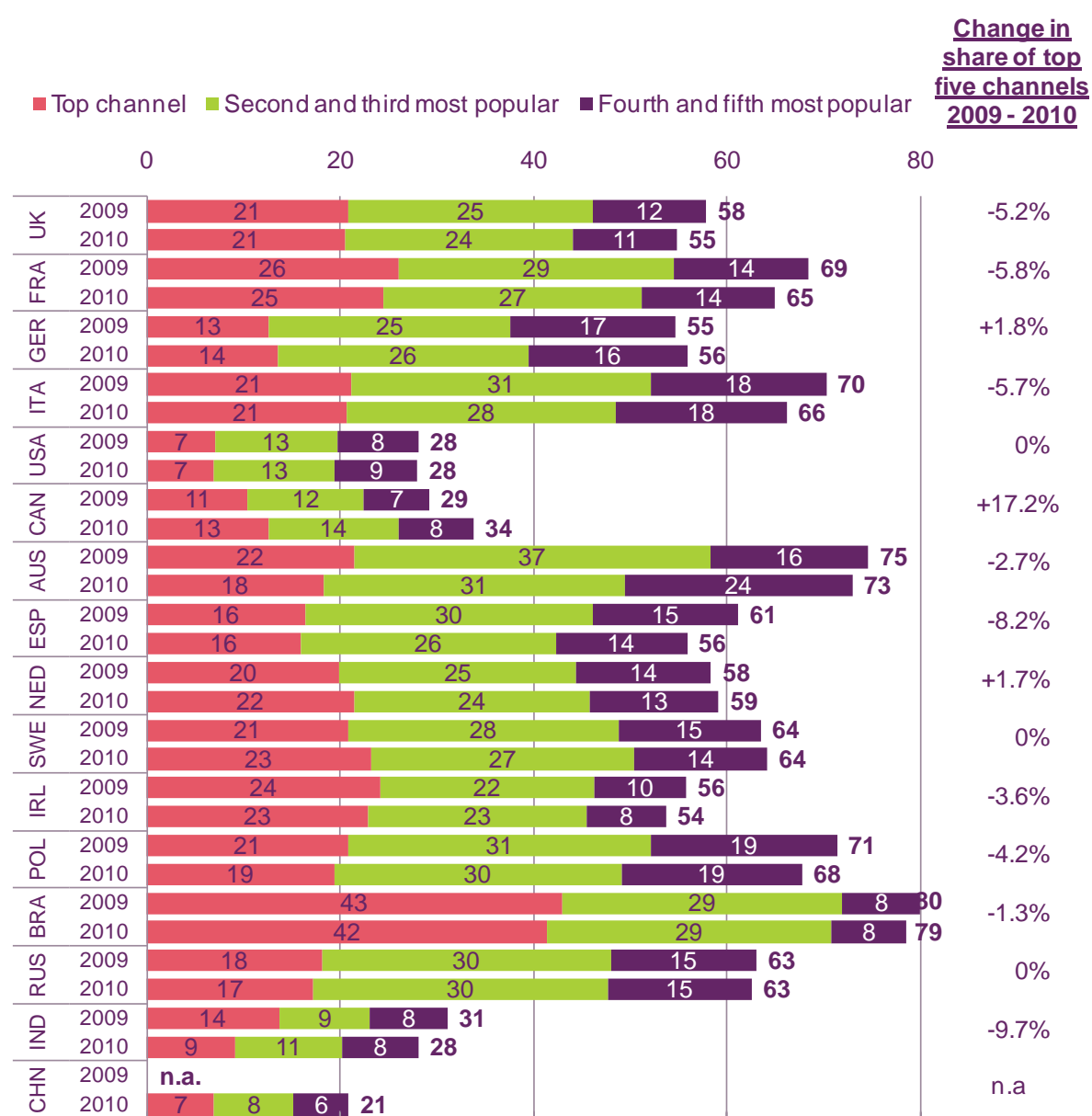
Source: Mediametrie, Eurodata TV Worldwide. The figure for Canada relates to viewing in non-Quebec households.

Figure 3.41 sets out the share of viewing commanded by the top one, three and five TV channels across countries, during 2009 and 2010.

It shows that patterns of viewing were most highly concentrated among households in Brazil, where the top rated channel, Globo, commanded a 42% share of viewing – by far the highest share for a single channel among the comparator countries. By comparison, BBC One in the UK commanded a viewing share of 21% in 2010. Viewing of the most popular TV channel was least concentrated in the US, where CBS commanded a 7% share.

Viewing patterns were also most concentrated in Brazil, when the shares of the top five channels are accounted for – making up nearly 8 in 10 (79%) of all viewer hours during 2010. This was explained in part by the high market share commanded by Globo. In the UK, the comparable figure was 55% - accounting for BBC One, BBC Two, ITV1, Channel 4 and Channel 5.

**Figure 3.41 Patterns of viewing among the top five TV channels**

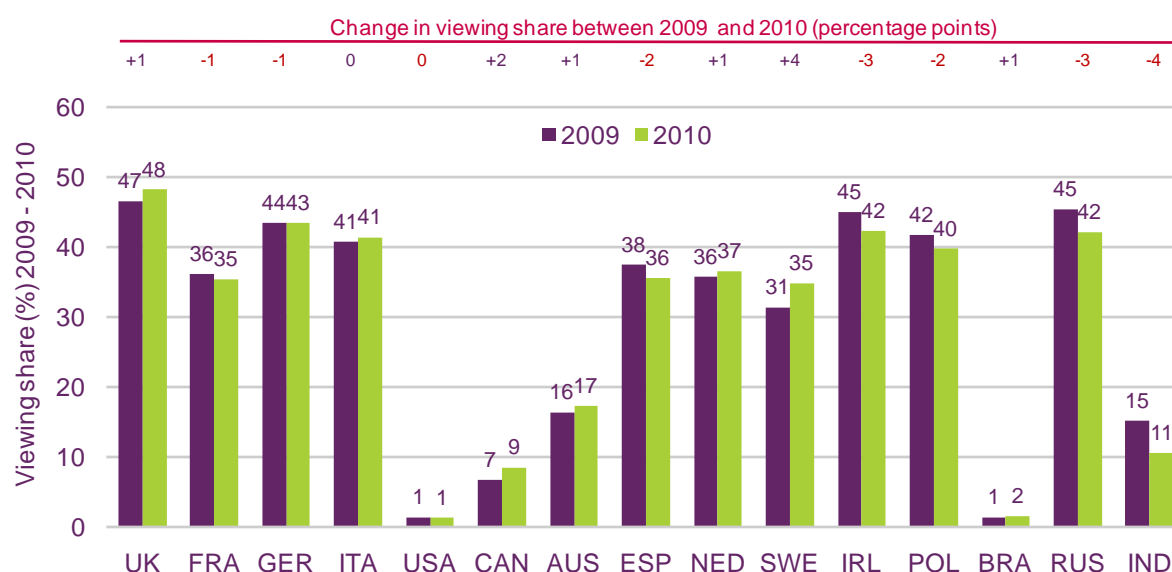


Source: Mediametrie, Eurodata TV Worldwide. The figure for Canada relates to viewing in non-Quebec households.

### Channels drawing on public funding grew in popularity, in the main, during 2010

Viewing of publicly funded channels was most popular in the UK, commanding a 48% share of all viewer hours (up by one percentage point in 12 months). The largest increase in viewing share – 4 pp – was experienced by SVT in Sweden. From a low base, Brazil's publicly-funded services' share doubled in 2010, rising by 1pp. Among those countries, where the viewing share of publicly funded channels fell, the reduction was most substantial in India and Russia (down by 4pp and 3pp respectively).

**Figure 3.42 Viewing of publicly-funded channels**



Source: Mediametrie, Eurodata TV Worldwide. The figure for Canada relates to viewing in non-Quebec households.

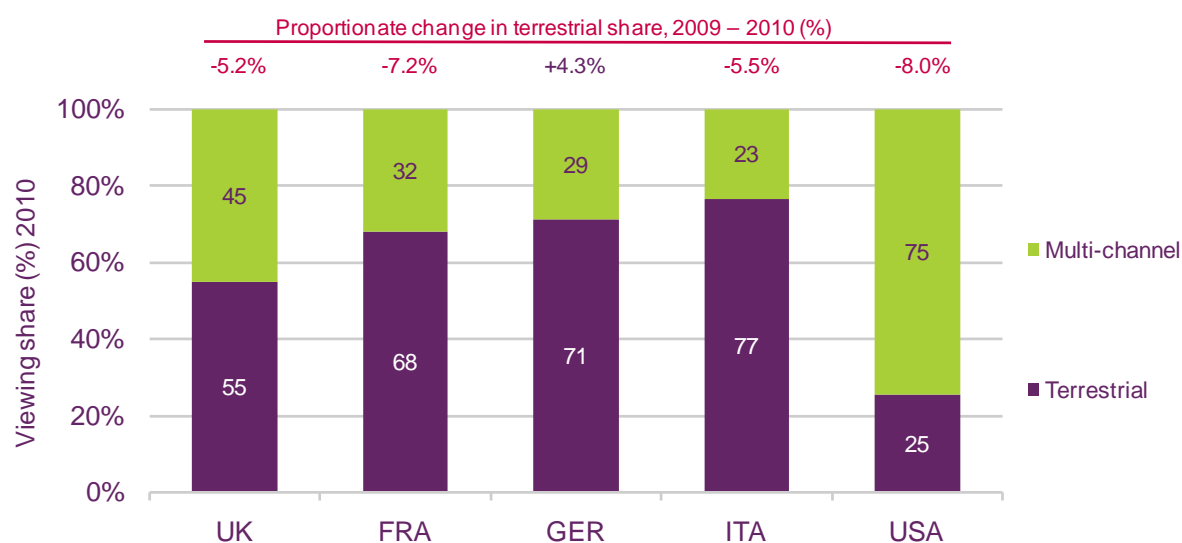
### Longest-established TV channels continued to experience falling multichannel share

In many of our comparator countries, a small number of channels (all free to view) commanded a monopoly of viewing for many years. Confining the analysis to multichannel homes only, these longer-established television services mostly lost ground during 2010.

The exception to this pattern was Germany, where ARD1, ZDF, P7, Sat1 and RTL's share of viewing rose by 4% to 71% of all multichannel viewing. Otherwise, the most pronounced reductions in viewing of terrestrial services was among viewers in the US, where ABC, NBC, CBS, Fox and PBS' share dropped by 8% to a quarter (25%) of all viewer hours. This reduction comes despite the long-established nature of multichannel services in the US (for example, HBO launched in 1972) – which might otherwise point to the possibility of a more settled and stable market share for the oldest free-to-view services.

In the UK, the terrestrial channels (BBC1 /BBC2 /ITV1 /Channel 4 /Channel 5) commanded a multichannel share of 55%, down by 5% during 2010. In France, TF1, France 2, France 3, France 5, Canal+ and M6's collective share fell by 7% over the period to 73%. In both countries, digital terrestrial switchover is approaching and these reductions in share may be explained by the expansion in channel choice in homes that have recently migrated to a digital television platform.

**Figure 3.43 Terrestrial versus multichannel share**



Source: Mediametrie, Eurodata TV Worldwide.

### 3.3.6 Use of video-on-demand services

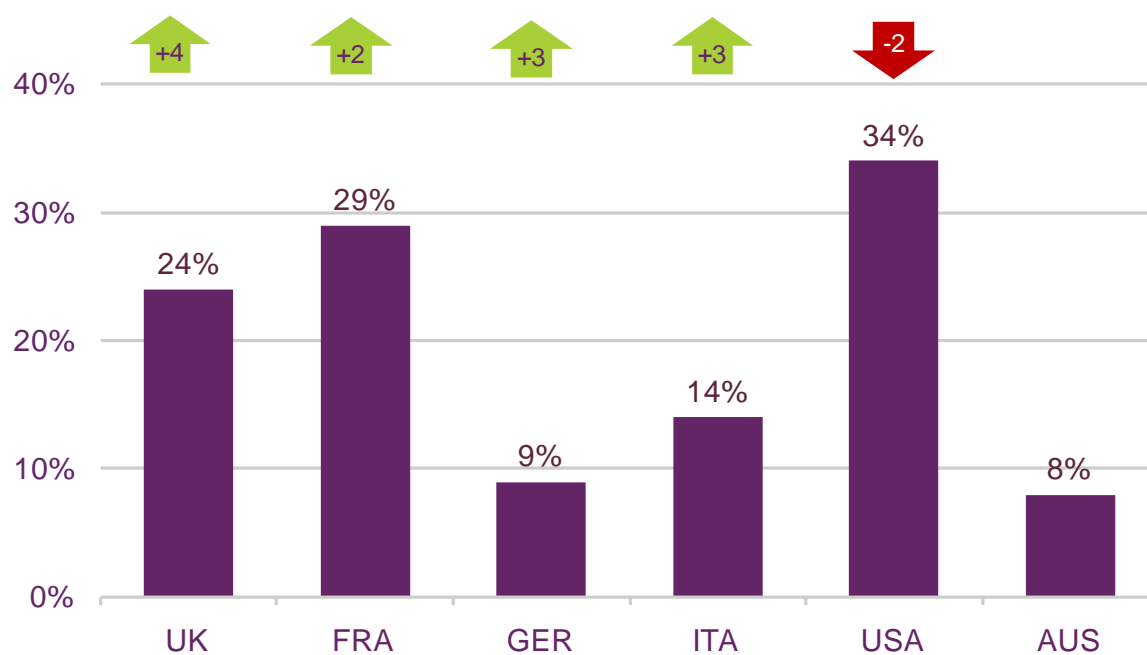
#### Consumers' claimed use of VoD services stood at 34% in the US; 29% in France

Viewers now have a variety of platforms over which they can get access to audio-visual content on an on-demand basis. This includes devices that connect directly to the internet (see Section 3.1.5 for an analysis of those who access TV content over the internet) and delivery of content over cable or IPTV infrastructure. The content they can access includes that which is available through free catch-up services, alongside those which are paid for.

In some countries, viewers are now accustomed to accessing on-demand content. In the US, over a third (34%) of consumers claim to personally use a service of this type, while the comparable figure in France is 29%. Just under a quarter (24%) of UK consumers make the same claim. Taken together, consumers in these three countries are far more likely than any other to claim they personally use video-on-demand services. In Italy, the comparable figure in 2011 stood at 14%; 9% in Germany and 8% in Australia.

Over time, the popularity of video-on-demand services rose furthest, by 4pp in the UK to 24% of all consumers. In France, from a comparatively high base, the increase was 2pp. Growth was, however, far higher in those countries where use of video on demand has yet to reach a mainstream audience – rising by a third in Germany and in Italy.

**Figure 3.44 Use of video-on-demand services, and changes in use over time**



Source: Ofcom consumer research, October 2011

Base: All those who use the internet. Total sample size: UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

Q: Which of the following devices do you own and personally use?

Note: Australia not included in 2010 research





# International Communications Market Report 2011

## 4 Radio and audio

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## 4.1 Radio and audio market summary

### 4.1.1 Industry metrics and summary

The chapter includes a global overview and country-level analysis of the 17 comparator countries. It focuses on three areas:

- The key market developments section sets out revenue trends and patterns of audio consumption during 2011.
- The audio industries section concentrates on revenue trends among comparator countries.
- The consumer section examines how people across the 17 comparator countries consume audio content.

**Figure 4.1 Key radio market indicators: 2010**

	UK	FRA	GER	ITA	USA	CAN	JPN	AUS	ESP	NED	SWE	IRL	POL	BRA	RUS	IND	CHN
Total industry revenue (£bn)	1.1	1.3	2.9	0.4	11.9	1.1	2.7	0.6	0.5	0.4	0.3	0.2	0.1	0.4	0.2	0.1	0.9
Change in revenue (% ,YOY)	+2.8	-3	+0.1	+8	+8.3	+6	-1.1	+6.3	-2.2	+2.5	+2.3	-6.8	-4.1	+10.8	+11.8	+11.2	+10.8
Revenues per capita (£)	18	20	36	7	39	33	21	27	10	23	36	33	3	2	2	0.1	1
Income from public funding (%)	61	61	79	n/a	n/a	n/a	64	n/a	n/a	43	81	36	9	n/a	n/a	n/a	n/a
Weekly radio listening (% of pop)	67	75	72	74	71	n/a	n/a	69	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Public radio share (%)	62	61	79	n/a	n/a	n/a	n/a	n/a	n/a	43	81	36	9	n/a	n/a	n/a	n/a

Sources: Ofcom, PricewaterhouseCoopers. All figures expressed in nominal terms

The key market developments during the year include:

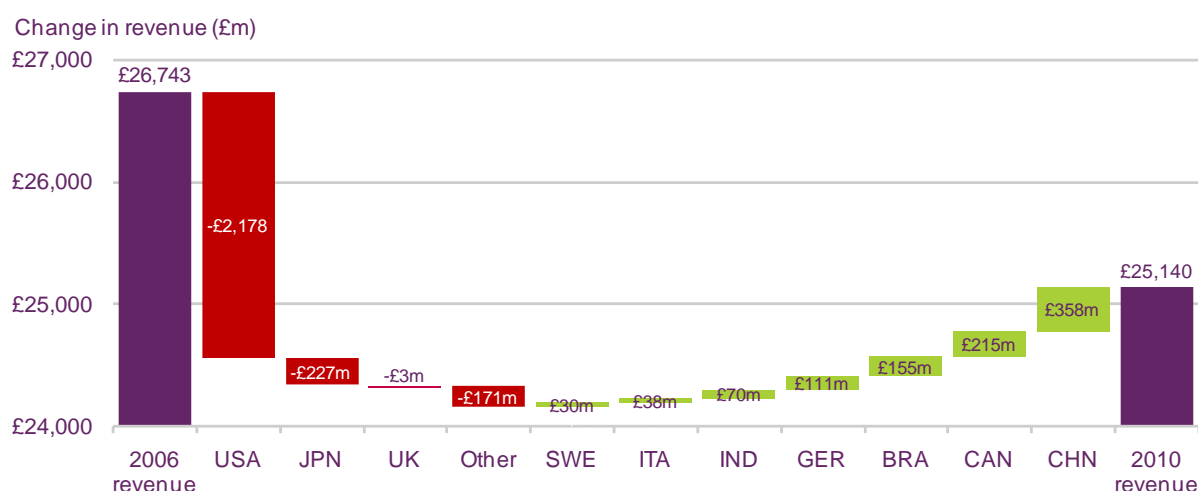
- Broadcast radio revenue, among the 17 comparator countries analysed in this report, reached £25bn in 2010, down by 6% from £27bn in 2006. The largest absolute increases were experienced by operators in the Chinese market, where revenue rose by £358m, followed by the Canadian market which grew by £215m over the same period. At the opposite end of the spectrum, the US radio market contracted by nearly £2.2bn. Over the same period, UK radio revenue was largely flat.
- Using the internet to download or listen to audio content (such as music tracks or podcasts) was most popular in Italy. Nearly half of all respondents (46%) claimed to use their home internet connection for this purpose. The figure was lowest in Germany, at less than a third (30%) of respondents. In the UK 38% said they had downloaded audio content online; this is in line with the average response rate among the six countries where the survey was conducted.
- Listening to MP3 tracks was the most popular audio purpose to which mobile phones were put in 2010. In Germany, just short of a third (30%) of consumers used their phones for this, followed by 29% of Italian mobile phone users. Just over a quarter (26%) of Australians and French people also listen to MP3s on their phone; the comparable figure for the UK was 24%.

### 4.1.2 Radio revenues among comparator countries down 6% since 2006

Broadcast radio revenue among the 17 comparator countries analysed in this report reached £25bn in 2010, down by 6% from £27bn in 2006. But there were substantial changes in revenue by country, due to their different funding patterns (and dynamics).

In Figure 4.2 nine of the 17 countries reported growing radio revenues between 2006 and 2010. The largest absolute increases were experienced by operators in the Chinese market, where revenue rose by £358m, followed by the Canadian market which grew by £215m over the same period. Radio industry income in Brazil rose by £155m since 2006, while the comparable figure in Germany was £111m. At the opposite end of the spectrum, the US radio market contracted by nearly £2.2bn since 2006 – by far the largest reduction among the 17 comparator countries; the next biggest reduction was in Japan, where revenue fell by £227m; by comparison, the UK radio market contracted by £3m between 2006 and 2010.

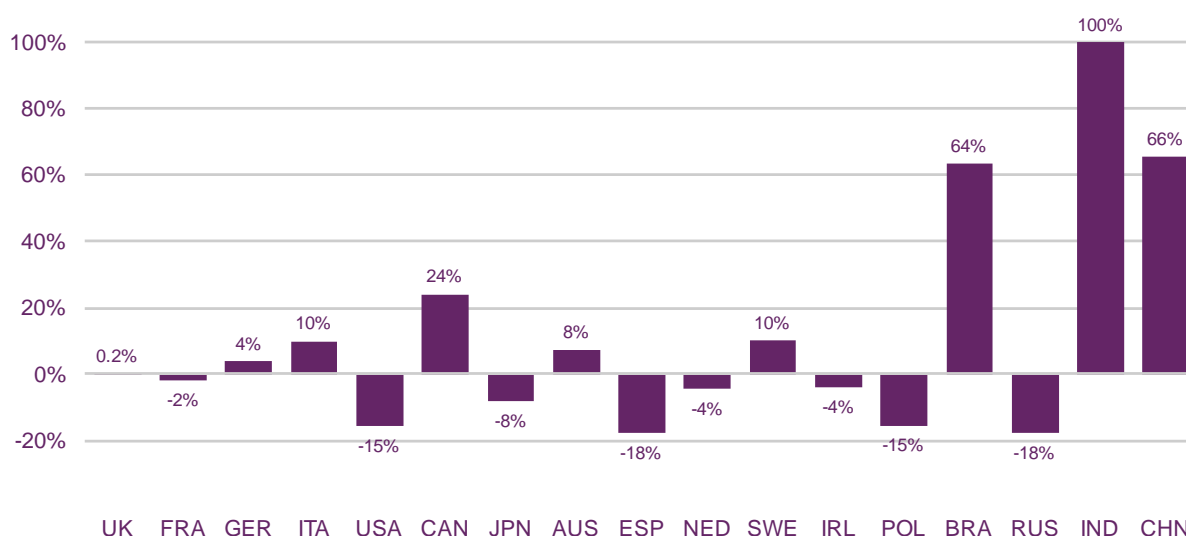
**Figure 4.2 Changes in radio revenues by country between 2006 and 2010**



Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

Figure 4.3 sets out the proportional changes in industry revenue among the 17 comparator countries over the period 2006 - 2010. The fast-growing markets of India, China and Brazil all saw revenue growth well into double digits for the four years to the end of 2010 – in some cases into triple digits. India's radio sector doubled in size (up by 100%), China's grew by 66%; Brazil's rose by nearly two-thirds (64%) over the period. The Canadian market expanded by nearly a quarter (24%), while at 10% the Italian and Swedish radio markets also experienced double-digit growth. The Russian and Spanish markets experienced the largest reductions in revenue over the four-year period, with revenue in each contracting by nearly a fifth (18%). The UK market was down by £3m over the period, equivalent to a -0.2% reduction since 2006.

**Figure 4.3 Growth in radio revenue, by country: 2006 – 2010**

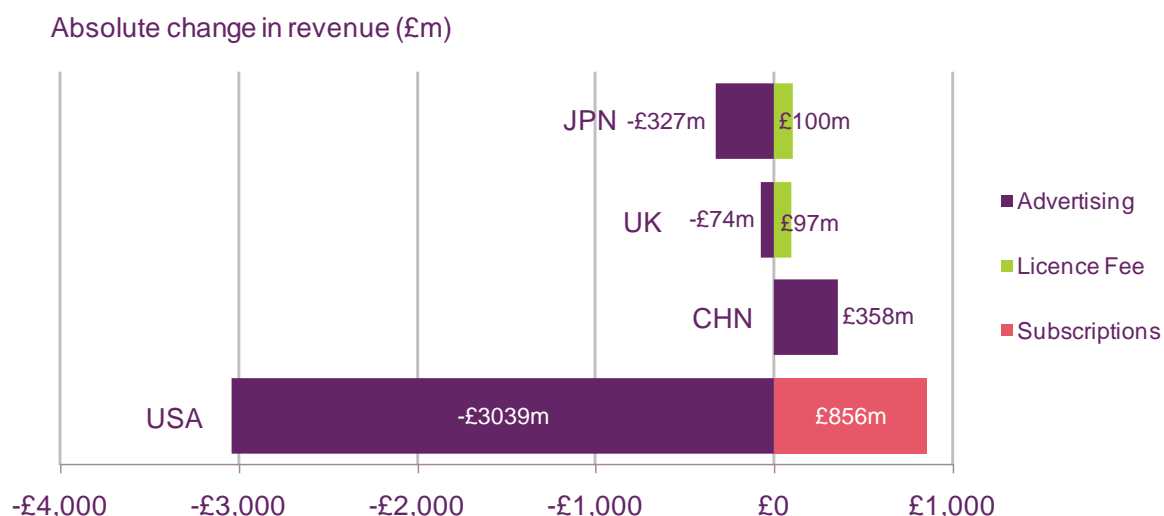


Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

Radio revenue trends among comparator countries are influenced by the dynamics of three income sources – advertising, subscriptions and public funding. Changes in the size of each have varied substantially by country. Such is the variation that this information is depicted in two separate charts (Figure 4.4 and Figure 4.5) below.

The first chart sets out the countries where the more substantial changes have been experienced; these are compared to the UK trend. It shows that the US market has experienced a large reduction in advertising revenue since 2006 (down by £3bn); this reduction was partially offset by growing subscriber revenue from the satellite radio service Sirius/XM (up by £856m). In Japan and the UK, falling advertising revenue (down by £327m and £74m respectively) has to a degree been offset by the growing contribution that licence fee income has made towards funding radio services (up by £100m and £71m respectively). In China, the growing popularity of radio advertising led to the industry expanding by £358

**Figure 4.4 The most substantial changes in radio revenue, by component: 2006 – 2010**

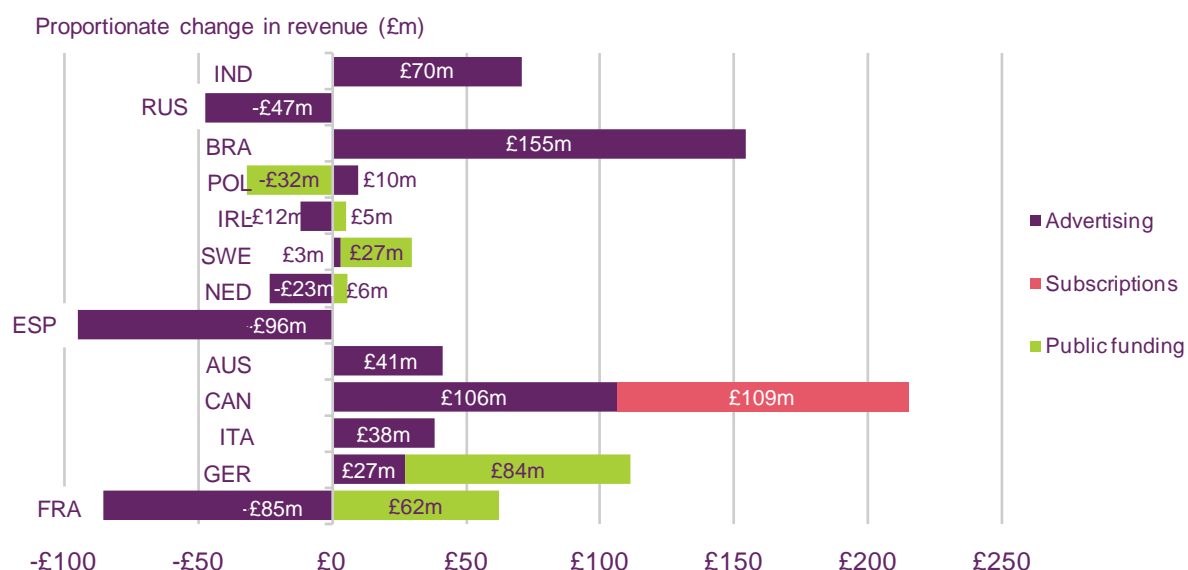


Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

Among the 13 remaining comparator countries, where changes in revenue were more modest, the Canadian, Indian and Brazilian radio advertising markets managed to attract the largest additional amounts of advertising revenue in the four years to 2010 (£160m, £70m and £155m respectively). Canada, like the US, has benefited from the growing popularity of subscription radio, which generated an additional £109m between 2006 and 2010.

There has been a substantial increase in the amount of public investment in German and French radio (of £84m and £62m respectively). In the French radio market, this has meant that falling advertising revenue has been substantially offset, so that total industry revenue contracted by only 2% over the period. By contrast, the Spanish and Russian markets, relying solely on advertising revenue, experienced the largest absolute losses across the period (of £96m and £47m respectively). Poland is the only comparator country whose radio market experienced a reduction in public funding; although advertising revenues have increased by £10m over the past four years, this was not enough to offset the £32m reduction in public investment.

**Figure 4.5 The smaller revenue swings, by component: 2006 – 2010**



Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

#### 4.1.3 Consumers prefer to use the internet to download audio content rather than listen to the radio online

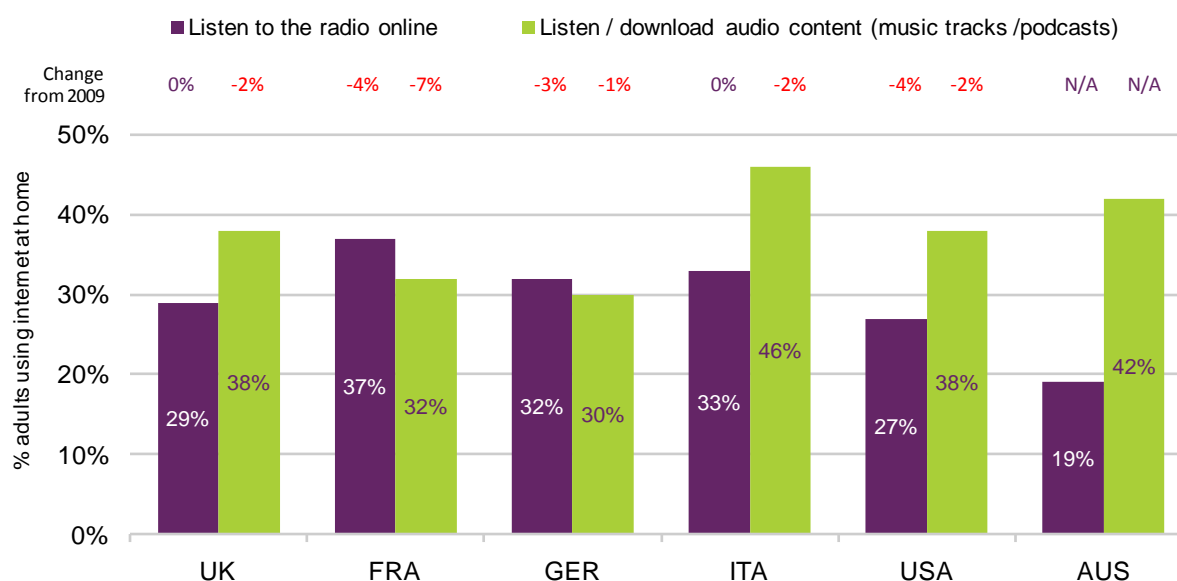
The internet's role in providing consumers with new ways of accessing audio content has grown in popularity over the last few years, as broadband take-up has increased.

On the whole, consumers across the six countries we surveyed preferred downloading audio content to listening to the radio online using the internet at home.

Using the internet to download or listen to audio content (such as music tracks or podcasts) was most popular in Italy. Nearly half of respondents (46%) claimed they used their home internet connection for this purpose. The figure was lowest in Germany, where less than a third (30%) downloaded or listened to audio content using their home internet connection. In the UK 38% said they had downloaded audio content online; this is in line with the average response rate among the six countries where the survey was conducted.

Listening to the radio over the internet was most popular in France (37%) followed by Italy (33%) and Germany (32%). Only in France and Germany did listeners prefer listening to the radio through the internet to downloading audio content. Listening to the radio over the internet in the UK was slightly more popular than the average across those countries surveyed, at 29%. People in Australia were least likely to claim to listen to the radio online (with less than a fifth (19%) of respondents claiming that they used the internet for this purpose).

**Figure 4.6 Use of the internet to listen to the radio/ download audio content (music tracks/ podcasts)**



Source: Ofcom consumer research, October 2011.

Base: All those who use the internet. Total sample size UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012.

Q: Which, if any, of the following activities do you use your home internet connection for? Listening to the radio / listening to or downloading audio content (e.g. music tracks or, podcasts).

### People in Italy are most likely to use their mobile handsets to listen to audio content

Mobile phone handsets often incorporate audio technologies such as analogue radio tuners, offering access to live radio, and MP3 players which support the storage and playback of podcasts.

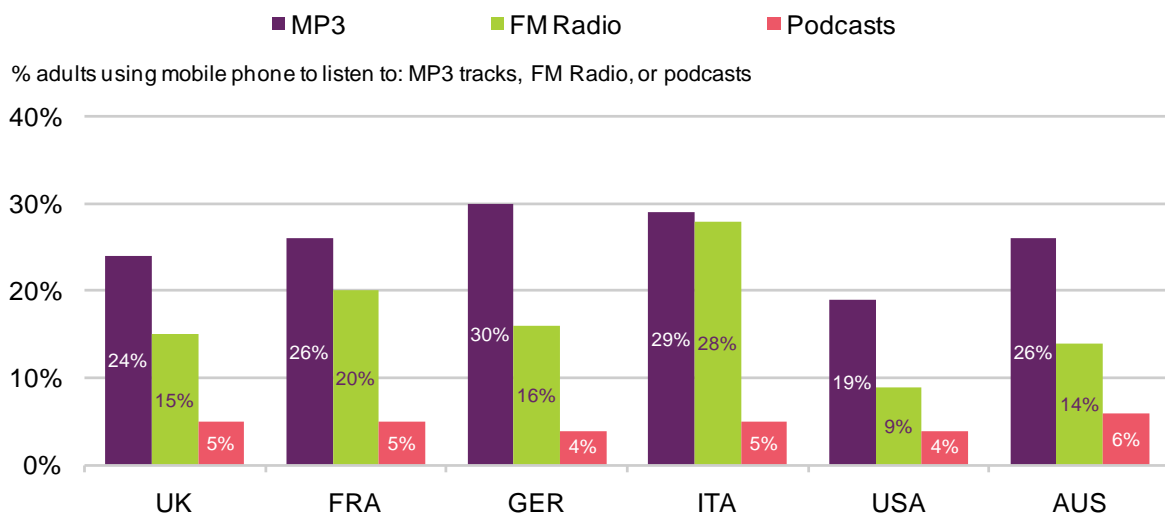
Listening to MP3 tracks was the most popular audio purpose to which mobile phones were put in 2010. In Germany, just short of a third (30%) of consumers used their phones for this, followed by 29% of Italian mobile phone users. Just over a quarter (26%) of Australians and French people also listen to MP3s on their phone; the comparable figure for the UK was 24%.

Almost as many Italian people use their mobile handsets for listening to FM radio as they do for MP3 tracks – 28% of respondents. A fifth of French mobile phone users used their handsets for this, followed by 16% of those in Germany and 15% of UK mobile phone users.

Listening to podcasts on the mobile handset was the least popular of the three audio functions that our consumer research explored. There was little variation in its popularity among countries, ranging from 6% in Australia, to 4% in Germany. The comparable figure for UK mobile phone users was 5%.



**Figure 4.7 Using a mobile phone to listen to MP3 tracks, FM radio or Podcasts**



Source: Ofcom consumer research, October 2011

Base: all those who use the internet. Total sample: UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

Q: 'Which of the following activities do you use your mobile for, listening to: FM radio, MP3 player, podcasts?'

## 4.2 The radio industry

### 4.2.1 Introduction

This section examines the revenues generated by the commercial radio sectors in each comparator country, along with the levels of licence fee funding that are invested in radio services. The main findings include:

- Global radio revenue was up by 5% year on year, reaching £29bn in 2010, following a 9% fall between 2008 and 2009. Of the total, advertising accounted for 68% (£19.7bn), public funding for just over a quarter (26% or £7.5bn) and subscriber revenue for the remaining 6% (£1.8bn).
- Among the 17 comparator countries analysed in this report, revenue reached £25bn in 2010 (86% of the global total), up by 5% from 2009. With the exception of Ireland, Spain, Poland and Japan, radio revenues across the comparator countries experienced year-on-year increases. Russia's market, funded by advertisements, showed the greatest relative increase (12%), followed by China and Brazil, both at 11%. The UK radio revenues rose by £31m in 2010, up 2.8%, to reach £1.1bn year on year
- Over a four year period, global radio revenues fell by 4.3%, with advertising revenue declining by 12%. This was the principal driver of the reduction, and was offset by rising public funding (up by 7.1% over the period) and by subscriber revenues (from radio satellite services) doubling over the same period.
- By country, the most substantial increases were experienced by the radio markets of Brazil, India and China, whose markets rose by an annualised average of 13.1%, 18.9% and 13.4% respectively. The Russian and Spanish markets each contracted by 4.7% per year over the same period, while those of the USA and Poland fell by an annual average of 4.1% each.
- Radio revenue per head was highest in the US, where it reached £38 in 2010. The Swedish market ranked second with £36 per head, while the radio industry of the Republic of Ireland generated £34 per capita. The UK industry generated £18 per head of population in 2010.

### 4.2.2 Global radio revenue

Radio revenue worldwide increased by 5%, or £1.4bn, in 2010 to £29.0bn, after a 9% fall in 2009. Radio advertising revenue accounted for 68% of industry income. After three years of consistent decline, global radio advertising revenues were up 6% last year, from £18.6bn to £19.7bn. Public funding accounted for just over a quarter (26%) of all radio funding in 2010, rising by £0.1bn to £7.5bn year on year.

Satellite subscription radio accounted for the final 6% of the total radio revenue figure (£29bn) in 2010. It experienced the most substantial year-on-year increase, at 13%, bringing the 2010 total to £1.8bn among the three revenue components.

**Figure 4.8 Global radio industry revenues: 2006 – 2010**



Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

### 4.2.3 Revenues among comparator countries

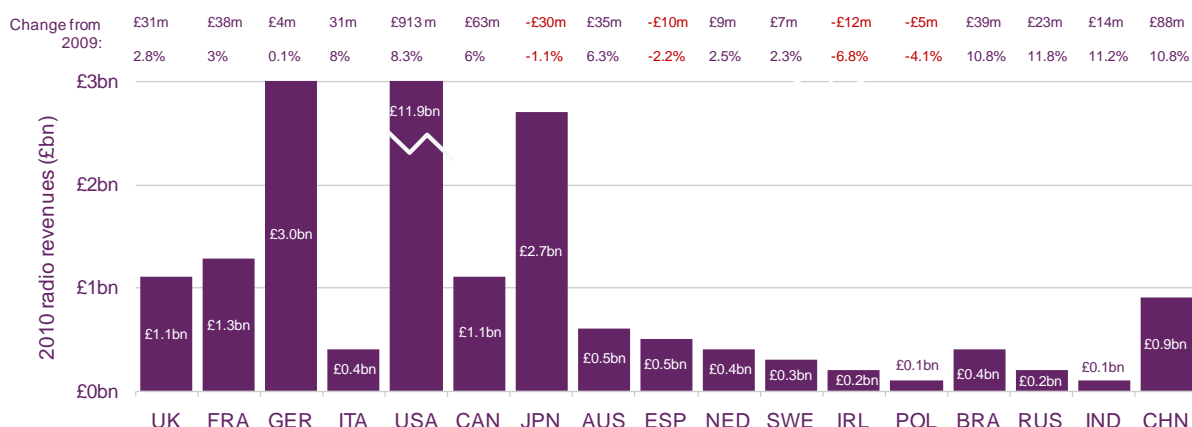
#### Year on year, radio revenues up 5% overall among 17 comparator countries

Broadcast radio revenue among the 17 comparator countries analysed in this report reached £25bn in 2010, up by 5% from 2009. With the exception of Ireland, Spain, Poland and Japan, radio revenues across the comparator countries experienced year-on-year increases. Russia, funded by advertising, showed the greatest relative increase (12%), followed by China and Brazil, both at 11%.

The largest commercial radio market, the US, experienced a substantial year-on-year increase in commercial revenue during 2010, up 8.3% to £11.9bn. With the US accounting for 48% of the radio revenues among the comparator countries, the increase played an important role in driving up their total revenues during the year.

Year on year, the developing markets of India, China and Brazil all expanded at a broadly similar rate (10.8% – 11.2%). Among the European countries within our comparator set, the Republic of Ireland's radio market experienced the greatest relative reduction (-6.8%). The UK, the fourth largest radio market in the world, saw its market grow by £31m, up 2.8% from 2009.

**Figure 4.9 Radio industry revenue: 2010**

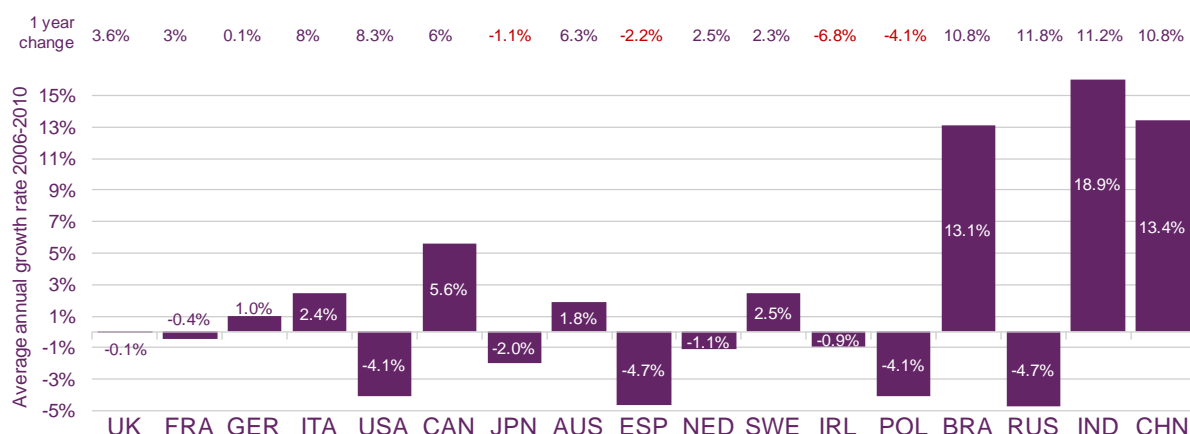


Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

### Brazil, India and China radio markets have been the fastest growing since 2006

Over the past four years, three of the four BRIC (Brazil, Russia, India, China) radio markets have been the fastest growing of our comparator countries, with India expanding at a rate of 19%. The second and third fastest-growing markets were those of China and Brazil, expanding at an average of 13% each over the four years. While, year on year, the Russian radio market grew by 12% (a result of growth in the advertising market), since 2006 its market has contracted on average by 4.7% per year – proportionally the largest contraction among the comparator countries. Alongside Russia, the Spanish radio market also contracted by an annualised average of 4.7% per annum since 2006. Poland's radio revenues fell on average by 4.1% over the same period, as did those of the US.

**Figure 4.10 Radio industry revenue annual average growth: 2006 – 2010**



Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

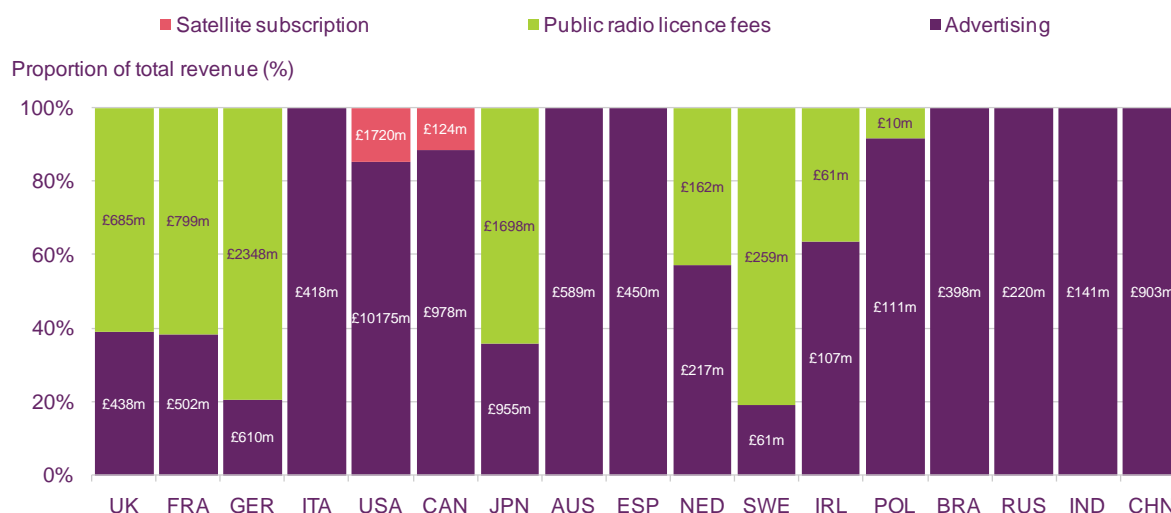
For five of the comparator countries' radio markets, the majority of revenue comes from public funding. With the exception of Japan, the remaining countries all fall within Europe: UK, France, Germany and Sweden.

The public funding ratio was highest in Sweden, where 81% of radio income was drawn from licence fee funding, and closely followed by Germany, where 79% of income came from licence fees. Public funding contributions in the UK and French radio markets each amounted to 61% of the total revenue.

In the remaining comparator countries radio programming is not always funded directly by licence fees but may receive some public/state support; for example, in the form of government grants to support public broadcasting. In 2010, three-quarters of all funds distributed by the US Corporation for Public Broadcasting (CPB) were grants awarded to public broadcasting stations and producers for programmes. Of this, 23% (approx \$118m), was allocated for radio services.

The US and Canada are currently the only markets where subscriber-based satellite radio is available to consumers (contributing 14% of revenues in the US and 11% in Canada).

**Figure 4.11 Proportion of radio revenue by source: 2010**

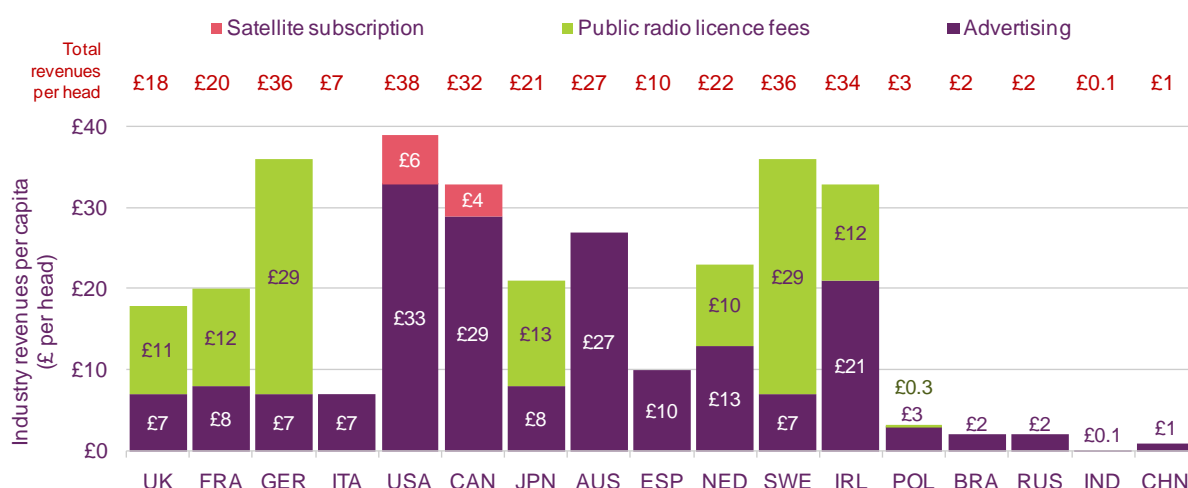


Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

### Radio markets in the US, Germany and Sweden generate the highest revenues per head

The radio markets in the US, Germany and Sweden generated high revenues per capita in 2010. The US figure of £38 per head was the highest of the 17 countries profiled. Eighty-five per cent of radio revenue in the US was generated by advertising, with the remaining 15% coming from satellite subscription fees. The German and Swedish radio markets generated the joint-second highest revenues per head, at £36; the majority of their revenues (81%) came from licence fees. The comparable figure for the UK was £18 per head.

**Figure 4.12 Radio industry revenue per head: 2010**



Source: Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.546 to the GBP, representing the IMF average for 2010. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

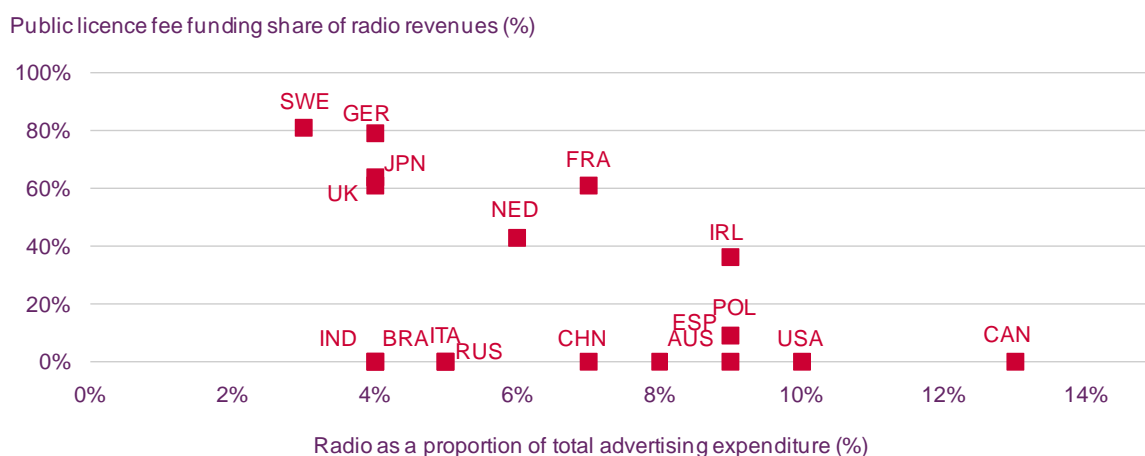
The share of total advertising spend commanded by radio markets varied significantly by country. The radio markets with higher levels of public funding (including a number of Western European markets and Japan) tend to have lower shares of total advertising spend, while the radio markets that featured higher advertising shares usually have correspondingly lower levels of public funding. The exceptions to this trend were the BRIC countries (Brazil, Russia, India and China), where there is no public funding, yet radio advertising spend comprises a comparatively low proportion of all advertising expenditure.

The radio markets in Sweden and Germany attracted the highest level of licence fee investment in 2010, at 81% and 79% of total revenue respectively. The Swedish radio advertising market commanded a 3% share of total advertising, whereas Germany was slightly higher at 4%. The UK radio market had a similar pattern to Japan in terms of public funding, which accounted for 62% of all revenue in the UK and 64% in Japan. Both countries had an advertising market share of 4%.

Some of the other countries illustrated in Figure 4.13 may also receive public funding from sources other than a licence fee; for example, government grants or support from other public bodies. The US, Canada, Australia and Spain all have a degree of publicly-funded radio programming.

The North American radio markets have the highest overall share of display advertising. In Canada, advertisers allocated the highest proportion of advertising spend to radio; spend on radio accounted for 13% of total advertising spend. This was closely followed by the US radio market, which had a 10% share of all advertising. The reason for the higher advertising share in the US and Canada may be partly due to the lower levels of public funding, but also reflects the established commercial radio market in North America, and the higher average number of commercial stations operating.

**Figure 4.13 Radio advertising as a proportion of total advertising spend: 2010, and licence fee as a share of all radio funding**



Source: Radio as a proportion of total advertising spend sourced from Warc ([www.warc.com](http://www.warc.com)). Public licence fee funding share of radio revenues is Ofcom analysis based on data from PricewaterhouseCoopers Global Entertainment and Media Outlook 2011-2015. Ofcom has used an exchange rate of \$1.546 to the pound. Interpretation and manipulation of data is solely Ofcom's responsibility. Figures in this chart are rounded. Note that the UK radio industry figure is sourced from broadcaster returns made to Ofcom.

## 4.3 The audio consumer

### 4.3.1 Introduction

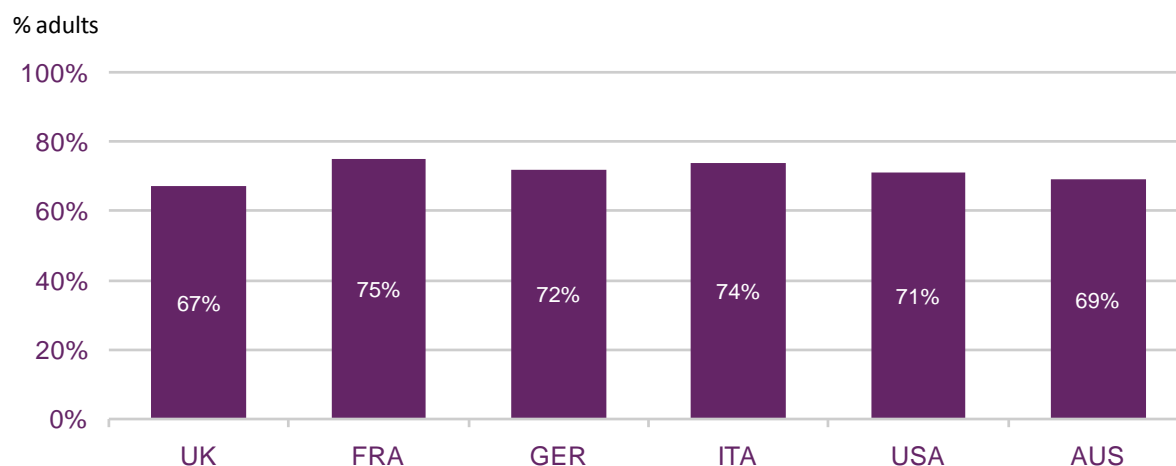
This section examines how people consume audio services in the 17 comparator countries in this report. The main findings include:

- Weekly radio listening remains popular across the five countries surveyed – 75% of consumers in France claim to listen to the radio on a weekly basis, as do 74% in Italy. In the UK, 67% of consumers claim to listen on at least a weekly basis.
- As a news source, radio is used most for news about a region or locality. It is most popular among Germans, where 11% claimed it is their main source for local/regional news, and ranks second in Australia, where 7% made the same claim. In the UK, the comparable figure was 5%.

### 4.3.2 Regular listeners to radio, and the role of radio as a source of news

Weekly radio listening is relatively popular across the comparator countries, with an average of 71% of respondents in the surveyed countries claiming to do this. Three-quarters of consumers in France (75%) and Italy (74%) are weekly radio listeners - more than in any of the other countries in this survey.

**Figure 4.14 Proportion of adults listening to the radio on at least a weekly basis, by country: 2011**



Source: Ofcom consumer research, October 2011.

Base: all those who use the internet. Total sample: UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

Q: Which of the following do you regularly do (at least once a week): Listen to the radio.

Note: For detailed information on the UK radio market, please refer to *The Communications Market Report 2011* where figures reported are from RAJAR

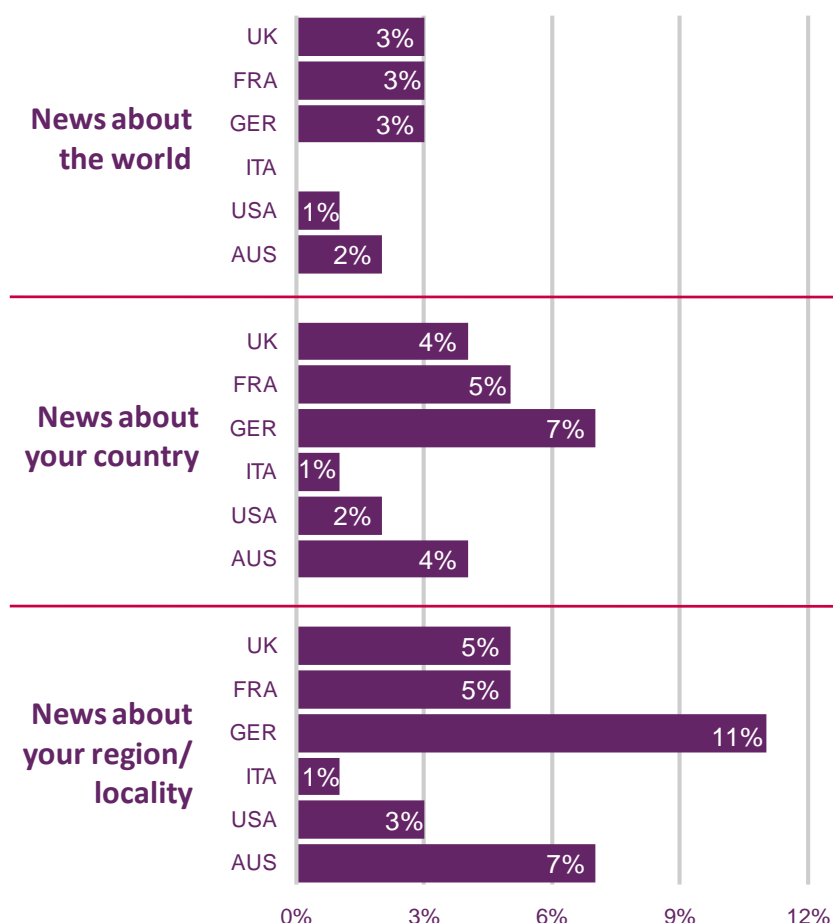
The importance that consumers attach to radio services for sources of news – world, national or local – varies substantially across countries. The extent to which radio is used as a main source of news subsides as the geographical scope expands. It is most popular for local news, with 11% of German listeners and 7% of Australians citing it as their source. The figure drops to 5% for those in France and the UK, 3% in the US and 1% in Italy.



Fewer people regard radio as their source for national news – it is most popular, again, in Germany (7% of respondents). Five per cent of listeners in France use the radio for this purpose, falling to 4% in both the UK and Australia.

Few people rely on the radio for international news – this ranges from 3% in the UK, France and Germany to 2% in Australia and 1% in the US.

**Figure 4.15 Proportion of adults regularly listening to the radio, by country: 2011**



Source: Ofcom Consumer Research, October 2011.

Base: All those who use the internet. UK=1015, France=1014, Germany=1014, Italy=1045, USA=1002, Australia=1012

Q: Which, if any, is your main source for the following information?

### 4.3.3 Digital music

Audio content was one of the first content types to feel the effects of the new opportunities for content distribution and consumption that arrived with the internet. This was helped by the early agreement of the MP3 format, which standardised audio compression and coding technologies. Consumers can listen to radio services online, download single tracks or complete albums, stream music over their internet connection, and even create their own audio content. All these ways of consuming music and audio online are also available on mobile devices, as well as PCs and laptops.

The entire music industry (including the recorded music industry, collecting and licensing societies, artists, publishers, music venues and promoters) has been affected in varying

ways by the emergence of the internet as a major digital distribution channel. This section focuses in particular on recent international trends in recorded music sales and revenues, as this market is adjacent to broadcast radio and is illustrative of the changing patterns of consumer behaviour that have come about as a result of digital distribution techniques.

### Consumers spend more on physical formats when purchasing music

Despite the rise of digital music sales, at a global level consumers still prefer to purchase recorded music in a physical format (CDs, vinyl etc). Only in South Korea does the amount spent on digital sales exceed physical sales, at 55% vs. 45%, due to stronger copyright regulations. But digital sales have continued to rise as recorded music retail sales have fallen over the past few years (2006 – 2010), with losses in physical retail offsetting the gains in the digital sector. Although 67% of people in the UK still prefer to purchase recorded music in a physical format, during 2006 – 2010 the UK saw increased take-up of digital sales (to 25%) with single track purchases and digital albums amounting to 82% of all digital music sales.

According to IFPI, around a quarter of the music business in Asia now comes from digital revenues, set against a backdrop of sharply falling physical sales.

**Figure 4.16 Recorded music sales – top 20 markets summary**

Rank	Country	Market Split (trade value)			Retail Value (£m)	% change
		Physical	Digital	Perf Rights		
1	USA	49%	49%	2%	£4,366.0	-10.0%
2	Japan	73%	25%	2%	£3,455.9	-8.3%
3	Germany	81%	12%	6%	£1,278.3	-4.1%
4	UK	67%	25%	8%	£1,228.0	-11.0%
5	France	74%	17%	9%	£810.0	-5.1%
6	Canada	66%	29%	5%	£335.0	-13.5%
7	Australia	68%	27%	5%	£370.2	-12.4%
8	Netherlands	70%	8%	22%	£194.7	-2.6%
9	Italy	75%	15%	10%	£212.9	-2.3%
10	Brazil	75%	17%	8%	£214.5	-1.2%
11	Spain	65%	20%	15%	£156.6	-21.0%
12	South Korea	45%	55%	-	£233.9	11.7%
13	Switzerland	79%	16%	5%	£132.5	-13.3%
14	India	41%	34%	25%	£153.8	16.5%
15	Belgium	79%	9%	12%	£134.0	-6.7%
16	Sweden	61%	28%	11%	£124.8	-7.1%
17	Mexico	76%	23%	1%	£136.8	0.9%
18	South Africa	93%	5%	2%	£118.8	-7.3%
19	Austria	76%	14%	10%	£136.9	-12.0%
20	Norway	65%	25%	10%	£113.1	-7.5%
Global		66%	29%	5%	£15,116.3	-8.4%

*Source: Ofcom calculations based on IFPI data, 'Recording Industry in Numbers' report. Physical sales include CDs, vinyl, cassettes and other physical formats. CD sales ordered via the internet (e.g. Amazon) are reported as physical sales. Digital sales refer to sales via online, mobile channels and via subscriptions. Income from ad-supported services, mono/polyphonic ringtone income and bundled subscriptions are also included.*



# International Communications Market Report 2011

## **5 Internet and web-based content**

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# 5.1 Key market developments in internet and web-based content

## 5.1.1 Industry metrics and summary

**Figure 5.1 Internet and web-based content: key international statistics**

	UK	FRA	GER	ITA	USA	CAN	JPN	AUS	ESP	NED	SWE	IRL	POL	BRA	RUS	IND	CHN
Online universe (m)*	38.7	40.6	48.1	28.6	199.9	n/a	61.9	14.8	22.4	n/a	n/a	n/a	n/a	44.9	n/a	n/a	n/a
Fixed broadband connections per 100 HH†	74	77	67	51	70	83	66	66	63	89	64	68	37	25	36	5	32
Cellular broadband connections per 100 population‡	8	4	5	10	n/a	3	8	20	7	4	32	12	9	n/a	n/a	n/a	n/a
Mobile-only broadband HH (%)‡	5	2	9	14	6	n/a	n/a	19	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Internet access via a mobile phone(%)‡	46	39	38	40	41	n/a	n/a	43	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Sources: IDATE / Industry data / Ofcom, Nielsen

\* Nielsen, month of July 2011, home and work panel, applications included.

† IDATE / Industry data / Ofcom, 2010

‡ Ofcom consumer research, October 2011

In this section of the report we examine the transformative impact of the internet across our key comparator countries.

As a global platform, many of the trends are the same across our comparator countries – for example, our analysis of the leading web brands finds that the same internet giants are present in every country. But it is instructive to explore how the take-up of different services varies between countries, as internet connectivity, technologies and content interact with existing communications infrastructures, content ecosystems and cultural habits. Our data find, for example, that consumers in the UK are more likely to make online purchases than consumers in other countries – the result of a history of catalogue shopping and high credit card use; and that hand-in-hand with this, online advertising spend is proportionately higher in the UK than in other countries. And we find that consumers in Italy are most likely to use the internet as a main source of news; this could be related to the perception of other news media<sup>18</sup>.

Similarly, there are differences in the ways in which consumers access the internet. Differences in levels of use of the internet on mobile phones do not appear to be simply due to different availability of high-speed mobile networks (although this plays a role), but are also driven by smartphone take-up, data tariffs and online behaviour (mobile users in France are twice as likely to watch TV programmes on their mobile phones than consumers in the UK, but less likely to download apps, play games or use social networking). And while using mobile broadband networks to connect to a PC has grown very rapidly in some countries (Sweden, Australia, Ireland), in other countries, after initial growth, take-up appears to be levelling off at a lower level (UK, France, Germany, Canada).

<sup>18</sup> “82 percent of Italians believe news offerings on traditional TV channels are influenced by political power... In general, TV is the medium that Italian people trust least: only 35 percent believe it to be trustworthy (the average value in Europe is 53 percent)”

[http://www.ejc.net/media\\_landscape/article/italy/#128](http://www.ejc.net/media_landscape/article/italy/#128)

This section of the report takes a high-level look at aspects of internet use, both in terms of platforms and devices, and content and consumption. It is increasingly difficult to separate the use of internet services from 'television', 'radio' and voice communications – the internet is a delivery mechanism for all of these services, and all services can be provided by the same device. Other sections of this report consider content delivered via the internet in the context of television and other audio-visual services (Section 3.1.5) and radio and audio services (Section 4.1.3), and in the Telecoms section of the report we examine the internet from a networks perspective.

We begin this section by looking in depth at two enduring key market developments in the evolution of internet services – the growth of internet access on mobile phones (Section 5.1.2), and trends in internet advertising (which remains the main business model for most internet services) (Section 5.1.3). Section 5.2 then looks at platforms and devices in examining the ways in which consumers access the internet, and Section 5.3 looks at internet content and consumption by analysing internet consumers across our comparator countries and looking at what they do online.

## **5.1.2 Smartphones have driven rapidly-increasing use of internet on mobile phones**

### **Use of internet on a mobile phone has doubled in most countries since 2008**

In recent years the use of internet-based services on mobile phones has risen in all of our surveyed comparator countries, driven by a combination of the launch of new devices designed for the use of internet services, operating systems which facilitate the installation and use of specific mobile internet applications, the availability of high speed mobile networks and low cost data plans.

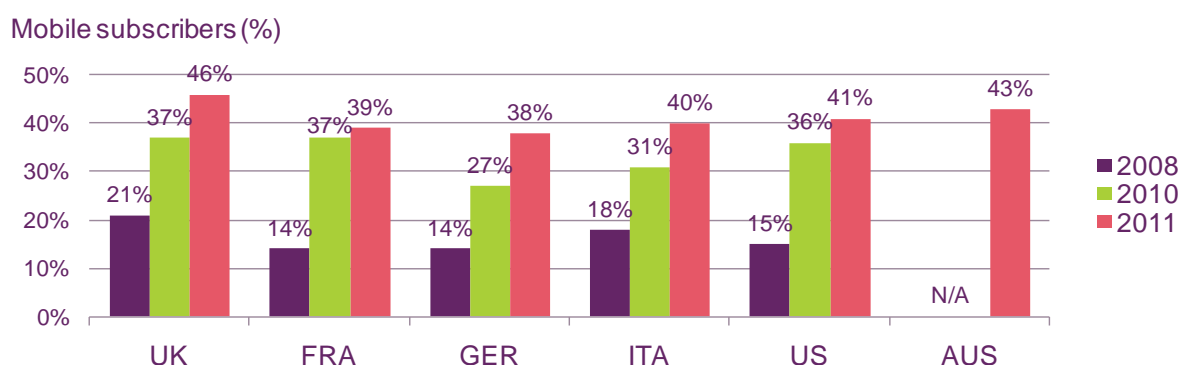
Ofcom research conducted in October 2008, 2010 and 2011 enables us to track the large changes in the ways in which consumers in our comparator countries use their mobile phones.

In the UK, France, Germany, Italy and the US the proportion of mobile phone users who use their device to connect to the internet more than doubled between 2008 and 2011 (Figure 5.2). Among these countries, internet use on mobiles is highest in the UK, perhaps due to the wide availability and take-up of smartphones, which have a more user-friendly mobile internet browsing experience and are often included in 12- to 24-month contracts for free or with a discount, and with an inclusive data allowance.<sup>19</sup>

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<sup>19</sup> Analysis of mobile bills submitted to comparison service billmonitor in June 2011 found that 73% of those who used data services had no additional payment other than the monthly access charge (See *Ofcom Communications Market Report 2011*, Fig 5.22, p. 266)  
[http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK\\_CM\\_2011\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK_CM_2011_FINAL.pdf)

**Figure 5.2 Use of mobile phone to access the internet**



Source: Ofcom research, October 2008, 2010 and 2011.

Base: All adults aged 18+ who use the internet (UK=929, France=914, Germany=945, Italy=989, USA=902, Australia=957).

Q: Which, if any, of the following activities do you use your smartphone / mobile phone for?

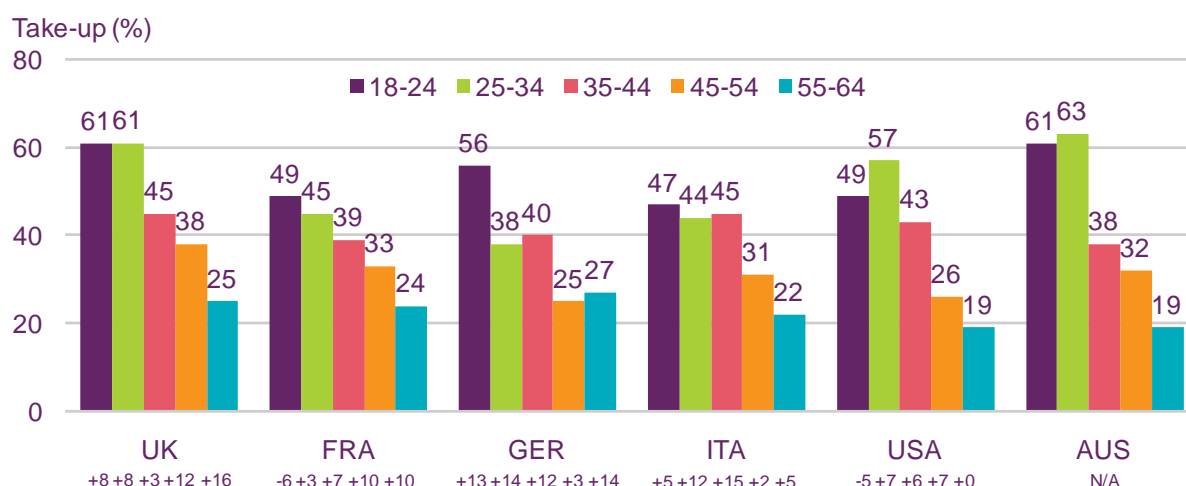
Note: Change since 2010 may be understated due to a change in the way in which the question was asked. In 2008 and 2010 we asked respondents to classify whether they had “ever” used their mobile phone for activities; in 2011 we simply asked what activities they used their mobile phone for.

### **Younger people more likely to use mobile internet – but fast growth among older age groups**

In line with general patterns for adoption of new technologies, in all of the countries surveyed, younger mobile users were more likely to access the internet on their mobile phone.

However, there was significant growth in use among older users. In the European countries surveyed, between a quarter and a fifth of mobile users aged 55-64 claimed to access the internet on their devices in October 2011. The greatest increase in older users was in the UK, where 25% of 55-64s claimed to access internet services, up from 9% a year previously, and there was also a significant increase among 35-44s (up from 26% to 38%). However, it should be noted that in all countries it is likely that the use among older users is slightly overstated – this is because we used an online survey, and use of the internet among older age groups is lower than among younger age groups (see section 5.3.1 below).

**Figure 5.3 Internet access via mobile phone among internet users, by age**



Source: Ofcom consumer research, October 2011.

Base: All Adults who own a smartphone and/or a mobile phone, UK=929, France=914, Germany=945, Italy=989, US=902, Australia=957

Q: Which, if any, of the following activities do you use your mobile phone for?

Note: Change since 2010 may be understated due to a change in the way in which the question was asked. In 2010 we asked respondents to classify whether they had "ever" used their mobile phone for activities; in 2011 we simply asked what activities they used their mobile phone for.

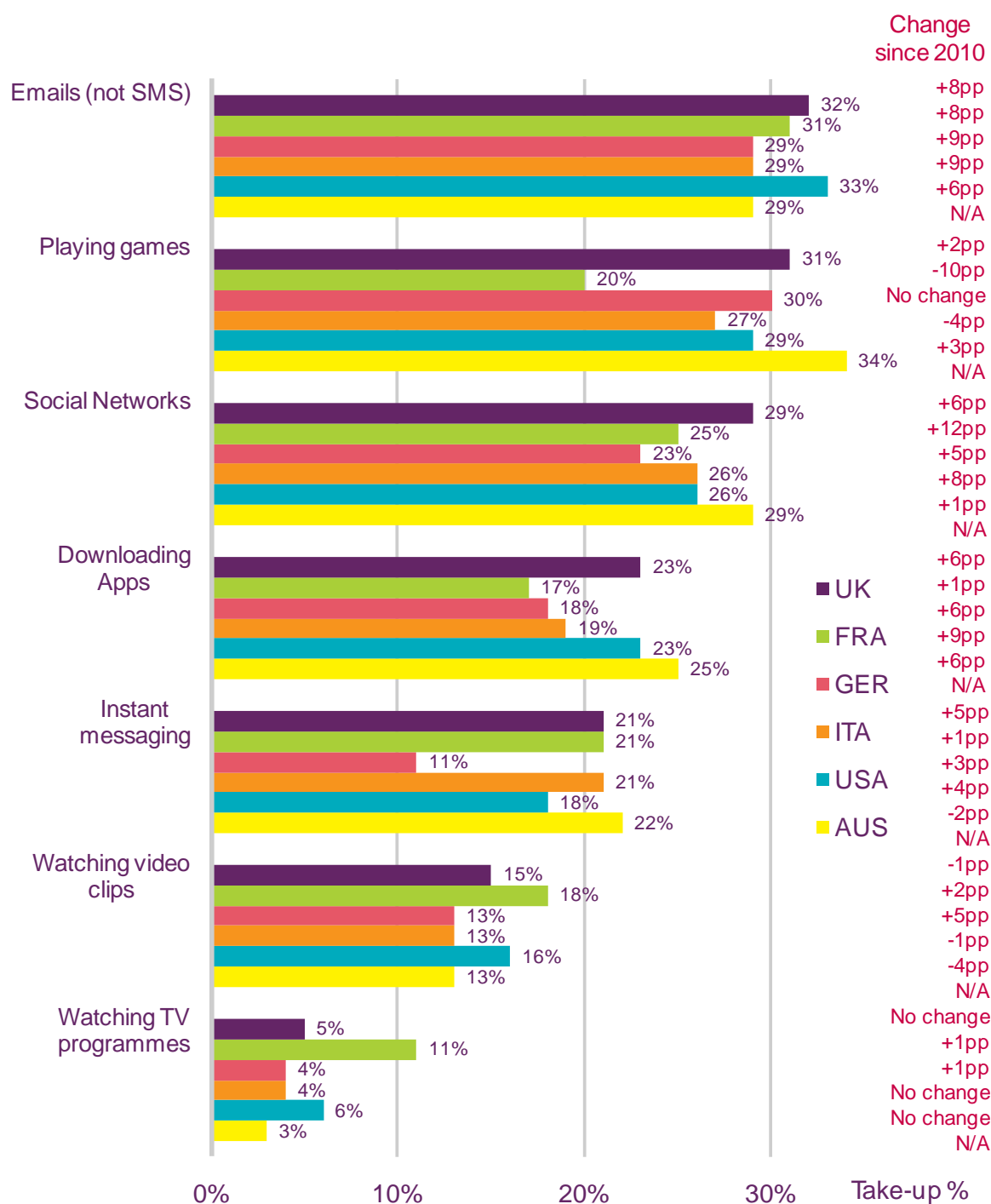
### Growth in use of internet services on mobile phones is primarily for 'low bandwidth' services

Consumers use mobile phones for a wide range of internet-based applications, many of which may not be browser-based. Email, playing games and using social networks are the most popular services used, in all countries. It is also notable that, even from a higher usage base, the use of these services grew more in the past year than the watching of videos, either clips or TV programmes. This may reflect comparatively high data charges for mobile services compared to fixed-line broadband services, as well as the fact that the slower speeds of mobile networks generally mean that the user experience of services requiring high bandwidth is not as good as over fixed-line services. Furthermore, many mobile browsers are incompatible with web technologies used by online video services (e.g. Adobe Flash) and some popular video services cannot be accessed from mobile networks (e.g. BBC iPlayer in the UK). The proportion of people downloading mobile applications also increased in all countries except the US between 2010 and 2011 – this is indicative of higher take-up of phones with operating systems such as Apple's iOS or Android, which promote the installation of 'apps' to optimise the mobile internet experience (see below).

There are some variations in the use of services between countries. The watching of TV programmes on mobile phones is significantly higher in France than in the other European countries, probably because TV is often bundled with mobile subscriptions. Overall, take-up of internet services on mobile phones is slightly higher in the UK than in the other European countries – the UK has higher use of email, playing games, social networks and downloading applications than France, Germany and Italy.



**Figure 5.4 Use of selected internet/data services on mobile phones**



Source: Ofcom consumer research, October 2011.

Base: All those who use the internet, UK=929, France=914, Germany=945, Italy=989, USA=902, Australia=957.

Q: Which, if any, of the following activities do you use your smartphone / mobile phone for?

Note: Change since 2010 may be understated due to a change in the way in which the question was asked. In 2008 and 2010 we asked respondents to classify whether they had "ever" used their mobile phone for activities; in 2011 we simply asked what activities they used their mobile phone for.

## Internet on mobile driven by take-up of smartphones

A key driver of the take-up of internet services on mobile phones is the take-up of smartphones.<sup>20</sup> According to data from technology research company Gartner, worldwide sales of smartphones were up 74% year on year in June 2011, and accounted for 25% of total mobile handset sales<sup>21</sup>. The US is the largest smartphone market in terms of revenue, but China overtook the US by volume of smartphone shipments in the third quarter of 2011. According to Mobile World Live, China shipped 23.9 million units during this period, growing 58% in the quarter, compared to 23.3 million units in the US, falling 7% on the previous quarter<sup>22</sup>.

ComScore's *MobiLens* survey provides a measure of smartphone take-up as a proportion of all mobile subscribers, and indicates strong growth across all five of the largest European markets between February 2010 and August 2011 (Figure 5.5).

In the UK nearly half (46%) of all mobile subscribers had a smartphone by August 2011, marginally ahead of Spain (45%). The UK had also seen very sharp growth, with take-up of smartphones almost doubling in the previous year. A driver of this is likely to be the bundling of smartphones in with 24-month mobile contracts, which allows the cost of the handset to be spread across a greater period of time. Research from Kantar WorldPanel ComTech finds that 67% of all mobile phones sold in the UK in the 12 weeks to 10 July 2011 were smartphones – the highest proportion of all 12 countries tracked – and that 61% of these smartphones were included 'free' for customers signing up to contract tariffs.<sup>23</sup> The second-highest sales of smartphones were in Australia, which also had the second-highest proportion of smartphones included in mobile phone contracts. Italy was an early leader in the take-up of smartphones, largely because of the high market share of Nokia phones with the Symbian operating system; however, growth has been slower, in part, because the high share of pre-pay mobile connections means that handsets are rarely offered to incentivise new subscribers.

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<sup>20</sup> See Ofcom's *UK Communications Market Report 2011*, Section 1.5 (pp47-67) for an in-depth review of the take-up and use of smartphones,

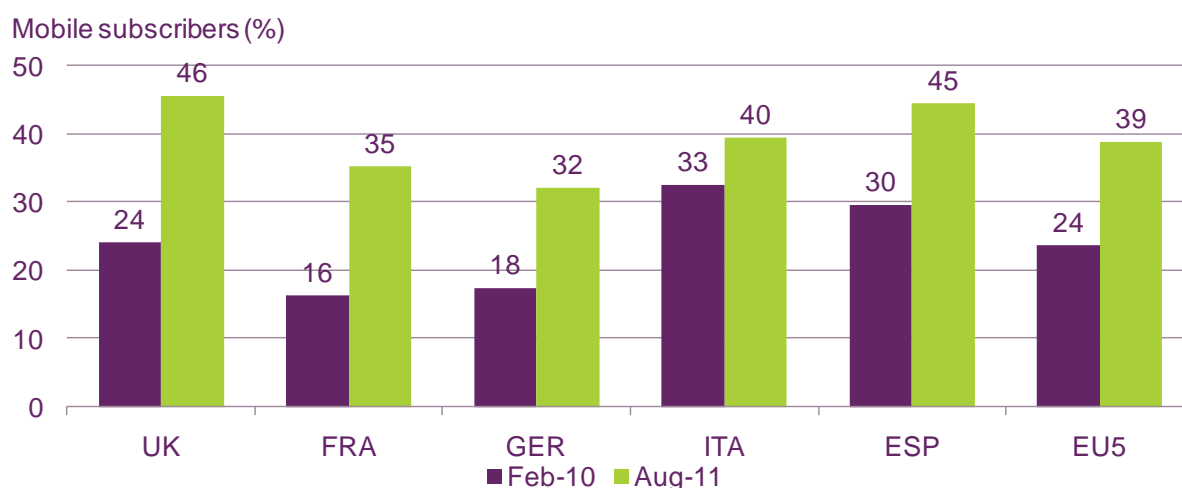
[http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK\\_CM11\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK_CM11_FINAL.pdf)

<sup>21</sup> <http://www.gartner.com/it/page.jsp?id=1764714>

<sup>22</sup> <http://www.mobilebusinessbriefing.com/articles/china-becomes-world-s-largest-smartphone-market/19721/>

<sup>23</sup> <http://www.kantarworldpanel.com/en/index.html#/News/news-list/Kantar-Worldpanel-ComTech:-Great-Britain-leading-global-Smartphone-adoption>

**Figure 5.5 Proportion of mobile subscribers with smartphones in Europe**



Source: comScore MobiLens, three-month averages ending February 2010 and August 2011, mobile subscribers ages 13+, EU5 is UK, FRA, GER, ITA and ESP

Note: MobiLens data are derived from an intelligent online survey of a nationally representative sample of mobile subscribers age 13 and above. Data on mobile phone use refer to a respondent's primary mobile phone and do not include data related to a respondent's secondary device.

### Smartphone platform share varies between Europe, US and Japan...

While a mobile phone's hardware (processing power, screen size, keyboard availability, etc) is integral to providing a good internet experience and promoting use of the internet on mobile phones, the operating system (OS) is of at least equal importance – as it largely defines the user interface and also the applications that are available.

As smartphone take-up has increased, the rivalry between platforms has intensified. In the past twelve months industry players have made a range of announcements and OS releases in a bid to compete in this growing market:

- In October 2010, Microsoft launched its revamped Windows Mobile 7 platform. This was followed four months later at the Mobile World Congress by the announcement of a major update, codenamed 'Mango'. Officially announced in May 2011, Windows Phone 7.5 was released internationally in September 2011, while devices pre-installed with the updated OS went on sale in autumn 2011.<sup>24</sup>
- In February 2011, the handset manufacturer Nokia announced a strategic partnership with Microsoft. As a result Nokia will drop the Symbian OS and adopt Windows Phone as its principal smartphone operating system.<sup>25</sup>
- In June 2011, at Apple's Worldwide Developer Conference, the technology company announced the latest iteration of its iOS platform, on which its phone, tablet and touch-screen portable music player will run<sup>26</sup>. iOS5 was launched in October 2011,

<sup>24</sup> [http://windowsteamblog.com/windows\\_phone/b/windowsphone/archive/2011/09/27/windows-phone-7-5-mango-update-begins.aspx](http://windowsteamblog.com/windows_phone/b/windowsphone/archive/2011/09/27/windows-phone-7-5-mango-update-begins.aspx)

<sup>25</sup> <http://www.microsoft.com/presspass/press/2011/feb11/02-11partnership.msp>

<sup>26</sup> <http://www.apple.com/pr/library/2011/06/06New-Version-of-iOS-Includes-Notification-Center-iMessage-Newsstand-Twitter-Integration-Among-200-New-Features.html>

along with the latest version of the iPhone and the remote backup and storage service iCloud.<sup>27</sup>

- In August 2011, Research In Motion (RIM), the manufacturer of the BlackBerry smartphones and the accompanying operating system, announced the release of the BlackBerry 7 OS<sup>28</sup>, but just two months later, revealed BBX, RIM's unified OS for smartphones and tablets<sup>29</sup>. While BB7 is only compatible with the latest handsets, BBX will not be backward-compatible with existing apps available for BlackBerry. However, RIM has committed to porting the top 100 apps to BBX, and highlighted that the second version of BBX will include support for Android applications.
- In August 2011 HP announced<sup>30</sup> that it was discontinuing the webOS platform, the operating system it acquired when it bought Palm for \$1.2bn just 15 months earlier<sup>31</sup>. This affected both webOS phone and TouchPad tablets running the OS.
- Android is the free and open-source operating system developed by a group of companies called the Open Handset Alliance and led by Google. Android has evolved rapidly since its launch in April 2009, as have the large number of handsets on which it has been released. Named after various desserts, Android released the *Gingerbread* version of its smartphone OS in December 2010, and a tablet-only version called *Honeycomb* in February 2011. A unified OS for both smartphones and tablets, *Ice Cream Sandwich*, was released on 19 October 2011.
- In August 2011 Google announced the acquisition of Motorola Mobility, already a handset manufacturer for Android, for US\$12.5bn. Google's CEO, Larry Page, hoped the acquisition would "supercharge" the Android ecosystem, increasing competition and delivering benefits for consumers. The deal is expected to be completed in late 2011 or early 2012 after approval from regulatory authorities in operating jurisdictions<sup>32</sup>.

The relative success of competing operating systems varies across markets, as demonstrated by platform penetration across Europe, the US, and Japan (Figure 5.6). In Japan, market share is a two-horse race between Apple and Google (40% and 47% respectively). In the US, Google leads with 42% of smartphone platform share versus RIM's 22% and Apple's 20%. In Europe, Apple and Google have grown at the expense of Symbian, which, while it still has a stronghold in Europe and is the largest platform by number of users, has rapidly lost platform share; from 61% in January 2010 to 38% in July 2011. Apple and Google have similar shares in Europe (20% and 22% respectively) and RIM is fourth with 9% of the market. However, RIM is more popular in the UK than the rest of Europe as sales figures in Figure 5.7 suggest. Microsoft's Windows Mobile and Windows Phone platforms had a smaller share across all markets, with 7% in Europe, 6% in the US and no significant presence in Japan<sup>33</sup>.

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<sup>27</sup> <http://www.apple.com/pr/library/2011/10/04Apple-Launches-iPhone-4S-iOS-5-iCloud.html>

<sup>28</sup> <http://press.rim.com/release.jsp?id=5071>

<sup>29</sup> <http://press.rim.com/release.jsp?id=5230>

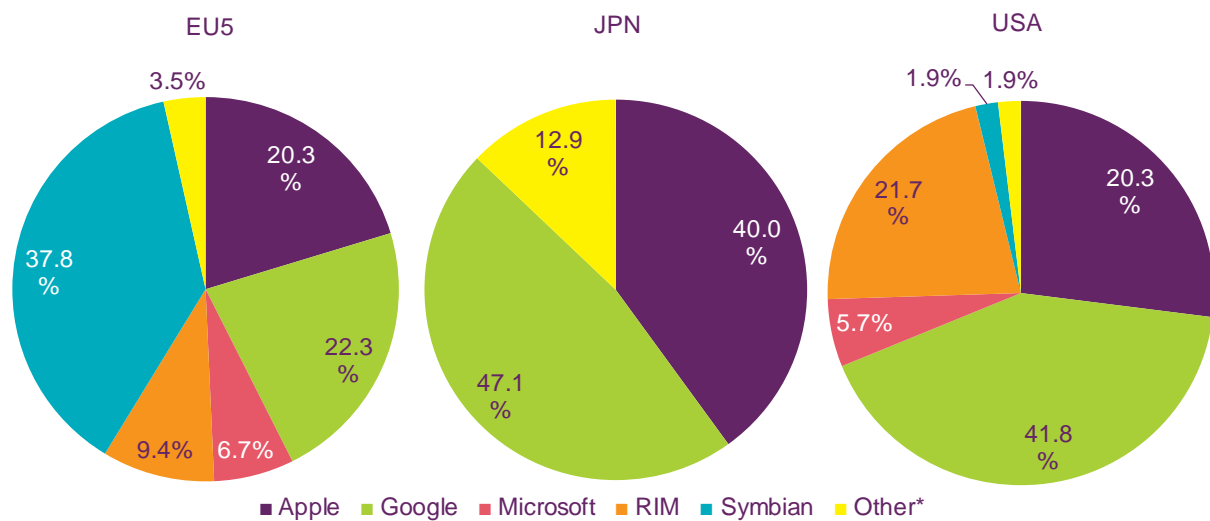
<sup>30</sup> <http://www.hp.com/hpinfo/newsroom/press/2011/110818b.html>

<sup>31</sup> <http://www.hp.com/hpinfo/newsroom/press/2010/100428xa.html>

<sup>32</sup> <http://mediacenter.motorola.com/Press-Releases/Google-to-Acquire-Motorola-Mobility-3797.aspx>

<sup>33</sup> Only with latest Mango release of Windows Phone 7 has the OS supported Japanese script, with the first Mango phone released in Japan in September 2011 <http://www.t3.com/news/fujitsu-is12t-goes-on-sale-in-japan>

**Figure 5.6 Smartphone platform share across Europe, the US and Japan**



Source: comScore MobiLens, aged 13+

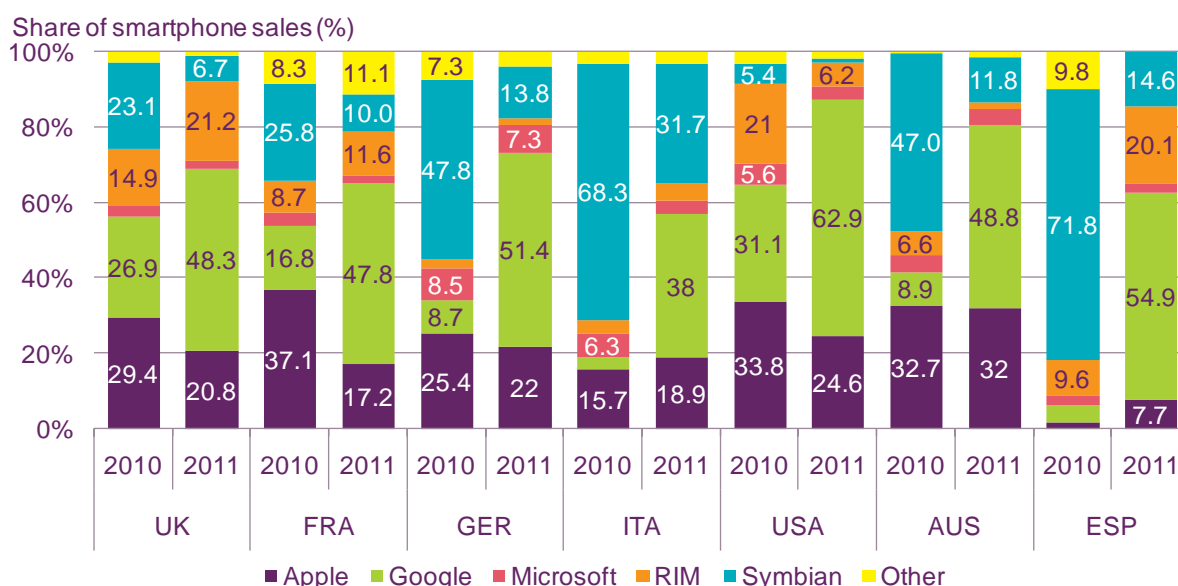
Note: MobiLens data are derived from an intelligent online survey of a nationally representative sample of mobile subscribers age 13 and above. Data on mobile phone use refer to a respondent's primary mobile phone and do not include data related to a respondent's secondary device. EU5 (UK, FRA, GER, ITA, ESP) 3 month average ending July 2011, USA 3 month average ending July 2011, JPN data March 2011. \*Other includes all platforms not featured in respective pie chart.

### **...but Google's Android has had most success in winning market share**

Data from Kantar Worldpanel ComTech on smartphone sales over equivalent 12-week periods in 2010 and 2011 clearly show that Google's Android had the greatest share of sales across Europe, the US, and Australia (Figure 5.7). Android is most popular in the US, with a 63% share of smartphone sales. Among the seven countries for which data are available, Android had lowest share in Italy, with 38% of sales, but is still the highest-selling operating system. Unlike Apple's iOS on iPhone or RIM's BlackBerry OS, Android is not tied to one specific handset manufacturer. Furthermore, Android is provided as an open source operating system, released for free, giving handset manufacturers and mobile network operators the opportunity to pass that saving on to the consumer. HTC, Samsung, Motorola, LG and Sony Ericsson and others all make handsets for Android, meaning that Android offers consumers a greater choice of handsets across a wider range of budgets than its main competitors.

Symbian is strongest in Italy, with a 32% share of smartphone sales, but sales have dropped significantly in all countries. As noted above, the UK remains a stronghold for the BlackBerry OS (21%) but more recently Blackberry has gained popularity in Spain (21%) where sales of Apple's iPhone have been the weakest across our comparator countries (7.7%). France is notable for its strong sales of the Bada operating system from Samsung (10.6%), which made up the majority of other smartphone sales during the 2011 period.

**Figure 5.7 Operating system share of smartphone sales**



Source: Kantar Worldpanel ComTech 12 weeks ending 5 September 2010 and 12 weeks ending 4 September 2011

Note: Microsoft includes both Windows Phone 7 and Windows Mobile operating systems. Data labels for operating systems with less than 5% share not shown.

### 5.1.3 Online advertising

#### Nearly 30% of advertising spend in the UK is on internet advertising

A major trend in advertising markets in recent years has been the growth of spend on the internet (Figure 5.8). In 2005, internet spend accounted for less than 10% of total advertising spend in all our comparator countries, but by 2010 online spend accounted for more than 15% in most countries, and approached 30% in the UK.

The UK continues to have the greatest internet share of total advertising spend (28.7%), followed by the Netherlands (25.2%) and Sweden (23.4%). Reasons for this include high internet take-up in these countries and, in the UK in particular, widespread take-up of online shopping, which is driven by high levels of credit card take-up, high levels of trust in online payments, a previous history of catalogue shopping and the early launch of major online shopping services (Amazon.co.uk launched in 1998, for example, following the purchase of bookpages.co.uk). More information on internet shopping is provided in Section 5.3.4 below.

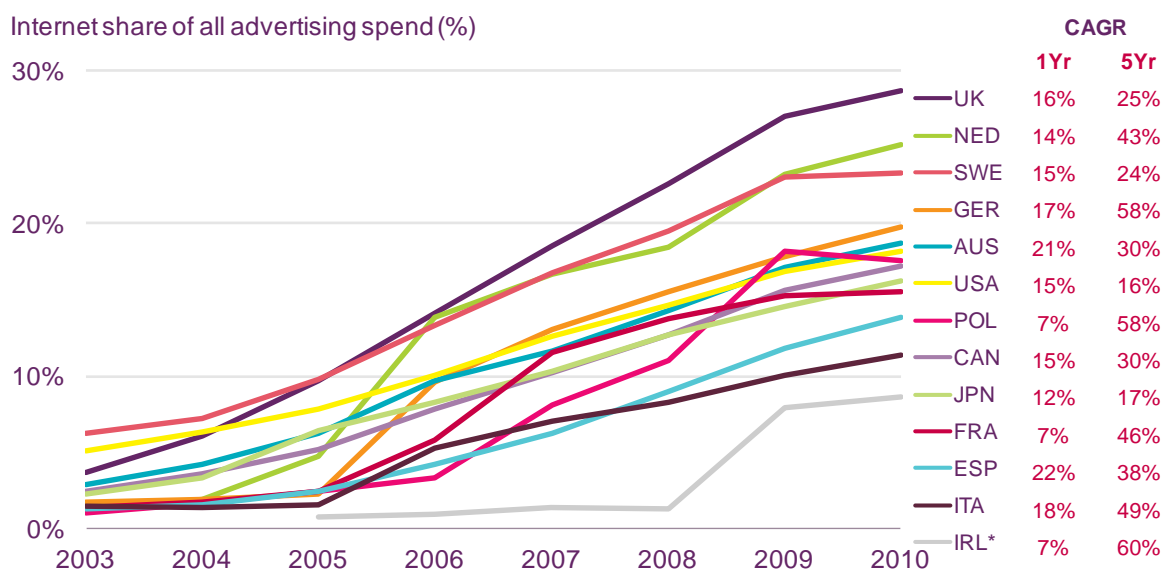
Ireland's internet advertising market has the smallest share of total advertising among our comparator countries (8.6%), although this may be in part explained by some advertising being administered in the UK, followed by Italy (11.4%) and Spain (13.9%).

Between 2004 and 2009 the proportion of all advertising spend allocated to internet campaigns has steadily grown. However, in 2010 this growth slowed in some European markets. In Sweden and France the internet's share of total advertising expenditure remained almost constant (up by 0.3 percentage points in both countries) and in Poland the share of internet advertising fell by 0.6 percentage points.

Slower growth in share is not a reflection of a slowing internet advertising market but reflects a recovery in the total advertising market. In 2009 total advertising spend in all comparator countries fell, while internet advertising spend continued to grow in most countries (France and the US were the exceptions, with internet advertising spend falling by 3.3% in each

country in 2009). In 2010, total advertising spend recovered and exceeded 2009 spend in all comparator countries except Ireland. In Australia and Poland strong growth exceeded even the peak spend in 2008. Internet advertising also benefited from a recovery in growth, but in Sweden and France at a similar rate to the total advertising market, and in Poland at a slower rate than the total advertising market.

**Figure 5.8 Internet share of total advertising expenditure**



Source: Warc data ([www.warc.com](http://www.warc.com))

Note: Data do not include mobile advertising, a small but growing new market. This is particularly relevant to Japan where in 2010 mobile advertising accounted for approximately 3% of total advertising expenditure. \* Ireland data prior to 2009 exclude paid-for search advertising. Ireland internet data from 2009 include display, classified, search and email and are therefore not directly comparable with those of previous years.

### Australia spends the most on internet advertising per head

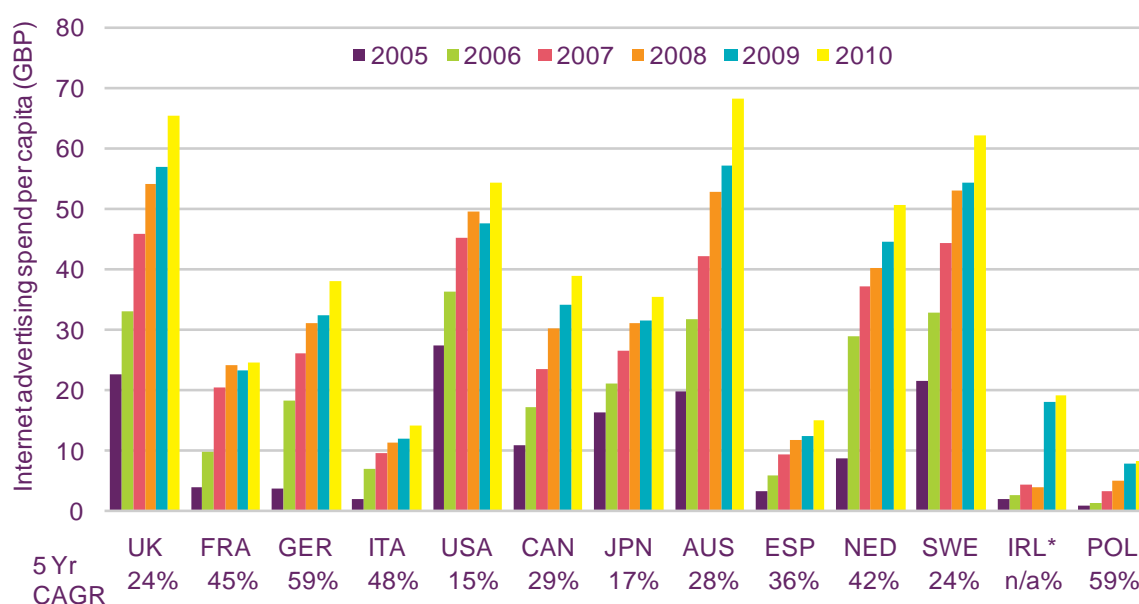
After a slowdown in growth in internet advertising spend per head during the economic downturn of 2009, growth rates increased in all countries except Poland.

In 2010, spend per head on internet advertising was highest in Australia (£68.29), ahead of the UK (£65.53)<sup>34</sup>. In relative terms Spain's year-on-year growth of 21.5% was the strongest in 2010, while Poland and Germany had the greatest five-year compound annual growth rate, of 59% each.

<sup>34</sup> Currency exchange rates are of course a driver of relative differences in advertising spend. During 2010, the Australian dollar increased in value against the British pound by 18.5%.  
<http://www.google.com/finance?q=AUDGBP>, AUD/GBP Jan 1 2010 to Dec 31 2010



**Figure 5.9 Internet advertising spend per head**



Source: Warc data ([www.warc.com](http://www.warc.com)) Currency conversions represent the IMF average for 2010. Population data from US Census Bureau (EoY estimates from mid-year values).

\* Note: Ireland data prior to 2009 exclude paid-for search advertising. Ireland internet data from 2009 include display, classified, search and email and are not comparable with those of previous years.

### Social media drives growth in display advertising in the UK and the US

The three key classifications of internet advertising are search, display, and classifieds. In search advertising (which is the main source of Google's revenue), ads are delivered against search results depending on what the user searched for. Search advertising has developed a range of tools that allow advertisers to create ever more sophisticated advertising campaigns. The advertiser can vary its campaign by a number of variables including geography, language and time of day.

In contrast, display advertising is contextual to the website being viewed, or can rely on certain types of profiling. It can therefore provide a different form of targeting for advertisers that may appeal to a user's broader interests: for example, gambling firms may advertise on sports websites, and airlines may advertise on travel websites. Internet advertising also includes classifieds which includes websites like Craigslist in the US, Gumtree in the UK and Le Bon Coin in France.

Between 2008 and 2009, search increased its share of advertising spend in all comparator countries (Figure 5.10). However, in 2010 there are some signs that display may be regaining share; between 2009 and 2010 share of internet advertising spend by search declined by three percentage points in the UK and by one percentage point in the US.

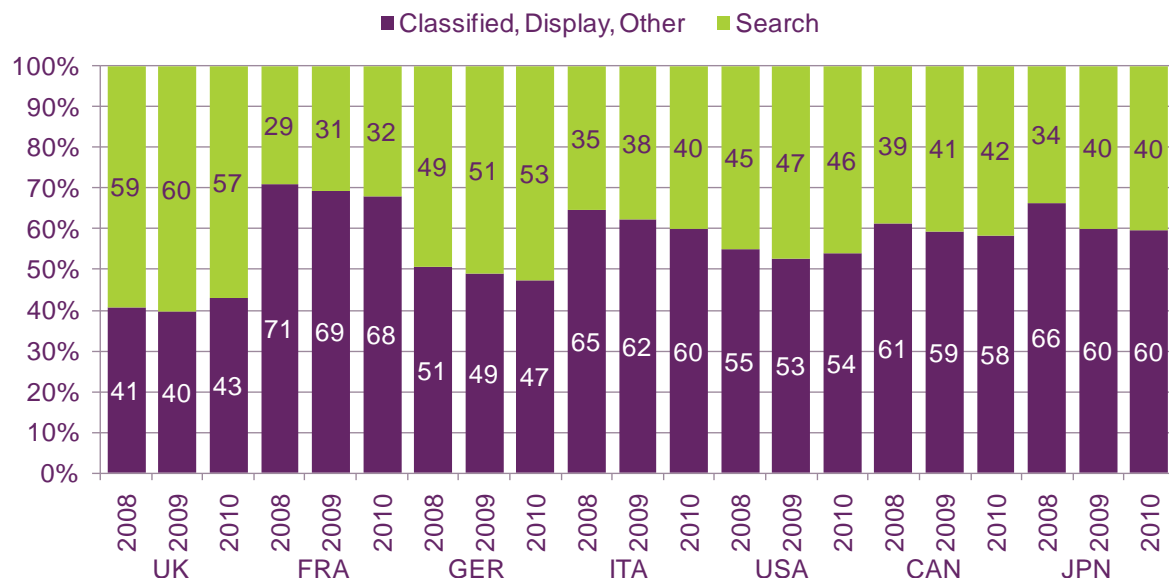
This growth in display advertising is driven by advertising on social media sites, and in particular on Facebook. ComScore reports that advertising impressions on social networking sites in the UK increased by 47% between December 2009 and December 2010, while other display advertising impressions fell by 3% over the same period.<sup>35</sup> Overall, the UK's online display advertising market grew by 27.5% in 2010 on a like-for-like basis to £945m,

<sup>35</sup> See Ofcom's UK Communications Market Report 2011, Section 4.1.3 for a fuller discussion of internet advertising trends in the UK, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK\\_CMR\\_2011\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK_CMR_2011_FINAL.pdf)



accounting for 23% of all internet advertising spend.<sup>36</sup> Similarly in the US, according to comScore, a third of all internet display advertising was served on social media sites in 2010<sup>37</sup> and display internet advertising rose 24% to \$9.9bn from \$8bn last year<sup>38</sup>, accounting for 38% of all internet advertising revenues.

**Figure 5.10 Internet advertising spend, by category**



Source: PricewaterhouseCoopers Global Entertainment and Media Outlook: 2011-2015

([www.pwc.com/outlook](http://www.pwc.com/outlook))

Note: interpretation and manipulation of data are solely Ofcom's responsibility.

### UK mobile internet advertising surges while Japan remains a world apart

The size of the UK's mobile internet advertising market increased by 118% in 2010, with revenues up from £38m to £83m (see Figure 5.11). Other European nations achieved moderate double-digit growth, while Ireland doubled the size of its fledgling mobile internet advertising market, to £2m.

The largest mobile advertising market in the world is Japan, where a saturated and sophisticated mobile market has offered greater opportunity for mobile advertising to grow. The proportion of mobile subscribers with a 3G connection in Japan in 2010 was 93%, far greater than in the US (48%) and the UK (39%); the average monthly spend on mobile phones in 2010 was £35.52, (compared to £15.40 in the UK), and 49% of this spend was on data (compared to 29% in the UK).<sup>39</sup>

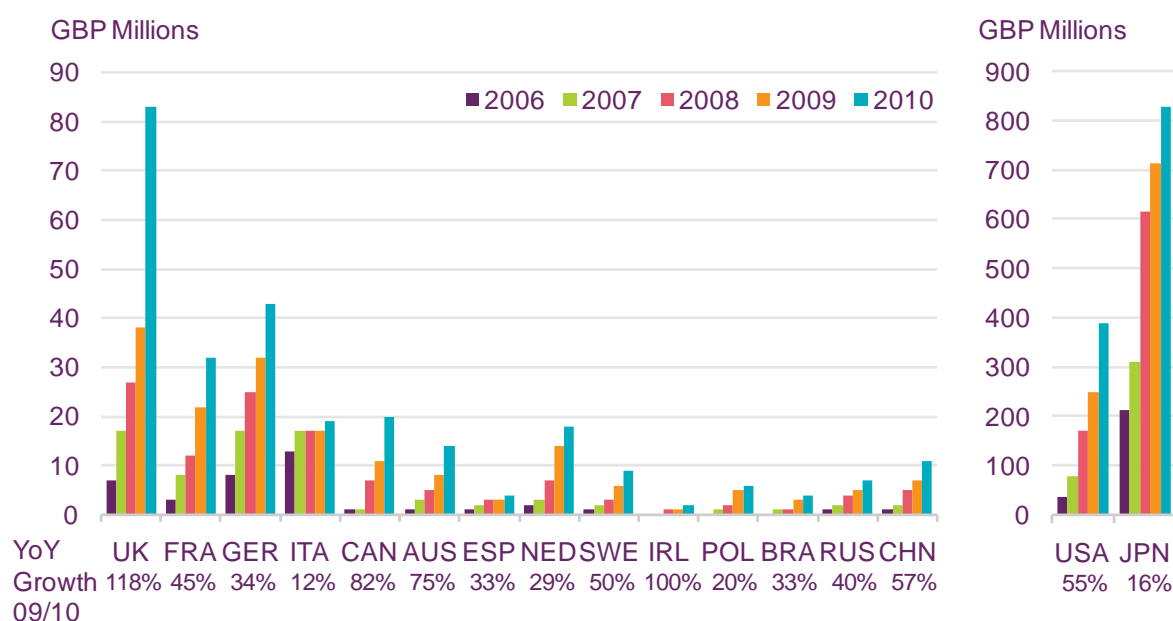
<sup>36</sup> <http://www.iabuk.net/en/1/adspendbreaks4billionmilestone280311.mxs>

<sup>37</sup> [http://www.comscore.com/Press\\_Events/Press\\_Releases/2011/2/comScore\\_Releases\\_The\\_2010\\_U.S.\\_Digital\\_Year\\_in\\_Review](http://www.comscore.com/Press_Events/Press_Releases/2011/2/comScore_Releases_The_2010_U.S._Digital_Year_in_Review)

<sup>38</sup> [http://www.iab.net/media/file/IAB\\_Full\\_year\\_2010\\_0413\\_Final.pdf](http://www.iab.net/media/file/IAB_Full_year_2010_0413_Final.pdf)

<sup>39</sup> All figures IDATE / Industry Data / Ofcom

**Figure 5.11 Mobile internet advertising expenditure**

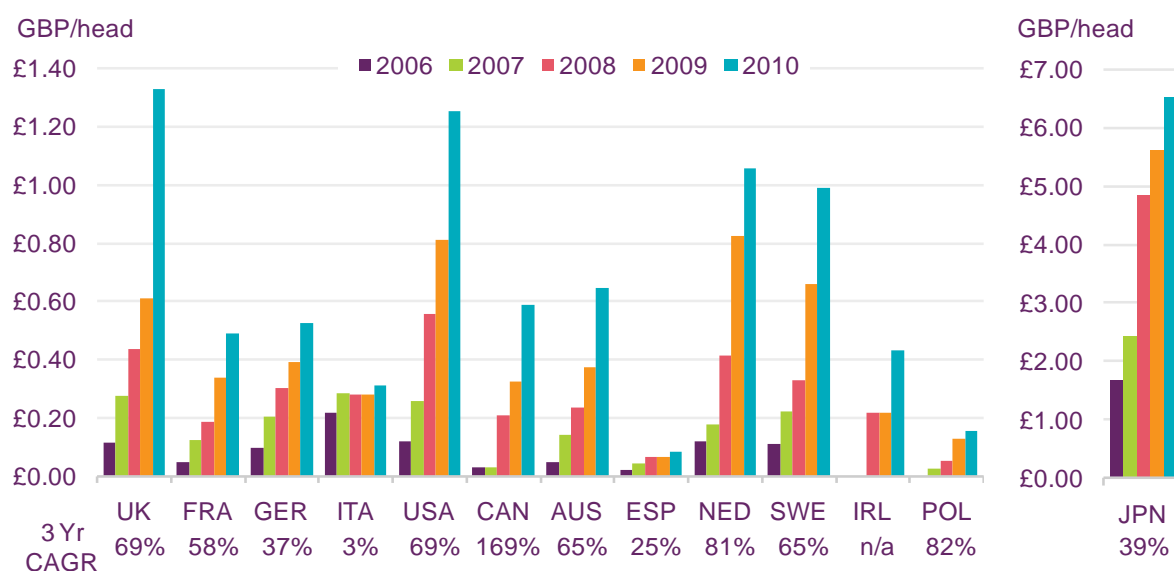


Source: PricewaterhouseCoopers Global Entertainment and Media Outlook: 2011-2015 ([www.pwc.com/outlook](http://www.pwc.com/outlook))

Note: interpretation and manipulation of data are solely Ofcom's responsibility.

Those nations with a high proportion of internet advertising spend (see Figure 5.8 above) also have a high mobile internet advertising spend per head (Figure 5.12). This is notably the case with the UK (£1.33), the Netherlands (£1.06) and Sweden (£0.99). The US (£1.25) falls in line with comparable countries, but Japan remains by far the largest market on a per-capita basis (£6.52).

**Figure 5.12 Mobile internet advertising spend per head**



Source: PricewaterhouseCoopers Global Entertainment and Media Outlook: 2011-2015 ([www.pwc.com/outlook](http://www.pwc.com/outlook)) Population data from US Census Bureau (EoY estimates from mid-year values).

Note: Note interpretation and manipulation of data are solely Ofcom's responsibility.

## 5.2 Platforms and devices

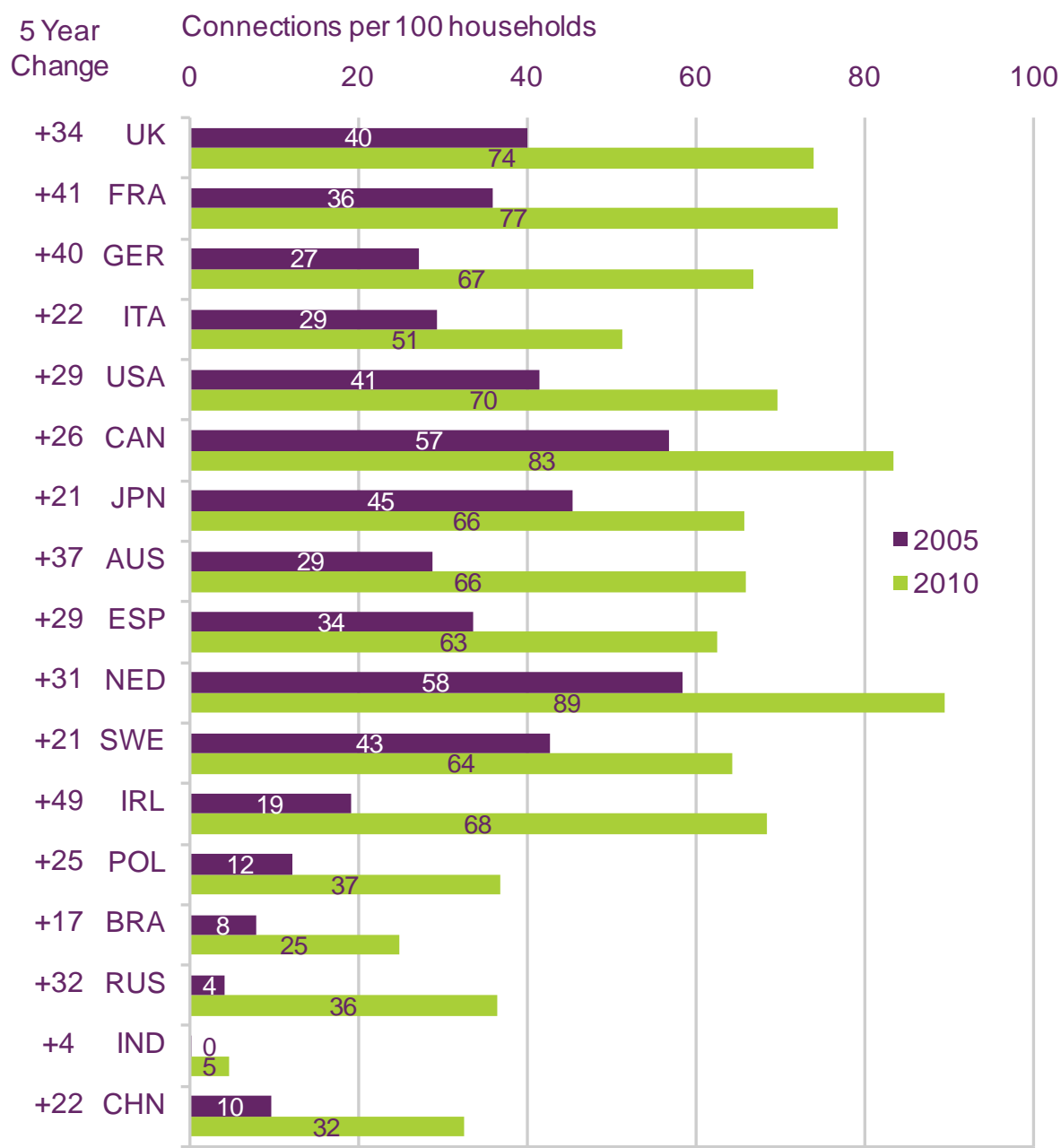
### 5.2.1 Access platform adoption

#### **Early adopters retain highest penetration per 100 households of fixed broadband**

Figure 5.13 shows that five years ago only two of our comparator countries averaged more than 50 fixed broadband connections per 100 households, but today all of them except Poland and the BRIC countries do. The two countries that led fixed broadband adoption five years ago continue to do so today, with the highest penetration of fixed broadband remaining in the Netherlands (89 connections per 100 households) and Canada (83 connections per 100 households). Take-up in France has grown rapidly in the past five years to 77 connections per 100 households, higher than in the UK (74 connections per 100 households) and the US (70 connections per 100 households). Ireland experienced the greatest growth in the past five years, up from 19 connections per 100 households in 2003 to 68 in 2010.

All comparator countries have experienced significant growth over the past five years. Broadband connections continue to become increasingly prevalent in emerging markets. Russia has 36 connections per 100 households, while China has 32 and Brazil 25. India lags behind the other BRIC countries, with just five connections per 100 households.

**Figure 5.13 Broadband connections per 100 households**



Source: IDATE / Industry data / Ofcom

Note: this calculation includes business broadband lines, and therefore the figures in the analysis do not equate exactly to household fixed broadband take-up.

### Mobile broadband take-up slows in the UK – but grows apace in other countries

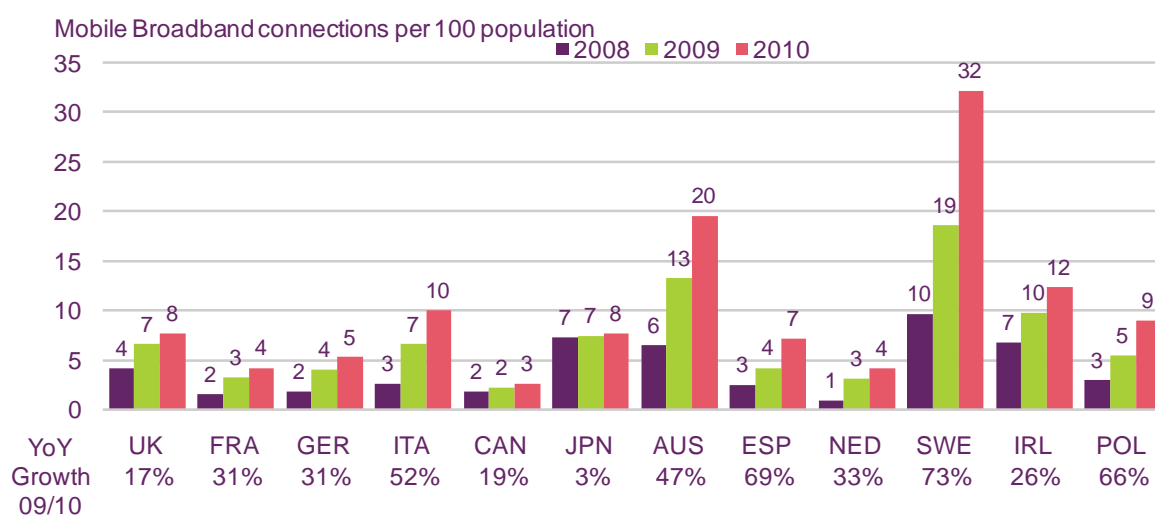
The roll-out of upgrades to 3G networks (such as HSPA and CDMA 2000 1xEV-DO) in recent years has facilitated the emergence of mobile broadband services and increased the data speeds that consumers can expect.

In all of our comparator countries there has been rapid growth in take-up of mobile broadband (defined as broadband delivered to PCs using dongles, datacards, or SIM cards embedded in laptop PCs) since 2008. Sweden and Australia had the highest number of mobile broadband subscribers per 100 population (32 and 20 respectively).

While many countries saw rapid growth in mobile broadband take-up during 2010, in some countries growth slowed. In the UK, the number of connections per 100 households grew by just one, to eight, while there was also only slow growth in France, Germany, Canada, Japan and the Netherlands. During 2010, mobile broadband take-up per 100 population in Italy (10), and Poland (9) overtook that in the UK (8) as each country experienced greater than 40% growth in the number of connections.

Of course, mobile broadband networks can also be accessed via mobile phones, and Figure 5.2 above shows that use of the internet on mobile phones has increased rapidly in most countries since 2008.

**Figure 5.14 Mobile broadband subscribers per 100 population**



Source: IDATE / industry data / Ofcom

Note: this calculation includes business mobile broadband lines, and therefore the figures in the analysis do not equate exactly to household mobile broadband take-up.

### Mobile broadband can complement or substitute for fixed broadband

Mobile broadband services can either be a complement to or a replacement for fixed broadband services.

Ofcom consumer research among broadband users in six countries found that in the UK, France and Germany most mobile broadband users also have a home fixed broadband connection, indicating complementary use – with consumers using fixed broadband at home and mobile broadband when out and about. Separate Ofcom research finds that in the UK younger people, and those living in rented accommodation, are more likely to rely on mobile broadband.<sup>40</sup> This may reflect the fact that for many, mobile broadband is a life-stage product, particularly when used as a substitute for fixed broadband.

In the US and Australia, most mobile broadband users have it as their only broadband connection, and in Italy there is high take-up of mobile broadband, both as the only internet connection and as a complement to fixed broadband. High take-up of mobile broadband as the only service may be driven by a number of factors – lack of availability of fixed-line broadband (which historically<sup>41</sup> has been the case in Australia), a high incidence of mobile-

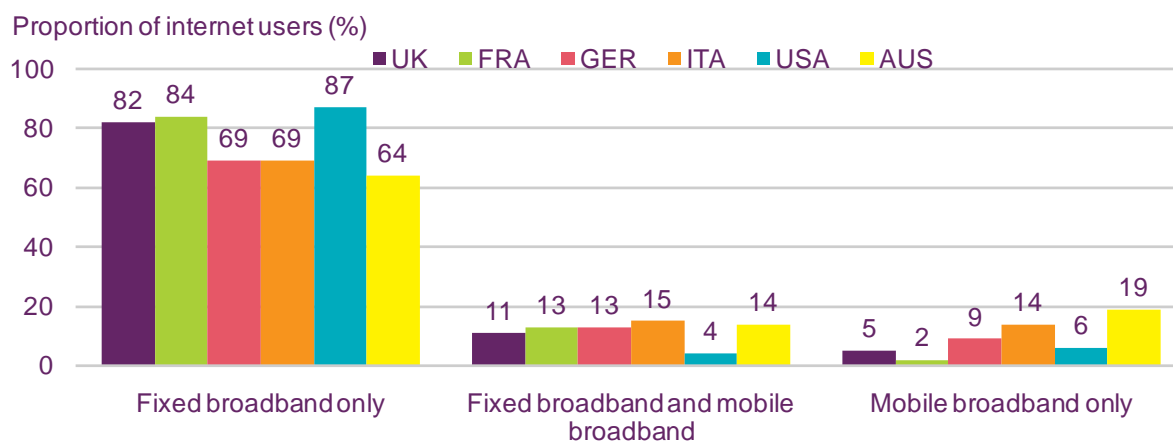
<sup>40</sup> Ofcom *Communications Market Report* 2011, Fig 5.95, p323,

[http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK\\_CMR\\_2011\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK_CMR_2011_FINAL.pdf)

<sup>41</sup> However, Australia's National Broadband Network plans to roll out high speed fixed broadband services to 93% of the population by 2020 <http://www.nbn.gov.au/>

only households (as is the case in the US and Italy), the wide availability of high-speed mobile networks (HSPA services are widely available in Australia and Italy, and in the US alongside EV-DO services), the relative price of fixed and mobile broadband services, and demographic characteristics (e.g. mobile broadband is more likely to be taken up by young people in rented accommodation, as stated above).

**Figure 5.15 Take-up of home internet access platforms**



Source: Ofcom consumer research October 2011.

Base: all those who use the internet, UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

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

## 5.2.2 Device penetration

### Beyond the PC... new internet-connected devices gain a foothold

As WiFi and cellular networks have grown, and consumers and content providers increasingly value online access 'anytime, anywhere', the number of internet-connected devices available to consumers has increased significantly.

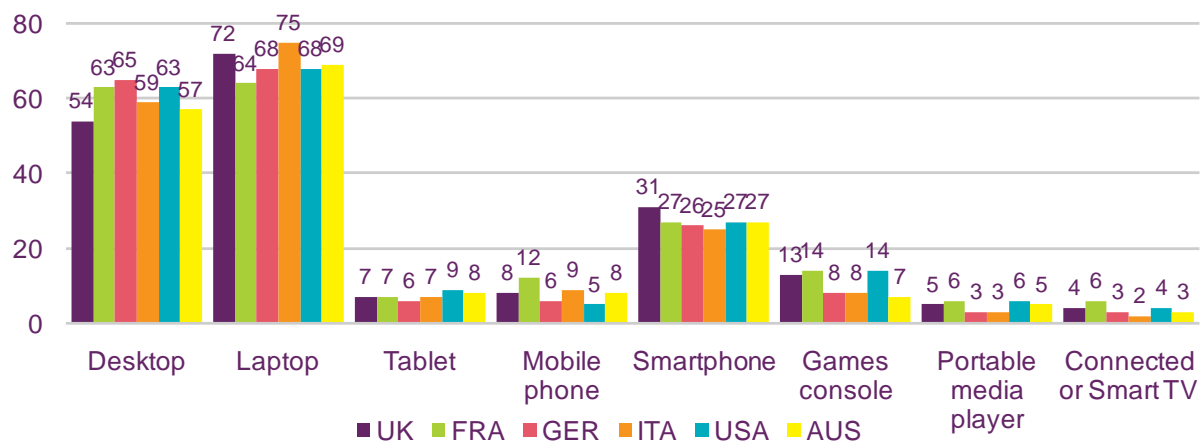
In all of the six countries we surveyed, consumers were more likely to use a laptop PC than a desktop PC to access the internet at home. The margin between the use of laptop PC and desktop PC was narrowest in France (1 percentage point) and widest in the UK (18 percentage points) where there was the lowest incidence of desktop PC use (54%) across our surveyed countries (see Figure 5.17 below for a demographic breakdown).

The mobile phone was the third key in-home internet device, and more than 10% of broadband users also used a games console for internet access in the UK, France, and the US.

Other internet platforms currently have lower take-up. The launch of Apple's iPad in 2010 defined the emergence of tablet PCs as a distinct category (although it was not the first such device), and according to our research it was used by 6% to 9% of broadband households to access the internet by October 2011. The use of portable media players (including e-readers such as the Amazon Kindle and music/video players such as Apple's iPod Touch) to access the internet stood at around one in 20 broadband households. Internet-enabled televisions are increasingly becoming widely available (connected TVs made up almost 20% of global

shipments in 2011<sup>42</sup>) but by October 2011 they still had comparatively low claimed use, highest in France at 6% of broadband households.

**Figure 5.16 Devices used to access the internet**



Source: Ofcom consumer research October 2011.

Base: All those who use the internet, UK=1002, France=1004, Germany=1005, Italy=1040, US=992, Australia=1004

Q. Which of the following devices do you use to access the internet at home (e.g. visiting web sites, emailing, online gaming, downloading files)?

### Younger internet users more likely to use laptops

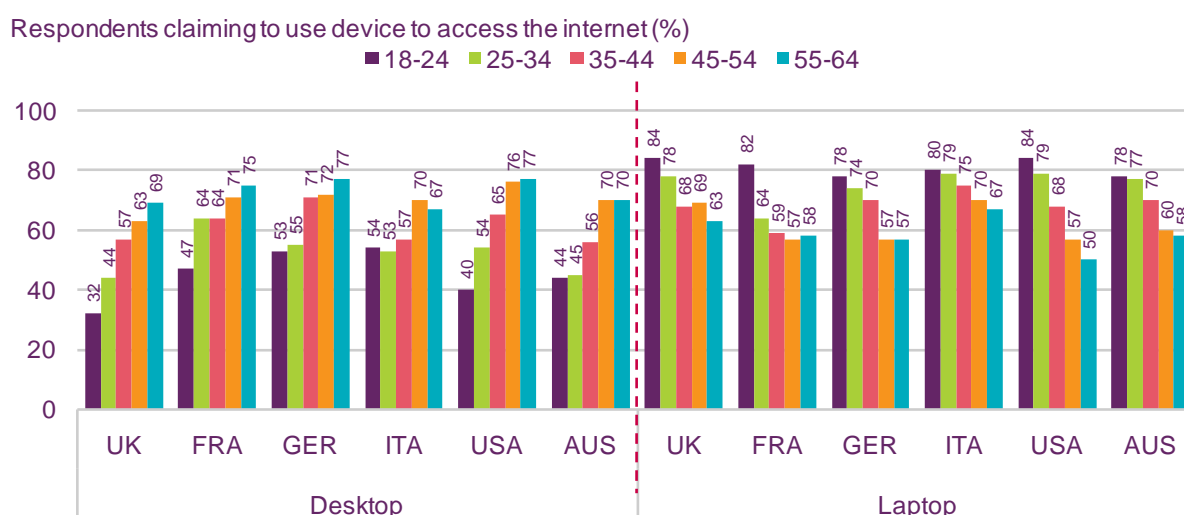
In the UK, less than a third (32%) of 18-24 year-old internet users use a desktop PC to access the internet at home, compared to 69% of 55-64s. A similar pattern is evident in the other five countries surveyed – where less than half of 18-24s and more than half of over-35s use a desktop PC.

Similarly, in all countries surveyed younger users are much more likely to use a laptop PC. This may be due to a number of factors – younger users putting more value on mobility, younger users being more likely to live in shared accommodation, sharing a WiFi connection or using a mobile broadband connection, or younger users living with parents being more likely to use a 'secondary' household device.

42

[http://www.displaysearch.com/cps/rde/xchg/displaysearch/hs.xsl/110425\\_connected\\_tvs\\_forecast\\_to\\_exceed\\_123m\\_units\\_in\\_2014.asp](http://www.displaysearch.com/cps/rde/xchg/displaysearch/hs.xsl/110425_connected_tvs_forecast_to_exceed_123m_units_in_2014.asp)

**Figure 5.17 Use of desktop and laptop PCs to access the internet, by age**



Source: Ofcom consumer research October 2011.

Base: All those who use the internet, UK=1002, France=1004, Germany=1005, Italy=1040, US=992, Australia=1004

Q. Which of the following devices do you use to access the internet at home (e.g. visiting websites, emailing, online gaming, downloading files)?

### Tablets account for over a third of internet traffic on other devices in Canada

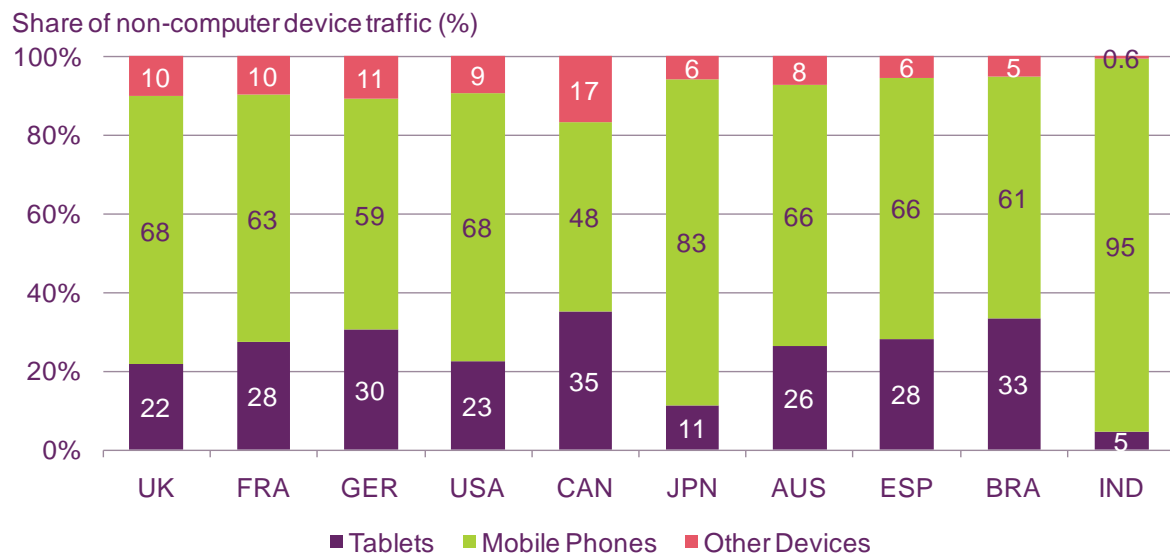
As the number of devices able to connect to the internet proliferates, the share of non-computer internet traffic will diversify. Furthermore, some devices create more internet traffic than others. Tablets may be more likely to be used for video content because of their larger screen size, as might other devices such as games consoles. Therefore device take-up is not necessarily a guide to internet usage or share of internet traffic.

Figure 5.18 presents the share of non-computer internet traffic for mobile phones, tablets and other non-computer devices. The share of mobile phone traffic was smallest in Canada, with just less than half of non-computer internet traffic coming from phones. Canada also had the highest proportion of traffic from tablet devices (35%), a large proportion of which was from Apple's iPad (33.5%). Brazil also has a high proportion of tablet traffic (33%), while the UK (22%) has the smallest share of tablet traffic among the European comparator nations. However, mature mobile data markets like Japan (where 93% of mobile connections are 3G) offer the ability to consume a large quantity of data on mobile devices over cellular networks very easily, and are therefore likely to have a greater skew towards mobile phone traffic than nations with a low proportion of 3G connections like Brazil and Canada (at 9% and 30% respectively)<sup>43</sup>.

<sup>43</sup> 3G connections per 100 population as a proportion of mobile connections per 100 population.  
Source: Ofcom / EDATE / Industry data



**Figure 5.18 Share of internet traffic on other devices**



Source: comScore Device Essentials, May 2011

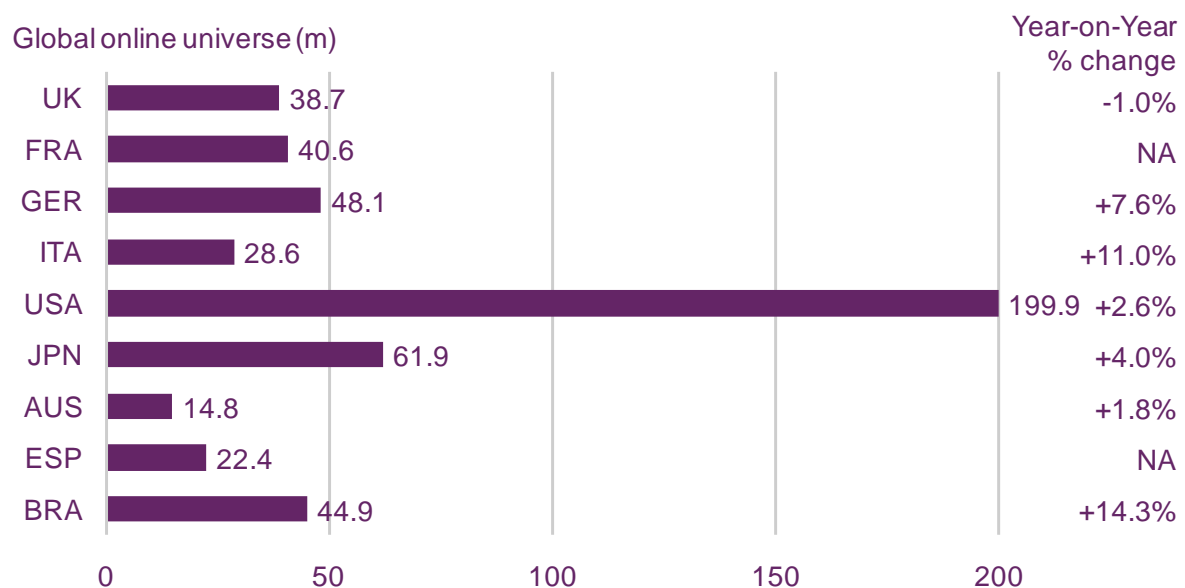
## 5.3 Internet content and consumption

### 5.3.1 Online audiences

#### Growth in internet users stalled in the UK in 2010-11

Based on data collected by internet measurement company Nielsen, the total internet audience (using a computer) across the nine countries for which we have data increased by just 2.4% between July 2010 and July 2011 (up by 12 million to 500 million across the nine countries). Audience levels have remained relatively flat with minor seasonal changes in the UK, the US, Japan and Australia. In contrast Italy (up 11%), Germany (up 8%), and Brazil (up 14%) experienced significant growth in the number of people online in the year to July 2011.

**Figure 5.19 Global online universe, July 2011**



Source: Nielsen, July 2011 and July 2010 (internet applications included, home & work)

Note: Due to a change in methodology in January 2011 online universe figures are incomparable for Spain between July 2010 and July 2011. Year-on-year comparisons for France are not applicable because of an anonymous high data point.

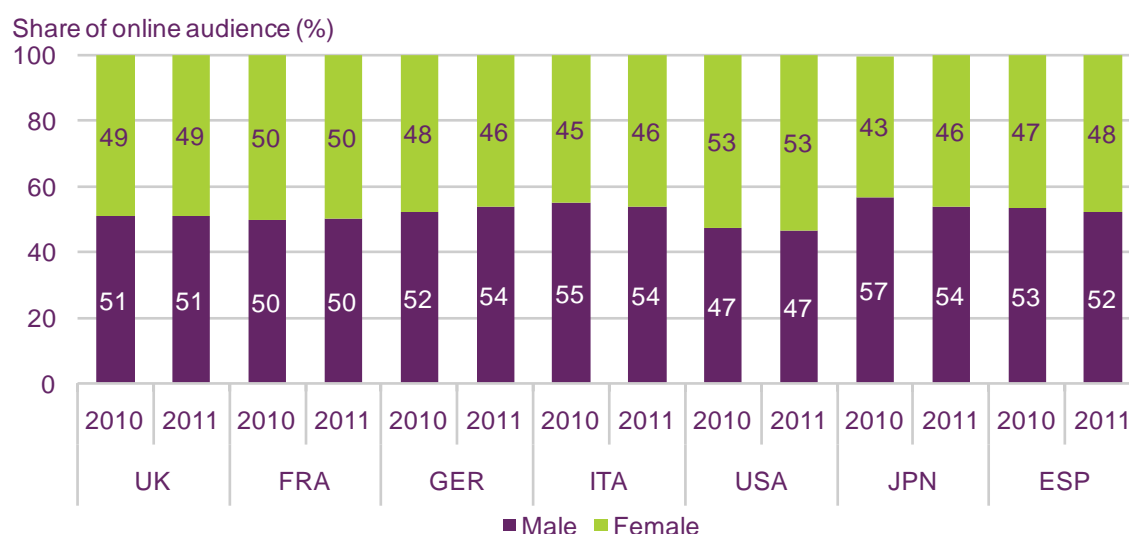
#### The US is the only country to have more women than men online

According to Nielsen, in August 2011 the only one of our comparator countries to have a greater proportion of women than men online was the US (53:47). There was an approximately even split between women and men in the UK (49:51) and France (50:50), while in Spain the gender balance was marginally in favour of men (48:52). The greatest differences between male and female online populations were in Germany, Italy, and Japan where 54% of the unique online audiences were male.

The gender split of unique online audiences between August 2010 and August 2011 has remained similar in most of our comparator countries, with no change in the UK, France and the US, and only a one or two percentage point change in Spain, Italy and Germany. Japan saw the greatest shift in gender split, at three percentage points, as the online audience

came closer to, yet remained a significant distance from, the population gender split of 48% men to 52% women<sup>44</sup>.

**Figure 5.20 Unique online audience, by gender: August 2010 and August 2011**



Source: Nielsen, August 2010 and August 2011, home and work panel, applications included.

### The US has the highest proportion of internet users aged 65 and over

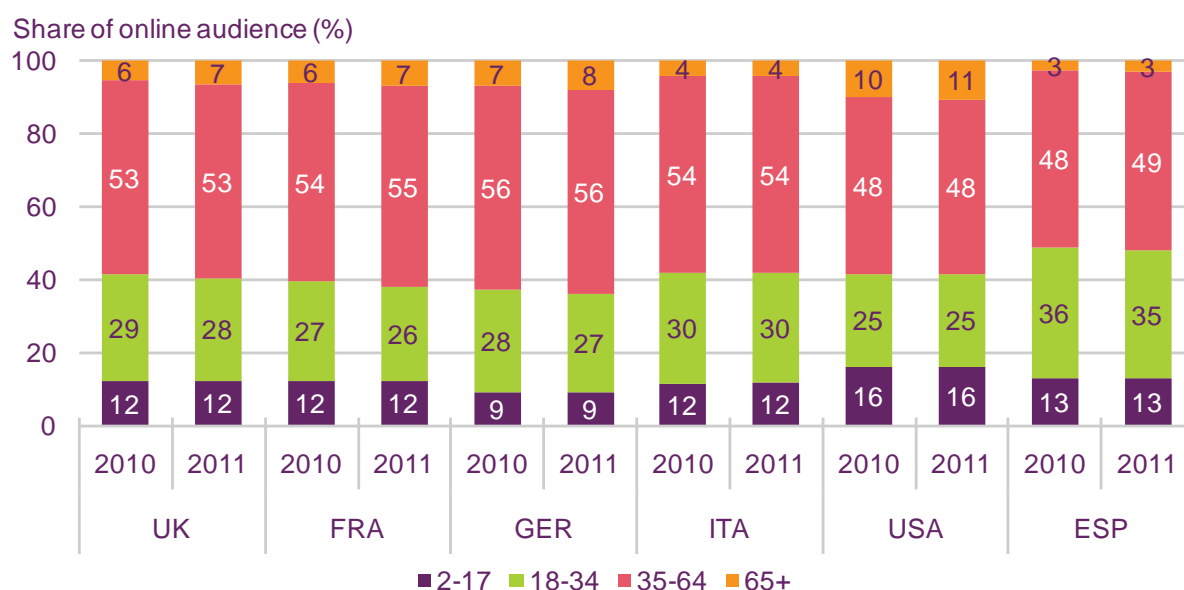
In the US 11% of the online audience was aged 65 and over in August 2011 – the highest proportion of any of our comparator countries where data were available, and despite the US proportion of this demographic being the smallest (13%)<sup>45</sup> among the comparator countries featured in Figure 5.21. Spain and Italy had the lowest proportion of over-65s among their online audiences, at 3% and 4% respectively, while France and the UK had 7%, and Germany 8%.

It should be noted that the data in Figure 5.21 will partly reflect the differing age profiles of the populations in each country.

<sup>44</sup> <https://www.cia.gov/library/publications/the-world-factbook/fields/2018.html>

<sup>45</sup> <https://www.cia.gov/library/publications/the-world-factbook/fields/2010.html>

**Figure 5.21 Unique online audience, by age: August 2010 and August 2011**



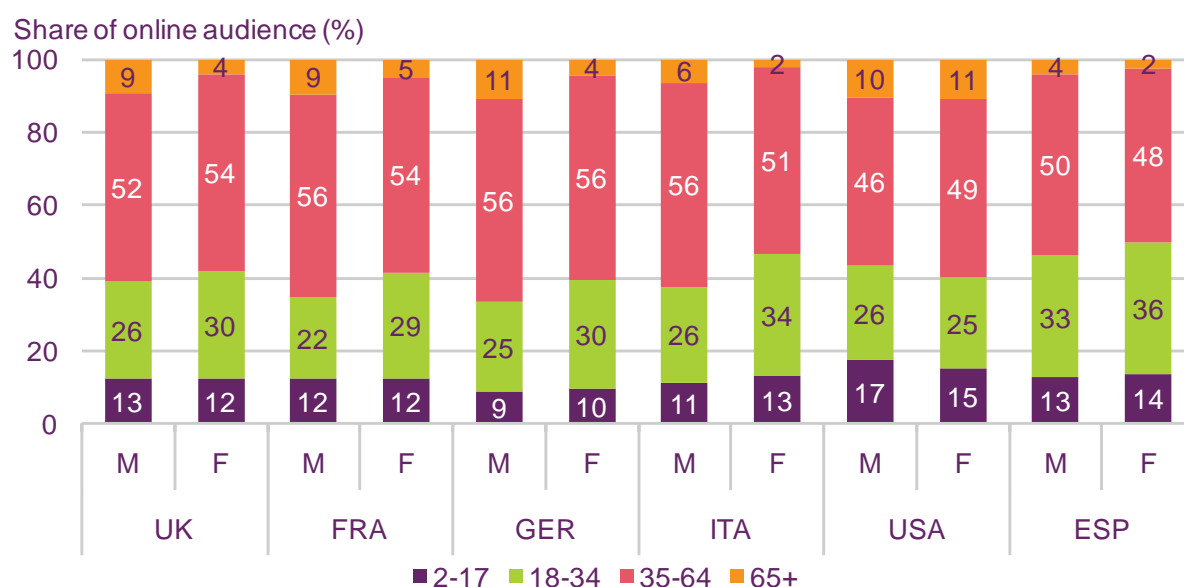
Source: Nielsen, August 2010 and August 2011, home and work panel, applications included.

### In most countries male internet users are significantly older than female internet users

Across all but one of the comparator countries for which we have data, there were more than twice the proportion of men aged over 65 than the proportion of women aged over 65 using the internet in August 2011. The US bucked the trend, where over-65s accounted for 11% of the total female online audience, but just 10% of the total male online audience.

Conversely, 18-34 year olds account for a higher proportion of the female online audience than the male online audience in all countries for which we have data; in Italy, 18-34s account for 34% of the total female online audience, but just 26% of the male online audience.

**Figure 5.22 Unique online audiences, by age and gender: August 2011**



Source: Nielsen, August 2011, home and work panel, applications included.

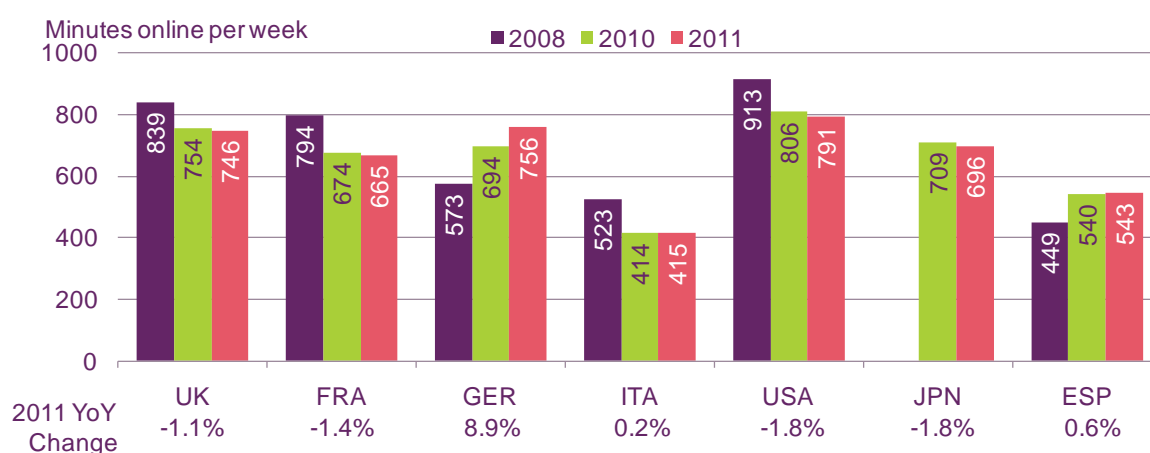
## Average time spent online by PC users fell in most countries between 2008 and 2011

Average number of minutes spent online per week (on a computer) declined marginally for most of the countries for which we have data. Internet users in the UK spent an average of 12 hours 26 minutes online each week in August 2011, eight minutes less than a year previously. Among the countries for which we have data, internet users in the US spent the most time online, averaging 13h 11m a week in August 2011; and internet users in Italy spent the least amount of time online, averaging 6h 55m a week.

Germany was the only country where average time online went up significantly between August 2010 and August 2011, with average time online increasing by 60 minutes to 12 hours 36 minutes a week (an 8.9% increase).

It should be noted that the data in Figure 5.23 only include time spent on the internet using a computer. Internet use on mobile phone and tablet devices has increased significantly, and some of this use may be substitutional for time spent on the internet using a computer.

**Figure 5.23 Average number of minutes spent online per week**



Source: Nielsen, August 2008, 2010 and 2011, home and work panels, applications included.

Note: 2008 data unavailable for Japan.

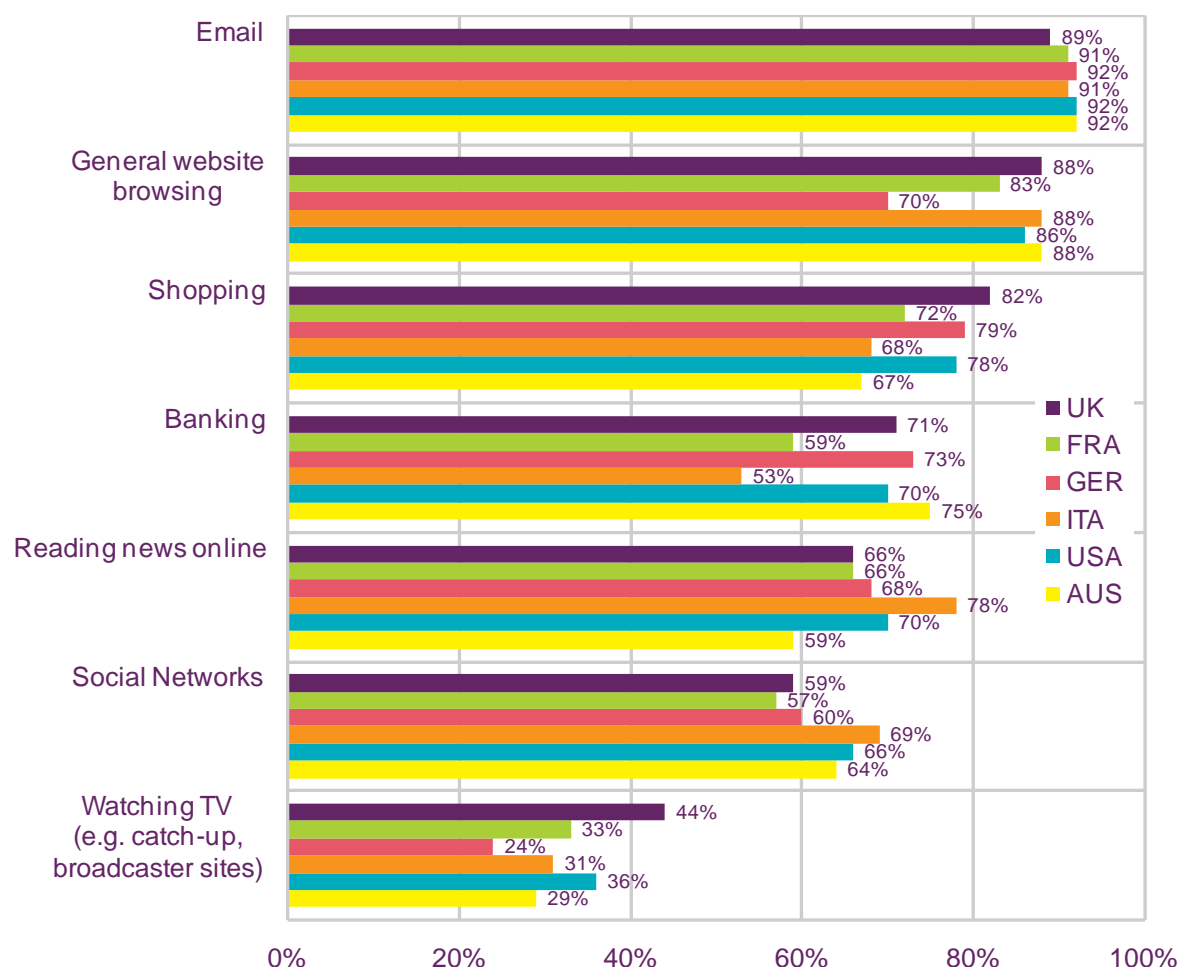
### 5.3.2 Activity and behaviour

#### So what are we doing online?

Our research into internet users in six countries provides a detailed overview of what services consumers use their home internet connection for (Figure 5.24 and Figure 5.25). There are similarities between consumers in most countries, with email and “general website browsing” generally the most popular two uses of the internet. However, there are also some significant differences.

A higher proportion of consumers in the UK used their internet connection for shopping (82% of internet users) and watching TV programmes (44% of internet users) than in the other six countries (Figure 5.24), but had lower-than-average use of instant messaging (36%), making voice calls (VoIP) (19%) and uploading video (13%) (Figure 5.25)

**Figure 5.24 Highlighted use of home internet connection**



Source : Ofcom consumer research, October 2011.

Base: All those who use the internet, UK=1015, France=1014, Germany=1014, Italy=1045, USA=1002, Australia=1012

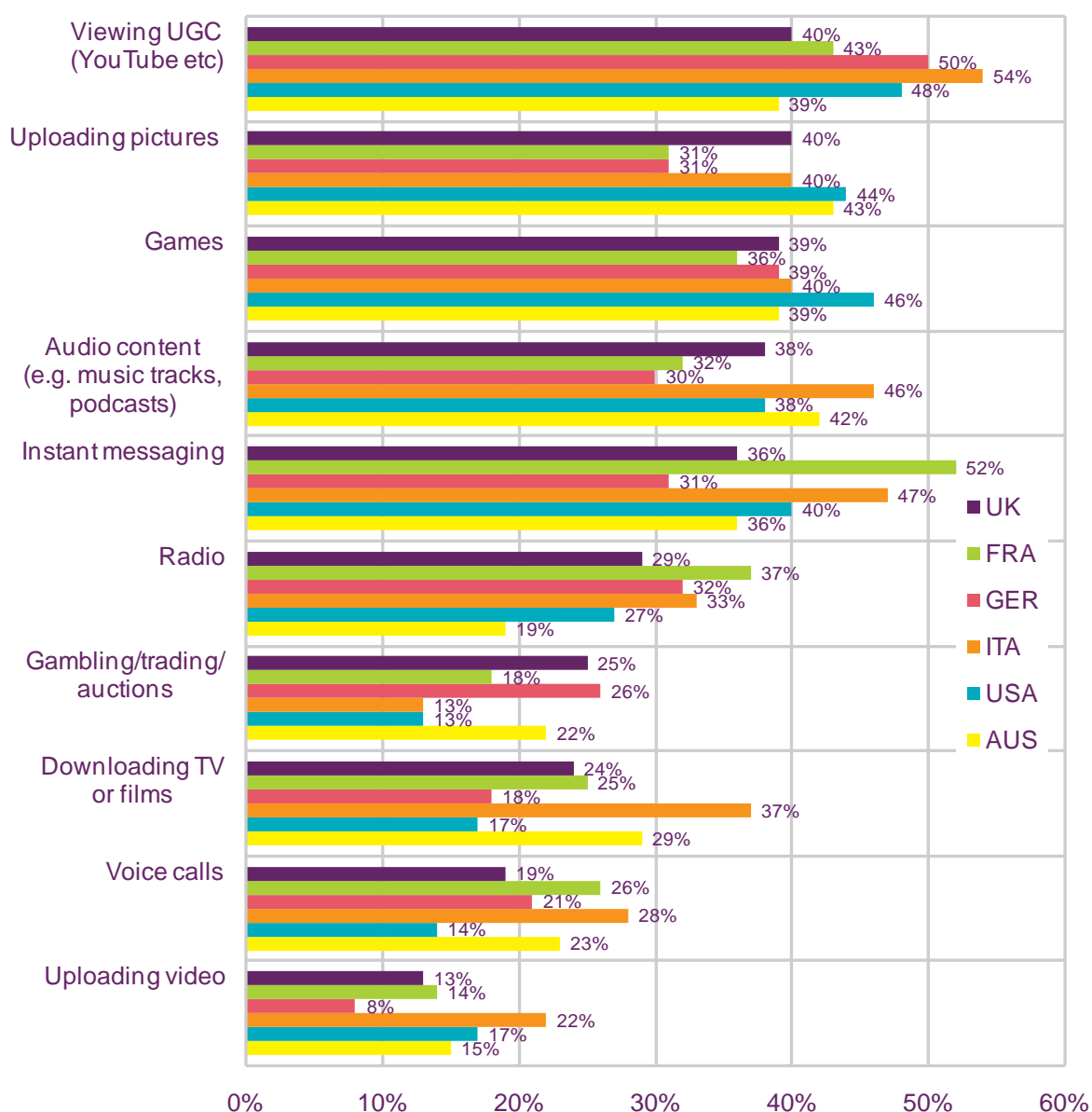
Q. Which, if any, of the following activities do you use your home internet connection for?

Other findings include:

- Use of instant messaging was greatest in France (52% of all internet users), but least popular in Germany (31%).
- In all countries more than half of all internet users claimed to read news online – the highest proportion was in Italy (78%).
- Internet users in Italy also claimed the highest use of social networks (69%), watching user-generated content (54%), listening to audio content (46%), downloading TV or films (37%), making voice calls (28%) and uploading video (22%).
- Consumers in Italy had lower use of online banking (53%) than the other six countries. The highest levels of use were in Australia (75%) and Germany (73%).

Social networking is discussed in more depth in Section 1.5 above, as is watching TV online in Section 3.1.5. See Section 5.3.4 below for a brief analysis of social networking among internet users, Section 5.3.5 for analysis of use of the internet for shopping, Section 5.3.6 for use of online banking and Section 5.3.7 for an overview of online newspapers.

**Figure 5.25 Use of home internet connection**



Source: Ofcom consumer research, October 2011.

Base: All those who use the internet, UK=1015, France=1014, Germany=1014, Italy=1045, USA=1002, Australia=1012

Q. Which, if any, of the following activities do you use your home internet connection for?

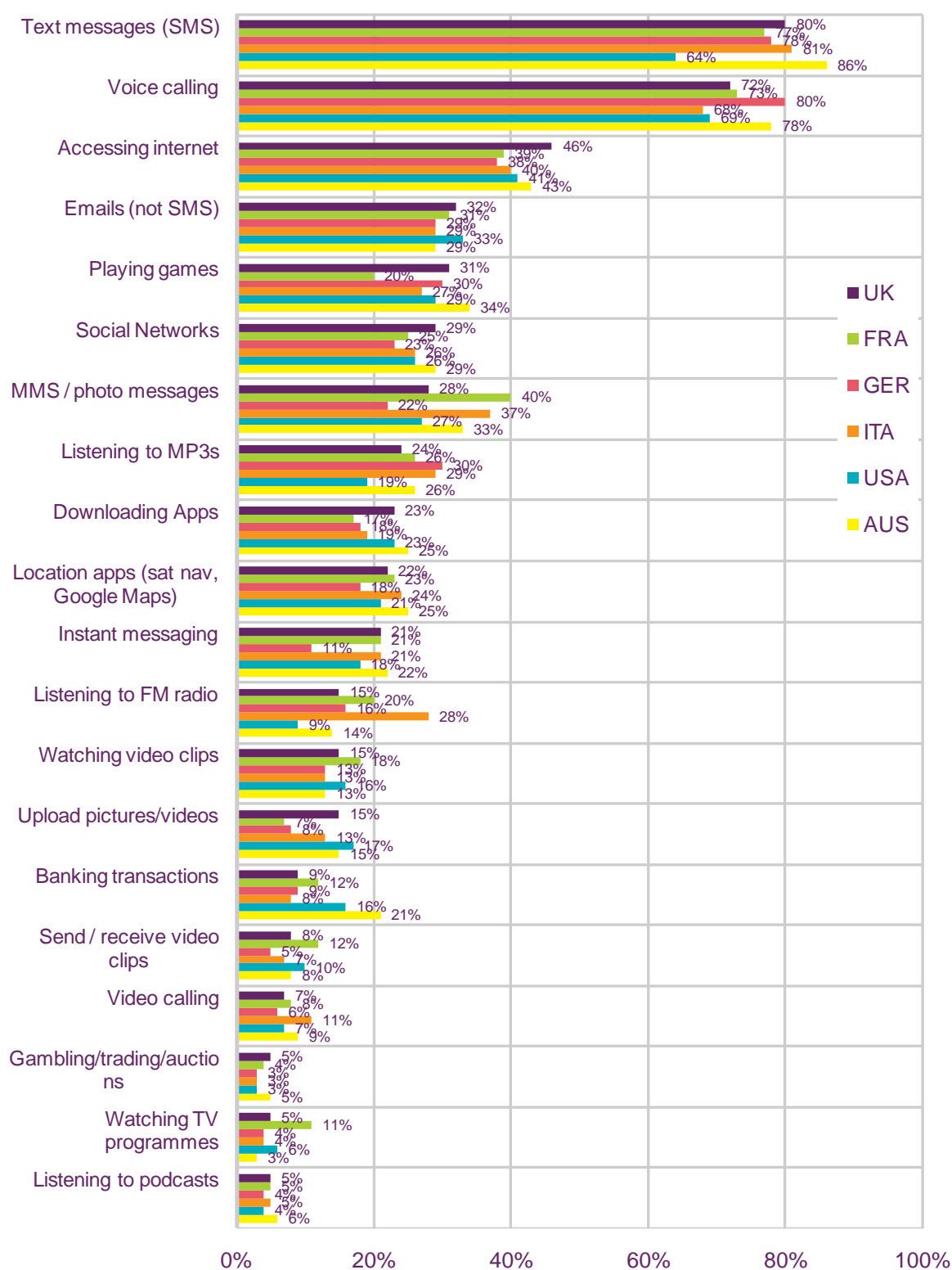
### ...and on mobile?

Figure 5.26 details the result from our survey of internet users in relation to what they use their mobile phone for. In all countries, internet-enabled services have much lower use than voice and SMS. However, more than a third of respondents in all countries use their mobile phones for internet access, while between 17% and 25% download applications.

Use of internet services on mobile phones is discussed in detail in Section 5.1.2 above. UK consumers were more likely to access the internet on their phone than were consumers in other countries surveyed, and were comparatively high users of email (32%), social networks (29%) and instant messaging (21%) on mobile phones. It is notable that use of banking services on mobile phones is much lower in all countries than on the fixed internet – for example, 71% of internet users in the UK claimed to use their home internet connection

for online banking, but only 9% claimed to use their mobile phone to do this (see Figure 5.43 below).

**Figure 5.26 Mobile phone uses, by country**



Source: Ofcom research, October 2011.

Base: All those who use the internet, UK=929, France=914, Germany=945, Italy=989, USA=902, Australia=957.

Q. Which, if any, of the following activities do you use your smartphone / mobile phone for?



ComScore's *MobiLens* survey provides an alternative measure of the use of mobile phones across some of our comparator countries, based on a representative sample of mobile subscribers aged 13 and above (Ofcom's research was among internet users aged 18 and above). Its data find that data and internet services on mobile phones in general have higher take-up in the UK than in other comparator countries. Mobile users in the UK are more likely to send text messages, use an application, access social networking sites/blogs and play games than their counterparts in France, Germany, Italy, the US and Spain (Figure 5.27).

**Figure 5.27 Mobile behaviour in the US and Europe, September 2011**

% of mobile subscribers	UK	FRA	GER	ITA	USA	ESP
Sent Text Message	91%	84%	80%	80%	70%	80%
Used Browser	47%	35%	28%	31%	43%	35%
Used Application (excl. pre-installed)	45%	32%	30%	31%	43%	35%
Accessed Social Networking Site or Blog	35%	22%	17%	21%	32%	23%
Played Games	34%	16%	25%	30%	29%	29%
Listened to Music	26%	23%	26%	24%	21%	33%

Source: comScore *MobiLens*, three-month average ending September 2011, ages 13+

Note: *MobiLens* data are derived from an intelligent online survey of a nationally representative sample of mobile subscribers age 13 and above. Data on mobile phone use refer to a respondent's primary mobile phone and do not include data related to a respondent's secondary device.

### 5.3.3 Web brands and search

#### Where are we going on the web?

While devices play an important role in how consumers access the web, the sites they visit and how they navigate to them help to determine the type of content they consume. Figure 5.28 shows the ten most-visited websites (in terms of number of users) for seven of our comparator countries. Search engines remain key brands on the web, and the number-one spot has not changed across our comparator countries since 2008. However, Facebook has risen to second place in five of our comparator countries - above alternative search engines Bing and Yahoo!, indicating both the growth of social networking and the strength of Facebook in the social networking category. Online video site YouTube continues to grow in strength, reaching third place in Germany and Italy, but is only sixth in the UK, behind the BBC's iPlayer service.

Changes within the top ten can indicate how dynamic are the tastes and habits of the respective country's internet users. The UK has the most changed positions within the top ten, while Spain has the fewest. Nevertheless, despite Spain's static top eight websites, positions nine and ten have been taken by new entrants, including social networking site Tuenti, which is emerging as a competitor to Facebook in Spain. Japan is also notable for having five Japanese brands in the top ten, whereas in all other countries the top ten is dominated by US-based internet giants.

**Figure 5.28 Top ten website brands, by country**

	UK		FRA		GER		ITA		USA		JPN		ESP
1	Google		Google		Google		Google		Google		Yahoo!		Google
2	Facebook	+1	Facebook	+1	Facebook	+7	Facebook		Facebook	+1	Google		MSN/WindowsLive/Bing
3	MSN/WindowsLive/Bing	-1	MSN/WindowsLive/Bing	-1	YouTube	+2	YouTube	+1	Yahoo!	-1	FC2		Facebook
4	BBC	+1	Microsoft		Microsoft	-1	MSN/WindowsLive/Bing	-1	MSN/WindowsLive/Bing		YouTube	+4	YouTube
5	Yahoo!	-1	YouTube	+1	eBay	-3	Virgilio		YouTube		Rakuten	-1	Microsoft
6	YouTube	+1	Orange	-1	Amazon	+1	Yahoo!		Microsoft		Wikipedia		Yahoo!
7	Amazon	+2	Wikipedia	+3	MSN/WindowsLive/Bing	-3	Libero	+1	AOL Media Network		goo		Blogger
8	eBay	-2	Yahoo!	-1	Wikipedia	-2	Microsoft	-1	Wikipedia	+2	Microsoft	-3	Wikipedia
9	Microsoft	-1	Free	-1	T-Online	-1	Wikipedia		Apple	-1	Ameba	+1	Tuenti N
10	Wikipedia		PagesJaunes	-1	RTL Network		Blogger		Ask Search Network	-1	livedoor	N	Elmundo.es N

Source: Nielsen, August 2010.

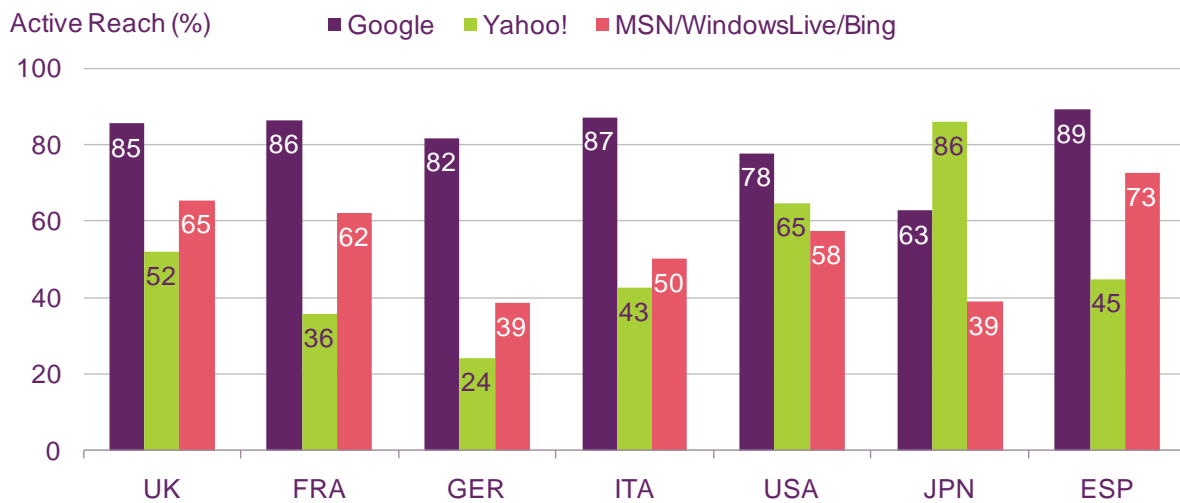
Note: Coloured font indicates brand appears more than once. Includes all internet applications. '+' or '-' denotes change in rank since 2010 ICMR publication, and 'N' denotes a new entrant to the top 10.

### How are we searching for content?

Figure 5.29 clearly shows that Google is the most popular search engine among our comparator countries with the exception of Japan. However, the competition between Google, Microsoft's Bing and Yahoo! is not consistent everywhere. The closest competition between the three search engines is in the US, where only 20 percentage points separate first place Google (78% active reach) from third place Bing (58% active reach). The greatest disparity is in Germany, where Google has 82% active reach while Yahoo! and Bing have only 24% and 39% active reach respectively.

Yahoo! is the most popular search engine in Japan where Yahoo! Japan is a joint venture between the American internet company Yahoo! and Japanese internet company Softbank. In July 2010 Yahoo! Japan announced that it would use Google technology to power its internet search engine and search advertising platform. This is the opposite direction of Yahoo! Inc., which partnered with Microsoft to cede control of its search engine in exchange for a shared search advertising inventory. The partnership, *Search Alliance*, was announced in July 2009 and cleared US and European regulators in February 2010.

**Figure 5.29 Active reach of search engines**



Source: Nielsen, *Search Brands per Country, August 2011, home and work panel, including applications.*

### And what are we looking for?

In all of our comparator countries except Japan, Brazil, India and China, a social network was the most searched-for term on Google in the year to August 2011 (Figure 5.30). Only in Japan and India did a social network not feature in the top three most-searched-for terms on Google. However, social networks were not completely without influence in India; “www.facebook.com” was the search term with the largest proportional increase over the year.

The terms most searched for on Google correlate closely with the web brands with the largest active reach (see Figure 5.28). This may reflect the way internet users navigate the web: using a search term and Google as a shortcut to a website’s address. This is particularly the case in Germany, where the search term with the largest increase was “facebook.de”, suggesting that users confuse the search box of Google’s website with the address bar of their browser.

**Figure 5.30 Most-searched terms on Google between August 2010 and August 2011**

Country	1 <sup>ST</sup>	2 <sup>ND</sup>	3 <sup>RD</sup>	Largest increase
UK	facebook	bbc	youtube	fb
FRA	facebook	youtube	bon coin	dpstream
GER	facebook	youtube	berlin	facebook.de
ITA	facebook	youtube	libero	fb
USA	facebook	you	youtube	minecraft
CAN	facebook	youtube	you	minecraft
JPN	yahoo	youtube	画像 <sup>1</sup>	東京電力 <sup>2</sup>
AUS	facebook	youtube	google	minecraft
ESP	facebook	tuenti	youtube	twitter
NED	hyves	youtube	facebook	ipad
SWE	facebook	youtube	google	minecraft
IRL	facebook	youtube	facebook login	donedeal
POL	nk	gry	allegro	nk.pl
BRA	jogos	orkut	youtube	facebook
RUS	одноклассники <sup>3</sup>	контакте <sup>4</sup>	в контакте <sup>5</sup>	гугл <sup>6</sup>
IND	in	download	india	www.facebook.com
CHN	qq	人人 <sup>7</sup>	游戏 <sup>8</sup>	pptv

Source: Google Insights Search Tool, August 2010 to August 2011.

Notes: 1. Image 2. TEPCO 3. classmates (odnoklassniki.ru) 4. Contact (vkontakte.ru) 5. In contact (vkontakte.ru) 6. Google 7. Everyone (renren.com) 8. Games

### 5.3.4 Social Networking

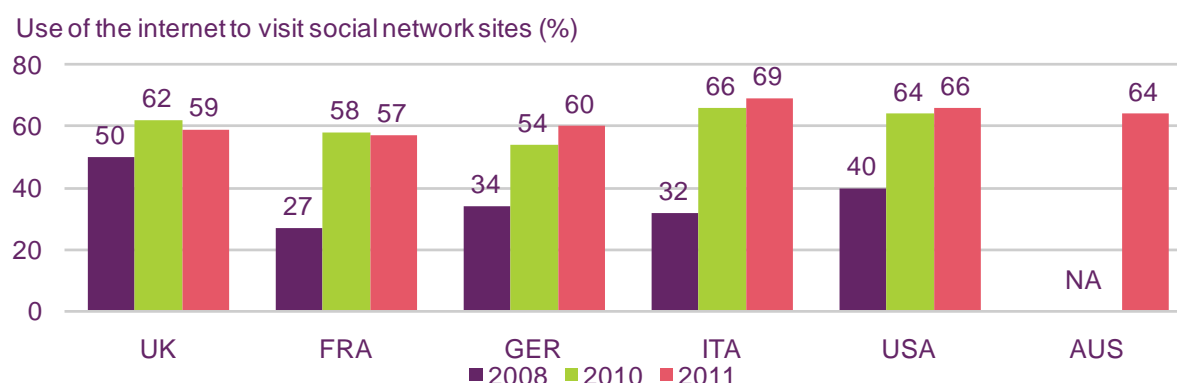
#### Social networking is a majority activity among all comparator countries

Over the past five years social networking has spread across the world to become a significant, if not the leading, activity of our time online. Social networks are leading brands on the web (Figure 5.28) and are among the most searched-for terms online (Figure 5.30). Social networking is discussed more fully in Section 1.5 of this report, particularly in the context of the attitudes and behaviours of social networkers. This section will briefly summarise the take-up of social networking among internet and mobile users across our comparator countries and demographics.

Consumer research conducted by Ofcom shows that access to social networking sites from a home internet connection continues to grow among most of our comparator countries (Figure 5.31). Italy has the greatest proportion of internet users using their home connection to access social networking sites (69%) followed by the US (66%) and Australia (64%).

In the UK and France the proportion of internet users visiting social networking sites appears to have declined between 2010 and 2011, but neither drop is statistically significant. Analysis elsewhere in this chapter shows that social networks remain very popular in the UK and France; the apparent decline could be explained by the increased adoption of the internet among demographics less likely to visit social networking sites, or by substituted access by other means (see mobile social networking below).

**Figure 5.31 Use of home internet connection to visit social networking sites**



Source: Ofcom consumer research, October 2011.

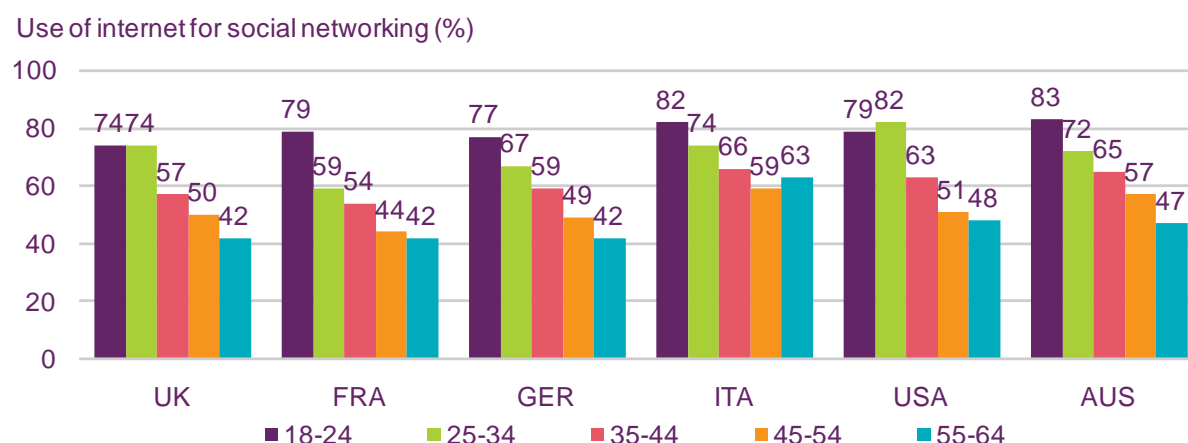
Base: All those who use the internet, UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012.

Q. Which, if any, of the following activities do you use your home internet connection for?

### Social networking no longer just an activity of the young

In all markets surveyed, except the US and the UK, the greatest use of a home internet connection for social networking was among 18 to 24 year olds. In the UK, use among 18 to 24 year olds equalled that of 25 to 34 year olds (74%), while in the US use among 25 to 34 year olds was greatest (82%). The prevalence of social networking among 25 to 34 year olds in the US is perhaps partly a result of Facebook originally being available only to those with a US educational email address (.edu) before 2006, and the first iterations of US networks such as MySpace and Bebo targeting younger audiences. In Italy, 55 to 64 year olds were the only group to outnumber a younger group.

**Figure 5.32 Use of home internet connection for social networking, by age**



Source: Ofcom consumer research, October 2011.

Base: All those who use the internet, UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012

Q. Which, if any, of the following activities do you use your home internet connection for?

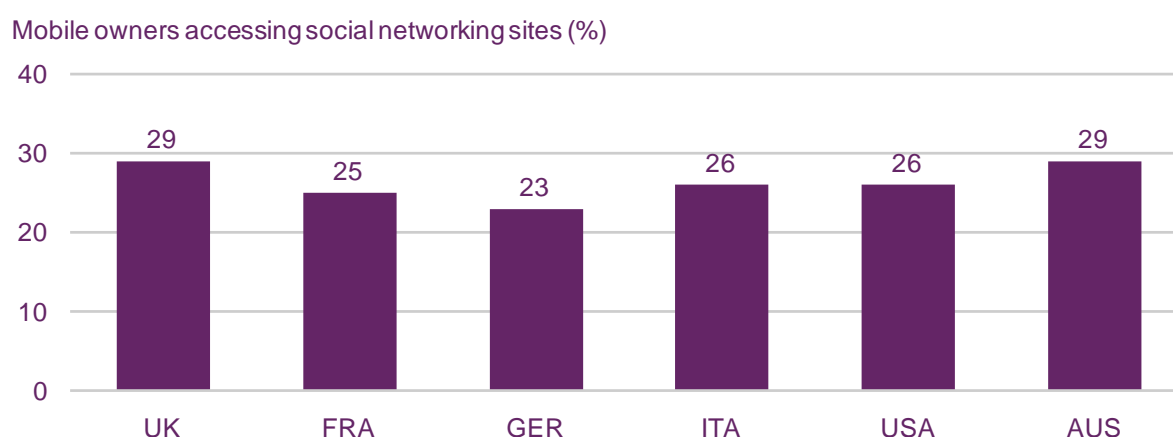
### Mobile social networking highest among UK and Australian mobile subscribers

As outlined in Section 5.1.2 above, the growth of the mobile internet continues to gather pace. Smartphones have been a key driver of this growth and similarly appear to be a driver of the growth of mobile social networking. Social networking applications on smartphones

allow subscribers easily to access social networks as well as upload photos and videos to them. And handset manufacturers have, in 2011, taken steps to further integrate their phones with social networks. At the 2011 Mobile World Congress HTC announced the launch of the HTC Salsa and HTC ChaCha Android phones with a dedicated one-touch access button to Facebook<sup>46</sup>. Operating system manufacturers have acted similarly: Apple's iOS 5 features Twitter integration, allowing users to easily share photos, YouTube videos, web pages and locations<sup>47</sup>; and Microsoft's Windows Phone 7 integrates SMS, Facebook, LinkedIn, Twitter and instant messaging into unified conversation threads.

In the context of the growing partnership between smartphones and mobile social networking it is unsurprising to see the UK and Australian markets, where smartphone sales have been strongest, have the highest proportion of mobile subscribers accessing social network on their phones (29%). The US and Italy have the next highest, with one in four mobile subscribers accessing social networking sites (26%).

**Figure 5.33 Use of mobile phones for social networking**



Source: Ofcom consumer research, October 2011.

Base: All those who own a smartphone and/or a mobile phone, UK=957, France=914, Germany=945, Italy=989, US=902, Australia=957

Q. Which, if any, of the following activities do you use your mobile phone for?

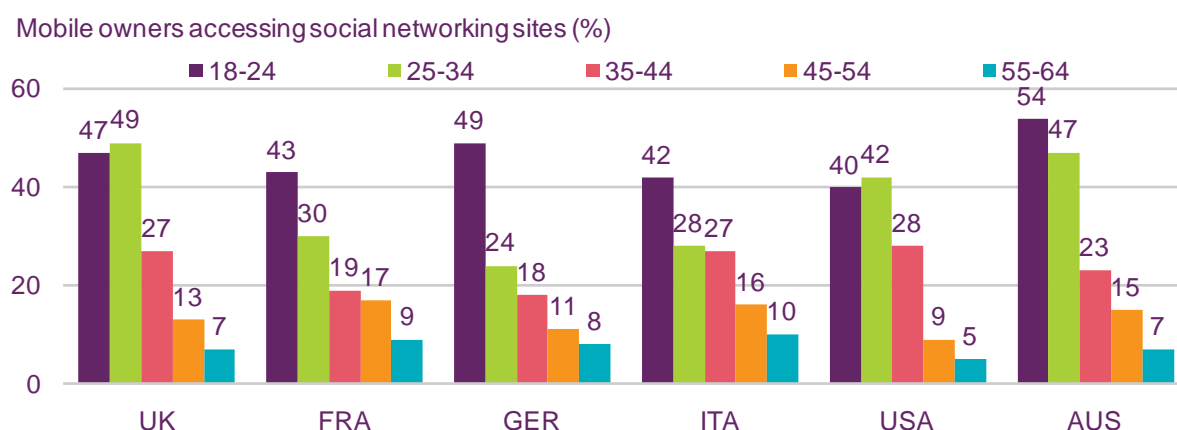
### **Younger mobile subscribers are much more likely to access social networks on their phones**

More than half of all Australian 18-24 year old mobile subscribers use their phone to access social networks (54%). This is also the most popular demographic for mobile social networking in France, Germany, and Italy. However, echoing the pattern of social networking on a home internet connection (see Figure 5.32), the proportion of mobile subscribers using their phone to access social networks is highest in the UK (49%) and the US (42%) among 25-34 year olds.

<sup>46</sup> <http://www.htc.com/www/about/#news>

<sup>47</sup> <http://www.apple.com/ios/features.html#twitter>

**Figure 5.34 Use of mobile phones for social networking, by age**



Source: Ofcom consumer research, October 2011.

Base: All those who own a smartphone and/or a mobile phone, UK=929, France=914, Germany=945, Italy=989, US=902, Australia=957

Q. Which, if any, of the following activities do you use your mobile phone for?

### 5.3.5 Retail

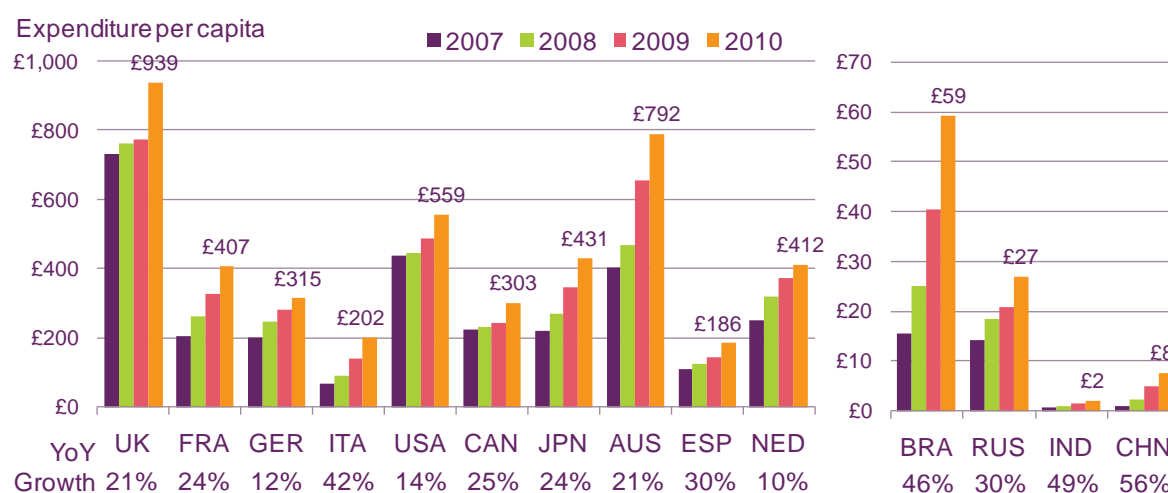
#### The value of business to consumer e-commerce is almost £1000 per person in the UK

Our research found that more than two-thirds of internet users in the UK, France, Germany, Italy, the US, Japan and Australia use their home internet connection for online shopping. At 82% in the UK, this is a higher proportion than for any other internet use other than email and “general website browsing” (Figure 5.24). Retail sites Amazon and eBay appear in the top ten web brands in both the UK and Germany (Figure 5.28), and classified websites leboncoin.fr and donedeal.ie, and auction site allegro.pl appear among the most-searched-for terms on Google in France, Ireland and Poland respectively (Figure 5.30). In the analysis below we investigate in more detail how the web has changed the way we shop.

Figures from the Interactive Media in Retail Group (IMRG) show that the value of business to consumer (B2C) e-commerce per person is higher in the UK than that of any of the comparator countries for which we have data. The value of B2C e-commerce per head was £939 in 2010, up 21% from £773 in 2009. Australia and the US had the greatest values after the UK, growing 21% to £792 and 14% to £559 respectively.

The BRIC countries experienced the greatest growth in B2C e-commerce per head in 2010, but from much lower bases. Brazil leads the BRIC nations in value with £59 per head, followed by Russia (£27), China (£8) and India (£2).

**Figure 5.35 Value of B2C e-commerce per head**



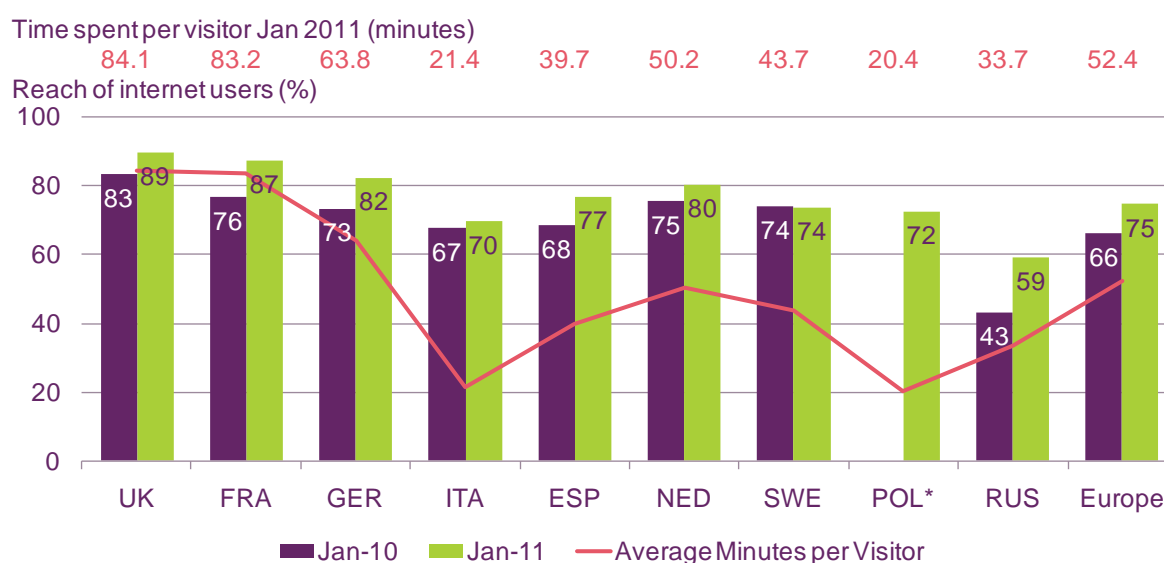
Source: IMRG B2C Global e-Commerce Overview 2011 Update 01, June 2011

Notes: Values converted from Euros to Sterling (£1 = €1.167382). Population figures from US Census Bureau (end of year estimates from mid-year values)

### UK users spend more time shopping online than any other country in Europe

According to data from online measurement company ComScore, in January 2011 89% of internet users in the UK visited a retail website, each user spending on average 84 minutes on these websites each month (Figure 5.36). France followed close behind, with 87% of internet users visiting a retail website, spending on average 83 minutes in the month. The fastest-growing market for the reach of retail websites was Russia (59% of internet users), gaining 16 percentage points in the year to January 2011. Despite such growth, the reach of Russian retail websites remained the lowest among the comparator countries for which we have data, followed by Italy (70% reach) and Poland (72%). Internet users in Poland recorded the lowest average amount of time spent on retail websites (20 minutes).

**Figure 5.36 Average minutes per visitor, and reach of retail websites**



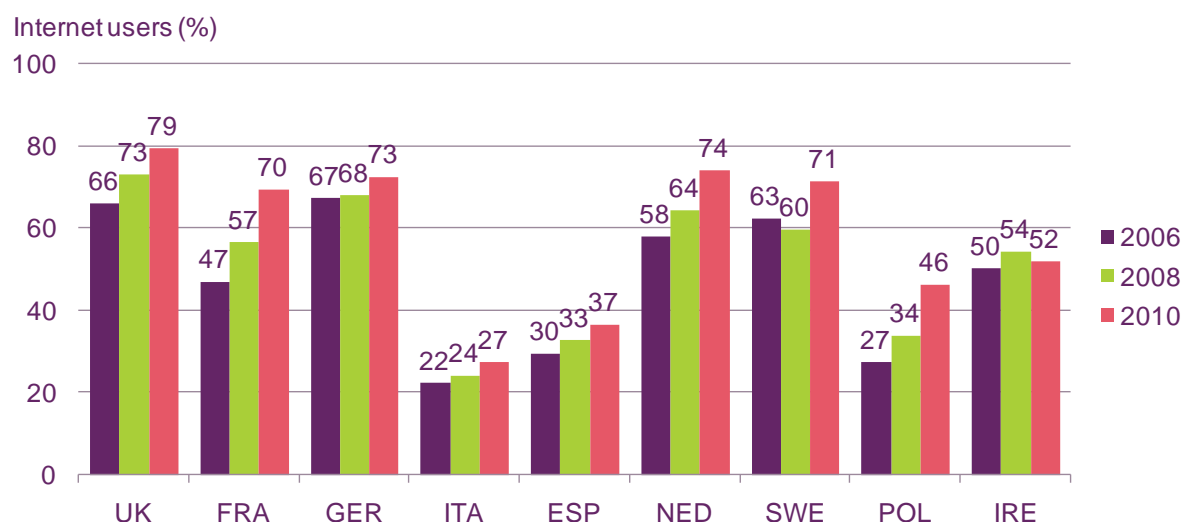
Source: comScore Media Metrix, January 2011, user aged 15+, home and work locations.



## Four in five internet users in the UK purchased online in 2010, while consumers in Italy and Spain prefer to window-shop

Survey data collected by the European Commission provide insight into online shopping habits across Europe. Four in five internet users (79%) in the UK had ordered goods or services online in 2010, up from 66% in 2006 (Figure 5.37), and more than any other EC country (Denmark was next, with 76% of people claiming to have shopped online). Among our comparator countries, the Netherlands had the next-highest proportion of online shoppers, with 74% of internet users having ordered goods or services online in the past year, followed by Germany (73%) and Sweden (71%). Although the reach of retail websites is only slightly lower than in other countries (see Figure 5.36 above), internet users in Italy (27%) and Spain (37%) were significantly less likely to buy goods and services online.

**Figure 5.37 Internet users ordering goods or services online**



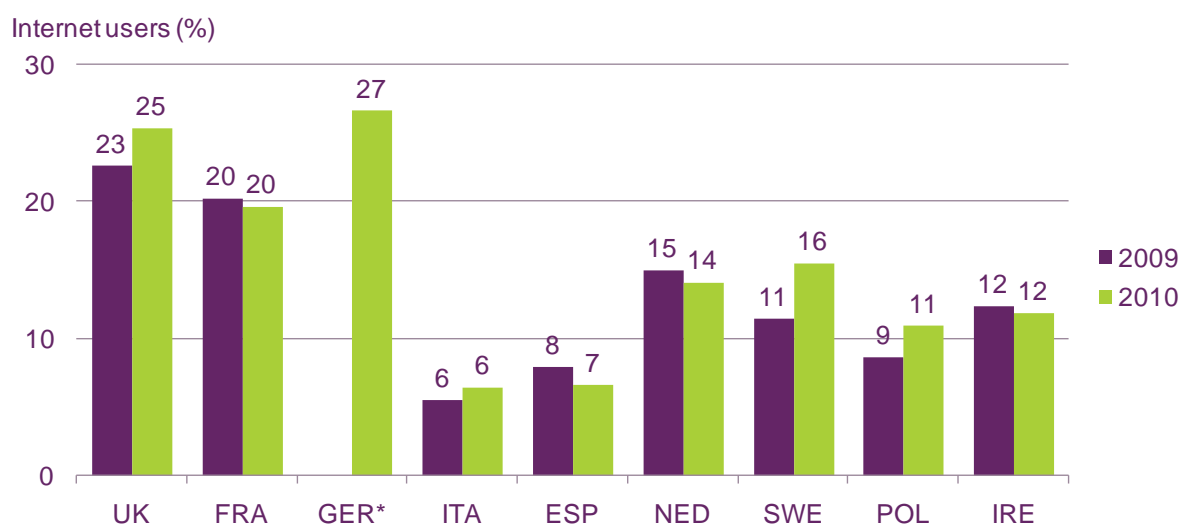
Source: Eurostat - Community survey on ICT use in households and by individuals

Scope: Individuals who used the internet in the last 12 months, aged 16-74, carrying out this activity over the internet in the last year, for private use

## A quarter of internet users in the UK and Germany bought digital goods in 2010

One in four internet users in the UK (25%) and Germany (27%) ordered content or software that were delivered or upgraded online in 2010. Examples of this behaviour include buying an MP3 download or upgrading anti-virus software following a free trial. In the UK and Poland the number of internet users ordering digital goods online rose by two percentage points between 2009 and 2010. The greatest increase was in Sweden, where the number of internet users who bought digital goods rose by five percentage points to 16%. Among the rest of our comparator countries figures remained flat or experienced marginal declines.

**Figure 5.38 Internet users ordering digital goods online**



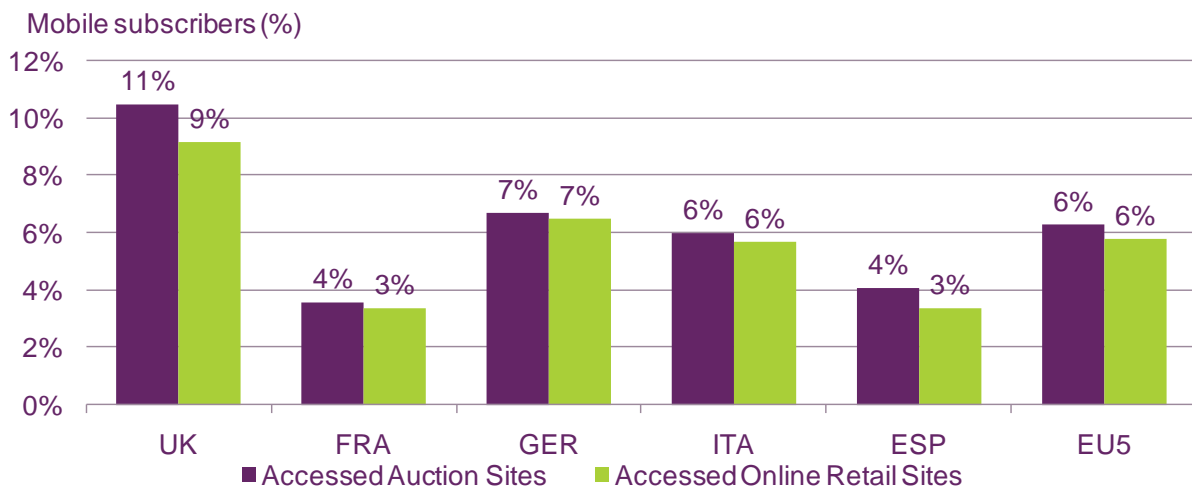
Source: Eurostat - Community survey on ICT use in households and by individuals

Scope: Individuals who used the internet in the last 12 months, aged 16-74, ordering content or software that were delivered or upgraded online in the last year, for private use

### **The UK leads on mobile online shopping but it still remains a minority activity**

Using a mobile phone to visit online auction websites such as eBay, and accessing online retail websites, are still very much minority activities among European mobile subscribers. According to data from comScore, between 3.4% and 6.7% of mobile subscribers in France, Germany, Italy and Spain engaged in either of these mobile retail activities in May 2011. However, mobile subscribers in the UK have been much more receptive to this way of shopping, with 10.5% having visited an auction site and 9.2% an online retail site. Across our comparator countries, penetration levels of auction sites on mobile phones is slightly greater than online retail sites. The nature of auctions can require bidders to check the status of a lot wherever they are, or to make another bid before the auction ends. As such, auction sites are particularly well suited to mobile use, especially when sites like eBay serve mobile versions of their site to aid navigation.

**Figure 5.39 Mobile retail activity among mobile subscribers in Europe, May 2011**



Source: comScore MobiLens, three-month average ending May 2011, mobile subscribers ages 13+, EU5 is UK, FRA, GER, ITA and ESP

Note: MobiLens data are derived from an intelligent online survey of a nationally representative sample of mobile subscribers age 13 and above. Data on mobile phone use refer to a respondent's primary mobile phone and do not include data related to a respondent's secondary device.

### The Open Graph Protocol

The latest version of the Open Graph Protocol is the third iteration of an evolving concept that Facebook introduced to social networking. Originally, the map of relationships between users and their friends was known as the social graph. Facebook extended the social graph to the open graph by allowing developers to turn web pages into objects which became a part of the social graph. Users could then 'like' these objects (an artist, a venue, a cafe) and receive updates from them.

The third version of the Open Graph Protocol was announced at Facebook's f8 conference in September 2011. Whereas the previous version of the protocol allowed users to connect to any *thing* (any noun), the most recent version allows users to connect in any way to any *thing* (any action). Facebook users can now *listen* to a song, *read* a news story, *watch* a TV programme, or *cook* a recipe.

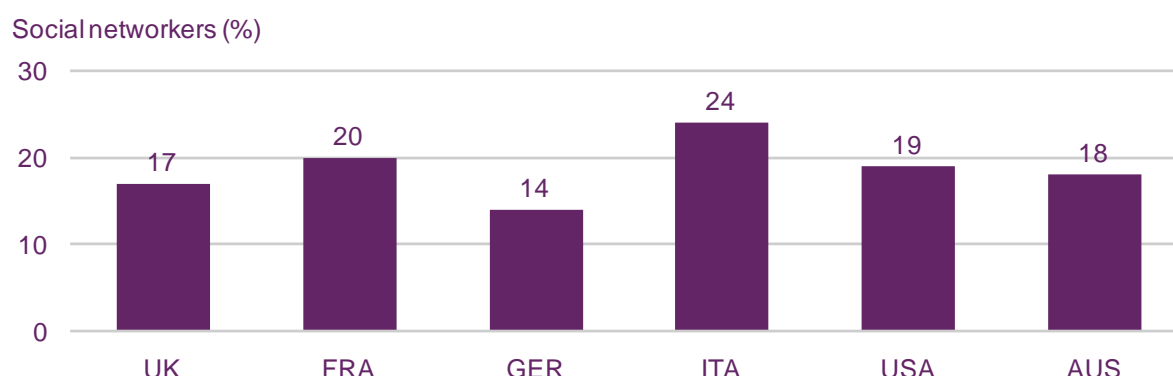
### Influence of social networks on online shopping

Review websites have long been a feature of the online retail experience for web users, and social networking provides a platform on which users can discuss potential purchases and receive feedback from their peers. Figure 5.40 indicates that across the six countries where we commissioned research, a significant proportion of people with a social networking profile claimed to have made a purchase following a recommendation made on a social networking site. Social networking recommendations appear to have the most influence in Italy (where 24% claimed to have made a purchase following a recommendation), and the least influence in Germany (14%).

The concept of social commerce could spread, following Facebook's recent extension of its 'open graph' (see above), making it easier for users to share their experience of online shopping and enabling retailers to find new ways of marketing products and services to online communities. Further impetus could also come from the growth of Twitter, which is popular across a number of our comparator nations (see Section 1.5.4). Social connections on Twitter are not reciprocal; users can 'follow' individuals and receive their updates without

the obligation to share their own. And users of Twitter are more likely to follow individuals who they don't know personally, but with whom they share similar interests. Updates from these connections are a likely source of recommendations for potential purchases.

**Figure 5.40 Peer recommendation of online purchases**



Source: Ofcom consumer research, October 2011.

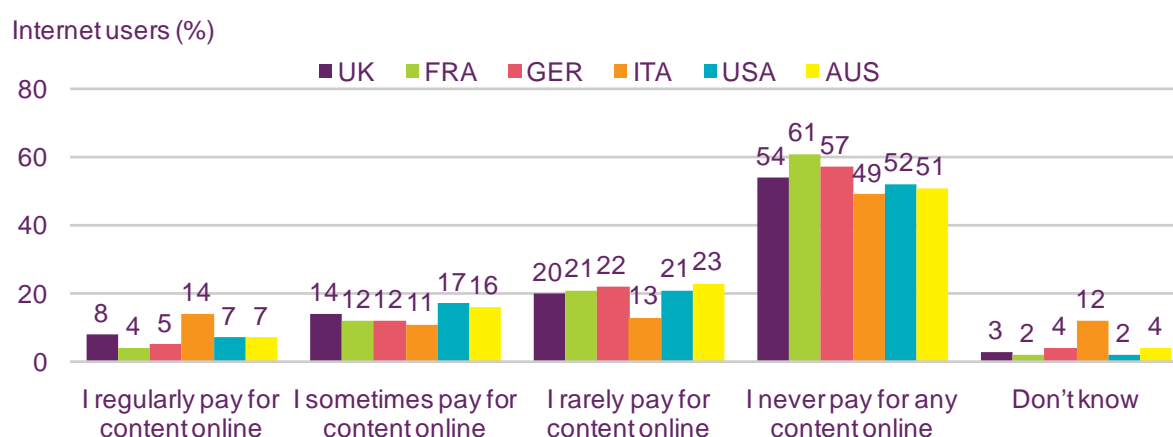
Base: All who have a social networking site profile, UK=715, France=717, Germany=658, Italy=841, US=778, Australia=755.

Q. Have you ever made a purchase following a recommendation from a 'friend / connection' on a social networking site?

### A minority of internet users regularly purchase online content

Despite the widespread consumption of digital media – newspapers, books, films, music – only a minority of internet users in all six countries surveyed said they had ever purchased online content. Consumers in Italy were the most likely to regularly pay for online content (14%). More than four in ten internet users in the UK, the US and Australia claimed to have paid for content online, but only 7% or 8% in each country did so regularly, with even lower levels in France and Germany.

**Figure 5.41 Frequency of purchasing online content**



Source: Ofcom consumer research October 2011.

Base: All those who use the internet, UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012.

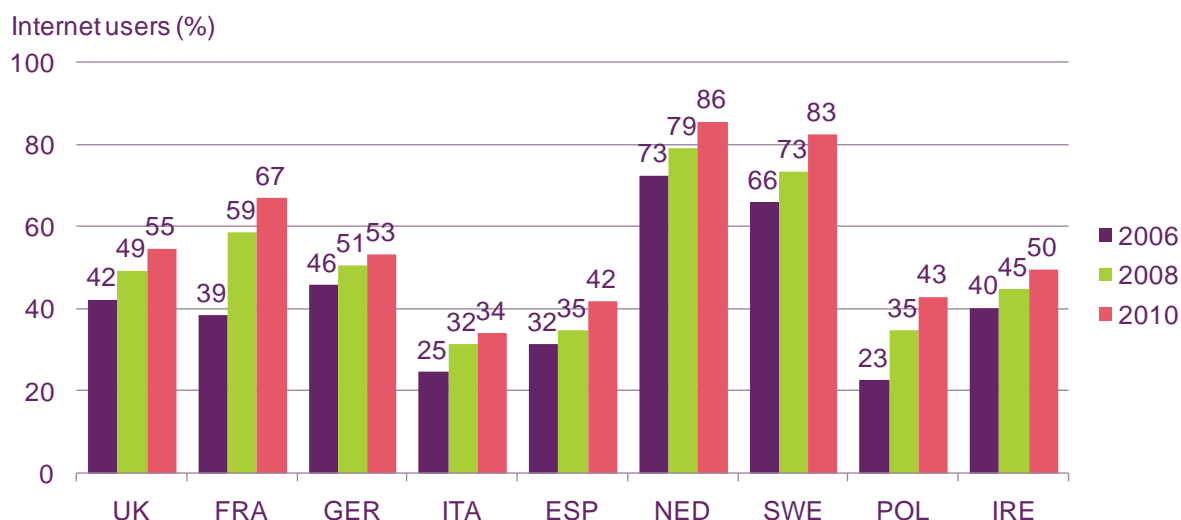
Q14. Which of the following best describes your behaviour with regards to paying for digital content online? Examples of digital content would be newspapers, TV programmes, films, e-books, music tracks, smartphone apps.

### 5.3.6 Banking

#### Internet banking is most prevalent in the Netherlands and Sweden

European Commission survey data show that internet banking has been steadily increasing across our European comparator countries since 2006 (Figure 5.42). In 2010, in two-thirds of our comparator countries, the majority of internet users claimed to have used internet banking at least once in the past three months. The highest take-up of internet banking is in the Netherlands and Sweden, where 86% and 83% of internet users have used internet banking at some point in the past three months. France holds third place, with two-thirds of internet users (67%), and the UK fourth place with just over half of internet users (55%).

**Figure 5.42 Internet users using online banking**



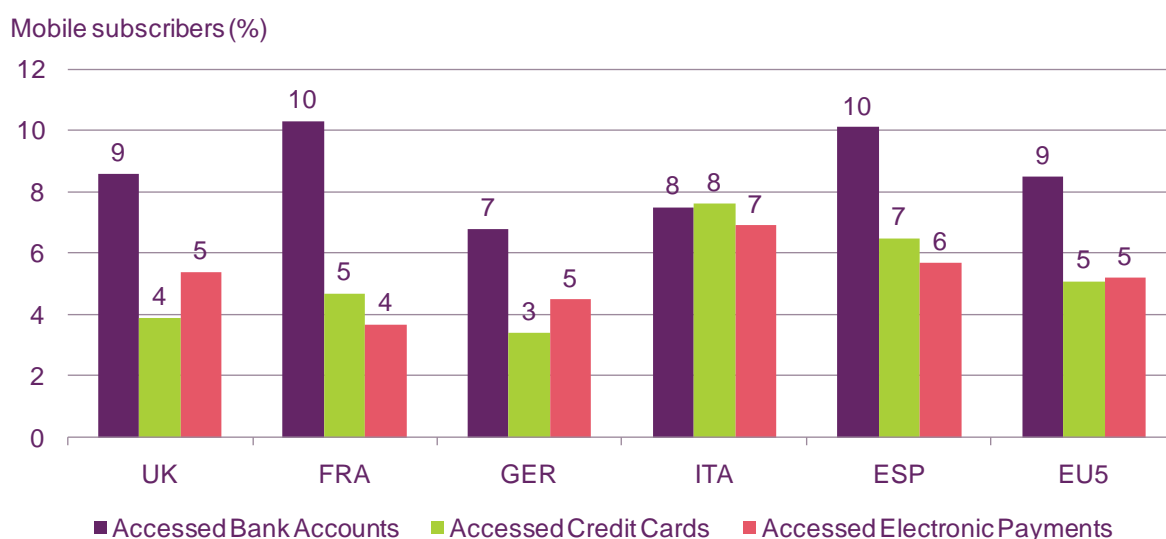
Source: Eurostat - Community survey on ICT use in households and by Individuals

Scope: Individuals using internet in the last 3 months, aged 16-74, carrying out this activity over the internet in the last year, for private use

#### Mobile banking has yet to take off, but shows promise in France and Spain

As with mobile shopping, data from comScore show that mobile banking is still very much a minority activity among European consumers. On average, across the big five European economies (EU5), only one in 20 mobile subscribers have made credit card or electronic payments through their mobile phone, while one in twelve have accessed their bank account (Figure 5.43). France and Spain lead among the EU5 for bank account access, with one in ten mobile subscribers using their phone to access their account (Spain has a comparatively high use of mobile online banking, despite having comparatively low use of internet banking). In the UK, 9% of mobile subscribers used online banking services at least once a month in Q1 2011, in line with the average across the EU5.

**Figure 5.43 Use of online financial services on mobile phones**



Source: comScore MobiLens, age 13+, three-month average ending March 2011.

Note: MobiLens data are derived from an intelligent online survey of a nationally representative sample of mobile subscribers age 13 and above. Data on mobile phone use refer to a respondent's primary mobile phone and do not include data related to a respondent's secondary device. EU5 is UK, France, Germany, Italy, and Spain

### 5.3.7 Newspaper content

#### Mail Online and Guardian.co.uk the most popular newspaper sites in Europe

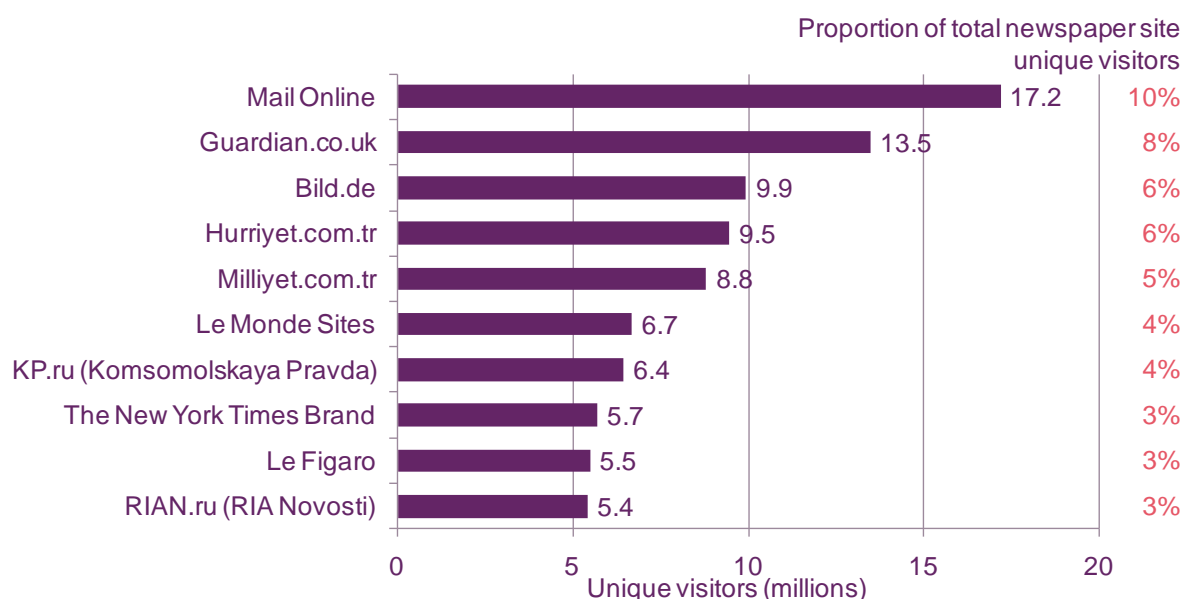
The internet has presented many challenges for traditional content companies, which have seen both subscription and advertising revenues come under increased competition from digital content providers. However, the internet also provides opportunities, such as removing the geographical constraints of distribution and enabling content providers to appeal to audiences beyond their domestic market.

According to comScore, the two newspaper websites with the greatest audience in Europe are Mail Online and Guardian.co.uk, both from the UK. Mail Online,<sup>48</sup> the website for *The Daily Mail*, attracted 17.2 million unique visitors from Europe to its website during June 2011, while the website for the *Guardian*, guardian.co.uk, attracted 13.5 million unique visitors. These figures represent 10% and 8% respectively of total newspaper sites' unique visitors from Europe in June 2011. Nielsen statistics for the same month suggest that only a minority of the unique audience for Mail Online and Guardian.co.uk were from the UK<sup>49</sup>. It is also notable that the online versions of two Turkish newspapers feature in the top five newspaper websites in Europe, indicating how internet distribution serves the Turkish diaspora across Europe. As another illustration of the way in which internet access transcends geographical boundaries, 5.7 million unique visitors from Europe visited websites associated with the *New York Times* in June 2011.

<sup>48</sup> [www.dailymail.co.uk](http://www.dailymail.co.uk)

<sup>49</sup> Unique audience figures: Mail Online (6.1 million) Guardian.co.uk (4.2 million), Home and Work Panel, June 2011, ages 15+

**Figure 5.44 Top newspaper websites, by total unique European visitors: June 2011**



Source: comScore Media Metrix, June 2011, Total Europe, Age 15+, home and work locations

### UK leads consumption of newspaper site content on mobile devices

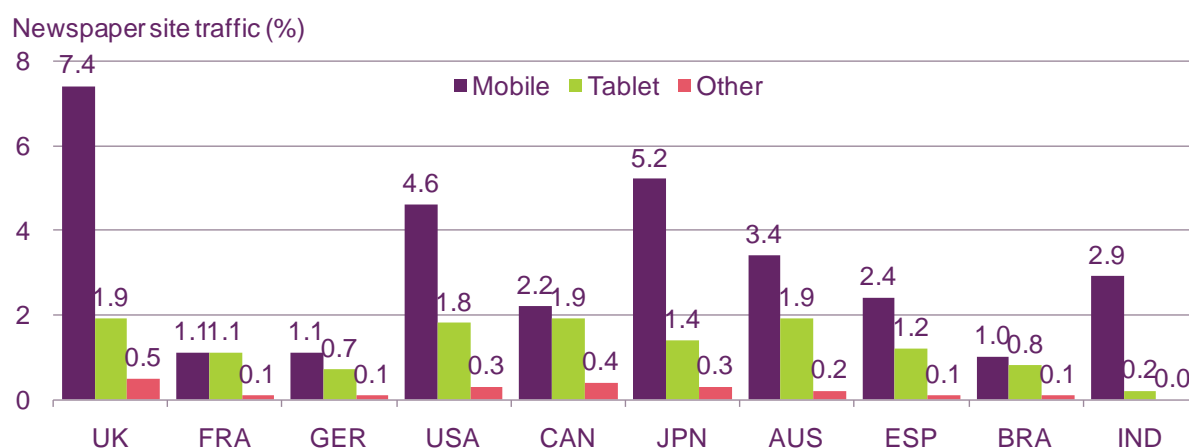
The digital distribution of content through the internet has enabled consumption across a range of devices, including tablet computers such as the iPad and e-readers such as the Kindle. However, newspaper site traffic to non-computer devices remains low across our comparator countries; the highest proportion is 9.8% of newspaper site traffic in the UK and the lowest proportion is 1.9% of newspaper site traffic in Brazil and Germany in May 2011 (Figure 5.45).

One factor that might contribute to the popularity of newspaper websites on mobile devices in the UK is the availability of mobile versions of newspaper websites. These mobile sub-sites format the width of the page and navigation to suit the smaller screens of mobile devices, while some newspapers offer mobile applications which allow the content of newspapers to be downloaded to mobile devices and read offline. Eight of the top ten national newspaper websites in the UK had mobile-specific websites<sup>50</sup>, and these eight sites accounted for 99% of page views of the top ten sites<sup>51</sup>.

<sup>50</sup> Mail Online, Guardian.co.uk, Telegraph, The Sun, Mirror.co.uk, The Independent, The Metro, The Times

<sup>51</sup> 391,252 of 395,132 page views, The Nielsen Company, Home and Work, ages 2+, May 2011.

**Figure 5.45 Newspaper site traffic by non-computer devices**

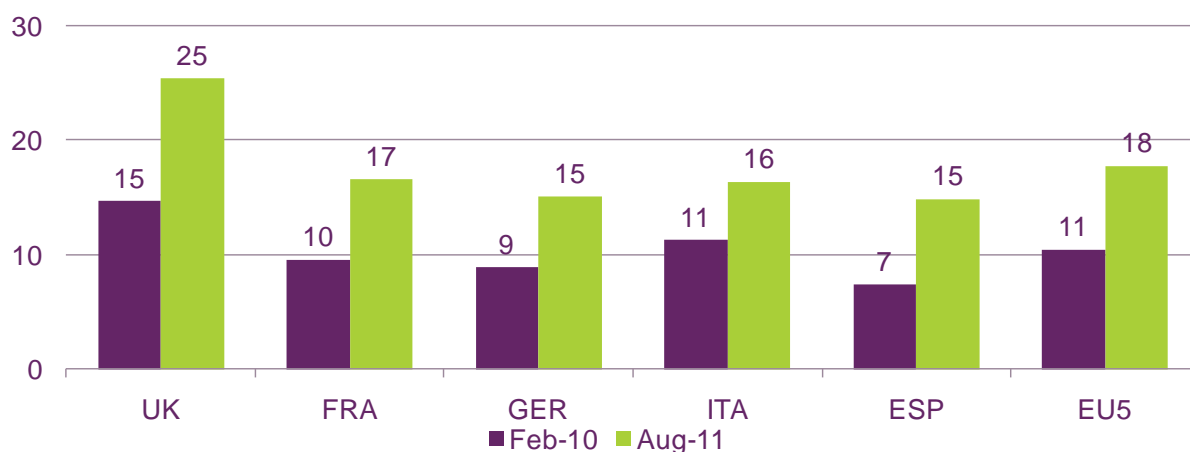


Source: comScore Device Essentials, May 2011

### One in four UK mobile users access news on their phones

Survey data from comScore MobiLens indicate that the consumption of news (which includes all types of news, not just newspaper sites) on mobile phones increased significantly between Q1 2010 and Q3 2011 in the UK, France, Germany, Italy and Spain. According to these data, one in four UK mobile users accessed news content on their phone in Q3 2011, significantly higher than in the other countries – and up ten percentage points compared to 18 months previously.

**Figure 5.46 Proportion of mobile subscribers who accessed news on their mobile**



Source: comScore MobiLens, three-month averages ending February 2010 and August 2011, mobile subscribers ages 13+, EU5 is UK, FRA, GER, ITA and ESP

Note: MobiLens data are derived from an intelligent online survey of a nationally representative sample of mobile subscribers age 13 and above. Data on mobile phone use refer to a respondent's primary mobile phone and do not include data related to a respondent's secondary device.

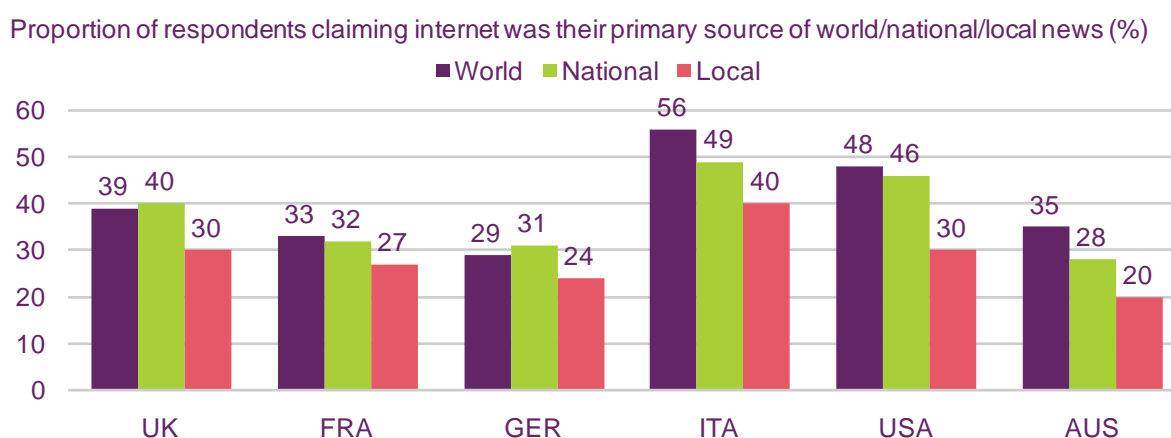
### The internet as a source of news

Ofcom's survey of internet users asked consumers in six countries about their main source of different types of news. Overall, a large majority of respondents in each country cited either the internet or television as their main source of news, although for many respondents newspapers were the main source for local news. Use of the internet as a main source of news was highest in Italy, and lowest in Germany (Figure 5.47).



In all countries, consumers were least likely to use the internet as a main source of local news. The UK and Germany were the only countries in which consumers were (marginally) more likely to use the internet as a source of national news than of world news.

**Figure 5.47 Internet as a primary source of news**



Source: Ofcom consumer research, October 2011.

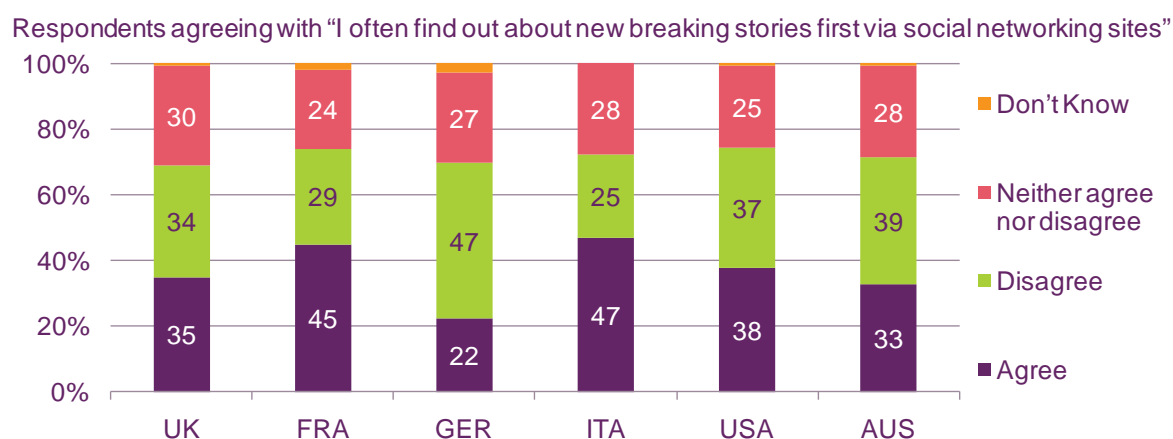
Base: All those who use the internet, UK=1015, France=1014, Germany=1014, Italy=1045, US=1002, Australia=1012. Responses are cumulative figures for internet on computer/mobile phone/tablet Q11. Which, if any, is your main source for the following information? News about the world; news about your country; news about your region/locality.

### **Nearly half of all social networking users in Italy often find out first about breaking news from social networking sites**

In recent months a good deal of media attention has been paid to the use of social networks for breaking news – they played a leading role in sharing information about the tsunami in Japan in March 2011, and have also had a prominent role in celebrity news; for example, in the first half of 2011 social networks in the UK were at the centre of controversy over the breaking of ‘super-injunctions’ taken out by celebrities seeking to prevent press publication of details of their private lives.

In the six countries we surveyed, a significant proportion of adults with a social networking profile agreed that they often found out about breaking news stories from social networking sites. In Italy, nearly half (47%) of respondents claimed to often find out about news in this way, while the lowest proportion was in Germany (22%). In the UK 35% of those with a social networking profile agreed that they often found out news first from a social networking site, approximately the same proportion as those who disagreed (34%). Differences between countries may be driven by a number of different factors including the use of the internet in general as a source of news, the frequency of social networking, levels of trust in established news media and the type of news people are most interested in.

**Figure 5.48 Social media as a source for breaking news**



Source: Ofcom consumer research, October 2011.

Base: All those who have a social networking profile, UK=715, France=717, Germany=658, Italy=841, US=778, Australia=755

Q. From the statements below can you please confirm how much you agree or disagree with them: "I often find out about new breaking stories first via social networking sites".



# International Communications Market Report 2011

## 6 Telecoms

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# 6.1 Telecoms key market developments

## 6.1.1 Overview

The telecoms section of this report looks at the fixed and mobile voice markets and those for fixed broadband and mobile data services among our 17 comparator countries. As such, the analysis excludes narrowband internet and corporate data services.

The section is split into three parts:

- **Key market developments** – provides an overall context and highlights key developments in international telecoms markets in 2009 and 2010, including changing revenues, investment in superfast networks and the growth of voice over IP (VoIP).
- **The telecoms industry** – provides a ‘top-down’ approach by looking at the telecoms sector from the point of view of operators, 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, mobile and broadband use.

## 6.1.2 Introduction

A strong case can be made that the deployment of telecoms networks has been the most significant single driver of social, cultural and economic change globally in the first decade of the 21<sup>st</sup> century. According to the United Nations’ International Telecommunication Union, around 30% of the world’s population (over 2 billion people) were internet users by the end of 2010, compared to just 6% at the end of 2000, and around 1.2 billion of these accessed the internet via mobile networks, using technologies which were barely nascent ten years previously.<sup>52</sup> By the end of 2010 there were more than five billion mobile connections, a growth of 629 million in the year, and of the 1.28 billion mobile handsets sold during the year, 23% of them were smartphones – i.e. mobile phones specifically designed for the use of mobile internet services.<sup>53</sup>

As basic telecoms services reach large sections of the world’s population, attention from industry and policy makers is increasingly focused on building the networks that are considered necessary to support the ‘internet of the future’. Investment in next generation fixed-line access networks is bringing ever-faster broadband speeds to consumers; by September 2011, 59% of UK homes were covered by a service offering at least ‘up to’ 30Mbit/s, while by October 2011 next-generation mobile networks using the long-term evolution (LTE) standard had been commercially launched by 35 operators in 23 countries around the world<sup>54</sup> (although not in the UK). There are many indications that the ‘internet of

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<sup>52</sup> International Telecommunication Union, Measuring the Information Society 2011, [http://www.itu.int/ITU-D/ict/publications/idi/2011/Material/MIS\\_2011\\_without\\_annex\\_5.pdf](http://www.itu.int/ITU-D/ict/publications/idi/2011/Material/MIS_2011_without_annex_5.pdf)

<sup>53</sup> Data from IDATE, *DigiWorld Yearbook 2011*

<sup>54</sup> Global mobile Suppliers Association, GSM/3G Market/ Technology Update, 12 October 2011

the future' is arriving very quickly: for example, Cisco estimates that global internet data traffic increased by 41% in 2010, with mobile internet data traffic increasing by 159%.<sup>55</sup>

However, questions remain about how investments in building the infrastructure for the internet of the future will be funded. As the world becomes increasingly connected, the telecoms industry has struggled to convert increasing take-up and use of services into revenue growth. Global telecoms service revenues grew by just 2% in 2010 (to £864bn), with much of the growth being in developing markets such as China and Latin America. In Western Europe, North America and Japan revenues were largely flat as any bounceback from the economic downturn of the previous year was flattened by structural changes in saturated markets. In these mature telecoms markets fixed-line voice revenues have long been in decline - mainly from substitution for mobile, but also increasingly from voice over internet protocol (VoIP) telephony in some countries. Mobile revenues are coming under pressure as increasing data revenues struggle to offset the decline in voice revenues, and fixed broadband revenue growth is slowing as markets become saturated and the service becomes commoditised.

In this section we examine three of the key developments which are transforming the global telecoms market, both in terms of industry structures and consumer behaviour:

- First, we provide an overview of the changing relationship between fixed and mobile services, exploring variations in the relative use and take-up of mobile and fixed telecoms services across our comparator countries.
- We then compare and contrast the roll-out and take-up of next-generation fixed broadband services in different countries.
- We conclude the section by detailing the massive growth in data use on mobile networks, and how next-generation mobile networks herald a new phase of infrastructure development.

Figure 6.1 summarises key telecoms indicators across the 17 comparator countries included in this report.

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<sup>55</sup> Cisco Systems' Visual Networking Index,  
[http://www.cisco.com/en/US/netsol/ns827/networking\\_solutions\\_sub\\_solution.html](http://www.cisco.com/en/US/netsol/ns827/networking_solutions_sub_solution.html)

**Figure 6.1 Key telecoms indicators, 2011**

	UK	FRA	GER	ITA	USA	CAN	JPN	AUS
Telecoms service revenues (£bn)	27.2	31.8	35.5	23.7	188.2	20.9	79.0	16.0
Telecoms revenues per capita (£)	434	486	435	389	608	615	624	739
Fixed lines per 100 population	53.0	32.9	52.5	28.9	48.2	54.3	36.5	50.4
Monthly outbound fixed mins per capita	172	145	201	125	148	174	58	209
Mobile connections per 100 population	129.8	99.4	133.5	148.5	97.8	76.2	92.4	129.5
Share of mobile post-pay connections	46%	71%	45%	15%	77%	80%	99%	58%
3G connections per 100 population	50.3	34.4	26.0	56.6	46.8	23.1	85.8	72.4
Monthly outbound mobile mins per capita	170	132	103	172	603	318	98	287
Fixed broadband conn per 100 popn	31.3	32.6	32.9	21.1	26.6	31.9	26.9	25.7
DSL as a proportion of fixed bb conns	79%	93%	86%	96%	36%	40%	25%	80%
FTTx as a proportion of fixed bb conns	0.2%	1.6%	0.3%	2.6%	7.1%	-	54.2%	-
Mobile broadband conns per 100 popn	7.7	4.2	5.3	10.0	27.6	2.7	7.7	19.5
VoIP subscriptions per 100 population	6.0	28.9	10.0	11.8	9.3	24.6	19.7	14.3

	ESP	NED	SWE	IRL	POL	BRA	RUS	IND	CHN
Telecoms service revenues (£bn)	20.0	8.5	4.3	2.2	5.9	34.2	18.6	12.1	65.9
Telecoms revenues per capita (£)	429	497	476	482	153	169	134	10	49
Fixed lines per 100 population	42.7	30.4	50.9	40.0	22.8	20.8	32.2	3.0	22.1
Monthly outbound fixed mins per capita	117	107	156	131	29	87	99	-	11
Mobile connections per 100 population	122.1	121.0	141.9	114.3	121.4	100.3	155.7	63.7	64.4
Share of mobile post-pay connections	65%	55%	64%	36%	49%	18%	5%	4%	33%
3G connections per 100 population	67.3	26.3	80.8	39.3	40.7	9.3	5.6	0.6	3.5
Monthly outbound mobile mins per capita	128	198	204	193	125	102	190	140	270
Fixed broadband conn per 100 popn	22.7	38.9	33.2	21.9	14.7	6.6	14.1	0.9	9.5
DSL as a proportion of fixed bb conns	79%	54%	54%	72%	46%	67%	39%	89%	75%
FTTx as a proportion of fixed bb conns	0.3%	3.1%	18%	0.9%	0.4%	0.0%	21%	0.0%	0.7%
Mobile broadband conns per 100 popn	7.2	4.2	32.2	12.3	9.0	-	-	-	-
VoIP subscriptions per 100 population	2.4	22.3	13.1	3.1	1.8	-	-	-	-

Source: IDATE / industry data / Ofcom

Notes: USA, CAN and CHN mobile use includes both outbound and inbound calls; 3G includes W-CDMA and CDMA2000 1xEV-DO but not CDMA2000; BRIC country revenues exclude fixed broadband

### 6.1.3 Mobile growth driven by substitution of fixed services

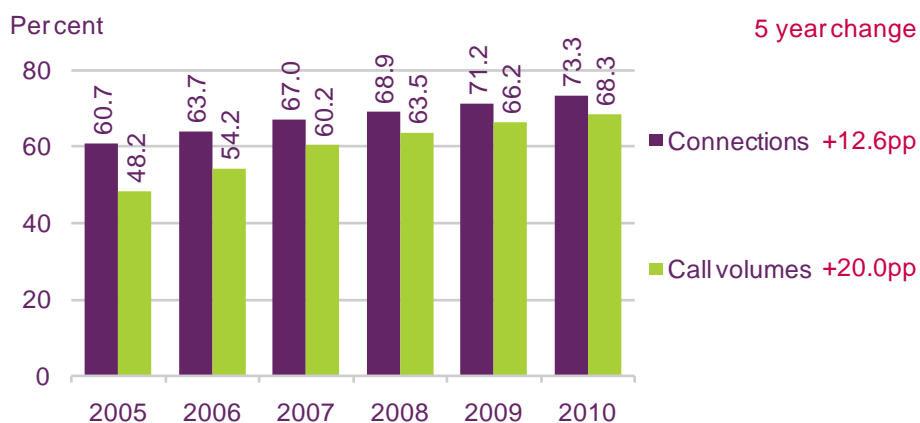
#### Fixed connections and call volumes fall in a mobile world

A characteristic of telecoms markets in recent years has been growth in the use of mobile services – for voice calls, messaging and data. Figure 6.2 indicates that, on average, across the 13 nations for which full time-series data were available, 68.3% of voice call minutes were made from mobile networks in 2010, up from 48.2% five years earlier in 2005 and 66.2% in 2009. Over the same period the proportion of voice connections that were mobile increased by 12.6 percentage points from 60.7% to 73.3%.

In some cases, increasing mobile use is complementary to that of fixed voice services; for example, where consumers benefit from the higher quality of service and/or lower prices offered by fixed-line services in the home, and use mobile services when out of the home. Mobile networks have provided telecoms services where there was no existing fixed network in some countries (for example, in large areas of the BRIC countries). And mobile telecoms services can also be substituted for fixed telecoms services. In this section of the report we

explore variations in the relative use and take-up of mobile and fixed telecoms services across our 17 comparator countries.

**Figure 6.2 Mobile as a proportion of total connections and voice call volumes, 2005 to 2010**



Source: IDATE / industry data / Ofcom

Note: Includes data for US, CAN and BRA, where mobile call volumes include an element of incoming calls

### Fixed calls more resilient in some countries than others...

Figure 6.3 shows the percentage change in fixed and mobile voice call minutes among our comparator countries in 2010, and indicates that there were wide variations in call volume growth. The change in fixed voice call volumes ranged from a 15% fall in Poland to a 4% increase in China, whereas for mobile voice call volumes it ranged from a 1% fall in the US to a 93% increase in Brazil. Overall, total mobile voice call volumes among our comparator countries increased by 15% in 2010, while fixed voice call volumes fell by 7% during the year.

Among the Western European comparator countries, the only country where fixed voice call volumes increased in 2010 was France. The 2.1% increase in France in 2010 may be a result of the availability of 'naked DSL' (which means that DSL broadband can be provided without the requirement for a traditional fixed line). This has led to the widespread availability and take-up of low-cost bundled triple-play services, including a fixed broadband connection over which internet protocol television (IPTV) and VoIP-based fixed voice services are provided. In 2010 over half of fixed voice call volumes in France were made over VoIP.

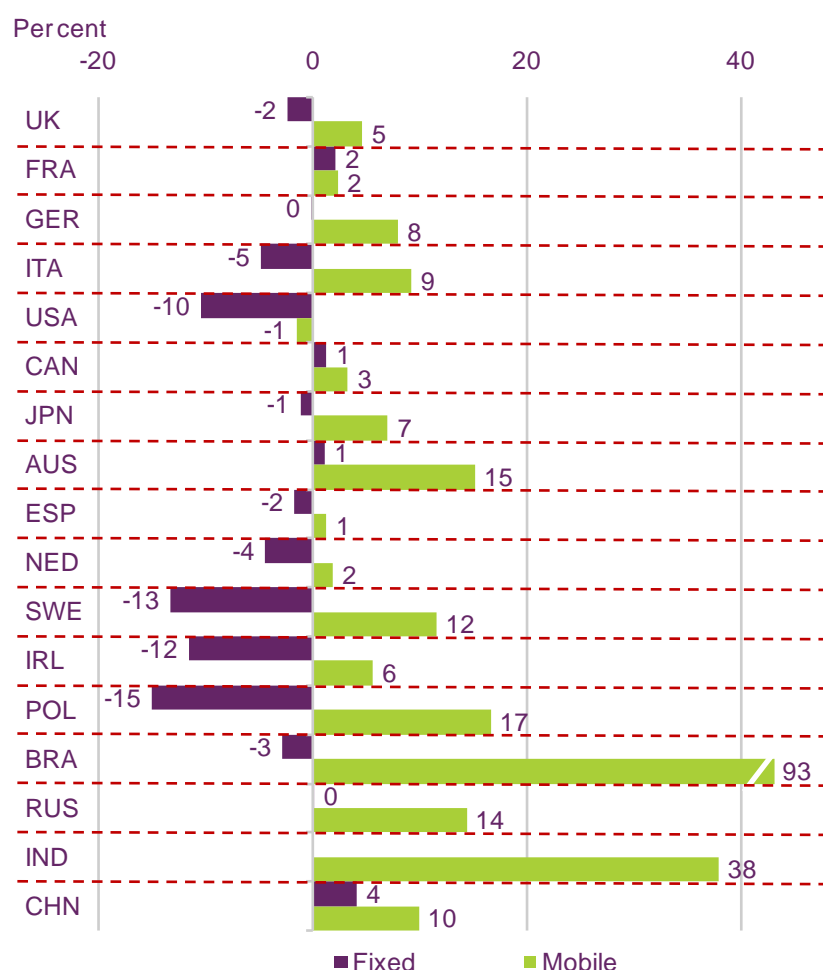
The rate of decline of fixed voice call volumes in 2010 was also lower than the average fall of 1.8% across our Western European comparator countries in Germany, where fixed call volumes fell by 0.2%. Although take-up of mobile services in Germany was in line with the other countries, the average use per connection (which was 77 minutes a month in 2010) was lower, because fixed voice services in Germany are much cheaper than mobile services (see Figure 6.5 below and Section 2 for our comparative price benchmarking work). The largest declines in fixed voice call volumes among the Western European comparator countries in 2010 were in Sweden and Ireland, where they fell by 13.3% and 11.6% respectively. In both countries (along with Italy and the Netherlands) the average cost of a mobile voice call minute was less than that of a fixed voice call minute, while Ireland had the highest average use per mobile connection, at 169 minutes per month.

Section 6.3.5 contains an analysis of European Commission consumer research data regarding the proportion of homes that are mobile-only, i.e. those that no longer have a fixed



line, which shows that among the European countries covered in our report the proportion of homes that were mobile-only ranged from 2% in Sweden to 49% in Poland (in the UK it was 17%).

**Figure 6.3 Change in fixed and mobile voice call volumes, 2010**



Source: IDATE / industry data / Ofcom

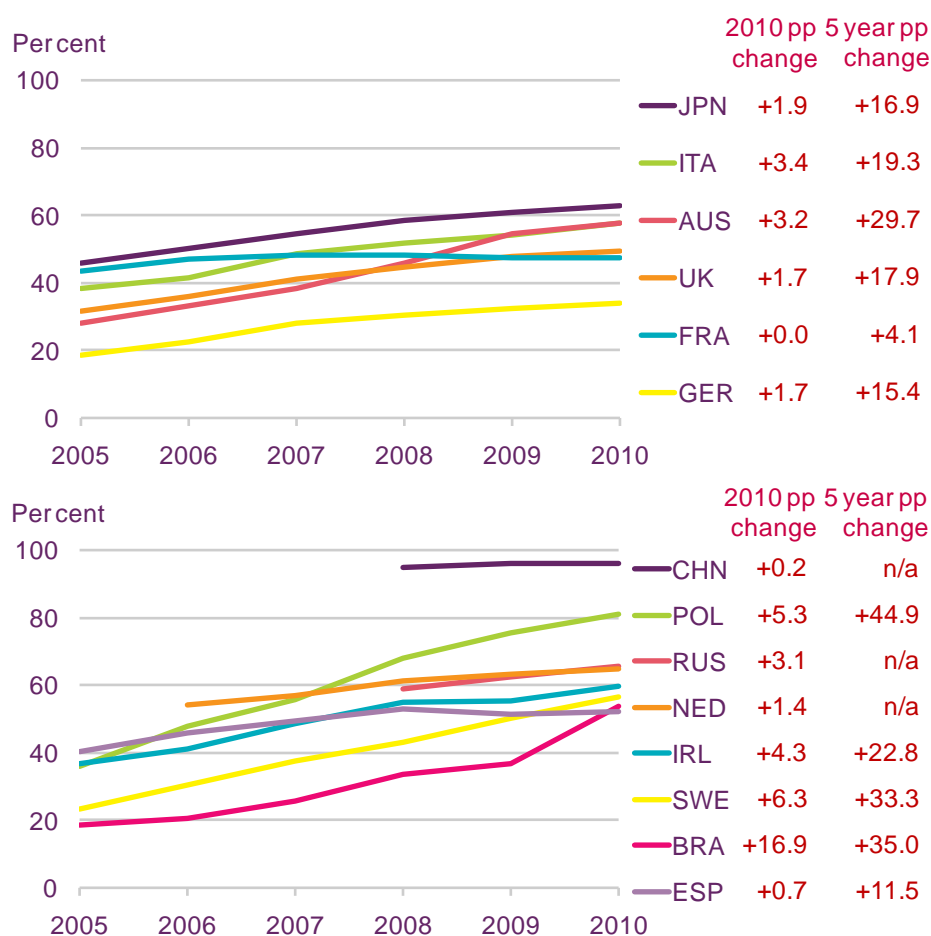
Note: USA, CAN and CHN includes incoming calls to mobiles; BRA, RUS and IND include fixed-to-mobile and off-net incoming calls

### ...but the proportion of calls that are mobile-originated continues to increase

In all of the comparator countries for which figures were available, there has been growth in the share of total call volumes originating on mobile networks. However, there is a great deal of variation between countries: 96.2% of call minutes in China (where the availability of fixed lines is low) were made from mobile networks in 2010, compared to 34.0% in Germany. Even within Western Europe there is significant variation: 65.0% of call minutes originated on mobile networks in the Netherlands in 2010, 31 percentage points more than in neighbouring Germany, and in the UK just under half of voice call minutes were mobile-originated in 2010.

Similarly, there are significant variations in the growth of mobile between countries (Figure 6.4). In France, mobile telephony's share of total voice minutes grew by just 4.1 percentage points between 2005 and 2010, whereas in Sweden it increased by 33.3 percentage points over the same period (in the UK the figure was 17.9 percentage points).

**Figure 6.4 Proportion of voice calls originating on mobile networks**



Source: IDATE / industry data / Ofcom

Note: Mobile data volume data for CHN includes incoming calls to mobiles, while that for BRA and RUS includes fixed-to-mobile and off-net incoming calls

### Relative fixed and mobile voice prices are a key driver of levels of substitution

In order to compare relative fixed voice and mobile voice prices, we calculated the average cost of a mobile voice minute as a proportion of the average cost of a fixed voice call minute across our comparator countries, including access fees in the calculation (Figure 6.5). In this analysis a value of 100 shows that average prices are identical, while a value of less than 100 means that mobile calls are, on average, cheaper than fixed line calls in the country in question, and for values over 100 the opposite is true.

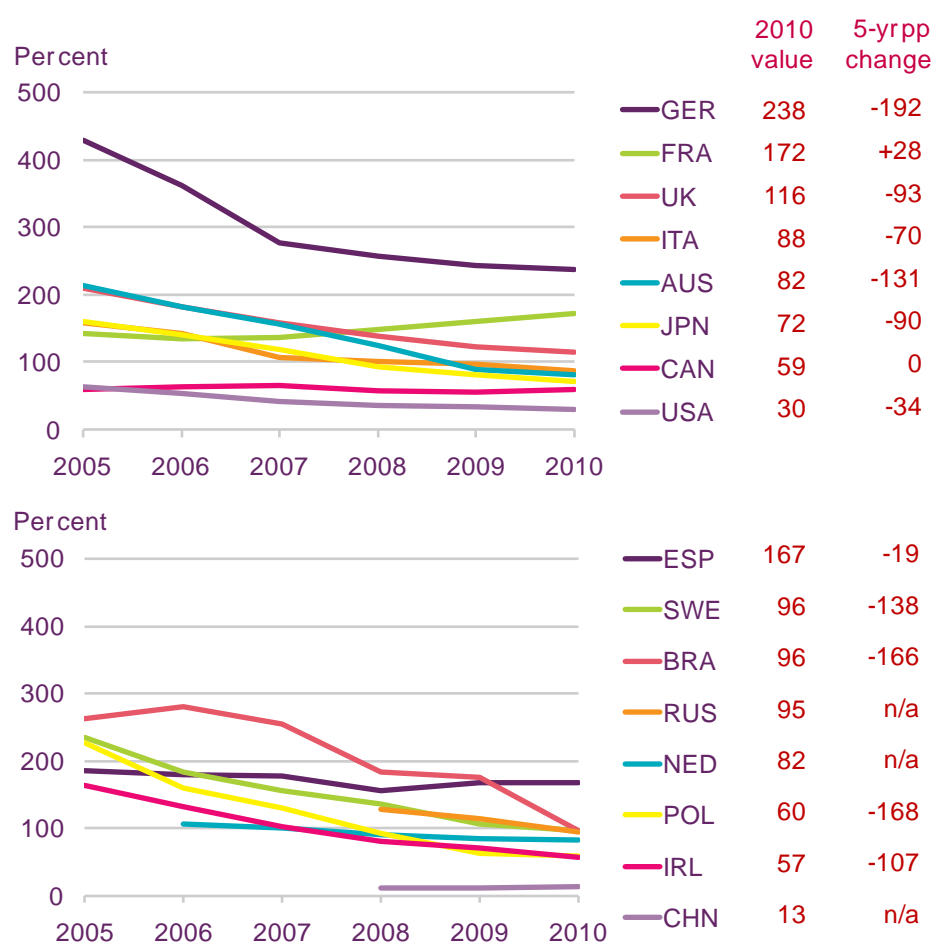
In 12 of the 16 countries for which we had data, the average per-minute cost of mobile voice call was lower than that of a fixed voice call in 2010 (this was the case in just two of our countries in 2005). The UK was one of the four comparator countries (along with France, Germany and Spain) where the 'mobile premium' (the difference between the cost of fixed and mobile voice services) was positive in 2010, with the average cost of a UK mobile voice minute being 16% more than that of a fixed voice minute<sup>56</sup>. The lowest-cost mobile calls relative to fixed calls were in China, where the average cost of a mobile minute was just 13%

<sup>56</sup> Note that the cost per minute is calculated from operator-reported retail call volumes and retail voice revenues (including line rental); it provides an indication of, but is not the same as price – for example, for consumers with 'unlimited' calls within a voice package the incremental price of each call is zero.

of that of the average fixed minute, i.e. the 'mobile premium' was minus 87%. This is likely to be due to the economies of scale realised from the roll-out of national mobile networks in China, plus limited fixed infrastructure availability (in China, mobile use and take-up far outstrips that of fixed-line services), and low pricing of mobile calls in order to target the mass market.

France and Spain were the only countries where the 'mobile premium' increased in 2010. In France, the cost of mobile calls relative to fixed voice calls has been increasing since 2006, while in Spain this has been true since 2008. In both countries the average cost of mobile calls has been falling, meaning that the increase in the mobile premium is as a result of the rate of decline in fixed prices being greater than that of mobile calls. This may partly be a result of aggressive pricing by fixed network operators in response to falling fixed-line numbers, the decline in which has been particularly steep in France due to high levels of VoIP use.

**Figure 6.5 Average cost of a mobile voice minute as a proportion of the cost of a fixed voice minute, 2005 to 2010**



Source: IDATE / industry data / Ofcom

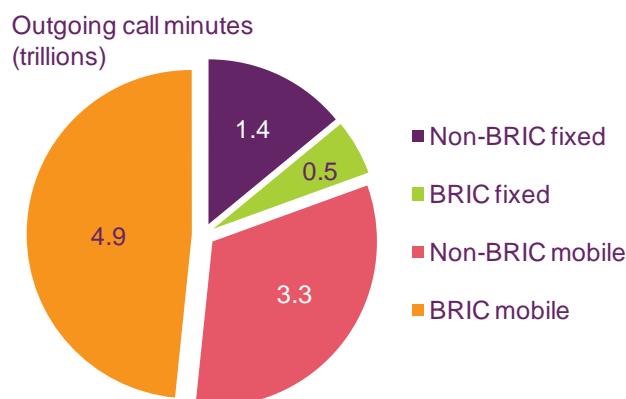
Note: US, CAN and CHN includes incoming calls to mobiles; BRA, RUS and IND include fixed-to-mobile and off-net incoming calls

### Many consumers in BRIC countries have gone straight to mobile

The proportion of calls that originate on mobile networks is much higher in the less-developed BRIC countries than in our other comparator countries. In 2010 89.9% of total call volumes in Brazil, Russia and China (fixed-line call volume data was not available for India)

originated on mobile networks, more than 20 percentage points more than the 69.6% across our non-BRIC comparator nations. In fact, almost half (48%) of total voice call volumes in the comparator countries for which we had both fixed and mobile call volume data originated on mobile phones in the BRIC countries in 2010 (Figure 6.6).

**Figure 6.6 Total voice call volumes, by network and country type**



Source: IDATE / industry data / Ofcom

Note: BRIC country data excludes India

The difference between relative levels of fixed and mobile telephony use in the BRIC and non-BRIC countries can be explained by the maturity of the fixed-line markets in these countries when mobile services launched. In most non-BRIC countries landline services were widely available for many decades before the roll-out of mobile networks, and fixed telephony markets were relatively mature, with take-up of fixed voice services being widespread. When mobile services launched in these countries they were a more expensive alternative to making calls from a fixed-line phone, and it was only when pre-pay services launched that mobiles became a mass-market proposition. With increased take-up and falling prices (more generous call allowances were bundled with monthly line rental fees) mobile services became a viable substitution for landline calls.

This was not true in the BRIC countries, where fixed-line networks were not so developed, when mobile services launched, and often, landline services only became widely available in urban areas; they were not accessible to large proportions of the population living in rural areas. Accordingly, mobile telephony, rather than being a substitute for fixed telephony services, represented an alternative way for people to connect to the public switched telephony network (PSTN) and, more importantly, a lower-cost way for telephony providers to extend their network coverage; the investment required to roll out mobile base stations is significantly lower than that required to implement a fixed-line network from scratch.

### **Different drivers for fixed-mobile substitution of broadband services**

As with voice call services, mobile broadband can be used either as a complement to fixed-line broadband or as a substitute for it. In order to assess different levels of take-up of fixed and mobile broadband services, we conducted consumer research in six of our comparator countries in October 2011. It should be noted that as the survey was carried out online, so the proportion reporting that they did not have a broadband connection at home will be lower than for a truly representative sample of the population in each country, and all other figures are likely to be higher.

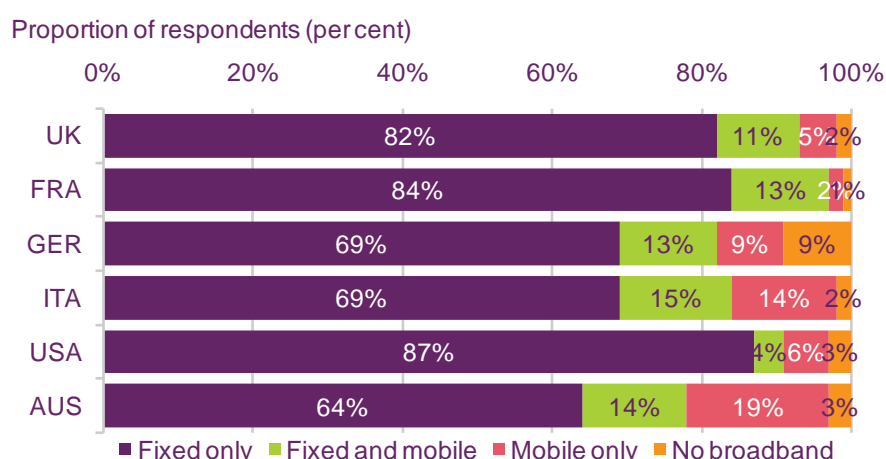
The lowest levels of mobile broadband take-up were in France (15% of respondents) and the US (10%). This may appear counter-intuitive, as both countries have also been

characterised by rapid decline in the number of fixed voice lines. However, the availability of 'naked DSL' in both countries (and high take-up of cable services in the US), mean that customers are able to take a fixed broadband service without having a fixed line, and there is less incentive to go 'mobile-only' for broadband, as the incremental cost of a fixed broadband connection is lower than elsewhere.

In France the widespread availability of cheap triple-play bundles of fixed voice, fixed broadband and pay-TV provides a further incentive for households to have a fixed broadband service, while in the US relatively expensive mobile broadband data charges are likely to be limiting the use of mobile broadband as a substitute for fixed broadband services. In the UK 82% of respondents lived in a household which had only a fixed broadband connection, the third highest proportion among those countries where the research took place (Figure 6.7).

Australia and Italy had the highest proportions of respondents relying entirely on mobile broadband for internet access, at 19% and 14% respectively. In Italy, this is likely to be driven by a high proportion of mobile-only households, which is a result of historically lower take-up of fixed voice lines than in the other large European countries. Australia was comparatively late to roll out fixed-line broadband networks, and this, combined with the early deployment of HSPA mobile networks and the fact that in some sparsely populated areas mobile is the cheapest way to provide broadband services, contributed to nearly one in five respondents having mobile broadband as their sole broadband connection.

**Figure 6.7 Household penetration of fixed and mobile broadband**



Source: Ofcom consumer research, October 2011

Base: All respondents, UK=1015, France=1014, Germany=1014, Italy=1045, USA=1002, Australia=1012

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

## 6.1.4 Growth in next-generation broadband services

### Governments target a superfast future

With broadband now available to the large majority of consumers in most of our comparator countries, much of the focus among policy makers and industry has shifted to ensuring that networks are in place that will be sufficient for the 'internet of the future' in which the use of high-bandwidth services such as high-definition video become commonplace, multiple connected devices share a household's broadband connection, and upload speeds become increasingly important for video communications, file sharing and 'cloud-based' storage.

Governments in many countries have introduced targets for the roll-out of superfast broadband, which in the UK and the rest of the European Union refers to a headline downstream speed of at least 30Mbit/s. Figure 6.8 indicates that most of our comparator countries have set targets related to the availability and/or take-up of next-generation services<sup>57</sup>, while as part of its Digital Agenda initiative, the European Commission has set a target that all Member States' consumers should have access to 30Mbit/s downstream by 2020, with at least half of European households subscribing to 100Mbit/s services by the same year.

In all of the European countries covered in this report, the majority of broadband connections were ADSL at the end of 2010 (ADSL uses the copper wires initially laid for the telephone network to connect customers to their telephone exchange). Operator upgrades in recent years have increased the speeds available via ADSL, although the limitations of the technology mean that speeds of higher than 20Mbit/s downstream can rarely be delivered, and speeds much lower than this are typical, because speed decreases as the length of the line increases.

In order to provide superfast (next-generation) networks to consumers, it is necessary to lay fibre-optic cables, which are capable of transmitting data at high speeds with very little performance degradation, closer to consumers' homes. These 'next-generation' fixed network connections can broadly be categorised as follows:

- Fibre-to-the-home (FTTH) or fibre-to-the-premises (FTTP), where a fibre-optic cable is installed all the way from the telephone exchange to the consumer's premises. Copper wiring is often used inside the house building for the final part of the delivery.
- Fibre-to-the-cabinet (FTTC), where a cabinet is installed on the street with a fibre-optic cable laid from it to the exchange. A copper wire connects the cabinet to the consumer's premises: this portion is typically less than 500 metres and is known as a 'sub-loop'.
- Hybrid fibre/co-axial cable networks (HFC), via a DOCSIS 3.0 upgrade to an existing cable TV (CATV) system. From a network point of view, HFC is similar to FTTC in that it uses a street cabinet with fibre-optic cables on one side and co-axial copper wires on the consumer premises side. The technology used in HFC networks is often referred to as fibre-to-the-last amplifier (FTTLA).

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<sup>57</sup> Exceptions include Brazil, Russia, India, China and Poland. Although all of these countries are seeing investment in fibre broadband networks (often in areas that have never had a copper telephone network), government targets focus more on expanding the coverage and take-up of any kind of broadband network (including mobile broadband). Brazil targets having 30 million fixed broadband connections by 2014, Russia targets 35 broadband lines per 100 population by 2015, India set a target of 10 million broadband connections by 2010, China targets availability of broadband to 45% of population by 2014; Poland targets 23% of its population taking broadband by 2013 (source: OECD, OECD Working Party on Communication Infrastructures and Services Policy 'National Broadband Plans', 15 June 2011, pp13-15).

**Figure 6.8 Broadband targets in selected countries**

Country	Target
<b>UK</b>	By 2015, to bring “superfast broadband” to all parts of the UK and to create the “best broadband network” in Europe. To provide everyone with at least 2Mbit/s and superfast broadband to be available to 90% of people.
<b>FRA</b>	By 2012, 100% of the population to have access to broadband. By 2025 100% of home to have access to very high speed broadband.
<b>GER</b>	By 2014, 75% of households will have download speeds of 50Mbit/s.
<b>ITA</b>	By 2012, all households to have access to the Internet at between 2 and 20Mbit/s.
<b>USA</b>	By 2020, at least 100 million homes should have affordable access to actual download speeds of at least 100Mbit/s and actual upload speeds of at least 50Mbit/s. Every household should have access to actual download speeds of 4Mbit/s and actual upload speeds of 1Mbit/s.
<b>JPN</b>	By 2015, fibre optic ‘highways’ will be completed enabling every household to access a superfast broadband service
<b>AUS</b>	By 2021, the National Broadband Network will cover 100% of premises - 93% of homes, schools and businesses at up to 100 Mbit/s over fibre, with the remainder at up to 12Mbit/s over next generation wireless and satellite.
<b>ESP</b>	By 2011, minimum speed of 1Mbit/s broadband access available to 100% of population. By 2015, 100Mbit/s broadband available to 50% of population.
<b>IRE</b>	October 2010: in areas where there was no broadband a mobile service (using HSPA), was required to be in place with a minimum download speed of 1.2Mbit/s and a minimum upload speed of 200kbit/s. Delivery of high speed broadband throughout Ireland is a key commitment under the Government’s NewERA programme and in June 2011 the government set up a Next Generational Broadband Taskforce
<b>European Commission</b>	Digital Agenda sets targets of basic broadband coverage for all EU citizens by 2013 and 30Mbit/s by 2020, with at least half European households subscribing 100Mbit/s.

Source: Source: Adapted from Table 21: ‘Broadband targets’ in OECD Working Party on Communication Infrastructures and Services Policy ‘National Broadband Plans’, 15 June 2011, pp13-14 , <http://www.oecd.org/dataoecd/22/41/48459395.pdf>

## NGA deployments gather pace as Europe catches up with Japan and US

In Japan the large-scale roll-out of FTTH and FTTP networks began in 1999, and by the end of 2010 93% the population had access to FTTH/B networks, typically offering speeds of ‘up to’ 100Mbit/s.

In our other comparator countries the roll-out of FTTH/P networks has been much slower to develop. In the UK, France, the US, Australia, Spain, the Netherlands and Ireland, at the end of 2010, the greatest proportion of superfast coverage was available from cable operators, where the upgrade of existing cable networks to the DOCSIS3.0 standard is inexpensive compared to the cost of laying new fibre networks. Speeds offered by the various implementations of DOCSIS 3.0 vary – in the UK, Australia, Spain and Ireland speeds of ‘up to’ 100Mbit/s are offered to many customers, whereas in the US the maximum speeds available are rarely more than ‘up to’ 25Mbit/s. This is less a factor of the technology and more an issue of competitive positioning by the operator concerned, and the range of spectrum available in the coaxial cable for broadband use.



In the UK and Germany, large-scale fibre-to-the-cabinet deployments have been made. In these countries the existing telecoms network infrastructure makes FTTC services more cost-effective to deploy to large areas of the country than FTTH/P services, not least because of the shorter lengths of fibre-optic cable that need to be laid. The relatively short sub-loops make it feasible to run VDSL<sup>58</sup> from the cabinet to the consumer's home, while, in Germany in particular, the large size of cabinets reduces civil engineering costs. Speeds available via FTTC services vary: in Germany, incumbent operator Deutsche Telekom offers services 'up to' 50Mbit/s and in the UK BT offers speeds of 'up to' 40Mbit/s (although speeds for some consumers are lower, due to the length of the copper wire between the cabinet and the premises) and BT plans to launch services offering 'up to' 80Mbit/s in 2012. However, in the US the highest speeds offered by AT&T's FTTC service in November 2011 were 'up to' 24Mbit/s.

The per-capita cost of providing FTTH/P services is lower in countries where a large proportion of the population live in multiple-dwelling units (MDUs), and where the infrastructure or planning regulations allow for more cost-effective laying of fibre-optic cable. For example, in Japan, the costs for deploying fibre-to-the-home were relatively low because of the dense population (the large majority of which live in MDUs), and the deployment of cables overhead, as opposed to in the ground. Similar characteristics have limited the costs of deployment in cities in Russia, while Paris was one of the first cities in Europe to have widespread fibre deployment assisted by the low cost of laying cables, enabled by the unique characteristics of its sewer system. The high levels of availability of FTTH/P in Sweden are the result of deployment by local municipalities, under a government programme which makes funding available for them to build fibre networks to be run by independent operators.

Figure 6.9 details both current deployments and planned next-generation access (NGA) deployments. It shows that by the end of 2010 the coverage of superfast networks in the UK compared favourably to other countries in Europe, with 48% of the population passed by Virgin Media's cable network (offering speeds of 'up to' 50Mbit/s and 'up to' 100Mbit/s in some areas) and 15% being passed by BT's FTTC service. Throughout 2011, BT has continued to roll out its network – in September 2011 FTTC services were available to around 24% of the population, and around 59% of UK homes were covered by superfast services from either BT, Virgin Media or both.<sup>59</sup> The UK is likely to continue to be one of Europe's leaders in the availability of superfast broadband services in the next few years – BT's fibre services (a combination of FTTP and FTTC) are set to reach 40% of the population by 2012 and 67% of the population by 2015.

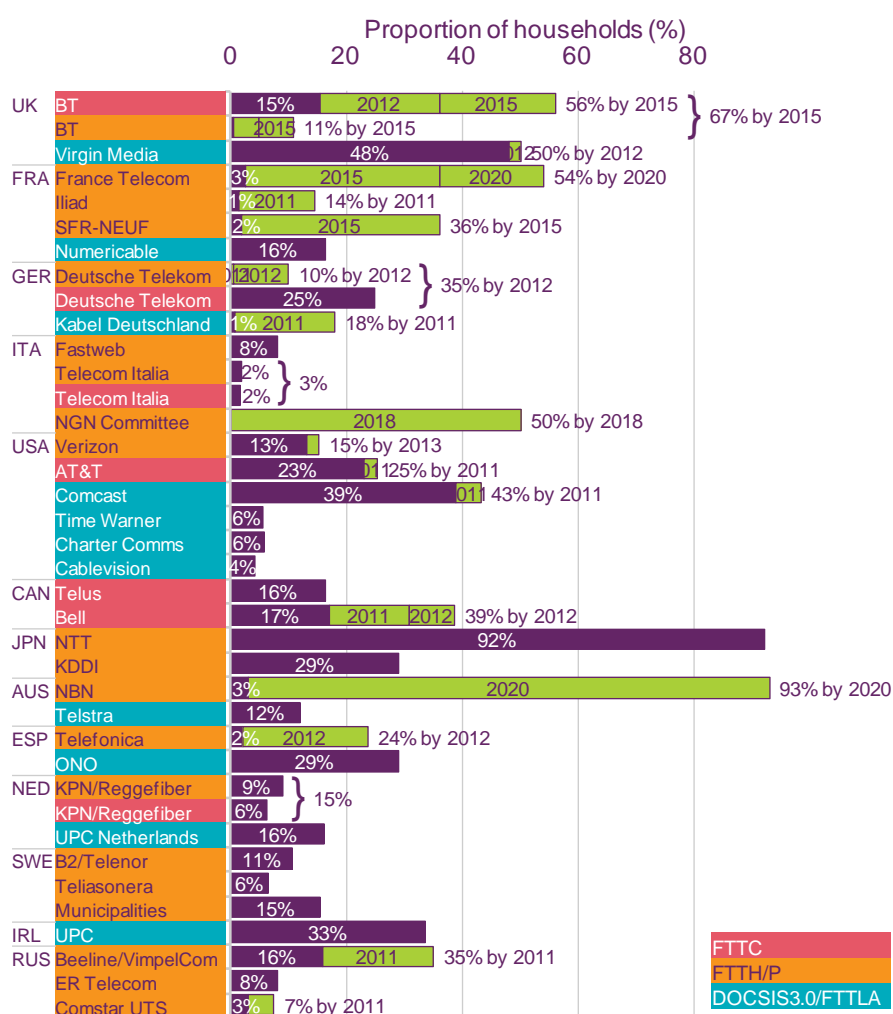
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<sup>58</sup> VDSL is a variant of DSL which provides higher speeds than ADSL but it is effective only over shorter distances, due to higher signal degradation by distance

<sup>59</sup> This estimate assumes that around 15% of homes in exchange areas where FTTC is available will be unable to receive FTTC services. See <http://maps.ofcom.org.uk/broadband/downloads/ofcom-uk-broadband-speed-report-2011.pdf>



**Figure 6.9 NGA coverage and planned deployments, end 2010**



Source: Ofcom, based on operator announcements and third-party data including IDATE

Notes: Includes announcements from the largest operators only; estimates have been used where there is lack of clarity on timelines; deployments are typically gradual and incremental – the year given marks the end of a planned deployment phase

### Take-up still low in most countries

Figure 6.10 details the take-up of next-generation broadband services across our comparator countries. Some caution should be applied to these figures for two reasons. Firstly, while data on take-up of fibre-to-the home services is available in all countries, data on take-up of FTTC and high-speed cable services is not always available (for example, in France we do not have data on how many consumers take high-speed services from service provider Numericable, and in the US we do not have data for any of the cable providers). Secondly, in some countries, consumers taking NGA services do not necessarily receive speeds which are 'superfast' – for example, while Verizon in the US offers a range of speeds over its high-quality FTTH network including 'up to' 150Mbit/s, many customers are on speeds of 'up to' 25Mbit/s or less (this is the result of Verizon charging a significant price premium for higher speed packages).<sup>60</sup>

<sup>60</sup> In November 2012, Verizon's fibre internet services (FiOS) started at \$49.99 a month for a 15Mbit/s service, rising to \$194.99 for a 150Mbit/s service, <http://www22.verizon.com/Residential/internet>

It is clear that there is significant variation in the take-up of superfast services across our comparator countries, and that in some nations, such as the UK, only a small proportion of consumers take superfast services even where they are available, while in Sweden, Russia and Japan more than a third of households covered by superfast services subscribe to them.

Two key factors appear to drive the take-up of superfast services as an alternative to basic services.

- The relative cost of superfast services compared to basic broadband services. Ofcom research among UK superfast broadband users, conducted in April 2011, found that 'value for money' was the key consideration in taking up superfast broadband services<sup>61</sup>. Virgin Media's 'up to' 50Mbit/s cable service (£25 per month in November 2011, excluding line rental) is nearly double the price of its basic 'up to' 10Mbit/s service (£13.50 per month), and only around 5% of Virgin Media's customer base took its 'up to' 50Mbit/s service by the end of June 2011<sup>62</sup> (with an additional 21% taking the 'up to' 30Mbit/s service which is £18.50 a month). In contrast, in Sweden and Russia, fibre broadband is often the least expensive fixed broadband service in towns and cities where it is available.
- Secondly, in some countries fibre has had the highest take-up when it forms a 'triple-play bundle' with telephony and premium television services. IP-based television services are central to the fibre propositions of Verizon and AT&T in the US as they look to compete with cable companies – in June 2011, 83% of AT&T's FTTC customers also took a TV service, and 76% of Verizon's FTTH subscribers also took its FioS TV service. Similarly, in France, the majority of fibre subscribers purchase it within a triple-play package including IPTV. However, in Japan and Russia, IPTV penetration remains low, despite high take-up of FTTH/P services. The UK has very low take-up of IPTV services, although it is notable that the use of the internet for watching 'catch-up' television services is higher in the UK than in many other countries (see Figure 5.24 in the internet and web-based content section of this report).

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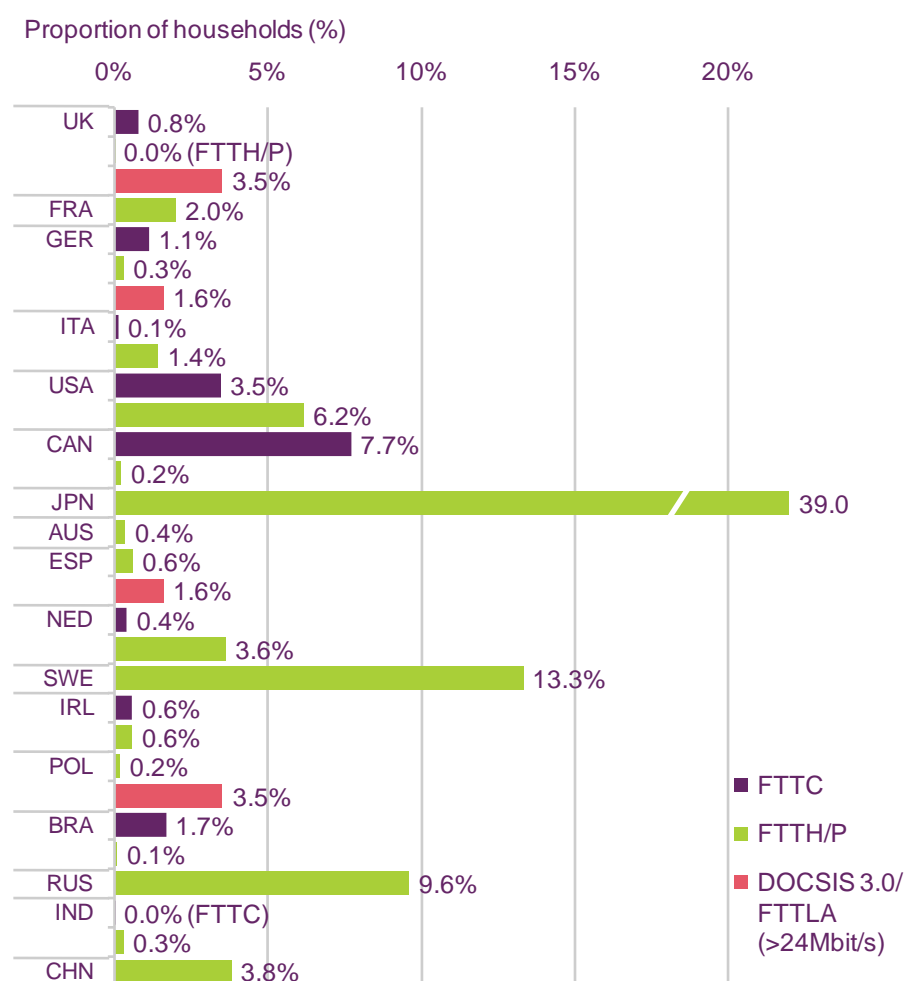
<sup>61</sup> Ofcom, UK Communications market report 2011, pp251-252,

[http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK\\_CM\\_2011\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK_CM_2011_FINAL.pdf)

<sup>62</sup> [http://phx.corporate-](http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njc2NTd8Q2hpbGRJRD0tMXxUeXBIPtM=&t=1)

[ir.net/External.File?item=UGFyZW50SUQ9Njc2NTd8Q2hpbGRJRD0tMXxUeXBIPtM=&t=1](http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njc2NTd8Q2hpbGRJRD0tMXxUeXBIPtM=&t=1)

**Figure 6.10 Household take-up of superfast broadband, June 2011**



Source: Ofcom, based on operator announcements and third-party data including Cullen International and IDATE

Notes: All FTTH/B and FTTC subscribers are included; DOCSIS3.0/FTTLA subscribers at speeds of more than 'up to' 24Mbit/s and higher are included; subscriber numbers for FTTC and DOCSIS3.0/FTTLA subscribers in some countries are not available.

## 6.1.5 Networks upgraded as mobile data use soars

### Mobile users in UK and Japan use the most data

More than ever before, consumers are using a wide range of high-speed mobile devices to connect to the internet. According to telecoms vendor organisation, the GSA (Global mobile Suppliers' Association), there were 3,227 HSPA-enabled mobile devices available to purchase in August 2011, ranging from smartphones to mobile broadband dongles, SIM-enabled laptops, datacards, wireless routers and mobile hotspots; this number having risen 25% year on year.

The increasing take-up of powerful mobile devices, the availability of fast mobile networks and the ever-growing availability of internet applications and services (many of which are mobile-specific) means that consumers are downloading and uploading an increasing quantity of data. According to calculations published in Cisco Systems' Visual Networking

Index<sup>63</sup>, monthly data traffic per mobile connection in the UK increased by 108% between December 2009 and December 2010 and was higher in December 2010 (268MB) than in all other comparator countries except Japan (349MB)<sup>64</sup>. By comparison, France and Germany – two of Europe's largest telecoms markets – averaged 106MB and 139MB of data traffic per mobile connection per month; although they grew faster than the UK from 2009 to 2010: up 172% and 136% respectively (Figure 6.11).

The majority of data use is from mobile broadband (dongles) connected to computers, although smartphone data use is growing rapidly: Vodafone reported that smartphones were responsible for 21% of all data traffic on its European networks in September 2011, compared with just 12% in March 2011<sup>65</sup>. Cisco also forecast that total mobile data use will increase 21-fold by 2015 in the UK, with even higher growth rates in many other countries. The UK rate is equivalent to a compound annual growth rate (CAGR) of 84%, compared with 158% in India and 129% in China. However, mobile data use in India and China lags behind the UK considerably, so higher CAGRs can be expected in these emerging markets. Compared with the UK's 268MB per month per mobile connection in 2010, consumers in India and China consumed just 8MB and 9MB per person respectively.

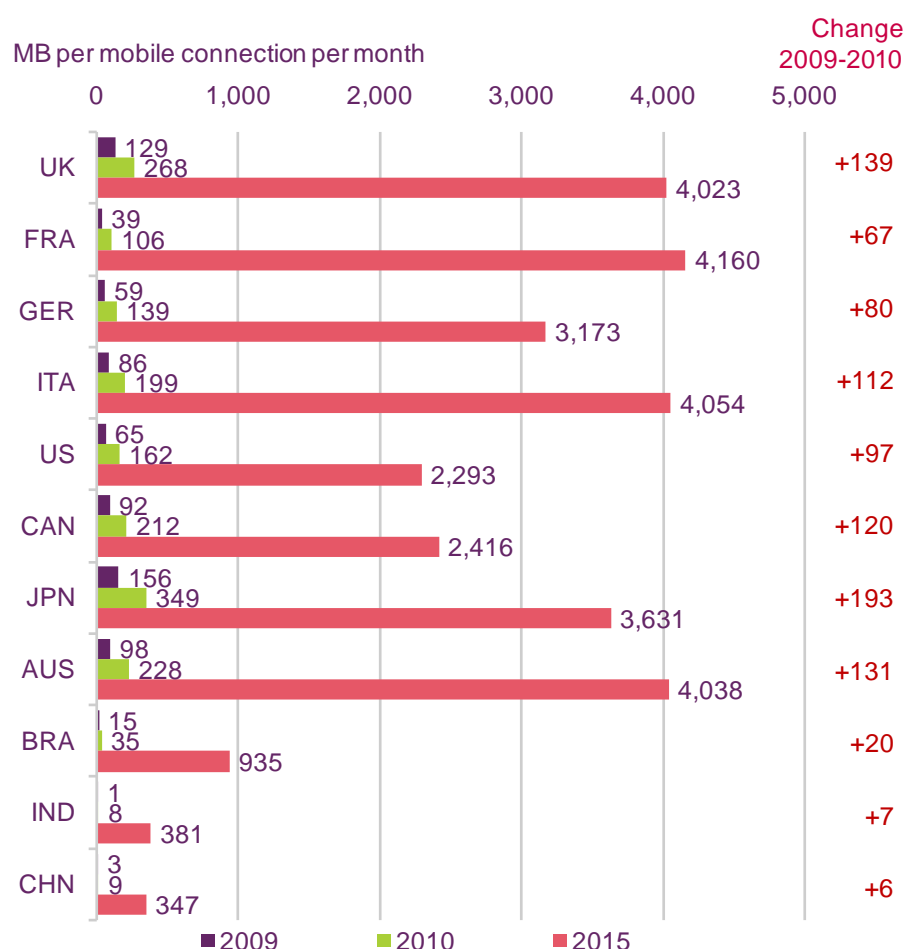
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<sup>63</sup> [http://www.cisco.com/en/US/netsol/ns827/networking\\_solutions\\_sub\\_solution.html](http://www.cisco.com/en/US/netsol/ns827/networking_solutions_sub_solution.html)

<sup>64</sup> Average mobile data volumes reported by Cisco for the UK are higher than that reported by UK mobile operators. Data published in Ofcom's Infrastructure report found that average mobile data throughput per 3G connection was 240MB in March 2011. See <http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2011/infrastructure-report.pdf>

<sup>65</sup> [http://www.vodafone.com/content/dam/vodafone/investors/financial\\_results\\_feeds/half\\_year\\_30september2011/p\\_halfyear2011.pdf](http://www.vodafone.com/content/dam/vodafone/investors/financial_results_feeds/half_year_30september2011/p_halfyear2011.pdf)

**Figure 6.11 Mobile data traffic per mobile connection: 2009, 2010 and 2015**



Source: Cisco Systems' Visual Networking Index

Figures given are for December in each year stated. Precise figures are not available: the 2009 and 2010 figures are Cisco estimated actuals, and the 2015 figure is a Cisco forecast.

### Mobile network operators are investing in upgrades to cater for data demand

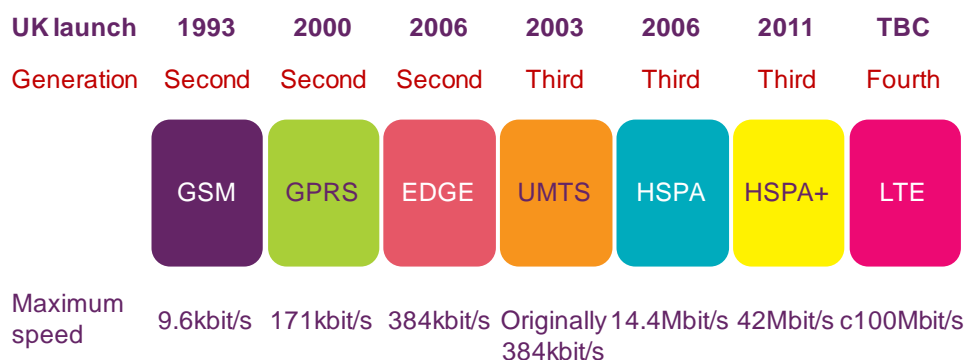
In order to keep up with the demand for mobile data services, operators need to invest in additional network capacity. Most operators in our comparator countries have now upgraded the radio access segment of their networks – the portion between the consumer's device and the base station - with HSPA technology, which offers download speeds theoretically more than 1,500 times faster than early second-generation (2G) GSM networks.

In some countries, including Sweden, Japan and the US, operators have deployed even faster networks, based on fourth-generation LTE technology, which can potentially deliver speeds of up to 100Mbit/s. However, this is the theoretical maximum speed that the technology is capable of, and is rarely achieved in practice. According to Ofcom's mobile broadband research, typical mobile data speeds in the UK were 1.5Mbit/s in Q4 2010<sup>66</sup>; in contrast, according to Vodafone, its LTE customers in Germany are receiving actual speeds

<sup>66</sup> This finding was presented in Ofcom's Measuring Mobile Broadband in the UK report, published in May 2011. See [http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2010/Mobile\\_BB\\_performance.pdf](http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2010/Mobile_BB_performance.pdf)

of 6-12Mbit/s<sup>67</sup> in practice. Figure 6.12 illustrates the evolution of mobile technology in the UK since 1993.

**Figure 6.12 Theoretical download speeds of mobile data technologies**



Source: Ofcom

### LTE networks offer faster downloads, less delay and greater efficiency

LTE networks offer a number of advantages both to consumers and to mobile network operators. For consumers, faster download speeds are required to deliver satisfactory performance for streaming high quality video content, while faster download and upload speeds make it quicker to receive and send large files. In addition to the benefits associated with faster overall speeds, LTE networks typically enable the transmission of data with lower delay (known as latency), meaning that internet connections are more responsive – for example, even a small web page will download much more quickly, while the experience of symmetric services like video telephony and online gaming are much improved.

For mobile network operators, LTE networks make more efficient use of radio spectrum, which will allow operators to carry more traffic for a given quantity of spectrum. This is highly important, given that radio spectrum is finite and telecoms operators have a licence to use only part of it. According to Ofcom's research<sup>68</sup>, LTE is 3.3 times as efficient for a given amount of spectrum, compared with standard 3G networks being used in 2011. The same research predicts that technical evolution will mean that by 2020, LTE networks will have become 5.5x as spectrally efficient as 3G networks in 2011.

### The UK trails other countries in LTE deployment

In December 2009, Swedish operator Teliasonera announced the launch of the world's first commercial mobile networks using the LTE standard, and by October 2011 LTE networks had launched in 21 countries worldwide, including six of our 17 comparator countries). In November 2011, two million subscribers currently use LTE services on 31 networks around the world, according to the GSA<sup>69</sup>.

However, the evolution of mobile networks is happening at a different pace in different countries. With spectrum auctions not scheduled until the second half of 2012, LTE services are unlikely to launch in the UK, Italy, Ireland and Australia until 2013 or later, while the early

<sup>67</sup>

[http://www.vodafone.com/content/dam/vodafone/investors/financial\\_results\\_feeds/half\\_year\\_30september2011/p\\_halfyear2011.pdf](http://www.vodafone.com/content/dam/vodafone/investors/financial_results_feeds/half_year_30september2011/p_halfyear2011.pdf)

<sup>68</sup> <http://media.ofcom.org.uk/2011/05/12/4g-set-to-deliver-capacity-gains-of-more-than-200-over-3g/>

<sup>69</sup> [http://www.vodafone.com/content/dam/vodafone/investors/financial\\_results\\_feeds/half\\_year\\_30september2011/p\\_halfyear2011.pdf](http://www.vodafone.com/content/dam/vodafone/investors/financial_results_feeds/half_year_30september2011/p_halfyear2011.pdf)

launch of high-speed LTE services in Sweden followed a 2.6GHz spectrum auction in 2008, and also comes in the context of high mobile broadband take-up.

Despite relatively high mobile data use in the UK, the launch of LTE services will be later than in many countries, as operators wait to purchase additional radio spectrum before rolling out LTE commercially, relying on HSPA until then. Ofcom has announced plans to auction spectrum at 800MHz and 2.6GHz (the former is 'digital dividend' spectrum made available by the switchover from analogue to digital television), which is likely to take place in the second half of 2012. In the meantime, operators are trialling LTE; Everything Everywhere announced in May 2011 that it would conduct a trial in Cornwall from September 2011 to early 2012, while in November 2011 O2 launched a nine-month trial in parts of London.<sup>70</sup>

Due to the greater availability of spectrum and a general focus on mobile rather than fixed-line infrastructure, the BRIC countries are ahead of many other countries, including the UK, in rolling out LTE networks. As illustrated in Figure 6.13 below, China has been offering services on a limited scale since 2010 and Brazil is expected to follow suit in 2012. India has only recently launched 3G services, but LTE services are expected to launch in 2012. In Russia, the focus has been on the deployment of Wimax wireless broadband services (Wimax is an alternative technology standard to LTE for delivering high-speed mobile broadband services).

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<sup>70</sup> <http://news.o2.co.uk/Press-Releases/O2-brings-superfast-4G-to-London-347.aspx>

**Figure 6.13 Awards of UHF spectrum for likely LTE use**

	Relevant spectrum awards	LTE launch	Comments
UK	No	No	Currently consulting on combined spectrum award. Proposed award is likely to be in the second half of 2012 with likely deployment of services starting 2013-2014.
FRA	No	No	Award for both bands expected early 2012
GER	Yes – 800MHz and 2.6GHz	Yes	Awarded May 2010. Commercial services launched late 2010.
ITA	Yes - 800MHz and 2.6GHz	No	Spectrum availability expected at the turn of 2012/2013
USA	Yes – 700MHz, 1700MHz and 2.1GHz	Yes	LTE services launched in all three bands in 2010
CAN		No	Launch expected 2012, with the auction of the 700MHz band late 2012.
JPN	Yes – 1500MHz	Yes	Launched December 2010.
AUS	No	No	700MHz and 2.6GHz auctions expected end 2012.
ESP	Yes – 800MHz and 2.6GHz	Expected late 2011	800MHz awarded July 2011.
NED	No	No	Awards in both bands expected early 2012.
SWE	Yes - 800MHz and 2.6GHz	Yes	World's first LTE deployment in 2009 after 2.6GHz award in 2008. Five operators now using this band. 800MHz awarded March 2011. Deployment of LTE Advanced expected in 2013.
IRL	No	No	Consultation launched on 800MHz band. Services expected after digital switchover in 2012. No plans for awarding 2.6GHz band.
POL	Yes – 2.6GHz	Yes	Part of the 2.6GHz band was awarded in 2009, which is already being used for LTE. No timetable for 800MHz.
BRA	No	No	2.6GHz spectrum award expected 2012.
RUS	Yes - 2.6GHz	No	2.6GHz band is being used for Wimax services.
IND	Yes – 800MHz and 2.3GHz	No	800MHz launch (2010) for UMTS only. 2.3GHz spectrum, awarded 2010, may be used for LTE, with services as early as the first half of 2012.
CHN		Yes	LTE services launched in 2010. Widescale deployment expected.

Source: Ofcom

### Mobile data networks in Poland offer the fastest theoretical speeds

Figure 6.14 details the highest theoretical speeds commercially available in 13 countries in November 2011. It should be treated with caution, as in all countries there is a large gap between theoretical speeds and the actual speeds being delivered, and in many countries the speeds marketed are below the theoretical speeds (for example, Bell in Canada indicates<sup>71</sup> average speeds of 12-25Mbit/s with peak speeds of 'up to' 75Mbit/s, and AT&T in the US simply claims LTE speeds will be 'up to ten times faster than 3G').<sup>72</sup>

While the technology (LTE, HSPA, HSPA+) is a determinant of the theoretical speeds available, network topology, radio access network contention, other network technologies and consumer hardware, as well as the size of the radio spectrum bands used, are also relevant in determining speed. For example, in Poland the joint venture between operators CenterNet and Mobyland uses a 20MHz shared downlink and uplink band in the 1800MHz band (using the LTE Time Division Duplex, or TDD, standard) to offer theoretical speeds of 153Mbit/s<sup>73</sup>, whereas Vodafone Germany uses two paired blocks of 5MHz in the 800MHz

<sup>71</sup> <http://www.bce.ca/en/news/releases/bm/2011/09/14/76960.html?displayMode=print&>

<sup>72</sup> <http://www.att.com/network/>

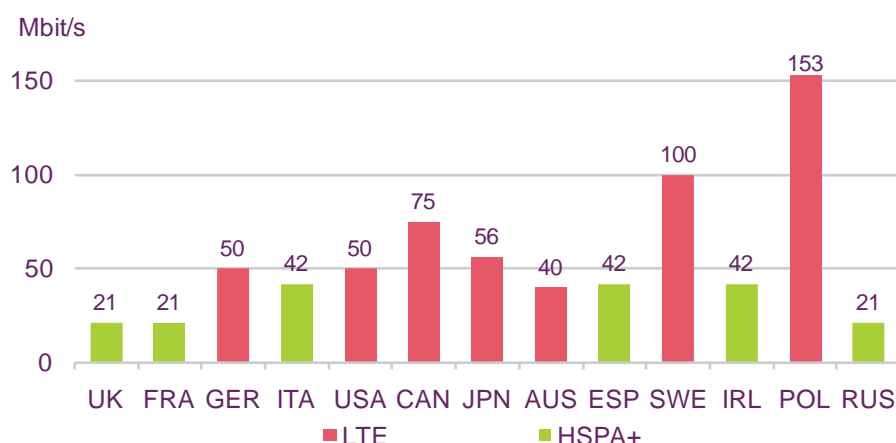
<sup>73</sup> [http://www.mobyland.com/pdfs/IP\\_MBL\\_and\\_Cent\\_07\\_09\\_2010\\_v7\\_en.pdf](http://www.mobyland.com/pdfs/IP_MBL_and_Cent_07_09_2010_v7_en.pdf)



band (using the Frequency Division, or FDD, standard) and offers theoretical maximum speeds of 50Mbit/s<sup>74</sup>.

In Sweden, Teliasonera's LTE network uses a 20MHz downlink carrier to offer theoretical speeds of 100Mbit/s<sup>75</sup>, while the LTE network deployed by MetroPCS in parts of the US uses 5MHz of spectrum, and has a lower theoretical maximum speed. As LTE networks are launched in more countries, the number of devices that can connect to LTE networks grows. By November 2011, according to the GSA, 161 devices capable of connecting to LTE networks were available. Most of these devices are also able to use HSPA networks, for when subscribers are not within range of an LTE base station.

**Figure 6.14 Maximum theoretical download speeds available via mobile networks, by country: October 2011**



Source: Ofcom, Global mobile Suppliers Association (GSA), Technology Update, 28 October 2011

<sup>74</sup> <http://www.mobilenewscwp.co.uk/2010/12/vodafone-germany-intros-lte-service-and-pricing/>  
<sup>75</sup> <http://feed.ne.cision.com/wpyfs/00/00/00/00/00/13/28/1C/wkr0002.pdf>

## 6.2 The telecoms industry

### 6.2.1 Introduction

In this section we consider the major trends in telecommunications markets in the 17 nations covered by this report from an industry and operator perspective. In general, we have looked at trends over the five years to 2010, although we provide year-on-year analysis where trends have changed significantly over the period.

In the first part of this section we provide an overview of the industry as a whole, considering recent trends in revenue growth. We then look at each market individually and in more depth, starting with fixed voice, followed by mobile voice and data services and concluding with an overview of fixed-broadband services.

Some of the key points highlighted in this section include:

- **Total retail telecoms revenue generated in the 17 countries covered in this report was £594bn in 2010, 1.9% higher than in 2009.** This growth followed a 0.4% fall in total telecoms revenues in 2009 (page 242).
- **The BRIC countries had the highest average annual growth rate in telecoms revenues in the five years to 2010.** Growth was highest in Russia at 16.1%, followed by India (10.6%) Brazil (6.6%) and China at 5.4%, while in the UK it averaged 1.2% over the period (page 244).
- **Annual revenues from mobile services in the US, the largest mobile market among our comparator countries, passed £100m for the first time in 2010.** However, it was in India that growth in mobile revenues was highest, with growth hitting 18% during the year. In the UK mobile revenues were unchanged at £14.9bn in 2010 (page 255).
- **In 2010 data services generated 34% of total telecoms revenue among the non-BRIC countries in our report, up from 16% in 2005 and 30% in 2009.** Among these countries, the proportion of telecoms service revenue generated by data services ranged from 27% in the UK to 43% in Japan (page 245).
- **The UK was one of only three countries where fixed broadband revenues declined in 2010.** This 4.8% revenue fall in the UK was as a result of falling prices and increasing service bundling, and was despite increasing average connection speeds (page 32).
- **Fixed voice volumes declined in all of our comparator countries except France, Canada, Australia, Russia and China in 2010.** The fastest rates of increase in 2010 were in China (up 4.0%) as a result of strong economic growth during the year and in France (up 2.1%), while in the UK fixed voice call volumes fell by 2.4% to 129 billion minutes (page 251).
- **In 2010 the proportion of mobile connections that were pre-pay fell in all of our comparator countries except the US, Russia and India.** This is as a result of providers seeking to maximising revenues from their existing customer base by incentivising pre-pay customers to switch to higher-spend monthly contracts (page 267).

## 6.2.2 Overview

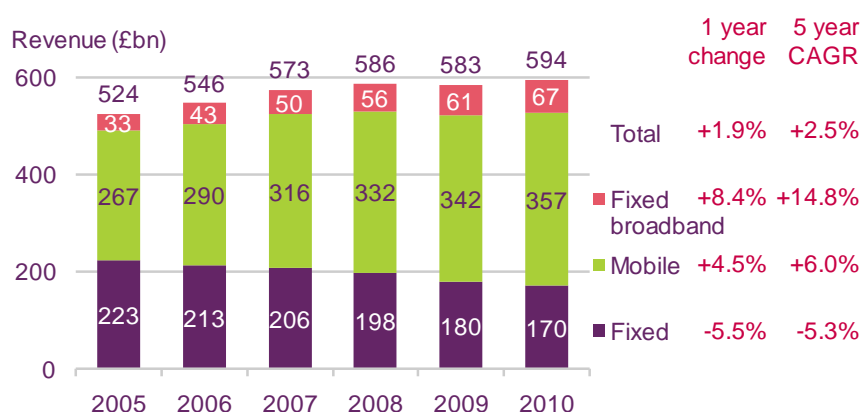
### Telecoms revenues return to growth, following a decline in 2009

Total retail telecoms revenue generated in the 17 countries covered in this report amounted to £594bn in 2010, 1.9% higher than in 2009 and 13.4% higher than in 2005 (Figure 6.15). The growth in 2010 was as a result of a slowing in the rate of decline of fixed-line revenues and an improvement in global economic conditions, and followed a 0.4% fall in total revenues in 2009.

In the five years to 2010, fixed broadband services provided the fastest growing element of telecoms revenues, increasing by an average of 14.8% a year, from £33bn in 2005 to £67bn in 2010. Over the same period, revenues from mobile services grew by an average of 6.0% a year, while those from fixed-line voice services fell by an average of 5.3% a year, from £223bn in 2005 to £170bn in 2010.

Mobile telephony services continued to generate the majority of total telecoms revenue in 2010, accounting for 60% of the total (up from 59% in 2005 and by more than nine percentage points since 2005). Fixed-line voice share of total telecoms revenues fell to 29% in 2010, (compared to 31% in 2009 and 43% in 2005) while fixed broadband services continued to account for 11% of total revenue, one percentage point higher than in 2009 and five higher than in 2005.

**Figure 6.15 Total comparator country retail telecoms revenue, by sector: 2005 to 2010**



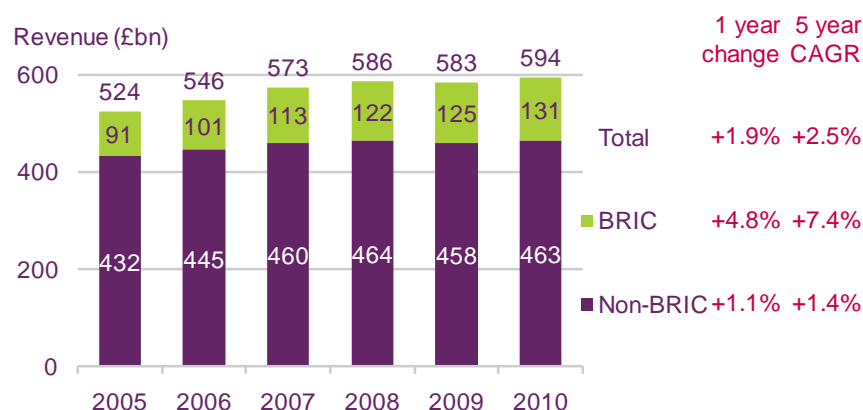
Source: IDATE / industry data / Ofcom

Note: Excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN; covers only the 17 countries in the analysis; figures have been restated to reflect more accurate data

### Brazil, Russia, India and China are growing the fastest by total telecoms revenues

The decline in total telecoms revenues in 2009 was as a result of a 1.2% fall in revenues in the non-BRIC countries (revenues in the BRIC countries – Brazil, Russia, India and China - continued to grow, increasing by 2.2% during the year). In 2010 non-BRIC country telecoms revenues returned to growth, increasing by 1.1% during the year as many countries recovered to some extent from the economic downturn. In the BRIC countries, the rate of telecoms revenue growth more than doubled in 2010 to 4.8% (Figure 6.16).

**Figure 6.16 Total comparator country retail telecoms revenue, by country type: 2005 to 2010**



Source: IDATE / industry data / Ofcom

Note: Excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN; covers only the 17 countries in the analysis; figures have been restated to reflect more accurate data

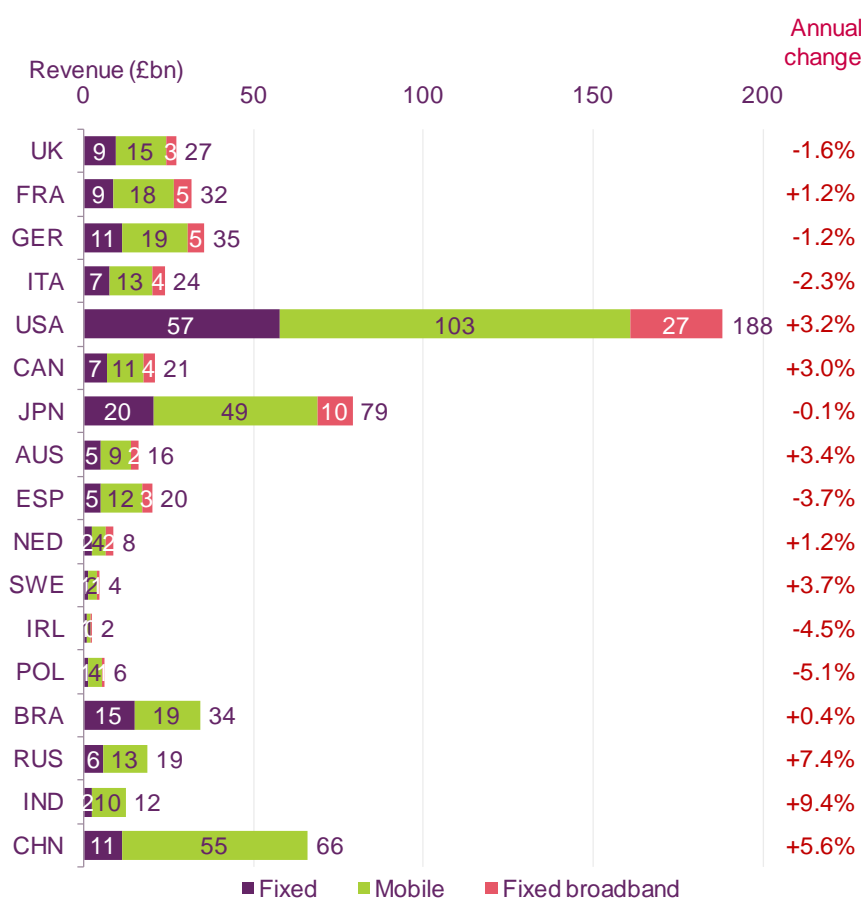
### Mobile accounts for the majority of telecoms spend in all countries except Ireland

Ireland was unique among our comparator countries in that it was the only nation where revenues generated by mobile services were less than the combined revenues generated by fixed voice and broadband services. In 2010, mobile services generated 49% of total telecoms revenue in Ireland, with fixed voice accounting for 39% of all revenue (the highest among our comparator countries).

High take-up and use of mobiles in Poland (along with low fixed-line take-up) meant that it had both the highest proportion of total revenue generated by mobile services in 2010 (69%) and the lowest proportions generated by fixed voice (20%) and fixed broadband (10%) services. The Netherlands had the highest proportion of telecoms revenues generated by fixed broadband services in 2010, at 24%.

In terms of total revenue, the US continued to be the largest telecoms market covered in this analysis (and in the world as a whole) in 2010, generating £188bn of telecoms service revenues in 2010, a 3.2% increase on 2009 (Figure 6.17). Japan generated the second-highest telecoms revenues in 2010 at £79bn (down 0.1% on 2009) while in China, which had the third highest telecoms service revenue in 2010 at £66bn, revenues were 5.6% higher than in 2009). The UK had the seventh-largest telecoms market among our comparator countries in 2010, at £27bn higher than in Italy (£24bn) but lower than in Germany and France (£35bn and £32bn respectively).

**Figure 6.17 Telecoms service retail revenue, by nation and by sector: 2010**



Source: IDATE / industry data / Ofcom

Note: Total service revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN

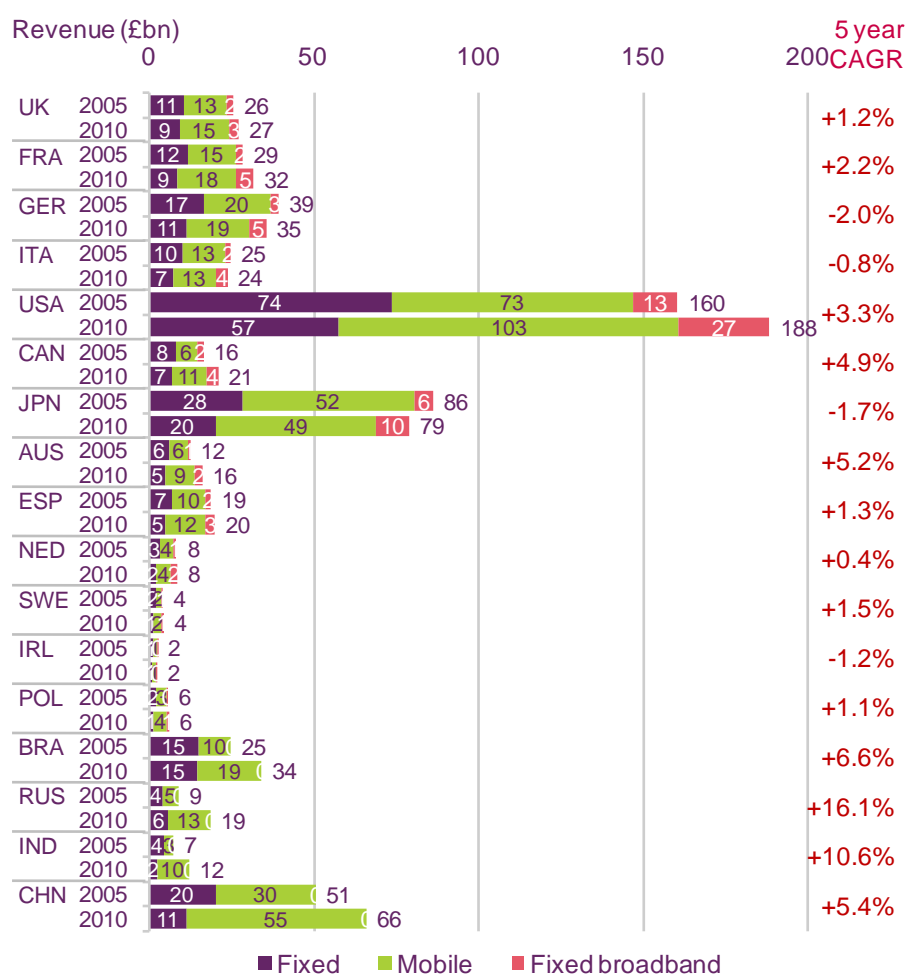
### Russia had the highest growth in telecoms revenues in the five years to 2010

The BRIC countries had the highest average annual growth rate in telecoms revenues in the five years to 2010, with the rate being highest in Russia at 16.1%, followed by India (10.6%), Brazil (6.6%) and then China at 5.4% (Figure 6.18).

Among the non-BRIC comparator countries, revenue growth was highest in Australia (5.2%) and Canada (4.9%) over the same five-year period. In both countries mobile revenues contributed the greatest increase in revenues, while percentage growth rates were highest for fixed broadband revenues. Similarly, in the UK, a 2.8% average annual increase in mobile revenues was the largest element of a 1.2% average annual rise in total revenues, although the highest percentage growth rate over the period was in fixed broadband revenues, at 8.1%.

In four of our comparator countries total revenues from telecoms services fell between 2005 and 2010. These countries were Germany (down an average of 2.0% a year), Italy (down 0.8% a year), Japan (down 1.7%) and Ireland (down 1.2%). These falls were largely caused by declining fixed voice revenues (which fell in all of our comparator countries except Russia between 2005 and 2010, reflecting falling fixed-line use). However, in these countries mobile service revenues also fell over the period as a result of declining prices (they were the only comparator countries where this occurred).

**Figure 6.18 Telecoms service retail revenues, by sector: 2005 and 2010**



Source: IDATE / industry data / Ofcom

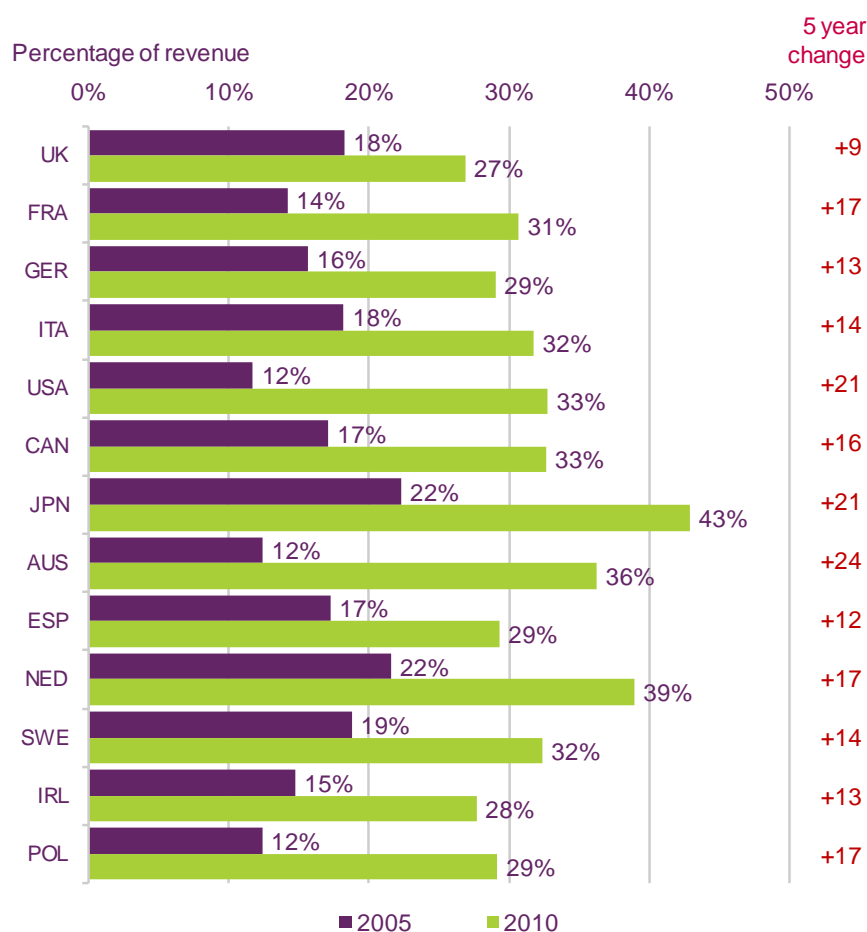
Note: Total service revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN

### Data services accounted for over a third of telecoms services revenues in 2010

There has been a gradual shift in the source of revenue for telecoms operators over the past few years, as revenues from voice services have declined and those from both fixed and mobile data services have increased. In 2010 data services generated 34% of total telecoms revenues among the non-BRIC countries in our report (we do not have fixed broadband revenue data for the BRIC countries), up from 16% in 2005 and 30% in 2009 (Figure 6.19). Among these countries, the proportion of telecoms service revenue generated by data services ranged from 27% in the UK to 43% in Japan, with the proportion from mobile data services ranging from 14% in France to 30% in Japan.

It should be noted that throughout this report, 'data service revenue' includes revenue from fixed broadband and mobile data services (including SMS and MMS messaging), but excludes revenue from narrowband internet and corporate data services (which are also excluded from our overall telecoms industry totals). Voice and data services are often sold together – for example, fixed broadband services are often sold in a 'bundle' with fixed voice services, and pay-monthly mobile services often include a bundle of both voice and data services – which can make it problematical to isolate revenues. We use operator allocations, but data revenues may be understated, as telephone rental is typically fully allocated to voice revenue, as are access charges for mobile phone contracts.

**Figure 6.19 Data revenue as a proportion of total telecoms revenues: 2005 and 2010**



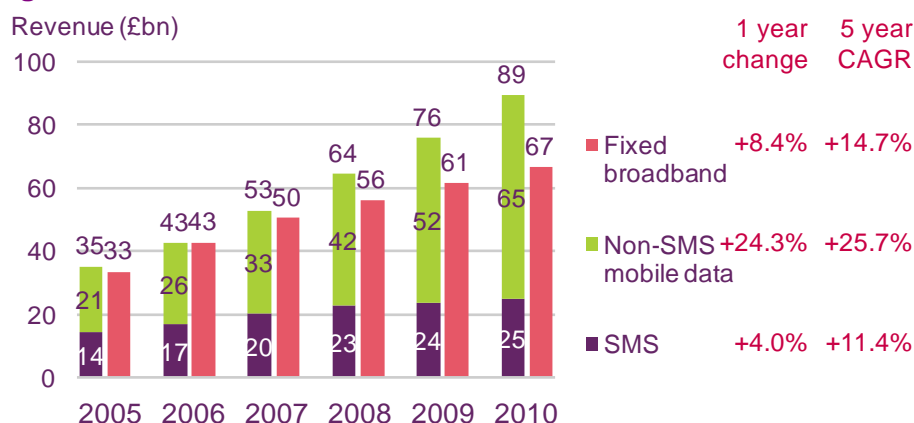
Source: IDATE / industry data / Ofcom

Note: Analysis excludes the BRIC countries

### Mobile data revenues growing twice as fast as those from fixed broadband

Figure 6.20 shows total mobile data and fixed broadband revenues from 2005 to 2010 in the 13 comparator countries for which fixed broadband revenue figures were available. This shows that mobile data revenues (£89bn) continued to be higher than those from fixed data services (£67bn) in 2010. Growth in mobile data revenues in 2010 (17.9%) was more than twice that of fixed broadband services (8.4%) in 2010, while on average over the previous five years the rates of growth were closer, at 14.8% for fixed broadband services and 20.6% for mobile data services.

**Figure 6.20 Fixed broadband and mobile data revenues: 2005 to 2010**



Source: IDATE / industry data / Ofcom

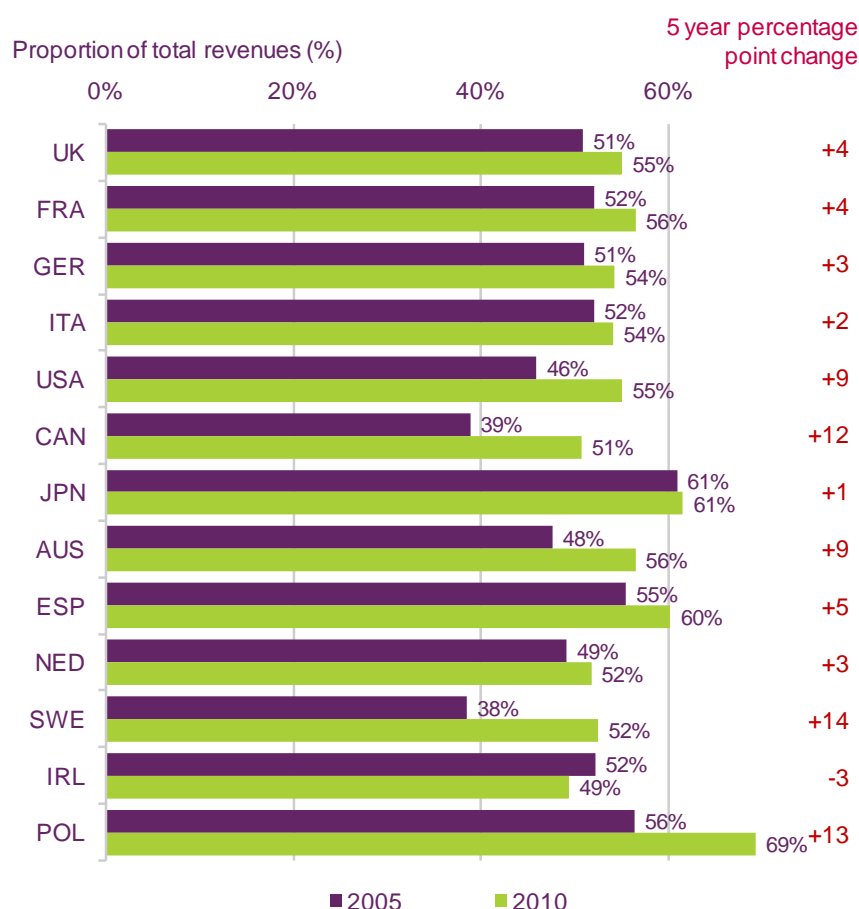
Note: Analysis excludes the BRIC countries

### Mobile accounts for 69% of total telecoms spend in Poland

Across the 13 comparator nations for which fixed broadband revenue data were available (which excludes the BRIC countries), mobile accounted for 56% of total telecoms revenues in 2010, compared to 51% in 2005 and 55% in 2009 (Figure 6.21). Ireland had the lowest proportion of revenue attributed to mobile in 2010, at 49%, while Japan had the lowest increase in mobile's share of total telecoms revenues over the five years, at just one percentage point. Poland had the highest proportion of telecoms revenue from mobile services in 2010, at 69%, while mobile's share of revenue had the largest increase in the five years to 2010 in Sweden, where it increased by 14 percentage points to 52% over the period. In the UK, mobile contributed 55% of total telecoms revenues in 2010, an increase of four percentage points on 2005.



**Figure 6.21 Mobile as a proportion of total telecoms revenues, 2005 and 2010**



Source: IDATE / industry data / Ofcom

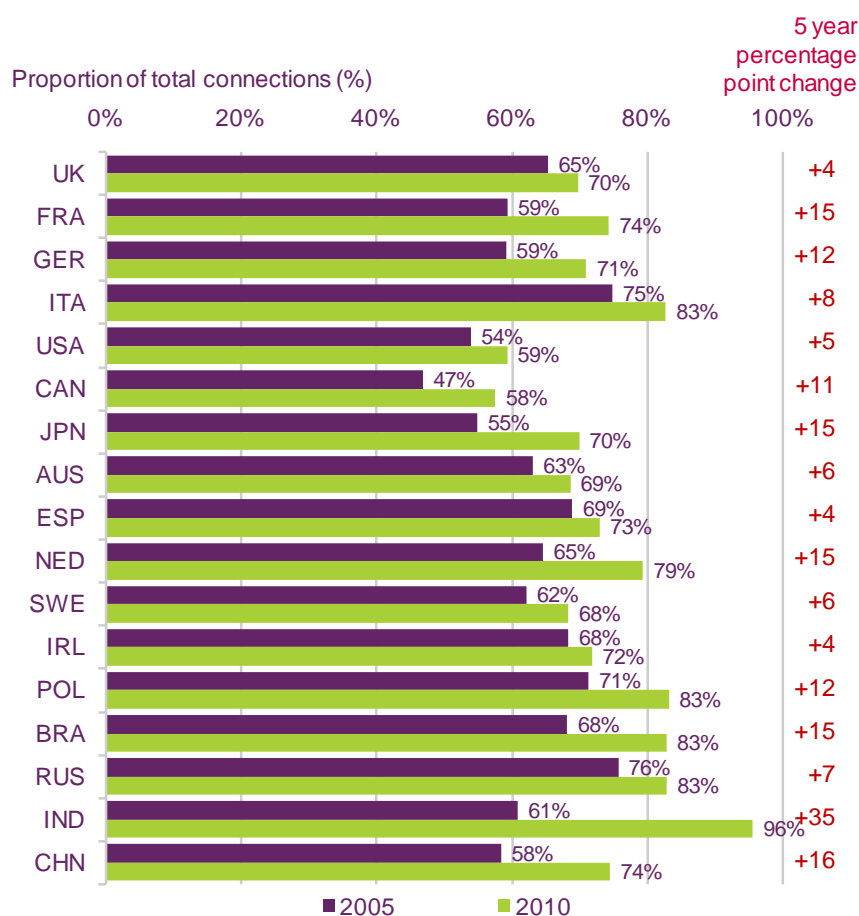
Note: Analysis excludes the BRIC countries

### Mobile accounts for over 95% of voice connections in India

The proportion of voice telecoms connections that were mobile was highest in India (96%) at the end of 2010, while among the European comparator countries Italy, Russia and Poland had the highest proportions, at 83% (Figure 6.22). Several factors may be behind a high proportion of mobile connections relative to fixed, including low fixed-line availability, the comparatively high cost of fixed-line services and the prevalence of multiple mobile connections per person, often present in countries where pre-pay is the main way of purchasing mobile services.

On average, mobile accounted for 78% of total voice telecoms connections across our 17 comparator countries in 2010, up from 76% in 2009 and 61% in 2005. In the UK 70% of all voice telecoms connections were mobile in 2010, four percentage points higher than in 2005 and the fifth lowest proportion among our comparator countries after Canada (58%) the US (59%) Sweden (68%) and Australia (69%), where the majority of mobile connections are pay-monthly contracts.

**Figure 6.22 Mobile as a proportion of total voice connections: 2005 and 2010**



Source: IDATE / industry data / Ofcom

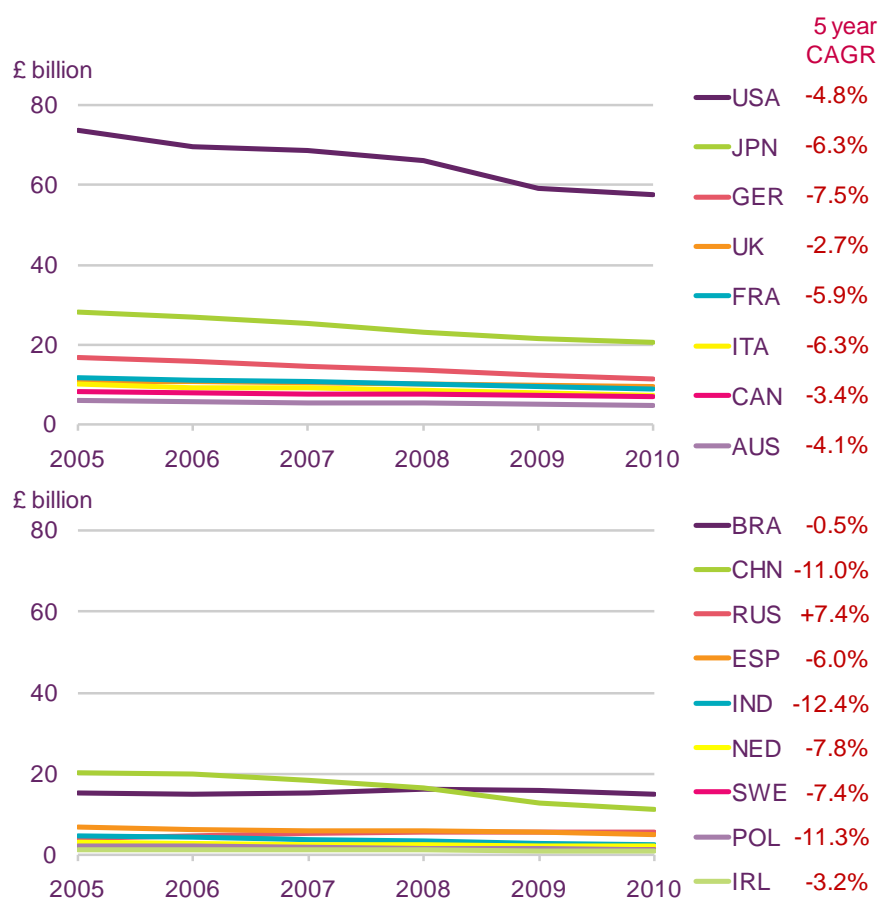
Note: Calculation excludes mobile broadband connections

### 6.2.3 Fixed voice services

#### Fixed voice revenues fell in every country except Russia and Sweden in 2010

Across all 17 comparator countries fixed voice telephony revenues fell by an average of 5.3% a year between 2005 and 2010, lower than the 8.9% fall in 2009, when the full effect of the global economic downturn was felt (Figure 6.23). Fixed voice revenues fell in all our comparator countries in 2010 with the exception of Russia, which was also the only comparator country where fixed-line revenues increased over the five-year period. The fastest average annual decline in fixed voice telephony revenues over the five years to 2010 was in India (12.4%), followed by Poland (11.3%), where levels of mobile use are high and increasing rapidly. In the US revenues fell by an average of almost 5% annually over the period, to £57bn in 2010.

**Figure 6.23 Fixed-line voice retail revenues, 2005 and 2010**



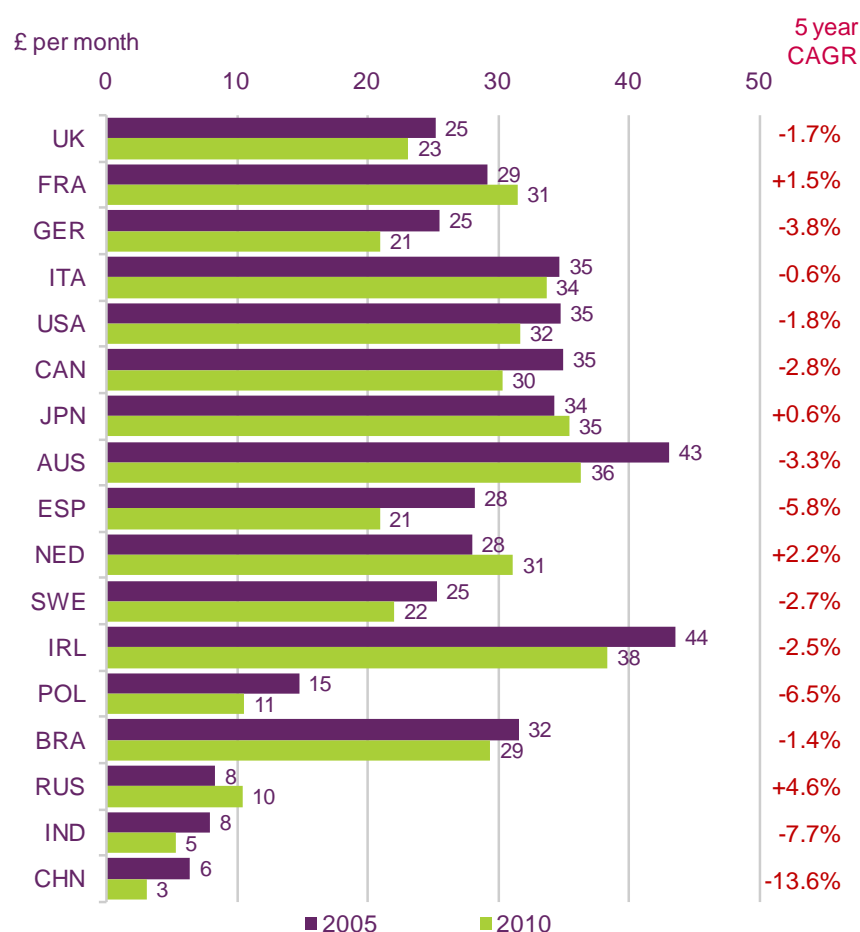
Source: IDATE / industry data / Ofcom

### Average voice revenue per fixed line is lowest in China at £3 a month

Average voice revenue per fixed line fell in all but four of the countries covered in this analysis between 2005 and 2010, with the largest average annual declines being in China (13.6%) and India (7.7%), where the shift towards mobile voice telephony is likely to be the main contributory factor (Figure 6.24). The largest increase in revenue per line over the period was in Russia, where the increase averaged 4.6% a year to £10 per month in 2010, although most of this growth occurred prior to 2008 and average revenue per line has remained largely unchanged since then.

There were significant variations in the average monthly revenue per fixed voice line generated during 2010 among the 17 countries covered in this report. The highest revenue per line was in Ireland, at £38 per month, while it was just £3 per month in China. Average spend per fixed line in the UK was £23 in 2010, down an average of 1.7% a year since 2005. The average monthly revenue per line across the 17 countries was £17 in 2010, down from £22 in 2005, largely as a result of growth in the number of lines in the BRIC countries, where average revenue per line is low.

**Figure 6.24 Average monthly revenue per fixed line, 2005 and 2010**



Source: IDATE / industry data / Ofcom

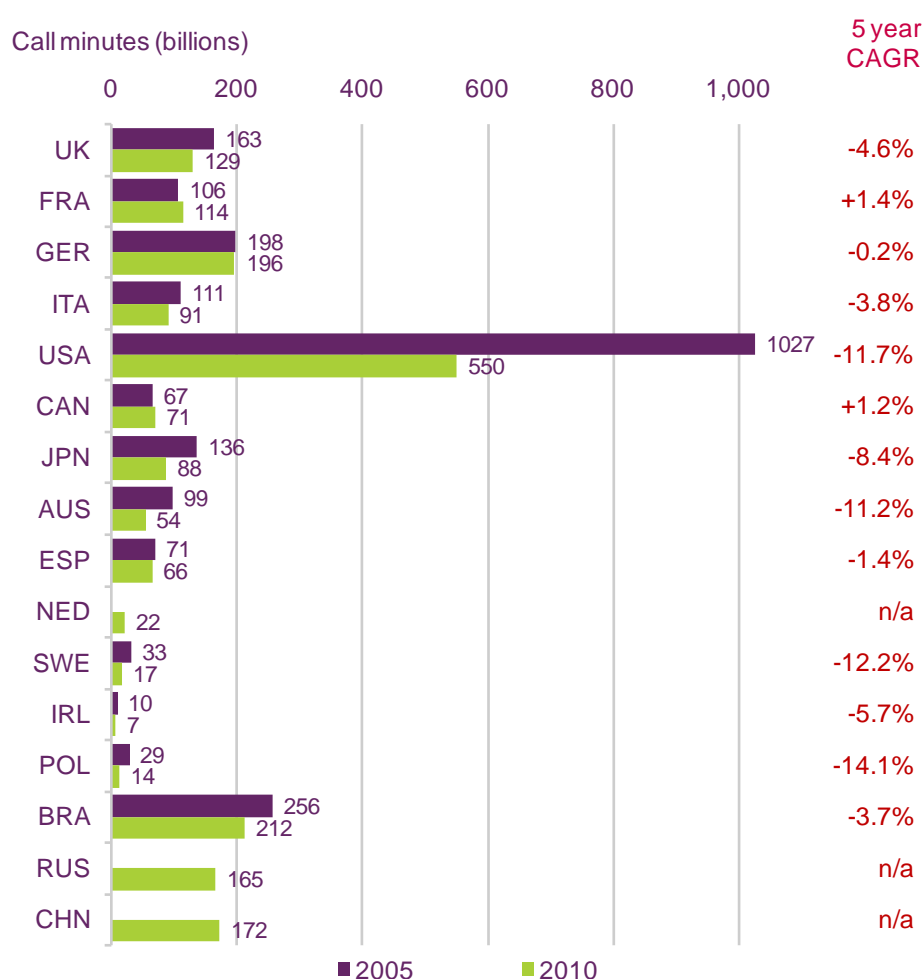
### Fixed call volumes are declining in most comparator countries

Fixed voice volumes declined in all but five of the comparator countries for which data were available in 2010, those countries being France, Canada, Australia, Russia and China. The fastest rates of growth in 2010 were in China (up 4.0%) as a result of strong economic growth during the year, and in France (up 2.1%), as a result of the availability of cheap voice over IP (VoIP)-based fixed-line services.

Among the 11 comparator countries where fixed voice call volumes fell in 2010, the rate of decline ranged from 0.2% in Germany (where mobile services are relatively expensive) to 15.0% in Poland where there is low availability of fixed-line networks and high mobile use. Across all of the comparator countries for which data were available, fixed voice call volumes fell by an average of 3.8% in 2010, the rate of decline in the UK being less than average at 2.4%.

Looking at the longer-term trend, France and Canada were the only comparator countries for which data were available, where fixed voice call volumes increased in the five years to 2010, growing by an average of 1.4% and 1.2% respectively over the period (Figure 6.25). Again, Poland had the highest average annual rate of decline in fixed call volumes at 14.1%, while in the UK fixed voice call volumes fell by an average of 4.6% a year over the period.

**Figure 6.25 Fixed-line voice call volumes: 2005 and 2010**



Source: IDATE / industry data / Ofcom

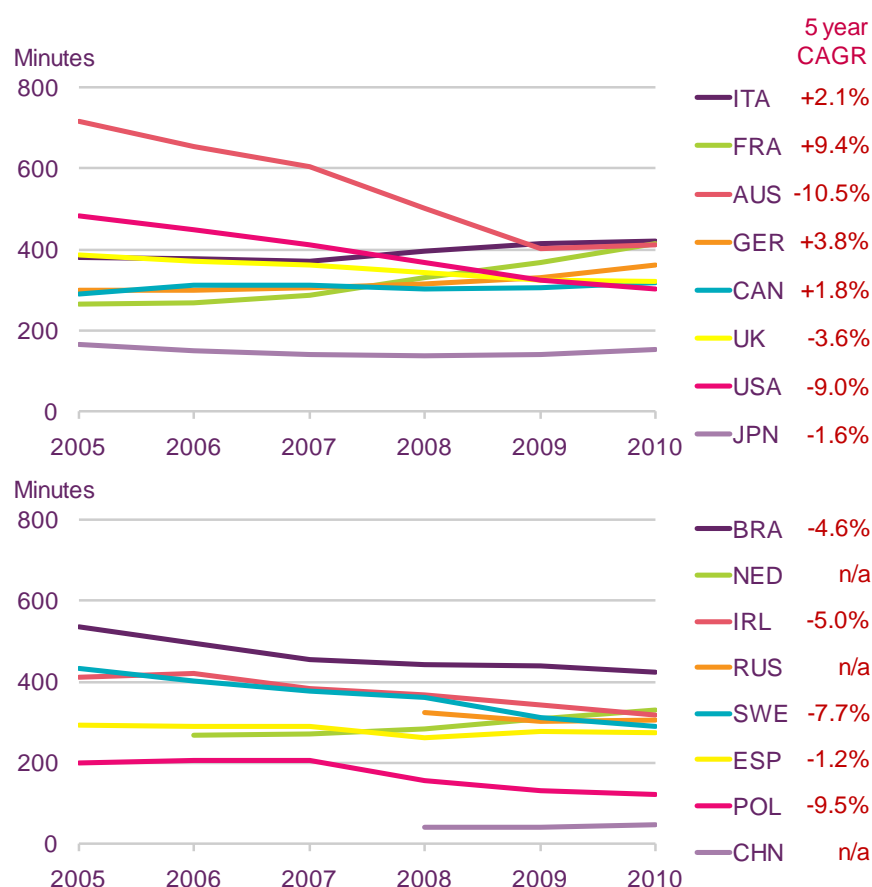
Note: Figures for US and CAN exclude local and VoIP calls and include incoming mobile calls

### Call minutes per fixed line were highest in Brazil in 2010

The average number of monthly outgoing minutes per fixed line fell by 3.8% a year to 315 minutes a month in the five years to 2010, across the 13 comparator countries for which full time series data was available (Figure 6.26). Brazil had the highest number of call minutes per fixed line in 2010, at 422 minutes a month, almost nine times higher than that in China, where average use was lowest, at 47 minutes per month.

Average call volumes per fixed line in the UK fell to 322 minutes in 2010, an average annual decline of 3.6% over the five-year period. Italy, France, Germany and Canada were the only comparator countries for which full time series data were available where call volumes per line increased during the same five-year period, with the largest average annual rate of growth being in France, at 9.4% per year.

**Figure 6.26 Monthly outbound minutes per fixed line: 2005 to 2010**



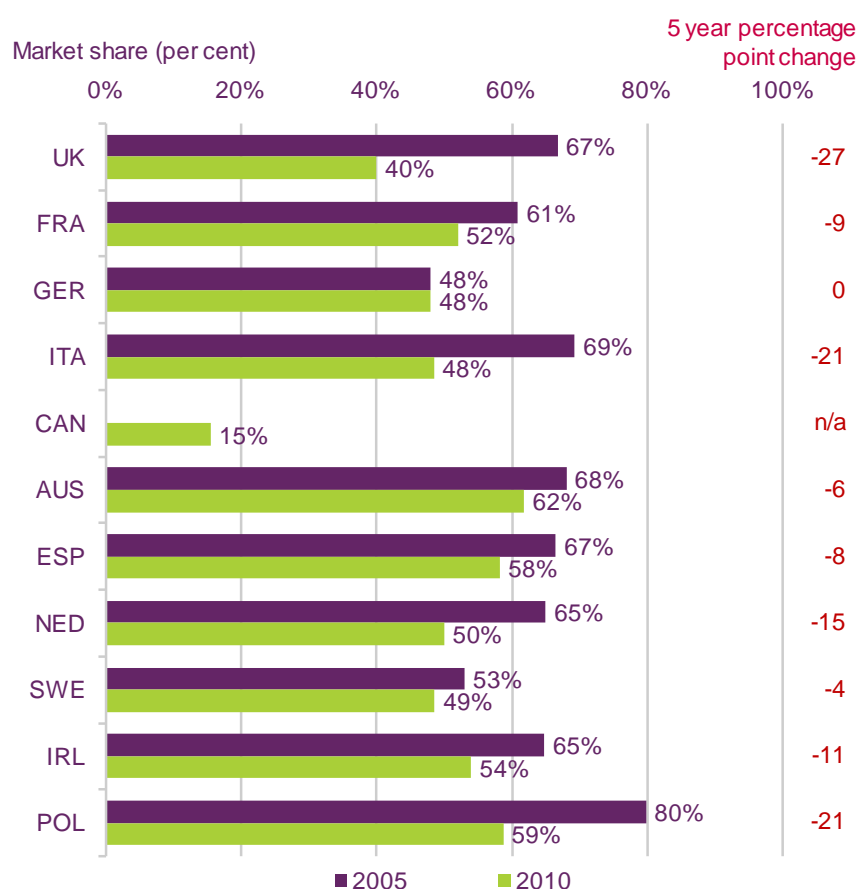
Source: IDATE / industry data / Ofcom

Note: Figures for US and CAN exclude local and VoIP calls and include incoming mobile calls

### Germany is the only nation where the incumbent operator's fixed call volume share has not fallen

Across all of the comparator countries for which figures were available, the incumbent operator's share of fixed voice call volumes ranged from 15% in Canada (where the market is fragmented between regional players) to 62% in Australia in 2010 (Figure 6.27). In the UK, BT's share of fixed voice call volumes was 40%, the second lowest share after Bell Canada's, and 27 percentage points lower than it had been in 2005, the largest fall among our comparator countries. There were similar falls in the proportion of fixed call volumes which originated on the national incumbent operators' networks in the five years to 2010 in all of the comparator countries for which figures were available, the only exception being in Germany, where Deutsche Telekom's share was unchanged at 48%.

**Figure 6.27 Incumbent operator's share of fixed voice call volumes: 2005 and 2010**



Source: IDATE / industry data / Ofcom

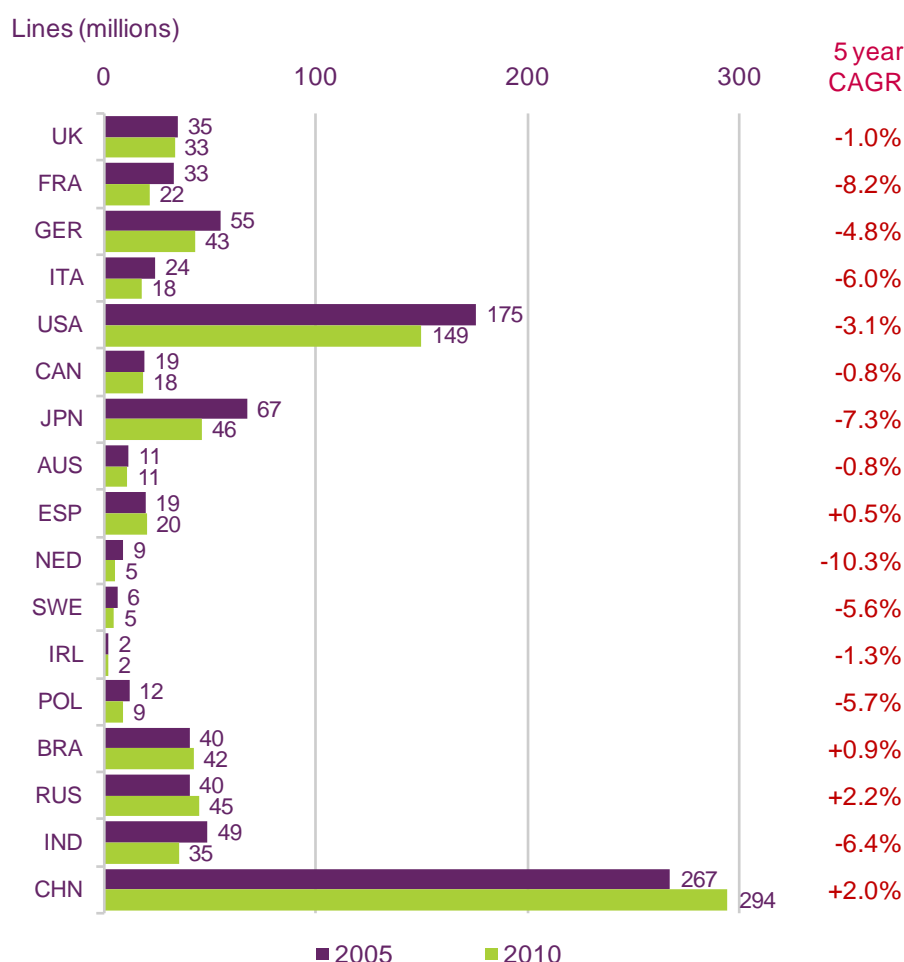
Note: Figures for CAN exclude local and VoIP calls and include incoming mobile calls

### Take-up of VoIP drives decline in fixed exchange lines in the Netherlands, France and Japan

Between 2005 and 2010 the number of fixed exchange lines fell in all of our comparator countries except Russia, China, Brazil and Spain, where the number of lines increased by averages of 2.2%, 2.0%, 0.9% and 0.5% respectively per year over the period (Figure 6.28). Brazil was the only comparator country where the number of fixed exchange lines increased in 2010 (up by 1.4%), as the number of lines in Spain, Russia and China have declined over recent years.

The fastest average annual rate of decline in the number of fixed lines in the five years to 2010 was in the Netherlands, at 10.3%, followed by France and Japan, where the number of lines fell by an average of 8.2% and 7.3% a year respectively. Increasing take-up of VoIP services over broadband connections, where no fixed voice line connection is required (using either 'naked' DSL, cable or fibre), is likely to be a significant contributor to the rapid decline in these countries. In the UK the number of fixed lines fell by 1.0% a year, on average, over the period, to 33 million.

**Figure 6.28 Fixed exchange lines: 2005 and 2010**



Source: IDATE / industry data / Ofcom

## 6.2.4 Mobile voice and data services

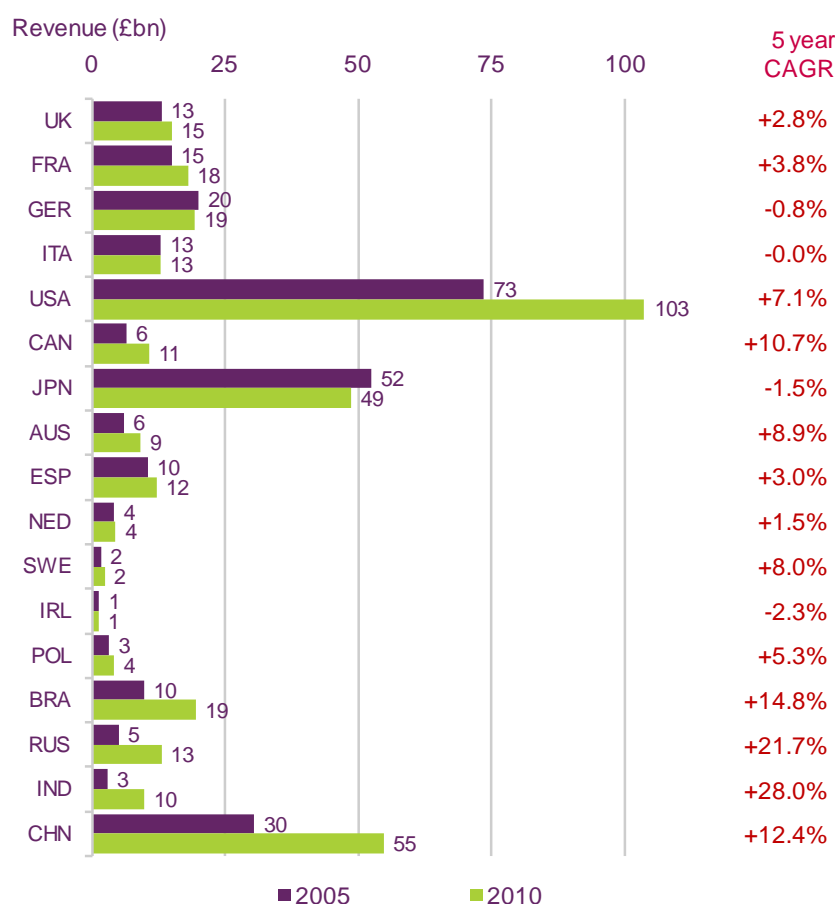
### US mobile revenues passed £100m for the first time in 2010

Annual revenues from mobile services in the US, the largest mobile market among our comparator countries, passed £100m for the first time in 2010, growing by 4.8% during the year to £103m. However, it was in India that growth in mobile revenues was highest, with growth hitting 18.0% during the year (in the UK mobile revenues were unchanged at £14.9bn).

Average growth in mobile revenues was highest in the BRIC countries during the five years to 2010, with India experiencing the largest average annual increase, at 28.0% a year; from £3bn in 2005 to £10bn in 2010 (Figure 6.29). However, growth in the BRIC countries is slowing, and was, on average, 10.0% in 2010 compared to an average of 15.1% in the five years to 2010. Outside the BRIC countries average annual revenue growth in the five years to 2010 was strongest in Canada (10.7%) and Australia (8.9%), while in the UK revenue grew by an average of 2.8% a year. Ireland, Japan, Germany and Italy were the only countries in which mobile revenues declined over the five-year period, with the sharpest fall being in Ireland, where revenues dropped by an average of 2.3% a year over the period.



**Figure 6.29 Mobile retail revenues, 2005 and 2010**



Source: IDATE / industry data / Ofcom

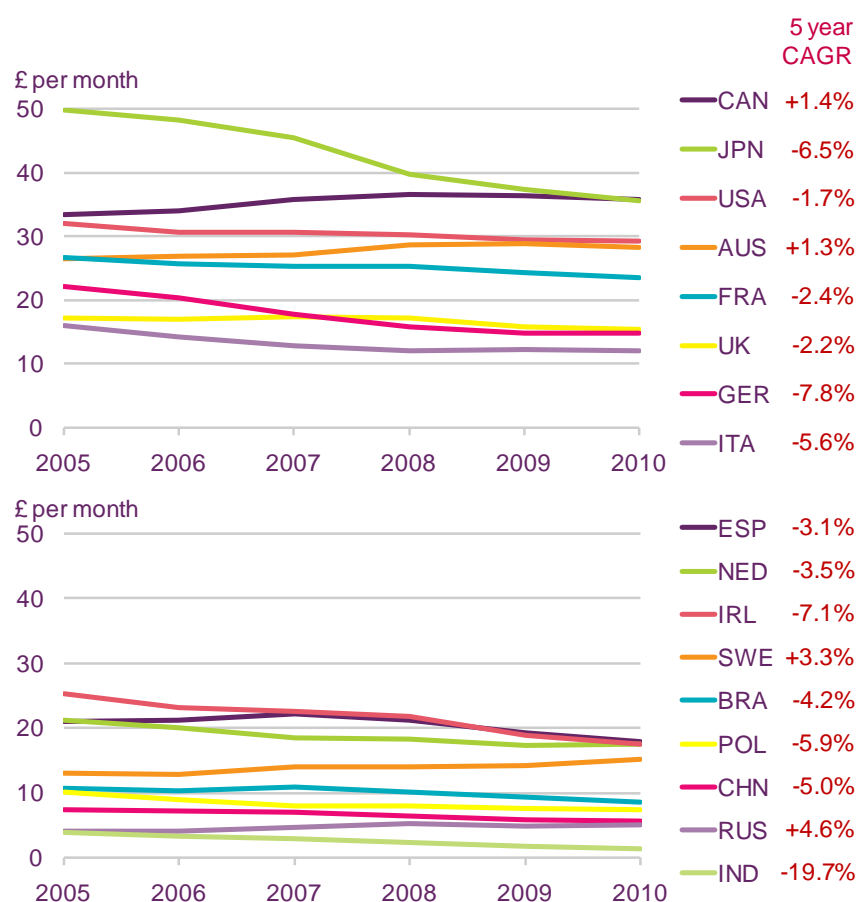
Note: USA and CAN include revenues from incoming calls

### Revenue per mobile connection is highest in Canada and Japan, at £36 per month

In most comparator countries, average revenue per mobile connection declined in the five years to 2010, with the greatest average annual falls in being in India (19.7%) and Germany (7.8%) where spend has fallen as a result of falling prices, and is despite growing call volumes per connection (see Figure 6.35). Competition between mobile providers is the main factor behind falling prices in most comparator countries, and this has led to falling average spend, although the global economic downturn is likely to have also had a downward effect, as consumers have sought to reduce household spend.

The only comparator countries where average spend per connection increased in the five years to 2010 were Sweden, Russia, Canada and Australia. There were wide variations in revenue per mobile connection across our comparator countries, with average spend in 2010 ranging from just £1 per month in India to £36 a month in Canada and Japan (Figure 6.30). The main driver of variations in average mobile spend are differences in income levels (although although high levels of multiple connections per user will also reduce average spend). In the UK, average monthly spend fell by an average of 2.2% a year in the five years to 2010, to £15.

**Figure 6.30 Average monthly revenue per mobile connection: 2005 to 2010**



Source: IDATE / industry data / Ofcom

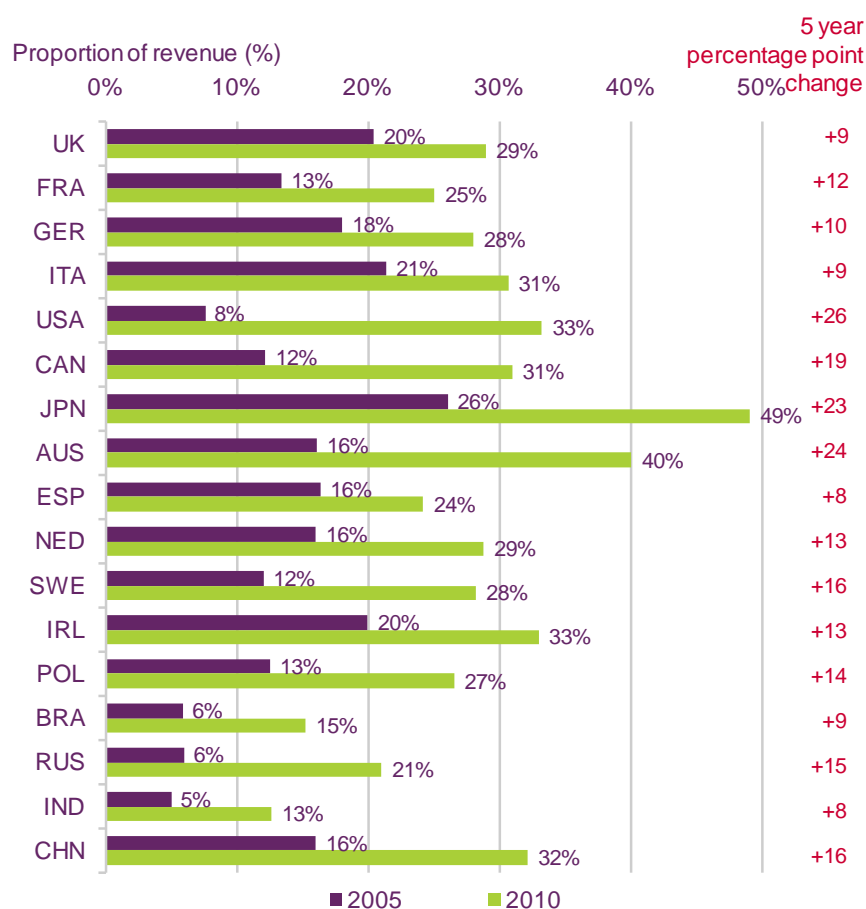
Note: USA and CAN include revenues from incoming calls

### Data services generated almost a third of total mobile revenues in 2010

Data service revenues have become an increasingly important element of mobile revenues over recent years, as the use of mobile data services, including SMS messaging services, has increased while growth in mobile voice revenues has been limited, as a result of price competition between providers. Among our comparator countries, the average proportion of total mobile revenue that was generated by data services (including SMS messaging) more than doubled; from 15% to 32% in the five years to 2010 (Figure 6.31).

The proportion of mobile revenue generated by data services grew in all of our comparator countries in the five years to 2010, with the increase over the period ranging from eight percentage points in Spain and India to 26 percentage points in the US (in the UK the increase was eight percentage points). Japan had the highest proportion of mobile revenues generated by data services in 2010, at 49%, and it appears likely that mobile services will generate over half of total mobile revenue in Japan in 2011. Conversely, the lowest proportion of mobile revenue generated by data services was in India, where the availability of 3G services and take-up of internet-enabled handsets is low, at 13% (in the UK, data accounted for 29% of mobile revenue in 2010, slightly lower than the average).

**Figure 6.31 Data as a proportion of total mobile service revenue: 2005 and 2010**



Source: IDATE / industry data / Ofcom

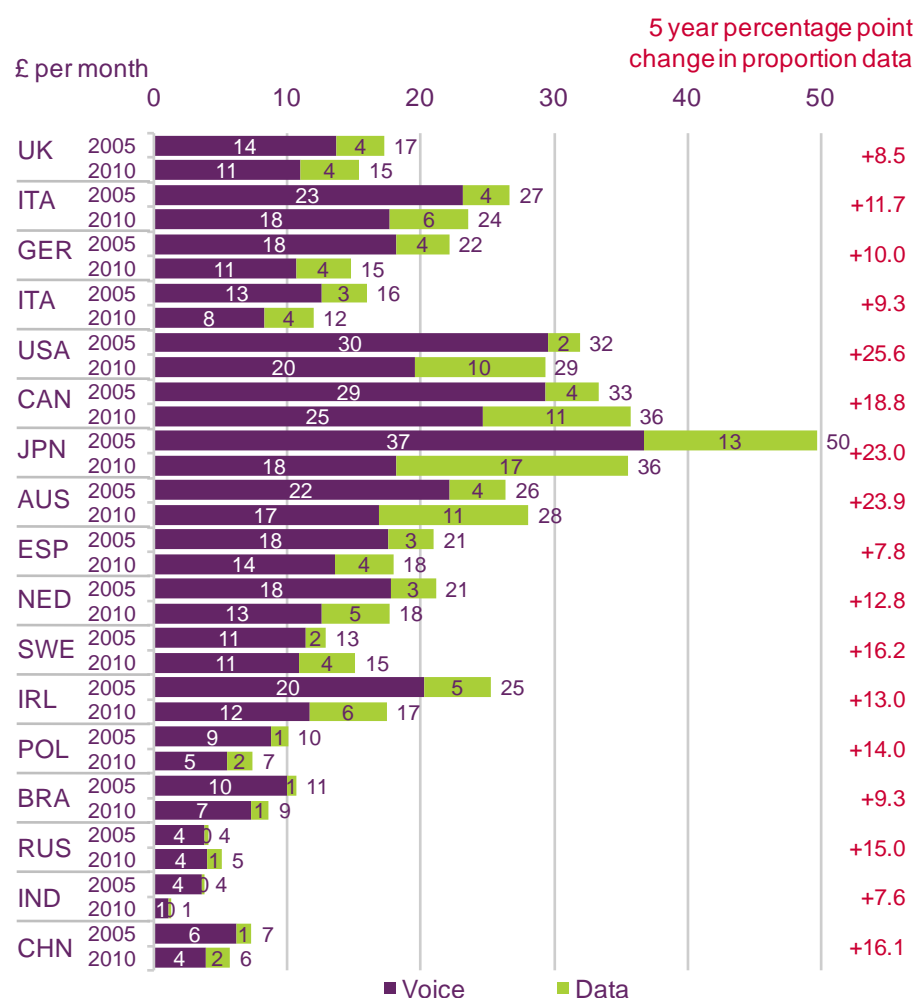
Note: USA and CAN include revenues from incoming calls

### Mobile revenues per connection are falling in most comparator countries

Average revenue per mobile connection fell in all of our comparator countries except Sweden, Russia, Canada and Australia between 2005 and 2010, with the average annual increase among these countries ranging from 1.3% in Australia to 4.6% in Russia (Figure 6.32). The main reason behind falling average revenues per connection is declining prices, although average spend will be further reduced in countries with high levels of multiple connections per user (typically, those with high levels of pre-pay use, such as Italy).

In most comparator countries, falling average voice revenues per connection is being offset by increasing average data revenues per connection: in the five years to 2010 Russia (up by an average of 1.0% a year) was the only comparator country where average voice spend per connection grew, while over the same period average data revenue per connection increased in all of our comparator countries except India (where it fell by an average of 3.4% a year). In the UK, average mobile data revenue per connection increased by £1 a month to £4 in the five years to 2010, although this was offset by a £3 a month decline in spend on voice services, to £11, over the same period.

**Figure 6.32 Average monthly voice and data revenue per mobile connection: 2005 and 2010**



Source: IDATE / industry data / Ofcom

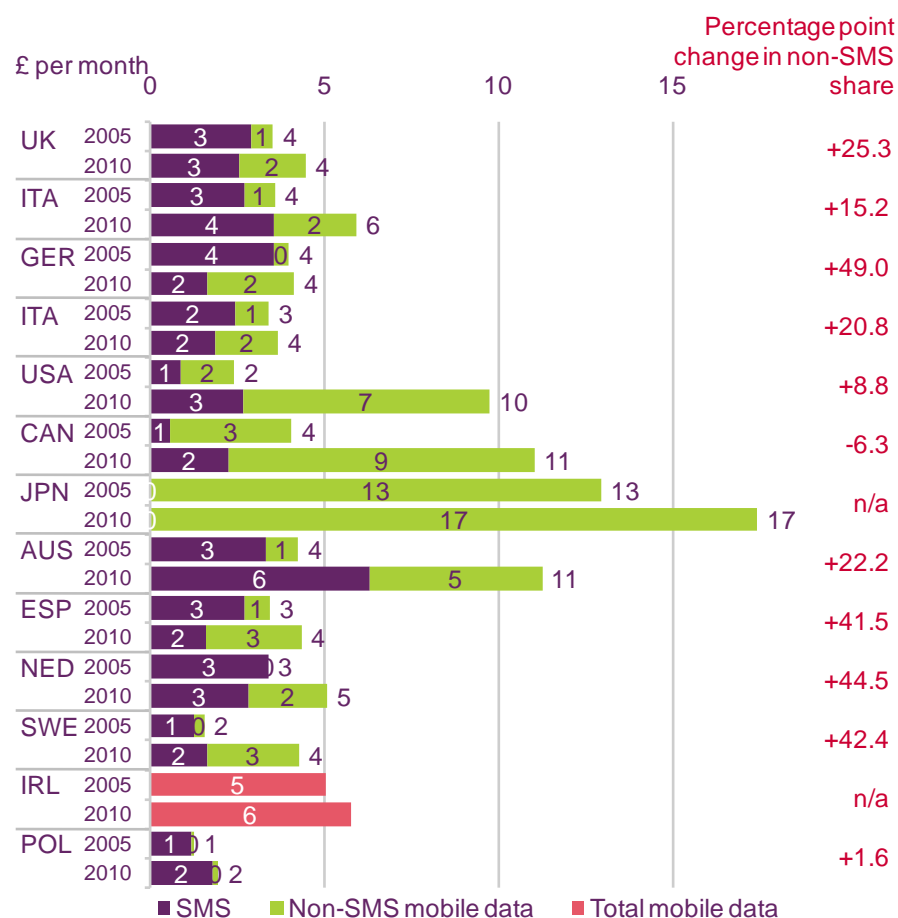
Note: USA and CAN include revenues from incoming calls

### Share of non-SMS data services has increased in all countries except Canada

While the proportion of total mobile revenues per connection that are generated by data services has been increasing in almost all of our comparator countries, the proportion of average data revenues generated by services other than SMS messaging also increased in all of our comparator countries (Figure 6.33). This is as a result of the increasing sophistication of mobile devices (many of which are now web-enabled) and growth in the take-up of mobile broadband services using either a mobile datacard or dongle.

The largest increase in the proportion of average mobile data revenues that are generated by services other than SMS was in Germany in the five years to 2010, at 49.0 percentage points, while in Canada this proportion fell by 6.3 percentage points to 20.3% (in the UK the increase over the same period was 25.3 percentage points). In six of our comparator countries (Germany, the US, Canada, Japan, Spain and Sweden) non-SMS data services accounted for the majority of average mobile data revenue per subscriber in 2010, while in the UK the figure was 43%. In Japan, SMS use is not widespread, and mobile users are much more likely to use email and instant messaging on their mobile handsets instead.

**Figure 6.33 Average monthly SMS and non-SMS data revenue per mobile connection: 2005 and 2010**



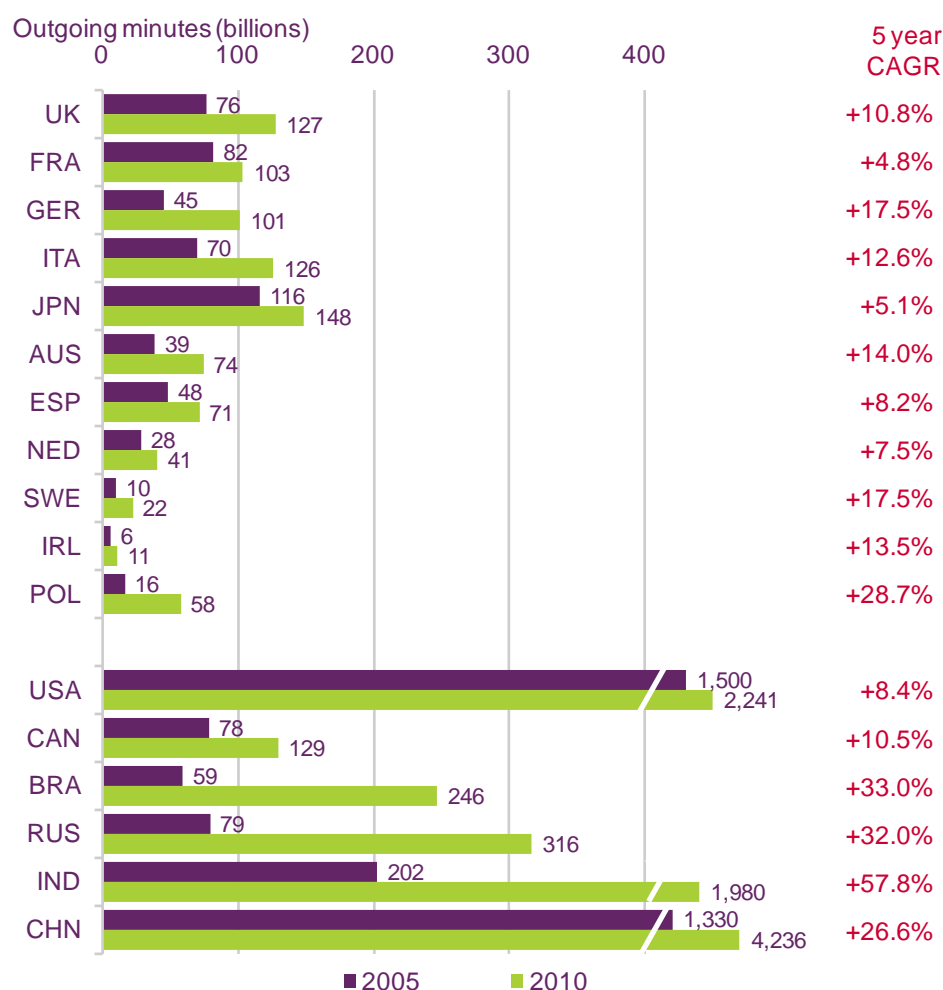
Source: IDATE / industry data / Ofcom

### Mobile voice call volumes fell in the US in 2010

Mobile call volumes increased in all of our comparator countries in 2010 except the US, where total mobile call volumes (which, as in Canada and the BRIC countries, include incoming and outgoing calls) fell by 1.5%. Fixed voice call volumes also fell in the US in 2010, suggesting increasing use of other forms of communication such as VoIP, email and mobile messaging, including SMS (see Figure 6.36). Looking at the long-term trend, in the five years to 2010 mobile call volumes increased in all the comparator nations for which data were available, with the fastest growth being among the BRIC nations (average annual growth rates during the period were in excess 30% in Brazil, Russia and India) as shown in Figure 6.34.

Among the non-BRIC countries the average annual growth in mobile voice call volumes ranged from 4.8% a year in France (where fixed voice services are relatively cheap, due to the availability of VoIP-based services) to 28.7% in Poland, where there is limited fixed-line availability. In the UK, mobile voice call volumes increased by an average of 10.8% in the five years to 2010, around half the average rate of 21.7% across all of our comparator countries as a result of the UK's mobile market being comparatively mature.

**Figure 6.34 Mobile voice call volumes: 2005 and 2010**



Source: IDATE / industry data / Ofcom

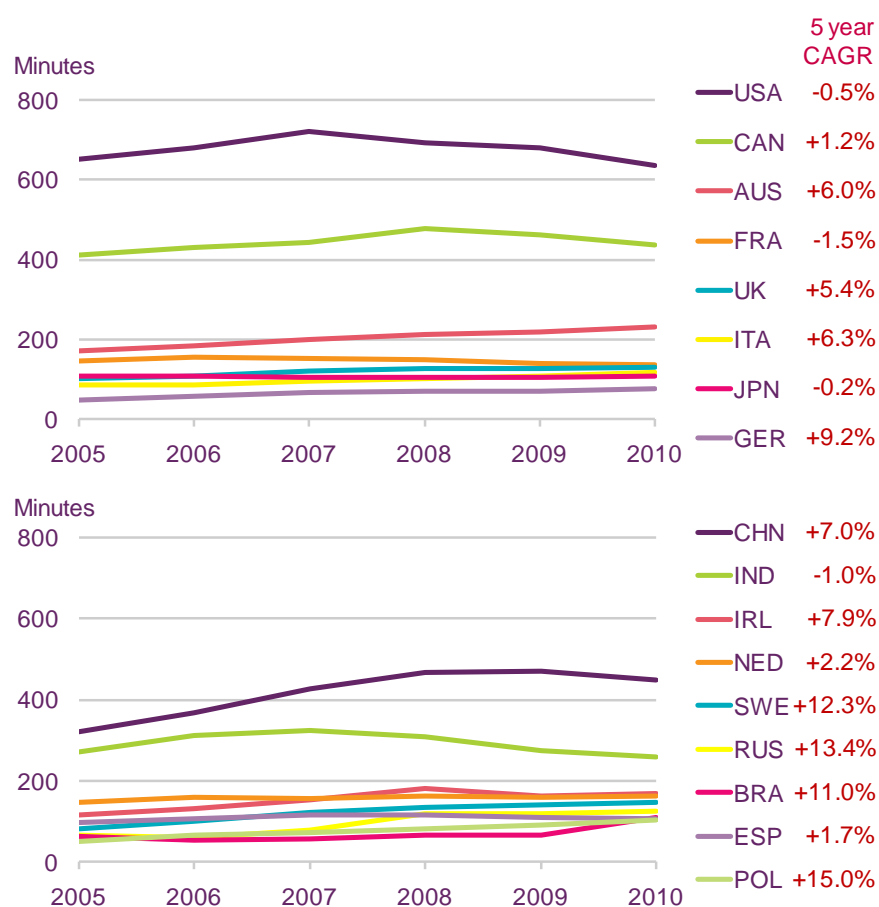
Note: USA, CAN and CHN include incoming calls; BRA, RUS and IND include fixed-to-mobile and off-net incoming calls

### Mobile call volumes per connection fell in six comparator countries in 2010

Average call volumes per mobile connection fell in six of our comparator countries (the US, Canada, France, China, India and Spain) in 2010 (Figure 6.35). In those countries where take-up is relatively low, this is often because newer mobile subscribers are lower users of mobile services and therefore pull down average use per connection, while in countries where penetration is high it is because mobile users are dividing their use across more than one connection, and therefore average use per connection is lower. There were, on average, 131 minutes of monthly outgoing calls made for every mobile connection in the UK in 2010, 1.6% (two minutes) more than in 2009 as a result of a migration of pre-pay customers to monthly contracts (including SIM-only contracts) which offer inclusive call allowances.

In 2010, average monthly voice call minutes per mobile connection ranged from 78 minutes a month in Germany (where mobile service are comparatively expensive) to 232 minutes a month in Australia, among the countries for which separate outgoing call volume data were available. In fact, the US had the highest average use per month at 635 minutes, although this figure also includes incoming call minutes. The fastest rates of outgoing call volume growth, per connection, over the five years to 2010 were in Poland (up by an average of 15.0% a year) and Russia (with average growth of 13.4% a year).

**Figure 6.35 Monthly outbound minutes per mobile connection: 2005 and 2010**



Source: IDATE / industry data / Ofcom

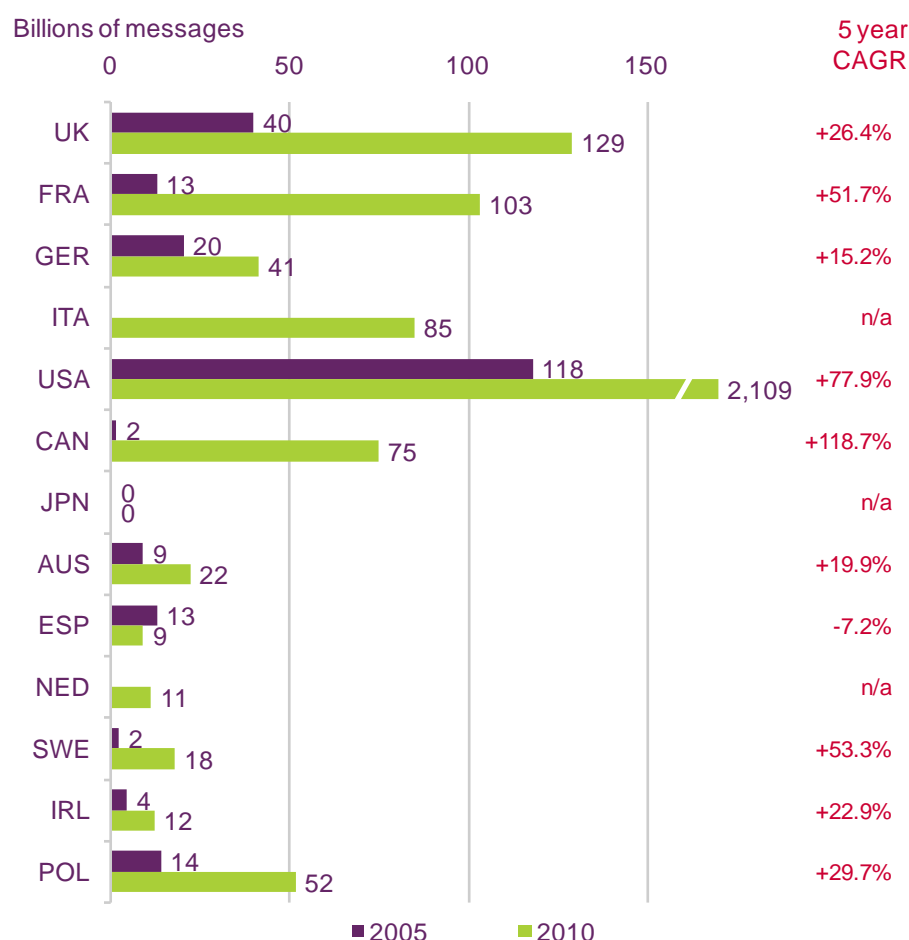
Note: USA, CAN and CHN include incoming calls; BRA, RUS and IND include fixed-to-mobile and off-net incoming calls

### Mobile messaging volumes continue to increase in most comparator countries

Spain was the only country in which mobile messaging (SMS and MMS) volumes declined during the five years to 2010, falling from 13 billion in 2005 to 9 billion in 2010 (Figure 6.36). Average use of SMS is lower in Spain than in our other comparator countries as SMS is rarely included within pay-monthly tariffs in Spain, and messages are relatively expensive to send.

Among our other comparator countries, the fastest rate of SMS volume growth was in Canada, where SMS message volumes rose by an average of 118.7% a year over the period, due to a combination of rising take-up of mobile services and increased bundling of SMS messages in monthly contract tariffs. In the UK, the increased availability of tariffs with large or unlimited bundles of SMS contributed to an average annual rise of 26.4% in SMS volumes over the period. In 2010 the total volume of MMS messages more than doubled to 78 million, although MMS accounted for just 2.9% of total SMS and MMS messages across those countries for which volume data for both message types were available, up from 1.8% in 2009.

**Figure 6.36 Mobile messaging volumes: 2005 and 2010**



Source: IDATE / industry data / Ofcom

Note: Figures for the USA include push-to-text and are not directly comparable to those for the other comparator countries

### Spain and Australia are the only countries where mobile messaging use per connection fell in 2010

The average monthly messages per mobile subscription increased in all of our comparator countries in 2010 except in Spain and Australia. As mentioned previously, SMS is a service which never gained the same momentum in Spain as it did in our other comparator countries (in 2010 an average of just 13 messages per connection per month were sent, compared to 236 across those comparator countries for which data were available), while in Australia 2010 was the first year in which average messaging use per connection fell (Figure 6.37).

Falls in total SMS volumes during the first half of 2011 have been reported<sup>76</sup> in the Netherlands, France, Ireland, Portugal and Spain. A factor behind these declines is likely to be an increase in consumers' use of over-the-top messaging services, which some are using instead of SMS. It is also the case that text messaging is barely used in Japan (although data on the use of SMS are not available), because email has long been used on mobile phones.

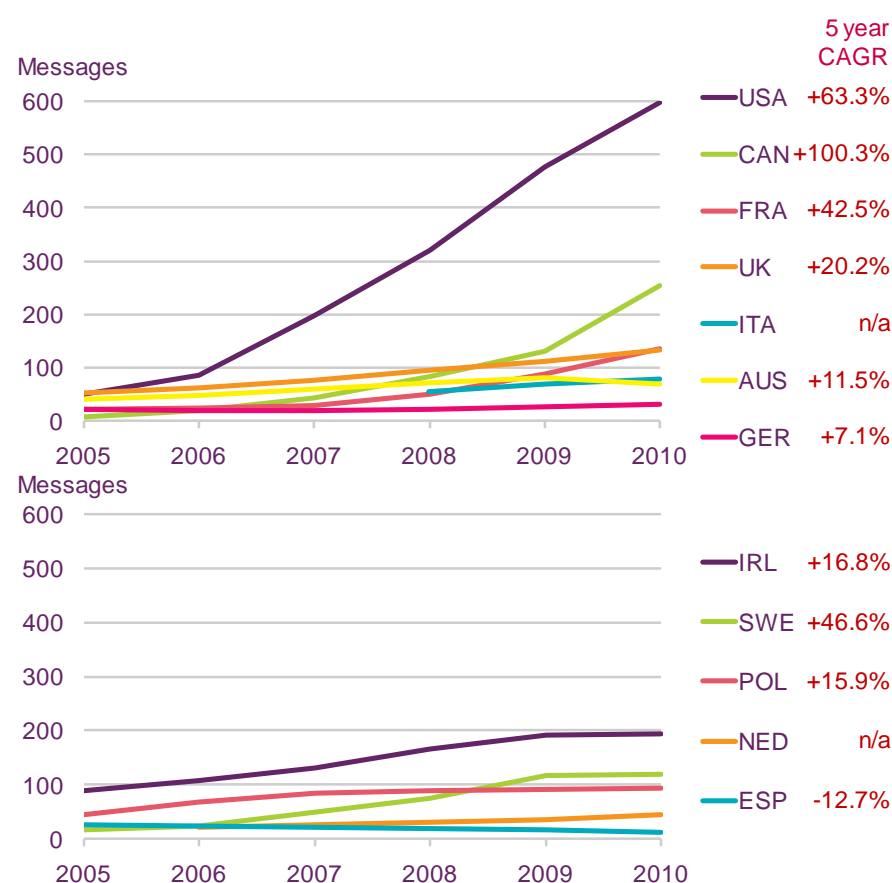
<sup>76</sup> <http://www.mobilebusinessbriefing.com/articles/sms-on-the-decline-as-third-party-messaging-gains-traction/19001/>



Average messaging use per connection was highest in the US, where it increased by over 25% to 597 messages a month in 2010, equivalent to almost 20 messages per connection per day, although this includes push-to-text messages, which are excluded from the figures in other countries. Outside the US, the highest use of mobile messaging was in Canada, where average mobile messaging use almost doubled; to 253 messages a month in 2010. Average annual growth in messages per mobile connection in Canada in the five years to 2010 was over 100%, and in 2010 average use per connection overtook that in Ireland where use had previously been highest. In the UK, the number of monthly mobile messages sent per connection increased by an average of 20.2% a year in the five years to 2010; to 133 messages per month, the fourth highest average use outside the US.

Different levels of use are likely to reflect different the tariffs available from operators. For example, in the UK, tariffs including unlimited SMS messages are widely available, some at less than £15 per month. Growth in text messaging is also likely to be driven by increasingly easy-to-use interfaces on smartphones, which include keyboards and present text messages in the form of a 'conversation', almost equivalent to instant messaging interfaces.

**Figure 6.37 Monthly outbound messages per mobile connection; 2005 to 2010**



Source: IDATE / industry data / Ofcom

Note: Figures for the USA include push-to-text and are not comparable to the other comparator countries

### The total number of mobile connections fell in the Netherlands in 2010

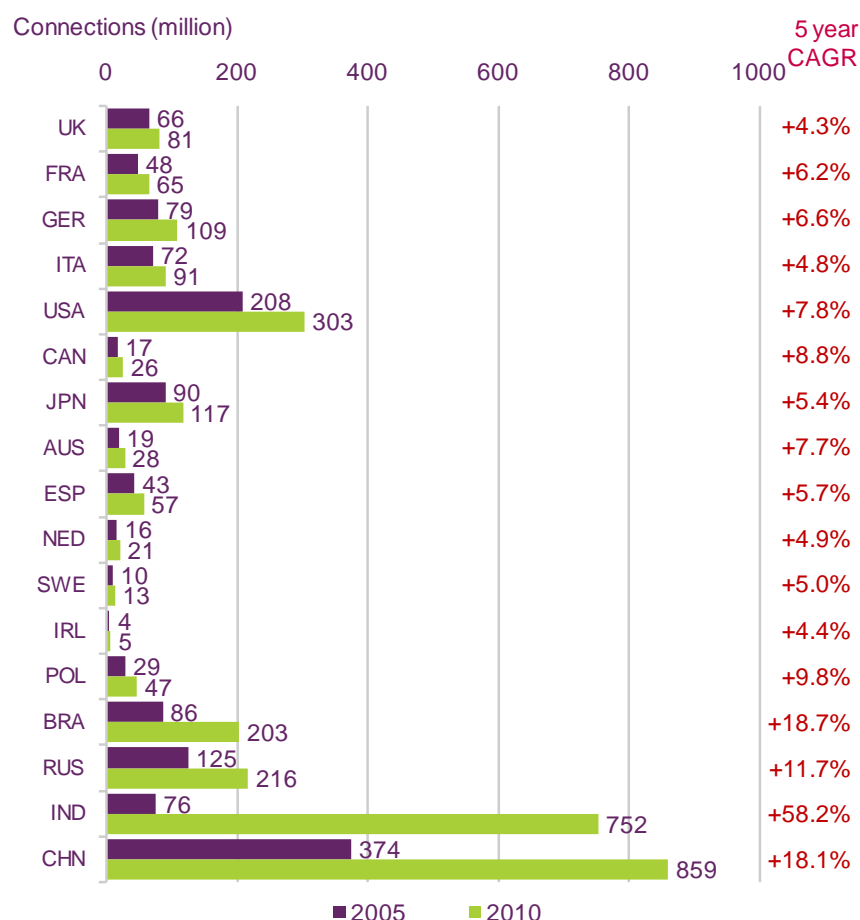
Despite high take-up in many countries, the number of mobile connections continues to grow as take-up of mobile broadband and use of multiple connections per person increases (as more mobile data-enabled devices become available). The Netherlands was the only

comparator country where the total number of mobile connections fell in 2010, the first time that this has happened in the country, although among our other comparator countries the number of mobile connections had previously fallen in Italy and Ireland in 2009 (Figure 6.38).

As mobile markets have matured, the rate of connection growth has slowed, and average growth across the non-BRIC comparator countries (where mobile markets are more mature) was 4.4% in 2010, compared to 22.7% in the BRIC countries where mobile penetration is lower and mobile markets are still developing. The fastest growth in mobile connections across our comparator countries in 2010 was in India, where the number of connections increased by 43.2% (277 million) to 752 million; however, in China there were the most mobile connections at the end of the year, at 859 million. Overall, there were more than twice as many mobile connections in the BRIC countries than in our other comparator countries combined, at the end of 2010.

The UK had the lowest average rate of mobile connection growth among our comparator countries in the five years to 2010, at 4.3%. This was partly due to a change in the definition of an 'active subscriber' for T-Mobile's UK base (following its 2010 merger with Orange to form Everything Everywhere) which led to a fall in the reported subscriber base. Outside the UK, the lowest rate of subscriber growth over the period was in Sweden, at 4.4%, and highest in India at 58.2% (where mobile penetration was very low, at just seven connections per 100 people, in 2005).

**Figure 6.38 Mobile connections: 2005 and 2010**



Source: IDATE / industry data / Ofcom

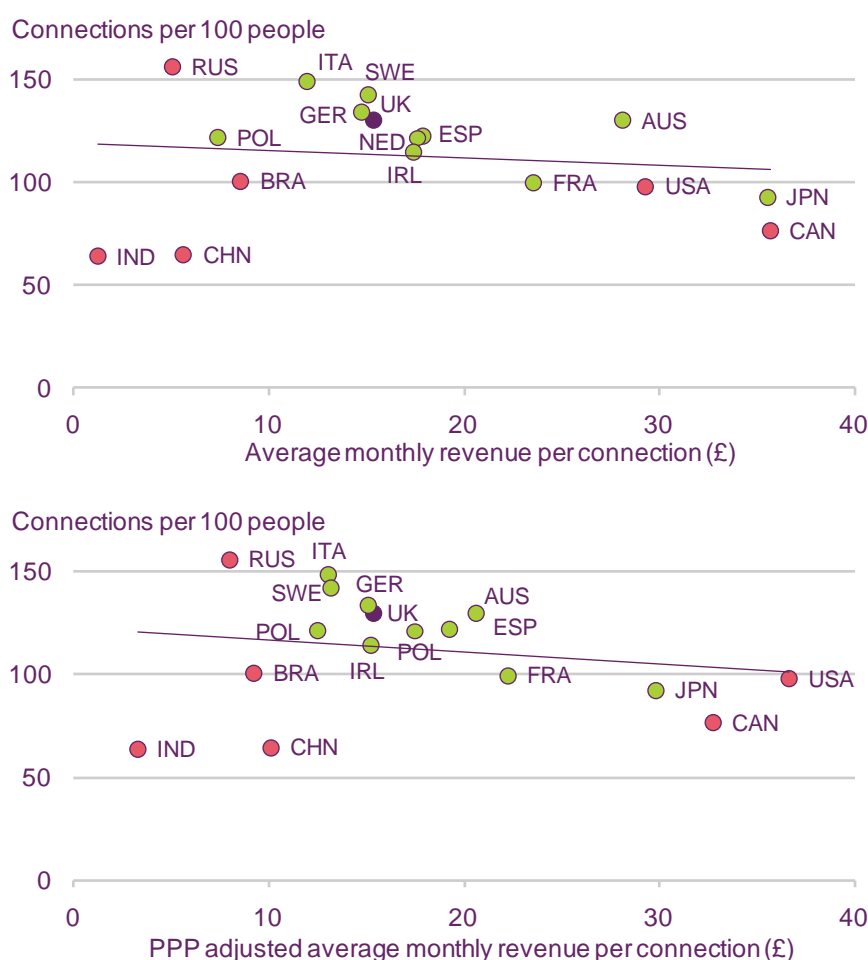
### **Countries with higher mobile penetration tend to have slightly lower revenue per user**

The two charts which make up Figure 6.39 below plot mobile penetration against average monthly revenue per connection, across all of our comparator countries, in order to enable us to assess whether there is a correlation between the two. They show that among most of our comparator countries, there is a relationship between the two, with, in general, take-up being highest where average spend is lowest (although it is not possible to draw any conclusions as to cause and effect) and this relationship is more pronounced when average monthly spend is adjusted for PPP, as in the second chart.

Average spend was highest (and take-up relatively low) in Japan, Canada and the US. In Canada and the US average spend is high as a result of a charging regime in which mobile users are charged for incoming calls, while in Japan higher spend is partly a result of high use of mobile data services. Conversely, take-up was highest (and spend comparatively low) in Russia and Italy, where many consumers have more than one pre-pay connection and spend is spread across more than one connection. The main outliers were India and China, where both average spend and take-up were low, even following the PPP adjustments which have been made in the second chart.

This analysis includes data on the use of mobile broadband services, which will increase the penetration levels and reduce the average spend in this analysis, as spend per connection on mobile broadband services is lower than on standard mobile phone tariffs. This is particularly relevant to the UK, Sweden, Italy and Ireland, where take-up of mobile broadband is relatively high.

**Figure 6.39 Mobile take-up and average monthly revenue per connection: 2010**



Source: IDATE / industry data / Ofcom

Note: USA and CAN revenues from incoming calls

### The share of connections that are contract is increasing in most countries

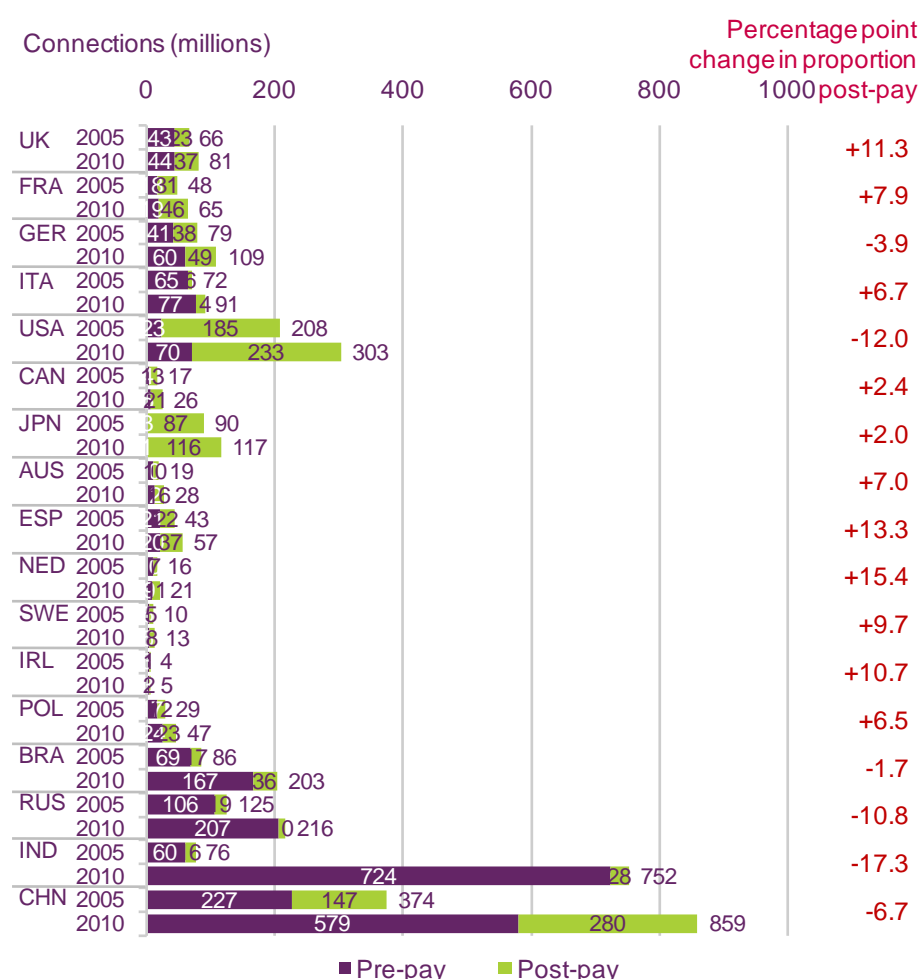
There is some evidence that a shift towards contract (pay-monthly) subscriptions is taking place in many of our comparator countries, a relatively new phenomenon. As shown in Figure 1.40, there were more pre-pay (pay-as-you-go) mobile connections than contract in most of our comparator countries at the end of 2010, but in 11 of the 17 countries, the proportion of connections that were post-pay increased in the five years to 2010.

This is a reflection of changing operator strategies as mobile markets mature. In mature mobile markets there is little subscriber growth, and operators concentrate on maximising revenues from their existing customer base. One way of doing this is to incentivise pre-pay customers to switch to monthly contracts; post-pay customers typically spend more and are less likely to churn as they are tied into minimum-term contracts.

However, the six countries where the percentage of subscribers that are pre-pay has risen in the five years to 2010 include India, China and the USA, which have the largest number of mobile subscribers of our comparator countries. Accordingly, in total across all our comparator countries, the percentage of mobile subscribers that are prepay has risen over the five-year period by 2.6 percentage points to 67.7%. In India and China, the growth in the percentage of subscribers that are pre-pay may be due to mobile networks reaching poorer communities that cannot afford post-pay contracts, or that do not have the banking facilities

required to use to post-pay, and it may also be due to multiple SIM ownership, which tends to occur more with pre-pay. In the US, the increase in the percentage of subscribers that are prepay may be due to operators trying to find new niches in a saturated market.

**Figure 6.40 Mobile connections, by type: 2005 and 2010**



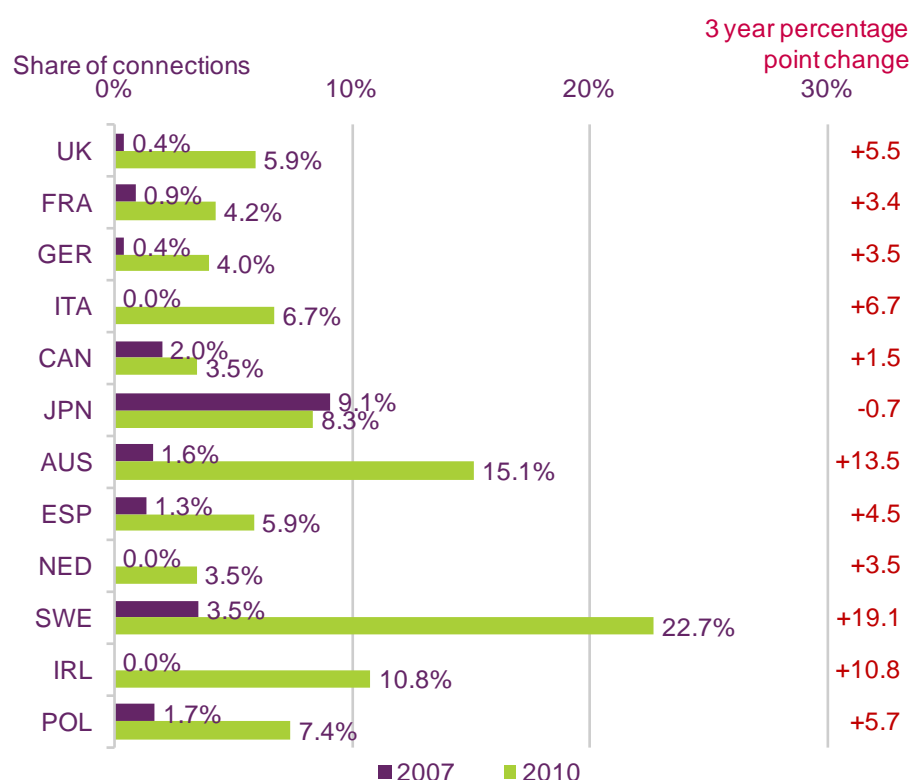
Source: IDATE / industry data / Ofcom

### The US had the highest proportion of mobile connections that were mobile broadband

At the end of 2010 the proportion of mobile connections that were mobile broadband datacards or dongles ranged from 3.5% in Canada and the Netherlands to 22.7% in Sweden, among those comparator countries for which data were available (Figure 6.41). Japan had the highest number of mobile broadband connections at the end of 2010, at 9.8 million, while the fastest growth in the proportion of mobile connections that were mobile broadband in the three years to 2010 was in Sweden, where it increased by over 19 percentage points during the period. Japan was the only country where this proportion fell over the period, down by -0.7 percentage points to 8.3%, despite the number of mobile broadband connections having increased by 0.7 million over the period.

In the UK there were 4.8 million active UK mobile broadband connections at the end of 2010, equivalent to 5.9% of total mobile subscriptions, compared to 0.3 million (0.4% of the total) at the end of 2007.

**Figure 6.41 Mobile broadband as a proportion of total mobile connections: 2007 and 2010**



Source: IDATE / industry data / Ofcom

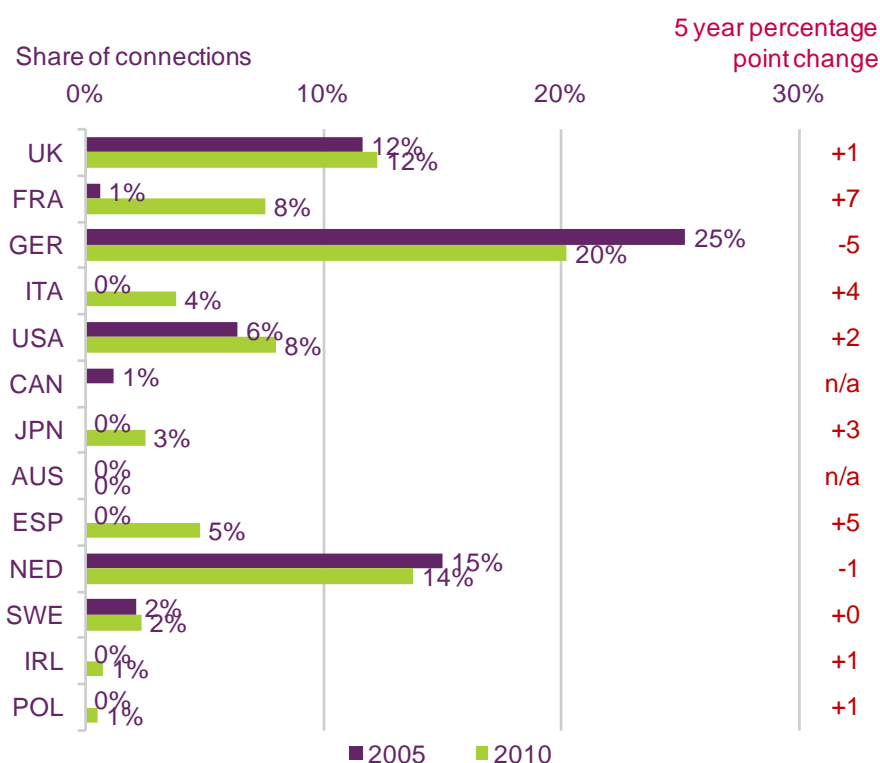
### Germany had the highest proportion of subscribers using MVNOs in 2010

A mobile virtual network operator (MVNO) is a mobile provider that resells mobile services purchased on a wholesale basis from a network operator. This allows MVNOs to offer mobile services to their customers without the significant investment required to purchase their own spectrum allocation and network infrastructure, thereby increasing the level of competition in a market.

At the end of 2010 the proportion of mobile connections held by MVNOs was highest in Germany (among the 13 comparator nations for which figures were available), at 20% (including independent service provider resellers), and lowest in Australia at zero (Figure 6.42). In most countries the MVNOs' share increased in the five years to 2010, although in a few countries (including Germany) it fell during the period. The strongest growth in MVNOs' share was in France, where it increased from 1% to 8%, largely driven by Virgin Mobile, which accounted for around 40% of all MVNO connections in France in 2010.

In the UK, MVNOs accounted for 12% of mobile connections at the end of 2010, one percentage point higher than at the end of 2005, driven by the launch of supermarket MVNOs such as those run by Tesco and Asda, and providers which target immigrant communities in the UK by offering low-cost international calls, such as Lycamobile and Lebara Mobile.

**Figure 6.42 MVNO share of total mobile connections: 2005 and 2010**



Source: IDATE / industry data / Ofcom

Note: UK and GER figures includes resellers' connections in addition to full MVNOs

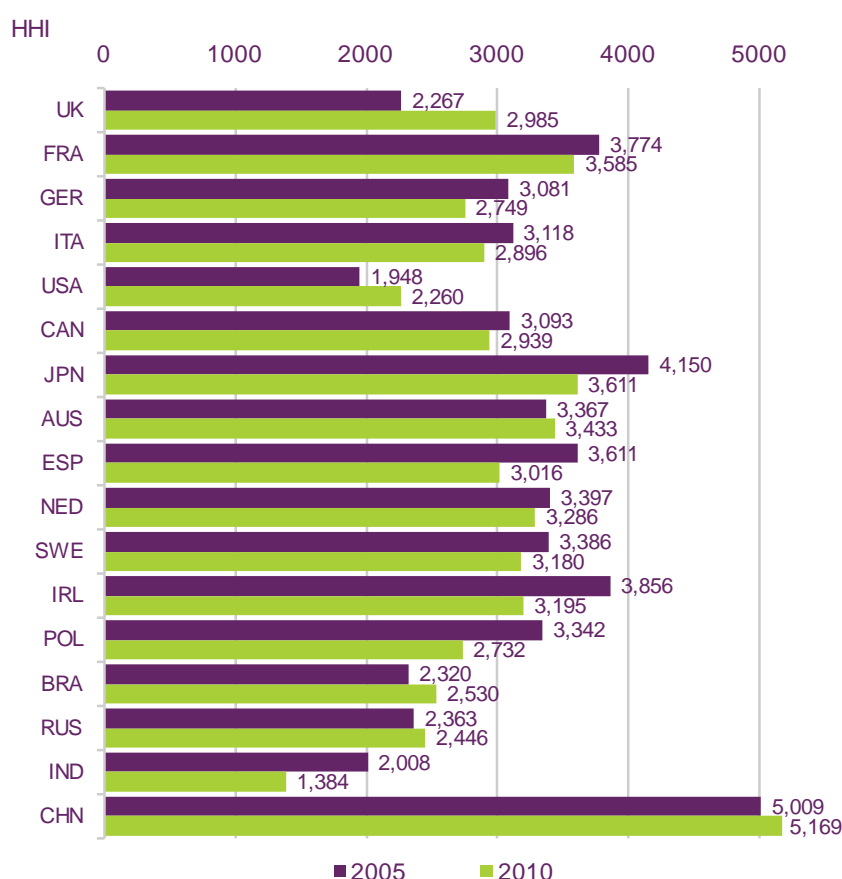
### India had the least concentrated mobile market in 2010

The Herfindahl-Hirschman Index of market concentration (HHI) is a measure of the concentration of a market, calculated using the market share of individual operators. The HHI scale ranges from 0 for a perfectly competitive market (i.e. one with a large number of competitors equal with a small market share) to 10,000 for a single-player monopoly.

China had the most concentrated market in terms of connections at the end of 2010, with an HHI index of 5,169 (Figure 6.43), largely due to China Telecom having a market share of around 70%. Conversely, the lowest market concentration was found in India, as a result of there being a relatively large number of operators offering services at different coverage levels, (including regional, pan-regional and national), although this it should be treated with caution as a measure of competition, as many of these providers will not be in direct competition with each other.

Having had the second least-concentrated mobile market at the end of 2009, the UK had the ninth least-concentrated market at the end of 2010. This increase in market concentration was a result of the merger of the UK operations of Orange and T-Mobile, the third and fourth largest UK mobile networks by number of subscribers, to form Everything Everywhere. Their merger was finalised in April 2010.

**Figure 6.43 Herfindahl-Hirschman index of mobile concentration: 2005 and 2010**



Source: IDATE

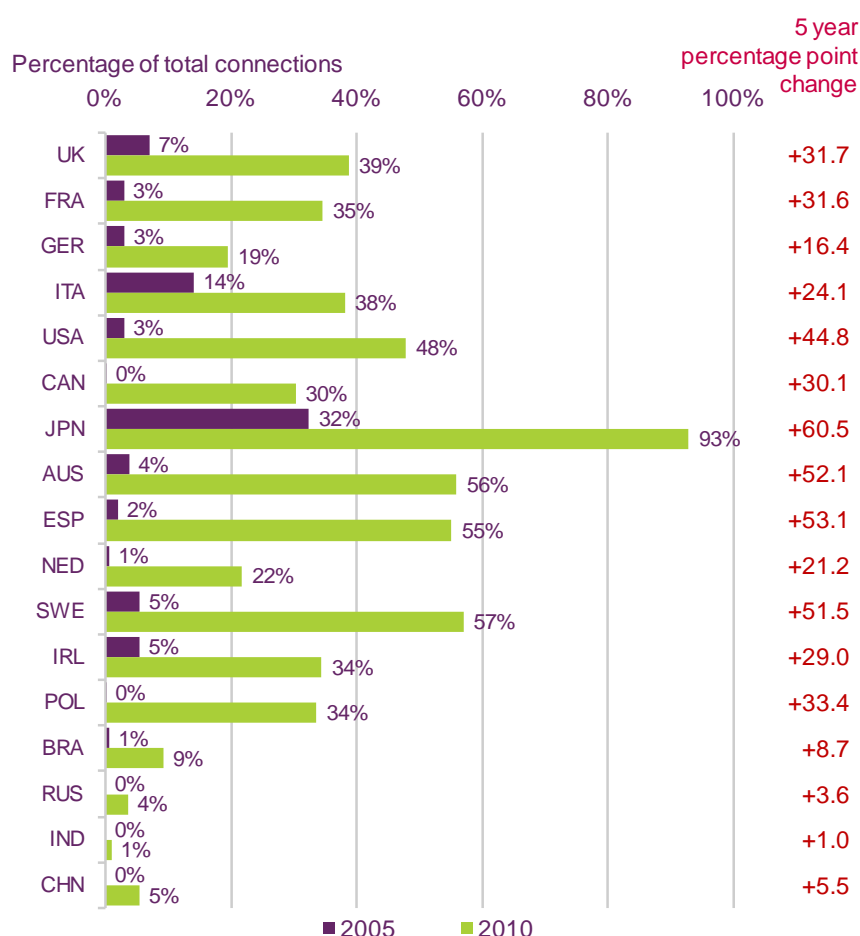
### Japan had the highest take-up of 3G mobile services

Use of 3G mobile services among our comparator countries was highest in Japan, where 93% of mobile connections used 3G at the end of the year (Figure 6.44). This was partly as a result of Japan being the first to launch 3G services (in 2001), and Japan was also where the fastest growth in the adoption of 3G services in the five years to 2010 was found, with the proportion of connections using 3G increased by 60 percentage points over the period.

Outside Japan, the only countries where over half of mobile connections were 3G were Spain, Australia and Sweden (in the UK the figure was 39%, up from 7% in 2005). The lowest take-up of 3G was to be found in the BRIC countries, where an average of 4% of mobiles used 3G, double the 2% average a year previously, reflecting the ongoing roll-out of 3G networks and services in these countries, and the fact that take-up is stifled by the relatively high price of 3G devices. Meanwhile, in some more developed markets (including the US and Sweden) 4G LTE networks have already launched.



**Figure 6.44 3G as a proportion of total mobile connections: 2005 and 2010**



Source: IDATE / industry data / Ofcom

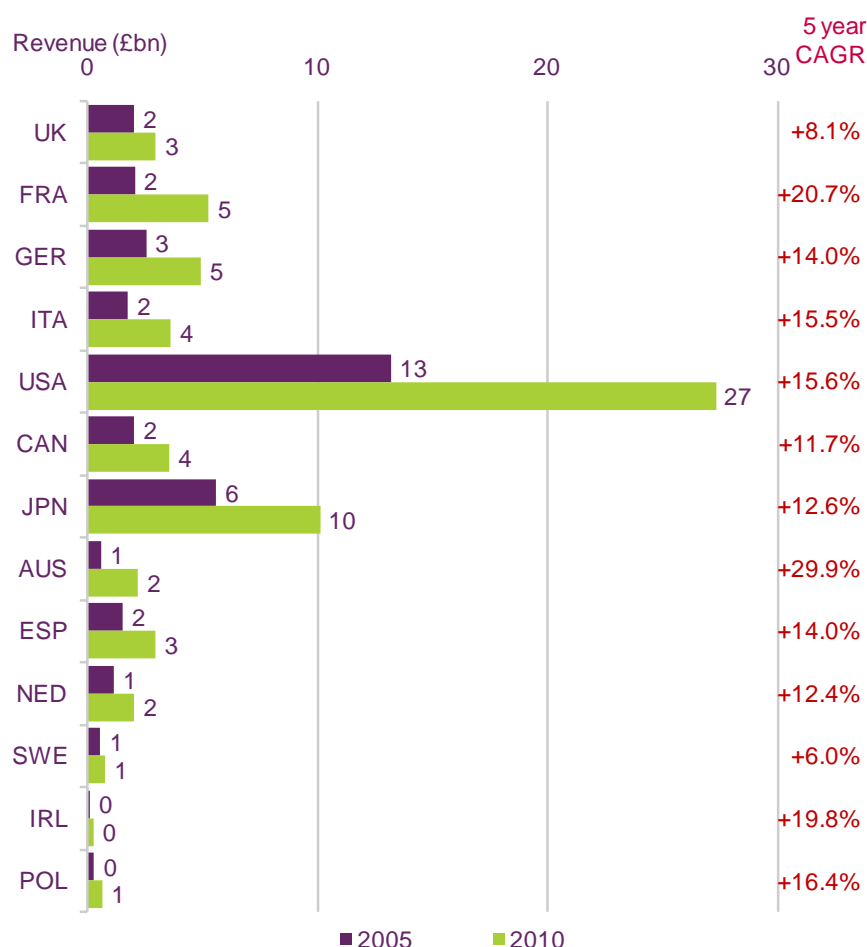
## 6.2.5 Fixed broadband services

### The UK was one of only three countries where fixed broadband revenues fell in 2010

Fixed broadband revenue growth averaged 15% among the comparator countries for which figures were available in the five years to 2010, although this was lower than the 19% average in the five years to 2009 (Figure 6.45). The UK, Sweden and Poland were the only countries where fixed broadband revenues fell in 2010; in the UK the 4.8% decline was a result of falling prices due to continued competition and increased service bundling, and occurred despite increasing average connection speeds.

The highest average fixed broadband revenue growth rates in the five years to 2010 were in Australia and France, where revenues increased by an average of 29.9% and 20.7% a year respectively, albeit from low starting points. The lowest rate of growth in the five years to 2010 was in Sweden, at 6.0% per year, and second lowest in the UK, at 8.1%.

**Figure 6.45 Fixed broadband revenues: 2005 and 2010**



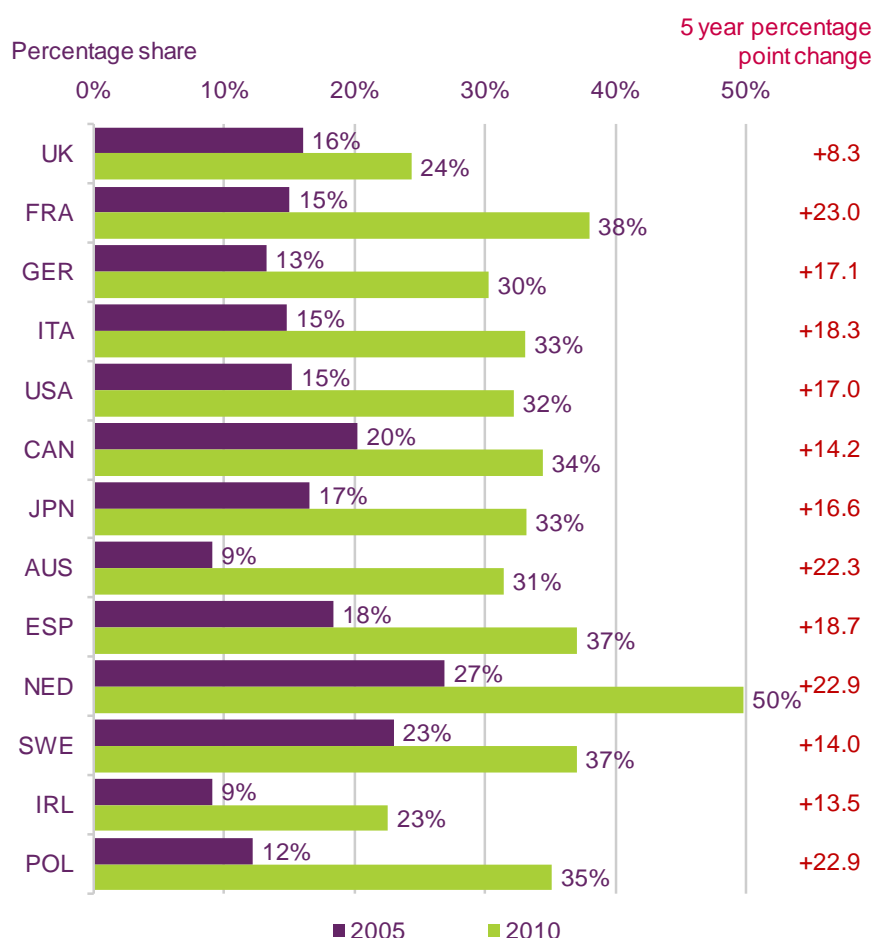
Source: IDATE / industry data / Ofcom

### **Broadband accounted for 33% of fixed telecoms revenues in 2010**

The average proportion of total fixed line revenues that were generated by broadband services (among the 13 comparator countries for which figures were available) was 33% in 2010, up from 16% in 2005 and 30% in 2009 (Figure 6.46). The proportion of fixed revenues generated by broadband ranged from 23% in Ireland to 50% in the Netherlands in 2010, while in the UK just under a quarter (24%) of fixed revenues were generated by broadband services.

In the five years to 2010 the largest increase in the proportion of fixed revenues generated by broadband was in France, where it increased by 23 percentage points to 38%, mainly as a result of increasing broadband take-up, but also due to declining fixed-voice revenues (see Figure 6.23) as low-cost VoIP-based services gained popularity. The lowest increase was in the UK, where the proportion of fixed revenues generated by broadband increased by just 8% over the period, a reflection of the relatively low cost of fixed broadband in the UK.

**Figure 6.46 Fixed broadband as a proportion of total fixed revenues: 2005 and 2010**



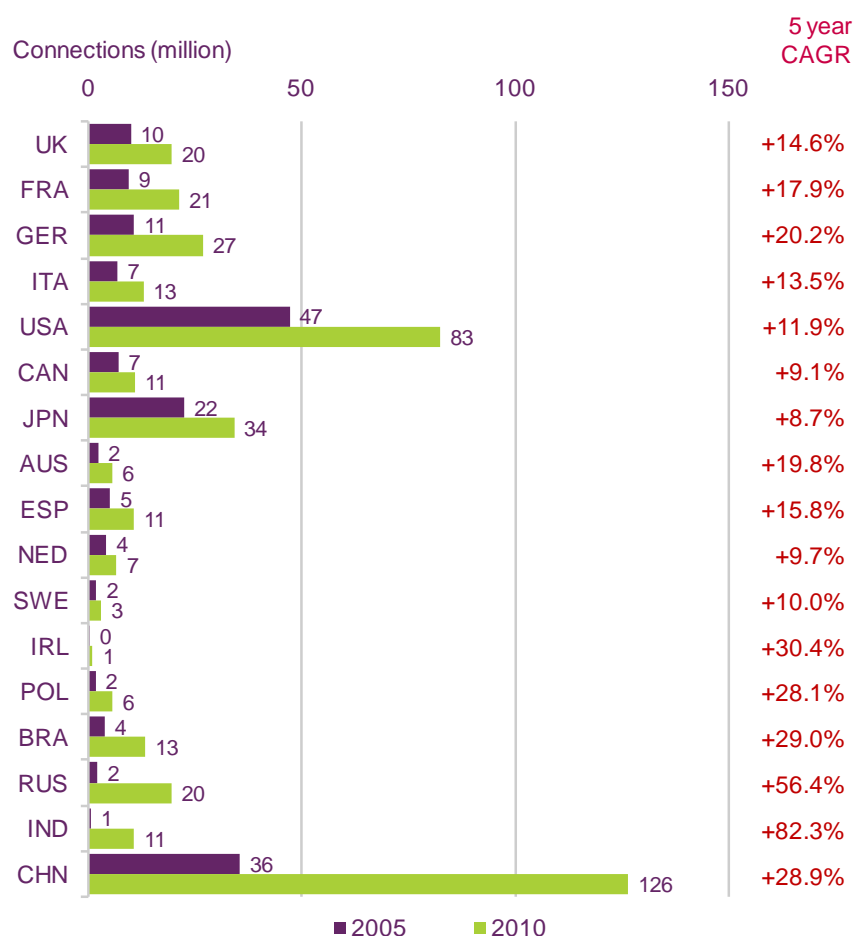
Source: IDATE / industry data / Ofcom

### Fixed broadband connections up by one-eighth in 2010 in our comparator countries

At the end of 2010 there were a total of 410 million fixed broadband connections among our 17 comparator countries, 44 million (12%) more than there had been at the end of 2009 (Figure 6.47). More than half of the growth in connections in 2010 was in China, which had the most fixed broadband connections among our comparator countries at the end of the year, at 126 million, a 23 million connection increase on 2009.

However, it was another BRIC country, India, that achieved the fastest average rate of connection growth. In the five years to 2010 the average rate of connection growth in India was over 80%, largely due to there being a low broadband base in 2005 (less than a million connections). Conversely, growth rates were lower among those comparator countries which had higher levels of take-up in 2005: Japan had the lowest average annual rate of growth in fixed broadband connections over the period (8.7% a year), while the number of broadband connections in the UK almost doubled between 2005 and 2010, an average annual increase of almost 15%.

**Figure 6.47 Fixed broadband connections: 2005 and 2010**



Source: IDATE / industry data / Ofcom

#### **45% of UK fixed broadband connections have a headline speed of 10Mbit/s or more**

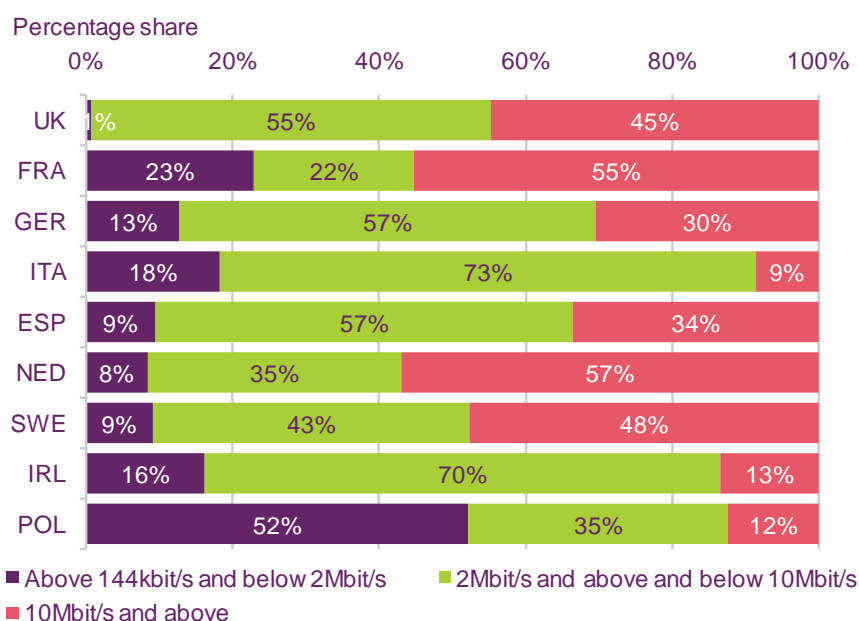
Figures published by the European Commission allow a comparison of the 'headline' speeds of broadband connections across selected member states. It should, however, be noted that the actual speeds delivered by DSL broadband are typically much slower than headline speeds: this is at least partly due to the speed of a DSL connection decreasing with distance from the exchange.

The difference is highlighted by Ofcom findings in May 2010, when we identified that the average speed of a UK 'up to' 8Mbit/s ADSL1 connection was 3.2Mbit/s and that of an 'up to' 20/24Mbit/s ADSL2+ connection was 6.3Mbit/s<sup>77</sup>.

Figure 6.48 shows the split of fixed broadband connections by 'up to' headline speed in nine European comparator countries at the end of December 2010. This shows that the proportion of connections with a headline speed of 'up to' 10Mbit/s and above ranged from 9% in Italy to 57% in the Netherlands. In the UK, 45% of connections offered headline speeds of 'up to' 10Mbit/s and above, a higher level than in Germany (30%), Italy and Spain (34%) but lower than in France (55%). The figure for the UK reflects the fact that ADSL2+ is widespread (offering headline speeds of typically 20Mbit/s) but that fibre broadband is not ubiquitous.

<sup>77</sup> UK fixed-line broadband performance, May 2011, <http://stakeholders.ofcom.org.uk/market-data-research/telecoms-research/broadband-speeds/broadband-speeds-may2011/>

**Figure 6.48 Split of fixed broadband connections, by headline speed: Q4 2010**



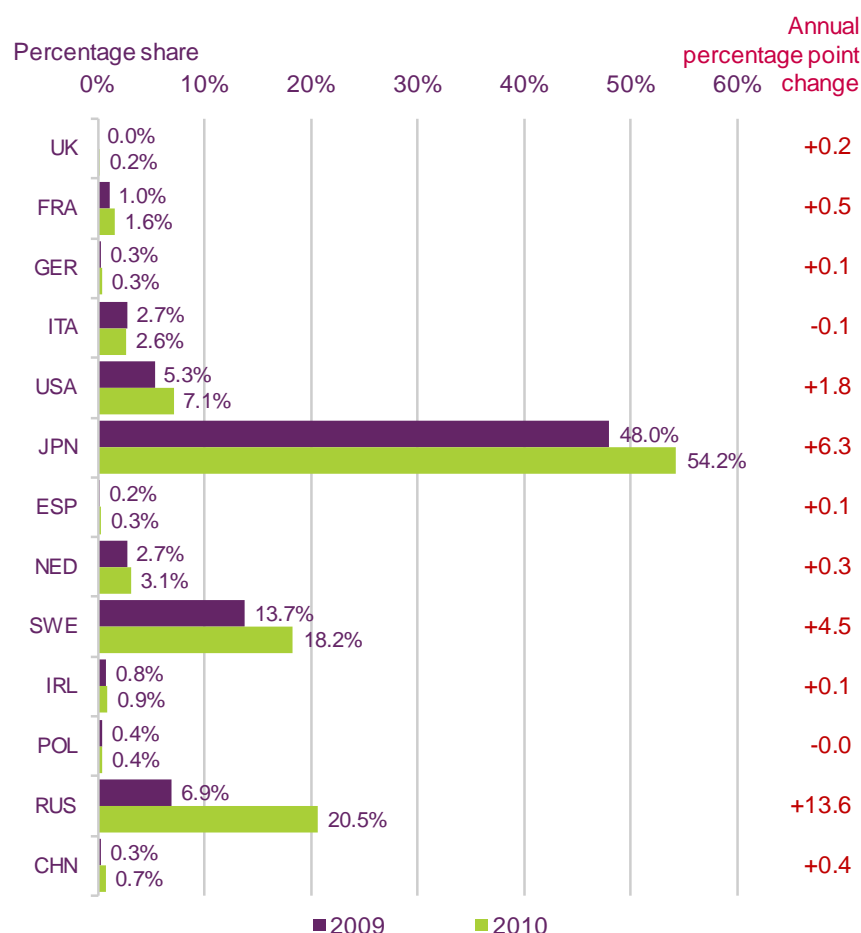
Source: European Commission, [http://ec.europa.eu/information\\_society/digital-agenda/scoreboard/docs/pillar/digital\\_agenda\\_scoreboard\\_telecom\\_database.xls](http://ec.europa.eu/information_society/digital-agenda/scoreboard/docs/pillar/digital_agenda_scoreboard_telecom_database.xls)

### More than half of fixed broadband connections in Japan are fibre-based

In all of our comparator countries investment in upgrading the broadband infrastructure to high-speed fibre-based networks is taking place, although the rate of fibre roll-out and growth in service take-up differs widely between nations (Figure 6.49). Ninety-three per cent of Japan's population have access to fibre-based broadband. By the end of 2010, 54% of Japan's fixed broadband connections were fibre-based, more than twice the proportion in any other country (across all of our comparator countries an average of 8% of fixed broadband connections used a fibre technology).

In the UK just 0.2% of broadband connections were fibre-based at the end of 2010, up from less than 0.1% a year previously, and this has increased further in 2011 as BT has aggressively rolled out its fibre-to-the-cabinet (FTTC) services. We estimate that by September 2011 24% of UK homes were able to access BT's fibre services, up from 13% in January 2011. In addition, 48% of UK homes are able to access superfast cable broadband services (there are high rates of cable broadband adoption in Poland, Ireland, Brazil and Germany) and in total, around 61% of UK homes can access superfast fixed broadband services.

**Figure 6.49 Fibre-based connections as a proportion of all fixed broadband connections: 2005 and 2010**



Source: IDATE / industry data / Ofcom

### **Total market share of the top three providers remains unchanged at 66% in 2010**

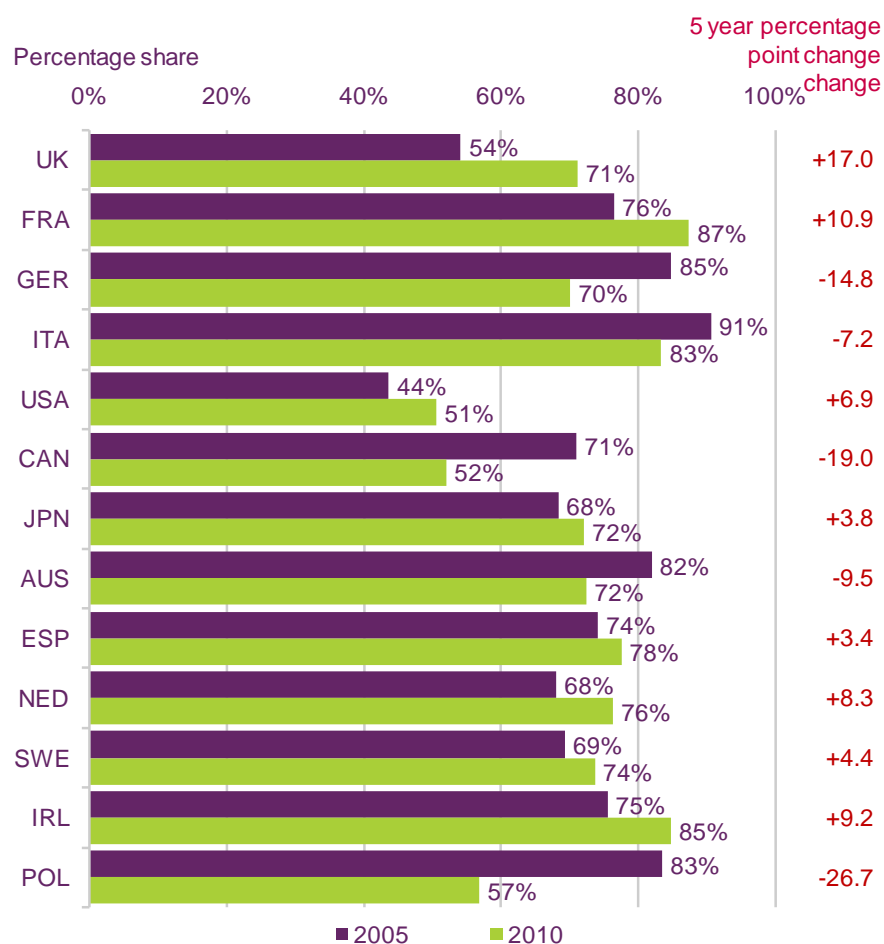
In order to look at the competitiveness of the broadband markets in our comparator countries we calculated the combined retail market share of the three largest broadband providers in each country (Figure 6.50). On average, across the 13 comparator countries for which figures were available, the combined connection share of the largest three providers was unchanged at 66% in 2010.

The change in the market share of the largest three internet service providers (ISPs) in the five years to 2010 among these comparator countries ranged from a 27 percentage point fall, to 57%, in Poland, to a 17 percentage point increase in the UK. In Poland this was as a result of smaller ISPs gaining market share at the expense of incumbent Telekomunikacja Polska (which saw its market share of fixed broadband connections more than halve; from 71% to 35% over the period), while in the UK the increase in the aggregate market share of the three largest providers came as a result of a series of mergers and acquisitions (in particular the acquisition of AOL Broadband and Tiscali by TalkTalk), and by the end of 2010 the three largest ISPs (BT, Virgin Media and TalkTalk) had a combined connection share of 71%.

The most concentrated broadband market at the end of 2010 was France, with the largest providers (Orange, Free and SFR) accounting for 87% of connections. Excluding the US and Canada (where infrastructure-based competition between local incumbent telecoms

providers and cable operators makes the share of the largest three operators a less useful measure of competition) the least concentrated broadband market among our comparator countries was in Poland.

**Figure 6.50 Retail connection share of the top three fixed broadband providers: 2005 and 2010**



Source: IDATE / industry data / Ofcom

## 6.3 The telecoms user

### 6.3.1 Introduction

This section looks at trends in the availability and use of telecoms services in the 17 countries covered by this report.

The analysis is based on Ofcom figures for the UK telecoms market, which are collected as part of our regular data collection programme, international data that has been compiled for use in this report, and third-party sources. In addition, we commissioned consumer research, undertaken in October 2011, in the UK and five of our comparator countries (France, Germany, Italy, the US and Australia).

The key points highlighted in this section include:

- **High-speed mobile coverage using HSPA technology is becoming close to ubiquitous in mature mobile markets, with countries in Western Europe and North America having more than 90% population coverage.** The UK has broadly similar 2G coverage (to the nearest percentage point, 100% of the UK population have 2G coverage outside their homes from at least one mobile network) and 3G/HSPA coverage (99%, using the same criteria) to its West European and North American peers.
- **Consumers in Australia spent more on telecoms services than those in any of our other comparator countries, at £739 per person in 2010.** UK consumers spent an average of £434 each. Across the 17 countries, the trend is downwards – primarily led by declines in mobile expenditure.
- **Out of six comparator countries, UK consumers are the most, or second most, satisfied with their fixed and mobile voice and broadband services.** Consumers in the US are the most satisfied. But UK consumers switch telecoms services just as frequently as their counterparts in other countries.
- **Voice telephony is significantly more expensive in Japan than in our other comparator countries, with an average price of 23p/minute for a fixed call and nearly 17p/minute for a mobile call.** UK costs compare favourably to other countries for fixed voice, and moderately for mobile, at just over 7p/minute and 8p/minute for fixed and mobile calls respectively.
- **Though there is widespread concern from consumers about the cost of voice and broadband services, UK consumers were the third least concerned about both.** Consumers in Spain were the most concerned about voice charges, France's consumers the most concerned about fixed broadband charges and Australia's the most concerned about mobile broadband charges.
- **Take-up of fixed-line voice services is generally in decline in the face of substitution for mobile services.** While some countries, including Italy and France, have seen a steep decline in fixed voice lines, declines have been limited in other countries, including the UK (with three fixed lines fewer per 100 people in 2010 than in 2005), where the general requirement to have a fixed voice line for broadband access constrains households from going mobile-only.
- **Mobile penetration has increased markedly over a five-year period, with very rapid growth in India and China, where there are now nearly two SIMs for every**



**three people.** The number of mobile connections continues to increase at a slower rate in the UK, which currently has an average of 1.31 mobile connections per person, partly driven by multiple device ownership.

- **Fixed broadband growth is slowing, due to market maturity, but mobile broadband (accessing the internet on a PC via a cellular network) remains in its infancy, with take-up rising quickly in some countries.** The Netherlands led the fixed broadband comparison in 2010, with 89 broadband connections per 100 households. The UK was fourth of the 17 comparator countries, with 74 broadband connections per 100 households. Sweden was a clear leader in mobile broadband, with 32 connections per 100 people, well ahead of the UK's 7.7 connections per 100 people.
- **Over three-quarters of consumers in our comparator countries (76%) purchase additional telecoms services with fixed broadband; that is, they buy 'bundles' of services.** In the UK, 78% of consumers with fixed-line broadband buy it in a bundle.

### 6.3.2 Availability of mobile and broadband services

#### HSPA roll-out nears completion in most countries

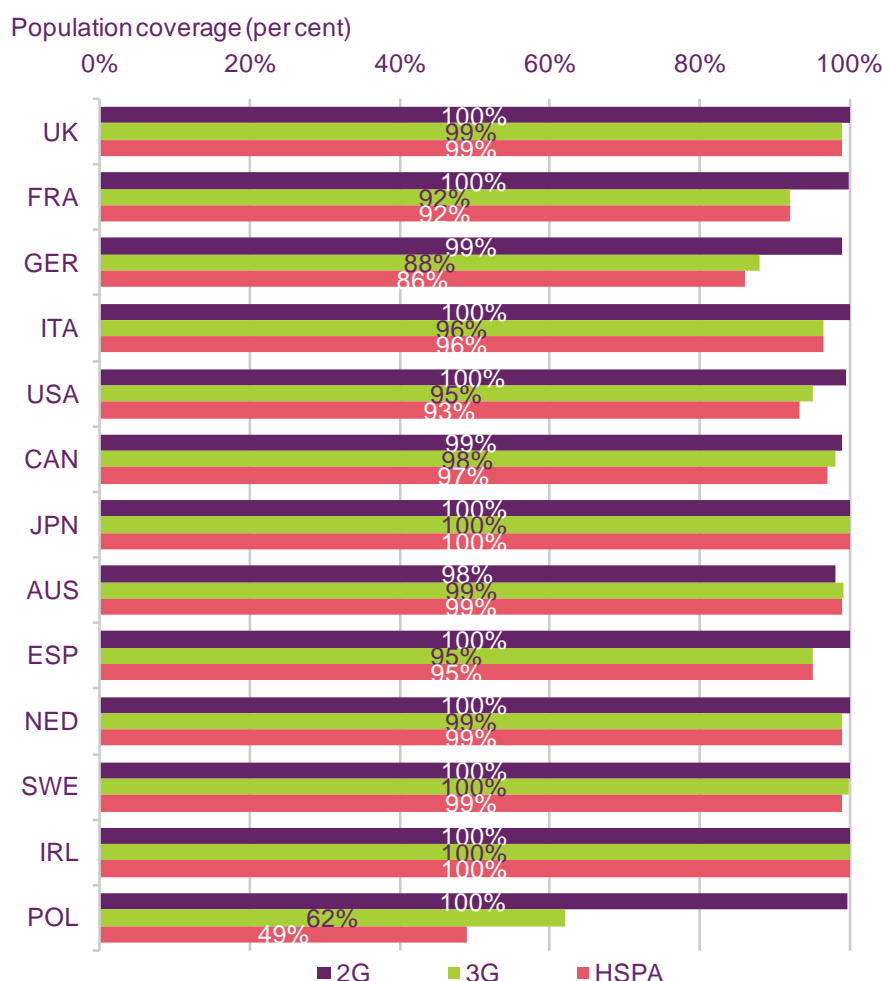
It is difficult to compare mobile coverage, as operators and regulators use different methodologies for identifying coverage, and in most countries there is little information on the extent to which the footprints of the different operators' mobile networks overlap with each other. Figure 6.51 compares population coverage, using the most reliable data available to Ofcom, by depicting the network coverage of the operator in each country which has the largest coverage, but this should be treated with caution. The UK figure is not directly comparable with other countries because it shows the combined population coverage<sup>78</sup> of all four mobile networks.

The chart does demonstrate that the upgrade from 3G to the higher-speed HSPA technology is complete, or nearing completion, in most comparator countries. HSPA coverage increased in France by four percentage points (to 92%) during 2010, with Spain gaining six percentage points (to 89%). An HSPA network has 100% population coverage in Ireland (up from 94% at the end of 2009), and also in Japan. The only Eastern European country that we compare is Poland, which has far lower availability of HSPA (49%) than the other countries. All figures are given to the nearest percentage point.

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<sup>78</sup> Further details on UK mobile coverage can be found in Ofcom's *Infrastructure Report*. See <http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2011/infrastructure-report.pdf>

**Figure 6.51 Mobile availability for the largest operator, by technology: 2010**



Source: IDATE and Ofcom.

Note: CDMA 2000 EV-DO standards are available alongside HSPA in the USA and CAN. UK figures are more up-to-date (2011) and show the percentage of premises that are covered by at least one mobile network.

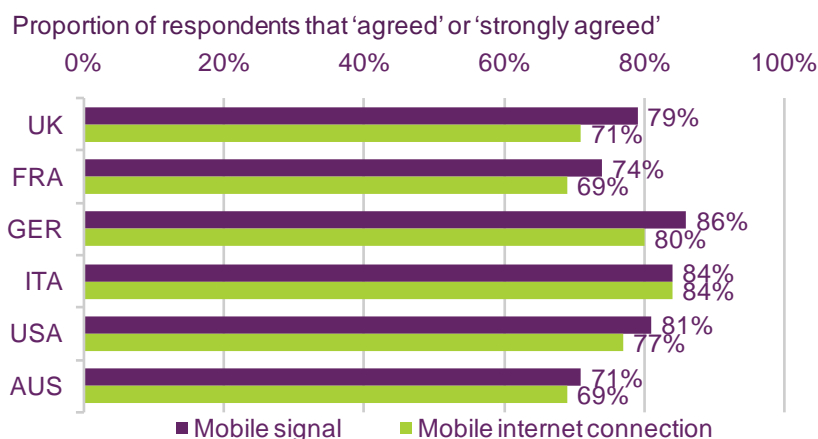
### Actual experiences of connectivity can be poorer than population statistics suggest

Although mobile networks cover the vast majority of populated areas, this does not necessarily mean that consumers will be able to make a call, or connect to the internet using their smartphone, whenever they want to. The data represent outdoor coverage, and mobile signals do not penetrate inside every home where there is outdoor coverage; and of course consumers make some calls in sparsely-populated areas, including when they are travelling. In order to explore this, we commissioned research to ask consumers if they could always make a call when they wanted, and whether they could always connect to the internet using their smartphone when they wanted (Figure 6.52).

Respondents were, in general, satisfied with levels of coverage. More consumers in Germany than in any other country agreed, or strongly agreed, that they could always get a mobile signal (86%). Consumers in the UK felt they had less good coverage, with just 79% agreeing, or strongly agreeing, that they could always get a mobile signal. UK consumers were even less content with their connections to the internet, with just 71% of smartphone users agreeing, or strongly agreeing, that they could always get a mobile internet connection. Although 3G population coverage of the UK is high, area coverage remains

quite low, which could explain why UK smartphone users are facing problems connecting to data services. Consumers in Australia appear to be having the most connectivity issues, which may be explained by wide areas of lack of network coverage in the country's vast, sparsely-populated areas.

**Figure 6.52 Consumer perceptions of reliability of voice and data connectivity, 2011**



Source: Ofcom consumer research, October 2011.

Base: all mobile phone users (number of smartphone users in brackets): UK=929 (506), France=914 (445), Germany=945 (502), Italy=989 (498), USA=902 (416), Australia=957 (490).

Q. Thinking about when you use your smartphone or mobile phone, please select an answer to each of the following:

*I always have a mobile signal when I want to make a call [question asked of all mobile phone users]*

*I can always connect to the internet when I want to [question asked only of smartphone users]*

[Choose from strongly agree, slightly agree, neither agree nor disagree, slightly disagree, strongly disagree, don't know]

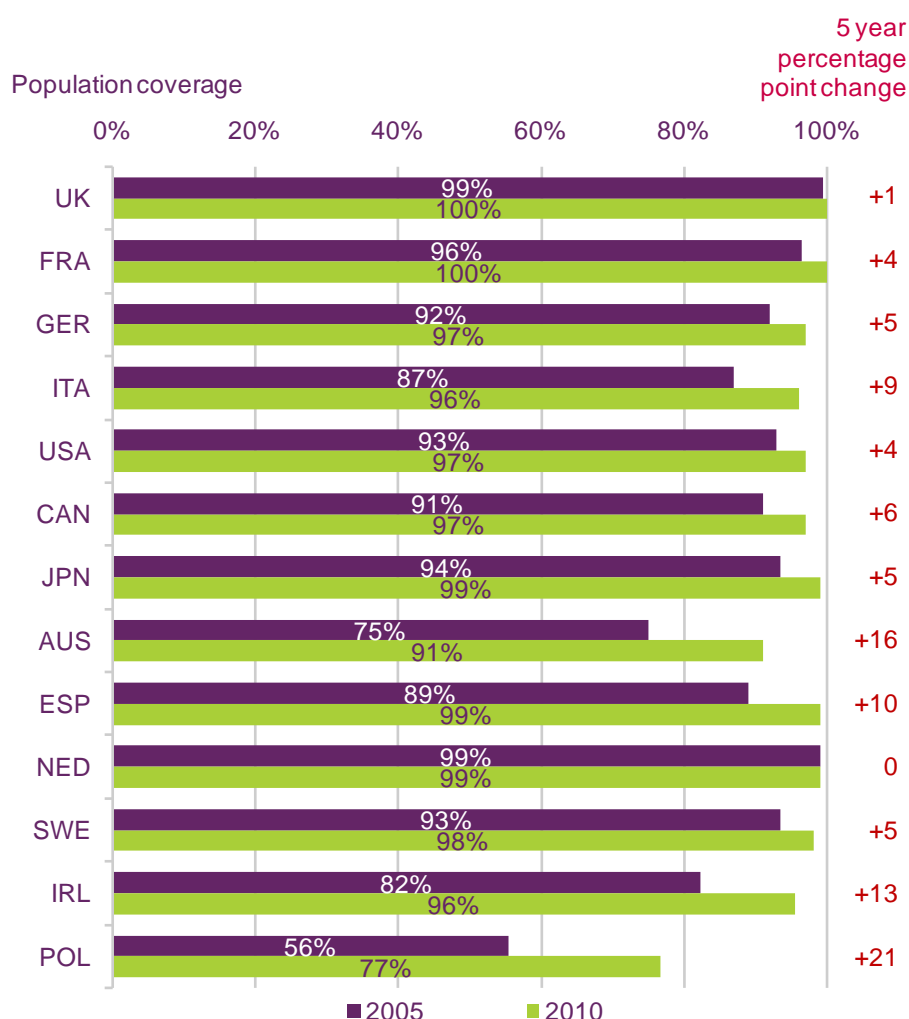
### Fixed broadband laggards are catching up

Although virtually all households in the UK could access fixed broadband networks by the end of 2010<sup>79</sup>, the same has not been true of many of the comparator countries over the past five years (Figure 6.53). In 2005, Italy, Australia, Spain, Ireland and Poland offered less than 90% of citizens the option of broadband connectivity. But since then, and despite considerable macroeconomic difficulties globally, and in some European nations in particular, there has been significant investment in broadband infrastructure, with only Poland still having less than 90% availability in 2010 (some way behind countries in Western Europe).

Broadband availability in Australia (91%) has increased rapidly in recent years, but remains lower than in many other countries. However, the government has made superfast broadband roll-out a policy priority, and the implementation of the National Broadband Network (NBN) is under way, which will bring fibre-optic broadband to most of the population.

<sup>79</sup> At the end of 2010 over 99.9% of UK homes were connected to an ADSL-enabled local exchange (although some people living in these areas may not be able to receive ADSL broadband services, or may only be able to do so at very slow speeds, as a result of the long length or poor quality of the copper telephone line from their premises to the local telephone exchange)

**Figure 6.53 Fixed broadband availability: 2005 and 2010**



Source: IDATE / industry data / Ofcom

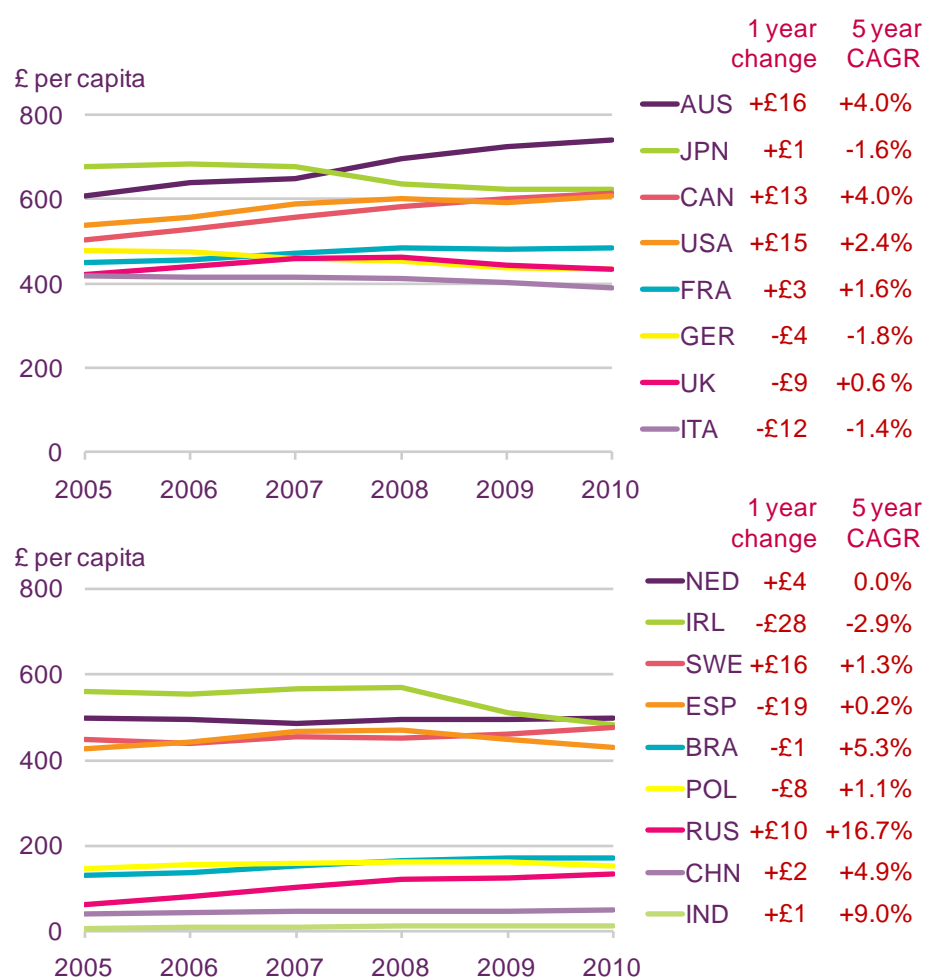
### 6.3.3 Expenditure

#### Australian consumers are the largest telecoms spenders

We use retail revenue per capita as a proxy for spending on telecoms services, although it should be noted that this incorporates both residential and business spending, and makes no allowance for retail taxes. For the third year running, Australia topped the list of spending on telecoms services among our comparator countries, and spending there continues to increase, rising by £16 per person, from £723 in 2009 to £739 in 2010 (Figure 6.54). Much of this has been driven by increasing numbers of contract mobile customers.

The story across the other 16 countries was mixed: ten (the US, Japan, Canada, France, the Netherlands, Sweden, Poland, Russia, China and India) saw an increase, and six a decrease, with the overall trend marginally downward. Countries that have suffered most in the economic downturn have tended to see the greatest decline in telecoms expenditure, namely Ireland, Italy and Spain. UK retail revenue per head declined by £10 in 2010, to £434. The fastest-growing country over the past five years is Russia, at 16.7% compound annual growth rate (CAGR).

**Figure 6.54 Total telecoms service retail revenue per capita: 2005 to 2010**

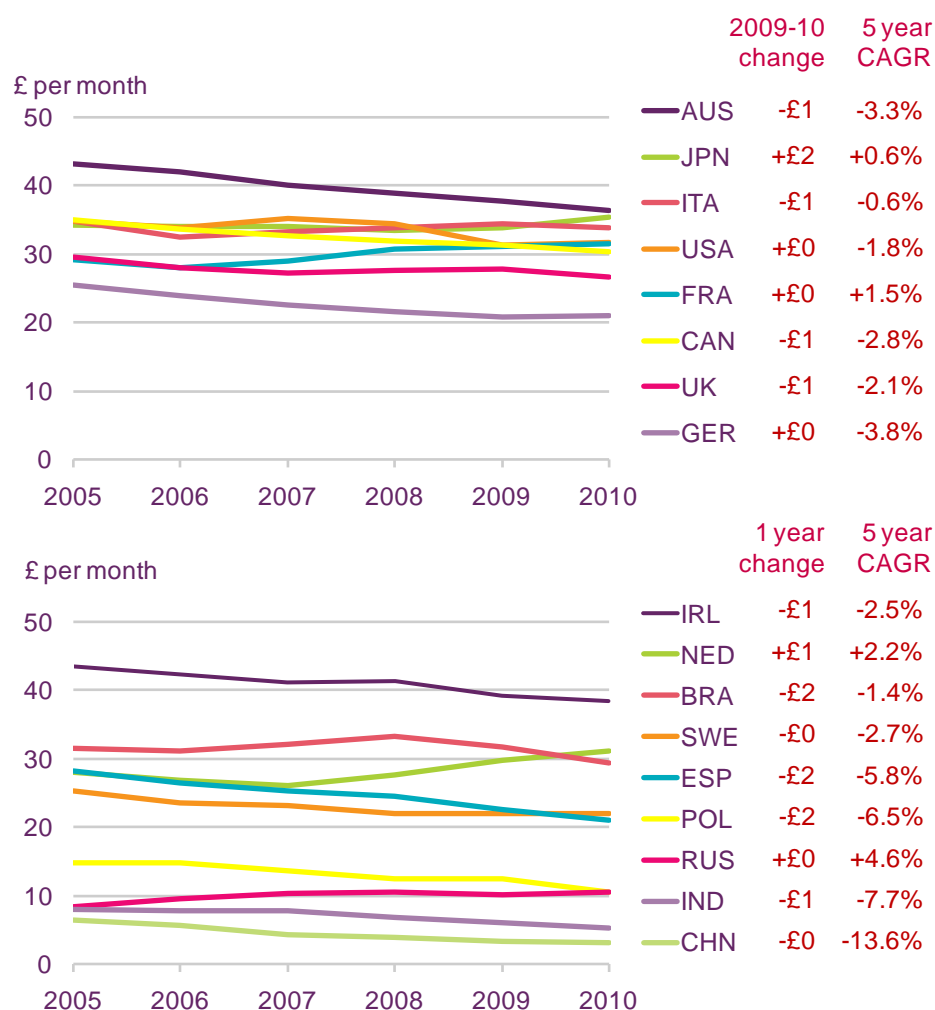


Source: IDATE / industry data / Ofcom

### After years of decline, signs of increasing fixed voice expenditure appear

Spending on fixed line rental and telephony has been steadily declining in recent years, as shown in Figure 6.55. However, during 2010 there were indications that this trend was reversing: across our comparator countries spending remained level, with retail revenues per user increasing in the US, Germany, Japan, France, the Netherlands and Russia.

**Figure 6.55 Retail fixed voice average revenue per user (ARPU): 2005 to 2010**



Source: IDATE / industry data / Ofcom

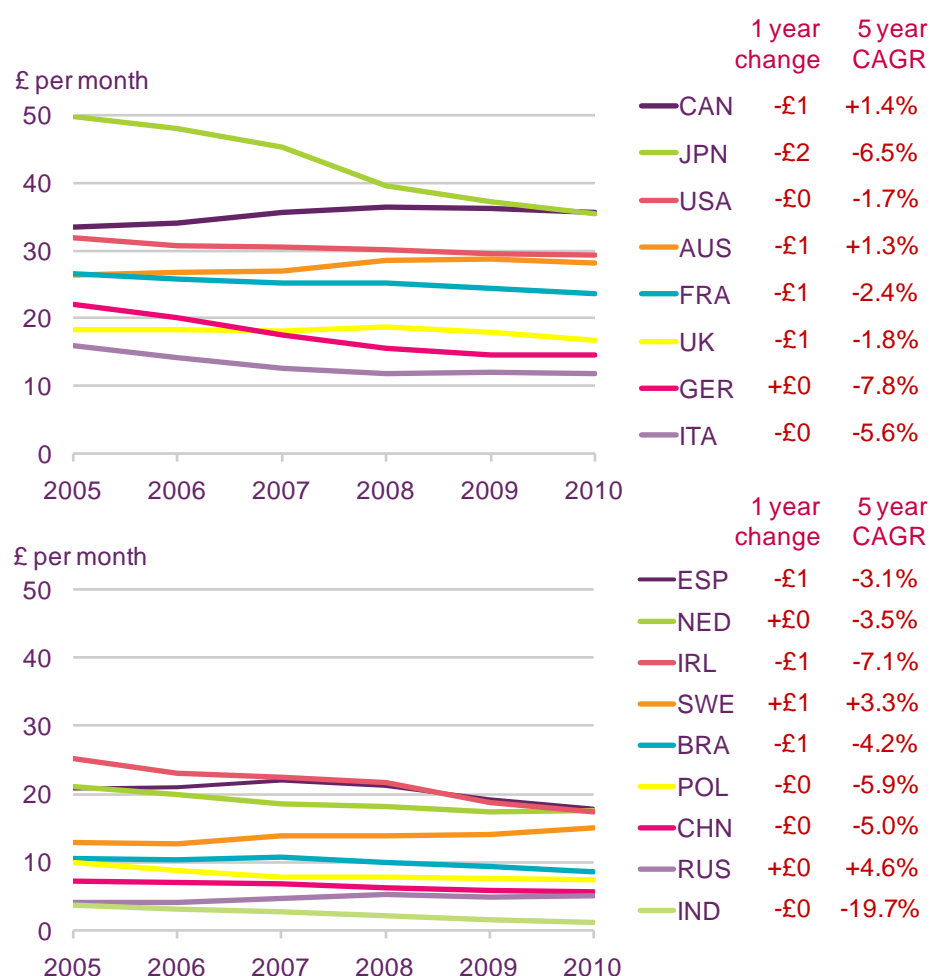
### Mobile spending continues to decline

In contrast, mobile revenues per user fell in 2010 in all countries except Sweden (Figure 6.56). High levels of competition, plus mandatory reductions in mobile termination rates and roaming fees imposed by national regulatory authorities and the European Commission, have been major contributors to these declines. At the same time, some use of VoIP and substitution of voice for messaging (SMS and instant messaging) may be affecting voice revenues. Hit by the severity of economic conditions, consumers in Ireland have slashed their mobile voice expenditure by a cumulative 21.9% over two years.

The Irish picture contrasts sharply with a significant uptick in Sweden, where consumers spent nearly £1 per month per head more on mobile services in 2010. This may be attributed to increasing numbers of contract mobile subscribers, together with a substantial switch from pre-pay to post-pay, with consequential increase in ARPU, and the early roll-out of LTE, which brings the prospect of faster access to data services. Though the per-user revenue figures for India have dropped sharply, the number of SIMs per person has significantly increased, which largely explains the fall. Overall expenditure per user is significantly higher in Japan, Canada, the US and Australia than in the European countries included in this analysis, perhaps reflecting greater competitive intensity in Europe. Expenditure per user is

lowest in the BRIC countries and in Poland, where prices are lower than in the other comparator countries, reflecting lower average incomes.

**Figure 6.56 Retail mobile average revenue per user (ARPU): 2005 to 2010**



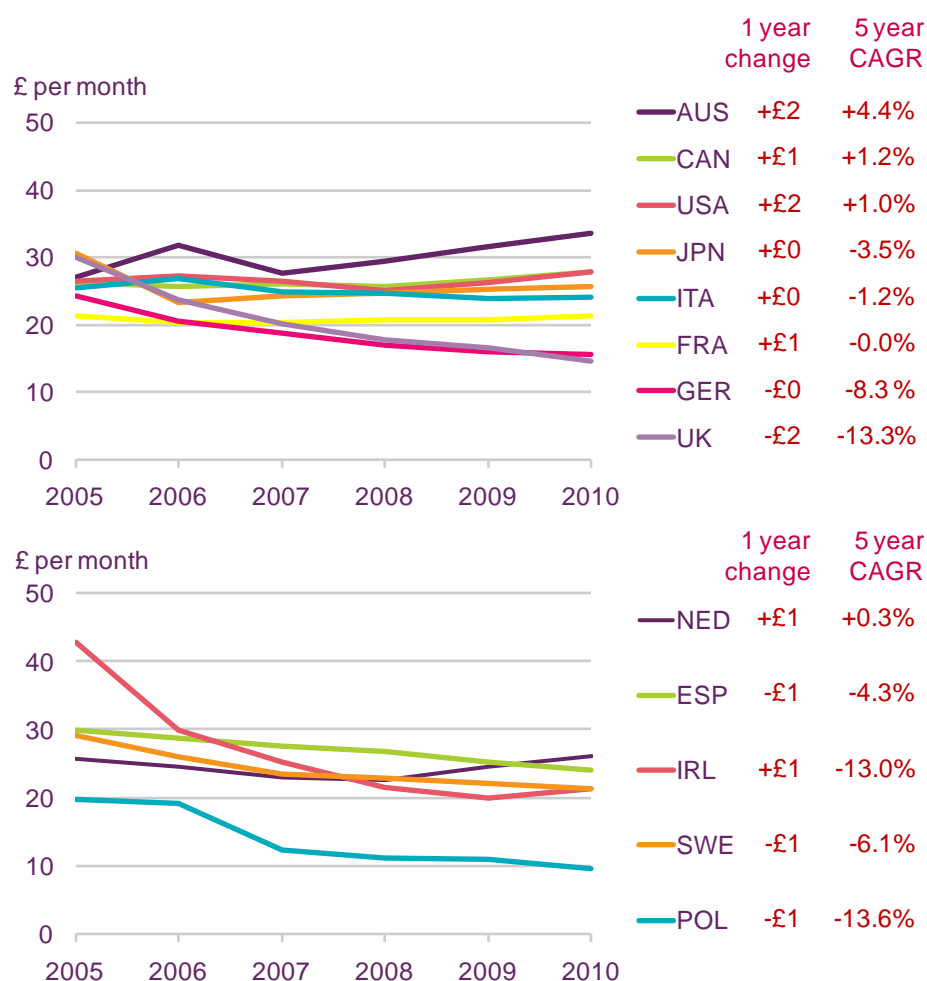
Source: IDATE / industry data / Ofcom

### Spend on fixed broadband increases in countries with high take-up of NGA services

Over the past five years, consumers in Ireland have gone from spending the most per fixed broadband connection to spending the sixth-least among our comparator countries (Figure 6.57). At the same time, per-capita spending in Australia has grown, and it is now the only country where subscribers spend over £30 each per month on fixed broadband. Overall, average expenditure on fixed broadband connections appeared to bottom-out in 2008 and 2009, with a 1% increase in 2010. This may be because some consumers are increasing their expenditure in return for higher-speed services. It is notable that in countries where there have been increases in fixed broadband expenditure, there is often relatively high take-up of superfast next-generation broadband services (e.g. Japan, the US and Canada).

Average expenditure per broadband user in the UK fell by 11.8% as a result of falling prices, particularly in the context of the take-up of bundled services, where broadband is purchased in association with voice ('dual-play') and sometimes also television ('triple-play') services. However, the cost of line rental is generally excluded from this analysis (it is attributed to voice telephony) – and as line rental is required for most broadband services in the UK (and in many other countries), the data are not a complete representation of the actual price of broadband services.

**Figure 6.57 Retail broadband average revenue per user (ARPU): 2005 to 2010**



Source: IDATE / industry data / Ofcom

### 6.3.4 Satisfaction and switching

#### Customers in all comparator countries are least satisfied with mobile broadband

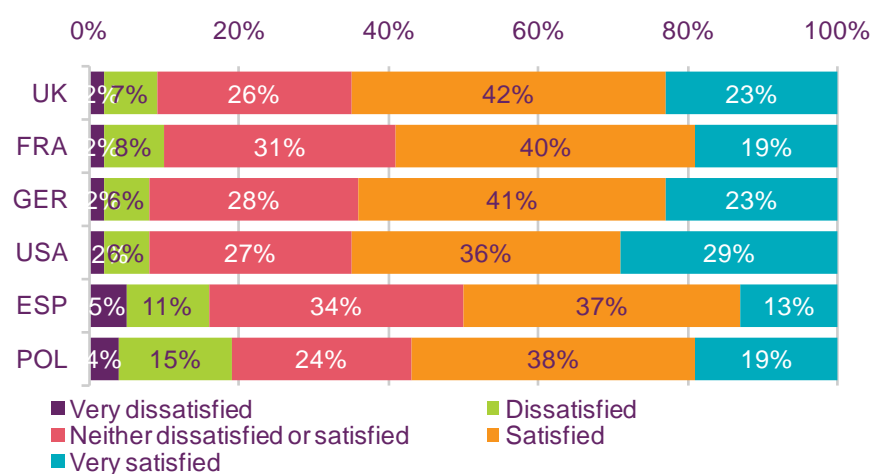
Compared with fixed telephony, mobile telephony and fixed broadband, consumers are more dissatisfied with their mobile broadband service, according to Analysys Mason's *Connected Consumer Survey 2011*, which surveyed consumers in six of Ofcom's comparator countries. Between 15% of survey respondents (in the US and France) and 25% of survey respondents (in Spain) said they were either dissatisfied, or very dissatisfied, with their mobile broadband service (Figure 6.61). This compared with a range of 8% - 23% for mobile voice (Figure 6.59), 9% - 22% for fixed broadband (Figure 6.60) and 8% - 19% for fixed voice (Figure 6.58) among the comparator countries.

US consumers were the least dissatisfied with their services, having the joint-lowest proportion of dissatisfied and very dissatisfied customers for fixed voice and fixed broadband, and the lowest proportion for mobile voice and mobile broadband. Spanish consumers were the most dissatisfied for mobile voice and fixed broadband, and the second most dissatisfied for fixed voice and mobile broadband. UK consumers appear fairly happy with their telecoms services, having the third-lowest percentage of dissatisfied and very dissatisfied customers for fixed voice, joint second-lowest for mobile voice and mobile broadband, and joint lowest for fixed broadband.



**Figure 6.58 Satisfaction with fixed voice services**

Proportion of respondents

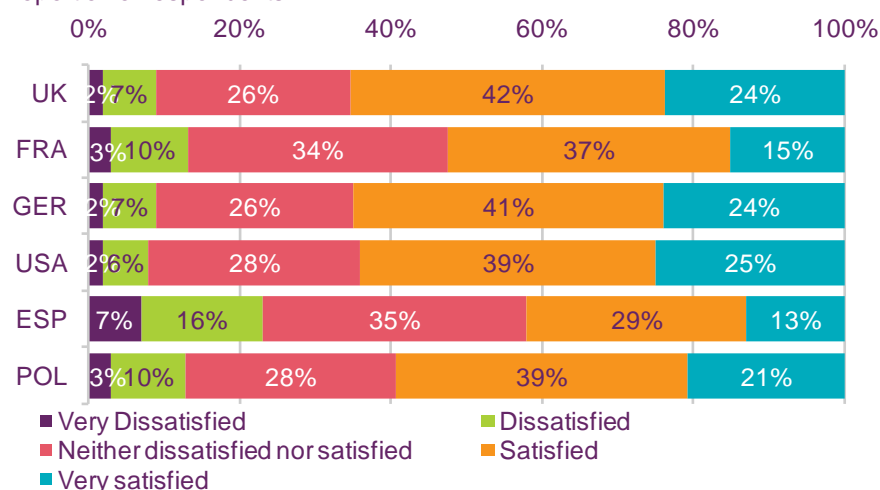


Source: Analysys Mason Connected Consumer survey, 2011.

Q: Respondents were asked how satisfied they were with their fixed voice provider.

**Figure 6.59 Satisfaction with mobile voice services**

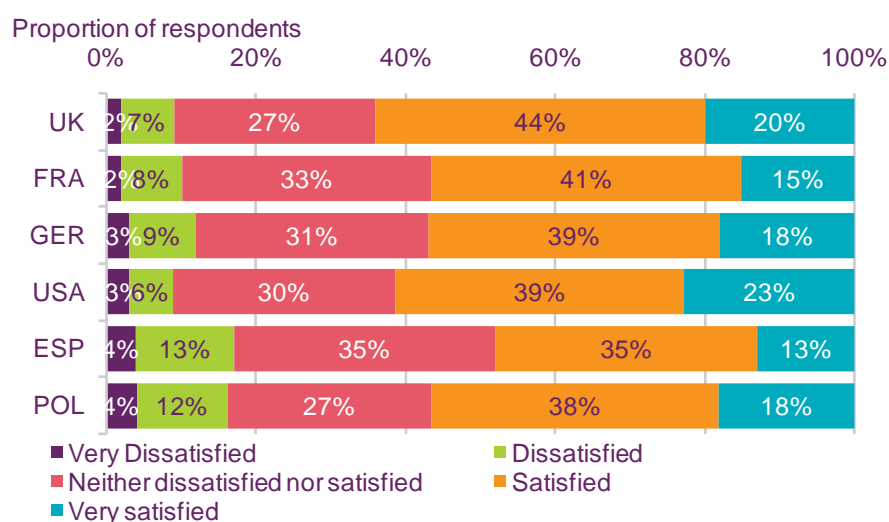
Proportion of respondents



Source: Analysys Mason Connected Consumer survey, 2011.

Q: Respondents were asked how satisfied they were with their mobile voice provider.

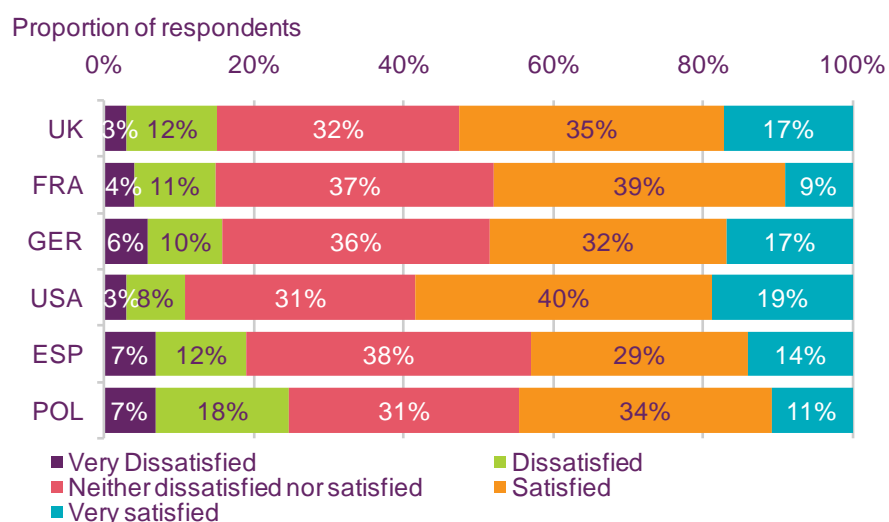
**Figure 6.60 Satisfaction with fixed broadband services**



Source: Analysys Mason Connected Consumer survey, 2011.

Q: Respondents were asked how satisfied they were with their fixed broadband provider.

**Figure 6.61 Satisfaction with mobile broadband services**



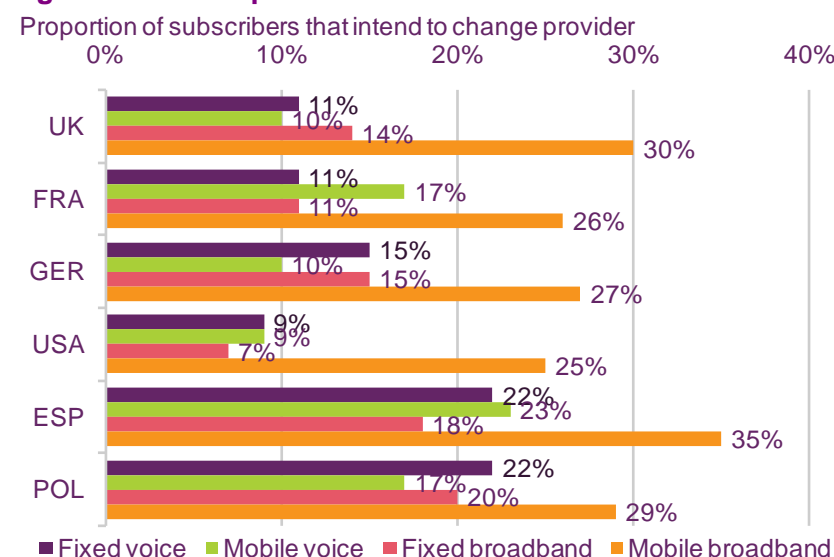
Source: Analysys Mason Connected Consumer survey, 2011.

Q: Respondents were asked how satisfied they were with their mobile broadband provider.

### US consumers are the least likely to change provider and Spanish the most

Closely reflecting dissatisfaction with their services, consumers in Spain said they were most likely to change supplier (Figure 6.62). US consumers – the most satisfied – said they were least likely to change, with UK consumers the second least likely to change. However, three in ten UK mobile broadband subscribers said they intended to change from their current provider. Relatively high levels of dissatisfaction with mobile broadband services appears to be leading to a significant intention to change provider: 29% of mobile broadband subscribers across the six countries said they intended to change subscriber, according to the same Analysys Mason survey. The figures for fixed broadband, fixed telephony and mobile telephony are all much lower, at between 14% and 15%.

**Figure 6.62 Proportion of subscribers who intend to change service provider: 2011**

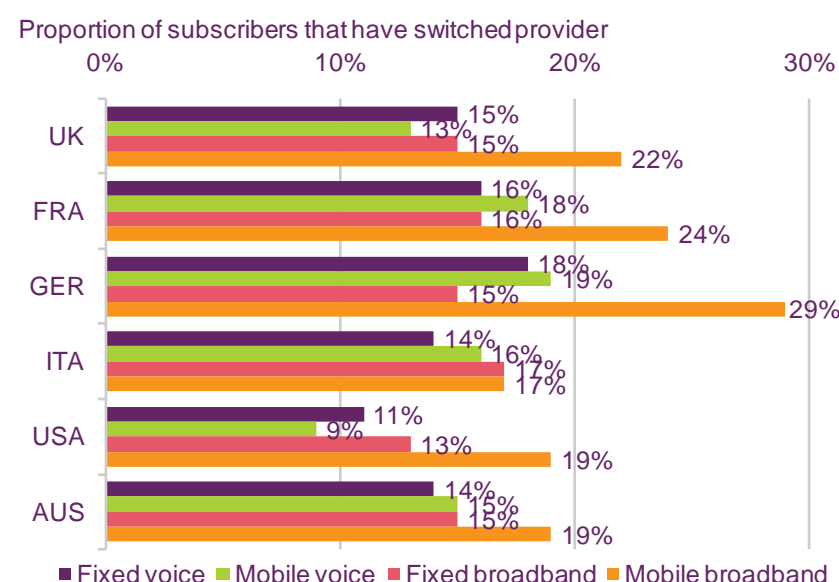


Source: Analysys Mason Connected Consumer Survey, 2011

### Mobile broadband subscribers most likely to have switched in the past year

Not only are mobile broadband customers the most dissatisfied, and have the highest intention to change provider, they have also changed provider the most frequently in the past twelve months. Ofcom research among consumers in six countries found that 21% of mobile broadband subscribers that have had the service for over a year have changed provider in the past year (Figure 6.63). This compares with just 15% for fixed broadband, 14% for fixed voice and 14% for mobile voice. In the past twelve months, UK consumers claimed to have changed provider roughly as much as their peers in the other six countries. Consumers in Japan have shown the least willingness to change provider, and those in Germany the most.

**Figure 6.63 Proportion of users who have switched provider in the past 12 months: 2011**



Source: Ofcom consumer research, October 2011.

Base: subscribers to each service of more than one year.

Q. Which of the following is the case for each of these services that your household pays for? Options given: Switched provider in the last 12 months; stayed with the same provider over the last twelve months.

### 6.3.5 Voice

#### **Fixed-line take-up much more resilient in the UK than in other countries**

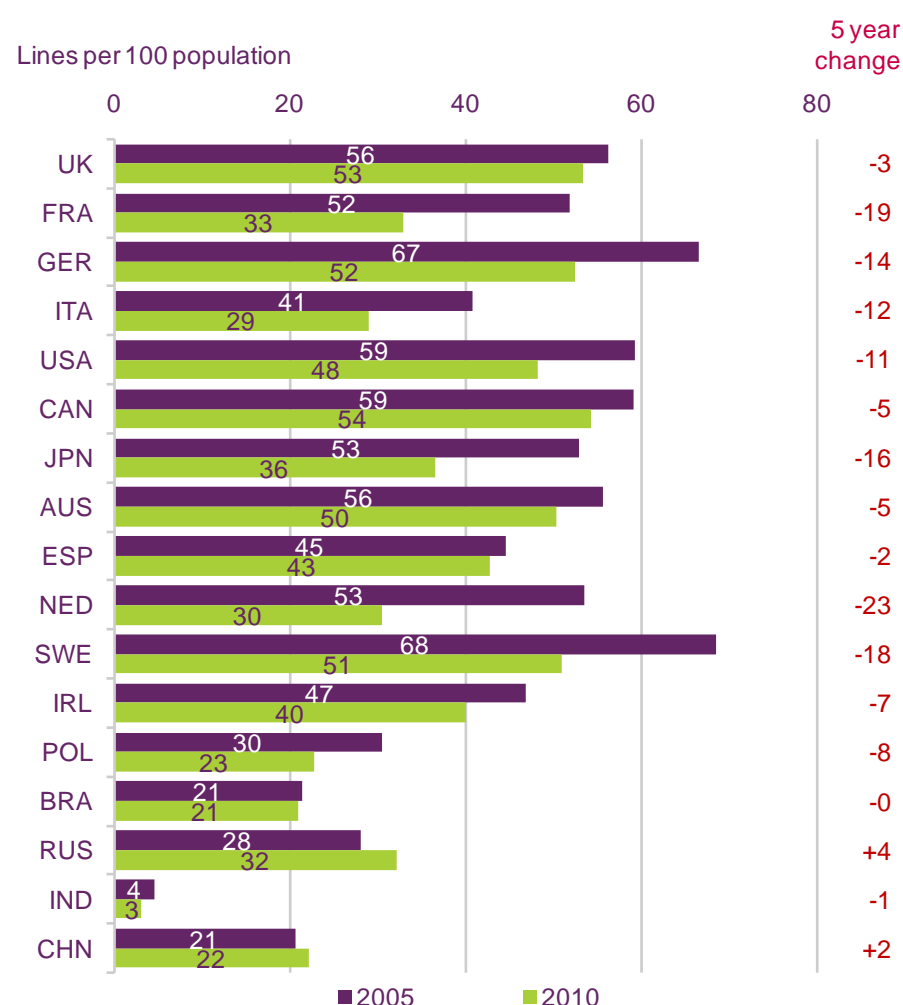
There is considerable variation both in the levels of fixed-line take-up and in the trends across the 16 comparator countries for which we have data (Figure 6.64). Although a general trend has been a decline in fixed lines, the base of fixed lines has been more resilient in some countries. In the UK, fixed-line penetration fell by three lines per 100 people between 2005 and 2010 (to 53 lines per 100 people), and by the end of 2010 take-up of fixed-line voice was the second highest among our comparator countries. Take-up has also been resilient in Canada, Australia, Spain, Ireland, Brazil and Russia.

By contrast, there has been a much greater decline in fixed-line penetration in other countries, in particular France, Germany, Italy, Japan, the Netherlands, Sweden, Poland and India. Despite having relatively low fixed-line penetration, India has seen a decline in its fixed-line figures, indicating that fixed voice lines are playing little role in its economic development, as the country embraces mobile connectivity. It should also be noted that the number of households has been increasing in India, exacerbating the rate of decline per 100 households of a slowly growing fixed infrastructure. In the Netherlands, France, Sweden and Germany, a contributory factor is the large number of households that now rely on VoIP for fixed-line voice telephony.

The slower rate of decline in fixed-voice lines in the UK and Spain is likely to be due to the requirement to have a voice line for most broadband connections. In France, the Netherlands and Sweden, 'naked DSL' is available; customers are not required to have a PSTN voice line in order to receive broadband services over their phone line. In Germany, large numbers of cable broadband subscribers receive a fixed broadband service but not a voice service. By contrast, a voice line is mandatory in the UK for all DSL broadband subscribers (representing over 75% of all broadband customers and around 55% of all households), while the pricing strategy of cable operator Virgin Media provides little incentive for broadband customers to give up a voice line.

Of the comparator countries, the lowest take-up of fixed-line services is in India and Poland, which have never had nation-wide fixed-line infrastructures. However, to a significant extent households have bypassed fixed services and gone straight to mobile. Despite significant economic growth since 2005 and an explosion in the take-up of mobile, fixed-line penetration has increased only slightly in China – which in that way makes it akin to India.

**Figure 6.64 Fixed lines per 100 population: 2005 and 2010**

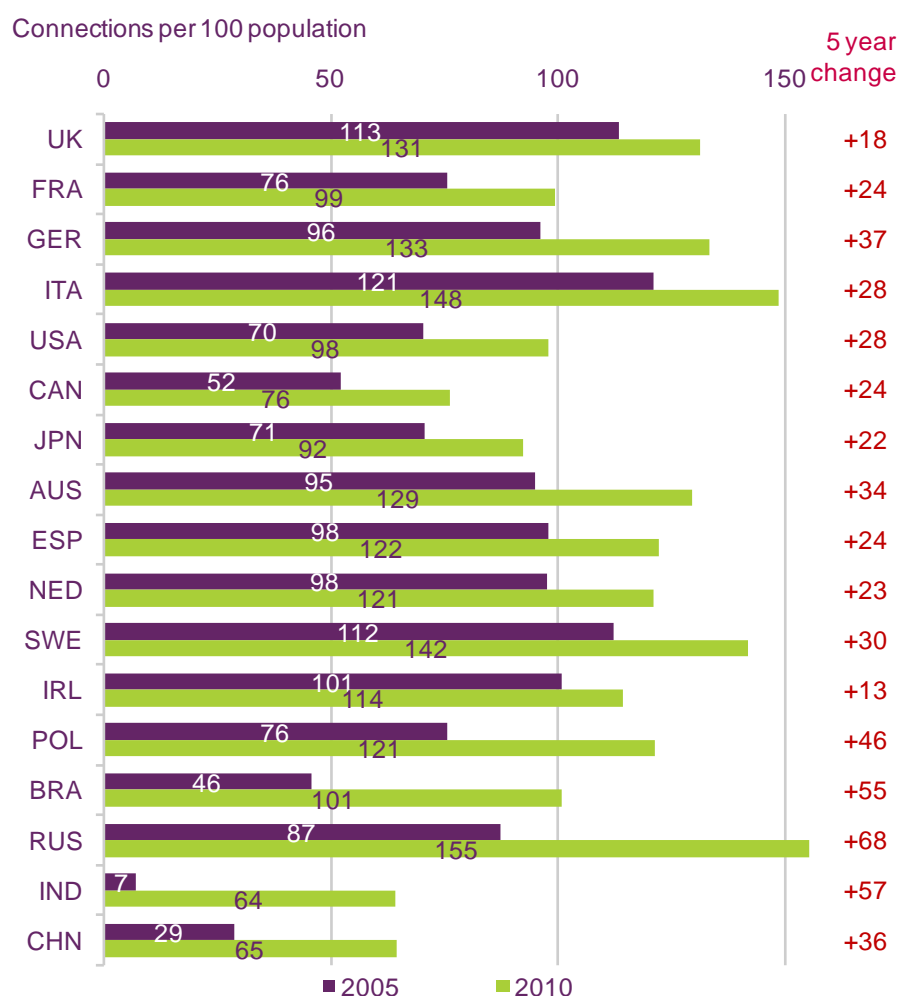


Source: IDATE / industry data / Ofcom

### Mobile connections continue to rise

In contrast to the decline in fixed telephony, Figure 6.65 illustrates the rapid growth in mobile telephony across all countries over the five-year period to 2010. Indeed, there are now more mobile connections than people in most of our comparator countries as individuals have more than one device, or buy SIM cards on multiple networks in order to achieve the lowest prices for different types of call (this is particularly common in India and China where dual-SIM phones make switching between different networks very easy).

**Figure 6.65 Mobile connections per 100 population**

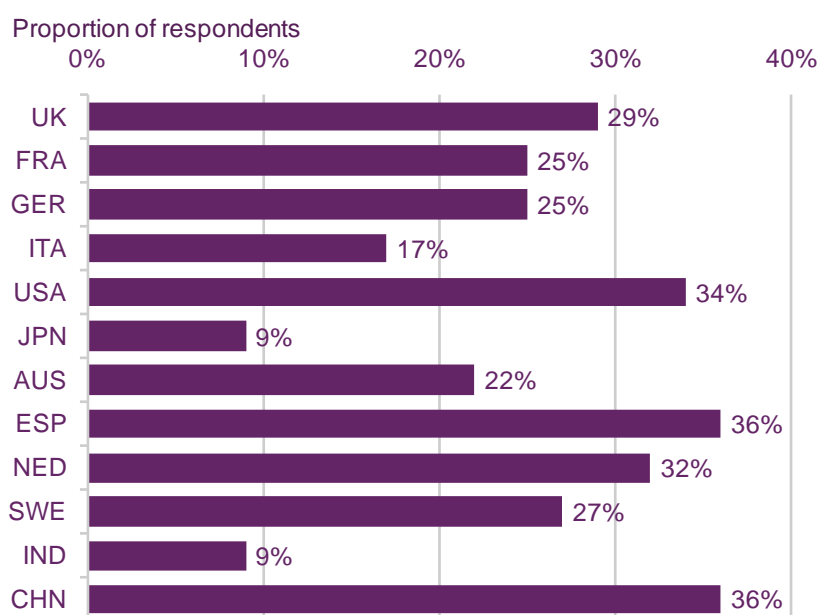


Source: IDATE / industry data / Ofcom

### Multiple device ownership is commonplace

Data from Forrester Research in Q2 2011 indicate the proportion of each population that owns multiple handsets (if not multiple active SIMs). Of the countries compared, China and Spain have the highest incidence of multiple handset ownership, followed by the US and the Netherlands (Figure 6.66). The UK has the fifth highest level of multiple handset ownership, with over a quarter of adult mobile subscribers owning two or more handsets. The figures for China and India refer to urban populations only and therefore may not be representative of those countries' populations as a whole.

**Figure 6.66 Mobile subscribers aged 18+ with two or more handsets**



Source: Forrester Research, Inc. *European Technographics® Benchmark Survey, Q2 2011*; *North American Technographics Benchmark Survey, Q2/Q3 2011 (US, Canada)*; *Asia Pacific Technographics Benchmark Survey, Q2 2011*. Data published in Forrester Research 'Global Mobile Behaviours 2011'.

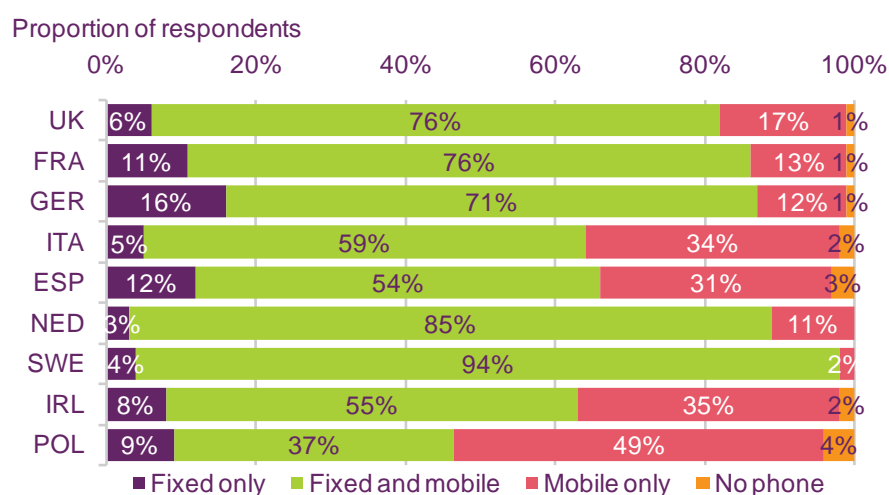
### Mobile-only households are becoming commonplace in some countries

European Commission research into household take-up of fixed and mobile telephony provides insight into the extent to which mobile telephony is a substitute for, or complement to, fixed telephony. The results show marked differences between nations. Of the nine European Union nations that are also Ofcom comparator countries, Poland is by far the most mobile-only, with 49% of its households taking at least one mobile service, but no fixed service (Figure 6.67).

In contrast, only 4% of households in Sweden are mobile-only, with 94% of households taking both mobile and fixed phone services. Germany had the highest proportion of fixed-only households (16%) out of the nine nations. According to this survey, just over three-quarters of UK households (76%) have both a fixed and mobile telephony service, with 6% being fixed-only and 17% mobile-only. One per cent of UK households have no telephony service<sup>80</sup>.

<sup>80</sup> Ofcom's own consumer research found that in Q1 2011 79% of UK households had both fixed and mobile phones, 15% were mobile only and 6% fixed only, see Fig 5.70 (p304) in Ofcom's *UK Communications Market report 2011*, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK\\_CMR\\_2011\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK_CMR_2011_FINAL.pdf)

**Figure 6.67 Household penetration of fixed and mobile telephony: 2011**



Source: European Commission consumer research, July 2011.

Base: UK=1322, Germany=1622, Spain 1004, France=1035, Ireland=1007, Italy 1027, Netherlands=1012, Poland=1000, Sweden=1024.

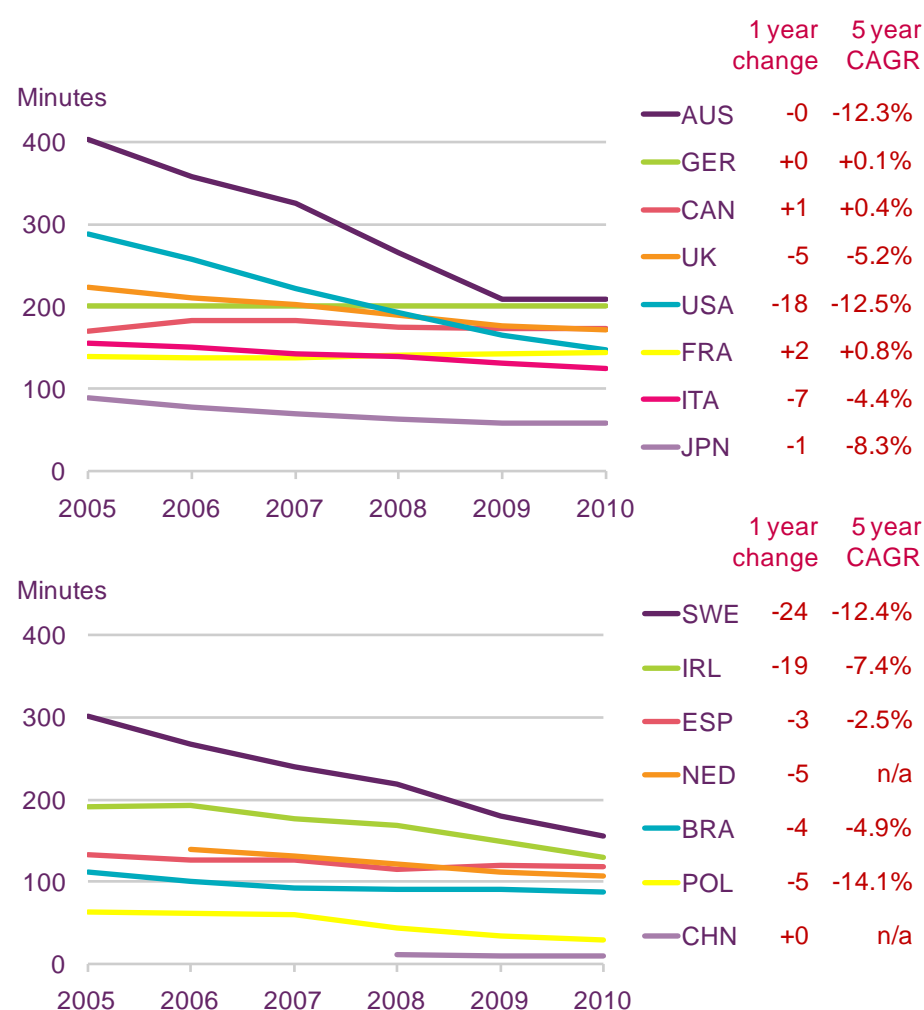
### Fixed telephony use tumbles as fixed lines are abandoned

Given the large-scale abandonment of fixed lines in many countries, it is unsurprising that call volumes have also decreased. The greatest falls have been in the US, Australia, Sweden and Poland, where call volumes fell by around 50% in the five years to 2010. Even in the UK and Spain, where the number of fixed lines has remained comparatively resilient, call volumes have fallen significantly. In the UK, consumers have substituted mobile calls for fixed-line calls as the price difference between fixed and mobile calls has reduced. And in Spain, there are now fewer voice calls being made in total, perhaps in part due to the economic downturn and also as people use alternative ways of communicating, such as email, instant messaging and social networks.

France and Germany are anomalies, because although the number of fixed lines has fallen, the number of minutes made per person over fixed lines has not. Indeed, in France the number of fixed minutes per person has risen every year since 2007, while mobile minutes remain close to static, suggesting that mobile-to-fixed substitution is occurring. This may be driven by high levels of take-up of VoIP services, where low-cost voice services are charged at a flat rate: Figure 6.68 below indicates that the cost per minute for fixed voice services has been falling in France and Germany in recent years, and is among the lowest of our comparator countries, while the price per minute for mobile calls is comparatively high (see Figure 6.72 below).



**Figure 6.68 Monthly fixed line voice call minutes per person: 2005 to 2010**

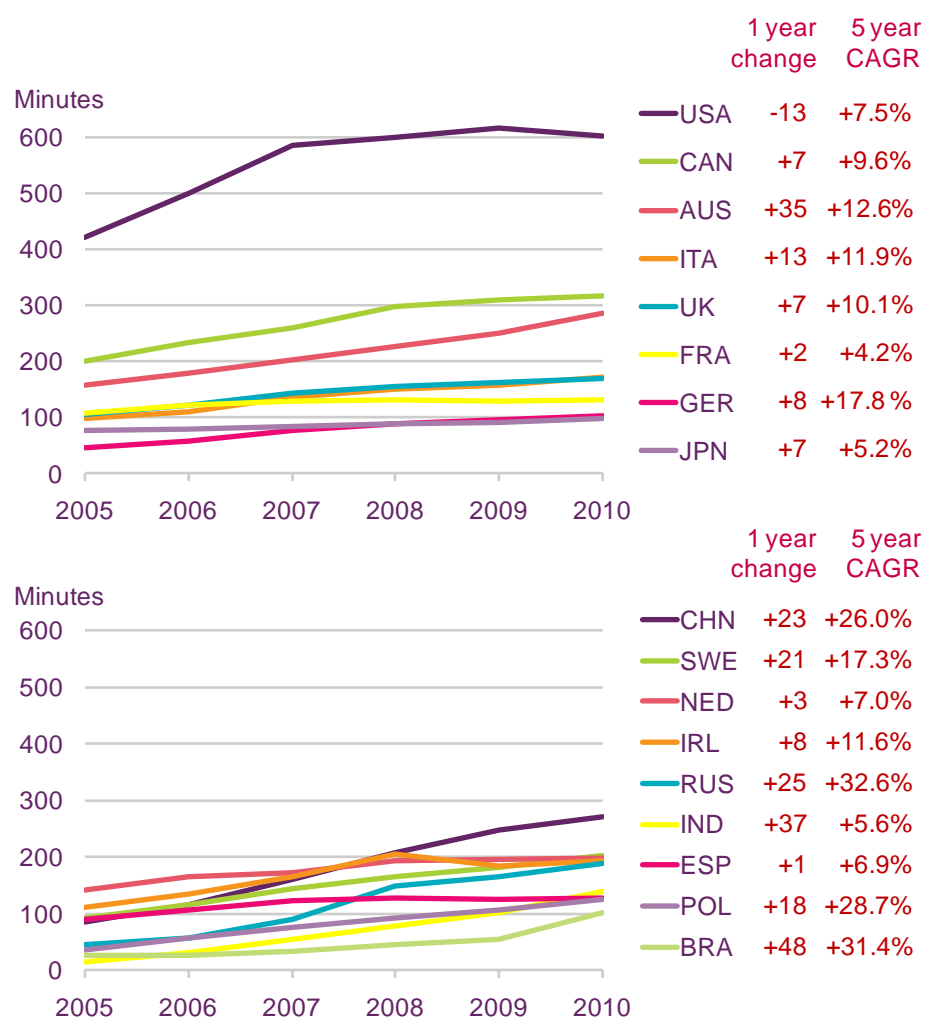


Source: IDATE / industry data / Ofcom

### Mobile call volumes continue to surge

Mobile use continued to increase in all of our comparator countries except the US during 2010, although there is some evidence of a slowdown in growth rates as markets become saturated (Figure 6.69 and Figure 6.35). Mobile use in the BRIC nations has rocketed in the past five years, driven by economic growth and service take-up, with call volumes more than tripling in Brazil, Russia, India and China between 2005 and 2010. It should be noted that the data for the US, Canada, and all four BRIC nations include some proportion of incoming calls (see footnote) and are therefore not directly comparable with European figures (this is a consequence of a different regulatory policy for mobile termination charges, which means that inbound as well as outbound calls are chargeable in some countries).

**Figure 6.69 Monthly mobile voice call minutes per head: 2005 to 2010**



Source: IDATE / industry data / Ofcom

Note: USA, Canada and China – incoming calls included; Brazil, India and Russia – incoming calls included except on-net mobile-mobile

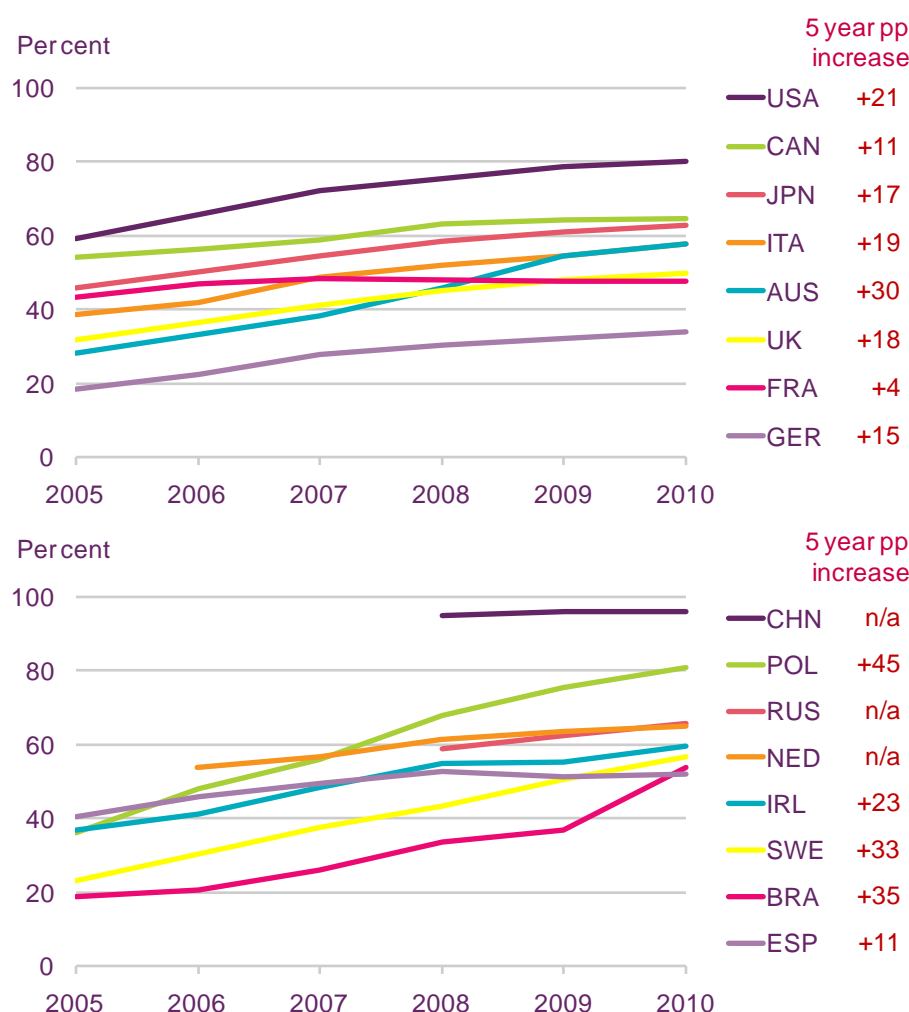
### Mobile voice traffic exceeds fixed voice traffic in most comparator countries

The rate of substitution of mobile voice calls for fixed voice calls is indicated in Figure 6.70. Consumers in Australia, Sweden, Poland and Brazil are migrating the quickest from fixed voice to mobile voice, while in China the dominance of mobile has strengthened still further. France, followed by Canada, the Netherlands and Spain, have seen the least fixed-mobile substitution over the five-year period, and in the past two years migration appears to have stopped or reversed in these three nations.

Thirteen of the 16 nations for which data are available carried more mobile voice traffic than fixed voice traffic at the end of 2010. Data collected by Ofcom indicate that the UK became the fourteenth during the fourth quarter of 2010.<sup>81</sup>

<sup>81</sup> Mobile call volumes exceeded fixed call volumes in the fourth quarter of 2010, as shown in Ofcom's quarterly telecoms data updates: <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/tables/>

**Figure 6.70 Percentage of voice minutes originating from a mobile: 2005 to 2010**



Source: IDATE / industry data / Ofcom

Note: USA, Canada and China – incoming calls included; Brazil, India and Russia – incoming calls included except on-net mobile-mobile

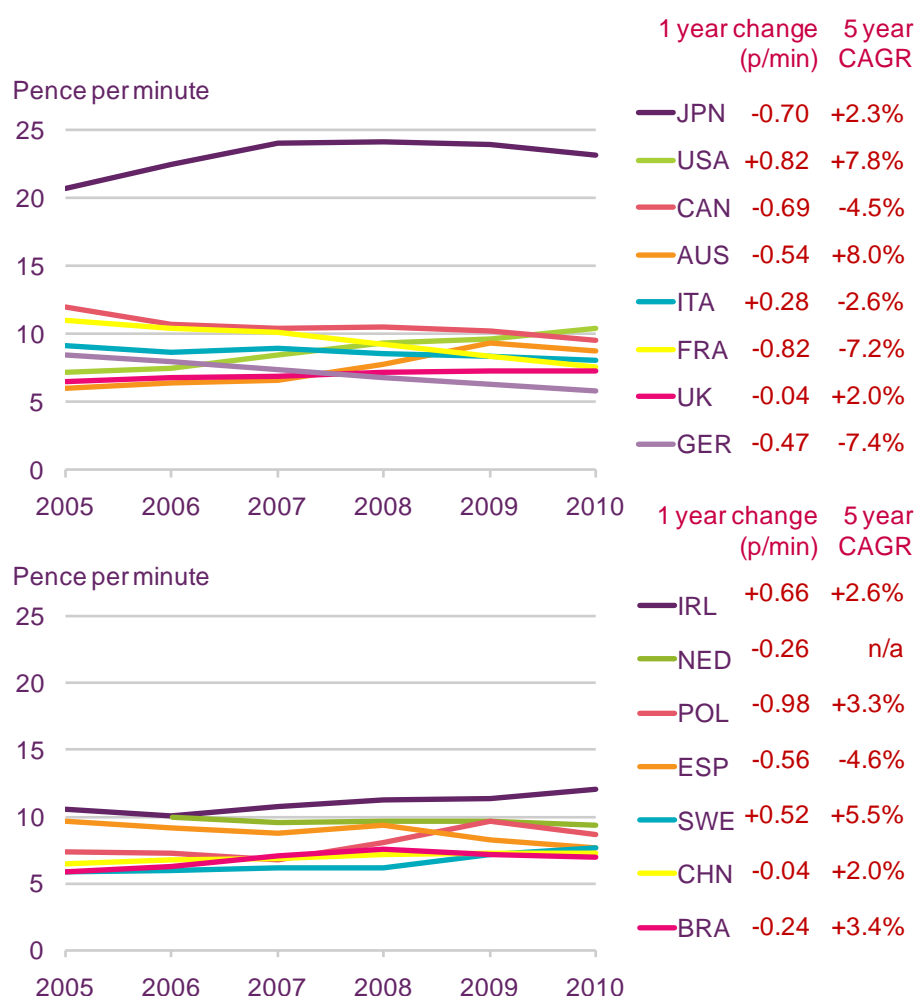
### Japan remains the most expensive country for fixed telephone calls

In Section two of this report we compare pricing in the UK with that in France, Germany, Italy, Spain and the US, by analysing tariffs to compare the price of baskets of communications services. Another way of comparing prices is to look at the cost per minute, which we calculate from voice revenues and voice volumes. This can be very instructive in looking at trends, but should be treated with some caution as cost-per-minute is not necessarily a reflection of price (for example, many fixed-line tariffs and some mobile tariffs offer unlimited calls for some call types), while the inclusion of access charges as well as metered charges means that some of the costs may not necessarily be associated with voice services – for example, voice line rental is a requirement for many fixed-line broadband services, while monthly access charges for post-pay mobile services often include data services and sometimes include the cost of the mobile handset.

Among our comparator countries, Japan remains clearly the most expensive for the cost-per-minute of fixed telephone calls, at nearly double the price of the second most expensive country, Ireland (Figure 6.71). The UK is one of the least expensive, although most major operators have increased standard prices for line rental during 2011. The lowest cost per minute among our comparator countries was in Germany, where prices fell by 32% between

2005 and 2010. Germany (along with Australia) has the highest fixed call volumes per head (see Figure 6.68 above), so low cost-per-minute in part reflects high usage.

**Figure 6.71 Average cost of a fixed voice call minute: 2005 to 2010**



Source: IDATE / industry data / Ofcom

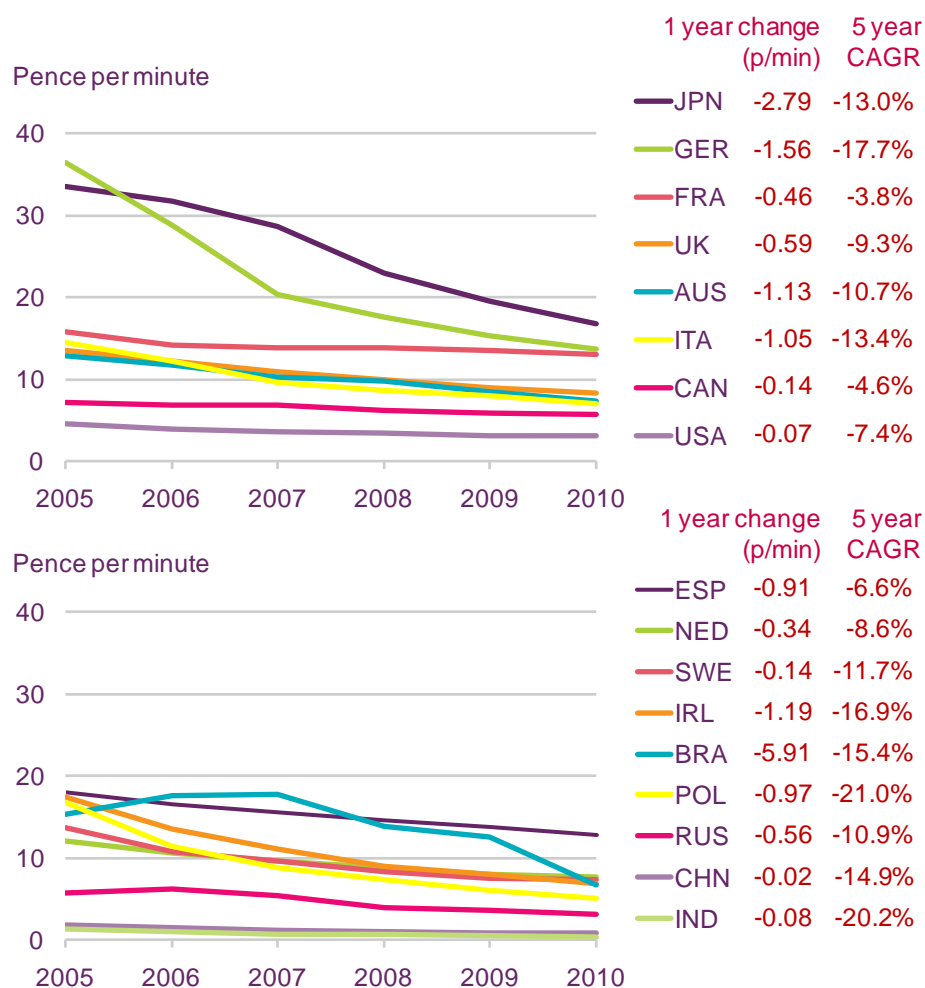
### Japan remains the most expensive for mobile too, but prices are falling

Japan also has the most expensive mobile voice calls in terms of cost per minute, although the situation has improved: prices halved between 2005 and 2010 (Figure 6.72). Every country has seen falling mobile prices over the five-year period, as well as during 2010. Lower cost per minute comes in the context of increasing use and high levels of competition in saturated markets, characterised by price disruption from new entrants looking to gain market share (including MVNOs). Regulation, which has capped mobile termination rates and roaming charges, is also a driver of falling prices, particularly in Europe. Price per minute in Italy and the UK has historically been lower than in the other European comparator countries, in part because of the pricing strategy of 3G-only operator Three, while costs in Germany have fallen steeply in recent years but remain higher than in other European countries. Cost per minute is lowest in China and India, driven by lower cost bases and lower average incomes.

The mobile cost-per-minute figures are likely to be overstated, particularly in countries which have high take-up of post-pay mobile, as the monthly access charge often includes data services and sometimes the cost of the mobile handset. In the UK, for example, post-pay

mobile contracts typically include a fully- or partly-subsidised handset; in Q2 2011 nearly three-quarters of mobile data users paid no additional data charge outside their monthly access fee.<sup>82</sup> The figures for the US and Canada are not directly comparable with the other countries because the figures include revenues from, and volume of, incoming calls, and the BRIC countries are not comparable because they are calculated from incoming call volumes.

**Figure 6.72 Average cost of an outgoing mobile voice call minute: 2005 to 2010**



Source: IDATE / industry data / Ofcom

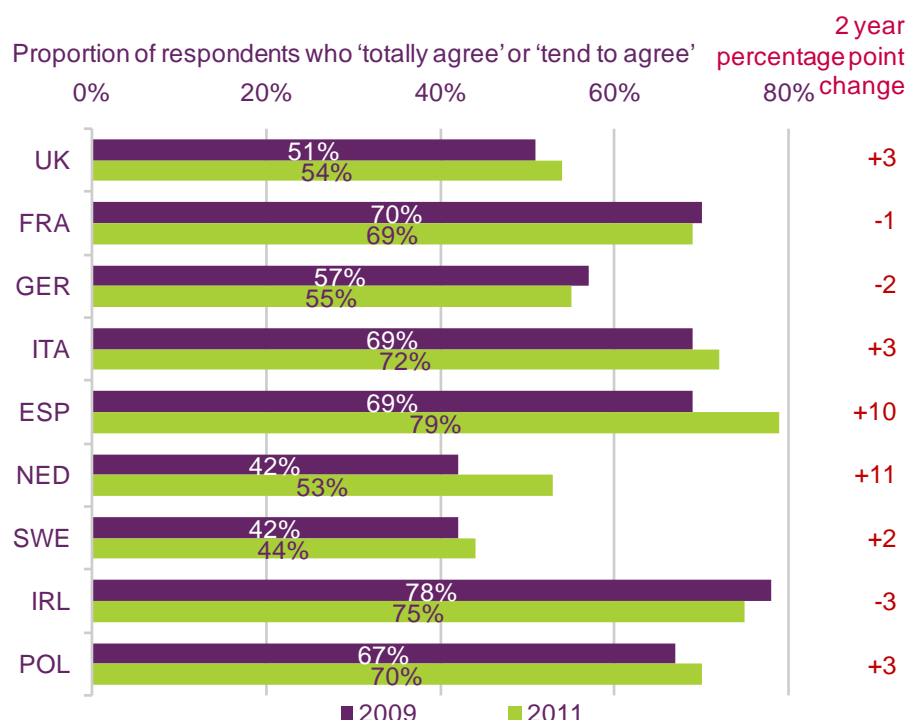
### Affordability concerns increase despite price declines

Despite falling average prices of fixed and mobile calls, consumers' concerns about their ability to afford mobile phone charges appear to have increased across the majority of our comparator countries (Figure 6.73). Concerns increased the most in Spain and the Netherlands, according to European Commission research. In a survey conducted in February and March 2011, 79% of consumers in Spain said that they limited their mobile phone calls because they were concerned about the charges – up from 69% in the EC's previous survey in November and December 2009. In the Netherlands, 53% of consumers said they limited their calls because they were concerned about the charges – up from 42% in the earlier survey. The concerns in Spain may be partly related to its relatively high mobile pricing, but also to the macroeconomic downturn.

<sup>82</sup> See Ofcom Communications Report 2011, Fig 5.22 p 266, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK\\_CM\\_2011\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr11/UK_CM_2011_FINAL.pdf)

In the UK, 54% of respondents to the 2011 survey said that they limited mobile calls because of concerns about the charges, up from 51% in 2009. Among our comparator countries, Sweden had the lowest proportion of consumers concerned about mobile phone costs, although its total rose to 44% from 42%. Affordability concerns lessened in Germany, France and Ireland – in the latter, from very high levels. In the previous survey, consumers in Ireland had been the most concerned about affordability; now, the country is second; behind Spain.

**Figure 6.73 Level of concerns about the affordability of voice: 2009 and 2011**



Source: European Commission consumer research, published July 2011.

Base: UK=1322, Germany=1622, Spain 1004, France=1035, Ireland=1007, Italy 1027, Netherlands=1012, Poland=1000, Sweden=1024.

Statement: You limit your calls with your mobile phone because you are concerned about communication charges. Answers: Totally agree/tend to agree/tend to disagree/totally disagree/not applicable/don't know.

### 6.3.6 Broadband

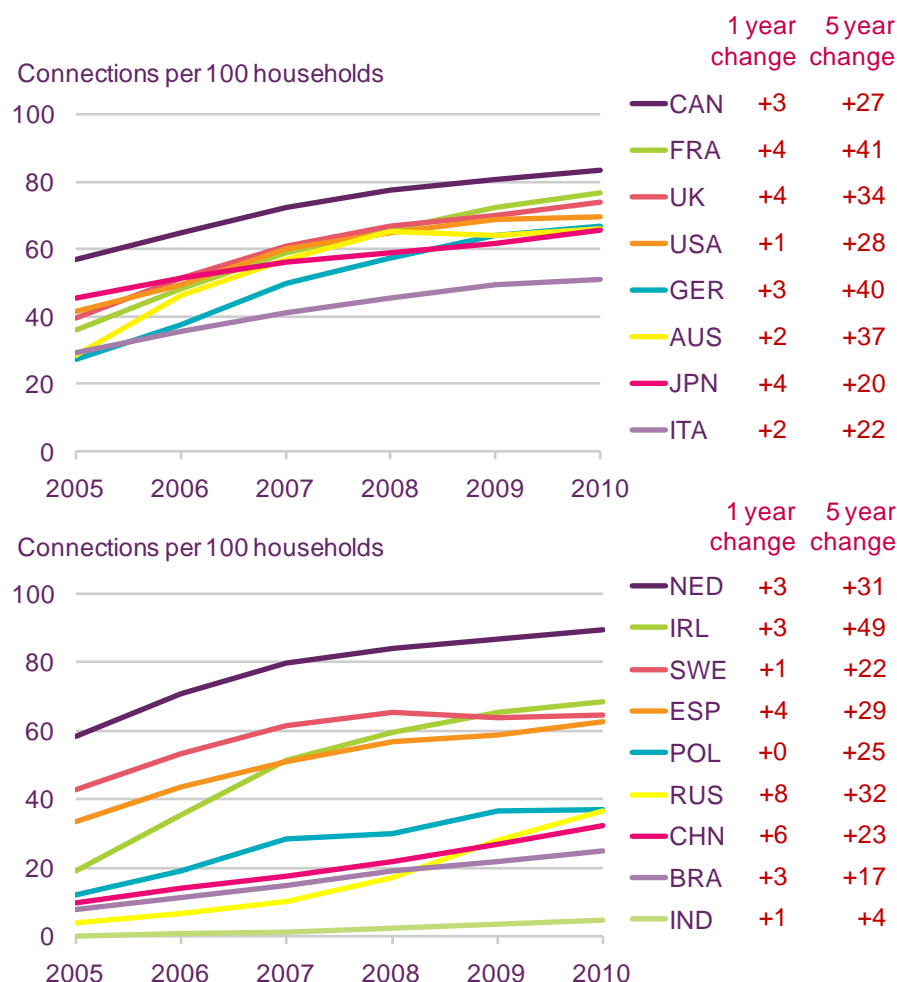
#### Growth in fixed broadband take-up is slowing

Perhaps the most significant global telecoms trend in the first decade of the 21<sup>st</sup> century was the massive and rapid take-up of fixed broadband. All of our comparator countries saw very significant growth in take-up between 2005 and 2010 (Figure 6.74). The Netherlands, and Canada, lead the country comparison, with over eight connections for every 10 households by the end of 2010 (availability is 99% of the population for the former and 97% for the latter). However, along with most other developed markets, growth in those countries is slowing and 2010 marked less than three percentage points growth for each of these two leading countries: having reached mass adoption, take-up among late adopters is slower.

Penetration in the UK continues to grow, increasing from 70 connections per 100 households to 74 connections during 2010; indeed, the growth rate in the UK in 2010 was higher than in 2009. Poland and the BRIC nations have lower take-up but are growing rapidly. But as mobile broadband establishes a foothold in these countries it may be that the

take-up of fixed broadband will never approach levels in Western Europe, North America and Japan. Indeed, slowing growth rates in mature markets may be partly driven by increasing take-up of mobile broadband services. High-speed mobile services using the LTE standard (often known as 4G) have launched in some countries, and the early launch of LTE in Sweden (where one in three households have mobile broadband) by TeliaSonera in 2009 (the first LTE deployment to go live) may be constraining further growth of fixed-line broadband.

**Figure 6.74 Fixed broadband connections per 100 households: 2005 to 2010**



Source: IDATE / industry data / Ofcom

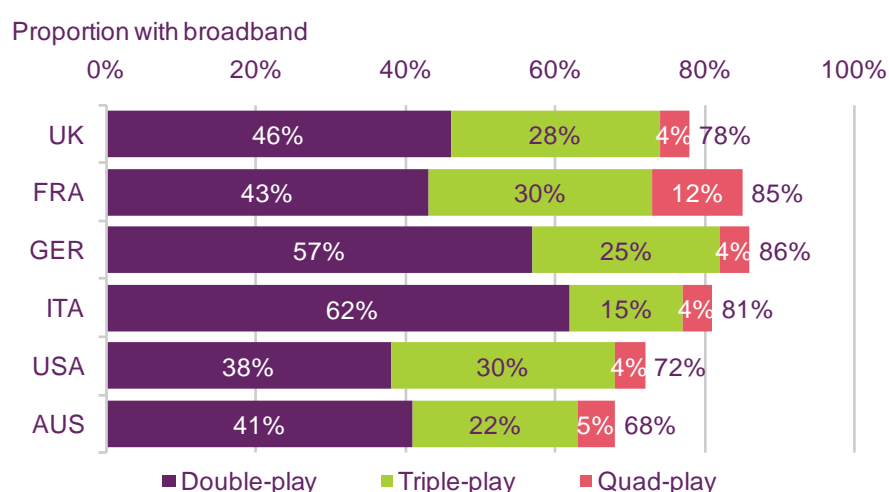
### Fixed broadband is typically bought with one additional telecoms service

A characteristic of the 'convergence' of communications services is that multiple services are frequently purchased in a 'bundle' from the same provider, generally at a discounted price compared to purchasing the services individually. An Ofcom survey of broadband users found that in all six countries researched, most broadband customers purchased the service in a 'bundle' (Figure 6.75). The most common additional service is fixed voice (35% of respondents across all comparator countries), followed by fixed voice and pay TV (14%) then fixed voice and mobile voice (10%). The most popular 'bundle' of services was two services, known as 'dual-play': 45% per cent of broadband subscribers took a dual-play bundle, with 25% taking three services (triple-play) and 5% taking four services (quad-play). Twenty-four per cent of consumers took broadband on its own.

Among the seven countries surveyed, consumers in Germany were most likely to buy broadband in a bundle: six in seven did this. A majority bought just one additional service: fixed voice. UK consumers are the third most likely to buy other services with broadband, with 78% of broadband customers buying a bundle. The most common UK bundles were a dual-play fixed voice and broadband bundle (35%) and a triple-play bundle including broadband, fixed voice and pay TV (24%). UK telecoms operators have focused strongly in recent years on selling bundles of voice and broadband (a trend which increased in 2009 when deregulation by Ofcom permitted BT to offer discounted bundles), while pay-TV operators Virgin Media and Sky have strongly promoted triple-play services.

UK cable and mobile virtual network operator Virgin Media has had modest success in selling quad-play services that also include mobile. The highest take-up of quad-play is in France (12%) where France Telecom (Orange), Free and SFR have, in the last couple of years, promoted mobile services as an add-on to long-established triple-play services.

**Figure 6.75 Take-up of multi-service ‘bundles’ among fixed broadband customers**



Source: Ofcom consumer research, October 2011.

Base: All those with fixed broadband, UK=940, France=977, Germany=833, Italy=872, USA=905, Australia=794.

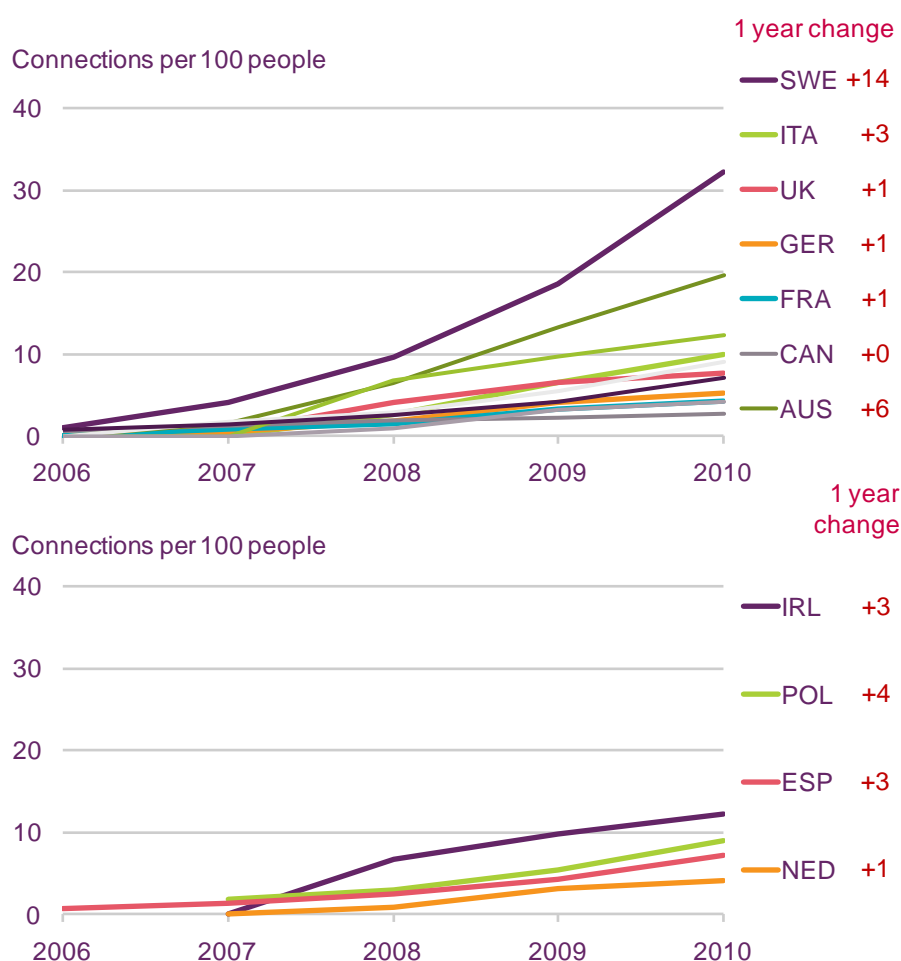
Q: Do you receive any of the following from the same supplier as your broadband as part of a package (i.e. you receive one bill for all services)? (multiple choice containing the commonly found double-play, triple-play and quad-play service bundles).

### Mobile broadband is ratcheting up

Mobile broadband services (defined as services delivered to a PC via a cellular modem) are still in relative infancy, with a minority of consumers purchasing services. However, subscriber figures are growing. In Sweden, nearly one in three consumers have an active mobile broadband connection five years after mass-market services launched (Figure 6.76). In Ireland, one in eight consumers have an active mobile broadband connection three years after launch, in part driven by the government's National Broadband Scheme, which has promoted the provision of mobile broadband to areas of Ireland where no broadband service was previously available. Take-up in the UK is nearly five percentage points behind Ireland, although in line with other large European countries.



**Figure 6.76 Mobile broadband connections per 100 people: 2006 to 2010**



Source: IDATE / industry data / Ofcom

### One in five households in Australia have mobile broadband as their only internet connection

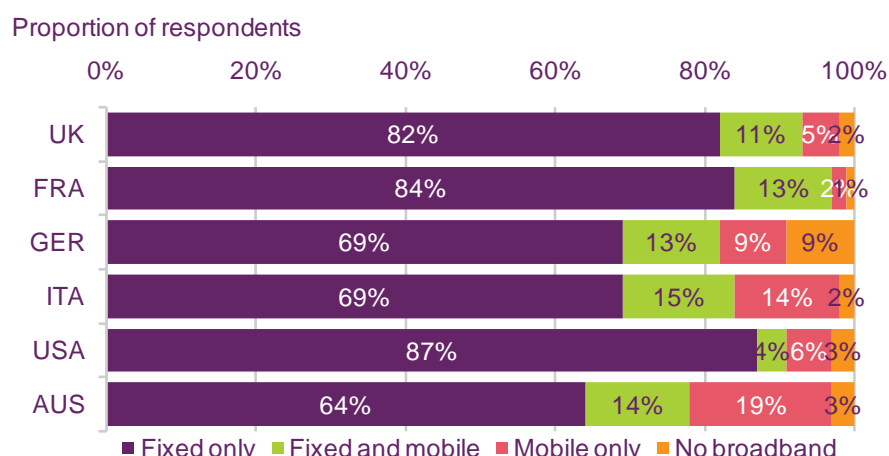
Mobile broadband can be used either as a complement to fixed-line broadband (where consumers use fixed-line broadband for in-home use and mobile broadband when they are out and about), or as a substitute for it (when consumers use mobile broadband as their only home internet connection). Our research in the UK and six comparator countries indicates different levels of take-up of fixed and mobile broadband, and different levels of mobile-only households (Figure 6.77).

The lowest levels of take-up of mobile broadband were in France and the US. This may appear counter-intuitive; both countries have also been characterised by rapid decline in the number of fixed voice lines. However, the availability of 'naked DSL' in both countries and high take-up of cable services in the US in particular means that customers are able to take a fixed broadband service without having a fixed voice line – and this may mean that there is less incentive to go 'mobile-only' for broadband, as the incremental cost for fixed broadband is lower than in countries where a fixed voice line is also required. In France the widespread availability of triple-play services offering broadband, voice over IP (VoIP) telephony and IPTV provides a further incentive of households to have a fixed broadband service, while in the US relatively expensive mobile broadband data charges, and the widespread roll-out of fibre-to-the-home services, are likely to play a role in limiting take-up of mobile broadband as a substitute for fixed broadband services.

Australia and Italy have the highest proportion of households relying entirely on mobile broadband for internet access. In Italy, this is likely to be driven by a high proportion of mobile-only households, which is itself the result of historically lower take-up of fixed voice lines than in the other large European countries. Australia was late to offer widespread fixed-line broadband network availability, and this, combined with the early availability of high-speed HSPA mobile networks, and the fact that in some of the sparsely populated areas mobile is the cheapest technology to be deployed, means that nearly one in five consumers who completed our online survey had mobile broadband as their only connection.

The survey was carried out online, so it can be expected that the 'no broadband' figure is lower than could be expected for a truly representative sample of each population.

**Figure 6.77 Household penetration of fixed and mobile broadband: 2011**



Source: Ofcom consumer research, October 2011.

Base: All respondents, UK=1015, France=1014, Germany=1014, Italy=1045, USA=1002, Australia=1012

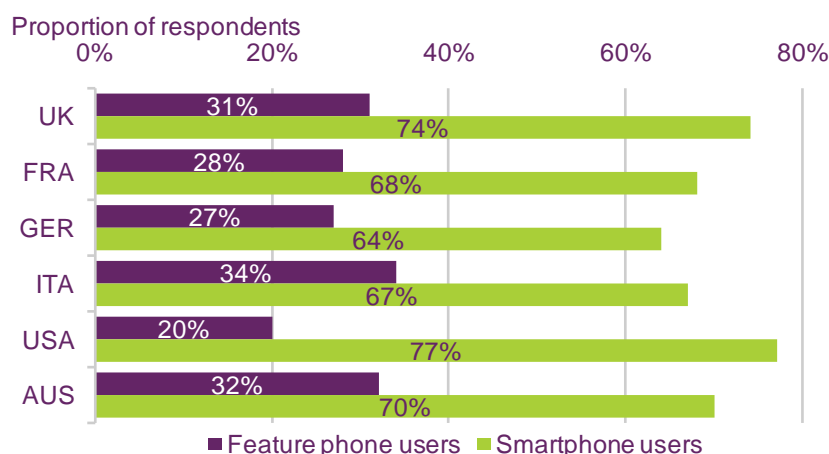
Q.

### Smartphone take-up leads to increasing use of mobile phones to access the internet

In recent years the launch of high-speed mobile networks and the increasing take-up of smartphones has led to a significant increase in the use of mobile devices to access the internet. Further increases are constrained by the large installed base of feature phones, which are not well-suited to the internet. In Ofcom's research (Figure 6.78), each of the six countries listed below showed far higher use of mobile internet services among smartphone users.

The UK's smartphone users were the second most likely to access the internet (74%), although UK feature phone users are much less likely to access the internet on their mobile device (31%) – broadly in line with the comparator countries.

**Figure 6.78 Proportion of feature phone and smartphone users that access the internet via their mobile device: 2011**



Source: Ofcom consumer research, October 2011.

Base (smartphone users): UK=506, France=445, Germany=502, Italy=498, USA=416, Australia=490

Base (feature phone users): UK=423, France=469, Germany=443, Italy=491, USA=486,

Australia=467. For the purposes of these results, we have classified feature phone users as those survey respondents who said they owned a mobile phone but not a smartphone.

Q: Which, if any, of the following activities do you use your smartphone / mobile phone for? Multiple answers allowed, including 'access the internet'. Use of voice over IP is lower in the UK than in other countries

Our survey of broadband users found that fewer consumers in the UK than in the other six countries surveyed used their internet connection to make voice calls, with 19% claiming to make voice calls over their home internet connection, and only 12% doing so at least once per week (Figure 6.79). This compares with 28% and 17% respectively in Italy, and 26% and 19% respectively in France. There are a number of reasons why UK consumers are not making large quantities of voice-over-IP (VoIP) calls, relative to other countries. Firstly, UK fixed network operators tend not to widely promote VoIP services, and they offer little choice of such services. Additionally, they tend to offer unlimited calls on some standard telephony tariffs, limiting the attractiveness of VoIP services.

Voice over IP is much more appealing for consumers in countries where it can enable them to replace their telephone line. This is not the case in the UK, where a telephone line is required if the consumer wants a DSL broadband service. Furthermore, in countries like France, cheap bundled deals of broadband and VoIP calls are available, sometimes including unlimited calls to landlines, making these bundles much more attractive.

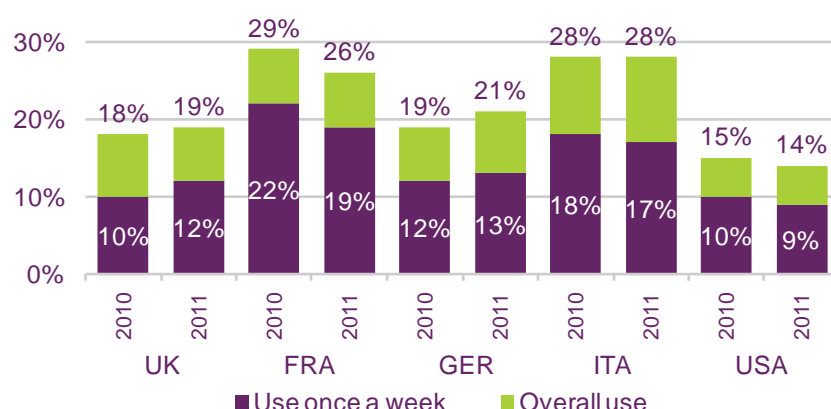
However, across the six comparator countries, growth in the use of VoIP appears to have slowed or stopped since 2010. Previous research, reported in *Ofcom's International Communications Market Report 2010*, suggested that the fastest growth in VoIP take-up came in 2007 and 2008.<sup>83</sup>

Voice over IP is an important technology trend because it has the potential to significantly reduce fixed telecoms revenue and fixed line take-up in countries where it is popular: fixed line take-up is falling more quickly in France than in the other comparator countries. Calls can be made using a telephone handset connected to a broadband line, or by using a headset connected to a PC which is then connected to a broadband line. This range of options, plus the fact that consumers are unaware of the route their calls is taking, can mean

<sup>83</sup> See Ofcom, *International Communications Market Report 2010*, Section 6.1.5, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/icmr/ICMR\\_2010.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/icmr/ICMR_2010.pdf)

that some consumers are unaware that they are using VoIP services. Therefore, our consumer research may underestimate actual usage.

**Figure 6.79 Take-up of voice-over-IP services among fixed broadband users**



Source: Ofcom consumer

research, October 2011.

Base: All fixed broadband users, UK=940, France=977, Germany=833, Italy=872, USA=905

Q. Which, if any, of the following activities do you use your home internet connection for?

### UK lags behind its peers on broadband speed satisfaction

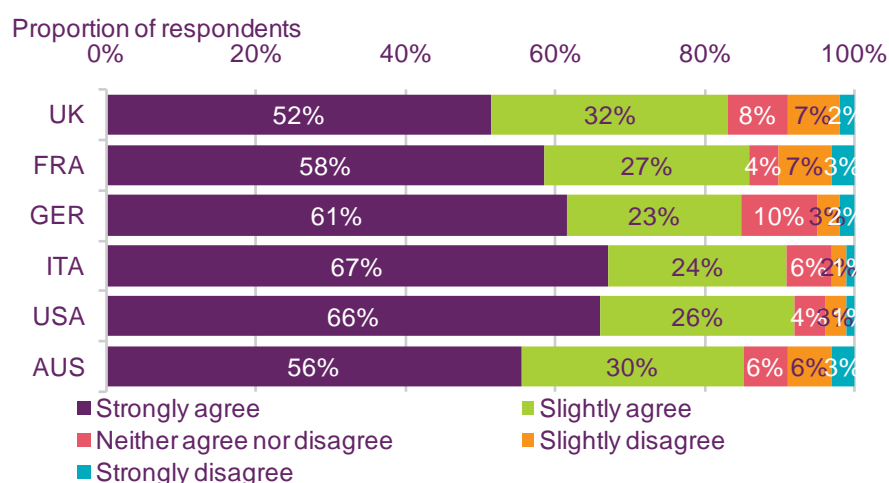
The speed of broadband connections is high up the policy agenda for governments and regulators across the world. Investment in higher-speed networks is viewed as essential for future competitiveness, while monitoring the actual speeds delivered, and ensuring that consumers have information about the speed of services available to them, are important in promoting competition based on speed and ensuring that consumers are able to choose the best service for their needs.<sup>84</sup> In order to gain insight into consumer perceptions of the speed of their services, our research asked broadband users in six countries whether their internet connections – fixed and mobile - are fast enough for what they do online.

Across the six countries, most consumers said their fixed broadband speeds were fast enough. Consumers in Italy (91%) and the US (92%) were the most likely to agree that their broadband was always fast enough (Figure 6.80). In the UK, 84% of consumers agreed that their broadband was fast enough, but a higher proportion than in other countries (15%) said that they disagreed.

Satisfaction with mobile broadband speeds was lower than with fixed broadband in every comparator country (unsurprising, given that current-generation mobile networks typically offer much lower speeds than fixed-line networks and are subject to radio propagation characteristics that mean that coverage can change). In the UK, 21% of smartphone users disagreed, or strongly disagreed, that their broadband speed was fast enough for what they do online (Figure 6.81). Smartphone users in Australia (27%) were most likely to consider that speeds were not sufficient (27%), while those in Germany (13%) and Italy (14%) were least likely to consider that speeds were not fast enough.

<sup>84</sup> Since 2009, Ofcom has researched and published data on actual speeds delivered by UK providers, while similar research has been undertaken in the US and the European Commission has commissioned research into actual speeds delivered across all its member states which is scheduled for publication in 2012.

**Figure 6.80 Satisfaction with the speed of fixed broadband: 2011**

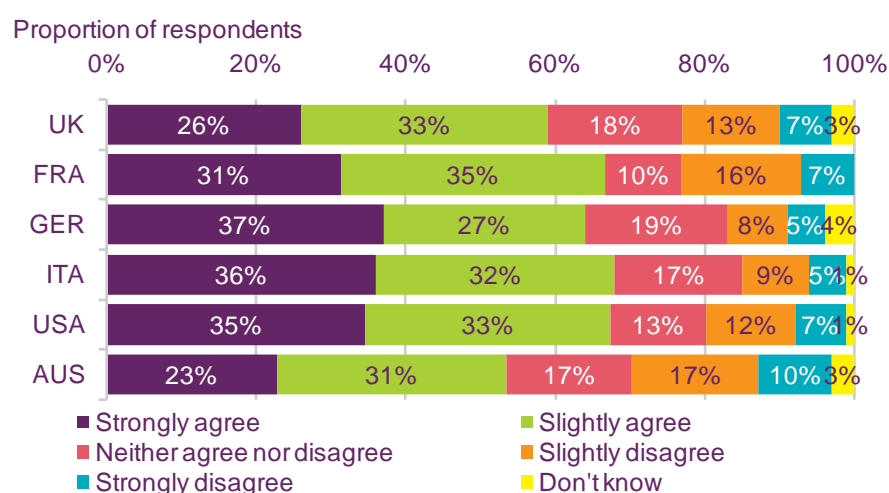


Source: Ofcom consumer research, October 2011.

Base: UK=940, France=977, Germany=833, Italy=872, USA=905, Australia=794.

Statement: My internet connection is always fast enough for what I do online.

**Figure 6.81 Satisfaction with the speed of mobile broadband: 2011**



Source: Ofcom consumer research, October 2011.

Base: smartphone users, UK=506, France=445; Germany=502; Italy=498, USA=416, Australia=490

Statement: My internet connection is always fast enough for what I do online.

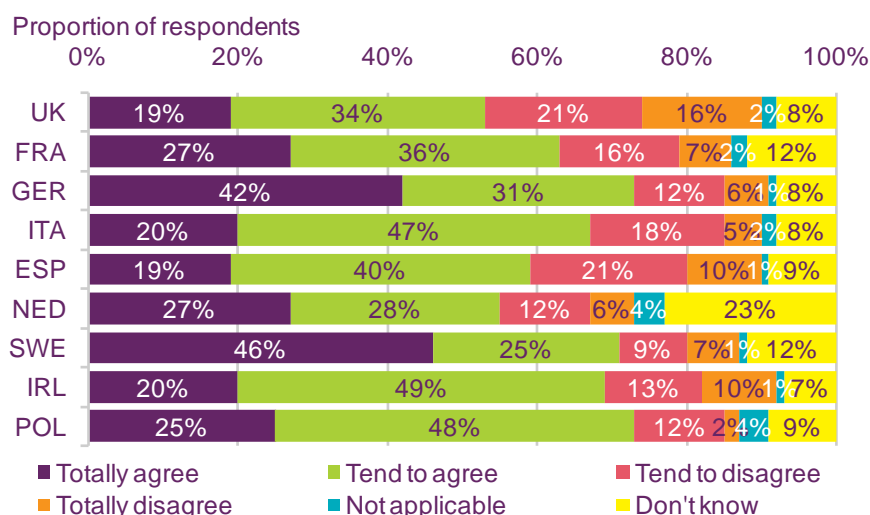
### UK consumers are most aware of actual speed falling short of advertised speed

Perhaps one of the reasons for comparatively high levels of dissatisfaction with the speed of broadband connections among UK consumers is their apparently high level of awareness of how their actual broadband speed differs from the headline speed advertised by their ISP. A 2011 survey conducted on behalf of the European Commission found that UK citizens feel the strongest about there being a difference between actual and headline speeds, out of all the EU27 countries (Figure 6.82).

Asked if actual download and upload speeds matched their contract conditions, 37% of UK consumers disagreed or strongly disagreed. Among our comparator countries, the next highest of the comparator countries was in Spain, with 31%. Consumers in Poland felt that their actual experience most closely matched advertised speeds, with just 14% disagreeing or strongly disagreeing. The gap between actual and headline speeds has received

considerable media attention in the UK in recent years, promoted in part by Ofcom's research into actual broadband speeds and also by a review by the UK's advertising regulator of the guidelines around how broadband should be advertised.

**Figure 6.82 Perception of the difference between contract and actual broadband speeds: 2011**



Source: European Commission consumer research, July 2011.

Base: UK=1322, Germany=1622, Spain 1004, France=1035, Ireland=1007, Italy 1027, Netherlands=1012, Poland=1000, Sweden=1024.

Statement: The download/upload speed and capacity matches your contract conditions.

### Consumers remain concerned about broadband costs, particularly mobile

Our research also asked consumers whether they could use their broadband connections without worrying about the cost. Again, users of mobile broadband tended to have greater levels of concerns, which reflects the lower data limits typically associated with mobile broadband contracts. Two in seven (28%) consumers across the six countries disagreed or strongly disagreed with the statement that they could use as much data as they liked without worrying about cost. This compares with just 12% of fixed broadband customers who disagreed or strongly disagreed.

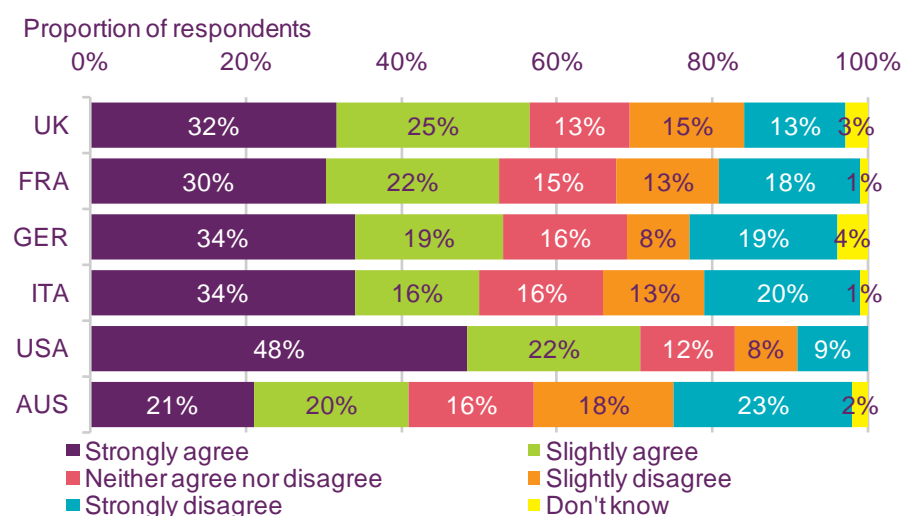
The most concerned mobile broadband consumers (see Figure 6.83) were in Australia, where 41% of mobile broadband customers disagreed or strongly disagreed. Twenty-eight per cent of UK consumers disagreed or strongly disagreed, which was the same as the average across the six countries.

Consumers in France were the most likely to be concerned about the costs of data on fixed broadband connections (Figure 6.84), with 26% disagreeing or strongly disagreeing that they could use as much data as they liked without worrying about the cost. This is perhaps surprising, because broadband charges are relatively low in that country, so the dissatisfaction may be partly connected with the recent VAT rise which forced up broadband prices.

France's concerns contrast with Germany's consumers, where just 3% disagreed or strongly disagreed. This is indicative that most broadband tariffs in Germany include unlimited data

downloads. The figure was 7% for the UK – although there were clearly still some concerns, reflecting the fact that some broadband tariffs in the UK include data caps.<sup>85</sup>

**Figure 6.83 Ability to consume mobile broadband data without worrying about cost: 2011**

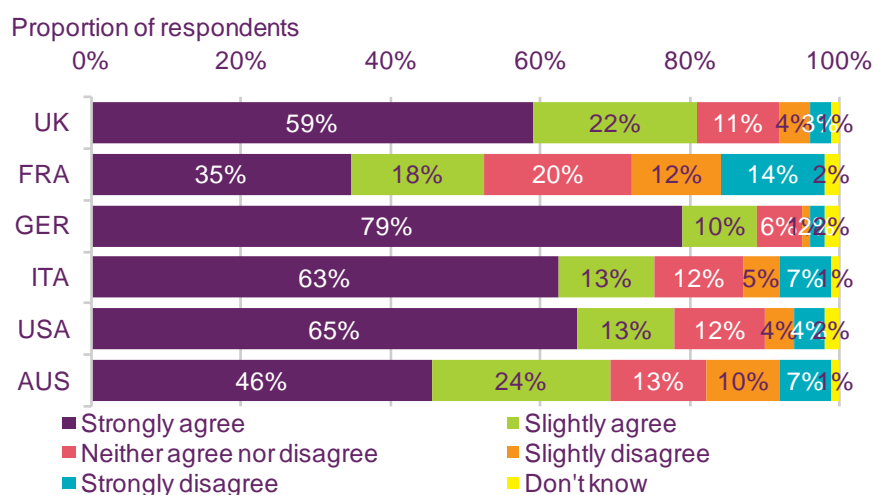


Source: Ofcom consumer research, October 2011.

Base: Smartphone users, UK=506, France=445; Germany=502; Italy=498, USA=416, Australia=490

Statement: I use as much data as I like without worrying about cost.

**Figure 6.84 Ability to consume fixed broadband data without worrying about cost: 2011**



Source: Ofcom consumer research, October 2011.

Base: Fixed broadband users, UK=940, France=977, Germany=833, Italy=872, USA=905, Australia=794.

Statement: I use as much data as I like without worrying about cost.

<sup>85</sup> Many ISPs in the UK include a data cap on their lowest price broadband service – For example BT's Option 1 has a cap of 10GB of usage every month (with an additional fee of £5 per 5GB) and Sky's Broadband Everyday Lite has a 2GB monthly limit. According to Ofcom's Infrastructure report (<http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2011/infrastructure-report.pdf>), the average UK broadband subscriber uses 17GB per month.



# International Communications Market Report 2011

## **Appendix A – Consumer research methodology**



# Appendix A: Consumer research methodology

## Preface

This volume contains the methodology for the 2011 International Communications Behaviour Research, which has been undertaken by RSM on behalf of Ofcom.

The survey researches the communications behaviour of internet users in six markets: the UK, Germany, France, Italy, the US, and Australia. The study explores usage of internet, mobile communications, fixed line telephony and television, and addresses a range of behavioural issues about these communications, among internet users. Alongside this, the research looks in more detail at social networking websites across the markets, looking particularly at take-up, use and attitudes.

The 2011 research comprised 6,102 interviews and was completed in October 2011. Four previous waves of the research have been undertaken (in 2010, 2008, 2007 and 2006) and a number of key issues were tracked across all waves.

## Research methodology

### Overview

The International Communications Behaviour research is conducted using an international online consumer access panel.

In 2011 the panel employed was managed by Toluna, a major international panel provider. Toluna's panel was selected based on a number of criteria, including its flexible invitation methods (email invitations, social networking and on-site invitation), cost effectiveness and, most importantly, panel size (ensuring that only one panel supplier would be needed to cover the entire research requirement).

A total of 6,102 interviews with internet users were completed – with at least 1,000 in each of the following markets: the UK, Germany, France, Italy, the US and Australia. Age and gender quotas in each market were set in line with those employed in earlier waves, to ensure historical consistency. Quotas in the 2008 wave of the research were based on e-Marketer's Worldwide Internet Users Report 2005-2001, and have been replicated for the 2011 wave of the research, as this was still the most consistent source of demographic information for internet users across all countries. In this year's research, however, there has been an increase in quotas for France, Germany and Italy among the older age groups, to better reflect the online populations in those markets. The study has traditionally excluded those under the age of 17 and over the age of 64 and this approach was maintained in 2011.

Members of Toluna's access panel were screened for home internet use (only 9% of panel members were disqualified because they accessed the internet from a connection other than at home) and to meet age and gender requirements. Respondents were invited to participate using a random 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 bias was not introduced into the responses. The sample itself was then automatically randomised for potentially-qualifying individuals.

A fifteen minute self-completion web survey was employed for all respondents in each market.

## Quotas

Quotas of 1,000 interviews per market were set to match previous waves, and age and gender quotas were set within each market to match the age and gender balance in the previous wave of the study. The age and gender quotas had been set in the previous wave to reflect the demographic profile of internet use in each market, although in this wave there was a small increase in the quotas among older internet users in France, Germany and Italy. A small amount of operational flexibility around quotas was permissible, because the quotas were parallel, not interlocking, and a panel was used. An additional 102 interviews were completed and the final achieved quota cells (see below) were met within 6% of target.

	<i>UK</i>	<i>Germany</i>	<i>France</i>	<i>Italy</i>	<i>USA</i>	<i>Australia</i>
<i>Total</i>	<i>1015</i>	<i>1014</i>	<i>1014</i>	<i>1045</i>	<i>1002</i>	<i>1012</i>
<i>Male</i>	<i>517</i>	<i>561</i>	<i>529</i>	<i>530</i>	<i>509</i>	<i>524</i>
<i>Female</i>	<i>498</i>	<i>453</i>	<i>485</i>	<i>515</i>	<i>493</i>	<i>488</i>
<i>18-24 yrs</i>	<i>144</i>	<i>192</i>	<i>197</i>	<i>201</i>	<i>147</i>	<i>152</i>
<i>25 -34 yrs</i>	<i>233</i>	<i>243</i>	<i>276</i>	<i>288</i>	<i>265</i>	<i>226</i>
<i>35 -44 yrs</i>	<i>241</i>	<i>243</i>	<i>230</i>	<i>246</i>	<i>224</i>	<i>254</i>
<i>45 – 54 yrs</i>	<i>217</i>	<i>211</i>	<i>181</i>	<i>194</i>	<i>217</i>	<i>211</i>
<i>55 – 64 yrs</i>	<i>180</i>	<i>125</i>	<i>130</i>	<i>116</i>	<i>149</i>	<i>169</i>

## Statistical significance

Results were not weighted, as demographic quotas were employed to match internet use in each market. Results were tabulated and significance testing (at 95% confidence) was applied. Results between the 2011, 2010 and 2008 waves were also compared and tabulated and significance tested (also at 95% confidence).

## Access panel

The 2011 survey used Toluna's access panel.

The panel included the following members in each of the relevant markets:

	<i>UK</i>	<i>Germany</i>	<i>France</i>	<i>Italy</i>	<i>USA</i>	<i>Australia</i>
<i>Members</i>	<i>456,498</i>	<i>339,088</i>	<i>338,418</i>	<i>150,812</i>	<i>1,186,445</i>	<i>104,988</i>

Panel members were recruited from a variety of sources, using a double opt-in procedure; the process is 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 login information for future reference by the panellist.

Members complete no more than two surveys per month. For this survey all panellists completing the survey were paid an incentive of £0.45 (or international equivalent) for their time.

## Questionnaire

Thank you for agreeing to take part in this study which will be looking at communications in the home. The study should take around 15 minutes to complete.

The answers you give will form part of a confidential market research study. They will be analysed along with those of many others and will never be linked back to you personally. The results will be used solely for the purposes of this market research study.

Q1 Are you....?

Please select one answer

Male

Female

Q2 Which age group do you belong to?

Please select one answer

18-24

25-34

35-44

45-54

55-64

65+

Q3a Which of the following do you have in your home?

Select all that apply.

Pay TV subscription

Fixed line phone

Fixed line broadband (always on, high speed access, including through a wi-fi connection)

Broadband via a mobile network – connected using a USB stick or dongle

Dial-up internet connection

Prepay mobile phone

Postpay mobile phone

None

[PROG: IF SELECTED FIXED LINE BROADBAND AT Q3a]

Q3b Thinking about when you use your home internet connection on a PC, please select an answer to each of the following:

Strongly agree

Slightly agree

Neither agree nor disagree

Slightly disagree

Strongly disagree

Don't Know

I can always connect to the internet when I want to

My internet connection is fast enough for what I do online

My connection speed varies according to the time of day

I use as much data as I like without worrying about cost

---

Q4a Which of the following devices do you ++own and personally use++?

Please select all that apply

[PROG: ROTATE ORDER]

FM radio

Digital radio set that gives you access to a wider range of stations than a traditional radio set (e.g. DAB, DRM)

Satellite radio (e.g. Worldspace, Sirius, XM)

WiFi Radio (an audio device which uses a WiFi or wireless connection to access radio stations via the internet, providing access to radio stations from around the world)

Television set

An HDTV service I pay for

An HDTV I get for free

Video recorder (VCR)

DVD player, including those which are part of a computer or video games console

Recordable DVD player

Digital Video Recorder (DVR) (allows you to record and store programmes onto a hard drive. On some DVRs you can also pause and rewind live TV)

On-demand (VOD) TV service

Video games console attached to your TV (e.g. Nintendo Wii, Sony Playstation, Microsoft Xbox)

Handheld games console (e.g. Nintendo DS, Sony PSP)

Portable media player (e.g. MP3 or MP4 player/iPod)

Desktop computer

Laptop computer

Tablet computer (e.g. iPad)

Smartphone (a mobile phone that allows you to easily access email, download apps, and browse the internet) e.g. HTC, iPhone, Blackberry

Mobile phone

Connected or smart TV (a new type of TV that allows you to connect directly to the internet)

E-book reader e.g. Kindle

A TV that can receive 3D broadcasts

None of these

[PROG: IF SELECTED SMARTPHONE AND/OR MOBILE PHONE AT Q4a]

Q4b Thinking about when you use your smartphone, please select an answer to each of the following:

- Strongly agree
- Slightly agree
- Neither agree nor disagree
- Slightly disagree
- Strongly disagree
- Don't Know

I always have a mobile signal when I want to make a call

I can always connect to the internet when I want to [ASK SMARTPHONE ONLY]

My internet connection is always fast enough for what I do online [ASK SMARTPHONE ONLY]

My connection speed varies according to the time of day [ASK SMARTPHONE ONLY]

I use as much data as I like without worrying about cost [ASK SMARTPHONE ONLY]

Q5 Which of the following do you regularly do (at least once a week)?  
Please select all that apply

Watch television

Listen to the radio

Use a mobile phone

Use a Smartphone (a mobile phone that allows you to easily access email, download apps, and browse the internet) e.g. HTC, iPhone, Blackberry

Use home fixed line phone

Use the internet via a computer/ laptop

Read national newspapers

Read local newspapers

Read magazines

Watch videos/ DVDs

Play console/computer games

Listen to music on a portable media player (e.g. MP3 or MP4 player/iPod)

Listen to music on hi-fi/ CD or tape player

None of these [PROG: SINGLE CODE ONLY]

Don't know

[PROG: IF ONLY ONE RESPONSE GIVEN GO TO Q7]

Q6 Which ++one++ of these media activities would you miss doing the most?

Please select one

Watch television

Listen to the radio

Use a mobile phone

Use a smartphone (a mobile phone that allows you to easily access email, download apps, and browse the internet) e.g. HTC, iPhone, Blackberry

Use home fixed line phone

Use the internet via a computer/ laptop

Read national newspapers

Read local newspapers

Read magazines

Watch videos/ DVDs

Play console/computer games

Listen to music on a portable media player (e.g. MP3 or MP4 player/iPod)

Listen to music on hi-fi/ CD or tape player

None of these [PROG: SINGLE CODE ONLY]

Don't know

[PROG: IF ONLY ONE RESPONSE GIVEN AT Q5 PLEASE AUTOMATICALLY CODE THIS AT Q6]

Q7. Which of the following devices do you use to access the internet at home (e.g. visiting web sites, emailing, online gaming, downloading files)?

Please select all that apply.

[PROG: ONLY DISPLAY FOLLOWING IF SELECTED AT Q4]

Desktop computer

Laptop computer

Tablet computer (e.g. iPad)

Mobile phone

Video games console

Portable media player (e.g. MP3 or MP4 player/iPod)

Connected or smart TV (a new type of TV that allows you to connect directly to the internet)

None of these

---

Q8 Which, if any, of the following activities do you use your home internet connection for?

Please select all that apply

[PROG: ROTATE ORDER]

Accessing email

Making voice calls

Instant messaging

Using social networking sites (e.g. Facebook, MySpace)

Shopping

Banking transactions

Gambling/trading/auctions

Listening to or downloading audio content (e.g. music tracks or, podcasts)

Listening to the radio

Downloading TV programmes or films

Watching TV over the web (e.g. catch-up services, broadcaster web sites)

Watching videos made by other people (e.g. user-generated clips on YouTube)

Playing online games

Uploading or putting pictures or photos on to a website

Uploading or putting video content on to a website

General website browsing

Reading the news online

None of these

Don't know

Q9 Which, if any, of the following activities do you use your home internet connection for AT LEAST ONCE A WEEK?

Please select all that apply

[PROG: ROTATE ORDER]

[PROG: ONLY DISPLAY OPTIONS SELECTED AT Q9]

Accessing email

Making voice calls

Instant messaging



Using social networking sites (e.g. Facebook, MySpace)  
Shopping  
Banking transactions  
Gambling/trading/auctions  
Listening to or downloading audio content (e.g. music tracks or podcasts)  
Listening to the radio  
Downloading TV programmes or films  
Watching television over the web (e.g. catch-up services, broadcaster web sites)  
Watching videos made by other people (e.g. user-generated clips on YouTube)  
Playing online games  
Uploading or putting pictures or photos on to a website  
Uploading or putting video content on to a website  
None of these  
Don't know

[PROG: IF MOBILE PHONE OR SMARTPHONE NOT SELECTED AT Q4, GO TO Q11]

Q10 Which, if any, of the following activities do you use your smartphone / mobile phone for?  
Please select all that apply

[PROG: ROTATE ORDER]

Making and receiving voice calls  
Sending and receiving text messages (SMS)  
Instant messaging  
MMS or photo messaging  
Sending and receiving emails (not SMS)  
Sending and receiving video clips  
Making and receiving video calls  
Listening to FM radio  
Listening to music using MP3 function  
Listening to podcasts  
Playing games  
Accessing the internet  
Uploading pictures/videos taken to the Internet  
Downloading applications or programs directly to your phone  
Accessing social networking sites

Watching video clips  
Watching TV programmes  
Using applications that use your current location (e.g. satellite navigation, Google Maps)  
Banking transactions  
Gambling/trading/auctions  
None of these  
Don't know

Q11 Which, if any, is your main source for the following information?

TV  
Internet on a computer  
Internet on a mobile phone  
Internet on a tablet computer (e.g. iPad)  
Newspaper / magazine  
Radio  
Other people  
Not interested

[PROG: GRID]

News about the world  
News about your country  
News about your region/locality  
Sports news  
Celebrity news and gossip

We would now like to ask you about some of the communication services that you or your household pay for.

Q12. Do you receive any of the following from the same supplier as your broadband as part of a package (i.e. you receive one bill for all services)?

[PROG: ONLY IF FIXED LINE BROADBAND SELECTED IN Q3]

Fixed line voice calls only  
Pay TV subscription only  
Mobile phone contract only

Fixed line voice calls and Pay TV subscription  
Fixed line voice calls and mobile phone contract  
Pay TV subscription and mobile phone contract  
Fixed line voice calls, Pay TV subscription and mobile phone contract  
None of the above - just receive broadband as a single service

Q13a. Which of the following is the case for each of these services that you or your household pays for?

[PROG: ONLY DISPLAY OPTIONS SELECTED IN Q3]

Pay TV subscription  
Fixed line voice calls  
Fixed line broadband (always on, high speed access, including through a wi-fi connection)  
Broadband via a mobile network – connected using a USB stick or dongle on your computer  
Mobile phone

[PROG: GRID]

Switched provider in the last twelve months  
Took up service in the last twelve months  
Stayed with the same provider over the last twelve months

[PROG: ONLY IF 'Stayed with the same provider over the last twelve months'  
SELECTED IN Q13a]

Q13b. Have you considered changing the company that provides this service?

Yes  
No

Q14. Which of the following best describes your behaviour with regards to paying for digital content online? Examples of digital content would be newspapers, TV programmes, films, e-books, music tracks, smartphone apps

I regularly pay for content online

I sometimes pay for content online

I rarely pay for content online

I never pay for any content online

Don't know

#### SOCIAL NETWORKING SITES

Q15. Have you ever visited a social networking site e.g. Facebook, Myspace, Bebo?

Yes

No

Don't know

[PROG: IF RESPOND "NO" AT Q15 GO TO Q25]

Q16. Which of the following social networking sites have you visited?

Badoo

Bebo

Classmates online

Facebook

Friends Reunited

Friendster

Google+

Gree

hi5

LinkedIn

Linernaute Copins d'Avant

Mixi

Mobage Town

MySpace

Netlog

Ning

Orkut

Skyrock

Stayfriends

Twitter

VZnet Netzwerke

Wer-kennt-wen

Windows Live

Xing

Other

None of these [PROG: SINGLE CODE ONLY]

Don't know

[PROG: IF RESPOND "None of these" AT Q16 GO TO Q25]

Q17. Have you set up your own page or profile on any of the following social networking sites?

Badoo

Bebo

Classmates online

Facebook

Friends Reunited

Friendster

Google+

Gree

hi5

LinkedIn

Linernaute Copins d'Avant

Mixi

Mobage Town

MySpace

Netlog

Ning

Orkut

Skyrock

Stayfriends

Twitter

VZnet Netzwerke

Wer-kennt-wen

Windows Live

Xing

Other

None of these [PROG: SINGLE CODE ONLY]

Don't know

Q18. How often do you visit social networking sites, please think of the site(s) you visit most often?

5 or more times a day

2-4 times a day

Once a day

Weekly

Once every two weeks

Once a month or less

Don't know

Q19. Which of the following do you use to access social networking sites? (MULTICODE)

Connected or smart TV (a new type of TV that allows you to connect directly to the internet)

Desktop computer

Laptop computer

Tablet computer (e.g. iPad)

Mobile phone via an App

Mobile phone via the web browser

Games console e.g. Xbox, Playstation 3

Other

None of these

Don't know

[PROG: ONLY ASK IF HAVE SNS AT Q17]

Q20. How many connections or "Friends" do you have for your Social Network profile(s) (ON AVERAGE), please use the site you visit most often?

Less than 10

10-49

50-99

100-199

200+

[PROG: ONLY ASK IF HAVE SNS AT Q17]

Q21. Do you generally amend your privacy settings when using Social Network sites or do you keep the default settings?

I adjust the default settings

I keep the default privacy settings

Don't know

Q22. Which of the following activities do you use social networking sites for? (MULTICODE)

Communicate with existing friends and family

Communicate with people with similar interests and hobbies (e.g. people you didn't know before)

For entertainment news and information e.g. celebrity gossip, music

For information on what's happening in my local area

For information about national and global events

To look at campaigns and petitions

To network with business or professional contacts

To upload videos

To upload pictures

Advertise to promote business

To reconnect with people you've lost contact with e.g. old school friends, work colleagues

To look at comments, photos and other information that 'friends / connections' have shared

None of these

Q23. Have you ever made a purchase following a recommendation from a 'friend / connection' on a social networking site?

Yes

No

Don't know

Q24. Since you've used social networking websites, which of the following activities do you now take part in MORE or LESS than you used to? (MULTICODE)

Playing games on a games console computer  
Reading a printed local newspaper  
Reading a printed national newspaper  
Reading books  
Socialising with friends / family  
Taking part in sports  
Texting on mobile phone  
Using a computer to access the internet  
Watching TV  
Talking to friends / family on mobile/landline phone  
Watching news on TV  
Sending emails  
Using search engines e.g. Google, Bing  
Taking photos  
Writing blogs

[PROG: GRID]

More  
Same  
Less  
I don't do this

Q25. From the statements below can you please confirm how much you agree or disagree with them.

SINGLE CODE FOR EACH STATEMENT

Strongly agree  
Slightly agree  
Neither agree nor disagree  
Slightly disagree  
Strongly disagree  
Don't Know

[ASK ALL]

Social networking websites make a positive contribution to society  
I have concerns about how personal data is used by social networking sites  
I have concerns about my personal privacy online



ASK THOSE WITH SNS PROFILE [Response at Q17]

I trust the information on social networking sites

Social networking has significantly changed the way I communicate with people

I engage more with my local community as a result of social networking sites

I regularly update my social networking site(s)

I mainly use social networking websites to see what other people are saying and doing

I would feel out of touch without social networking sites

I often find out about new breaking stories first via social networking sites

I use social networking sites less than I did 12 months ago

ASK THOSE NOT VISITED SNS OR DON'T HAVE SNS PROFILE [Responded 'No' at Q15  
OR 'none of these' at Q17]

I don't have any interest in social networking websites

Q26 And which of the following best describes where you live?

Please select one answer

[PROG: UK]

East Anglia

East Midlands

Kent

London/Home counties

North east

North west

Scotland

South

South west

Wales

West midlands

Yorkshire/Humberside

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[PROG: FRANCE]

Ile-de-France

Champagne-Ardenne

Picardie

Haute-Normandie

Centre  
Basse-Normandie  
Bourgogne  
Nord-Pas-de-Calais  
Lorraine  
Alsace  
Franche-Comte  
Pays de la Loire  
Bretagne  
Poitou-Charentes  
Aquitaine  
Midi-Pyrenees  
Limousin  
Rhone-Alpes  
Auvergne  
Languedoc-Roussillon  
Provence-Alpes-Cote d'Azur

[PROG: GERMANY]

Schleswig-Holstein  
Hamburg  
Niedersachsen  
Bremen  
Nordrhein-Westfalen  
Hessen  
Rheinland-Pfalz  
Baden-Wurttemberg  
Bayern  
Saarland  
Berlin  
Brandenburg  
Mecklenburg-Vorpommern  
Sachsen  
Sachsen-Anhalt  
Thuringen

[PROG: ITALY]

Abruzzo

Aosta Valley (Valle d'Aosta / Vallée d'Aoste)

Apulia (Puglia)

Basilicata

Calabria

Campania

Emilia-Romagna

Friuli-Venezia Giulia

Lazio (Latium)

Liguria

Lombardy (Lombardia)

Marche (Marches)

Molise

Piedmont (Piemonte)

Sardinia (Sardegna)

Sicily (Sicilia)

Trentino-Alto Adige/Südtirol

Tuscany (Toscana)

Umbria

Veneto

[PROG: USA]

Alabama

Alaska

Arizona

Arkansas

California

Colorado

Connecticut

Delaware

District of Columbia

Florida

Georgia

Hawaii

Idaho

Illinois

Indiana

Iowa

Kansas

Kentucky  
Louisiana  
Maine  
Maryland  
Massachusetts  
Michigan  
Minnesota  
Mississippi  
Missouri  
Montana  
Nebraska  
Nevada  
New Hampshire  
New Jersey  
New Mexico  
New York  
North Carolina  
North Dakota  
Ohio  
Oklahoma  
Oregon  
Pennsylvania  
Rhode Island  
South Carolina  
South Dakota  
Tennessee  
Texas  
Utah  
Vermont  
Virginia  
Washington  
West Virginia  
Wisconsin  
Wyoming

[PROG: AUSTRALIA]

New South Wales  
Northern Territory

Queensland  
South Australia  
Tasmania  
Victoria  
Western Australia

Q27 Please indicate your household's ++annual income++?  
Please select one answer only

[PROG: UK]

Under £20,000  
£20,000 to £34,999  
£35,000 to £59,999  
£60,000 to £99,999  
£100,000 or more  
Prefer not to answer

[PROG: FRANCE, GERMANY, ITALY]

Under 20,000 Euros  
20,000 to 34,999 Euros  
35,000 to 59,999 Euros  
60,000 to 99,999 Euros  
100,000 Euros or more  
Prefer not to answer

[PROG: USA, AUSTRALIA]

< \$20,000  
\$20,000 - \$29,999  
\$30,000 - \$39,999  
\$40,000 - \$49,999  
\$50,000 - \$59,999  
\$60,000 - \$74,999  
\$75,000 - \$99,999  
\$100,000 - \$149,999  
\$150,000 +



# International Communications Market report 2011

## **Appendix B - Comparative international pricing methodology**

# Appendix B: Comparative international pricing methodology

## Introduction and objectives

For the 2011 international price benchmarking we used the same methodology as in previous reports, although we updated the baskets to ensure that they more accurately reflected current use of communications services among the comparator countries.

We have used a bespoke model commissioned from telecoms pricing consultancy Teligen, which Teligen has populated with specifically-sourced tariff data for fixed-line voice, mobile phone, fixed broadband, mobile broadband, television and 'multi-play' (i.e. tariffs incorporating more than one service such as 'triple-play' fixed voice, broadband and television tariffs) services in the UK, France, Italy, Germany, Spain and the US.

The key objectives were as follows:

- to identify and compare the pricing that is available for consumers buying fixed-line voice services, pre-pay and post-pay 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 baskets 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).
- In addition, mobile calls (and messaging) were split between on-net and off-net and voicemail was included.
- Call set-up and per-minute charging was 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 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 television element included the licence fee (where applicable), a digital receiver and, for some baskets, 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 baskets was adjusted to ensure that it was closely aligned with average use across the households (for example, the average number of outbound minutes per fixed line across the six countries in 2007 was 298 minutes, our average number of fixed minutes across our five households is now 300 minutes).
- Mobile handsets, broadband routers, digital set-top boxes and DVRs are included within the baskets (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; operators frequently include subsidised or 'free' equipment (for example, a mobile handset or a wireless router) within the monthly subscription. For similar reasons, connection and/or installation costs are included.
- In July 2010 and again in July 2011, detailed data of every tariff and every tariff combination (including bundle services) from the largest three operators in each country by retail market share were collected (or from more than three operators, if required to ensure that a minimum of 80% of the overall market was represented in terms of share of retail connections). Multi-play tariffs (i.e. those which incorporate more than one service) were also collected. Only tariffs available on the web site of the operators were included (i.e. we exclude bespoke tariffs that are only offered to certain customers).
- Across the six countries, the tariff data in 2010 consisted of:
  - fixed voice: 613 tariff options;
  - fixed broadband: 282 tariff options;
  - mobile: 3,475 tariff options;

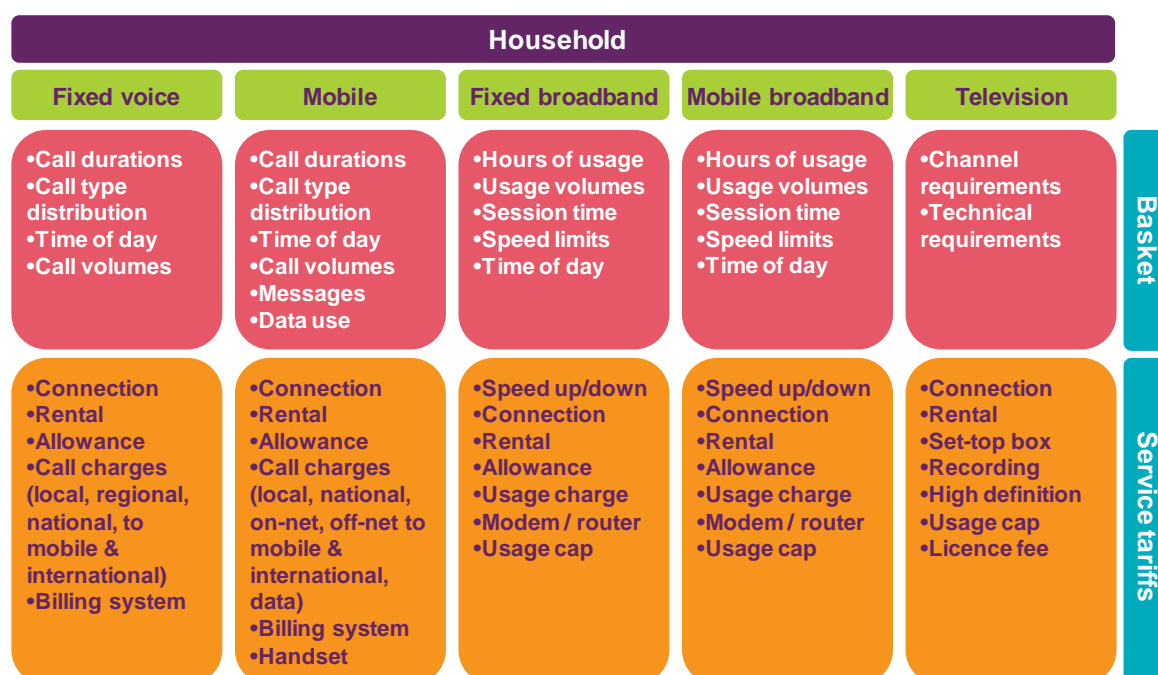


- mobile broadband: 347 tariff options;
- television: 367 tariff options; and
- multi-play bundles: 1,404 tariff options.
- Our model identifies the tariffs that offer the lowest price for meeting the requirements of each of the household baskets.
- All sales taxes and surcharges have also been included, 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).
- 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 2011.
- In order to provide both 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 two types of analysis for each basket:
  - the first, which we call "average single service" pricing, illustrates the price of each individual service as defined by the average of the lowest price tariff from each of the three largest operators for each service in each country, weighted by the market share of the service provider in order to ensure fair representation; and
  - the second, which we call "best offer" 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 definition of household baskets of any combination of services.

**Figure 8.1 Components of the pricing comparison model**



Source: Teligen

Each household definition 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 handsets

However, mobile handsets, 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 through the course of a contract.

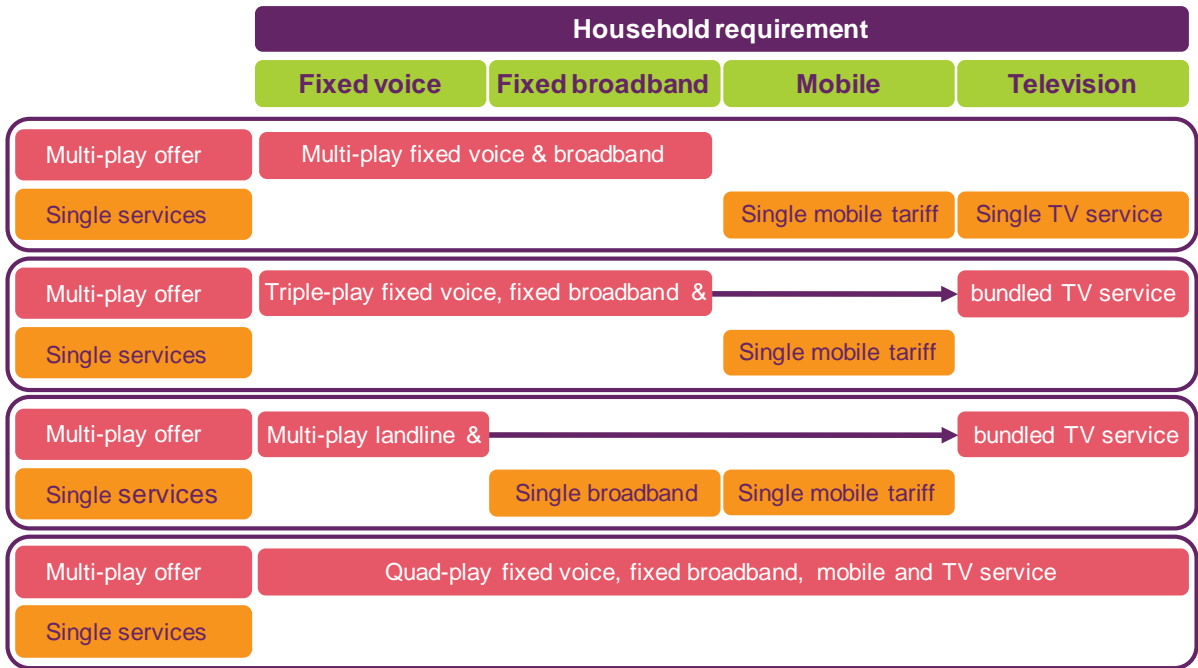
### Multi-play service offerings

An important part of the analysis is the inclusion of 'multi-play' service offers available in each of the study countries, whereby more than one service is purchased from a single service provider, often at a substantial discount from 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 multi-play offerings available, it is necessary to combine the multi-play offerings with the available single service tariffs in each market. Where the multi-play offer does not cover the household requirement for a particular service,

a suitable single-service tariff is used to fill the gap. In such cases the best possible tariff (the cheapest single offer that can fulfil the usage requirements) is used.

**Figure 8.2     Examples of combinations of multi-play and single service offers**



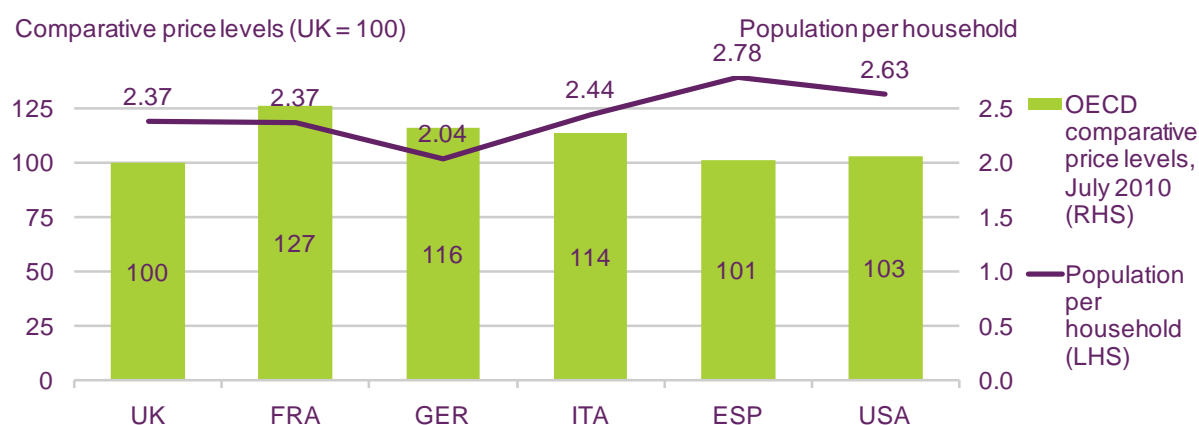
Source: Teligen

### Geographic scope

Pricing comparisons are made 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 easier 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 the tariffs available in the state of Illinois. This was chosen as it is reasonably 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 being representative of the whole country.

**Figure 8.3 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 also included the fourth and fifth largest operators to ensure that we represented a minimum of 80% of the market. All operators included by these criteria were also considered for 'multi-play' 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 2008, July 2009, July 2010 and July 2011, and only tariffs detailed on the web sites 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 available for the whole month.

**Figure 8.4 Operators included within the analysis**

	Fixed voice	Fixed broadband	Mobile	Mobile broadband	Television
UK	BT, O2, Orange, Sky, TalkTalk & Virgin Media,	AOL/TalkTalk, BT, O2, Orange, Sky & Virgin Media	BT, O2, Orange, T-Mobile & Vodafone	BT, O2, Orange, T-Mobile, Three, Virgin Media & Vodafone	BT, Sky & Virgin Media
FRA	Bouygues Telecom, France Telecom, Free, Numericable & SFR	Bouygues, Free, Numericable, Orange & SFR	Bouygues, Orange & SFR	Bouygues, Orange & SFR	Bouygues, CanalSat, France Telecom, Free, Numericable, SFR & TNT
GER	Kabel BW, Freenet, O2, Telecolumbus, T-Home, United, Internet, Unity Media & Vodafone	Kabel BW, O2, T-Home, Telecolumbus, United Internet, Unity Media & Vodafone	O2, T-Mobile & Vodafone	O2, T-Home & Vodafone	Kabel Deutschland, Kabel BW, O2, Telecolumbus, Sky, T-Home, Unity Media & Vodafone
ITA	Fastweb, TeleTu, Telecom Italia, Tiscali & Wind	Fastweb, TeleTu, Telecom Italia, Tiscali and Wind	TIM, Vodafone & Wind	TIM, Tre, Vodafone & Wind	Fastweb, Mediaset, Sky & Telecom Italia
ESP	Jazztel, Movistar, ONO, Orange & Vodafone	Jazztel, Movistar ONO & Orange	Movistar, Orange & Vodafone	Movistar, Orange & Vodafone	Digital Plus, Movistar & ONO
USA	AT&T, Comcast, Frontier & RCN	AT&T, Comcast, Frontier & RCN	AT&T, Sprint, T-Mobile & Verizon	AT&T, Sprint, T-Mobile & Verizon	AT&T, Comcast, DirectTV, Frontier & RCN

Source: Teligen

Note: Some operators for some services only included in multi-play analysis

## 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; however, 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 basket composition are provided in Section 2 above.

**Figure 8.5 Household types**

	'Typical household type'	Fixed voice	Mobile voice	Mobile messaging	Fixed line broadband	Mobile broadband	Television
1	A retired low-income couple	Low	Low	n/a	n/a	n/a	Basic
2	A couple of late adopters	Medium	Low	Low	Low	n/a	Basic
3	A single mobile-only user	n/a	High	High	n/a	High	Pay-TV
4	A 'networked' family	High	Medium	High	Medium	n/a	Pay-TV
5	Affluent couple with sophisticated use	Low	High	Medium	High	Medium	HD premium pay-TV

Source: Ofcom

## The relationship between basket composition and usage, by country

There is significant variation in the take-up and use of communications services across the six comparator countries.

**Figure 8.6 Average take-up and use of communications services, by country**

	UK	FRA	GER	ITA	ESP	USA
People per household	2.4	2.4	2.0	2.4	2.8	2.6
Fixed-only households per 100 households	6	11	16	5	12	10
Monthly outbound fixed minutes per access line	317	416	363	420	274	303
Mobile connections per household	3.1	2.3	2.7	3.6	3.4	2.6
Mobile-only households per 100 households	17	13	12	34	31	29
Monthly outbound fixed minutes per household	407	343	409	304	326	389
Monthly outbound fixed minutes per household	402	312	210	418	354	1584
Monthly outbound SMS messages per household	406	309	86	283	43	1451
Fixed broadband connections per 100 households	74	77	67	51	63	70
Pay-TV subscriptions per 100 households	52	55	59	25	27	86

Source: IDATE / European Commission

Notes: All data are for Q4 2010/Q1 2011; further details are available in the Telecoms and Television sections; data for some countries was not available when the baskets were define; as combined outbound and inbound call and SMS volumes are the only data available, this total has been halved as a proxy to represent outbound calls / SMS only

In order to address potential biases arising because our baskets are more closely aligned with the usage profiles of some countries than others, we have adjusted the overall average use across the five baskets to ensure that it closely matches the average use across the six countries. Nevertheless, the variations in the average use should be considered when looking at the output from the individual baskets.

**Figure 8.7 Alignment of average use across comparator households with average use across comparator countries**

	Basket 1	Basket 2	Basket 3	Basket 4	Basket 5	Average per household	Average across countries
Number of people	2	2	1	4	2	2.2	2.5
Fixed-only households	0	0	0	0	0	0	0.1
Mobile-only households	0	0	1	0	0	0.2	0.2
Outbound fixed minutes	51	99	0	136	57	69	376
Outbound mobile minutes	37	37	290	258	212	167	542
Outbound SMS per household	0	0	150	190	70	82	794
Fixed broadband subscriptions	1	1	0	1	1	0.8	0.6
Mobile broadband subscriptions	0	0	1	0	1	0.4	0.4
Pay-TV subscriptions	0	0	1	1	1	0.6	0.5

Source: Ofcom

## Fixed-line voice services

### Fixed voice tariff information

The fixed voice service is assumed to be a home-based fixed telephony service. A household is assumed to have not more than one fixed-line service.

Single fixed voice services are normally offered on a dedicated analogue line (PSTN services). In the context of multi-play, the fixed voice service is often 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 multi-play fixed voice services will often 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 each month's use. 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

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 8.8 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 was amortised over a five-year period.



**Figure 8.9 Components of the fixed voice baskets**

	Basket 1	Basket 2	Basket 3	Basket 4	Basket 5	Units
<b>Call durations</b>						
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	2	2	n/a	2	2	Mins
International	6	6	n/a	6	6	Mins
<b>Destination weights</b>						
Local	67	70	n/a	68	60	%
Regional	10	8	n/a	9	7	%
National	16	13	n/a	14	13	%
Fixed to	7	7	n/a	7	12	%
International	0	2	n/a	2	8	%
<b>Time of day weights</b>						
Day	58.3	58.3	n/a	59.2	55.5	%
Evening	24.5	24.5	n/a	24.9	25.0	%
Weekend	17.2	17.2	n/a	15.9	19.5	%
<b>Depreciation</b>	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 8.10 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 "from", and horizontal is "to".

### Basket logic

Once the cost of using each fixed voice package has been 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 multi-play 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 and 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. When relevant, these have been incorporated in order to identify the lowest prices available for a basket of services.

Tariff packages offering free or reduced price calls to specific destinations or selectable numbers have not been considered.

## **Mobile services**

### **Mobile tariff information**

The mobile service is assumed as a personal service; a household may have several users with individual usage profiles and requirements. VoIP services over mobile networks 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
  - Messages

The billing system information is used to determine the price elements included in a typical call. Seven types of billing are possible:

**Figure 8.11 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 lifetime.

**Figure 8.12 Components of the mobile baskets**

	Basket 1	Basket 2	Basket 3	Basket 4				Basket 5		
	User 1&2	User 1&2	User 1	User 1	User 2	User 3	User 4	User 1	User 2	
<b>Call durations</b>										
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
<b>Destination weight</b>										
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	%
<b>Time of day weight</b>										
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	%
Calls per month	37	37	290	159	99	38	38	212	109	Calls
Messages	-	30	150	30	160	70	65	80	20	SMS
On-net	50	50	50	50	50	50	50	50	50	%
Off-net	50	50	50	50	50	50	50	50	50	%
Peak	48	48	60	50	50	48	48	60	50	%
Off-peak	52	52	40	50	50	52	52	40	50	%
<b>Data usage</b>										
Volume/month	-	-	1000	300	-	-	-	300	100	MB
Time/month	-	-	500	200	-	-	-	200	100	Mins
Days/month	-	-	30	30	-	-	-	20	15	Days
Handset type	Basic	Basic	High	High	Medium	Basic	Basic	High	Medium	
Depreciation	3	3	3	3	3	3	3	3	3	Years

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 8.13 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%	0.8%	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 “from”, and horizontal is “to”.

The internet traffic is defined as both megabytes of download volume and minutes of use, as tariffs may charge according to either of these two methods.

Handsets are defined in three categories:

- i) Basic 2G, ideally without camera or MP3 player; if not, then up to 2MP camera + MP3 player / FM radio
- ii) Mid-range - 2.5G or basic 3G, above 2MP camera, + MP3 player / FM radio
- iii) High-end – 3G smartphone.

### Basket logic

Once the cost of using each mobile package is calculated, some checks will take place:

- Does the package include a handset, or can a suitable handset be included with the package? If not, then the amortised cost of a suitable handset 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.

The cheapest package per provider and per country is then identified. These are the packages that will be considered in the household cost scenarios. The packages that are part of a multi-play 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 also offer advantages to those who vary their usage month by month.

The effect of free or discounted calls to specific destinations or selectable numbers is not included.

Allowances or free minutes/message/data volumes are included in the tariffs, and are treated as close 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 ones being DSL and cable. Wireless broadband is also included wherever possible, although these services are most often provided by mobile service providers. 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 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 8.14 Components of the broadband baskets**

	Basket 1	Basket 2	Basket 3	Basket 4	Basket 5		Units
Type of service	None	Fixed	Mobile	Fixed	Fixed	Mobile	
Usage time	-	10	160	50	50	150	Hours/month
Usage volume	-	0.5	5	5	5	3	GB/month
Session duration	-	20	20	20	20	20	Mins
Minimum speed	-	4	1	8	16	1	Mbit/s
Usage/day	-	30	30	30	30	30	%
Usage/evening	-	40	40	40	40	40	%
Usage/weekend	-	30	30	30	30	30	%
Depreciation	-	3	1	3	3	1	Years

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 also checked against the speed range given 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 a number of checks will take place:

- If the package uses a limiting mechanism that takes 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 shall be 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: DSL, cable 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 taken into account, 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, using the promotional offer valid in the month of tariff data collection (July 2010 and July 2011). 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 multi-play package. Therefore there will not always be single-service offers for all providers listed.

## **Television services**

### **Television tariff information**

Television services are probably the area where there is most diversity between the countries in terms of the service description and quality. In this benchmarking study the television services covered typically 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 providers 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); and
- 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 relevant installation and/or equipment amortised over three years. The basket parameters are generally given per month. The values below relate to the five defined households.

**Figure 8.15 Components of the television baskets**

	Basket 1	Basket 2	Basket 3	Basket 4	Basket 5	Units
Antenna reception	No	No	No	No	No	n/a
HD capable	No	No	No	No	Yes	n/a
DVR included	No	No	No	No	Yes	n/a
Football channels	No	No	No	No	Yes	n/a
Movie channels	No	No	No	No	Yes	n/a
Depreciation	3	3	3	3	3	Years

Source: Teligen

### Basket logic

Once the charges for using each television package have been calculated, some checks take place:

- Is the number of channels offered in the package equal 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” then the package will not be considered.

The cheapest package is identified for each provider and for each country, and these are used in the following 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 programming requirements.
- HD premium pay-TV access, including premium channels with a top-price film/entertainment package and top-choice football/NFL matches. This option also 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 2011 and exchange rates as of 1 July 2011.

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 specific 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 2011 and applied it to 2010 data.

**Figure 8.16 Purchasing power parity conversion rates**

Country	Currency	Exchange rate August 2010 to July 2011 (£)	Comparative price level (July 2010)	PPP adjusted rate (£)
UK	GBP (£)	1.00	100	1.00
FRA	EUR (€)	1.11	106	1.17
GER	EUR (€)	1.11	98	1.09
ITA	EUR (€)	1.11	91	1.01
ESP	EUR (€)	1.11	93	1.03
USA	USD (\$)	1.61	80	1.28

Source: Teligen, 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 single service' pricing available for each of the components in every basket (fixed-line voice, broadband, post-pay mobile, pre-pay mobile, pay-TV). This was calculated as the average of the lowest price tariffs from three operators for each service in each country, weighted by the market share of the service provider in order to ensure fair representation.
- The 'best offer' pricing available for the overall basket. 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 both types of analysis are important for providing an overall understanding of comparative pricing.

Single-service pricing provides a useful comparison of the relative costs of communications services, and, because it is an average weighted by market share, it also provides a good indication of the prices that many consumers are actually paying. However, an important limitation is that single-service offers are sometimes not available from leading suppliers. For example, in the UK, TalkTalk only offers broadband together with its fixed-voice service, while BSkyB only offers broadband together with either digital television or fixed voice services (or both).

We believe the inclusion of 'bundles' within 'best offer' 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's standard broadband and voice tariffs, and Sky's 'triple-play' offer which provides TV, voice and broadband, and Virgin's 'quad-play' offer which includes TV, voice, broadband and mobile.) However, a limitation is that 'bundled' service offerings are typically not available to all consumers, as they are generally geographically constrained to areas where premises are connected either to a cable network or to an unbundled telephone exchange. And although focusing on the 'best offer' 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 single-service pricing.

## Limitations

One of our key learnings from four years of constructing international price comparison models is that it is a very problematical exercise, which requires assumptions to be made and imposes 'like-for-like' comparison on markets that are very different. In future years we will continue to improve our methodology, and we welcome feedback at: [market.intelligence@ofcom.org.uk](mailto:market.intelligence@ofcom.org.uk)

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. It should be noted, however, that alternative measures of consumer choice and the competitive environment are the complexity of tariff structures (a large range of tariffs is generally beneficial to consumers, as it indicates that they have choice and are more likely to find an option that meets their needs; but the complexity of tariffs can make it more difficult to compare prices and select the optimal tariff), and the ease of switching to an appropriate tariff.
- 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 levels of customer service.
- In order to calculate the weighted average, we have used market share calculations based on operators' retail customers. It should be noted that 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 (or only one, for some premium TV offerings) and/or significant market share. In these instances, we have identified the best-value tariff from each of them and calculated a blended average based on their market shares.
- To avoid 'skewing' the average single-service pricing analysis, tariffs which are over 100% higher than that offered by the lowest price provider are excluded from the weighted average (the aim here is to exclude tariffs which are clearly not targeted at the usage profile we are analysing).
- 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 it is also true for cable TV and all types of broadband.

- We do not define 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, over 80% of Italian mobile connections are pre-pay, while over 80% 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.
- 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 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 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 2011 and applied it to 2010 data. This means that there may be some distortions in the relative positions of countries compared to the findings in 2010. The prices quoted are in nominal terms.



# International Communications Market report 2011

## **Glossary**

# Glossary

**1G** First Generation Cellular Mobile Wireless. The first generation of cellular wireless was based on analogue technology. The systems were designed only to carry voice services.

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

**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.

**3DTV** Provides viewers with a three-dimensional TV experience. Most existing services require a 3DTV set and glasses.

**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.

**3.5G** Refers to evolutionary upgrades to 3G services starting in 2005-2006 that provide significantly enhanced performance. High Speed Downlink Packet Access is widely expected to become the most popular 3.5G technology (see HSDPA).

**3GPP** Third Generation Partnership Project. The 3GPP was formed in December 1998 as a collaboration agreement bringing together a number of telecommunication standards bodies, referred to as Organizational Partners. The original aim of the 3GPP was to produce globally applicable technical specifications for third-generation mobile systems based on evolved GSM core networks and the radio access technology UTRA (Universal Terrestrial Radio Access).

**3G LTE** Aims to achieve an upgraded version of 3G W-CDMA services having up to 100 Mbps downlink speeds and 50 Mbps uplink speeds. The target for completing the first stage of the development was 2007, with service offerings perhaps by 2009.

**4G** Fourth-Generation Cellular Mobile Wireless. 4G technologies are still in the early research stage and no consistent industry definition exists yet. NTT DoCoMo in Japan are one of the leading companies in driving 4G. Technologies such as VSF (Variable Spreading Factor), OFCDM (Orthogonal Frequency and Code Division Multiplexing) and VSF CDMA (Code Division Multiple Access) are being proposed, along with a target data rate of over 100 Mbps for downlink and 20 Mbps uplink. 4G is likely to include MIMO technologies (see MIMO). It is likely to be well into the next decade before the technology is commercially deployed.

**Access network** Electronic Communications Network which connects end-users to a service provider; running from the end-user's premise 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.

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

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

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

**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 often used to refer to the medium frequency band (see MF below).

**ARPU** Average Revenue Per User

**AVMS** Audiovisual Media Services. 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, replaces the TV Without Frontiers Directive (TVWF)

**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.

**Bit-rate** The rate at which digital information is carried within a specified communication channel.

**Bitstream** A wholesale service providing conveyance of data traffic from an end user's premise to a point of interconnection made available by the incumbent to a competitive provider.

**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.

**CAGR** Compound Annual Growth Rate. The average annual growth rate over a specified period of time. It is used to indicate the investment yield at the end of a specified period of time. The mathematical formula used to calculate  $CAGR = (present\ value / base\ value)^{(1/\#of\ years)} - 1$

**CDMA** Code Division Multiple Access. The basis for the primary 2G technology; and the later evolution of mobile technology in the US and related markets. A technology that allows a band of spectrum to be shared by multiple concurrent users. Rather than subdividing the spectrum (FDMA) or determining use on a round robin basis (TDMA), unique codes are used to differentiate subscribers so they can simultaneously use the same spectrum.

**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).

**Co-regulation** The sharing of regulation between a statutory body (e.g. Ofcom) and its licensees.

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

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

**Data packet** In networking, the smallest unit of information transmitted as a discrete entity from one node on the network to another.

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

**Digital switchover** (DSO) The process of switching over the current analogue television broadcasting system to digital, as well as ensuring that people have adapted or upgraded their televisions and recording equipment to receive digital TV. DSO usually refers to the cessation of analogue terrestrial television but can affect other analogue distribution technologies, such as cable and satellite.

**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. A mobile broadband dongle enable access to the internet via a mobile network.

**Double-play** Supply of two communications services from a single supplier for a single subscription fee, usually broadband and fixed voice telephony.

**Downlink speed** Also downlink or download. Rate of data transmission from a network operator's access node to a customer, typically measured in Megabits per second.

**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).

**DTH** Direct-to-home refers to the satellite television distribution technology.

**DTR** See DVR

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

**DVB** Digital Video Broadcasting. A set of internationally accepted open standards for digital broadcasting, including standards for distribution by satellite, cable, radio and handheld devices (the latter known as DVB-H).

**DVD** Digital Versatile Disc. A high capacity CD-size disc for carrying audio-visual content. Initially available 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 disc drive which allows the user to record, pause and rewind live TV.

**EDGE** Enhanced Data Rates for GSM Evolution: An extension to GSM/GPRS standards that can support data rates in excess of 200Kbit/s. EDGE is a relatively inexpensive way for GSM operators to provide data services without rolling out a UMTS network. Recently developed EDGE – Evolution allows data rates of up to 1Mbit/s.



**Ex ante regulation** Regulation to address behaviour before it happens.

**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-building (FTTB)** A form of fibre-optic communication delivery in which an optical fibre is run directly onto the customers' premises.

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

**GDP** Gross Domestic Product.

**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.

**HbbTV** The Hybrid Broadband Television standard has been designed to provide a standard system for the delivery of audiovisual content delivered over the open internet to TV sets and other devices

**HD Radio** Hybrid Digital Radio. A radio standard developed in the US for terrestrial broadcasters, offering high-quality audio.

**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.

**HSDPA** High Speed Datalink Packet Access, an evolution of 3G mobile technology, often known as 3.5G, which offers higher data speeds.

**HSDPA** Jointly, downlink and uplink mobile broadband technologies are referred to as HSPA (High Speed Packet Access) services.

**HSUPA** High Speed Uplink Packet Access – an upgrade to 3G mobile technology that allows data to be sent from customer's devices more quickly.

**Hybrid** Refers to digital TV devices that incorporate one or more distribution technologies, such as DTT/IPTV or DTH/IPTV, to provide content and services through different delivery mechanisms.

**Incumbent** The incumbent telecoms operator owns the fixed-line infrastructure by which public-switched telephone services are provided, typically consisting of copper-wire

telephone lines linking consumer premises to a network of local telephone exchanges. BT is the incumbent operator in the UK.

**Interconnection** The linking of one Public Electronic Communications Network to another for the purpose of enabling the persons using one of them to be able (a) to communicate with users of the other one; (b) to make use of services provided by means of the other one (whether by the provider of that network or by another person).

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

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

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

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

**ISDB** Integrated Services Digital Broadcasting. A separate broadcasting standard developed in Japan. during the early 1980s, which led to the development of the ISDB standard. Japan started terrestrial digital broadcasting using the ISDB-T standard through NHK and commercial broadcasting stations on 1 December 2003.

**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.

**ITU** International Telecommunication Union.

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

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

**LTE (Long Term Evolution)** describes standardisation work by the 3rd Generation Partnership Project to define a new high-speed radio access method for mobile communications systems.

**MMS** Multimedia Messaging Service. The next generation of mobile messaging services, adding photos, pictures and audio to text messages.

**Mobile termination rate** The 'per minute' fees that mobile phone companies charge other carriers to deliver incoming calls to users on their networks.

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

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

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

**Naked DSL** A digital subscriber line (DSL) provided without a PSTN telephony service or the associated dial tone. Only a standalone DSL internet service is provided; voice calls must be made using Voice over IP (VoIP), as analogue voice calls are not supported.

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

**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

**Next-generation access networks (NGA)** Broadband access networks that connect the end-user to the core network capable of a bandwidth quantity and quality significantly in excess of current levels (a benchmark of 20Mbit/s or more is often used).

**OECD** Organisation for Economic Cooperation and Development.

**Online TV** The delivery of audio-visual content over the internet to consumers, usually to the PC.

**Over the top (OTT)** refers to the delivery of audiovisual content delivered over the open internet without the need for a bespoke IPTV infrastructure.

**PAYG** Pay-as-you-go.

**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.

**Peaktime** In the UK, 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 distribution** The process of directly transferring information, services or products between users or devices that operate on the same hierarchical level.

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

**PP** Percentage point.

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

**PSTN** Public Switched Telephony Network.

**PVR** See DVR.

**Quad-play** Supply of TV, broadband, landline and mobile from a single supplier for a single subscription fee.

**Radio Authority** The statutory body responsible for the licensing and regulation of non-BBC radio services between 1990 and 2003. It was one of the bodies replaced by Ofcom.

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

**Regulatory holiday** A commitment by a regulator not to impose regulatory measures on a given product or service for a specified period of time.

**ROI** Republic of Ireland or Return on Investment

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

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

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

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

**SIM card** (Subscriber Identity Module) A removable smart card used in mobile phones to authenticate the mobile subscriber and store data. Each card has a unique number known as International Mobile Subscriber Identity (IMSI).

**Simulcasting** The broadcasting of a television or radio programme service on more than one transmission technology (e.g. FM and MW, DAB and FM, analogue and digital terrestrial television, digital terrestrial and satellite).

**Smartphone** A mobile phone that allows you to easily access email, download apps, and browse the internet.

**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.

**Sub-loop unbundling** A variant of LLU where a competitive operator takes control of only a portion of a customer's local loop, allowing them to install their equipment closer to the

customer and potentially offer higher-speed services. In Sub-loop unbundling, the point of handover is commonly the Primary Connection Point (PCP) or street cabinet.

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

**TD-CDMA** Time Division Code Division Multiple Access. One of the family of 3G mobile technology standards.

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

**Triple-play** Supply of TV, broadband and landline from a single supplier for a single subscription fee.

**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.

**VDSL** Very high bit rate DSL. This is currently the fastest version of DSL and can transmit very high data rates on short reaches of the local loop.

**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 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.

**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.

**WCDMA** Wideband Code Division Multiple Access. One of the family of 3G mobile technology standards.

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

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

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

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

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

**YOY** Year-on-year.