



# International Communications Market Report 2010

Research Document

Publication date: 2 December 2010



# Contents

Key Points	7
1 The UK in context	15
2 Comparative international pricing	67
3 Television and audio-visual	109
4 Radio & audio	181
5 Internet and web-based content	205
6 Telecoms	253
7 Appendix A : Basic data used in the report	349
8 Appendix B: Consumer research methodology	353
9 Appendix C : Price benchmarking methodology	379
10 Glossary & Table of Figures	403



# Introduction

## Purpose of this report

This is the fifth year that Ofcom has published comparative international data on the communications sector, benchmarking the UK against comparator countries. It aims to provide a statistically-driven international comparative context for the UK communications sector. This is a core responsibility for Ofcom, enabling us to assess how the UK market is performing in an international context.

Putting the UK market into an international context is essential to allow us to benchmark the availability, take-up, use and pricing of communications services. International developments are also becoming increasingly important to the experience of UK consumers in using communications services, as service provision globalises, technological innovation breaks down traditional national market boundaries, and international bodies (such as the European Commission, the GSMA and the ITU) become increasingly important in informing regulatory policy and defining technological standards.

We are publishing this report to help fulfil our commitment to research markets constantly and to remain at the forefront of technological understanding, and it meets the commitment we made in our 2009/10 annual plan. It complements other research published by Ofcom and forms part of the Communications Market series, which includes a UK report and specific reports for England, Northern Ireland, Scotland and Wales (all published in August 2010).

This report is used widely to support our policy development, in order to benchmark the UK's communications sector, to learn from market and regulatory developments in other countries, and to inform the context of Ofcom's regulatory initiatives. It also contributes to the richness of information we draw upon – alongside other publications such as our Consumer Experience reports and, of course, the UK Communications Market – to enable us to understand how our actions and priorities influence outcomes in markets and, ultimately, for consumers. However, the report itself does not draw any policy conclusions. Rather, we present the data in a factual and statistical report. We hope that this will act as a useful reference tool for stakeholders, as well as providing support to our policy development.

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.

## Scope of the report

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, Poland, Spain, the Netherlands, Sweden, Ireland, Brazil, Russia, India and China, although we focus on a smaller sub-set of comparator countries for some of our analysis.

## Data and methodologies

Data in this report generally cover the 2009 calendar year. We show trends using a five-year historical time series wherever possible.

All currency conversions use the average market exchange rate during 2009, as provided by the IMF. 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. All figures are nominal unless otherwise stated.

The document draws on a combination of desk research and discussions with industry bodies, operators, regulators and commentators. The data were gathered with the support of 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 international pricing and populated it with specifically-sourced tariff data (collected in July 2010). Comparisons between data in this report and its predecessors will not always be possible, owing to changes in definitions over time, in the method of collecting data and due to 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, PricewaterhouseCoopers, Screen Digest, the European Audiovisual Observatory, Warc, Producers Alliance for Cinema and Television (Pact), Cullen International, The Nielsen Company, The European Interactive Advertising Association Mediascope Europe 2010, Efficient Frontier, Credit Suisse, UK Trade and Industry (UKTI), Mediаметrie, Eurodata TV Worldwide, the Television Research Partnership (TRP), and the European Broadcasting Union (EBU) for the permissions they have given us to use their data.

We endeavour to ensure that data in this report are comprehensive and the most accurate currently available. However, with a document so wide in scope, and with reliance on third parties for some data, there will always be omissions and occasional inaccuracies. Comments and feedback on this report are welcomed at [market.intelligence@ofcom.org.uk](mailto:market.intelligence@ofcom.org.uk).

### **Executive summary: the experience of UK consumers compared to those in other countries**

The data within this report tell an interesting story about how the global communications sector is evolving, and paint a broadly positive picture about how UK consumers continue to have comparatively high levels of use of communications services, are at the forefront of the use of new technologies, and benefit from lower prices than those available to consumers in many other countries.

Overall, we find that globally communications markets are changing at a rapid pace. People are becoming increasingly connected – there were around 500million new mobile connections in 2009. This means that there are now around six mobile connections for every ten people in the world, and new devices and services such as smartphones, digital video recorders (DVRs), high-definition TV and a whole raft of online services are dramatically changing the way consumers all over the world communicate with each other and consume media content.

And we find that consumers in the UK are at the forefront of many of these changes. Levels of broadband and mobile take-up are higher than in most of our comparator countries; the UK has the highest take-up of digital TV, DVRs and digital radio among all the countries we looked at for this report. Smartphone ownership is growing faster in the UK than in other countries, and penetration is higher than in all our comparator countries with the exception of Italy. UK mobile users are also more likely to use social networking services than those in the other countries for which we have data

Yet the use of 'traditional' communications services in the UK also remains more resilient than in many other countries. Across all of the countries we examine there has been a decline in the use of fixed-line voice services as people increasingly use mobile phones, but

the decline in fixed-line voice has been less marked in the UK than in other countries, both in terms of overall connections and in call volumes. And, while use of the internet continues to increase in the UK and in other countries, the UK consumer on average watched the same amount of television in 2009 as in 2008.

Consumer take-up and use of communications services therefore compares favourably to that in other countries. Related to this, our analysis finds that the prices available to UK consumers are relatively low. Mobile prices are lower in the UK than in five other comparator countries (France, Italy, Germany, Spain and the US) for all but the lowest-use connections, and fixed-line voice pricing is also lower than in all the other countries, except for low users. However, we also note that overall fixed-line voice prices in the UK increased slightly between July 2009 and July 2010, while it fell in the other five countries, and that the fall in mobile prices in the UK was lower than in the other countries. The price of basic and premium pay-TV packages is more expensive in the UK than in most other countries, although we note that variation in numbers and types of channels and different types of programme content means that like-for-like comparison is difficult.

There are some areas where the UK trails behind other countries. Only 0.2% of UK households had a super-fast broadband connection at the end of 2009, compared to 34% in Japan, 12% in Sweden and 7% in the US. And while HSPA+ and LTE deployments are beginning to deliver high-speed mobile services in some countries (offering theoretical maximum speeds between 21Mbit/s and 100Mbit/s), no UK mobile operator has yet upgraded its network beyond HSPA. However, we also compare deployment plans for superfast broadband and report that by 2015, two-thirds of UK households should have access to services of 'up to' 40Mbit/s or higher, a larger proportion than in most other countries.

## Structure of the report

The report is divided into six chapters:

- The UK in context (page 15) provides a broad overview by looking at comparative international communications markets from an industry perspective, from a consumer context and by comparing regulatory contexts. We then present a brief overview of three key ways in which communications markets are globalising.
- Comparative international pricing (page 67) 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 recent developments in both broadcast and on-demand services and compares the industries and consumer experience among our comparator countries. We also include a section comparing local TV in the UK to that in other countries.
- Radio and audio (page 181) compares and contrasts radio listening across our comparator countries, including the use of digital platforms. We compare the revenues generated, and in the radio listener section look at differences in PSB radio around the world.
- Internet and web-based content (page 205) focuses on two recent developments that are influencing the wider communications markets around the world – the take-up of smartphones and the growth of internet advertising. It then provides a comparative overview of internet take-up and use in our comparator countries.

- Telecoms (page 253) examines how global revenues flattened during 2009 even while use continued to increase. We examine the different contexts for deployments of superfast broadband networks and different levels of Voice over IP take-up. We then analyse the communications sectors in our comparator countries from an industry perspective before examining consumer take-up and use of telecoms services.

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



# Key points: the UK market in context

- **Global communications sector revenues were largely flat in the year to 2009, growing just 0.3% to £1,113bn. (Page 18).**
  - Global telecoms service revenues rose 1% to £878bn in 2009
  - Global television revenues fell 1% between 2008 and 2009 to £208bn, reflecting falls in advertising
  - Global radio revenues fell 9% between 2008 and 2009 to £28bn, reflecting falls in advertising revenues
- **Total UK telecoms, radio and television revenue was £39bn in 2009.** The US, Japan and China have the largest communications sector revenues of our comparator countries, at £276bn, £100bn and £70bn respectively, but revenue per head is highest in the US (£899), Australia (£808) and Japan (£790). This compares with the UK at £630 per head. (Page 21).
- **Global advertising expenditure fell by 13% to £254bn in 2009.** TV remained the largest single component, accounting for £97bn of revenues (38% of the total) – a fall of 9% from the previous year. Online was the only growth area, rising by 1% over the same period to £37bn, 15% of the global total. The internet accounted for a larger proportion of advertising spend (27%) in the UK than in any other comparator country. (Page 23).
- **Consumers appear less likely to have reduced their expenditure on communications than on other goods and services.** Our online survey in six countries found that the UK was in line with several other countries, while Germany had the lowest proportion of consumers who had reduced their expenditure on a range of goods and services. (Page 30).
- **The communications service on which most survey respondents had reduced expenditure over the past 12 months was mobile,** where 24% in the UK said they had lowered their expenditure. The country with the highest proportion of mobile users saying they had reduced expenditure was Italy (25%) and the lowest was the US (17%). (Page 28).
- **Spend on broadband has been generally more resilient than on other communications services.** Eight per cent of fixed broadband users in the UK and Germany said they had reduced spending on the service in the previous 12 months, and just 4% in Italy said they had reduced their spend on broadband. (Page 28).

# Key points: comparative international pricing

- **Overall, prices in the UK compare favourably 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 four of the 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. (Page 106).
- **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 both in terms of 'weighted average' pricing and best-offer pricing for all of the mobile connections we looked at except the very low-use connections (60 minutes a month), where Italy and Germany offer lower pricing. (Page 78).
- **Although overall mobile prices in the UK are lower than in the other five countries, the gap is narrowing;** prices fell by 8% in the UK between July 2009 and July 2010, compared to falls of 24% in Italy, 23% in Spain, 16% in France and 11% in Germany. (Page 80).
- **Fixed-line voice pricing in the UK also compares favourably to that in the other five countries.** As calculated from the weighted average of the best-value tariffs from the three largest operators in each country, the UK offers the lowest pricing of the six countries for three of the four baskets, with France and the US less expensive than the UK for the lowest-use basket. However, prices increased in the UK between July 2009 and July 2010, whereas they fell in all other countries. (Page 77).
- **For stand-alone broadband, pricing in the UK, along with France, is lower than in the other countries.** However, comparisons of stand-alone broadband are not very useful as most broadband in all the European countries we consider is purchased with a 'bundle' along with at least one other service – and stand-alone broadband is not available from the largest operators in Germany and Spain. (Page 82).
- **In all the European countries analysed, consumers can make significant savings by purchasing 'dual-play' (voice and broadband) or 'triple-play (voice, broadband and TV) bundles rather than subscribing to the lowest-price stand-alone services.** In the UK, the best price for a basic 'voice and broadband' dual-play bundle was 15% lower than the lowest price achievable by purchasing the services separately, the price for a triple-play service, including basic pay-TV, was 10% lower than stand-alone services, and the price for a triple-play bundle, including premium pay-TV (sport and movies), was 17% lower than for stand-alone services. (Page 74).
- **In terms of bundled services, pricing in the UK compares favourably with other countries for a basic bundle of broadband and voice services,** but once a pay-TV requirement is also included, pricing in the UK is comparatively more expensive. Among the European countries, the UK is the most expensive for a basket of fixed voice, fixed broadband and basic pay-TV services, and France and Italy are less expensive for a basket of fixed voice, fixed broadband and premium TV services. (Page 75).

## Key points: TV and audio-visual

- **Global TV revenues declined in 2009, by 1.0% year on year to £208bn. Growing income from pay TV providers** – up by 5.8% to £102bn - failed to offset declining TV advertising revenue in 2009. Net TV advertising revenue fell by 8.9% year on year from £95bn to £86bn. (Page 112).
- **With digital switchover already completed in five comparator countries and imminent in several others, digital TV penetration rose across all the countries included in our analysis during 2009.** In the UK and Spain 91% of homes took digital TV, followed by the USA (83%) and France (81%). (Page 114).
- **At the end of 2009, there were over 400 million digital TV households across all comparator countries, an increase of nearly a quarter (24.5%) compared to 2008.** Spain (17 percentage points) and Poland (11pp) saw the highest rate of digital take-up, compared to lower rates of digital migration in more mature markets such as Sweden (3pp). (Page 156).
- **Pay TV accounted for 61% of TV households across all comparator countries in 2009, a rise of two percentage points on 2008. For the first time, the majority of households in the UK took a pay TV package (51% versus 49%).** (Page 160).
- **The TV industry globally is taking advantage of a broad range of technologies to offer consumers increasing convenience, quality and control over their viewing.** Our consumer research found that HD-ready TV sets were most widely adopted in the UK (59% of respondents), slightly ahead of the US (57%). (Page 120).
- **The UK was the second biggest market for pay-DVR homes at the end of 2009 with 7.8 million devices,** up by 40% on 2008. The US had the highest number, 34.7 million DVR subscription homes at the end of 2009, up by more than a quarter (26%) year on year. The UK also has a sizeable free-to-air DVR market, led by Freeview and Freesat (around four million such devices had been sold by the end of 2009). (Page 144).
- **An average viewer among the 17 comparator countries consumed 207 minutes of TV each day in 2009.** US viewers watched more TV than in any other country (280 minutes per person per day, up by 1.1% year-on-year). They were followed by viewers in Poland at 240 minutes (up 3.4% year-on-year) and those in Italy (238 minutes, up by 1.7%). People in the UK watched an average of 225 minutes, a figure unchanged from 2008. (Page 163).
- **Of the European countries, the highest proportion of Entertainment programmes was broadcast in France (23%) with the lowest proportion in the Netherlands (8%).** In most countries News accounted for between 10% and 20% of programmes with the exception of Spain at 22% and at the other end of the scale, Poland at 6%. (Page 153).
- **Local/regional TV services (which are often subsidised) are available in all our comparator countries.** Italy had the greatest number of dedicated local/regional channels (631), compared to 9 in the UK. In UK, Germany, the Netherlands, Sweden, the USA, Canada and Australia, commercial broadcasters deliver local/regional content within a national service through 'opt-outs' or network-affiliate arrangements. (Page 169).

## Key points: radio and audio

- **Global radio revenue totalled £27.6bn in 2009, down £2.7bn (9%) since 2008.** The figure was also down by 5% in nominal terms in the four years since 2005. Commercial radio revenue grew in a number of developing countries, particularly Brazil, India and China, but this was more than offset by decline in the US, the largest global commercial radio market. UK radio income was down 7.1% year on year. (Page 192).
- **Of the £27.6bn revenue generated by radio in 2009, advertising revenue was down by 14% to £17.9bn,** while public funding rose by 1.9%, and satellite radio subscriber revenue grew by 5.1%. As a result, advertising revenue accounted for around two-thirds (65%) of total radio income in 2009, down from almost three-quarters (72%) share in 2005. (Page 192).
- **The UK radio industry was the fifth largest of all of the 17 comparator countries** (behind the US, Germany, Japan and France). UK revenues stood at £1.2bn (£19 per head) in 2009, equivalent to a 4% share of the global total. (Page 193).
- **Radio's share of display advertising varies from country to country.** It was highest in Canada and the US, accounting for 13% and 11% of total advertising spend respectively. In the UK, radio advertising spend took a 4% share. (Page 196).
- **Digital radio take-up in the UK was the highest among the countries we surveyed.** Almost a third (31%) claimed to own and use a digital radio. Take-up was lower in Japan (3%) and the US (7%). With different interpretations of the term 'digital radio' across nations, this should be taken into account when interpreting these results. (Page 201).
- **Ownership and use of personal media players (such as MP3/MP4 and iPods) was highest in Italy,** with nearly two-thirds (64%) of people claiming to own and use such a device. Ownership in the UK was second-highest at 52%. (Page 201).
- **Downloading or listening to audio content such as music tracks and podcasts was most popular in Italy,** with 48% claiming to download or listen to music through websites. The figure was lowest in Germany (31%), and about average in the UK at 40%. (Page 188).
- **Listening to radio stations online was most popular among people in France,** at 41% and lowest in Japan, at 16%. The UK was also slightly lower than average, at 29%. (Page 188).
- **Listening to FM radio through a mobile phone was most popular in Italy;** almost a third (31%) of respondents there claimed to have listened to radio on their mobiles, compared to only 5% in Japan. The UK was in line with the average, at 18%. (Page 189).
- **Listening to MP3 tracks via a mobile was also highest in Italy** (33%), this time also matched by Germany (33%). This activity was least popular in Japan (17%) and the US (18%) compared to 26% in the UK. (Page 189).

## Key points: internet and web-based content

- **As a proportion of all ad spend, UK internet advertising has demonstrated the largest and steadiest growth of all our comparator countries since 2004.** In 2009 the UK also had the largest spend per head on internet advertising; all countries experienced treble digit growth over the period 2004 to 2009. (Page 214).
- **The UK is one of the leading countries for fixed broadband take-up, with 70 connections per 100 households at the end of 2009.** Only the Netherlands (85), Canada (80) and the US (71) had a higher number of connections per 100 households. The number of connections has grown rapidly in Brazil, Russia and China to reach 21, 29 and 26 per 100 households respectively. (Page 223).
- **Apart from Sweden, the UK has the highest number of mobile broadband connections per 100 households in Europe,** There are 16 connections per 100 households in the UK, compared to 29 for Sweden. Outside Europe, connections per 100 households were highest in the US (30) and Australia (27). (Page 224).
- **Take-up of smartphones and mobile internet devices is growing rapidly.** Italy leads Europe in levels of smartphone take-up among the countries we looked at (26 per 100 population). Spain (21 per 100 pop) and the UK (18 per 100 pop) have the next highest levels. Growth since 2009 was highest in the UK at 70%. (Page 211).
- **More than a third of UK internet users (37%) claim to have accessed the internet on their mobiles.** This is a similar number to users in France (37%) and the US (36%). Of our survey countries only Japan had higher take-up (70%) – driven by early 3G roll out and historically high mobile internet levels there. (Page 248).
- **Social networking continues to grow rapidly, driven by high take-up among the younger population in all comparator countries.** The proportion of internet users using social networks is now 62% in the UK, 58% in France and 66% in Italy. Growth was highest in France (115%) and Italy (106%). (Page 238).
- **The UK has the highest percentage of mobile owners who use their phone for social networking (24%) across our survey countries.** Japan has the most compared to the total number using social networks on the internet. (Page 244).
- **UK consumers buy most items and spend most money on web purchases. UK shoppers on average made 19 purchases online in the six months to November 2009** and spent an average of £1031. This was much higher than consumers in the next highest European country, Poland (14 purchases; £325). (Page 218).
- **Mobile advertising spend per capita in Japan outstrips its nearest rival, the UK, by a ratio of almost 5 to 1 – but the UK is growing rapidly.** Japan spends £5.57 per head, in the UK the figure is £1.14. High 3G network take-up in Japan has made mobile a more attractive proposition to advertisers. (Page 220).
- **Internet access via desktop computers is lowest in the UK.** The UK had the lowest reported level of internet access using desktops, with just 58% of web users using a desktop to get online. The contrast is greatest among young people: 83% of 18-24s use a laptop to access the internet, but just 40% use a desktop. (Page 231).

## Key points: telecoms

- **Telecoms service revenues declined in seven comparator countries during 2009.** The greatest fall was in Ireland (down 9.6%), while UK revenues fell 3.2%. Revenues in Australia increased 7.4% during the year, and there were also increases in the BRIC countries, although at slower rates than in previous years. (Page 257).
- **Global telecoms connectivity continued its advance in 2009.** There were around 500 million new mobile connections in 2009, bringing the total to 4.5 billion, or six for every ten people in the world. (Page 255).
- **UK households have comparatively high levels of connectivity,** with among the highest number of fixed-lines per 100 people (54), fixed broadband connections per 100 people (29) and mobile connections per 100 people (129) at the end of 2009. Germany had the highest fixed-line take-up (58 per 100 people), Italy the highest mobile take-up (152 per 100 people), and the Netherlands the highest fixed broadband take-up (37 per 100 people). (Page 317).
- **Despite stagnating or falling revenues, mobile connections and use generally continued to grow in 2009,** although mobile call volumes actually declined in France and Spain (they increased by 7% in the UK). (Page 302).
- **There are wide variations in the take-up and availability of super-fast fibre-based broadband services.** At the end of 2009 34% of households in Japan had a super-fast connection, compared to 0.2% in the UK. However, around the world there are large scale super-fast network deployments; by 2015, 66% of households in the UK are set to have access to next-generation broadband, representing greater availability than in most comparator countries. (Page 261).
- **Voice over IP (VoIP) has seen large growth in many countries over the past few years,** and by the end of 2009 there were 26 VoIP subscriptions per 100 population in France, where people use VoIP in place of a standard fixed line. Take-up of specific VoIP subscriptions was much lower in the UK (5 per 100 people), however, 17% of people claimed that a PC was to make voice calls in their home. (Page 273).
- **The average cost of a broadband connection in the UK in 2009 (£15.42) was the second lowest among our comparator countries after Poland (£11.02).** Cost per connection was highest in Australia, Spain and the Netherlands. (Page 346).
- **Among six countries surveyed, the US and Italy had the highest proportion of mobile-only homes (29%) in October 2010.** In the UK 13% of homes used mobiles as their sole form of telephony. (Page 330).
- **Mobile messaging use continued to grow in most countries, although there were large differences in volumes of use.** In Australia an average of 254 SMS and MMS messages were sent per person per month in 2009, while in Japan SMS is hardly used. Among the European countries for which data was available Ireland had the highest use (218 messages/person/month), followed by the UK (140). (Page 344).
- **The UK was the only one of our comparator countries where fixed broadband revenues fell in 2009** (down 0.1%). Fixed-voice revenues fell in all countries except Brazil during 2009 and mobile revenues fell in some countries, with the falls greatest in the UK and Spain (both down 3.2%) and Ireland (down 11.9%). (Page 260).



## 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)	10.5	10	11.2	7.9	81.5	3.5	24.9	3.6	4	2.3	1.4	0.9	2.1	8	2.8	4	8.7
	Change in revenues (% ,YOY)	0.2	2.4	-0.4	-2.9	-1	-0.2	-4.6	0.1	-9.4	-0.8	-3	-2.1	5.7	12	-12.2	14.1	7.6
	Revenue per capita (£)	169	160	137	135	265	104	196	168	86	136	150	190	53	40	20	3	7
	Largest TV platform	DTT	DTT	ACab	DTT	DCab	DCab	ACab	ATT	DTT	ACab	ACab	DSat	DSat	ATT	ATT	ACab	ATT
	Largest TV platform (% of homes)	41%	32%	40%	36%	38%	38%	27%	39%	62%	43%	45%	46%	49%	55%	44%	61%	40%
	TV viewing per head (mins/day)	225	205	212	238	280	217	n/a	183	226	184	165	185	240	227	228	138	158
	Digital TV take-up (%)	91	81	48	71	83	69	69	61	91	57	55	66	57	38	26	23	25
	Pay TV take-up (%)	51	56	65	25	90	92	58	31	28	99	97	76	84	14	49	78	47
	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)	1.2	1.3	3.0	1.1	10.7	0.9	2.6	0.5	0.5	0.4	0.3	0.2	0.1	0.3	0.2	0.1	0.8
	Change in revenue (% ,YOY)	-7.1	-4.3	+1.9	-5.1	-15.7	-6.6	-3.9	-5.7	-17.5	-4.8	-1.7	-13.3	-22.9	+12.3	-35.7	+18.2	+7.2
	Revenues per capita (£)	19	20	37	20	35	27	20	22	4	24	32	42	3	1.6	1.3	0.1	0.6
	% income from public funding	64	63	80	57	0.5%	16	62	n/a	n/a	41	84	40	14	n/a	n/a	n/a	n/a
	Listening (hours /head/week)	22.1	20.9	21.7	21.0	18.5	18.3	12.6	n/a	12.6	24	19	31	33	n/a	39	n/a	n/a
	Public radio share (%)	55	22	58	19	5	13	8	n/a	6	32	65	33	25	n/a	24	n/a	n/a
Internet and web	People online (m)	39.1	44.9	44.9	25.7	195	n/a	59.5	14.6	25.0	n/a	n/a	n/a	n/a	39.3	n/a	n/a	n/a
	Fixed BB conn. per 100 HH	70	69	62	49	71	80	64	66	56	85	66	63	40	21	29	4	26
	Mobile BB conns. per 100 HH	16	7	3	16	30	20	19	27	11	7	29	13	9	n/a	n/a	n/a	n/a
	Mobile-only broadband HH (%)	6	1	11	13	6	n/a	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Internet access via a mobile (%)	37	37	27	31	36	n/a	70	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Telecommunications	Telecoms service revenues (£bn)	27.4	32.6	37.2	25.6	183.8	18.1	73.0	13.3	21.4	8.7	3.9	2.4	5.9	30.0	16.4	10.3	60.8
	Telecoms revenues per capita (£)	442	506	452	440	599	540	574	626	462	522	427	529	155	151	117	9	46
	Fixed lines per 100 population	53.9	37.0	57.5	37.3	46.0	55.6	39.1	48.2	42.7	36.5	56.8	42.5	25.7	20.8	32.5	3.2	23.7
	Monthly outbound fixed-line minutes per capita	179	141	161	117	167	174	57	213	122	114	202	150	34	91	0	0	10
	Mobile connections per 100 population	129.1	95.1	131.5	151.7	93.0	69.9	87.1	119.2	117.4	124.9	133.1	115.0	117.3	87.0	148.8	45.1	56.3
	Monthly outbound mobile minutes per capita	159	131	92	163	618	312	91	254	128	199	182	185	107	54	165	103	248
	Fixed broadband connections per 100 population	29.3	30.3	30.3	21.2	27.3	30.8	25.0	25.0	20.8	37.0	32.5	21.2	13.6	5.6	10.6	0.7	7.8







# The International Communications Market 2010

## 1 The UK in context

# Contents

1.1	The global communications industry in context	17
1.1.1	Introduction to Section 1	17
1.1.2	Putting the global communications industry in context	17
1.1.3	Communications sector revenues	18
1.1.4	The recession and the communications sector	25
1.2	The UK consumer in context	33
1.2.1	Introduction	33
1.2.2	Take-up of services and bundles	33
1.2.3	Use of devices and services	36
1.2.4	Attitudes towards devices and activities	39
1.3	Regulation in context	41
1.3.1	Introduction	41
1.3.2	Regulatory authorities worldwide	41
1.3.3	Implementing the EU regulatory framework for electronic communications	45
1.3.4	Monitoring implementation of the EU Audiovisual Media Services Directive (AVMS)	47
1.3.5	Promoting and protecting competition	48
1.3.6	Empowering and protecting consumers	53
1.3.7	International spectrum policy	56
1.4	Globalising communications markets	61

# 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 of other countries and discuss the impact of the recession on the sector.
- **Consumers in context** (Section 1.2): We present findings from our consumer research on attitudes, use and take-up of communications services in the UK and five comparator countries.
- **Regulation in context** (Section 1.3): We highlight recent international developments in communications regulation and their impact on citizens and consumers.
- **Globalising communications markets** (Section 1.4): Our case studies illustrate the increasing internationalisation of communications markets.

## 1.1.2 Putting the global communications industry in 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. We also discuss what impact the global recession may have had on communications sector stakeholders.

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.

Given Ofcom's core duties, we focus primarily on the telecoms, television and radio industries. However, we also discuss related sectors, where this helps to provide a wider context.

### Key points

- Global communications sector revenues were largely flat in the year to 2009, growing just 0.3% to £1,113bn. Of these revenues, subscriptions (from consumers and businesses) accounted for 88% in 2009 (87% in 2008).
- The US, Japan and China had the world's largest communications sector revenues at £276bn, £100bn and £70bn respectively, compared to £39bn in the UK. Revenue per head is highest in the US (£899), Australia (£808) and Japan (£790). This compares with the UK at £630.
- Global advertising expenditure fell by 13% to £254bn in the year to 2009, compared to a 12% fall in the UK. TV advertising spend remained the largest single component (38%), but online was the only growth area, rising by 1% over the same period to £37bn, 15% of the total.

- Our consumer communications survey found that respondents were less likely to have reduced expenditure on communications than on other goods and services, in particular eating/going out and holidays. UK consumer behaviour was in line with that of other countries. In general consumers in Germany were less likely to have reduced expenditure on a range of goods and services than in the other countries.
- Among subscription services, our survey found that spend on mobile was hit hardest; 24% of respondents in the UK with mobile service said that they had reduced spend in the previous 12 months, but fewer in Germany (19%) and the US (17%). This compared with fixed broadband, where 8% in the UK and Germany said they had reduced spend, compared to 4% in Italy.

### **1.1.3 Communications sector revenues**

#### **The communications sector generated £1,113bn in revenues in 2009**

The communications sector is a major contributor to the global economy, with telecoms service television and radio revenues growing by 0.3% to £1,113bn in 2009, far slower than the 2005-2009 average of almost 4% per annum.

Telecoms services accounted for almost 80% of global communications sector revenues, growing by 0.9% in 2009 to £878bn. This included fixed voice, mobile voice and data, and internet access.

Despite growing by an average of 4% per year between 2005 and 2009, TV revenues fell 1% in 2009 to £208bn, largely driven by a decline in advertising revenues during the economic downturn.

Radio was the smallest of the three sectors, reporting revenues of £28bn for 2009. Revenues fell by 9% in 2009, as cyclical pressures combined with structural changes (shifts towards online) in advertising markets to contract the overall size of the sector. Radio is the only sector where total revenues fell between 2005 and 2009. When inflation is taken into account, the decline in radio advertising spend is even greater in real terms.

Further detail on sector revenues is provided in the relevant chapters in this report.

**Figure 1.1 Global communications revenues**



Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [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 \$1.5643 to the GBP, representing the IMF average for 2009.

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 comprise 88% 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.

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 them (except for licence fees). Virtually all telecoms revenues are drawn from subscriptions, although some ISPs are attempting to increase advertising revenue, and some telecoms services receive public funding.

Overall, subscription revenues comprise the largest source of revenue for the communications sector, accounting for £982bn in 2009 – 88% of the total. This is up two percentage points since 2005, a function both of the relative growth of the telecoms sector, and the decline in advertising revenue as a proportion of television revenue.

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



Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [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.

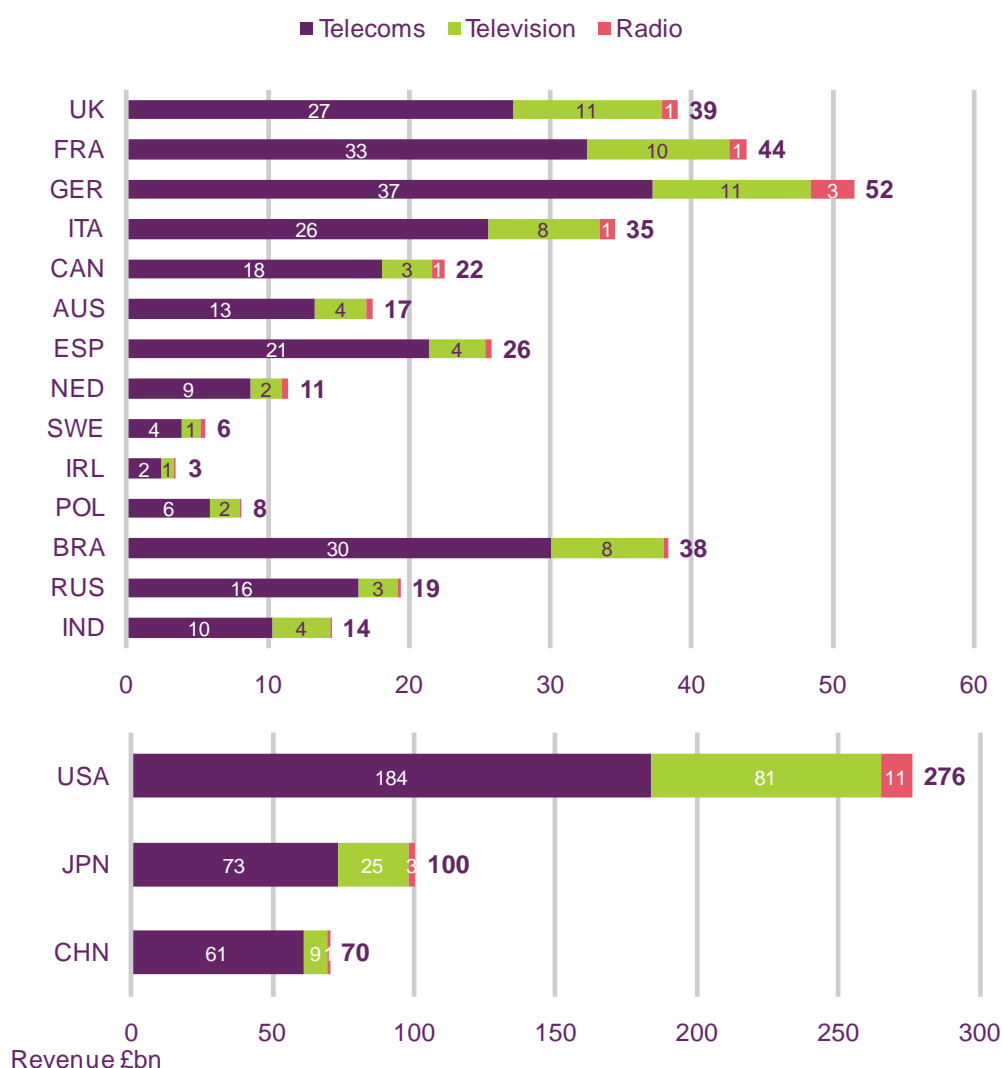
Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

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.

### **Total communications revenue and revenue per head are highest in the US**

Communications markets vary between individual countries, reflecting differences in size, disposable income and service take-up, in addition to policy decisions surrounding 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 on both an absolute (£276bn) (Figure 1.3) and a per-capita basis (£899) (Figure 1.4), while UK revenues, at £39bn, were the third largest in Europe, behind Germany (£52bn) and France (£44bn).

**Figure 1.3 Communications sector revenues in 2009**

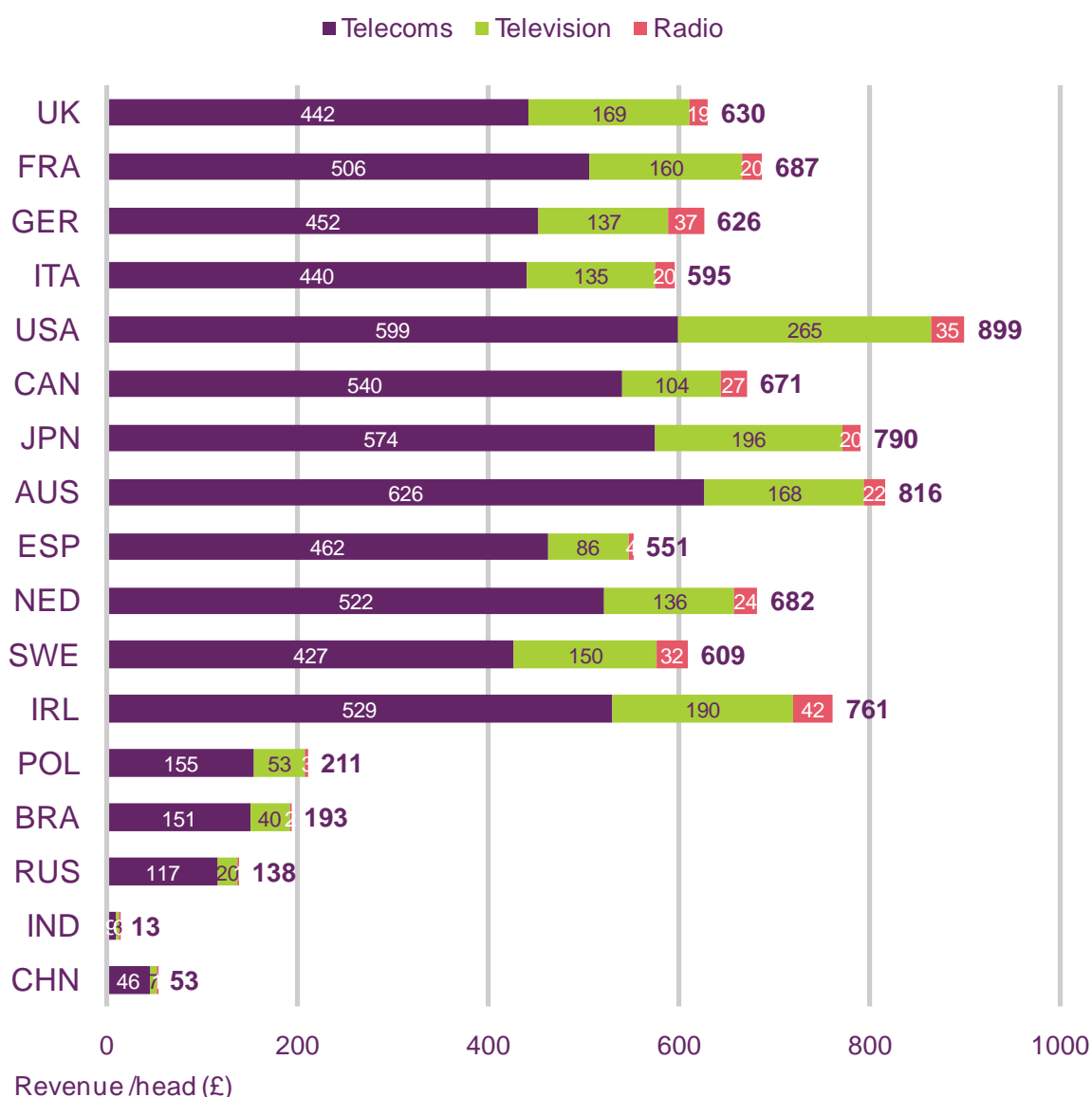


Source: Ofcom analysis based on Ofcom / IDATE data for telecommunications/TV and Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook) for radio. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

Notes: Telecoms revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN.

Among our 17 comparator countries, China was the third largest communications market, with £70bn service revenues in 2009, although per-capita revenues at £53 are nearly twelve times smaller than those in the UK (£630). Revenue per head is higher in the US, Australia and Japan than in the European countries, primarily due to higher spend on telecoms services, although TV revenues were 36% higher in the US than in any other country. Among the European countries, Ireland has the highest revenue per head, followed by France and the UK.

**Figure 1.4 Communications sector revenues per head in 2009**



Source: Ofcom analysis based on Ofcom / IDATE data for telecommunications/TV and Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [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 \$1.5643 to the GBP, representing the IMF average for 2009.

Notes: Telecoms revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN

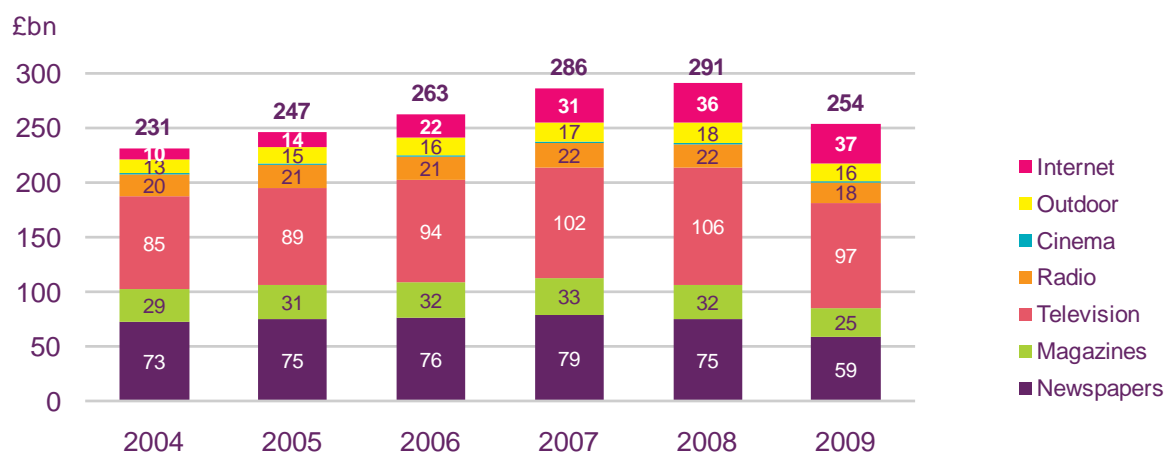
**Global advertising expenditure fell substantially in 2009 - although online continues to grow**

While accounting for a minority 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 between advertising, business and consumer confidence, and consumer expenditure. Total global advertising revenue declined by 13% during 2009 due to the economic downturn.



However, Figure 1.5 also shows that structural changes in advertising have led to a considerable redistribution of advertising spend. In particular, internet advertising continued to grow, and accounted for just under 15% of total advertising expenditure in 2009, compared to just over 4% in 2004. By contrast, press advertising has been hit particularly hard, with spend on newspaper and magazine advertising experiencing the greatest proportional declines over the period, collectively accounting for a third of total expenditure in 2009 compared to 44% in 2004.

**Figure 1.5 Global advertising expenditure, by source**



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

Figure 1.6 illustrates this point further by detailing the wide variation in the performance of different types of advertising between 2004 and 2009. Between 2004 and 2008, the total advertising market grew by an average of 5.9% a year. In 2009 this trend was reversed, with revenue falling by 12.8%, reflecting the global economic downturn. Radio suffered more than TV, with expenditure falling 14.8%. However, the largest decline over the one-year period comes from newspapers and magazines.

**Figure 1.6 Global advertising expenditure growth**

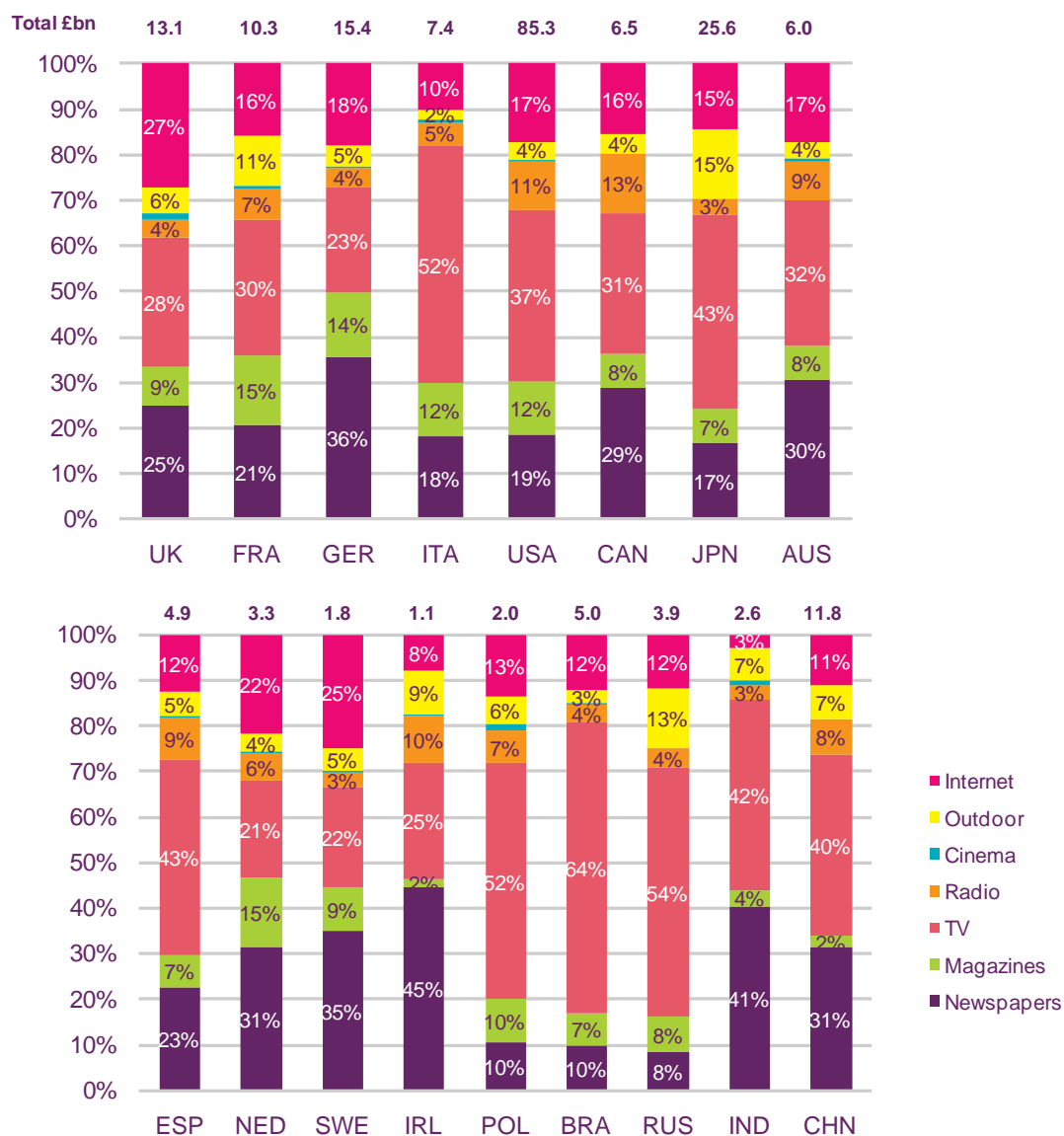
	Total advertising	Newspapers	Magazines	Television	Radio	Cinema	Outdoor	Internet
2004-2008 CAGR	+5.9%	+0.6%	+2.3%	+5.8%	+1.7%	+7.2%	+8.6%	+38.7%
2008-2009 annual growth	-12.8%	-20.5%	-21.6%	-9.0%	-14.8%	-6.4%	-13.3%	+1.1%
2004-2009 CAGR	+1.9%	-4.0%	-3.0%	+2.7%	-1.8%	+4.4%	+3.8%	+30.2%

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

There are significant differences in the mix and size of advertising among our comparator countries (Figure 1.7). At £85.3bn in 2009, the US was the largest advertising market, 6.5 times the size of the UK market (£13.1bn in 2009). Germany was the largest advertising market among our comparator countries in Europe (£15.4bn in 2009).

**Figure 1.7 2009 Advertising expenditure analysis**

Proportion of total advertising expenditure



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

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

The internet accounted for a larger proportion of advertising spend (27%) in the UK than in any other comparator country. This is in line with higher spending on online purchases in the UK than in other countries (See section 5). TV advertising remains the single largest source of revenue in the majority of the 17 countries, including the UK, and accounted for over half of total advertising spend in Poland, Brazil and Russia in 2009. In Ireland and India, where paid-for newspaper circulation increased between 2000 and 2008 by 45%<sup>1</sup>, newspapers accounted for more than 40% of advertising spend in 2009.

The fall in UK advertising expenditure of 12% between 2008 and 2009 was greater than that in Germany (down 9%) but in line with France (down 12%). Total US advertising spend fell

<sup>1</sup> Source: OECD, 2010, The evolution of news and the internet. Available from <http://www.oecd.org/dataoecd/30/24/45559596.pdf> [Accessed November 2010]

16%. Despite the global economic downturn, Brazil, India and China reported growth in advertising spend of 7%, 17% and 11% respectively. In Russia it fell by 25%.

For further details on advertising in each sector, please see the relevant section of this report.

#### **1.1.4 The recession and the communications sector**

We published our last full *International Communications Market Report* two years ago; in late 2008, against the backdrop of Lehman Brothers' insolvency in September that year, and concerns about other banks. Since then, the size and nature of the downturn has affected all sectors of the economy, including communications, as consumer and business confidence has been eroded, unemployment has risen, and governments and central banks around the world have used monetary and fiscal stimulus packages to mitigate the effects of the recession.

The ability of firms to raise and maintain debt was a key focus during the initial part of the recession, characterised as the 'credit crunch'. This spread from the financial sector to other parts of the economy, affecting firms' capital expenditure decisions as well as consumer confidence and consumer spending. As many countries return to economic growth, recovery measures are also affecting the communications sector around the world, in particular the level of public funding to the sector.

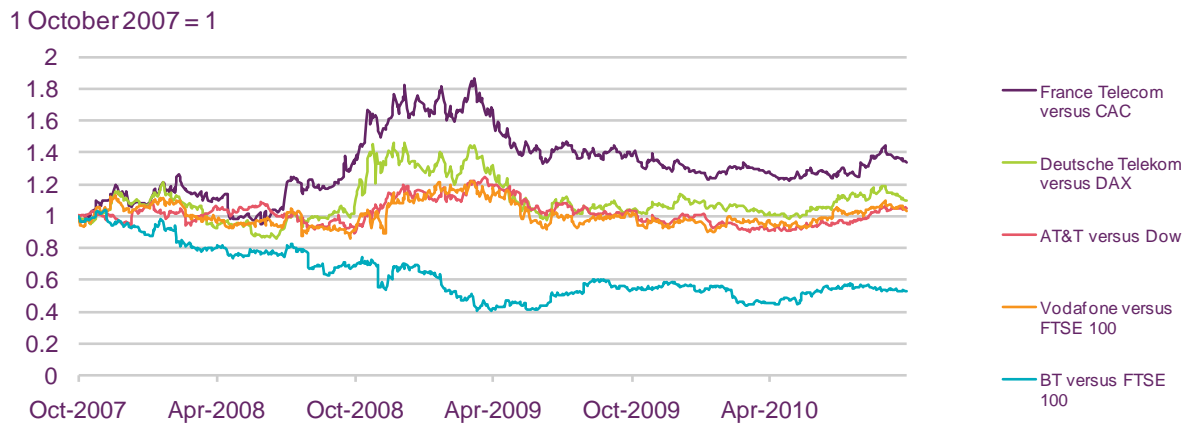
#### **The impact of the economic downturn on publicly-quoted companies**

Many of the world's largest communications companies are publicly quoted. Their share prices are subject to short-term volatility at times of uncertainty, and to longer-term pressures arising from concerns about lower long-term economic growth and hence lower revenue and profitability. However, the link between communications service revenues and trends in the wider economy is complex, reflecting factors such as the price sensitivity of consumers, the level of competition, the regulatory environment, the extent of providers' pension liabilities, and the confidence of investors in management decisions.

In response to these challenges, a common response for many companies is to reduce costs, either internally or via mergers. An example is the merger of T-Mobile and Orange's UK operations into Everything Everywhere, which was announced in September 2009 and officially launched in July 2010. Many communications firms have also reviewed their product ranges, introducing lower price entry points, in an attempt to retain and attract subscribers seeking to reduce spend. Examples of this include the range of SIM-only mobile offerings launched in the UK throughout 2009, and a general movement towards incentivising consumers to move to longer contracts, with 24-month terms now most common in the UK.

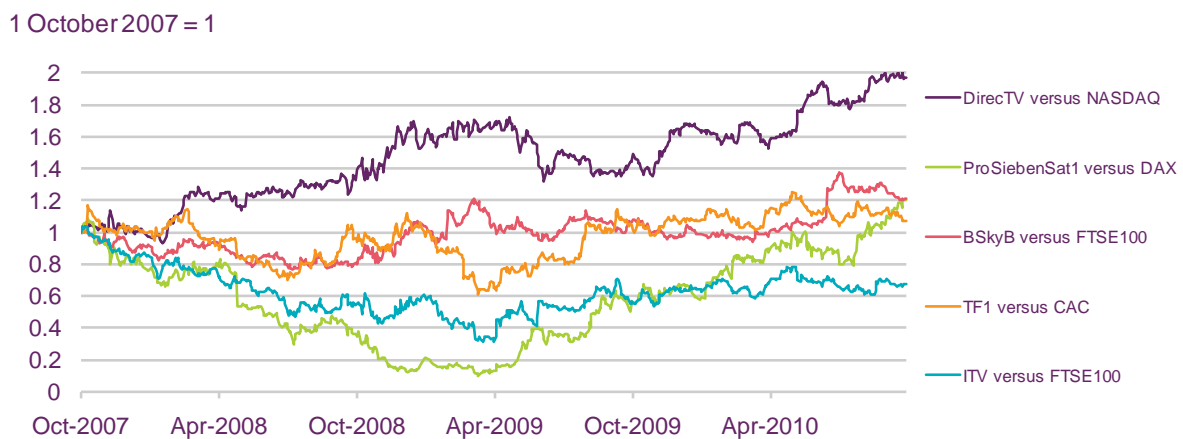
Between late 2008 and early 2009, telecoms shares outperformed the wider market, partly reflecting falls in other sectors, in particular financial stocks, in the light of the bank recapitalisations. Figure 1.8 shows that since 1 October 2007 (before the start of the credit crunch and economic downturn), large telecoms operators on several of our key comparator markets have either outperformed, or performed in line with, the wider market, (although it should be noted that the constituents of the indices vary between countries). This may reflect a relative confidence in the ability of individual telecoms companies to generate future revenues, or may also reflect a wider defensive mindset in which investors switch from higher-risk stocks to lower-risk sectors.

**Figure 1.8 Three year share price performance of selected telecoms operators against the wider market**



Source: Data from Yahoo! Finance, Ofcom calculations and analysis. Share price performance of companies is against relevant national market rather than the other companies in the chart. The three-year share price performance of broadcasters against the wider national markets has varied more than that of telecoms operators (Figure 1.9). Two of the companies considered (DirecTV and BSkyB) rely more on subscription revenues than the others, whose revenues are primarily derived from advertising, which fell heavily between 2008 and 2009. In addition, country and market-specific factors, such as ratings and regulation, will have affected the share prices.

**Figure 1.9 Three year share-price performance of selected broadcasters against the wider market**



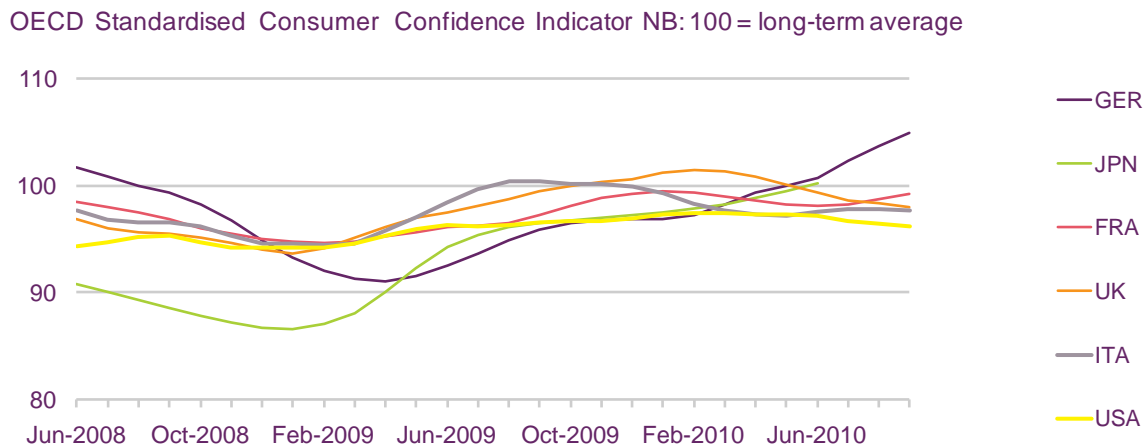
Source: Data from Yahoo! Finance, Ofcom calculations and analysis. Share price performance of companies is against relevant national markets rather than the other companies in the chart.

### Consumer confidence recovered during 2009

Consumer confidence is a key driver of economic performance. When confidence is high, consumers are more likely to be prepared to increase spending; when it is low, spend may fall as more consumers seek to reduce spending in preparation for potential future hardship. Confidence also affects advertising spend as it determines consumers' willingness to spend. Figure 1.10 uses a metric defined by the OECD to detail how consumer confidence has

changed since June 2008 in six countries. It suggests that consumer confidence generally fell in the latter part of 2008 (at around the time of the bank recapitalisations) hitting lows in early 2009, before rising throughout 2010. It indicates generally higher levels of consumer confidence in Germany, and a slower and longer decline in the UK than in other countries, followed by a steady increase since October 2009 (note that the index below stops before the announcement of the UK's public expenditure review in October 2010).

**Figure 1.10 Consumer confidence**



Source: Data from OECD <http://stats.oecd.org/index.aspx?queryid=299> [Accessed October 2010], Ofcom analysis

### Communications expenditure remains relatively resilient in economic downturn

In order better to understand the impact of the economic downturn on consumers' use of communications services, and to assess the relative resilience of consumer spending on these services, we commissioned research on spending between October 2009 and October 2010 and on spending intentions for a range of goods and services across the UK and five comparator countries (France, Germany, Italy, the US and Japan). We used an online survey, so the results may not reflect the behaviours of non-internet users.

This analysis could reflect a range of factors which contribute to overall consumer confidence and spending intentions. We note that changes to VAT and other indirect tax rates may have played a part. Most importantly, we emphasise that perceived changes in spend may not relate to any change in the amount that consumers use communications services, but may rather be a measure of the scope for reducing expenditure by paying lower prices. Terms and conditions may also mean that consumers have relatively little discretion to change their spend on services within the duration of the contract.

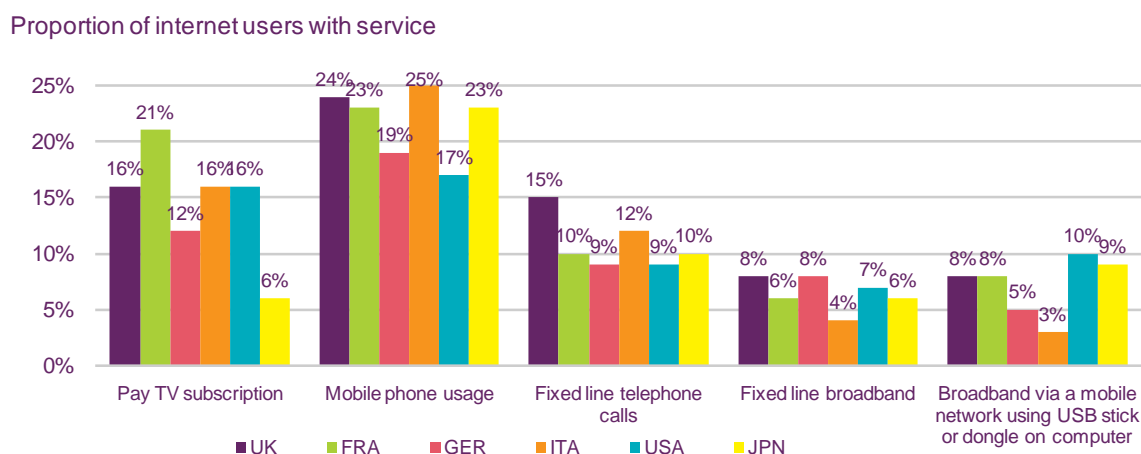
Consumers were most likely to have reduced their expenditure on mobile, with over a fifth in the UK, France, Italy and Japan having done so in the previous 12 months, a little ahead of Germany at 19% (Figure 1.11). In contrast, people in the US were least likely to have reduced expenditure, with 17% doing this in the previous 12 months. This is consistent with our finding that overall mobile prices have fallen across a range of comparator countries despite stable usage trends (see Section 2 of this report).

UK consumers were more likely than those in the other five countries to have reduced spend on fixed-line telephony over the previous 12 months, with 15% saying they had done so – compared to 9-12% of respondents in most of the other countries. Reductions in broadband expenditure were broadly consistent across the survey countries – ranging from 8% in the

UK to 4% in Italy. Previous surveys have suggested that broadband may be resilient in a downturn, as consumers consider spend on internet connectivity as essential rather than discretionary.<sup>2</sup>

Six per cent of internet users with pay TV in Japan stated that they had reduced expenditure on pay-TV services over the previous 12 months, compared to 21% in France, with 16% in the UK saying they had reduced spend on this service. These differences may be partly explained by the fact that pay-TV packages vary between countries. For example, in Germany a basic cable pay TV is often bundled with other utility payments, and costs significantly less than the majority of packages in the UK and the US, which typically include a greater range of channels and premium content. In France, pay-TV packages allow consumers to subscribe to individual speciality channels, so it may be easier for consumers to reduce their spending with only an incremental change in the range of channels they can access. French IPTV provider Free, for example, offers an à-la-carte option, allowing subscribers to pay an additional €2.99/month for music channel Brava HD<sup>3</sup> or BBC World at €0.25/month<sup>4</sup>, alongside other channels.

**Figure 1.11 Reduction in expenditure on communications services over past 12 months by communications service subscribers**



Source: Ofcom Consumer Research October 2010

Base: Those respondents who take service. Total sample size: UK=1016, France=1017, Germany=1014, Italy=1002, US=1017, Japan=1001

Q 18: Over the past twelve months have you decreased the amount of money you spend on any of the following things?

We also compared consumers' stated changes in their expenditure on communications services with their responses regarding a range of other goods and services. (For a consistent comparison, the responses in Figure 1.12 relate to respondents as a whole, rather than those who take the services, as is the case in Figure 1.11).

<sup>2</sup> See, for example, data from Execution Research, reproduced in Ofcom's 2008 International Communications Market report (p39) which found that spending on broadband internet was more resilient than 13 other categories of 'discretionary' spend, including fixed-line voice and mobile phone, <http://stakeholders.ofcom.org.uk/binaries/research/cmr/icmr08.pdf>

<sup>3</sup> <http://www.free.fr/adsl/pages/television/services-de-television/acces-a-plus-250-chaines/chaines/chaine-65.html> [accessed November 2010]

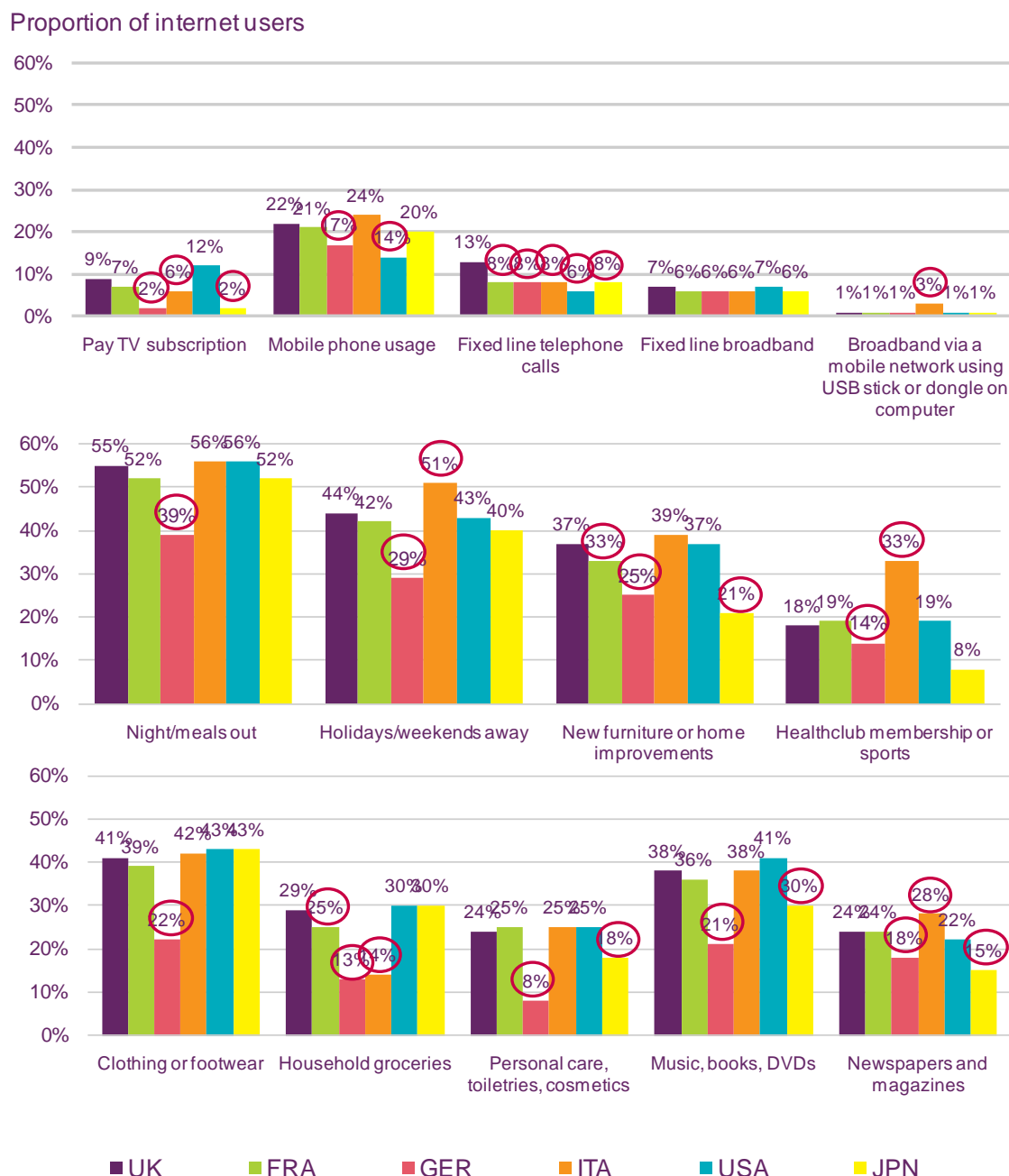
<sup>4</sup> <http://www.free.fr/adsl/pages/television/services-de-television/acces-a-plus-250-chaines/chaines/chaine-86.html> [accessed November 2010]

Across the countries we surveyed, it seems that, in general, spend on communications services has been relatively resilient. In the UK, 29% said they had reduced expenditure on groceries, compared to 13% in Germany (Figure 1.12). Consumers in the UK (37%) were more likely to have reduced spend on new furniture and home improvements than those in France (33%), Germany (25%) and Japan (21%).

Consumers in Germany (21%) and Japan (30%) were less likely to have cut spending on books/music/DVDs than those in the UK (38%). Italian consumers were more likely to have reduced expenditure on newspapers and magazines (28%) than those in the UK (24%), although spend on newspapers and magazines appeared most resilient in Germany (18%) and Japan (15%). Overall, consumers in Germany were least likely to have reduced expenditure on non-communications goods and services.

In all countries, consumers are more likely to have reduced expenditure on the other categories of discretionary spend identified than on broadband, pay TV or fixed-line voice, while the proportion claiming to have reduced spend on mobile phones is broadly similar to the proportion claiming to have reduced spend on: health club or sports membership; groceries; personal care, toiletries and cosmetics; and newspapers and magazines.

**Figure 1.12 Reduction in expenditure on goods and services in the previous 12 months by internet users**



Source: Ofcom consumer research October 2010

Base: UK=1016, France=1017, Germany=1014, Italy=1002, US=1017, Japan=1001

Q 18: Over the past twelve months, have you decreased the amount of money you spend on any of the following things? Select all that apply

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

We also asked consumers about their intention to reduce spending in the coming year. The responses were broadly similar to reductions in the previous year, although in general a slightly smaller proportion of respondents said that they intended to reduce expenditure (perhaps an indication of increasing consumer confidence). Across all countries, respondents said they were more likely to reduce their expenditure on mobile telephony over the coming 12 months than on other communications goods and services. However, while

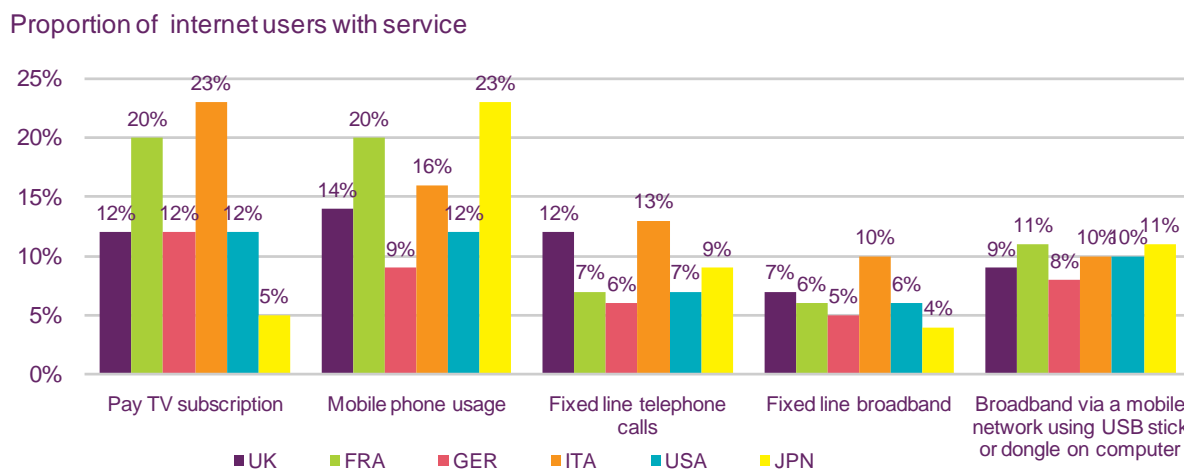


24% of UK respondents with mobiles said that they had reduced their mobile spend in the past year; just 14% said they intended to do so in the next 12 months, compared to 23% in Japan and 20% in France.

By contrast, 12% of UK consumers said that they planned to reduce expenditure on fixed-line telephone calls in the next 12 months, compared to 15% who said that they had reduced expenditure in the previous 12 months. This may reflect an ongoing trend of consumers shifting towards mobile instead of fixed line for voice calls (see Section 6).

Consumers in Japan were the least likely to intend to reduce spend on fixed-line broadband in the next 12 months. Twenty-three per cent of internet users in Italy with pay TV said they intended to reduce expenditure on pay TV compared to 12% in the UK. The Italian pay-TV market is distinctive in that pay-per-view TV services are available on digital terrestrial television (DTT), meaning that viewers can reduce their expenditure on an ad-hoc basis.

**Figure 1.13 Intention of internet users to reduce spend on communications services in next 12 months (users of service)**



Source: Ofcom consumer research 2010

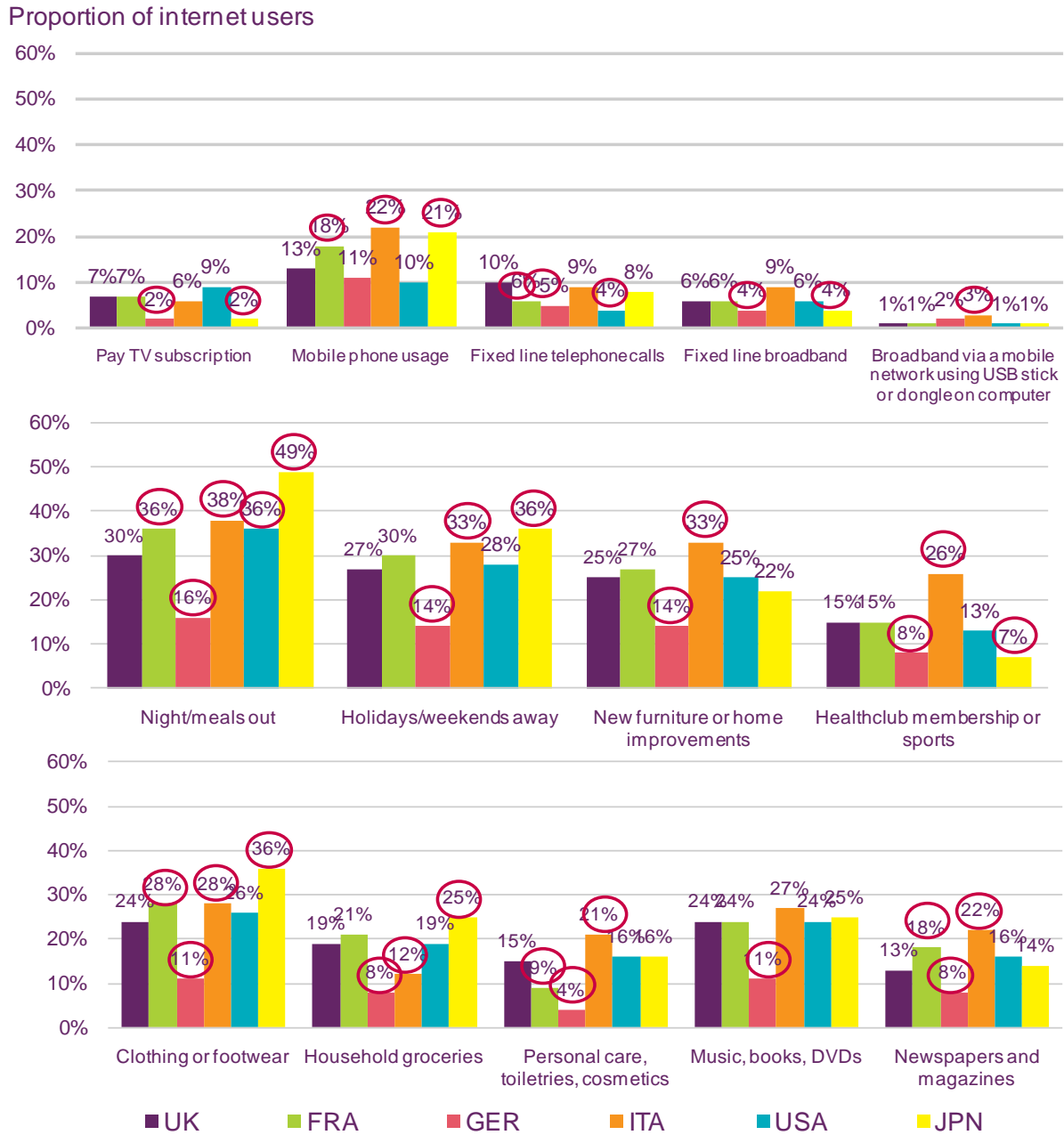
Base: Survey respondents with service. Total sample size: UK=1016, France=1017, Germany=1014, Italy=1002, US=1017, Japan=1001

Q 19: Over the next twelve months do you intend to decrease the amount of money you spend on any of the following things? Select all that apply

In general, a greater number of consumers intend to reduce their expenditure on non-communications goods and services than on communications goods and services (Figure 1.14). However, there are indications of increases in consumer confidence, with, in general, a lower proportion of consumers intending to reduce expenditure in the coming 12 months than said they had done in the previous 12 months. This particularly applies to goods/services that are seen as luxuries (nights/meals out and holidays) or that may involve significant outlay (new furniture / home improvements).

Internet users in Germany were generally less likely to report that they intended to reduce expenditure; this is consistent with the findings in relation to communications services expenditure intentions, and is also consistent with Germany's relatively strong consumer confidence scores, shown in Figure 1.10 above.

**Figure 1.14 Anticipated reduction in spend on a selection of goods and services in next 12 months**



Source: Ofcom consumer research October 2010  
 Total sample size: UK=1016, France=1017, Germany=1014, Italy=1002, US=1017, Japan=1001  
 Q 19: Over the next twelve months, do you intend to decrease the amount of money that you spend on any of the following things? Select all that apply  
 Note: Circled data points indicate statistically significant differences to the UK.

# 1.2 The UK consumer in context

## 1.2.1 Introduction

### Introduction

In this section we examine and compare take-up, use of and attitudes to communications services and devices. We focus primarily on the UK and those other countries where we carried out consumer research in October 2010 (France, Germany, Italy, the US and Japan), but we discuss our other comparator countries where relevant.

### Key findings

- Between 2004 and 2009, the number of fixed-line voice connections fell in all six countries - although the decline in the UK (-5%) was much lower than elsewhere.
- At the end of 2009, the majority of households in all six countries had digital TV, with the exception of Germany (which has high take-up of analogue cable services). Penetration was highest in the UK with 91 in 100 households having digital TV.
- Across the EU, consumers in the Netherlands are the most likely to take a bundle of any two or more communications services from the same provider (60% of households) compared to 40% of UK households.
- UK consumers are more likely to own and use an HD-ready TV set (59%) and a digital video recorder (DVR) (32%) than those in France, Germany and Italy.
- Television and the internet are the communications services most used by UK internet users (94%), who are more likely to watch TV regularly than internet users in Germany and Japan. 89% of UK internet users regularly use a mobile phone, a lower proportion than in Italy (96%).

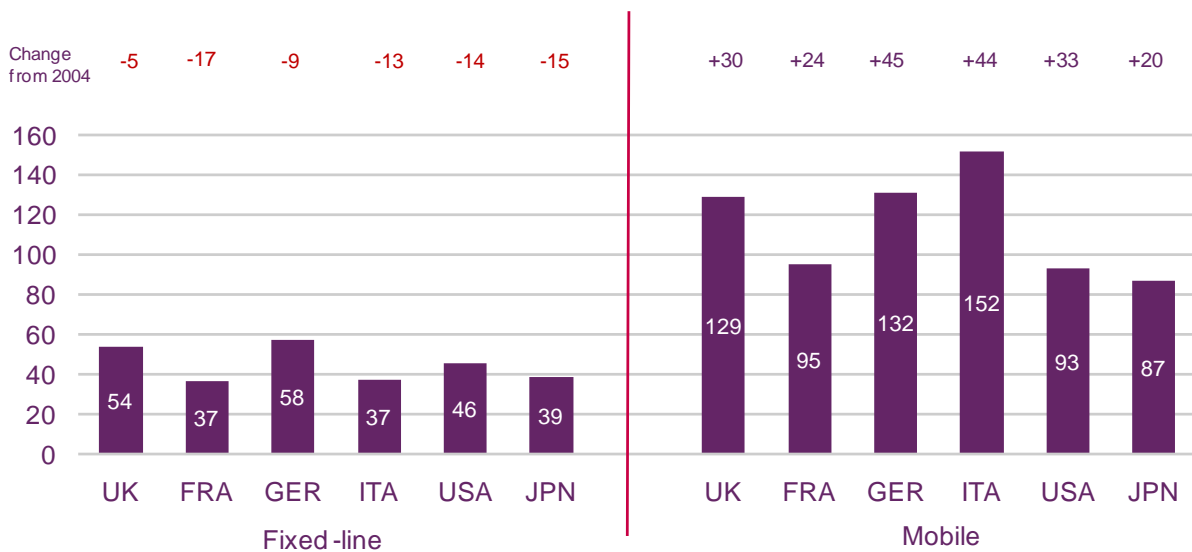
## 1.2.2 Take-up of services and bundles

### Fixed-line voice comparatively resilient in UK, as mobile grows in all markets

The number of fixed-line connections fell between 2004 and 2009 in the countries in which we carried out our consumer research, although the fall in the UK (-5 percentage points) was much lower than in other countries. However, fixed-line take-up remains higher in Germany (58 lines per 100 people) than in the UK (54 lines per 100 people). Take-up of fixed-line voice is lowest in France (reflecting the use of VoIP) and in Italy, at 37 per 100 people (reflecting a high proportion of mobile-only households) (Figure 1.15).

In contrast to its relatively low take-up of fixed-line voice, Italy leads in the number of mobile connections, with 152 connections per 100 people, reflecting high levels of multiple pre-pay SIM card use. Other countries where the number of mobile connections exceeds the population are Germany (132 connections per 100 people) and the UK (129 per 100 people).

**Figure 1.15 Fixed-line voice and mobile connections per head, 2009**



Source: IDATE / industry data / Ofcom

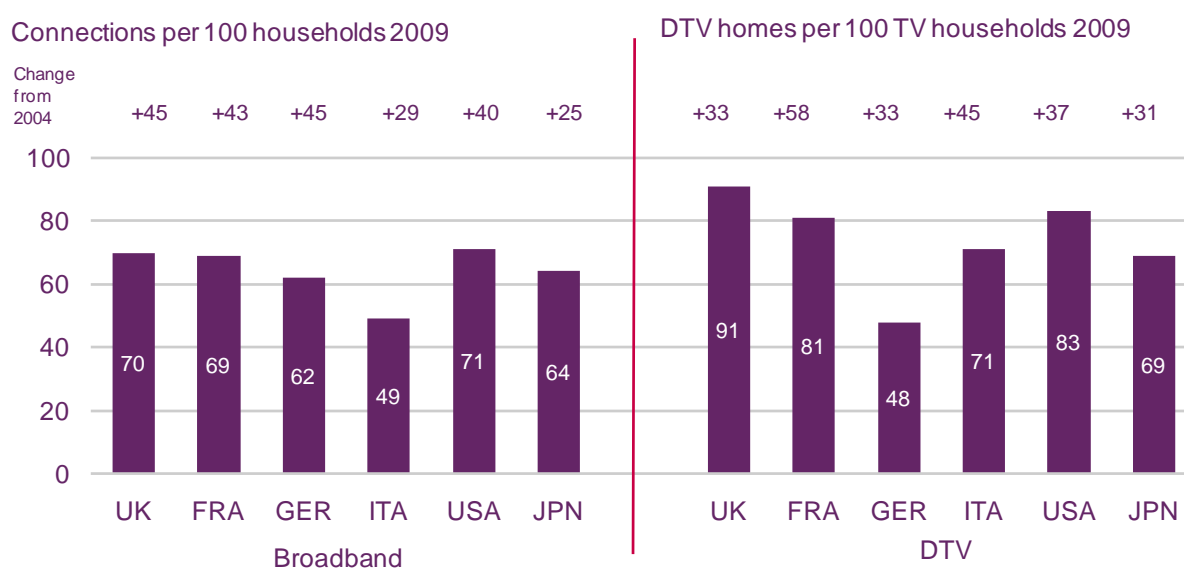
**The US, the UK and France have the highest number of broadband connections per head in the six countries where we carried out our consumer research**

Among the six countries, the number of fixed broadband connections per 100 households is highest in the US (71) with the UK second at 70 and France at 69, as a result of early availability and take-up of DSL and cable services. With 49 connections per 100 households, broadband penetration was lowest in Italy, reflecting a higher proportion of mobile-only households.

**The UK has the highest proportion of digital TV households in the countries where we carried out our consumer research**

The UK had the highest number of digital TV homes, at 91 per 100 TV households, reflecting high levels of DTV penetration in the UK, with the US at 83 and France at 81 (Figure 1.16). The relatively low number of DTV households in Germany (48 per 100 homes) may be partly explained by the high levels of analogue cable take-up, while 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 1.16 Fixed broadband and DTV penetration in 2009**



Source: IDATE / industry data / Ofcom. Note broadband connections include business connections

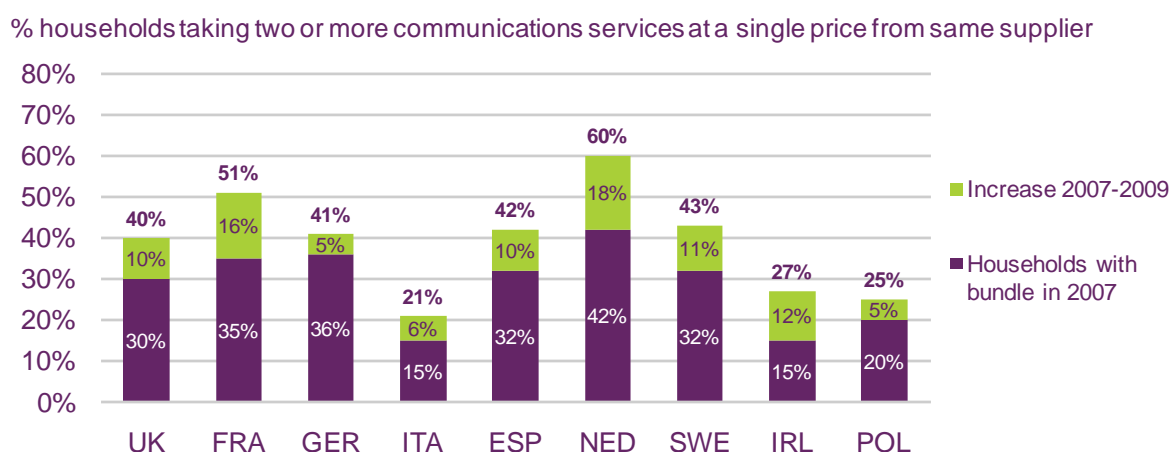
For further information on the penetration of specific communications services across all our comparator countries, please see the relevant section of this report.

### Large variations in take-up of communications ‘bundles’ across Europe

A common trend in the communications industry globally has been the growth of communications ‘bundles’ whereby consumers purchase more than one service from the same supplier, typically at a discounted rate compared to purchasing the services individually. The most common bundles are ‘dual-play’ bundles including fixed voice and broadband and ‘triple-play’ bundles including fixed voice, broadband and pay TV.

Take-up of bundles varies, but has become more common between 2007 and 2009 in all the European countries in our report. In the EU, it is most common in the Netherlands, where 60% of households take at least two communications services from a single supplier for a single price (Figure 1.17). In comparison, only 21% of households in Italy reported taking a bundle. The prevalence of bundling among UK households (40%) was in line with Germany (41%), Spain (42%) and Sweden (43%), but below that of France (51%) which grew 16 percentage points between 2007 and 2009, as operators such as Free, SFR and Orange have marketed broadband, VoIP and IPTV triple-play services. For further details on bundling of broadband with other services, refer to Sections 2 and 6.

**Figure 1.17 Bundling prevalence in selected EU countries**



Source: Eurobarometer e-Communications Household Surveys 293 (2007) and 335 (2009) Survey 293 fieldwork carried out Nov-Dec 2007. Survey 355 fieldwork carried out Nov – Dec 2009.

Q: By bundle we mean a combined package offering more than one communication service from the same provider at a single price. Does your household buy two or more of the following services as part of a bundle?

### 1.2.3 Use of devices and services

#### Watching TV is still the most popular activity

The reasons for differences in levels of use of communications services and devices are complex, and may relate to cultural factors, differences in affordability, and local market structures and communications infrastructures. We used an online survey, so the results may not reflect the behaviours of non-internet users.

In all six countries surveyed, over 90% of internet users watch TV and access the internet via a computer/laptop on at least a weekly basis (Figure 1.18). Those in Germany (91%) and Japan (92%) were less likely than those in the UK to watch TV (94%), while in France (90%) and the US (91%) internet users were less likely to access the internet via a computer/laptop on a weekly basis than those in the UK (94%).

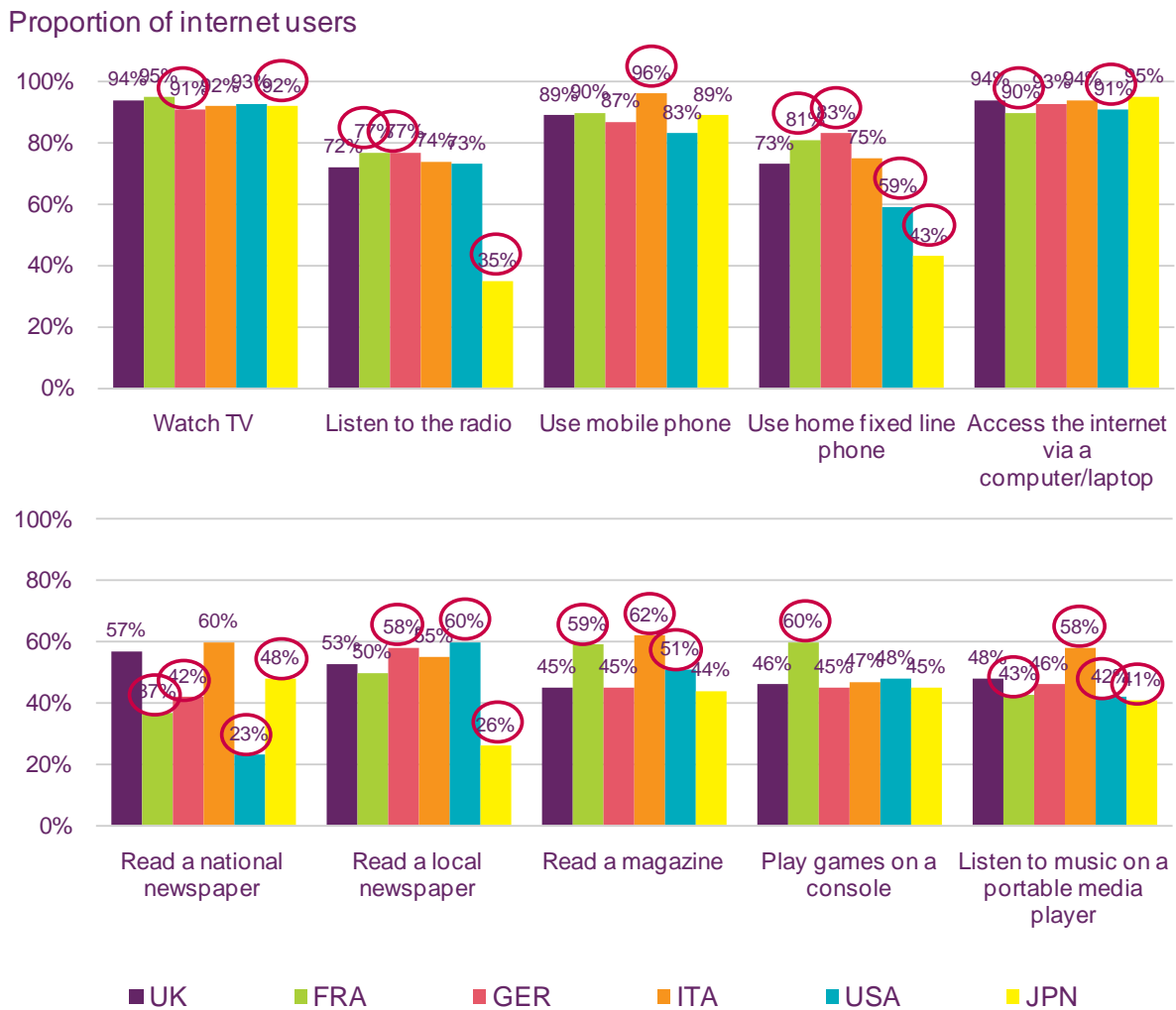
In France and Germany, internet users were more likely than UK participants (72%) to listen to the radio at least once a week. It was least common in Japan, with just 35% respondents saying they listened at least once a week.

Weekly mobile phone use was highest in Italy (96%), compared with 89% in the UK. Internet users in France (81%) and Germany (83%) were more likely to use a fixed-line home phone at least weekly than those in the UK (72%), the US (59%) and Japan (43%).

Differences in national newspaper markets explain some of the differences in readership between countries. In some countries including France, and in particular the US, newspapers are published on a local/regional basis, but include international and national news stories in addition to those about the local/regional area. This differs from markets such as the UK, where the news stories carried by national and regional/local titles tend to be more distinct.

Respondents in France were more likely to play games on a console at least weekly (60%) than those in the UK (46%) while those in Italy were most likely to have listened to music on a portable media player (at 58%, compared to 48% in the UK).

**Figure 1.18 Regular use of selected communications services / media**



Source: Ofcom consumer research, October 2010.

Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

Q5: Which of the following do you regularly do (at least once a week)? Select all that apply

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

### The UK and the US lead in take-up of HD-ready TV sets and DVRs

Our consumer research also demonstrates the wide variation in ownership and use of communications devices between countries.

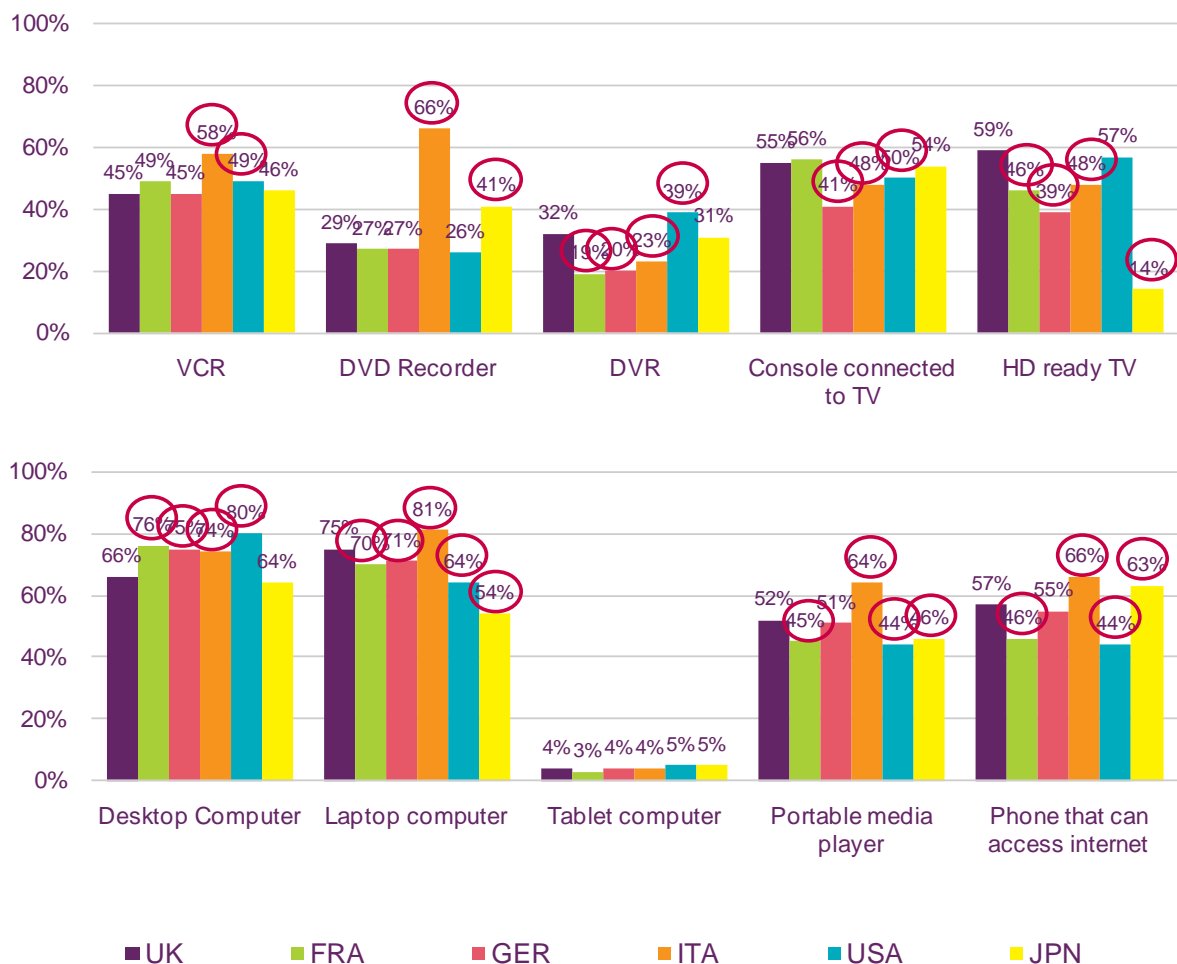
Reported ownership and use of HD-ready TVs was highest in the UK (59%) and the US (57%), and internet users in the UK are also more likely to own DVRs (32%) than in France, Germany and Italy (Figure 1.19). (The results for DVD recorders in Italy and HDTV in Japan may be partly influenced by terminology – for example, in Japan HDTV services are also known as ‘Hi Vision’). UK internet users are less likely to own and use a desktop computer (66%), than those in the US (80%) probably because they are more likely to own and use laptops. In Japan, they are least likely to own and use either a desktop or a laptop. Reported ownership and use of a tablet computer was relatively low, at between 3% and 5% across the survey.

Internet users in Italy were most likely to report owning and using VCRs and DVD recorders, although their DVR ownership was low. (We note that in some countries such as Italy,

consumers may use the same term for 'DVD recorder' as 'DVD player'). They were also most likely to say that they owned and used a mobile phone that can access the internet (66%), ahead of the UK (57%). Respondents in France (46%) and the US (44%) were the least likely to own a phone capable of accessing the internet.

**Figure 1.19 Ownership and use of devices**

Proportion of internet users



Source: Ofcom consumer research October 2010

Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

Q4: Which of the following devices do you own and personally use?

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

For further details on consumer ownership and use of devices and services, please refer to the relevant section of the report.



## 1.2.4 Attitudes towards devices and activities

### TV is more important to UK and US internet users than those in France, Germany, Italy or Japan

In order to gain insight into the relative perceived importance of communications services, we asked internet users in the six countries about which media activity they would miss the most. Figure 1.20 shows that in all countries, with the exception of Japan, respondents mentioned the same top four media activities (internet use on desktop or laptop computer, watching TV, using a mobile phone and listening to the radio).

**Figure 1.20 Summary of most-missed communications activities**

	UK	FRA	GER	ITA	USA	JPN
<b>1<sup>st</sup> most missed</b>	Access internet via desktop/laptop	Access internet via desktop/laptop	Access internet via desktop/laptop	Access internet via desktop/laptop	Access internet via desktop/laptop	Access internet via desktop/laptop
<b>2<sup>nd</sup></b>	Watch TV	Watch TV	Watch TV	Use mobile phone	Watch TV	Use mobile phone
<b>3<sup>rd</sup></b>	Use mobile phone	Use mobile phone	Listen to radio	TV	Use mobile phone	TV
<b>4<sup>th</sup></b>	Listen to radio	Listen to radio	Mobile	Listen to radio	Radio / Console	Read national newspaper

Source: Ofcom consumer research, October 2010. Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

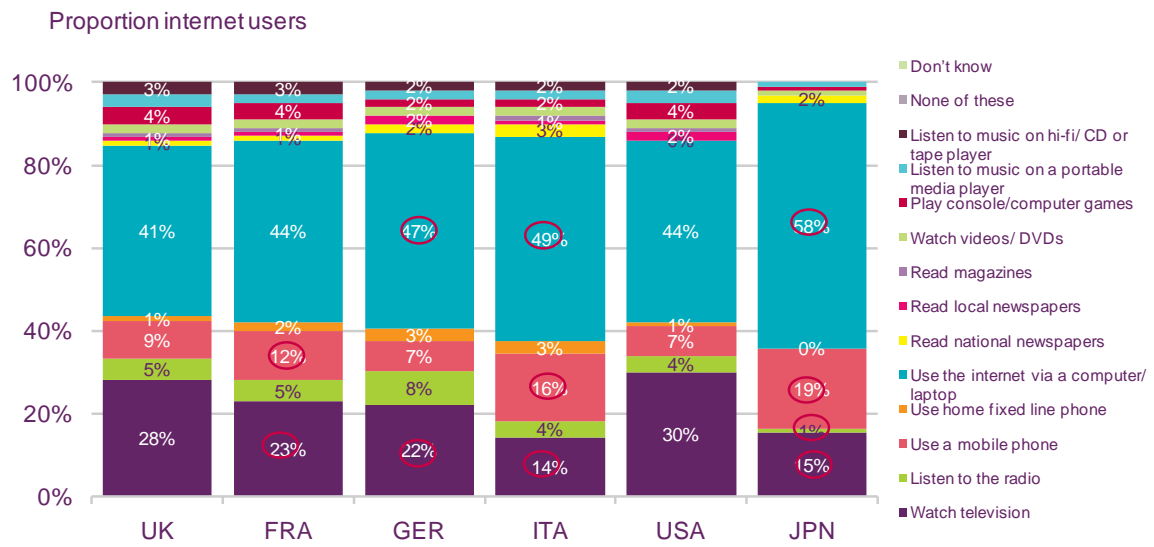
Q6: Which **++one++** of these media activities would you miss doing the most? Please select one

Furthermore, in all countries, respondents (who were all internet users) cited accessing the internet via a computer/laptop as (by far) the activity they would miss the most. This was highest in Japan (58%) and Italy (49%), and lowest in the UK (41%).

Television came a distant second or third (28% in the UK; 30% US, Japan 15%, Italy 14%) Only 1% of Japanese internet users said they would most miss listening to the radio, compared to 5% of UK internet users, in line with much lower reported levels of listening.

Respondents in France (12%), Italy (16%) and Japan (19%) were more likely to miss using a mobile phone than UK internet users (9%). In all countries, those surveyed were less likely to miss fixed-line telephony (1-3% across all countries) than mobile.

**Figure 1.21 Most-missed activity**



Source: Ofcom consumer research, October 2010.

Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

Q6: Which ++one++ of these media activities would you miss doing the most? Please select one

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

# 1.3 Regulation in context

## 1.3.1 Introduction

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

The regulatory environment can be an important influence on developments in communications markets, by introducing constraints on market players to achieve specific public policy goals in the light of policy objectives (an example in the UK and many other countries is the obligation for mobile network operators to meet coverage obligations defined under the terms of their spectrum licences). Equally, market developments and technology/consumer trends determine the evolution of the regulatory framework (for example, in the UK, the growth of LLU has reduced BT's market power in retail landline markets, thereby resulting in Ofcom introducing deregulatory measures, such as removing restrictions preventing BT from bundling services such as broadband and fixed-line voice in a discounted package<sup>5</sup>).

For both 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, but rather an overview of the main regulatory and policy developments over the past two years, since our last *International Communications Market* report in 2008.

## 1.3.2 Regulatory authorities worldwide

### **Market liberalisation drives have prompted rapid growth in the number of regulatory authorities worldwide**

In telecoms, the formation of national regulatory authorities (NRAs) came hand-in-hand with the ending of national monopolies in retail markets, the promotion of competition among suppliers and the formalisation of 'universal service' arrangements to ensure that all citizens continued to receive a basic set of services. In line with commitments made by WTO members in relation to the provision of basic telecoms services, NRAs are required to be independent from industry (in the European Union this was mandatory under the EU framework), and in many cases (but not all) they are also structurally independent from government. From just 12 in 1990, the number of NRAs had grown to 153 by 2009<sup>6</sup>.

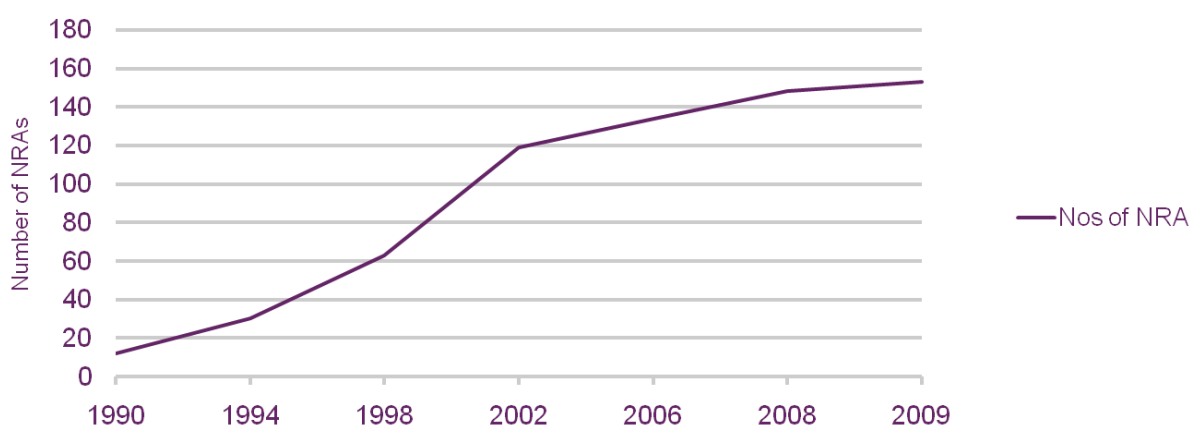
The organisation, structure, powers and governance of these NRAs vary widely. Some are also responsible for other network industries (such as post or energy) and a few, such as Ofcom, have joint media and telecommunications responsibilities. In the main, their principal role in telecoms regulation is setting obligations on service providers, which cover the terms of access to bottleneck facilities (where there are high and enduring barriers to entry), provision for interconnection, and arrangements for universal service. While NRAs generally have duties to promote non-discrimination by dominant operators, in most cases the application of competition law in telecoms is undertaken separately by the national competition authority. Ofcom is one of the few communications regulators with concurrent powers to apply competition law.

---

<sup>5</sup> [http://stakeholders.ofcom.org.uk/consultations/wnmr\\_statement\\_consultation/](http://stakeholders.ofcom.org.uk/consultations/wnmr_statement_consultation/)

<sup>6</sup> [http://www.itu.int/ITU-D/icteye/Reporting/ShowReportFrame.aspx?ReportName=/TREG/SeparateRegulator&ReportFormat=HTML4.0&RP\\_intClassID=1&RP\\_intLanguageID=1&RP\\_intYear=2009](http://www.itu.int/ITU-D/icteye/Reporting/ShowReportFrame.aspx?ReportName=/TREG/SeparateRegulator&ReportFormat=HTML4.0&RP_intClassID=1&RP_intLanguageID=1&RP_intYear=2009)

**Figure 1.22 Growth of telecommunications NRAs: 1990 - 2009**



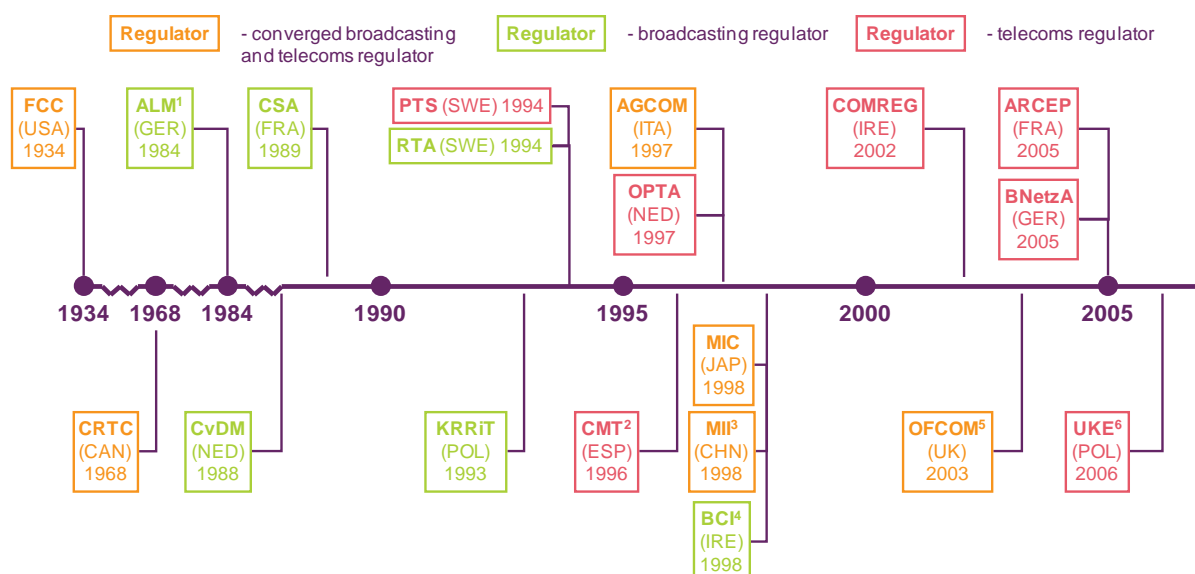
Source: ITU-D GSR Reports

In broadcasting, the forms of regulation and the structure and scope of regulatory authorities is more diverse, reflecting the diverse economic factors and cultural considerations present in different countries. But in general, the creation of regulatory authorities in broadcasting has had less to do with promoting competition and more to do with the recognition of the fundamental democratic and public interest role played by the media in society and the need to ensure quality and cultural diversity under conditions of spectrum scarcity.

In the US, Canada and France, there is a single authority responsible for the regulation of both commercial and public service broadcasting; in other countries (e.g. Germany), there are separate supervisory bodies for public service broadcasters. Equally, while some matters of broadcasting policy require nation-wide regulation, in some countries (such as Spain, Germany and the US), regional and local authorities have some media regulation responsibilities.

Figure 1.23 shows the foundation of the communications sectors' NRAs for the countries included in this report.

**Figure 1.23 Foundation of NRAs**



Notes: (1) In Germany, broadcasting is regulated at the state (Länder) level, and coordinated at the national level through the Association of State Media Authorities (ALM); (2) In Spain the Ministry of Industry, Tourism and Commerce regulates broadcasting with three regional authorities in Catalunya, Navarra and Andalusia; (3) In China broadcasting is regulated through a subsidiary organisation called SARFT, which is accountable to and supervised by the MII; (4) The duties and responsibilities of the Broadcasting Commission of Ireland transferred to the Broadcasting Authority of Ireland, which was established in October 2009 (5) Ofcom inherited the duties that had previously been the responsibility of five regulatory bodies: the Broadcasting Standards Commission, the Independent Television Commission, the Office of Telecommunications (OfTel), the Radio Authority and the Radiocommunications Agency; (6) In Poland the UKE replaced the Office of Telecommunications and Post Regulation, which was established in 2002.

### Converging markets have led to converging regulatory authorities in some countries

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 regulators, this has required an increasingly joined-up approach across the communications sector.

Converged regulators that span both networks and content now exist in many of our comparator countries:

- in the US the Federal Communications Commission (FCC) has been responsible for the communications sector since its inception in 1934;
- Italy was the first European country to set up a converged regulator (AGCOM) in 1997;
- in the UK, Ofcom replaced five previously distinct national regulators with responsibilities spanning telecoms, broadcasting and spectrum, in 2003; and
- among the countries covered in this report, Australia, Canada and Japan also have converged telecoms and broadcasting regulators, as do other countries including Finland, Slovenia, Israel, Switzerland and South Africa, and more recently Malaysia and South Korea.

But '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) - but the challenges of convergence have been met through increased cooperation between these separate authorities. NRAs also have some spectrum responsibilities in some countries including the UK, 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. The Australian converged regulator (ACMA), for example, has for some years operated a co-regulatory system that spans content and internet services. The German and UK regulators are also 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.

### **Global communication services have encouraged the development of regional regulatory networks**

The growth in digital satellite services, e-commerce and internet-delivered content means that regulators are increasingly dealing with companies that are legally established outside their jurisdiction. There has also been a rise in phenomena such as online copyright infringement, malware and spam, which by their nature span national jurisdictions.

Both of these trends require greater co-operation between regulators. This has triggered the creation of regional regulatory networks to deal more effectively with cross-border issues, to share experiences and to develop common regulatory guidelines and principles. Examples of such regional groups include the:

- Body of European Regulators for Electronic Communications (BEREC, formerly the European Regulators Group (ERG));
- Radio Spectrum Policy Group (RSPG);
- European Platform of Regulatory Authorities (EPRA);
- Mediterranean regulators (MEDA);
- Arab Telecommunications Regulators Network (AREGNET);
- Latin America Forum of Telecommunications Regulators (REGULATEL);
- West African Telecommunications Assembly (WATRA);
- Réseau Francophone de Régulation des Télécommunications (FRATEL)
- ASEAN Telecommunications Regulators Council (ATRC);
- Telecommunications Regulators Association of South Africa (TRASA); and the
- East Caribbean Telecommunications Authority (ECTEL).

These regional groups meet to discuss international cooperation and to debate the most important regulatory challenges. For example, BEREC (formerly ERG) and REGULATEL hold regular High Level Seminars on matters of common interest. For the last ten years, the International Telecommunication Union has organised the Global Symposium for Regulators (GSR), gathering NRA representatives from approximately 100 countries, in addition to ICT stakeholders, including the private sector, investors and consumers.

## ...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 becomes increasingly important as the development of common approaches grows around technology standards, spectrum use, international mobile roaming, intellectual property and content standards:

- **The International Telecommunication Union (UN agency)** has three sectors: Radiocommunication (ITU-R), which allocates spectrum at the global level and has been pivotal in harmonising spectrum for applications; Telecommunications (ITU-T), which establishes worldwide standards for telecommunications and ICT equipment and technology – for example, recently beginning work on cloud computing – and studies on related economic and policy issues such as climate change; and Development (ITU-D), which provides capacity-building, documentation, case studies and other assistance in the developing world. The ITU defined the scope of its work, priorities and broad management policies for the next four years at its plenipotentiary conference (PP10) in Guadalajara, Mexico in October 2010. ITU-R and ITU-T will hold subsequent conferences to define their priorities and review the international treaties, the Radio Regulations and the International Telecommunication Regulations respectively, in 2012.
- **The Organisation for Economic Cooperation and Development** - the OECD Information and Computer and Communications Policy (ICCP) Committee collects and publishes relevant data (notably its Communications Outlook) and contributes to the development of the regulatory and economic telecoms policies of its member countries. It does so by producing reports of analysis and policy recommendations, and holding multi-stakeholder events on issues of interest to its 35 member countries. 2010 reports include International Mobile Roaming Services, Geographically Segmented Regulation for Telecommunications, and Developments in Cable Broadband Networks. Examples of workshops are the June 2010 ICCP's Communications Infrastructure and Services policy working group (CISP) on the Role of Internet Intermediaries in Advancing Public Policy Objectives; and the June 2011 ICCP High Level Event: 'Generating Innovation and Growth in the Internet Economy', which will assist policy makers in examining approaches to advance broadband deployment, the policy goals to strengthen growth and best-practice principles for policymaking in the internet economy.
- **The World Trade Organisation** - The Fourth Protocol of the General Agreement on Trade in Services (GATS) sets out the requirements for opening up national telecoms markets to competition. The Basic Telecommunications Agreement sets out a number of liberalisation and regulatory principles that signed-up member states must meet.

### 1.3.3 Implementing the EU regulatory framework for electronic communications

The European Union (EU) has established a common regulatory framework for electronic communications networks and services. This applies across the 27 EU Member States and extends to Norway, Iceland and Liechtenstein, under agreement with the European Economic Area's EFTA Surveillance Authority.

The EU regulatory regime is the result of a long process, the first stage of which culminated in the full liberalisation of the European telecoms sector in 1996. A major review in 2002 resulted in an amended set of rules, often referred to as the 'EU Communications Regulatory Framework'. This Framework establishes the basic principles within which National

Regulatory Authorities (NRAs) authorise the provision of services, mandate access to bottleneck facilities and impose universal service and consumer protection obligations. The Framework also sets standards for data protection in the telecommunications sector.

The Framework is based on a number of important principles:

- Targeted and focused regulation: The Framework aligned sector-specific regulation with the competition law principles for assessing and regulating market dominance, with the aim of preventing over-regulation of markets but ensuring access on fair terms to economic bottlenecks.
- Technology neutrality: Services should be treated in a similar way regardless of the technology or platform over which they are delivered, recognising the reality of convergence.
- Harmonisation: The approach taken across the EU to regulation should be consistent, allowing a Single Market in telecommunications services to develop.

The 2002 Framework contained an inbuilt review mechanism. This review process was completed in autumn 2009 with the adoption of two amending directives: the Citizen's Rights Directive and the Better Regulation Directive.

The amendments, which are due to come into force in May 2011, are intended to raise standards across all 27 Member States, improve the regulatory framework for business and, where possible, remove superfluous regulation. The Framework seeks to enhance competition in the communications sector through further liberalisation of spectrum markets (e.g. promoting spectrum trading) and making express the power of regulators to impose functional separation in certain defined circumstances on incumbent operators where necessary to promote effective competition.

The revised Framework also strengthens consumer protection through new provisions to ensure that consumers are better informed about conditions and tariffs and can more easily switch providers, and clarifying that NRAs may impose obligations on all operators for the provision to disabled users of equivalent access to certain electronic communications services, where appropriate.

In some instances the revised Framework extends obligations on Member States, National Regulatory Authorities (NRAs) and industry, particularly with regard to consumer protection; e-privacy; and the security and resilience of networks and services. It also extends the powers granted to Member States and NRAs, particularly NRA enforcement powers.

### **Launch of the Body of European Regulators for Electronic Communications (BEREC)**

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) took up its duties in January 2010. BEREC will play an important role in the revised EU Regulatory Framework by: promoting co-operation amongst NRAs and between NRAs and the Commission; identifying and disseminating best regulatory practice; and providing advice on regulatory matters to the EU institutions, 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 the measure notified under the terms of Article 7 of the EU Framework Directive.



NRAs have welcomed the transition from the previous collaborative group, the European Regulators Group (ERG), for two main reasons. Firstly, they recognise and welcome the significant responsibility of playing a formal role in the Regulatory Framework; and secondly they consider that the new BEREC Office based in Riga in Latvia, which will become operational in 2011, will add considerable value to their work through the professional and administrative support that it will offer.

### **1.3.4 Monitoring implementation of the EU Audiovisual Media Services Directive (AVMS)**

In Europe there is a common framework for the regulation of television and video-on-demand content (this is not the case for radio). The core regulatory instrument is the Television without Frontiers Directive, first adopted in 1989 and revised and renamed the Audiovisual Media Services (AVMS) Directive in 2007.

The AVMS Directive sets out common minimum content rules for television content, with a focus on protection of minors, incitement to hatred, advertising, and the promotion of European works. It also ensures that pan-European broadcasters only have to comply with a single set of rules, those of the country in which they are established (the country of origin). In 2007, the scope of the Directive was extended to cover video-on-demand (VOD) services, but these were subject to a lighter regulatory regime, on account of the greater choice and control exercised by viewers in an on-demand environment. Rules on television advertising were liberalised and product placement was permitted in certain cases. The Directive also strengthened cooperation procedures between regulatory authorities.

The deadline for transposition into national law was December 2009. For the most part, responsibility for the regulation of VOD services has been given to the broadcasting content regulator. This has been the case in France, Italy, the Netherlands, Poland, Spain and Sweden. In some cases, as in the UK, Ireland or Germany (for the protection of minors) a co-regulatory solution has been favoured.

The vast majority of countries have opted for a general authorisation or registration model, instead of requiring licensing, although a few, such as France and Ireland, do not require any type of registration. Only a few, including the UK, Italy and the Netherlands, will charge an administrative fee.

A significant number of countries have introduced restrictions on the availability of sexually explicit content and other material that may seriously impair minors. Some (e.g. France) are considering additional rules for the promotion of French and European works on VOD services. Finally, most countries have also embraced the opportunity to liberalise some of the current restrictions on television advertising, including the prohibition on product placement (see below).

It is too early to assess the impact of the new rules on the development of VOD services and how effective implementation and enforcement will be in practice. One of the major challenges relates to definitions of what is a 'regulated service'. Regulators and policy makers across Europe already face new challenges as a result of technological developments such as hybrid TV and connected TV, which may call into question the applicability and appropriateness of the existing regulatory framework.

## **Product placement will provide a new source of revenue to broadcasters**

In Europe, there are detailed rules around the regulation of TV advertising. These are set out in the Audiovisual Media Services Directive (see above) and relate to the quantity and frequency of advertising (for example, setting a limit of 12 minutes per hour of spot advertising and teleshopping spots), as well as the content of the advertisements (for example, advertising of tobacco products is prohibited, and there are restrictions on the advertising of alcohol to minors). The Directive also requires that advertising and other commercial communications such as sponsorship or product placement be clearly identified by visual or acoustic means.

One of the key changes introduced by the AVMS Directive has been to allow product placement in certain programmes (cinematographic works, films and series made for audiovisual media services, sports programmes and light entertainment programmes), as long as it is duly identified, editorial independence is maintained and there is no undue prominence. The great majority of EU countries have decided to allow product placement, although the detailed circumstances vary and some countries are still in the process of implementing the rules. Ofcom published consultations on commercial references in June 2010<sup>7</sup>. Most countries have opted to have a common logo (P or PP) and many will require a consumer familiarisation period. In some countries, such as France, Germany and the Netherlands, additional regulatory guidance has been provided to broadcasters.

These changes aim to provide greater commercial flexibility for broadcasters in an increasingly competitive environment. However, the liberalisation of product placement also calls into question the traditionally strict separation between editorial and advertising, and a number of countries are considering the consequences for other forms of advertising such as sponsorship and other commercial references.

Elsewhere, while there is evidence that product placement has become an increasingly preferred choice for advertisers, there have been no radical reviews of product placement in 2009 or 2010. Canada has introduced guidance on advertising for children, including practices around product placement. It already has in place a set of rules ensuring that there is transparency and clear identification.

The US regulator, the FCC, maintains its similar principle of full disclosure regarding the existence of commercial agreements. There has been some mention of a possible review of the current rules, but nothing has emerged as yet.

### **1.3.5 Promoting and protecting competition**

#### **Next-generation networks and access**

Telecoms operators in Europe, Asia and North America have been facing a common challenge of upgrading networks to make use of more efficient technologies, including fibre optic cables, and also migrating from traditional transmission standards designed in the world of the Public Switched Telephony Network (PSTN) to standards used to route data via the internet protocol, or IP).

Many operators have now migrated their backbone networks to next-generation core networks (NGNs), which are capable of providing a full range of electronic communication services. In practice, this has been achieved 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.

---

<sup>7</sup> <http://consumers.ofcom.org.uk/2010/06/ofcom-publishes-product-placement-proposals/>

The introduction of next-generation access (NGA)<sup>8</sup>, typically though not universally based on fibre optic technology, has been more uneven. There has been substantial roll-out of NGA in Asia, particularly in Japan, South Korea, Hong Kong and Singapore, and significant build-out in US urban areas. Roll-out of NGA in Europe has been patchy. In some countries, notably Sweden, municipal investment in fibre has been a significant factor. In others, such as Denmark, investment in fibre by energy companies has led the way. Where incumbents have faced strong competition for broadband internet from cable operators, this also appears to have triggered earlier and more widespread roll-out of fibre in the access network. While the benefits of NGA are widely recognised, the high cost of installing the required fibre in the access network, coupled with the global economic downturn, has slowed, or deterred, investment.

There have been intense debates on the appropriate regulatory approach to next-generation access in many countries over the past few years. There are two key issues:

### **(1) The role of the market and of the state**

- 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 also encouraged infrastructure-based competition, which has been particularly successfully in South Korea where there are now three competing providers of broadband internet with nationwide NGN/ NGA networks. However, other circumstances and characteristics of the Japanese and South Korean markets have also proved very favourable to NGA roll-out.
- In Australia, the government has established a new entity, the National Broadband Network (NBN), in order to construct a nationwide fibre broadband core and access network, which it will lease to other operators to provide retail NGA-based services. Singapore, too, has funded the establishment of a new NGN entity (Next Gen NBN), which has already started offering wholesale NGN/ NGA services.
- Other countries have focused public investments in areas where commercial provision of NGA is unlikely. For example, the US government provided \$7.2 billion of government funds to expand access to, and adoption of, broadband in selected un-served and under-served areas.
- 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.

### **(2) The role of regulation in encouraging investment in NGA while promoting competition between providers**

- The regulatory approach to NGA has been under review in the light of the very significant investments required to roll out NGA. On the one hand, policy-makers want to encourage NGA investment, while on the other they want to encourage competition using the NGA access network. Accordingly, regulation has to balance

---

<sup>8</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

the promotion of competition against the industry need for an appropriate level of return on the investments made in fibre roll-out.

- In the EU, regulators consider that in order to incentivise efficient investment the rate of return has to be adequate to reflect the (potentially greater) risks involved. Some countries have considered a policy of forbearance (whereby operators are not required to offer wholesale access to the network), or partial forbearance (for example, where operators are not required to offer wholesale access for a period of time), but this is not, in principle, permitted under EU law.
- A difficult regulatory issue is the appropriate form of regulated access to the fibre in the access network, in particular the choice between passive and active access. Passive access involves access to physical network elements, such as ducts and fibre. Active access relates to granting access to the electronic equipment that is connected to the physical infrastructure. In the UK, Ofcom has been carrying out work in this area, in line with its Annual Plan priorities.<sup>9</sup> BT is required to offer a new active wholesale service called virtual unbundled local access (VULA). This can be considered as a 'virtual LLU' on BT's NGA network.

## Functional separation

Fixed-line network regulation aims to promote fair competition between providers by ensuring that alternative operators can get access to the incumbent's network. Many countries require the incumbent telecom operator to supply wholesale services to rival operators on a non-discriminatory basis.

'Functional separation' is a remedy that can complement other access measures by placing the monopoly elements in a separate business unit. This allows any wholesale products and associated services to be offered both to the incumbent's own retail businesses and to those of rivals, on equal terms. Functional separation of this kind was first introduced in the UK market in 2005, when Ofcom accepted undertakings under national competition law from BT to place its access and backhaul businesses in a separate business unit (Openreach). An Equality of Access Board with its own secretariat within BT monitors and reports on BT's compliance.

Functional separation is not unique to the UK and is a remedy either implemented or under consideration in other European countries. These include Sweden, Italy, Poland and Greece, although mechanisms vary from those in the UK.

In the context of the revised EU Regulatory Framework, functional separation is a remedy available to NRAs: "in exceptional cases, functional separation may be justified as a remedy where there has been persistent failure to achieve effective non-discrimination in several of the markets concerned, and where there is little or no prospect of infrastructure competition within a reasonable time-frame after recourse to one or more remedies previously considered to be appropriate" (Recital 61, Better Regulation Directive). The Directive empowers the Commission, taking the utmost account of the opinion of BEREC, to take a decision to authorise or prevent an NRA from imposing functional separation as a remedy.

Functional separation has also attracted support outside Europe. In March 2008, a three-way operational separation of Telecom New Zealand was approved by the New Zealand government, with legally enforceable undertakings.

---

<sup>9</sup> <http://stakeholders.ofcom.org.uk/consultations/wla/statement>

## **Mobile termination rates**

The level at which termination rates (TRs) are capped has proven a controversial economic question and has attracted considerable regulatory attention. The divergent levels of TRs across Europe prompted the European Commission to issue a Recommendation in May 2009 that would have the effect of substantially lowering TRs in Europe by changing the way in which regulators calculate the levels of both mobile and fixed termination, by disallowing any allowance for costs which are not directly related to the provision of the termination service, and by removing almost all differences among the fixed operators and among the mobile operators. The Commission proposed December 2012 as the date for compliance with the Regulation. On the basis of decisions following the Recommendation, taken by a small number of NRAs so far, average rates seem likely to fall by well over 50% from the current level of around 6 Eurocents per minute.

Outside the EU, a number of jurisdictions have interconnection regimes that are not based on termination charges. Instead, a pricing scheme for the two-way interconnection of two or more networks operates under a regime in which the reciprocal call termination charge is zero and each network operator agrees to terminate calls from the other network at no charge. This form of interconnection pricing is sometimes known as bill and keep (B&K) and variants of it are used in a number of territories, including the US, Canada and Hong Kong. It has been studied by European regulators as a possible long-term model for Europe; transition to it would be easier once rates are much lower than at present.

## **International mobile roaming**

In 2009, an EU Regulation entered into force amending the 2007 EU Roaming Regulation. Like the 2007 Regulation, it aims to ensure that consumers travelling in the EU are not charged excessive prices. The scope of regulation has been extended to cover roaming SMS and data services, as well as voice. 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 over a 12-month period for voice, SMS and data services respectively. 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 enable 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 European Commission is required to review the functioning of the Regulation and, following public consultation, to report to the European Parliament and the Council by the end of June 2011. In doing so, the Commission shall have regard to independent advice from BEREC, particularly on regulatory methods other than price regulation, and shall make recommendations on the future of regulation when the current law expires in June 2012.

Other regional and international organisations are considering the level of roaming prices, pricing transparency, and/or possible regulatory solutions. These include the Arab Regulators Network (AREGNET), the OECD Working Party on Communication Infrastructures and Services Policy (CISP) and the ITU. There are also examples of bilateral approaches; for example, the Singaporean and Malaysian governments have announced a

mutual agreement to bring down roaming prices between their two countries, and in July 2010 the Australian and New Zealand governments issued a joint discussion paper about mobile roaming between their countries.

### **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 intensified and spread internationally throughout 2009 and 2010. Overall, regulatory discussions have centred on questions of discrimination and transparency. It is worth noting, however, that the wider debate covers political, industrial and social policy issues.

In Europe, the review of the Regulatory Framework identified net neutrality as a policy objective, in that end-users should be able to access and distribute information or run applications and services of their choice. The revised Framework therefore includes provisions intended to prevent the degradation of services and the hindering or slowing of traffic over networks. The revisions, once implemented, will introduce requirements for greater transparency and allow NRAs to impose a 'minimum quality of service on the internet'.

In June 2010, the European Commission published a consultation document on "the open internet and net neutrality in Europe".<sup>10</sup> The Commission is due to produce a report on the current state of play to the European Parliament before the end of 2010, after a Net Neutrality Summit in November.

The Body of European Regulators for Electronic Communications (BEREC) response to the Commission's consultation stated that, at present, it would be premature to consider further intervention with respect to net neutrality at an EU level, but recognised that the openness of the internet and the evolution of the market over time should be monitored.

Individual NRAs around the world have also started work on net neutrality issues:

**Sweden:** In a March 2009 memorandum compiled at the request of the Swedish government, PTS stated that a precautionary principle must be applied when intervening, and that it was necessary to consider the impact of intervention at one level of the value chain on the other levels.

**Norway:** In February 2009, NPT and stakeholders reached a voluntary agreement on guidelines for net neutrality based on three principles: transparency, freedom of use and non-discrimination. Following an assessment by NPT, these guidelines were found to be applicable to mobile broadband as well.

**UK:** In June 2010, Ofcom published a discussion paper on internet traffic management, intended to open up a discussion on how any existing and future powers might be used to address traffic management concerns and what stance Ofcom should take on any potential anti-competitive discrimination. It also raised questions about transparency and consumers' awareness of their broadband service's traffic management policy.

**France:** In September 2010, ARCEP issued a set of ten Recommendations aiming to promote a lasting state of equilibrium, neutrality and quality for all networks, and particularly the internet. The Recommendations recognise that ISPs can employ traffic management

---

<sup>10</sup> See European Commission, "Questionnaire for the Public Consultation on the Open Internet and Net Neutrality in Europe." at:

[http://ec.europa.eu/information\\_society/policy/ecomms/doc/library/public\\_consult/net\\_neutrality/nn\\_questionnaire.pdf](http://ec.europa.eu/information_society/policy/ecomms/doc/library/public_consult/net_neutrality/nn_questionnaire.pdf)



mechanisms for ensuring access to the internet, as long as they comply with the general principles of relevance, proportionality, efficiency, non-discrimination between parties, and transparency. ARCEP has called on ISPs to work with consumer representatives to define common systems for the provision of consumer information and to identify and qualify the different types of traffic management practices. In the meantime, ARCEP will monitor the evolution of the market and work with industry and consumer groups to define QoS parameters and indicators.

A number of other EU regulators (e.g. ANACOM in Portugal, CMT in Spain and OPTA in the Netherlands) have held workshops on net neutrality, with a specific focus on the challenges faced by NRAs and the appropriateness of current regulatory tools. Overall, there is wide recognition of the importance of transparency as a necessary (though in some cases not sufficient) condition, and the legitimacy of certain traffic management practices.

In the United States, the debate on net neutrality has continued, with calls for Congress to legislate to create a clear legal basis for broadband regulation. In September 2009 the FCC announced proceedings to consider formally adopting the 'Four Freedoms' internet policy principles through which the FCC seeks to enforce 'net neutrality' requirements on providers of broadband internet access. These are: freedom to access lawful content; freedom to use applications; freedom to attach personal devices that do not harm the network; freedom to obtain service plan information entitlement to competition, and also included two further principles; on non-discrimination and on transparency. Following a period of consultation, the FCC issued, in September 2010, a call for additional comment on two specific issues: (i) specialised (managed) services (e.g. cable TV provided over a broadband internet connection) and (ii) the application of net neutrality principles to wireless. The FCC also recommended general policy approaches around the following six areas: definitional clarity, truth in advertising, disclosure, non-exclusivity in specialised services, limited specialised service offerings, and guaranteed capacity for broadband internet access service. The comment period closed at the beginning of October.

### **1.3.6 Empowering and protecting consumers**

#### **USO - the debate moves from fixed to mobile and broadband**

'Universal service' is the principle that a defined minimum set of communications services (originally postal and telephony services, and progressively other services such as internet access) should be available to all end-users at an affordable price, regardless of their geographic location.

In Europe, as part of the review of the EU Regulatory Framework, the universal service obligation was amended to allow for (but not require) the extension of the scope of the obligation to cover broadband.

Following this, the European Commission issued a consultation on USO in March 2010 looking at the principles, design and funding of USO. This aimed to assess what role USO could play in advancing the Digital Agenda targets of basic broadband (DSL) for 100% of EU citizens by 2013; fast broadband (30Mbit/s or more) for all citizens by 2020; and ultra-fast broadband (above 100Mbit/s) for 50% of European households by 2020. Some Member States (Finland, Spain and Sweden) have already, or are planning to, extend the USO obligation to cover broadband, while in the UK for example, the government has opted to encourage universal broadband availability but has not introduced an obligation.

In the US, the US National Broadband Plan proposes an extensive reform of the existing universal service fund, to focus on supporting the provision of a minimum requirement of

affordable broadband access, to an actual download speed of 4Mbit/s, in un-served geographic areas where there is no business sector for such provision.

### **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. A major challenge is the fight against online copyright infringement.

At EU level, the European Commission has various initiatives in this area. The 2010 Digital Agenda contains an action for the Commission, on the basis of a review of the existing civil Directive on the enforcement of intellectual property rights (IPR) and extensive stakeholder dialogue, to report by 2012 “on the need for additional measures to reinforce the protection against persistent violations of intellectual property rights in the online environment, consistent with the guarantees provided in the Telecoms Framework and fundamental rights on data protection and privacy”.

Since 2009, the Commission has chaired a stakeholder round table, mainly between rights holders and ISPs, to look at the EU legal framework, the scope for voluntary solutions, new business models, and technical enforcement measures. It also plans to review the civil IPR Enforcement Directive in 2010-2011, covering how to secure evidence of online copyright infringement and how to deal with repeat infringers and data protection, and is expected to propose a criminal IPR Enforcement Directive.

In 2010, the European Parliament adopted an own-initiative report by Maria Gallo MEP, calling on the Commission to adopt stricter sanctions for online copyright infringement, to propose a comprehensive IPR strategy, and emphasising the role of public education and stakeholder dialogue.

At the multilateral level, an Anti-Counterfeiting Trade Agreement (ACTA) is being negotiated by the EU, the US, Australia, Canada, Japan, Korea, Mexico, Morocco, New Zealand, Singapore and Switzerland. The treaty seeks to define common enforcement standards and increase international cooperation.

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

**UK:** the Digital Economy Act 2010 requires Ofcom to approve an industry Code, or to make a Code, to regulate the process of notifying subscribers where they, or someone using their internet connection, appear to have infringed copyright.

**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). 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.

**Spain:** the 2010 Sustainable Economy Bill would create an administrative authority (‘Intellectual Property Commission’ within the Ministry of Culture) empowered to order the

---

<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



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 law is expected to be adopted by the Parliament at the end of 2010 or early 2011.

**New Zealand:** a Bill amending the Copyright Act 1994 was introduced to parliament in February 2010. This would establish a 'three notice regime', under which rights holders with evidence of infringements would ask ISPs to send alleged infringers up to two notifications. Where infringement continued after the second notification, the rights holder could seek a compensation award of up to \$15,000 at the Copyright Tribunal.

**Australia:** the Communications Minister has proposed that rights holders and ISPs agree a Code of Conduct on dealing with cases of online copyright infringement. (The monitoring of infringement on peer-to-peer file sharing sites had previously been considered within a wider internet filtering trial, aimed at preventing child abuse images, but was ruled out in 2009.)

### **Child online protection**

Child online protection continues to move higher up the international policy-making and political agenda and is involving, increasingly, the input of communications regulators.<sup>12</sup>

There are different views of how protection of minors/online child protection can best be achieved. 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. In other jurisdictions, greater emphasis is placed on the development of 'media literacy'<sup>13</sup> as a tool for children and parents to be self-empowered in avoiding 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 asked to play in preventing or detecting harmful activities. There does not appear to be, as yet, a consistent pattern emerging in approaches to protection or indeed enforcement measures internationally. Instead, emphasis is placed on better understanding user needs, in particular young consumers online and their behaviour, so as to better inform any further policy-making or regulation in this area.

Though there is no single 'centre of gravity' or clearly assigned responsible international body for online child protection policy, several important protocols, conventions and guidelines related to child protection have emerged in the past 12 months. These have, for the most part, taken the form of guidelines for self-regulation rather than legally binding measures. Some recent examples include:

- The European Commission continues to pursue approaches to protecting children online through a number of measures including research, education, media literacy and programmes such as Safer Use of the Internet. In recent months the challenge

---

<sup>12</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. In addition to the existing public interest challenges in protecting young viewers, some new policy challenges are emerging in approaches to protection of minors for the non-broadcast regulated content available online.

<sup>13</sup> Media literacy is not easy to define but generally refers to the capacity to use and understand communications. Ofcom defines media literacy as: 'the ability to access, understand and create communications in a variety of contexts'.

of child internet safety has gained further prominence as the Commission promotes greater take-up and cross-border provision of online services through its Digital Agenda.

- The ITU continues to implement its Child Online Protocol initiative.
- The Internet Governance Forum (IGF) in September 2010 covered themes relating to 'young citizens, social networking and privacy'.

Trade associations and industry players representing the mobile, fixed and premium content sectors are increasingly lending their weight to international campaigns and agencies that seek to make the online world safer for children and their families. They identify and promote best practices, tools and methods; for example, the work and scope of the Family Online Safety Institute (FOSI).

- National regulatory authorities are starting to play a more active and strategic role in this field, for example:
  - The US National Broadband Plan 2010 includes substantial proposals for facilitating and coordinating child online safety and literacy work. The FCC has launched Parents' Place, a new website that provides parents with tools and information for safer use of content online, as well as an online forum to facilitate debate about protection of children in the digital space. More broadly, it has consulted extensively on filtering techniques and blocking technologies and practices.
  - The Nordic regulators 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.
  - The Italian regulator Agcom is currently working on a White Paper on the relationship between minors and the media.
  - Latin American regulators, including Brazil and Argentina, have been working with peers to create a framework for strategies on child protection in Latin America.

### **1.3.7 International spectrum policy**

#### **The international dimension to spectrum management**

The use of spectrum needs to be co-ordinated internationally and the development of a stable international framework to underpin spectrum awards programmes is an ongoing major work area for Ofcom in 2010-11. For more than a hundred years, international co-ordination has been required to avoid harmful interference, as radio waves do not respect international borders. International co-ordination is also required so that manufacturers can benefit from economies of scale, allowing them to produce equipment for regional or global markets, leading to lower prices for consumers. Consumers also want interoperability so that they can use their wireless devices – such as mobile phones – wherever they travel around the world. Such interoperability is possible because the spectrum bands have been harmonised globally and hence equipment manufacturers are able to build devices which work across given frequencies.

The body responsible for co-ordinating spectrum use at the global level is the International Telecommunication Union (ITU). Specifically this is done through World Radio Conferences (WRCs) which meet approximately every four years to update the Radio Regulations. The Radio Regulations allocate the usable spectrum to different types of service in each of three regions into which the world has been divided (Europe/Middle East/Africa; Asia/Pacific; and the Americas). The next time that the Radio Regulations will be updated will be at WRC-12 which is taking place from 23 January to 17 February 2012 in Geneva.

European preparation for WRCs is co-ordinated through the European Conference of Post and Telecoms (CEPT) which consists of 48 Member countries including all 27 EU Member States. As well as co-ordinating European positions for WRCs, the CEPT also undertakes detailed technical work to co-ordinate the technical conditions under which spectrum is made available across the CEPT region. In essence the CEPT builds on the Radio Regulations, which provide the generic allocations, providing more detailed criteria on spectrum use, such as channel plans, in order to facilitate European harmonisation.

In recent years, in addition to the CEPT, the European Commission, as well as the European Parliament, has become increasingly interested in spectrum matters. The European Commission works very closely with the CEPT and often their respective decisions are closely co-ordinated. However, whereas the Decisions adopted by the CEPT are non-mandatory, EU Decisions are legally binding on the 27 Member States of the European Union.

The international dimension of spectrum management is becoming more important as demand for scarce spectrum resource grows and the communications sector and other industries which are dependent upon access to spectrum become ever more global.

### **There is international interest in the use of spectrum to provide new wireless communications services**

Spectrum is the raw material through which a massive range of wireless services are provided: in the UK alone there are approximately 250,000 users licensed to provide wireless services. These include broadcasting services, mobile telephony, defence services, medical and scientific applications, satellite technologies, transport and logistics applications and many others. However, one particular issue that is currently the focus of much attention in the UK, across the rest of Europe and globally is the use of spectrum to provide wireless broadband services. Work to prepare for the release of spectrum for mobile broadband is a priority in Ofcom's 2010-11 Annual Plan.

Across Europe demand for mobile services has increased massively since the first public mobile licences were granted approximately 30 years ago. The last few years have seen particularly rapid growth, in part as a consequence of the rapid take-up of smart phones and 3G datacards/dongles. As a result more spectrum is required to be made available for mobile broadband.

On 20 September 2010 the European Commission published its broadband strategy. This included proposals for a European Radio Spectrum Policy Programme (RSPP) which sets out policy orientations and objectives for the strategic planning and harmonisation of spectrum use across Europe. The five-year programme supports the Europe 2020 Strategy and the Digital Agenda for Europe and seeks to promote flexible and efficient use of spectrum and EU policies. Two bands in particular are identified in the RSPP as being critical to promote the availability of mobile broadband across Europe: 800 MHz and 2.6 GHz.

The 800 MHz spectrum (specifically 790-862 MHz) has been freed up in a number of EU Member States as a result of the transition from analogue to digital terrestrial broadcasting (this spectrum is often referred to as the 'digital dividend'). The transition to digital broadcasting is now complete in a number of countries (including Finland, the Netherlands, Sweden, Germany, Denmark, Norway and Switzerland) and the process is well under way in other countries including the UK.

It is anticipated that the majority of European countries will have completed digital switchover by 2012, as shown in Figure 1.24.

**Figure 1.24 Digital switchover completion dates**

Completed digital switchover before 2010	DSO in 2010	DSO in 2011	DSO in 2012	2013 or later
Finland Netherlands Sweden Switzerland Germany Denmark Norway	Spain Malta Austria Estonia Belgium	Slovenia France Czech Republic Hungary Cyprus Latvia	UK Italy Lithuania Portugal Slovakia Ireland Bulgaria	Poland Greece Russia

Source: Ofcom / NRAs

In May 2010 the European Commission adopted a Decision requiring all Member States that are clearing 790-862 MHz to do so according to common technical conditions. This will give operators and manufacturers certainty around the equipment and services that can be offered in those countries, making the 800 MHz band available for electronic communications services. The UK has committed to make the 790-862 MHz band available for electronic communications services and work in this area forms one of our 2010-11 Annual Plan priorities. Other countries that have committed to make the 790-862 MHz band available for electronic communications services include France, Germany, Spain, Sweden, Denmark, Finland, Austria, Ireland, Norway and Switzerland, and it is expected that others will follow.

Of the 27 EU Member States, only Germany has so far awarded the 790-862 MHz band. It did this through an auction held in May 2010 which combined around 350 MHz of spectrum at 800 MHz, 1.8 GHz, 2.0 GHz and 2.6 GHz. The auction raised 4.38 billion Euro with the spectrum being acquired by four German mobile operators (Vodafone, Telefonica, T-Mobile and E-Plus).

Apart from 800 MHz, the other band that is the focus of much interest for mobile broadband across Europe is the 2.6 GHz band (2500 MHz – 2690 MHz). Many mobile operators across Europe seek a combination of lower frequency (typically sub-1 GHz) and higher frequency spectrum, the lower frequencies being good for providing coverage and the higher frequencies important for capacity. As with 800 MHz, the 2.6 GHz is the subject of an EU Decision which determines the technical conditions under which the spectrum must be made available. A number of European countries have already awarded the 2.6 GHz band including Germany, Austria, Denmark, Netherlands, Finland and Sweden, in line with the requirements of the EU Decision.

## Developments in the US and elsewhere outside Europe

In the US the analogue terrestrial TV signal was switched off in June 2009. Unlike in the UK, where the switchover to digital TV is being completed over a four-year period on a region-by-region basis, the US completed switchover across the whole country at a single point in time. Prior to this, in March 2008, the US Federal Communications Commission (FCC) awarded the 700 MHz band (698 – 806 MHz) which is the spectrum that was to become available as a result of digital switchover. This is the equivalent of the 800 MHz band which is being made available across Europe, the difference in frequencies resulting from the different allocations to broadcasting services in different regions of the world. The US auction of the 700 MHz band raised \$19.6bn.

Despite the award of the 700 MHz band, and as well as other spectrum being made available, some groups have argued that still more spectrum is required in the US for mobile broadband services. Earlier this year, the FCC published a National Broadband Plan (NBP) for the US which proposes a goal of having 100 million homes subscribed at 100Mbps by 2020. One of the planks upon which this goal rests is the proposal to make 500 MHz of spectrum available over the next ten years. Spectrum managers in the US (FCC and NTIA) have been tasked with finding this additional spectrum, which is expected to come from both the private and public sector.

Another important feature of the national broadband plan is the aim to provide greater transparency over the use of spectrum in the US. A key element of this is the 'spectrum dashboard' which seeks to provide information on how spectrum is being used, who owns spectrum licences and what spectrum is available in different parts of the US.<sup>14</sup>

Other countries are also taking action to release new spectrum, especially for mobile broadband. In May and June 2010 India held two auctions, of 1.9 GHz and 2.3 GHz respectively, which between them raised \$20 billion. In both cases the spectrum is likely to be used to provide mobile voice and data services; in the case of the 2.3 GHz spectrum the focus is on broadband wireless access services. Other spectrum auctions in 2010 have taken place in Mexico and Columbia.

In Japan, (as in many other countries) the focus of attention is increasingly on LTE (Long Term Evolution) or 4G services. In June NTT DoCoMo stated that it had begun trial operation of its LTE network with a view to a full-scale launch, possibly at the end of 2010. DoCoMo said that it expected 37.5 Mbps downlinks and 12.5 Mbps uplinks, later rising to 75 Mbps downlinks and 25 Mbps uplinks, in selected test areas. In South Korea SK Telecom has been testing LTE this year and has said that it will switch on its first commercial LTE network in Seoul in 2011. It aims to complete nationwide roll-out of its LTE network by 2013.

---

<sup>14</sup> The spectrum dashboard can be found at: <http://reboot.fcc.gov/reform/systems/spectrum-dashboard>



# 1.4 Globalising communications markets

## Introduction

This section briefly explores international links within the communications sector. International regulatory and policy co-ordination has become increasingly important at a time when more communications goods and services are being supplied and consumed across international borders. This presents a range of opportunities for consumers, suppliers and investors, including:

- an increased choice of goods and services;
- the increased ability to use the same communications devices and services as people travel between countries;
- lower prices for consumers due to scale economies in design and production on a global scale; and
- opportunities for investors to find new sources of growth

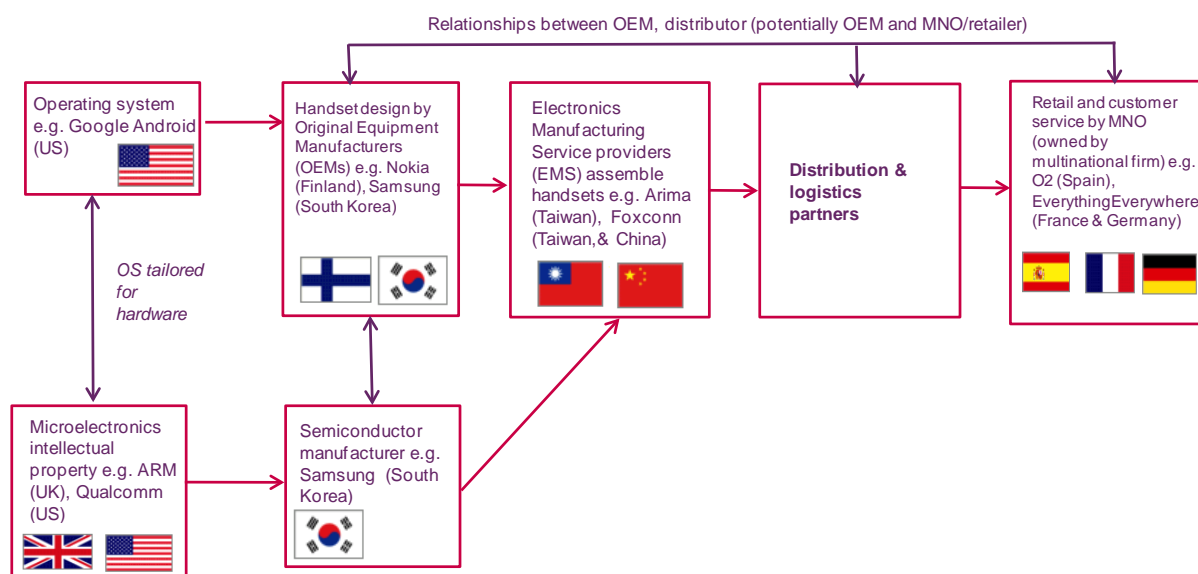
Globalisation in the communications sector can take many forms. Here we briefly take a look at three aspects: the internationalisation of supply chains for communications hardware, the export (and import) of content, and the multinational activities of communications companies.

### **Designed in the UK, components from Japan, assembled in China and used around the world...**

International supply chains in the communications sector can be highly complex. They range from the import of goods or services produced in another country, to the design of devices and equipment using components produced in one country with final assembly taking place in another, before export around the world.

A typical example is ARM, a UK company based in Cambridge which owns the intellectual property at the heart of many smartphones and tablet processors. ARM licenses its designs to chip designers and manufacturers, whose products may be assembled by third-party handset designers in China alongside components from Japan or South Korea.

**Figure 1.25 Generic mobile handset supply chain**



Source: Ofcom Note: Analysis is indicative – firms may operate in multiple countries and the exact role played by firm in individual supply chains will vary between firms.

These global development, production and supply systems enable devices to be produced and distributed on a global scale. The benefits are maximised when devices can take advantage of international interoperability, which requires global standards.

### Growing international markets for TV programmes

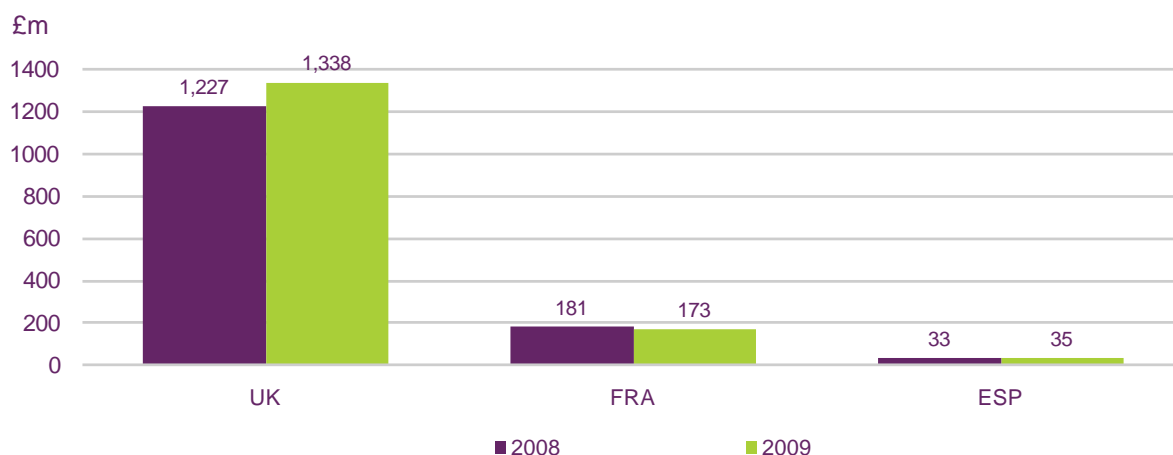
International trade in television programmes and formats has a long history. BBC Enterprises was set up in 1986 to manage the corporation's commercial activities, and was re-structured in 1994 as BBC Worldwide, with the name recognising the market outside the UK. Similarly, France Televisions Distribution International has been marketing French programmes since 1992.

International trade in finished TV programmes and programme formats enables rights holders to monetise their content (potentially acting as a source of funding for domestically-originated content). Major international TV sales fairs at which distributors and producers meet buyers include MIPTV, held annually in Cannes, and the Hong Kong International Film and TV market. For broadcasters, the international trade in TV programmes and formats gives access to a wider pool of content than they could access from domestic sources alone. This is of particular importance for countries with relatively small domestic audio-visual markets.

The UK television export market was worth over £1.3bn in 2009, more than eight times the size of the French export market and 38 times the size of the Spanish export market (Figure 1.26). Despite the economic downturn, the value of the UK export market increased by 9% between 2008 and 2009 (the Spanish market also grew, by 6.8%, while the French market fell by 4.4%).



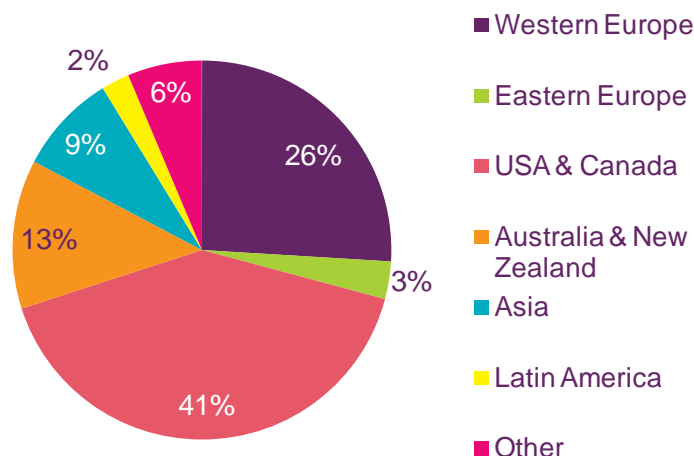
**Figure 1.26 TV programme export revenues, 2008-2009**



Source: Ofcom analysis of Screen Digest/PACT/UKTI/TRP data. NB: Data collection methodologies and item definitions may vary between countries; cross-country comparisons should be regarded as indicative only.

Part of the explanation for the size of the UK TV programme export market compared to the other two countries lies in its ability to export programmes to the predominantly English-language markets of the US, Canada, Australia and New Zealand (which collectively accounted for 54% of revenue) (Figure 1.27). However, UK programmes and formats were sold all around the world; 29% of revenue came from Europe and 2% from Latin America.

**Figure 1.27 UK TV programme export revenues, by geography, 2009**



Source: Pact/UKTI/TRP, Ofcom analysis

Broadcasters and producers are continuing to develop new markets for programmes and formats, particularly targeting the BRIC countries (Brazil, Russia, India and China). In the UK, BBC Worldwide announced its BBC Showcase China in Beijing in 2010, building upon the BBC Showcase Latin America event, held each year in Brazil. In January 2010, ITV Studios (the production arm of ITV plc) announced a format deal with Hunan TV, a Chinese broadcaster. And producers in the BRIC countries are also seeking opportunities to export

their own content: in 2010 Brazil's Globo reported that it had sold its \$50m telenovela *India: a Love Story* in at least 100 countries.

While programme and format sales are an established way for rights owners to monetise their intellectual property outside their home market, public and commercial broadcasters have continued to launch new 'international' channels. In 2009, the BBC World Service launched a Farsi language TV service, building on its portfolio of online and broadcast services in 32 languages, and Russia's international state broadcaster launched a Spanish-language version of its international news channel to complement its existing English-language channel. Commercial broadcasters are also seeking to tap new audiences through international versions of channels that target diasporas, often included as extra options within pay-TV bouquets, such as Globo Internacional (priced at \$19.99/month for Verizon's FiOS TV customers in the US).

New international co-operative efforts are also emerging. In the production sector, international co-productions between producers in different countries can be used to share risk, and to fund larger productions that might be impossible in the absence of such agreements. For example, in 2010 the first Chinese-Russian co-production was agreed between the Beijing Zhongbei TV Arts Center and Russian broadcaster REN TV.

Historically, in many countries the TV production sector has been subject to less regulation on ownership than has broadcasting. Major production groups based in the EU such as Endemol and RTL's Freemantle are able to operate on a global scale. This global presence is enabling production firms to develop global formats (Endemol's *Big Brother* has been shown more than 70 countries) and seek production efficiencies; for example, Endemol uses a set in Argentina for multiple national versions of the TV game show *Wipeout*.

While the television market is globalising, the increasing take-up of internet access (in particular broadband) on both fixed and mobile devices has lowered the barriers to consumers accessing content from other countries, although rights considerations mean that some content remains accessible only to those within a particular country.

### **Multinational operations in the communications sector**

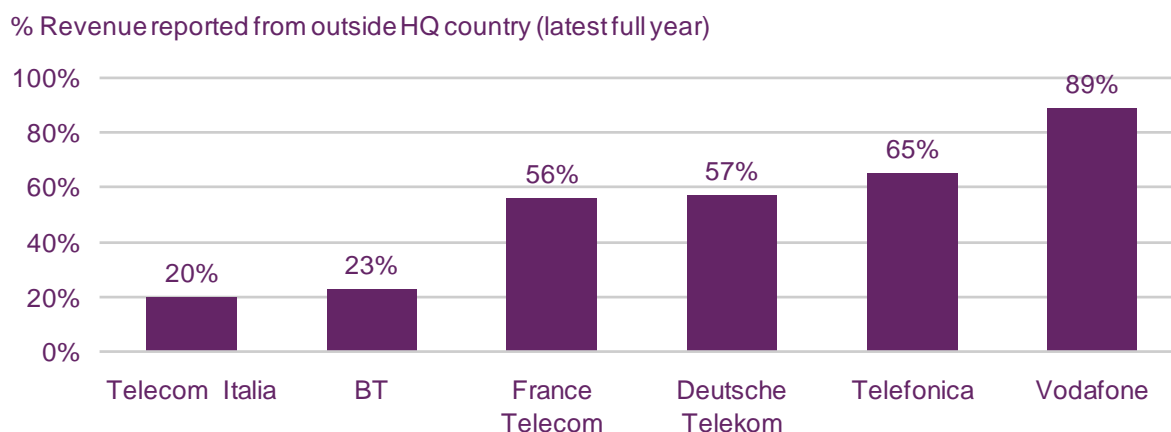
A deeper type of globalisation occurs when a firm based in one country provides services in another through a local presence. The strategic nature of the communications sector means that some countries place restrictions on foreign ownership of companies operating in the telecoms and broadcasting space. Some companies focus on particular global regions, potentially those which share certain linguistic or political similarities to the 'home' market (for example, Spain's Telefonica in Latin America, and France's Canal+ in North Africa). In other cases, international expansion may centre on neighbouring countries (for example, Nordic operators investing in Russian MNOs), or markets with similar economic characteristics (which has resulted in interest in M&A activity by some operators based within African, Middle Eastern and South Asian markets).

In telecoms markets international expansion has provided firms with growth opportunities, with particular interest among EU-based companies in the rapidly expanding BRIC economies. Positive investor sentiment, encouraged by economic growth, a large domestic market, and increased take-up has played a role in China Mobile becoming the most valuable telecoms company by market capitalisation and it has itself invested overseas, purchasing Pakistan operator Paktel in 2007.

The incumbent operators in France, Germany and Spain all now generate more revenue from overseas markets than from their own home markets (Figure 1.28). However, it is notable that with the exception of BT (whose international business, like that of the US

incumbents, is primarily focused on corporate markets rather than residential consumers) the majority of the non-domestic revenues from these firms come from predominantly mobile businesses, such as Telefonica's Movistar and Vivo operations in Latin America and Deutsche Telekom's T-Mobile operations in the US and Europe. It has generally been more difficult for operators to win share of fixed-line revenues in overseas markets due to the advantage in infrastructure ownership enjoyed by national incumbents. To address this, many countries (including all EU members) require incumbents to provide new entrants with access to their networks.

**Figure 1.28 Revenue, by geography, of selected EU-headquartered telecoms companies**



*Source: Company reports, Ofcom analysis and calculations. Note: Comparisons should be regarded as indicative, given potential differences in accounting treatments. Includes only revenue reported against a specific geographic segment*

Multinational operations in the broadcasting and media sectors tend to be on a smaller scale than in the telecoms sector, partly because of restrictions on the foreign ownership of the main terrestrial broadcasters. In some countries with these restrictions, foreign investment may be allowed in pay-TV services. Restrictions vary considerably between countries. Luxembourg-based RTL (which exited the UK channel business through its sale of Five in July 2010) has stakes in free-to-air terrestrial TV channels and radio stations in ten European countries, while several of the major US studios, including Disney and Viacom, have significant digital channel operations in Europe, either directly or through joint ventures with local operators.

Brazil's communications sector demonstrates the full range of foreign ownership arrangements. The three largest Brazilian mobile operators are controlled by firms based outside Brazil, while the largest fixed-line operator, Oi, is Brazilian-owned. Terrestrial television and radio is controlled by Brazil-based organisations, as foreign ownership is limited to 30% of the voting capital. Foreign-owned companies play a greater role in the Brazilian pay-TV market, with US-based DirecTV owning a majority stake in Brazilian satellite operator Sky Brasil, and Mexico-based Telmex owning stakes in DTH rival Via Embratel and cable operator NET<sup>15</sup>.

<sup>15</sup> Foreign ownership of Brazilian cable TV companies is limited to 49% of voting capital

### **It is becoming less relevant to consider national markets in isolation**

This short section has highlighted how in three areas – hardware supply chains, international content markets and multinational companies – it is becoming increasingly less relevant to consider national markets in isolation. The same is of course true for the consumer experience of communications services. In Sections 3 and 4 of this report we highlight the increasing importance of on-demand video and audio content which, to a large extent, is available anywhere to anyone with an internet connection, and in Section 5 of this report we look at online applications such as search and social networking which are increasingly globalising the ways in which consumers seek information and entertainment, and communicate with one another.



# The International Communications Market 2010

## **2 Comparative international pricing**

# Contents

2.1 Introduction and methodology	69
2.1.1 Introduction	69
2.1.2 Methodology	69
2.2 Summary of findings	74
2.2.1 Summary of findings: 'multi-play'	74
2.2.2 Summary of findings: Fixed voice	75
2.2.3 Summary of findings: mobile	78
2.2.4 Summary of findings: fixed-line broadband	82
2.2.5 Summary of findings: mobile broadband	84
2.2.6 Summary of findings: TV	85
2.3 Baskets analysis	88
2.3.1 Basket 1: a low-use household with basic needs	88
2.3.2 Basket 2: A broadband household with basic needs	90
2.3.3 Basket 3: A mobile 'power user'	93
2.3.4 .Basket 4: A family household with multiple needs	96
2.3.5 Basket 5: An affluent two-person household with high use of mobile, internet and premium TV	100
2.4 Conclusion	104

## 2.1 Introduction and methodology

### 2.1.1 Introduction

There are many ways to compare the experience of UK consumers with those in other countries. 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 which probably matters most to the greatest number of consumers is the price they pay for their services.

Unfortunately it is difficult to provide meaningful international comparisons to help place UK pricing in context. The complexity of tariffs, the wide range of usage profiles across households within countries, large variation in 'average' use between countries, the rise of 'service bundling' (where more than one service is offered on a single bill from the same provider), and the variations of installation and hardware costs, all require a holistic and multifarious approach if a price benchmarking exercise is to be meaningful.

To try to address these issues, we have developed a methodology for comparing prices which is 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 such as the impact of hardware subsidies and multi-service discounts.

Within this section, we provide an overview of the methodological principles (which are essential to understanding the basis of the findings), and then provide a summary of findings followed by a basket-by-basket analysis. Appendix C details our methodology.

### 2.1.2 Methodology

Full details of the methodology are provided in Appendix C, 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.

**Figure 2.1 Household types**

'Typical' household type		Fixed voice	Intern'l voice	Mobile voice	Mobile messaging	Fixed-line broadband	Mobile broadband	Television
1	A retired low-income couple	Low	-	-	-	-	-	Basic
2	A couple of late adopters	Medium	Low	Low	-	Low	-	Basic
3	A single mobile-only user	-	Medium	High	High	-	High	Pay TV
4	A 'networked' family	High	Medium	Medium	High	Medium	-	Pay TV
5	Affluent couple with sophisticated use	Low	High	High	Medium	High	-	Premium pay TV

Source: Ofcom

- We included a wide range of components within the baskets to ensure as accurate as possible a representation of the real costs 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).
  - In addition, 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 a defined mean based on averages across 30 OECD countries).
  - Incoming calls to mobile phones 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.
  - The television element included the licence fee, a digital receiver and (for some baskets) a digital video recorder (DVR). 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 first-run movies from the major Hollywood studios and 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 phones, 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 they are often inseparable from the service price, as operators frequently include subsidised or 'free' equipment (for example, a mobile phone or a wireless router), but seek to recoup the cost of these devices from subscriptions and service payments across the life of a contract. For similar reasons, we included connection and/or installation costs.
- In July 2009, details of every tariff and every tariff combination 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 which were published on the websites of the operators were included.
- Across the six countries, the tariff data included consisted of:
  - fixed voice: 649 tariff options;
  - mobile: 3,427 tariff options;
  - broadband: 252 tariff options;
  - television: 328 tariff options; and



- multi-play: 812 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 an exchange rate based on the average exchange rate between 1 August 2009 and 1 July 2010.

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 tariffs offered by the three operators which provide the service in each country. These are then weighted by the market share of the service provider in order to ensure fair representation. This provides a useful comparison of the relative costs of communications services, but an important limitation is that single-service offers are sometimes not available from leading suppliers. For example, in the UK, Sky markets broadband only to television subscribers and TalkTalk only offers broadband together with fixed voice. In Spain and Germany, the largest three broadband providers by retail market share offer broadband only in association with voice services.

The second type of analysis (which we call 'best-offer' pricing) identifies the lowest price that a consumer could pay for this basket of services, including, where appropriate, by 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 BSkyB's TV, broadband and talk 'triple-play' offer, and Virgin's 'quad-play' offer which includes TV, voice, broadband and mobile. However, there are two key 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, they may not have high take-up. 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.

We believe that a multi-platform, basket-based approach is the most useful way of comparing 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, many consumers do not act in this way, 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, the benefits available from fixed-line and mobile tariffs which include free or reduced rates to nominated 'friends and family' numbers.
- 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 data are not available).
- Pay-TV services constitute 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 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 telco operators and cable operators offering localised prices for fixed-line services. We use only those tariffs available within the state of Illinois, chosen because it is 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 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 exchange rate in 2009 and applied it to 2008 data. This means that there may be some distortions in the relative positions of countries compared to the findings in 2008 (in particular, the fall of the pound against the Euro means that UK pricing is presented as lower relative to France, Germany, Italy and Spain than it was in 2008 – although the PPP adjustment mitigates to some extent against this).

## 2.2 Summary of findings

### 2.2.1 Summary of findings: 'multi-play'

For all of the baskets that include a fixed-line broadband connection, consumers in the European countries can make savings by purchasing multiple services in a multi-play 'bundle' from one provider, rather than purchasing each service on a stand-alone basis.

Figure 2.2 below indicates that the lowest price available in the UK for Basket 2, which includes a basic broadband connection and a fixed-line voice line, was around £29. This involves purchasing a tariff which includes 'unlimited' broadband access at a speed of 'up to' 20Mbit/s, line rental and inclusive weekend and evening calls to UK geographic numbers, and it is more than £8 less than the lowest price achievable by purchasing all the services separately (see Figure 2.3). This 'dual-play' voice and broadband tariff in the UK is available from an operator which also offers discounts to broadband consumers taking a pay-monthly mobile contract. However, the low use of the mobile within this basket means that there is no benefit, and the lowest price is achieved by purchasing a separate pay-as-you-go mobile service.

For Basket 4, which includes a basic pay-TV deal, the lowest prices available in the UK, France, Germany and Spain involve purchasing broadband, fixed-line voice and television services in a 'triple-play' bundle. The greatest savings compared to purchasing the lowest price stand-alone services are in Spain and Germany (however, this may be misleading as in both countries stand-alone broadband is not available from the largest operators, so taking a bundle is the default option), where consumers can save £37 and £27 a month; in the UK, the saving is £4 a month.

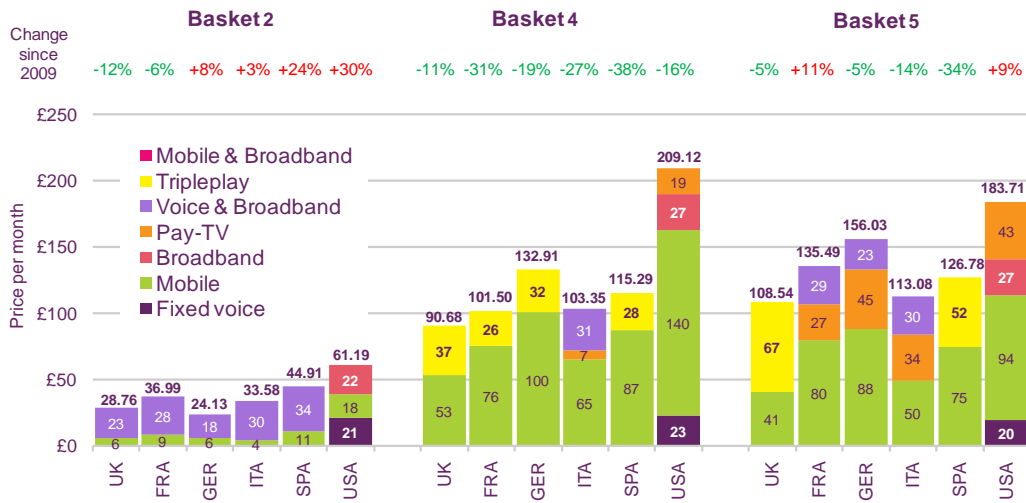
Basket 5 includes premium pay-TV services (top league domestic football and first-run Hollywood movies). In the UK and Spain, the lowest price available for these were achieved by purchasing a 'triple-play' bundle, whereas in France, Germany and Italy the lowest prices were achieved by purchasing a 'dual-play'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

In the US, there are no savings available by purchasing services in 'bundles' rather than purchasing the lowest-price single services. This is probably the consequence of less diversification in local markets, with the incumbent telco 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 contrasts with Europe, where local loop unbundling and wholesale line rental with regulated price controls has led to a competitive landscape characterised by alternative network operators building market share by launching bundled services (the incremental costs of adding a broadband service to a voice service are low, and the consumer benefits high) - and incumbents have responded by doing the same.

Prices for most of the baskets have fallen since 2009. However, these decreases are primarily the result of lower mobile prices (see Section 2.2.3 below). It is notable that 'bundles' including mobile services do not feature as delivering the lowest overall prices in any of these countries, despite the increasing availability of multi-play services which include mobile (typically within a broadband tariff or a 'quad-play' tariff including broadband, fixed voice and TV). This perhaps reflects the fact that there are fewer synergies between mobile and the other services, in that mobile is delivered via a different network and is typically an individual rather than a household purchase.

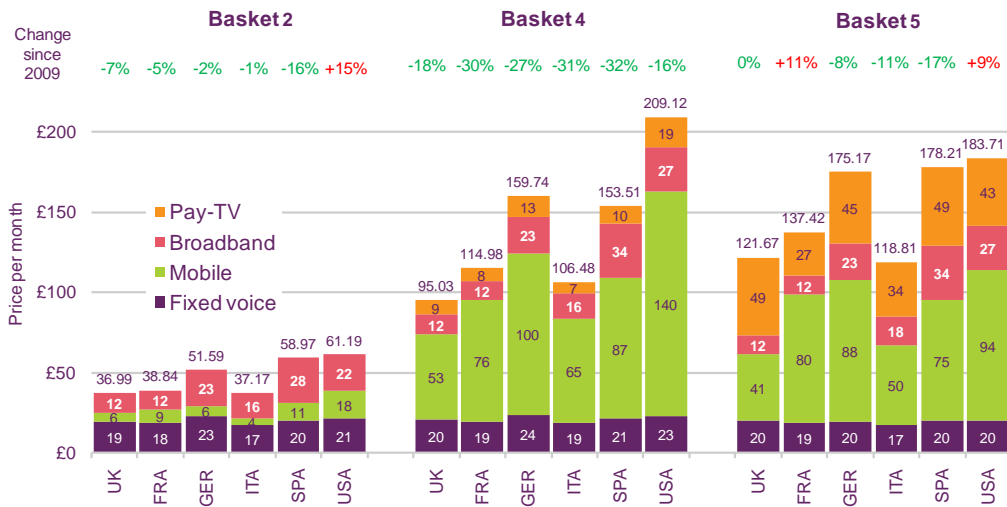
**Figure 2.2 Best prices available, including multi-play offers**



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 2009 and July 2010; PPP adjusted.

**Figure 2.3 Best prices available for stand-alone services**



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available from any of the three largest operators by market share for each service in each country, July 2009 and July 2010; PPP adjusted.

### 2.2.2 Summary of findings: Fixed voice

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. Overall, as calculated from the weighted average of the best-value tariffs from the three largest operators in each country (Figure 2.4), the UK offers the lowest pricing. However, prices increased in the UK between July 2009 and July 2010, whereas they fell in all other countries.

The small increases in the UK are the result of higher line rental fees, with BT increasing the price of its basic line rental from £11.50 to £12.50 from April 2010.

The basic line rental fee is typically higher in the UK than in some other countries, but a feature of the UK market is that even basic line rental often includes some inclusive calls while value seekers can potentially reduce prices by purchasing 'add-ons' to their basic line rental which provide reduced or inclusive calls for certain call types in return for a fixed monthly payment. Indeed, the reason for prices falling in other countries is a consequence of the increasing availability of tariffs which include similar options which enable consumers with good awareness of their calling needs to save money by purchasing tariffs which include certain types of call within the line rental fee.

In addition, the BT tariffs used (which have the most impact on the weighted average pricing, as BT has 55% market share) include those which are available only to customers committing to a 12-month rolling contract. These customers are able to get 'free' calls to UK geographic numbers and 0845/0870 numbers in the evenings and at weekends, and for an additional £4.99 a month can make unlimited numbers of these call types at any time of the day.<sup>16</sup> Further savings can be achieved through purchasing add-ons such as 'Friends and Family Mobile' or 'International Freedom' (where applicable, these are also included in our analysis).

Other operators have followed a broadly similar pricing strategy to BT, with line rental prices starting at around £11 and a range of 'add-ons' offering discounted or lower price calls for a fixed monthly payment, for example Virgin Media's 'Talk Anywhere' plans, Sky's 'Talk Unlimited' Plan or TalkTalk's 'Anytime / Mobile / International Calls Boost' plans. While it is notable that there is less variation in prices between operators in the UK than in other countries, it is also evident that consumers are likely to be able to make significant savings by carefully identifying the tariff best suited to them; tariff structures are fairly complex and consumers typically achieve the lowest prices only if they are able to match the best tariff to their usage, and make an effective choice from a range of pricing options which include contract length/commitment, paper or electronic bills and payment type.

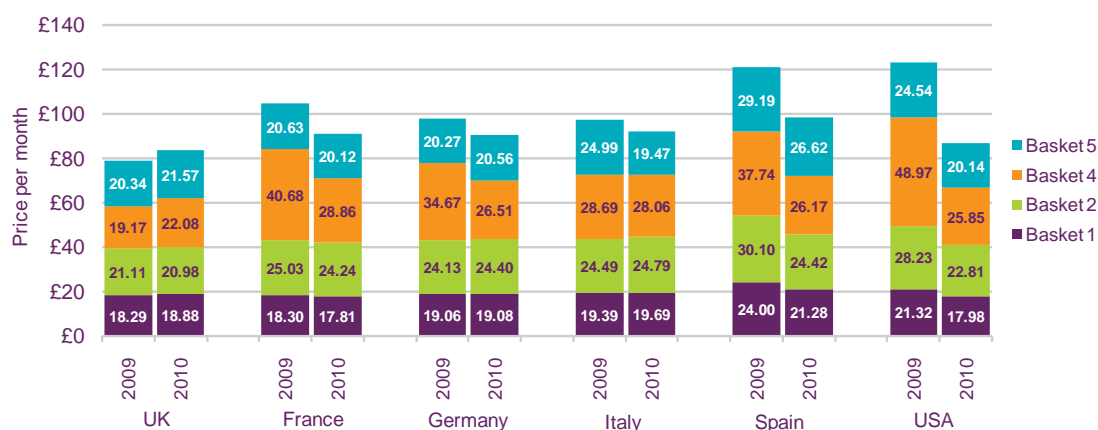
The biggest falls in France, Spain and the US come from falling prices in the cost of Basket 4 – which, with 600 minutes of calls a month, is the highest-use basket. In all countries, these falls come largely through the availability of line rental packages which include 'free' or discounted calls.

- In France, the price available from incumbent France Telecom (which has 74% market share and is therefore the major component of the weighted average pricing) has fallen by 41% since 2009 due to the availability of a new tariff which includes up to two hours of calls, including international calls.
- In Spain, the best tariff for this basket from incumbent Telefonica (market share 80%), includes 1,000 anytime minutes a month to fixed lines in Spain.
- In the US, one of the drivers of the falling price is the availability of a tariff combination from largest operator AT&T (market share 29%) which includes an add-on for low-cost US national calls and another add-on which includes unlimited calls to Canada.

---

<sup>16</sup> This analysis is based on data collection in the first half of July 2010, before BT introduced changes to its tariffs. For most customers the impact of these tariff changes will be an overall increase in the cost of fixed voice services, with a 50p increase in the cost of line rental and increases in the cost of a peak time call (up by 0.5p a minute) and the cost of connection g a call (up by 1p). However, at the same time BT also offered customers signing up to a 12-month line rental contract before November a £3.80 a month reduction on line rental for the first 12 months, if they paid for a year's line rental in advance.

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



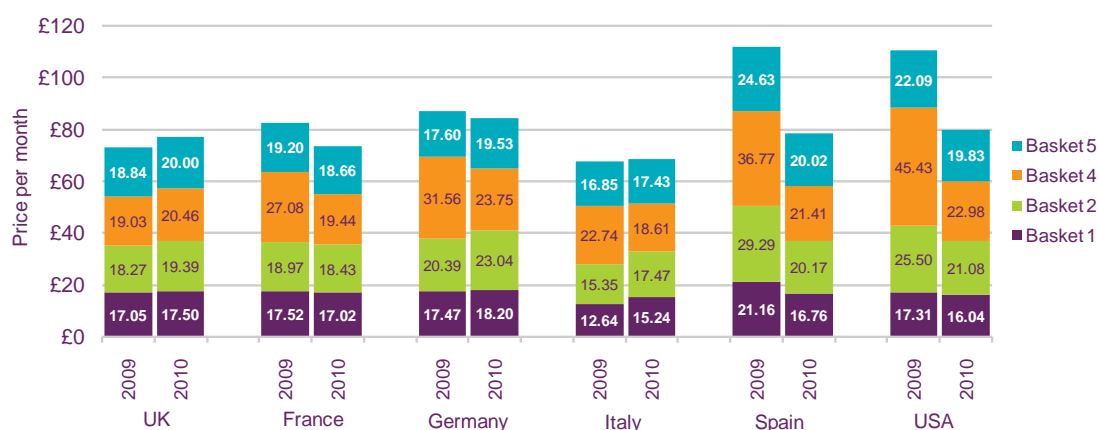
Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2009 and July 2010; PPP adjusted

While the 'weighted average' analysis is to a considerable extent a reflection of incumbent pricing (incumbents have retail market share of over 50% of fixed line connections in all the European 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. In looking at the best tariff available from the three largest operators in each country (Figure 2.5), Italy offers the lowest prices overall as a result of much lower prices from alternative network (alt-net operators) than from incumbent Telecom Italia.

In all countries, there was less difference between the prices offered by the largest operators in 2010 than had been the case in 2009. However, there was significant variation between countries. The best prices available in Italy were overall 25% lower than the weighted average pricing. By contrast, in the UK and in Germany the lowest prices available were overall just 7% lower than the 'weighted average'. The UK is the only European country in which a tariff from the incumbent (BT) appears as a 'best offer' tariff in any of the baskets.

**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 2009 and July 2010; PPP adjusted.

### 2.2.3 Summary of findings: mobile

Across the five households we include in our analysis there are eight mobile phone connections, ranging from low use and a basic handset typical of a pre-pay subscriber in the UK to high use and an advanced handset, typical of a pay-monthly smartphone user 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 which are to UK mobile, to UK geographic numbers or to international numbers); full details are provided in the basket analysis below.

Overall, the UK offers the lowest 'weighted average' prices, although it is more expensive than some other European countries for the low-use connections 1, 2 and 3 (which all have 60 minutes of voice, and vary in the amount of messaging) (Figure 2.7). In general, prices in the UK and Italy are lower than those in other countries

This is, perhaps, indicative of higher levels of price competition in the UK and Italy, driven by:

- saturated markets – in both countries the number of mobile connections has exceeded the population since 2005;
- the affect caused by new entrant Hutchison 3G (branded as '3') in Italy and the UK, which launched in both countries in 2003 and since then has sought to gain market share through low-priced offers, particularly for medium and high users (until recently the higher cost of 3G handsets compared to 2G handsets has meant that 3G operators have had limited success in targeting low-spending consumers). (Note that as Hutchison 3G is the fourth largest operator in the UK and the fourth largest in Italy, its tariffs are excluded from this analysis); and
- relatively low levels of market concentration in both countries, which fosters intense competition between relatively equally matched operators. Until 1 July 2010, when T-Mobile and Orange officially combined their UK operations into Everything Everywhere, The UK was the only European market with five mobile network operators; (the Herfindahl-Hirschman Index (HHI), often used as an index of the level of competition in the market, finds that the UK has the least concentrated mobile market in Europe), while in Italy there are four mobile network operators and the HHI index finds that the market is less concentrated than in France and Spain, and comparable to Germany.

However, although they both offer low prices, the characteristics of the mobile markets in the UK and Italy are very different.

In the UK, around 42% of mobile connections are post-pay, and these tariffs are characterised by heavily subsidised (or even 'free') handsets, with operators recouping the value over the course of the contract. Fixed monthly line rentals typically include a large number of inclusive any-time any-network minutes and SMS texts, and, increasingly, a data allowance. The result is that high users tend to pay a 'flat rate' for most of their use, and the value available from these tariffs is evident in the low relative prices for the high-use mobile connections in Basket 3, Basket 4 and Basket 5 (although of course, this assumes that consumers know their regular monthly usage level and select the correct tariff accordingly). In the last two years, 'SIM-only' tariffs have become increasingly popular, in which customers are not given a new handset when signing up for a contract, but are supplied only with a SIM card which they can use in a handset they already own. These now account for around one in five new post-pay connections and in July 2010, one-month SIM-only tariffs offering at least 300 minutes and unlimited texts were available for £15 or less from four UK



mobile network operators. However, for customers willing to commit to a 24-month contract, similar tariffs are available which also include a basic handset.<sup>17</sup> It is these tariffs which typically offer the best value for all the UK connections which include 180 voice minutes or more (in order to provide like-for-like comparison we also include the cost of a handset within our baskets, calculated as a monthly cost on a three-year amortisation; in 2009, the lowest-cost tariffs for these connections in the UK involved purchasing a SIM-only contract and a separate handset, while in 2010 the lowest cost was achieved by purchasing a two-year contract with an inclusive handset). In our analysis in all countries the lowest-use baskets are best served with pre-pay tariffs. However, in the UK this may be changing as operators launch sub-£10 post-pay SIM-only tariffs. Because of its small market share, Virgin Media's £8.50 a month SIM-only contract, which includes 100 call minutes and unlimited SMS, was not included in the analysis, and in August 2010 Tesco Mobile (which is again not included in our analysis) launched a £5 a month SIM-only contract including 100 minutes and unlimited SMS.

In contrast to the UK, around 90% of mobile connections in Italy are pre-pay and there is little by way of handset subsidy even for post-pay tariffs, where line rental is typically much lower than in the UK, with correspondingly lower numbers of inclusive minutes and SMS. Indeed, there is little variation between pre- and post-pay in Italy; they tend to have the same basic call charges. The result is that Italian tariffs are characterised more by metered than 'flat rate' pricing. Prices for consumers with low monthly use tend to be lower than in the UK (as in Basket 2, and for two of the connections in Basket 4). Although not captured in our findings, this pricing structure has benefits to consumers in that it offers greater flexibility to consumers who either do not know their monthly usage or, typically, vary it from month to month. It also means there are fewer tariff combinations available in Italy than in the UK – our research identified 170 different tariffs in Italy (the lowest of the six countries surveyed) and 1,056 tariffs in the UK (the highest of the six countries). The range and complexity of UK tariffs is an issue which was raised in 2009 by Consumer Focus, which claimed that there were 1.3 million deals available – resulting in consumers often being "bewildered" and overspending by signing up for an unsuitable package<sup>18</sup>. Research in July 2010, commissioned by price comparison site Top1.com, found that 55% of UK adults on pay-monthly contracts claimed never to use all their inclusive minutes, and estimated that on average, pay-monthly consumers could save over £5 a month by switching to contracts which better reflected their usage.<sup>19</sup>

Although prices in the UK are, overall, lower than in other countries, the gap is narrowing; prices fell by 8% in the UK between July 2009 and July 2010, compared to falls of 24% in Italy, 23% in Spain, 16% in France and 11% in Germany. The fall in pricing in Spain comes as a wider range of tariffs have become available, particularly post-pay tariffs offering a high number of inclusive minutes within the line rental. The fall in prices in Italy comes as a result of falling prices of the higher-use baskets, and are in some respects artificial – in 2009 there was little availability of post-pay tariffs offering more than 200 minutes a month, and the result was that the requirements of the high-use mobile connections in Baskets 3, 4 and 5 were best served by *iPhone* tariffs, which factored into the price the cost of the inclusive *iPhone* handset; in 2010 tariffs were available that did not include a handset subsidy.

---

<sup>17</sup> In the *Communications Market Report 2010*, fig 5.25, we compare £15 SIM-only contracts and £15 handset-inclusive contracts from the UK's mobile network operators,

<http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr10/uk/>  
<sup>18</sup> [www.consumerfocus.org.uk/en/content/cms/News\\_Press\\_speech/Over\\_a\\_million\\_deals/Over\\_a\\_million\\_deals.aspx](http://www.consumerfocus.org.uk/en/content/cms/News_Press_speech/Over_a_million_deals/Over_a_million_deals.aspx); our pricing analysis interrogates 857 UK mobile tariffs, more than in any other country.

<sup>19</sup> [www.itpro.co.uk/624880/uk-mobile-users-spend-800-million-on-unnecessary-contracts](http://www.itpro.co.uk/624880/uk-mobile-users-spend-800-million-on-unnecessary-contracts)

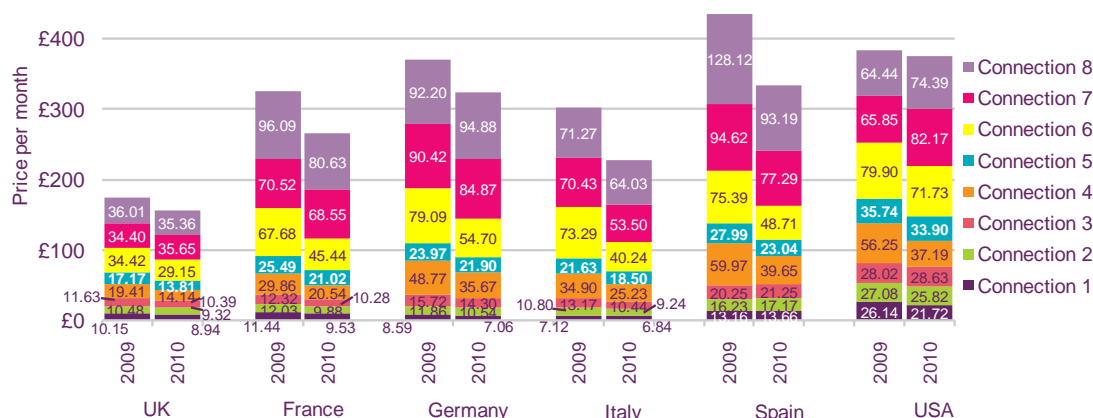
A likely contributory factor to pricing for the higher use baskets in particular is the level of mobile termination rate (MTR), which is the regulated maximum price per minute at which one operator can charge another to for incoming calls to its network. All the European countries except Germany saw cuts in MTRs in the period between July 2010 and July 2011, with cuts of around 10% in Spain and the UK, 14% in Italy and over 33% in France (implemented on 1 July 2010).

**Figure 2.6 Summary of mobile connections**

	Basket	Handset type	Outbound voice minutes per month	Outbound SMS per month	Outbound MMS per month	Data use per month
Connection 1	Household 2	Basic	60	-	-	-
Connection 2	Household 4, #4	Basic	60	65	2	-
Connection 3	Household 4, #3	Basic	60	70	2	-
Connection 4	Household 4, #2	Mid-tier	180	160	4	-
Connection 5	Household 5, #2	Mid-tier	200	20	-	-
Connection 6	Household 4, #1	Advanced	300	30	-	30MB
Connection 7	Household 5, #2	Advanced	400	80	-	30MB
Connection 8	Household 3	Advanced	550	150	10	100MB

Source: Ofcom

**Figure 2.7 Comparative single-service 'weighted average' mobile pricing**



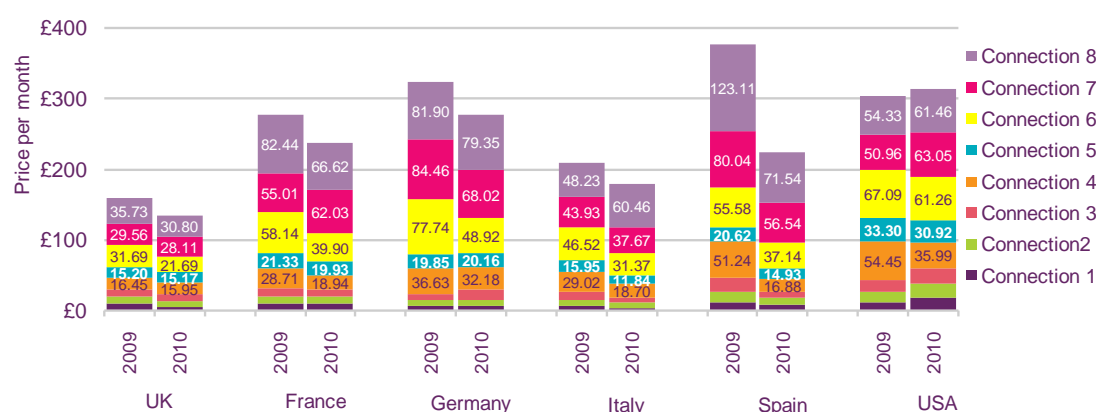
Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2009 and July 2010; PPP adjusted

In looking at the lowest prices available for the mobile phone components of each basket, the pattern is broadly similar to the 'weighted average' analysis.

Typically, the operators with lower market share tend to offer the lowest prices (note however, that as this analysis includes only the largest operators by retail market share in each country, the prices of some smaller MNOs such as 3 in the UK and Italy, and all MVNOs, are not included in the analysis). Overall, the lowest price for a mobile is offered by the mobile operator with the largest market share on only two occasions (out of 48, comprising eight mobile connections in six countries); and in France and Italy the third-largest operator offers the lowest price for six of the eight connections. No single operator offers the lowest price for more than three of the eight connections in the UK.

**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 2009 and July 2010; PPP adjusted.

The US mobile market is very different from that in Europe because of a different interconnect regime which results in charges for incoming as well as outgoing calls (in order to incorporate this, our analysis includes both inbound and outbound calls); a consequence is that US mobile contracts typically include a very high number of inclusive (inbound and outbound) minutes in order to provide a 'flat-rate'-style tariff which incentivises consumers to leave their phone switched on. Most contracts in the US include over 900 (inbound and outbound) minutes a month, and there are very few contracts available that include fewer than 450. Similarly, pay-as-you-go services have much lower take-up, with 82% of mobile connections being pay-monthly; and pay-as-you-go connections typically follow a different model than in Europe, offering a set number of inbound and outbound minutes to be used in a 30-day period, rather than charging by the minute.<sup>20</sup>

This fundamental difference in the US market has an impact on our pricing analysis in two, related, ways. Firstly, basic line rental is typically much higher in return for many more minutes, meaning that there are very few US tariffs targeted at low users, such as connections 1, 2 and 3 in Figure 2.7 above. Secondly, overall average mobile phone use in the US is much higher than in European countries (678 combined inbound and outbound minutes per mobile connection in 2009, compared to 141 outbound minutes in France, 127 outbound minutes in the UK, 110 outbound minutes in Spain, 106 outbound minutes in Italy and 70 outbound minutes in Germany). This means that, even though the baskets have been created to be representative of average use across the six countries, the mobile baskets collectively have a much lower usage profile than the US average. Because the baskets are less representative of the US market than of the European market, they contain a bias against the US.

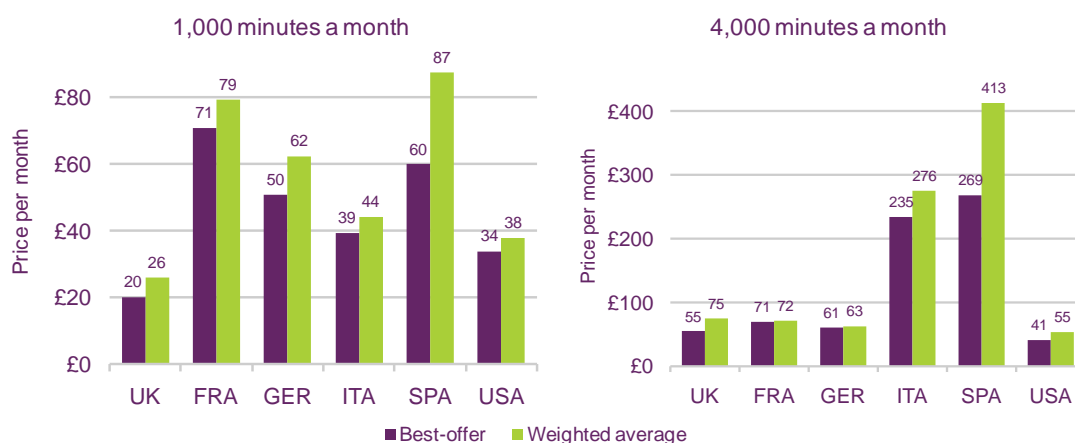
Put simply, were our analysis to look at actual minutes of calls on a price-per-minute basis, rather than being based on a usage basket, the US would be relatively less expensive.<sup>21</sup> Similarly, were our baskets to contain much higher mobile usage, the US would also be relatively less expensive. In order to examine this, we also looked at the prices for a basket

<sup>20</sup> Differences between the UK and the US market, 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)

<sup>21</sup> In Section 6 of this report we find that the average cost of an outbound voice call minute in 2009 was 3.1p in the US compared to 8.5p in Italy, 8.8p in the UK, 13.9p in France, 14.3p in Spain and 16.3p in Germany.

of 1,000 minutes and 4,000 minutes (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 which offered free on-net calls and 600 any-network minutes for £20 a month on a 12-month contract, which delivered an overall cost of £39.89), 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 which does not match any typical usage profile (indeed, it should be noted that prices in Italy and Spain are more than four times as expensive as for the 1,000 minute basket). Nevertheless, it is notable that at this extreme high usage level the US is less expensive than any European country.

**Figure 2.9 Comparative pricing for mobile tariffs with 1000 minutes and 4,000 minutes, July 2010**



Source: Ofcom using data supplied by Teligen

Notes: (1) 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. (2) 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

## 2.2.4 Summary of findings: fixed-line broadband

Single-service broadband pricing comparison should be treated with some caution, as broadband is very frequently bought as part of a multi-service bundle, and many operators do not even offer stand-alone broadband. We have defined the prices below as the lowest price for purchasing a broadband service, excluding the price of telephone line rental where this is required (as the cost of the line rental is attributed to the voice element of the basket).

In the UK, all of the largest operators incentivise consumers to purchase other services along with their broadband connection (for example, by including free call packages), while Sky markets broadband only to its pay-TV customers; in Spain and Germany none of the largest three broadband operators offer a stand-alone product (it is always bundled with voice) and in France broadband is typically taken within a triple-play service that includes voice (often delivered via VoIP) and IPTV (every broadband package from the largest provider, France Telecom, has IPTV included - although not all consumers are able to receive IPTV services).

Our broadband baskets are defined by the headline speed of the connection, and require a minimum of 2Mbit/s, 4Mbit/s or 8Mbit/s. The lowest overall prices are available in the UK and in France, and it is a characteristic of both countries that the most basic packages from all the leading operators meet the requirements of the highest specification basket (8Mbit/s and

5GB per month). Increasingly, for DSL broadband, there is little price differentiation between broadband at different speeds. In the UK, all the largest DSL operators offer a headline speed of 'up to' 20 or 24Mbit/s as standard on all of their products (with package prices determined primarily by data allowance). The same is true in France, where in addition the leading cable operator, Numericable, makes no pricing distinction between those who are able to receive 100Mbit/s or 30Mbit/s services. By comparison, in Italy and the US, markets are characterised by tiered pricing by headline speed.

However, it should be noted that none of our baskets include genuinely high-speed broadband. This is because the limited availability of next-generation access broadband in most countries would make price comparisons meaningless, and because it is not possible to purchase superfast broadband as a stand-alone service from many operators in many countries. Nevertheless, it should be recognised that high-speed alternatives, often at no great incremental cost, are available to many households in the US and to significant numbers of households in Italy, France and Germany. In the UK, Virgin Media cable provides a service, available to around 48% of UK households, offering headline speeds 'up to' 50Mbit/s for a monthly fee of around £8 a month higher than its 20Mbit/s service and £15.50 a month higher than its 10Mbit/s service. The only other nationally available 'superfast' service in the UK is BT Infinity, a fibre-to-the-cabinet service offering speeds of 'up to' 40Mbit/s, which should be available to 40% of UK households by the end of 2012; the price for the basic Infinity service is £6 a month more expensive than a basic DSL service.

Relatively low prices in the UK are maintained by a competitive environment in which no single provider has more than 30% market share, and consumers are able to choose from a range of services provided by operators offering service via wholesale line rental (WLR) (available to virtually 100% of the population), local loop unbundling (LLU) (available to 85% of the population) and cable (available to 48% of the population).<sup>22</sup> Similarly, in France broadband competition has been intense, particularly between incumbent France Telecom (with around 47% market share) and alternative network providers Free and SFR/Neuf (who both have over 20% market share).

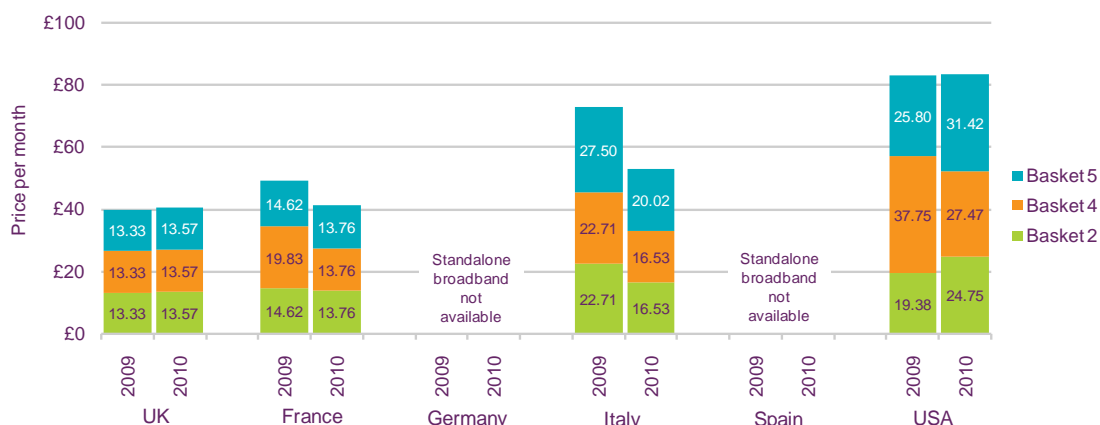
In all countries for all baskets, the price does not include any additional usage charge above that of the line rental, reflecting that broadband is typically priced on a 'flat rate' rather than a 'per MB' basis. Tariffs in the UK and US all include a WiFi router, whereas these are a separate cost for all of the baskets in France and two of the three baskets in Italy.

In the UK, France and the US stand-alone broadband prices from the largest providers are broadly similar, resulting in little variation between the 'best offer' price and the 'weighted average' price, whereas in Italy the weighted average price is much higher than the lowest price due to the higher prices of incumbent Telecom Italia (which offers a nationwide service, has around 74% market share and is significantly more expensive than some services from alt-net providers which do not have nationwide availability).

---

<sup>22</sup> See the Glossary for a definition of WLR and LLU

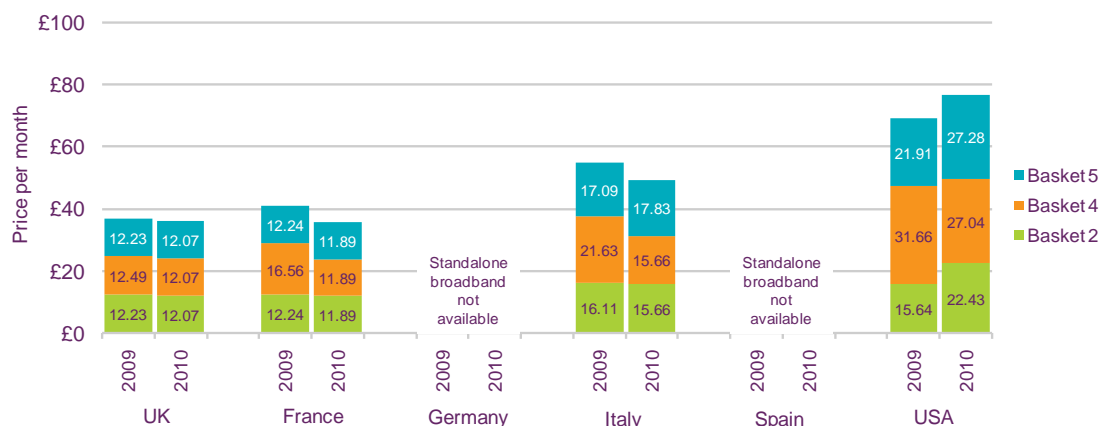
**Figure 2.10 Comparative single-service ‘weighted average’ fixed-line broadband pricing**



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 2009 and July 2010; PPP adjusted

**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 mobile phone component of each basket from any of the three largest operators by market share in each country, July 2009 and July 2010; PPP adjusted.

## 2.2.5 Summary of findings: mobile broadband

Our basket analysis includes only one mobile broadband connection, which is a 3GB per month connection included in basket 3.

However, we also looked at two other connections, a low-use 1GB per month connection and a high-use 5GB per month connection. We consider only the ‘best offer’ service available, as lack of data on market share and the wide range of prices available from operators in some countries make it problematical to analyse on a ‘weighted average’ basis.

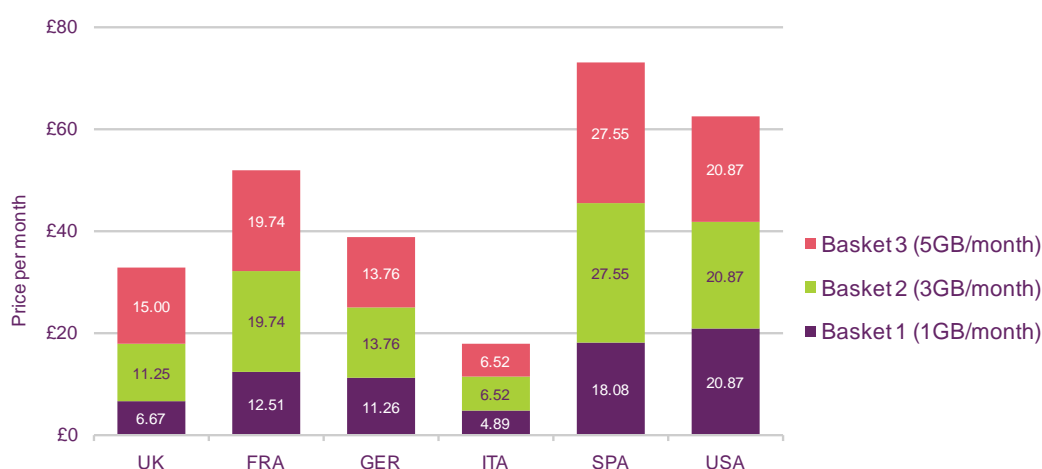
The lowest prices for mobile broadband were available in Italy, followed by the UK. This indicates that the competitive dynamics, which are delivering lower prices for mobile phone tariffs, are also reflected in mobile broadband. 3G and HSPA networks were launched relatively early in these countries, with three operators offering HSPA networks by the end of 2006, and by early 2008 mobile broadband had launched as a mass market consumer proposition in both countries. The 3G-only operator, 3, has been active in both countries in promoting mobile broadband, as a differentiator to build market share and utilise spare capacity in its network, and to develop new revenue streams and compete with fixed



broadband suppliers (unlike most of the leading mobile operators, 3 does not have a fixed broadband network). A consequence is that the markets are relatively mature compared to other countries, with all the MNOs competing to win mobile broadband share.

In both the UK and Italy, the price for mobile broadband compares favourably with the price of the basic fixed-line broadband connection in Basket 2. In addition, mobile broadband does not need a fixed phone line, as is required for DSL broadband. However, the levels of quality of service for fixed-line and mobile broadband are different, with fixed-line broadband typically offering greater reliability, higher speeds and higher usage allowances. In the UK, the majority of consumers with a mobile broadband connection also have a fixed-line broadband connection, indicating that the two services are often complementary, serving different purposes (i.e. a fixed-line connection is used in the home and a mobile broadband connection is used when out and about).

**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; PPP adjusted

## 2.2.6 Summary of findings: TV

The variation in numbers and types of channels and different types of programme content means that like-for-like comparison of the pricing of television services is difficult. However, we have included television tariffs within our analysis in order to include comparisons of ‘triple-play’ (voice, broadband and TV) packages, which have had increasing take-up in all countries. The comparative pricing of television services has been discussed in some detail in the context of Ofcom’s pay-TV market investigation<sup>23</sup>. Our view is that it is difficult to draw strong conclusions from an analysis of comparative pricing levels for pay-TV packages<sup>24</sup>. For the purposes of this analysis we have used some headline prices of common pay-TV packages, but this is not intended to either supplement or replace the analysis conducted for the pay-TV investigation.

<sup>23</sup> See Section 3 of our Second Pay TV Consultation::

[http://www.ofcom.org.uk/consult/condocs/second\\_paytv/condoc.pdf](http://www.ofcom.org.uk/consult/condocs/second_paytv/condoc.pdf).

<sup>24</sup> See paragraphs 8.264 to 8.266 of Ofcom’s Pay TV Statement (March 2010):

[http://www.ofcom.org.uk/consult/condocs/second\\_paytv/](http://www.ofcom.org.uk/consult/condocs/second_paytv/)

Licence fees are highest in Germany and the UK, which have the highest investment per head in public service broadcasting. There is no licence fee in Spain and the US, where public funding is raised by alternative means.

‘Basic pay-TV’ is defined as the lowest subscription required to receive channels in addition to those available on free-to-view television. France, Italy and Spain offer the lowest costs for this ‘entry-level’ service, but the type of service varies significantly. The lowest-cost service in Italy is from a cable operator at €10 a month, and includes 18 channels. In France the leading satellite operator’s entry-level service is available for €12.90 (£10) a month, with the first three months discounted to €19.90, and provides 23 channels (the reason for the price increase since 2009 is that in July 2009 the same service was available at the same basic price, but with an offer of the first three months free of charge). In Spain the lowest-cost service is an IPTV service (with limited geographical availability) that offers 50 channels for €11 a month. In Germany the lowest-price offer is a cable service offering 36 channels for €17.90 a month, plus a connection fee, while in the US the best offer is a cable service for \$25.49 a month.

The lowest price for basic pay-TV as a stand-alone service has fallen in the UK since 2009 as a result of Virgin Media’s cheapest pay-TV service (M+) now being available without the requirement to take a Virgin phone line<sup>25</sup>. However, in terms of comparing like-for-like, prices in the UK have increased slightly – the lowest price for Sky TV in July 2009 was £18 a month compared to £16.50 in July 2009), and the lowest price for Virgin Media TV and phone line was £17.49 a month (compared to £16.50 in July 2009) .

We also looked at the price for a basket of ‘premium’ services, consisting of the best package of top-flight football (NFL in the US) and first-run major Hollywood studio movies). Because of the variation of content in these packages it is difficult to compare packages, and apparent changes in the prices in France and Spain between 2009 and 2010 have more to do with changing package structures than genuine changes in price. This basket does not include a requirement for high definition (HD) channels; however, in most countries HD is now standard with these premium channels; the UK is the only country in which HD channels are not included in the service that offers the lowest price (an additional £10 per month is required for HD services).

**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 packages which includes channels not available over free-to-air TV; Premium TV is defined as the best package of

<sup>25</sup> Note that from 1 October 2010, Virgin Media increased the price of the stand-alone M+ TV tariff from £11.50 a month to £12.50 a month, and the price of M+ TV with a Virgin Media phone line from £17.49 to £18.49.



*top-league football (NFL in the US and first run films from major Hollywood studios); 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 2009 and July 2010; 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.

## 2.3 Baskets analysis

### 2.3.1 Basket 1: a low-use household with basic needs

Our first basket contains a usage pattern typical of a retired low-income couple in any of our comparator countries. They rely on a fixed-line phone for communications and spend around seven and a half minutes a day making calls, the majority of which are local. They only occasionally make calls to mobiles and do not make any international calls. They watch free-to-air multichannel digital television, which is available in all of our countries (largely via satellite in Germany and via the terrestrial platform in the other countries).

**Figure 2.14 Composition of Basket 1**

Fixed-line voice	Mobile	Broadband	Television
Total outbound: 225mins  - Local: 61% - Regional: 14% - National: 22% - To mobile: 3%  - Daytime: 58% - Evening: 25% - Weekends: 17%	No connection	No connection	Free-to-air digital television --- 1 digital receiver / set-top box

Source: Ofcom

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 prices are available in Italy and the highest prices are in Spain.

Despite reasonably low use, in most countries there are advantages to users who opt to purchase an add-on', or pay a higher line rental for a service that offers inclusive calls (or much lower-priced calls), rather than simply taking a basic package with line rental and metered calls. For example, the lowest prices for all three of the operators considered in the UK require the consumer to pay additional monthly rental fees for 'Anytime' plans that offer inclusive calls to any UK fixed number at any time of day. This emphasises that the lowest prices are available only to consumers who have a good understanding of their requirements and do the research necessary to identify the tariff combination which best meets these requirements.

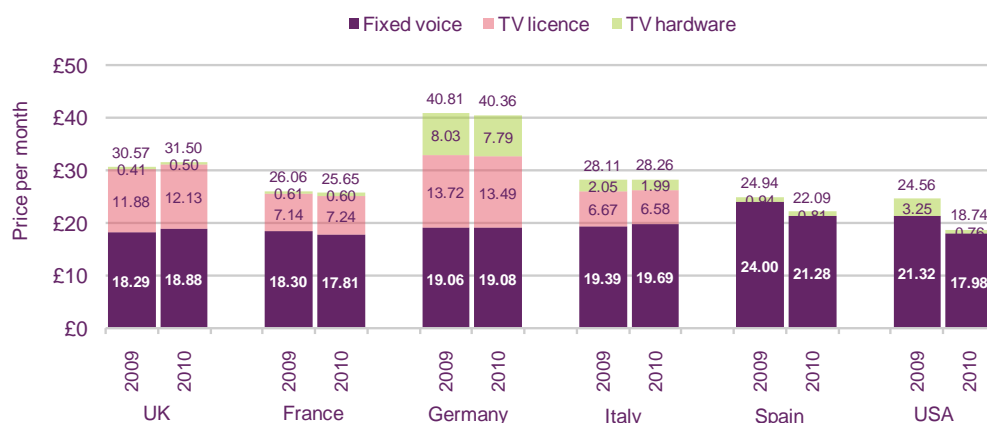
As these data represent an average of the lowest prices available from the largest operators, weighted by the market share of these operators, the fixed voice pricing, to a large extent, reflects the pricing of incumbent operators, which have over 50% retail market share in each of the European countries. The fall in voice pricing in Spain comes largely through the availability of a new tariff from incumbent operator Telefonica (with a market share of 80%) having a new tariff which includes national calls in return for a slightly higher monthly line rental fee, while similarly the price falls in Italy are driven mainly by lower prices from incumbent Telecom Italia (market share 52%), with the prices for this basket of calls having fallen by 37% between July 2009 and July 2010. Prices in the UK have increased slightly as a result of higher line rental fees, with BT increasing the price of its basic line rental from £11.50 to £12.50 from April 2010 (although the actual price rise for this basket is lower than £1 due to an increase in inclusive call types).

There is significant variation in the cost of the television licence across the six countries (which, along with the cost of a receiver / set-top box, represents the only television costs for this basket, which does not take pay-TV services). With higher investment per head in public

service broadcasting than in the other countries, the TV licence is most expensive in Germany and the UK. By contrast, there is no licence fee in the US or in Spain, where public funding for television is raised by alternative means (and is lower per head than in the other countries).

Digital terrestrial television is the largest platform for basic TV services in the UK, France, Italy and Spain - so the prices in Figure 2.15 are an accurate reflection of what the majority of people pay. Digital terrestrial television has also been used for the US as the cheapest way of receiving basic multichannel services, even though only around 15% of homes receive terrestrial rather than cable or satellite television. In Germany, because less than 5% of homes receive terrestrial television on their main set, we have used the free satellite service (received by over 20% of households) as the basic service, resulting in higher hardware and installation costs. The largest TV platform in Germany is cable (with around 60% market share), with monthly prices for access to a basic set of channels beginning at around €4 (£3.50) for apartment dwellers and rising to €17 (£15) for those living in houses.

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



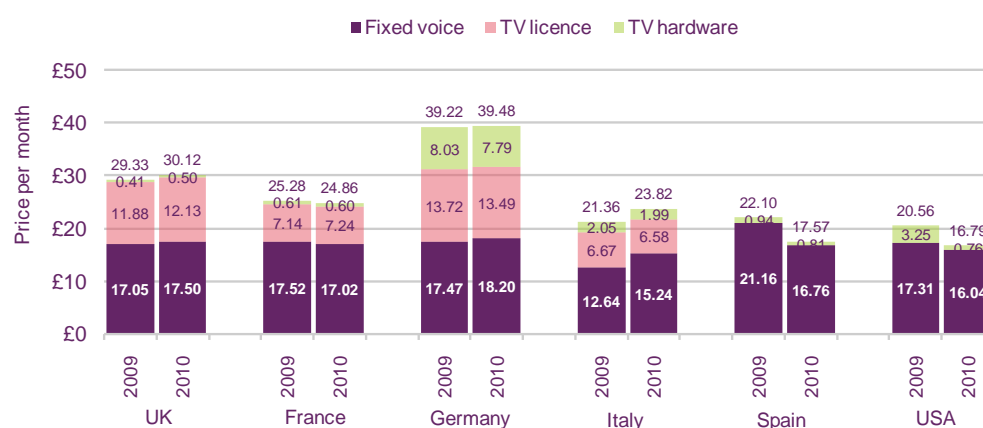
Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2009 and July 2010; PPP adjusted

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

The biggest difference between the 'weighted average' and the lowest price available from the three largest operators is in Spain, where a service from an alternative network provider is 44% lower than the comparable tariff from incumbent Telefonica. By contrast there is relatively low variation between the prices of the three largest operators in the UK, France and Germany.

**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 three largest operators by market share in each country, July 2009 and July 2010; PPP adjusted.

### 2.3.2 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 one mobile between them which they use occasionally, and have a basic broadband connection.

**Figure 2.17 Composition of Basket 2**

Fixed-line voice	Mobile	Broadband	Television
Total outbound: 430mins  - Local: 65% - Regional: 18% - National: 11% - International: 3% - To mobile: 3%  - Daytime: 58% - Evening: 25% - Weekends: 17%	One basic handset  Voice: Total outbound: 60mins To national fixed: 24% To on-net mobile: 38% To off-net mobile: 38% Total inbound: 60mins  Daytime: 58% Evening: 25% Weekend: 17%	Basic fixed-line connection  Minimum speed: 1Mbit/s Minimum usage: 0.5GB Minimum hours: 10	Free-to-air digital television --- 1 digital receiver / set-top box

Source: Ofcom

The fixed-line voice component of this basket consists largely of calls to fixed-line phones within the same country (accounting for 94% of total calls), which are largely made in the daytime. It therefore favours tariffs that include these call types within the line rental fee. This is the case in the UK, where tariffs from all operators offer unlimited UK geographic calls for a relatively small increment in the line rental fee (for example, BT customers can get unlimited anytime UK geographic calls for an additional £4.99 a month). As a result, this is the only basket of the four fixed voice baskets included in this analysis whose price in the UK fell between July 2009 and July 2010; this was because savings from better pricing for inclusive calls exceeded the cost of increased line rental. UK costs are just 11% higher than for Basket 1, despite this basket including almost twice as many minutes. By comparison, fixed-line voice prices in France and the US are 30% higher than for Basket 1. Prices have fallen by the greatest amount in Spain and the US, due to the availability of new ‘inclusive’ call packages.

The low use of the mobile phone in this basket is typical of a pre-pay mobile user. Around 90% of mobile connections in Italy are pre-pay, resulting in competition which focuses heavily on price-per-minute charges, and reflected in the fact that Italy offers the lowest pricing for this basket. However, low monthly rental contract tariffs (including SIM-only contracts) are increasingly being offered in many countries, and so, even for low users, post-pay contracts now often offer lower prices than pay-as-you-go; £10 a month tariffs including at least 100 minutes and unlimited texts are now available from four UK mobile network operators, and in this analysis two of the three best-value tariffs included in the calculation of average UK pricing are pay-monthly.

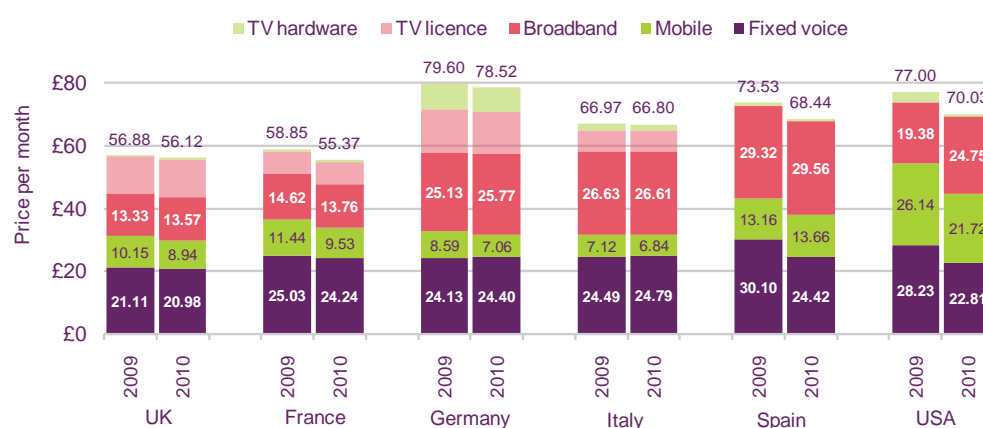
The highest mobile prices for this basket are in the US. This is the consequence of two features of the US market. Firstly, pre-pay has a much lower take-up than in any of the European countries, resulting in the availability of a narrower range of tariffs; indeed, of the three tariffs included in the average pricing calculation of the US, two are post-pay. Secondly, retail pricing in the US is characterised by consumers typically being charged for incoming calls (this is a consequence of the interconnect regime, which differs from that in Europe in that the call-receiving operator bears the cost for the incoming call, rather than the operator from which the call originated paying an 'interconnect' charge to the call-receiving operator). The response from many operators is to incentivise customers to purchase large numbers of additional minutes (in order to ensure that they keep their phone switched on), either included with the monthly line rental or, for pre-pay, through higher value top-ups (which typically expire after 30 days). The result is that the price per minute for low users is higher than in the European countries.

Single-service broadband pricing comparison should be treated with some caution, as broadband is very frequently bought as part of a multi-service bundle. Indeed, in Spain and Germany none of the largest three operators actually offers broadband on a stand-alone basis (the tariff we use is therefore a tariff which also includes a voice connection). This explains why pricing in Spain and Germany is relatively higher than in the other countries.

France and the UK offer the lowest pricing for the basic broadband requirements of this basket (note that this excludes the price of line rental and also includes any introductory promotions such as a reduced price for the first three months of the contract, which are incorporated into calculating the average monthly price for a 12-month period). However, pricing in the UK increased between July 2009 and July 2010. This was in part due to a small increase in price from incumbent operator BT, and was also due to a stand-alone tariff from an alternative network provider no longer being available. The UK and France are both characterised by having well-established alternative network operators; in both countries the incumbent has less than 30% market share (in the UK BT's market share is around 25%), and the two largest alternative network providers each have a retail market share of more than 20%.

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 2009 and July 2010; PPP adjusted

In all the European countries, the lowest prices available for this basket of services are available when consumers buy broadband in a package which includes fixed voice (Figure 2.19). In the UK a combined voice and broadband tariff (including line rental) is available for £23.24 a month from an LLU operator, whereas the lowest price available by purchasing voice and broadband separately is £31.46.

The lowest price available for combined voice and broadband services is in Germany, from the third largest provider, which for this basket offers prices which are 45% lower than those of incumbent Deutsche Telekom.

In the US, the lowest price is achieved by purchasing broadband and voice services separately. This reflects the fact that service bundling is less common in the US, which is the consequence of a market structure in the, where, in the majority of areas, a local duopoly is in place with the incumbent telecoms company in competition with the local cable operator for the supply of voice and broadband services. Whereas in European countries new entrants have sought to gain market share by offering bundled services, the US has not seen the same level of market disruption and operators offer fewer discounts for purchasing services in a 'multi-play' bundle.<sup>26</sup>

Although the requirements of this basket are for a basic broadband service with a headline download speed of 1Mbit/s or more, the lowest-price packages in all of the countries offer headline speeds considerably in excess of this – tariffs in Germany and Spain offer speeds of 'up to' 6Mbit/s, France and Italy 'up to' 8Mbit/s, the US 'up to' 10Mbit/s and the UK and Italy 'up to' 20Mbit/s. However, in all of the European countries the lowest-price service is delivered via DSL, and the speeds available depend on the length and quality of the copper telephone line between the local telephone exchange and the customer premises. The

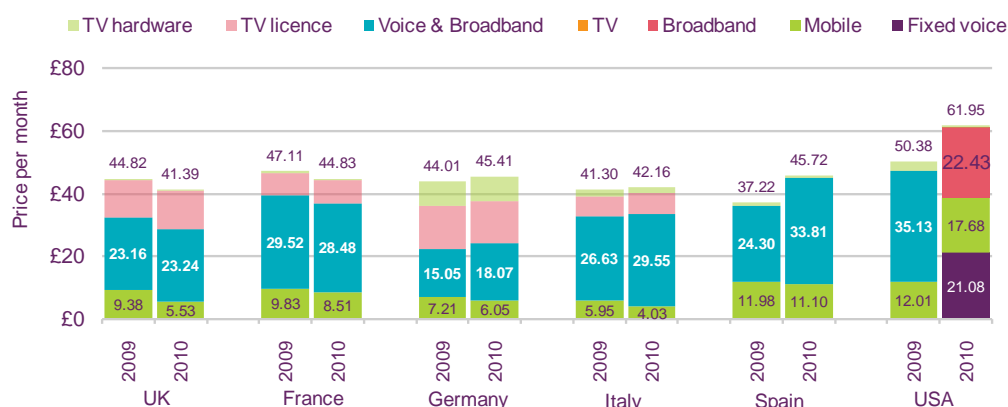
<sup>26</sup> The lowest price for this basket in the US in July 2009 was achieved through purchasing a voice and broadband bundle, from Verizon. Broadband tariffs are not included from Verizon in the 2010 analysis as a result of the sale of its fixed-line operations in 13 states (including Illinois, which is the state we use for our analysis) to Frontier. The sale was approved in May 2010. The Frontier voice and broadband bundle is the lowest priced bundled service available, but lower prices are achievable by purchasing voice and broadband separately.

lowest-price US service is delivered via cable, which typically delivers actual speeds closer to headline speeds.<sup>27</sup>

In terms of the best prices available for the mobile element of this basket, there is a similar pattern to the average prices, with pre-pay tariffs in Italy and Germany offering the lowest prices. There is less variation between the best-priced tariff and the average of the best tariffs available in the UK than in other countries. This indicates that, rather than shopping around for the lowest-price tariff, UK consumer should focus on their specific needs, as there is very little difference between the price of the ‘best offer’ pre-pay tariff from one operator and a the lowest-price 24-month contract tariff from another operator.

The lowest-price offer in the US for this basket is less than half the cost of the ‘weighted average’ price. This is driven entirely by the availability of a pre-pay tariff from T-Mobile USA, offering 1,000 minutes, which can be used over 12 months when topping up with \$100. By comparison, pre-pay tariffs from other operators typically require that top-ups are used within 30 days.

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



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the three largest operators by market share in each country, July 2009 and July 2010; PPP adjusted.

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

The third basket represents a single-person household typical of a young professional or student. This person has eschewed fixed-line telecoms and is instead a heavy user of both a mobile phone and of mobile broadband (using a mobile ‘dongle’ to connect to the internet on a laptop computer).

<sup>27</sup> See Ofcom’s report into broadband speeds for further information on the difference between actual and headline speeds and the variation by access technology, <http://stakeholders.ofcom.org.uk/market-data-research/telecoms-research/broadband-speeds/broadband-speeds-2010/>

**Figure 2.20 Composition of Basket 3**

Fixed-line voice	Mobile	Broadband	Television
No connection	One high-end handset  Voice: Total outbound: 550mins To national fixed: 13% To on-net mobile: 37% To off-net mobile: 37% To international: 6% To voicemail: 7% Total inbound: 550mins  Daytime: 60% Evening: 19% Weekend: 21%  Messaging and data: SMS: 150 MMS: 10 Internet: 100MB / 300mins	Mobile broadband connection  Minimum speed: 1Mbit/s Minimum usage: 3GB Minimum hours: 15	Entry-level pay-TV subscription (including channels which are not available via free digital television) --- 1 digital receiver / set-top box

Source: Ofcom

There is greater variation between countries in the total cost of this basket than for any other basket, ranging from £78.29 in the UK to £140.75 in Germany, driven primarily by large variation in the cost of the mobile phone element (Figure 2.21).

For this high-use mobile phone connection, the UK offers significantly lower prices than any of the other five countries, with the weighted average price 44% lower than in the next least-expensive country, Italy. All three of the UK's largest operators offer tariffs that deliver a lower cost for this basket than any tariff in any other country; all operators offer tariffs on 24-month contracts for £30 a month or less, that include at least 600 minutes, 3,000 texts, 500Mb data usage and an inclusive high-end handset; in addition, for two of the tariffs 'bolt-ons' are available, offering better value for the 33 minutes of international calls included in this package.

Italy offers the next lowest prices. However, the composition of the pricing in the two countries is very different: in the UK the monthly access fee accounts for 77% of the overall prices of the three tariffs, whereas in Italy it accounts for just 29%, with the remainder being usage-related (61%) or required to purchase the handset (9%), which is not included within the monthly fee. There are, of course, benefits to tariffs which are predominantly usage-related as they provide the flexibility to vary usage from month to month and be charged accordingly.

Whereas the US was the most expensive country for the low-use mobile phone in Basket 2, the high-usage requirements of this basket means that the US offers among the lowest average prices for Basket 3. High-end US tariffs typically include a large 'bucket' of minutes and unlimited weekend, evening and on-net calls (this is related to the interconnect regime in the US, as discussed above) and as a result are characterised by relatively high monthly rental fees and low usage fees. However, the international calls element is typically more expensive in the US.

Prices for the mobile phone element have fallen by the greatest amount in France and Spain. In both countries this comes as new tariffs offer more inclusive calls, message and data within access fees. A further factor driving prices down in France may be the lower mobile termination rates (MTRs); cut by 33% (for SFT and Orange) and 43% (for Bouygues) from 1 July 2010. In all countries, lower prices are associated with longer contracts;



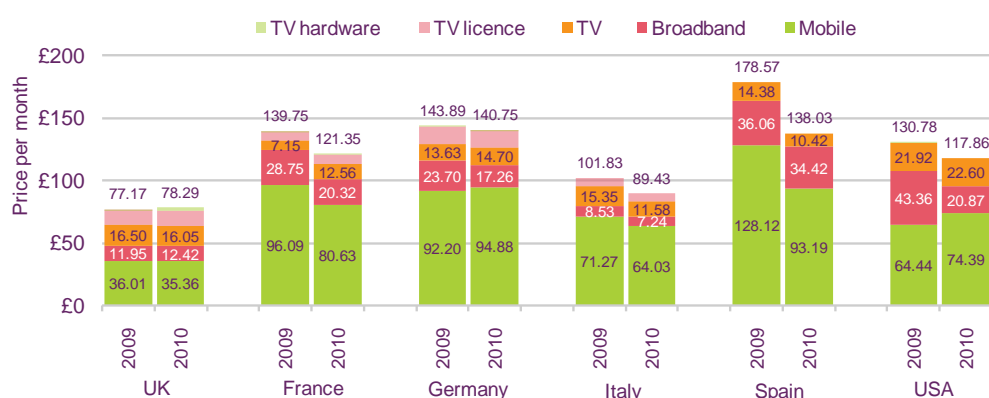
however, whereas 24-month contracts are commonplace in the UK, France, Germany, Italy and the US, the longest mobile contracts available in Spain in July 2010 were for 18 months.

There is large variation in mobile broadband prices between the countries, which in part represents different levels of take-up. Prices are lowest in Italy, France and the UK. Relatively low prices in Italy and the UK indicate that the competitive dynamics which are delivering lower prices for mobile phone tariffs are also reflected in mobile broadband. 3G and HSPA networks were launched relatively early in these countries, with three operators offering HSPA networks by the end of 2006, and by early 2008 mobile broadband had launched as a mass market consumer proposition in both countries. The 3G-only operator, 3, has been active in both countries in promoting mobile broadband, as a differentiator to build market share and use spare capacity in its network, and to develop new revenue streams and compete with fixed broadband suppliers (unlike most of the leading mobile operators, 3 does not have a fixed broadband network).

In both the UK and Italy, the price for mobile broadband compares favourably with the price of the basic fixed-line broadband connection in Basket 2. In addition, mobile broadband does not need a fixed phone line, as is required for DSL broadband. However, the levels of quality of service for fixed-line and mobile broadband differ, with fixed-line broadband typically offering greater reliability, higher speeds and higher usage allowances. In the UK, the majority of consumers with a mobile broadband connection also have a fixed-line broadband connection, indicating that the two services are often complementary, serving different purposes (i.e. a fixed-line connection is used in the home and a mobile broadband connection is used when out and about).<sup>28</sup>

This basket 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.

**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 2009 and July 2010; PPP adjusted

In the UK and in Italy, there is much lower variation in the prices available for this basket among the three largest operators than is the case in the other countries. In the UK, the

<sup>28</sup> In the UK Communications Market report 2010, we report that 9% of UK households had both a fixed and mobile broadband connection, and 6% of households had a mobile broadband connection but no fixed-line broadband connection, p294: [http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR\\_2010\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf)

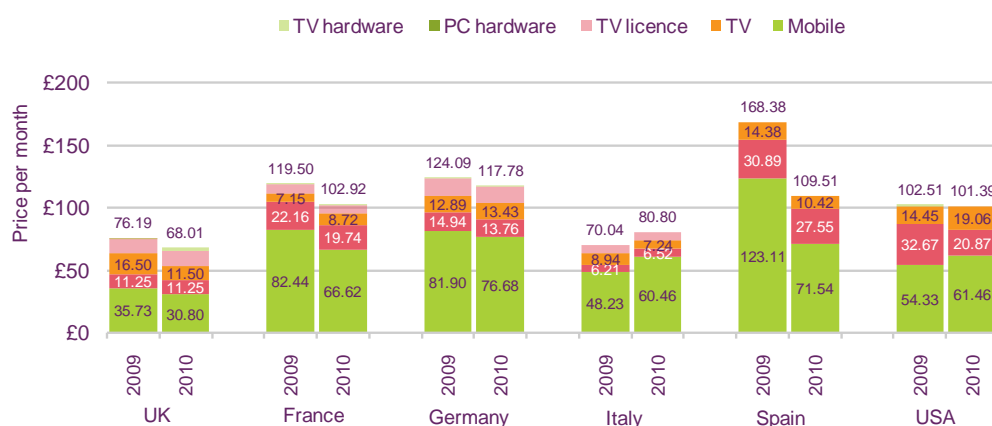
lowest price is available on a £25 a month 24-month contract which includes 600 minutes and a high-end mobile handset; the lowest-cost offers from the other two operators are based on taking a SIM-only contract and purchasing the handset separately (note that the requirements of the basket include a premium handset, so the overall cost of the SIM-only tariff also includes the separate purchase of a handset).

In looking at the mobile broadband component, again there is little difference between the prices of the tariffs of the largest three operators in the UK, resulting in the 'best value' offer being only marginally lower than the 'weighted average'.

The least expensive mobile broadband tariff is in Italy, where a tariff at €10 (£8) a month (with the first two months free of charge), allows for 30 hours of usage every month (Italy and France are the only countries in which allowances in some tariffs are according to time online; all other tariffs provide a data volume allowance).

In Italy, Germany and the US the lowest price for a basic pay-TV service is offered by a cable TV operator, in France by a satellite TV operator and in Spain by an IPTV operator. In the UK, the lowest price is offered by cable operator Virgin Media which now offers its basic M+ TV service without the requirement to take a Virgin Media phone line. However, the fall in price of £4 between July 2009 and July 2010 is perhaps misleading; in like-for-like terms, the lowest prices in the UK have increased slightly – the lowest price for a basic package from satellite operator Sky was £18 a month in July 2010 compared to £16.50 a year previously, while the lowest price for a television and phone package from Virgin Media has increased from £16.50 to £18.49.

**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 three largest operators by market share in each country, July 2009 and July 2010; PPP adjusted.

### 2.3.4 .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 cost-conscious and favour using the fixed-line phone whenever possible, which gets fairly heavy use. The family members are also heavy users of the internet, requiring a minimum connection speed of 4Mbit/s, and subscribe to entry-level pay-TV services.

**Figure 2.23 Composition of Basket 4**

Fixed-line voice	Mobile	Broadband	Television
Total outbound: 600mins - Local: 68% - Regional: 9% - National: 14% - International: 7% - To mobile: 2%  - Daytime: 59% - Evening: 25% - Weekends: 16%	One high-end handset One mid-range handset Two basic handsets  Mobile connection 1 Voice: Total outbound: 300mins To national fixed: 17% To on-net mobile: 33% To off-net mobile: 33% To international: 10% Voicemail: 7% Total inbound: 300 mins Messaging and data: SMS: 30 Internet: 30MB / 100mins  Mobile connection 2 Voice: Total outbound: 180mins To national fixed: 20% To on-net mobile: 34% To off-net mobile: 34% Voicemail: 12% Total inbound: 180mins Messaging and data: SMS: 160 MMS: 4  Mobile connection 3 Voice: Total outbound: 60mins To national fixed: 30% To on-net mobile: 30% To off-net mobile: 30% Voicemail: 10% Total inbound: 60mins Messaging and data: SMS: 70 MMS: 2  Mobile connection 4 Voice: Total outbound: 60mins To national fixed: 30% To on-net mobile: 30% To off-net mobile: 30% Voicemail: 10% Total inbound: 60mins Messaging and data: SMS: 65 MMS: 2	Fixed-line broadband connection  Minimum speed: 4Mbit/s Minimum usage: 5GB Minimum hours: 50	Entry-level pay-TV subscription (including channels which are not available via free digital television) --- 1 digital receiver / set-top box

Source: Ofcom

Overall, the UK has the lowest prices for this basket, and the US has the highest prices, driven mainly by the mobile phone costs, which account for nearly half of the total costs of this basket in the UK and a higher proportion in other countries (Figure 2.24).

Of all the five baskets we examined, this one has the highest volume of fixed-line voice calls. The UK has significantly lower costs than any other country for this component, due both to the availability (from all of the leading three operators) of ‘anytime’ plans, which offer inclusive calls to any fixed line in the UK, and separate ‘add-ons’ which offer savings on calls to mobile and international calls. All the best-value tariffs for this basket from the largest three UK operators involve purchasing a line rental package which includes unlimited calls to UK geographic numbers, and a separate add-on which offers lower-price international calls,

while one of the tariffs also includes purchasing an add-on which offers lower prices on calls to mobiles. This means that although the monthly fee is higher in the UK than in other countries, usage fees are typically lower.

Although the weighted average cost of the best value tariffs from the three largest operators is lower in the UK, the lowest price tariffs among all those considered are from alt-net operators in France and Italy. However, the 'weighted average' is to a large extent a reflection of the 'best value' tariffs available from the incumbents (which have more than 50% market share in every country), and for this particular basket the price available from BT was 31% lower than that available from the incumbent in Italy (Telecom Italia) and 32% lower than that available from the incumbent in France (France Telecom).

The biggest fall in fixed voice prices for this basket, between July 2009 and July 2010, was in the US and was due to all three operators offering tariffs that included unlimited national calls and calls to mobiles within a monthly package. In general, however, US prices for national calls are more expensive than in the European countries, perhaps a consequence of the greater geographic area covered. Among the European countries, none of the operators considered in the UK, France or Germany made any pricing distinction between local, regional and national calls.

This basket includes four mobile phones, one with relatively high voice use (300 minutes a month), one with average voice use (180 minutes a month) and two with low voice use (60 minutes a month). In most countries, the two mobile phones with the highest usage requirements (connections 1 and 2) achieve the lowest prices with post-pay tariffs, and the two phones with the lowest-use (connections 3 and 4) achieve the lowest pricing with pre-pay tariffs. Overall, the lowest prices (as defined by the 'weighted average') for the high-use connections are available in the UK, while the lowest prices for the low-use connections are available in Italy.

The greatest fall in the price of the mobile connections has come in Spain as a wider range of tariffs have become available, particularly post-pay tariffs offering a high number of inclusive minutes within the line rental.

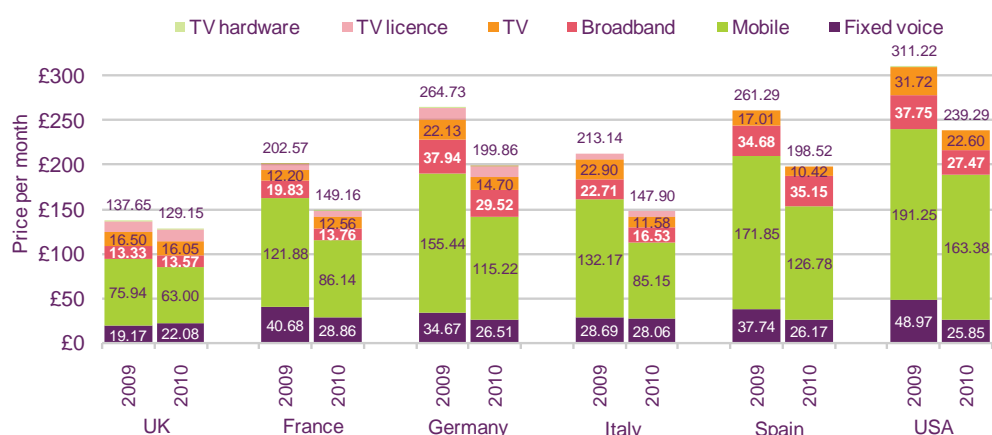
Overall, prices are highest in the US. A couple of factors are driving this. Firstly, as discussed in 2.2.3 above, US tariffs are structured to favour much higher use; for the low-use connections 3 and 4 the lowest prices available in the US are generally more than double the cost of those in the European countries. Secondly, the price of international calls from mobiles is much higher in the US than in Europe. This may be a result of the introduction of the Euro-tariff in the European Union in 2007, which put a cap on the prices of mobile calls between EU countries.

The lowest broadband prices for this basket are in the UK and France; in both countries, despite the higher speed and data use requirements, the costs are exactly the same as for Basket 2 - a reflection of the fact that the large majority of broadband tariffs offer a headline speed of at least 8Mbit/s and unlimited data use.

Prices for broadband are highest in Germany and Spain. However, in both countries the largest three operators do not offer broadband as a stand-alone service, but offer it only in combination with voice services (our theoretical consumers in Germany and Spain are therefore purchasing two voice services in the single-service analysis in Figure 2.24 and Figure 2.25 – one to meet the requirements for the fixed voice component, and another which is included with the broadband connection).

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

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



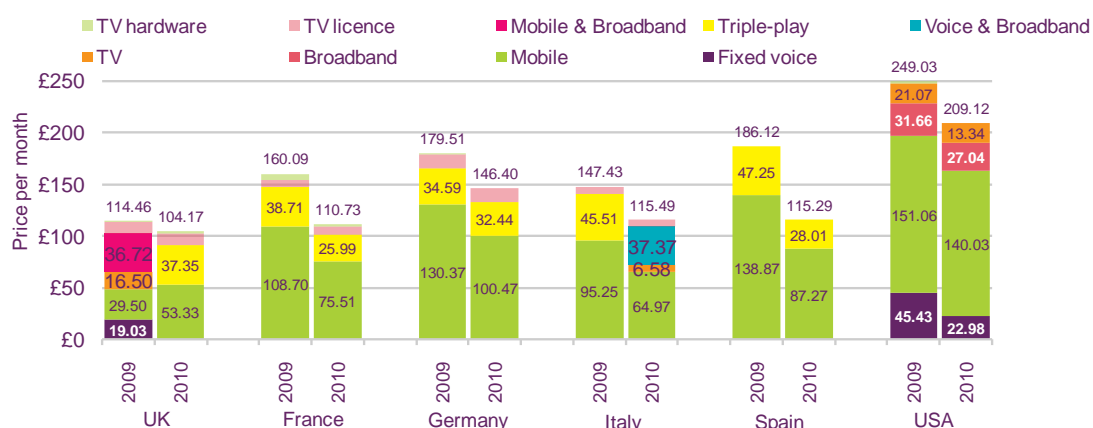
Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2009 and July 2010; PPP adjusted

As with Basket 2, there are considerable savings to be made in all European countries by purchasing services within a bundle (Figure 2.25). In the UK, France, Germany and Spain the lowest prices were available by purchasing a 'triple-play' service incorporating fixed-line voice, broadband and basic pay-TV, while in Italy a 'dual-play voice and broadband tariff, with the pay-TV component purchased separately, offered the lowest overall price. However, while in France, Germany and Spain triple-play offers provided a significantly lower overall price than other components, in the UK there was little difference between the price of purchasing these services in triple-play, or purchasing television separately and bundling broadband with fixed voice services or mobile services.

Prices for triple-play services providing the fixed voice, broadband and basic pay-TV requirements of this basket are lowest in France, Spain and Germany, where the lowest tariffs are available from cable operators. While the basic requirements of the pay-TV element are the same as for Basket 3, it is notable that many of these triple-play tariffs provide services in excess of the least expensive available on a stand-alone basis. For example, the triple-play offer in France includes 138 channels compared to 23 for the lowest-price stand-alone service, and the triple-play service in Germany includes 60 channels compared to 36 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 three largest operators by market share in each country, July 2009 and July 2010; PPP adjusted.

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

Our final basket is typical of a young couple of high-end users who have low price sensitivity. They both have mobile connections and are fairly high users of voice and (to a lesser extent) SMS. They also have a fixed line, but this has relatively low use. They have a fast broadband connection and are heavy internet users, and have a premium television package for watching sport and the latest movies, and also a digital video recorder (DVR).

Figure 2.26 Composition of Basket 5

Fixed-line voice	Mobile	Broadband	Television
Total outbound: 250mins - Local:60% - Regional:7% - National: 13% - International: 8% - To mobile: 12% - Daytime: 59% - Evening: 25% - Weekends: 16%	One high-end handset One mid-range handset Mobile connection 1 Voice: Total outbound: 400mins To national fixed: 20% To on-net mobile: 29% To off-net mobile: 29% To international: 14% Voicemail: 8% Total inbound: 400mins Messaging and data: SMS: 80 Internet: 30MB / 100mins Mobile connection 2 Voice: Total outbound: 200mins To national fixed: 30% To on-net mobile: 30% To off-net mobile: 30% Voicemail: 10% Total inbound: 200mins Messaging and data: SMS: 20	Fixed-line broadband connection Minimum speed: 8Mbit/s Minimum usage: 5GB Minimum hours: 50	Premium pay-TV subscription, including: - Best package of live top-flight football / NFL - Film package including first-run major studio movies - PVR service --- 1 digital receiver 1 DVR

Source: Ofcom

As for Baskets 3 and 4, the UK offers the lowest pricing for this basket because of significantly lower prices for the mobile component than in the other countries (Figure 2.27)

For the fixed-line component, prices are similar to those of Basket 1, which has a similar volume of calls. In all countries except Italy, prices for the fixed-line component are slightly higher than for Basket 1, which has a similar volume of calls, as a result of the higher proportion of calls to international and mobile numbers. Italy has seen the biggest fall in prices of the fixed-line component as a result of a new tariff from incumbent Telecom Italia which includes discounted calls to mobiles. Prices are proportionally higher in Spain than in the other countries, largely as a result of the lack of availability of suitable 'add-ons' offering reduced prices for mobile and international calls from the incumbent, Telefonica. The UK is the only country in which prices increased between July 2009 and July 2010, due to increases in line rental prices.

The UK offers the lowest price for both of the mobile connections in this household, although it is the only one of the European countries in which prices increased between July 2009 and July 2010 (up by 2%). Mobile connection 1 includes 56 minutes of international calls and also internet browsing, and tariffs including 'add-ons' for web browsing and for international calls are available from all of the largest three UK operators. Overall, the weighted average price for this connection in the UK is 31% lower than in the next least expensive country (Italy) and more than 50% lower than in Germany, Spain and the US. All three UK operators

meet the requirements of the basket with pay-monthly 24-month contracts which include the full price of the handset (in all other countries, payment for the handset is required up-front – we amortise this cost over three years to calculate the monthly cost).

With 200 minutes of use a month, mobile connection 2 represents lower than average use for the average contract pay-monthly customer in the UK, and higher than average use for the average pre-pay customer<sup>29</sup>. One of the UK's three largest operators offers the lowest price for this basket with a pre-pay tariff, while the lowest price from the other two operators is achieved by £15-a-month pay-monthly contracts, with the handset included within a 24-month contract.

Prices for the mobile component are highest in the US. While prices are broadly in line with those in France, Germany and Spain for the higher-use connection 1, prices are 50% higher than in any other country for the lowest-use connection 2. Once again, this highlights the characteristics of the US market, whereby low-use tariffs are relatively expensive (the consequence of the 'receiving party pays' interconnect regime which has resulted in tariffs tending to offer a high number of inclusive minutes, but where monthly rental or pre-pay 'top-up' costs are high).

As for Baskets 2 and 4, the UK and France offer the lowest price for broadband; indeed, the three tariffs which offered the lowest price for Basket 2, which only required a minimum speed of 1Mbit/s and 0.5GB use a month, are all still valid for the higher requirements of this household (8Mbit/s and 5GB per month).

This basket also includes a premium TV component. Among the European countries, Spain, Germany and the UK have the most expensive TV pricing for this top-end package of premium top-league football rights and first-run movies from the major Hollywood studios. This is partly a consequence of the way operators bundle this content with other content and channels. BSkyB in the UK and Audiovisual Sport in Spain both own rights to most of the biggest football matches, and the "best packages" which include this content comprise a large amount of TV content (both premium and non-premium). By contrast, in Germany, Premiere's segmentation (via its distribution partners) is to offer matches on a pay-per-view basis as well as within an 'all inclusive' monthly tariff. Therefore in Germany consumers can choose to purchase the top matches on an individual basis, or within a monthly 'bundle' (this does not affect the comparisons below; the price used is the price for a monthly 'bundle', as the requirement of the basket is for the 'best package').

In Italy a fragmented football rights market creates more pressure on pricing; rights are sold on a club-by-club basis, and separate packages are sold to the terrestrial and satellite platforms. As a result, even though satellite operator Sky Italia has been able to secure a better overall package of rights than its competitors, the availability of a wide range of matches on digital terrestrial television (many on a pay-per-view basis) combines to create competition between the two platforms.

Comparisons with the US are harder to make, partly because we are comparing NFL with football, but also because a characteristic of the US market is that NFL viewing packages are wrapped up in many different ways and offered through a combination of pay-per-view and subscription.

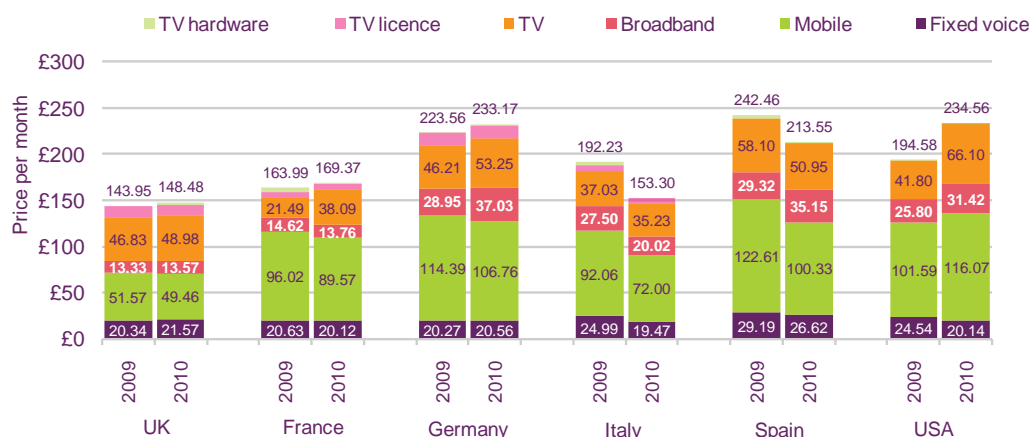
---

<sup>29</sup> In 2009, contract mobile connections in the UK used an average of 236 outbound minutes a month, and pre-pay mobile connections used an average of 61 outbound minutes a month (UK Communications Market Report, 2010, p341: [http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR\\_2010\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf))



This basket does not contain the requirement for high-definition (HD) television, because of its low take-up in some countries. However, it is worth noting that the services in all countries except the UK include HD channels, an HD receiver and a DVR without any additional fee. Premium HD channels are available for additional charges in the UK.

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



Source: Ofcom using data supplied by Teligen

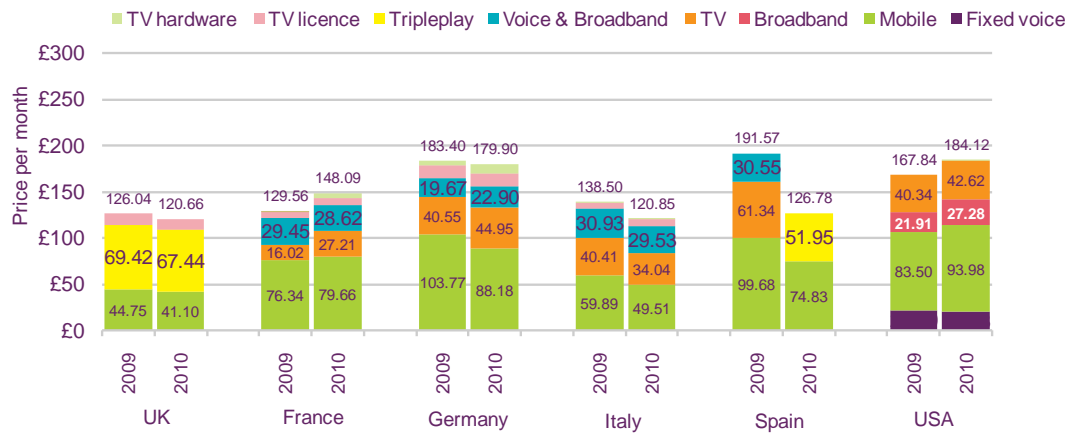
Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2009 and July 2010; PPP adjusted

There are not many triple-play tariffs in any of the countries which meet the requirement of containing premium football and movies. Premium television packages are typically offered as an ‘add-on’ to a basic service and so do not generally offer savings if purchased within a triple-play subscription rather than on a stand-alone basis. Only in the UK and Spain does a combined ‘triple-play’ tariff offer better value than purchasing TV separately, although in Spain the television component is offered via IPTV and therefore has limited availability. In France, Italy and Germany, a voice and broadband bundle offers the best value, while in the US stand-alone services provide the lowest prices.

The largest savings, compared to purchasing services on a stand-alone basis, are found in Spain, where there was the steepest fall in prices between July 2009 and July 2010. This was due to the availability of a triple-play tariff from incumbent Telefonica, which in the last year has launched triple-play services under the Movistar brand – previously, IPTV-based television services were sold under the name Imagenio.



**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 three largest operators by market share in each country, July 2009 and July 2010; PPP adjusted.

## 2.4 Conclusion

Figure 2.29, Figure 2.30 and Figure 2.31 below summarise the service pricing of each basket in each country (TV licence and equipment costs are excluded). The findings enable us to draw some general conclusions about the pricing of communications services, as well as highlighting differences between the six countries.

A number of conclusions can be drawn about the relative pricing of communications services in the UK compared to the five comparator countries:

- Overall, prices in the UK compare favourably to those in other countries. Among the six countries analysed, the UK offers the lowest prices for four of the 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.
- However, much of this difference is due to lower mobile prices in the UK than in other countries – with the UK offering the lowest prices both in terms of 'weighted average' pricing and best-offer pricing for all of the baskets that contain a mobile element, except for Basket 2, which has a very low-use mobile component.
- For stand-alone broadband, pricing in the UK, along with France, is lower than in the other countries. However, comparisons of stand-alone broadband are not very useful, as most broadband in all the European countries we consider is purchased as a 'bundle' along with at least one other service – and stand-alone broadband is not available from the largest operators in Germany and Spain.
- In terms of bundled services, pricing in the UK compares favourably with other countries for a basic bundle of broadband and voice services (Basket 2), but once a pay-TV requirement is included, pricing in the UK is comparatively more expensive. Among the European countries, the UK is the most expensive for a basket of fixed voice, fixed broadband and basic pay-TV services (Basket 4), and France and Italy are less expensive for a basket of fixed voice, fixed broadband and premium TV services (Basket 5).

The difference between the 'weighted average' and the 'best offer' pricing of the single services indicates the range of pricing between the largest operators in each country, and therefore indicates the countries where consumers potentially have most to gain by switching providers.

Compared to other countries, there is little variation in mobile, fixed-line and broadband pricing in the UK between the 'weighted average' price and the lowest price. This indicates similar pricing from all the largest operators.

For example, the difference between the 'weighted average' pricing of the fixed voice component and the best price available in the UK is never more than £2 a month (the greatest difference is in Basket 2, where the best available price is 13% lower than the 'weighted average' price). By comparison, in Italy 'best-offer' prices for fixed-line voice are up to a third cheaper than the weighted average. Similarly, in mobile the biggest difference between the 'best offer' and the 'weighted average' pricing in the UK is much lower than in other countries; the biggest difference between the 'weighted average' and 'best offer' pricing in the UK is 13% (Basket 4), whereas in the US there is a bigger difference in all baskets, with the best pricing for Basket 2 more than 50% less expensive than the 'weighted average' pricing.

The mobile phone component is easily the largest cost for all of the baskets 3, 4 and 5. This is in line with the relative sizes of the fixed-line voice, broadband and mobile industry sectors – with mobile generating over 50% of telecoms industry revenue in all of the countries. However, it is also notable that it is the mobile component which shows greatest variation across the countries analysed. This is perhaps due to greater variation in the industry structures between the countries than is the case for fixed-line services (where, in all the European countries, the incumbent still has more than 50% of all retail voice connections). For example:

- Lower prices in the UK may be a reflection of competition between five mobile network operators (until July 2010 when Orange UK and T-Mobile UK officially combined into Everything Everywhere, while still retaining the two brands), compared to three in France; four in Germany, Italy and Spain, and four nationwide operators plus regional operators in the US.
- The ‘receiving party pays’ interconnect regime in the US to a large extent defines the structure of tariffs, which typically include a large number of inclusive minutes. This in turn means that ‘low-use’ baskets are expensive compared to other countries, whereas higher-use baskets are less expensive. (This is of course also reflected in consumer behaviour, with much higher use per connection in the US than in other countries).
- Nearly 30% of Germany’s mobile connections are with mobile virtual network operators (MVNOs). This provides part of the explanation why the low-use baskets are relatively low-priced, as MVNOs have, in particular, driven competition at the low end of the market.
- The Italian market is 90% pre-pay, whereas the US market is 90% post-pay; as a result pricing in Italy tends to be more usage-based (i.e. metered), and US pricing is characterised by ‘flat-rate pricing’. The result is that Italy offers relatively low prices for low-use connections, while the US is more competitive for high-use connections.
- In Italy and the UK the award of 3G licences led to a new 3G-only operator entering the market, whereas in Germany, Spain and France 3G licences went only to existing operators. The resulting disruption in the Italian and UK markets, caused by a new operator seeking rapidly to gain market share, may be reflected in lower overall prices than in the other countries.

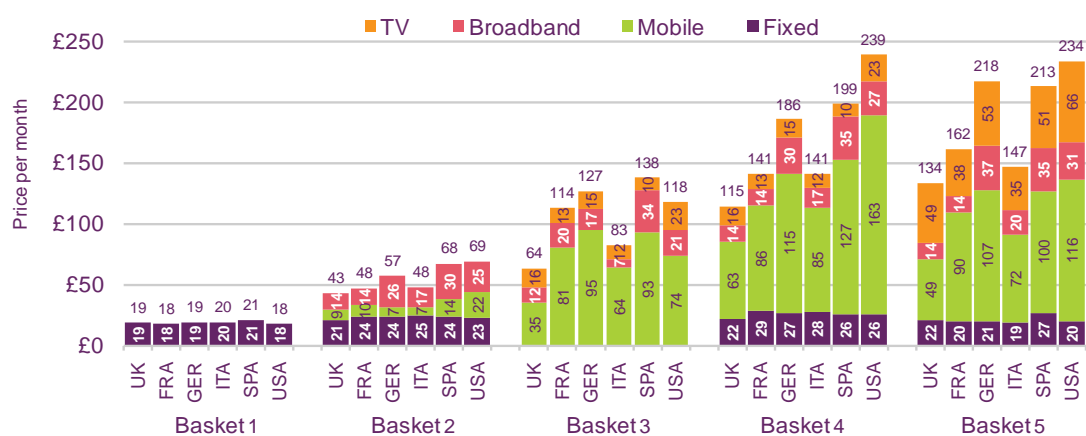
As broadband is frequently ‘bundled’ with other services, consumers in all countries can make significant savings by purchasing communications services in bundles, compared to purchasing the lowest-price single services (as evident in Baskets 2, 4 and 5 which all include a fixed-line broadband connection). However, the extent of the savings varies from country to country. In the UK, the savings that consumers get from purchasing a whole basket of services as a bundle vary from 7% for Basket 5 to 18% for Basket 2. By comparison, consumers in Germany (where most operators offer broadband only in a bundle with voice services), the prices for Basket 2 are 59% lower when purchasing services in a bundle than when purchasing the lowest-price equivalent services on a stand-alone basis; similarly, German consumers can save 25% on Basket 4 and 14% on Basket 5.

Like-for-like TV price comparison is not really possible, due to variations in channel numbers and package content. However, we have included it in order to include comparisons of ‘triple-play’ (voice, broadband and TV) packages, which have had increasing take-up in all countries, although it must be noted that, because of variations in television content in these triple-packages, pricing comparisons should be treated with caution. ‘Triple-play’ services

deliver the lowest prices for basket 4 in France, Germany, Italy and Spain, where the requirement is for a basic pay-TV service.

By contrast, prices for triple-play packages, including a basic pay-TV element in the UK, are more expensive than in the other European countries for this basic pay-TV package and do not offer the lowest price for this basket, which is achieved by purchasing a dual-play voice and broadband tariff and a separate pay-TV service. However, for Basket 5, which includes premium TV services, the UK and Spain are the only countries where a 'triple-play' service offers lower prices than purchasing a 'dual-play' (voice and broadband) service with a separate pay-TV service.

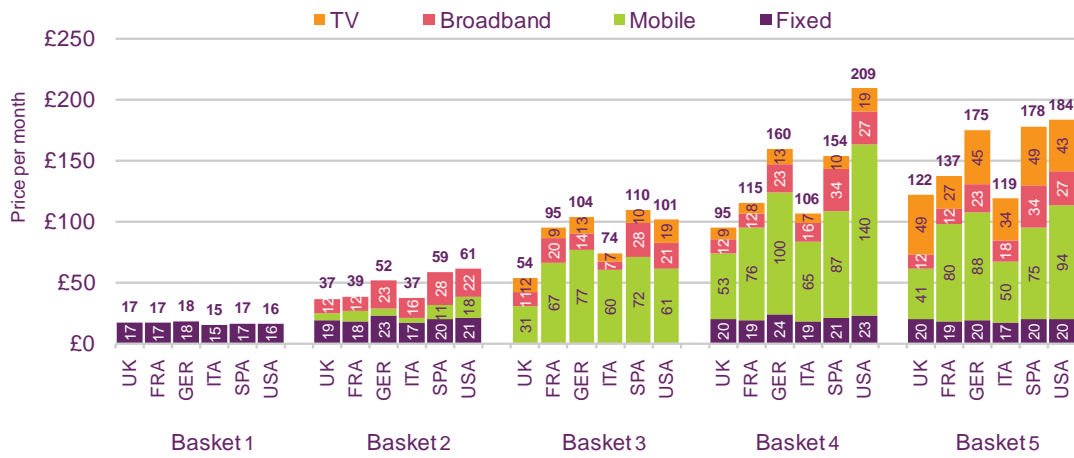
**Figure 2.29 Comparative 'weighted average' pricing of 'single services' for all countries**



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; Note '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

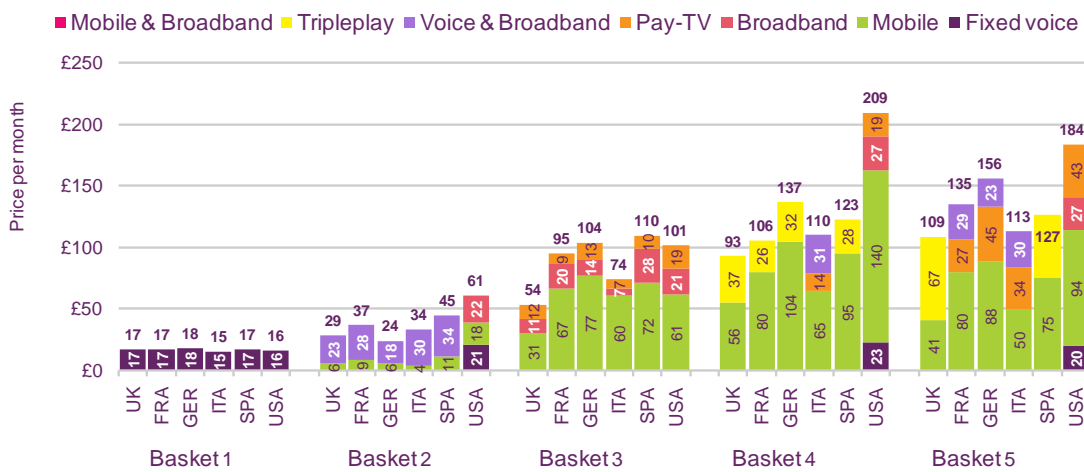
**Figure 2.30 Comparative 'best offer' pricing of 'single services' for all countries**



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

**Figure 2.31 Comparative cost of lowest price services, including multi-play, for all countries**



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





## The International Communications Market 2010

### **3 Television and audio- visual**

# Contents

<b>3.1 Key market developments in the TV and audio-visual markets</b>	<b>111</b>
3.1.1 Industry metrics and summary	111
3.1.2 Global TV revenues fell in 2009 as growing income from pay-TV services failed to offset reductions in advertising	112
3.1.3 Digital TV take-up continues to rise as digital switchover gathers momentum	114
3.1.4 New digital platforms begin to offer more choice to consumers	117
3.1.5 Broadcasters look to technology to drive growth	120
3.1.6 Patterns of viewing concentration influenced by digital TV take-up	123
3.1.7 The value of TV airtime to advertisers was similar across many comparator countries in 2009	125
<b>3.2 The TV and audio-visual industries</b>	<b>127</b>
3.2.1 Summary	127
3.2.2 Television revenues among comparator countries	127
3.2.3 TV revenue per head among comparator countries	131
3.2.4 TV licence fees still important in Europe	133
3.2.5 Advertiser-funded income stream under pressure in 2009	134
3.2.6 Pay-TV revenues resilient in the downturn	135
3.2.7 HDTV development	139
3.2.8 Digital video recorders (DVR)	143
3.2.9 Video on demand	144
3.2.10 Hybrid devices and online video	147
3.2.11 Television output from European public service broadcasters (PSBs)	151
<b>3.3 The TV and audio-visual consumer</b>	<b>156</b>
3.3.1 Summary	156
3.3.2 Take-up of television distribution technologies on main television sets	156
3.3.3 Take-up of pay-TV on main television sets	160
3.3.4 Consumption of broadcast television	163
3.3.5 Television remains the most common primary source for international and national news for internet users	166
<b>3.4 Local and regional television</b>	<b>169</b>
3.4.1 Local and regional television	169
3.4.2 Definitions and availability of local/regional television	169
3.4.3 Features of local TV markets	175



## 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 four areas: key market developments in the sectors, analysis of industry revenue and trends, the TV and audio-visual consumer and local TV. It includes a global overview and country-level analysis of the 17 comparator countries.

- **Key market developments** details some of major TV and audio-visual industry trends during the last year, covering analysis of revenue, device take-up, technology developments and viewing.
- **The TV and audio-visual industries** section focuses on the TV and audio-visual industries, looking at key revenue trends and financial results for TV broadcasters; analysis of key TV technologies and programming trends among European public service broadcasters.
- **The TV and audiovisual consumer section** looks at developments in TV device take-up across our comparator countries, TV viewing trends and attitudes towards and consumption of news.

Figure 3.1 TV industry metrics 2009

	UK	FRA	GER	ITA	USA	CAN	JPN	AUS	ESP	NED	SWE	IRL	POL	BRA	RUS	IND	CHN
TV revenue (€bn)	10.5	10.0	11.2	7.9	81.5	3.5	24.9	3.6	4.0	2.3	1.4	0.9	2.1	8.0	2.8	4.0	8.7
Revs change (% , YOY)	0.2	2.4	-0.4	-2.9	-1.0	-0.2	-4.6	0.1	-9.4	-0.8	-3.0	-2.1	5.7	12.0	-12.2	14.1	7.6
Revenue per cap (£)	169	160	137	135	265	104	196	168	86	136	150	190	53	40	20	3	7
<i>from advertising</i>	51	41	40	67	105	52	92	81	45	41	40	58	19	24	16	1	4
<i>from subscription</i>	74	84	45	44	159	36	69	63	27	56	77	93	33	16	4	2	3
<i>From public funds</i>	44	35	51	25	1	16	35	24	14	39	33	39	2	1	0	0	0
TV licence fee <sup>1</sup>	143	105	192	95	n/a	n/a	102	n/a	n/a	n/a	173	142	38	n/a	n/a	n/a	n/a
Largest TV platform (% of homes)	DTT 41%	DTT 32%	ACab 40%	DTT 36%	DCab 38%	DCab 38%	ACab 27%	ATT 39%	DTT 62%	ACab 43%	ACab 45%	DSat 46%	DSat 49%	ATT 55%	ATT 44%	ACab 61%	ATT 40%
TV viewing (mins/day) <sup>2</sup>	225	205	212	238	280	217	n/a	183	226	184	165	185	240	227	228	138	158
No.1 channel share (%)	21	26	13	21	7	11	n/a	22	16	20	21	24	21	43	18	14	9
DTV take-up (%)	91	81	48	71	83	69	69	61	91	57	55	66	57	38	26	23	25
Pay TV take-up (%)	51	56	65	25	90	92	58	31	28	99	97	76	84	14	49	78	47
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 2009 average exchange rates. Note: Prices as of end 2009. <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.

The TV and audiovisual sectors are among the most rapidly developing of the communications markets. However, their characteristics and levels of development vary greatly among the countries covered in our analysis. This section focuses on some of the key market developments seen during the last year. For example:

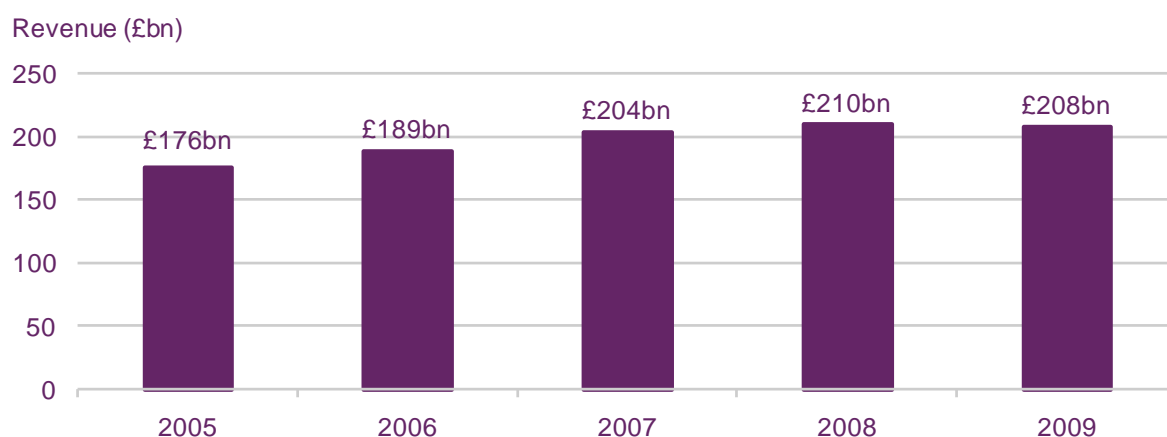
- **Global TV revenues declined in 2009, by 1.0% year on year to £208bn.** Growing income from pay-TV providers – up by 5.8% to £102bn – failed to offset declining TV advertising revenue in 2009. Net TV advertising revenue fell by 8.9% year on year from £95bn to £86bn (page 112).
- **With digital switchover already completed in five comparator countries and imminent in several others, digital TV penetration rose across all countries included in our analysis during 2009.** In the UK and Spain 91% of homes took digital TV, followed by the US (83%) and France (81%) (page 114).
- **Although cable, satellite and free-to-air terrestrial account for the vast majority of TV households across the comparator countries, other platforms are emerging to offer more variety to consumers.** The UK was among the first countries to launch pay DTT and IPTV services (page 117).
- **Consumers are taking advantage of a broad range of technologies to capitalise on increasing convenience and quality, and to take control of their viewing.** Our consumer research found that HD-ready TV sets were most widely adopted in the UK (59% of households), slightly ahead of the US (57%). The UK was the second biggest market for DVRs (32%) behind the US (39%) (page 120).
- **Patterns of viewing were most concentrated in Brazil,** where Globo commanded a 43% share of viewing in 2009. TF1 in France (with a 26% share) and RTE1 in the Republic of Ireland (24%) followed. BBC One attracted the highest viewer share in the UK in 2009, at 21% (page 123).
- **An hour of TV viewing in the US and Australian markets generated 6.2 pence per viewer hour (ppvh) and 7.3ppvh respectively.** In India, Poland, Russia and Brazil the comparable figure ranged 0.1 ppvh pence to 1.7 ppvh in 2009. Among remaining countries the figure ranged from 3.1 ppvh in Germany to 5.2 ppvh in the Republic of Ireland; the UK was situated at the lower end of this range, at 3.7 ppvh (page 125).

### **3.1.2 Global TV revenues fell in 2009 as growing income from pay-TV services failed to offset reductions in advertising**

Ofcom estimates that global TV revenues declined in 2009, by 1.0% year on year to £208bn. The trend may well be explained by the economic downturn seen in many major economies. While TV revenues fell slightly in 2009, they were still up by nearly a fifth (18.2%) compared to 2005.

Our analysis of *global* revenue (presented in this section) incorporates three main components – net advertising revenue, TV licence fees and subscriptions. It also incorporates revenues from pay per view (PPV) 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 Section 3.2.2), where we focus only on net advertising revenues, public funds/TV licence fee and subscriptions.

**Figure 3.2 Global TV revenues**



Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [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 \$1.5643 to the GBP, representing the IMF average for 2009.

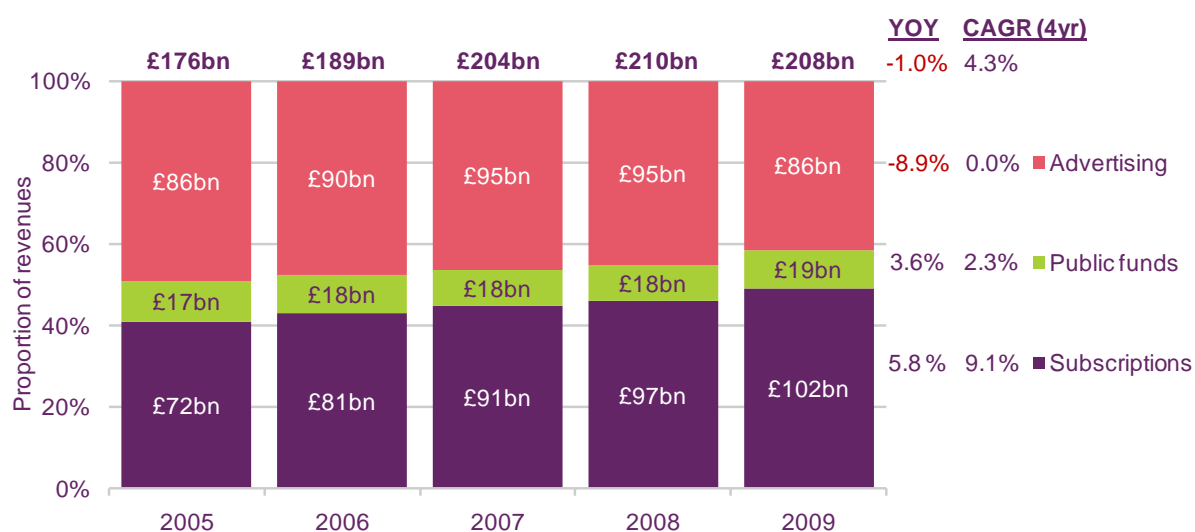
Growing revenues from pay-TV providers failed to offset declining TV advertising revenue in 2009. Net TV advertising income fell by 8.9% year on year from £95bn to £86bn and was the only revenue category analysed that contracted in 2009, probably driven largely by the economic downturn.

Despite the overall reduction, pay-TV revenues grew by 5.8% in 2009 to reach £102bn – the first time they have passed the £100bn mark. Unlike many advertiser-supported channels, pay-TV operators have generally reported resilient performance throughout the economic downturn as consumers value TV in such times (see section 3.2.6).

Growth in pay-TV adoption (see section 3.3.3) has contributed to this increased revenue, as has the launch of new products and services. Enhancements such as digital video recorders (DVRs), video on demand (VoD), high-definition television (HDTV) and three-dimensional TV (3DTV) can help pay-TV broadcasters increase average revenue per user (ARPU). We look at these products in greater detail in sections 3.2.7 to 3.2.10. Public funding, usually sourced from TV licence fees or government grants, increased by 3.6% year on year to reach £19bn.

On a compound annual basis, subscription revenue increased by 9.1% p.a. between 2005 and 2009, while public funding grew by 2.3% p.a. over the same period. NAR was static, returning to the £86bn earned in 2005 and down from £95bn in 2007 and 2008. In 2009, subscriptions accounted for nearly half (49%) of total TV revenue for the first time, up by eight percentage points on the 41% share recorded in 2004, and up by four percentage points year on year. Net advertising revenue commanded a share of 42% in 2009, seven percentage points lower than that in 2005. Public funding's share was relatively stable between 2005 and 2009, down by one percentage point to 9%.

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



Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [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 \$1.5643 to the GBP, representing the IMF average for 2009.

### 3.1.3 Digital TV take-up continues to rise as digital switchover gathers momentum

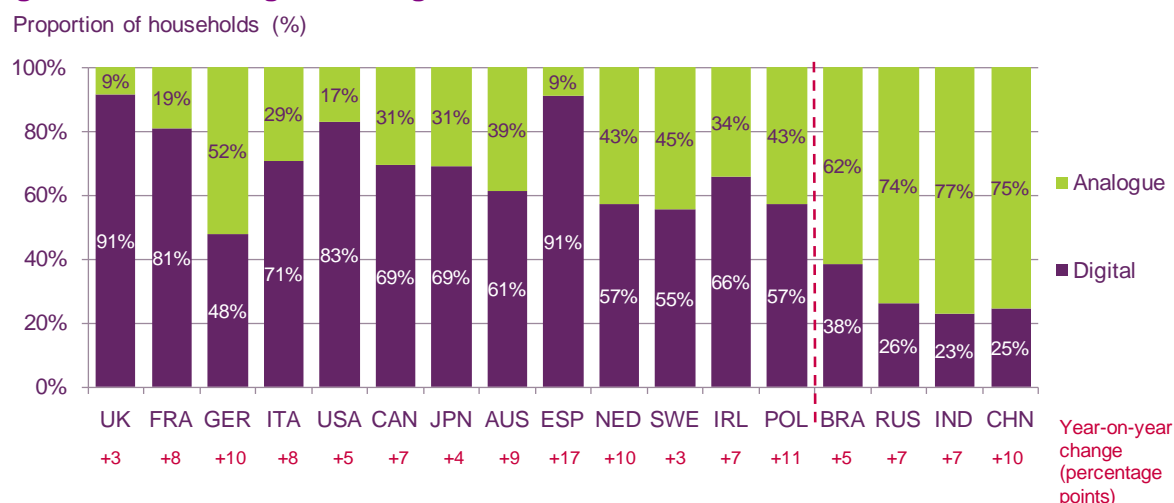
With digital switchover (DSO) already completed in five comparator countries and imminent in several others, digital TV penetration increased across all the countries in our analysis in 2009. DSO usually refers to the cessation of analogue terrestrial broadcasting, replaced by a digital equivalent (DTT).

Homes in the UK had one of the highest levels of digital TV take-up (91%) at the end of 2009, up by three percentage points year on year, driven partly by digital switchover. In Spain, where DSO was completed in April 2010, 91% of homes had also adopted digital TV after a rapid increase in digital conversion compared to 2008 (17 percentage points)<sup>30</sup>. Although digital TV penetration grew by ten percentage points in Germany year on year, it remained the only European comparator country not to have a majority of digital households (48%). This was driven by the continuing popularity of basic analogue cable offerings and by some homes taking analogue satellite.

Figure 3.4 depicts the contrast between European markets (where a majority of homes in every comparator country apart from Germany have their television sets connected to digital), and the BRIC countries (where this figure is closer to a quarter). Brazil is the most mature digital TV market among the BRIC countries due to its relatively early adoption of DTT (December 2007), with 38% of main sets connected to digital. This compares to around a quarter (23-26%) of homes in Russia, India and China.

<sup>30</sup> Note that this figure relates to the end of 2009, before DSO had been completed, and includes a small element of analogue satellite and analogue cable.

**Figure 3.4 Analogue and digital TV households, 2009**



Source: IDATE / industry data / Ofcom

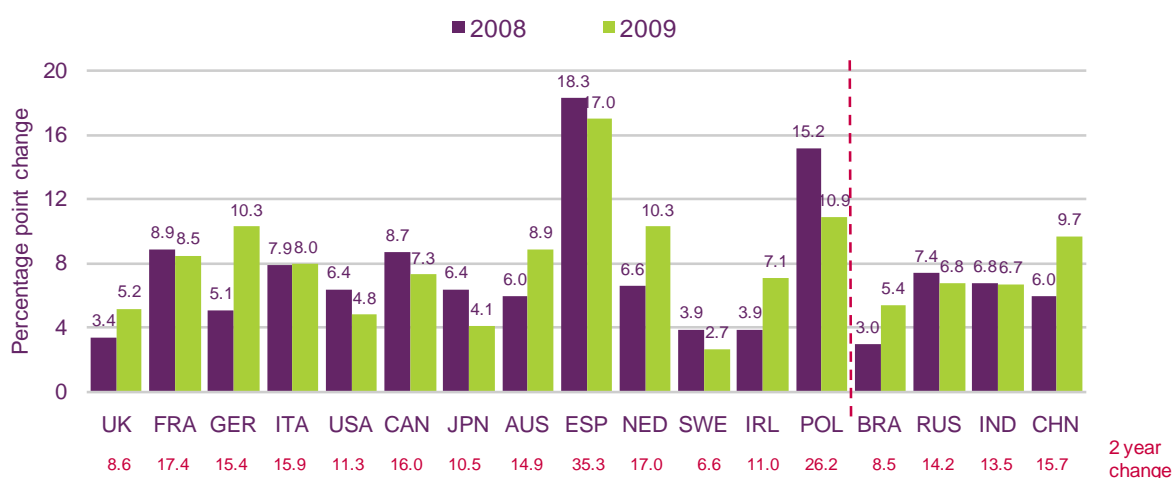
**Homes in Spain adopted digital TV most rapidly during 2009 (up by 17.0pp) in the run up to switchover**

At the end of 2009 there were over 400 million digital TV households across all comparator countries, an increase of nearly a quarter (24.5%) compared to 2008. As Figure 3.5 illustrates, digital TV take-up is experiencing steady growth in the majority of comparator countries. Homes in Spain (where digital take-up rose by 17pp) and Poland (up by 10.9pp) adopted digital at the fastest rates in 2009, compared to relatively low migration levels in more mature markets like Sweden (up by 2.7pp).

Figure 3.5 also shows that the rate of digital migration actually slowed down in some of the countries where the full transition to digital terrestrial services is imminent, or has already been made (further migration to digital in these cases is driven by upgrades to cable infrastructure and/or by analogue satellite homes moving over to digital).

The most notable cases were the US (where the rate of growth fell by -1.6 year on year), Canada (-1.4pp), Japan (-2.3pp) and Sweden (-1.2pp). Digital migration accelerated year on year in Ireland (where the rate of migration rose by 3.2pp in 2009) and in China (up by 3.7pp), where DSO is scheduled to be completed in 2015.

**Figure 3.5 Percentage point change in the proportion of DTV homes, 2008 and 2009**



Source: IDATE / industry data / Ofcom

Note: Figures represent additional DTV homes

## Switchover strategies

Digital switchover is now well advanced in Western Europe, where many countries have employed a phased transition from analogue to digital terrestrial (DTT), progressing region-by-region until analogue signals are switched off across the whole country. Digital switchover can also include other TV distribution technologies, such as cable and satellite. DSO continues in the UK and is due to be completed in 2012. Wales became the UK's first digital nation in March 2010 and analogue switch-off is now under way in Scotland<sup>31</sup>. As DSO progresses in other countries, a range of strategies have emerged to manage the transition from analogue to digital:

**Europe:** On 2 April 2010, Spain officially completed the transition to DTT by switching off all remaining analogue transmissions in the regions of Asturias, Castilla and Leon, Galicia and Islas Canarias. Italy is also due to switchover in 2012, but according to the Italian communications regulator (AgCom), this deadline could be brought forward to 2011, as there are six 'all digital' regions already, and the digitisation of Northern Italy may be completed this year<sup>32</sup>. In contrast, the transition to digital broadcasting has proceeded at a slower pace in Poland, where DTT launched in September 2010, when the DTT multiplex licensed to TP Emitel became operational in four regions of the country<sup>33</sup>.

**North America:** Contrary to the phased approach adopted in some Western European countries, US television stations shut down analogue broadcasts on a single day in a nationwide switch to digital programming on 12th June 2009 (although this represented a four-month delay on the original timetable)<sup>34</sup>. The strategy also included a 'coupon programme' which provided consumers access to two \$40 discounts to use towards the purchase of two DTT set-top boxes. In Canada, public broadcaster CBC has said it will be unable to convert all its TV transmitters by the scheduled DSO deadline of August 2011<sup>35</sup>.

**BRICs:** Plans for digital switchover are at an earlier stage of development in the BRIC countries, but are gathering pace. In India, where analogue cable accounts for the majority of television households, the Telecom Regulatory Authority of India (TRAI) has recommended a fast-track approach for cable analogue switch-off. In August 2010 it announced a plan to digitise the network, starting with the four largest cities in March 2011 and the entire country by the end of 2013. In contrast, digital switchover in Brazil is not scheduled until 2016, when all broadcasters are required to adopt the ISDB-T standard. China plans to have complete DTT coverage by 2012 and complete analogue switch off in 2015, using its own DTT standard; DTMB<sup>36</sup>. Russia has a four-stage plan to switch to all-digital broadcasting by 2015, with DTT set to launch in the Khabarovsk region by the end of 2010<sup>37</sup>.

---

<sup>31</sup> [http://www.digitaluk.co.uk/\\_data/assets/pdf\\_file/0016/47302/Wales\\_becomes\\_UKs\\_first\\_digital\\_nation.pdf](http://www.digitaluk.co.uk/_data/assets/pdf_file/0016/47302/Wales_becomes_UKs_first_digital_nation.pdf)

<sup>32</sup> <http://www.agcom.it/Default.aspx?message=viewrelazioneannuale&idRelazione=19##>

<sup>33</sup> <http://www.screendigest.com/news/Poland-gets-second-DTT-multiplex/view.html>

<sup>34</sup> <http://www.fcc.gov/dtv/>

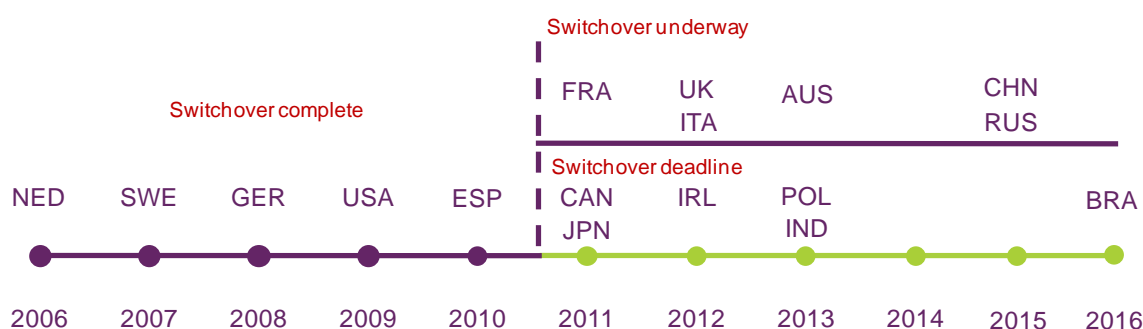
<sup>35</sup> <http://cbc.radio-canada.ca/newsreleases/20100806.shtml>

<sup>36</sup> [http://www.dvb.org/about\\_dvb/dvb\\_worldwide/china/index.xml](http://www.dvb.org/about_dvb/dvb_worldwide/china/index.xml)

<sup>37</sup> <http://www.screendigest.com/news/russia-starts-dtt-roll-out/view.html>



**Figure 3.6 Timeline for DSO**



Source: IDATE / industry data / Ofcom

### 3.1.4 New digital platforms begin to offer more choice to consumers

Cable, satellite and free-to-air terrestrial account for a large majority of TV households across the comparator countries (see Figure 3.46). But new digital platforms are emerging that offer more variety and choice for consumers. For example, some European providers of pay-OTT services are offering consumers increased flexibility in how they choose to structure and pay for TV packages.

OTT launched as a pay-TV platform in the UK (as OnDigital) and Sweden (Boxer) at the end of the 1990s, and in Spain (Quiero) in 2000. Both the UK and Spanish platforms closed after lower than expected take-up and eventually re-launched as free-to-air services. But pay-OTT is now re-establishing a presence in some markets, with operators positioning themselves as a low cost or 'pay-lite' option compared to traditional pay-TV offerings via cable and satellite. Figure 3.7 illustrates that a number of different business models have emerged to provide consumers with increasing degrees of flexibility in how they access pay-TV:

- Italian broadcaster Mediaset offers a pre-pay OTT system, where consumers can 'top up' pre-pay viewing cards to pay for the TV they watch. It offers premium sports and movies via two core packages, 'Calcio' and 'Gallery'.
- Top Up TV launched as a pay-OTT service in the UK in 2004. The service offers movies and TV programmes via 'push' VoD, with content being downloaded to the hard drives of its Top Up TV DVRs.
- TNtop, formerly owned by Top Up TV, launched in France in May 2008, replicating Top Up TV's early UK business model. Recently acquired by rival pay-OTT service TV Numeric, its offering now consists of a bouquet of six pay-TV channels provided at a low monthly cost, alongside retailing Canal+ premium channels.
- Launched in 1999, Swedish pay-OTT service Boxer is a full pay-TV subscription offering, typical of cable or satellite in breadth. Free channels are included within package combinations, but they are not actively promoted. Boxer has expanded to other markets including Denmark and was the winning bidder for three OTT multiplex contracts in Ireland, before withdrawing its application in April 2009<sup>38</sup>.

<sup>38</sup> [http://www.bci.ie/news\\_information/press216.html](http://www.bci.ie/news_information/press216.html)

**Figure 3.7 Selected pay-DTT services**

Country	Total pay DTT households	Selected providers	Launch date	Content	Price
UK	1.0m	Top Up TV	2004	40+ free channels. Premium sports channels and SVOD movie service.	Subscription (from £11.99 p/m)
		BT Vision	2006	Premium sports channels via DTT and PPV films.	Subscription (from £17 p/m)
France	1.4m	Canal+	2005	Limited bouquet of Canal+ premium channels available via DTT.	Subscription (from €20 p/m)
		TNtop	2008	3 <sup>rd</sup> party reseller providing a six channel pay TV bouquet.	Subscription (from €6.90 p/m)
Spain	0.2m	Gol TV	2009	Premium sports channel (football only) with PPV option.	Subscription (€14.90 p/m)
Italy	4.1m	Mediaset Premium	2006	Two main packages of premium football and movies. Plus add-on entertainment packages.	Pre-pay (from €14 p/m)
		Dahlia TV	2009	Pre-pay service premium sports channels including Serie A coverage.	Pre-pay (from €99 p/a)
Netherlands	0.4m	Digitenne	2003	23 channels (multichannel only available via pay DTT).	Subscription (from €8.50 p/m)
Sweden	0.4m	Boxer	1999	Five tiered packages of free and pay channels, including premium sports.	Subscription (from 99kr p/m)

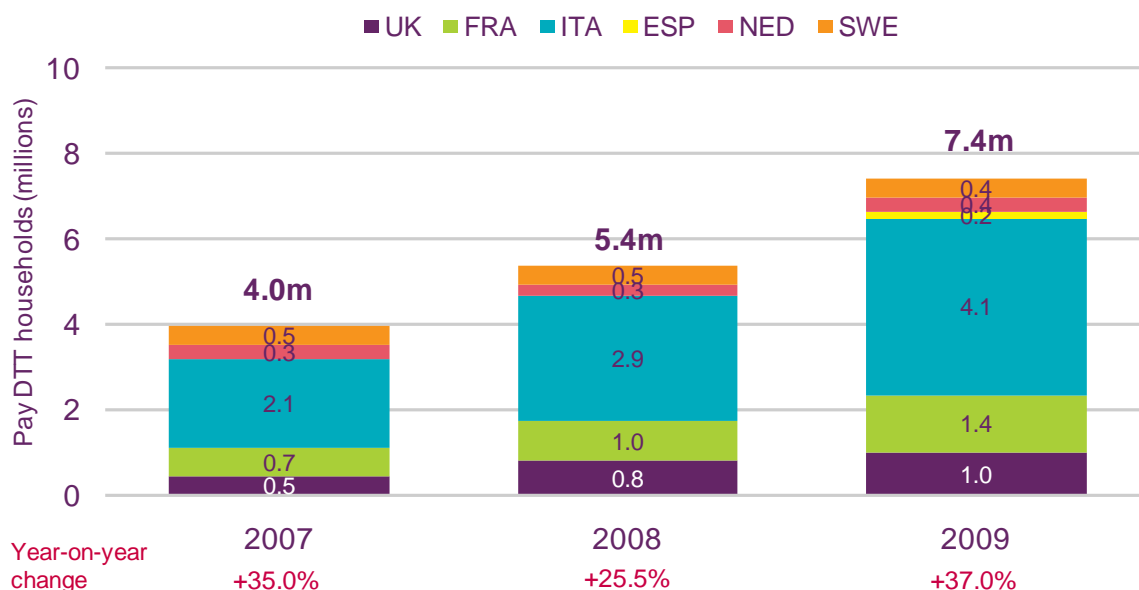
Source: IDATE / industry data / Ofcom

Figure 3.8 shows that there has been consistent year-on-year growth in pay-DTT across Western Europe, with the total number of pay-DTT households increasing by 37% in 2009 to reach 7.4 million. At the end of 2009, the UK accounted for around one million of these through subscribers to Top Up TV and hybrid service BT Vision, which provides linear channels via DTT and video-on-demand (VoD) over IP.

Across pay-DTT services, take-up has been most rapid among Italian consumers, with the number of pay-DTT homes reaching 4.1 million in 2009, helping to drive pay-TV penetration. However, the majority of this growth is accounted for by casual users of the pre-pay Mediaset Premium and Dahlia TV services (i.e. the number of active pre-pay cards), rather than those taking a fixed-term subscription. Canal+ has experienced strong take-up in France, accounting for the majority (1 million) of total pay-DTT homes, while Scandinavian operator Boxer has firmly established itself in Scandinavian countries such as Sweden (400,000). Overall, pay-DTT take-up remains relatively low in most comparator countries compared to free DTT services and established cable and satellite platforms. As a result, we do not distinguish between pay and free DTT in our subsequent analyses.



**Figure 3.8 Pay-DTT households, 2007-2009**



Source: IDATE / industry data / Ofcom

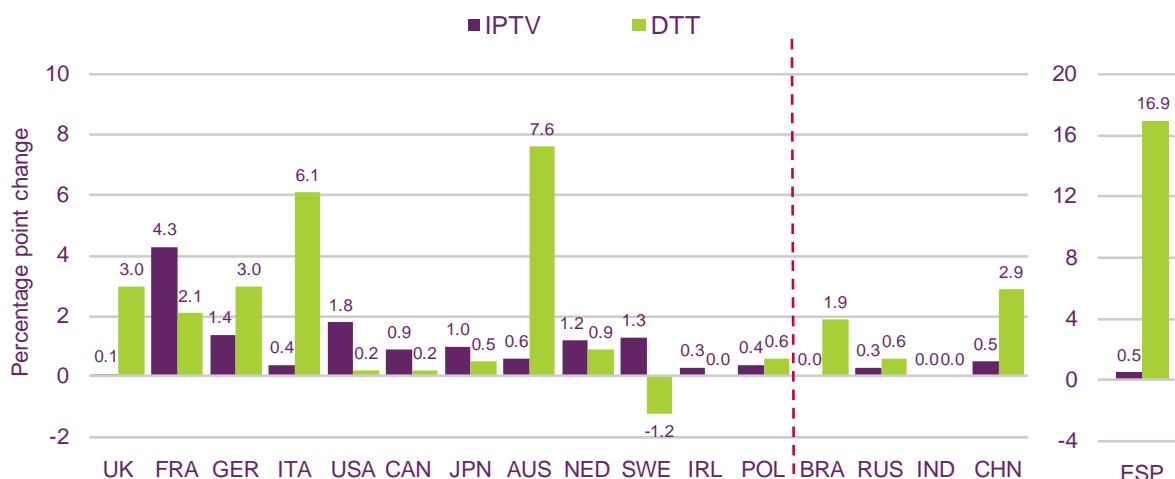
Although DTT (both pay and free) has been the main beneficiary of digital switchover, IPTV is also establishing itself as an alternative to the traditional sources of pay-TV. In the US, telecoms providers such as AT&T and Verizon have taken advantage of the roll-out of optical fibre networks to deliver a wide range of television services over the internet. In France, telecoms providers have bundled ‘free IPTV’ services such as Freebox TV and Neuf TV with broadband access and fixed-line subscriptions at no additional cost, leading to increased take-up.

Figure 3.9 shows that migration to IPTV during 2009 has been faster than that of DTT (pay and free) in a number of comparator countries, often those where DSO is well advanced or completed. These include France (+4.3pp), Sweden (+1.3pp) and Japan (+1.0pp). This is also the case in the US (+1.8pp), where DSO was completed in 2009 and where services such as U-Verse TV and FiOS TV have experienced consistent growth in subscriber numbers.

Despite this, IPTV still accounts for only a small part of the overall TV distribution technology share in most comparator countries. There has been limited additional adoption during 2009 in the UK (+0.1pp), Spain (+0.5pp) and Italy (+0.4pp), where free-to-air terrestrial television has been historically predominant. It also appears that IPTV is yet to gain popularity in the BRIC countries, as adoption among households during 2009 remained relatively low in Russia (+0.3pp) and China (+0.5pp). It has also been slow to develop in Brazil, where telecoms providers had previously been restricted from providing linear channels via IPTV<sup>39</sup>.

<sup>39</sup> Digital TV Yearbook 2009, p.128.

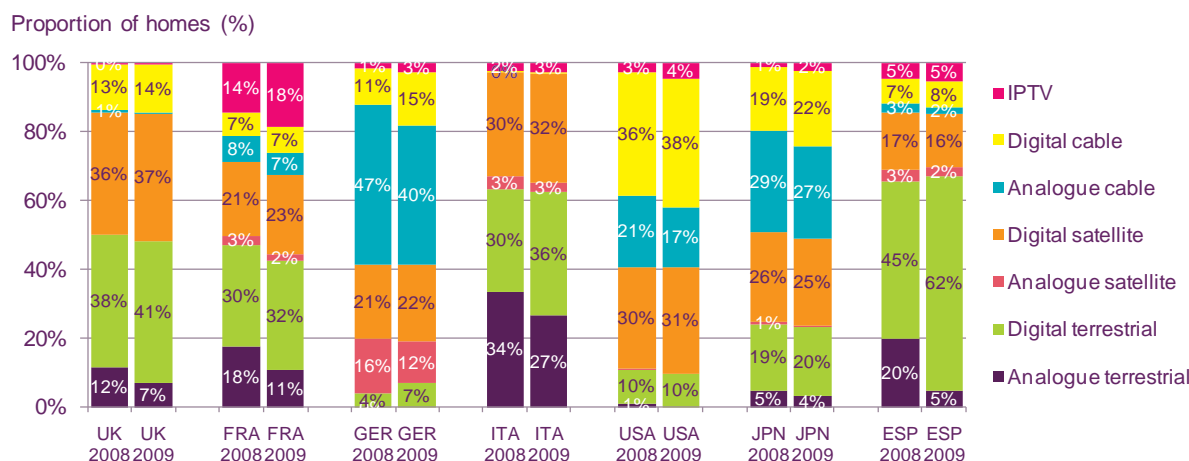
**Figure 3.9 Percentage point change in the proportion of DTT (free and pay) and IPTV homes, 2008-2009**



Source: IDATE / industry data / Ofcom  
 Note: Figures represent additional IPTV and DTT homes

Figure 3.10 puts IPTV and DTT in context with other TV distribution technologies where, in the majority of comparator countries, cable, satellite and free-to-air terrestrial account for a large proportion of the overall share of television platforms. However, growth in cable and satellite homes (digital and analogue combined) is slowing, especially in Western Europe and North America (see Figure 3.45). In Germany, IPTV's share of television households rose by 1.4pp year on year and DTT take-up rose by 3pp; by contrast, there was a reduction in satellite's overall share (it fell by 3pp during 2009) and a similar decrease for cable (-3pp).

**Figure 3.10 TV reception devices connected to the main set in the home, 2008 - 2009**



Source: IDATE / industry data / Ofcom

### 3.1.5 Broadcasters look to technology to drive growth

The TV industry globally is taking advantage of a broad range of technologies to offer consumers increasing convenience, quality and control over their viewing.

Pay-TV providers continue to introduce new products and services to attract new customers, retain existing ones and generate more revenue. Among some of the latest developments are 3DTV and hybrid devices that marry broadcast and broadband-delivered content. HDTV

and digital video recorders (DVRs) are establishing themselves as the default for many consumers, largely in mature TV markets.

But while devices and viewing innovations have traditionally been the domain of pay-TV providers, free-to-air broadcasters are also attempting to offer what would typically be platform-led innovations. This has been motivated by the twin pressures of growing adoption of pay-TV and a declining advertising market. The last decade has been defined by the emergence of DVRs, while the past five years have seen growing adoption of VoD and HDTV.

Figure 3.11 details some of the products and service innovations that are emerging among both pay and free television operators and broadcasters. We look at each of these in section 3.2.

**Figure 3.11 Technology developments in pay and free-to-air TV**

Device/ Feature	Function	Services	Free TV	Pay TV
Digital video recorder (DVR)	<ul style="list-style-type: none"> <li>Record TV digitally</li> <li>Live pause function</li> <li>In some cases learn viewer preferences</li> </ul>	<ul style="list-style-type: none"> <li>Sky+ (pay, UK)</li> <li>Tivo (retail and pay)</li> <li>MySky (pay, Italy)</li> </ul>	<ul style="list-style-type: none"> <li>Horizontal – retail rather than operator led – DVR markets developed in many countries, mostly on DTT and satellite</li> </ul>	<ul style="list-style-type: none"> <li>Widespread across many platforms, high capacity devices available, some with 'virtual' VoD</li> </ul>
Video on demand (VoD)	<ul style="list-style-type: none"> <li>Offer programming 'on demand'</li> <li>Provides alternative to linear TV</li> </ul>	<ul style="list-style-type: none"> <li>Comcast on Demand (pay, US)</li> <li>Ono's VideoClub (pay, Spain)</li> </ul>	<ul style="list-style-type: none"> <li>Limited roll-out by FTA platforms due to complexity</li> <li>Most use open ('over the top') internet</li> </ul>	<ul style="list-style-type: none"> <li>Large libraries of VoD available (17,000 items on Comcast)</li> <li>Many content genres, available for free, subscription or PPV</li> </ul>
HDTV	<ul style="list-style-type: none"> <li>TV channels five times picture quality of standard definition digital TV</li> </ul>	<ul style="list-style-type: none"> <li>DirectTV HD (pay, US)</li> <li>Sky PerfectTV! HD (pay, Japan)</li> <li>TNT HD (free, France)</li> </ul>	<ul style="list-style-type: none"> <li>Many FTA channels are launching HD not always available on FTA platforms but within pay packages</li> </ul>	<ul style="list-style-type: none"> <li>HDTV is now a key product for pay to differentiate from FTA.</li> <li>Platforms use HD as a marketing tool (DirectTV has 160 channels).</li> </ul>
3DTV	<ul style="list-style-type: none"> <li>TV with effect of three-dimensional perspective</li> <li>Requires new TV set.</li> </ul>	<ul style="list-style-type: none"> <li>Free (pay, France)</li> <li>Sky 3D (pay, UK)</li> <li>J:Com (pay, Japan)</li> <li>Canal + 3D (pay, Spain)</li> </ul>	<ul style="list-style-type: none"> <li>Most 3DTV channels are available in pay bouquets</li> <li>Given the infancy of 3DTV, few FTA broadcasters have launched services</li> </ul>	<ul style="list-style-type: none"> <li>3D is one of the next technical developments in TV viewing</li> <li>Pay providers are launching HD channels, focusing on sports, movies and factual shows</li> </ul>
Online TV and video	<ul style="list-style-type: none"> <li>Deliver on-demand content to PCs and other devices</li> <li>Ad-funded models but some premium</li> </ul>	<ul style="list-style-type: none"> <li>Hulu (free/pay, USA)</li> <li>BBC iPlayer (free, UK)</li> <li>Foxtel Download (pay, Australia)</li> <li>SVTPlay (free, Sweden)</li> </ul>	<ul style="list-style-type: none"> <li>Online catch-up TV allows FTA channels to broaden reach, attract new viewers</li> <li>Also can generate additional revenue and mitigate piracy</li> </ul>	<ul style="list-style-type: none"> <li>Could be seen as a threat to pay TV (cancelled subscriptions)</li> <li>Some operators using online TV as a 'value-add', offering portability of content</li> </ul>
OTT / Hybrid services	<ul style="list-style-type: none"> <li>Deliver VoD and other applications over open internet ('over the top') to TV</li> <li>OTT video also on games consoles</li> </ul>	<ul style="list-style-type: none"> <li>Viasat+ HD (pay, Scandinavia)</li> <li>HbbTV devices (free, Germany, others)</li> <li>Canal+ Le Cube, (pay, France)</li> </ul>	<ul style="list-style-type: none"> <li>FTA is playing a major role in development of OTT services to PCs and retail devices such as STBs and TVs (YouView and HbbTV) to offer VoD</li> </ul>	<ul style="list-style-type: none"> <li>Pay operators have been slower to launch OTT (as IPTV and cable have VoD)</li> <li>Some satellite platforms see OTT as way of offering VoD</li> </ul>

Source: Ofcom research, companies. Note: Services are examples, not an exhaustive list.

Figure 3.12 compares take-up and use of key audio-visual services drawn from our consumer research, which was carried out in six of the major comparator countries among internet users aged between 18 and 64.

Among the four devices and services we explored with consumers, HD-ready TV sets were the most widely adopted in all six countries, with the UK leading (59% of respondents), slightly ahead of the US (57%). Virtually all sets available and sold in the UK are now HD-ready; over 24 million sets had been sold by the end of 2009<sup>40</sup>.

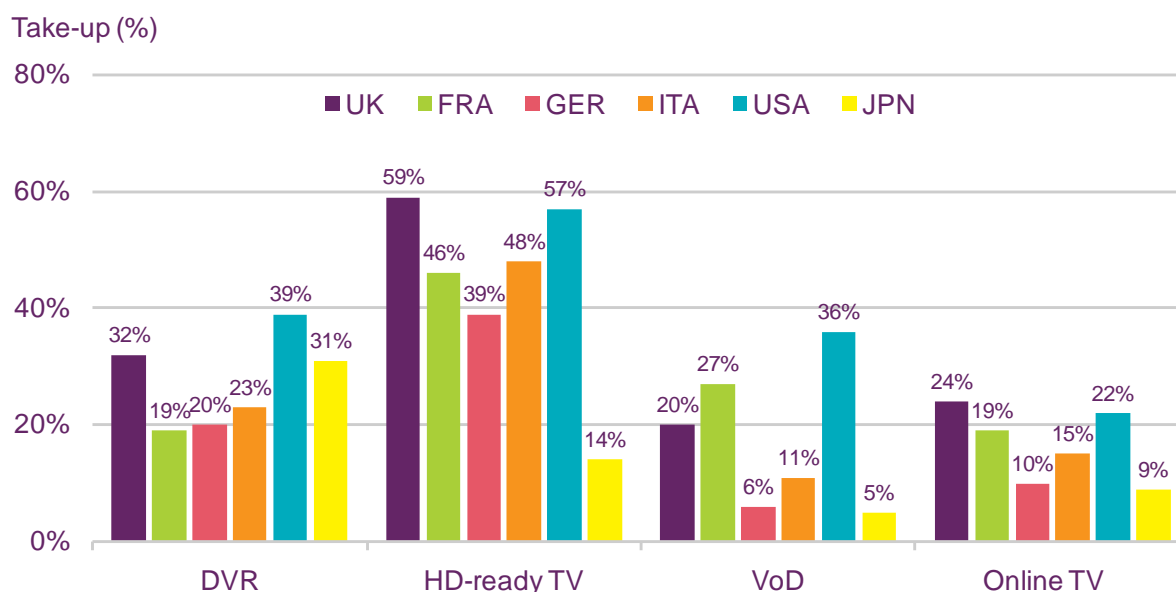
Homes in France and Italy had similar levels of HD-ready set adoption, at 46% and 48% respectively. Those in Japan were markedly lower, although this is likely to be as a result of

<sup>40</sup> [http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR\\_2010\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf)

definitional differences for HDTV. The second most widely-adopted product among the six markets was the digital video recorder (DVR). The UK was the second biggest market for DVR penetration (32%) behind the US (39%). In all six markets, the research found that at least one in five respondents reported to have a DVR in their home.

The UK also leads on use of online TV, with nearly a quarter of respondents (24%) claiming to watch TV on the internet via a PC at least once a week, narrowly ahead of the US (22%) and France (19%). Meanwhile, a fifth of UK respondents claimed to have access to VoD through their television, behind the US (36%) and France (27%).

**Figure 3.12 Adoption and use of key audio-visual services**



Source: Ofcom consumer research, October 2010, for all adults 18 – 64. Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001.

Pay-TV operators have driven much of the development of TV technology in recent years. Many of the mature pay-TV markets that have led in this innovation have also experienced higher average revenue per user (ARPU).

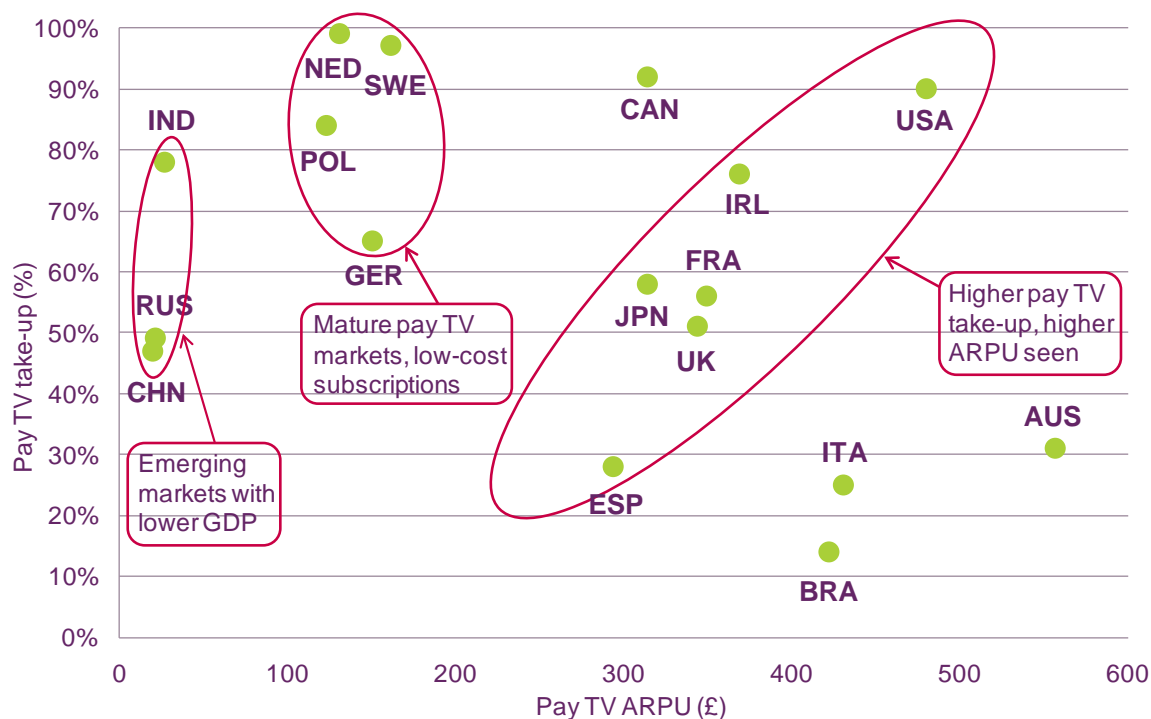
Figure 3.13 illustrates that the US is among the markets with both higher pay-TV penetration (90%) and higher ARPU (£480). The cluster of countries that includes the US shows an apparent concurrency between levels of pay-TV take-up and the levels of ARPU generated. Take-up of advanced TV products and services (that can drive ARPU) is generally higher in these markets.

The cluster of countries including the Netherlands, Sweden, Poland and Germany share the characteristic of high analogue cable penetration. In most cases (the Netherlands, Sweden and Germany), cable is bought by consumers as a low-cost utility service. The number of digital satellite television providers competing in Poland has led to significant competition, which could affect ARPU levels when operators compete on price.

Given the relatively low amounts consumers spend on pay TV in these markets, convincing them to upgrade to advanced TV products and services appears to have been challenging, especially when consumers generally pay for devices themselves. Few markets follow the UK model, in which set-top boxes tend to be heavily subsidised.

A third cluster of countries in Figure 3.13 includes three BRIC countries – Russia, India and China – which have moderate to high pay-TV take-up but very low ARPU. This may well reflect the relative lower disposable income available to consumers to spend on TV, and the lower GDP in those countries.

**Figure 3.13 Pay-TV take-up versus pay-TV ARPU, 2009**



Source: IDATE / industry data / Ofcom

### 3.1.6 Patterns of viewing concentration influenced by digital TV take-up

The relationship between patterns of television viewing, platform take-up and content spending are complex, which makes it harder to draw firm conclusions. But there appears to be a connection between analogue terrestrial television platform take-up and the degree to which viewing is concentrated among a small number of TV channels. This is perhaps to be expected, given that analogue terrestrial offers little in the way of channel capacity when compared to the capabilities of digital terrestrial and cable or satellite platforms.

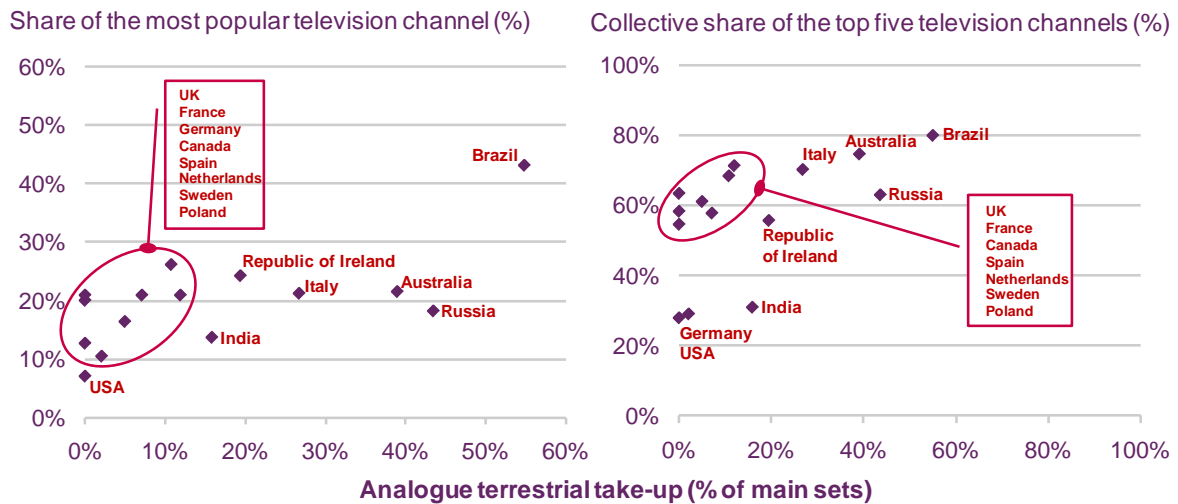
Figure 3.14 sets out the proportion of main television sets in each country that remain connected to analogue terrestrial television. This is mapped against the audience share of the single most popular channel (on the left hand side), and the share of that country's five most popular television channels (on the right).

In the case of five-channel share, the US, Germany and Indian markets share the characteristics of low take-up of analogue terrestrial television and low audience share for the five most popular channels.

The remaining countries fall into a second category, where there appears to be a broad positive association between analogue terrestrial television take-up on the one hand, and five-channel share on the other. In Brazil, the top five channels accounted for over 80% of all viewer hours in 2009 (driven in particular by the popularity of Globo TV), and analogue terrestrial was available on 60% of main television sets.

This association is less apparent when the analysis is confined to the single most popular channel. Figure 3.14 (left hand side) maps the share of the most popular channel in each country against analogue terrestrial take-up. It shows that with the exception of Brazil, audience share typically hovers between 10% and 30%, while analogue terrestrial take-up varies from anything between 0% and 45% of main television sets.

**Figure 3.14 Viewing concentration – share of top, and top five, channels, 2009**



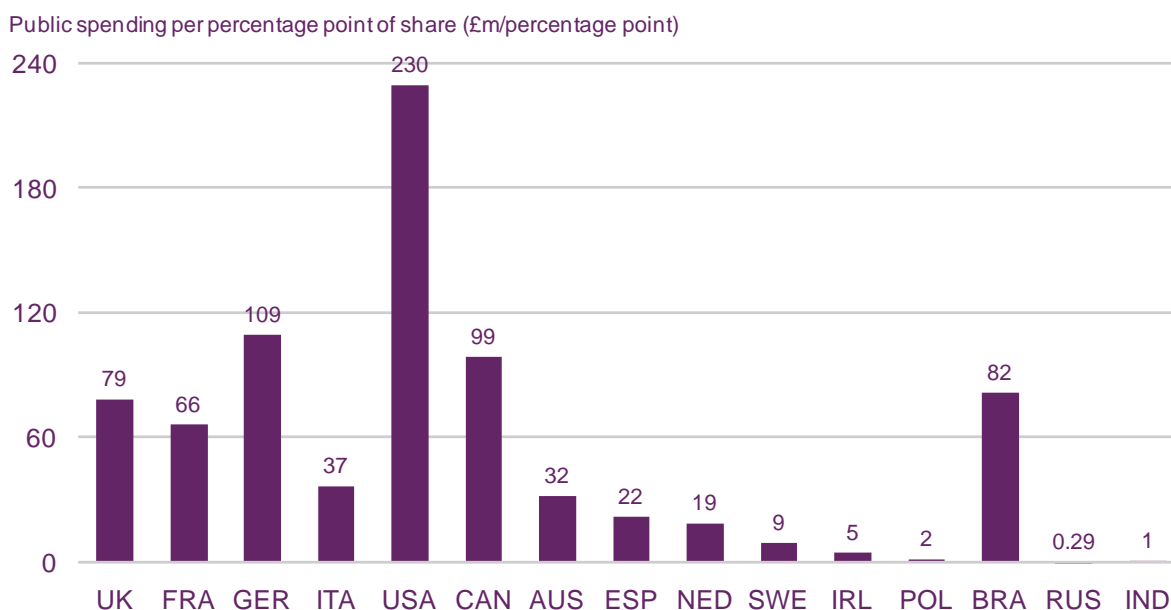
Source: IDATE, industry data, Médiamétrie, Eurodata TV Worldwide and Ofcom calculations. Notes: The audience share data used for Canada relates to the viewing in non-Quebec households. The data for Australian audience share is the five metro cities. Interpretation and manipulation of data is solely Ofcom's responsibility.

Platform take-up is one factor that may influence a consumer's propensity to watch one or more television services; funding may be another. Figure 3.15 depicts the association between public funding and audience share for selected publicly funded channels across our comparator countries.

Some of these channels rely both on public funds and commercial income, so this analysis should be treated with caution. In the cases where there is a mixed funding model, the analysis below may have a tendency to overstate the impact of public funding on share.

In the US, the figure stood at £230m per percentage point (pp), explained mainly by the low audience share that PBS attracts in the US relative to other publicly-funded television channels. In the UK, France, Germany, Canada and Brazil the comparable figures were between £60m/pp and £110m/pp. The equivalent channels in Italy, Australia, Spain and the Netherlands fell into a third category, in which public funding per percentage point of audience share was between £19m and £27m in 2009. In Poland, Russia and India the comparable channels were connected with lower levels of public funding, due to the lower levels of public funding available in these countries.

**Figure 3.15 Public spending on channels per percentage point of audience share generated, 2009**



Source: IDATE, industry data, Médiamétrie, Eurodata TV Worldwide and Ofcom calculations. Notes: The audience share data used for Canada relates to the viewing in non-Quebec households. The figure for Australia audience share represents the five metro cities. Interpretation and manipulation of data is solely Ofcom's responsibility. Some services are funded from both public and commercial sources. This effect is not captured in the analysis above; it may have a tendency to exaggerate the impact of public funding on viewer share.

### 3.1.7 The value of TV airtime to advertisers was similar across many comparator countries in 2009

The commercial value of a minute of television viewing is influenced by the interplay of a wide range of factors. These include:

- the propensity of viewers in a country to watch television, which in turn may be influenced by the range and number of channels available to viewers;
- the availability of advertising minutage;
- the share of viewing captured by fully or partly publicly-funded channels;
- the attractiveness of television advertising relative to competing advertising platforms (such as newspapers and radio); and
- the impact of the economic cycle on organisations' appetite to invest in advertising.

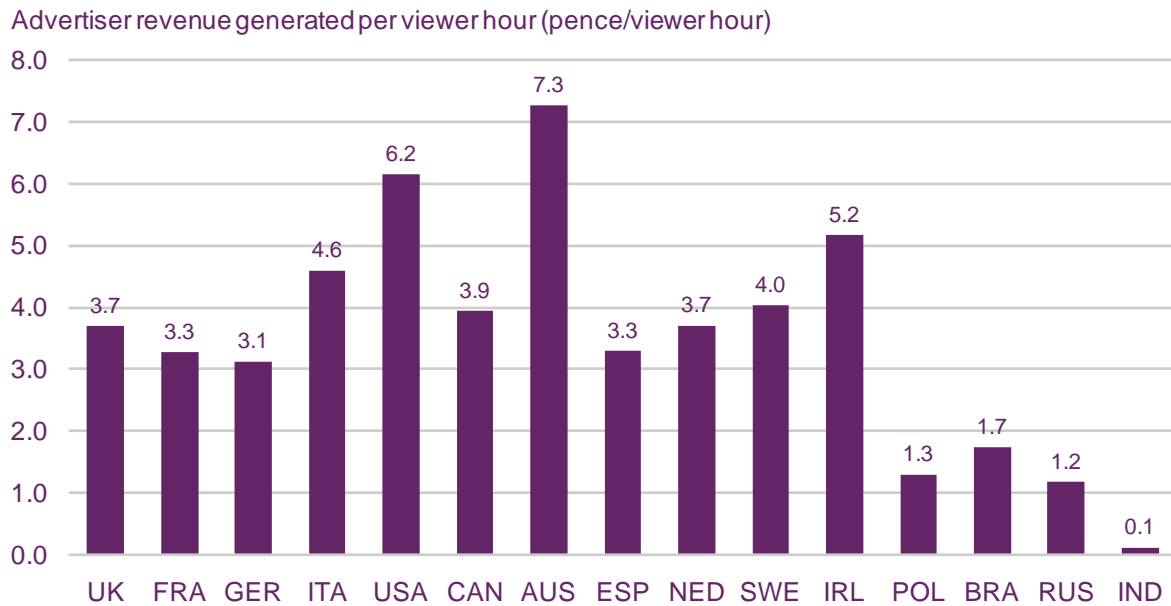
Figure 3.16 shows that in 2009, an hour of television viewing<sup>41</sup> in the US and Australia generated the highest level of advertising revenue, at 6.2 pence per viewer hour (ppvh) and 7.3ppvh respectively. In the US, this may be connected to the strength of TV as an advertising medium; in Australia it may have more to do with the fact that people on average watch less television than in other developed countries, so an hour of television viewing may be a more valuable commodity.

<sup>41</sup> Calculated as the ratio of total advertiser income to all viewer minutes

The television markets of India, Poland, Russia and Brazil fall into a second category, where the value of a viewer hour ranged from 0.1 ppvh to 1.7 ppvh in 2009 – possibly reflecting lower levels of GDP per capita and/or the strength of TV versus alternative advertising media in those territories.

Among the remaining countries, there was a degree of consistency in the value of viewer hours. It ranged from 3.1 ppvh in Germany to 5.2 ppvh in the Republic of Ireland, with the UK situated at the lower end of this range, at 3.7 ppvh.

**Figure 3.16 Advertiser revenue generated for an hour of television viewing, 2009**



Source: IDATE, industry data, Médiamétrie, Eurodata TV Worldwide and Ofcom calculations. Notes: The audience share data used for Canada relates to the viewing in non-Quebec households. The Australian audience share figure is for metro cities. Interpretation and manipulation of data is solely Ofcom's responsibility.



## 3.2 The TV and audio-visual industries

### 3.2.1 Summary

This section focuses on the TV and audio-visual industries, looking at key revenue trends among our comparator countries; financial results for major pay-TV and free-to-air broadcasters; analysis of key TV technologies and services, and trends in first-run originated programming among European public service broadcasters.

- **Revenue among the 17 countries analysed by Ofcom declined by 0.4% in 2009 to £187bn, with falls in all the major developed markets.** Collective revenue among the BRIC countries – Brazil, Russia, India and China – increased by 7.2% in 2009, up by £2bn to £24bn (page 127).
- **Among Canada and the nine European markets included in our analysis, the majority saw reduced revenues in 2009.** Spain experienced the sharpest fall proportionally, down by 9.4% to £4.0bn. Only three European markets saw revenues grow in 2009 – the UK by 0.2% (to £10.5bn), France by 2.4% (to £10.0bn) and Poland by 5.7% (to £2.1bn) (page 129).
- **Many free-to-air broadcasters felt the effects of the economic downturn in 2009, given their exposure to cyclical advertising markets and pressure on public finances.** Nine of the 13 broadcasters included in our analysis experienced declining revenue in 2009 (page 134).
- **Pay-TV companies reported more positive revenue performance than their free-to-air counterparts during 2009.** Revenue from all but one country included in our analysis increased year on year – Sogecable of Spain being the one exception. Sky reported growth of 9.8% in 2009 to £4.7bn for the UK and Republic of Ireland (page 135).
- **The UK was the second biggest market for pay-DVR homes at the end of 2009 with 7.8 million devices,** up by 40% on 2008. The US had the highest number, 34.7 million DVR subscription homes at the end of 2009, up by 26% year on year. The UK also has a sizeable free-to-air DVR market, led by Freeview and Freesat (around four million such devices had been sold by the end of 2009) (page 137).
- **Among European PSBs, the highest proportion of Entertainment programmes was broadcast in France (23%) with the lowest proportion in the Netherlands (8%).** In most countries, hours of News accounted for between 10% and 20% of output with the exception of Spain at 22%, and, at the other end of the scale, Poland at 6% (page 151).

### 3.2.2 Television revenues among comparator countries

**In 2009 only BRIC countries among the major country groups experienced growth**

Revenue among the 17 countries analysed by Ofcom declined by 0.4% in 2009 to £187bn as the major developed regions all saw falls. The BRIC countries – Brazil, Russia, India and China – jointly saw TV revenue increase by 7.2% in 2009, up by £2bn to £24bn. Growth was largely driven by increases in advertising apart from in Russia, where NAR fell by 22% between 2008 and 2009.

While growth among BRIC countries is strong, the four markets together account for just a third of the revenue generated by the US. As the largest television market globally, the US generated revenue of £81bn in 2009, a slight decline (1%) on the £82bn earned in 2008 due to declining NAR.

Europe and Canada account for the second-largest region in our analysis, at £54bn in 2009, down by 0.8% compared to 2008. Canada is included separately here, rather than with the US, given its similar size to many European markets. Japan and Australia collectively saw revenues fall by 4.0% to £29bn.

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 section 1.1), which includes pay per view and VoD.

**Figure 3.17 TV industry revenues among comparator countries**



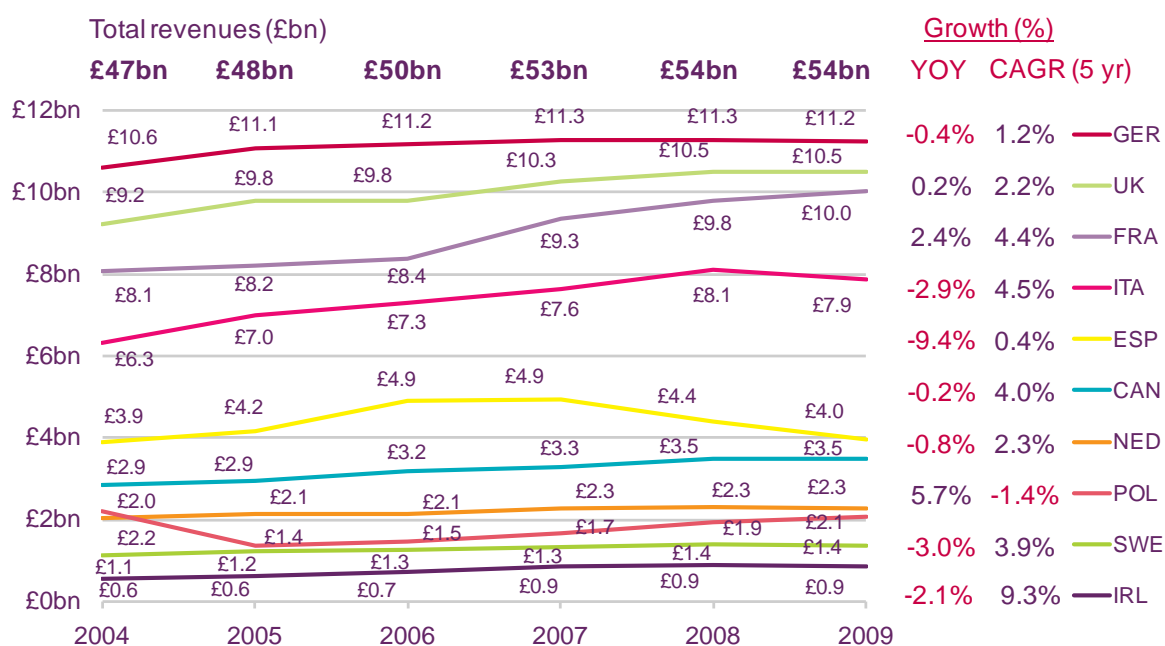
Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009. Revenues include advertising, subscriptions and sources of public funding only. Europe includes the European countries in this analysis – UK, France, Germany, Italy, Spain, Netherlands, Sweden, Republic of Ireland and Poland. BRIC is Brazil, Russia, India and China.

Among Canada and the nine European markets included in our analysis, the majority saw revenues fall in 2009. Spain experienced the sharpest proportional reduction, down by 9.4% to £4.0bn. Only three European markets grew in 2009. Poland saw the strongest growth in percentage terms between 2008 and 2009, up by 5.7% to £2.1bn, while the UK and France increased by 0.4% and 2.4% respectively to £10.5bn and £10bn.

Note that the UK TV revenue total differs from our 2010 *UK Communications Market Report*, which included ‘other’ TV revenues (of £0.7bn)<sup>42</sup>. For reasons of consistency, these revenues have been excluded in our international analysis.

<sup>42</sup> <http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/UK-tv.pdf>

**Figure 3.18 TV industry revenue among European countries and Canada**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009. Revenues include advertising, subscriptions and sources of public funding only. Europe includes the European countries in this analysis – UK, France, Germany, Italy, Spain, Netherlands, Sweden, Republic of Ireland and Poland.

Among the BRIC countries, 2009 held mixed fortunes. India saw the highest growth in revenue in the year proportionally, up by 14.1% to £4.0bn. Brazil, the second biggest market, experienced growth of 12.0% to £8.0bn, while China, the largest of the BRICs, saw a 7.6% increase to revenues to £8.7bn.

Only in Russia did revenue fall in 2009, by 12.2% to £2.8bn. This was due to declining NAR, which contracted by £0.5bn to £2.3bn, largely as a result of the economic downturn. Over a five-year average, Russia's revenue grew by 20.0%, a higher compound annual growth than the other BRICs.

**Figure 3.19 Total TV industry revenues among BRIC countries**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009. Revenues include advertising, subscriptions and sources of public funding only. BRIC is Brazil, Russia, India and China.

**Most countries saw TV revenues rise between 2004 and 2009**

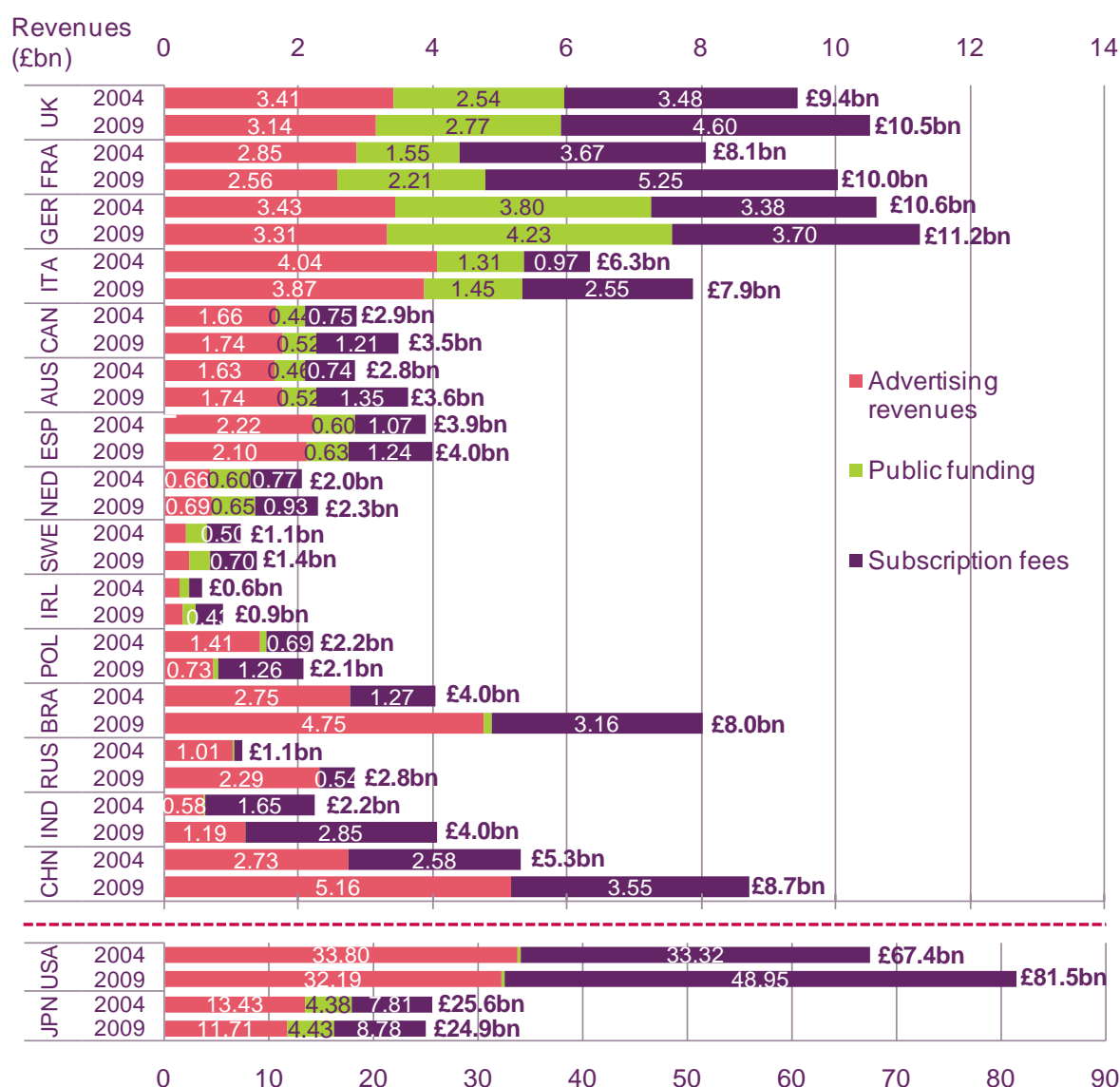
Figure 3.20 illustrates the changing composition of TV industry revenues by country between 2004 and 2009. In the majority of the 17 comparator countries, TV revenues rose over the five-year period – only in Japan and Poland did income contract, down by 4.6% and 1.4% respectively to £24.9bn and £2.1bn.

Revenue 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 2004 and 2009.

The US and Japan, the two largest countries by revenue, are included at the bottom of the chart to accommodate the higher scale. Both countries experienced declining net TV advertising revenues over the five-year period.

The television markets of the BRIC countries are notable for a lack of public funding. Only Brazil saw any public funds attributed to TV in 2009 – around £0.1bn. In Brazil, Russia, India and China, NAR and subscription revenue rose over the five-year period to 2009.

**Figure 3.20 TV revenues among comparator countries by source, 2004 and 2009**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009. 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

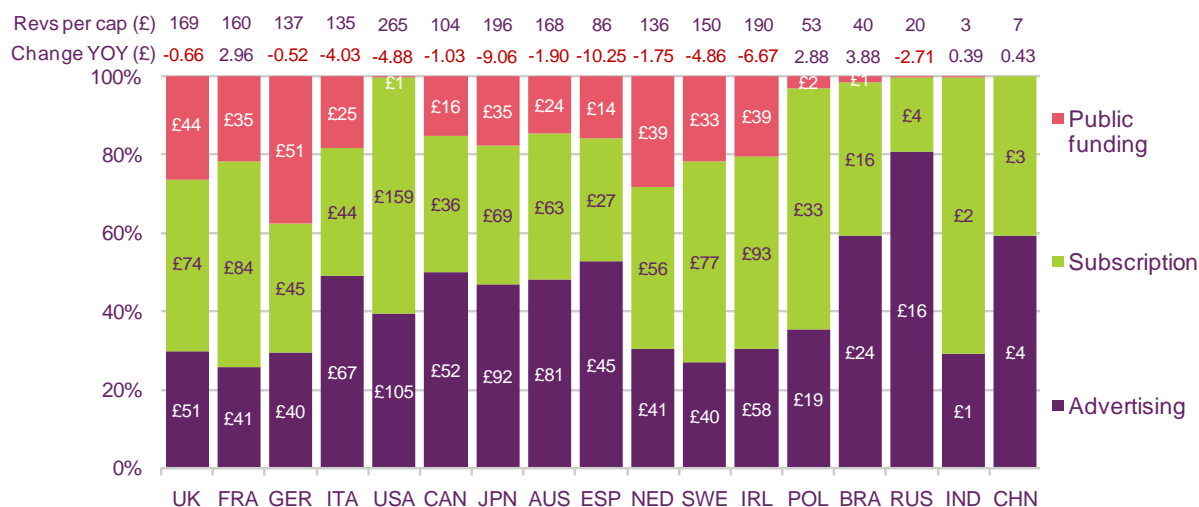
#### The US, Japan and Ireland generate most TV revenue per head

Per head, revenue in the US continued to lead the 17 comparator countries, generating £265 per capita in 2009 (Figure 3.21). This is some way ahead of the second-highest, Japan (£196) and the third-highest, Ireland (£190). These three markets were also among those that saw decreases in per-head revenue year on year, with the US down by 1.8% (or £4.88), Japan down 4.4% (or £9.66) and Ireland down 3.4% (or £6.67). The UK also experienced declining revenue per head, down by £0.66 to £169.

Russia had the largest proportional decline, down by 11.8% to £20 per head in 2009, followed by Spain, down by £10.25 to £86, a 10.7% fall. Given their large populations and lower TV revenues, the BRIC countries generated the smallest per-head revenues of all the comparator countries but still demonstrated a capacity for growth (apart from Russia). Of all

17 countries, three of the five recorded markets that grew in 2009 were BRIC countries: France, Poland, Brazil, India and China.

**Figure 3.21 TV revenue per head, by source, 2009**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009. Revenues include advertising, subscriptions and sources of public funding only; figures inside the bars represent industry revenue per head by source.

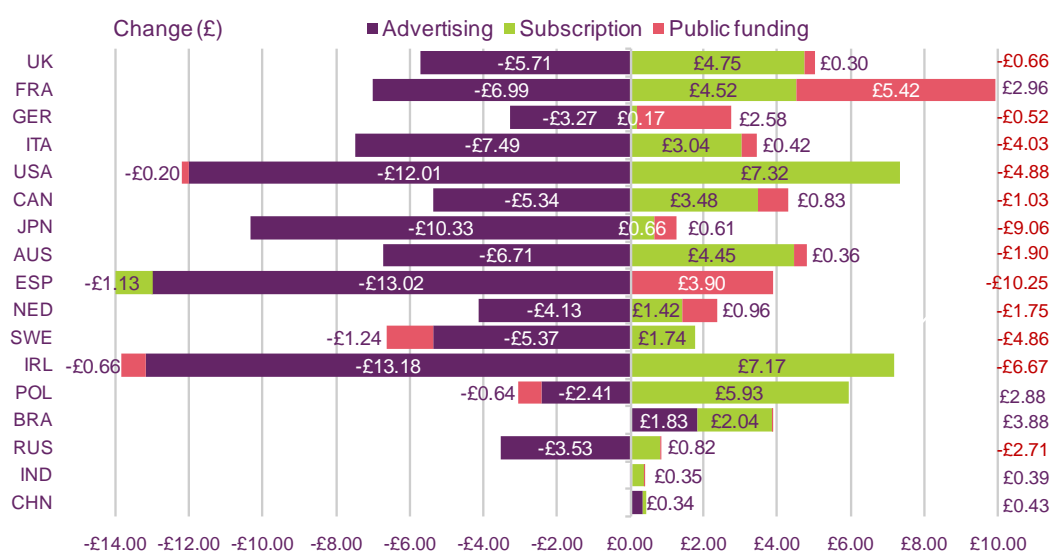
### Advertising accounts for the bulk of declining revenues per head

Figure 3.22 details the changes by country in revenue per head, split by the three component parts. In almost all countries, advertising fell on a per-capita basis as the industry felt the impact of the advertising downturn. Ireland saw the sharpest per-head decrease for TV advertising, down by £13.18, marginally higher than in Spain, where there was a £13.02 reduction.

Subscription revenues per head increased in all markets except Spain during 2009 – the highest being the US, up by £7.32. Despite this, growth in per-head subscription revenue in the US failed to offset the declines in advertising.

In the larger European markets public funding in television rose between 2008 and 2009. France saw the largest increase, up by £5.42, followed by Spain (£3.90), Germany (£2.58), Italy (£0.42) and the UK (£0.30). The Netherlands also saw increased public money dedicated to TV, up by £0.96 per head. The US, Sweden, Ireland and Poland experienced per-head decreases year on year.

**Figure 3.22 Changes in components of TV revenues per head, 2008 to 2009**



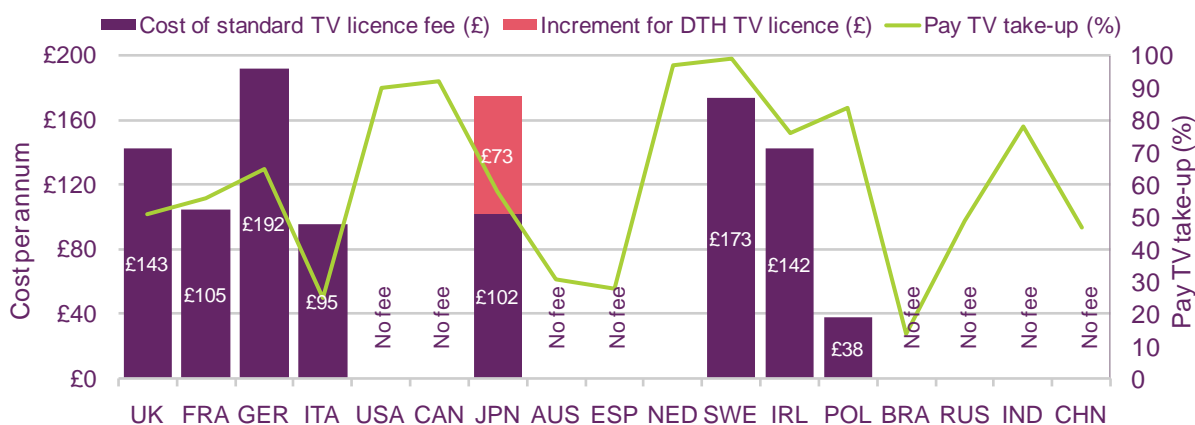
Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009. Revenues include advertising, subscriptions and sources of public funding only; the bars represent changes in industry revenue per head, by source.

### 3.2.4 TV licence fees still important 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 3.23 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 £143, behind Germany (£192), Japan (£175 for a satellite TV licence) and Sweden (£173). 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. While homes in the US and Canada are among those with the highest take-up of pay-TV, and do not have a TV licence fee, Sweden and Ireland also have substantial pay-TV take-up (97% and 76% respectively) but also have TV licence fees.

**Figure 3.23 Cost of a TV licence fee**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009; Prices as of end 2009. Note: The Japanese licence fee costs £102 in terrestrial households or £175 (rounded) to receive a larger number of channels via satellite. The pink bar represents the difference in cost between a terrestrial licence and a satellite (DTH) one in Japan.



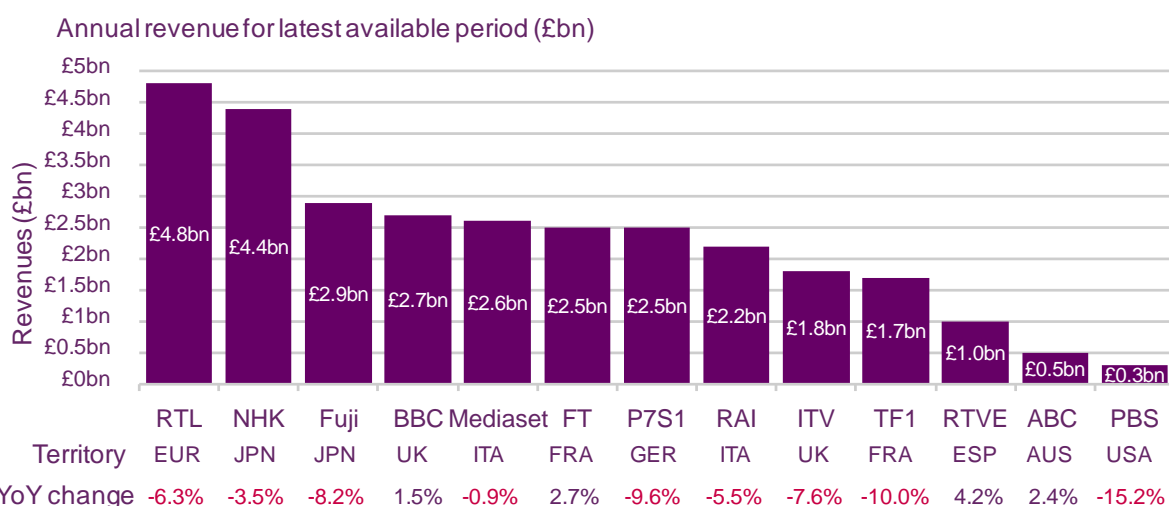
### 3.2.5 Advertiser-funded income stream under pressure in 2009

Many free-to-air broadcasters felt the effects of the economic downturn in 2009 due to exposure to cyclical advertising markets and pressure on public finances. This, coupled with structural changes facing their businesses, contributed towards nine of the 13 broadcasters included in our analysis experiencing declining revenues in 2009. The US national public broadcaster, PBS, saw its funding fall by 15.2% in 2009.

Worst hit of all the commercial channels – which rely heavily on advertising – were TF1, the French commercial broadcaster, which saw revenues fall by 10% to £1.7bn, and ProSieben.Sat1 in Germany, which reported revenues down by 9.6% year on year at £2.5bn.

Of the broadcasters featured in Figure 3.24 that reported higher revenue in 2009, all receive the bulk of their revenue from public sources – either a TV licence fee or government grants. RTVE in Spain saw the largest increase proportionally, up by 4.2% to £1.0bn. France Televisions' revenue rose by 2.7% to £2.5bn.

**Figure 3.24 Latest reported revenues from selected free-to-view TV operators, 2009**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009; 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).



### France and Spain overhaul public TV funding

The French and Spanish governments have recently changed the funding structures of their main public broadcasters, to strengthen the public purposes of France Televisions and RTVE. Despite initial clearance by the European Commission following state-aid investigations, elements of the system are now disputed by Brussels<sup>43</sup>.

In France, the government prohibited the public broadcasters (except France Ô) from broadcasting commercials after 8.00pm – this came into effect from January, 2009. To compensate for the loss of income – estimated at about €450m per year – the government created two taxes. First, a 0.9% tax on the turnover of telecommunications operators and internet service providers, and second, a 3% tax on commercial broadcasters' advertising revenues.

In its initial plan, the French government intended to ban all advertising from the public channels from December 2011. However, the deadline has been postponed to 2013 or 2014. France Televisions expected to generate around €200m in advertising and sponsorship revenues in 2009, the first year of the law coming into force, but actually recorded €405m<sup>44</sup>. The move was cleared by the European Commission in July 2010<sup>45</sup>.

Spain 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 new funding structure was cleared by the European Commission in July 2010<sup>46</sup>. However, in September 2010, the Commission called on France and Spain to cease the so-called 'telecoms tax' element of their systems, declaring them incompatible with EU telecoms law. In France, the telecoms tax was expected to generate €400m a year and €230m in Spain. The Commission gave the countries two months to inform the Commission of measures taken to comply with EU rules<sup>47</sup>.

### 3.2.6 Pay-TV revenues resilient in the downturn

Pay-TV companies reported more positive performance than their free-to-air counterparts during 2009. All but one included in our analysis saw revenues rise year on year – only Sogecable (which owns the Digital Plus satellite broadcaster in Spain) experienced a drop in earnings, down by nearly a fifth (18.6%) to £1.4bn. 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 programming.

The operator which experienced the most significant jump in earnings, proportionally, was Sky Perfect of Japan, up by nearly a fifth (19.8%) to £1.0bn. Sky in the UK reported growth of 9.8% in 2009 to £4.7bn (this also includes revenue from its telecommunications services).

<sup>43</sup> <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/1211&format=HTML&aged=0&language=EN&guiLanguage=en>

<sup>44</sup> [http://adage.com/globalnews/article?article\\_id=146328](http://adage.com/globalnews/article?article_id=146328)

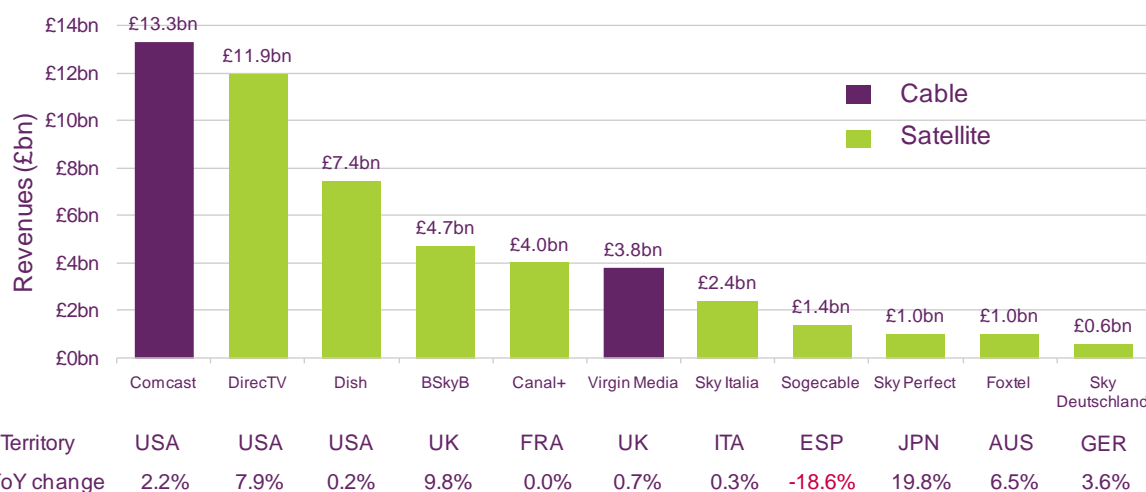
<sup>45</sup> <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/979&format=HTML&aged=0&language=EN&guiLanguage=en>

<sup>46</sup> <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/978&format=HTML&aged=0&language=EN&guiLanguage=en>

<sup>47</sup> <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/1211&format=HTML&aged=0&language=EN&guiLanguage=en>

The majority of the pay-TV operators that generate the highest revenue in our comparator countries are primarily satellite-based platforms (even though many offer channels on other distribution technologies).

**Figure 3.25 Latest reported revenues from selected pay-TV operators, 2009**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009; 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 2009

Average revenue per user (ARPU) can provide insights into the relative performance of different pay-TV operators (Figure 3.26 focuses on annual ARPU). The Australian television market delivered the highest ARPU level in 2009 at £557, up by 24.9% since 2004.

Around a third of Australian homes subscribe to pay-TV and there are several competing distribution technologies including two satellite TV providers, as well as cable and IPTV. Figures from Foxtel (Australia's largest pay-TV platform with around 1.5 million customers at the end of 2009), offer an insight into why ARPU is high (at £557 in 2009). It reported that at the end of 2009, 13% of its subscribers were taking Foxtel's high-definition TV services; 31% opted for the multiroom service while more than half (55%) took Foxtel's DVR<sup>48</sup>.

The Australian market was some way ahead of the second-highest-ranking ARPU figure, in the US, which stood at £480, representing a 30.1% increase over five years.

The third-highest market by ARPU was Brazil, which has relatively low pay-TV adoption at 14% of homes. ARPU stood at £442 in 2009, up by 27.9% since 2004. 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 2009, which may help to lift ARPU. The company also pointed to a 'relatively stable macro-economic environment' in Latin America<sup>49</sup>. The highest growth market was Russia, where average pay-TV revenue per

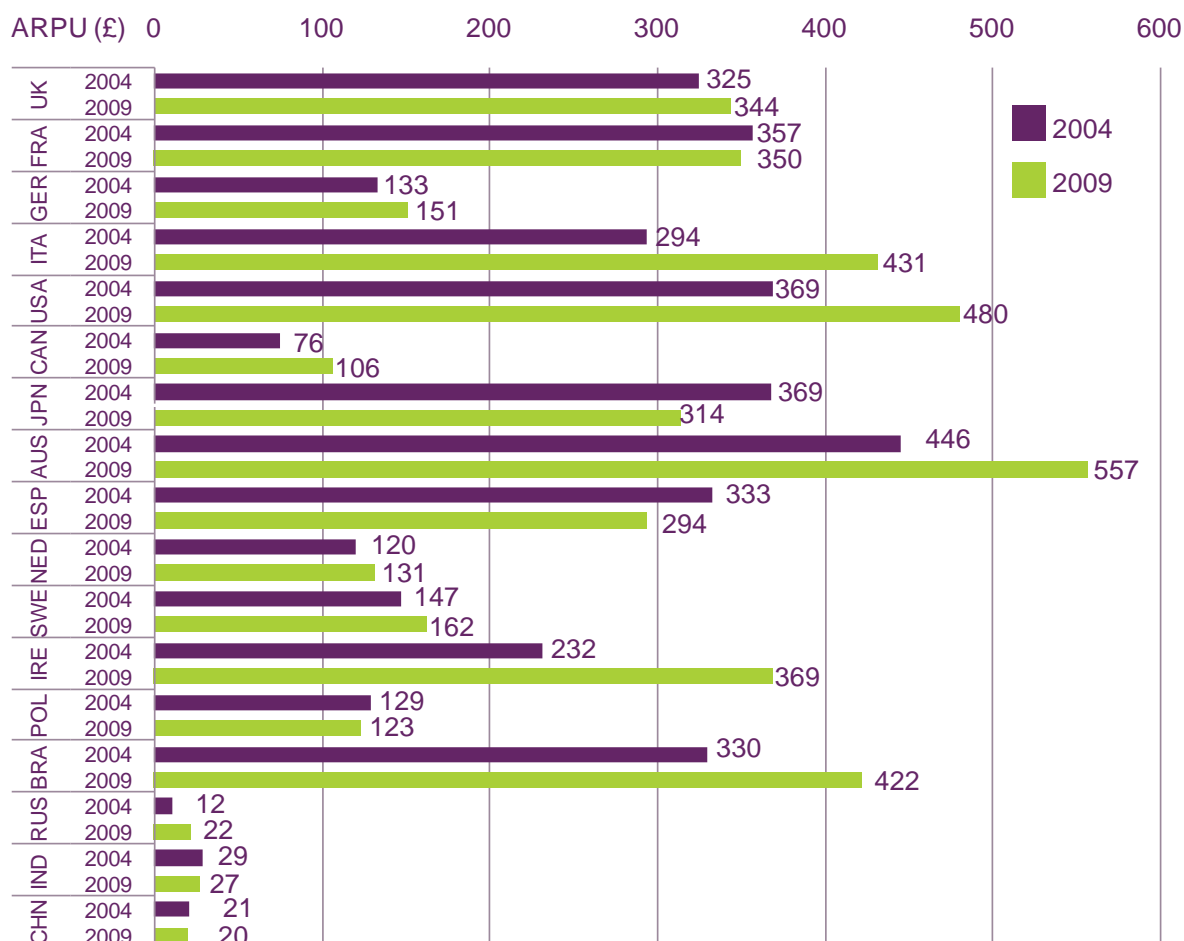
<sup>48</sup> <http://www.foxtel.com.au/about-foxtel/communications/foxtel-delivers-solid-earnings-growth-supported-by-strong-se-57205.htm>

<sup>49</sup> <http://investor.directv.com/releasedetail.cfm?ReleaseID=445565>

subscriber increased by 83% from 2004 to (a still relatively low) £22 per year. The UK was among the countries with higher ARPU- at £344 at the end of 2009, up by 6%.

Pay-TV homes in Ireland generated ARPU of £369 in 2009, up by 56% since 2004. Italy also saw substantial growth, of 47% to £431 over the five-year period, largely driven by growing spend on Sky Italia and pay-DTT services.

**Figure 3.26 Pay-TV ARPU by country, 2004 – 2009**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009. ARPU is average revenue per user, representing the average revenue generated per pay-TV subscriber.

### US operators generate the highest ARPU

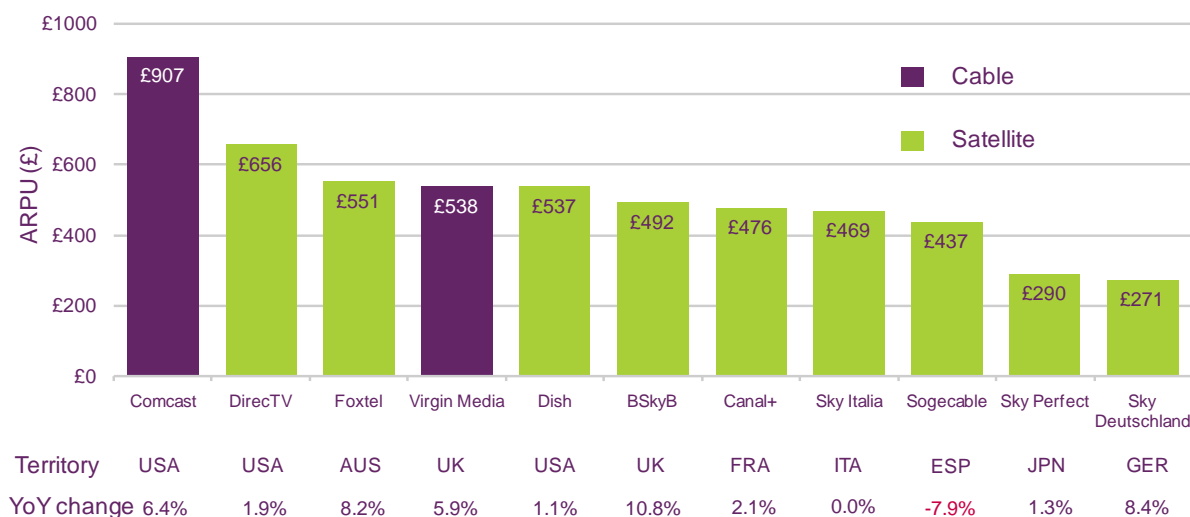
Pay-TV operators tend to report an annualised ARPU figure on a quarterly basis or a monthly ARPU figure, which is the average over the preceding quarter. Figure 3.27 analyses annual ARPU reported at the end of 2009 and shows that Comcast generated a substantially higher ARPU than other operators in our analysis – although this includes revenues earned from pay television and telecommunications products such as telephone and broadband.

Comcast reported ARPU of £907 in 2009, up by 6.4% year on year – £251 higher than the next operator, US satellite platform DirecTV (£656, up 1.9%). US platforms benefit from a long history of pay-TV, with consumers paying for access to advertiser-funded channels (networks) such as Fox and ABC within a basic tier. On top of this, they offer other basic pay channels and premium packages from the likes of Showtime, HBO and Starz. US operators

also commonly charge a monthly subscription for access to DVR services, HDTV and multiroom subscriptions.

Virgin Media earned average revenue of £538 per customer, up by 5.9%. It is the only UK operator to offer a 'quad-play' product bundle of TV, telephone, broadband and mobile. Reflecting the trend among pay-TV operators' total revenue, only Spanish operator Sogecable reported a fall in ARPU over the past five years, down by 7.9% to £437.

**Figure 3.27 Latest reported ARPU for selected pay-TV operators, end 2009**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009; 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. Platform represents main distribution method.

### Markets with higher pay-TV take-up tend to have greater DVR adoption

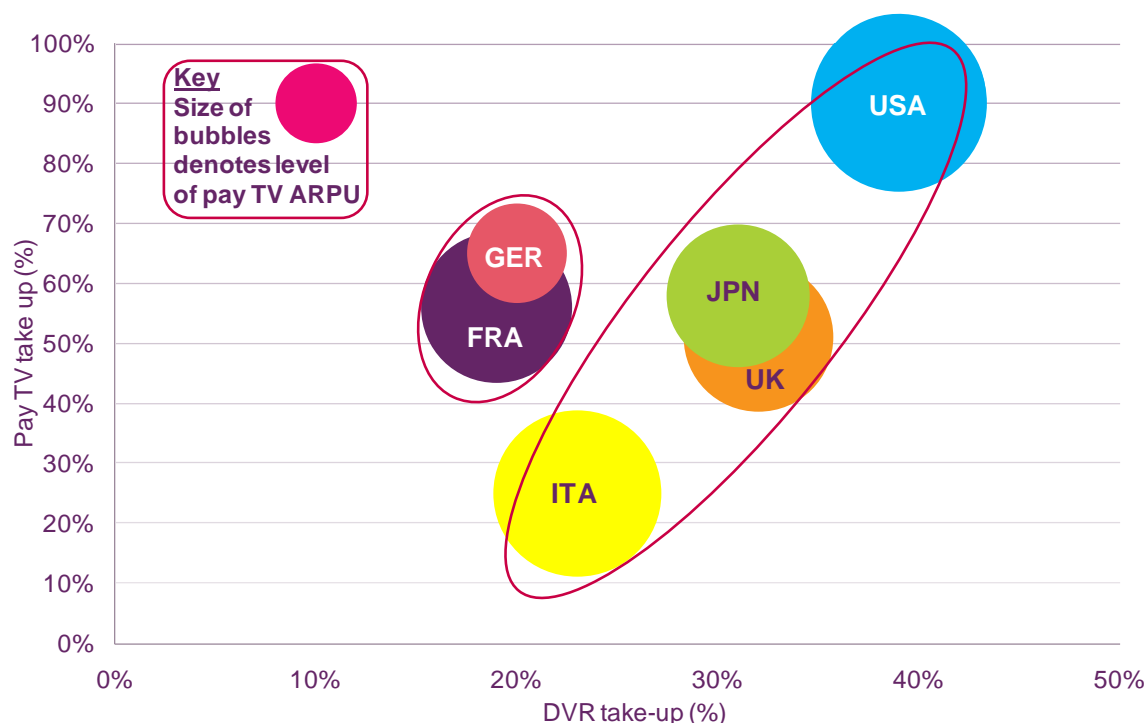
Figure 3.28 plots take-up of pay-TV (Y axis) against take-up of DVRs (X axis). The average revenue per user (ARPU) generated in each of the six major countries – based on pay-TV homes and subscriber revenue – is depicted by the relative size of the bubbles. DVR take-up figures are based on Ofcom consumer research conducted among internet users aged between 18 and 64.

The data show that for most countries included here, the higher the levels of pay-TV adoption, the more homes have DVRs. The US is the most advanced market across all three variables, with pay-TV take-up at 90%, DVR adoption of 39% and pay-TV ARPU of £480. The UK and Japan show similarities on all three measures, though the Japanese market is roughly double the size of the UK in terms of overall TV revenues, population and households.

France and Germany share different characteristics – higher pay-TV take-up than the UK and Japan but lower DVR adoption. In Germany, TV is dominated by cable, for which consumers usually pay a monthly access fee. This provides around 30 channels and is included the price of monthly rent, much like a utility. France, meanwhile, was an early mover into pay services, with the Canal Plus premium channel on terrestrial TV in 1984. The

channel's analogue terrestrial feed was switched off in November 2010<sup>50</sup>. More than 40% of French homes relied on analogue or digital terrestrial TV at the end of 2009.

**Figure 3.28 Pay-TV take-up versus DVR take-up showing ARPU levels**



Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009; ARPU and pay-TV take-up from Ofcom / IDATE analysis as of end 2009. ARPU represents average subscriber revenues by country and has been converted to GBP using 2009 IMF average exchange rates. DVR take-up from Ofcom consumer research, October 2010, for all adults 18 – 64. Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001.

### 3.2.7 HDTV development

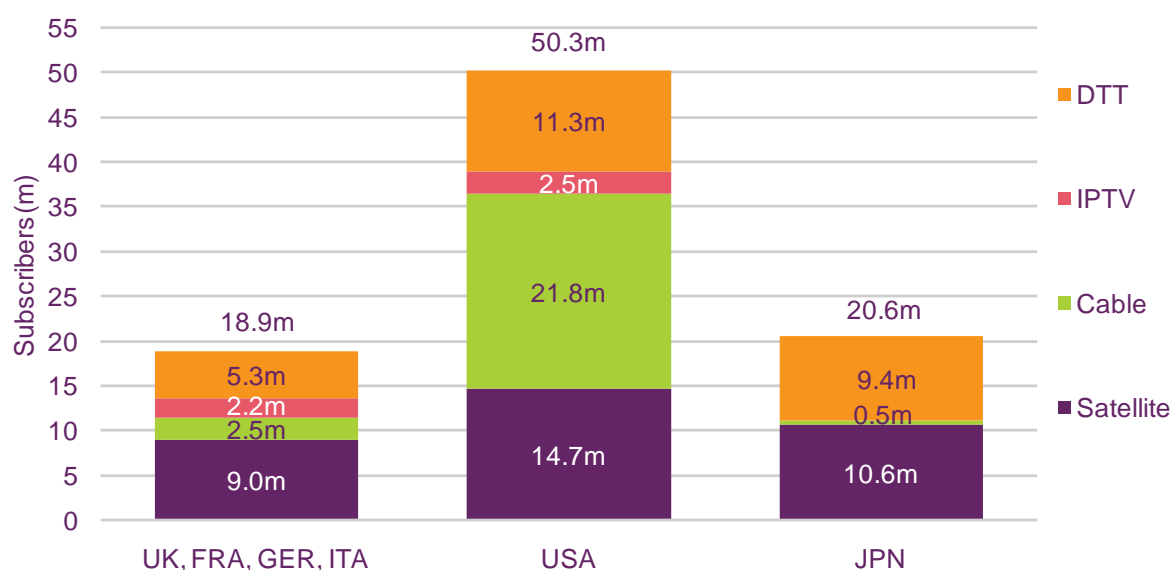
#### HDTV enters the mainstream in several markets

High-definition television provides viewers with sharper picture quality, using up to five times the resolution of standard definition digital TV. It first emerged in Japan in the 1970s, and at the end of 2009 20.6 million homes were watching HDTV (Figure 3.29). The propensity to watch HDTV is likely to be driven by a number of factors, including availability and breadth of HD content and the price of HD reception equipment (TV sets and set-top boxes).

The US, where HD launched in the early 2000s, is now the largest HD market with nearly half of all TV homes (50.3 million) able to access HD channels across all platforms. Europe was slower to adopt HDTV, with services launching from around 2005. The four major European markets of the UK, France, Germany and Italy, had 18.9 million homes receiving HD at the end of 2009.

<sup>50</sup>[http://www.digitaltveurope.net/news\\_articles/nov\\_10/23\\_nov\\_10/canal\\_plus\\_shuts\\_down\\_analog\\_lo oks\\_to\\_new\\_services](http://www.digitaltveurope.net/news_articles/nov_10/23_nov_10/canal_plus_shuts_down_analog_lo oks_to_new_services)

**Figure 3.29 Number of HDTV homes, by platform and country, end 2009**



Source: IDATE / industry data / Ofcom. Notes: Paying and FTA HD homes; no data available for IPTV in Japan.

Figure 3.30 illustrates the distribution of HDTV homes by platform among the six major markets included in our analysis. In most – the UK, Germany, Italy and Japan – satellite television accounts for majority of HD homes.

In the US, the distribution of HD homes is more evenly balanced between platforms. There are two digital satellite broadcasters, a large number of cable operators, IPTV platforms from large telecommunications players and a DTT platform. France, the most advanced HD market in Europe, also has a mixed ecology, with DTT, the main HD distribution technology, using the advanced compression technology MPEG-4 for some channels on the TNT platform.

The UK had no HD homes on DTT at the end of 2009 (although technical trials were ongoing) but by October 2010, around 420,000 Freeview HD-enabled devices, including both set-top boxes and integrated digital TV sets (IDTVs), had been sold<sup>51</sup>.

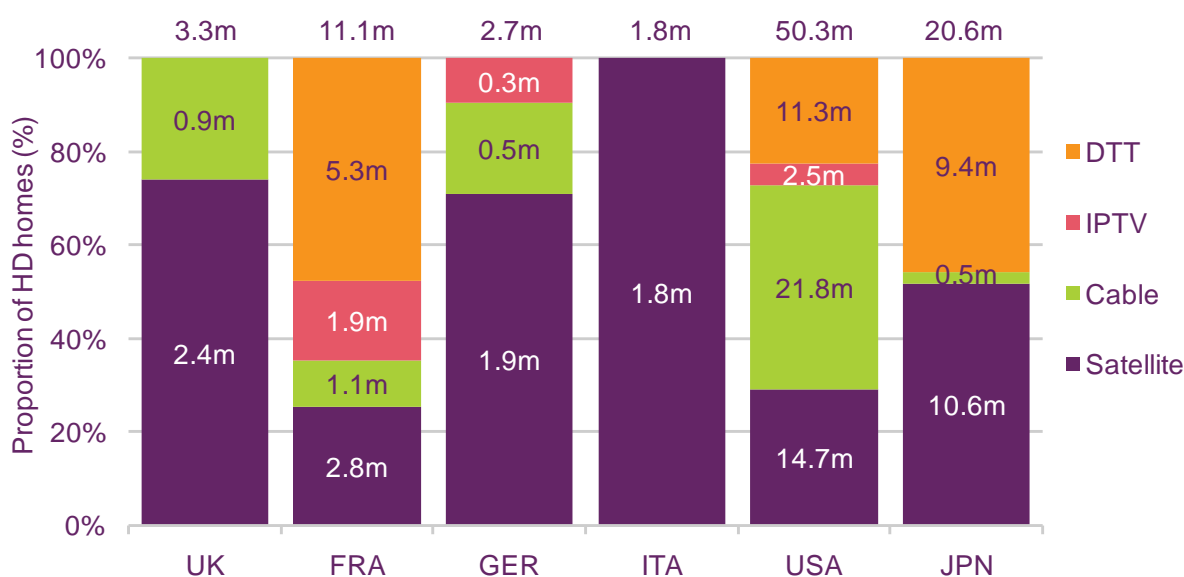
The introduction of MPEG-4 and the DVB-T2 advanced transmission mode enabled the UK platform to use spectrum more efficiently to support the launch of high-bandwidth HD channels from the BBC, ITV/STV, and Channel 4/S4C<sup>52</sup>. Sweden also introduced HD on DTT using MPEG-4 and DVB-T2 in November 2010<sup>53</sup>. Italy's HD base was exclusively satellite at the end of 2009, in part because the country does not have a cable TV network.

<sup>51</sup> <http://www.telegraph.co.uk/finance/newsbysector/mediatechnologyandtelecoms/media/8046925/Vie-wers-tune-in-to-Freeview-HD.html>

<sup>52</sup> <http://www.digitag.org/WebLetters/2010/External-Nov2010.html>

<sup>53</sup> [http://www.dvb.org/about\\_dvb/dvb\\_worldwide/sweden/index.xml](http://www.dvb.org/about_dvb/dvb_worldwide/sweden/index.xml)

**Figure 3.30 Number of HDTV homes, by platform and country, end 2009**



Source: IDATE / industry data / Ofcom. Notes: Paying and FTA HD homes; no data available for IPTV in Japan.

### Satellite generally offers access to more HD channels than other platforms

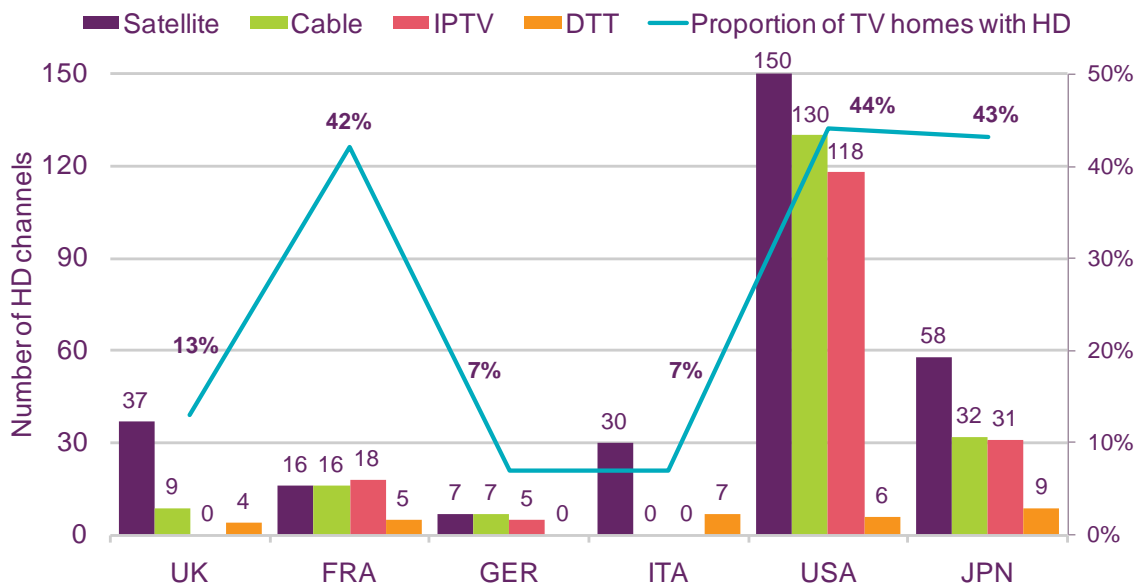
When analysing HD channel availability, there appears to be a connection between the take-up of HD services and the number of HD channels on offer. In the US in particular, HDTV has been a key battleground in attracting pay-TV subscribers, with the digital satellite platforms (DirecTV and Dish) and cable operators (such as Comcast and Time Warner Cable) using the breadth of the HD offer as a point of differentiation.

In terms of HDTV penetration rates, illustrated in Figure 3.31, this does not take into account whether homes have a TV set capable of accessing HD or whether homes have multiple HDTV services from different platforms. At the end of 2009, 44% of homes in the US had access to HDTV channels; just ahead of Japan (43%) and France (42%), which both had strong take-up of HD on DTT.

Digital satellite platforms offer the most HD channels in the majority of countries covered, as shown in Figure 3.31. Given the high-capacity demands on HD, the technology is well suited to high-bandwidth platforms such as satellite and cable. HD channel availability is more limited on platforms where capacity tends to be comparatively scarce, such as DTT.



**Figure 3.31 Number of HDTV channels and HD penetration, end 2009\***



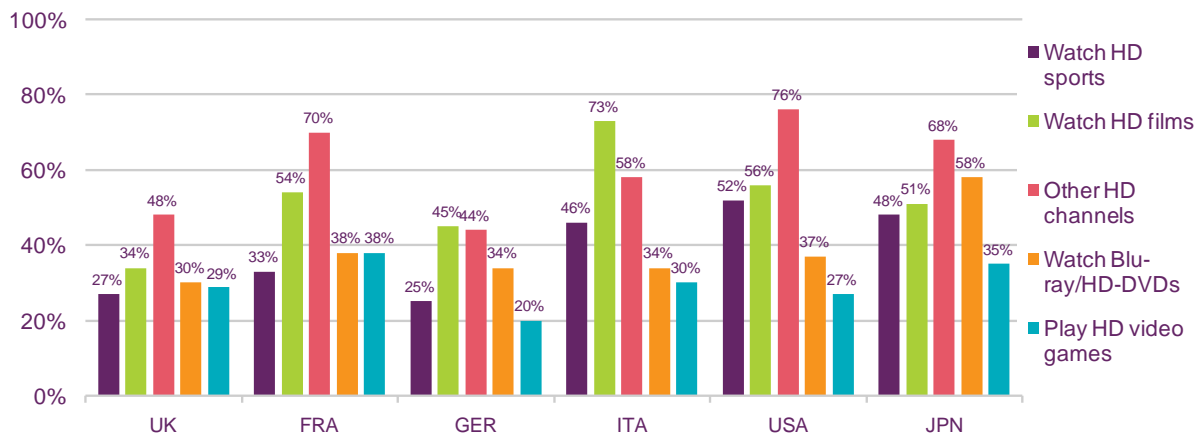
Source: IDATE / industry data / Ofcom. Notes: Penetration rates based on HD take-up among all TV households. Paying and FTA HD homes; DTT in Japan offers maximum of 9 channels but some regions receive 6. \*indicates that not all data for end 2009: UK DTT as of July 2010; Satellite in Italy as of August 2010; DTT in Italy as of August 2010, including Calcio HD which is PPV; cable in Germany as of August 2010.

**Consumers most likely to claim they watch HD channels for genres other than sports and film**

Our consumer analysis carried out among internet users looked at use of HDTV sets. In all countries except Italy, respondents most commonly said that they used their HD sets to watch HD channels in neither film nor sports categories. In the US, this figure reached 70% of those respondents with a HDTV set, followed by France (70%) and Japan (68%) and Italy (58%). The UK (48%) was ahead of only Germany (44%).

In all countries, more consumers watched films than sports in HD, which could be a result of using recorded media. There were varied response rates to whether consumers used their HDTV set to watch Blu-ray or HD-DVD discs. In Japan, 58% of respondents said that they watched HD discs, nearly double that of the UK (30%).

**Figure 3.32 Uses of HD TV sets**



Source: Ofcom consumer research, October 2010. Base sizes: UK=597, France=467, Germany=399, Italy=480, USA=581, Japan=139



### 3.2.8 Digital video recorders (DVR)

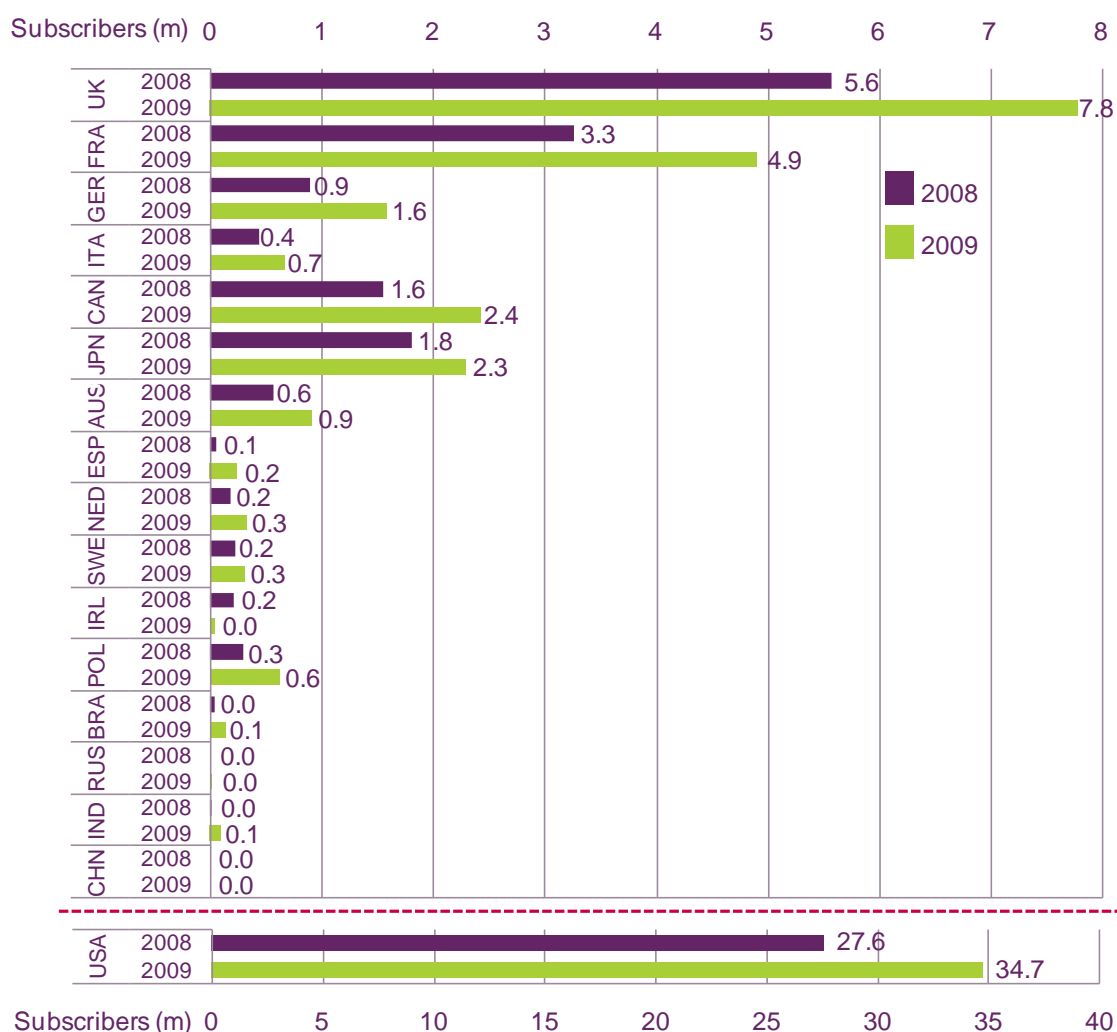
#### DVRs becoming widespread in mature TV markets

Digital video recorders (DVRs), sometimes known as personal video recorders (PVRs) or digital television recorders (DTRs), are the natural replacement technology for analogue video cassette recorders. They enable users to record TV digitally via a hard disc without the need for physical tapes. Such devices are becoming integral parts of the viewing experience for many consumers. They offer not just digital recording functions but also the opportunity to pause live TV, record more than one channel at the same time and in some cases more personalised functions like recommendations and automatic recording.

The US is the most developed market for pay-TV DVRs, where devices first launched at the end of the 1990s with TiVo and Replay TV. There were 34.7 million DVR subscription homes there at the end of 2009, up by more than a quarter (26%) year on year, according to data from Screen Digest. Generally, US pay-TV customers who sign up to higher-value packages are given free DVRs.

The UK, which saw TiVo launch in 2000 and Sky+ a year later, was the second biggest market for pay-TV DVR homes at the end of 2009, with 7.8 million devices, up by 40% on 2008. UK consumers have benefited from subsidised DVRs when they sign up to pay-TV. The UK also has a sizeable free-to-air DVR market, with four million such devices sold by the end of 2009. The BRIC territories are among the least advanced markets for DVRs.

**Figure 3.33 Pay-TV DVR subscribers, 2008 – 2009**



Source: Screen Digest

### 3.2.9 Video on demand

#### VoD remains nascent in many markets

Video on demand is emerging as a key product for pay-TV operators, helping to generate revenue and retain customers, but it remains nascent. It has also caught the attention of free-to-air broadcasters who want to increase the reach of their programming and capture advertising and subscription revenues from non-linear distribution.

On-demand technology allows providers to offer large libraries of programming available to watch at the viewer’s convenience rather than being fed to them through a TV schedule. For many operators, VoD is replacing the linear pay-per-view services where broadcast content is offered at staggered start times.

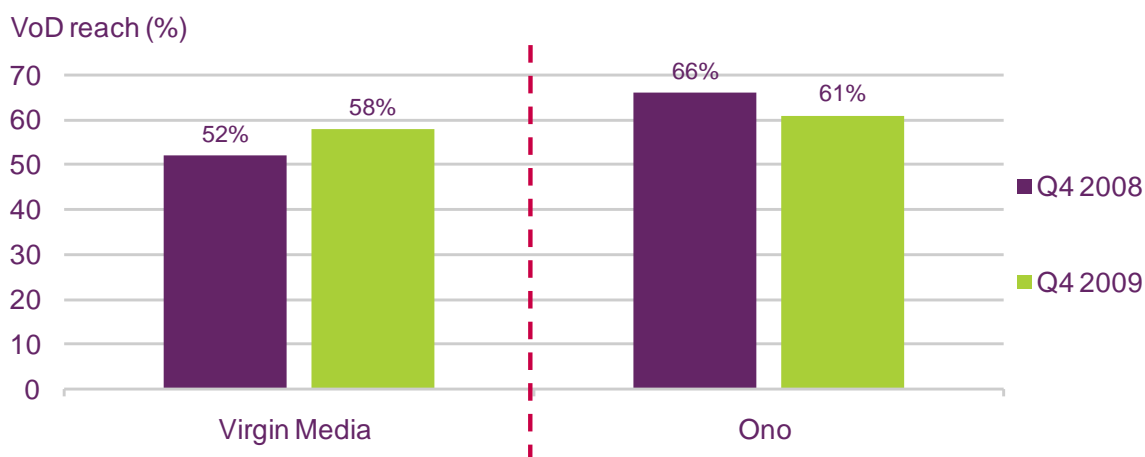
Various business models have emerged for VoD, ranging from free content, to transactional access and subscription (SVoD). Comcast in the US offers more than 25,000 pieces of on-demand content<sup>54</sup>, the majority of which are free to subscribers. By the end of 2009, it had received 15 billion views of VoD content<sup>55</sup>.

<sup>54</sup> <http://www.comcast.com/About/PressRelease/PressReleaseDetail.aspx?PRID=990>

<sup>55</sup> <http://www.comcast.com/nbcutransaction/pdfs/Public%20Interest%20Statement%20-%20FINAL.pdf>

Virgin Media, the UK cable operator, reported that 58% of its VoD-enabled customers accessed the service in the final quarter of 2009, up by six percentage points year on year. Ono, the Spanish cable operator, reported that 61% of subscribers used free VoD (VideoClub) at the end of 2009<sup>56</sup>, down from 66% at the end of 2008<sup>57</sup>.

**Figure 3.34 Video on-demand use in Virgin Media and Ono homes**



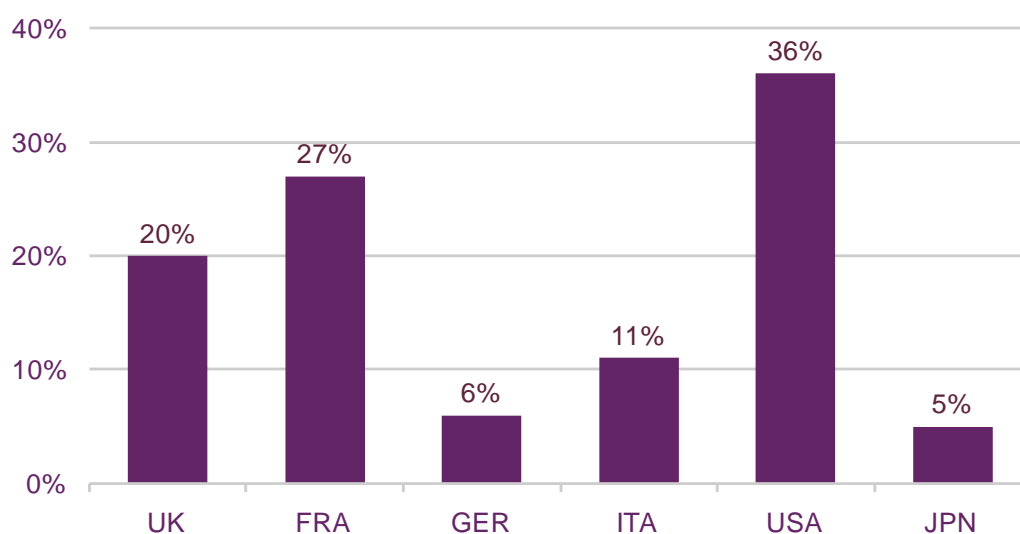
Source: Virgin Media and Ono company results

Our research conducted among internet users suggests that consumer access to VoD on the TV varied significantly across the countries analysed. More than a third of US respondents reported that they had access to a VoD service on their TV, the majority of whom are likely to be cable subscribers.

People in France reported the second-highest adoption levels, likely to be driven by consumer take-up of IPTV. A fifth of UK respondents claimed to have VoD, which could be attributed to the ‘pull’ VoD services in the UK provided by Virgin Media, BT Vision and TalkTalkTV. It could also represent consumers with access to ‘push’ VOD – where content is stored locally on the set-top box and accessed ‘virtually’ on demand. Such UK services include the Sky Anytime TV service and Top Up TV. However, these systems are limited by the available capacity on the hard disc of the DVR.

<sup>56</sup> <http://sobreono.ono.es/inversores/pdfs/ONO%20MEMORIA%202009%20MKT%20ENG%20AF.pdf>  
<sup>57</sup> <http://sobreono.ono.es/inversores/pdfs/annual-report-2008-english.pdf>

**Figure 3.35 Take-up of video on demand on the TV, by country**

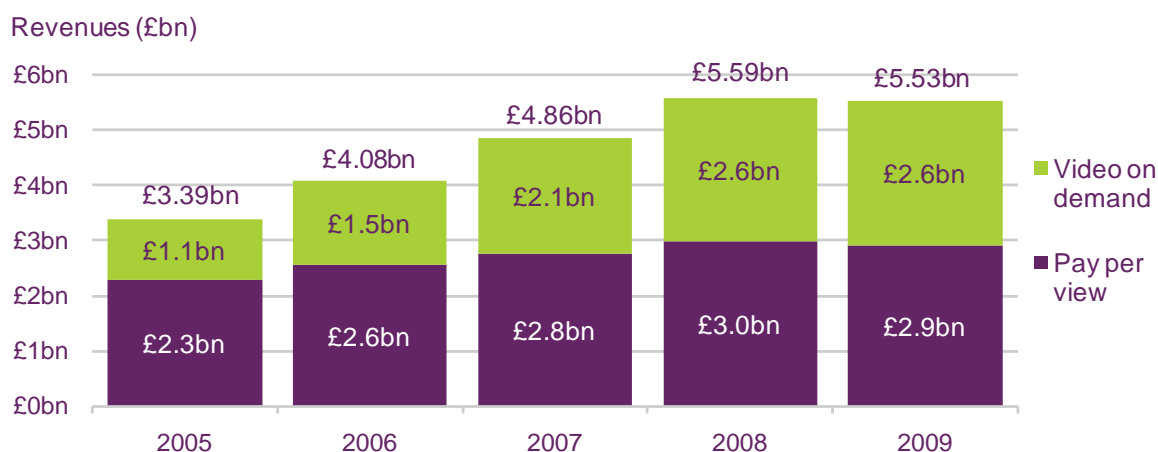


Source: Ofcom consumer research, October 2010, for all adults 18 – 64. Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001.

Together, VoD and PPV generated global revenues of £5.5bn in 2009, down by 1% year on year. VoD represents a growing component of global TV industry revenue, up by 0.6% between 2008 and 2009 and up by an annual average growth rate of 23.9% since 2004. Pay-per-view revenue declined in 2009, down 2.6% year on year but was still up by 13.0% per annum on a compound average annual basis since 2004.

Digital cable and IPTV operators have traditionally been well placed to offer VoD, given the two-way connectivity of their networks. Satellite and digital terrestrial television have historically been disadvantaged in VoD because of their one-way networks.

**Figure 3.36 Global pay-per-view and video-on-demand revenues**



Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Notes: Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the £GBP, representing the IMF average for 2009.

### 3.2.10 Hybrid devices and online video

#### 'Hybrid' devices offer the prospect of significant enhancements for satellite and DTT

The emergence of the internet as a viable way of delivering video content is opening up opportunities to deliver programmes on demand over a wider range of platforms. While VoD has traditionally been the domain of cable and IPTV operators, a number of pay-TV operators are looking to combine one-way infrastructure such as satellite and terrestrial with broadband connectivity to offer on-demand content and web-like applications on the TV.

In October 2010, BSkyB began rolling out a VoD service to its Sky+ HD customers using 'progressive download' technology. This, and similar services, downloads content over the open internet to the hard disc of the DVR. The video is available to play back when enough content is stored to ensure an uninterrupted service<sup>58</sup>. Viasat in Scandinavia and DirecTV in the US already offer such services.

It is not only satellite and terrestrial operators that are looking to bring internet connectivity to their set-top boxes and merge TV and web experiences. Other satellite, cable and IPTV providers, and some free-to-air broadcasters, are making similar moves:

- Liberty Media, the pan-European cable operator, plans to launch a new device that will allow customers to watch pay-TV, access internet content through their television and stream content downloaded on the DVR throughout the house<sup>59</sup>.
- Spanish cable operator Ono has announced plans to roll out new set-top boxes based on the TiVo DVR technology to its cable subscribers. The box will also allow Ono to launch a hybrid DTT/internet service to those outside its cable network<sup>60</sup>.
- Virgin Media, the UK cable operator, has announced plans to launch a 'converged TV and broadband interactive platform' based on TiVo technology in Q4 2010. The company said that the device will have a dedicated internal modem to offer internet services and applications directly to the TV<sup>61</sup>.
- Digital satellite broadcaster Canal Digital announced in November 2010 plans to launch set-top boxes including the TiVo technology in Norway, Sweden, Denmark and Finland. The devices will offer standard DVR/HDTV functionality as well as universal search, home networking and integration with mobile devices<sup>62</sup>.
- Mobile operator Vodafone is reportedly looking to launch hybrid TV devices in Spain (DTT and broadband) and Germany (digital satellite and analogue cable)<sup>63</sup>.
- Foxtel in Australia has announced that from October 2010 it would start downloading software to its iQ2 set-top boxes to enable them to connect to the internet and offer

---

<sup>58</sup> [http://corporate.sky.com/media/press\\_releases/2010/sky\\_introduces\\_anytimeplus.htm](http://corporate.sky.com/media/press_releases/2010/sky_introduces_anytimeplus.htm)

<sup>59</sup> <http://www.broadbandtvnews.com/2010/10/15/first-pictures-of-upc-horizon-gateway/>

<sup>60</sup> [http://pr.tivo.com/easyir/customrel.do?easyirid=CA934452BA6418EF&version=live&prid=624198&releasejsp=custom\\_150](http://pr.tivo.com/easyir/customrel.do?easyirid=CA934452BA6418EF&version=live&prid=624198&releasejsp=custom_150)

<sup>61</sup> <http://pressoffice.virginmedia.com/phoenix.zhtml?c=205406&p=irol-newsArticle&ID=1490920&highlight=>

<sup>62</sup> [http://pr.tivo.com/easyir/customrel.do?easyirid=CA934452BA6418EF&version=live&prid=688354&releasejsp=custom\\_150](http://pr.tivo.com/easyir/customrel.do?easyirid=CA934452BA6418EF&version=live&prid=688354&releasejsp=custom_150)

<sup>63</sup> <http://www.screendigest.com/news/vodafone-hybrid-set-top-box-strategy/view.html>

access to on-demand content. Foxtel On Demand expects to include more than 5,000 films and TV episodes by 2011<sup>64</sup>.

The increased use of broadband to deliver audio-visual content to consumers is also presenting opportunities to free-to-air broadcasters. A number of initiatives have been kick-started by such broadcasters aimed at bringing on-demand content and the web to the TV:

- The HbbTV (Hybrid Broadcast Broadband TV) standard has been developed to deliver internet services to connected TVs and set-top boxes<sup>65</sup>. The European consortium includes broadcasters, such as TF1 and France Televisions, and manufacturers including Samsung and Philips. HbbTV services have already launched in Germany<sup>66</sup>.
- YouView (formerly Project Canvas) devices are set to launch in 2011. They will provide access to on-demand content and web-like applications delivered over broadband to the TV alongside the Freeview broadcast channels. YouView, which is backed by the UK's PSBs, Arqiva and internet service providers, also plans to offer access to paid-for content<sup>67</sup>.

### **UK consumers use online TV most but the US generates the most revenue per head**

Online TV and video content is emerging as the driver of a new source of audio-visual revenue, both for traditional broadcasters and for new players in the value chain. Our consumer research found that the UK led the way among our comparator countries in terms of accessing TV content over the internet. Just under a quarter of UK respondents (24%) claimed to do this every week (rising to 45% when asked whether they had ever accessed TV content over the web).

People in the US were the second most likely to access online content, with a fifth (22%) using the internet to access TV content on a weekly basis. This compared to 37% of respondents on the US claiming to have ever accessed online TV, in line with France.

---

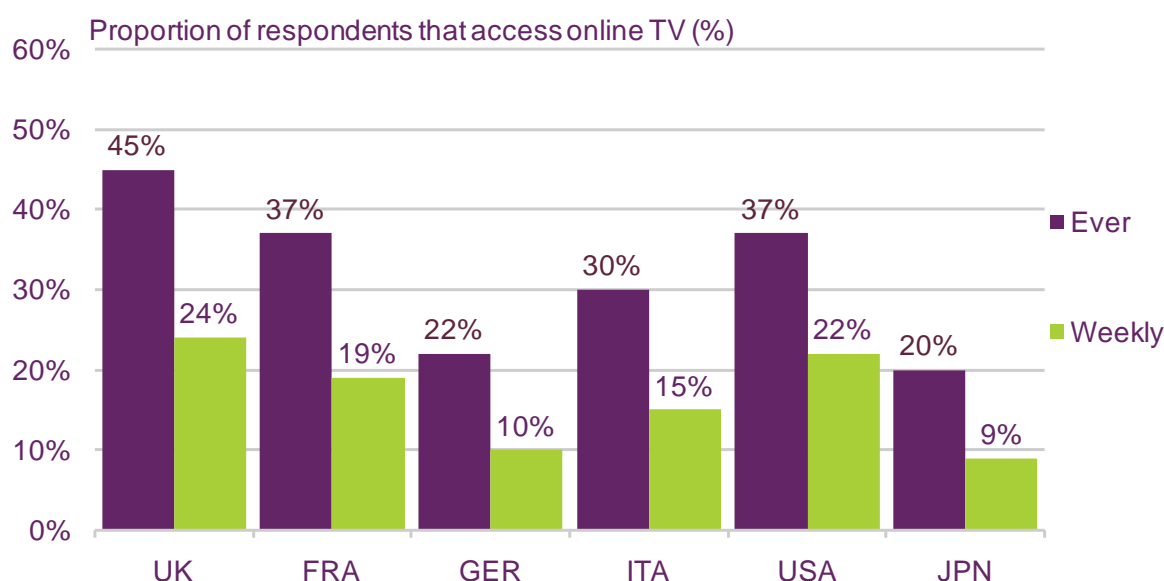
<sup>64</sup> <http://www.foxtel.com.au/about-foxtel/communications/foxtel-launches-internet-tv-service-foxtel-on-demand-96779.htm>

<sup>65</sup> [http://www.hbbtv.org/pages/news\\_events/pdf/HBBTV\\_PR\\_Final\\_20090827.pdf](http://www.hbbtv.org/pages/news_events/pdf/HBBTV_PR_Final_20090827.pdf)

<sup>66</sup> <http://www.broadbandtvnews.com/2010/10/13/hbbtv-launches-on-terrestrial-in-germany/>

<sup>67</sup> <http://www.youview.com/2010/09/16/%e2%80%98youview%e2%80%99-unveiled-as-the-future-of-television/>

**Figure 3.37 Accessing TV content over the internet**



Source: Ofcom consumer research, October 2010, for all adults 18 – 64. Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001.

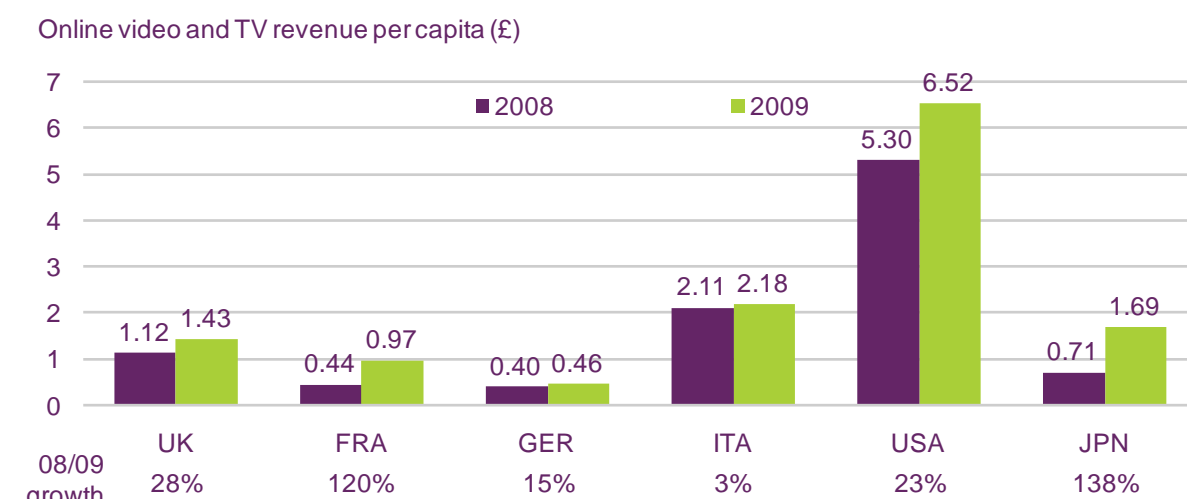
Figure 3.38 illustrates the relative size of the per-capita revenues raised from TV/video online (excluding those from pan-regional services such as iTunes and YouTube) in each of our main comparator countries.

In 2009, this stood at £6.52 per person in the US, substantially higher than any other country for which data are available and nearly three times higher than Italy, the next highest figure (£2.18 per capita). In the UK the figure stood at £1.43 per head, behind Japan (£1.69), but ahead of France (£0.97) and Germany (£0.46). The pattern of per-capita revenues for online TV and video closely reflect countries' performances for pay-TV average revenue per user (see Figure 3.13).

The high figure for the US may reflect the comparative success of services such as Hulu and broadcasters' own audio-visual online services. And online TV revenue tells only part of the story of online video. Publicly-funded services, such as the BBC iPlayer in the UK, can be very popular but do not contribute to overall online commercial revenue figures.

Rates of growth in online TV and video revenues during 2009 varied substantially. Japan (138%) and France (120%) both experienced growth of more than 100% compared to 2008, albeit from relatively low bases. By contrast, growth in Italy was just 3% for the same period. Despite being the most advanced market, the US continued to see double digit year-on-year growth (23%) along with the UK (28%) and Germany (15%).

**Figure 3.38 Online TV and video revenue per head**



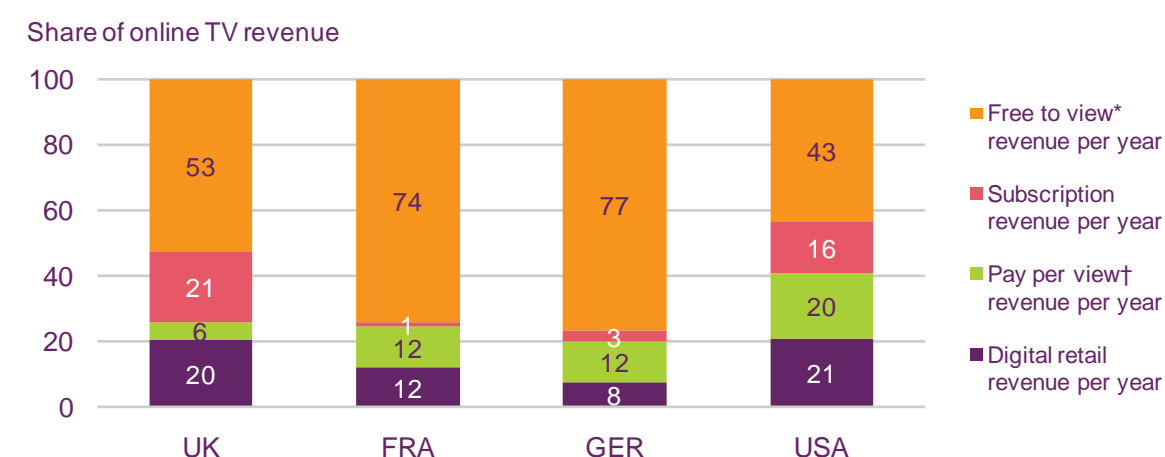
Source: IDATE / industry data / Ofcom. Notes: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009; revenue figures exclude revenue from pan-regional services (e.g. iTunes, YouTube etc).

### Free-to-view content dominates audio-visual online revenue in France and Germany

Separate data from Screen Digest show the distribution of online TV revenues by component (Figure 3.39). In each of the four countries for which data are available, free-to-view revenue accounted for the biggest proportion of revenues in 2009 (74% in France and 77% in Germany). In the UK the figure was 53%.

The US (43%) was the only country we looked at where free-to-view accounted for less than 50% of total revenue, although it still comprised the largest single component. Both subscription and digital retail revenue (which incorporates ‘download to own’ services such as iTunes) make up a larger proportion of online TV revenue in the UK and the US than they do in France and Germany.

**Figure 3.39 Online TV revenue by segment, 2009**



Source: Screen Digest. Note: these data are not directly comparable with those in Figure 3.38 as they derive from a different data source. \*Free to view revenue are generated from display and in-stream ads which the user sees when they view a video. †Pay per view includes all content consumed on an on-demand basis, including traditional PPV (as per live sports) and VoD.



## Cutting the cord – US pay-TV operators face the online video challenge

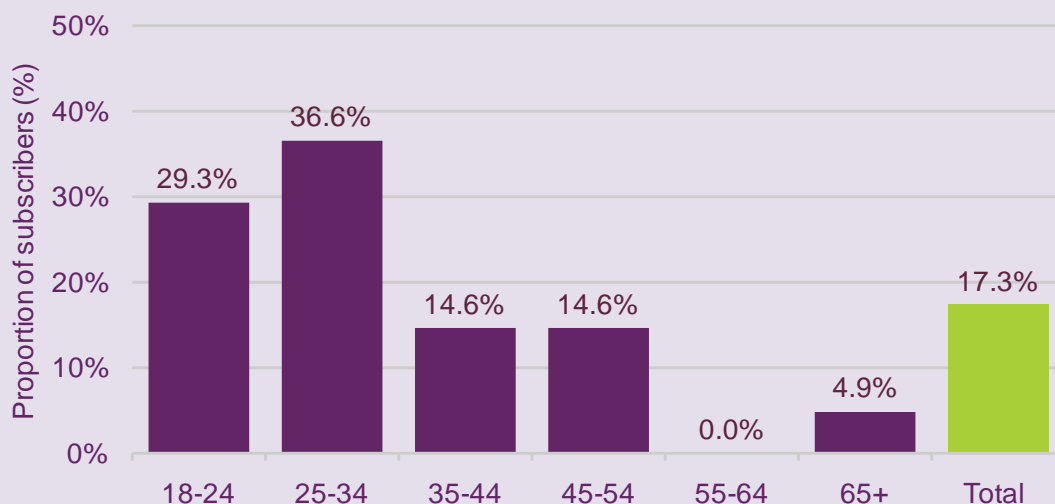
An emerging theme in the US in recent months has been the purported challenge that online video services pose to pay-TV operators. Research published in the US by investment bank Credit Suisse in September 2010 suggested that some consumers were using online video services as a substitute for pay-TV – so-called ‘cord cutting’.

The research focused on customers of Netflix, the subscription DVD, online TV and video service in the US. Since early 2009, Netflix has allowed its subscribers to stream content over the internet as well as request physical DVDs. Of the 1,000 Netflix customers polled, 17.3% said that they used their Netflix online streaming service as a substitute for pay-TV. This trend was particularly prevalent among younger people. The chart below shows that 29% were aged between 18 and 24, while 37% were aged between 25 and 34 and in moderate-to-low-income homes (nearly a quarter were from households that earned less than \$25,000).

Content can be viewed on a home computer and/or on other devices, such as broadband-enabled set-top boxes like Roku and Tivo, games consoles and connected TVs. Netflix had around 15 million customers at the end of Q2 2010, of whom around 8.8 million (61%) had streamed content for at least fifteen minutes during the quarter.

Pay-TV operators in the US are attempting to head off subscriber defections. US cable operator Comcast is launching its Xfinity online TV project, which allows its customers to access much of the pay-TV content online. The cable company has reportedly said that ‘cord cutting’ is rare<sup>68</sup>. A recent study (called *Life is a Stream*) commissioned by US cable marketing body CTAM found that 3% of US pay-TV respondents who watched at least some TV and films from the internet on their TV set planned to cancel their subscription<sup>69</sup>.

### Netflix customers who use the service as a substitute for pay-TV, by age



Source: Credit Suisse equity research report: *An uncertain time for big media*, Sept 2010

### 3.2.11 Television output from European public service broadcasters (PSBs)

The information contained in this section is taken from data collected by the European Broadcasting Union (EBU) which is the largest association of national broadcasters in the

<sup>68</sup> <http://www.zdnet.com/blog/btl/comcast-tv-everywhere-out-of-beta-next-month-cord-cutting-a-myth/39519>

<sup>69</sup> <http://www.hollywoodreporter.com/news/online-viewers-watch-tv-polls-45280>

world, representing 75 members from 56 countries. Member broadcasters, both television and radio, reach an average audience of 650 million each week.

The TV channels included in the analysis below are:

- **Germany:** ARD1 (Das Erste); ZDF
- **UK:** BBC One, BBC Two; ITV1; Channel 4; Channel 5; S4C Digital
- **France:** France 2; France 3
- **Italy:** RAI1; RAI2; RAI3
- **Spain:** RTVE LA 1; RTVE La2
- **Netherlands:** Nederland 1; Nederland 2; Nederland 3/Z@ppelin
- **Republic of Ireland:** RTE ONE; RTE TWO
- **Sweden:** SVT1; SVT2
- **Poland:** TVP 1; TVP 2

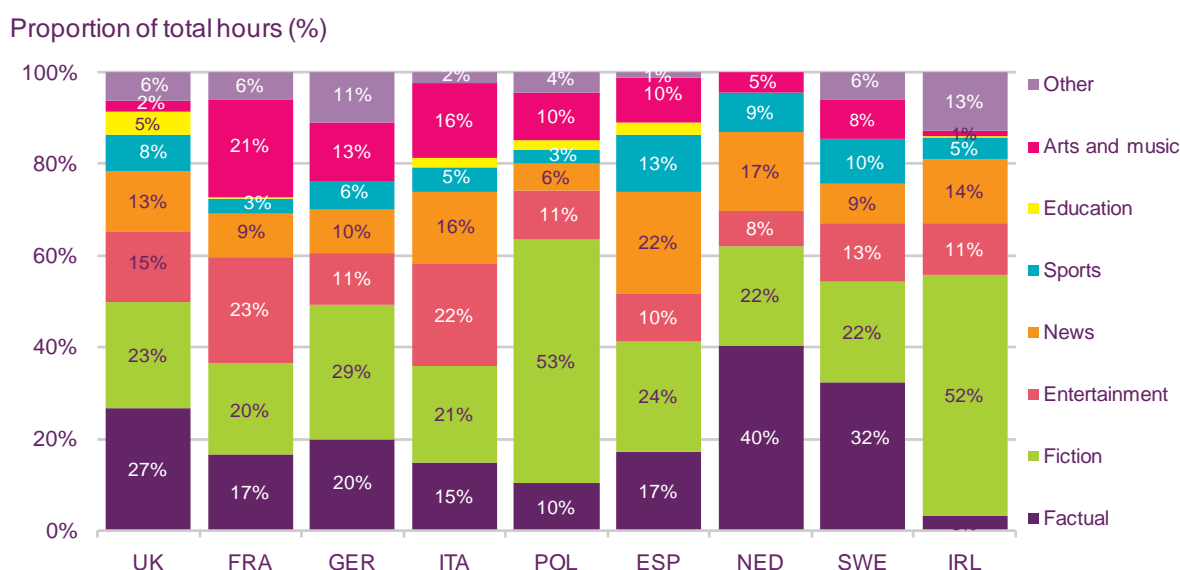
One of the essential characteristics of public service broadcasting remains the availability of a wide range of different types of programmes appealing to a broad audience base. This continues to be the case across European PSB output, as shown in Figure 3.40, which illustrates the proportion of different types of programme genres broadcast by country in 2009. All output is included – whether in-house, commissioned from independent producers; bought-in acquisitions or repeats.

Broadcasters follow a standard EBU programme classification system which means that the information shown here should be compatible and comparisons across countries are valid. However, the exception is the Netherlands where a number of genres (education, arts, culture, science and religion) are all incorporated within the information genre. Consequently, the proportion shown below for 'Factual' at 40% is over-stated when compared with the output for other countries. Sweden's SVT broadcast the highest proportion (32%) of Factual programmes in 2009, followed by the UK at 27% and Germany with 20%.

Fiction, which covers all types of drama programmes, including soaps and feature films, featured heavily in Poland and ROI where it accounted for 53% and 52% of output respectively. In all other countries the proportion varied between 20% (France) and 29% (Germany).

The highest proportion of Entertainment programmes was broadcast in France (23%) with the lowest proportion in the Netherlands (8%). In most countries News accounted for between 10% and 20% of programmes with the exception of Spain at 22% and at the other end of the scale, Poland at 6%. In most countries sport made up less than 10% of output, apart from in Spain where it stood at 13%. There was a wide spread in the Arts and Music genre, from 1% of output in ROI; 2% in the UK; up to 21% in France.

**Figure 3.40 PSB network output by genre, 2009**



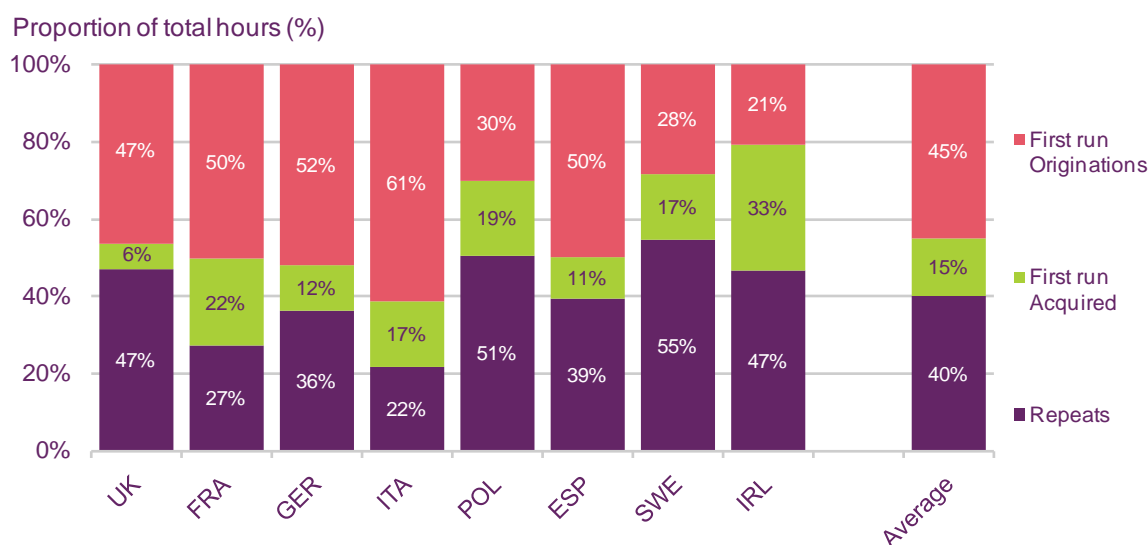
Source: Ofcom/EBU Members. Note: The UK figures include BBC One, BBC Two, ITV1, Channel 4, Channel Five and S4C digital

Figure 3.41 shows PSB output according to the origin of programmes – split by first run originations (both in-house and independent commissions); first run acquisitions; and repeats. In general, public service broadcasters tend to produce or commission a higher proportion of original programming than non-PSBs.

Within any genre, this is usually the most expensive element of the broadcast schedule, is often the most popular with audiences and is important for the economy of TV production industries across Europe. This is reflected in the fact that on average, across the countries reported, originations accounted for the highest proportion of output at 45% of all programmes broadcast. PSB schedules in Italy, Germany, France, Spain, and the UK broadcast above average proportions of originated output, ranging from 61% to 47% while Poland, Sweden and Ireland were significantly lower (30% to 21%).

First run acquired programmes averaged 15% with Ireland topping the list at 33%, while UK PSBs showed the lowest at 6%. The other main component of the schedules, repeats, accounted for 40% of broadcasts. Italy and France showed far fewer repeats than other countries (22% and 27% respectively) while Sweden and Poland showed the highest proportions (55% and 51%).

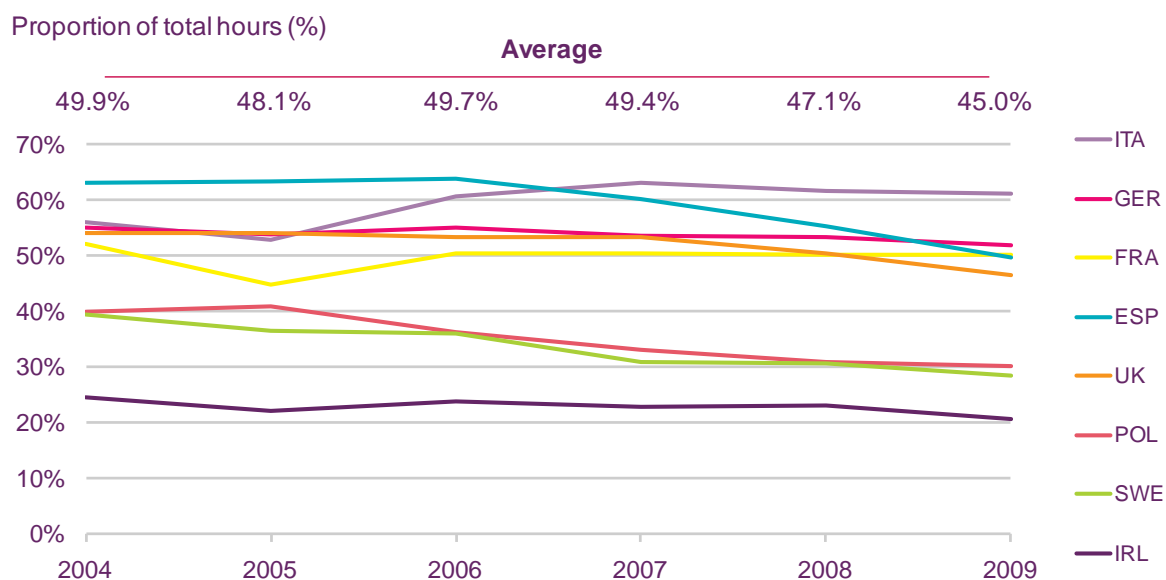
**Figure 3.41 First run originations, acquisition and repeats, 2009**



Source: EBU members/Ofcom. Note: The 'average' figures represent a weighted average of the data illustrated in the chart

Drilling down into each of these elements in more detail, Figure 3.42 shows that almost without exception, the proportion of programme originations have fallen on PSB channels over the past five years. The percentage dropped from an average of 50% in 2004 to 45% in 2009. This downward trend is evident in all markets, apart from Italy where originations increased from 56% of total output in 2004 to 61% in 2009.

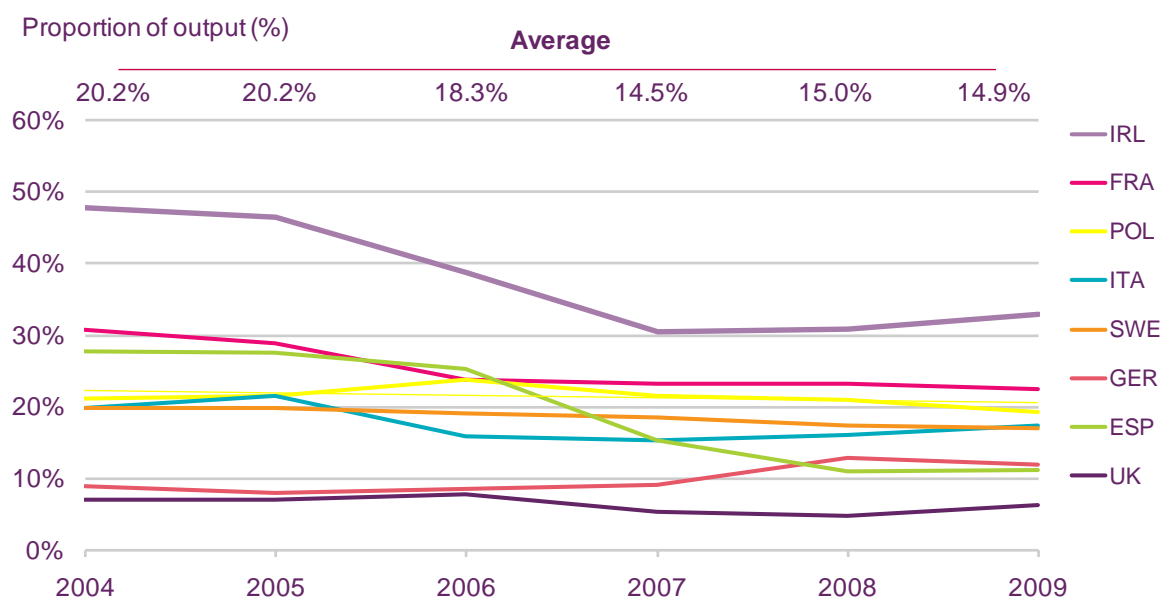
**Figure 3.42 First-run originations trends**



Source: Ofcom/EBU members. Note: The UK figures include BBC One, BBC Two, ITV1, Channel 4, Channel Five and S4C digital.

Alongside cut backs in originated programming, the proportion of acquired material has also dropped by an average of five points, from 20% in 2004 to 15% in 2009. Again, the fall occurred in almost all countries considered, apart from Germany which bucked the trend – with the proportion of bought-in programming rising from 9% to 12% over the period. The level of purchased programmes in the UK was lower than in other countries at 6% of output while in the Ireland at 33%, acquisitions were higher than elsewhere.

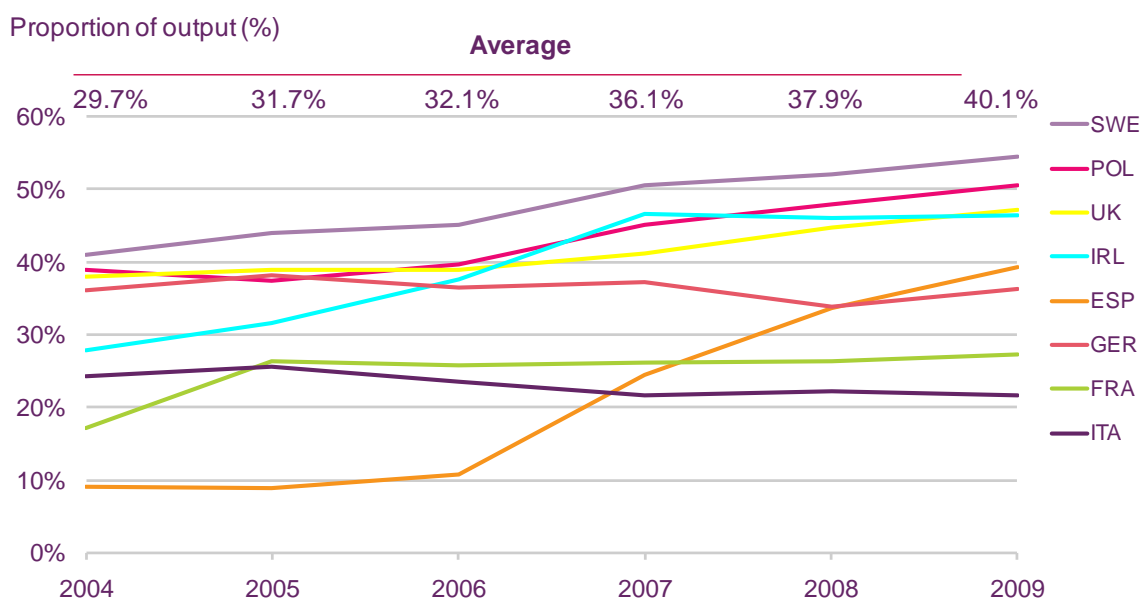
**Figure 3.43 Acquisition trends**



Source: Ofcom/EBU members. Note: The UK figures include BBC One, BBC Two, ITV1, Channel 4, Channel 5 and S4C digital.

With increasing pressure on programme budgets, broadcasters across Europe appear to have addressed the issue by raising the level of repeats, as can be seen in Figure 3.44. It shows a significant rise from an average of 30% of the schedules in 2004 to 40% in 2009. The increases were particularly marked from 2006 onwards. The pattern is consistent across all countries, to a greater or lesser extent, apart from in Italy where repeats fell over the period from 24% to 22% and in Germany where the levels were relatively stable, at around 36 - 38%.

**Figure 3.44 Repeats trends**



Source: Ofcom/EBU members. Note: The UK figures include BBC One, BBC Two, ITV1, Channel 4, Channel 5 and S4C digital.

## 3.3 The TV and audio-visual consumer

### 3.3.1 Summary

This final part of the TV and audio-visual section sets out consumer trends among television viewers during 2009. It examines TV platform and pay-TV take-up, patterns of broadcast television consumption and use of online TV. The main points in this section include:

- **Analogue TV take-up continued to fall in 2009 as switchover drove digital migration.** Digital terrestrial ('DTT') has been the major beneficiary of digital migration, with notable increases in DTT penetration among homes in Italy (+6.1 percentage points), Australia (+7.6pp) and Spain (+16.9pp) (page 156).
- **Pay-TV now accounts for 61% of TV households across all comparator countries, a rise of two percentage points on 2008.** For the first time, the majority of households in the UK took a pay-TV package (51% versus 49%). Migration to pay-TV continued to make rapid progress in Poland, growing by eight percentage points year on year, with India (up by five percentage points) and Russia (four percentage points higher) ranked second and third respectively (page 160).
- **An average viewer among the 17 comparator countries consumed 207 minutes of TV each day in 2009.** US viewers watched more TV than those in any other country (280 minutes per person per day, up by 1.1% year on year). They were followed by Polish viewers at 240 minutes (up 3.4% year on year) and those in Italy (238 minutes, up by 1.7%). People in the UK watched an average of 225 minutes, a figure that remained unchanged year on year (page 163).
- **Channels financed (at least in part) from public sources of funding continued to attract substantial audiences during the year, although typically, their share of viewing fell over the year.** The POL portfolio in Poland accounted for 41% of viewer hours in 2009 (down by three percentage points (pp)); RAI in Italy secured a 39% share of viewing (down by 3 pp); ZDF/ARD/ARD3's collective share was the same in Germany (down by 2pp). The BBC attracted a 35% viewing share, down by 2 pp year on year (page 165).
- **The degree to which the well-established channels have maintained share in the face of multi-channel competition varies across countries.** Multichannel viewing accounted for nearly three-quarters (72%) of viewer hours in the US. In Europe, the degree of attrition has been less severe – multichannel share stood at 42% in the UK, 32% in Germany, 27% in France and just 19% in Italy (page 166).

### 3.3.2 Take-up of television distribution technologies on main television sets

#### **Analogue TV take-up continued to fall in 2009 as switchover drove digital migration**

In almost all comparator countries, digital take-up rose across the four TV distribution technologies shown in Figure 3.45, as analogue penetration continued to fall in 2009. DTT has been the major beneficiary of digital migration, with notable increases in DTT penetration among homes in Italy (+6.1 percentage points), Australia (+7.6pp) and Spain (+16.9pp), where DSO was completed in April 2010.

Cable take-up continued to fall in some Western European markets, including Germany (-6.3pp) and the Netherlands (-10.3pp), where the loss of analogue subscribers is not being offset by increases to digital.

Digital satellite is enjoying strong growth in the BRIC countries where free-to-air offerings are more limited, with India (take-up rose by 5.8pp in 2009) in particular benefiting from competition between operators such as Sun TV and Tata Sky. In contrast, its progress appears to be slowing in Western Europe amid platform competition, with no increases over two percentage points apart from Poland (+8.4pp) and Ireland (+4.1pp).

IPTV take-up rose (or at least remained stable) in all comparator countries, with the fastest growth in France (+4.3pp), where 'free IPTV' offers bundled with broadband subscriptions are driving take-up. There were also modest increases in take-up in the US (+1.8pp), Sweden (+1.3pp) and Germany (+1.4pp).

**Figure 3.45 Changes in television distribution technology take-up, 2008-2009**

	Terrestrial		Satellite		Cable		IPTV
	Analogue	Digital	Analogue	Digital	Analogue	Digital	
UK	-4.7	3.0	0	1.4	-0.4	0.7	0.1
FRA	-6.8	2.1	-0.7	1.7	-1.0	0.4	4.3
GER	0	3.0	-4.0	1.2	-6.3	4.8	1.4
ITA	-7.0	6.1	-1.0	1.5	0	0	0
USA	-1.3	0.2	-0.1	1.1	-3.5	1.8	1.8
CAN	-1.6	0.2	-1.2	0.7	-4.5	5.5	0.9
JPN	-1.5	0.5	-0.2	-0.6	-2.4	3.2	1.0
AUS	-8.4	7.6	-0.4	0.3	0	0.3	0.6
ESP	-15.1	16.9	-1.1	-1.0	-0.9	0.6	0.5
NED	0	0.9	0	0	-10.3	8.1	1.2
SWE	0	-1.2	-0.8	-0.3	-1.9	3.0	1.3
IRL	-0.9	0	-0.9	4.1	-5.3	2.7	0.3
POL	-10.0	0.6	0	8.4	-1.0	1.5	0.4
BRA	-5.7	1.9	-0.1	3.1	0.3	0.5	0
RUS	-6.2	0.6	-0.2	3.8	-0.4	2.2	0.3
IND	-5.4	0	0	5.8	-1.3	0.8	0
CHN	-7.5	2.9	-0.2	1.1	-2.1	5.2	0.5

Source: IDATE / industry data / Ofcom

### DTT continues to be popular in UK households

Figure 3.46 shows that for most comparator countries, two or three TV distribution technologies account for the majority of TV households. In the UK, DTT has increased its lead as the most widely-used technology (connected to 41% of main sets). Digital satellite has continued to maintain its second place (37%) as BSkyB added a substantial number of subscribers in 2009 (before exceeding the ten million subscriber mark in November 2010)<sup>70</sup>. This broadly mirrors the majority of Western European countries, where the progression of digital switchover has tended to drive take-up of DTT, which is now also the principal TV distribution technology in Spain (62%), Italy (36%) and France (32%).

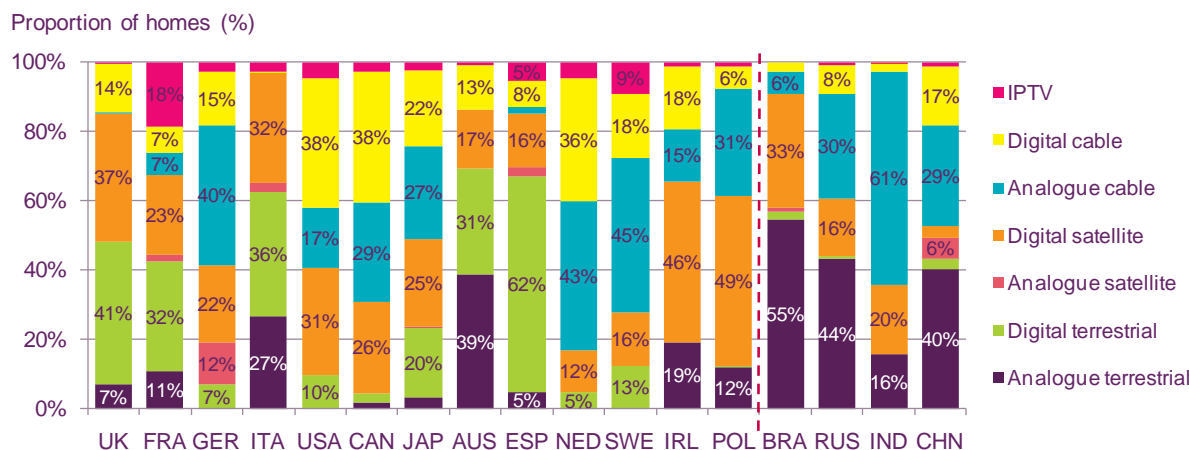
Analogue television continues to command a large share of the market in the BRIC countries, where analogue cable and terrestrial account for the majority of devices

<sup>70</sup> [http://corporate.sky.com/media/press\\_releases/2010/10\\_million.htm](http://corporate.sky.com/media/press_releases/2010/10_million.htm)

connected to the main set in the home. In Russia, where DSO is not scheduled to be completed until 2015, the analogue terrestrial (44%) and analogue cable (30%) distribution technologies combined comprise nearly three-quarters (73%) of the total platform share.

Cable continues to be the primary method of accessing TV in North America, where cable access is relatively cheap and digital migration has increased the share of digital cable to 38% in both the US and Canada. Among other comparator countries, France continued to lead in terms of IPTV penetration (18.4%), with growth driven by the TV packages offered by fixed telecoms providers such as France Telecom and Free.

**Figure 3.46 TV reception devices connected to the main set in the home, 2009**



Source: IDATE / industry data / Ofcom

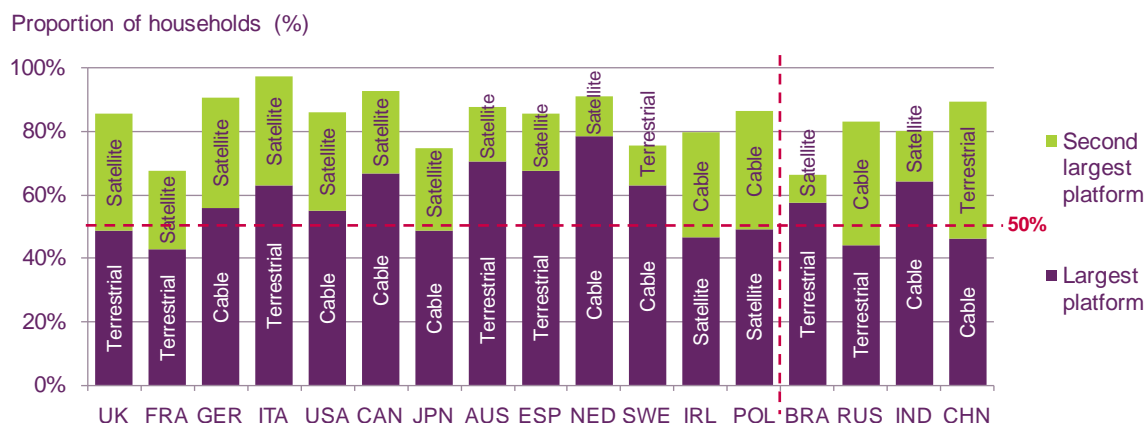
Figure 3.47 illustrates that when analogue and digital are combined, the majority of comparator countries have one principal TV distribution technology (terrestrial, cable or satellite) accounting for the majority of connections to the main TV set.

In Spain and Australia, the majority of connections are to terrestrial platforms (67% and 69%), while the principal TV distribution technology in the Netherlands and Canada is cable (78% and 66%). However, in some comparator countries share is more evenly distributed and the principal distribution technology accounts for under half of all connections. This includes France (terrestrial – 43%), Ireland (satellite - 46%) and Russia (terrestrial – 44%).

Satellite is the second-largest TV distribution technology in the majority of comparator countries (12 out of 17), where cable coverage is extensive. However, it is the principal distribution technology in Poland (49%) and Ireland (46%), where a combination of strong satellite take-up and limited cable coverage has seen it pull ahead of cable's share of the market (see Figure 3.46).



**Figure 3.47 Proportion of main sets connected to the most popular TV reception devices, 2009**



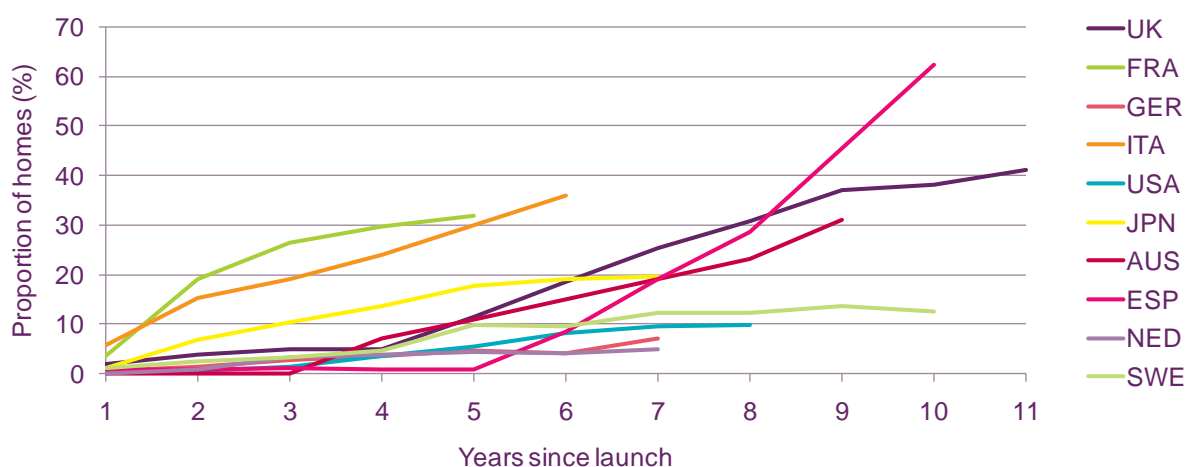
Source: IDATE / industry data / Ofcom

**Among our comparator countries, DTT is most popular among Spanish homes**

Figure 3.48 reveals that DTT in Spain experienced rapid growth in the lead up to switchover in April 2010, with DTT devices reaching the highest proportion of homes across all comparator countries (62%) in 2009. Italy and Australia, both countries with a strong history of terrestrial television, have also seen rapid take-up. DTT in Italy has reached 36% of main sets in six years, while in Australia, where DSO started in 2010, it reached 19% in seven years<sup>71</sup>.

However, DTT take-up appears to be slowing in more mature digital TV markets such as Sweden (10 years since launch), where the proportion of DTT homes actually decreased year on year. Similarly, take-up in the US and Japan has remained broadly flat in recent years, perhaps due to the twin constraints of a large cable platform share and the emergence of IPTV in these countries. Although the rate of DTT take-up in the UK has accelerated compared to 2008 (+1.2pp in 2008 versus +3.0pp in 2009), overall growth appears to be slowing in comparison to earlier years.

**Figure 3.48 Proportion of main sets connected to DTT devices since platform launch**



Source: IDATE / industry data / Ofcom

<sup>71</sup> <http://www.digitalready.gov.au/>

### 3.3.3 Take-up of pay-TV on main television sets

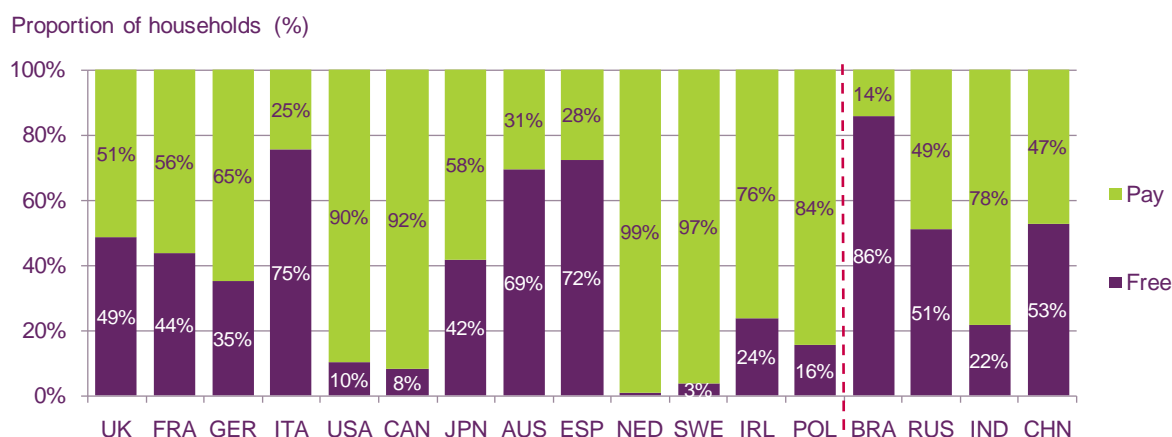
**On average, pay-TV accounts for the majority of TV households (61%) across all comparator countries**

On average, pay-TV accounted for 61% of television households across all comparator countries in 2009, a rise of two percentage points year on year. Nearly all European comparator countries now have a majority of pay-TV households, with the exceptions of Spain (28%) and Italy (25%) where free-to-air terrestrial platforms have been historically popular (see Figure 3.46).

In the Netherlands and Sweden, pay-TV penetration is near-universal, reaching 99% and 97% respectively in 2009. Due to the pervasive cable network in these countries, pay-TV is viewed more as a utility, with most subscribers paying a low-cost fee for a basic package of channels. Overall, North America remains the region where pay-TV experiences its highest penetration rate, with 92% of households in Canada taking pay-TV, an increase of 2.6 percentage points compared with 2008.

Among the BRIC countries, India has the highest proportion of pay-TV households, at just over three-quarters (78%), due to a combination of strong cable TV penetration and increasing competition among satellite providers. This contrasts with Brazil, where terrestrial platforms account for over half of all TV households, resulting in a relatively low level of pay-TV penetration (14%).

**Figure 3.49 Take-up of pay and free-to-air television, 2009**



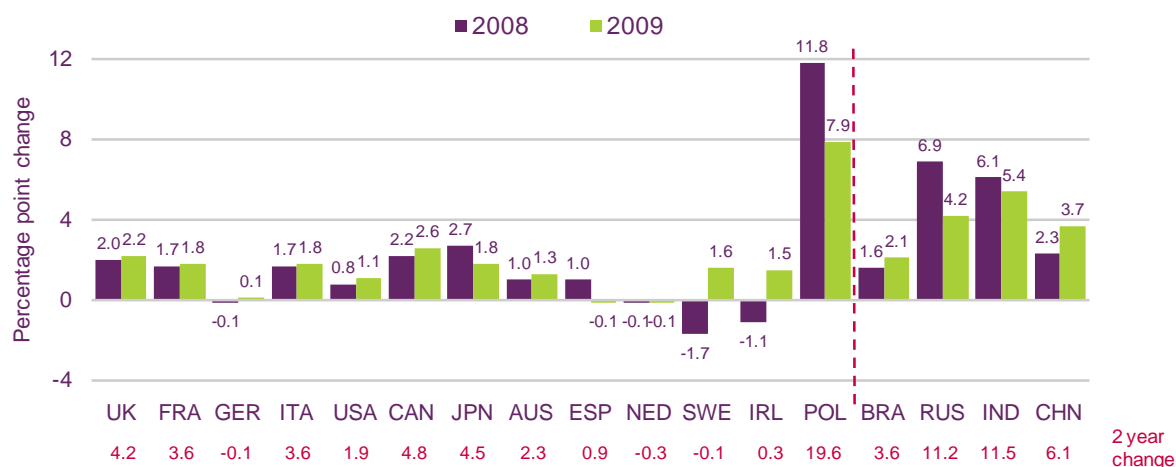
Source: IDATE / industry data / Ofcom

#### Homes in Poland, India and Russia adopted pay-TV at the fastest rates during 2009

Pay-TV penetration has continued to grow steadily in Western Europe and North America, with homes in the UK (+4.2pp), Canada (+4.8pp) and Japan (+4.5pp) showing the fastest rate of migration over the past two years. In the Netherlands and Sweden, growth has slowed and take-up has even fallen slightly over the last two years as the pay-TV markets in these countries reach saturation point (see Figure 3.49).

Despite a slowdown year on year, migration to pay-TV is still rising rapidly in Poland (+7.9pp). This is perhaps driven by competition between the increasing number of satellite broadcasters in what continues to be a fragmented market, including Cyfrowy Polsat, Cyfra+, 'n', Orange, TNK and new entrant TVP. Apart from Poland, people in India and Russia are embracing pay-TV at the fastest rates, with the proportion of pay-TV homes growing by 11 percentage points in both countries over the past two years.

**Figure 3.50 Percentage point change in the proportion of pay-TV homes, 2008 and 2009**



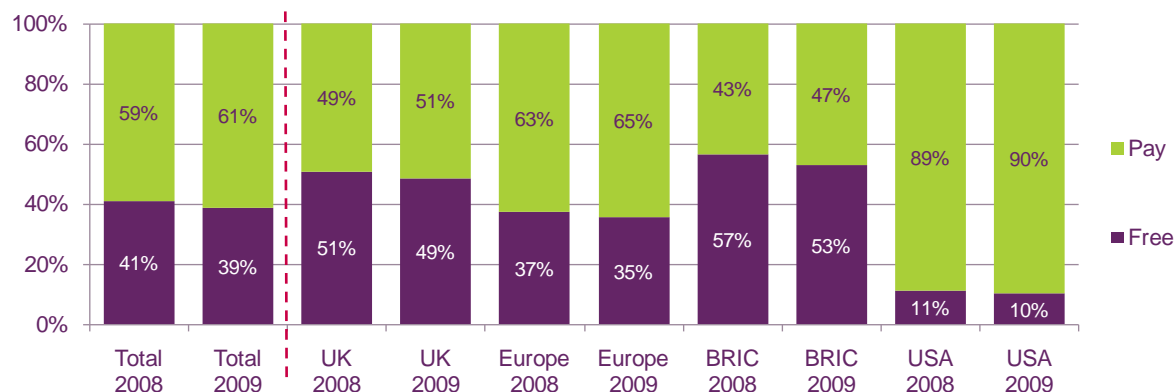
Source: IDATE / industry data / Ofcom  
 Note: Figures represent additional pay-TV homes

**The majority of households in the UK took a pay-TV package in 2009**

Figure 3.51 shows that, for the first time in 2009, the proportion of pay-TV households in the UK has overtaken that of free-to-air households (51% versus 49%). This may be driven by UK consumers taking advantage of pay-TV offers as part of triple-play bundles including fixed-line and broadband services. However, the level of pay-TV penetration in the UK is still below the European average of nearly two-thirds (65%), a rise from 63% the previous year. Despite UK homes being less likely than average to take a pay television package, they still generate the second highest level of TV revenues across all comparator countries (see Section 3.2.2).

Pay-TV continues to be the principal method of viewing in the US, with nine in every ten households (90%) taking a pay-TV subscription in 2009. Although free-to-air retains a large share of the market in BRIC countries, pay-TV is growing fast. Across the BRIC countries as a whole, pay-TV penetration increased by four percentage points in a year, to reach nearly half of all television households (47%) in 2009.

**Figure 3.51 Take-up of pay and free-to-air television across territories, 2008 and 2009**



Source: IDATE / industry data / Ofcom.  
 Note: 'Europe' excludes Russia.

## India and the US pass 100 million pay-TV households

The analysis so far has focused on television platform penetration as proportion of the total market in each comparator country. Turning to the total numbers of pay-TV homes over a longer time period, Germany is the only comparator country to have seen a decrease in pay-TV homes since 2004 (-0.7%). This has been driven by the abundance and diversity of free-to-air channels, which include early domestic football highlights. Another factor was the downward revision of subscriber numbers by Premiere (now Sky Deutschland) in 2008. It reported a fall of 1.1 million subscribers to 2.4 million in Q3 2008 as the result of a change in accounting methods<sup>72</sup>. Within Europe, the strongest annual growth rate in the total number of pay-TV homes has been in Italy (12.4%), France (7.9%) and Poland (13.4%), with Poland seeing the number of pay-TV households double since 2004.

But by far the largest pay-TV markets among the comparator countries are China, the US and India. Pay television homes in the US and India passed the landmark of 100 million pay households in 2009, with the majority of these attributed to Comcast, DirecTV and Dish TV in the US, and Sun Direct TV, Dish TV and Tata Sky in India. Although China continues to be the world's largest pay-TV market, with 179 million pay-TV households, the ARPU generated from these is limited due to the utility nature (low access fees) of cable.

**Figure 3.52 Pay TV homes, 2004-2009**



Source: IDATE / industry data / Ofcom

<sup>72</sup>[http://info.sky.de/inhalt/static/download/aktie/2008/q3\\_2008/english/premiere\\_ag\\_q3\\_2008\\_pressrel\\_ease\\_e.pdf](http://info.sky.de/inhalt/static/download/aktie/2008/q3_2008/english/premiere_ag_q3_2008_pressrel_ease_e.pdf); [http://info.sky.de/inhalt/eng/medienzentrum\\_news\\_uk\\_07082008.jsp](http://info.sky.de/inhalt/eng/medienzentrum_news_uk_07082008.jsp)

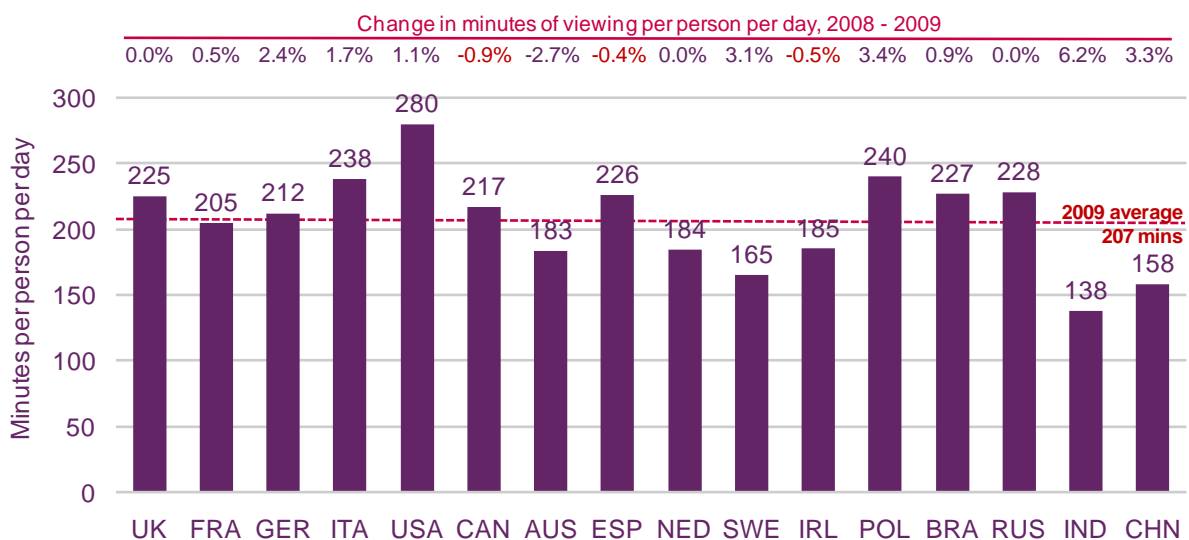
### 3.3.4 Consumption of broadcast television

Patterns of broadcast television viewing vary substantially across the world. A number of factors could influence how much television people watch, including the choice and range of television services available, the demographic mix of different countries and the quantity of home-grown content available. Viewers in the US consumed the most TV in 2009. Watching an average of 280 minutes every day, this was around one-third (35%) higher than the average volume of daily viewing across the sixteen countries depicted in Figure 3.53.

People in India, China and Sweden were the lightest consumers of TV, watching 138 minutes/head, 158 minutes/head and 160 minutes/head respectively. These figures were a third, a quarter and a fifth lower than the average during 2009. TV viewing in the UK was more popular than the average (by a margin of 9%) with the typical viewer consuming 225 minutes of TV each day.

TV consumption rose most substantially among viewers in India and Poland; up by 6.2% and 3.4% respectively during 2009. Viewing in Australia fell the furthest over the year, down by 2.7%. These figures compare to an average increase of 1.1% across the sixteen countries analysed; in the UK, TV consumption per head remained stable year on year.

**Figure 3.53 Television consumption per head per day, 2008 – 2009**



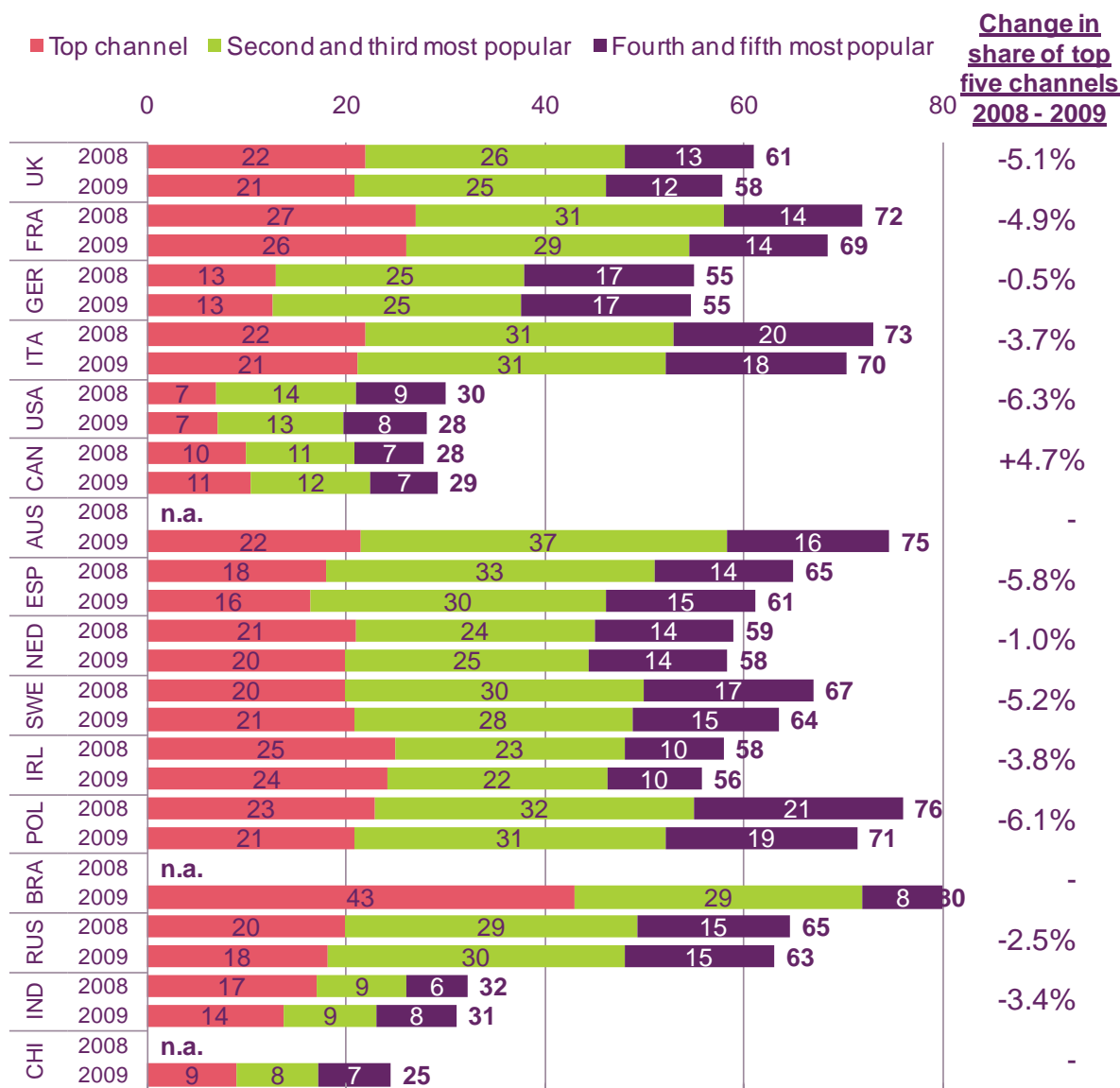
Source: Médiamétrie, Eurodata TV Worldwide. Notes: The figure for Canada relates to the viewing in non-Quebec households.

The degree to which television viewing is concentrated among one or a small number of channels differs between the countries set out in Figure 3.54. During 2009, viewing was most concentrated in Brazil, where TV Globo attracted a 43% share of viewing in 2009. Viewing was least concentrated in the US, Canada and China. CTV, the single most popular channel in Canada, attracted an 11% viewing share; CBS in the US attracted a 7% share; CCTV1 in China drew a 9% share of audience viewing in 2009.

The share commanded by a single channel fell furthest during 2009 in India, with DD1 National's share of hours contracting by 3.4 percentage points, or one fifth, to 14%. Zee TV and Colours were two channels whose audience share rose substantially over the same period. The share of a single channel rose most substantially in English-speaking Canada, where CTV's proportion of all viewing increased by a third to 11% of all viewing during 2009.

The collective share of the five most popular TV channels was highest in Brazil (driven by Globo's substantial market share), where it reached 80% in 2009. It was lowest in the US, Canada and India at 28%, 29% and 31% respectively.

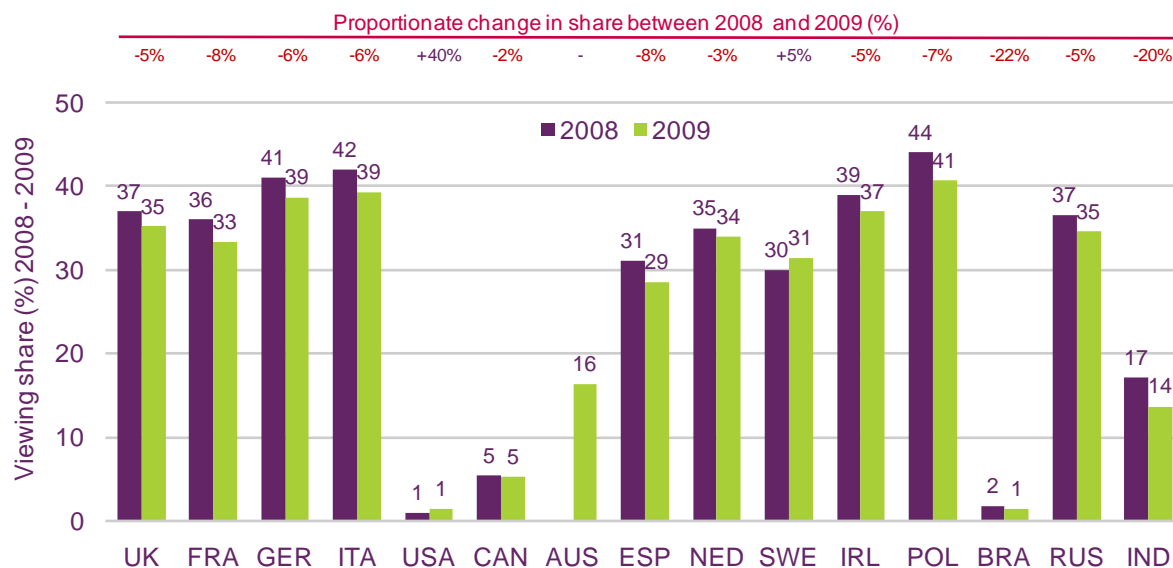
**Figure 3.54 Patterns of viewing among the five most popular TV channels, 2008 – 2009**



Source: Médiamétrie, Eurodata TV Worldwide. The figure for Canada relates to the viewing in non-Quebec households; the data for Australia represents the five metro cities.

Figure 3.55 illustrates that publicly-funded channels attracted the lowest audience shares in the US (PBS), Brazil and Canada (CBC) during 2009 (1%, 1% and 5% respectively). Shares were highest for this category of channels in Poland (POL), Germany (ZDF/ARD) and Italy (RAI) at 41%, 39% and 39%. Apart from the channels commanding very small shares (where modest fluctuations can translate into proportionally large changes), there was a broad year-on-year trend of falling audience share among public channels; this ranged from a reduction of 5% in the UK and the Republic of Ireland to 20% in India. The single exception to this trend was Sweden, where SVT's collective share of viewing rose by 5% over the same period.

**Figure 3.55 The share commanded by channels receiving public funding, 2008 – 2009**



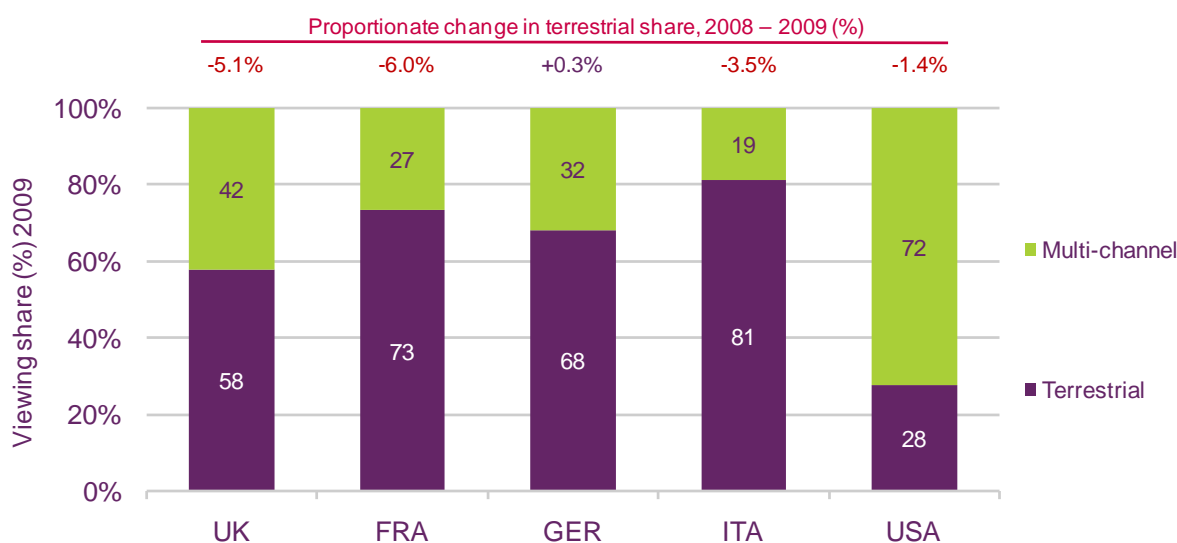
Source: Médiamétrie, Eurodata TV Worldwide. The figure for Canada relates to the viewing in non-Quebec households. The Australian data represents the five metro cities. 2008 figures for Australian Metro areas not available.

The channel groups that are the first to market often continue to attract substantial audience shares. In Figure 3.56, the RAI/Mediaset channels in Italy accounted for over eight in ten viewer hours in 2009; the equivalent channels in Germany and France accounted for seven in ten hours; in the UK, BBC One and Two, ITV1, Channel 4 and Five attracted six in every ten viewer hours in the same year.

The US market is different. Multichannel television is well established and the publicly-funded service (PBS) has always attracted a comparatively small viewer share. As a result, PBS, along with ABC, CBS, NBC and Fox attracted just under 30% of viewer hours, but their collective share was comparatively stable, falling by just over 1% year on year, while in Germany, ARD, ZDF, Pro7, Sat1 and RTL's joint share rose a little (+0.3%) on the year.

By contrast, the established channels in the UK and France continued to incur substantial year-on-year reductions in share (5.1% and 6% respectively), fuelled in part by the impact of the digital switchover process, which is well under way in both countries. There is, typically, a one-off reduction in share to 'analogue' channels when a home switches to digital. At the same time, average shares may have been depressed further still by the continuing erosion of market share in homes that already have multichannel television.

**Figure 3.56 The share of terrestrial / well-established TV channels, 2008 - 2009**



Source: Médiamétrie, Eurodata TV Worldwide.

### 3.3.5 Television remains the most common primary source for international and national news for internet users

To gain a better understanding of how individuals use media, we asked internet users what their main source was for finding out about certain types of news (Figure 3.57).

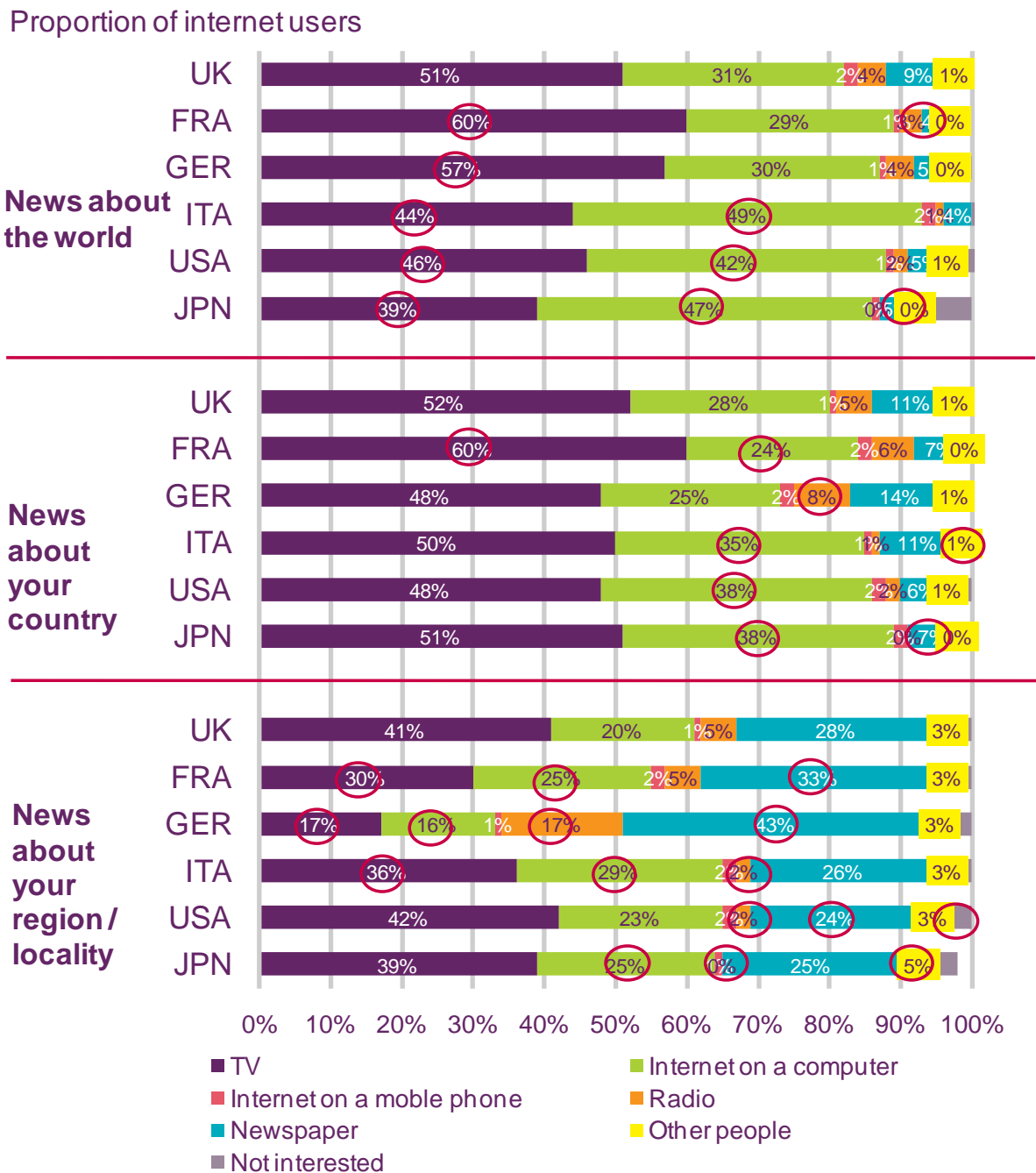
Television is the main source of world news for 60% of internet users in France and 57% in Germany - higher than in the UK (51%). In contrast, in Italy and Japan, more internet users said that they used the internet than television as their main source of world news.

In all countries surveyed, television was the most common main source of national news. This was most marked in France which had the greatest proportion of internet users stating that television was their main source of national news (60% compared to 52% for the UK, and the smallest proportion claiming that the internet was their main source (29% compared to 31% in the UK, although this is not regarded as a significant difference). As with international news, the internet was either first or second among most important sources of news in all countries, for national news, though a higher proportion of internet users in Italy, the US and Japan ranked it as their most importance source of news than UK internet users (52%).

Internet users in the UK, the US and Japan were more likely to use the TV as their main source of local/regional news than those in Italy, Germany or France, and in all countries newspapers were cited by more as a main source of local news than as a main source for national or international news. For a comparison of local/regional TV services, please see section 3.4 in this report for more details.



**Figure 3.57 Main source of news**



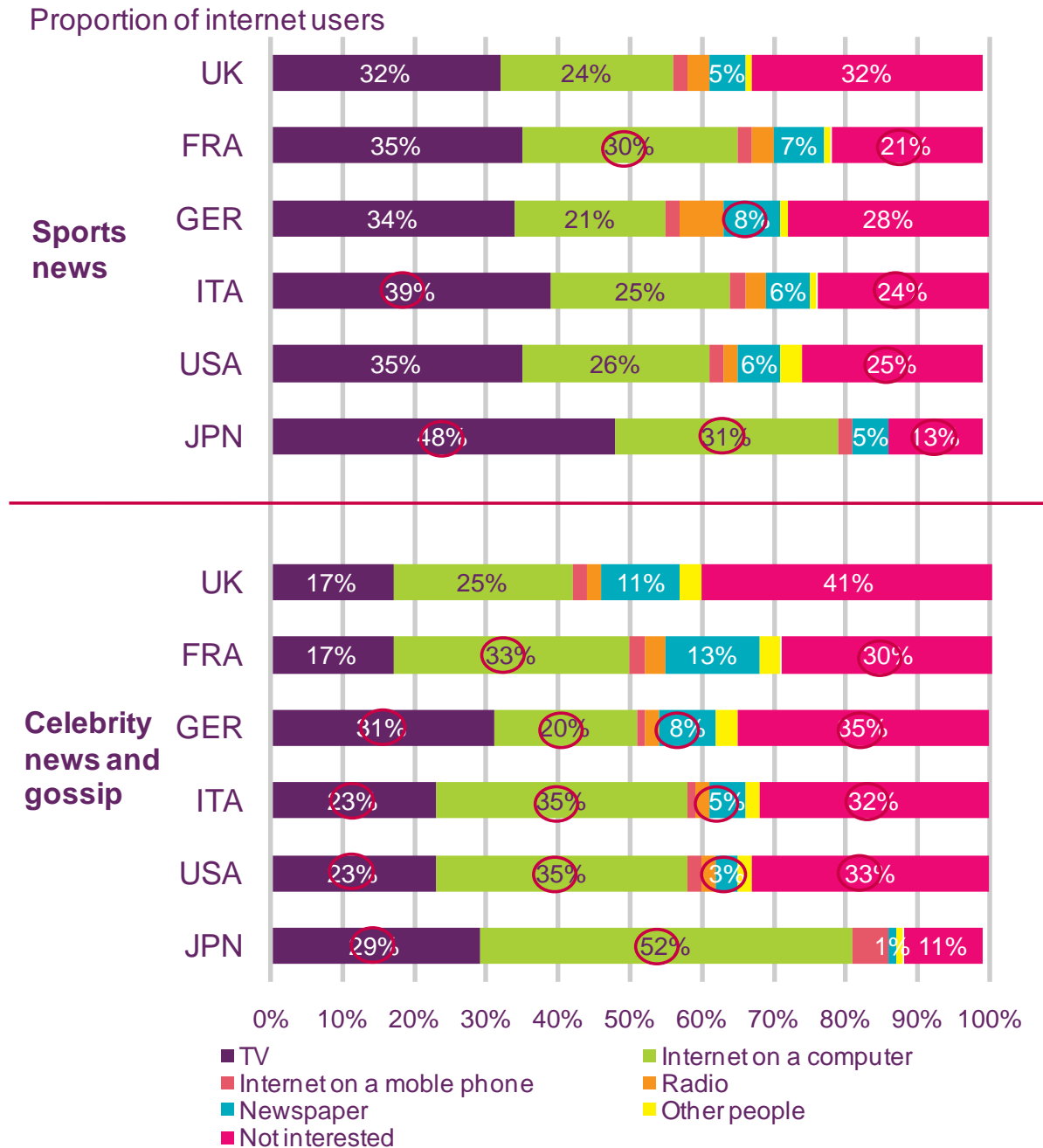
Source: Ofcom consumer research, October 2010. Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001: Q: Which, if any, is your main source for the following information? Note: Circled data points indicate statistically significant differences to the UK.

We also asked internet users in all six countries what their main source was for sports news and celebrity news and gossip (Figure 3.58). Internet users in all countries were most likely to use TV as their primary source for sports news, with this being highest in Italy and Japan. The internet was the second most cited primary source in all countries, with the numbers of users in France (30%) and Japan (31%) being significantly higher than those in the UK (24%).

With the exception of Germany, the internet was the most common main source of celebrity news and gossip for internet users in all the survey countries, though the numbers of UK

internet users reporting it as their main source of celebrity information (25%) was significantly lower than those in France, Italy, US and Japan. Japan had a much lower proportion of internet users who said they were not interested in celebrity news and gossip (11%). The UK had the highest proportion of internet users who claimed to not be interested in entertainment news and gossip (41%), and, along with Germany, the highest proportion who claimed to not be interested in sports news (32%).

**Figure 3.58 Main source of other information**



Source: Ofcom consumer research, October 2010. Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001 Q: Which, if any, is your main source for the following information? Note: Circled data points indicate statistically significant differences to the UK.

## 3.4 Local and regional television

### 3.4.1 Local and regional television

#### Introduction

In this section we examine broadcast audio-visual services targeted at the sub-national level, which in the UK primarily comprise regional content delivered by the national BBC and the commercial Channel 3 services, rather than by separate local TV channels.

The current UK Government has stated that it sees the development of local television services throughout the UK as a policy priority, linked to its objective of devolving power away from central government.

In this section we cover:

- Definitions of local and regional television.
- Cross-country comparison of the availability of local and regional television.
- Case study: Local TV in the US.
- Features of local and regional TV markets.
- Ownership and funding models.

#### Key findings

- Definitions and availability of 'local' and 'regional' TV services vary between, and within, countries. In the majority of European countries, local/regional content is provided in windows or 'opt-outs' on national channels. Local and regional content can also be provided by dedicated local/regional channels. Within Europe, the countries with the largest number of local/regional TV channels are Italy (631) and Spain (430); these are predominantly free-to air terrestrial channels. This contrasts with the UK, where there are five local TV channels, and four nations' indigenous language channels in Scotland and Wales. Outside Europe, some countries use a 'network-affiliate' model to deliver local/regional TV content within a national service.
- Factors such as: (1) decentralised political structures; (2) high levels of cable penetration; (3) strong local/regional advertising markets; (4) regulation; and (5) the existence of networked/syndicated content and advertising play roles in promoting local/regional TV services.
- There is a range of funding and ownership models, including fully-commercial channels, but the public sector plays a significant role in many cases.

### 3.4.2 Definitions and availability of local/regional television

#### Definitions of 'regional' and 'local'; vary between countries

Previous work carried out by Ofcom, among others, has found that even within the UK, understanding of 'locality' and 'region' varies to some degree between individuals, although the term 'local' tends to refer to a smaller area than 'regional'. Given that the 17 countries in this report differ from each other in terms of culture, geography, economics and political

structures, it is difficult to adopt a standardised definition as to what constitutes local or regional television.

Some of the countries in this report have defined ‘regions’ or ‘states’ or ‘provinces’ which act as a tier of government and have an identity distinct from that at the national or ‘local’/‘municipal’ level, e.g. Germany, Spain and the US. In other countries, the differences between ‘regional’ and ‘local’, while continuing to be important, may be more blurred, and the coverage areas of services may not be exactly aligned with political and economic boundaries (for example, in the UK, the location of TV transmitters means that some counties may be split between different regional terrestrial services). Local TV services which cover high-density metropolitan areas such as New York’s NY1 cable news channel or the Greater Paris area (Île de France)’s IDF1 have potential audiences measured in the millions. Some cable channels in Europe also described as ‘local’, such as Amnéville’s ATV (France), may be received by fewer than 10,000 households. Furthermore, in rural areas, a relatively small audience may be spread over a relatively wide geographic area.

**Figure 3.59 Potential coverage of selected local/regional TV services**



Source: Channel websites, CSA, TVB, Ofcom. Ofcom calculations & estimates.

Note: Figure relates to availability in target market area. Out of area reception may be possible for some services. 1) ITV1 London and UTV figures relate to adults. 2) Channel M estimated coverage based on maximum theoretical transmitter coverage of 974k households on DTT at maximum permitted power post 2011 - a transmitter power restriction until Q3 2011 means that the current maximum permissible coverage area is 834k households, though the broadcaster is not required to broadcast at its maximum permissible power. 3) ATV estimate based on 6,000 subscriptions. 4) US figure relates to TV market size (DMA).

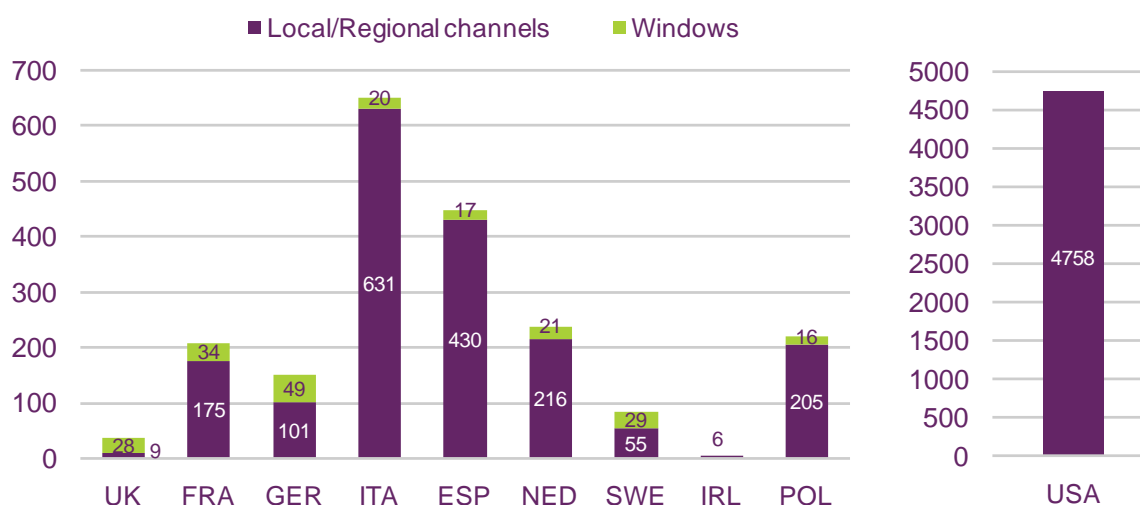
Within this report, we have adopted a broad definition of local/regional TV services to enable us to make cross-country comparisons. Our definition covers a wide range of services targeted at a specific sub-national area with very different content, revenues and audience reach. Some local/regional TV services may be viewed outside their area, either through traditional broadcast platforms, or increasingly online, as many channels stream live content and/or make content available on demand via the web.

## The availability of local/regional television

The availability of local and regional TV services varies between countries, in part reflecting differences in the structure of broadcasting markets. With the exception of Ireland, in all of the other European countries in this report at least one national channel has regional opt-outs, sometimes known as ‘windows’, which are blocks of time in the national schedule in which local/regional content is inserted, most often for news programming. Some larger local/regional channels also have windows within their services, providing a greater degree of localness for part of the schedule.

**Figure 3.60 Local and regional television services in selected European countries and the US**

Number of TV channels and windows by country



Source: Ofcom (UK data), MAVISE database at the European Audiovisual Observatory (non-UK Europe), FCC (US), calculations and analysis Ofcom.

Notes: European local channels includes channels in country of establishment with ‘regional/local’ genre in MAVISE database at November 2010; UK windows figure includes 12 BBC England regions and three Nations services, and 13 Channel 3 regional news areas; France figure includes DOM/TOM services; US figure includes commercial and non-commercial ‘Full power’, Class A and Low Power TV broadcast stations at 30 June 2010

In addition to differences in numbers of local/regional television services between countries, the type of services available in each country differs, reflecting differences in platform and ownership of broadcasters. Figure 3.61 below summarises some of the key features of local/regional TV across many of our comparator countries.

**Figure 3.61 Summary of local and regional TV services in selected comparator countries in 2010**

	Summary of local/regional TV services	Key platforms
<b>UK</b>	<ul style="list-style-type: none"> <li>• 12 BBC English Regions &amp; 3 Nations services and 13 Channel 3 nations/regions news areas. Additional sub regional services in some areas.</li> <li>•5 indigenous language channels (BBC Alba, teleG, S4C1+2)</li> <li>•5 local TV channels</li> </ul>	ATT, DTT, satellite, cable
<b>FRA</b>	<ul style="list-style-type: none"> <li>•8 super-regions and 25 regional/local windows on public France 3 channel</li> <li>•175 local TV services include DOM/TOM, metropolitan area, city, departmental and town focussed local TV services</li> </ul>	ATT DTT, cable//IPTV
<b>GER</b>	<ul style="list-style-type: none"> <li>•Regional 'windows' on national ARD service and two largest national commercial channels RTL and Sat1)</li> <li>•Total of 101 local/regional channels including 10 regional public 'Third channels'.</li> <li>•Some local TV services serving metropolitan areas available on DTT in addition to cable – smaller local TV services typically cable only</li> </ul>	DTT, Cable
<b>ITA</b>	<ul style="list-style-type: none"> <li>•20 regional windows on national public broadcaster (RAI)</li> <li>•631 regional/local channels - classified as either 1) commercial, 2) news, 3) community, 4) social thematic, or 5) teleshopping services</li> </ul>	ATT/DTT
<b>USA</b>	<ul style="list-style-type: none"> <li>•1393 'Full power' commercial terrestrial TV stations (majority affiliated to a national network) at 30 June 2010</li> <li>•3356 educational and low power/'Class A' stations providing more localised terrestrial TV service at 30 June 2010</li> <li>•Public, Educational and Government channels on cable networks</li> </ul>	ATT, DTT, satellite, cable
<b>CAN</b>	<p><i>As at 2009</i></p> <ul style="list-style-type: none"> <li>•26 owned and operated terrestrial CBC stations</li> <li>•96 Private OTA (terrestrial) TV stations (including network affiliates)</li> <li>•119 community channels</li> </ul>	DTT Cable (community channels)
<b>JPN</b>	<ul style="list-style-type: none"> <li>•Network-affiliate model for broadcast stations</li> <li>•Some independent stations</li> </ul>	DTT, Satellite, Cable
<b>AUS</b>	<ul style="list-style-type: none"> <li>•Network affiliate model used – majority of areas have access to local ABC station (PSB) and affiliate station of each of the three major commercial networks (Seven, Nine, Ten)</li> <li>•Community TV channels available on DTT in large metropolitan areas</li> <li>•TV services in remote areas provided by community licensees</li> </ul>	ATT, DTT, satellite
<b>ESP</b>	<ul style="list-style-type: none"> <li>•17 Regional windows on national public broadcaster TVE</li> <li>•Total of 430 local/regional channels including regional / city and town based stations</li> <li>•13 regional public broadcasters (autónómicos)</li> </ul>	DTT. Some services available on cable & satellite
<b>NED</b>	<ul style="list-style-type: none"> <li>•12 Provincial windows on national commercial channel SBS6</li> <li>•Total 216 local/regional TV channels</li> <li>•Regional TV services provided by public regional broadcasters</li> </ul>	Cable
<b>SWE</b>	<ul style="list-style-type: none"> <li>•Regional windows on national PSB SVT and commercial channel TV4 for news</li> <li>•6 Regional DTT channels active at November 2010</li> <li>•Community and local channels on cable TV</li> </ul>	DTT, cable
<b>IRL</b>	<ul style="list-style-type: none"> <li>•City TV operates commercial local cable TV service for Dublin, Galway and South</li> <li>•3 community cable TV channels</li> </ul>	Cable
<b>POL</b>	<ul style="list-style-type: none"> <li>•6 regional windows on national public broadcaster TVP</li> <li>•205 local/regional channels – predominantly cable channels</li> </ul>	Cable

Source: Broadcaster websites, ACMA, CRTC, CSA, Analysis Mason, FCC, MAVISE database at the European Audiovisual Observatory, Ofcom. Ofcom analysis

## UK

The UK has regional TV services provided by the BBC (12 main English regions and three nations services), and 13 Channel 3 news areas<sup>73</sup>. In some BBC and Channel 3 regions, additional localised, sub-regional opt-outs are provided in some areas for more localised content. Welsh language services are provided by S4C / S4C2 in Wales, and Gaelic services in Scotland by BBC Alba and TeleG.

The UK is distinct from many of its comparator countries in that it has few separate local TV channels. About two dozen restricted service licences (RSLs) have been issued for local terrestrial TV services in the UK since 1996, but only four linear stations are currently delivering local services via terrestrial transmission - Channel M in Manchester (on DTT); NvTv in Belfast; MATV in Leicester and York TV (broadcasting in analogue). In addition, there is Seven, a local not-for-profit cable channel for north-east Lincolnshire.

The comparative lack of dedicated local TV services across the UK led the Government in 2010 to identify the development of the sector as a policy priority, aligned with its aim to devolve power in some areas from central government to local councils, as part of its wider 'Big Society' programme.

## Italy

Among the European comparator countries, Italy has the largest number of local/regional TV channel, at 631; these are free-to-air commercial terrestrial channels. Italian local TV channels are classified into one of five types (commercial, news, community, social thematic and teleshopping). National PSB RAI provides regional services to each of Italy's 20 regions via regional windows.

## France

Of the 175 local TV channels in France, approximately 45 are free-to-air local terrestrial TV channels. They serve several of France's largest cities and towns, including Paris/Île de France, Marseille, Lyon and Lille. Some more rural areas also have a terrestrial local TV service. These services are complemented by regional services carried in windows on France Télévisions' France 3, whose service is run from eight main centres, with additional regional and sub-regional opt-outs. In France, digital switchover will enable a greater number of local terrestrial services to be launched, building on existing analogue local TV channels in a number of cities, and on local cable channels, whose history dates back to the 1980s and 1990s. The French broadcast regulator, the Conseil Supérieur de l'Audiovisuel (CSA), runs the tender process for the selection of local TV channels on DTT. In each area the successful bidder will use reserved capacity on the French DTT platform (TNT) to provide a local TV service that includes obligations to provide a proportion of local content. Some areas also have local cable channels, which typically provide more localised coverage than the terrestrial local TV services.

## Germany

Local/regional television is at the heart of the German TV ecosystem. The national PSB service ARD is formed by a consortium of regional PSBs, some of which have also developed their own regional channels ('third channels'). Commercial broadcasters RTL and Sat1 broadcast regional content in windows on their national channels. Additional local/regional content is provided by a range of local channels. The largest of these are typically available on DTT in addition to local cable networks.

---

<sup>73</sup> Figure includes Channel Islands

## Spain

With 430 channels, the Spanish local and regional TV sector is distinctive and predominantly carried on terrestrial television. In addition to regional windows on the national PSB service TVE, the majority of Spain's autonomous regions have their own public broadcasters (the 13 organisations are collectively known as 'autonómicos'). Regional commercial channels also operate in some areas. In addition, there are hundreds of more localised TV services provided by local authorities and commercial groups, providing coverage at the provincial or municipal level.

## Outside the EU

The US, Canada, Australia and Brazil have a network and affiliate system on terrestrial television in which national networks provide a network programme service to local broadcast stations in primetime, in return for running adverts during the network content. Outside the network time these broadcast stations run local programming and collect advertising revenues from adverts associated with the content. While a local broadcast station may be owned and operated by the same group as the network it is affiliated with, this is not always the case.

In Russia, India and China regional TV services complement national services. In China, for example, city and provincial broadcasters provide regional and local content, complementing the national services provided by the national broadcaster CCTV. The Indian PSB Doordarshan provides regional windows in its national service in addition to dedicated regional channels.

### **Case study: local TV in the US**

The structure of terrestrial television markets around broadcast stations in the US means that in one sense, all terrestrial television in the US can be regarded as being 'local'. There are several types of US broadcast stations, all of which may carry some form of local programming (in particular, news and current affairs programming).

US-wide network content is provided by one of the networks, the largest of which are ABC, CBS, Fox, and NBC. Smaller networks include WB, ION and the Spanish language Univision and Telemundo. The Public Broadcasting System (PBS) provides public service content to its affiliate non-commercial (i.e. educational) stations.

TV stations agree affiliation deals with individual TV broadcast stations under which the network supplies the service in the evening primetime slot in return for selling a proportion of the advertising slots around the content. Outside the network time, stations are able to show locally-produced programming (in particular news and current affairs) or acquired content from the syndicated market. A small minority of stations are 'independent' and are not affiliated to any network.

The main commercial local terrestrial stations (known as 'full power TV VHF/UHF stations') are licensed on a geographic basis by the FCC. As at 30 June 2010, there were 1,393 commercial and 391 educational full power stations. Licensees are required to fulfil certain conditions relating to children's and public interest programming (including local content), in return for regulation which promotes their cross-platform availability. Stations are able to obtain carriage on cable networks – either by triggering 'must-carry' provisions (in which the local cable operator is forced to carry the service, but without paying a fee to the station), or alternatively, the TV station can arrange a commercial agreement called 'retransmission consent'. Satellite platforms are not required to carry local channels, but if they do, 'must



carry' applies to all local channels in the local market. Stations may carry additional 'digital sub-channel' services for HD simulcasts or additional programme content.

Local news forms the core of locally-produced programming, and despite declines in audiences as viewers are increasingly able to access local news content online, a 2008 survey by the Radio-Television Digital News Association reported that over half of the stations surveyed said that news was profitable, on average generating 44% of the station's revenue. BIA/Kelsey Group estimated in December 2009 that total US local TV revenues fell by 22% from 2008 levels to \$16.1bn (£10.3bn) in 2009, in part reflecting structural shifts in media consumption (although 2008 revenues would have been boosted by election and Olympics advertising). Despite overall declines in news budgets and the size of newsrooms, average news output in 2008 was estimated to have increased by half an hour to 4.6 hours a day.

An additional 3,000 TV stations provide a more localised service to the main stations. These are called 'class A' and 'low power TV' stations. They are operated by a wide range of organisations, often including community and religious groups, and typically offer a range of local and community programming.

Education, government and community content for local neighbourhoods is provided in many areas through public, educational and government (PEG) channels, carried (and possibly funded) by local cable TV operators, if mandated to by the relevant local/state cable franchise authority.

Sources: FCC.gov, Pew - The State of the News Media 2010 report. Available at: <http://www.stateofthemedias.org/2010/index.php>

### **3.4.3 Features of local TV markets**

Features of the market play a role in determining the availability and type of local television content in a given country, as indicated in Figure 3.62.

**Figure 3.62 Features of local/regional television markets**

Feature of market	UK	France	Germany	Italy	Spain	United States
Decentralised political system	✓✓	✓	✓✓✓	✓	✓✓✓	✓✓✓
High levels of cable penetration	✓✓	✓✓	✓✓✓	No Cable	✓	✓✓✓
Strong local or regional TV advertising markets	✓	✓✓	✓✓	✓✓	✓✓	✓✓✓
Strong PSB culture in local/regional TV	✓✓✓	✓✓✓	✓✓	✓✓	✓✓	✓
Other regulatory interventions (eg quotas, must carry)	✓	✓✓✓	✓✓	✓✓	✓✓	✓✓
Availability of public funding/subsidy	✓	✓✓✓	✓✓	✓✓	✓✓✓	✓
Use of affiliate or opt-out arrangements with networks	✓	✓✓	✓	✓✓	✓✓	✓✓✓

Source: Ofcom analysis. Analysis should be regarded as indicative and features of markets may differ within countries.

The following factors all contribute to variations in the characteristics of local/regional TV markets.

### Sub-national political entities

In countries with a decentralised political system, key decisions surrounding public services are taken by sub-national authorities, strengthening the importance and interest of local and regional content for viewers. A strong sense of local identity or distinct culture (including language) is also likely to lead to high levels of interest in local/regional content. In countries where there are multiple tiers of sub-national government with differing responsibilities, such as Spain and France, viewers may have access to multiple local/regional services providing content at different levels of 'regional/localness'. For example, viewers in Essonne in the greater Paris area may receive both IDF1 (a channel available on DTT and other platforms across the Île de France) and also Télésonne, (a local cable channel for Essonne).

### Access to cable networks

Local cable networks have played a key role in the development of local/regional TV in some countries, enabling relatively low-cost distribution to a defined geographic area without requiring potentially scarce terrestrial broadcast spectrum/capacity. The UK's size and density of spectrum use has resulted in limited spectrum being available for analogue local terrestrial services TV services, compared with other countries such as Spain and Italy. In countries including France, Sweden, Canada and the US, local cable operators may also play a role in funding local/regional community channels as part of the franchise agreement with licensing authorities.

## Advertising

The structure of advertising markets has an impact on local television. In countries where sub-national brands and advertisers are important, local/regional TV services have a key strength: their ability to build strong relationships with sub-national advertisers and offer geographically targeted advertising to advertisers. In the US, where local TV advertising is carried on local broadcast TV and local advertising slots on national cable channels, revenues accounted for 31% of TV net advertising revenues in 2009. In countries such as the UK, much of the retail sector consists of national brands, retailing across the entire country.

## Content

The content offered by local/regional TV services varies greatly between countries and stations. While many have some form of news programming (particularly during the evening), the amount of locally/regionally-produced programming varies between services. Some of the smallest cable-only stations may produce only about an hour of content a week, such as a magazine show and information screens, while other channels may produce several hours of content a day, including drama. Many publicly-owned (and some commercially-owned) channels include a range of locally-produced non-news local public service output, including local documentaries, sports and coverage of local/regional authority meetings. Some commercial stations have adopted a different approach, using acquired content such as drama, films, and teleshopping slots to fill parts of the schedule and generate revenue.

Content regulation of local television services affects the type of service that can be delivered. In France the national regulator CSA sets output quotas for local originated content on local terrestrial channels across the French territory. In contrast, in Germany and Spain, regional regulators play a key role in the regulation and promotion of local and regional TV services. In the US, local cable franchise authorities can compel cable networks to carry public, educational and government (PEG) channels.

## Regulatory interventions

Other regulatory interventions play a key part in determining the characteristics of local TV services. Access to regulatory interventions such as must-carry rules (applicable for qualifying local/regional services in countries such as the US, Canada, Germany, France and Sweden), industry levies (in Canada, satellite and cable network operators pay a proportion of their revenues to support non-metropolitan local terrestrial TV stations) and regulatory assets such as gifted spectrum/ DTT capacity, EPG prominence, or may play a role in ensuring visibility and viability.

## Availability of public funding/subsidy

Direct and indirect subsidies are important sources of funding for many local/regional television channels and are critical to the financial viability of some services. We discuss funding of local and regional TV in more detail below.

## Access to a network or syndicated content

The availability of network or syndicated content enables individual local/regional TV services to benefit from economies of scale in content creation, and liberates services from having to fill an entire schedule with local programming. This is central to the local TV ecosystem in the US (as discussed above). Similarly, in Germany, the regional public broadcasters co-operate through the ARD organisation, and in Spain there is a range of

local TV network/syndication organisations such as the Catalan Xarxa de Televisions Locals, which provides content to member stations in Catalonia. French and Italian local TV stations have also formed associations for programme production and acquisition and to offer advertisers the flexibility to place adverts across multiple local channels, increasing the attractiveness of local TV to regional and national advertisers. Networks and syndicates can also be used to deliver national advertising via local television services.

### **Funding and ownership of local/regional TV services**

The funding and ownership of local TV services varies between and within the countries covered by our report, although, in almost all of the European countries that we have looked at, the national state-owned broadcaster provides local/regional content on national channels. Figure 3.63 summarises the range of ownership and funding models across some of our comparator countries.

Many local and regional TV services (including those classed as commercial) receive some public funding or subsidy. This can take one of several forms:

- **Regulatory assets:** These include access to spectrum or multiplex capacity (such as access to the video stream reserved for local TV on national French multiplex R1) and the right to prominence on electronic programme guides (for example Italy's DTT EPG numbering plan assigns numbers 10-19 for local services).
- **National funding.** This can either be sector-specific, such as Canada's Local Programming Improvement Fund (paid for via an industry levy), or general, such as Italian economic development funds.
- **Local/ regional funding.** In Europe, many local and regional authorities fund local TV services within their areas. Funding policy may vary between areas.
- **Indirect support from the public sector,** which may include advertising/sponsorship and supply and sale of content.

Commercial sources of income for local TV channels include advertising, programme sponsorship, premium-rate services and teleshopping, and some publicly-owned channels seek commercial revenues in addition to public funding. Some services generate advertising revenue from online advertising. In the US local TV website revenue was expected to be \$1.3bn (£830m) in 2009, up \$0.2bn (£130m) from the previous year.

While there are examples of local/regional TV channels in Europe being operated on a purely commercial basis or with very little subsidy (such as Catalonia's 8TV), public support forms an important source of finance for private channels in many countries – accounting for more than 50% of revenues for some small channels in some countries. Some companies have exited from the local/regional TV market amid concerns about the profitability of the sector and the economic downturn. For example, in Spain PRISA closed its local TV network Localia at the end of 2008.

Many of the countries have community channels operated by not-for-profit groups. Volunteers, public donations, support by platform operators and grants from philanthropic organisations may form key parts of the community channel funding mix. In Australia, the major metropolitan areas have a not-for-profit DTT community channel, including Melbourne's Channel 31 and Sydney's TVS. Many comparator countries have cable community channels, including Brazil.

**Figure 3.63 Summary of local/regional TV service ownership and funding in selected countries**

	Examples of local/regional TV operators/ shareholders	Key funding sources
<b>UK</b>	<ul style="list-style-type: none"> <li>•BBC</li> <li>•Channel 3 licensees</li> <li>•S4C / TeleG</li> <li>•Community groups and education establishments</li> <li>•Independent local TV firms</li> </ul>	<ul style="list-style-type: none"> <li>•BBC funded via licence fee. Channel 3 advertising funded commercial service</li> <li>•Total £256m expenditure on English/ &amp; some Irish nations &amp; regions services by PSBs in 2009</li> <li>•S4C 2009 income £105m (of which 97% public funds), BBC Alba £17m originated programme spend in 2009</li> <li>•Local TV channels mixture of advertising/sponsorship. Local community channels in receipt of National Lottery grants, Screen Councils funding, and support from local authorities and educational establishments</li> </ul>
<b>FRA</b>	<ul style="list-style-type: none"> <li>•National public broadcaster (France Télévisions)</li> <li>•Local/regional press groups</li> <li>•Local/regional banks</li> <li>•Local authorities (as shareholders and operators of local TV channels on municipal cable TV nets)</li> </ul>	<ul style="list-style-type: none"> <li>•Public &amp; licence fee funding to France Televisions</li> <li>•Commercial local TV channels funded by advertising and grants and programme donations from local/regional authorities.</li> <li>•30% total of £50m local TV sector revenues from commercial sources (excludes largest local/regional channels)</li> </ul>
<b>GER</b>	<ul style="list-style-type: none"> <li>•National commercial broadcasters (RTL/Pro7Sat1)</li> <li>•Regional public broadcasters</li> <li>•Local/regional press groups</li> <li>•Community groups</li> </ul>	<ul style="list-style-type: none"> <li>•Total local and regional TV revenues c.£1.4bn</li> <li>•Regional services funded by advertising, and public funding (licence fee)</li> <li>•Private local channels able to sell content to regional broadcasters</li> </ul>
<b>ITA</b>	<ul style="list-style-type: none"> <li>•National PSB (RAI)</li> <li>•Approximately 400 commercial local TV firms</li> <li>•Community groups</li> </ul>	<ul style="list-style-type: none"> <li>•RAI income from licence fee and advertising</li> <li>•Majority of local station revenues (c. £530m ) from commercial sources adverts, SMS, teleshopping</li> <li>•Public funding for local content and news content available to eligible channels</li> </ul>
<b>US</b>	<ul style="list-style-type: none"> <li>•Terrestrial TV broadcast firms (may be owned by national networks or newspaper groups)</li> <li>•Community / religious groups</li> <li>•Education establishments and local/state governments</li> </ul>	<ul style="list-style-type: none"> <li>•Majority of local TV fully commercial recital– estimated revenue of \$10.3bn includes advertising, sponsorship/product placement / retransmission fee revenue)</li> <li>•Public funding and sponsorship and donations fund public broadcasting stations</li> <li>•Cable franchise authorities able to require cable networks to support PEG channels</li> </ul>
<b>CAN</b>	<ul style="list-style-type: none"> <li>•National PSB (CBC)</li> <li>•Commercial media firms e.g. CityTV (Rogers, CanWest)</li> <li>•Community groups</li> </ul>	<ul style="list-style-type: none"> <li>•Total public and private local TV revenues estimated at c.£340m - 50% of which is from advertising</li> <li>•CBC funded via adverts and public funding</li> <li>•Advertising funded commercial stations able to access Canadian Media Fund and Local TV improvement Fund</li> <li>•Cable community channels funded by industry</li> </ul>
<b>ESP</b>	<ul style="list-style-type: none"> <li>•National public broadcaster (TVE)</li> <li>•Autonómicos regional public broadcasters</li> <li>•Local/regional press &amp; radio groups</li> <li>•Local authorities (in certain regions)</li> </ul>	<ul style="list-style-type: none"> <li>•TVE funded by Spanish government</li> <li>•Local/regional TV revenues in Spain estimated at £1.4bn</li> <li>•Regional public broadcasters funded by regional governments and advertising</li> <li>•Local authority subsidies some account for significant proportion of revenues for some commercial channels. Subsidies estimated to account for 26% overall local TV revenues in Catalonia in 2005</li> </ul>

Source: Broadcaster websites, Ofcom, CSA, CAC, FCC, Analysys Mason, CTRC, Ofcom analysis





# The International Communications Market 2010

## 4 Radio & audio

# Contents

<b>4.1 Radio and audio market summary</b>	<b>183</b>
4.1.1 Key radio market indicators	183
4.1.2 Radio revenues decline from 2005-2009	183
4.1.3 Audio services through the internet and mobile devices	187
<b>4.2 The radio industry</b>	<b>191</b>
4.2.1 Introduction	191
4.2.2 Global radio revenue	192
4.2.3 Revenues by country	193
4.2.4 Radio's share of total advertising spend	196
4.2.5 Digital music	197
<b>4.3 Audio/radio listening</b>	<b>199</b>
4.3.1 Use of radio and other audio content	200
4.3.2 Radio listening hours	202
4.3.3 PSB radio's share of listening	203



## 4.1 Radio and audio market summary

### 4.1.1 Key radio market indicators

This section summarises key data, including revenue and listening figures for the radio and audio markets for the 17 comparator countries (the UK, France, Germany, Italy, the US, Canada, Japan, Australia, Spain, the Netherlands, Sweden, Ireland, Poland, Brazil, Russia, India, and China). We also include some of the key findings of international research carried out in October 2010 on the increasing use of audio services online and via mobile devices.

This is followed by the radio industry section, which includes analysis of radio revenue data, and the final section examines radio and audio consumption trends.

**Figure 4.1 Key radio market indicators: 2009**

	UK	FRA	GER	ITA	USA	CAN	JPN	AUS	ESP	NED	SWE	IRL	POL	BRA	RUS	IND	CHN
Total industry revenue (£bn)	1.2	1.3	3.0	1.1	10.7	0.9	2.6	0.5	0.5	0.4	0.3	0.2	0.1	0.3	0.2	0.1	0.8
Revenue change (% YOY)	-7.1	-4.3	+1.9	-5.1	-15.7	-6.6	-3.9	-5.7	-17.5	-4.8	-1.7	-13.3	-22.9	+12.3	-35.7	+18.2	+7.2
Revenues per capita (£)	19	20	37	20	35	27	20	22	4	24	32	42	3	1.6	1.3	0.1	0.6
% income from public funding	64	63	80	57	0.5%	16	62	n/a	n/a	41	84	40	14	n/a	n/a	n/a	n/a
Listening (hours/head/week)	22.1	20.9	21.7	21.0	18.5	18.3	12.6	n/a	12.6	24	19	31	33	n/a	39	n/a	n/a
Public radio share (%)	55	22	58	19	5	13	8	n/a	6	32	65	33	25	n/a	24	n/a	n/a

Source: Ofcom, PricewaterhouseCoopers, EBU, Warc data.

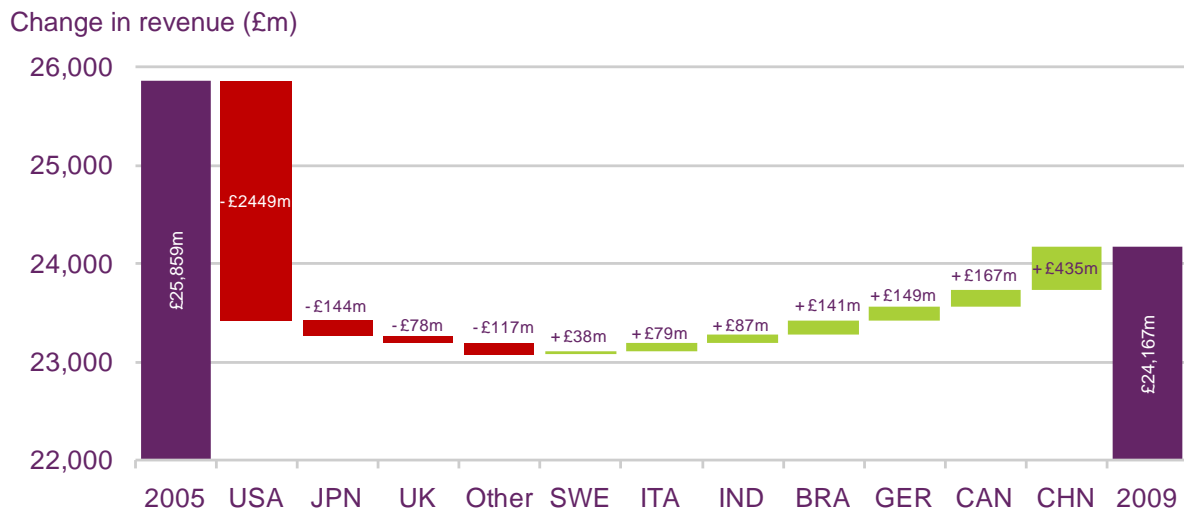
### 4.1.2 Radio revenues decline from 2005-2009

#### Radio revenues down by 6.5% overall in the four years 2005-2009, among 17 comparator countries

Broadcast radio revenue among the 17 comparator countries analysed in this report reached £24bn in 2009; down by 6.5% over four years, from £26bn in 2005. However, within this total, different patterns of performance can be observed due to the varied nature of radio markets around the world. With the countries analysed having differing market sizes, levels of commercial development, and revenue composition, resulting in varying levels of impact on total funding.

Despite the general fall, radio revenues showed an increase in some of the countries profiled over the period 2005-2009. China's market, funded by advertisements, grew the fastest, up by £435m. The Canadian market expanded by £167m (aided by the growing take-up of subscription radio), and in Germany sector revenues were up by £149m (here, additional public funding played an important role). The Brazilian and Indian markets also grew substantially (by £141m and £87m respectively).

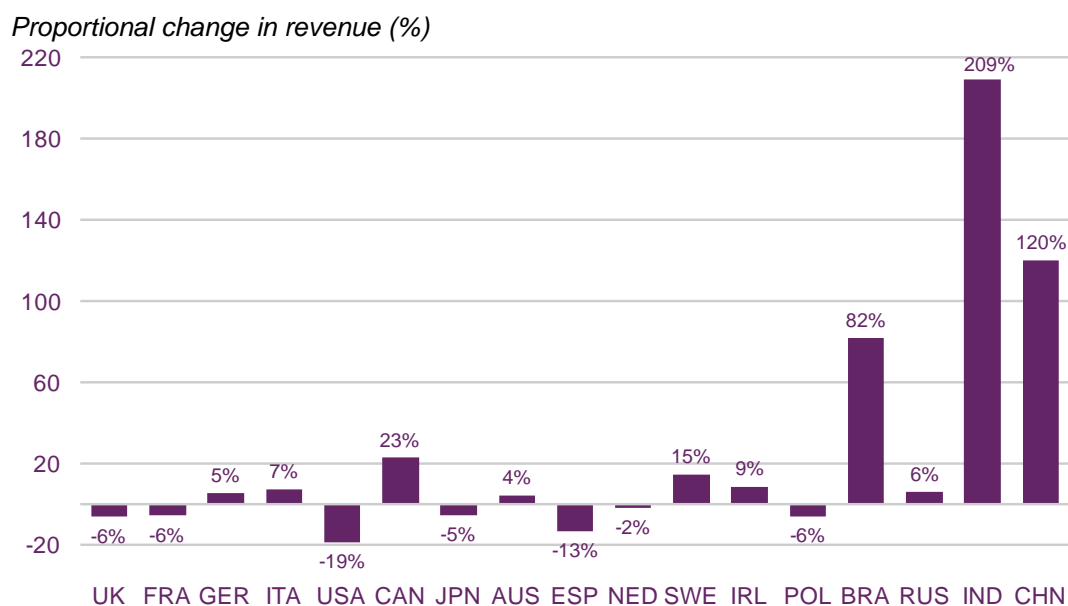
**Figure 4.2 Absolute changes in radio revenue by country, 2005 – 2009**



Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [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 \$1.5643 to the GBP, representing the IMF average for 2009.

Proportionally, the developing markets of Brazil, India and China saw their markets grow the fastest over the past five years. India's grew by 209%; China's expanded by 120%, and Brazil's radio revenue rose by 82% over the same period. The Canadian and Swedish radio markets were also notable for double-digit growth (of 23% and 15% respectively). The UK market was one of six among the 17 whose radio market has contracted since 2005. The US market shrunk proportionally the furthest (by almost a fifth) while Spain's radio sector revenues fell by 13%. The UK market's reduction of 6% was in a single-digit category of contraction reductions that included France, Japan and Poland (each of which fell by between 5% and 6%).

**Figure 4.3 Proportional changes in radio revenues, 2005 - 2009**



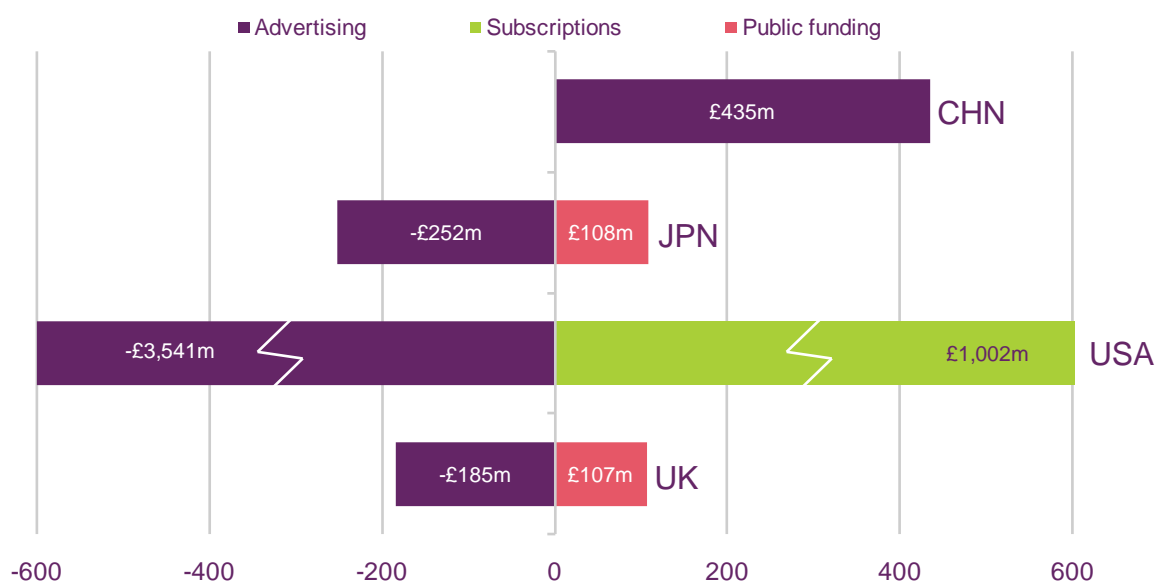
Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

Countries' radio revenue trends have been influenced by the dynamics of three particular sources of income – advertising, subscriptions and public funding. The swings have been substantial in some countries, and comparatively modest in others. This information is therefore depicted in two separate charts (Figure 4.4 and Figure 4.5) below.

The first chart sets out the more substantial changes in revenue by component. It shows that the US market has experienced a large reduction in advertising revenue since 2005 (down by £3.5bn). To a degree, this was offset by the growing popularity of Sirius/XM and the subscriber revenue that it generated (up by £1bn over five years). By contrast, revenue growth of 120% in China has been fuelled by the growing commercial radio advertising market. In Japan, and in the UK, falling advertising revenue has to a degree been offset by the growing contribution that licence fee income has made towards funding radio services.

**Figure 4.4 The most substantial revenue swings, by component, 2005 - 2009**

Proportionate change in revenue (£m)



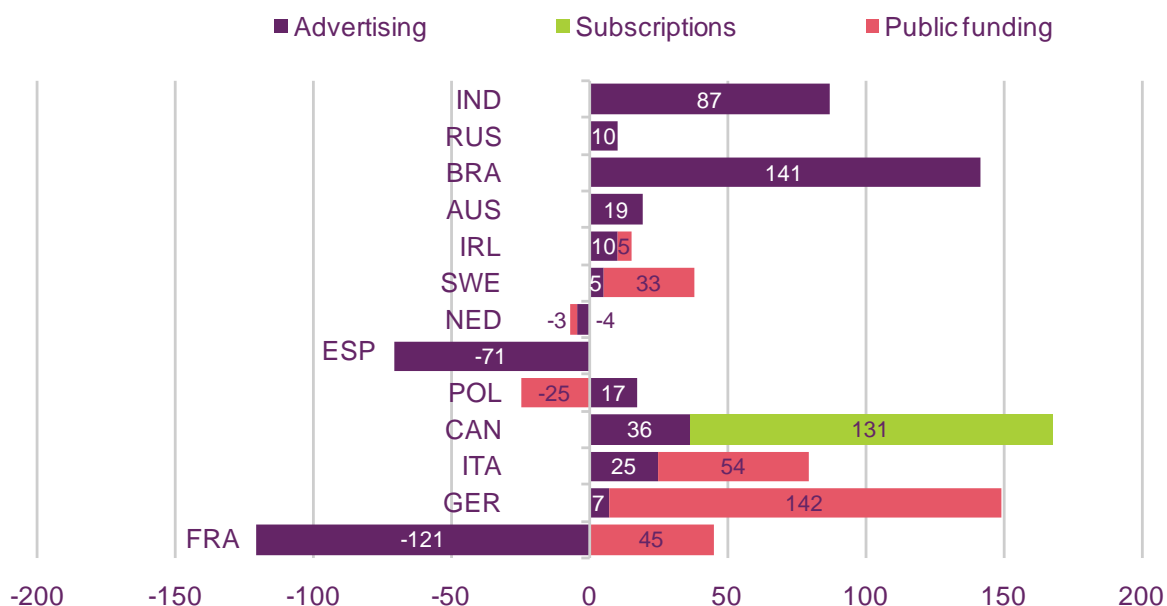
Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility.

Note: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

Among the 13 remaining comparator countries, the Indian and Brazilian radio advertising markets have managed to attract substantial additional advertising revenue since 2005. The Canadian market, as in the US, has benefited from the growing popularity of subscription radio, which generated an additional £131m between 2005 and 2009. In Germany, additional public funding totalling £142m helped to ensure that, overall, the German radio market's total income rose over the same period. In Italy, both advertising and public funding grew. Only the French and Spanish markets experienced substantial reductions in radio revenue during this period, both driven by falling advertising revenue (offset to a degree – although not fully – by additional public funding, in the case of France).

**Figure 4.5 The smaller revenue swings, by component, 2005 – 2009**

Proportionate change in revenue (£m)



Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility.

Note: Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

### 4.1.3 Audio services through the internet and mobile devices

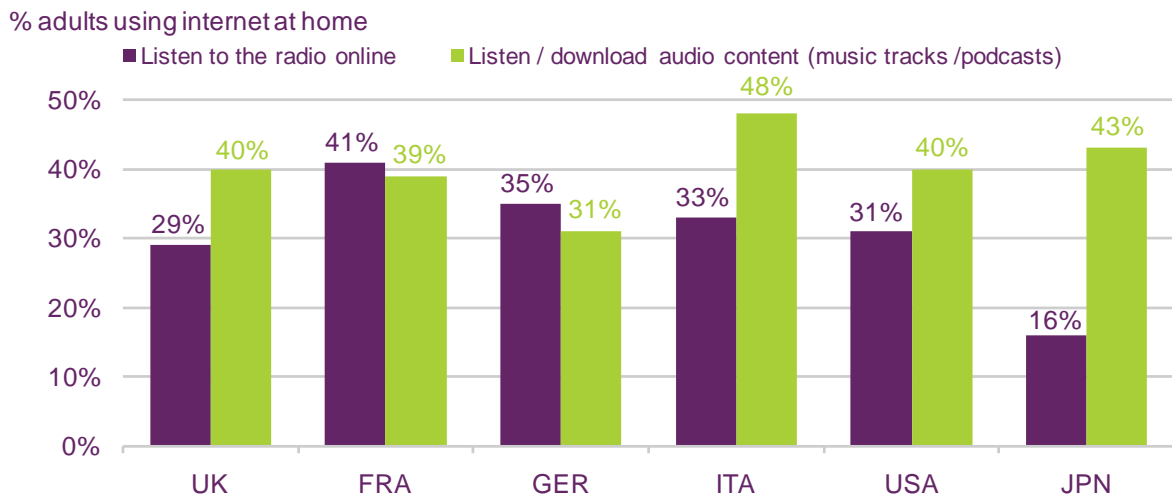
#### Consumers increasingly using the internet and mobile media devices to access radio and other audio content

The internet's role in providing consumers with new ways of accessing audio content has grown over the last few years particularly as broadband take-up has risen.

Using the internet to download or listen to audio content (such as music tracks or podcasts) was most popular in Italy. Almost half of respondents in Italy (48%) claimed that they used their home internet connection for this purpose. By comparison, the figure was lowest in Germany, where less than a third (31%) downloaded or listened to audio content. In the UK 40% said they had downloaded audio content online, similar to the average.

Listening to radio stations over the internet was most popular in France, at 41% and least popular in Japan at 16% (perhaps reflecting the generally lower use of radio among people in Japan). In the UK this was also slightly lower than the average, with almost a third (29%) saying they had listened to radio online.

**Figure 4.6 Use of the internet to listen to the radio / download audio content (music tracks / podcasts)**



Source: Ofcom consumer research, October 2010. Base sizes (all adults who use the internet): UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001.

Question: 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 claim they use their mobile handset to listen to audio

Mobile phone handsets often incorporate audio technologies such as analogue radio tuners and MP3 players which support the storage and playback of podcasts.

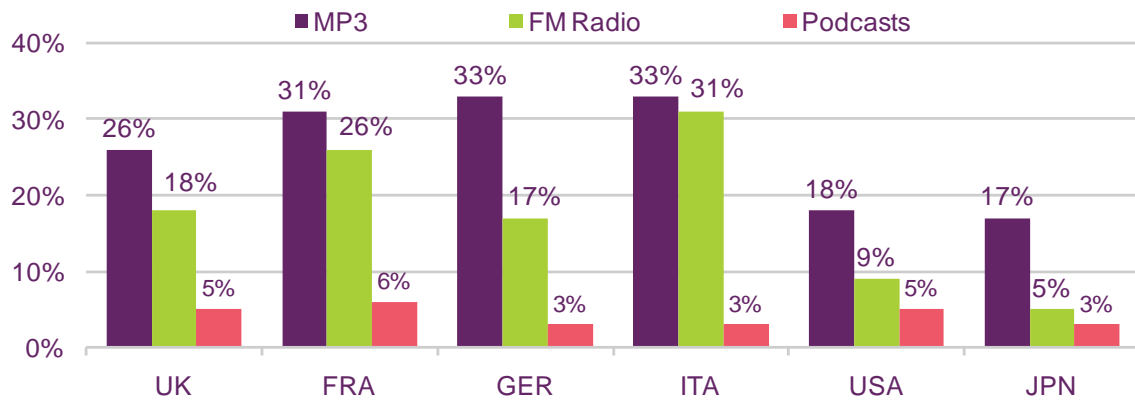
With mobile phone ownership high in Italy, many of the audio features available on handsets were also widely used. Listening to FM radio through a mobile handset was most popular in Italy at almost a third (31%) of respondents, compared to only 5% in Japan. The UK was close to the average with 18% listening to FM radio via their mobile.

Similarly, listening to MP3 tracks through a mobile was also highest in Italy (33%), this time matched by mobile users in Germany. People in Japan and the US were the least likely to listen to MP3 tracks on a mobile (17% and 18% of respondents respectively), compared to 26% in the UK.

Podcasting was generally less popular than other forms of audio listening over a mobile handset; people in France, the UK and the US were marginally more likely to claim that they used mobile handsets for podcasting (6% 5%, 5% respectively), but in the main this was a niche activity (3% in the remaining countries surveyed).

**Figure 4.7 Mobile audio service use: listening to MP3 tracks, FM radio, podcasts**

Proportion of mobile users (%)



Source: Ofcom consumer research, October 2010. Base sizes (all adults who use the internet): UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001.

Question: '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 country, along with the levels of public licence fee funding that are invested in radio services. The main findings include:

- Global radio revenue totalled £27.6bn in 2009, down £2.7bn on 2008. This was a decrease of 9% year on year and down 5% in nominal terms on the 2005 total of £29.1bn. Growing revenue in a number of countries, particularly the developing markets of Brazil, India and China, was offset by a fall in the largest commercial market, the US; UK radio income was down 7.1% on the year.
- The radio industries of the seven main comparator countries accounted for three-quarters (75%) of global radio revenues. The US radio market is still by far the largest, with annual revenue of nearly £10.7bn in 2009 (39% of the global total), equating to £35 per head of population. The UK was the fifth-largest market of the 17 comparator countries, with £1.2bn (£19 per head), equivalent to a 4% share of world radio revenue.
- Of the established larger radio industries, the Canadian market showed the most growth over the four years to 2009, with average annualised growth rate of 5.3% p.a. The developing markets of India (+32.6% per annum on average over four years), China (+21.8%), and Brazil (+16.1%) have grown the fastest. Of the European nations, Italy (+1.8%), Russia (+1.5%), and Germany (+1.3%) have also grown over this period, with the US market falling by 5.0% p.a. over the four years to 2009. The UK market was down 1.6% per year on average over the past four years.
- Global revenues from radio advertising were down by 14% year on year, while public funding rose by 1.9% over the period; and satellite-based subscription radio revenues also grew by 5.1%. Advertising revenue accounted for around two-thirds (65%) of the total radio income in 2009, down from almost three-quarters (72%) in 2005.
- The radio share of display advertising varies by country. This share was highest in Canada and the US, where radio accounted for 13% and 11% of total display advertising spend respectively. By comparison, UK radio advertising takes a 4% share of display advertising.

### 4.2.2 Global radio revenue

Radio revenue worldwide fell by 9% in 2009, down from £30.4bn in 2008 to £27.6bn in 2009.

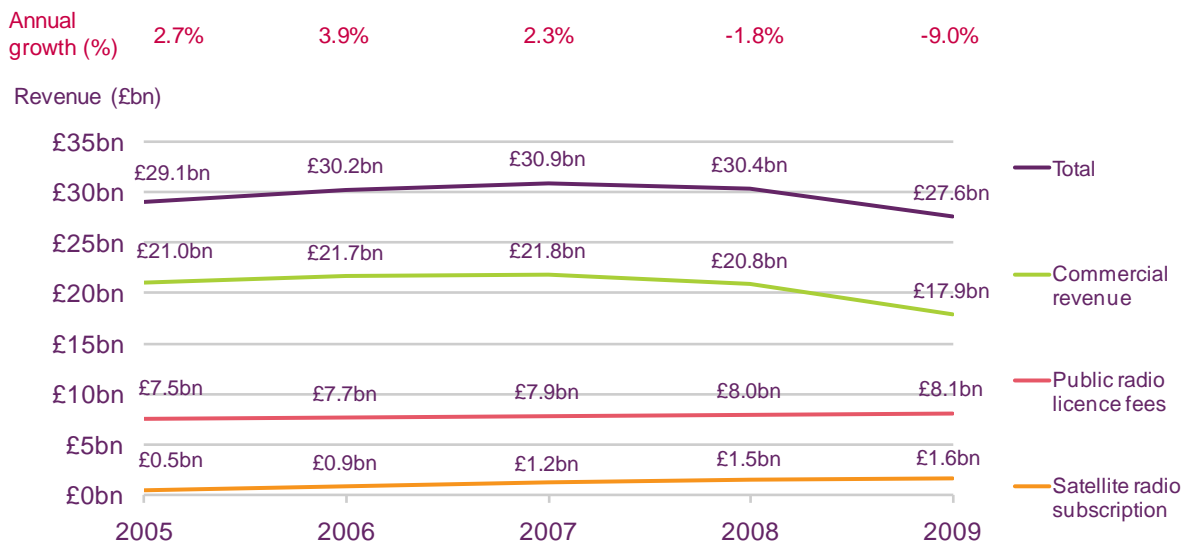
Global radio industry advertising revenues were down by 14% on the year; from just under £21bn in 2008 to under £18bn in 2009, the lowest level for at least five years. This followed a 4.5% fall in 2008.

Growth in some countries, particularly the developing markets in Brazil, India and China, was offset by a contraction in the largest radio market, the US. Of the other nations profiled here, only the German market experienced growth during 2009.

Advertising revenue (including advertising and sponsorship revenue) accounted for around two-thirds (65%) of total radio income in 2009, down from almost three-quarters (a 72% share) in 2005. This reduction was explained by falling advertising revenues, combined with a corresponding rise in public radio income from licence fees, and an increase in satellite radio subscriptions in the US and Canada. Year-on-year advertising revenues fell by 14% or £3.0bn in 2009, also down £3.2bn on the total in 2005. Revenues from satellite radio in North America increased over the year, up 5.1% in 2009. The vast majority of satellite revenues (98%) were from customer subscriptions, with the remaining 2% from advertising. Satellite revenues accounted for 5.9% of total radio revenues in 2009, up from 1.7% in 2004.

Public funding from licence fees accounted for the remaining 29.5% (£8.1bn) of all radio funding in 2009. This was up by £0.1bn, or 1.9% year-on-year, also up by £0.6bn from £7.5bn in 2005.

**Figure 4.8 Global radio industry revenues, 2005 - 2009**



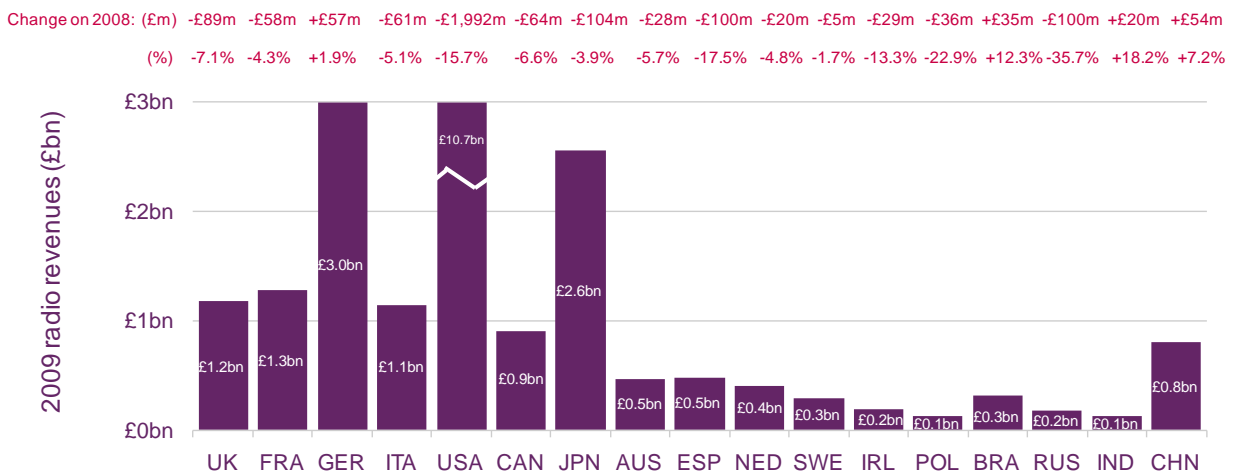
Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

### 4.2.3 Revenues by country

#### Advertiser spend falls in US radio market, offsetting revenue growth in smaller markets

The largest commercial radio market, in the US, experienced a large fall in commercial revenue during 2009, down 15.7% from £12.7bn in 2008 to £10.7bn in 2009. With the US market accounting for around 39% of total global radio revenues, this fall was substantial enough to offset gains in some of the other radio markets around the world, which expanded from comparatively small bases. Developing markets such as India (up 18.2% year on year), Brazil (+12.3%), and China (+7.2%) all showed growth in 2009. Most European radio markets contracted in 2009, including the UK which was down 7.1%. The Russian market contracted by over one-third (35.7%), while the Polish, Spanish and Republic of Ireland markets also saw double-digit reductions (22.9%, -17.5%-13.3% respectively). Germany, the second largest radio market in the world, bucked the trend; expanding by 1.9%.

**Figure 4.9 Radio industry revenue, 2009**



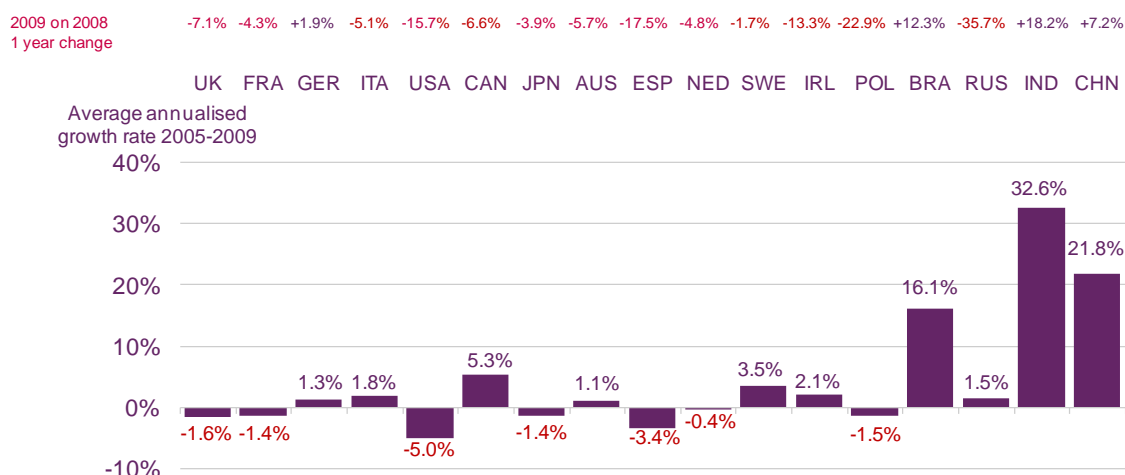
Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook). Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

#### Developing radio markets in Brazil, China, and India were among the fastest-growing over the past four years, alongside Canada

Over the four years to 2009, the radio markets in some of the BRIC nations have been the fastest growing of our comparator countries. The Indian radio market grew by 32.6% on average per year over this period. China's radio market expanded by 21.8% p.a. while Brazil grew by an average of 16.1% per year; the Russian radio market also grew, although more slowly (up by 1.5% per year on average over four years).

Of the other comparator countries, the Canadian market increased the most, up by 5.3% per year on average over four years, despite a 6.6% fall in 2009. Other growing markets included Sweden, Ireland, Italy, Germany, and Australia. The largest fall in revenues was experienced by the US commercial market, down by 5.0% per year on average since 2005. The radio markets in Spain, UK, France, Japan, Poland and the Netherlands also experienced reductions over the same period.

**Figure 4.10 Radio industry revenue annualised growth, 2005 - 2009**



Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [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 \$1.5643 to the GBP, representing the IMF average for 2009.

### Radio markets in Sweden and Germany receive the highest share of funding from licence fees

Of the 17 markets reviewed in this report, the majority of revenue in six countries – Sweden, Germany, the UK, France, Japan, and Italy - comes from public funding raised from licence fees.

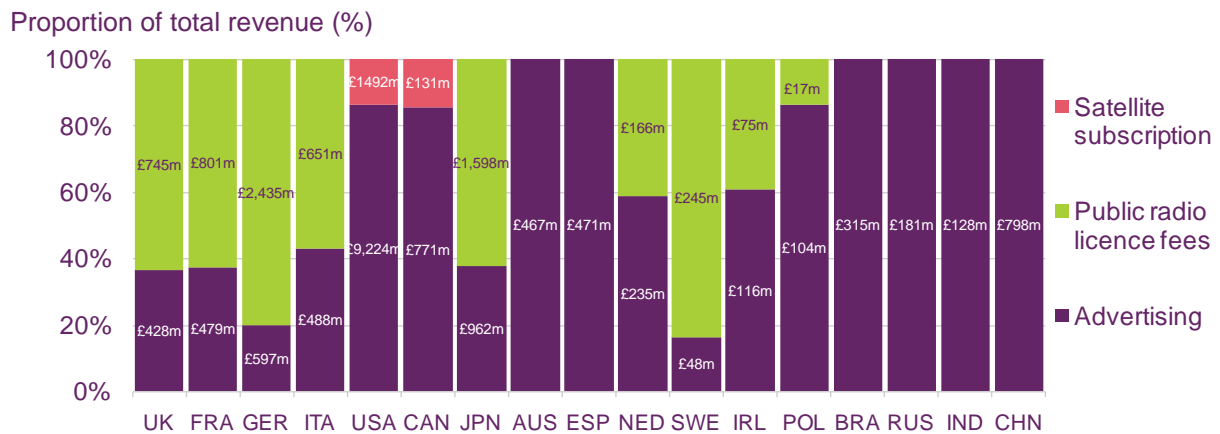
The public funding ratio was highest in Sweden, where 84% of radio income was from licence fee funding to support Swedish Radio's (SR) network of stations, which held a combined 65% share of listening in 2009. In Germany 80% of the market's income came from licence-fee funding, with the public broadcaster ARD attracting a 58% share of hours.

Radio markets in the UK (64%), France (63%), and Japan (62%) all received almost two-thirds of their funding from licence fees in 2009. The comparable listening shares varied, with the BBC the highest at 55%, while Radio France was less than half this at 22%; the share of NHK radio in Japan was lower still at only 8% of all listening hours. In Italy 57% of radio market funding came from licence fees and RAI's radio services held a 19% share of hours in 2009.

In some of the remaining comparator countries in this report 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. The contribution that public funding makes to these markets tends to be smaller than in those countries where a licence fee is levied. In the United States, for example, the Corporation of Public Broadcasting (CPB) allocated around £58m of federal funding to the production of public radio content in 2009, while National Public Radio (NPR) spent around £107m on public programming and distribution. This equates to around 1.5% of all US radio revenue in 2009; with the vast majority (almost £9.2bn or around 85% of the total) coming from advertisers, with satellite subscriptions accounting for the remaining 14% (£1.5bn, up by 2.4% in 2009).

In Canada, public funding accounted for around 18% of industry revenue, with CBC Radio Canada spending around £195m on radio services in 2009. Advertising revenue reached £771m (70%), while subscription revenue from satellite radio increased to £131m (12% of total revenues in 2009), up 31% from £100m in 2008.

**Figure 4.11 Proportion of radio industry revenue, by source**

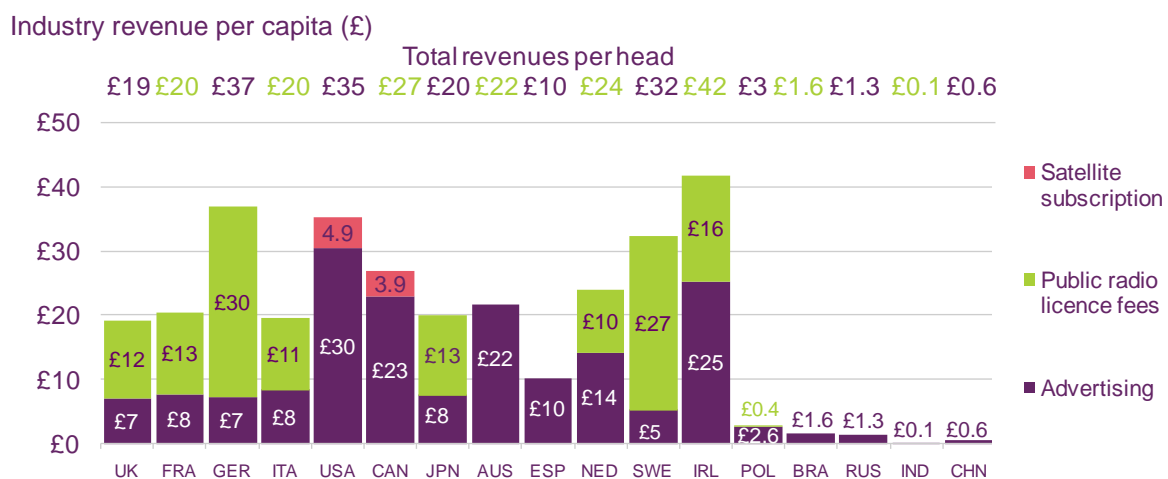


Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ www.pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

**Radio markets in Ireland, the US, and Germany generate the highest revenues per head**

The radio markets in Ireland, Germany, and the US generated high revenues per capita in 2009. The average of £42 per head in Ireland was the highest of the 17 countries profiled. Over 60% of radio revenue in Ireland was generated by commercial radio advertising, with the remaining 40% from licence fees. Of the other European nations, Germany (£37 per head) and Sweden (£32 per head) had high average incomes, although the component of public funding was much higher in each case, accounting for almost 84% in Sweden and 80% in Germany. The US radio market generated £35 per capita, mainly from commercial revenues from advertising and satellite radio subscriptions, with Canada having revenue of £27 per head. By contrast, income per head was much lower in the BRIC nations, in particular in India (£0.1 per person) and China (£0.6), partly due to the larger populations in these countries and the developing nature of the radio markets.

**Figure 4.12 Radio industry revenues, per head**



Source: Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ www.pwc.com/outlook. Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009. Population figures used in this calculation can be found in the country profiles.

## 4.2.4 Radio's share of total advertising spend

### Radio claims larger share of advertising in the North American markets

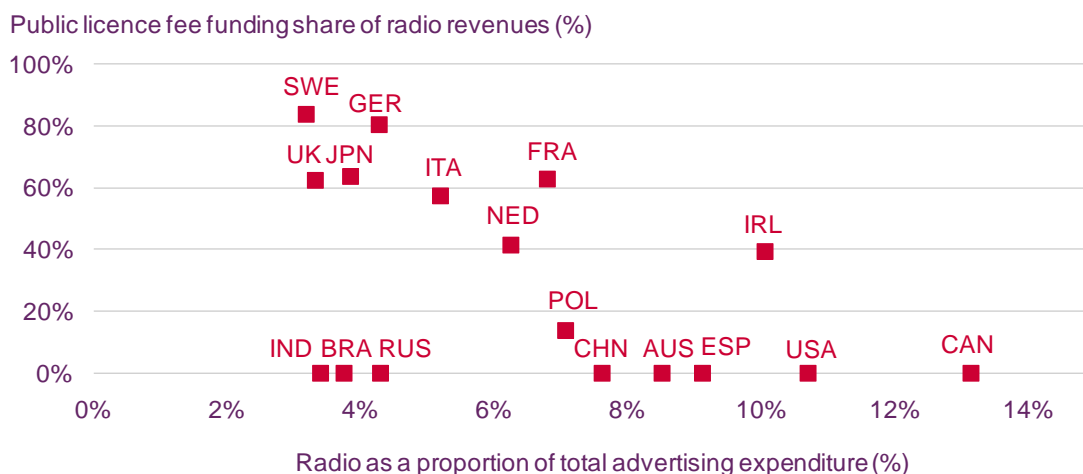
The share of total advertising spend commanded by radio markets varies significantly by country. Radio markets with higher levels of public licence fee funding (including a number of Western European markets and Japan) tend to have lower shares of total advertising spend, while the radio markets that feature higher ad shares usually having correspondingly lower levels of public funding. The exceptions to this trend are the developing markets of India, Brazil, and Russia.

The radio markets in Sweden and Germany attracted the highest level of licence fee investment in 2009, with public funding in Sweden equating to 84% of all radio income, with a similar level in Germany at 80%. The Swedish radio advertising market commanded a 3.2% share of total advertising expenditure in 2009, with the German market having a higher share at 4.3%. The UK radio market had a similar pattern to Japan, in terms of public funding (64% and 62% respectively) and ad market share (3.9% and 3.3%).

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; with spend on radio accounting for 13% of total ad spend. This was closely followed by the US radio market, which had an 11% share of all advertising, up slightly (by 1-2%) on previous years. The reason for the higher ad 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, and levels of public licence fee funding in 2009**



Source: Radio as a proportion of total advertising spend sourced from Warc ([www.warc.com](http://www.warc.com)). Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ [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 \$1.5643 to the GBP, representing the IMF average for 2009.

## 4.2.5 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 different ways of consuming music and audio online are also available on mobile devices as well as PCs and laptops.

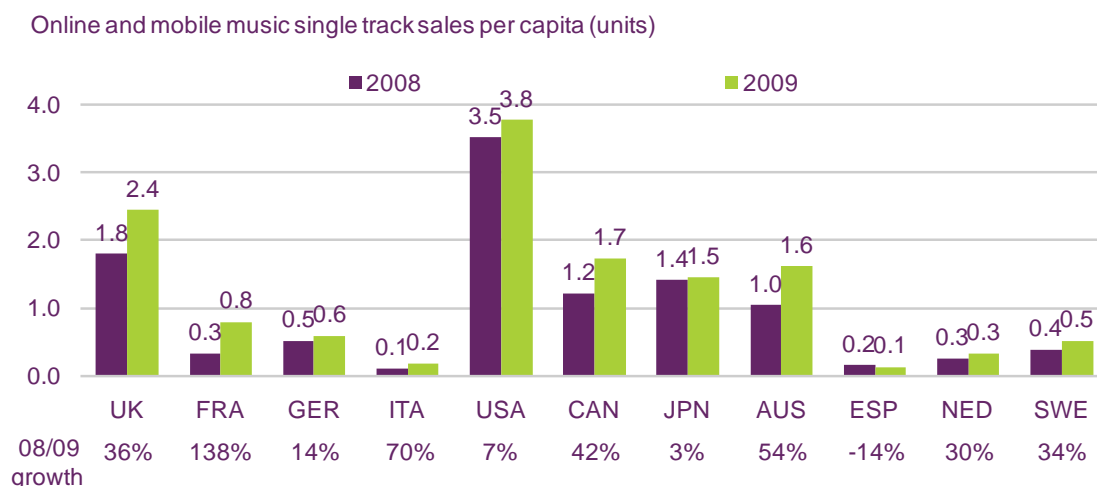
The entire music industry (including the recorded music industry, collecting and licensing societies, artists, publishers, music venues and promoters) has been affected in varying ways by the emergence of the internet as a major digital distribution channel. This section focuses in particular on recent 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.

### Digital music sales per capita are highest in the US and the UK

Per-capita sales of online and mobile single tracks in 2009 were highest in the US (3.8 tracks per head) and the UK (2.4 tracks per head). Average purchases exceeded one per person per year only in Canada (1.7), Australia (1.6) and Japan (1.5). The high music sales in the US are likely to be because the US is the largest recorded music market in the world, while strong sales in the UK may relate to its size as a large English-speaking market (it is the third-largest market in absolute terms, according to the IFPI). Four of the top five countries in terms of sales per head are English-speaking.

While per-capita digital music sales were relatively low in France (0.8 tracks per head), it experienced the highest growth between 2008 and 2009 (138%), significantly higher than any other market. In October 2010 the European Commission cleared France's plans for a 'Carte Musique'; designed to encourage young people to buy digital music. People aged 12-25 will be able to buy a pre-paid €50 music card for just €25, with the state making up the difference. They will be able to use the card to buy music from participating sites, which must accept certain restrictions (for example, on price) in return for participation. The French government estimates that the scheme will cost €25m over two years, if it reaches its target of one million cards. One week after the scheme launched, French culture minister Frédéric Mitterand announced in the French Council of Ministers that 10,000 cards had been sold.

**Figure 4.14 Digital music sales, 2008 and 2009**



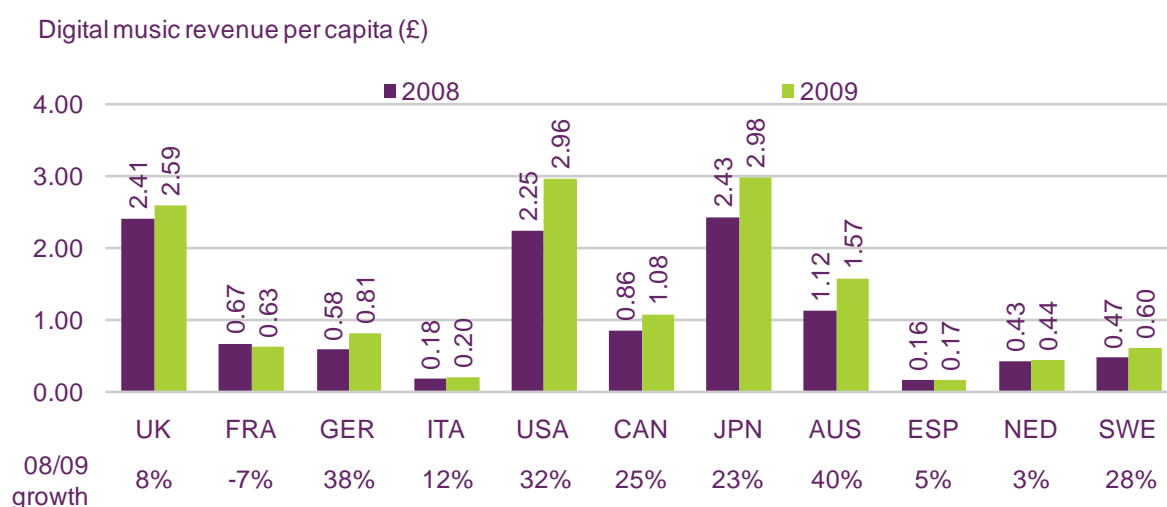
Source: Ofcom calculations based on IFPI data, 'Recording Industry in Numbers' report.



## Growth in digital music revenues higher in the US and Japan

Direct comparisons of digital music revenues across our comparator countries are difficult, due to differences in the way data are collected in each territory. With this caveat in mind, digital music revenues were highest in Japan (£2.98 per head) and the US (£2.96 per head) in 2009. The UK followed in third place with revenues of £2.59 per capita. As a rule, growth in revenues per head was fastest outside Europe, with the UK (8%), France (-7%), Italy (12%), Spain (5%) and the Netherlands (3%) all seeing comparatively low growth. The figure for France was particularly surprising, since it experienced very high growth in digital music volumes during the same period.

**Figure 4.15 Digital music revenues, 2008 and 2009**



Source: Ofcom calculations based on IFPI data, 'Recording Industry in Numbers' report.

Note: Digital music revenue includes revenue from online single tracks, online albums and mobile single tracks except GER, USA, CAN, NED (online single track and online album only) and JPN (online single track and mobile single track only). Excludes streaming revenue.



## 4.3 Audio/radio listening

This section summarises listening patterns in the radio and audio markets, including the results of Ofcom's international consumer research (across six countries) which examined patterns of listening across digital platforms, along with other forms of radio and audio listening. The section also examines patterns of radio listening across the comparator countries, including time spent listening to radio, and the listening share of the public and commercial operators.

The key points in this section include:

- The average time spent listening to radio was highest in Russia and Poland, with individuals spending 5.6 and 4.7 hours per day respectively listening to the radio. By comparison, listening in Spain and Japan was lowest among our comparator countries, at 1.8 hours per day in both cases; UK listening was above the average at 3.2 hours per person per day.
- Public service radio stations' share of listening varies across our comparator countries. It was highest in Sweden, where Swedish Radio (SR) commands a 65% share of all listening. In the UK, the BBC attracted a 55% share in 2009 while ARD's radio network in Germany enjoyed a 58% share. In Spain, national public network, RNE (Radio Nacional de Espana) accounted for 6% of all listener hours in 2009.
- Of the six main comparator countries surveyed, claimed listening to radio on a weekly basis was highest in France and Germany at over three-quarters (77%) of respondents. People in Japan were least likely to listen to the radio; just over a third (35%) of respondents claimed to use radio on a weekly basis. The UK figure was 72%.
- Ownership and use of personal media players (such as MP3/MP4 and iPods) was highest in Italy, with 64% claiming to own and use a personal music player. The UK figure was second-highest at 52%.
- Digital radio take-up in the UK was the highest among the countries we surveyed. Almost a third (31%) claimed to own and use a digital radio. Take-up was lower in Japan (3%) and the US (7%). With different interpretations of the term 'digital radio' across nations, care must be taken in interpreting these results.
- Downloading or listening to audio content such as music tracks and podcasts was most popular in Italy, with 48% claiming to download or listen to music via websites. The figure was lowest in Germany (31%), and in the UK stood at 40%.
- Listening to radio stations online was most popular among people in France, at 41%, and lowest in Japan at 16%. The UK figure was slightly lower than average, at 29%.
- People in the US were the most likely to claim to listen to radio or music while also watching television (37% and 38% respectively). The figures were lower in the UK, at 28% for concurrent radio/TV consumption and 30% for music/TV. Japan showed a mixed pattern, with 20% using radio and TV concurrently but 36% music and TV.
- Listening to FM radio through a mobile phone was most popular in Italy; almost a third (31%) of respondents there claimed to listen to radio on their mobiles, compared to only 5% in Japan, and 18% in the UK.

- Similarly, listening to MP3 tracks via a mobile was also highest in Italy (33%) and in Germany (33%). It was least popular in Japan (17%) and the US (18%) and 26% in the UK.

### 4.3.1 Use of radio and other audio content

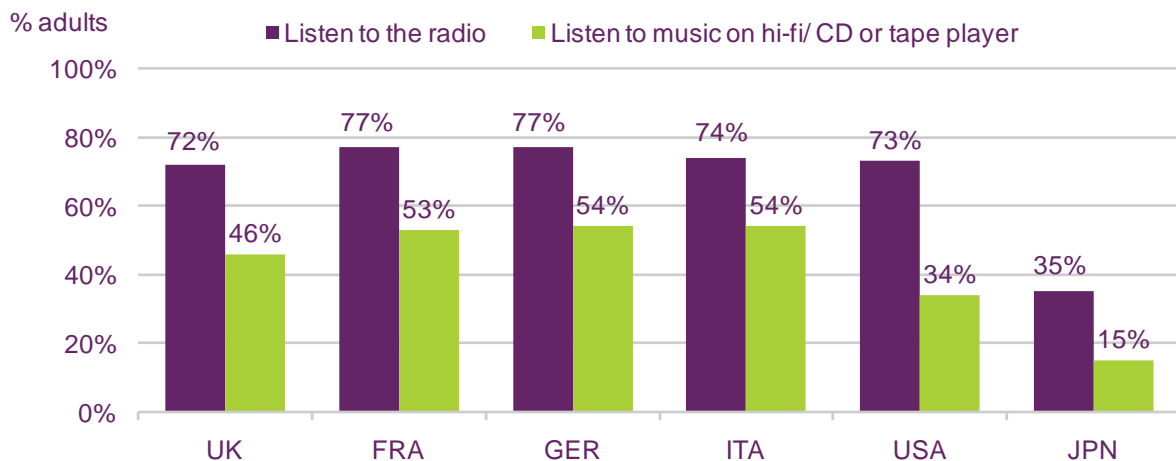
Ofcom commissioned an international quantitative online survey of consumers in six of our comparator countries (the UK, France, Germany, Italy, the US and Japan) to examine the adoption of new media and its effect on media consumption habits.

#### Weekly radio listening highest in France and Germany (77%)

Weekly radio listening was most popular in France and Germany, at over three-quarters (77%) of respondents. Radio listening was least prevalent among people in Japan, with just over a third (35%) of respondents claiming to use radio services on a weekly basis. By comparison, the UK figure stood at 72%.

Of the other forms of music listening, such as via hi-fi or CD players, use was highest in Germany, Italy, and France, at just over half of adults, (53-54%). It was lowest in Japan with only 15% of respondents claiming to use hi-fi or CD players on a weekly basis. In the UK less than half (46%) claimed to use these music formats on a weekly basis. These results could also indicate the effect of growing take-up of mobile media devices such as digital personal music players (i.e. MP3/MP4, and mobile handsets).

**Figure 4.16 Adults regularly listening to the radio / music on a hi-fi**



Source: Ofcom consumer research, October 2010. Base sizes (all adults who use the internet): UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001.  
Question: Which of the following do you regularly do (at least once a week): Listen to the radio/music on a hi fi.

#### Listeners in Italy most likely to claim ownership and use of FM radio and portable media players; while the UK has the highest ownership and use of digital radio

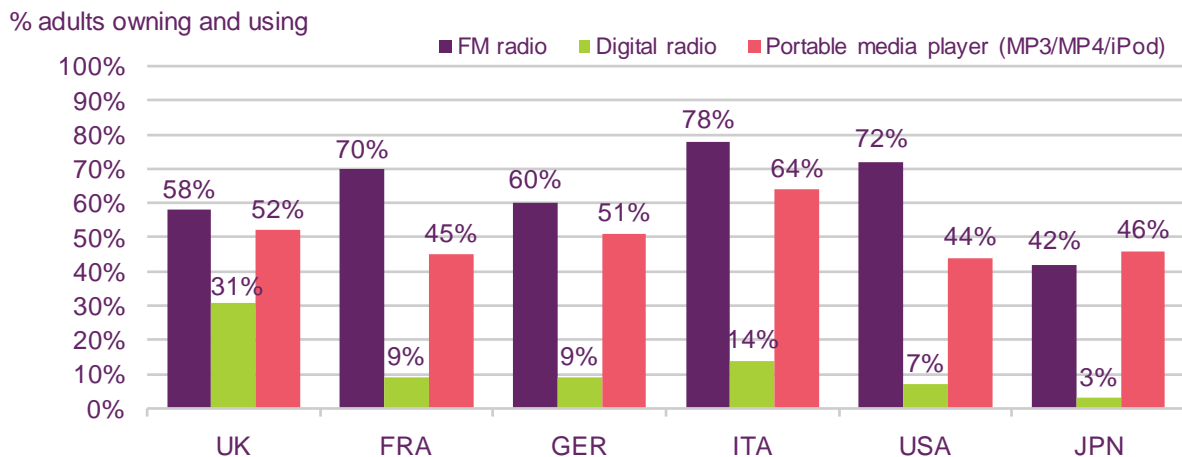
Among six main comparator countries, listening to FM radio was highest in Italy, with 78% claiming to own and use an FM radio. By contrast, use of FM radio was lowest in Japan at 42%. The UK was below average at 58%, possibly due to the increasing use of alternative digital audio platforms.

Use of personal media players (such as MP3/MP4 and iPods) was also highest in Italy, with 64% personally owning and using them. Media players were least popular in the US (44% claimed ownership/use), similar to France (45%) and Japan (46%).

Just over half of all people in the UK (52%) owned and used a media player, while listeners in the UK were the most likely (at 31%) to claim access to, and use of, a digital radio.

Listeners across the different countries may have different perceptions of what a digital radio is, particularly in countries where digital radio services have yet to launch. In some cases the respondents may have included radios which incorporate a digital display. As a result, the digital radio data depicted in Figure 4.17 should be treated with caution.

**Figure 4.17 Adults owning and personally using: FM radio, digital radio, portable media player (MP3/MP4/iPod)**



Source: Ofcom consumer research, October 2010. Base sizes (all adults who use the internet): UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001.

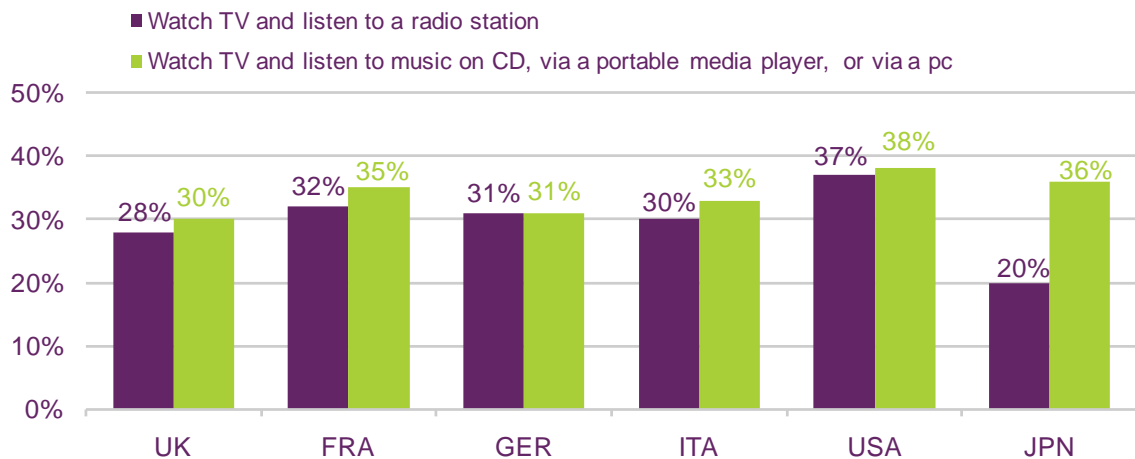
Question: Which of the following do you own and personally use? FM radio, digital radio, portable media player (MP3/MP4/iPod).

### Audio / radio listening while watching TV more prevalent in the US

The increasing availability of multimedia devices in the home has seen a growing trend among consumers towards the concurrent use of two or more media – where people use some combination of TV, radio, telecoms, and the internet at the same time.

Concurrent use of audio devices while watching TV was most popular in the US, with over a third of respondents saying that they had at some time listened to a radio station or music player such as a hi-fi while having the TV on at the same time (37% for TV/radio and 38% for TV/listening to music players). The comparable figures were lower in the UK (28% and 30% respectively). In Japan only a fifth said they had listened to the radio while watching TV (perhaps reflecting the fact that radio is less popular in Japan) but over a third (36%) had listened to audio via a music player such as hi-fi.

**Figure 4.18 Do you ever watch TV and listen to a radio station / listen to music?**



Source: Ofcom consumer research, October 2010. Base sizes (all adults who use the internet): UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001.  
 Question: Do you ever watch TV at home and do these other things: listen to a radio station or music on CD, an MP3 player / iPod, or through your computer, (at least sometimes)?

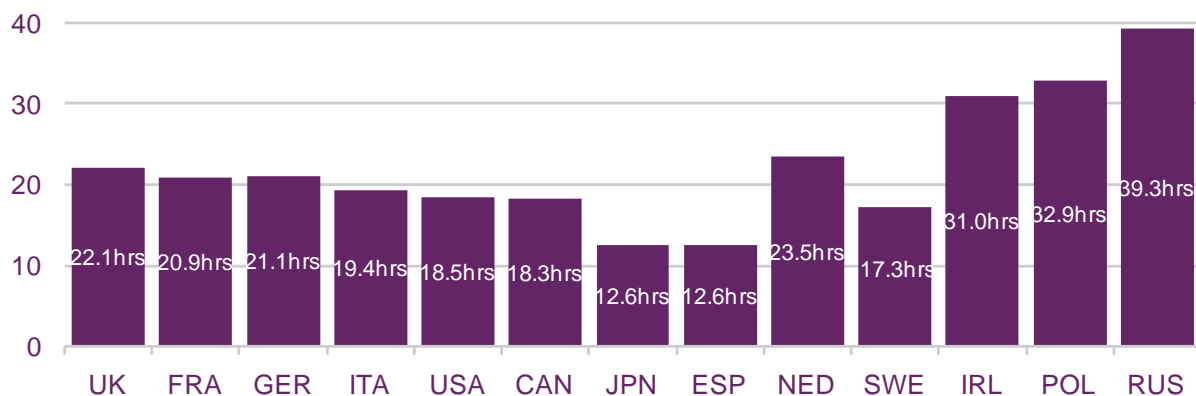
### 4.3.2 Radio listening hours

#### Time spent listening to radio highest in Russia and Poland

Patterns of radio listening vary significantly from country to country. It is highest in Russia at 39 hours per week (or 5.6 hours per day) followed by Poland (33 hours per week) and the Republic of Ireland (31 hours). People spend less time listening to the radio in Spain and Japan, both averaging 12.6 hours per week. In the larger Western European nations, listening typically averages around 21 hours per week, while in North America the average is slightly lower, at around 18 hours per week in the US and Canada.

**Figure 4.19 Weekly listening hours: 2009**

Average weekly hours, per head



Source: EBU, Ofcom, 2009.  
 Note: Age ranges covered vary across countries

### 4.3.3 PSB radio's share of listening

#### Public radio's share highest in Sweden, Germany, and the UK

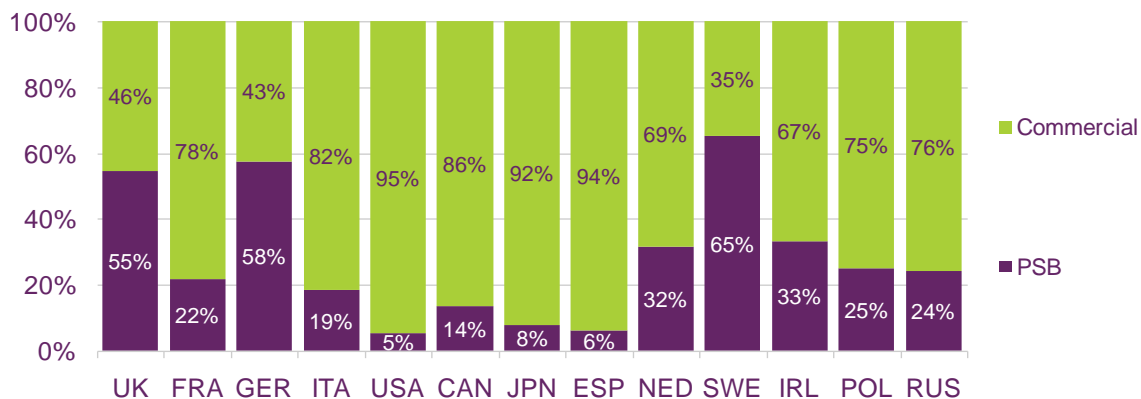
Public radio's share was highest in Sweden, where Swedish Radio (SR) has a long-standing presence, with commercial radio licensing commencing in 1993. SR's total share in 2009 stood at 65%, ahead of the BBC stations' share in the UK at 55% and ARD's radio network in Germany, at 58%. By comparison, Spain's national public network, RNE (Radio Nacional de Espana), commanded only 6% of listener hours. In Canada, CBC's stations attracted a share of almost 14% of all listener hours in 2009/10, while French stations from Radio-Canada (SRC) had a share of 19% in French-speaking areas.

In the US there are a substantial number of non-profit stations as well as commercial stations that carry public radio programming. According to media research from Arbitron, public radio programming reaches around 11% of the US population aged over 12 overall. On average these consumers listen to around 8 hours per week of public programming. This therefore equates to an approximate 5% share of all radio listening hours in the US.

The National Public Radio (NPR) organisation provides public radio programme content for around 800 stations in the US, reaching an estimated audience of 27.5 million per week. Overall, there are an estimated 1,700 public radio stations operating in the US, equivalent to around 12% of US stations.

**Figure 4.20 Share of PSB listening, 2009**

Audience share



Source: EBU, Ofcom, 2009/10.





# The International Communications Market 2010

## **5 Internet and web-based content**

# Contents

5.1	Key market developments in internet and web-based content	207
5.1.1	Industry metrics and summary	207
5.1.2	Smartphones and the pocket internet	208
5.1.3	Web-based advertising	213
5.2	International internet use and consumption of web-based content	221
5.2.1	Introduction	221
5.2.2	Internet platforms	222
5.2.3	Global internet traffic composition and geography	225
5.2.4	Online audiences	227
5.2.5	Devices	230
5.2.6	Popular international web brands, portals and searches	232
5.2.7	Principal internet uses across comparator countries	234
5.2.8	The mobile internet and web-based content	246



# 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)*	39.1	44.9	44.9	25.7	195	n/a	59.5	14.6	25.0	n/a	n/a	n/a	n/a	39.3	n/a	n/a	n/a
Fixed broadband connections per 100 HH†	70	69	62	49	71	80	64	66	56	85	66	63	40	21	29	4	26
Cellular broadband connections per 100 HH†	16	7	3	16	30	20	19	27	11	7	29	13	9	n/a	n/a	n/a	n/a
Mobile-only broadband HH (%)‡	6	1	11	13	6	n/a	6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Internet access via a mobile phone(%)‡	37	37	27	31	36	n/a	70	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: IDATE / Industry Data / Ofcom, The Nielsen Company

\*The Nielsen Company, month of July 2010, home and work panel, applications included.

† IDATE / Industry Data / Ofcom, 2009.

‡ Ofcom international research, October 2010.

Note: Nielsen is investigating a decline in its internet use data around duration metrics and the potential impact of this on Unique Audience metrics. Consequently, until these investigations are concluded, Nielsen internet data for 2010 is likely to represent a lower bound and should be treated as indicative only.

This year in our UK *Communications Market Report*<sup>74</sup> we considered the development of the UK market for internet and web-based content separately for the first time. In this chapter, we extend that analysis to the countries of our *International Communications Market Report*.

Across the world, the growth in the availability and take-up of the internet has provided another platform over which a variety of content types can be delivered to consumers. Rapid take-up of broadband means that a majority of households in all 17 of our comparator countries other than BRIC (Brazil, Russia, India, China), Poland and Italy had home access to a fixed broadband connection by the end of 2009. And the recent growth of fast mobile data services in many areas provides yet another way for consumers to access content. For some people this holds out the prospect of consuming web-based content without needing a fixed internet connection.

The take-up of the internet has affected content consumption in two significant ways:

- it allows existing forms of content such as TV-like programming and radio to be consumed in new ways (for example, on demand or interactively); and
- it has allowed new, internet-only content types to emerge (such as mobile applications, social networking sites, blogs, and other user-generated content).

<sup>74</sup> <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr10/>

But not everyone consumes web-based content to the same degree. An individual's engagement with this type of content is determined by a variety of personal preferences, social, demographic technological and economic factors. In the light of this, section 5.2 examines internet take up and use across our comparator countries, considering in particular:

- the different platforms and devices which people use to access the internet (including on PCs via fixed and mobile broadband, and on mobile phones - the 'pocket internet'); and
- the differences between audiences internationally (including gender and age splits and time spent online).

Section 5.2 also considers the breakdown of internet users internationally, the ways in which these people actually use the internet to consume web-based content, the devices on which they access content, the activities they undertake and the ways they navigate to this content online.

But first, we consider two important market developments that set the context for consumers' use of the internet across our comparator countries.

- **Smartphones and the pocket internet (section 5.1.2)** – the proportion of smartphone subscribers is highest in Italy (26 subscribers per 100 population). But Spain leads in terms of high-value smartphone subscribers, with seven subscribers per 100 population paying at least £35/€50 per month. The UK follows close behind with six subscribers per 100 population and the fastest growth in this group (61%) during the past year. (Page 208).
- **Web-based advertising (section 5.1.3)** – At £57, the UK is spending more per capita per annum on internet advertising than any other country in this report. The UK is also shopping more online than any other European country – an estimated average of £1,031 per person per annum is spent online compared to the next highest, Germany, at £588. (Page 213).

### 5.1.2 Smartphones and the pocket internet

#### Smartphones have brought the pocket internet into the mainstream

Web access through mobile phones has been a common feature of handsets for some time, initially through 2G (offering relatively low data speeds), and latterly over higher-speed 3G and 3G+ networks. But the recent emergence of smartphones has had a significant impact on the way that some consumers use the mobile web.<sup>75</sup> Unlike the previous generation of phones able to access the internet (often called 'feature phones'), smartphones commonly offer a much more fully converged internet and mobile phone experience and promise to turn the notion of the 'pocket internet' into a reality. We consider that there are a number of reasons why smartphones have grown in prominence and popularity recently, including:

- the launch of a new generation of highly popular and easy to use handsets from manufacturers such as HTC, Apple, RIM and Samsung;

---

<sup>75</sup> Although there is no generally agreed definition of a smartphone, the use of an advanced operating system that facilitates the development and installation of third party applications is commonly accepted as differentiating smartphones from 'feature' phones. In most cases, smartphones have other characteristics such as a large colour screen, a touchscreen or full QWERTY keyboard, access to fast internet through WiFi or 3G connection, and large memory storage.

- technological developments in handset capability – increased processing power, high-quality capacitive touchscreens, improved camera quality and large internal memory have all increased the attractiveness of handsets. For example, processing speeds of 1GHz are available on some handsets, as are high-resolution screens and cameras up to 12 megapixels;
- Flat-rate data plans that make it easier to understand how much mobile internet access costs; and
- operating systems that allow users to customise their phones by installing third-party applications and other software. A number of new smartphone operating systems have been launched in recent years including Android (controlled by Google), Bada (Samsung) and Windows Phone 7 (Microsoft). These have joined more established platforms from Apple (iOS), Nokia (Symbian) and RIM (Blackberry OS). All major operating systems have associated applications stores from which users can download applications to customise their phones, and a number of independent stores exist too.

### **Take-up of advanced mobile phones is high across our comparator countries**

Measuring the take-up of smartphones is not easy. Not only is there no agreed definition of a smartphone, but consumers are often unsure whether their handset is ‘smart’ or not. To get around this we asked a question about handset functionality in our international survey of our six main comparator countries. Since one of the key differentiators of smartphones is the ability to easily perform advanced functions, we asked online consumers in these countries whether they owned and used a phone that allowed them to easily perform three such web functions (email, web browsing and downloading applications) (Figure 5.2 below).

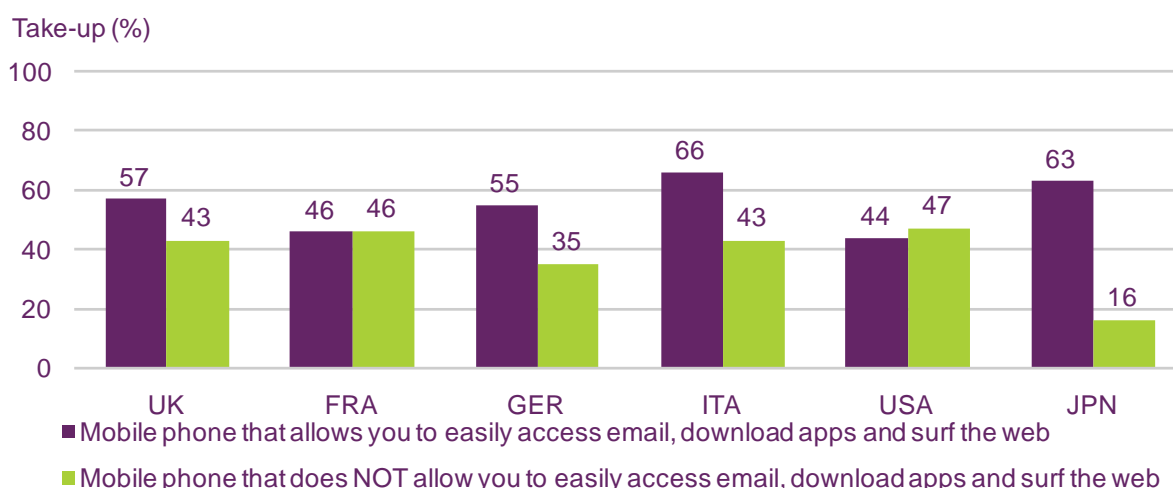
Our survey found that across our comparator countries claimed take-up of phones with advanced functionality was highest in Italy (66% of internet users), followed closely by Japan (63% of internet users). Claimed take-up of phones with advanced functionality was lowest in France (46%) and the US (44%).

High take-up of advanced mobile phones in Italy and Japan is likely to be related to high levels of 3G take-up and availability in these countries. It is also noteworthy that internet users in both countries claimed relatively low use of PCs to access the internet, although in Italy laptop use is high (see Figure 5.23). Historically Japan has had high mobile internet use – consumers in Japan made high use of the mobile internet even on 2G networks, and in 1999 Japan’s largest operator NTT DoCoMo launched i-mode, a 2G/3G internet platform, and by 2004 had attracted 40 million subscribers.

Across all six countries surveyed, claimed take-up of phones with advanced functionality was at a similar level to, or significantly higher than, claimed take-up of more basic phones. The widest disparity between take-up of advanced and basic phones was in Japan (63% vs. 16%). This reflects the early launch and rapid take-up of 3G and mobile internet services (and in particular email).

However, while these results provide an indication of the levels and relative differences in take-up of advanced mobile phones across our comparator countries, it is likely that they significantly overstate levels of actual smartphone take-up. This is likely to be due to consumer confusion over the capabilities of their phone, and the fact that our survey was an online sample, which may have a skew towards early adopters of advanced mobile phones.

**Figure 5.2 Mobile phone take-up by functionality**



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q4. Which of the following devices do you own and personally use?

### Overall, Italy has the highest number of smartphone subscribers...

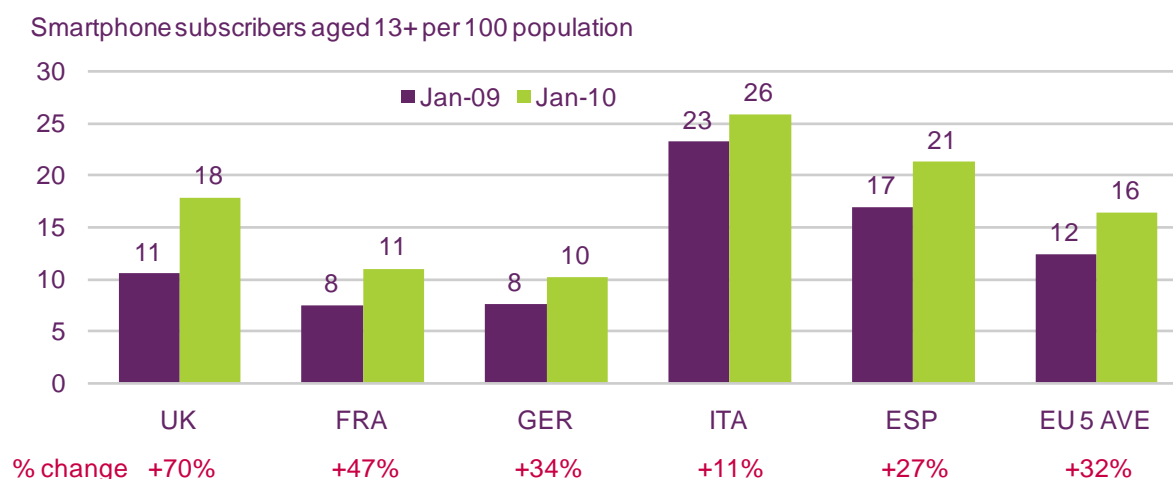
ComScore's *MobiLens* survey provides an alternative and more specific measure of smartphone take-up across several main European markets. These data show that across five major European markets Italy had the highest proportion of smartphone subscribers aged 13+ (26 subscribers per 100 population) in January 2010. Spain (21 subs per 100 pop) and the UK (18 subs per 100 pop) had the next highest proportion of subscribers.<sup>76</sup> The high take-up of smartphones in Italy is likely to relate to the widespread adoption and availability of 3G services and large numbers of Nokia handsets installed with the Symbian operating system, which have been available since the beginning of the decade.

All five European markets have seen significant growth in numbers of smartphone subscribers since January 2009. Growth was highest in the UK, which saw subscriber numbers jump by 70% between January 2009 and January 2010. Perhaps because Italy already had a relatively high number of smartphone subscribers in 2009, it experienced the lowest growth over the past year (11%).

A number of factors are likely to lie behind the growth in smartphone subscribers across Europe. These include the European launch of the iPhone 3GS in 2009, the emergence of an increasing number of handsets running the Android operating system, and the early signs of more and more mass market smartphones becoming available, in addition to high-end premium products.

<sup>76</sup> In our *UK Communications Market Report* we included a figure of 26.5% for UK smartphone penetration in May 2010. This is not directly comparable to the data in Figure 5.3 as it reflects penetration rather than subscribers aged 13+ per 100 population, and is taken from May 2010 rather than January 2010.

**Figure 5.3 Smartphone subscribers: January 2009 vs. January 2010**



Source: comScore MobilLens / Ofcom calculations. Age 13+.

Note: Subscriber numbers based on 3-month average ending Jan 2010 vs. 3 month average ending Jan 2009. Population based on year-end figures for 2008 and 2009. EU 5 = UK, FRA, GER, ITA, ESP.

### ...although Spain and the UK lead in terms of high-value subscribers

But the absolute numbers of smartphone subscribers in each market only tell part of the story. In many countries (although not Italy) smartphones are typically provided with monthly contracts which help to subsidise the higher costs of these handsets (although typically handsets are available for purchase and use by pre-pay customers too). By looking at the breakdown of monthly subscription fees by payment tier we can make certain inferences about the type of handsets that consumers use and how they use them.

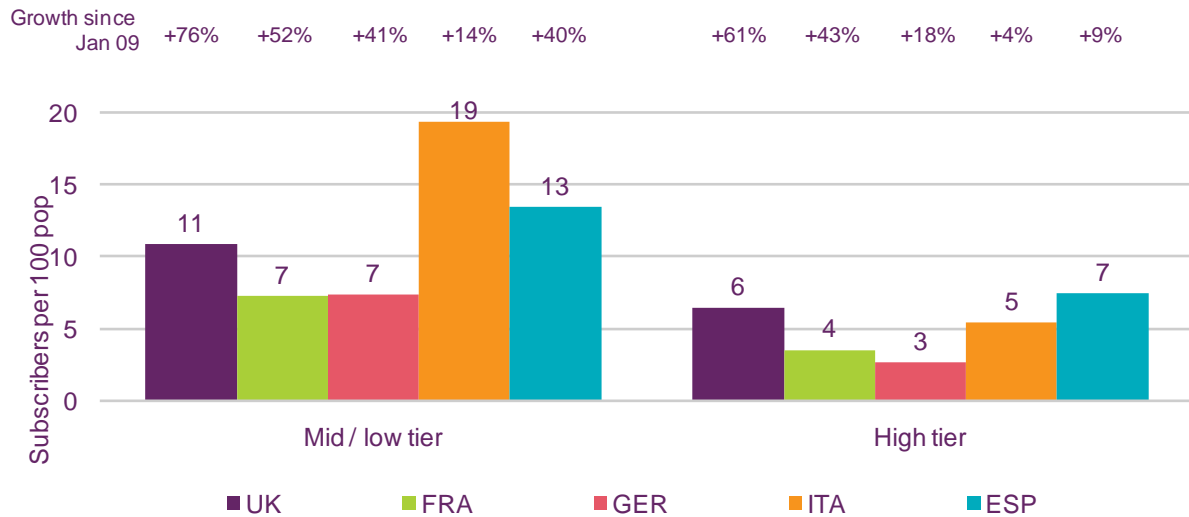
Comscore distinguishes between high-tier smartphone subscribers paying more than £35 monthly in the UK and €50 in the rest of Europe, and mid/low-tier subscribers paying less than this. High-tier subscribers are more likely to use high end and premium handsets such as the iPhone, HTC Desire or Blackberry Torch 9800, as these handsets require higher cost subscriptions to subsidise them. High-tier subscriptions are also more likely to include more bundled minutes and data, suggesting that subscribers to these plans may use their phones more intensively.

The data show that Spain had the highest proportion of high-tier smartphone subscribers, with seven high-tier subscribers per 100 population (Figure 5.4). The UK followed closely behind, with six high-tier subscribers per 100 population. But while Spain experienced sluggish growth in this tier during 2009 (9%), the UK experienced the fastest growth in high-tier subscribers of any of the five European markets for which data are available during the same period (61%). This was significantly faster than any other country, although France (43%) also saw rapid growth.

By contrast, in Italy (which has the highest proportion of smartphone subscribers overall), the split between high-tier and mid/low-tier subscribers is much more heavily in favour of mid/low-tier subscribers (19 per 100 population, compared to five per 100 population). This suggests that mid-market smartphones are much more popular in Italy than they are in the UK. And this trend appears to be growing. While high-tier and mid/low-tier smartphone subscribers grew by similar amounts in the UK during the past year (61% and 76% respectively), mid/low-tier subscribers grew much more rapidly than high-tier subscribers in Italy (14% vs. 9%).

Our work on international pricing comparisons (see section 2) suggests that mobile pricing is relatively cheap in both the UK and Italy, and so pricing differences are unlikely to explain the variations in payment tier subscriptions. It is more likely that these are explained by local market structures (in particular the split between pre-pay and post-pay) and handset preferences.

**Figure 5.4 Smartphone subscribers by payment tier, Jan 2010**



Source: comScore MobiLens / Ofcom calculations. Age 13+.

Note: Subscriber numbers based on 3 month average ending Jan 2010 vs. 3 month average ending Jan 2009. Population based on year-end figures for 2008 and 2009. High-tier pricing model includes smartphones with monthly subscription fees of over £35 in UK and over €50 in France, Germany, Spain and Italy. Totals do not necessarily match those in Figure 1.3 as some respondents do not disclose tariff information.

### Mobile operating systems (OS)

The mobile OS space used to be dominated by proprietary OS, generally developed in-house by handset vendors. But as operators' walled gardens were forced to open up, the rising popularity of mobile content opened up new opportunities for outsiders. Microsoft, Apple and Google jumped at the opportunity with their own ideas about how a smartphone OS should look. At the same time established players such as Nokia, RIM and Palm have been stepping up their efforts to maintain their market positions.

Today the main competitors in the smartphone OS space include Android, Apple iOS, Symbian and Blackberry OS. Microsoft recently launched Windows Phone 7 OS in an effort to re-invent its mobile brand after Windows Mobile devices struggled to gain large market share.

A key success factor for smartphone OS is the buy-in from developer communities. As third-party applications can significantly enhance the functionality of smartphones, more and higher-quality applications can attract consumers to one platform or another. The increasing openness of smartphone OS, and attractive revenue sharing terms, helps unleash the developer community's creativity and allows them to develop more appealing and useful applications to attract consumers.

In general, new-generation mobile OS present an intuitive user interface that relies primarily on a touchscreen interface, combined with easy access to frequently used applications and services via front-screen applets. Online content is readily available and there is usually a high degree of integration with online services such as social networking, mapping, weather and email.

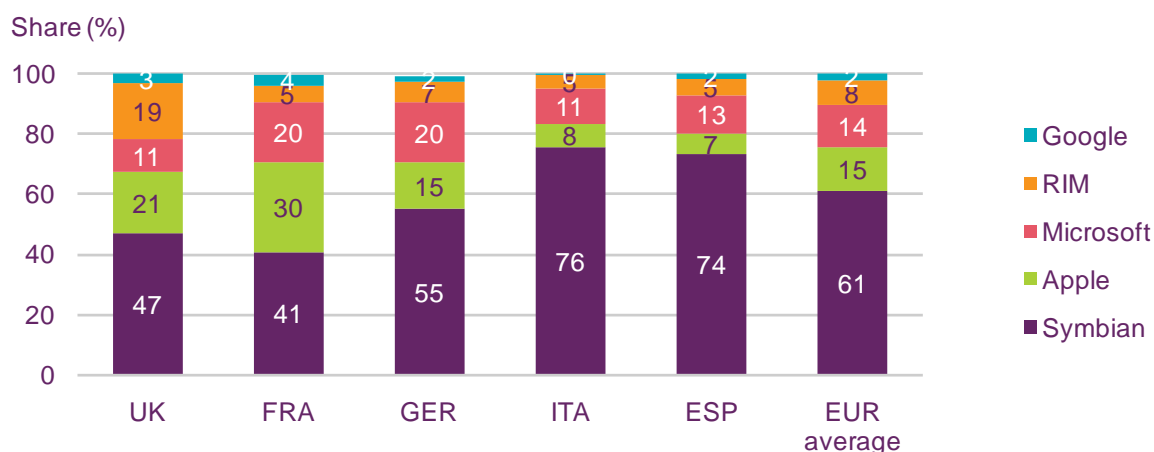
## In the UK and France the OS ecosystem is more mixed than elsewhere

Differences in payment tier are also partly reflected in the mobile operating ecosystems of the major European mobile markets. There are large differences in the market shares of the major mobile operating systems from country to country (Figure 5.5). Across the five European countries that comScore surveyed Symbian has the largest market share. But its share ranges from just four in ten subscribers (41%) in France to three-quarters in Italy (76%) and Spain (74%). Symbian's large market share is likely to be due in part to the popularity of mid-range Nokia smartphones (which are often based on the Symbian platform). France and the UK are the only markets where Symbian had a market share below 50% in 2009.

Part of this appears to reflect the much greater penetration of Apple's iOS operating system in the UK (21%) and France (30%), which is likely to be at least in part due to the fact that the iPhone launched earlier in the UK, France and Germany than in Spain and Italy. The high share for Apple in France may be due to the ruling by French competition authorities in December 2008 that the exclusive deal between Orange and Apple was illegal, and that the iPhone should be made available on other networks, potentially providing consumers in France with more choice at an earlier stage than consumers in other countries. It is notable too that in the UK the RIM/Blackberry smartphone platform has almost three times the market share (19%) as it does in the other countries.

The market shares of the major smartphone platforms are likely to change in the future as smartphone take-up increases, the rivalry between platforms intensifies, smartphone prices fall and new players emerge and develop. In particular Android's market share is likely to have increased significantly in some markets during 2010 due to the launch of a large number of new Android handsets from manufacturers such as HTC, Samsung, Huawei, ZTE and Sony Ericsson. The launch of Microsoft's revamped Windows Phone 7 platform in late 2010 may well also have an impact on Microsoft's market share.

**Figure 5.5 Smartphone subscribers by operating system, Jan 2010**



Source: comScore MobiLens. Age 13+.

Note: Shares based on 3-month average ending Jan 2010. EUR average = average across UK, FRA, GER, ITA, ESP.

### 5.1.3 Web-based advertising

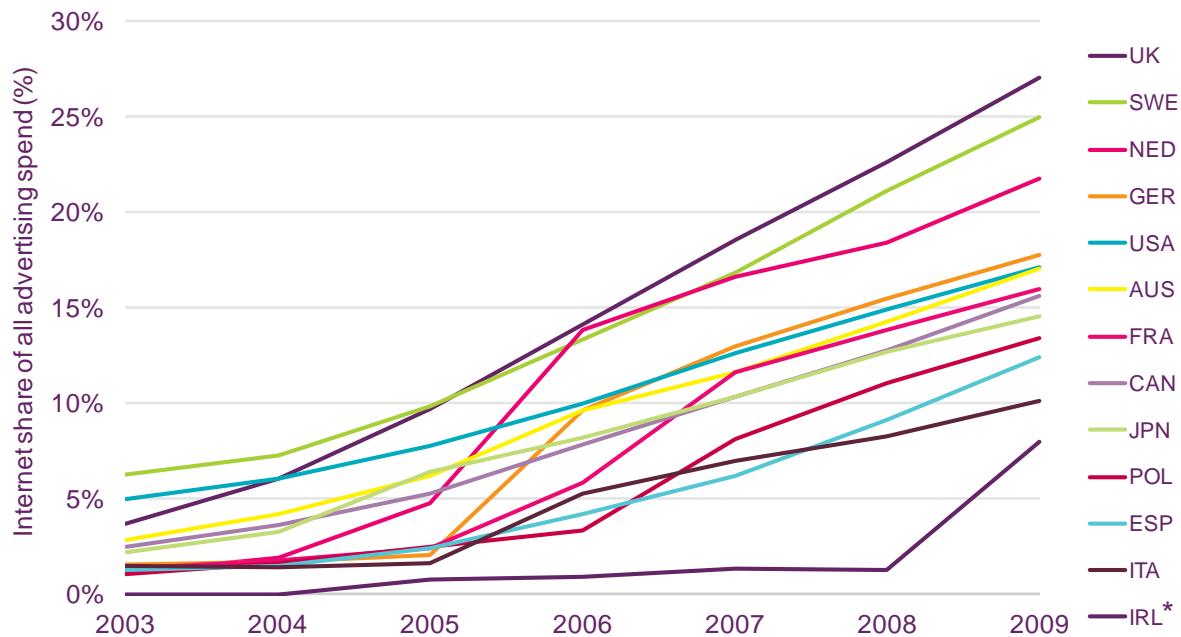
#### Introduction

Since 2004 the proportion of all advertising spend allocated to internet campaigns has steadily grown (Figure 5.6). According to Warc figures, the UK has been at the forefront of



this trend, demonstrating the greatest and most consistent growth over the period, closely followed by Sweden and the Netherlands, which has the highest home broadband take-up of any country in this report (see Figure 5.14). Internet advertising spend as a proportion of all advertising spend runs broadly in line with home broadband take-up. The exceptions are the UK at one end of the scale and Ireland at the other, which has broadband take-up comparable to Germany and Japan although internet advertising spend remains relatively low. One possible explanation may be the UK and Ireland's close proximity and shared language, with many advertising campaigns for the two markets being administered in the UK.

**Figure 5.6 Internet share of total advertising expenditure**



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

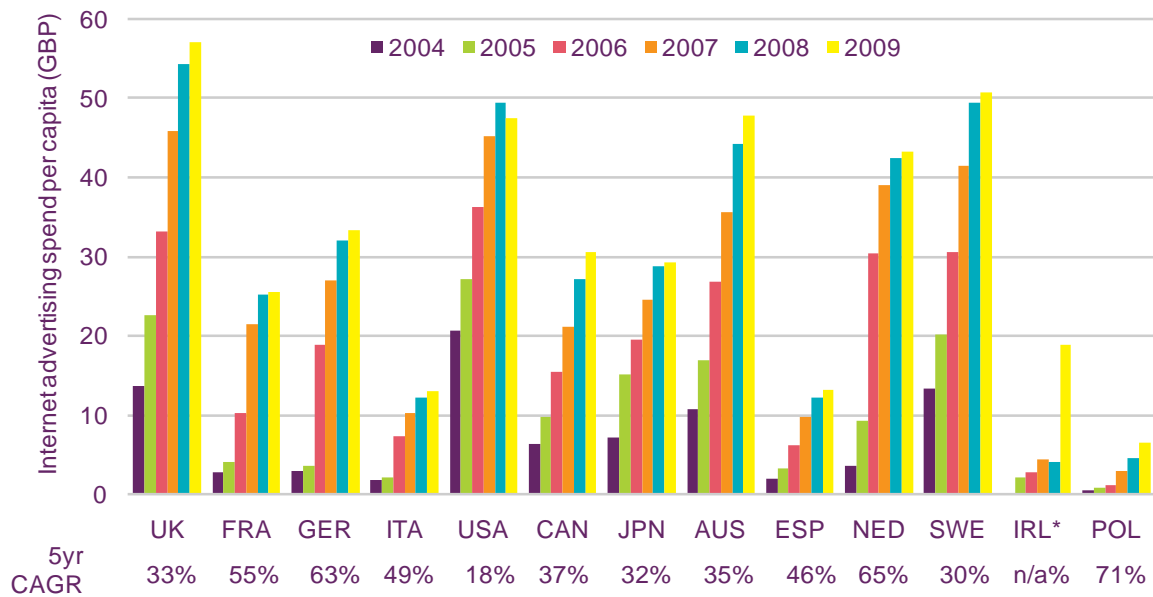
Note: Data do not include mobile advertising, a small but growing new market. This is particularly relevant to Japan where in 2009 mobile advertising accounted for approximately 2% of total advertising expenditure. \*Ireland data prior to 2009 exclude paid-for search advertising. Ireland internet data from 2009 include display, classified, search and email and are therefore not directly comparable with those of previous years.

### The maturing internet advertising market

The UK also spends proportionally higher amounts per head on internet advertising than anywhere else covered in this report. Over the five-year period all countries experienced at least treble digit growth. Growth in the US was the slowest, with a 230% gain between 2004 and 2009, starting from a relatively high base. The recession appears to have contributed to a general slowdown in growth rates across our comparator countries. Nowhere was this manifested more than in the US, where significant internet advertisers such as the automotive, travel and property sectors appear to have been particularly hard hit. At the other end of the scale, from a low base Poland experienced a 1480% increase in spend per capita over the period. Its comparatively small figures are a reflection of the country's lower GDP and broadband take-up figures. Japan's relatively modest figures are in part explained by its large mobile advertising industry (discussed later in this section).



**Figure 5.7 Internet advertising spend per head**



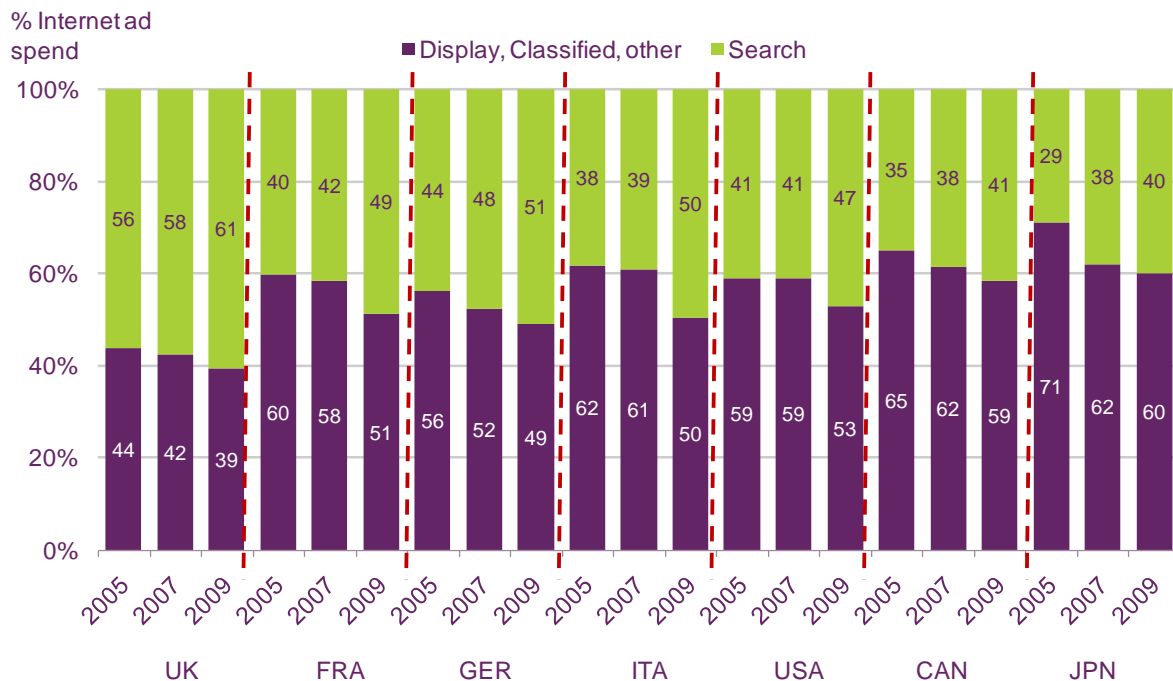
Source: Warc data ([www.warc.com](http://www.warc.com)). Currency conversions represent the IMF average for 2009.  
 \*Note: Ireland data prior to 2009 exclude paid-for search advertising. Ireland internet data from 2009 include display, classified, search and email and are not comparable with those of previous years.

**Online search advertising grows at the expense of display.**

Search advertising has grown consistently all over the world, as the tools that allow advertisers to control when and where campaigns appear become more sophisticated. By using key search words, consumers are telling advertisers exactly what they are interested in at that moment, allowing advertisers to respond accordingly. Display advertising, on the other hand, is often contextual to the website being viewed, or can rely on certain types of profiling. To this end it can provide a different form of targeting for advertisers, that may appeal to a user’s broader interests. Since 2008 display advertising revenues have levelled off in all our comparator countries as advertisers direct more of their budgets towards search advertising opportunities.

Figure 5.8 shows that across all our comparator countries, paid-for search increased its share of total internet advertising spend at the expense of display and other classified. Paid-for search accounts for the greatest share of total internet advertising in the UK (61%), and accounts for half of internet ad spend in Germany (51%), Italy (50%) and France (49%).

**Figure 5.8 Internet advertising spend, by category**



Source: PricewaterhouseCoopers Global Entertainment and Media Outlook: 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook).

Note: Interpretation and manipulation of data are solely Ofcom's responsibility.

There are signs that the growth of social networking has recently stimulated display advertising. UK internet users viewed over 2.2 billion display adverts in the third quarter of 2010, compared with 1.65 billion in the same quarter in 2009. With its high traffic volumes, it is no surprise that Facebook is the top display ad publisher in the UK, accounting for 31.1% of these impressions. Microsoft published 6.2%, followed by eBay (4%), Google (3.7%), Yahoo (3.5%) and Glam Media (1.3%)<sup>77</sup>.

**The vast majority of global search advertising is divided into three search engines.**

Across our comparator markets the bulk of paid-for search revenues accrue to three main search engines – Google, Yahoo! and Bing. Google has the largest share in each of our comparator markets with the exception of Japan, where Yahoo! Japan competes on an even footing. Bing, launched by Microsoft in 2009, has gained traction in the UK, US and France. Yahoo! Inc and Bing are in the process of implementing an agreement for Bing to provide search facilities for both companies, while Yahoo! Inc concentrates on the sales force for both companies. Roll-out began in English in late 2010 and is ongoing.

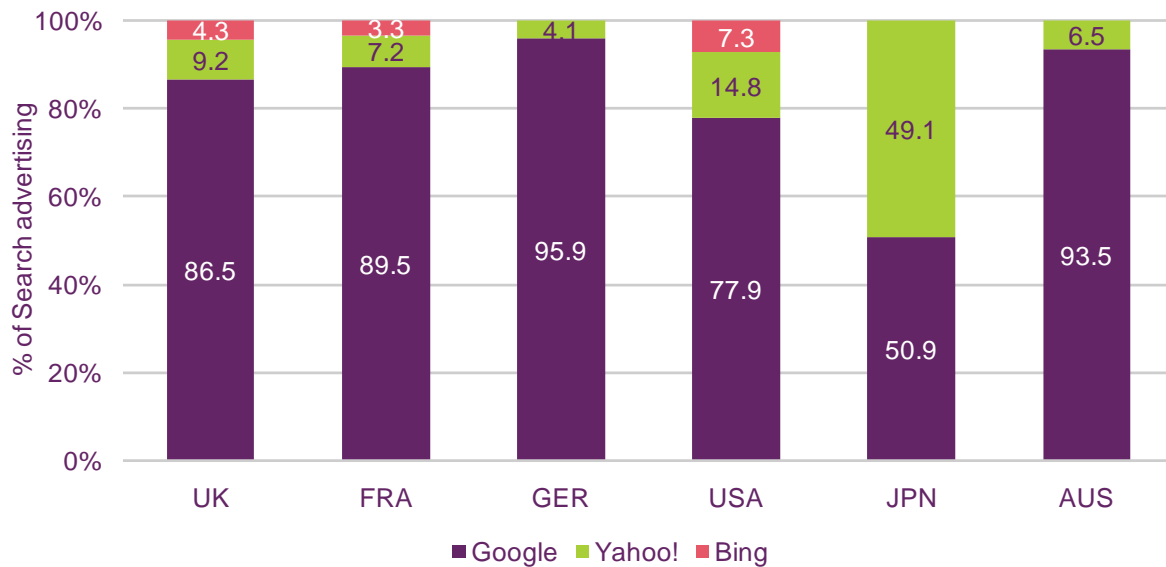
Yahoo! Japan should be considered as a separate entity from Yahoo Inc. The company is 35% owned by Yahoo Inc. and the majority shareholder is Softbank Group which holds a 40% share. Softbank has approximately 24 million mobile phone users in Japan<sup>78</sup> and integrates Yahoo Japan into its mobile browser as a homepage. Yahoo! Japan also offers certain other functionality not offered by Yahoo Inc. in other markets. In July 2010 Yahoo! Japan announced a deal to implement Google search technology. This deal will have no impact on Yahoo! activities outside Japan.

<sup>77</sup>

[http://comscore.com/Press\\_Events/Press\\_Releases/2010/11/Online\\_Display\\_Advertising\\_Market\\_Grows\\_34\\_Percent\\_in\\_the\\_UK\\_Versus\\_Year\\_Ago](http://comscore.com/Press_Events/Press_Releases/2010/11/Online_Display_Advertising_Market_Grows_34_Percent_in_the_UK_Versus_Year_Ago)

<sup>78</sup> <http://www.softbankmobile.co.jp/en/info/finance/progress/index.html>

**Figure 5.9 Share of search advertising market revenue**



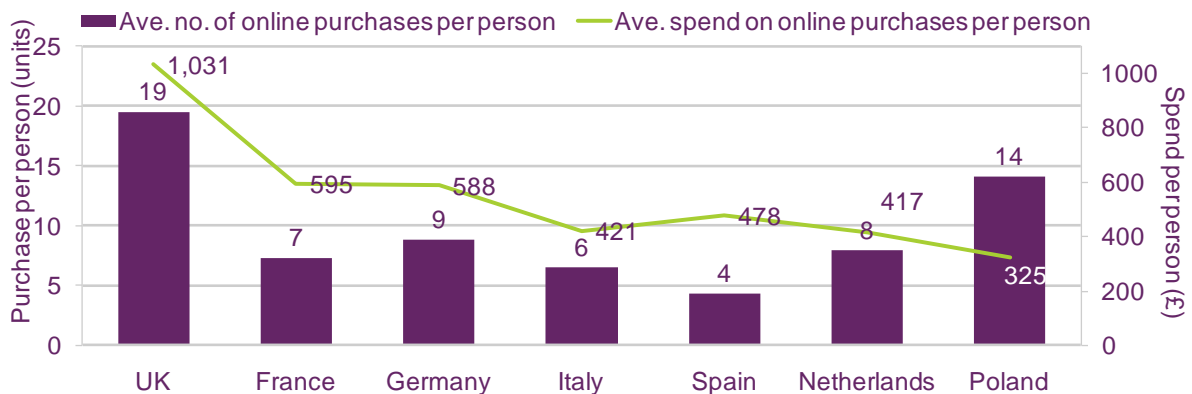
Source: <http://www.efrontier.com/sites/default/files/Digital-Marketing-Performance-Report-Q3-2010.pdf>

### UK consumers buy most and spend most online

Figure 5.27, below, shows that online shopping is the second most popular activity undertaken online across the UK, France, Germany and Italy. But data from Mediascope Europe show that this masks significant variations in behaviour between consumers in these countries (Figure 5.10). The data show that consumers in the UK made more than double the number of online purchases in the past six months (19) than consumers in any other major European country except Poland (14). In addition, the total value of online purchases made in the past six months was highest in the UK (£1031). This was nearly double the amount spent by consumers in the next-placed country, Germany (£595).

While no single factor can explain the relative popularity of online shopping in the UK, it is likely that the early launch of Amazon.co.uk in 1998, the historic popularity of catalogue shopping, high penetration of credit cards and the willingness of UK consumers to trust online payment systems all contributed.

**Figure 5.10 Online purchases and spend on online purchases in the past 6 months**



Source: European Interactive Advertising Association (EIAA) Mediascope Europe 2010.

Q18. In the last six months\*, how many purchases would you say you have made online?

Q19. In the last six months\*, approximately how much money would you say you spent in total on all your online purchases?

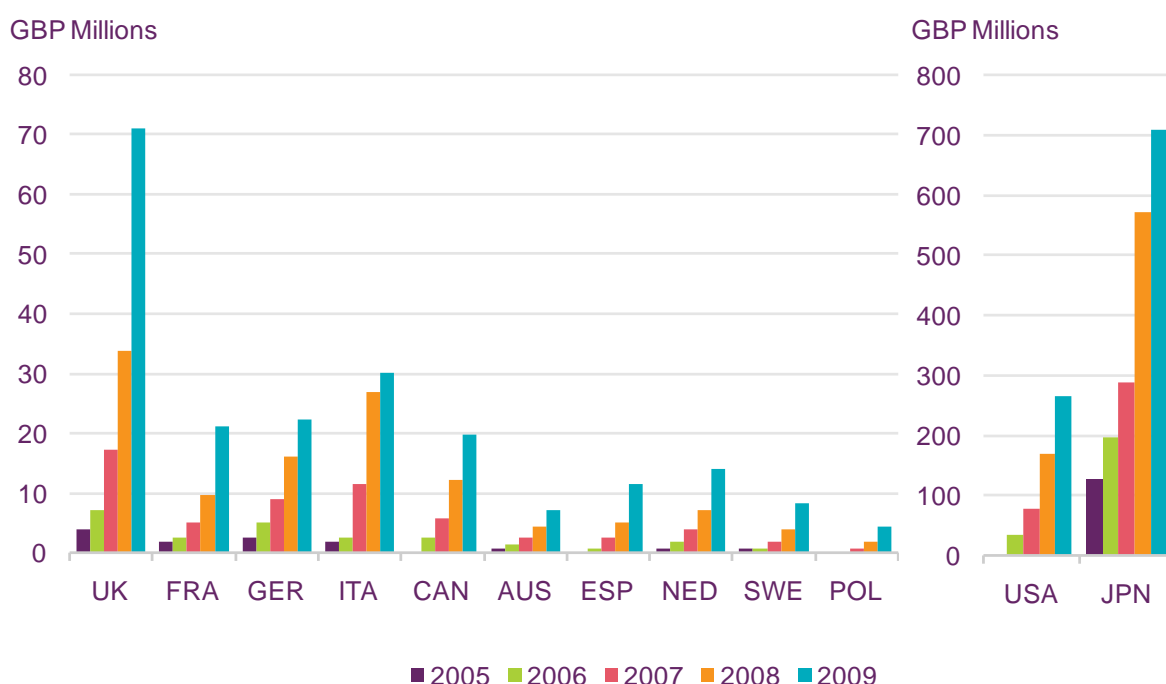
\*June – November 2009

### Japanese mobile internet advertising in a league of its own

In 2009 96% of mobile phones in Japan were operating on 3G networks, compared to 31% in the UK and 39% in the US. It has one of the most developed and competitive mobile markets in the world. The proportion of 3G subscribers is significantly higher than in any other country in the world. A saturated and sophisticated mobile market such as this offers greater opportunity for mobile advertising to grow. The average monthly spend on mobile phones in Japan in 2009 was £34.60, 42% of which was on non-voice activity. For comparison, in the UK the figures were £15.82 and 30%. So while the average UK consumer was spending £4.75 per month on mobile data, in Japan he or she was spending £14.53. The high proportions of both 3G take-up and of data consumption through browsing, downloads and mobile TV in the Japanese market provide greater reach for mobile marketers.<sup>79</sup>

<sup>79</sup> All figures IDATE / Industry Data / Ofcom

**Figure 5.11 Mobile internet advertising expenditure**



Source: PricewaterhouseCoopers Global Entertainment and Media Outlook: 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook).

Note: Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

Figures released by ComScore in October 2010 show that 22% of mobile phone users in Japan watched television or video content on their mobile phones in June 2010, compared to 4.8% in the US and 5.2% in Europe<sup>80</sup>. This helps to explain why mobile is such an attractive proposition to advertisers in Japan.

**Figure 5.12 Mobile behaviour in Japan, USA and Europe, June 2010**

	Japan	USA	Europe
Used connected media (Browsed, Accessed Applications or Downloaded Content)	75.2%	43.7%	38.5%
Used browser	59.3%	34.0%	25.8%
Used application	42.3%	31.1%	24.9%
Watched TV and/or video on mobile phone	22.0%	4.8%	5.4%

Source: comScore MobiLens

Note: Europe denotes EU5 (UK, DE, FR, ES and IT) June 2010 Total Mobile Audience Age 13+ ([http://www.comscore.com/Press\\_Events/Press\\_Releases/2010/10/comScore\\_Release\\_First\\_Comparative\\_Report\\_on\\_Mobile\\_Usage\\_in\\_Japan\\_United\\_States\\_and\\_Europe](http://www.comscore.com/Press_Events/Press_Releases/2010/10/comScore_Release_First_Comparative_Report_on_Mobile_Usage_in_Japan_United_States_and_Europe)).

80

[http://www.comscore.com/Press\\_Events/Press\\_Releases/2010/10/comScore\\_Release\\_First\\_Comparative\\_Report\\_on\\_Mobile\\_Usage\\_in\\_Japan\\_United\\_States\\_and\\_Europe](http://www.comscore.com/Press_Events/Press_Releases/2010/10/comScore_Release_First_Comparative_Report_on_Mobile_Usage_in_Japan_United_States_and_Europe)

**...but the UK has also experienced rapid growth...**

Figure 5.13 demonstrates that on a per-capita basis Japan is still by far the largest market while the US falls into line with comparable countries. The UK has experienced rapid growth from a relatively high base, especially in 2009, partly due to the explosion in smartphone take-up and despite economically challenging conditions.

**Figure 5.13 Mobile internet advertising spend per head**



Source: PricewaterhouseCoopers Global Entertainment and Media Outlook: 2010-2014 @ [www.pwc.com/outlook](http://www.pwc.com/outlook).

Note: Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

# 5.2 International internet use and consumption of web-based content

## 5.2.1 Introduction

Access to and use of the internet are two key determinants of international consumers' engagement with internet and web-based content. This section examines some of the key metrics relating to internet access and use across our comparator countries and has the following structure:

- Section 5.2.2 considers the prevalence of fixed and mobile broadband access platforms;
- Section 5.2.3 explores global internet traffic composition and geography;
- Section 5.2.4 goes on to analyse the online audiences across several of our comparator countries;
- Section 5.2.5 looks at the devices consumers use to access internet and web-based content, and how this varies by age;
- Section 5.2.6 looks at the sites consumers are visiting online – and how they navigate to them;
- Section 5.2.7 examines what activities people are using their internet connections for, and looks in detail at one of the most popular – social networking; and
- finally, section 5.2.8 looks at internet use on mobile phones, and considers some of the new content they have popularised, such as mobile mapping and location-based services.

## Key findings

Highlights from this section include:

- **Total fixed broadband connections per 100 households is highest in the Netherlands.** The Netherlands had 85 broadband connections per 100 households at the end of 2009, partly due to historically high broadband availability and relatively high urbanity. Canada was next highest (80), followed by the US (71) and the UK (70). (Page 223).
- **Mobile broadband is both a substitute for and a complement to fixed connections.** In Italy 15% of internet users use both mobile and fixed broadband connections, and 13% just use mobile broadband, the highest of all our survey countries. In the UK the figures are 10% and 6% respectively. (Page 225).
- **Spain has the highest proportion of internet users aged under 35.** In Spain 49% of the online audience was aged under 35 in August 2010 – the highest proportion of any of our comparator countries. Italy had the next highest share for under-35s (42%), followed by the UK and the US (both 41%). (Page 229).
- **Internet access via desktop computers is lowest in the UK.** The UK had the lowest reported level of desktop use to access the internet of all the countries we

surveyed, with just 58% of internet users claiming that they access the internet in this way. By contrast, nearly three-quarters of US internet users (74%) claim to use a desktop to go online. (Page 231).

- **Social networking continues to grow at a fantastic rate, driven by high take-up among the younger population in all comparator countries.** Growth was highest in France (115%) and Italy (106%). The proportion of internet users using social networks is now 62% in the UK, 58% in France and 66% in Italy. (Page 238).
- **More than a third of UK internet users (37%) claim to have accessed the internet on their mobiles.** This is a similar number to users in France (37%) and the US (36%). Of our survey countries only Japan had higher take-up (70%) – driven by early 3G roll-out and historically high levels of use of the mobile internet (Page 248).

## 5.2.2 Internet platforms

### Total fixed broadband connections per 100 households is highest in the Netherlands

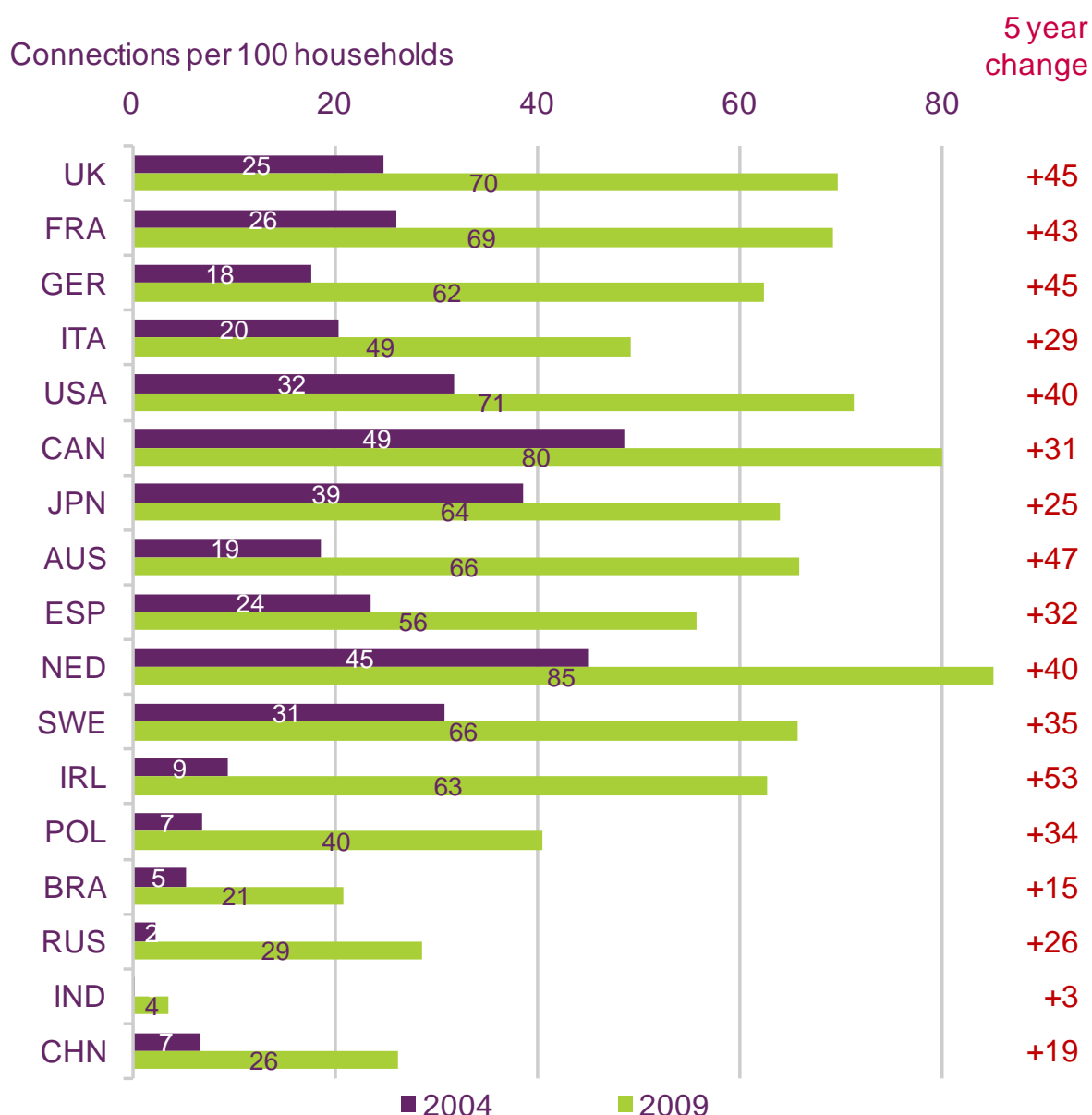
Five years ago none of our comparator countries averaged more than 50 fixed broadband connections per 100 households; today all of them except Italy, Poland and the BRIC countries do. Fixed broadband penetration is highest in the Netherlands (85 connections per 100 households), partly as a result of historical high availability of broadband in a relatively densely populated country with high levels of cable take-up. Canada had the next highest number of fixed broadband connections per 100 households (80). The UK (70 connections per 100 households) is among the leading countries for fixed broadband connections, in fourth place, just behind the US (71).

With the exception of India (three percentage points), all of our comparator countries have experienced significant growth over the past five years, ranging from 19 percentage points in China to 53 percentage points in Ireland. The growth in fixed broadband take-up in Ireland over the past few years can be attributed to rapidly falling prices and a general consumer boom (prior to 2009) along with a government initiative to encourage broadband network roll-out. The UK had the joint third-largest growth since 2004 (45 percentage points) alongside Germany but behind Ireland (53) and Australia (47).

Broadband connections have also become increasingly prevalent in emerging markets. Brazil has 21 connections per 100 households, China 26, and Russia 29. India lags behind the other BRIC countries, with four connections per 100 households.



**Figure 5.14 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.

**The US and Sweden have the largest number of mobile broadband subscribers per 100 households**

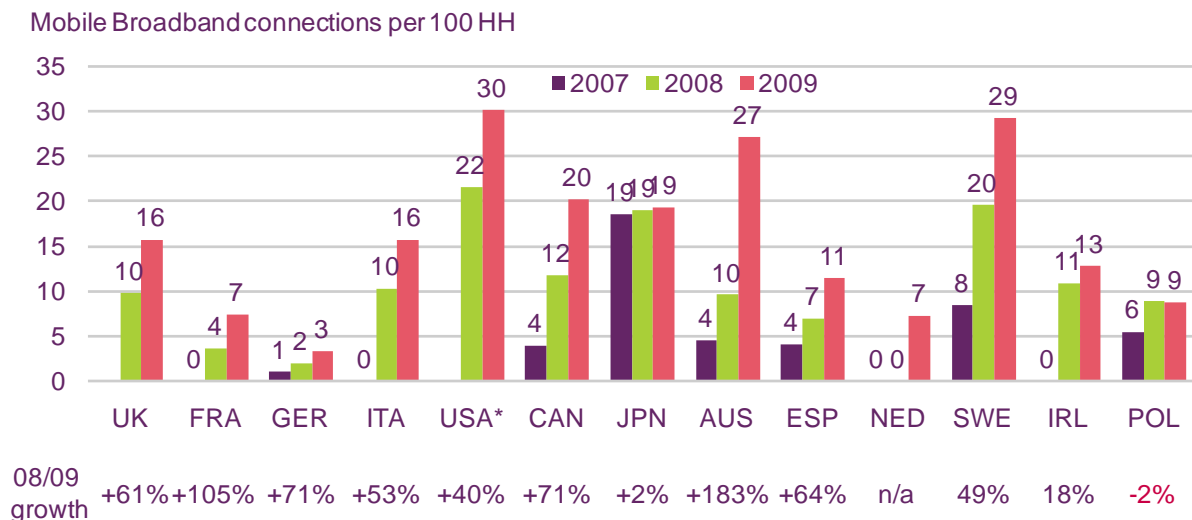
The roll-out of upgrades to 3G networks (such as HSPA and CDMA 2000 1xEV-DO) in recent years has facilitated the emergence of mobile broadband services and increased the data speeds that consumers can expect. These mobile broadband services (broadband provided using dongles, datacards or embedded laptops) can either be a complement to, or, for some people, a replacement for fixed broadband services.

Across our comparator countries the US and Sweden had the highest number of mobile broadband subscribers per 100 households (30 and 29 respectively), with Australia (27) following closely behind. In each of these countries early and extensive roll-out of fast data networks has played a part in driving take-up levels. It is worth noting also that the US has a

very large number of mobile-only households, with 29% of respondents to our consumer research claiming that they do not use any form of fixed telephony (see section 6.3.3).

In 2009 the UK had 16 mobile broadband subscribers per 100 households, putting it in joint fifth place alongside Italy and behind the US (30), Sweden (29), Australia (27) and Japan (19). With the exception of Sweden, the UK has the highest number of mobile broadband subscribers per 100 households of any of our European comparator countries.

**Figure 5.15 Mobile broadband subscribers 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.

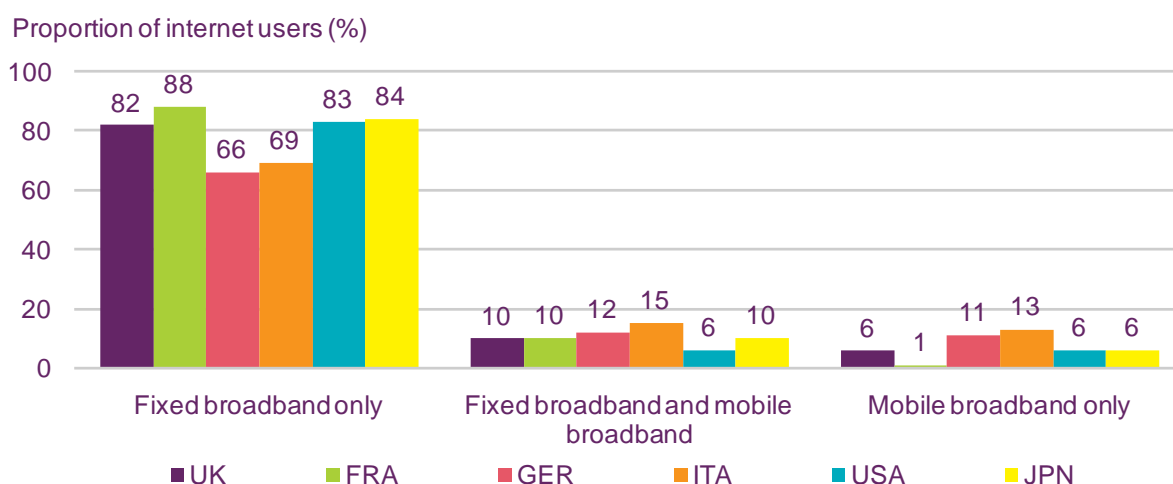
\*USA data are unavailable for 2007 due to a change in the way mobile wireless internet access service connections were reported during 2008.

### Mobile broadband is both a complement and a substitute to fixed broadband

Data from Ofcom consumer research among internet users in October 2010 suggests that mobile broadband can be both a complement to and a substitute for fixed broadband, although this varies across the comparator countries we looked at. Use of mobile broadband as a person's sole broadband connection was highest in Italy (13%), followed by Germany (11%), and was twice as high as in the UK (6%). France had the lowest proportion of mobile broadband-only homes, at just 1%.

The high take-up of mobile broadband in Italy is likely to be due to the high proportion of mobile-only homes (see section 6.3.3) and because mobile broadband services are relatively cheap (Section 2 shows that mobile broadband prices in Italy are the lowest among the six countries in the analysis). In Italy, 13% of internet users surveyed used mobile broadband as their only household connection, compared to just 1% in France.

**Figure 5.16 Take-up of home internet access platforms**



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q3. Which of the following do you have in your home?

### 5.2.3 Global internet traffic composition and geography

As the prevalence of internet access increases, and more and more applications and devices access the web, the amount of data being generated online across the globe is growing rapidly. This section looks first at the global split of web traffic by protocol, and then at which regions of the world are consuming the most data.

#### According to Cisco, video data is now the largest consumer of bandwidth around the world

Globally, the average broadband connection generates 14.9GB of Internet traffic per month, up from 11.4GB per month last year, an increase of 31%<sup>81</sup>.

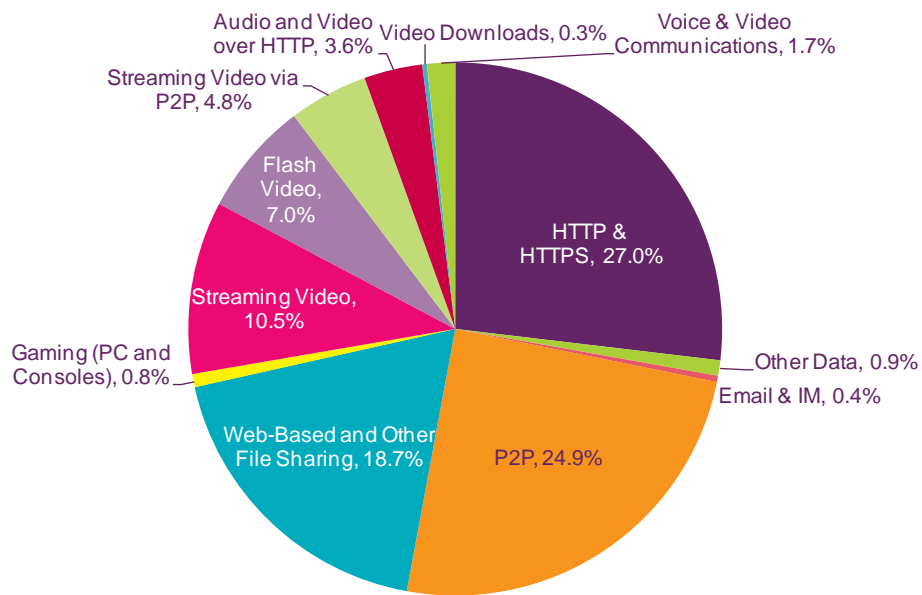
Online video (including streaming, flash, gaming, audio and video over http, video downloads and voice and video communications) now accounts for 28.7% of all global broadband traffic, overtaking peer-to-peer file-sharing (P2P; made up mainly of decentralised file sharing systems such as bitTorrent and edonkey) for the first time. Although P2P is still growing in absolute terms, rapid growth in video, visual networking and other advanced applications are contributing more to driving up overall internet traffic volumes.

Voice and video communications traffic is now six times higher than data communications traffic (email, instant messaging etc). Comparing Figure 5.17 and Figure 5.28 shows that, in terms of how people spend their time on the internet, email and data communication still outweighs video and voice by a considerable margin, but it is the much more data-hungry applications of video and voice that demand such high levels of bandwidth. ISPs are responding to this growth in demand by offering faster broadband connections. In November 2010, UK ISP Virgin Broadband began taking pre-orders for a 100Mbit/s service. KDDI in Japan has been offering a 1Gbit/s service since September 2008.

<sup>81</sup> Cisco Visual Networking Index: Usage Study

([http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/Cisco\\_VNI\\_Usage\\_WP.html](http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/Cisco_VNI_Usage_WP.html))

**Figure 5.17 Global broadband traffic, by application category**



Source: Cisco Visual Network Index Usage Study, Q3, 2010.

([http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/Cisco\\_VNI\\_Usage\\_WP.html](http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/Cisco_VNI_Usage_WP.html)).

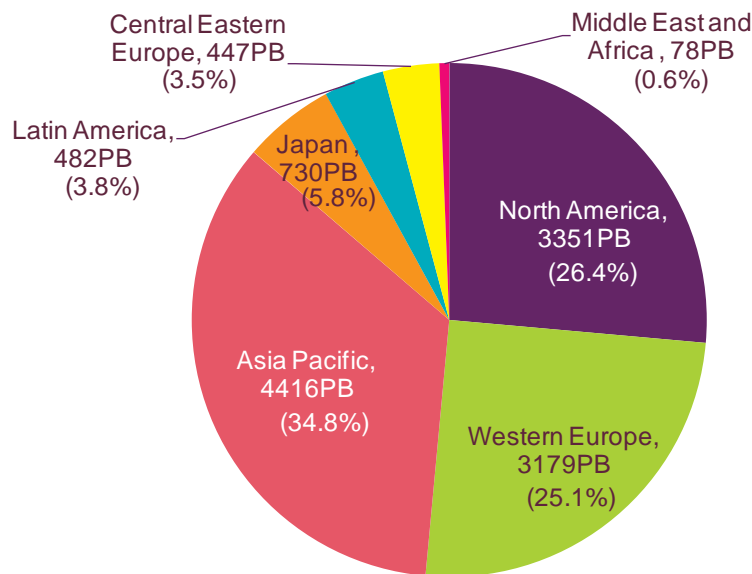
### Consumer broadband traffic around the world

In 2010 global consumer internet traffic grew by 42% year on year, from 8,930 to 12,694 petabytes<sup>82</sup>. Latin America experienced the greatest growth (62%) although this registers as only a 0.5% annual gain in its share of the overall figure. Asia Pacific currently has the greatest share; however, this is more a reflection of its population size, including India, China and Indonesia, than its level of technological advancement. By dividing the chart figures below by population sizes we can see that North America (approx. 9.5PB per million), Western Europe (7.4PB per million) and Japan (5.7PB per million) are the larger consumers of broadband data per head. The Middle East and Africa account for approximately 0.06PB per million<sup>83</sup>.

<sup>82</sup> Cisco VNI Index, June 2<sup>nd</sup> 2010. Note: PB denotes Petabyte, approximately equal to 1,024 Terabytes or 1.048 million Gigabytes.

<sup>83</sup> Regional populations based on UN demographics (<http://esa.un.org/unpp/p2k0data.asp>)

**Figure 5.18 Global consumer broadband consumption by region, 2010**



Source: Cisco Visual Networking Index Forecast, 2 June 2010  
([http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white\\_paper\\_c11-481360.pdf](http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-481360.pdf)).

Note: PB denotes petabyte, approximately equal to 1,024 terabytes or 1.048 million gigabytes.

#### 5.2.4 Online audiences

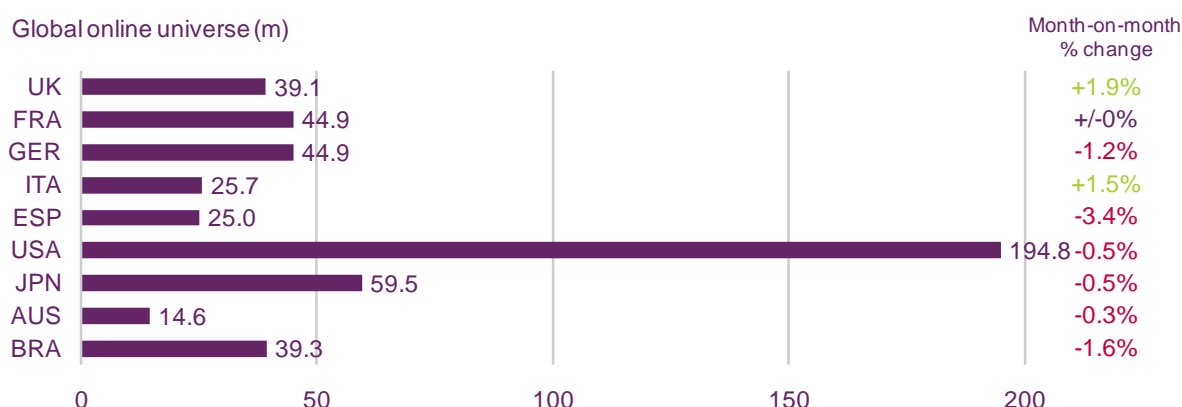
##### Nearly 500 million accessed the internet across nine of our comparator countries

The total internet audience (using a computer) across the nine countries for which we have data stood at just under half a billion people (488 million) in July 2010. Of these, 40% are in the US and 8% are in the UK, according to Nielsen data (Figure 5.19). Within Europe, France and Germany recorded the highest internet audiences (44.9 million); ahead of the UK (39.1 million). Apart from the UK and Italy, the sizes of online audiences in all the countries we looked at was flat, or saw a small month-on-month decline. This might be explained by seasonal variations, although increased mobile internet access may also be having a marginal effect.

For global context and comparison it is worth noting that the state-run Chinese Internet Network Information Center reports that as of 30 June 2010 there were 420 million internet users in China<sup>84</sup>.

<sup>84</sup> <http://www.cnnic.net.cn/en/index/00/index.htm>

**Figure 5.19 Global online universe, July 2010**



Source: The Nielsen Company, Jul 10 (Internet Applications Included, Home & Work).

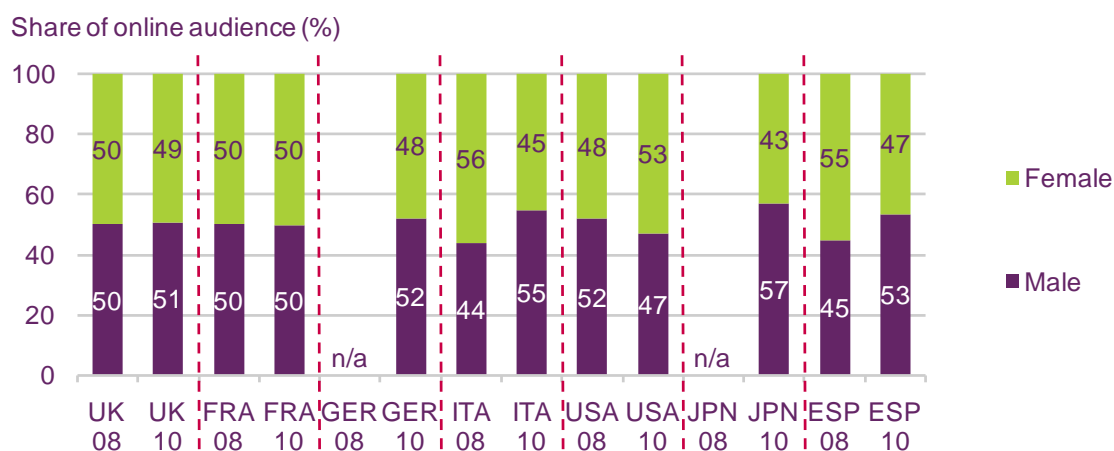
Note: Nielsen is investigating a decline in its internet use data around duration metrics and the potential impact of this on Unique Audience metrics. Consequently, until these investigations are concluded, Nielsen internet data for 2010 is likely to represent a lower bound and should be treated as indicative only.

### In most countries more men than women accessed the internet in August 2010

According to Nielsen, in August 2010 the proportion of internet users was split roughly equally between men and women in the UK (50:50) and France (51:49), while in Germany, Italy and Spain more men went online than women, accounting for between 52% and 55% of the total unique audience. The US was the only nation where the majority of internet users (53%) were women. The biggest imbalance between male and female users was in Japan, where men accounted for 57% of the online audience in August 2010, despite accounting for only 48.7% of the Japanese population, according to the CIA World Factbook.<sup>85</sup>

Italy, the US and Spain all saw substantial shifts in the gender split of their unique online audiences between August 2008 and August 2010. While these may reflect underlying changes in the internet universe in these countries, some of the differences could also be down to temporary changes in browsing habits (for example, internet reach may be influenced by current affairs and sports events).

**Figure 5.20 Unique online audience, by gender, August 2008 and August 2010**



Source: The Nielsen Company, August 2008 and August 2010, home and work panel, applications included.

Note: Nielsen is investigating a decline in its internet use data around duration metrics and the

<sup>85</sup> <https://www.cia.gov/library/publications/the-world-factbook/geos/ja.html>

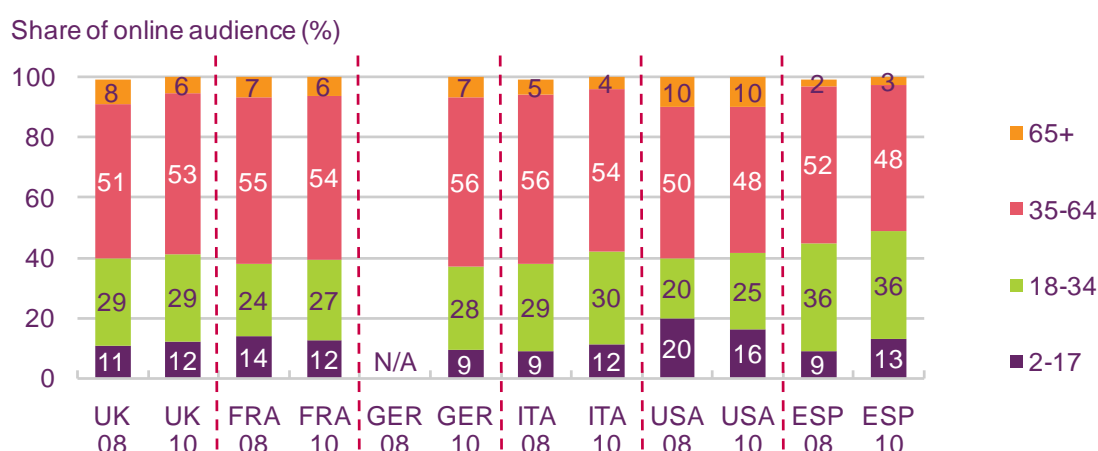
potential impact of this on Unique Audience metrics. Consequently, until these investigations are concluded, Nielsen internet data for 2010 is likely to represent a lower bound and should be treated as indicative only

### Spain has the highest proportion of internet users aged under 35

In Spain 49% of the online audience was aged under 35 in August 2010 – the highest proportion of any of our comparator countries where data are available and a four percentage point increase since 2008, driven largely by growth among under-18s. Italy had the next highest share for under-35s (42%), followed by the UK and the US (both 41%). The US had both the largest share of users aged under 18 (16%) and over 65 (10%).

It should be noted that the data in Figure 5.21 will partly reflect the differing age profiles of the populations in each country.

**Figure 5.21 Unique online audience, by age, August 2008 and August 2010**



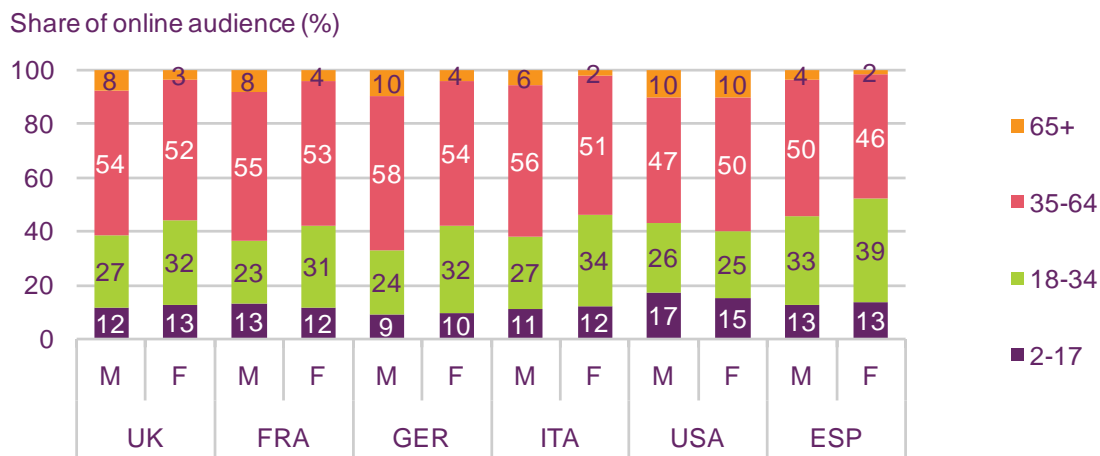
Source: The Nielsen Company, August 2008 and August 2010, home and work panel, applications included.

Note: Nielsen is investigating a decline in its internet use data around duration metrics and the potential impact of this on Unique Audience metrics. Consequently, until these investigations are concluded, Nielsen internet data for 2010 is likely to represent a lower bound and should be treated as indicative only.

### Female internet users are significantly younger than male internet users

The 35-64 age group makes up the majority of online audiences (both male and female) across all our comparator countries, with the exception of the US and Spain where the number falls between 46% and 50%. As this group contains the largest span of people of a working age, this is unsurprising. Across all our comparator countries other than the US the female user audience is younger than the male audience, with a higher percentage of female users being aged 18-34. There is little difference between the genders in each country for those of school age, the greatest difference (two percentage points) being in the US where 17% of the male audience and 15% of the female audience are under 18. With the exception of the US, female internet users are also less likely than males to be aged 65+.

**Figure 5.22 Unique online audience, by age and gender, August 2010**



Source: The Nielsen Company, August 2010, home and work panel, applications included.  
 Note: Nielsen is investigating a decline in its internet use data around duration metrics and the potential impact of this on Unique Audience metrics. Consequently, until these investigations are concluded, Nielsen internet data for 2010 is likely to represent a lower bound and should be treated as indicative only.

### 5.2.5 Devices

#### Internet access via desktop computers is lowest in the UK

The devices consumers use to access the internet influence how they access, and engage with, internet and web-based content. Figure 5.23 shows how consumers' use of these devices varies across our main comparator countries.

Across most of the countries we looked at, the desktop computer is still the most popular device used to access the internet, followed by the laptop. But in the UK and Italy this position is reversed, and laptops are the most popular device used to access the internet (used by 69% and 72% of internet users respectively). The UK had the lowest reported level of desktop use to access the internet, with just 58% of internet users claiming they access the internet in this way. By contrast, nearly three-quarters of US internet users (74%) claim to use a desktop to go online.

There are also signs that consumers are beginning to access the internet on devices other than desktop or laptop computers. Mobile phones are particularly popular as internet access devices in Japan, where 43% of people claim to use them in this way. This type of use is also high in the UK (29%) and the US (27%), partly due to high smartphone penetration (see section 5.1.2).

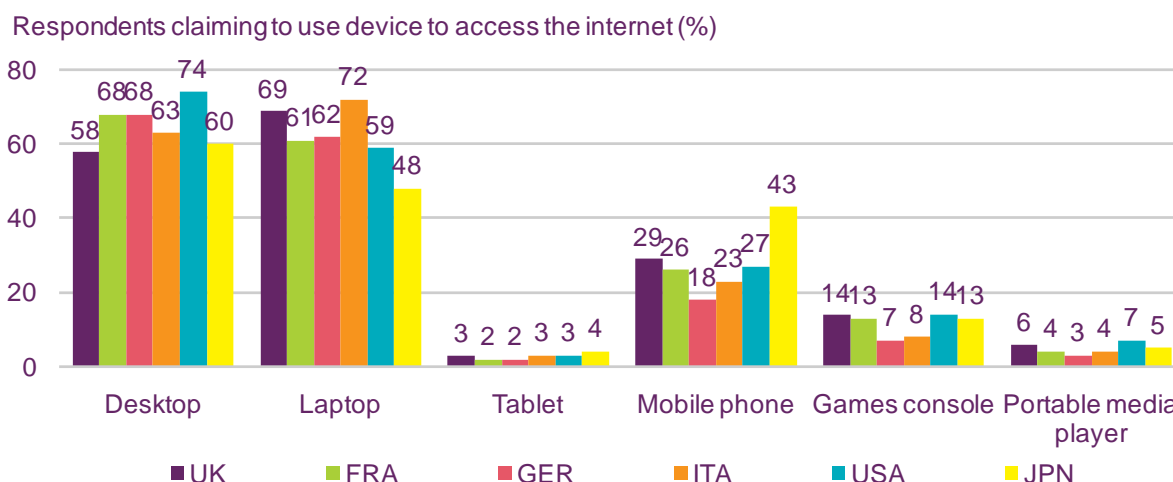
Games consoles also appear to have found a niche as devices used to access the internet. Use of these devices in this way is highest in the US and UK (14% of internet users), closely followed by France and Japan (both 13% of internet users). This reflects the growing capabilities of games consoles such as the Xbox, Playstation and Wii.

At this stage relatively few people (between 2% and 4% across our survey countries) claim to be using tablet computers such as the iPad or Samsung Galaxy Tab. This reflects the relatively early stage of the market for this type of device. But there are indications that their popularity will grow: in June 2010 Apple announced that it had sold three million iPads in just



80 days,<sup>86</sup> and overall tablet sales are set to increase as other manufacturers launch similar devices.

**Figure 5.23 Devices used to access the internet**



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q8. Which of the following devices do you use to access the internet at home (e.g. visiting web sites, emailing, online gaming, downloading files)?

### Laptop vs. desktop ratio between young and old is largest in the UK

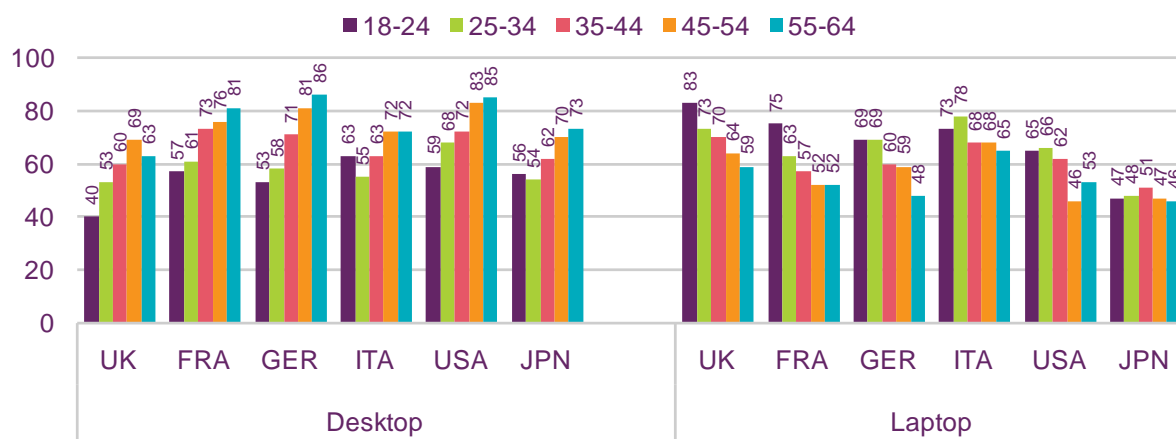
In most of the countries we surveyed, younger people were more likely to use a laptop to access the internet, and less likely to use a desktop, than older people. The exception to this was Japan, where using a laptop to go online was similar across all age groups, although in common with other countries, older people were more likely to use a desktop (Figure 5.24).

In the UK, adults aged under 45 were more likely to use a laptop to access the internet than a desktop, a pattern also seen in Italy. The UK had the largest contrast between laptop and desktop use among young people. Over twice as many internet users aged 18-24 use a laptop to access the internet as use a desktop (83% compared to 40%).

<sup>86</sup> <http://www.apple.com/pr/library/2010/06/22ipad.html>

**Figure 5.24 Devices used to access the internet, by age**

Respondents claiming to use device to access the internet (%)



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q8. Which of the following devices do you use to access the internet at home (e.g. visiting web sites, emailing, online gaming, downloading files)?

## 5.2.6 Popular international web brands, portals and searches

### So where are we going on the web?

While devices play an important part in how consumers access the web, the sites they visit and how they navigate to them help determine the type of content they consume. Figure 5.25 shows the top ten most-visited websites in each of our comparator countries. There is no change at the top since the 2008 report; Google remains number one in six out of seven countries and Yahoo! maintains its primacy in Japan. Facebook's impact is visible almost everywhere as it moves into the top three in five markets. YouTube also moved up the rankings in every country. In the UK it has narrowed the gap with the BBC, perhaps underlining the growth and importance of user-generated content as well as the increasing range and volume of professionally-produced content available on YouTube.

MSN/Windows Live/Bing maintained its position globally but Microsoft (i.e. Microsoft's software sites excluding MSN, Bing and WindowsLive services) dropped slightly in all markets except Japan.

**Figure 5.25 Top ten website brands per country**

	UK	FRA	GER	ITA	USA	JPN	ESP
1	Google -	Google -	Google -	Google -	Google -	Yahoo! -	Google -
2	MSN/WindowsLive/ Bing -	MSN/WindowsLive/ Bing -	eBay+1	Facebook (new)	Yahoo! -	Google -	MSN/WindowsLive/ Bing -
3	Facebook +4	Facebook (new)	Microsoft -1	MSN/WindowsLive/ Bing -1	Facebook (new)	FC2 +5	Facebook (new)
4	Yahoo! -	Microsoft -1	MSN/WindowsLive/ Bing +1	YouTube +4	MSN/WindowsLive/ Bing -1	Rakuten -1	YouTube +1
5	BBC -2	Orange -1	YouTube +5	Virgilio -1	YouTube +1	Microsoft +1	Microsoft -2
6	eBay -	YouTube (new)	Wikipedia -	Yahoo! -1	Microsoft -2	Wikipedia +3	Yahoo! -2
7	YouTube +1	Yahoo! -1	Amazon -	Microsoft -4	AOL Media Network -2	goo (new)	Blogger -1
8	Microsoft -3	Free -3	T-Online -	Libero -2	Apple +2	YouTube (new)	Wikipedia -
9	Amazon -	PagesJaunes -1	Facebook (new)	Wikipedia -	Ask Search Network (new)	"@nifty" (new)	Terra -2
10	Wikipedia (new)	Wikipedia (new)	RTL Network (new)	Blogger (new)	Wikipedia -1	Ameba (new)	Orange -1

Source: The Nielsen Company, August 2010.

Note: includes all internet applications. '+' or '-' denotes change in rank since 2008 ICMR publication.

### ...and what are we looking for?

Clearly the internet is evolving into a place where people meet and socialise in addition to being a repository of information and a source of entertainment. The number one Google search term in every country except Japan, Brazil, Russia and India is a social network, and in those four countries social networking is in the top three. The other search term of note is YouTube, now in the top three for 13 of our 17 comparator countries. With its added functionality such as subscribing to other members' channels, 'friending', messaging and video response, YouTube shows many of the characteristics which could classify it as a social network in its own right.

**Figure 5.26 Most searched terms on Google in the last 12 months**

Country	1 <sup>ST</sup>	2 <sup>ND</sup>	3 <sup>RD</sup>	Largest increase
UK	facebook	bbc	youtube	4od
FRA	facebook	youtube	bon coin (classifieds)	facebook.fr
GER	facebook	youtube	ebay	Wm (World Cup)
ITA	facebook	youtube	Libero (portal)	megavideo
USA	facebook	youtube	yahoo	ipad
CAN	facebook	youtube	lyrics	world cup
JPN	yahoo	youtube	facebook	ipad
POL	nasza	Gry (games)	nasza klasa (our class)	nk.pl
ESP	facebook	youtube	Tuenti (social network)	facebook en español
NED	Hyves (social network)	online	youtube	youtube.nl
SWE	facebook	youtube	google	facebook.se
IRE	facebook	youtube	bebo	rte player
AUS	facebook	games	youtube	ipad
BRA	Jogos (games)	Orkut (social network)	youtube	facebook
RUS	Скачать (download)	Фото (photo)	в контакте (in contact)	naomi watts
IND	India	songs	facebook	facebook login
CHN	Qq (social network)	games	baidu	dnf1100

Source: Google Insights Search Tool, 27 Sept '10, 11:20GMT

Note: Google's homepage is often used as a general purpose gateway when surfing the internet so in many cases the user already knows precisely what they are looking for and uses a search term as a shortcut to an already familiar webpage.

## 5.2.7 Principal internet uses across comparator countries

### So what are we doing online?

Our international survey research found that across our key comparator countries there was little difference in the main reasons why consumers use the internet. In the UK, Germany, the US and Japan the three most commonly-cited reasons were identical – email, shopping and banking. Email and shopping were the most popular activities in France and Italy too, although in these countries banking was pipped for third spot by instant messaging and social networking respectively.

In addition to asking why they ever use the internet, we asked consumers what activities they undertake online on at least a weekly basis. Email remains the most popular activity, with around nine in ten people in each country claiming to do this on a weekly basis. But there was more variation in the second and third most-commonly cited weekly activities, with social networking, banking and instant messaging occupying the second and third slots in most countries. Japan was the major outlier – it was the only country where watching video clips and shopping are among the top three most popular weekly online activities.

**Figure 5.27 Main reason for using the internet**

	Ever			Weekly		
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
UK	Accessing email (94%)	Shopping (81%)	Banking (71%)	Accessing email (89%)	Social Networking (56%)	Banking (55%)
FRA	Accessing email (94%)	Shopping (76%)	Instant Messaging (65%)	Accessing email (90%)	Instant Messaging (50%)	Social Networking (48%)
GER	Accessing email (93%)	Shopping (79%)	Banking (72%)	Accessing email (91%)	Banking (57%)	Social Networking (46%)
ITA	Accessing email (92%)	Shopping (68%)	Social Networking (66%)	Accessing email (87%)	Social Networking (57%)	Instant Messaging (39%)
USA	Accessing email (94%)	Shopping (74%)	Banking (68%)	Accessing email (90%)	Social Networking (57%)	Banking (53%)
JPN	Accessing email (90%)	Shopping (87%)	Banking (69%)	Accessing email (87%)	Watching video clips (32%)	Shopping (27%)

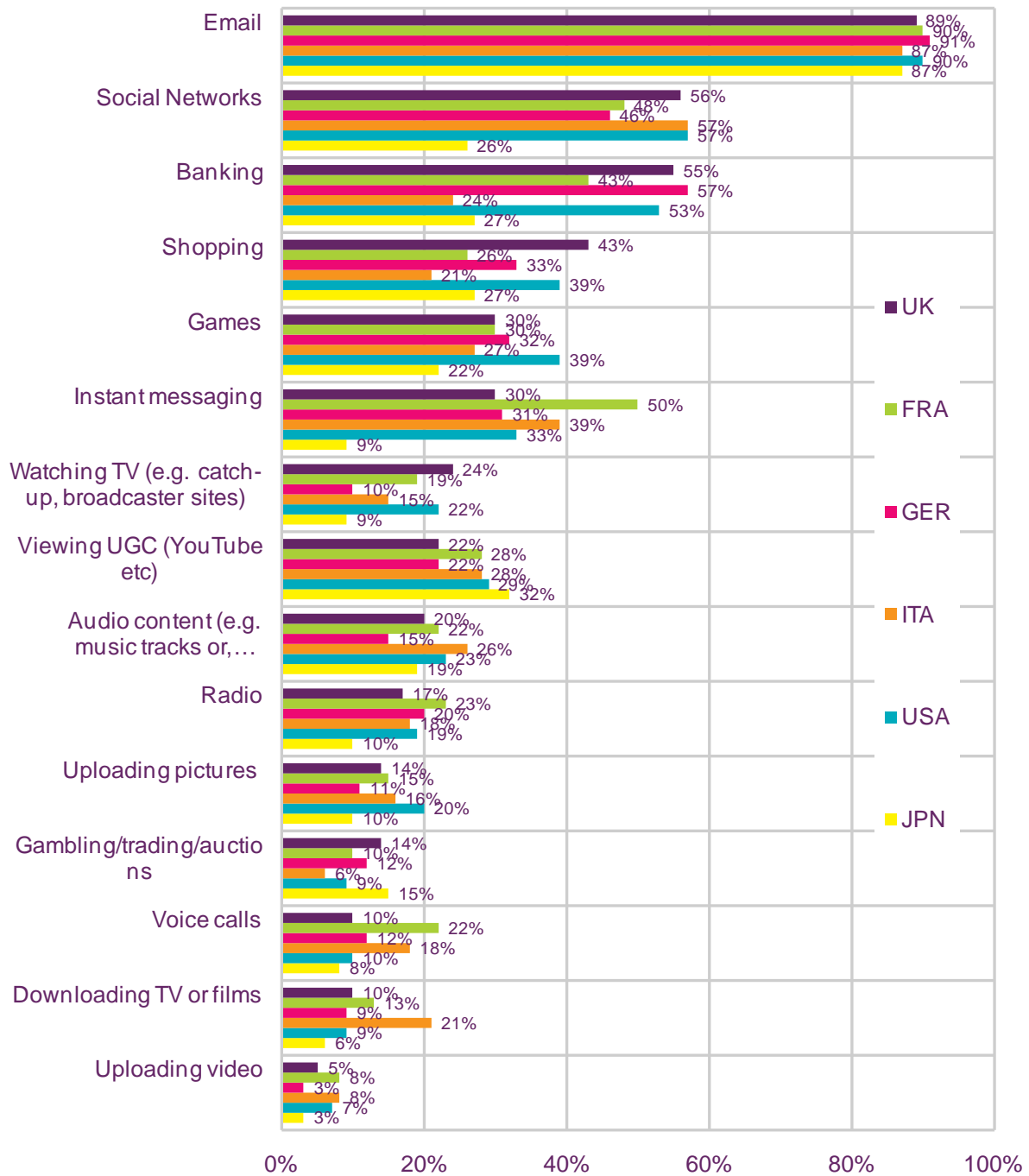
Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q9. Which, if any, of the following activities do you use your home internet connection for?

Beyond the most popular activities discussed above, Figure 5.28 shows the full range of activities for which consumers in our survey countries use their home internet connections on a weekly basis. The UK leads the way, albeit by small margins, in shopping and watching TV online (perhaps owing to the success and high visibility of the BBC iPlayer). Playing games online is highest in the US, with almost 40% of internet users claiming to use their home internet connection to do this. The high take-up of voice calling in France is due to the popularity of triple-play bundling (internet/VoIP/IPTV) offered over 'naked DSL' (a DSL broadband connection without an accompanying analogue landline) offered by all the major competitors in the French marketplace.

**Figure 5.28 Use of home internet connection**



Source: Ofcom consumer research, October 2010. Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

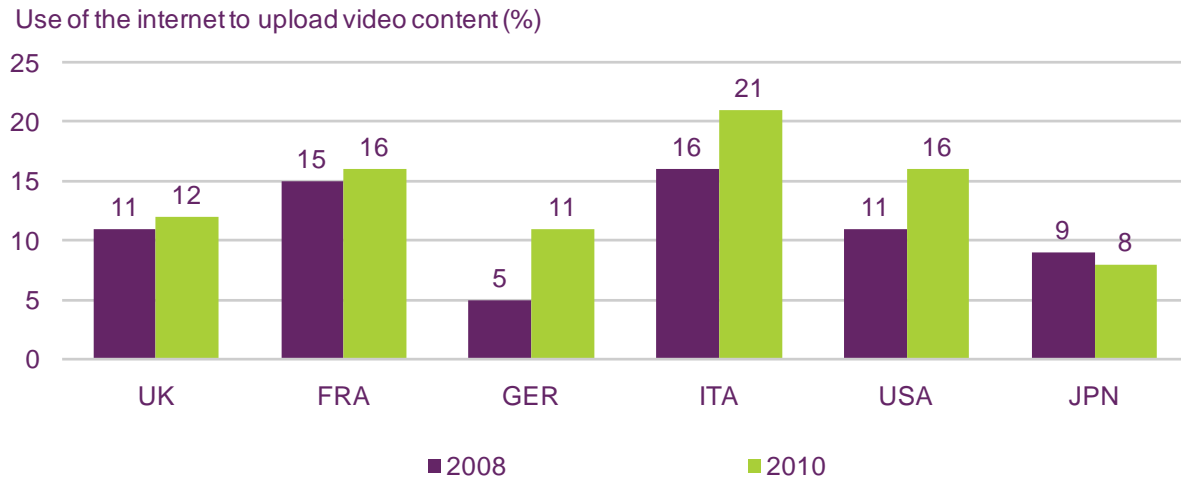
Q10: Which, if any, of the following activities do you use your home internet connection for at least once a week?

**Users are generating more of their own content than ever before...**

The uploading and sharing of new content is increasing. Taking video content as an example, we can see that in the UK in 2009 12% of internet users were uploading video

content, compared with 11% the previous year. In other countries such as Germany, Italy and the US this growth has been exaggerated, as video-sharing sites and social networking encourage people to share both previously recorded and homemade video material with their online friends.

**Figure 5.29 Respondents uploading video content via internet connection**



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q9: Which, if any, of the following activities do you use your home internet connection for?

### Social networks continue to grow in both audience and sophistication

Social networking sites allow people to interact using text, images, video and games. In recent years their emergence and rapid growth has changed the way people approach the internet, and many now see social networking as an important part of both their social and business lives. In a relatively short period the industry has morphed from small niche operators providing communities for special interest or location-specific groups into global networks used by many to keep in touch with family and friends and to network with colleagues and clients. For many it also provides an alternative to email as a means of communication with other individuals online.

Social networking has established itself as a key advertising outlet for many brands (both global and local). Many in the industry also see it as a valuable source of information to support marketing campaigns and to target ads based on users' preferences and behaviours, although some concerns have been raised about these practices by privacy organisations.

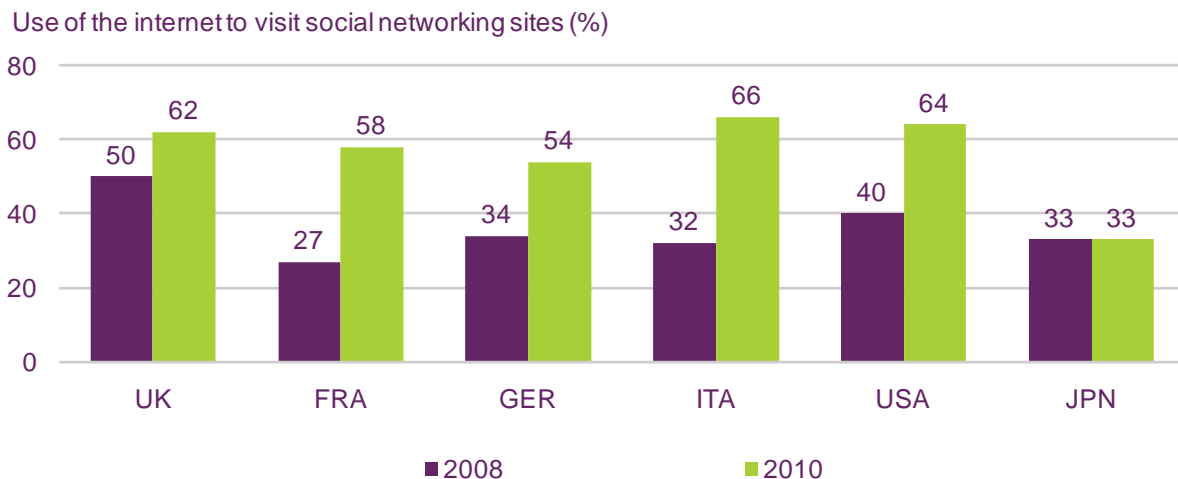
Each year the functionality of these services improves and diversifies as they seek to retain and grow audiences. Social networks are reaching out beyond the boundaries of their home sites and being integrated into other websites in the form of application programming interfaces (APIs) such as the 'Tweet This' button from Twitter which allows users of other sites to link content to their social network account. These activities help to increase traffic and build brand awareness. Monetisation activities can follow through channels such as advertising and gaming.

### Social networking continues to grow across Europe and North America.

Ofcom survey data (Figure 5.30) demonstrate growth in social networking across all our comparator markets since 2008, with the exception of Japan. The greatest increases were in

France (+115%) and Italy (+106%). The lack of growth in Japan may be a result of well-established alternative means of social communication, such as instant messaging and email via mobile phones, and lower use of PCs and laptops to access the internet (see Figure 5.23). The relatively modest growth and the high 2008 figure for the UK may demonstrate more maturity in the market as Facebook, by far the largest site in terms of membership numbers, has been available in English for four years now as opposed to two years for most other languages. In November 2010, Facebook claimed over 500 million members with the fastest growing demographic being the over-35s<sup>87</sup>.

**Figure 5.30 Use of the internet to visit social network sites**



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q9: Which, if any, of the following activities do you use your home internet connection for?

### The US provides the greatest numbers but Australians spend the most time

Since the first iterations of many popular sites came out of the US, it is perhaps unsurprising that the number of US visitors to social networking sites is much greater than in any other country (Figure 5.31). As Figure 5.32 shows however, relative take-up in the US is in reality very close to the average – 74%, exactly in line with the UK.

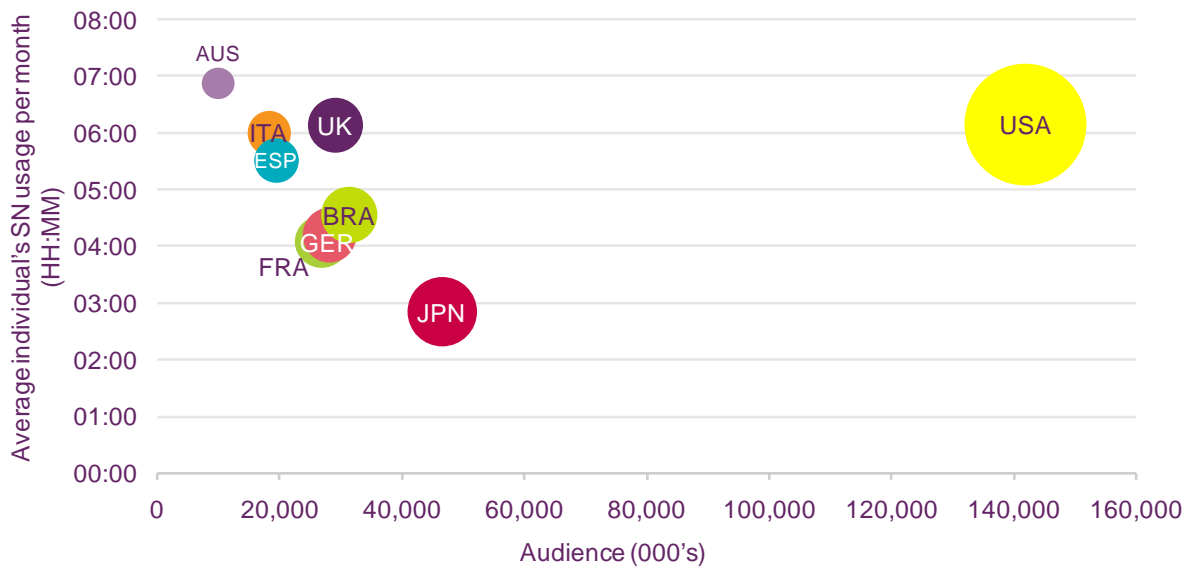
In terms of average time spent using social networking sites, of our comparator countries the three nations with the greatest use all have English as their first language, with Australia averaging more than seven hours per month. This could be because English-language sites are some of the most developed, as a result of being among the earliest to launch. Alternatively it may be a network effect: a common language driving take-up increases the likelihood of individuals making social connections and creates a richer, broader source of uploaded material to engage the audience using that language.

At the other end of the time-spent scale, users in Japan averaged only 2 hours 50 minutes per month on social networking sites. There may be a number of reasons for this. Blogging and networked game playing are both popular in Japan, as is the use of email on mobile devices, and these activities may compete with social networking for users' time. Consumers in Japan may also prefer to use their mobile phone, rather than a computer, for social networking. Mixi, the most popular social network in Japan, requires ownership of a Japan-registered mobile phone, and mobile social networking reach is equal to the US (Figure 5.37).

<sup>87</sup> <http://www.facebook.com/adsmarketing/#!/adsmarketing/index.php?sk=targeting>



**Figure 5.31 Monthly unique audience visiting social network sites**



Source: The Nielsen Company, December 2009.

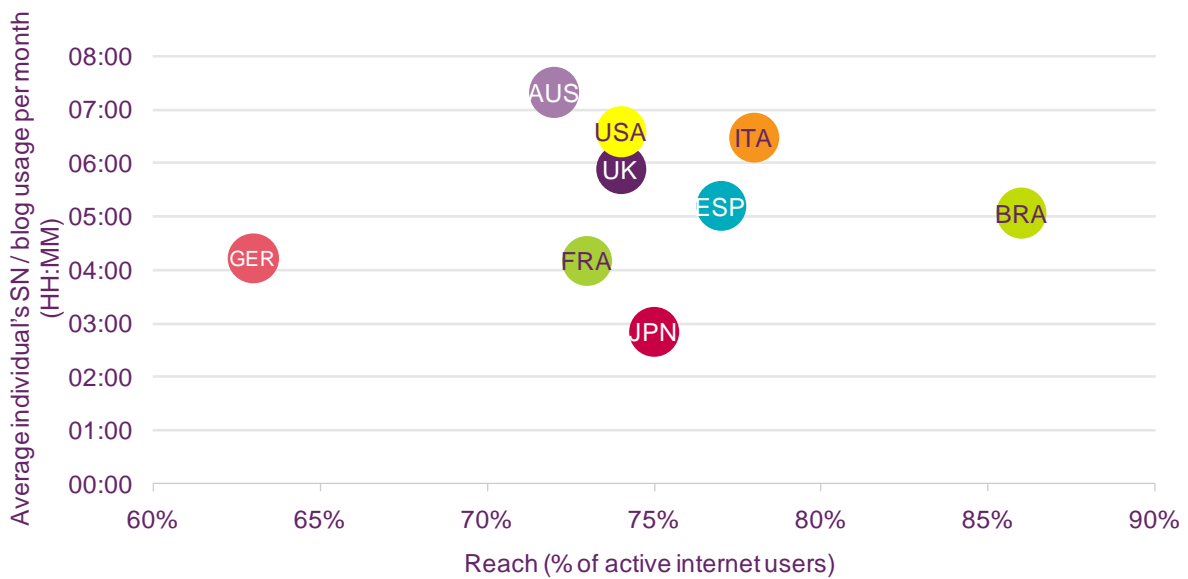
Note: Nielsen is investigating a decline in its internet use data around duration metrics and the potential impact of this on Unique Audience metrics. Consequently, until these investigations are concluded, Nielsen internet data for 2010 is likely to represent a lower bound and should be treated as indicative only.

Figure 5.32 gives a one-month snapshot of the proportion of active internet users (rather than population) who visit social networks or blogging websites. The UK's position reflects the general average, with a 74% reach and just under six hours per month average use. Only Brazil and Germany vary greatly from this average reach. While 18-34 year olds in Germany embrace social networking at much the same rate as our other comparator countries, the relatively low take-up among those aged 35 and over lowers overall reach. In Brazil, an emerging market, the high instance of social networking is driven by the relatively young average age of the online audience. Figure 5.32 demonstrates that the majority of internet users in many of our comparator countries are over 35, whereas new data from comScore suggests that in Brazil in 2010 68% of internet users are aged 34 or below<sup>88</sup>.

88

[http://www.comscore.com/Press\\_Events/Press\\_Releases/2010/6/comScore\\_Expands\\_Capabilities\\_in\\_Brazil](http://www.comscore.com/Press_Events/Press_Releases/2010/6/comScore_Expands_Capabilities_in_Brazil)

**Figure 5.32 Reach and use of social networking and blogging sites, by country**



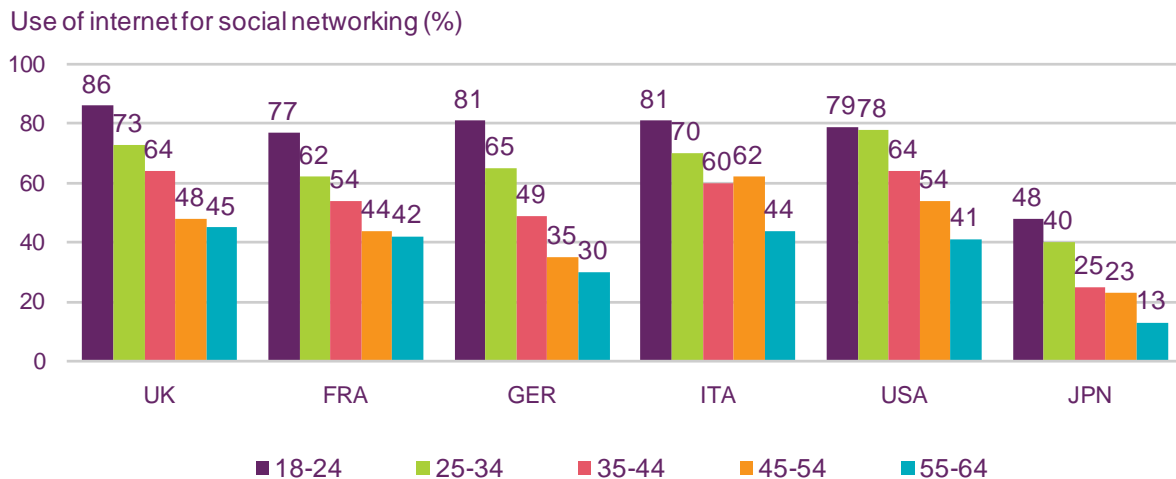
Source: The Nielsen Company, April 2010. Home and work data.

Note: Nielsen is investigating a decline in its internet use data around duration metrics and the potential impact of this on Unique Audience metrics. Consequently, until these investigations are concluded, Nielsen internet data for 2010 is likely to represent a lower bound and should be treated as indicative only.

### **In the UK more than four in five 18 to 24 year olds are social networkers**

In all the markets we surveyed, the highest take-up of social networking was in the 18-24 age group; UK young adults had the highest take-up, at 86%. Take-up decreases with age across all markets, but there are two anomalies: US residents aged 25 to 34 have an almost equal take-up rate as those under 25, perhaps partly as a result of Facebook originally being available only to those with a US educational email address (.edu) prior to 2006 and the first iterations of US networks such as MySpace and Bebo targeting younger audiences. In Italy, 45 to 54 year olds were the only group to outnumber a younger group. Take-up in Japan is relatively low, perhaps for the reasons previously discussed (see Figure 5.30).

**Figure 5.33 Use of the internet for social networking, by age**



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q9: Which, if any, of the following activities do you use your home internet connection for?

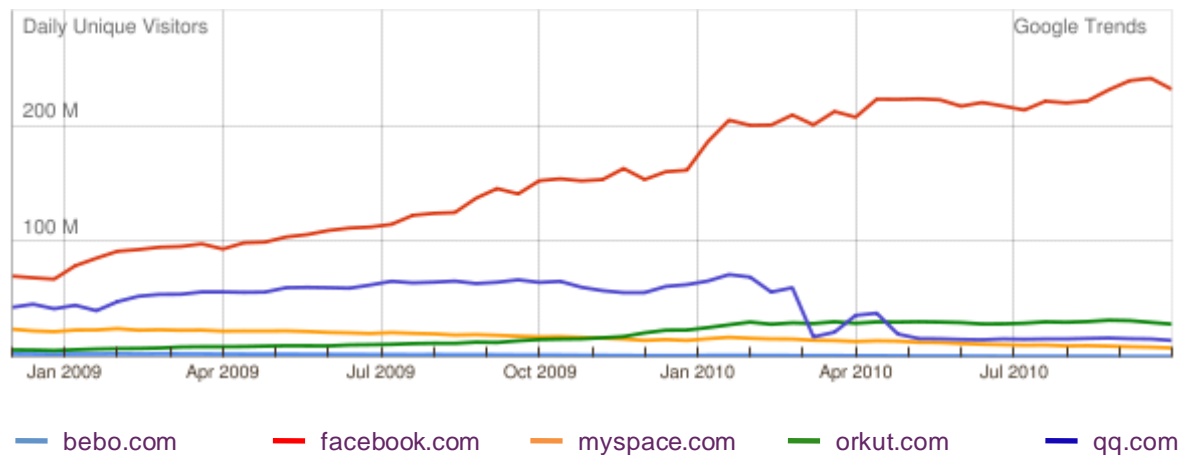
### Facebook is the largest player in the English speaking world, but there are many alternatives

To much of the English-speaking world it may appear that Facebook has become ubiquitous. But the global perspective is more complex. Google trend analysis<sup>89</sup> of our comparator countries shows that local social networking sites generate more traffic than Facebook in Brazil, China, Japan, the Netherlands and Russia. With the exception of the Netherlands, none of these countries has a notably high level of English speaking. By being first to market in their own territories, these social networks have managed to reach a critical mass, capturing a substantial market share before Facebook came on the scene.

Social networks are scale businesses and clearly benefit from network effects. While this may tend to discourage large numbers of people from switching networks, it has happened. According to the same Google data trending, in Germany in November 2008 (the earliest trending data available) StudiVZ traffic outnumbered Facebook by three to one, but by September 2010 this had reversed - to four to one in Facebook's favour. It is possible that Facebook itself is experiencing this 'winner takes all' phenomenon on a slower global scale as visits to globally established competitor sites such as MySpace and Bebo diminish.

<sup>89</sup> <http://trends.google.com> checked 20th October 2010. Analysis provides number of unique daily visitors to each website.

**Figure 5.34 Daily unique visitors to global social network sites, Jan 2009 to Oct 2010**



Source: <http://trends.google.com> checked 21st October 2010

Note: Qq.com is used almost exclusively in China.

### Brazil goes it alone

Like many nations, Brazil has embraced Facebook, but also has the interesting phenomenon of Orkut, a social network with particular traction in Brazil, which is home to 50.6% of all Orkut members<sup>90</sup>. This social network was developed by Google and was originally accessible only by invitation from current members. In a rare example of English being ousted by another language on the internet, Portuguese was established as the first language of most users when the invitation system went viral in Brazil. Many English speakers stopped using it, switching to alternatives. In August 2008 Google underlined the importance of the country to Orkut when it announced that the administration of the site would move from the US to Belo Horizonte in Brazil. Orkut's popularity shows no sign of abating; unique daily visitors continue to outnumber Facebook at a ratio of five to one<sup>91</sup>.

### Italy embraces Facebook

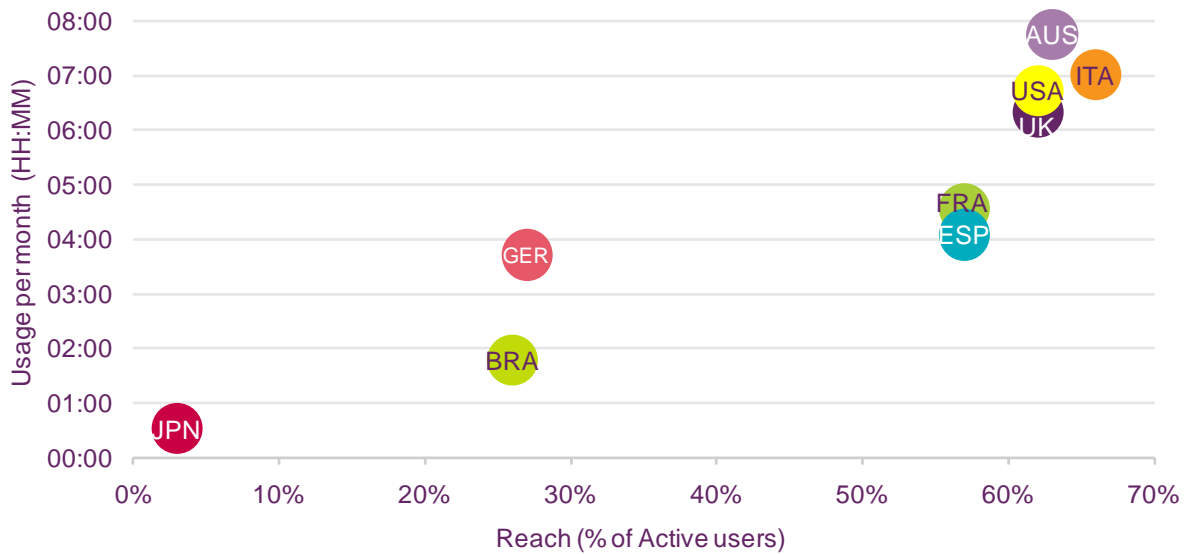
In terms of time spent and reach, consumers in the UK are in line with consumers in other English-speaking countries, spending the most time on Facebook. A large amount of user-generated content is in English and it was the first language Facebook rolled out to the public in 2006; others followed in 2008. As we have seen, Japan (Mixi) and Brazil (Orkut) have established local alternatives to Facebook, possibly explaining the relatively low reach of Facebook in these places.

Facebook also has a relatively low reach in Germany. One reason for this may be that many consumers in Germany migrated to Facebook from the local alternative (StudiVZ) at a later stage than consumers in most non-English speaking countries. By contrast, Italy's high Facebook take-up may in part be explained by a lack of a large-scale local alternative. Relatively large local alternatives exist both in Spain (Tuenti), and in France (Skyrock).

<sup>90</sup> <http://www.orkut.com> displays demographics to all members. Correct as of 20th October 2010. (20.4% of Orkut's membership is in India, the site's second largest market)

<sup>91</sup> <http://trends.google.com> checked 20th October 2010. Analysis provides number of unique daily visitors to each website

**Figure 5.35 Facebook reach and use, by country**



Source: The Nielsen Company, April 2010. Home and work data.  
 Note: Figures do not include mobile phone use. Nielsen is investigating a decline in its internet use data around duration metrics and the potential impact of this on Unique Audience metrics. Consequently, until these investigations are concluded, Nielsen internet data for 2010 is likely to represent a lower bound and should be treated as indicative only.

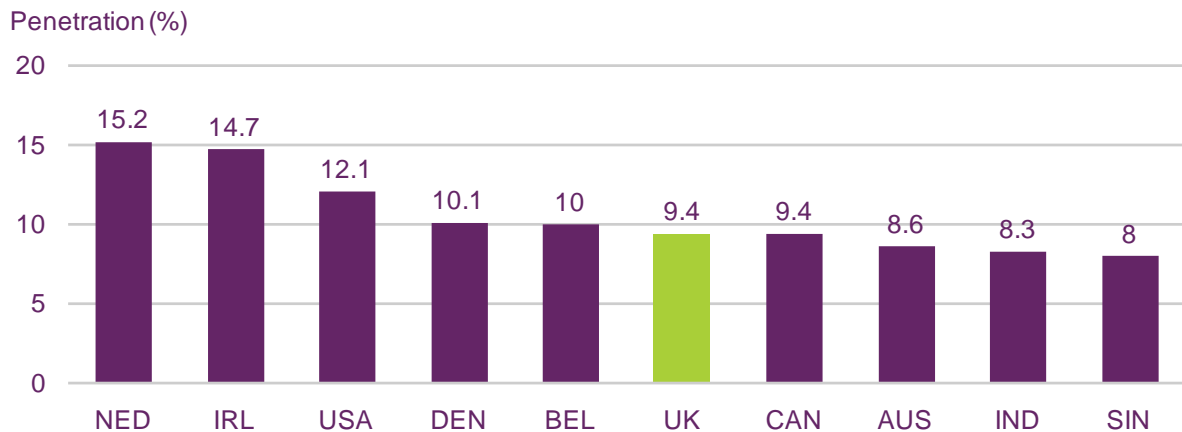
**The Netherlands and Ireland have the highest proportion of LinkedIn users**

Among business networking sites, LinkedIn is the global market leader in terms of subscribers. Figure 5.36 demonstrates the top ten countries for LinkedIn penetration (some of which are not main comparator countries in this report). The high penetration in smaller northern European markets, with high levels of tertiary education and English, may be indicative of an educated workforce looking beyond national boundaries to build business and professional relationships. There are internal market alternatives such as VIADEO in France and Xing in Germany which both have a greater presence than LinkedIn in their home territories but have limited presence elsewhere.

Looking beyond Europe and the English-speaking world, Sonico, focused primarily on Latin America and Spain, provides a good example of a converging social and professional network. Originating in Argentina in 2007, Sonico offers members both personal and professional networking facilities, the two co-existing independently of one another under one login. Currently available in Spanish, Portuguese and English, as of October 2009 Sonico claims membership of over 40 million<sup>92</sup>.

<sup>92</sup> [http://www.sonico.com//publico/sonico\\_corporate.php?step=5](http://www.sonico.com//publico/sonico_corporate.php?step=5)

**Figure 5.36 LinkedIn web penetration, top ten countries**

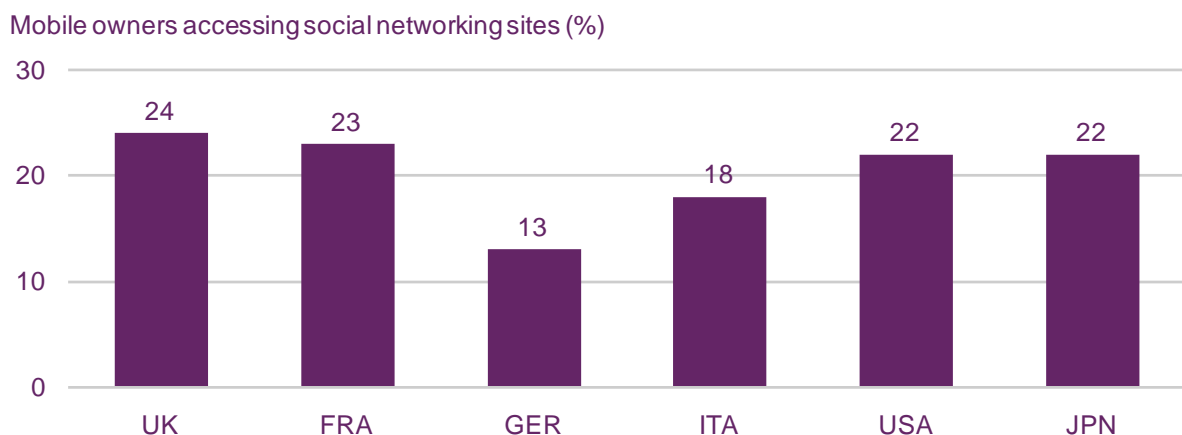


Source: comScore MediaMetrix, July 2010.

**Mobile social networking a success in the UK and Japan**

The increase in take-up of smartphones and the ongoing roll-out of 3G networks allows more social networkers to access their accounts using their mobile phones. Figure 5.37 demonstrates the Japanese mobile experience. As seen in Figure 5.30, in Japan social network take-up via an internet connection was below average for our comparator countries; however, as can be seen here, mobile social networking take-up is in line with the US (both at 22% of mobile owners), suggesting that those who do access social networking sites in Japan frequently do so by mobile phone. Again, the UK (24%) tops the chart as a result of both high social networking take-up in general and high take-up of smartphones.

**Figure 5.37 Use of mobile phones for social networking**

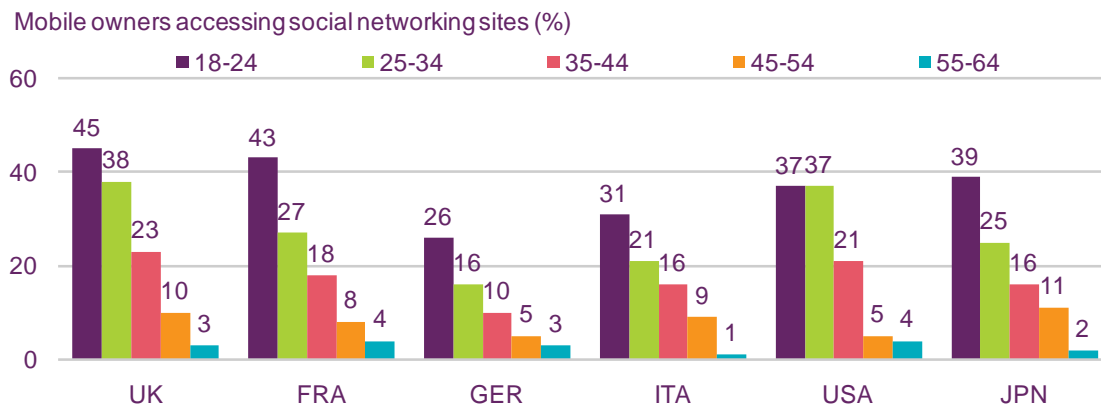


Source: Ofcom consumer research, October 2010.  
 Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q11. Which, if any, of the following activities do you use your mobile phone for?

In a similar manner to internet social networking take-up, mobile social networking take-up is most prevalent among younger age groups. In the UK 18-24s are the largest group, at 45% of mobile phone owners. The pattern is familiar but the differences are exaggerated. In the US, 25 to 34s keep pace with the younger mobile social networkers but in Italy 45 to 54s no longer outnumber the next-eldest group. As previously seen (Figure 5.30 and Figure 5.37), mobile social networking take-up in Japan is relatively high compared to the country's internet social networking take-up.

**Figure 5.38 Use of mobile phones for social networking, by age**



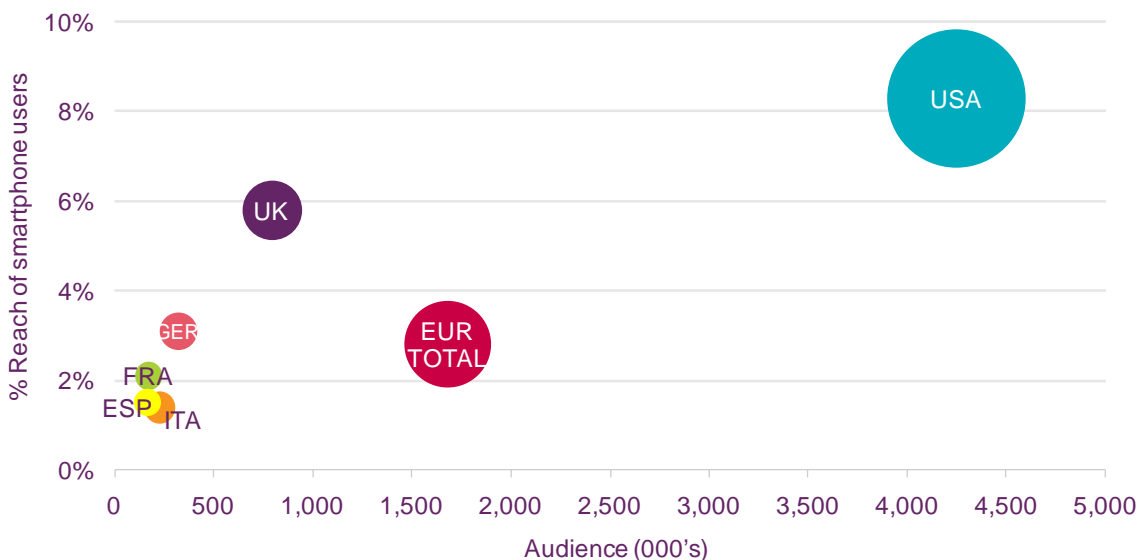
Source: Ofcom consumer research, October 2010. Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001). Q11. Which, if any, of the following activities do you use your mobile phone for?

**The UK is tweeting**

Twitter’s greatest success among smartphone users is currently in the US, with a penetration of 8.3% of all smartphone users, followed by the UK with 5.8%. Twitter first emerged in the US so this goes a long way towards explaining its relative popularity there. Again, the English language influence is noticeable as the UK boasts almost double the penetration of the next-largest European market (Germany at 3.1%). One theory for UK growth is that the US celebrity/personality content in English ‘pulls’ UK audiences too.

Within Europe, Twitter’s reach among smartphone users contrasts sharply with what we have previously seen for social networks in general, with Germany outscoring France, Spain and Italy. This can be explained by the number of smartphone subscribers in each country. Similar absolute numbers of smartphone users access Twitter via a mobile browser in Germany and Italy, but as smartphone penetration is significantly higher in Italy (see Figure 5.3), use of Twitter in this way is proportionally more common among smartphone users in Germany. It is worth noting that mobile browser access is only one way of using Twitter; it can also be accessed via a number of mobile applications, and this type of access is not included in Figure 5.39.

**Figure 5.39 Twitter penetration among smartphone users**



Source: comScore MobiLens. 3-Month Avg. Ending June 2010, Total Audience Age 13+. Note: Includes only mobile browser access to Twitter and does not include other Twitter-based mobile applications.

### **Social networking and mobile advertising combine**

The improved functionality of mobile phones has led to a number of business models based on the location of the user. Location-based mobile social networks such as Gowalla and Foursquare incentivise users by offering information, rewards and discounts at local places of interest and local businesses when a user 'checks in' to the service via their mobile phone. On 3 November 2010 Facebook announced a similar mobile advertising platform which will allow businesses to offer incentives and discounts to Facebook members at a local level. Currently the Facebook platform is being offered free for businesses to use. Facebook claims to have 200 million mobile members as of November 2010<sup>93</sup> compared with Foursquare's 4 million, as stated in October 2010<sup>94</sup>. Gowalla is thought to have considerably fewer.

### **5.2.8 The mobile internet and web-based content**

#### **Smartphones are changing the way we use our mobiles – and how we access the web**

Mobile phones have long ceased to be devices used solely to make and receive calls. On average more people in the UK say they regularly use their mobile phones for sending SMS messages than they do for making voice calls. Figure 5.40 demonstrates how in some ways Japan is far ahead of our other comparator countries in the diversity of mobile phone use; 81% of respondents in Japan said they used their phone for email, with the US having the next largest proportion (22%). Internet access was 54% in Japan and again the US was second with 31%. Game playing and TV watching are the other areas where Japan has a significant lead. As a consequence of high email and internet take-up, SMS, MMS and Instant Messaging all scored very low in Japan. Many of these advanced functions have become more popular as a result of widespread smartphone adoption (see section 5.1.2).

Although the percentage of respondents regularly performing these actions is still relatively low in Europe, it is already noticeable that in the UK and France take-up tends to be higher in almost all areas compared to Germany. Differences in consumer behaviour across these countries may play a part in these variations. Another consideration may be the average age of the population - 44.3 in Germany, 39.8 in the UK and 39.7 in France<sup>95</sup>. For further demographic detail on mobile internet access see Figure 5.42.

---

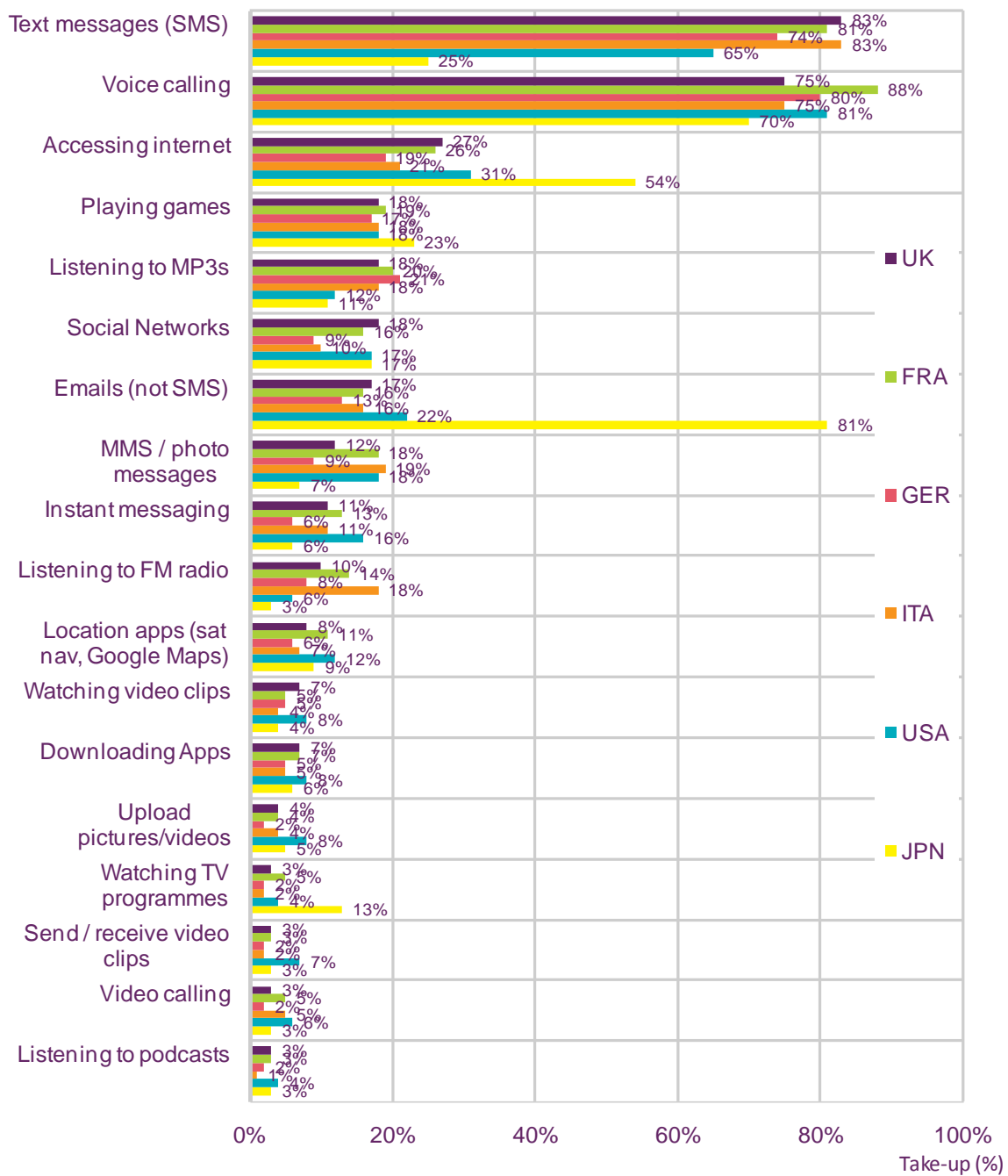
<sup>93</sup> <http://www.facebook.com/press/info.php?statistics>

<sup>94</sup> <http://foursquare.com/about>

<sup>95</sup> <https://www.cia.gov/library/publications/the-world-factbook/fields/2177.html>



**Figure 5.40 Mobile phone uses, by country**



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q: Which, if any, of the following activities do you use your mobile phone for at least once a week?

## Mobile internet use has grown steadily

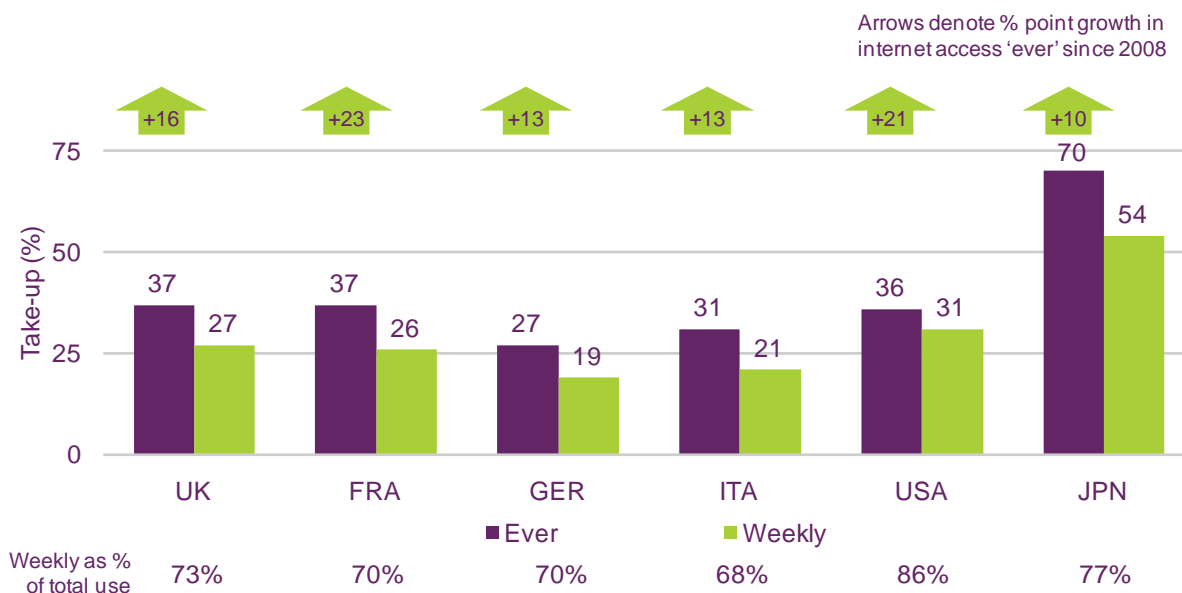
Perhaps the most significant impact of the emergence of smartphones into the mass market has been on mobile phone internet access. The coupling of a more intuitive and superior online user experience on a high-end device with fast data networks and unmetered data plans has led to rapid growth in the number of people using their mobile phones to access the internet. It has also allowed users to access a wide range of content and services using their phones, such as mobile music, mobile maps, and mobile applications.

Ofcom survey data show that across our main comparator countries mobile internet access has increased significantly since 2008 (Figure 5.41). The percentage point jump in the number of people who have ever used their mobile to access the internet was highest in France (+23pp) and the US (+21pp), but was significant even in Japan (+10pp) which has had historically high take-up of mobile internet services due to the early roll-out of 3G networks and mobile data services (such as NTT DoCoMo's i-mode, which launched in 1999).

Outside Japan (where mobile internet access stood at 70%), the number of internet users who have ever used their mobile phones to access the internet is highest in the UK (37%), France (37%) and the US (36%). Weekly mobile internet use was slightly lower, at 54% in Japan, 31% in the US, 27% in the UK and 26% in France.

Therefore the data suggest that the large majority of mobile internet users use their phones to access the internet at least weekly. Across our comparator countries at least two-thirds of people who claim to access the internet over their phones do so weekly, with this figure rising to 86% of mobile internet users in the US. In the UK the figure was 73%.

**Figure 5.41 Internet access via mobile phone**



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

Q11. Which, if any, of the following activities do you use your mobile phone for?

## Around half of internet users aged 18-24 access the internet on their mobiles

Across most of our key comparator countries age is an important determinant of whether consumers use their mobile phones to access the internet (Figure 5.42). In every country we

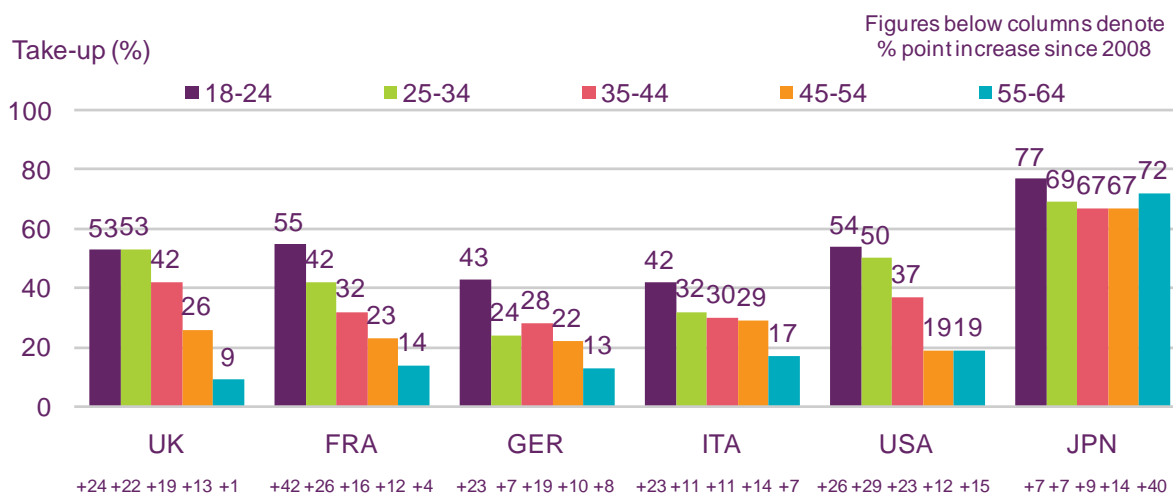
looked at, accessing the internet on a mobile device is highest among internet users aged 18-24, varying from 77% in Japan to 42% in Italy. In the UK just over half of internet users aged 18-24 (53%) claimed to have used their phones to access the internet. In the UK and the US claimed mobile internet access is also at a similar level among 25-34s, possibly driven by smartphone take-up among young professionals.

Younger age groups have also seen some of the largest growth in mobile internet access since 2008, with growth of at least 23 percentage points among 18-24s in all our comparator countries except Japan. The fastest growth among 18-24s was in France, which saw internet access on a mobile in this age group grow by 42 percentage points to 55%, catching up with the UK and the US.

Across our comparator countries there is also some evidence that internet access using a mobile phone is becoming more widespread among older age groups, at least among internet users, as our online survey shows significant growth in the numbers of people claiming to access the internet in this way since 2008. Outside Japan, mobile internet access among internet users aged 45-54 has generally doubled since 2008, and ranged from 19% in the US to 29% in Italy. In the UK the figure was 26%.

As consumers replace their handsets and smartphones gain mass market appeal, it is likely that mobile internet access levels among different age groups will begin to converge. Japan may point the way, with mobile internet use among users aged 55-64 rising 40 percentage points to 72% since 2008, bringing it into line with use among other age groups. However, the extent and pace of similar convergence in other countries will depend on local factors, just as mobile internet use in Japan has been driven by factors such as widespread use of email in place of text messaging (in contrast to all our other comparator countries, there is very little text messaging in Japan).

**Figure 5.42 Internet access via mobile phone among internet users, by age**



Source: Ofcom consumer research, October 2010.  
 Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).  
 Q11. Which, if any, of the following activities do you use your mobile phone for?

### Downloading mobile applications varies little across our comparator countries

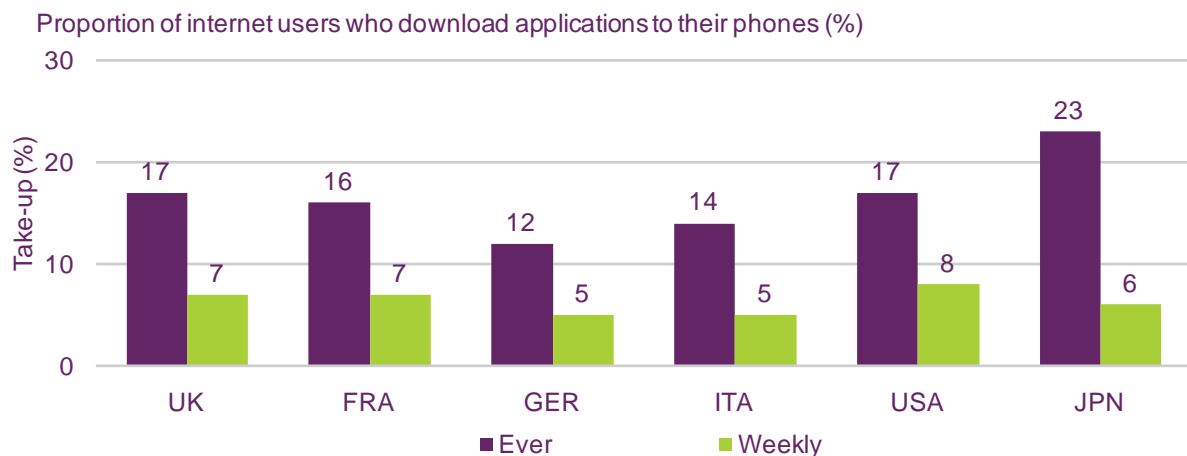
The growth of smartphones has led to the corresponding growth and emergence of mobile applications as an important way for consumers to access internet and web-based content on their mobiles. Mobile applications are pieces of software typically developed by third

parties to run on a mobile phone operating system. They generally allow consumers to easily access web-based content by adapting the internet experience for the limitations and advantages of a mobile device.

Despite the differences in take-up of smartphones between our comparator countries, there is little difference between them in the proportion of internet users who download applications to their mobile phones. Downloading mobile applications was highest in Japan (23%), in keeping with high levels of mobile internet access and advanced phone take-up. In other countries surveyed, the proportion of people who claimed to download mobile applications varied from 12% in Germany to 17% in the US and the UK.

Across all the countries we looked at, downloading mobile applications appeared to be an occasional rather than a regular activity, with no more than 8% of people in any of our comparator countries claiming to do this on a weekly basis.

**Figure 5.43 Internet users who have downloaded applications to their phones**



Source: Ofcom consumer research, October 2010.

Base: All adults aged 18+ who use the internet (UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001).

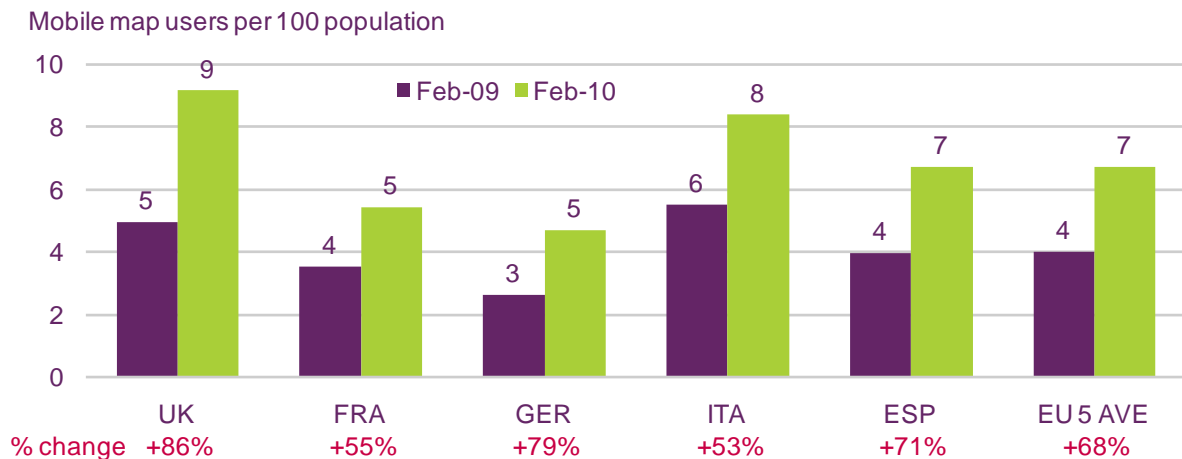
### Mobile map use has grown rapidly during the past year, driven by smartphone growth

One type of mobile application that has grown rapidly over the past year as a result of increased smartphone penetration is mobile map and direction services (sometimes referred to as 'location-based services'). These services commonly integrate mapping and/or direction and navigation software with the handset's GPS functionality or cell-site location software to provide handheld mapping services to users.

ComScore MobiLens data show that in the five largest European markets the number of users of mobile mapping and direction services grew by between 53% and 86% in the year to February 2010. Growth was fastest in the UK (86%), where the proportion of mobile map users in the UK surpassed the number in Italy to reach 9 users per 100 population.

Aside from their intrinsic usefulness and convenience, a key reason for the growth of these services has been that some of the most popular services such as Google Maps for Mobile, Ovi Maps from Nokia, and some services provided by mobile network operators are available to download free of charge on many devices.

**Figure 5.44 Users of mobile map and direction services, Feb 2010**



Source: comScore MobiLens / Ofcom calculations. Age 13+.

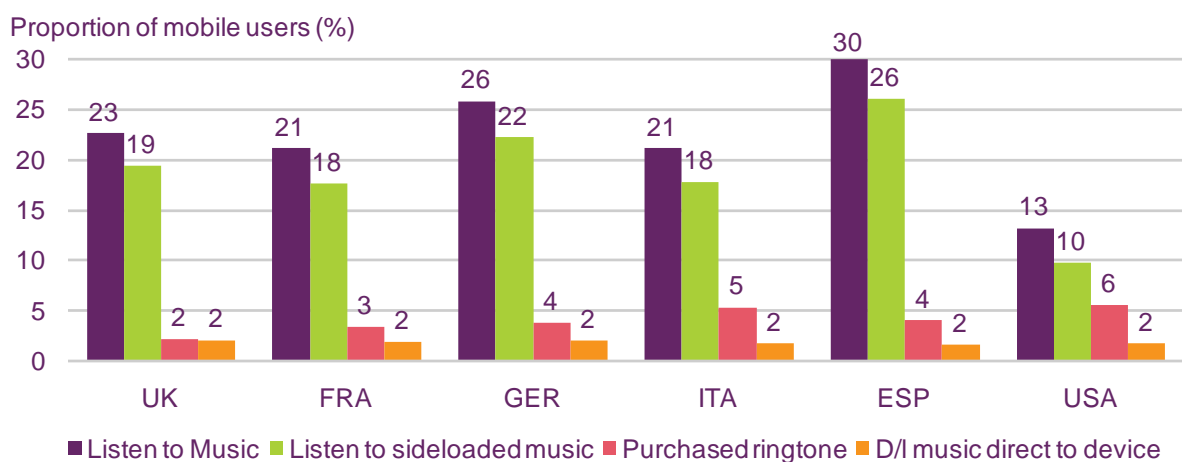
Note: Subscriber numbers based on 3 month average ending Feb 2010 vs. 3 month average ending Feb 2009. Population based on year end figures for 2008 and 2009. EU 5 = UK, FRA, GER, ITA, ESP.

### Mobile users remain reluctant to download music directly to their handsets

But while faster networks and advanced devices have enabled some forms of content delivered over the mobile internet to begin to take off, consumers remain reluctant to use mobile networks to download some other types of content. One example of this is music. While a sizable minority of mobile users claim to listen to music on their mobiles, the majority of this is music 'sideloaded' from their PCs, rather than downloaded directly to their mobile device. Across each of our comparator countries, only 2% of mobile users claimed to download music directly to their phone. A number of factors may be responsible for this including the data charges that music downloads can accrue, high prices and digital rights management and compatibility issues with consumers' existing music collections and devices.

Overall listening to music on mobile phones was highest in Spain (30%) and lowest in the US (13%). In the UK the figure was 23%.

**Figure 5.45 Mobile music users, Q1 2010**



Source: comScore MobiLens. Age 13+.

Note: 3-month average ending March 2010.





# The International Communications Market 2010

## 6 Telecoms

# Contents

<b>6.1 Telecoms key market developments</b>	<b>255</b>
6.1.1 Industry metrics and summary	255
6.1.2 Revenues flat in 2009	257
6.1.3 Looking to a super-fast future	261
6.1.4 The emergence of super-fast mobile networks	270
6.1.5 Take-up of VoIP has increased but varies across comparator nations	273
<b>6.2 The telecoms industry</b>	<b>279</b>
6.2.1 Introduction	279
6.2.2 Overview	280
6.2.3 Fixed voice services	286
6.2.4 Mobile voice and data services	292
6.2.5 Broadband services	307
<b>6.3 The telecoms user</b>	<b>314</b>
6.3.1 Introduction	314
6.3.2 Availability of mobile and broadband services	315
6.3.3 Take-up of telecoms services	317
6.3.4 Voice services	324
6.3.5 Use of voice services	330
6.3.6 Cost of voice services	334
6.3.7 Data services	337
6.3.8 Take-up of data services	337
6.3.9 Use of data services	341
6.3.10 Cost of data services	345



# 6.1 Telecoms key market developments

## 6.1.1 Industry metrics and summary

Figure 6.1 Key telecoms indicators, 2009

	UK	FRA	GER	ITA	USA	CAN	JPN	AUS
Telecoms service revenues (£bn)	27.4	32.6	37.2	25.6	183.8	18.1	73.0	13.3
Telecoms revenues per capita (£)	442	506	452	440	599	540	574	626
Fixed lines per 100 population	53.9	37.0	57.5	37.3	46.0	55.6	39.1	48.2
Monthly outbound fixed mins per capita	179	141	161	117	167	174	57	213
Mobile connections per 100 population	129.1	95.1	131.5	151.7	93.0	69.9	87.1	119.2
Share of mobile post-pay connections	41%	69%	44%	13%	80%	77%	99%	56%
3G connections per 100 population	41.0	23.8	31.6	56.6	36.3	9.2	83.6	70.5
Monthly outbound mobile mins per capita	159	131	92	163	618	312	91	254
Fixed broadband conn per 100 popn	29.3	30.3	30.3	21.2	27.3	30.8	25.0	25.0
DSL as a proportion of fixed bb conns	79%	94%	90%	97%	37%	43%	32%	78%
Mobile broadband conns per 100 popn	4.1	3.2	1.6	6.8	11.5	7.7	7.5	10.2
VoIP subscriptions per 100 population	5.4	26.3	10.6	9.5	9.9	10.0	17.6	14.0

	ESP	NED	SWE	IRL	POL	BRA	RUS	IND	CHN
Telecoms service revenues (£bn)	21.4	8.7	3.9	2.4	5.9	30.0	16.4	10.3	60.8
Telecoms revenues per capita (£)	462	522	427	529	155	151	117	9	46
Fixed lines per 100 population	42.7	36.5	56.8	42.5	25.7	20.8	32.5	3.2	23.7
Monthly outbound fixed mins per capita	122	114	202	150	34	91	-	-	10
Mobile connections per 100 population	117.4	124.9	133.1	115.0	117.3	87.0	148.8	45.1	56.3
Share of mobile post-pay connections	62%	51%	62%	33%	48%	17%	5%	9%	28%
3G connections per 100 population	49.8	17.9	60.5	48.2	20.9	2.1	3.2	0.1	0.8
Monthly outbound mobile mins per capita	128	199	182	185	107	54	165	103	248
Fixed broadband conns per 100 popn	20.8	37.0	32.5	21.2	13.6	5.6	10.6	0.7	7.8
DSL as a proportion of fixed bb conns	80%	59%	57%	73%	54%	69%	37%	85%	81%
Mobile broadband conns per 100 popn	4.2	3.2	14.4	4.3	2.9	-	-	-	-
VoIP subscriptions per 100 population	3.4	20.1	10.8	5.7	1.3	-	-	-	-

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

Global telecoms service revenues amounted to £878bn in 2009 – nearly four times the revenues of the television and radio sectors combined and approximately equivalent to the total GDP of Canada or Spain. However, it is in terms of its transformative social impact that the recent growth of the telecoms sector is most significant. By the end of 2009 there were around 4.5 billion mobile connections, 500 million more than at the end of 2008 and approximately equivalent to six connections for every ten people in the world. And increasingly these mobile connections are being used to access the internet. The number of fixed-line internet connections grew by 16% in the year, to reach 480 million<sup>96</sup>; but by the

<sup>96</sup> All data from IDATE, *DigiWorld Yearbook 2010*

end of 2010 there are likely to be more mobile internet connections than fixed-line connections<sup>97</sup>.

Yet analysis of our comparator countries shows that 2009 was a difficult year for the telecoms industries. Revenues flattened or declined in most markets, as the economic downturn coincided with structural changes in saturated markets, where 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 revenues are slowing down as the market becomes saturated and the service becomes commoditised. Revenues from the BRIC countries (Brazil, Russia, India and China) continued to grow as a result of continuing increases in mobile take-up, but revenues per connection are falling and growth in take-up is slowing.

Nevertheless, despite the global slowdown, 2009 and the first half of 2010 saw a great deal of investment in the telephony infrastructure of the future. Europe has lagged behind North America and Asia in building fibre networks, but operator investment programmes mean that by 2012 at least 40% of homes in the UK, France, Germany and Spain will be passed by fibre networks. Meanwhile, the first 'super-fast' mobile networks have arrived, with 4G networks launching commercially in Sweden and the US.

The telecoms chapter 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 chapter is split into three parts:

- **Key market developments** – this section 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.

In this first section we examine four of the key developments which are transforming the global telecoms market:

- First, we provide an overview of the changing revenue mix in the telecoms sector, focusing on the long-term shift from fixed-line to mobile and from voice to data, and looking in particular at how revenues were affected by structural and cyclical changes in the market in 2009. We compare and contrast the fortunes of telecoms sectors in our comparator countries to that of the UK, which saw an overall decline in revenues for the first time in 2009.

---

<sup>97</sup> IDC estimate that there were more than 450 million mobile internet users worldwide in 2009, <http://smartphone.biz-news.com/news/2009/12/10/0003>

- We then focus on super-fast broadband. The UK currently lags behind most other countries in the take-up of fibre services. We examine why different countries are at different levels of development and look ahead to explore how announced investment plans are intended to transform the telecoms infrastructure in the next five years.
- Having looked at fibre-based fixed-line networks, we then look at recent developments in the roll-out of high-speed mobile networks, including the launch of '4G' services in Sweden and the US.
- We conclude this introductory section to the Telecoms chapter by looking at the impact of VoIP. Take-up has so far been comparatively low in the UK, at least for residential consumers, but in some countries (in particular France, Japan and Sweden), it has been rapidly gaining share of voice traffic and is central to broadband propositions offered by the major ISPs.

### 6.1.2 Revenues flat in 2009

#### BRIC countries offset falling revenues in our other comparator countries

The total telecoms revenues generated in our 17 comparator countries increased by just £0.1bn to £557bn in 2009, as the rate of decline in fixed-line revenues increased and growth in revenues from mobile and fixed broadband services slowed (Figure 6.2). Falling telecoms revenues in our non-BRIC comparator countries were offset by continuing growth in the BRIC countries, where revenues increased by 2.2% to £117bn in 2009, and even in the BRIC countries this represented a significant slowdown, from growth of 8.0% in 2008<sup>98</sup>. Excluding the BRIC countries, total telecoms revenues declined for the first time in 2009, by 0.5% to £453bn.

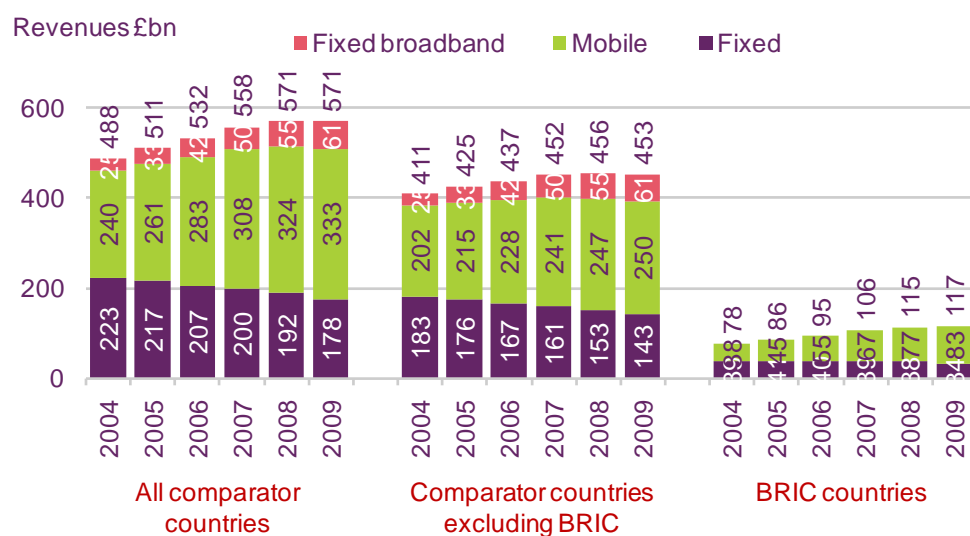
In aggregate, among all 17 countries the rate of growth of revenues from mobile services fell from 5.0% in 2008 to 2.7% in 2009 and those from fixed broadband services from 11.2% to 9.5%, while the decline in revenues from fixed voice services increased from 4.4% to 7.3%. However, because of take-up of bundled services, broadband revenues in some countries may include an element of VoIP and IPTV revenues.

It is likely that there were two drivers behind this decline in revenues: structural changes within markets and the economic climate.

---

<sup>98</sup> This analysis excludes revenue from fixed broadband services in the BRIC countries as data were not available

**Figure 6.2 Telecoms revenues by service, 2004 to 2009**



Source: IDATE / industry data / Ofcom

Note: Excludes fixed-line broadband revenues for the BRIC countries as data were not available

### Mobile revenue growth no longer offsets decline in fixed-line revenues

The most prominent structural change affecting telecoms revenues is ongoing fixed to mobile substitution. As the average cost of mobile services falls, consumers' use of mobile services increases, and a growing number of consumers cease to have a fixed-line phone at home. Figure 6.3 indicates that in aggregate the number of fixed-line voice connections and fixed-line voice volumes fell in 2009 in our comparator countries.

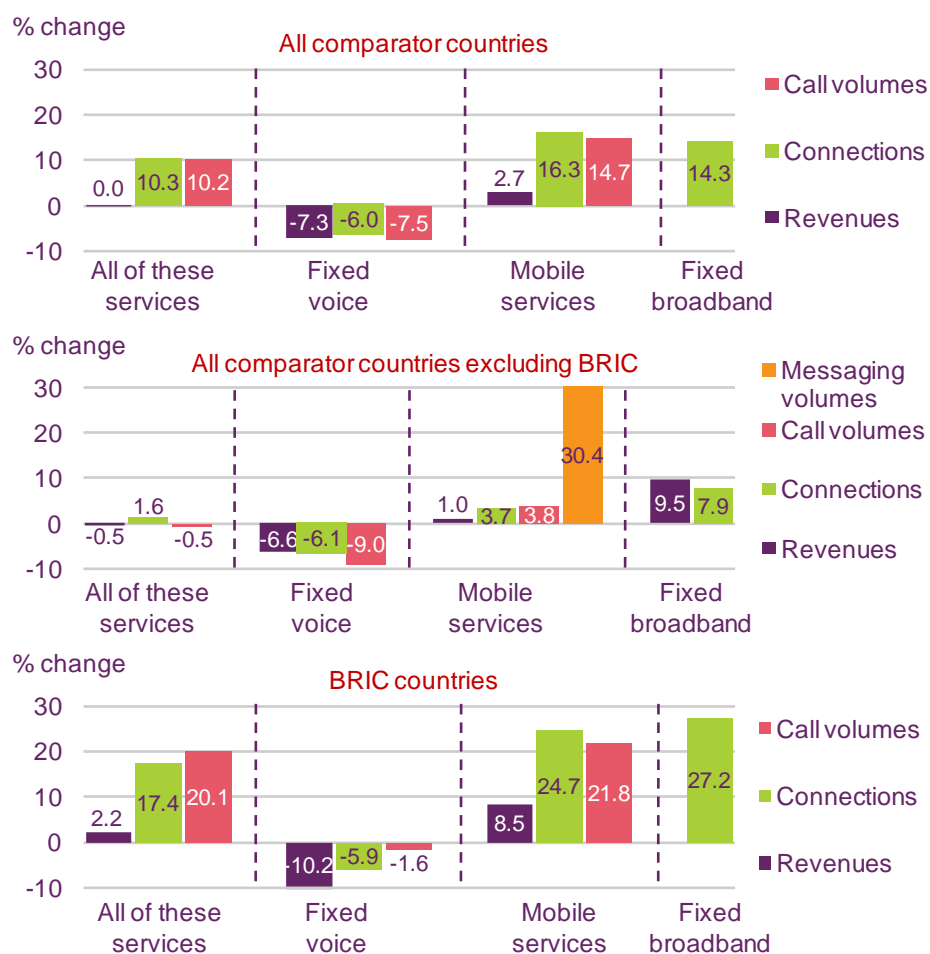
A second structural change is that mobile and fixed broadband take-up is slowing, particularly in the non-BRIC countries. Previously, strong growth in mobile and fixed broadband services had been more than sufficient to offset falling fixed voice revenues, but as take-up of mobile and fixed broadband services increases, growth in the number of connections (and revenues) slows. This is particularly the case outside the BRIC countries, where mobile connections and voice volumes increased by less than 4% in 2009 as markets approached saturation.

A third factor, evident in Figure 6.3, is that increases in revenues from mobile are not keeping pace with increases in take-up and use. Across all 17 countries, mobile connections increased by 16.3% and call volumes increased by 14.7% in 2009, but revenues increased by just 2.7%. Overall, mobile accounted for 58% of total telecoms revenues in the 17 countries in 2009 (up from 49% in 2004), but it is not driving growth to the same extent as previously, with total mobile revenues having increased by an average annual growth rate of 8% between 2004 and 2008. This is likely to be due to markets becoming saturated, and operators focusing increasingly on retention rather than acquisition; for example, in the UK 24-month mobile contracts now account for the majority of new pay-monthly contracts, while SIM-only contracts, offering a relatively large number of inclusive minutes within the monthly fee, are becoming increasingly popular<sup>99</sup>.

<sup>99</sup> In Q2 2010, 63% of new mobile contracts in the UK were for 24 months, compared just 3% in Q2 2008; around one in five new mobile contracts in the UK in 2009 were SIM-only, *UK Communications Market 2010* pp302-304, [http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR\\_2010\\_FINAL.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf)

The final factor exerting downward pressure on telecoms revenues was the economic downturn. Continued increasing use of mobile services suggests that the downturn may not have had a large impact on use of telecoms services. However, our consumer research, published in Section 1.1.4 of this report, finds that in the six countries surveyed, between 14% (US) and 24% (Italy) of consumers said that they had reduced their mobile phone expenditure in the 12 months up to October 2010. This indicates that consumers may have been more prepared to shop around for the best deal. Meanwhile, competitive pressures are driving down the prices available to consumers. Our international pricing analysis in Section 2 of this report finds that mobile and broadband pricing fell between July 2009 and July 2010 in all six countries analysed (the UK, France, Germany, Italy, Spain and the US).

**Figure 6.3 Change in telecoms connections, use and revenues, 2009**



Source: IDATE / industry data / Ofcom

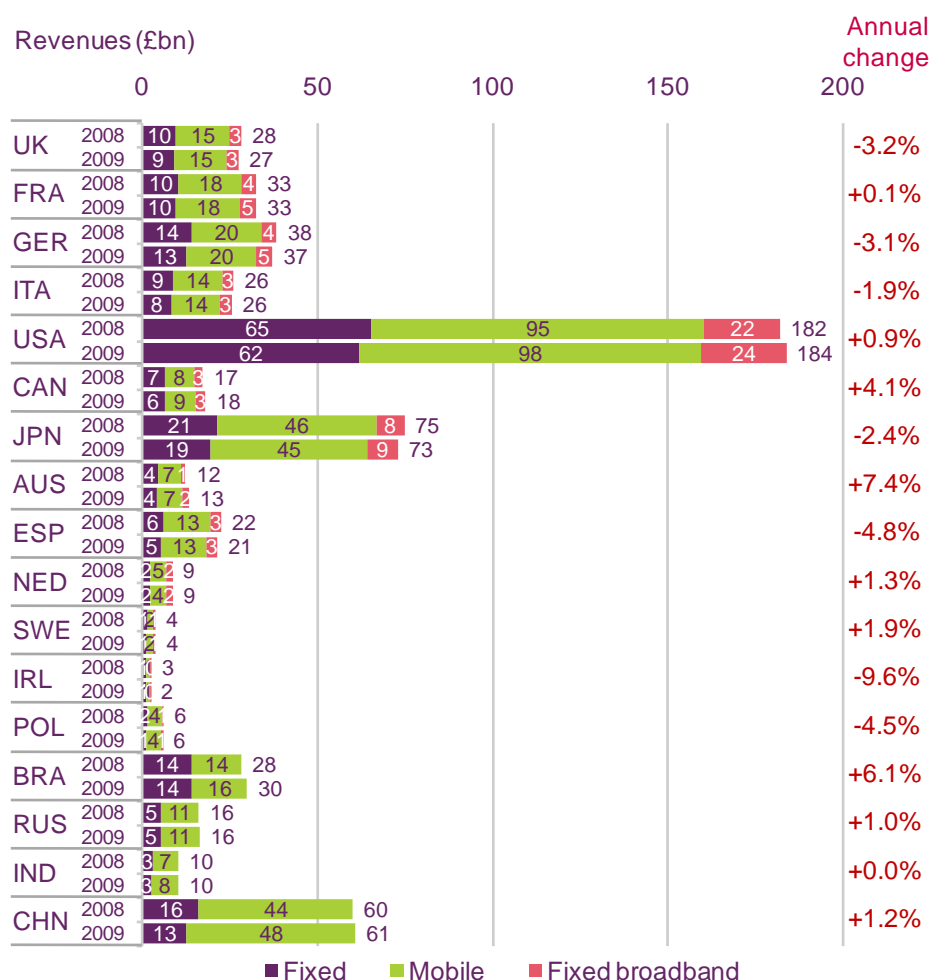
Note: Messaging volumes and fixed broadband revenues not available for BRIC countries

### Telecoms revenues declined in seven of our comparator countries in 2009

Analysis of total revenues from fixed voice, mobile and fixed broadband services in 2009 (and from fixed voice and mobile in the BRIC countries, as no broadband figures were available) shows that total telecoms revenues fell in seven of our 17 comparator countries in 2009 (Figure 6.4). The fall in revenues was greatest in Ireland (where both fixed and mobile voice revenues declined as a result of falling connections and use) at 9.6%, while in the UK total telecoms revenues fell by 3.2%, the fourth highest rate of decline among our comparator countries.

While revenues from fixed voice services fell in 2009 in all but one of our comparator countries (Brazil, where it increased by 0.5%), mobile service revenues continued to grow in the majority (9 out of 17) of the countries for which figures were available (by comparison, mobile revenues increased in 15 of the 17 countries in 2008). The UK was unique among our comparator countries as it was the only nation in which fixed broadband revenues fell in 2009. This was the result of increasing take-up of lower-cost LLU-based DSL services from alternative network operators such as Sky, TalkTalk and O2, particularly those purchased in a 'double-play' (voice and broadband) or 'triple-play' (voice, broadband and pay-TV) service, and meant that the UK was the only country in which revenues fell for all of the three services for which we had data.

**Figure 6.4 Telecoms revenues, by service and country, 2008 and 2009**



Source: IDATE / industry data / Ofcom

Note: Figures for the BRIC countries exclude fixed broadband revenues

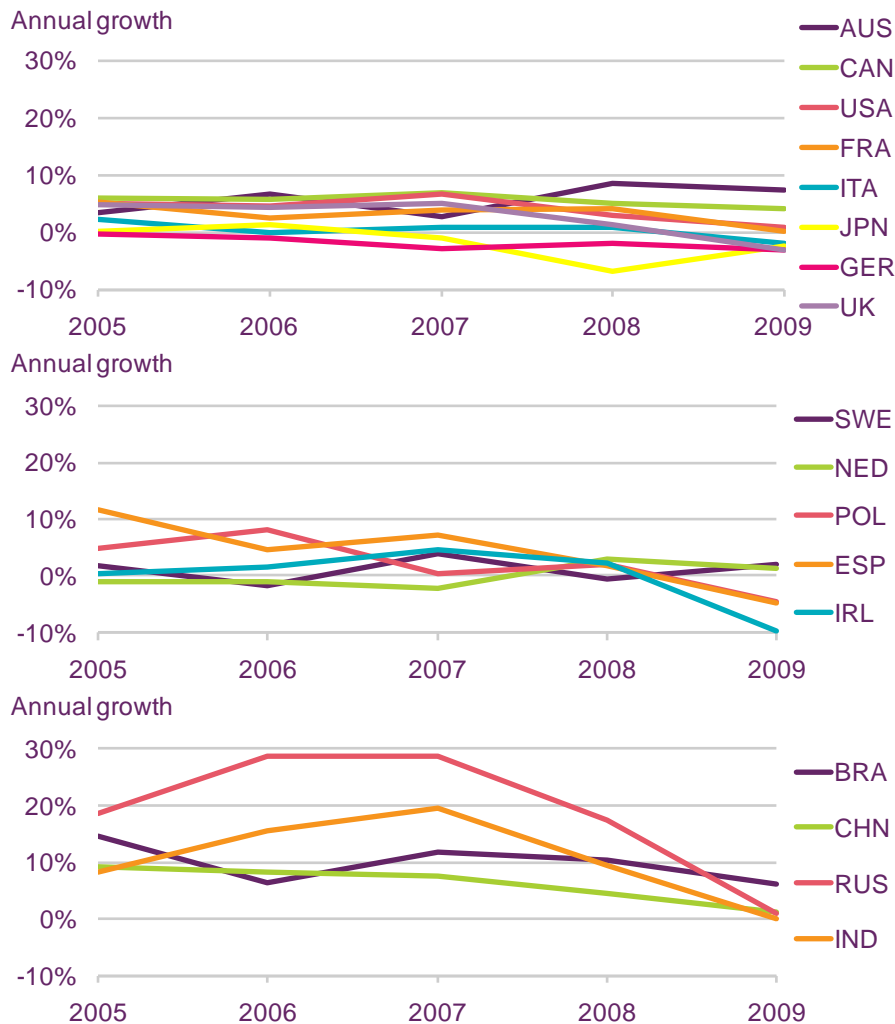
### BRIC countries have seen the most marked decline in revenue growth

Although the BRIC countries are at different stages of market development to the other countries included in this report, it is notable that they shared the same decline in revenue growth in 2009 (it should be noted that figures for these countries exclude fixed broadband revenues, and growth is therefore likely to be understated) (Figure 6.5). Total fixed voice and mobile revenues were unchanged in India in 2009, when just two years previously in 2007 they had increased by around 20%. Similarly, in the two years to 2009 telecoms revenue growth in Russia fell from 29% to 1%, while in China the decline was from 7% to 1%. Brazil

was the BRIC country with the highest telecoms revenue growth in 2009, at 6%, although this was only around half the 12% level of growth in 2007.

On average, across the BRIC countries telecoms revenue growth fell by almost ten percentage points between 2007 and 2009, more than twice the average 3.9% figure across our non-BRIC comparator countries.

**Figure 6.5 Growth in total telecoms revenues, 2005 to 2009**



Source: IDATE / industry data / Ofcom

Note: Figures for the BRIC countries exclude fixed broadband revenues

### 6.1.3 Looking to a super-fast future

#### Investment in next-generation access networks gathers pace

In all of the European countries covered in this report, the majority of broadband connections were delivered via DSL at the end of 2009, i.e. via the copper wiring initially laid for voice connections, which runs from the local telephone exchange to the consumer's premises. While upgrades in recent years have increased the speeds available via ADSL, the limit of the technology means that speeds of higher than 20Mbit/s can rarely be delivered, and speeds much lower than this are typical, as speed degrades as the length of the line increases.



There is emerging consensus among industry players and policy-makers that these DSL networks will not be sufficient for the 'internet of the future', in which high-bandwidth services such as high-definition video will become commonplace, multiple connected devices will share a household's broadband connection, and upload speeds will become increasingly important for video communications, file sharing and storage on the 'cloud'. In this context, Ofcom identified implementing regulation to support effective competition and efficient investment in super-fast broadband as one of the nine priorities in its Annual Plan for 2010/11<sup>100</sup>.

In order to provide this 'next-generation' performance, it is necessary to bring optical-fibre connections, which are capable of transporting data at high speeds without degradation, closer to the end-consumer. These 'next-generation' connections can broadly be categorised as follows:

- fibre-to-the-home (FTTH) or fibre-to-the-building (FTTB), where a fibre connection is in place all the way from the exchange to the end user's premises with existing in-building copper wiring often used for the final part of the delivery;
- fibre-to-the-cabinet (FTTC), where a fibre connection is laid from the exchange to a street cabinet. The final part of the delivery (typically less than 500m) is over the existing copper wire connections (known as sub-loops); and
- hybrid fibre/co-axial cable networks, via a DOCSIS 3.0 upgrade to an existing cable TV (CATV) system. Sometimes, analogue cable services are upgraded by deploying optical fibre up to the location of the last amplifier before the subscriber (known as fibre-to-the-last-amplifier, or FTTLA).

Figure 6.6 below summarises recent NGA announcements and developments among our key comparator countries.

---

<sup>100</sup> <http://www.ofcom.org.uk/files/2010/06/annplan1011.pdf>



**Figure 6.6 Major NGA developments among key comparator countries since 2008**

Country	Major NGA developments
<b>UK</b>	<p><b>January 2010:</b> BT launches 40Mbit/s FTTC service, with roll-out of fibre services to 40% of households by end of 2012 (three quarters of which are expected to be FTTC, with a quarter FTTH)</p> <p><b>May 2010:</b> BT announces plans to expand fibre footprint to two thirds of households by 2015</p> <p><b>October 2010:</b> Government announces funding for rural NGA trials in Scottish Highlands, North Yorkshire, Herefordshire and Cumbria</p> <p><b>October 2010:</b> Virgin Media announces planned upgrade of cable network (covering 48% of UK households) to offer 100Mbit/s</p> <p><b>November 2010:</b> Ofcom publishes Wholesale Broadband Access Review detailing requirements for BT of offer wholesale access to its NGA networks and provide access to its ducts and poles</p>
<b>FRA</b>	<p><b>February 2010:</b> President announces of task-force devoted to ultra-fast broadband deployment, with targets of 75% population coverage by 2012 and 100% by 2025.</p> <p><b>February 2010:</b> Orange announces €2bn fibre investment in five years to 2015</p> <p><b>April 2010:</b> Launch of Digital Society fund with €2bn funding for ultra-fast broadband roll-out</p> <p><b>August 2010:</b> Launch of national programme for ultra-fast broadband</p>
<b>GER</b>	<p><b>March 2010:</b> Deutsche Telekom announces €10bn investment in the next three years in fibre optics, new mobile communications technologies and IT processes</p>
<b>ITA</b>	<p><b>May 2010:</b> Italy's largest three alt-net operators, FastWeb, Wind and Vodafone, announced a joint FTTH/H project, Fibre for Italy. Involves deployment of an open access network to 10m inhabitants in 15 cities by 2015, followed by extension to all cities with over 20,000 inhabitants (representing 50% of the population).</p> <p><b>November 2010:</b> Government announces an agreement to create a new body to be responsible for building a basic fibre-optic next-generation network, funded by a combination of public and private investment. It will have an executive committee chaired by the Industry Ministry and will include one representative from each of the seven telecoms operators</p>
<b>USA</b>	<p><b>February 2010:</b> Google announces "experimental" plan to deploy 1Gbit/s broadband, initially to at least 50,000 homes</p> <p><b>March 2010:</b> National broadband plan includes a target of providing 100 million homes (over 80% of households) with access to 50Mbit/s broadband by 2015 and 100Mbit/s by 2020</p>
<b>JPN</b>	<p><b>September 2008:</b> KDDI launches service offering up to 1Gbit/s upload and download speeds</p>
<b>AUS</b>	<p><b>July 2010:</b> Launch of first FTTH services delivered by the National Broadband Network (NBN), in parts of Tasmania. The NBN is a government-funded enterprise, investing up to AUS\$43bn to provide fibre connectivity to 90% of population by 2018. The NBN will build the core and access fibre network, which it will then lease to other operators to offer retail NGA-based services</p>
<b>European Commission</b>	<p><b>August 2010:</b> Digital Agenda sets targets of basic broadband coverage for all EU citizens by 2013 and 30MB/s by 2020, with at least half European households subscribing 100Mbit/s.</p> <p><b>September 2010:</b> Publication of three complementary measures to the Digital Agenda:</p> <ul style="list-style-type: none"> <li>• Recommendation on Regulated Access to Next Generation Access (NGA) networks, setting out a common regulatory approach for access to new high-speed fibre networks</li> <li>• Proposal for a Decision by the European Parliament and Council to establish a 5 year policy programme to promote efficient radio spectrum management, and ensure spectrum is made available by 2013 for wireless broadband (especially for rural areas)</li> <li>• Broadband Communication setting out a framework for meeting the Digital Agenda's broadband targets</li> </ul>

Source: Ofcom

### Development patterns vary between countries

However, while there is an emerging consensus among operators and policy-makers about the importance of super-fast broadband in the future, there is much variation in patterns of national deployment. The reasons for differing patterns of development are complex, and rooted in individual national contexts, but the following variables all influence decisions to invest in next-generation access networks:

- **The existing telecoms network infrastructure**
  - The length of loops and sub-loops in copper-based telecoms networks determine both the feasibility and the cost of delivering FTTC or FTTH/B. For example, the relatively short typical lengths of sub-loops in Germany have

enabled Deutsche Telekom to make FTTC services available to more than a quarter of households, and the large cabinet size used in the deployment of FTTC in Germany reduces civil engineering costs. By contrast, the longer sub-loops in much of France make FTTC unfeasible. In the UK BT has identified FTTC as the most economic means of providing fibre services to most households.

- The cost of upgrading cable networks to offer high-speed broadband is often significantly less than the cost of replacing a copper network. Among the countries covered by this report, in the UK, the Netherlands, France, Ireland and Australia cable operators were the first to offer widely available super-fast broadband services.

- **Population distribution and topography**

- The distribution of population is a major determinant of the cost of deploying next-generation networks. Japan was one of the first large countries in the world to have a widely available next-generation network; in part, because 32% of the population live on just 4.5% of the land mass, while high population densities in Sweden and the Netherlands have contributed to their NGA leadership in Europe.
- Housing patterns are also an important contributory factor to the cost of NGA deployments. Deployments of fibre-to-the-home or building have been slower in the UK (where 85% of people live in single-family homes) and Ireland (95% in single-family homes) than in Italy, Germany, Spain, Japan and the Netherlands, where over 50% of the population live in multiple dwelling units (MDUs) and can therefore share the cost of deployment through FTTB rather than FTTH.
- Civil engineering costs for laying fibre can be reduced massively if a city's infrastructure allows for installation in existing routes or ducts. This is the case in Paris, which had early deployment of fibre, partly because of the relative simplicity of laying cable through the city's sewer system.

- **Regulatory approaches and government intervention**

- In the UK, the review of the wholesale local access market (October 2010) sought to promote competition and investment in next-generation access by requiring BT to provide access to both its NGA capability (where deployed) and its duct and pole infrastructure.
- In the US, a regulatory policy of 'forbearance' has been adopted, which removes the obligation for fibre operators to offer wholesale access or to unbundle fibre loops, thereby incentivising operators to invest in NGA with the promise of monopoly returns. This has promoted widespread investment in FTTH in the US, predominantly by Verizon (which accounts for 66% of US FTTH subscribers). This policy is more suited to markets with competition between end-to-end infrastructure owners, as is the case in the US, where local duopolies typically exist between cable and telco operators.
- In Australia, the government has looked on the construction of a nationwide fibre network as a civil infrastructure project and has established a government business enterprise, the National Broadband Network (NBN), to design, build and operate an open access FTTB/H network, with around

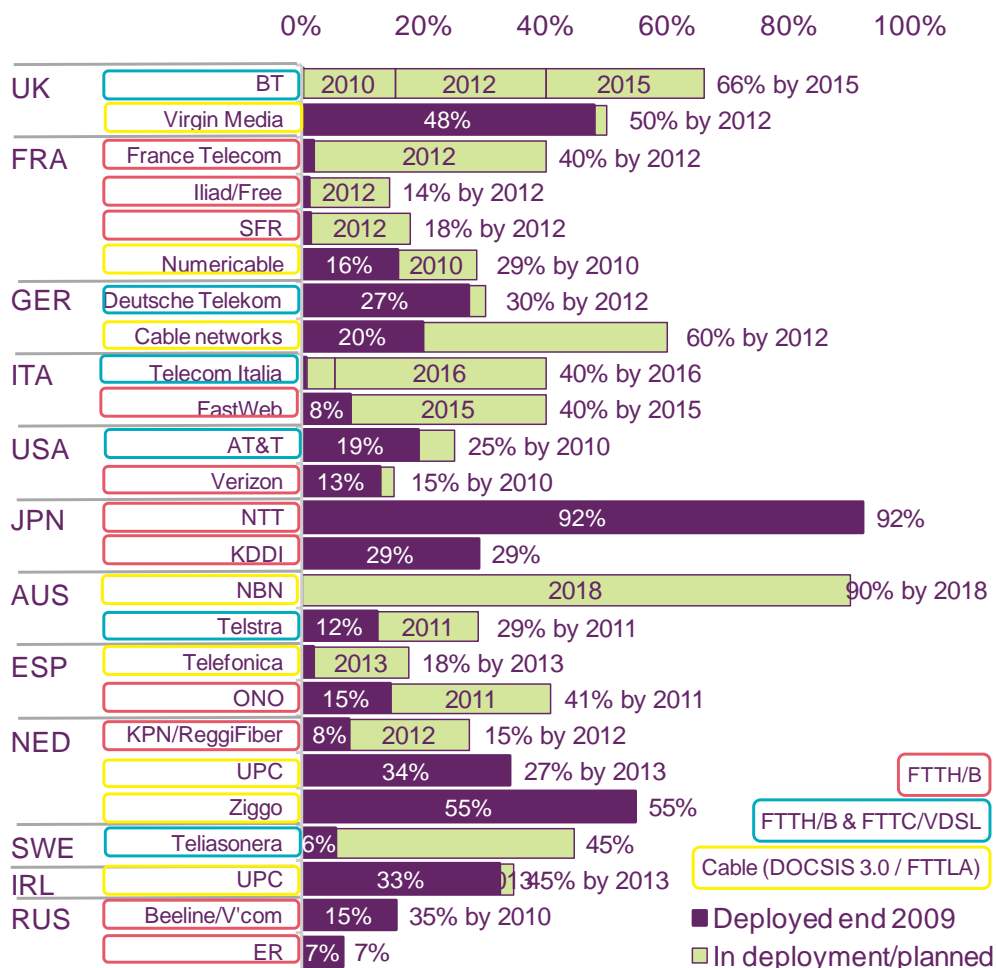
£16bn of government funding. The network will be leased to other providers to offer retail NGA-based services. Work began in 2010 and the network is planned to cover 90% of the Australian population by 2018.

- In Japan, the national strategy for the provision of high-speed broadband involves nationwide NGA roll-out based on infrastructure-based competition. Policy-makers initially pursued a light-touch approach to wholesale access pricing regulation, to stimulate the roll-out of fibre networks, but now that NGA roll-out has reached the majority of the population, they have taken a more interventionist stance, which has resulted in reduced wholesale access prices.
  - In many countries, public funding has contributed to the roll-out of NGA networks. Local government-funded 'munifibre' schemes have contributed to the widespread roll-out of NGA in Sweden (where a particular feature is the involvement of property owners and landlords in upgrading the in-building infrastructure in return for small increases in tenants' rent), while local deployments in the US and France are also often part-publicly funded.
  - Governments and regulators also have a role to play in facilitating the civil engineering associated with NGA roll-out. In Japan, permitting overhead cabling has significantly reduced costs, while in many countries, including the UK and France, regulatory and government policy has promoted obligations for shared duct access, so that multiple providers can share the same channelling. In autumn 2009, the French regulator ARCEP introduced measures to encourage multi-fibre network roll-outs within multiple-dwelling units by requiring the entity responsible for first installing the lines under contract with the property owner to install additional dedicated fibres on behalf of other operators on reasonable request, with installation costs shared with the requesting operators.
  - An overview of the regulatory context of next-generation access networks is provided in Section 1.3.
- **The competitive context**
    - The early investment by incumbent NTT in Japan in a FTTH/B network was partly motivated by a perceived imperative to win back broadband share from new entrants. A similar strategy can be seen in the investment in the US by local incumbent telecoms operators AT&T and Verizon in response to cable companies winning broadband share. In contrast, Italy's Fastweb and Sweden's B2 are alt-net providers which were early exponents of FTTH/B roll-out in Europe, taking advantages of the opportunity to gain access to the passive infrastructure of incumbent operators Telecom Italia and TeliaSonera (which have since launched major fibre deployments of their own).
  - **Consumer demand**
    - In the last couple of years there has been an increasing emphasis on the quality of broadband performance, largely related to increasing use of high-bandwidth services including video services, file-sharing and gaming.
    - However, the most obvious current commercial proposition for super-fast broadband is IPTV, where ADSL networks are typically not able to support the speed needed for the delivery of multiple simultaneous channels into a

household, and for high-definition TV. Triple-play offers, incorporating IPTV, have been central to the FTTH propositions offered by operators like Verizon in the US, FastWeb in Italy and Free in France. By contrast, there may not have been the same incentive for early investment in NGA in the UK. Here, there appears to be less scope for growth in IPTV, possibly because of early take-up of multichannel digital television (more than 53% of homes had digital TV by the end of 2004), and a mature pay-TV market, in which cable and satellite operators have built on existing installed TV customer bases to compete in the triple-play market.

All of these factors have contributed to different patterns of development among our comparator countries (Figure 6.7). It is notable that operators in European countries have been slower to invest in FTTH/B than in the US or (particularly) Japan. However, in all the European countries, significant investment in fibre deployment is planned for the next five years.

**Figure 6.7 NGA deployments and planned deployments**



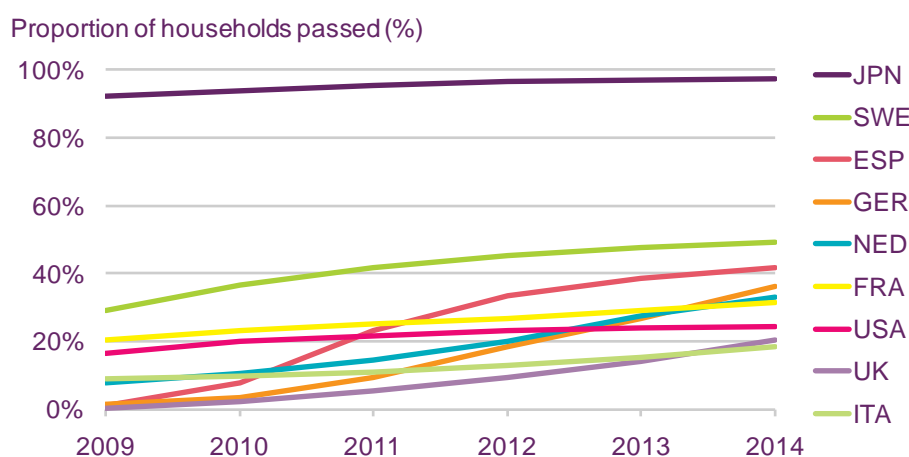
Source: Ofcom, based on operator announcements and third-party data including Cullen International and IDATE

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

## Japan leads the way among our comparator countries in fibre availability

Figure 6.8 provides estimated forecasts from industry analysts IDATE on the availability of fibre-to-the-home or building (excluding cable). It indicates very different deployment curves among the European nations, but a degree of convergence. In the UK and Germany, the viability of VDSL-based FTTC services means that incumbents BT and Deutsche Telekom have focused on these. By contrast, due to a combination of long sub-loops and relatively easy laying of fibre in the sewer systems of Paris, France had early deployment of FTTH/B, which is slowing as deployment costs increase.

**Figure 6.8 Actual and forecast availability of FTTH/B (excludes cable)**



Source: IDATE, *World FTTx markets*, October 2010

## Different approaches to extending super-fast broadband to all

In general, operators invest in laying fibre networks first to areas where the cost per household is relatively low. So as fibre deployments extend more widely, the incremental cost of adding households generally increases. In all countries, therefore, there is a point where fibre deployment is unlikely to be delivered by market-led investment alone. The UK government's *Digital Britain* report, published in 2009, estimated that the economics of next-generation broadband deployment, in the absence of public funding, would leave around a third of the population unserved by next-generation broadband networks. It estimated the public funds required to deliver a minimum of 40Mbit/s broadband to 90% of the population by 2015 at £2-3bn. However, there are high levels of uncertainty about how far market-led investment will go and the levels of public funding that would be required to extend superfast networks further. In November 2010 BT's chief executive Ian Livingstone claimed that the company would be able to provide fibre broadband to 90% of UK homes by 2017 if it was given the £830m which the UK government has said can be taken from the BBC licence fee over the next seven years for broadband infrastructure projects.<sup>101</sup>

Figure 6.9 provides an overview of key government announcements and publicly-funded initiatives to extend super-fast broadband networks. It indicates a range of different approaches:

- Some governments are taking the lead in providing funding for investment in open access networks, whereby a publicly-funded enterprise builds the network with service providers paying for wholesale access and competing for retail customers. In Australia the government has set up the National Broadband Network (NBN)

<sup>101</sup> <http://www.broadbandchoice.co.uk/news/bt-chief-targets-90-fibre-broadband-coverage-800232261/>

company to provide fibre access to 90% of households by 2018, and plans to gradually withdraw from the NBN company and privatise it fully when the network has been running for five years.

- By contrast, the US National Broadband Plan approach is more devolved, with funding available from a number of national organisations which are charged with allocating subsidies and loans to local infrastructure development projects. Meanwhile, in order to drive economic development, hundreds of municipalities all around the country have already invested in fibre networks (often in partnership with a private infrastructure company).
- In Europe, government approaches vary. France has ambitious plans for NGA access for all by 2025, and in 2010 set aside €2bn for broadband investment in sparsely-populated areas. Italy and Spain have not announced any central plans or funding for NGA projects. In Sweden, local authorities have been heavily involved in building FTTH/B networks, built on open access models, in which property owners and housing authorities have extended fibre-to-the-kerb services to FTTH, deploying the in-building infrastructure in return for higher rent from tenants.
- However, all countries in the European Union are required to conform to European Commission guidelines on state aid, which are designed to minimise the distortion of competition by public funding. Guidelines issued in September 2009 permit public funding in areas where there is no NGA network, no plan by private investors to roll out such an infrastructure within three years, no other traditional broadband infrastructure, or where rolling out an NGA network would be unprofitable (there are other circumstances where state aid is also permitted).

**Figure 6.9 Public funding of NGA broadband among key comparator countries**

Country	Major government announcements and commitments
<b>UK</b>	The Government's National Infrastructure Plan 2010 reaffirmed commitment to spend £530m of public funds on providing the UK with "the best superfast broadband in Europe by 2015". Four pilot projects in North Yorkshire, Cumbria, Herefordshire and the Highlands and Islands of Scotland will be launched to test and develop methods for delivering fibre networks to rural areas. A National Broadband Strategy is scheduled for publication in December 2010.
<b>FRA</b>	In June 2010 the government published a plan to allocate €2bn for operators or public authorities to invest in broadband to sparsely populated areas, including those deploying fibre networks. The France national broadband plan has a target of 70% of the population with access to 100Mbit/s services by 2020, and 100% of the population by 2025.
<b>GER</b>	The government broadband strategy has targets of 50Mbit/s broadband available to 75% of the population by 2015 and 100% of the population "as soon as possible". State aid schemes are available for the funding of broadband in rural areas from national, regional and local budgets.
<b>SWE</b>	The government's broadband strategy (November 2009) set targets of 40% population coverage of 100Mbit/s broadband by 2015 and 90% by 2020. Public funding will be available for extension of broadband networks to underserved areas, while local and regional authorities are also encouraged to invest in passive infrastructure (ducts and dark fibre)
<b>NED</b>	The CityNet FTTH network in Amsterdam is one of the largest roll-outs initiated by a local authority, with investment of €300m in an open access network aimed at covering 420,00 households and businesses by 2012. An ultra-fast broadband task force with representatives from local and national governments, industry and academics is preparing policy suggestions. Initial suggested targets were 100% population coverage at 20Mbit/s by 2015 and 100% coverage of 75Mbit/s by 2020.
<b>USA</b>	The Broadband Stimulus programme (part of the National Broadband Plan) announced in 2009 has set a target of 100million households (85%) with 50Mbit/s by 2015, and 100Mbit/s by 2020. Many local authorities have also invested in deploying open access fibre networks. As of mid-2010 more than 600 FTTH rollouts have been performed by municipalities, according to Broadband Properties magazine.
<b>JPN</b>	In 2006 the government announced 'next generation broadband Strategy 2012' aiming to make superfast broadband available to 90% of the population. This was achieved by the end of 2010, and the government is now targeting the availability of fibre broadband to 100% of the population by 2015.
<b>AUS</b>	The Government is investing around £16bn in the National Broadband Network which is targeted to provide fibre connectivity to 90% of population by 2018.
<b>European Commission</b>	The Commission's Digital Agenda (endorsed in 2010) has set a target of fast (<30Mbit/s) broadband availability for all Europeans and 'ultra-fast' (>100Mbit/s) for all by 2020. In September 2009 it provided guidelines on state aid (i.e. public funding) for both conventional and superfast broadband, with different rules relating to three scenarios (areas that lack connectivity; areas where only one network infrastructure is available; areas where at least two competing infrastructures are available)

Source: Ofcom, based on operator announcements and third-party data including Cullen International and IDATE

### But take-up still very low in most countries

In each of the 'big five' European countries (the UK, France, Italy, Germany and Spain), less than one in fifty households had a super-fast broadband connection at the end of 2009 (Figure 6.10), whereas take-up has been much higher in Japan, the US and Sweden.

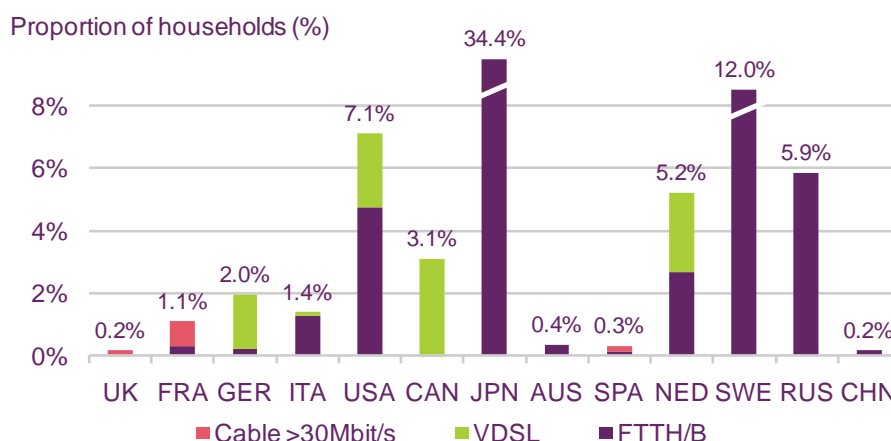
Three factors seem to drive the take-up of super-fast services as an alternative to basic services.

- The relative cost of super-fast services compared to basic services is likely to be a key driver. In the UK, Virgin Media's top-tier 'up to' 50Mbit/s cable service (£25 per month in November 2010) is double the price of its basic 'up to' 10Mbit/s service

(£12.50 per month excluding line rental), and only around 2% of its subscriber base took the 50Mbit/s service by the end of September 2010<sup>102</sup>. In contrast, in Japan the incumbent NTT retails its 100Mbit/s service at a less than 10% premium to its basic ADSL service, and the number of FTTB/H subscribers in Japan has exceeded the number of DSL subscribers since September 2008.

- The relative difference in performance between ‘super-fast’ and alternative broadband packages is also likely to be a factor driving take-up. Around 16% of Virgin Media’s UK cable subscribers take the ‘up to’ 20Mbit/s service, which they may feel is sufficient for their needs, while the ‘up to’ 10Mbit/s service, with typical speeds of around 9Mbit/s, is sufficient for most applications, including high-definition video services. In contrast, in countries where ADSL is the main alternative and speeds vary significantly with line length, for many consumers super-fast services may represent the only way of achieving acceptable performance for high-bandwidth services.
- Thirdly, in some countries fibre has had the highest take-up when it is associated with the delivery of triple-play services, incorporating premium TV services. At the end of 2009, Verizon had achieved take-up of 22% among the 15.4 million households it passes with its FTTB/H service, and of these, 83% took its IPTV service. Similarly, in France, the majority of fibre subscribers buy it within a triple-play package including IPTV. However, in Japan, Sweden and the Netherlands, IPTV penetration remains low, despite high take-up of FTTB/H services.

**Figure 6.10 Household take-up of super-fast broadband, end 2009**



Source: Ofcom, based on operator announcements and third-party data including Cullen International and IDATE

### 6.1.4 The emergence of super-fast mobile networks

#### Sweden has the world’s first mobile network using the LTE standard

A key trend in the last couple of years has been the increasing use of data services accessed via mobile networks, either on internet-enabled phones (see Section 5.1.2), or on a PC via a mobile broadband ‘dongle’ or datacard (see Figure 5.15 5.2.2). A key enabler of this has been the migration from 2G networks (offering theoretical speeds of up to 115kbit/s via GPRS – which is sometimes referred to as 2.5G), to 3G networks (offering theoretical

<sup>102</sup> <http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njc2NTd8Q2hpbGRJRjRD0tMXxUeXBIPtM=&t=1>



speeds from 'up to' 512kbit/s to 'up to' 28.8Mbit/s on HSPA-enabled (3.5G) to 'up to' 42Mbit/s on HSPA+ ('3.75G' networks).

By 2009, HSPA network coverage was available to at least 85% of the population in most of our comparator countries (93% in the UK) (see Figure 6.51 in the Telecoms User section below). In addition, operators in many countries have begun roll-out of higher-speed HSPA+ networks. Figure 6.11 details the highest theoretical speeds commercially available in 13 countries in October 2010. It should be treated with some caution, as in all countries there is a large gap between theoretical speeds and the actual speeds being delivered. For example, research by measurement company Epiteiro in the UK in June 2009 found that average download speeds for services offering theoretical speeds of 'up to' 3.6Mbit/s or 7.2Mbit/s were around 1Mbit/s<sup>103</sup>.

In December 2009, 'super-fast' mobile broadband became a reality as Swedish operator TeliaSonera launched the world's first mobile network using the LTE standard (often branded as '4G') in parts of Sweden and Norway, offering theoretical download speeds of 'up to' 100Mbit/s but actual speeds of 20-80Mbit/s<sup>104</sup>. In September 2010, US regional operator MetroPCS offered the first commercially-available LTE mobile handset (the Samsung Craft), and also launched an LTE network, initially available in Las Vegas, extended to Dallas/Fort Worth in the following month, with further roll-outs planned throughout late 2010 and early 2011.

All of the highest-speed services, in every country, launched in 2009 or 2010. This indicates the pace of change, and the fact that a 'critical mass' has been reached, from a supplier perspective, in terms of network infrastructure and consumer hardware. Nevertheless, the evolution of mobile networks is happening at a different pace in different countries; relatively late upgrades in the UK and France may indicate limited spectrum availability or uncertainty about future spectrum availability, while the early launch of high-speed LTE services in Sweden followed a 2.6GHz spectrum auction, and also comes in the context of high mobile broadband take-up.

Figure 6.11 also shows that while the technology (LTE, HSPA, HSPA+) is a determinant of the theoretical speeds available, network configuration, backhaul capacity and the spectrum bandwidth used also determine network speeds, while consumer hardware may also be a constraint. Teliasonera's LTE network in Sweden uses a 20MHz downlink carrier to offer theoretical speeds of 100Mbit/s, while the LTE network deployed by MetroPCS in parts of the US uses 5MHz of spectrum, and has a lower theoretical maximum speed.

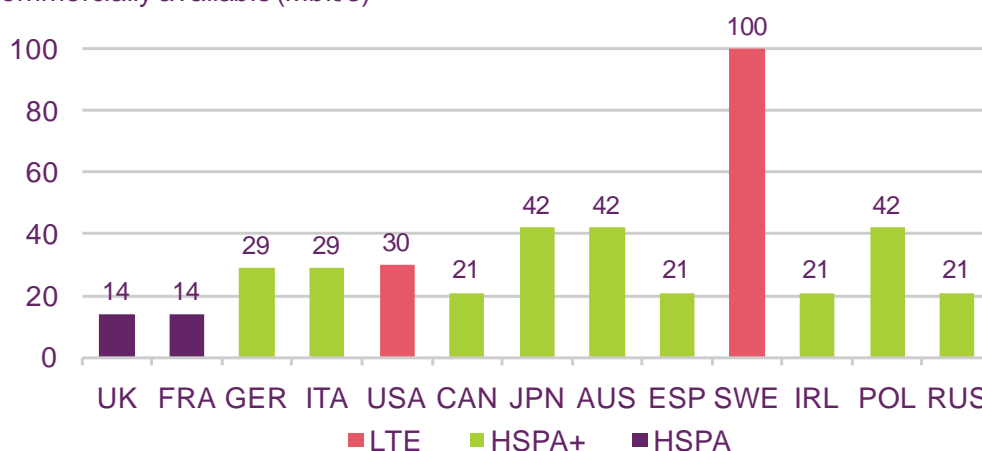
---

<sup>103</sup> [http://www.epitiro.com/assets/files/ukmobilebroadband\\_final.pdf](http://www.epitiro.com/assets/files/ukmobilebroadband_final.pdf)

<sup>104</sup> ComputerWorld's testing of TeliaSonera's LTE network found average download speeds of 33Mbit/s against a theoretical maximum of 100Mbit/s, <http://www.ispreview.co.uk/story/2010/09/28/average-uk-mobile-broadband-speeds-still-falling-below-1-2mbps.html>

**Figure 6.11 Maximum theoretical download speeds available via mobile networks, October 2010**

Maximum theoretical download speed commercially available (Mbit/s)



Source: Ofcom, Global mobile Suppliers Association (GSA), Technology Update, 29 October 2010

### Over 50 LTE networks should be in commercial service by the end of 2012

A flurry of launches of 4G network services is expected over the next couple of years as spectrum becomes available. The 800MHz ‘digital dividend’ band (which will become available in most countries between 2010 and 2013 following the switchover to digital) is viewed as particularly important because of the high level of coverage it can potentially provide. However, there is also much interest across Europe in the 2.6GHz band: many operators seek a combination of lower-frequency (typically sub-1GHz) and high-frequency spectrum, the lower frequencies being good for providing coverage and the higher frequencies important for capacity (further discussion is available in Section 1.3.7 above). In October 2010, the Global mobile Suppliers Association (GSA) stated that 156 operators in 64 countries were investing in LTE, and forecast that at least 55 LTE networks would be in commercial service by the end of 2012<sup>105</sup>.

Figure 6.12. shows the LTE deployment plans from the largest operators in a selection of comparator countries. The availability of enabled devices and infrastructure solutions at economically viable prices remains critical to roll-out and take-up of LTE around the world; for example, the Polish regulator UKE delayed its tender of 2.6GHz frequencies for LTE until 2011 after receiving requests from operators to delay, since they believed that LTE was not ready to be launched commercially. Different national contexts will also determine the timing and pattern of deployment. The following factors are all important:

- **The availability of spectrum suitable for LTE.** Early digital switchover in Germany, together with a decision to make available spectrum across four bands on a technology-neutral (‘liberalised’) basis facilitated the acquisition of suitable spectrum by all four mobile operators, with commercial deployment in 2011/12.
- **Levels of mobile data usage.** LTE not only increases speeds, but also increases capacity, massively reducing the cost per GB of serving mobile data. There is therefore more incentive for early roll-out of LTE network in countries with high mobile data use, such as Japan.

<sup>105</sup> GSA, GSM/3G Market/Technology update, 29 October 2010

- Policy in licensing spectrum for mobile broadband.** Wireless broadband is often seen as the most viable solution for extending broadband provision to areas poorly served by fixed broadband networks (typically, rural areas). Governments therefore sometimes link spectrum awards to policy goals of extending broadband coverage. This was the case in Germany, where a condition of spectrum awards was that networks should be built in four stages, starting with rural areas with no current fixed-line broadband infrastructure, and progressing to a fourth deployment stage in towns and cities with more than 50,000 inhabitants. Transition to a subsequent stage cannot take place until 90% of the population in the previous stage have been provided with access. The Swedish regulator has indicated that it wants to impose similar conditions on some of the ‘digital dividend’ spectrum blocks that it will auction.

**Figure 6.12 LTE deployments and plans, October 2010**

Country	Major NGA developments
UK	<b>Everything Everywhere</b> has stated that it aims to start building an LTE network in 2011 In May 2010, <b>O2</b> announced a new trial of LTE in the 800MHz band <b>Vodafone</b> is committed to beginning commercial LTE roll-out as part of its pan-European plans
FRA	<b>Orange</b> has stated plans to roll out a commercial LTE network by 2012 <b>SFR</b> and <b>Bouygues</b> are still at the trial stage <b>Free</b> (along with Orange and SFR) was awarded a licence in the 2.1GHz band in May 2010 which may signal its intention to invest in LTE
GER	In May 2010, Europe's first major auction of ‘digital dividend’ spectrum (800MHz band) (run concurrently with auctions in three higher frequency bands) resulted in spectrum awards to all four MNOs. <b>Deutsche Telekom, Vodafone</b> and <b>O2</b> have all outlined deployment plans and launches in 2010/11, and have also confirmed that they are in discussions about infrastructure sharing <b>E-Plus</b> did not win 800MHz spectrum but has stated that it plans to build its network using a combination of its existing spectrum and higher frequencies it acquired in the higher bands
ITA	<b>Telecom Italia</b> is trialling LTE and has stated that it expects to begin commercial roll-out by the end of 2012 <b>Vodafone</b> and <b>Wind</b> have stated their intentions to evolve to LTE, but have not set timetables.
SWE	<b>Teliasonera</b> launched the world's first LTE network in 2009, and plans to roll-out 4G services to cover 228 cities by the end of 2011. <b>Tele2</b> and <b>Telenor</b> have formed a joint venture to launch services in five cities by the end of 2010, with roll-out to 100 cities by the end of 2012
USA	<b>MetroCPS</b> launched LTE in Las Vegas in September 2010 and is rolling out to 13 other cities by early 2011 <b>Verizon</b> is targeting having the largest LTE network in the world, planning to cover 110 million people and 38 cities at launch by the end of 2010 <b>AT&amp;T</b> (2011) and <b>T-Mobile</b> (TBC) as well as regional operators have announced their intention to launch LTE networks.
JPN	<b>NTT DoCoMo</b> and <b>Emobile</b> are planning commercial launches in some cities by the end of 2010. <b>Softbank</b> is set to launch in 2011 <b>KDDI</b> is planning to launch in 2012 with targeted 96.5% population coverage by the end of 2014

Source: Global mobile Suppliers Association (GSA), *Evolution to LTE Information paper*, 26 October 2010

### 6.1.5 Take-up of VoIP has increased but varies across comparator nations

#### The number of VoIP lines globally increased by 46% during 2009

Fixed voice revenues have been in decline in most countries for a number of years (see Figure 6.2 above), predominantly as a result of consumers increasingly using mobile networks. However, another driver of falling fixed-voice revenues is the take-up of Voice over Internet Protocol (VoIP) services, in which voice calls are made over the internet, rather than routed through the public switched telephony network (PSTN). VoIP calls generally cost

less than the equivalent PSTN calls (and PC-to-PC calls are typically free). IDATE estimates that the global number of fixed VoIP lines increased by 46% during 2009<sup>106</sup>.

VoIP providers are able to offer comparatively cheap services as calls are routed over the internet; providers do not have to roll out the costly trunk networks required by traditional voice telephony services. VoIP services and VoIP use fall into two broad categories:

- PC-based VoIP calls, where users make calls using a PC (or sometimes a mobile phone) using VoIP software (for example, Skype or Google Voice). These are primarily PC-to-PC calls, or those that would be expensive using standard fixed telephone lines, such as international calls, and they generally offer no revenue to internet service providers.
- The use of VoIP as a substitute for a standard (PSTN) telephone line. Callers typically use a VoIP-compatible digital cordless phone connected to an internet router, or a standard home phone connected to VoIP operator-provided hardware (which is then connected to a router). Some ISPs have been able to monetise VoIP calls by providing the hardware and offering managed VoIP calls as the voice element within double-play (voice and broadband) or triple-play (voice, broadband and TV) packages. The user experience is virtually indistinguishable from that of making a call on a traditional fixed network; indeed, many consumers may not even be aware that they are using VoIP.

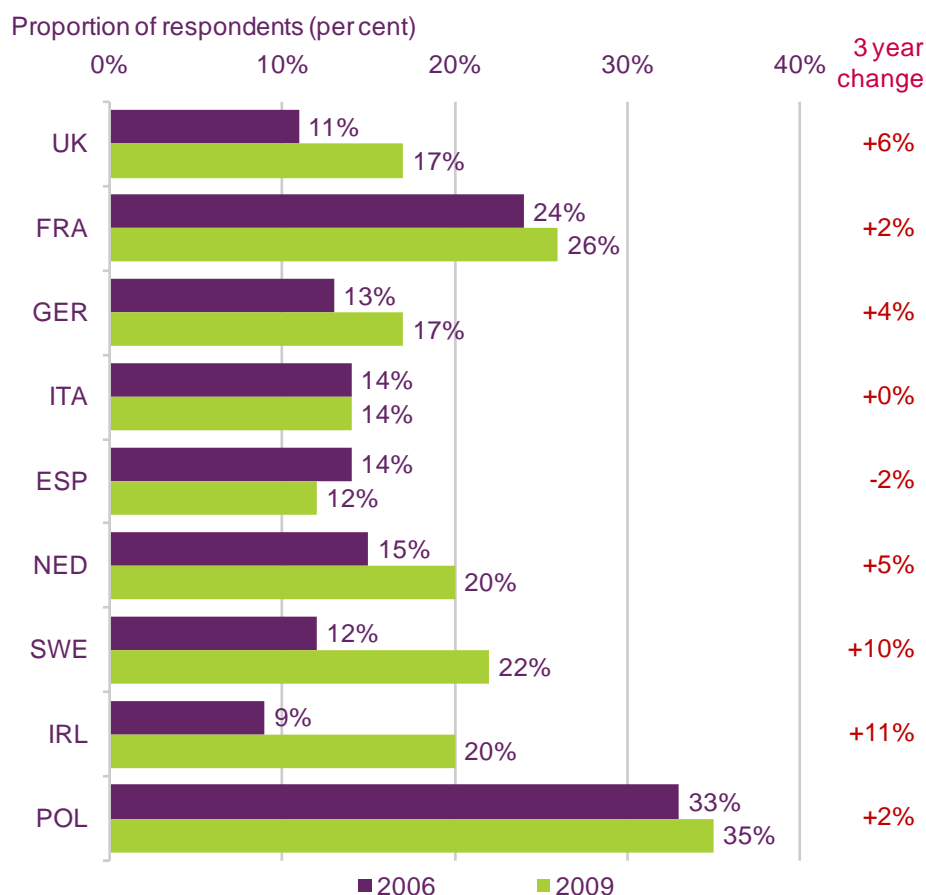
#### **PC-based VoIP calls are most popular in countries where there is high demand for international calls**

Survey data published by the European Commission show that PC-based VoIP calls increased in most countries between 2006 and 2009 (Figure 6.13). People in Poland were the highest users of VoIP in November to December 2009, with 35% of people claiming to use the internet to make voice calls. This may be due to the large Polish diaspora, as VoIP typically offers lower-cost international calls, and generally free calls when they are made PC-to-PC. The lowest household use of VoIP services was in Spain (12%), where reported use was two percentage points lower than the equivalent figure for 2006. In the UK 17% of homes used VoIP in 2009, six percentage points more than had done so in 2006. The largest reported growth in VoIP use in the three years to 2009 was in Ireland, where the proportion of homes using VoIP increased by 11 percentage points to 20%.

---

<sup>106</sup> IDATE, DigiWorld Yearbook 2010, p80

**Figure 6.13 Do you or another member of your household use a PC to make phone calls over the internet?**



Source: European Commission E-Communications Household Survey Report, October 2010

### Use of VoIP as a substitute for a standard fixed line is highest in France

Excluding users who make only PC-to-PC calls, the number of VoIP subscribers per 100 people was highest in France, at 26, among the comparator countries for which figures were available (Figure 6.14). The high take-up of VoIP in France is to a large extent due to low-cost double- and triple-play services, including VoIP, provided by all the leading broadband operators (including incumbent France Telecom), where a standard telephone handset can be plugged into the DSL, cable or FTTx modem. These managed VoIP services are simple to use; consumers are often unaware that they are using VoIP rather than a standard landline, and the services may include generous inclusive call bundles, such as unlimited free calls to landlines in France.

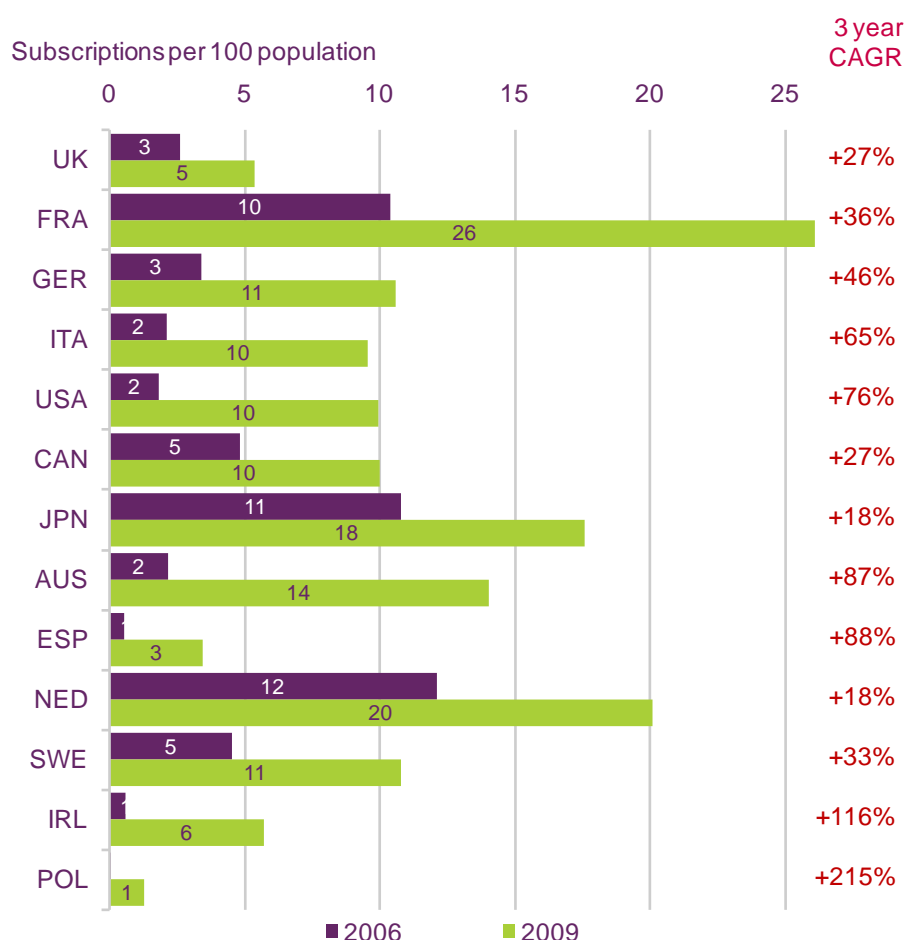
Migrating all fixed-line calls to VoIP removes the need to have a standard voice telephone line. For this reason, VoIP use is particularly high in countries where internet access is offered alone and costs less than an internet connection with a PSTN voice line. These may be 'naked DSL' products (i.e. DSL broadband without a voice line), which is common in France, or cable broadband (such as in the Netherlands, the US and Canada) or fibre-based broadband (such as in Japan).

In the UK, levels of VoIP take-up, excluding consumers making only PC-to-PC calls, were a fifth of those in France, at five subscribers per 100 population (the third-lowest level among the nations for which figures were available). This figure increased by an average of 27% in the three years to 2009. Limited take-up of VoIP in the UK can be linked to the fact that

PSTN voice lines often come with bundled voice calls, including 'unlimited' offers, similar to the managed VoIP offers in other countries. Few of the major ISPs have chosen to offer or promote managed VoIP services.

At the end of 2009, there was just one subscriber per 100 people in Poland. This suggests that while claimed VoIP use in Poland is high (as shown in Figure 6.13) the vast majority of this use is people making free PC-to-PC calls and it is rarely used as an alternative to having a standard fixed line.

**Figure 6.14 VoIP subscribers per 100 population, 2006 and 2009**



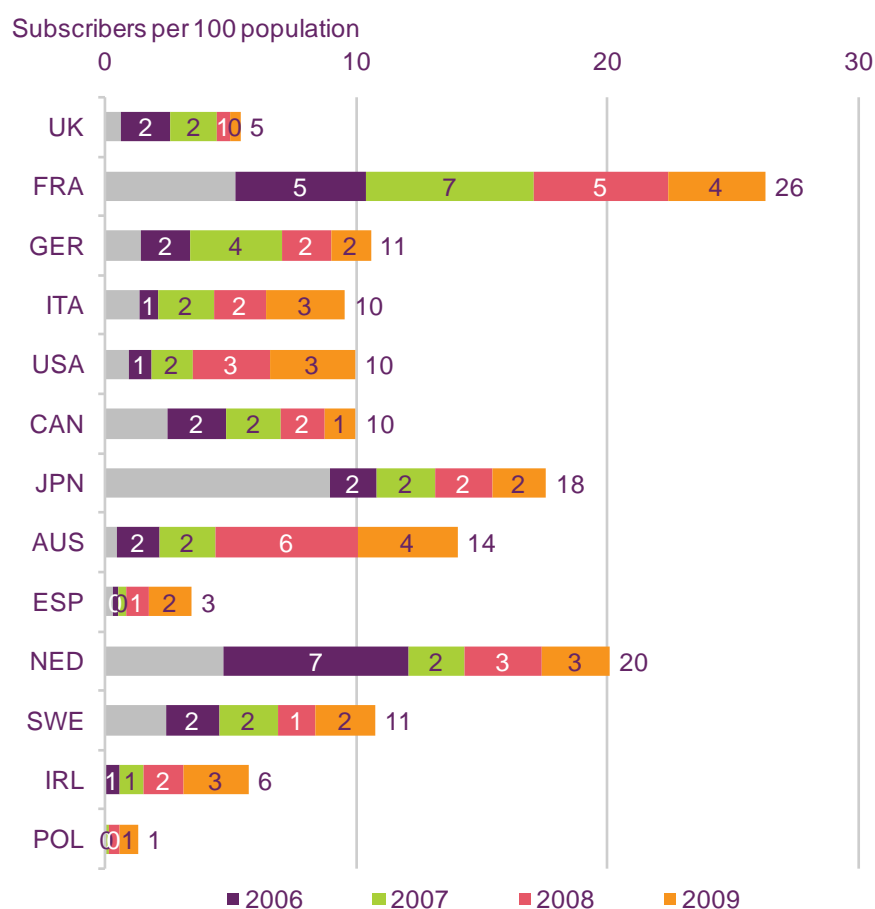
Source: IDATE

Note: Excludes those making only PC-to-PC VoIP calls

### Growth in VoIP slowing in UK as it gains pace in some other countries

Analysis of the growth in the number of VoIP subscriptions per 100 people shows very different patterns of development among our comparator countries. While the increase in VoIP subscribers per 100 people was higher in 2009 than 2008 in Italy, the US, Spain, Sweden, Ireland and Poland, it was lower in our other comparator countries, including the UK, possibly as a result of competition in fixed voice and bundled services (Figure 6.15). Across the countries for which figures were available, the average growth in VoIP subscribers per 100 people was 2.5 in 2009, unchanged from 2008. Australia had the highest growth in VoIP users per 100 population in 2009, at 4.0, while in the UK it was much lower than the average, at just 0.4 users per 100 people, equating to around a quarter of a million new VoIP users in the UK in 2009.

**Figure 6.15 Growth in VoIP subscribers per 100 population, 2006 to 2009**



Source: IDATE

Note: Excludes those making only PC-to-PC VoIP calls

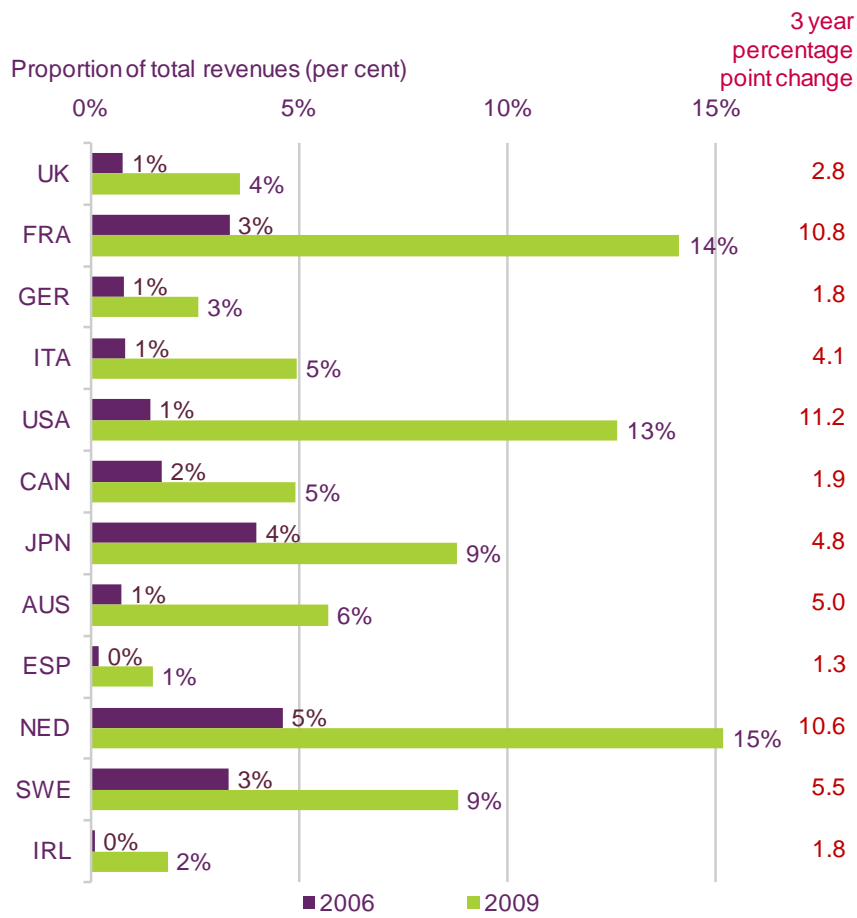
### VoIP's share of fixed telephony revenues was highest in the Netherlands in 2009

While France had the highest number of VoIP subscribers making calls to standard fixed and mobile telephones per 100 population (see Figure 6.14), the proportion of fixed telephony revenues generated by VoIP was highest in the Netherlands in 2009 at 15%, one percentage point higher than the 14% figure for France (Figure 6.16). This suggests either that VoIP users in the Netherlands make more VoIP calls on average than those in France (separate VoIP call volume data were not available to confirm this) or that the cost of VoIP calls, compared to those made over a standard fixed line, is higher in the Netherlands than in France.

As noted earlier in this section, VoIP services in France often include unlimited calls to landlines, so this could explain the difference. A further factor could be higher VoIP use by businesses in the Netherlands (the figures include business VoIP use), as businesses typically make larger volumes of more costly calls (peak-time, calls to mobiles and international) than residential users, and thereby push up the average cost of VoIP calls.

In the UK it is estimated that VoIP services contributed 4% of total fixed line revenues in 2009, the fourth lowest proportion among the 12 nations for which figures were available and a one percentage point increase on 2008. Spain had the lowest proportion of fixed voice revenues generated by VoIP in 2009, at just 1%, while the percentage point change in the proportion of fixed revenues from VoIP in the three years to 2009 was highest in the US, at 11.2%.

**Figure 6.16 VoIP share of fixed telephony revenues, 2006 and 2009**



Source: IDATE

Note: Excludes those making only PC-to-PC VoIP calls



## 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 in this report, from an industry and operator perspective. In general, we have looked at trends over the five years to 2009 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 developments in revenue growth. We then look at each market individually, 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 in the 17 countries in this report was £571bn in 2009, unchanged from 2008.** The proportion of revenues generated by mobile services rose to 58% in 2009, while that from fixed services fell to under a third for the first time (page 280).
- **BRIC countries had the highest growth in telecoms revenues in the five years to 2009.** Total telecoms revenues in Russia grew by an average of 18.5% in the five years to 2009; in contrast, revenue growth in the non-BRIC countries was highest in Australia at 5.7% and in the UK it averaged 2.4% over the period (page 282).
- **Data's share of revenues has more than doubled since 2004.** The average contribution made by data revenues to total telecom revenues increased from 13% in 2004 to 30% in 2009, and in the UK data services generated 28% of telecoms revenues in 2009 (page 283).
- **Mobile accounts for over two-thirds of total telecoms spend in Poland.** Poland had the highest proportion of telecoms revenue from mobile services in 2009, at 68% (in the UK it was 54%), while mobile's share of revenue had the largest increase in Canada, rising by 14 percentage points over the period to 49% in 2009 (page 285).
- **Fixed voice volumes declined in most countries in the five years to 2009.** The steepest falls in fixed call volumes were in the US, Australia and Japan, at an average of 12% per year, and France and Canada were the only countries where there was an increase. In the UK, fixed call volumes fell by an average of 4% a year over the period (page 289).
- **China overtook Japan to become the second-largest mobile market in terms of revenue in 2009 (£48bn).** Only the US was larger, generating almost £100bn in revenues in 2009, while in the UK the mobile market was worth £15bn in the same year (page 293).
- **27% of UK fixed broadband connections had a headline speed of 10Mbit/s or above at the end of June 2010.** This proportion was in line with Germany and France (both 28%) but was less than half the 57% in the Netherlands, where it was highest (page 311).

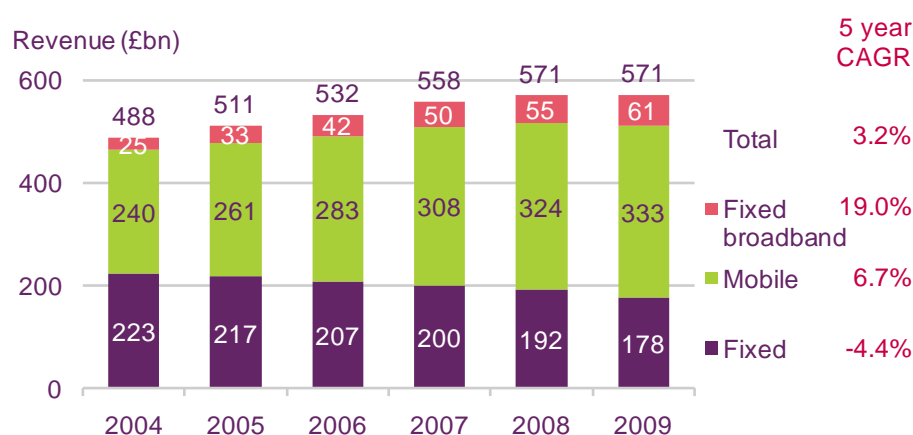
## 6.2.2 Overview

### Fixed voice share of total telecoms revenues falls to less than a third

Total retail telecoms revenue generated in the 17 countries covered in this report amounted to £571bn in 2009, unchanged from 2008 and 18% higher than in 2004 (Figure 6.17)<sup>107</sup>. The proportion of total revenues generated by mobile services rose to 58% in 2009, up two percentage points year-on-year and by nine percentage points since 2004. In contrast, fixed-line voice revenue fell to 31% of total telecoms revenues, compared to 34% in 2008 and 46% in 2004.

Fixed broadband services continued to account for the smallest proportion of revenues, at 11%, although this was more than double the share in 2004 (5%) and one percentage point higher than in 2008. Over the five years to 2009, broadband revenue grew the fastest, increasing by an average of 19.0% annually from £25bn in 2004 to £61bn in 2009. Over the same period revenues from mobile services increased by an average of 6.7% a year while fixed-line voice revenues have fallen year on year, declining by an average of 4.4% annually from £223bn in 2004 to £178bn in 2009.

**Figure 6.17 Total comparator country retail telecoms revenue, by sector, 2004 to 2009**



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 highest proportion of spend in all countries except Canada and Sweden

In 2009 the US was the largest telecoms market covered in this analysis, and in the world as a whole in terms of service revenues, generating £184bn (Figure 6.18). It was followed by Japan (£73bn) and China (£61bn). The UK was the seventh-largest telecoms market among our comparator countries, at £27bn, slightly ahead of Italy at £26bn but behind Germany (£37bn) and France (£32bn).

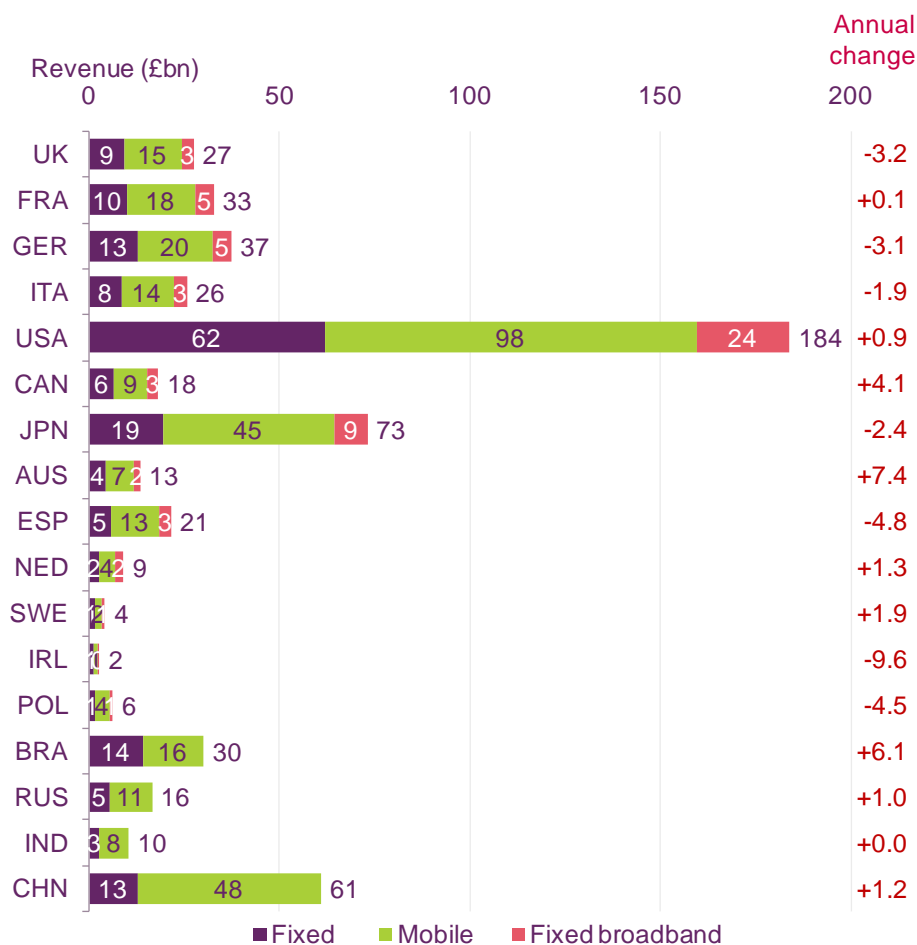
In most of the comparator countries, revenues from mobile services exceeded those from fixed voice and broadband revenues combined in 2009; Poland had the highest proportion of total revenues generated by mobile services (68%). The high take-up and use of mobiles for voice telephony in Poland meant that fixed-line voice accounted for the lowest share of revenues (21%) among our comparator nations. Canada and Sweden were the only two

<sup>107</sup> Excludes broadband revenues in Brazil, Russia, India and China

countries where revenues from mobile services accounted for less than half of total revenues (49% and 48% respectively), although based on recent growth trends, mobile revenues in both countries are likely to exceed the combined revenues from fixed voice and broadband services during 2010.

Ireland had the highest proportion of revenues generated by fixed voice services (40%) but the lowest proportion of revenues generated by fixed broadband services, at 10%, although this was up from 8% in 2008. The Netherlands had the highest proportion of total revenues generated by broadband services (22%) followed by Sweden (19%) and Canada (16%).

**Figure 6.18 Telecoms service retail revenue, by nation and by sector, 2009**



Source: IDATE / industry data / Ofcom

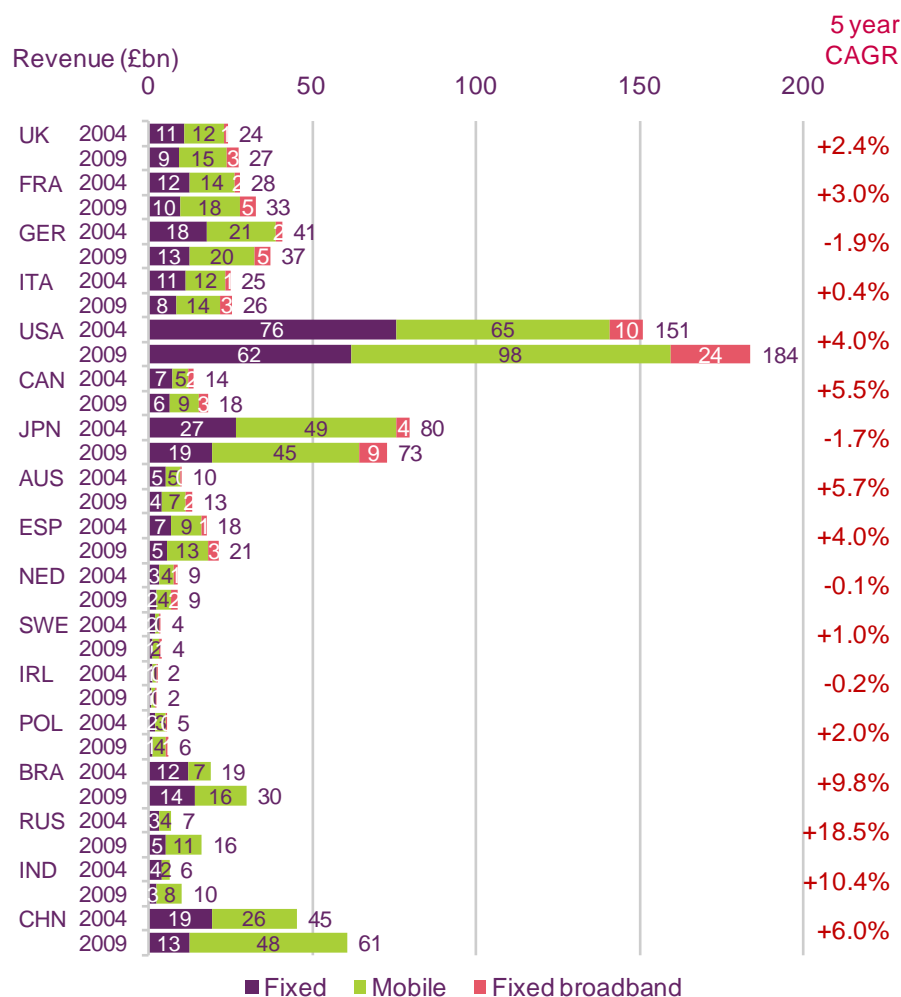
Note: Total service revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN

### Russia had the highest growth in telecoms revenues in the five years to 2009

Russia had the highest average annual growth rate in telecoms revenues in the five years to 2009 at 18.5%, followed by India (10.4%) and Brazil (9.8%) (Figure 6.19). Among the non-BRIC comparator countries, revenue growth was highest in Australia (5.7%) and Canada (5.5%) over the same period, with the main driver in both countries being growth in mobile revenues. Similarly, in the UK, a 4.5% average annual increase in mobile revenues was the main driver behind a 2.4% average annual rise in total revenues.

The only comparator countries where revenue from telecoms services fell between 2004 and 2009 were Germany (down an average of 1.9% a year), Japan (down 1.7%), Ireland (down 0.2%) and the Netherlands (down 0.1%). These falls were largely caused by a fall in fixed voice revenues, reflecting declining fixed-line penetration, although mobile service revenues also fell over the period in Germany and Japan.

**Figure 6.19 Telecoms service retail revenues, by sector, 2004 and 2009**



Source: IDATE / industry data / Ofcom

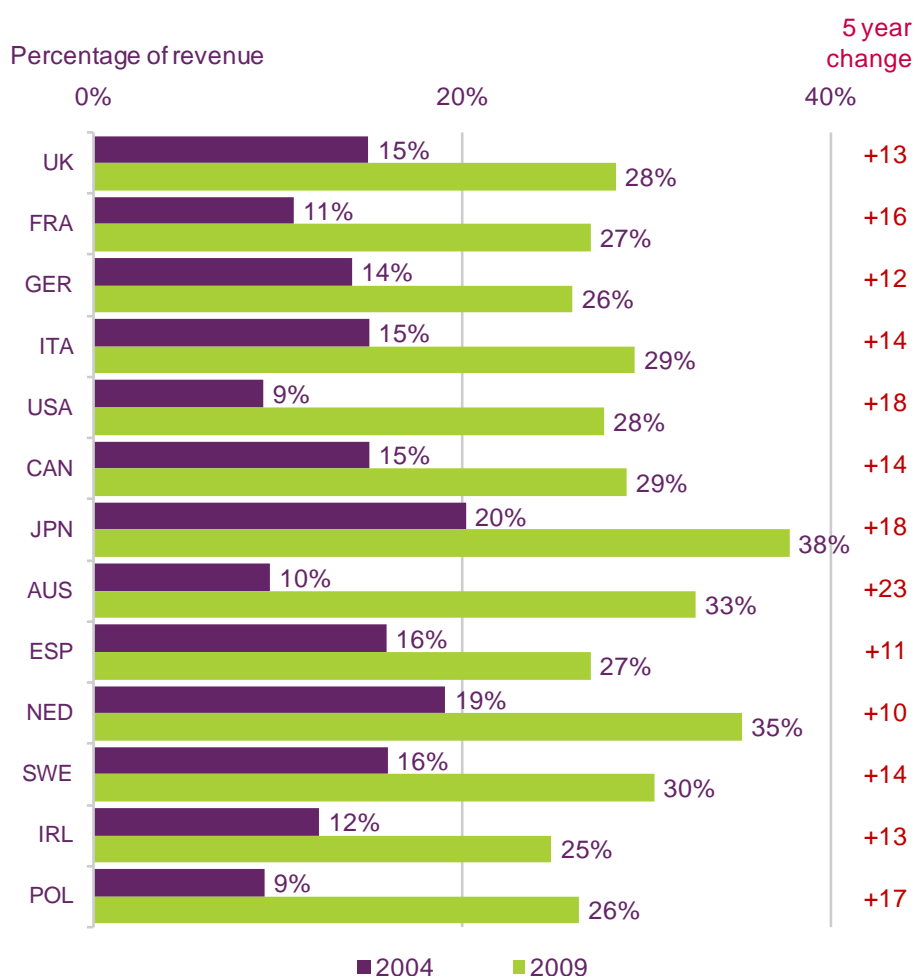
Note: Total service revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN

### Data's share of revenues has more than doubled since 2004

Over the five years to 2009, there has been a gradual shift in the sources of revenue for telecoms operators, with falling revenues from voice services being offset by rising revenue from both fixed broadband and mobile data services. Overall, the average contribution made by fixed broadband and mobile data to total telecom revenues increased from 13% in 2004 to 30% in 2009 among the 13 comparator countries for which fixed broadband revenue data were available (Figure 6.20).

Throughout this report, 'data service revenue' includes revenue from fixed broadband and mobile data services, but excludes revenue from narrowband internet and corporate data services (which are also excluded from our overall telecoms industry totals).

**Figure 6.20 Data revenue as a proportion of total telecoms revenues, 2004 and 2009**



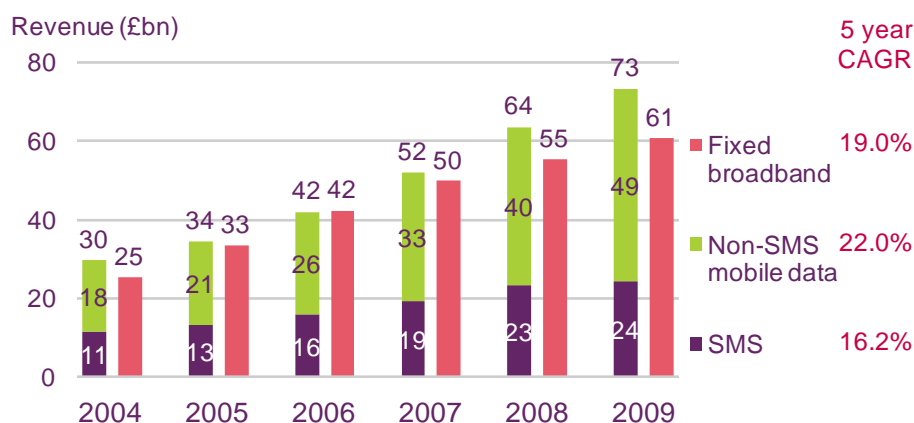
Source: IDATE / industry data / Ofcom  
 Note: Analysis excludes the BRIC countries

### Mobile data revenues growing faster than those from fixed broadband

Figure 6.21 shows fixed broadband and mobile data revenues from 2004 to 2009 in the 13 comparator countries for which fixed broadband revenue data were available. This shows that mobile data revenues (£73bn) continued to be higher than those from fixed data services (£61bn) in 2009. Over the five-year period an interesting pattern emerges. Prior to 2006, rapid growth in the take-up of fixed broadband services led to revenues from fixed broadband services growing faster than those from mobile data services, and in 2006 the revenues from each service were equal at £42bn.

However, in 2007 fixed broadband revenue growth declined significantly (to 18% from 27% in 2006) as a result of declining average broadband prices and a slowdown in connection growth, while total mobile data revenue growth increased, mainly due to growing use of non-SMS services. While mobile data service revenue growth has since started to slow, it remains higher than fixed broadband revenue growth, and the gap between revenues from fixed and mobile data services has continued to increase.

**Figure 6.21 Fixed broadband and mobile data revenues, 2004 to 2009**



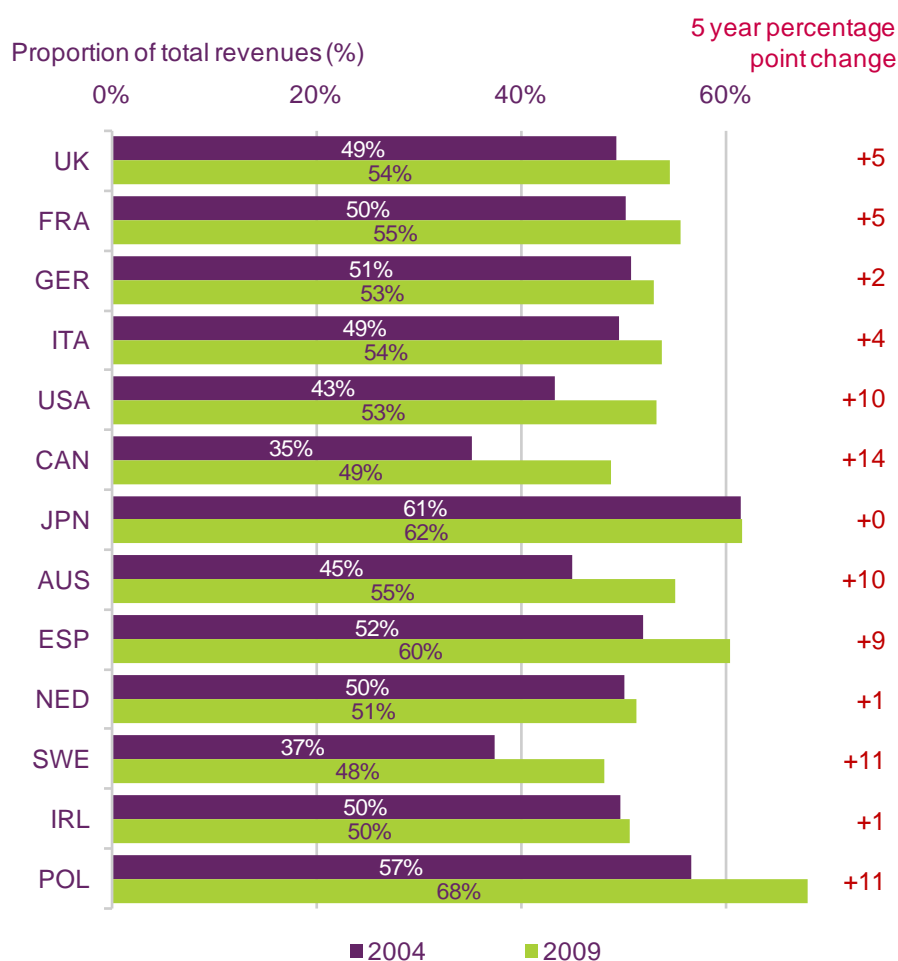
Source: IDATE / industry data / Ofcom  
 Note: Analysis excludes the BRIC countries

**Mobile accounts for over two-thirds 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 over half (55%) of total telecoms revenues on average in 2009, compared to 49% in 2004 (Figure 6.22). Poland had the highest proportion of telecoms revenue from mobile services in 2009, at 68%, while mobile’s share of revenue had the largest increase in Canada, rising by 14 percentage points over the period, while mobile accounted for 49% of telecoms revenue in 2009.

Sweden had the lowest proportion of revenue attributed to mobile in 2009, at 48%, while Japan had the lowest increase in mobile’s share of total telecoms revenues over the five years, at less than one percentage point. In the UK, mobile contributed 54% of total telecoms revenues in 2009, an increase of five percentage points on 2004.

**Figure 6.22 Mobile as a proportion of total telecoms revenues, 2004 and 2009**



Source: IDATE / industry data / Ofcom  
 Note: Analysis excludes the BRIC countries

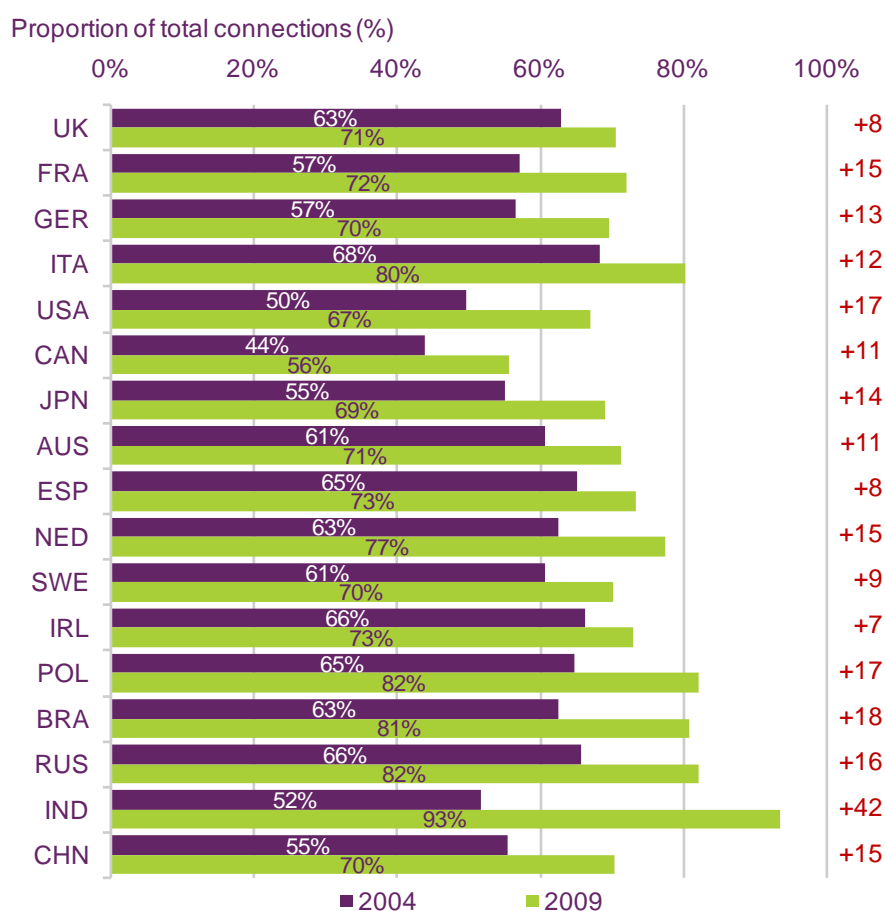
**Mobile makes up the highest proportion of voice connections in India and Russia**

On average, mobile accounted for 76% of total voice telecoms connections across our 17 comparator countries in 2009, compared to 57% in 2004; in the UK 71% of all telecom connections were mobile in 2009, up eight percentage points on 2004 (Figure 6.23).

The proportion of voice telecoms connections that were mobile was highest in India (93%) at the end of 2009, while among the European comparator countries Russia and Poland had the highest proportion at 82%. Several factors may be behind this 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 (see Figure 6.41 below).

In contrast, the lowest proportions of mobile connections relative to total voice telecom connections were in Canada (56%), the US (67%) and Japan (69%), where the majority of mobile connections are purchased on a pay-monthly contract basis.

**Figure 6.23 Mobile as a proportion of total voice connections, 2004 and 2009**



Source: IDATE / industry data / Ofcom

### 6.2.3 Fixed voice services

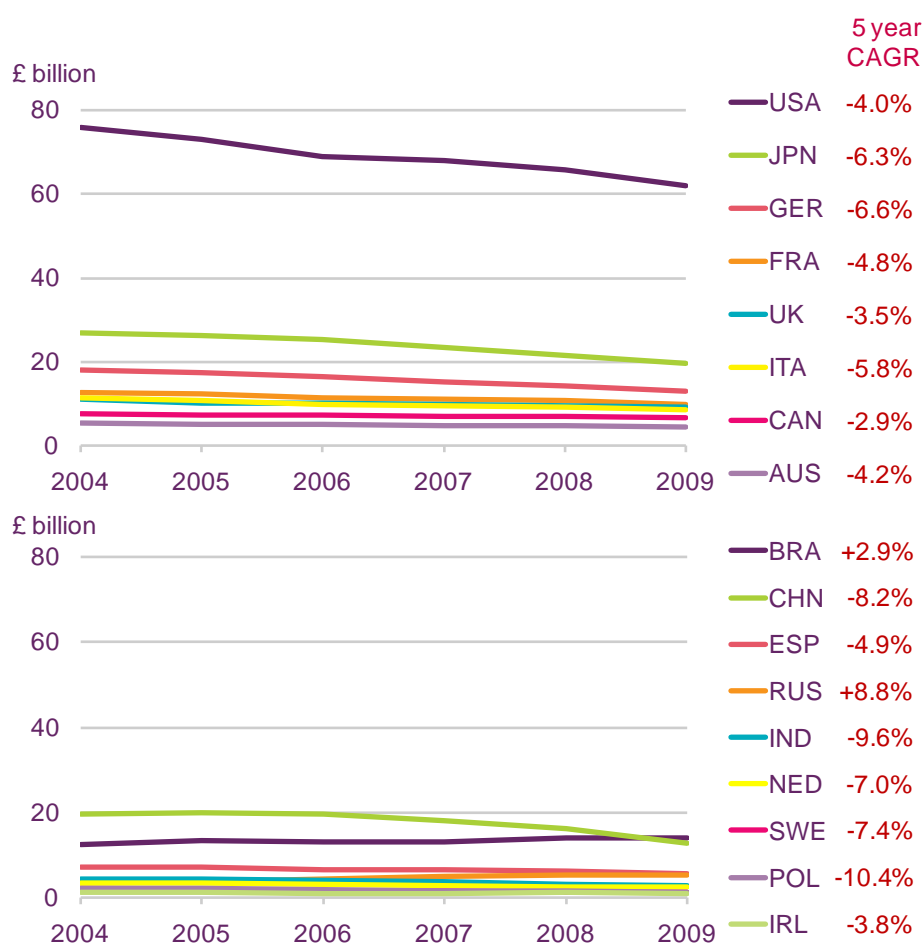
#### Fixed voice revenues fall in every country except Russia and Brazil

Fixed voice revenues fell in all our comparator countries with the exception of Brazil and Russia in the five years to 2009 (Figure 6.24). The steepest average annual decline was in Poland (10.4%), followed by China (8.2%), Sweden (7.4%) and the Netherlands (7.0%). In the US, the largest fixed voice market covered in this analysis, revenues fell by an average of 4.0% annually over the period to £62bn in 2009.

Across all 17 comparator countries fixed telephony revenues fell by an average of 4.4% a year between 2004 and 2009. However, in 2009 the rate of decline in fixed voice revenues increased in 13 of our comparator countries, and across all 17 countries it averaged 7.3% compared to 4.4% in 2008. Brazil was the only comparator country where fixed voice revenues increased in 2009 (up by 0.5%) while the decline was highest in China, at 21.8% during the year.



**Figure 6.24 Fixed-line voice retail revenues, 2004 and 2009**



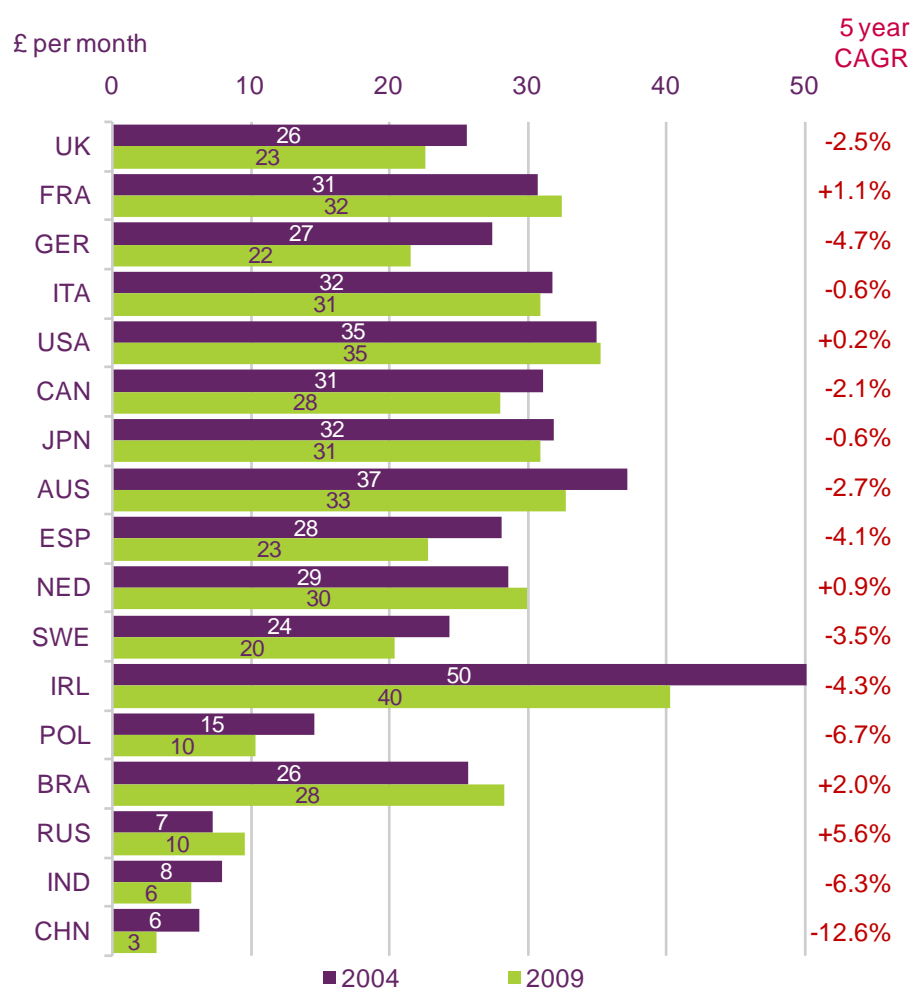
Source: IDATE / industry data / Ofcom

### Average revenue per fixed line is highest in Ireland at £50 a month

There were significant variations in the average monthly revenue generated per fixed voice line during 2009 among the 17 countries covered in this report (Figure 6.25). The highest revenue per line was in Ireland at £50 per month, while it was just £3 per month in China. Average spend per fixed line in the UK was £23 in 2009, down an average of 2.5% a year since 2004. The average monthly revenue per line across the 17 countries was £17 in 2009, down from £27 in 2004, largely as a result of growth in the number of lines in the BRIC countries, where average revenue per line is lower.

Average revenue per fixed line fell in all but five of the countries covered in this analysis between 2004 and 2009, with the largest average annual declines in China (12.6%) and Poland (6.7%), where the accelerating shift towards mobile voice telephony is likely to be a major contributory factor. The largest increase in revenue per fixed voice line over the period was in Russia, where the increase averaged 5.6% a year to £10 per month in 2009, although most of this growth occurred in 2004 to 2007 and average revenue per line has remained largely unchanged since then.

**Figure 6.25 Average monthly revenue per fixed line, 2004 and 2009**



Source: IDATE / industry data / Ofcom

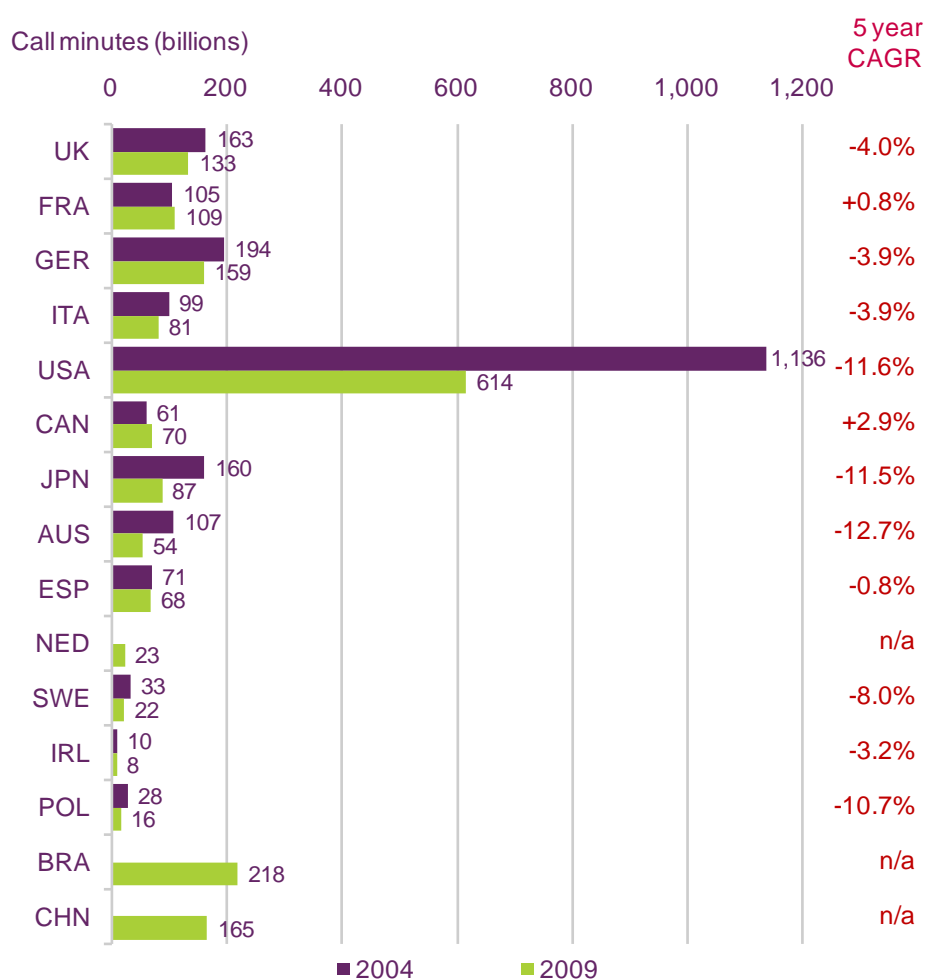
### Fixed call volumes are declining fastest in Japan and the US

Fixed voice volumes declined in most countries in the five years to 2009, with the steepest average annual falls among the comparator countries for which time series data were available being in Australia (12.7%), the US (11.6%) and Japan (11.5%). The number of call minutes made over fixed lines almost halved in Australia over the period, from 107 billion in 2004 to 54 billion in 2009, largely due to increasing use of mobile telephony for voice calls. Call volumes from fixed lines in the UK fell by an average of 4.0% a year to 133 billion in 2009 (Figure 6.26).

Canada and France were the only countries for which we had data where fixed call volumes increased in the five years to 2009, growing by an average of 2.9% and 0.8% respectively over the period. In France this is due to high levels of VoIP use, while figures for Canada exclude VoIP call minutes and fixed call volume growth is therefore likely to be understated<sup>108</sup>. In both countries, however, the volume of fixed calls fell for the first time in 2009 due to increasing use of mobile telephony.

<sup>108</sup> VoIP calls other than PC-to-PC calls are included for all countries except the US and Canada, where data were not available

**Figure 6.26 Fixed-line voice call volumes, 2004 and 2009**



Source: IDATE / industry data / Ofcom

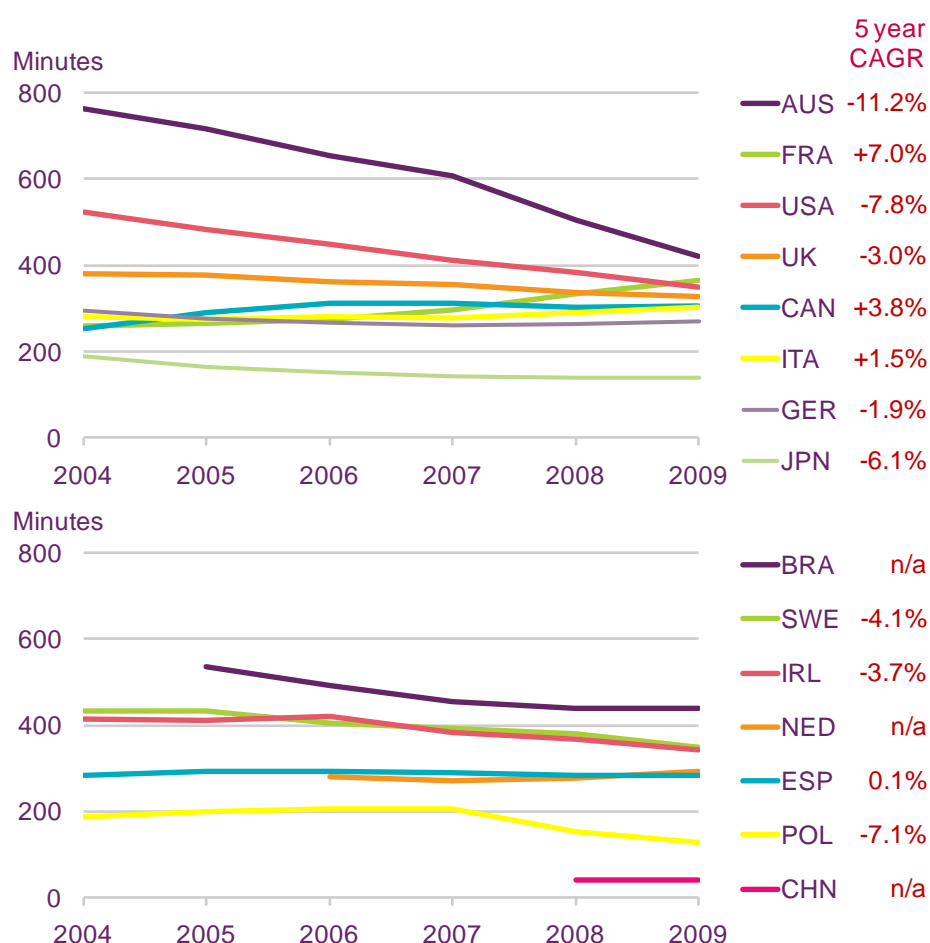
Note: Figures for USA and CAN exclude local and VoIP calls and include incoming mobile calls

### Call minutes per fixed line were highest in Brazil in 2009

The average number of outgoing minutes per fixed line fell by an average of 4.6% a year in the five years to 2009 to 299 minutes across the 12 comparator countries for which full time series data were available (Figure 6.27). Brazil had the highest number of call minutes per fixed line, at 439 minutes a month in 2009, while China, where usage was less than one-tenth that in Brazil (at 42 minutes per line), had the lowest average use.

Average call volumes per fixed line in the UK fell to 327 minutes in 2009, an average decline of 3.0% a year since 2004. France, Canada, Italy and Spain were the only comparator countries for which time series data were available where call volumes per line increased during the five-year period, with the largest average annual rate of growth being in France, at 7.0% per year.

**Figure 6.27 Monthly outbound minutes per fixed line, 2004 to 2009**



Source: IDATE / industry data / Ofcom

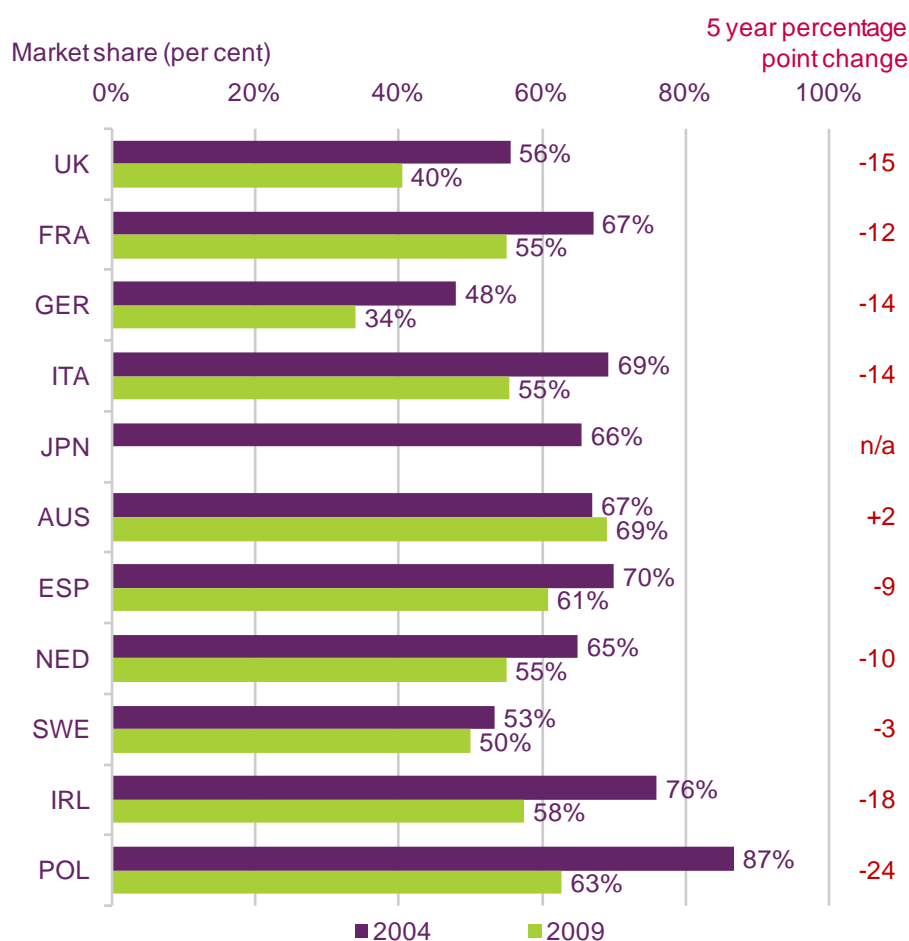
Note: Figures for USA and CAN exclude local and VoIP calls and include incoming mobile calls

### **Australia is the only nation where the incumbent's fixed call volume share increased**

There were significant declines in the proportions of fixed call volumes which originated on the national incumbent operators' networks in most of the comparator countries for which figures were available in the five years to 2009 (Figure 6.28). The largest decline was in Poland, where Telekomunikacja Polska (TP)'s share of fixed voice calls fell by 24 percentage points to 63% over the period, although TP still had the largest share of all the countries in our analysis after Telstra in Australia (69%).

Australia was the only country in which the incumbent's share of fixed call volumes increased, with the volume of fixed voice traffic originating on Telstra's network growing by two percentage points over the five-year period. Deutsche Telekom in Germany had the lowest share of any incumbent in 2009 (34%), followed by BT in the UK (40%). Among the European countries, the smallest decline in the incumbent's share was in Sweden (down three percentage points), although incumbent TeliaSonera's share (at 50%) was still relatively low compared to most of the countries covered in this report.

**Figure 6.28 Incumbent share of fixed voice call volumes, 2004 and 2009**



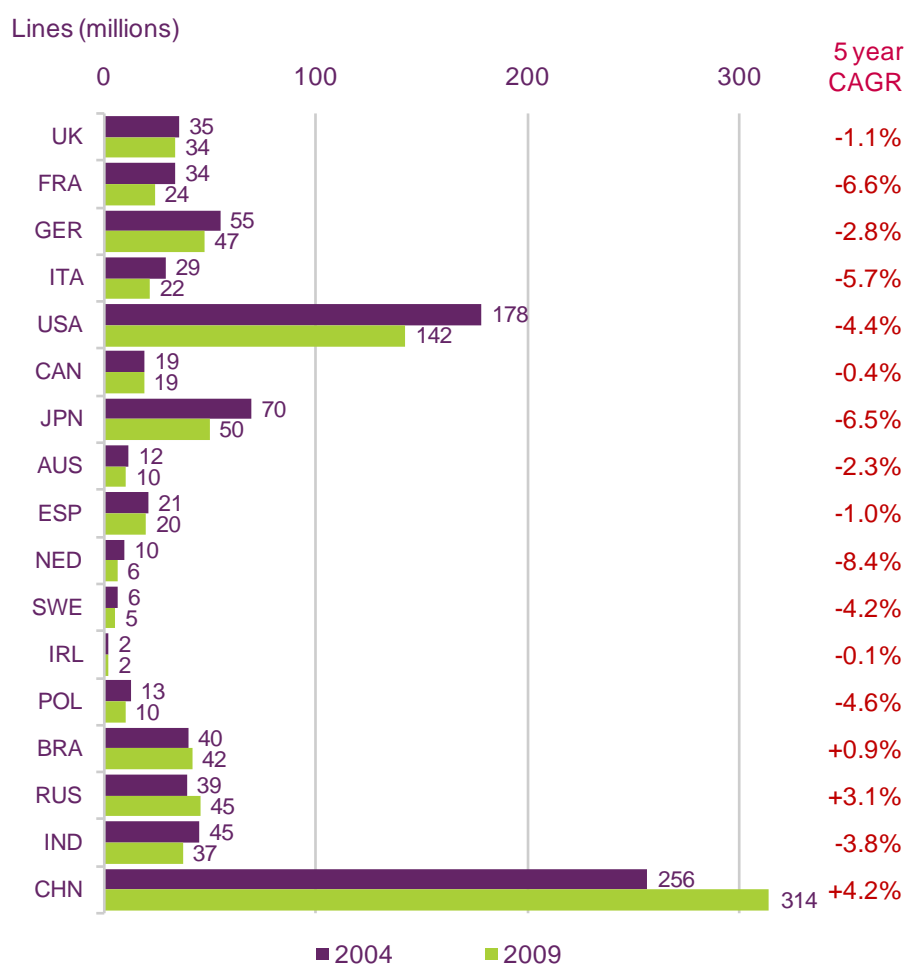
Source: IDATE / industry data / Ofcom

### Take-up of VoIP drives decline in fixed lines in the Netherlands, France and Japan

The number of fixed lines fell in all of our comparator countries between 2004 and 2009, except in China, Russia and Brazil where the number of lines increased by averages of 4.2%, 3.1% and 0.9% respectively per year over the period (Figure 6.29). Despite an overall increase in the five years to 2009, the number of lines in China has been declining since 2007, when it peaked at 374 million.

The fastest average annual rate of decline in the number of fixed lines was in the Netherlands at 8.4%, followed by France and Japan, where the number of lines fell by averages of 6.6% and 6.5% a year respectively. Increasing take-up of VoIP services (see Section 6.1.5) over broadband connections, where no fixed voice line connection is required (via either 'naked' DSL 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 1.1% a year on average over the five years to 2009, to 34 million.

**Figure 6.29 Fixed exchange lines, 2004 and 2009**



Source: IDATE / industry data / Ofcom

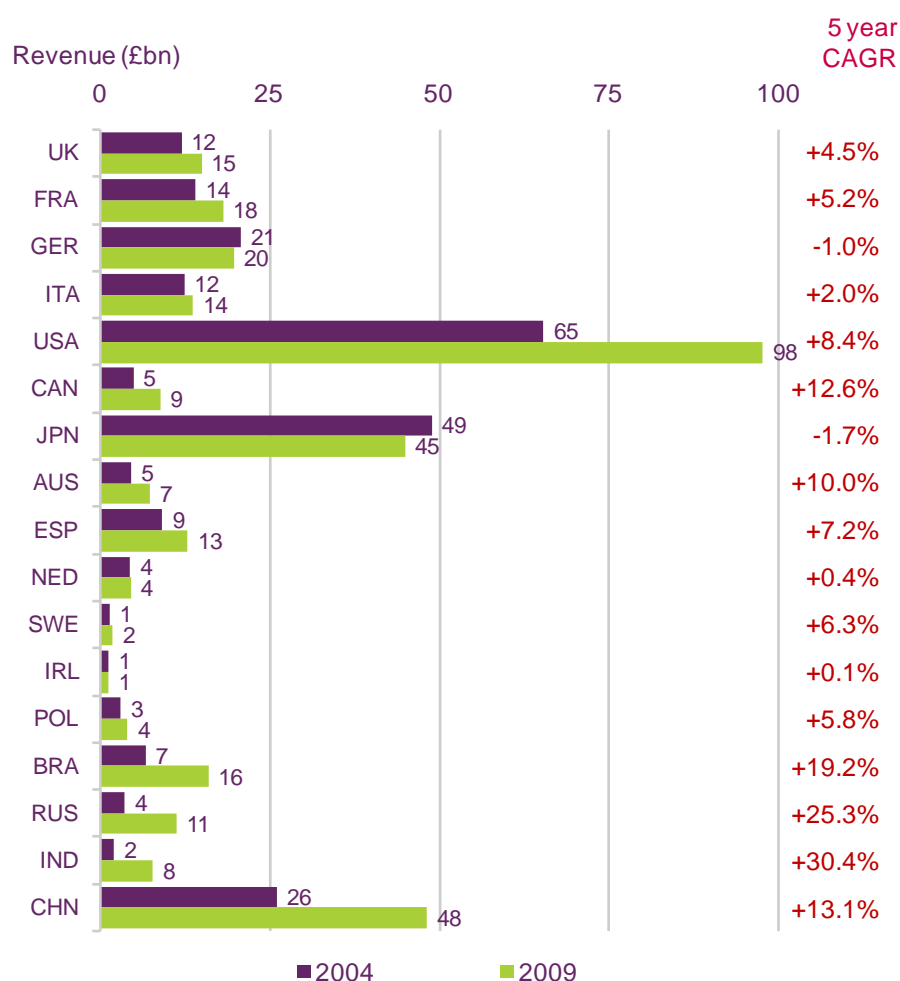
### 6.2.4 Mobile voice and data services

#### China becomes second largest mobile market in terms of revenues

During 2009 China overtook Japan to become the second largest mobile market in terms of revenues, after the US, which is by far the largest mobile market in the world and which generated nearly £100bn in revenue in 2009 (Figure 6.30). In contrast, the smallest mobile market in our analysis, with £1.2bn in mobile revenue, was Ireland, followed by Sweden at £1.9bn. These two countries have the smallest populations of all the countries covered in this report.

Growth in mobile revenues over the five years to 2009 was strongest in the BRIC countries, with India experiencing the largest average annual increase, at 30.4% a year from £2bn in 2004 to £8bn in 2009. However, growth in the BRIC countries slowed significantly in 2009, when it was 8.5% (compared to 14.1% in 2008 and 22.8% in 2007). Outside the BRIC countries revenue growth in the five years to 2009 was strong in Canada (12.6%) and Australia (10.0%), while in the UK revenue grew by an average of 4.5% each year. Germany and Japan were the only countries in which mobile revenues declined over the five-year period, with the sharpest fall being in Japan, where revenues dropped by an average of 1.7% a year.

**Figure 6.30 Mobile revenues, 2004 and 2009**



Source: IDATE / industry data / Ofcom

Note: USA, CAN and CHN include revenues from incoming calls

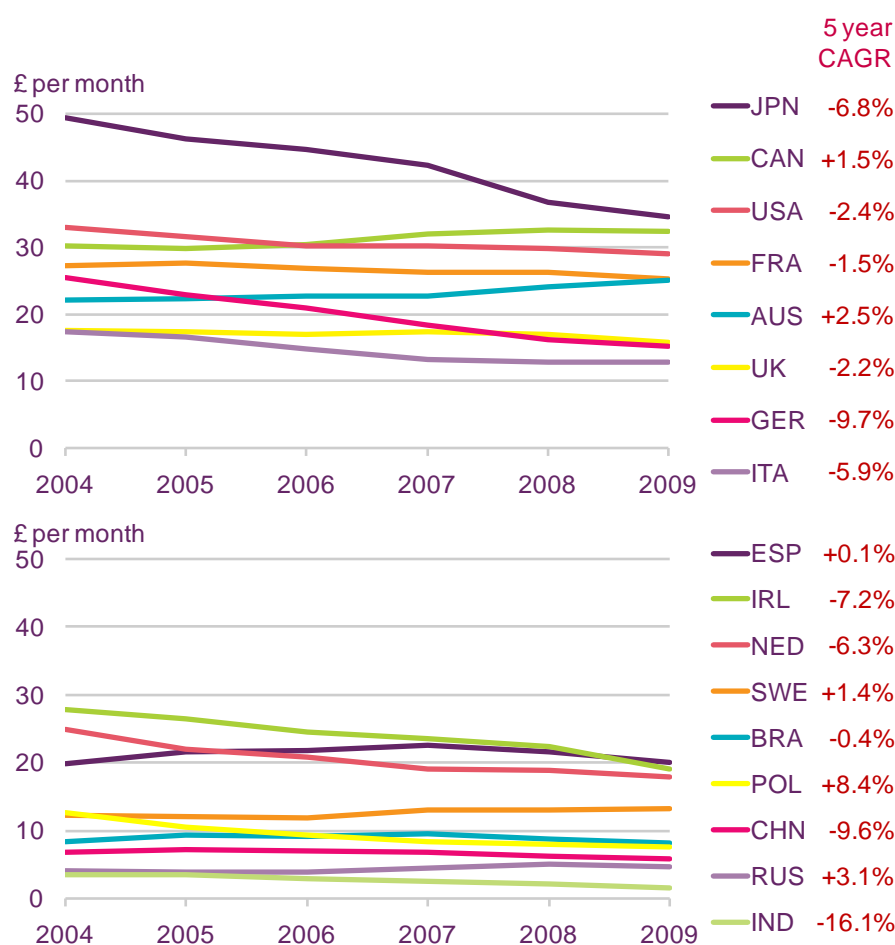
### Revenue per mobile connection is lowest in India at just £1.50 per month

Revenue per mobile connection varied widely among our comparator countries, ranging from just £1.30 per month in India to £35 in Japan in 2009 (Figure 6.31). Differences in income levels are the main driver of these differences, although high levels of multiple connections per user, especially where pre-pay services are popular (such as in Italy and India), can also result in average revenue per connection being lower.

In most countries average revenue per connection declined in the five years to 2009, with the greatest average annual falls being in India (16.1%) and Germany (9.7%) where, despite increased call volumes per connection (see Figure 6.36), lower voice tariffs as a result of increased competition have pushed overall spend downwards. Falling mobile prices as a result of growing competition is the largest factor behind falling average mobile spend in most comparator countries, but it is likely that the global economic situation is also causing consumers to rein in their mobile spend. In the UK, average monthly spend fell by an average of 2.2% a year during the five-year period, to £16 per month in 2009.

Average spend per mobile connection increased in six of our comparator countries (Poland, Russia, Australia, Canada, Sweden and Spain) in the five years to 2009, while in 2009 itself average monthly revenue per mobile connection increased only in Australia (up 3.8% to £25) and Sweden (up 1.9% to £13).

**Figure 6.31 Average monthly revenue per mobile connection, 2004 to 2009**



Source: IDATE / industry data / Ofcom

Note: USA, CAN and CHN include revenues from incoming calls

### Mobile data service revenue grew strongly in the US and Australia

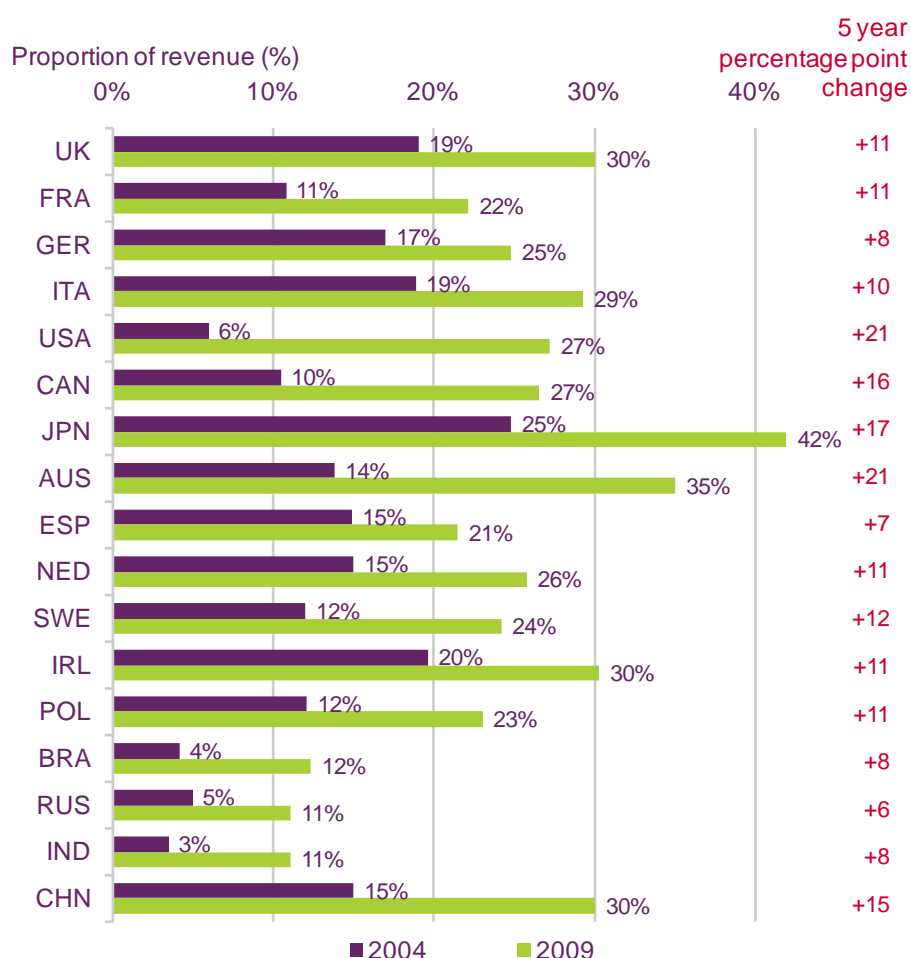
Over the past five years revenue from mobile data services (including SMS and MMS messaging) has become an increasingly large proportion of overall mobile revenue in all of our comparator countries (Figure 6.32). Indeed, with little or no overall growth in revenues from voice services, mobile data revenue has been the main driver of overall mobile revenue growth in most countries.

The average contribution of data services to overall mobile service revenues across all the nations in this report increased from 14.2% in 2004 to 27.6% in 2009, and the highest proportional growth was in the US and Australia, where there were increases of 21 percentage points to 27% and 35% respectively.

Japan had the highest proportion of mobile revenues generated by data services in 2009 (42%) while the lowest proportions were in India and Russia at 11%, where the availability of 3G networks that support advanced data services is less widespread, and the take-up of internet-enabled handsets is lower than in most other comparator countries. In the UK, data accounted for 30% of mobile revenue in 2009, an 11 percentage point rise since 2004.



**Figure 6.32 Data as a proportion of total mobile service revenue, 2004 and 2009**



Source: IDATE / industry data / Ofcom

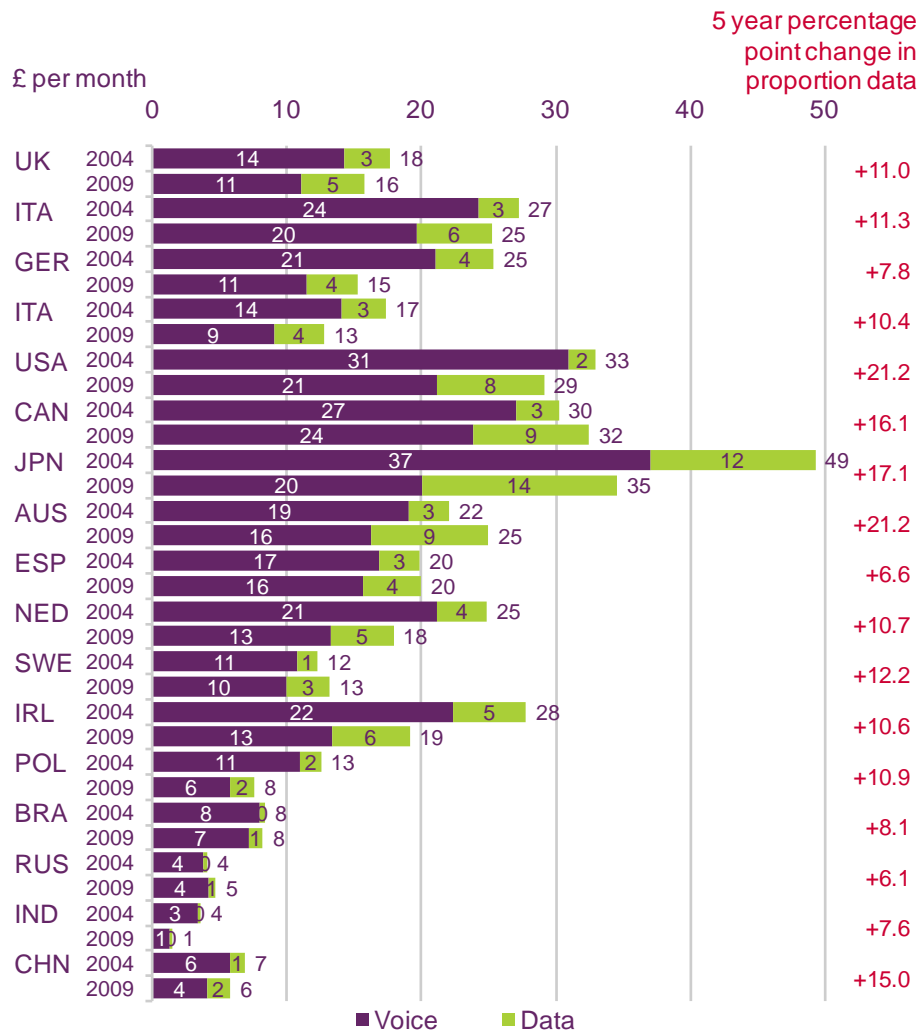
Note: USA, CAN and CHN include revenues from incoming calls

### Mobile voice revenues per connection decline in all countries except Russia

In the five years to 2009 the average voice revenue per mobile connection fell in all 17 of our comparator countries except Russia, where it increased by an average of 1.7% a year to £4 a month over the period (Figure 6.33). Falling average fixed voice revenues per connection contributed to falling average total monthly revenue per mobile connection in all of our comparator countries except Australia, Canada, Sweden, Spain (where the increase in average data revenue per user was greater than the fall in voice revenue) and Russia.

The fastest fall in voice revenue per connection was in India, where it declined by an average of 17.5% a year in the five years to 2009, largely due to the growing use of mobiles. The largest rise in spend on data services over the same period was in the US, where revenues increased by an average of 32.0% a year. In the UK, average mobile data revenue per connection increased by £1 a month to £5, but this was offset by a £3 decline in spend on voice services to £11 in the five years to 2009.

**Figure 6.33 Average monthly mobile voice and data revenue per connection, 2004 and 2009**



Source: IDATE / industry data / Ofcom

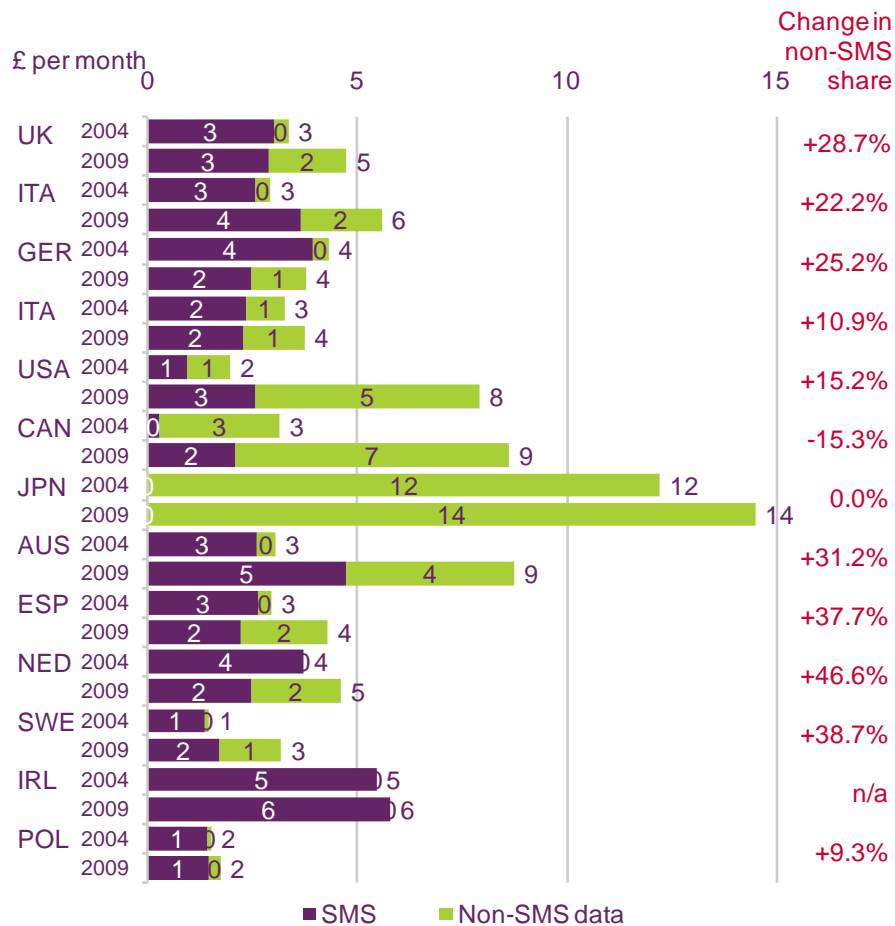
Note: USA, CAN and CHN include revenues from incoming calls

### Share of non-SMS data services has increased in all countries since 2004

SMS continued to account for the majority of mobile data revenue per connection in most comparator nations in 2009 (Figure 6.34). However, while SMS spend remained largely flat or declined in most of the comparator countries for which data were available in the five years to 2009, due to falling prices, non-SMS data revenue increased in these countries, due to the rising take-up of advanced mobile data services accessed via either mobile handsets or via PCs/laptops using mobile broadband dongles or datacards.

The fastest rate of growth in average non-SMS revenue per connection was in Sweden (up by an average rate of 67.5% a year between 2004 and 2009) while the lowest non-SMS data revenue growth was in Japan, averaging just 3.5% per year. Spend in the UK on non-SMS data services increased by an average of 39.9% a year to £2 per month. The US, Canada and Japan were the only countries in which non-SMS data services accounted for the majority of mobile data revenue in 2009; in Japan, SMS has very low availability and is rarely used, with mobile users being much more likely to use email and instant messaging instead.

**Figure 6.34 Average monthly SMS and non-SMS data revenue per mobile connection, 2004 and 2009**

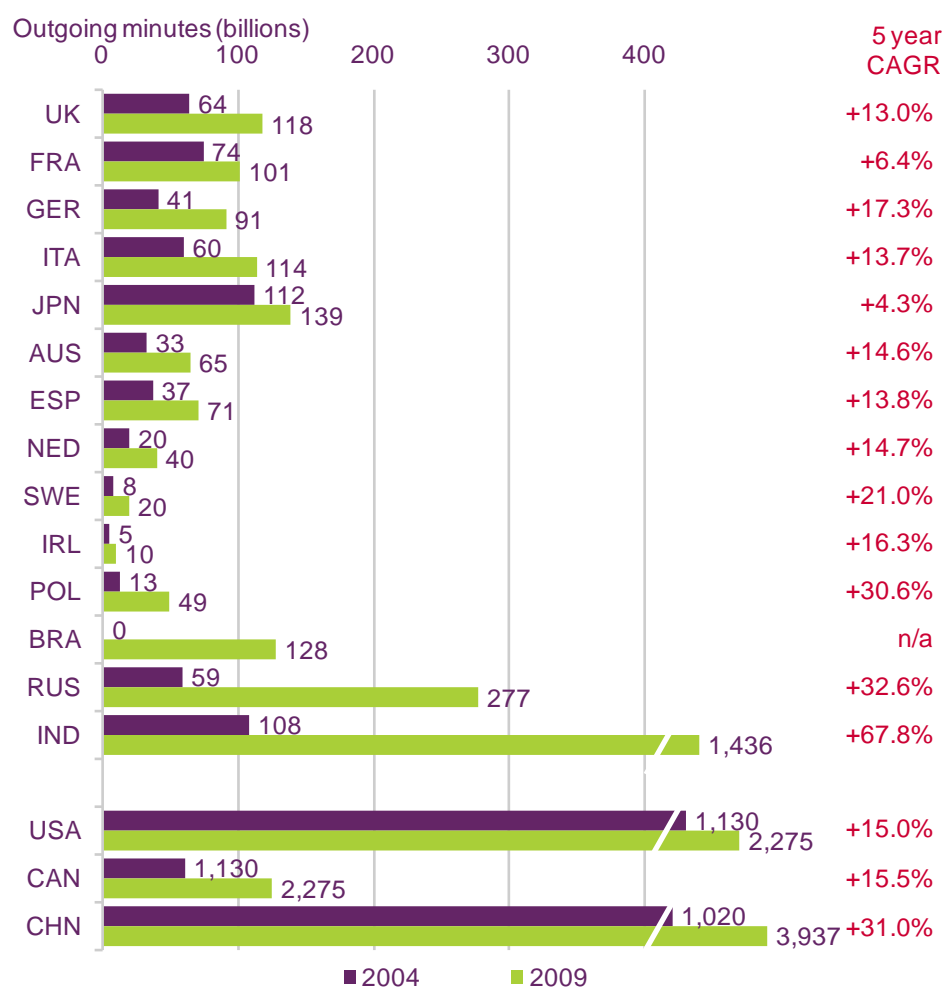


Source: IDATE / industry data / Ofcom

### Mobile call volumes continue to grow, but growth rates vary

Mobile call volumes increased in the five years to 2009 in all the comparator nations for which data were available (Figure 6.35). The fastest average annual growth was among the BRIC nations, with the highest being in India at 67.8%, followed by Russia (32.6% a year), China (31.0%) and Poland (30.6%). Despite already having a high level of mobile take-up in 2004, mobile call volumes almost doubled in the UK in the five years to 2009 (an average annual increase of 13.0%), although this rate of increase was slower than in most of our comparator countries. The slowest mobile call volume growth among our comparator countries was in Japan, where call volumes increased by just 4.3% a year in the five years to 2009.

**Figure 6.35 Mobile voice call volumes, 2004 and 2009**



Source: IDATE / industry data / Ofcom  
 Note: USA, CAN and CHN include incoming calls

**Mobile calls per connection fell in ten of our comparator countries in 2009**

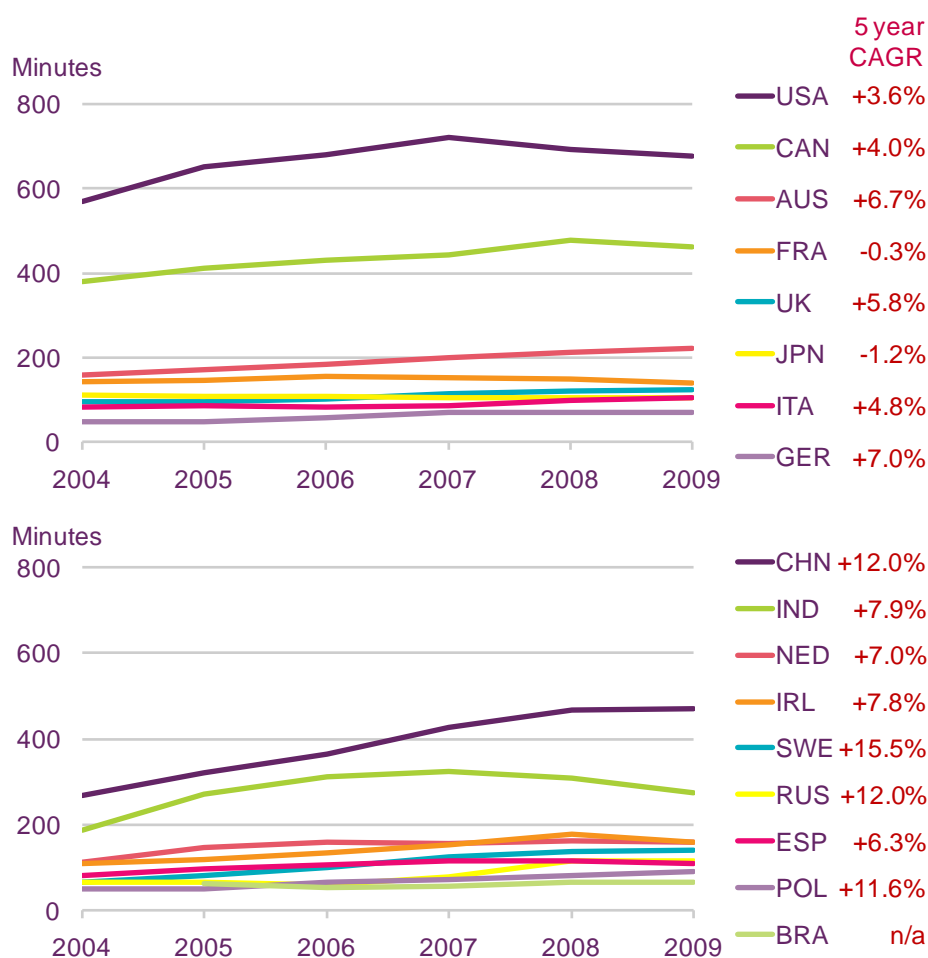
Much of the increase in mobile voice call volumes is due to growth in the number of mobile connections, which increased in all our comparator countries, as shown in Figure 6.39. However, in all of the countries covered in this report except Japan and France, call volumes per connection also increased in the five years to 2009 (Figure 6.36). The highest average use per mobile connection was in the US (678 minutes per month), although figures for the US (and China and Canada, with the second and third highest calls per connection respectively) also include incoming call minutes.

The fastest rates of call volume growth per connection over the period were in Sweden (up by an average of 15.5% a year), China (which also had the highest number of outgoing calls minutes per connection, and average growth of 12.0% a year) and Russia (also 12.0%). Call volumes per connection in the UK increased by an average of 5.8% per year over the same period, although this slowed to just 2.3% in 2009.

Average call volumes per mobile connection fell in ten of our comparator countries in 2009 as a result of high penetration rates and people having more than one mobile connection and therefore using each of them less. Japan and France were the only countries in which mobile call minutes per connection declined over the five-year period (by 1.2% and 0.3%

respectively). In France this was partly due to a lower degree of fixed-to-mobile substitution, as a result of the availability of cheap VoIP-based fixed-line services, offering generous call packages and relatively expensive mobile voice calls. In Japan, mobile voice calls are expensive and so consumers tend to use non-voice forms of mobile communication such as email instead. Details of average voice call use per person among our comparator countries can be found in Section 6.3.4.

**Figure 6.36 Monthly outbound minutes per mobile connection, 2004 and 2009**



Source: Ofcom consumer research

Note: USA, CAN and CHN include incoming calls

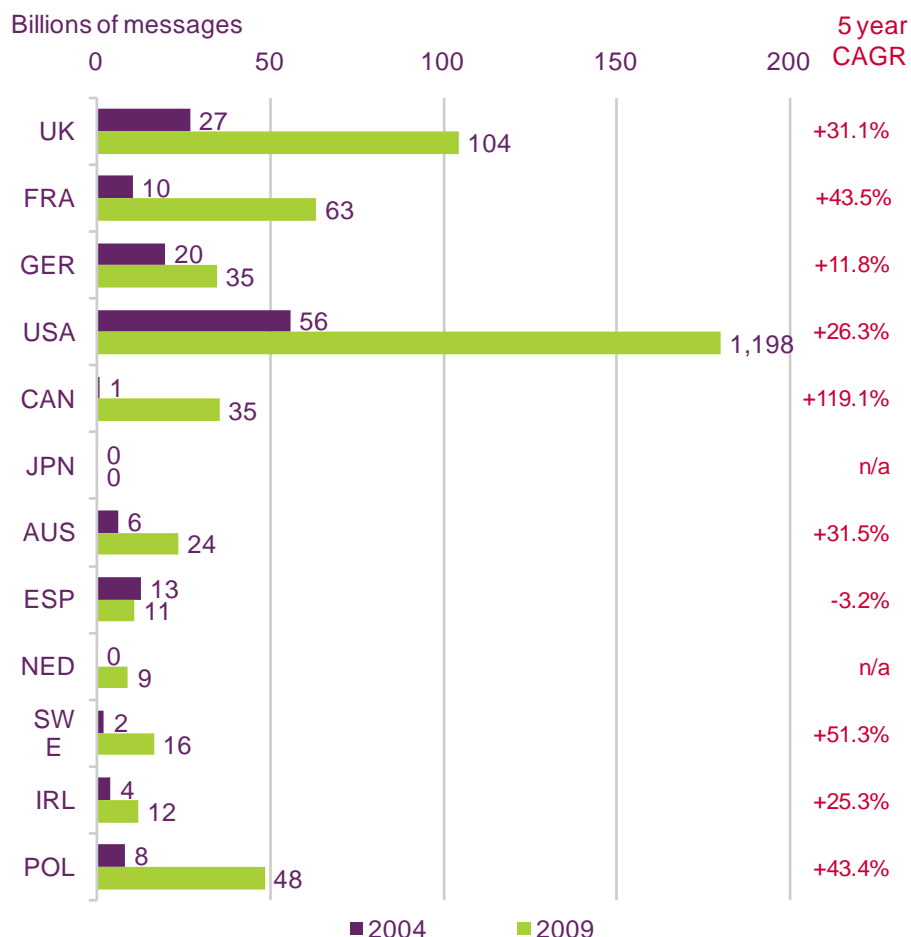
### Mobile messaging volumes continue to increase in most comparator countries

In all of the comparator nations for which time series data were available, except Spain and Japan, mobile messaging volumes increased in the five years to 2009 (Figure 6.37). The fastest growth was in Canada, where message volumes rose by an average of 119.1% a year, due to a combination of rising take-up of mobile services and increased bundling of SMS in contract tariffs. In the UK, the increased availability of tariffs with large or unlimited bundles of SMS contributed to an average annual rise of 31.1% in SMS volumes during the period.

Spain was the only country in which mobile messaging volumes declined during the five-year period, falling from 13 billion in 2004 to 11 billion in 2009. Mobile messages are rarely included within pay-monthly tariffs in Spain and messages are relatively expensive to send, so overall use has remained low in comparison with our other comparator countries. Messaging volumes in Spain started to fall in 2007, and the decline in use may also be

related to the impact of the economic downturn on consumer spending on mobile services, and the increasing use of lower-cost alternatives to SMS and MMS message, such as instant messaging and email. MMS accounted for only 0.1% of total mobile messaging volumes among the comparator countries for which we have data in 2009, the remainder being SMS text messages.

**Figure 6.37 Mobile messaging volumes, 2004 and 2009**



Source: IDATE / industry data / Ofcom

Note: Figures for the USA include push-to-text and are not comparable to the other comparator countries

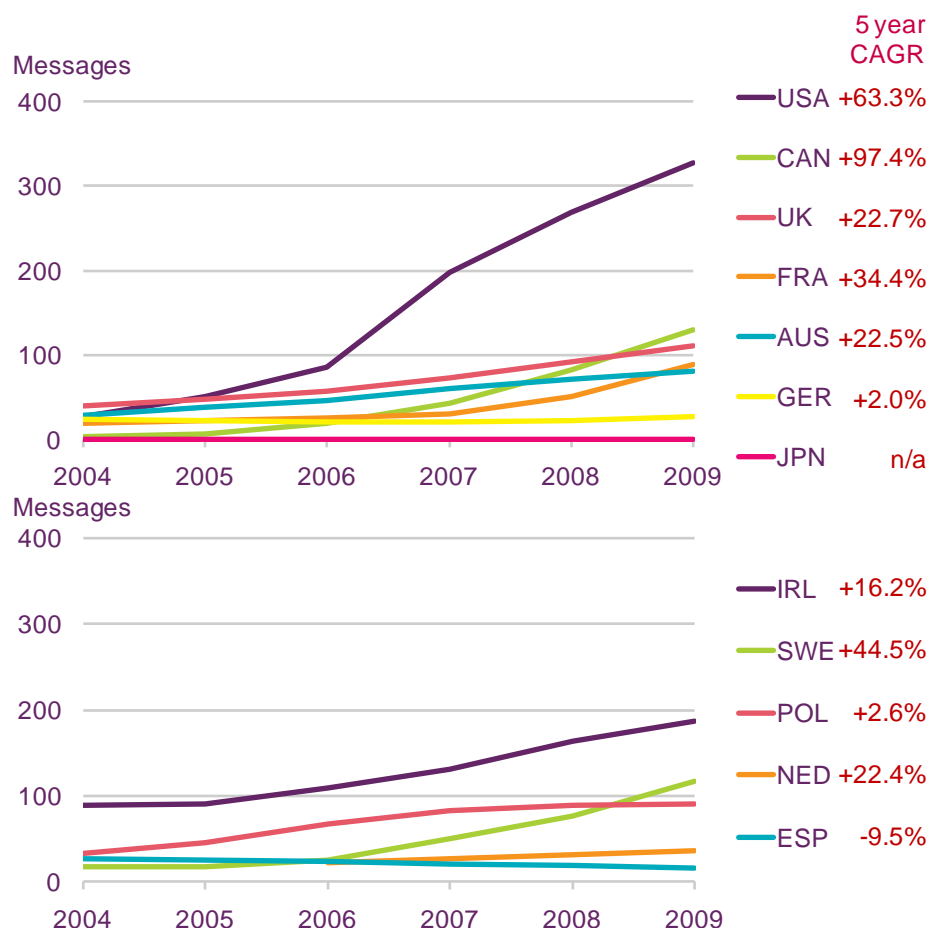
### Mobile messaging use per connection is highest in the US

Average mobile messaging use per mobile connection increased in all of the comparator countries for which time series data were available, except Japan and Spain, in the five years to 2009 (Figure 6.38). The availability of tariffs with a large, or unlimited, number of text messages for a relatively low monthly line rental fee is the main driver behind substantial increase in SMS use in many of our comparator countries. The highest mobile messaging use in 2009 was in the US, where on average 327 messages were sent per mobile connection per month, although these figures include push-to-text messages and are therefore not comparable with figures for the other comparator countries.

Outside the US, the highest average mobile messaging use in 2009 was in Ireland, at 187 messages per connection per month, following an average annual increase of 16.2% over the five-year period. In the UK, the number of monthly mobile messages sent per connection

increased by an average of 22.7% a year to 111 messages per month. In countries where SMS is largely charged on a per-message basis, growth rates have been slower or have fallen. For example, in Spain the average number of monthly messages per mobile connection in 2009 was 17, down from 28 in 2004, while in Germany the average was 27 messages per month in 2009, up slightly from 24 in 2004.

**Figure 6.38 Monthly outbound messages per mobile connection, 2004 to 2009**



Source: IDATE / industry data / Ofcom

Note: Figures for the USA include push-to-text and are not comparable to the other comparator countries

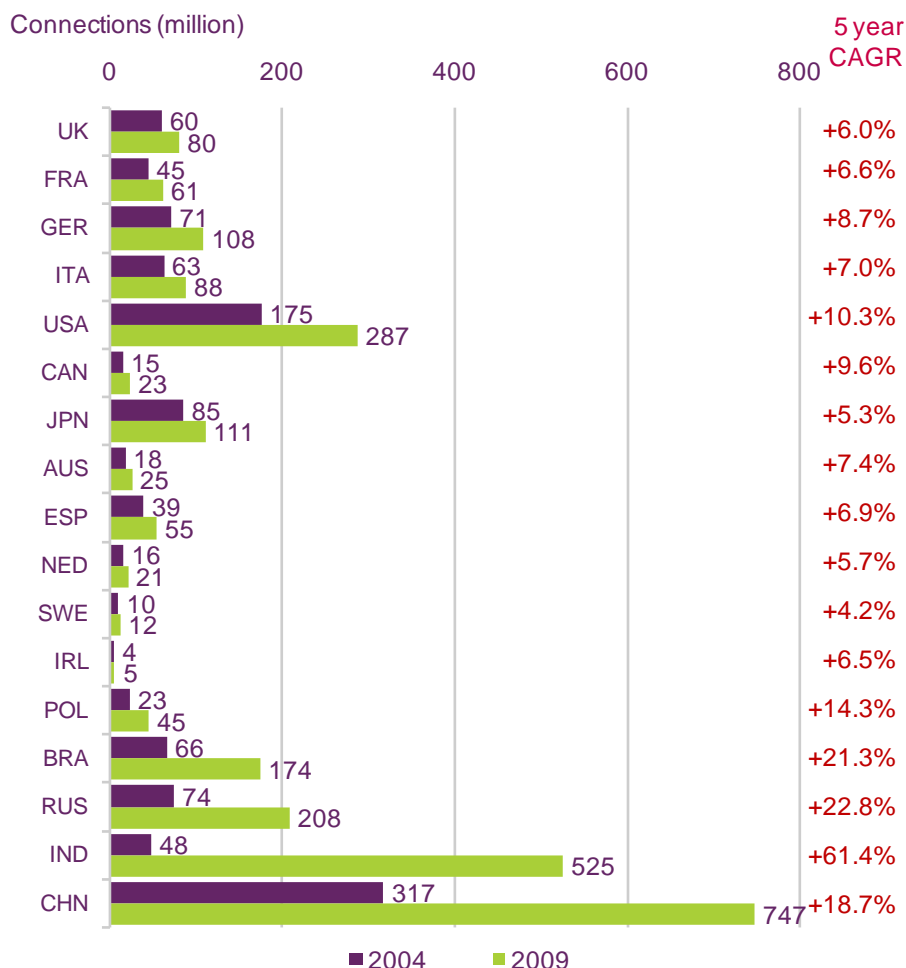
### Massive growth in mobile connections in the BRIC countries

The total number of mobile connections continued to increase across all 17 countries covered in this report, rising by an average of 18.9% each year in the five years to 2009 (Figure 6.39). China added 430 million mobile connections over this period, and by the end of 2009 there were more active mobile connections (747 million) in China than in all of our European comparator countries and Japan, Canada and Australia combined.

The highest average annual growth rate between 2005 and 2009 among our comparator countries was in India (61.4%), reflecting the relatively low penetration of mobile services in 2004, when it was just four connections per 100 people, and a subsequent rapid rise in take-up over the period. Growth in both China and India looks set to continue, as take-up was still relatively low at the end of 2009 (56 connections per 100 people in China, and 45 per 100 people in India).

In more mature markets growth was much lower, with the slowest growth being in Sweden (up 4.2% a year) where there were already more mobile connections than people in 2004. Similarly, the growth of mobile connections was relatively low in the UK due to high take-up, rising by an average of 6.0% a year over the period. However, even in mature markets the number of mobile connections continues to rise, driven largely by multiple connections per person, either through multiple SIMs for the same device, or through use of multiple devices, for example a mobile handset and a mobile broadband dongle.

**Figure 6.39 Mobile connections, 2004 and 2009**



Source: IDATE / industry data / Ofcom

### Mobile broadband pushes up overall mobile take-up

An analysis of the relationship between mobile take-up and average revenue per connection shows a strong correlation between the two among most of our comparator countries, with average spend per connection being lower in countries where mobile penetration is high (Figure 6.40). The main outliers in this analysis were countries where average monthly spend per connection was low (most noticeably India, China, Brazil Poland and Russia), a possible reason being that the straight currency conversion used in this analysis does not capture lower levels of GDP per capita in these countries, and the fact that the price of most goods and services will be lower in these countries.

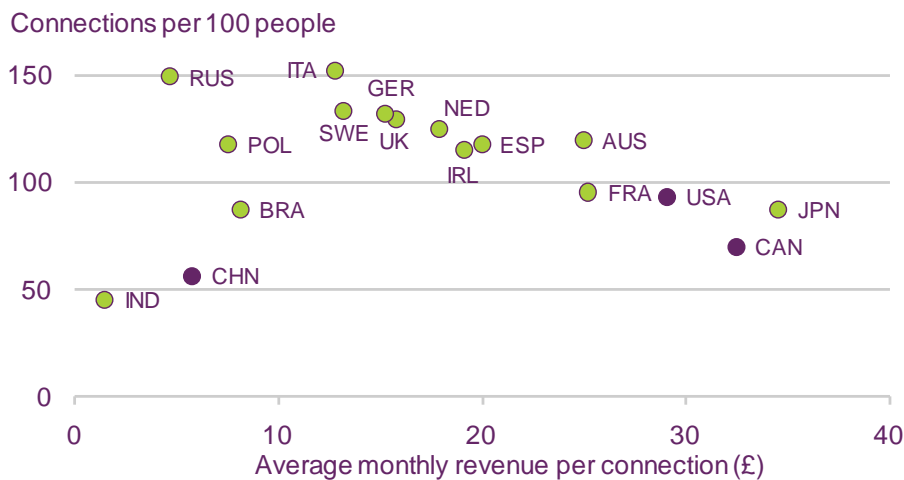
In Italy and Russia, where the number of connections per 100 people were highest, the relatively low revenues per connection were largely due to consumers owning more than one pre-pay connection; this dilutes revenue per connection as it pushes up the number of



connections. In contrast, spend per connection was highest in Japan, Canada and the US, where there is a higher proportion of post-pay users and a user typically has just one connection.

The take-up of mobile broadband (using a PC/laptop datacard or dongle) also needs to be taken into account in this analysis, as this pushes up the overall number of connections but may contribute to lower average spend; typically, spend on mobile broadband tariffs 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 6.40 Mobile take-up and average monthly revenue per connection, 2009**



Source: IDATE / industry data / Ofcom

Note: USA, CAN and CHN include incoming call revenues

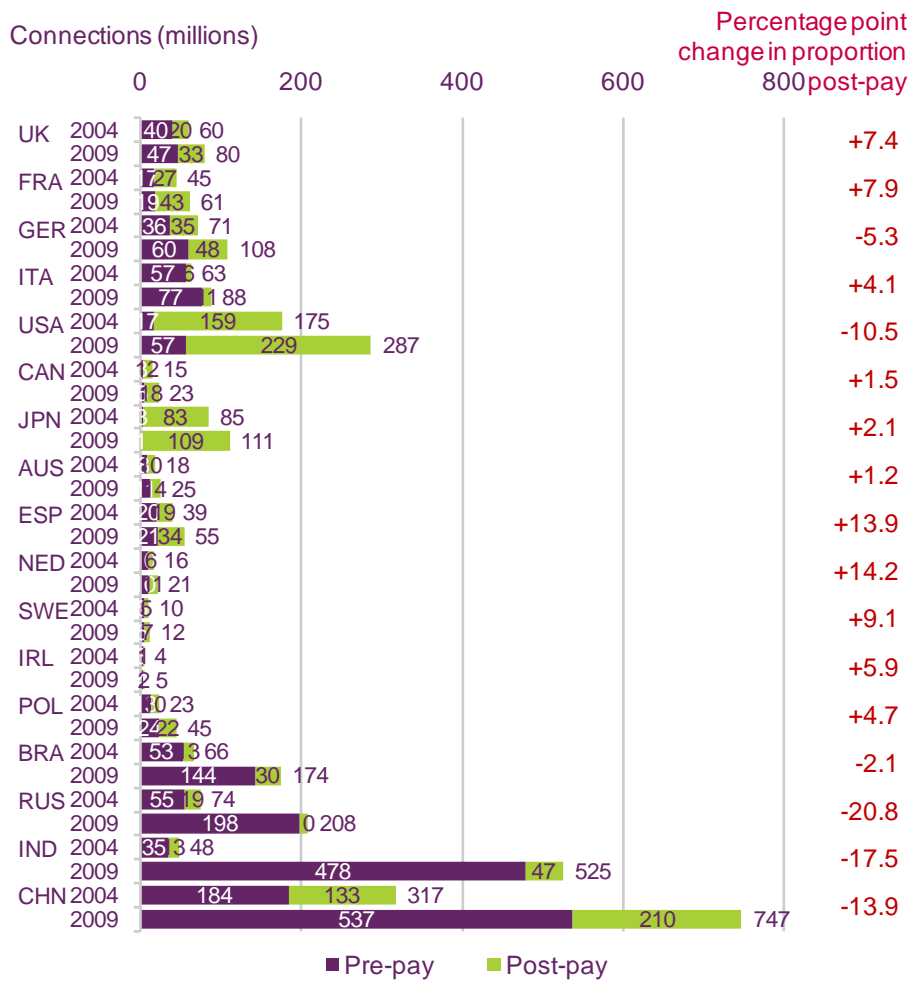
### Post-pay accounts for a growing share of connections in most countries

In most of our comparator countries, there were more pre-pay (pay-as-you-go) than post-pay (pay monthly) mobile connections at the end of 2009 (Figure 6.41). A general trend in most of our comparator countries (11 out of 17) in the five years to 2009 has been the migration of connections from pre-pay to post-pay, although across our comparator countries as a whole the proportion of mobiles that were post-pay fell from 50.5% to 34.1% as a result of growth in the proportion of connections that are pre-pay in the larger nations (the US, Brazil, Russia, India and China).

Post-pay's share of total mobile connections had the largest percentage point increase in the Netherlands (14.2) and Spain (13.9) in the five years to 2009, increasing to 51.2% and 61.9% respectively, while in the UK post-pay's share increased by 7.4 percentage points to 41.1%. A number of factors are likely to be driving this. In mature markets, operators have increasingly focused on retention rather than acquisition and have therefore been incentivising consumers to commit to long-term post-pay contracts by offering prices lower than the pre-pay equivalents. In addition, the increasing take-up of smartphones is likely to have contributed to the number of post-pay contracts, as consumers look to spread the price of these more expensive handsets over the duration of a contract.

An additional factor in some countries in the last couple of years, and in particular in the UK, has been the emergence of low cost SIM-only post-pay tariffs that offer lower per-unit prices than pre-pay tariffs and often have similar flexibility, with many being available on 30-day rolling contracts. However, in Germany, the US and the BRIC countries, the proportion of connections using pre-pay increased over the period, with the largest proportional rise being in Russia, where its share increased by 20.8 percentage points to 95.2%.

**Figure 6.41 Mobile connections, by type, 2004 and 2009**



Source: IDATE / industry data / Ofcom

### MVNOs have the highest market share in Germany among our comparator countries

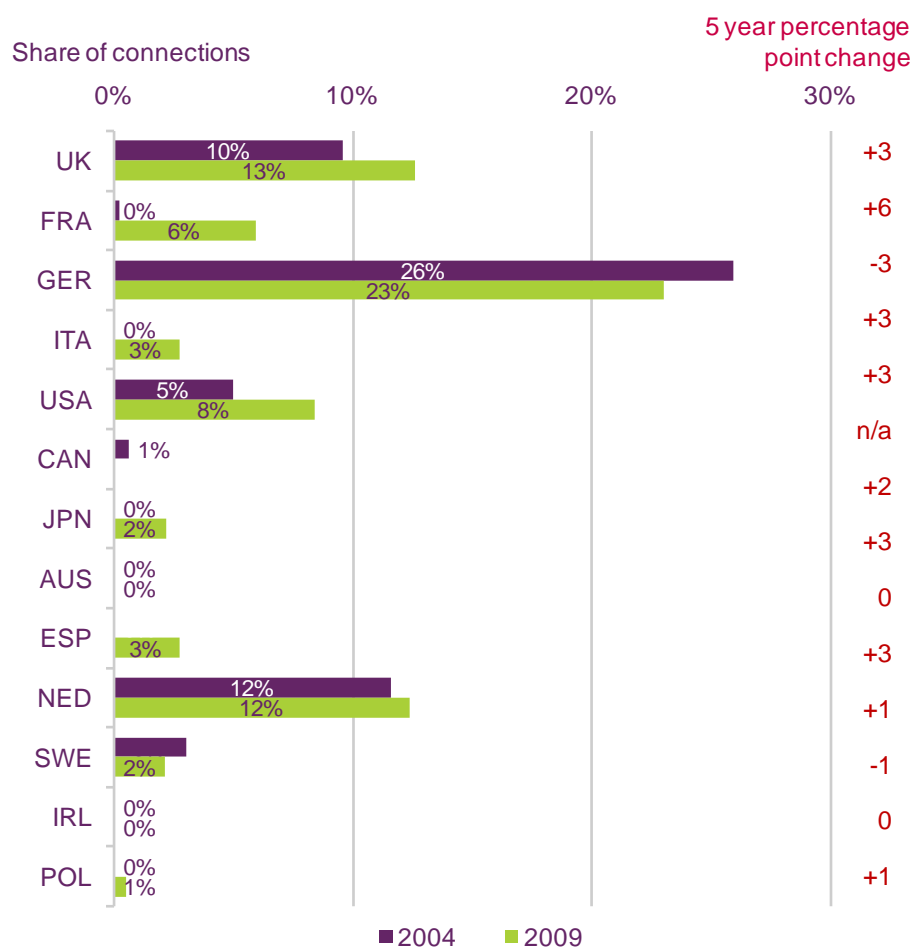
A mobile virtual network operator (MVNO) is a mobile provider that has neither its own spectrum allocation nor network infrastructure, and instead resells mobile services purchased on a wholesale basis from a network operator to its customers.

The share of mobile connections held by MVNOs at the end of 2009 ranged from zero in Australia and Ireland to 23% in Germany (including independent service providers, i.e. resellers) among the 13 comparator nations for which figures were available (Figure 6.42). In most countries MVNOs' share increased in the five years to 2009, with MVNOs being first introduced in Italy, Japan, Spain and Poland during this period. The strongest growth in MVNO share was in France, where it increased from 0.2% to 6%, largely driven by Virgin Mobile, which accounted for half of all MVNO connections in France in 2009.

In the UK, MVNOs accounted for 13% of mobile connections in 2009, up from 10% in 2004, driven by the emergence of supermarket MVNOs such as those run by Tesco and Asda, and MVNOs which target immigrant communities in the UK by offering low-cost international calls, such as Lebara Mobile and Lycamobile. While the MVNO share of connections was highest in Germany, along with Sweden, it was one of only two of the comparator countries for which data were available where MVNOs' connection share declined during the five-year

period, falling by three percentage points and one percentage point respectively, due to market consolidation as some MVNOs were acquired by the mobile network operators.

**Figure 6.42 MVNO share of total mobile connections, 2004 and 2009**



Source: IDATE / industry data / Ofcom

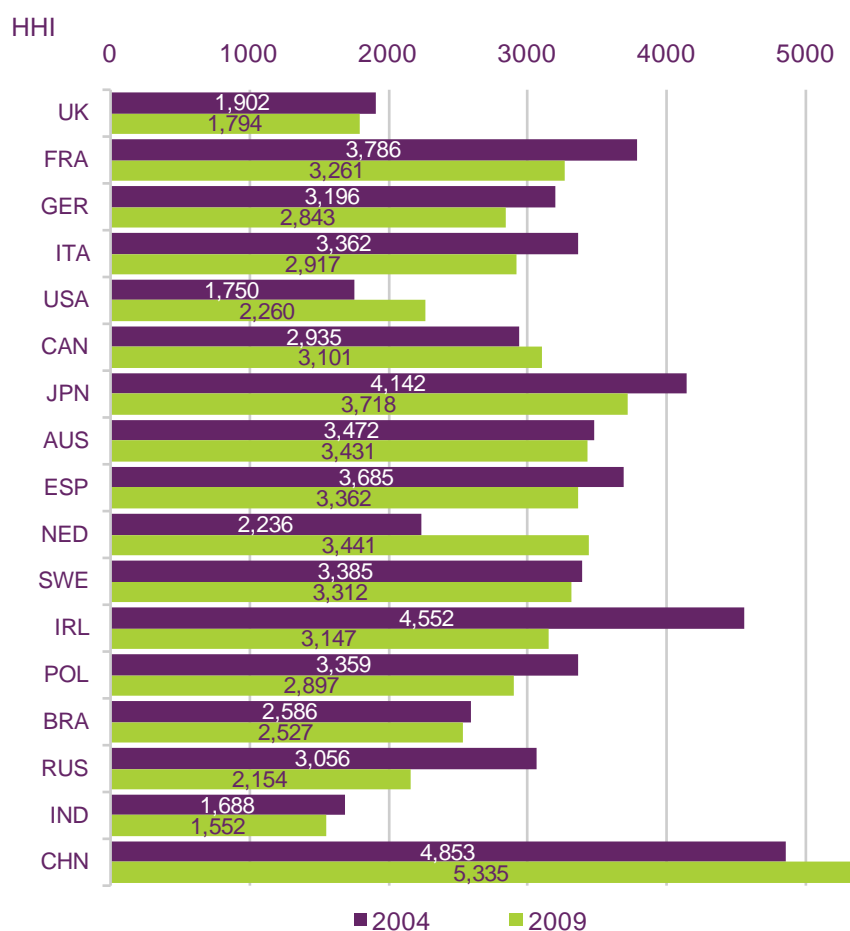
Note: UK and GER figures include resellers' connections in addition to full MVNOs'

### India has the most competitive mobile market

The Herfindahl-Hirschman Index of market concentration (HHI) is based on the market share of individual mobile operators and is used as an indicator of levels of competition and market concentration. The HHI scale ranges from 0 (for a hypothetical, perfectly competitive market, having an infinite number of competitors with an equal market share of zero) to 10,000 for a monopoly.

India had the least concentrated market in terms of connections at the end of 2009, with an HHI index of 1,552 (Figure 6.43). This is due to a relatively large number of operators which offer services at different coverage levels, including regional, pan-regional and national. However, as a measure of competition this may be misleading, as many of the operators will not be in direct competition with each other. The UK had the second least concentrated mobile market at the end of 2009, as a result of no single operator having a connection share of more than 30%, although the HHI index for the UK will have subsequently increased, following the merger of the UK operations of Orange and T-Mobile into Everything Everywhere in July 2010.

**Figure 6.43 Herfindahl-Hirschman index of mobile concentration, 2004 and 2009**



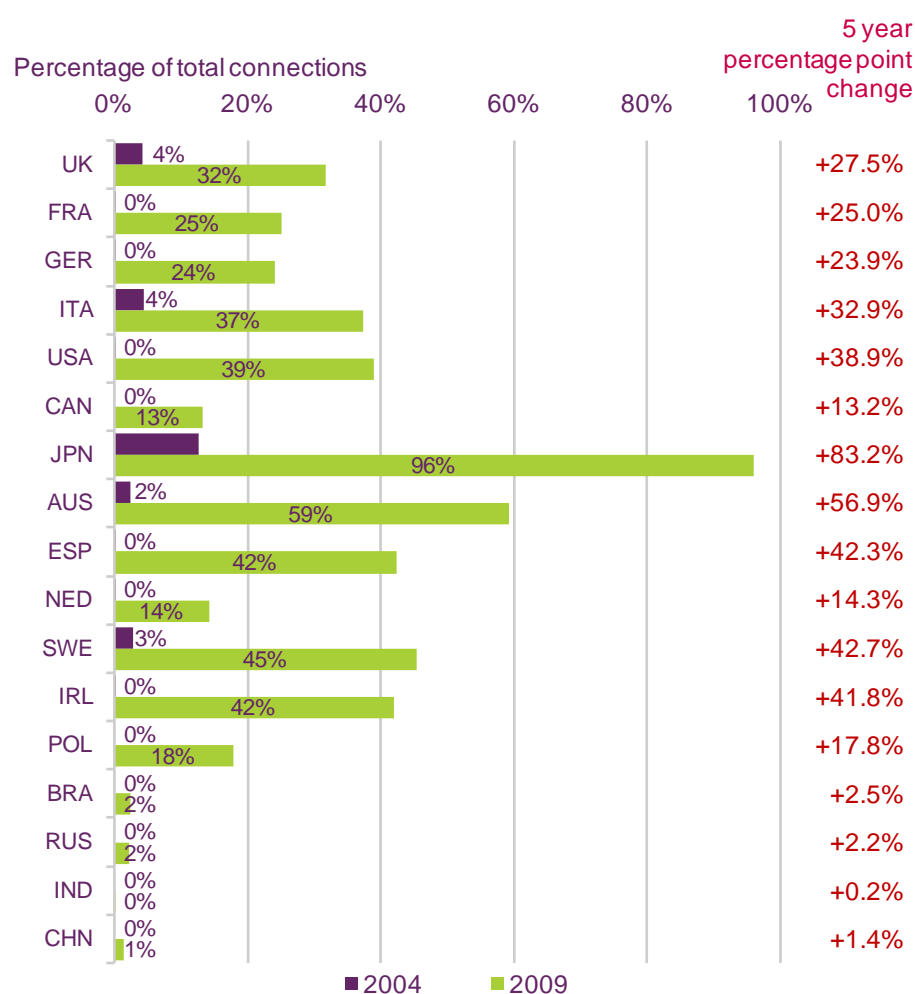
Source: IDATE / industry data / Ofcom

### High take-up of 3G mobile services in Japan and Australia

The increased availability of networks offering 3G services, and the falling prices of 3G handsets, have resulted in widespread take-up of higher-speed 3G services across many of our comparator countries (Figure 6.44). In Japan, where operators were first to launch 3G services in 2001, adoption has been fastest, increasing from 13% at the end of 2004 to 96% by the end of 2009. Elsewhere, take-up has been particularly strong in Australia, where more than half (59%) of mobile connections were 3G by the end of 2009, compared to 2% in 2004. In the UK, nearly a third of mobile connections (32%) were 3G by the end of 2009, compared to just 4% at the end of 2004.

The BRIC countries had the lowest take-up of 3G services in 2009, ranging from less than 1% of connections in India to 2% in Russia and Brazil. This reflects the relatively recent roll-out of 3G services and the lower availability of 3G networks in these countries, and a lower propensity to purchase 3G handsets - which are typically more expensive than 2G equivalents.

**Figure 6.44 3G as a proportion of total mobile connections, 2004 and 2009**



Source: IDATE / industry data / Ofcom

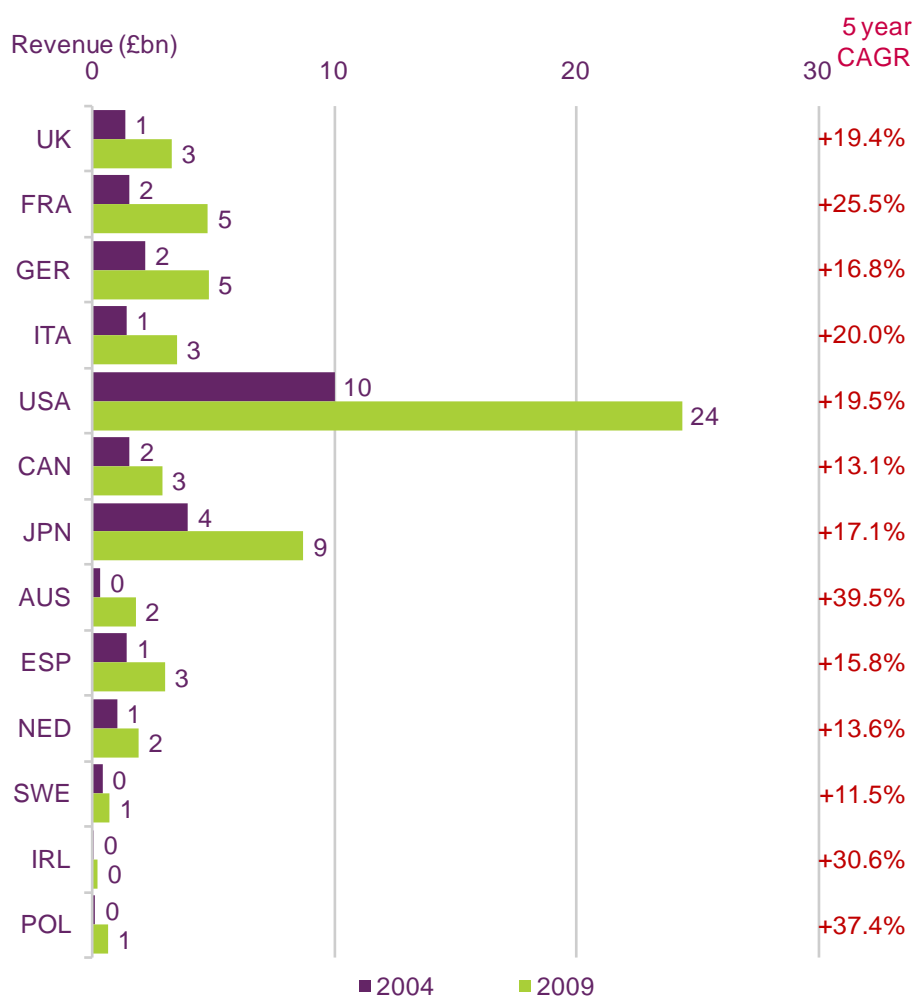
## 6.2.5 Broadband services

### Annual broadband revenue growth averaged 19% between 2004 and 2009

Fixed broadband revenues more than doubled in most of the comparator countries for which figures were available between 2004 and 2009, the only exceptions being Sweden and Canada, although both of these nations also experienced strong revenue growth (Figure 6.45). This growth came as a result of increasing fixed broadband connections, as consumers either migrated from narrowband internet to broadband or chose a broadband connection when they subscribed to an internet service for the first time.

The highest average growth rates in the five years to 2009 were in Australia and Poland, where revenues increased by an average of 39.5% and 37.4% a year respectively, albeit from low starting points. The lowest rate of growth was in Sweden at 11.5% per year, while the annual average growth rate in the UK was 19.4%. The UK was also unique among the comparator countries for which figures were available, as it was the only country where fixed broadband revenues declined in 2009. This was as a result of falling broadband prices and increasing take-up of lower-cost, bundled, LLU-based DSL services.

**Figure 6.45 Fixed broadband revenues, 2004 and 2009**



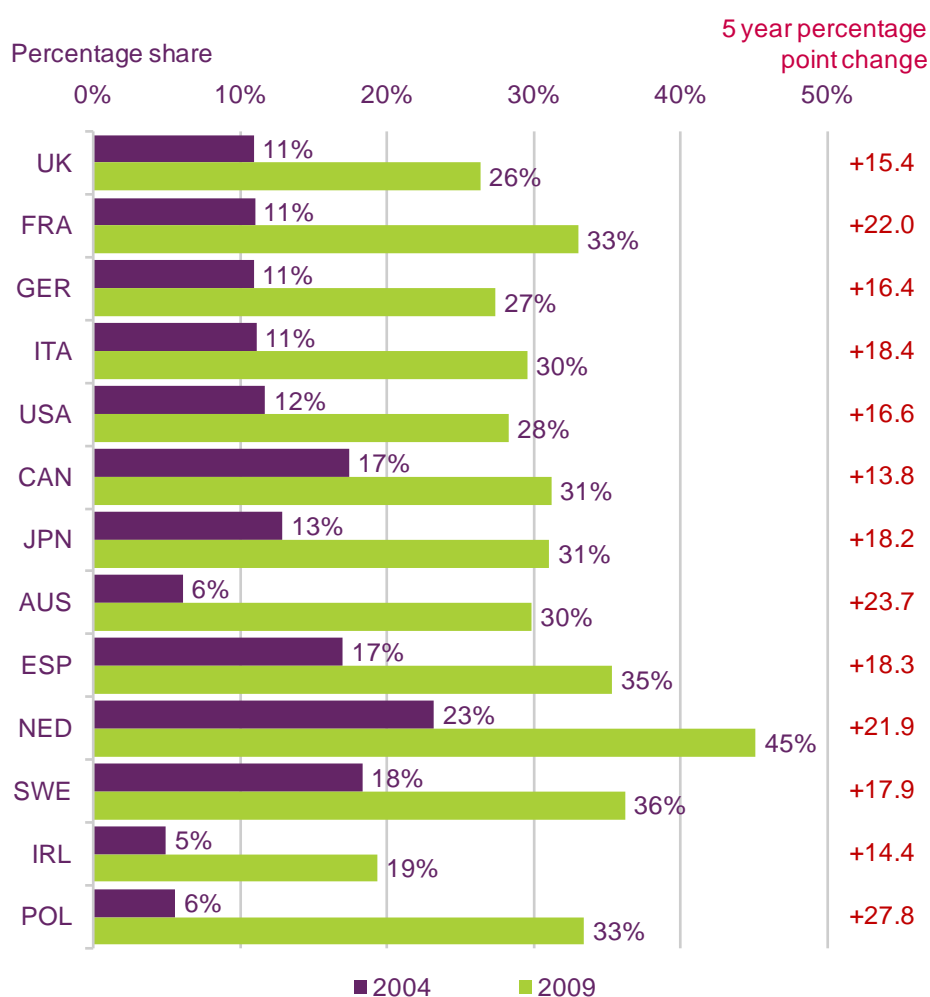
Source: IDATE / industry data / Ofcom

**Broadband accounted for 30% of fixed telecoms revenues in 2009**

In 2009, the average proportion of total fixed telecoms service revenues attributed to broadband across the 13 comparator countries for which figures were available, was 29.8%, up from 12.2% in 2004 (Figure 6.46). The proportion of fixed revenues generated by broadband ranged from 19% in Ireland to 45% in the Netherlands in 2009, while in the UK just over a quarter (26%) of fixed revenues were from broadband services.

The largest increase in the proportion of fixed revenues generated by broadband was in Poland, increasing by 27.8 percentage points to 33% in 2009, mainly as a result of increasing broadband take-up, but also driven by a significant decline in fixed-voice revenues (see Figure 6.24) over the period.

**Figure 6.46 Fixed broadband as a proportion of total fixed revenues, 2004 and 2009**



Source: IDATE / industry data / Ofcom

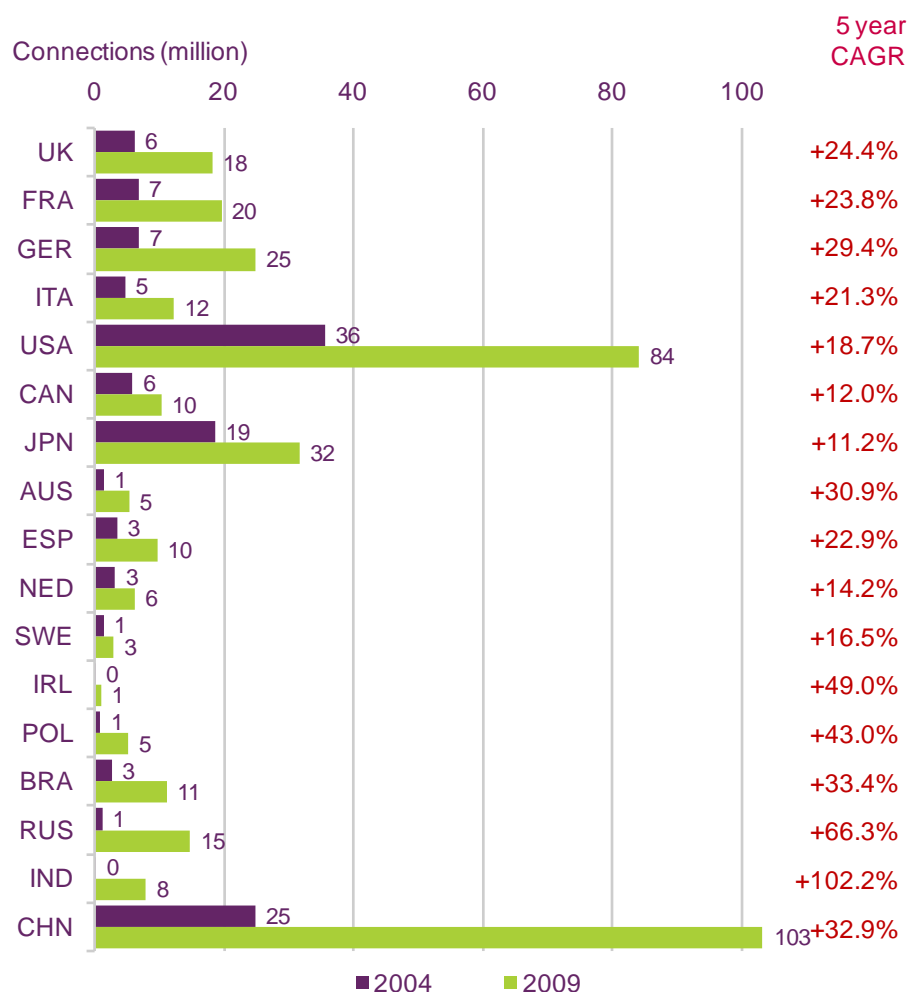
### China has more fixed broadband connections than the US

China had 103 million fixed broadband connections at the end of 2009, the highest number of any country in the world (Figure 6.47).

On average, more than 15 million new fixed broadband connections were added a year in China in the five years to 2009 (representing an average annual growth rate of 32.9%), and growth looks set to continue as the number of broadband connections per 100 people in China was still only eight at the end of 2009 (it was highest in the Netherlands, among our comparator countries, at 37). However, despite the rapid fixed broadband connection growth in China, average annual growth rates in the five years to 2009 were higher in India (102.2%), Russia (66.3%), Ireland (49.0%), Poland (49.0%) and Brazil (33.4%).

Growth rates were lower among those comparator countries which had higher levels of take-up in 2004. Japan had the lowest average annual rate of growth in fixed broadband connections over the period (11.2% a year), while the number of broadband connections in the UK almost tripled between 2004 and 2009, an average annual increase of 24.4%.

**Figure 6.47 Fixed broadband connections, 2004 and 2009**



Source: IDATE / industry data / Ofcom

**Over a quarter of UK fixed broadband connections have a headline speed of 10Mbit/s or above**

A lack of availability of like-for-like performance data means that it is difficult to compare actual broadband speeds between countries. However, figures published by the European Commission do enable a comparison of the ‘headline’ speeds of broadband connections across selected member states. It should be noted that actual speeds delivered by DSL broadband are typically much slower than headline speeds, as a result of the degradation in performance as the length of the wire between local telephone exchange and consumer premises increases<sup>109</sup>.

Nevertheless, the headline speeds of broadband connections do provide some insight, as they are typically related to the technology by which broadband is delivered. First-generation DSL broadband (ADSL1) delivers a maximum headline (‘up to’) speed of 8Mbit/s, while second-generation DSL broadband (ADSL2+) is theoretically capable of delivering ‘up to’

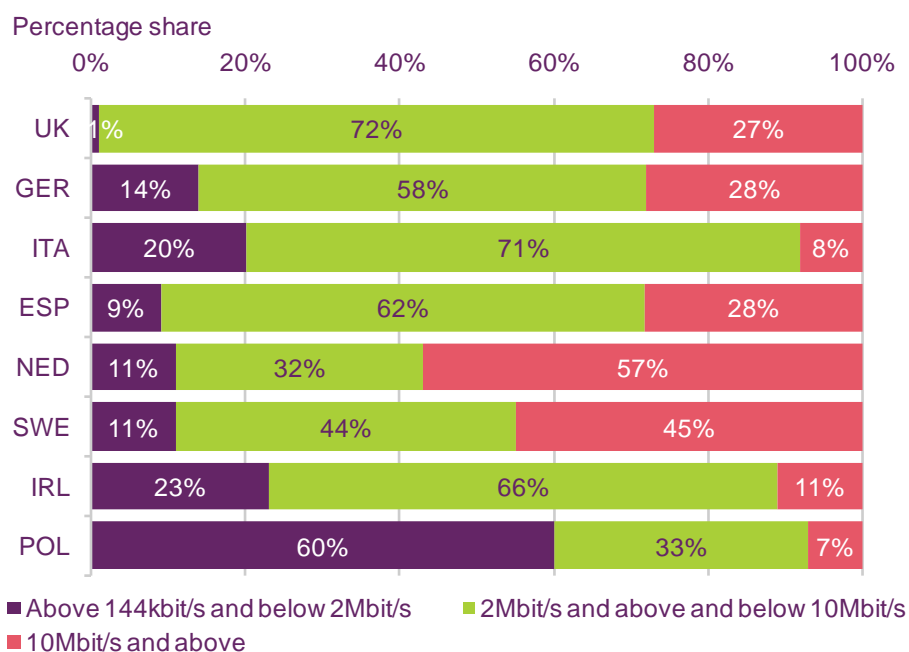
<sup>109</sup> For details on how actual broadband performance relates to headline speeds, see Ofcom’s research into broadband speeds, <http://stakeholders.ofcom.org.uk/market-data-research/telecoms-research/broadband-speeds/broadband-speeds-2010/>. The European Commission is also currently in the process of commissioning research which will compare actual broadband speeds across its member states.



24Mbit/s, and fibre services can deliver even faster speeds. Figure 6.48 indicates the split of fixed broadband connections by headline speed across a number of our European comparator countries at the end of June 2010 (figures were not available for France).

The proportion of connections with a headline speed of ‘up to’ 10Mbit/s and above is of interest as these connections will be provided by a technology superior to ADSL1. Of the countries for which figures were available, the Netherlands had the highest proportion of these higher-speed connections (57%), while Poland had the lowest proportion of such connections, at 7%. In the UK, over a quarter of connections (27%) offered headline speeds of ‘up to’ 10Mbit/s and above, a similar level to in Germany and Spain.

**Figure 6.48 Split of fixed broadband connections by headline speed, Q2 2010**



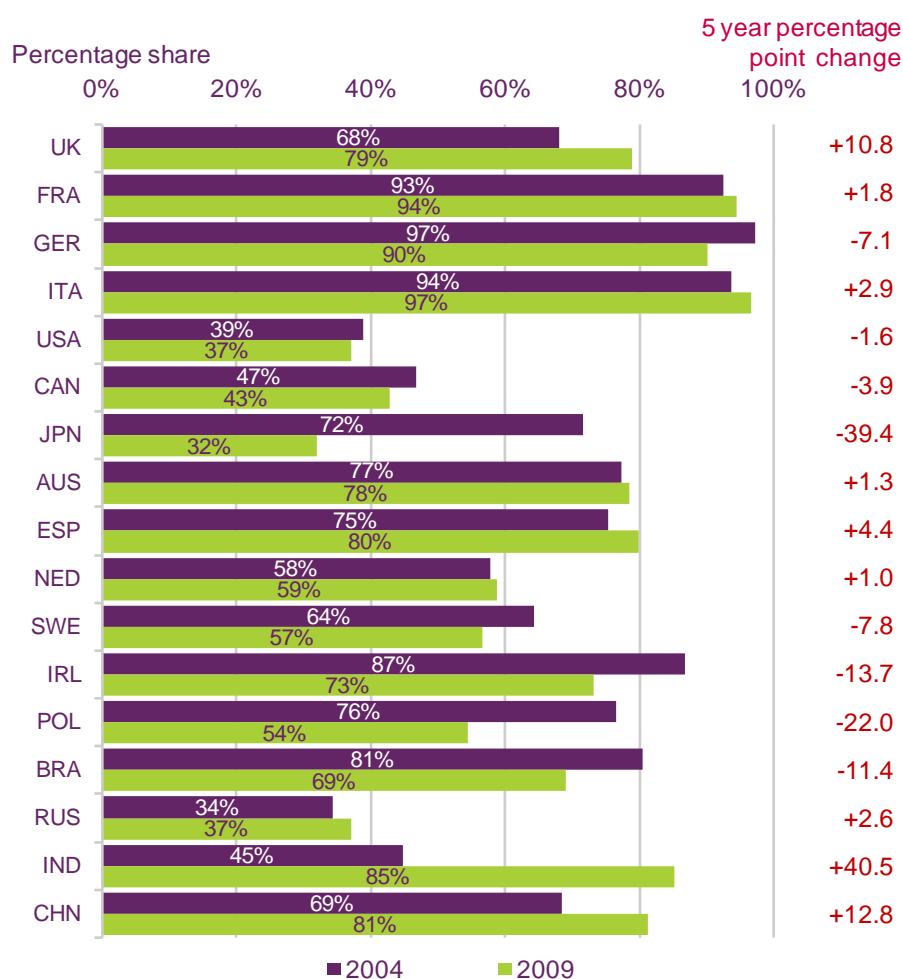
Source: European Commission / Ofcom

### Fibre-based broadband beginning to erode DSL share in some countries

There was a mixed picture among the countries in this report in terms of changes in the proportions of fixed broadband connections that were DSL between 2004 and 2009 (Figure 6.49). In more than half of our comparator countries the proportion increased, with the largest increases being in India (40 percentage points), followed by the UK (11 percentage points), reflecting faster growth in take-up of broadband over DSL than over cable. In contrast, a higher rate of cable broadband adoption in Poland, Ireland, Brazil and Germany led to a decline in DSL’s share of fixed broadband connections.

However, all countries are, to some extent, seeing investment in upgrading the broadband infrastructure to high-speed fibre networks (see Section 6.1.3), and in some countries fibre connections are already eroding the share of DSL (in particular in Japan, Sweden and the US). Most households in Japan have access to fibre broadband, and there was a 40 percentage point decline in the number of fixed broadband connections using DSL in the five years to the end of 2009, as take-up of fibre extended to over half of all broadband subscribers.

**Figure 6.49 DSL as a proportion of all fixed broadband connections, 2004 and 2009**



Source: IDATE / industry data / Ofcom

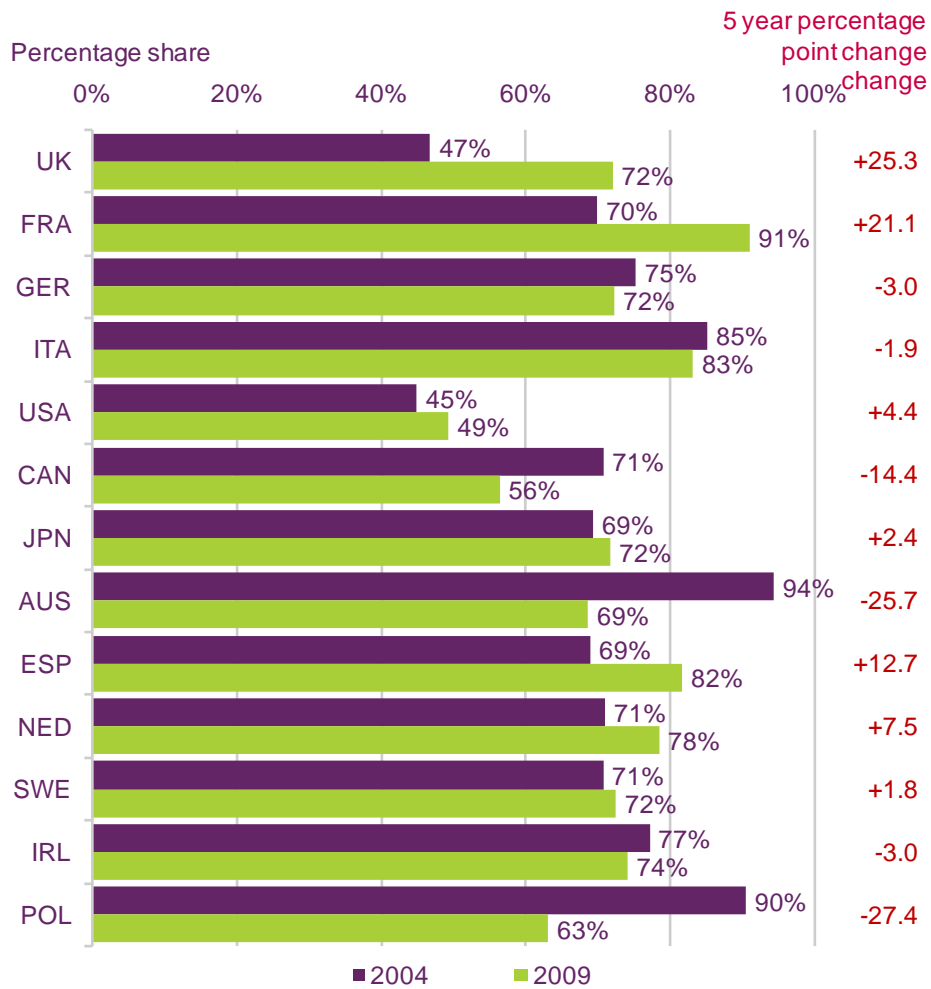
### Total market share of the top three providers remains unchanged at 66%

The combined retail market share of the three largest broadband providers in each country (as shown in Figure 6.50) can be used as a measure of market concentration, and across the 13 comparator countries for which figures were available, the average share of the largest three providers was unchanged at 65.6% in 2009. The change in the market share of the largest three ISPs in the five years to 2009 among these comparator countries ranged from a 27.4 percentage point fall to 63% in Poland, to a 25.3 percentage point increase to 72% 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 fall from 78% to 44% 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 2009 the three largest ISPs (BT, TalkTalk and Virgin Media) had a combined connection share of 72%.

The most concentrated broadband market at the end of 2009 was France, with the largest providers (Orange, Free and SFR) accounting for 91% 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, 2004 and 2009**



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, starting with an overview of the availability, take-up, average spend and levels of switching for each service. This is followed by analyses of fixed and mobile voice, and fixed broadband and mobile data services, which take a deeper look at use and costs of these services.

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 2010, in six of our comparator countries (the UK, France, Germany, Italy, the US and Japan).

The key points highlighted in this section include:

- **Australia had the highest telecoms spend per person among our comparator countries in 2009 at £626, having overtaken the US and Ireland during the year.** In the UK the average spend per person was £442, £17 (4%) less than in 2008 (page 320).
- **Ofcom consumer research in six comparator countries suggested that levels of switching were highest in Germany.** 18% of respondents with a fixed line, a mobile or a fixed broadband connection in Germany had switched supplier in the previous year, and levels of switching in the UK were in line with these (page 324).
- **The UK fixed telephony market is proving resilient in comparison with many other nations.** In the UK the average number of lines per 100 people fell by 1.4 in 2009, the third lowest rate of decline among our 17 comparator countries (page 325).
- **The US and Italy had the highest proportion of mobile-only homes in October 2010.** Ofcom consumer research suggests that among six countries surveyed the US and Italy had the highest proportion of mobile-only homes (29%) while in the UK 13% used mobiles as their sole form of telephony (page 330).
- **The proportion of total voice calls made from mobile phones increased between 2004 and 2009 in all of the nations for which figures were available.** In the UK the proportion of voice calls originating on mobile phones increased by 19 percentage points to 47% over the period (page 333).
- **The average cost of an outgoing UK mobile voice call minute was 8.8 pence in 2009, 12% less than in 2008.** This was lower than in Japan, France, Germany and Spain, comparable to Italy, the Netherlands and Sweden, and higher than in Canada and the US (page 336).
- **43% of internet users in Japan said that they had used a mobile handset to access the internet at home.** This was the highest proportion among the six countries surveyed; the UK had the second highest level of use (at 29% of internet users), and use was lowest in Germany at 18% (page 341).
- **The UK was the only comparator country where average fixed broadband spend per person fell in 2009.** This was due to growth in the take-up of low-cost

bundled LLU DSL services, and came despite increasing connection speeds (page 323).

- **At the end of 2009 the Netherlands had the highest number of fixed broadband connections per 100 people, at 37.** This compared to 29 in the UK; the average among our comparator nations was ten, or 27 excluding the BRIC countries (page 338).
- **The UK had the second-lowest average monthly fixed broadband cost in 2009 at £15.42.** The average annual fall in the cost of a UK fixed broadband connection was 8.8% in the five years to 2009, while Australia and Japan were the only comparator countries where the average cost of a fixed broadband connection increased during the period (page 346).

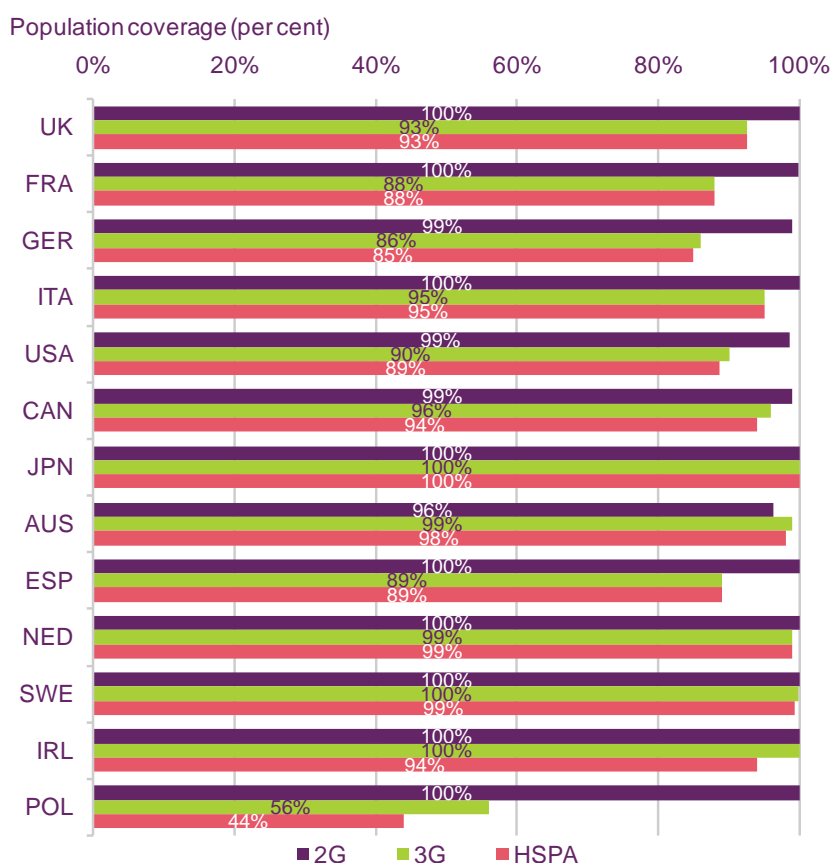
### **6.3.2 Availability of mobile and broadband services**

#### **3G population coverage is 85% or higher in all countries except Poland**

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 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 it should be treated with caution. By this analysis, Australia was the only one of the 13 comparator countries, for which figures were available, where less than 99% of people had access to mobile telephony services in 2009. In the UK almost all people (over 99%) were able to receive 2G services, very slightly higher than the average among our comparator countries.

The roll-out of 3G mobile networks over the last decade is also evident in the figures, with 3G and HSPA population coverage being 85% or higher in all comparator countries except Poland, where 3G population coverage was 56% and HSPA 44%. Levels of 3G and HSPA population coverage in the UK (both 93%) were again higher than the averages for the countries covered by this report, which were 91% for 3G services and 89% for HSPA.

**Figure 6.51 Mobile availability for the largest operator, by technology, 2009**



Source: IDATE

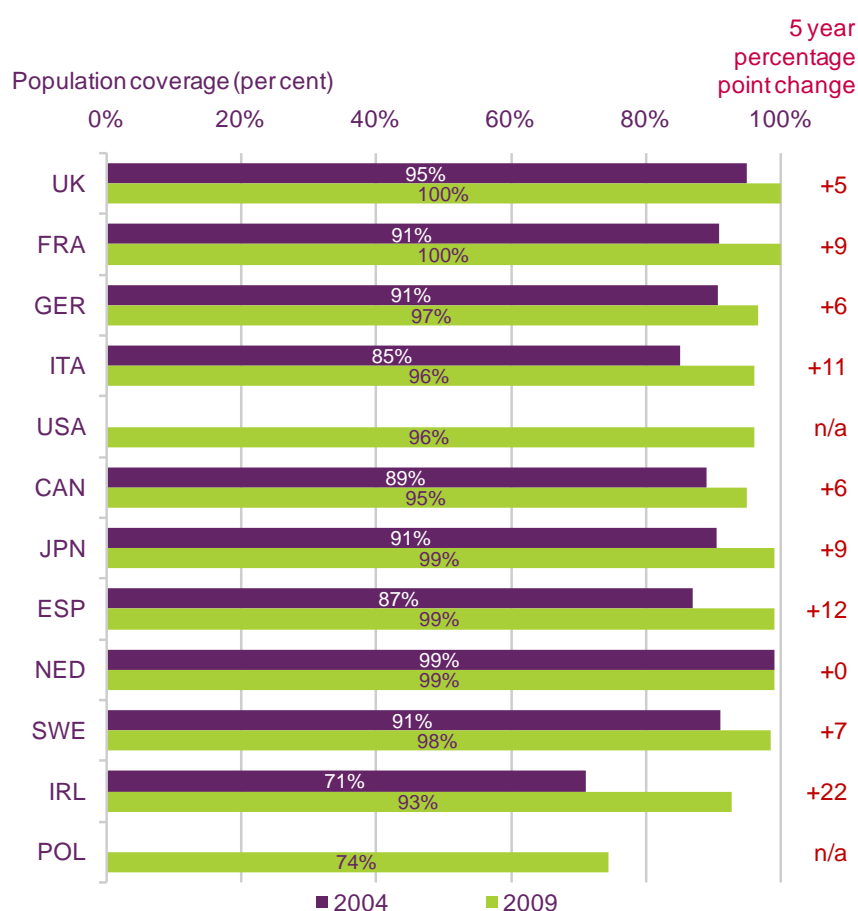
Note: Based on reported coverage of single operator with largest population coverage; CDMA 2000 EV-DO standards are available alongside HSPA in the USA and CAN

**Fixed broadband population coverage is over 75% in all comparator countries except Poland**

The availability of fixed broadband services increased in the five years to 2009 in all of the comparator countries for which figures were available except the Netherlands, where it was unchanged at 99% of the population (Figure 6.52). On average, 96% of people in these countries lived in an area where fixed broadband services were available in 2009, and, as with the availability of 3G and HSPA mobile services, the availability of fixed broadband was significantly lower in Poland than in the other countries covered by this report, with less than three-quarters of people (74%) living in an area where fixed broadband services were available. This is related to the fact that fixed-line voice services are available to only about 80% of the population in Poland.

Almost all people in the UK (over 99%) lived in an area where fixed broadband was available in 2009; four percentage points higher than the average for those countries for which we have data. However, it should be noted that the quality of the broadband service will vary significantly, due to factors such as the length, or the quality, of the line from the local telephone exchange to the customer premises, and the consumer’s own in-house wiring.

**Figure 6.52 Fixed broadband availability, 2004 and 2009**



Source: IDATE

### 6.3.3 Take-up of telecoms services

#### Household mobile take-up highest in Italy in 2009 at 95%

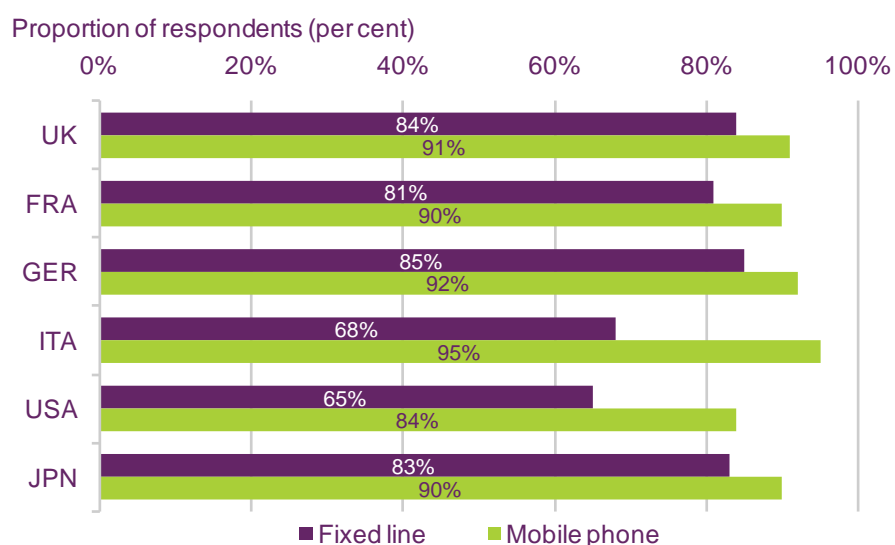
Ofcom consumer research undertaken in October 2010 asked internet users<sup>110</sup> in six of our comparator nations (the UK, France, Germany, Italy, the US and Japan) about their use of communications services. Among the countries covered by the research, respondents in Germany reported the highest levels of household fixed-line take-up (85%), while it was lowest in homes in the US at 65% (Figure 6.53), partly as a result of high levels of VoIP use, which is considered in more depth in Section 6.1.5 of this report.

According to our research, the US also had the lowest take-up of mobile telephony, with 84% of people saying that there was at least one mobile in their home, due to a large extent to the general lack of availability of low-cost tariffs (see Section 2). Mobile take-up was highest in Italy, where only one in 20 (5%) homes did not have a mobile, while in the UK 84% of respondents said that they had a landline, in line with Germany, and 91% of said that there was at least one mobile in their home.

Take-up of fixed broadband is examined in section 6.3.8.

<sup>110</sup> For practical reasons, our research methodology was to survey online panels in all six countries. Therefore the findings are applicable only to internet users in each country, not to the general population.

**Figure 6.53 Household take-up of fixed and mobile telephony, 2010**



Source: Ofcom consumer research, October 2010

Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

### The Netherlands has the highest level of fixed broadband connections per 100 homes

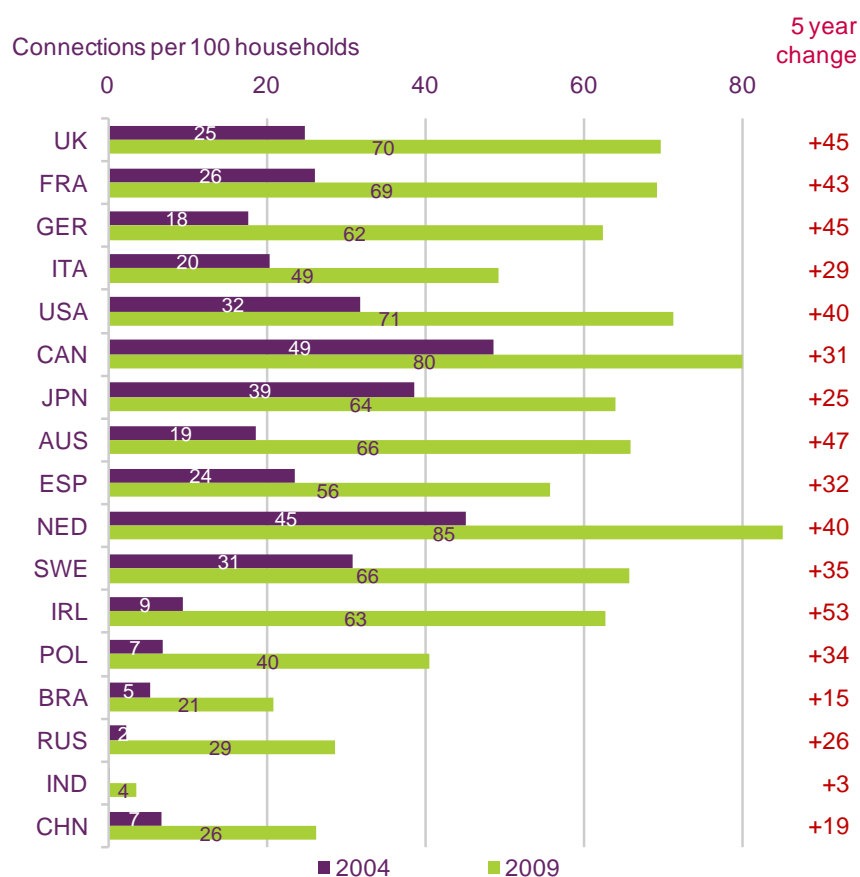
At the end of 2009 the Netherlands had the highest number of fixed broadband connections per 100 households, at 85, compared to an average among our nations of 34 (or 66 excluding the BRIC countries (Figure 6.54)). The Netherlands has historically had high fixed broadband availability and take-up, as its population is largely urban, making the deployment of broadband networks very cost-effective for providers. It is important to note that this calculation includes some business broadband lines, and therefore the figures in the analysis do not equate to household fixed broadband take-up.

At the end of 2009 the UK had the fourth-highest number of fixed broadband connections per 100 households, at 70<sup>111</sup>, and the joint third-highest increase in connections per home in the five years to 2009 (along with Germany) at 45 connections per 100 homes. Only Ireland (with 53 connections per 100 homes) and Australia (45) had a faster rate of fixed broadband connection growth over the period. The growth in fixed broadband take-up in Ireland over the past few years can be attributed to rapidly falling prices (as shown in section 6.3.10) along with a government initiative to encourage broadband network roll-out.

<sup>111</sup> Ofcom consumer research in Q4 2009 found that 66% of households had a fixed line; the difference is likely to be due to the inclusion of some business lines in the international comparative data.



**Figure 6.54 Fixed broadband connections per 100 households, 2004 and 2009**



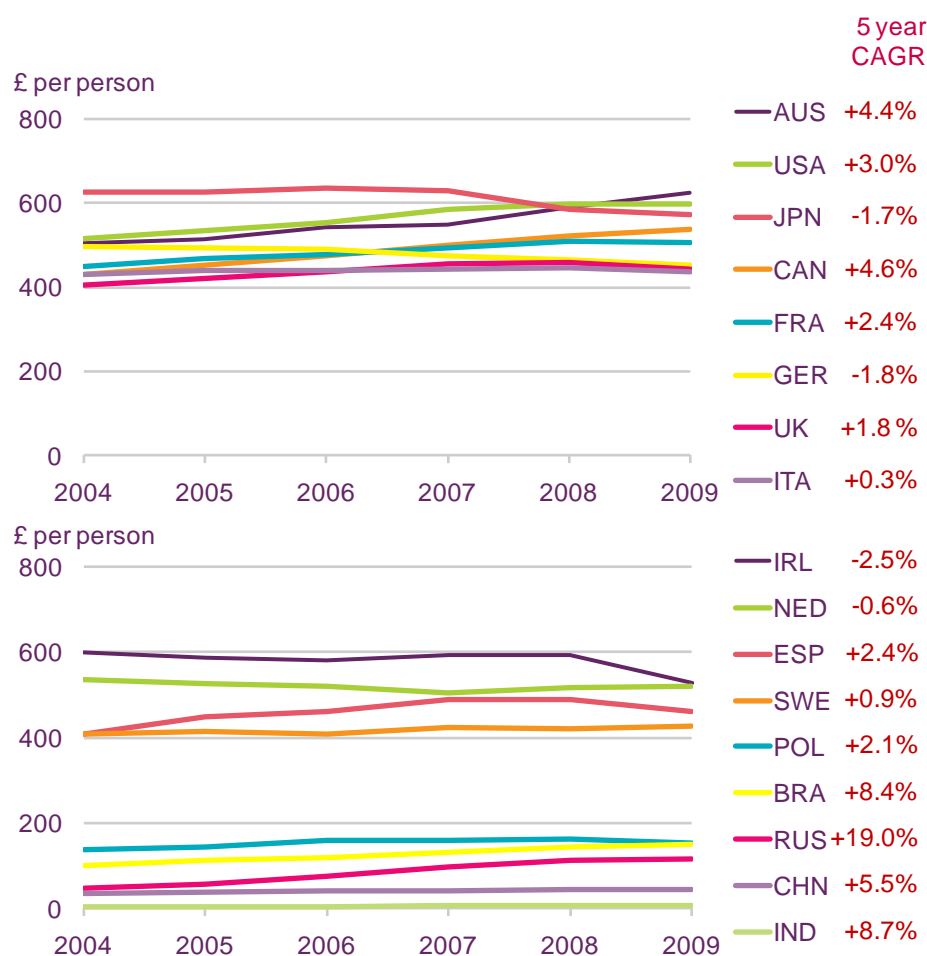
Source: IDATE / industry data / Ofcom

### People in Australia spend most per person on telecoms services

Australia had the highest average telecoms spend per person among our comparator countries in 2009, at £626, having overtaken both the US and Ireland during the year (Figure 6.55). The main reason for the increase in average telecoms spend in Australia was a 9% increase in the number of mobile connections, although there was also strong growth in fixed broadband revenues, which increased by almost 20% during the year.

The UK had the tenth-highest average telecoms spend, at £442 per person, 3.8% (£17 per person) lower than in 2008 as a result of falling use of fixed voice services and declining mobile and fixed broadband prices. Ireland and Japan were the only countries which saw a decline in telecoms spend per person between 2005 and 2009, and there was a particularly notable dip in Ireland in 2009, when spending was 10.9% lower than in 2008, as competitive pressure, a saturated market and the economic downturn all combined to push down prices and constrain use. Over the five years Russia had the fastest growth in average spend per person, at 19.0% a year, to a large extent due to expansion in the mobile sector.

**Figure 6.55 Total telecoms service retail revenue per person, 2004 to 2009**



Source: IDATE / industry data / Ofcom

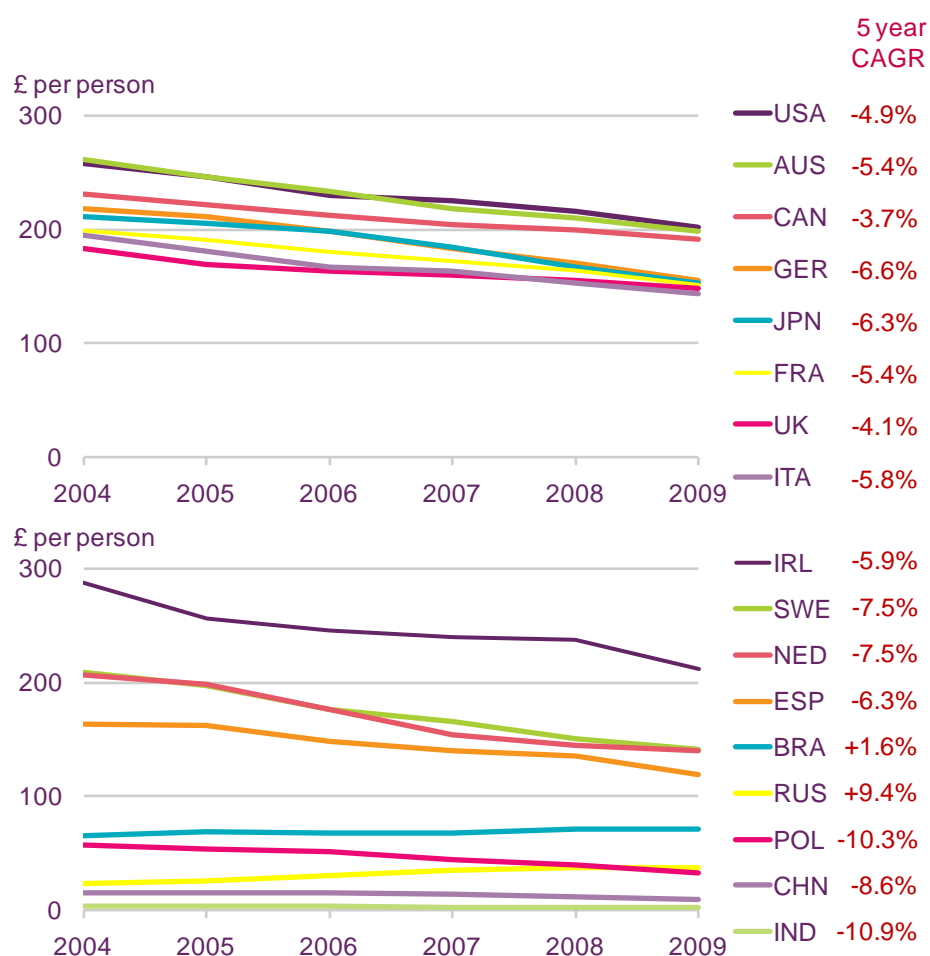
Note: Total telecoms service revenue excludes revenue from narrowband internet and corporate data services

### Average fixed-line spend per person falls in all of our comparator countries

Average spend on fixed voice services fell in all of our 17 comparator countries in 2009, the decline ranging from 0.7% in Brazil to 22.1% in China (Figure 6.56). Ireland continued to have the highest average fixed-line spend per person in 2009 at £211, despite a drop of over 10% during the year as a result of a fall in the number of fixed lines and average use per line.

Average fixed-line spend per person was £148 in the UK in 2009, higher than the average among all comparator countries (£45) but 9% lower than the average excluding the BRIC countries (£161). Average UK fixed-line spend per person fell by 4.4% in 2009, slightly faster than the 4.1% average decrease in the UK in the five years to 2009, and lower than the average 8.1% fall among all of our comparator nations (7.2% excluding the BRIC countries).

**Figure 6.56 Fixed-line voice retail revenue per person, 2004 to 2009**



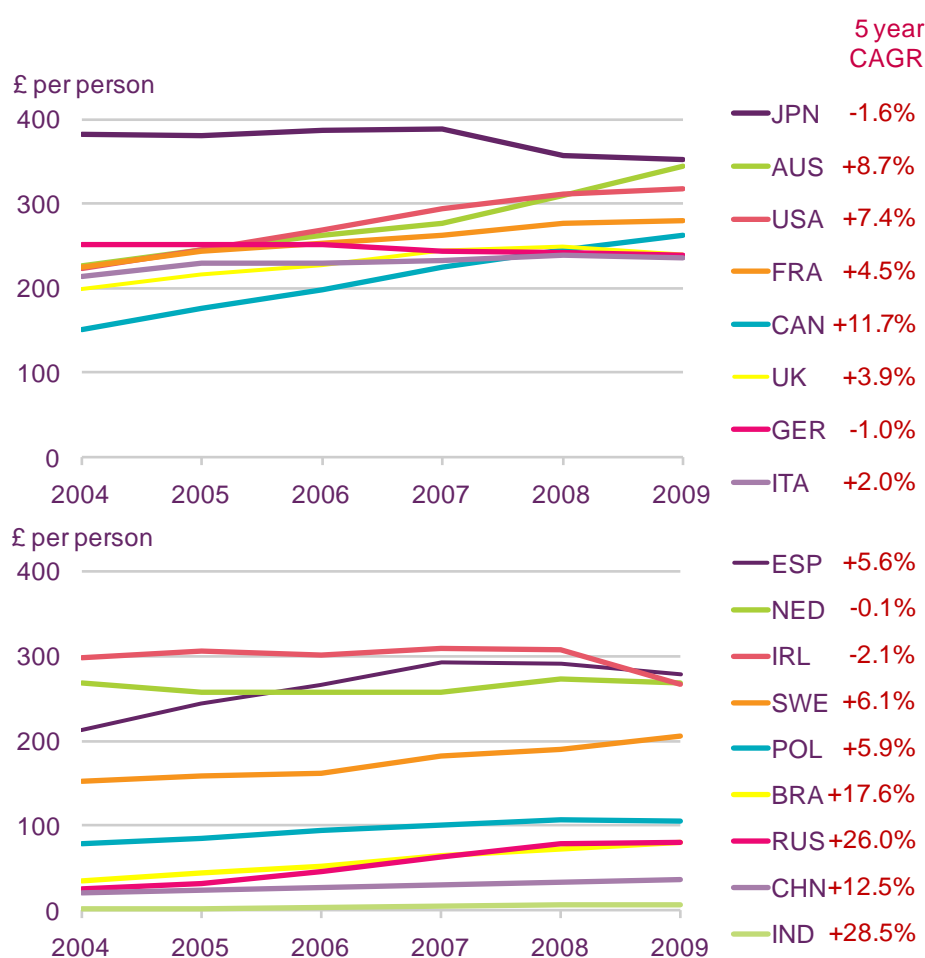
Source: IDATE / industry data / Ofcom

### Average mobile spend per person fell in eight comparator countries during 2009

The UK was one of three countries where average mobile telephony spend per person fell for the first time in 2009 (the others being Italy and Poland). This meant that, including Germany, Japan, Spain, the Netherlands and Ireland, where spend had also fallen prior to 2009, average mobile spend fell in eight of our 17 comparator countries during the year (Figure 6.57). The decline in average spend came despite increasing connections per 100 people in all of these countries except Italy and Ireland (where inactive pre-pay connections have been removed from the overall mobile connection base), suggesting that in most countries, falling spend is a result of declining prices.

The average spend per person on mobile services among our comparator countries was £86 in 2009 (or £245 excluding the BRIC countries), 3.5% lower than in 2008 (2.5% excluding the BRIC countries). In the UK, average mobile spend per person fell by 4.0% to £240 in 2009, the ninth-highest spend among the countries in this report and 32% lower than the £353 average in Japan, where spend was highest. Growth in average mobile spend per person ranged from a 10.9% increase to £344 in Australia to a 13.1% fall to £267 in Ireland in 2009.

**Figure 6.57 Mobile retail revenue per person, 2004 to 2009**



Source: IDATE / industry data / Ofcom

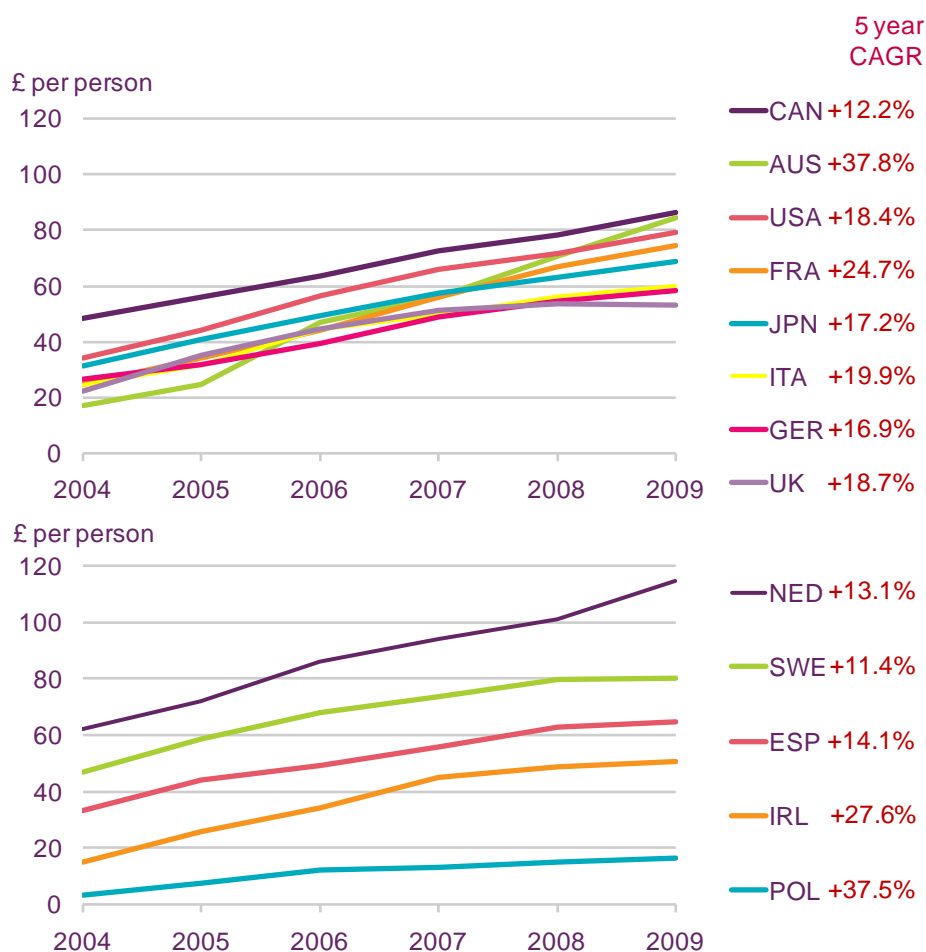
Note: USA, CAN and CHN include revenues from incoming calls

### The UK is the only country where per-capita fixed broadband spend declined

The UK was unique among our comparator nations in 2009, as the only country in which average fixed broadband spend per person fell in 2009, down by 0.7% to £53 a year (Figure 6.58). This fall was due to declining prices and growth in the take-up of lower-cost bundled LLU-based DSL services (the average revenue per fixed broadband connection fell by 7.5% during the year) and was despite continued, albeit slowing, growth in the total number of UK fixed broadband connections. (It should be noted that broadband revenue data were not available for the BRIC countries and they are therefore excluded from this analysis).

In 2009 per-capita fixed broadband revenues ranged from £17 in Poland to £115 in the Netherlands (where the number of fixed broadband connections per household was highest). Growth in average fixed broadband spend in 2009 was highest in Australia, where there was a 19.8% increase to £83 per person during the year as consumers migrated to faster ADSL2+ packages and to cable services.

**Figure 6.58 Fixed broadband retail revenue per person, 2004 to 2009**



Source: IDATE / industry data / Ofcom

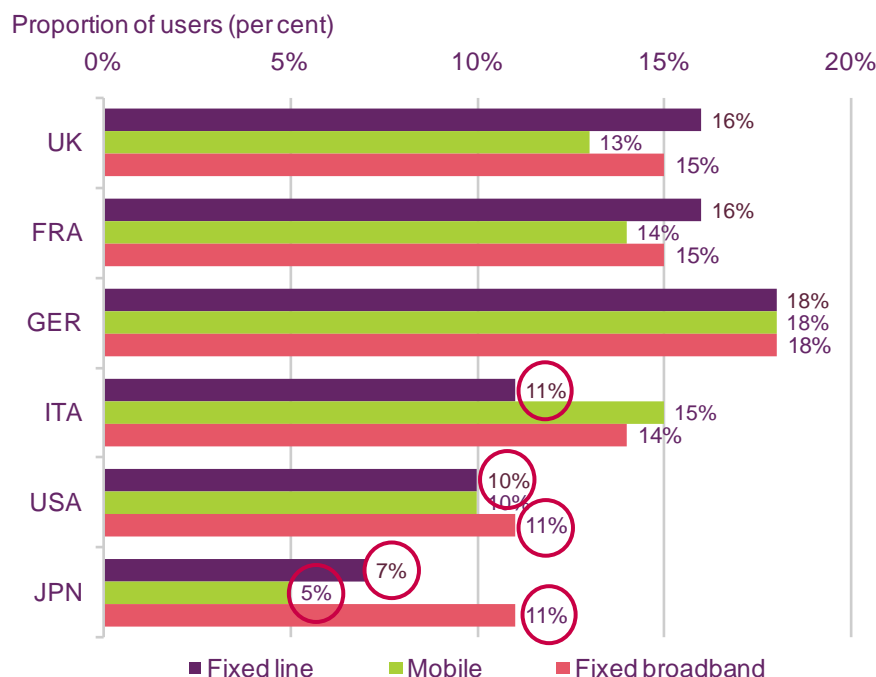
### Levels of switching of all services are highest in Germany

Levels of consumer switching between communications providers is often an indicator of effectively operating competition, and one of Ofcom's nine priorities in our Annual Plan for 2011/12 is to ensure that consumers can switch communications providers by removing unnecessary barriers<sup>112</sup>. Our research in six comparator countries suggested that consumers in Germany were the most likely to have switched telecoms provider in the year to October 2010, with 18% of respondents with a fixed line saying that they had switched provider during the previous 12 months, 18% of those with a mobile and 18% of those with a fixed broadband connection (Figure 6.59).

Levels of switching in the UK were in line with those in Germany, at 16% for fixed-line telephony, 15% for fixed broadband and 13% for mobile voice and data services. Japan had the lowest levels of switching among respondents with a fixed line (7%) and a mobile phone (5%) and the joint lowest level of switching (with the US) for those with a fixed broadband connection (11%).

<sup>112</sup> <http://www.ofcom.org.uk/files/2010/06/annplan1011.pdf>

**Figure 6.59 Proportion of users of a service who have switched provider in the last twelve months, 2010**



Source: Ofcom consumer research, October 2010  
 Total sample: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001  
 Base: Proportion of people with each service

### 6.3.4 Voice services

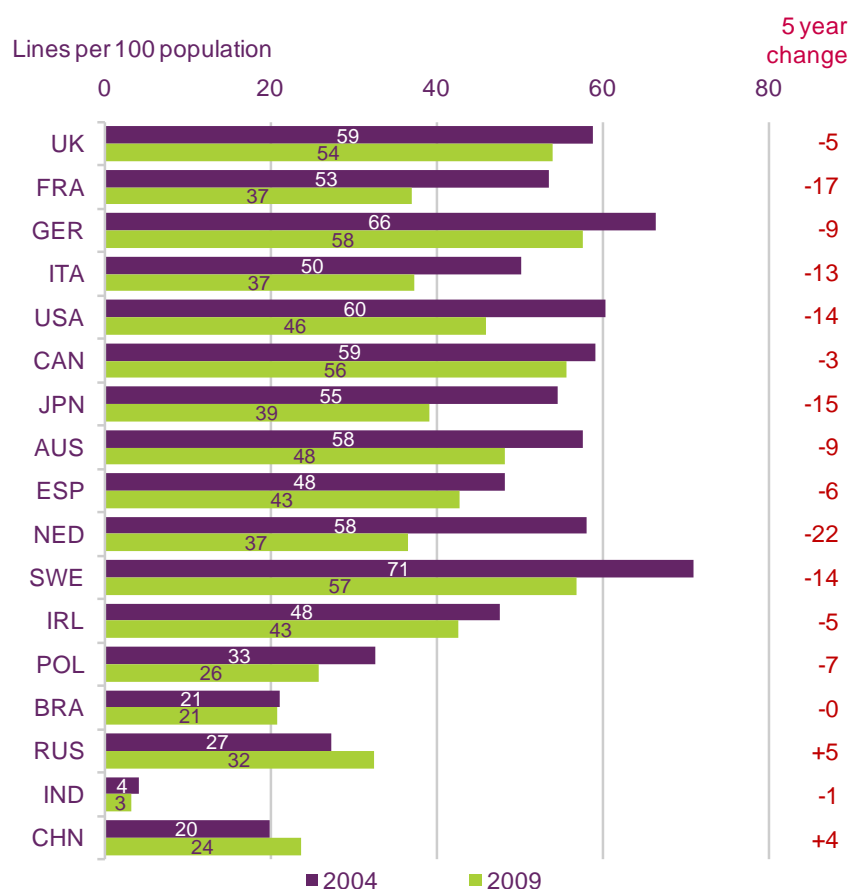
In this section we look at the take-up and use of both fixed and mobile voice services, including analysis of the cost of each. This section does not look at levels of Voice over Internet Protocol (VoIP) use among our comparator countries; this can be found in section 6.1.5 of this report.

#### Fixed lines per person falls in all comparator nations except Russia in 2009

Russia was the only country covered in this report where the number of fixed lines per 100 people did not fall in 2009. While in Russia the number of lines per 100 people was unchanged, at 32, on average it fell by 1.5 across all of our comparator countries (and 3.1 per 100 people excluding the BRIC countries). Again, it should be noted that this calculation includes business lines and the figures therefore should not be used to compare residential fixed-line penetration.

The UK fixed telephony market is proving resilient in comparison with many countries: the average number of lines per 100 people in the UK fell by 1.4 in 2009, the third-lowest rate of decline among our 17 comparator countries, and the UK also had the fourth-highest number of lines per 100 people (54) at the end of 2009 (Figure 6.60). Germany had the highest number of lines per 100 people at the end of 2009, at 58, while it was lowest in India, at just three. Despite rapid growth in the overall communications sectors in China, India and Brazil, the number of fixed voice lines is declining, as consumers and businesses use mobile (and to a smaller extent, VoIP) to fulfil their telephony needs.

**Figure 6.60 Fixed lines per 100 population, 2004 and 2009**



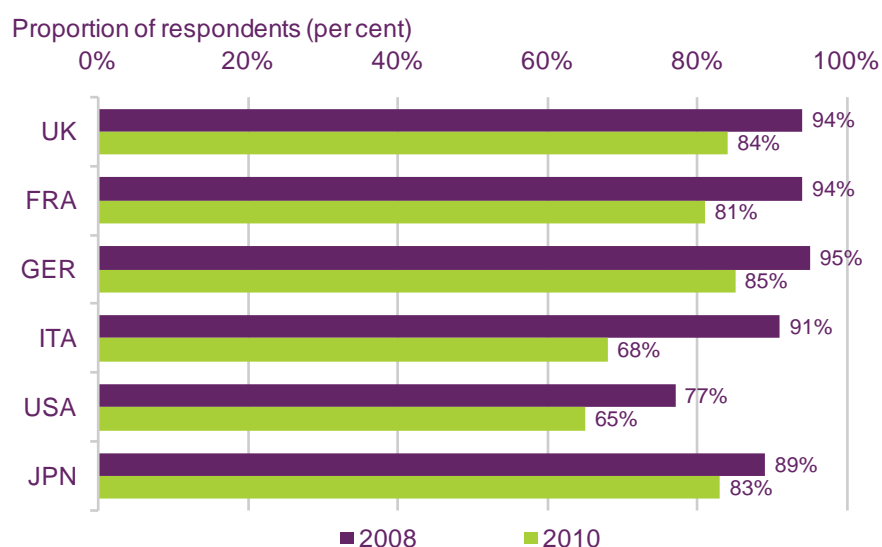
Source: IDATE / industry data / Ofcom

**The US has experienced the fastest decline in fixed-line penetration since 2008.**

Ofcom consumer research suggests that household fixed-line take-up among internet users ranged from 65% in the US (where levels of VoIP use are high) to 85% in Germany in October 2010 among the six comparator countries for which figures were available. In the UK, fixed line take-up was at a similar level to that in Germany, with 84% of people saying that there was a fixed line in their home, a ten percentage point drop over the previous two years.

Italy had the largest decline in fixed-line penetration in the two years to 2010, with household take-up falling by 23 percentage points to 68% (Figure 6.61), partly a result of high mobile penetration and mobile broadband penetration among homes in Italy (in many countries, the requirement to have a fixed voice line in order to receive DSL broadband services constrains the growth of mobile-only households). The lowest decline in fixed telephony penetration over the period was in Japan, where household take-up fell by six percentage points to 83%.

**Figure 6.61 Household take-up of fixed-line services, 2008 and 2010**



Source: Ofcom consumer research, October 2010

Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

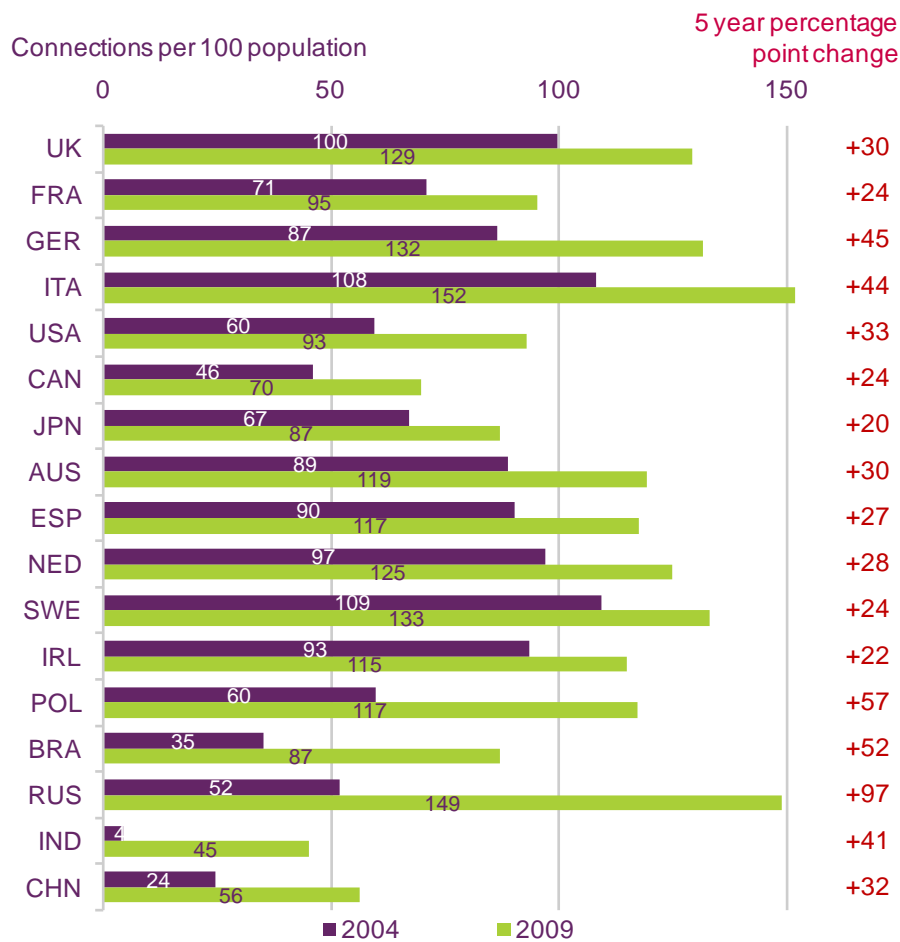
### There were more than 1.5 mobile connections per person in Italy at the end of 2009

At the end of 2009 the number of mobile connections per 100 people in our 17 comparator countries ranged from 45 in India to 152 in Italy (Figure 6.62). In Italy and Russia (where average mobile connections per person was the second highest at 149) this was largely the result of high take-up of pre-pay services and mobile users having more than one SIM or phone in order to take advantage of the different call rates provided by providers (as shown in Figure 6.64, 87% of mobile connections in Italy and 95% in Russia were pre-pay at the end of 2009).

The UK had the fifth-highest number of mobile connections per person among the countries in this report at the end of 2009, at 129. This represented an increase of five connections per 100 people during the year, a third of the largest increase among our comparator nations - 15 connections per 100 people in Russia and India. The average number of mobile connections per 100 population fell by four in Italy and by three in Ireland in 2009 as a result of saturated markets, a slow move towards post-pay (contract) rather than pre-pay connections, and because inactive pre-pay connections were removed from the overall connection bases.



**Figure 6.62 Mobile connections per 100 population, 2004 and 2009**

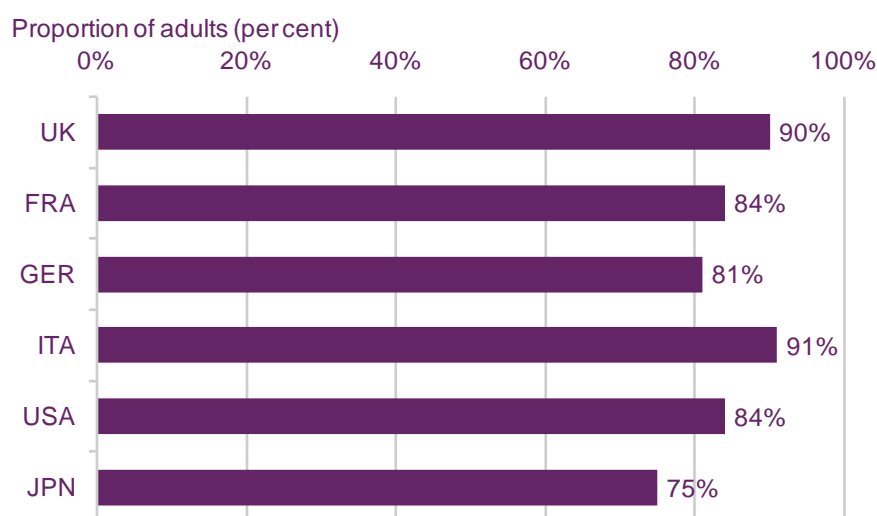


Source: IDATE / industry data / Ofcom

**The proportion of adults with a mobile phone is highest in Italy and the UK**

Ofcom consumer research suggests that household take-up of mobile telephony ranged from 75% in Japan to 90% in the UK and 91% in Italy among the six comparator countries in which the research took place in October 2010 (Figure 6.63).

**Figure 6.63 Household take-up of mobile telephony services, 2010**



Source: Ofcom consumer research, October 2010

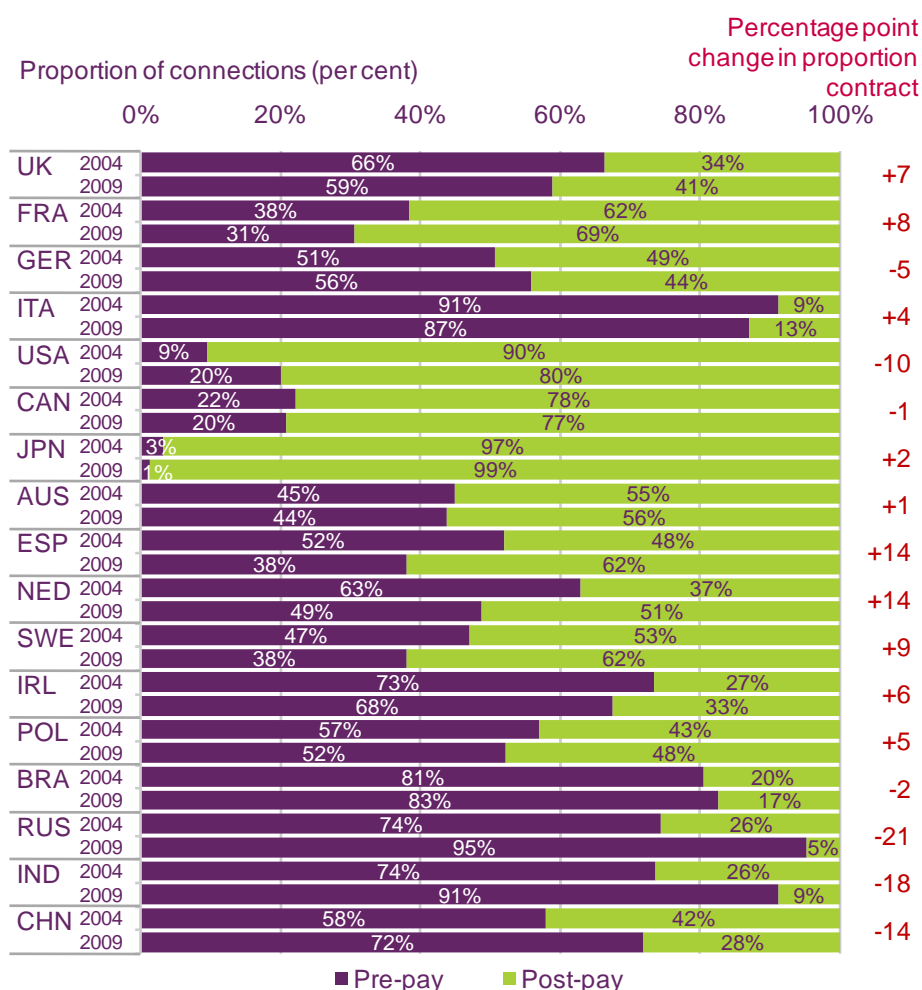
Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

#### **Japan has the highest levels of post-pay take-up, at 99% of connections**

We also looked at the way in which consumers in our comparator countries purchase mobile services, by looking at the proportion of total mobile connections that were pre-pay or bought on a monthly contract. This showed that consumers in Japan and the US had the highest proportion of mobiles on a monthly contract at the end of 2009 (99% and 80% respectively), while Russia (95%), India (91%) and Italy (also 91%) were the highest users of pre-pay (pay-as-you-go) services (Figure 6.64).

Use of pre-pay services was higher than average among all of the BRIC countries, where the proportion of connections that were pre-pay averaged 82%, compared to 66% among our 17 comparator nations as a whole. Italy had the highest proportion of mobile connections that were pre-pay, outside the BRIC countries (87%). In the UK 59% of mobile connections were pre-pay at the end of 2009, lower than the averages both including and excluding the BRIC countries, and seven percentage points lower than they had been in 2004.

**Figure 6.64 Split of mobile connections by type, 2004 and 2009**

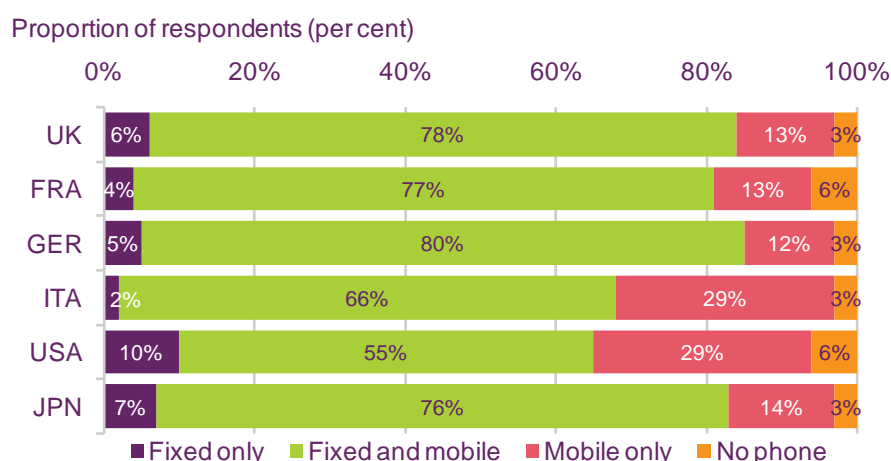


Source: IDATE / industry data / Ofcom

### The US and Italy had the highest proportion of mobile-only homes in October 2010

Ofcom consumer research, conducted in October 2010, suggests that the US and Italy had the highest proportion of mobile-only homes among internet users, with almost three in ten (29%) respondents saying that their household used mobiles as its sole form of telephony (Figure 6.65). Germany had both the lowest proportion of homes that were mobile-only (12%) and also the highest proportion that used both a fixed line and mobile (80%), while the US had the highest proportion of homes that used only a fixed line, and the joint highest proportion without a fixed-line or mobile voice connection, along with France, at 6% (in both of these countries it is likely that many of these respondents use VoIP). In the UK almost four in five (78%) homes used both fixed and mobile phones, broadly in line with Germany, France, and Japan, and significantly higher than either the US or Italy.

**Figure 6.65 Household penetration of fixed and mobile telephony, 2010**



Source: Ofcom consumer research, October 2010

Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

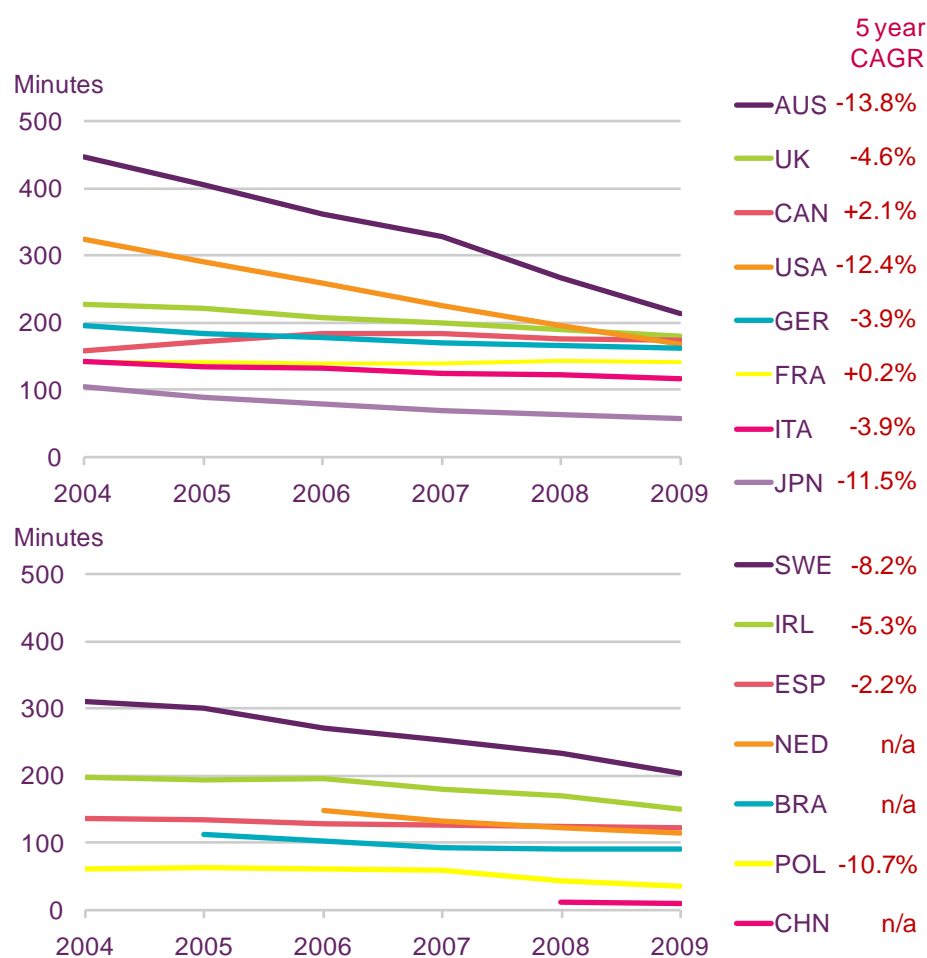
### 6.3.5 Use of voice services

#### Brazil is the only comparator country where fixed voice calls per person grew in 2009

France and Canada were the only countries for which figures were available where average outgoing fixed voice calls per person increased between 2004 and 2009 (Figure 6.66). Falling fixed-line penetration and the growing use of mobile voice services and non-voice forms of communication (such as SMS messaging, instant messaging and email) have been the main factors behind falling landline use in most countries over the last decade. The fixed-line market in France performed better than most in the five years to 2009, as a result of the success of VoIP services, which offer unlimited calls to landlines (note that the data below includes VoIP to landline calls, but excludes PC-to-PC VoIP calls), and in Canada, because of relatively low levels of mobile take-up and fixed-mobile substitution.

The only country where outgoing fixed voice call volumes per person increased in 2009 was Brazil (where growth was 1.1% during the year and overall use was relatively low at 91 minutes per person per month in 2009) as a result of rapid growth in the use of VoIP services during the year, and relatively high per-minute mobile prices. The UK had the third-highest average outgoing fixed-line use per person in 2009, at 176 minutes per month, due to the prevalence of cheap fixed-voice services, while average use per person was lowest in China, at just ten minutes per month, as a result of low fixed-line availability and the relatively high use of mobiles.

**Figure 6.66 Monthly fixed-line voice call minutes per person, 2004 to 2009**



Source: IDATE / industry data / Ofcom

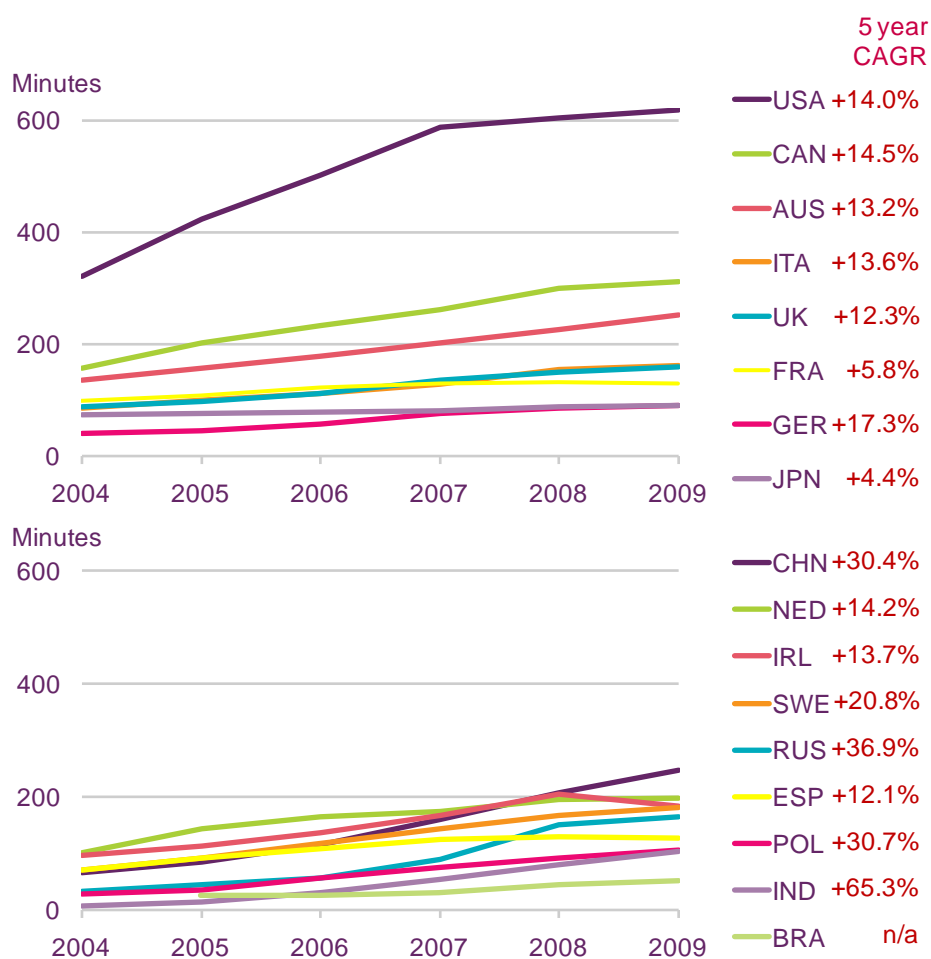
Note: Figures for USA and CAN exclude local and VoIP calls and include incoming mobile calls; data for BRA is only available from 2005, data for NED is only available from 2006 and data for CHN is only available from 2008

### Average mobile call volumes per person declined in France and Spain in 2009

In all of the comparator countries for which data were available, average mobile voice call volumes per person increased between 2004 and 2009 (Figure 6.67) This was a result of growing mobile take-up and, in many markets, falling prices as markets approach saturation and competition between providers intensifies. However, in 2009 average mobile voice call use per person fell in France and Spain, the first time that this had happened in either country (there was also a fall in Ireland but this was largely due to a change in reporting by regulator ComReg, which stopped including WAP mobile data minutes in its reported figures from Q1 2009).

The falls in average voice call use in France and Spain were 1.1% and 1.2% respectively, and may be due to the increased use of SMS and email among younger mobile users (particularly in France), and reduced use as an impact of the economic downturn (particularly in Spain). Average monthly outgoing mobile call volumes per person ranged from 54 minutes per month in Brazil to 254 minutes in Australia. (Note that this analysis excludes the US, Canada and China, where call volume figures also include incoming calls). In the UK the average outgoing mobile voice call volume per person was ranked seventh out of the 14 comparator countries for which data were available, at 159 minutes per month.

**Figure 6.67 Monthly mobile voice call minutes per person, 2004 to 2009**



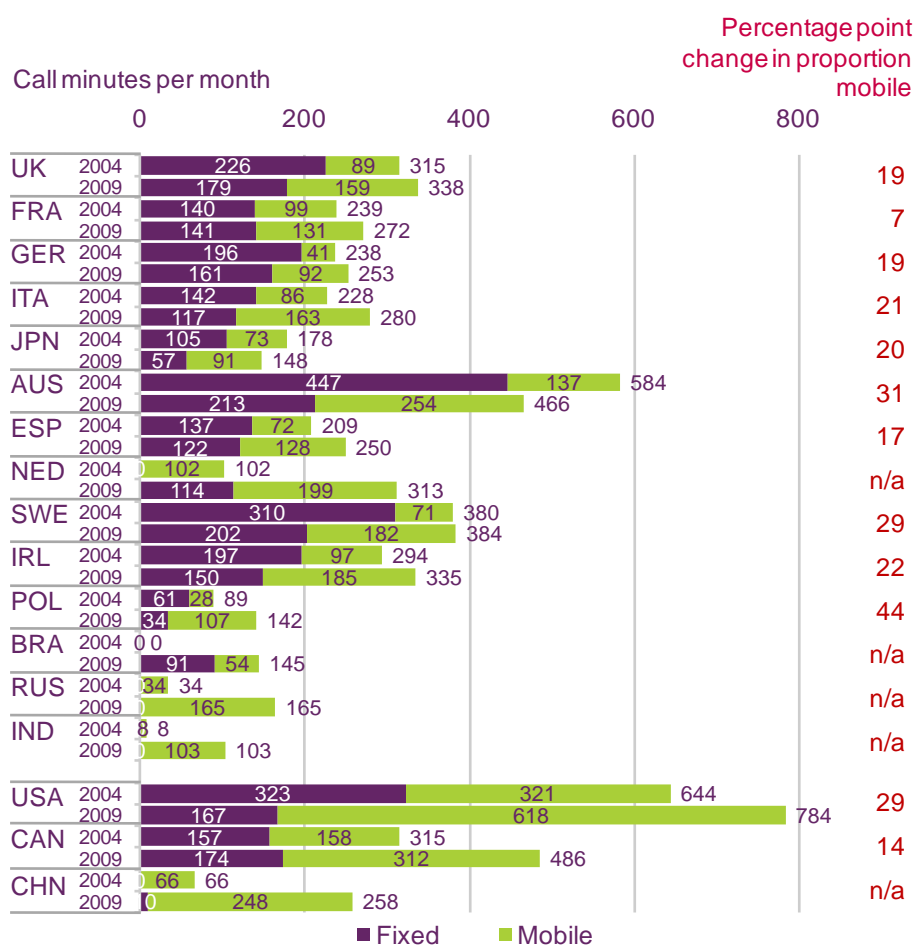
Source: IDATE / industry data / Ofcom

Note: Data for USA, CAN and CHN includes incoming calls

### Fixed to mobile substitution continues across the board

Increasing use of mobiles (and declining average fixed-line use in most countries) meant that the proportion of total voice calls per person that originate on mobile phones increased among all of the nations for which comparable figures were available between 2004 and 2009 (Figure 6.68). The percentage point growth in the proportion of voice calls that originated on mobiles in the five years to 2009 among our comparator nations was greatest at 44 in Poland, where it increased from 32% to 76% as a result of low fixed-line availability (only around 80% of homes in Poland can get a fixed line). In the UK the proportion of voice calls which originate on mobile phones increased by 19 percentage points to 47% over the period.

**Figure 6.68 Monthly fixed and mobile call volumes per person, 2004 and 2009**



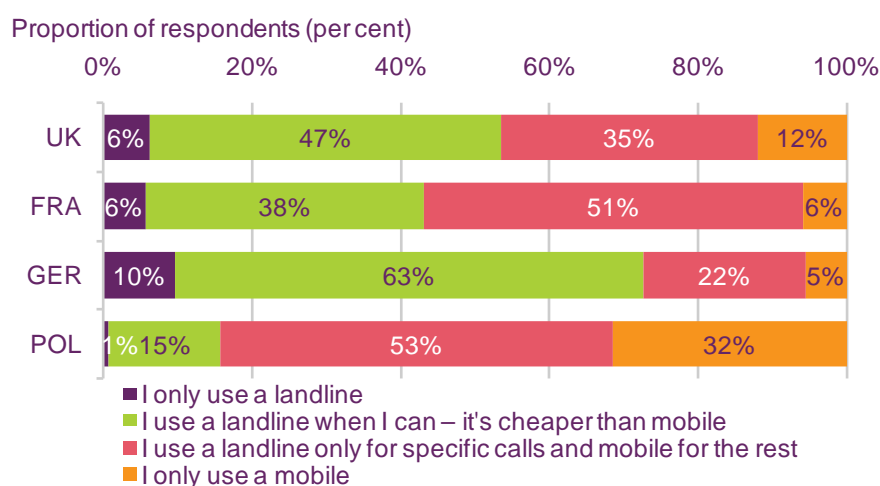
Source: IDATE / industry data / Ofcom

Note: Fixed figures for USA and CAN exclude local and VoIP calls; mobile figures for USA, CAN and CHN include incoming calls

### Price seems to be the largest factor affecting levels of fixed-line and mobile use

Data from Analysys Mason sheds some light on differing levels of fixed and mobile voice call use among four of our comparator nations (Figure 6.69). This shows that the proportion of people who only use a landline, or use one whenever they can, ranged from 16% in Poland to 73% in Germany, while in the UK the figure was 53%. This can to a large extent be explained by the relative cost of calls in each of the countries: in Germany an average mobile voice call costs more than twice as much a minute as an average fixed-line call minute (as shown in Figure 6.72) while in Poland an average mobile voice call minute costs around 20% less than an average fixed-line voice call minute.

**Figure 6.69 Use of telephony services, by country, 2009**



Source: *Analysys Mason Connected Consumer, 2009*

### 6.3.6 Cost of voice services

#### Average fixed voice call costs highest in Japan at 22.2 pence per minute

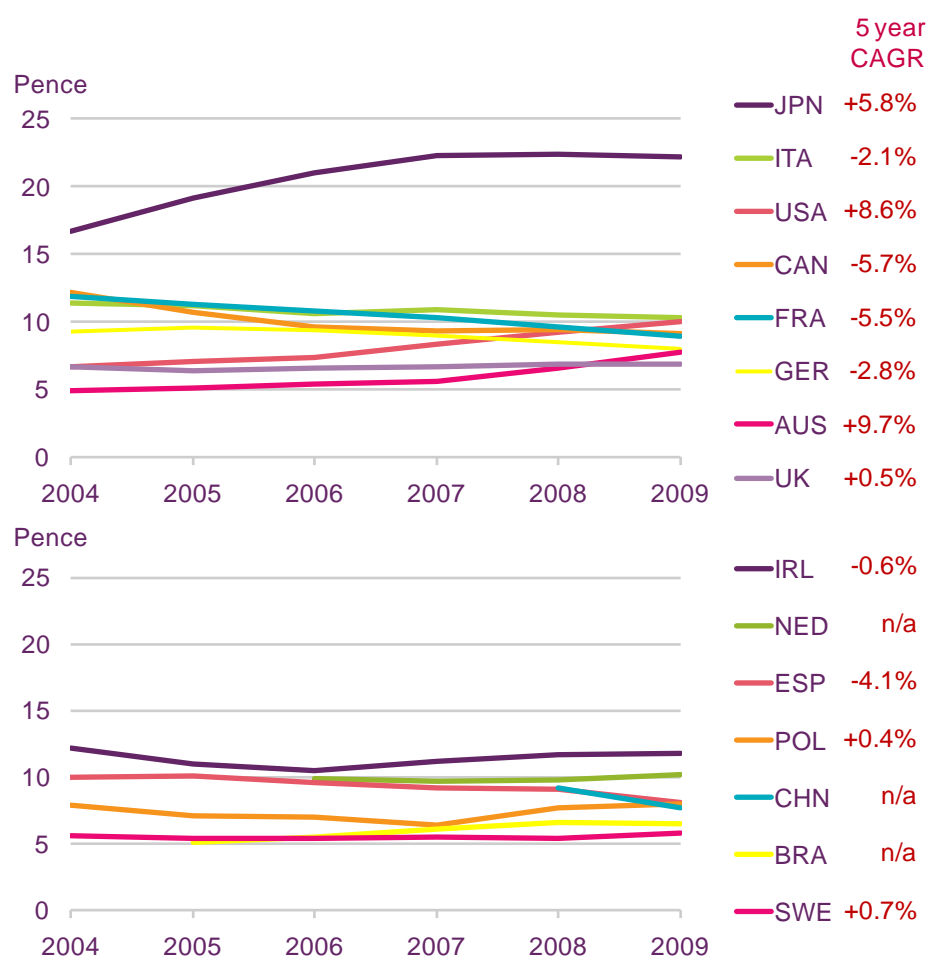
In order to compare call costs across our comparator countries we calculated an average cost per outgoing fixed voice call minute by dividing total fixed voice revenues (including rental charges) by total fixed voice call volumes. Although this measure is not perfect (as it does not take into account differing call type patterns in each country) it provides a useful high-level measure of the cost of using fixed-voice services. Japan, where, historically, fixed and mobile voice calls have been expensive, had by far the highest average cost per voice call minute among our comparator countries in 2009, at 22.2 pence per minute (ppm), over twice the 9.3ppm average across all of our comparator countries.

In the UK the average fixed voice cost was 6.9ppm, significantly lower than the average and the third lowest among those comparator countries for which figures were available, after Brazil and Sweden (Figure 6.70). The UK was one of seven comparator countries where the average cost of a voice call minute increased in nominal terms in 2009. In the UK this was as a result of a number of providers (including the incumbent, BT, and cable provider Virgin Media) increasing prices during the year, although at 0.7% the growth in average fixed voice call costs in the UK was the joint lowest among countries where there was an increase, along with Ireland.

Australia had the highest increase in average fixed call costs in 2009, at 18.7%, as a result of a higher proportion of total call volumes being more expensive long-distance, calls to mobiles and international calls, and despite a fall in overall levels of use.



**Figure 6.70 Average cost of a fixed voice call minute, 2004 to 2009**



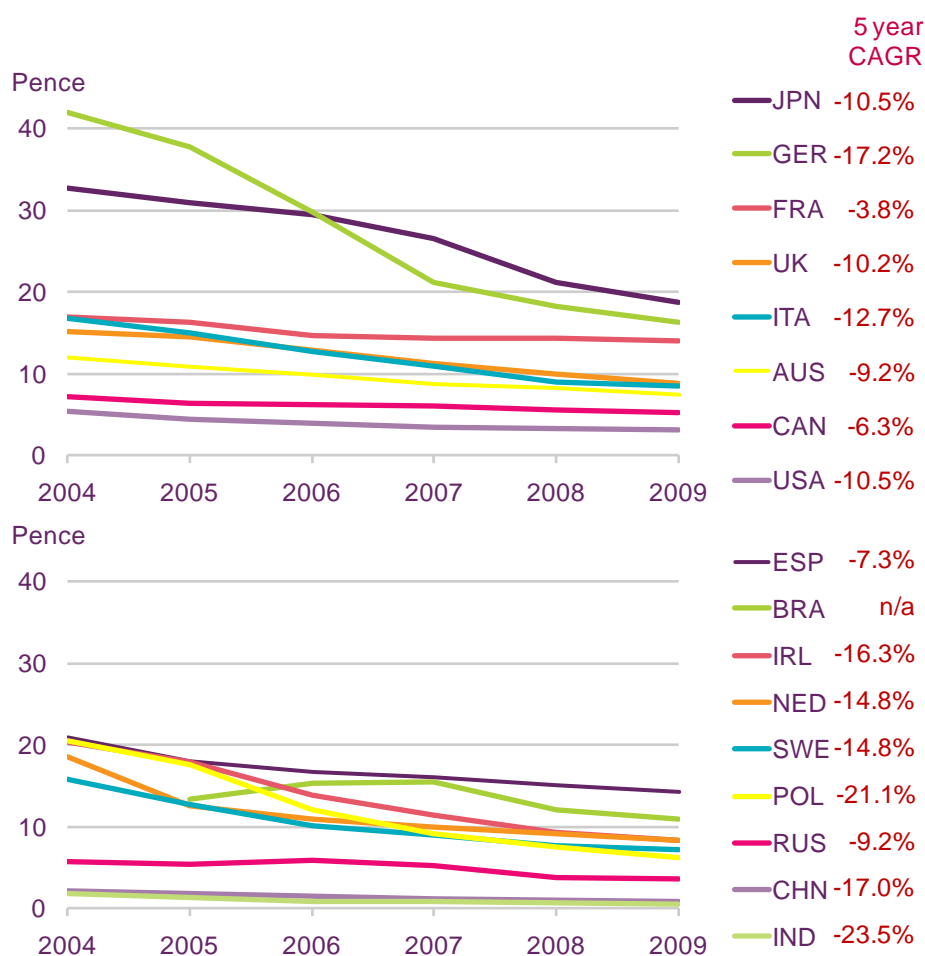
Source: IDATE / industry data / Ofcom

### Average mobile voice call cost falls in all comparator countries in 2009

The average cost of a mobile voice call minute fell by 14% to 2.7ppm in 2009, with the annual fall in the BRIC countries (down 14% to 1.1ppm) being greater than that in our other comparator nations (where the drop was 8% to 5.5ppm). Whereas average fixed voice call prices increased in almost half of our comparator countries in 2009 (see Figure 6.70), the average cost of a mobile voice call minute fell in all comparator countries over both a one-year and a five-year timeframe (Figure 6.71).

As with fixed voice calls, Japan had the highest average cost of a mobile voice call minute in 2009, at 18.8ppm, while in the UK the average was 8.8ppm, higher than the averages among our comparator countries, both including and excluding the BRIC countries. The average mobile voice call cost in the UK fell by 12% in 2009, as a result of price competition between providers, the increasing use of SIM-only tariffs and the growth of 24-month post-pay contract terms offering lower prices or more inclusive minutes than comparable 18-month or 12-month contracts.

**Figure 6.71 Average cost of an outgoing mobile voice call minute, 2004 to 2009**



Source: IDATE / industry data / Ofcom

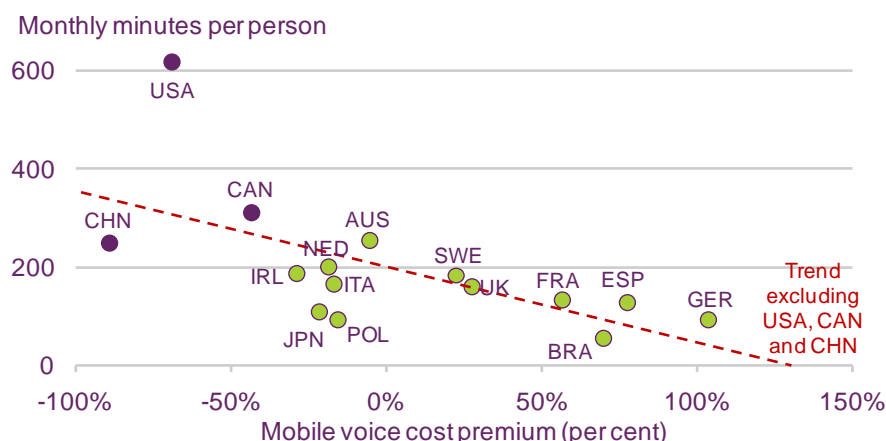
Note: USA, CAN and CHN calculation includes incoming calls

### Correlation between relative cost of mobile calls and average use

In order to explore the relationship between average mobile voice call use and the comparative cost of mobile calls, we plotted the mobile voice cost premium (the additional percentage cost of the average mobile voice call minute over the average fixed voice call minute) against average monthly mobile voice call minutes per person for all of the comparator countries for which figures were available (Figure 6.72).

Unsurprisingly, this showed that as the cost premium of mobile voice calls over fixed lines increased, the average monthly call minute use fell (the trend line in the chart excludes the US, Canada and China, as data for these countries include revenues and volumes from incoming calls). In six of the comparator countries for which we had data (excluding the US, Canada and China from the analysis) it was, on average, cheaper to use a mobile than a fixed line.

**Figure 6.72 Average mobile voice call use and the comparative cost of fixed and mobile voice calls, 2009**



Source: IDATE / industry data / Ofcom

Note: USA, CAN and CHN include incoming calls

### 6.3.7 Data services

In this section we look at the take-up and use of data services by consumers, concentrating on fixed broadband internet access and mobile access, using either a mobile handset or a mobile broadband dongle. We also consider the cost of fixed broadband services, and look at the services that consumers are using their fixed and mobile data connections for.

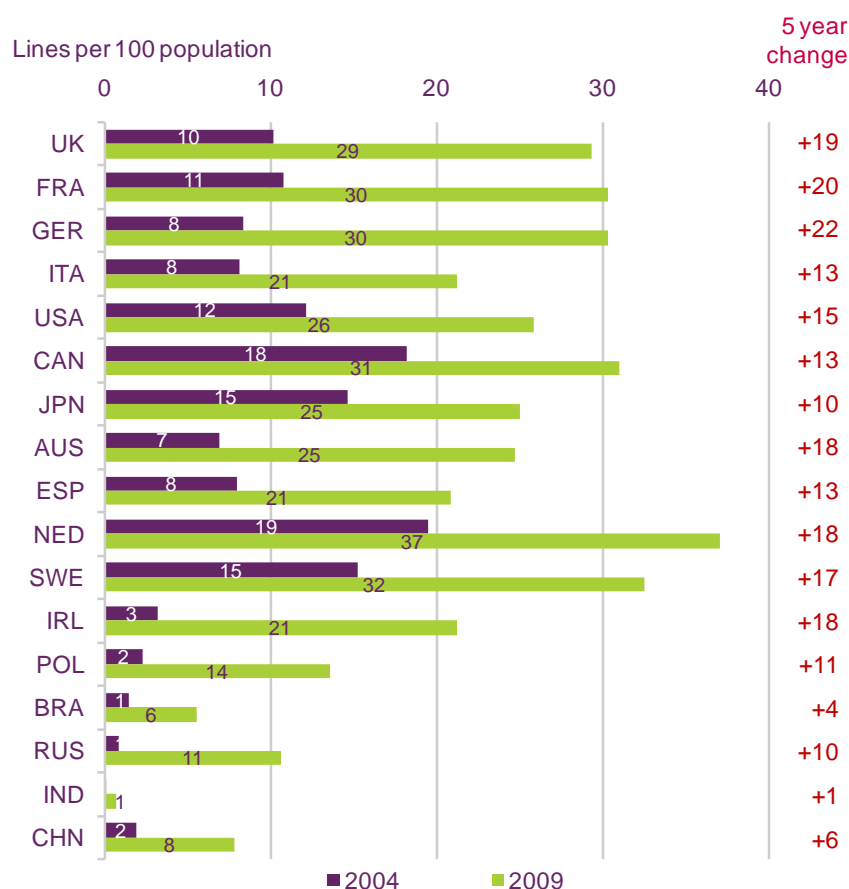
### 6.3.8 Take-up of data services

#### The Netherlands has the highest fixed broadband connections per 100 people, at 37

At the end of 2009 the Netherlands had the highest number of fixed broadband connections per 100 people among our comparator countries (37); the metric was lowest in India (where fixed broadband roll-out is concentrated in recently-developed areas) at one per 100 people (Figure 6.73). In the UK there were 29 fixed broadband lines per 100 people at the end of 2009, the sixth-highest level of take-up among the 17 countries covered by this report.

The number of fixed broadband connections per 100 people increased among all our comparator countries in the five years to 2009, although there was wide variation in the rate of this growth, from one connection per 100 people in India to 22 per 100 people in Germany. In the UK the increase was 19 connections per 100 people, the third highest growth among the countries included in this report, after Germany (22) and France (20).

**Figure 6.73 Fixed broadband connections per 100 people, 2004 and 2009**



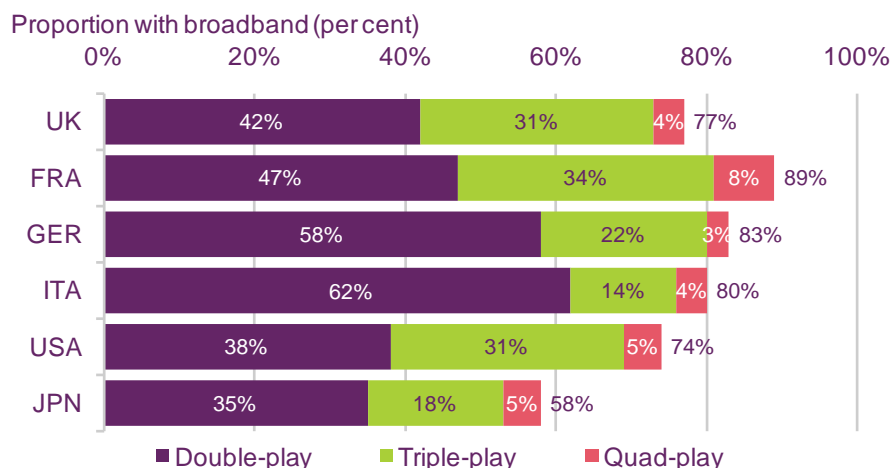
Source: IDATE / industry data / Ofcom

### 89% of fixed broadband users in France buy it in conjunction with another service

Ofcom consumer research suggests that the majority of consumers with a home fixed broadband connection bought it in conjunction with another service, from the same supplier, in all six of the countries surveyed in October 2010 (Figure 6.74). The proportion of people with a home fixed broadband connection who bundled it with another communications service ranged from 58% in Japan to 89% in France, where cheap LLU-based DSL broadband is frequently bundled with VoIP and IPTV services.

While France also had the highest proportion of home broadband purchased as either a triple or quad-play bundle, Germany had the highest proportion that was bought in a double-play bundle, mainly with fixed voice services. In the UK over three-quarters (77%) of home broadband was bought with another service from the same supplier, mainly as a double-play option with fixed voice services.

**Figure 6.74 Proportion of consumers with fixed broadband who buy it in conjunction with another service, 2010**



Source: Ofcom consumer research, October 2010

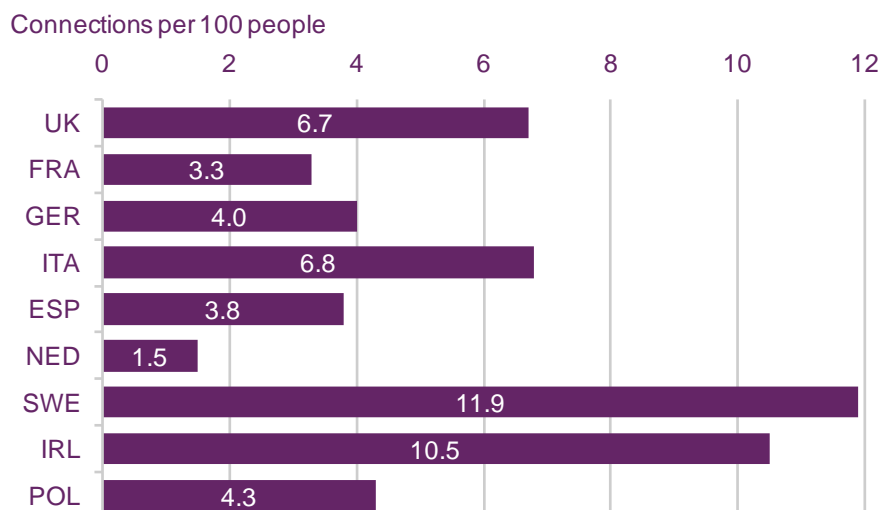
Base: All with a broadband connection

Base sizes: UK=930, France=993, Germany=793, Italy=844, USA=904, Japan=943

### Sweden and Ireland have the highest levels of mobile broadband take-up

European Commission data show the number of mobile broadband connections per 100 population among comparator countries in the European Union in 2009 (Figure 6.75). Mobile broadband connections per 100 people were highest in Sweden (11.9) and Ireland (10.5) in 2009, and lowest in the Netherlands (where fixed broadband take-up was highest) at 1.5. The UK had the fourth-highest take-up of mobile broadband among the nine countries for which we have figures, at 6.7 connections per 100 people, in line with Ofcom's own consumer research which shows that 13% of UK homes had a mobile broadband connection in Q4 2009.

**Figure 6.75 Mobile broadband connections per 100 population, 2009**



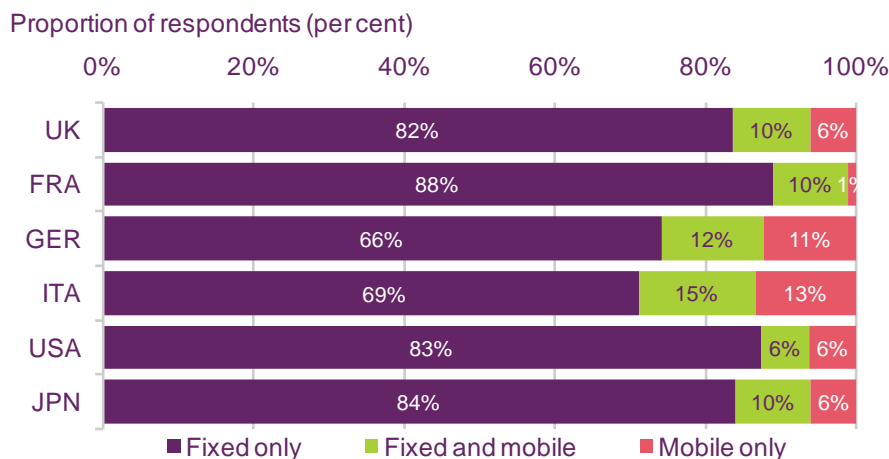
Source: European Commission's 15th Progress Report on the Single European Electronic Communications Market, 2009

## Italy has the highest proportion of broadband homes solely using mobile broadband

Ofcom consumer research, conducted in October 2010, suggested that, among the six countries surveyed, broadband homes in Italy had the highest overall levels of mobile broadband take-up, use of both fixed and mobile broadband services, and use of mobile broadband as their sole broadband connection (Figure 6.76). The proportion of broadband homes that used mobile broadband ranged from 12% in the US to 28% in Italy, while the proportion that were mobile broadband-only was lowest in France (1%) and highest in Italy (13%). France also had the highest proportion of broadband homes which solely used fixed broadband (88%), a result of the availability of cheap bundled fixed broadband services.

Use of mobile broadband is high in Italy, because there is a high proportion of mobile-only homes (see Figure 6.65) and because mobile broadband services are relatively cheap (Section 2.2.5 shows that mobile broadband prices in Italy are the lowest among the six countries in the analysis). In the UK 82% of broadband homes only used a fixed broadband connection, 6% only had mobile broadband and 10% used both.

**Figure 6.76 Household penetration of fixed and mobile broadband, 2010**



Source: Ofcom consumer research, October 2010

Base: All with a broadband connection

Base sizes: UK=930, France=993, Germany=793, Italy=844, USA=904, Japan=943

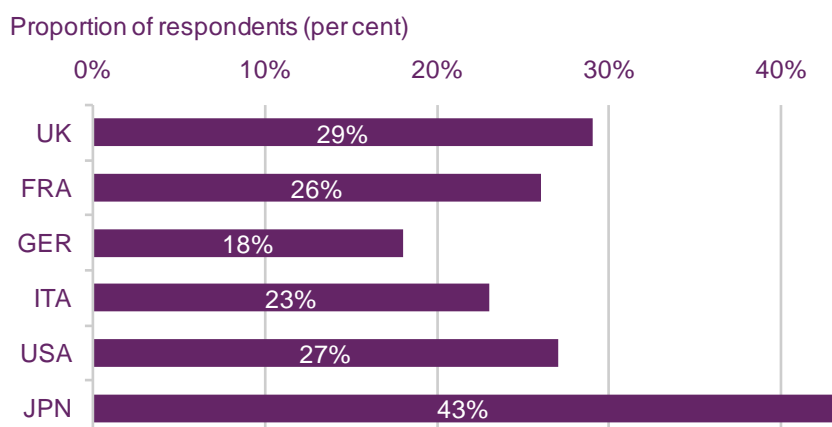
## Use of a mobile handset to access the internet is highest in Japan

Ofcom consumer research shows that in October 2010 consumers in Japan had the highest levels of using a mobile handset to access the internet in the home, with 43% of internet users saying that they had ever done this (Figure 6.77). Among the countries surveyed, Japan had the most mature mobile data market, with virtually all mobile connections using a 3G network. The UK had the second-highest level of handset mobile internet use at home, among the countries for which figures were available, at 29%, while use was lowest in Germany, at 18%.

Separate figures from Orange's *Mobile Exposure 2010* study<sup>113</sup> show that the majority of people using mobile media (59%) in the four countries in which research was undertaken (the UK, France, Spain and Poland) were male, while almost two-thirds (63%) were under 35. The study also showed that 65% of those using mobile media were in full-time employment and 22% were students.

<sup>113</sup> <http://exposure2010.orangeadvertisingnetwork.co.uk/pdf/orange-mobile-exposure-2010-press%20presentation-eng.pdf>

**Figure 6.77 Proportion of people using a mobile handset to access the internet at home, 2010**



Source: Ofcom consumer research, October 2010

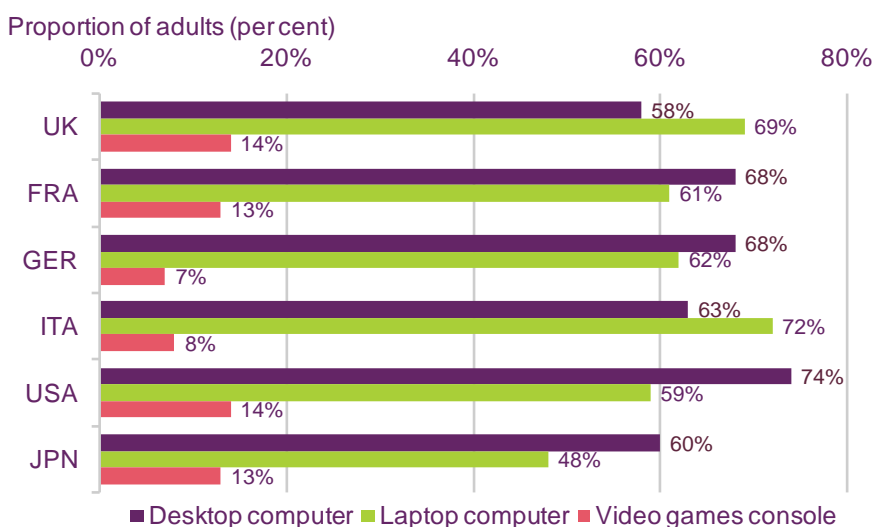
Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

### 6.3.9 Use of data services

#### People in the UK and the US are the most likely to use a games console to access the web

Ofcom consumer research shows that internet users in the UK and the US reported the highest levels of using a games console to access the internet at home in October 2010, with 14% of respondents in each country claiming to do this (Figure 6.78). The UK was also one of only two countries (with Italy) where more people used a laptop computer to access the internet at home than used a desktop. Italy had the highest proportion of people using a laptop to access the internet at home (72%), while the US had the highest proportion using a desktop to do so (74%).

**Figure 6.78 Devices used to access the internet at home, 2010**



Source: Ofcom consumer research, October 2010

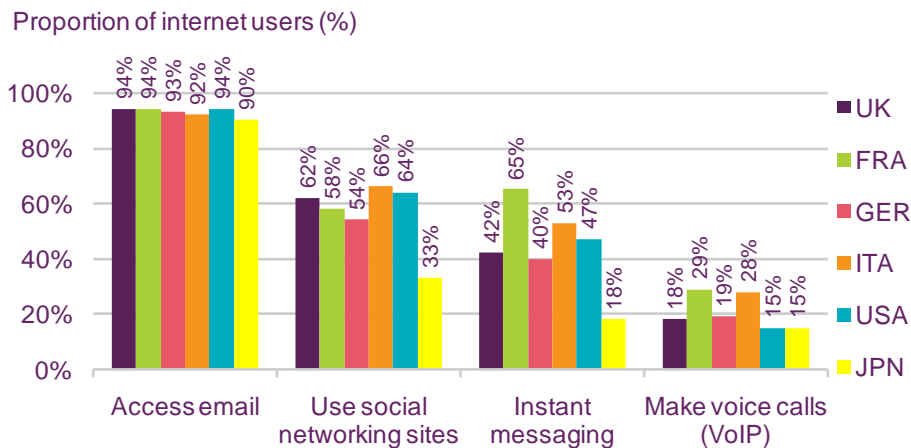
Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

## Twice the proportion of internet users access social networking sites at home in Italy than in Japan

As part of our consumer research, we asked internet users in six comparator countries about the online activities which they undertook at home (Figure 6.79). In all of the six countries email was the most frequently-used online method of communication in the home, with 90% or more of respondents saying that they used email at home.

Levels of use of other online services varied more widely; for example, the proportion of internet users who accessed social networking sites at home was highest in Italy at 66%, twice the level in Japan (33%) where use was lowest (in the UK it was 62%). Similarly, the proportion of web users using instant messaging services in the home ranged from 18% in Japan to 65% in France, while in the UK 42% said that they did this. Use of VoIP was highest in France (29%) and Italy (28%) and lowest in the US and Japan (both 15%). Use of VoIP is covered in more depth in Section 6.1.5 above.

**Figure 6.79 Online activities undertaken at home, 2010**



Source: Ofcom consumer research, October 2010

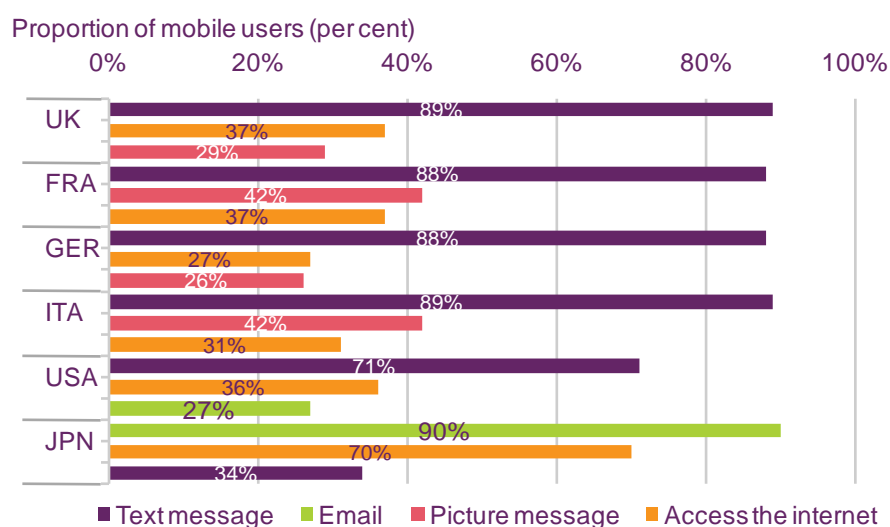
Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

## SMS is the most-used mobile data service in all countries surveyed except Japan

SMS messaging was the most frequently-mentioned mobile data service in all of the six countries in which we undertook consumer research in October 2010 except Japan, where it ranked third (Figure 6.80). Almost nine in ten (89%) mobile users in the UK claimed to use SMS messaging, in line with use in Italy (also 89%), France and Germany (both 88%), and higher than the US (71%). The most frequently-mentioned mobile data service in Japan was email, with 90% of mobile users in Japan saying that they used their mobile to send and receive emails: the US was the only other country where email featured in the top three most-mentioned services, although only 27% of respondents did this. Japan was also the country where using a mobile handset to access the internet was most frequently mentioned, with 70% of mobile users saying that they used the service (stated use was lowest in Germany, at 27%).



**Figure 6.80 Three most frequently-mentioned mobile data services used, 2010**



Source: Ofcom consumer research, October 2010

Base: all who own and use a mobile phone

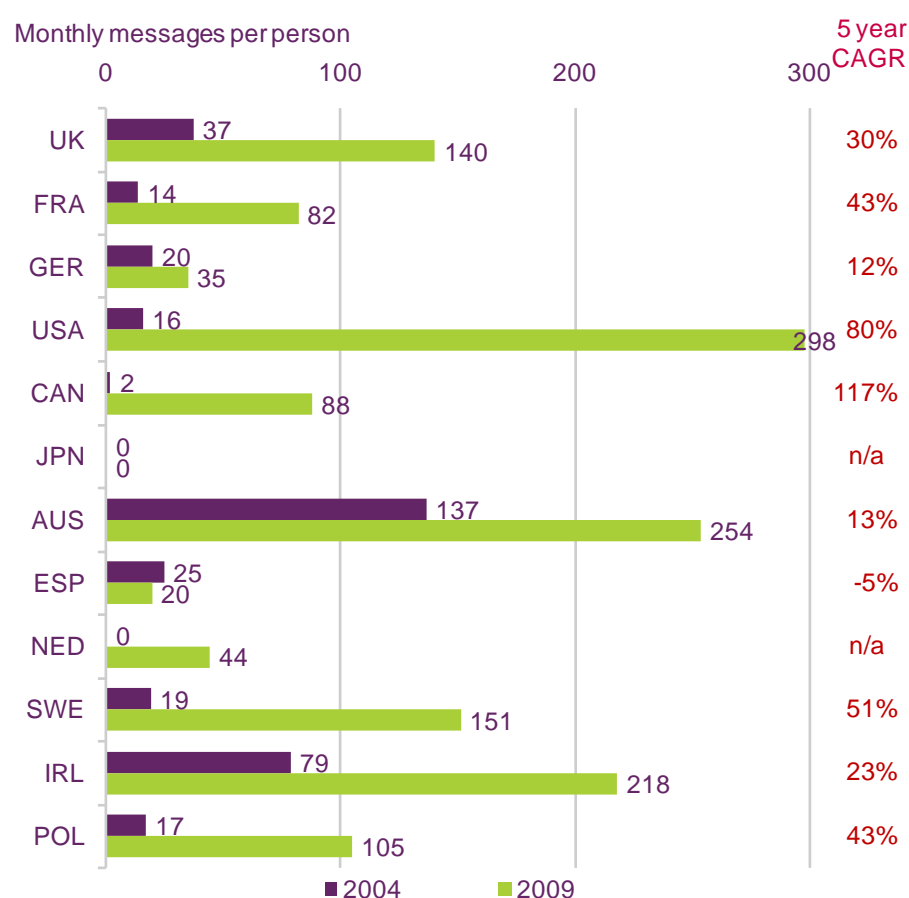
Base sizes: UK=918, France=853, Germany=822, Italy=910, USA=854, Japan=750

### Average monthly mobile messages per person is highest in Australia, at 254

Excluding the US (where messaging figures include push-to-text messages and figures are therefore not comparable to those for our other comparator countries) Australia had the highest average monthly mobile messaging use per person in 2009, at 254 messages per person per month (Figure 6.81). This was over 80% higher than the monthly average of 140 a month in the UK, which had the fifth-highest average use among the eleven comparator countries for which figures were available. Average messaging use increased in all of the countries for which figures were available in the five years to 2009, except in Spain, where they fell by an average of 5% a year over the period.

Canada had the highest growth in average messaging use in the five years to 2009; average monthly messages per person rose from two to 88 per person, an average increase of 117% a year. Despite this growth, average message use in Canada was much lower than the average of 153 messages per person among those countries for which figures were available.

**Figure 6.81 Average monthly mobile messages per person, 2004 and 2009**



Source: IDATE / industry data / Ofcom

Note: Figures for the USA include push-to-text and are not comparable to the other comparator countries

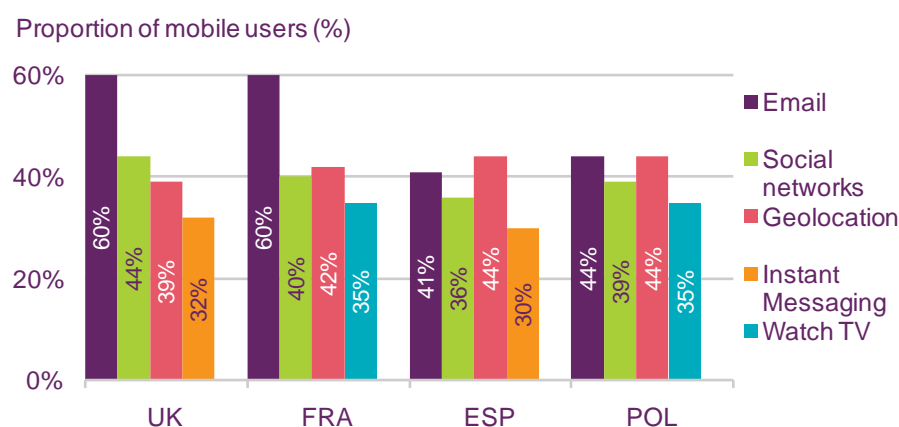
### Email is the most used non-SMS mobile data application

Orange's *Mobile Exposure 2010*<sup>114</sup> investigated the most popular non-SMS types of data use used by mobile phone internet users in four of our comparator countries: the UK, France, Spain and Poland (Figure 6.82). In the UK, France and Poland, email was the most-used service, and in Spain location-based services ranked first and email second. Location-based services ranked second in France and Poland, and third in the UK.

Use of social networks also appeared in the top four in all four countries, with mobile internet users in the UK having the highest levels of use among the nations covered in Orange's study (44%). While email, location-based and social networking services occupied the top three spots in all four countries, there were differences in the fourth-ranked service. In the UK and Spain this was taken up by instant messaging, whereas in France and Poland the fourth most-used service was mobile TV.

<sup>114</sup> <http://exposure2010.orangeadvertisingnetwork.co.uk/pdf/orange-mobile-exposure-2010-press%20presentation-eng.pdf>

**Figure 6.82 Four most frequently used non-SMS mobile data services, by country**



Source: Orange Mobile Exposure 2010 study:  
<http://exposure2010.orangeadvertisingnetwork.co.uk/pdf/Consumer-Orange-Exposure-English-FINAL.pdf>

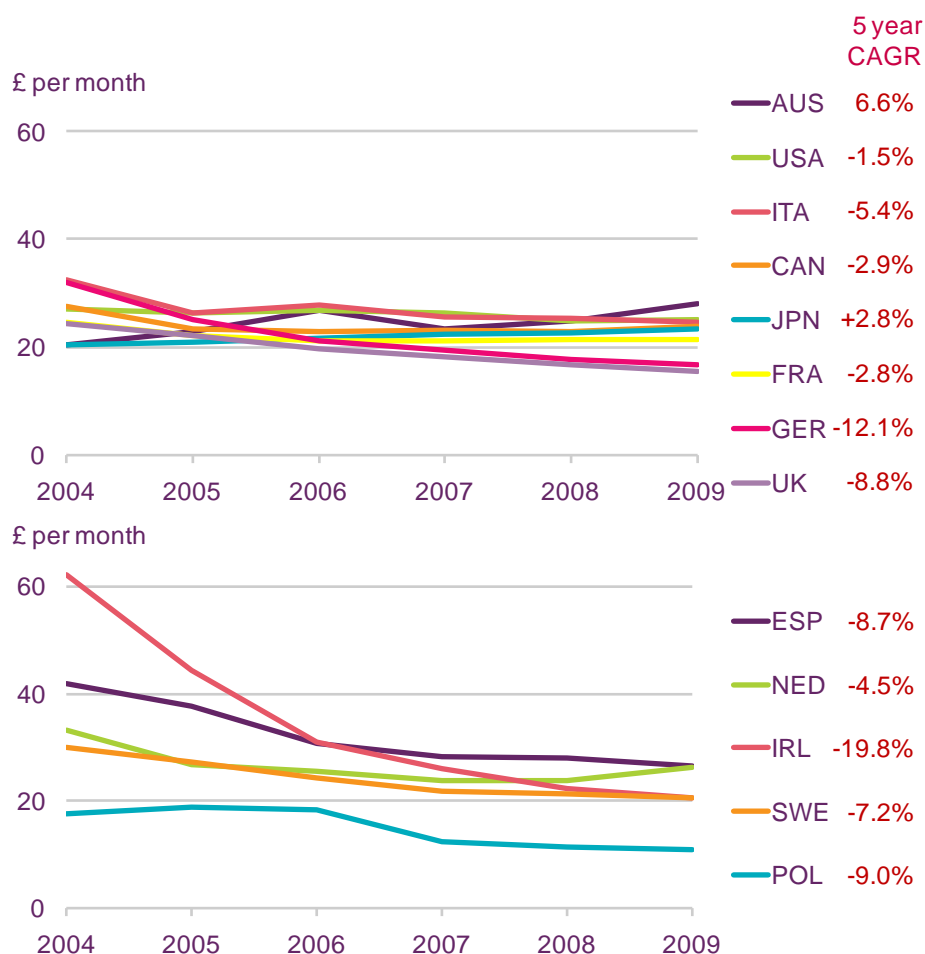
### 6.3.10 Cost of data services

#### UK has the second lowest average monthly fixed broadband cost, at £15.42

In 2009 the UK had the second-lowest average monthly cost per broadband connection among the comparator countries for which figures were available, at £15.42 a month, second only to Poland at £11.02 a month (Figure 6.83). In the UK the average annual fall in the cost of a fixed broadband connection was 8.8% in the five years to 2009. The decline was greatest in Ireland, where it averaged almost 20% per year, to a large extent due to the average cost of a broadband connections having been so high (at over £60 a month) in 2004.

Australia and Japan were the only comparator countries where the average cost of a broadband connection increased during the period. This was as a result of consumers switching to higher-speed services (to fibre-based connections in Japan and to ADSL2+ and cable in Australia), and in 2009 Australia had the highest average monthly cost of a fixed broadband connection among the nations in this report, at £27.98 a month.

**Figure 6.83 Average monthly revenue per fixed broadband connection, 2004 to 2009**



Source: IDATE / industry data / Ofcom

**The UK had the cheapest bundled fixed-line ‘up to’ 8Mbit/s fixed broadband service in 2009**

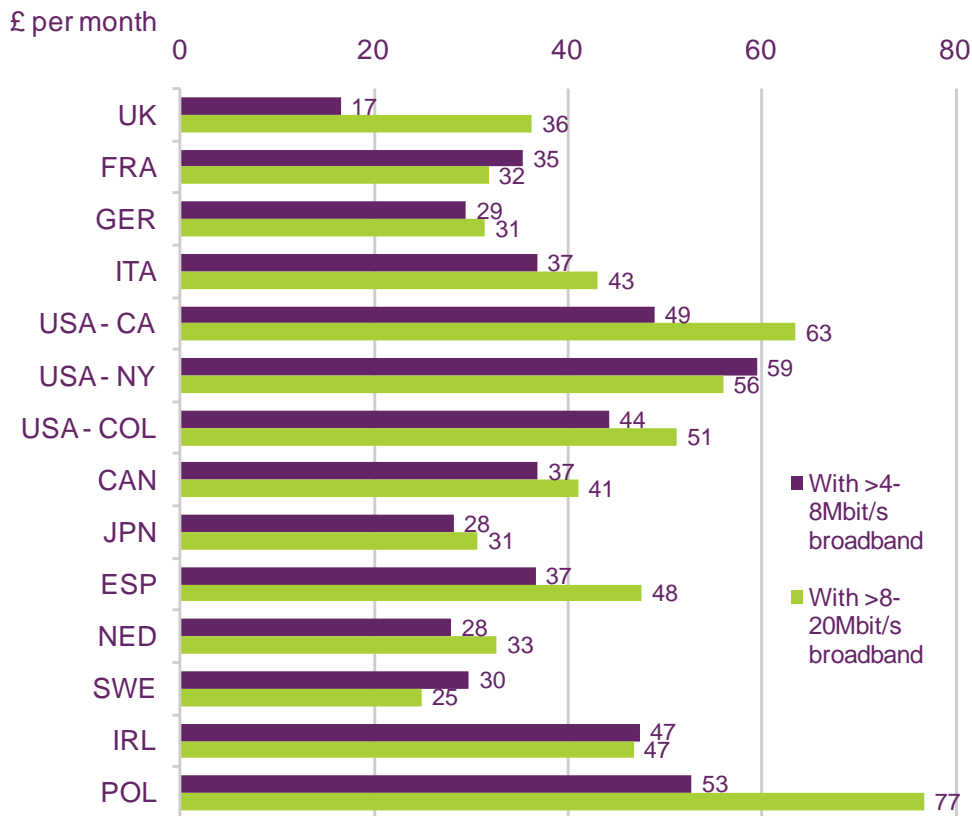
Fixed broadband connections are often supplied in conjunction with fixed voice services, and Figure 6.84 below shows the least expensive option for bundles of a fixed line and a fixed broadband connection, with a headline speed of either ‘up to’ >4Mbit/s to 8Mbit/s, or ‘up to’ >8Mbit/s to 20Mbit/s broadband connection, including at least 30GB of data or 20 hours of use, available from the largest ISPs in a number of our comparator countries.

These figures, which are taken from research commissioned by the European Commission, show that the UK was cheapest for a bundle including an ‘up to’ >4Mbit/s to 8Mbit/s connection in October 2009, at £17 a month, while a bundle of the same services was most expensive in New York, at £59 a month. Similarly, the range of monthly costs for a bundle of fixed telephony and an ‘up to’ >8Mbit/s to 20Mbit/s connection ranged from £25 a month in Sweden to £77 a month in Poland.

The report found that the cheapest bundle including ‘up to’ >8Mbit/s to 20Mbit/s broadband in the UK cost £36 a month, the sixth lowest among the comparator nations for which data were available. However, since the figures were compiled most of the major UK ISPs have started to migrate their ‘up to’ 8/10Mbit/s customers onto ‘up to’ 20/24Mbit/s services, usually without any additional charge.

The report also highlighted the differences in product offers available in different parts of the US, with the lowest-cost bundle in the three states in the report (which included an 'up to' >4Mbit/s to 8Mbit/s broadband connection) being in Colorado, at £44 a month, while the cost of a bundle with an 'up to' >8Mbit/s to 20Mbit/s connections ranged from £51 a month in Colorado to £63 in California.

**Figure 6.84 Least expensive bundled offer of fixed-line and broadband connection, October 2009**



Source: European Commission - Broadband Internet Access Cost, Second Semester 2009, [http://ec.europa.eu/information\\_society/eeurope/i2010/docs/eda/biac\\_2009.pdf](http://ec.europa.eu/information_society/eeurope/i2010/docs/eda/biac_2009.pdf) P134 and 139  
 Note: Figures show the cost of the least expensive tariff from those offered by the three largest ISPs in each territory and include a fixed telephone line and a broadband internet connection with 30GB or 20 hours per month of internet use The global communications industry in context





# The International Communications Market 2010

## **7 Appendix A : Basic data used in the report**

# Contents

7.1 Basic data used in the report	351
7.1.1 Financial years	351
7.1.2 Exchange rates	351
7.1.3 Population figures	351
7.1.4 Households	351
7.1.5 Overseas territories	351



## 7.1 Basic data used in the report

### 7.1.1 Financial years

Calendar year for all countries except Japan

### 7.1.2 Exchange rates

Source: IMF

Basis: Average during 2009

	Currency	Average 2009 rate (IMF)
UK	UK	1.000
Euro	Euro	1.126
USA	US Dollar	1.563
Japan	Japanese Yen	146.372
Canada	Canadian dollar	1.781
Australia	Australian dollar	2.002
Poland	Polish Zloty	5.176
Sweden	Swedish Crown	11.967
Brazil	Real	1.954
Russia	Ruble	49.651
India	Indian Rupee	75.728
China	Chinese Yuan	10.684

### 7.1.3 Population figures

Source: US Census bureau

Basis: Mid-year figures

### 7.1.4 Households

Source: IMF / Eurostat

Basis: Mid-year figures

Note: for households, Multiple Dwelling Units (MDUs) are not explicitly considered. One subscriber or one telco line equates to one person or household, or one SIM card to one person in case of mobiles.

### 7.1.5 Overseas territories

Due to the way telecoms services are regulated and statistics are reported for France, telecoms figures for France include parts of France outside Europe (the départements d'outre mer – DOMs) and other overseas territories (TOMs) in addition to France in Europe (Metropolitan France).

Except where stated, French broadcasting statistics relate to Metropolitan France only, reflecting differences in service availability and reporting between Metropolitan France and other French territories.

The UK telecoms figures relate to the UK (England, Wales, Scotland and Northern Ireland) only and exclude the Channel Islands, Isle of Man (which sit within the UK numbering plan administered by Ofcom). Our analysis also excludes British overseas territories (where telecoms services are the responsibility of local administrations).

UK broadcast television services are received in the Isle of Man and the Channel Islands. Channel Television holds the Channel 3 licence for the Channel Islands (where radio and TV services are licensed by Ofcom), and there are dedicated BBC services for the Channel Islands. The Isle of Man Communications Commission licenses programme services provided from places within the Isle of Man. UK Overseas territories do not receive UK domestic programme services and responsibility for radio and TV services in the British Overseas territories are the responsibility of local administrations.

Ofcom carries out some functions in relation to spectrum on behalf of the Isle of Man, the Channel Islands and British Overseas territories.



# The International Communications Market 2010

## **8 Appendix B: Consumer research methodology**

# Contents

8.1 Research methodology	355
8.1.1 Introduction	355
8.1.2 Research methodology	355
Access Panel	356
Questionnaire	357

# 8.1 Research methodology

## 8.1.1 Introduction

This volume contains the methodology for the 2010 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: UK, Germany, France, Italy, USA and Japan. The study explores usage of Internet, mobile communications, fixed line, and television, and addresses a range of behavioural issues about these communications, amongst Internet users.

The 2010 research comprised 6,067 interviews completed in October 2010. Three previous waves of the research have been undertaken (2008, 2007 and 2006) and a number of key issues were tracked across all waves.

## 8.1.2 Research methodology

The International Communications Behaviour research is conducted using an international on-line consumer access panel.

In 2010 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 invites, 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). Active panel members in each market are shown in Section 2.

A total of 6,067 interviews with Internet users were completed – with at least 1,000 in each of the following markets: UK, Germany, France, Italy, USA and Japan. 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 2010 wave of the research, as this was still the most consistent source of demographic information for internet users across all six countries. The study has traditionally excluded those under the age of 17 and over the age of 64 and this approach was also maintained in 2010.

Members of Toluna's access panel were screened for home Internet usage (only 9% of panel members were disqualified because they access 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 their panel selecting e-mail 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 a bias is not introduced in responses. The sample itself is then automatically randomised for potentially-qualifying individuals. .

A ten 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 usage in each market. A small amount of operational flexibility around quotas was permissible given the quotas were parallel not interlocking and a panel was used. An additional 67 interviews were completed and the final achieved quota cells (see below) were met within 6% of target with two exceptions (Japan Age 35 – 44, where the quota was exceeded by 9% and Japan Age 18 – 24 where 89% of the quota was met).

	<i>UK</i>	<i>Germany</i>	<i>France</i>	<i>Italy</i>	<i>USA</i>	<i>Japan</i>
<i>Total</i>	1016	1014	1017	1002	1017	1001
<i>Male</i>	508	550	519	502	513	533
<i>Female</i>	508	464	498	500	504	468
<i>18-24 yrs</i>	139	182	195	189	140	206
<i>25 -34</i>	234	273	311	311	252	294
<i>35 -44</i>	252	265	234	240	254	285
<i>45 – 54</i>	211	171	172	167	226	153
<i>55 – 64</i>	180	123	105	95	145	63

## Statistical Significance

Results were not weighted as demographic quotas were employed to match internet usage in each market. Results were tabulated and significance testing (at 95% confidence) was applied. Results between 2010 and 2008 waves were also compared and tabulated and sig tested (also at 95% confidence).

## Access Panel

The 2010 survey utilised Toluna's access panel.

The panel includes 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>Japan</i>
<i>Members</i>	624,321	287,645	420,368	147,891	644,356	61,178

Panel members are 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

### INTRODUCTION

Thank you for agreeing to take part in this study which will be looking at communications in the home. The study should take around 10 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+

Q3 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

Mobile phone

Q4 Which of the following devices do you own and personally use?

Please select all that apply

[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)

Wi Fi 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

HD-ready TV set

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)

Mobile phone that allows you to easily access email, download applications, and surf the web

Mobile phone that does not allow you to easily access email, download applications, and surf the web

None of these

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 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

Don't know

[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 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

Don't know

IF ONLY ONE RESPONSE GIVEN AT Q5 PLEASE AUTOMATICALLY CODE THIS AT Q6

IF HD-READY TV NOT SELECTED AT Q4, GO TO Q8

Q7 Which of the following do you do on your HD-Ready TV set?

Please select all that apply

Watch high definition sports channels

Watch high definition film channels

Watch other high definition TV channels

Watch Blu-Ray or HD-DVD discs

Play HD video games (e.g. PS3, Xbox 360).

Q8. 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.

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)

Q9 Which, if any, of the following activities do you use your home internet connection for?

Please select all that apply

- 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
- None of these
- Don't know

Q10 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

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

IF MOBILE PHONE NOT SELECTED AT Q4, GO TO Q13

Q11 Which, if any, of the following activities do you use your mobile phone for?

Please select all that apply

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)
- None of these
- Don't know

Q12 Which, if any, of the following activities do you use your mobile phone for AT LEAST ONCE A WEEK?

Please select all that apply

PROG: ONLY DISPLAY OPTIONS SELECTED AT Q11

- Making and receiving calls
- Sending and receiving text messages (SMS)
- Using IM / Instant messaging
- MMS or photo messaging
- Sending and receiving emails (not SMS)
- Sending and receiving video clips

Video calling

Listening to FM radio

Listening to music using MP3 function

Listening to Podcasts

Playing games

Uploading pictures/videos taken to the Internet

    Downloading applications or programs directly to your phone

Accessing the internet

Accessing social networking sites

    Watching video clips

Watching TV programmes

Using applications that use your current location (e.g. satellite navigation, Google Maps)

None of these

Don't know

ASK ALL

Q13 Do you ever watch TV at home and do these other things ++at the same time?++

Yes, most times

Yes, some times

No, never

Go on the internet

    Use your mobile phone

    Talk on your fixed line home phone

    Listen to a radio station

Listen to music on CD, a portable media player (e.g. MP3 or MP4 player/iPod), or through a computer (through downloaded music or streamed over the internet).

Play video games on a games console

Q14 Which, if any, is your main source for the following information?

TV

Internet on a computer

Internet on a mobile phone

Newspaper

Radio

Other people

Not interested

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.

Q15. 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)?

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

Q16. Which of the following is the case for each of these services that you or your household pays for?

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

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

Q17. Which, if any, of these are reasons why you have not considered switching to another supplier for your service in the last year?

ONLY DISPLAY OPTIONS FOR WHICH “STAYED WITH THE SAME PROVIDER OVER THE LAST TWELVE MONTHS” SELECTED AT Q16

Pay TV subscription

Fixed line voice calls

Fixed line broadband

Broadband via a mobile network – connected using a USB stick or dongle on your computer

Mobile phone

I am happy with my current supplier

I don't think there is enough benefit in changing supplier

It's too much hassle to change supplier

I'm tied to a fixed length contract

I don't want to risk losing the service for any length of time

Other reasons

I don't know

Q18 Over the past twelve months, have you decreased the amount of money you spend on any of the following things? Select all that apply.

Night/meals out

Holidays/weekends away

New furniture or home improvements

Health club membership or sports

Clothing or footwear

Household groceries

Personal care, toiletries, cosmetics

Music, books, DVDs

Newspapers and magazines

[PROG: ONLY DISPLAY FOLLWING IF SELECTED AT Q3]

Pay TV subscription

Mobile phone usage

Fixed line voice calls

Fixed line broadband

Broadband via a mobile network connected using a USB stick or dongle on your computer

ASK ALL

Q19 Over the next twelve months, do you intend to decrease the amount of money that you spend on any of the following things? Select all that apply.

Night/meals out

Holidays/weekends away

New furniture or home improvements

Health club membership or sports

Clothing or footwear

Household groceries

Personal care, toiletries, cosmetics

Music, books, DVDs

Newspapers and magazines

[PROG: ONLY DISPLAY FOLLWING IF SELECTED AT Q3]

Pay TV subscription

Mobile phone usage

Fixed line telephone calls

Broadband subscription

ASK ALL

Q20 And which of the following best describes where you live? Please select one answer

UK

East Anglia

East Midlands

Kent

London/Home counties

North east

North west

Scotland

South

South west

Wales

West midlands

Yorkshire/Humberside

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

#### GERMANY

Schleswig-Holstein  
Hamburg  
Niedersachsen  
Bremen  
Nordrhein-Westfalen  
Hessen  
Rheinland-Pfalz  
Baden-Wurttemberg  
Bayern  
Saarland  
Berlin  
Brandenburg  
Mecklenburg-Vorpommern  
Sachsen  
Sachsen-Anhalt

Thuringen

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

JAPAN

Hokkaido

Tohoku

Kanto

Koshinetsu

Tokai

Hokuriku

Kansai

Chugoku

Shikoku

Kyusyu

Okinawa

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

Q21 Please indicate your household's ++annual income++?

Please select one answer only

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

FRANCE

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

GERMANY

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

#### 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

#### JAPAN

Less than 3,000,000 JPY  
3,000,000 – less than 6,000,000 JPY  
6,000,000 – less than 9,000,000 JPY  
9,000,000 – less than 12,000,000 JPY  
More than 12,000,000 JPY  
Prefer not to answer

#### USA

< \$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 +





# The International Communications Market 2010

## **9 Appendix C : Price benchmarking methodology**

# Contents

9.1 Price benchmarking methodology	381
Introduction	381
9.1.1 Basic methodology	381
9.1.2 Principles of the model	383
9.1.3 Geographic scope	385
9.1.4 Tariff data	386
9.1.5 Household types	387
9.1.6 Fixed-line voice services	389
9.1.7 Mobile services	391
9.1.8 Broadband services	395
9.1.9 Television services	397
9.1.10 Purchasing power parity adjustment	399
9.1.11 Analysis	400
Limitations	401

# 9.1 Price benchmarking methodology

## Introduction

For the 2010 international price benchmarking we utilised the same methodology deployed in the 2008 and 2009 analysis, and retained exactly the same baskets in order to allow for year-on-year comparison.

This is the third year we have used a bespoke model commissioned from telecoms pricing consultancy Teligen, which Teligen have 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 USA.

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.

### 9.1.1 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 costs 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).
- 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 USA.
- 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 first-run movies from the major Hollywood studios 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 300 minutes).

Mobile phones, 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 they are often inseparable from the service price as operators frequently include subsidised or 'free' equipment (for example a mobile phone or a wireless router) within the monthly subscription. For similar reasons, connection and/or installation costs are included.

In July 2009 and again in July 2010, detailed data of every tariff and every tariff combination from the largest three operators in each country by retail market share were collected (or for more than three operators if required to ensure that a minimum of 80 per cent 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.

Across the six countries, the tariff data in 2010 consisted of:

- Fixed voice: 649 tariff options;
- mobile: 3,427 tariff options;
- broadband: 252 tariff options;



- television: 328 tariff options; and
  - multi-play: 812 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 an exchange rate based on the average exchange rate between 1 August 2009 and 1 July 2010.
  - 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:

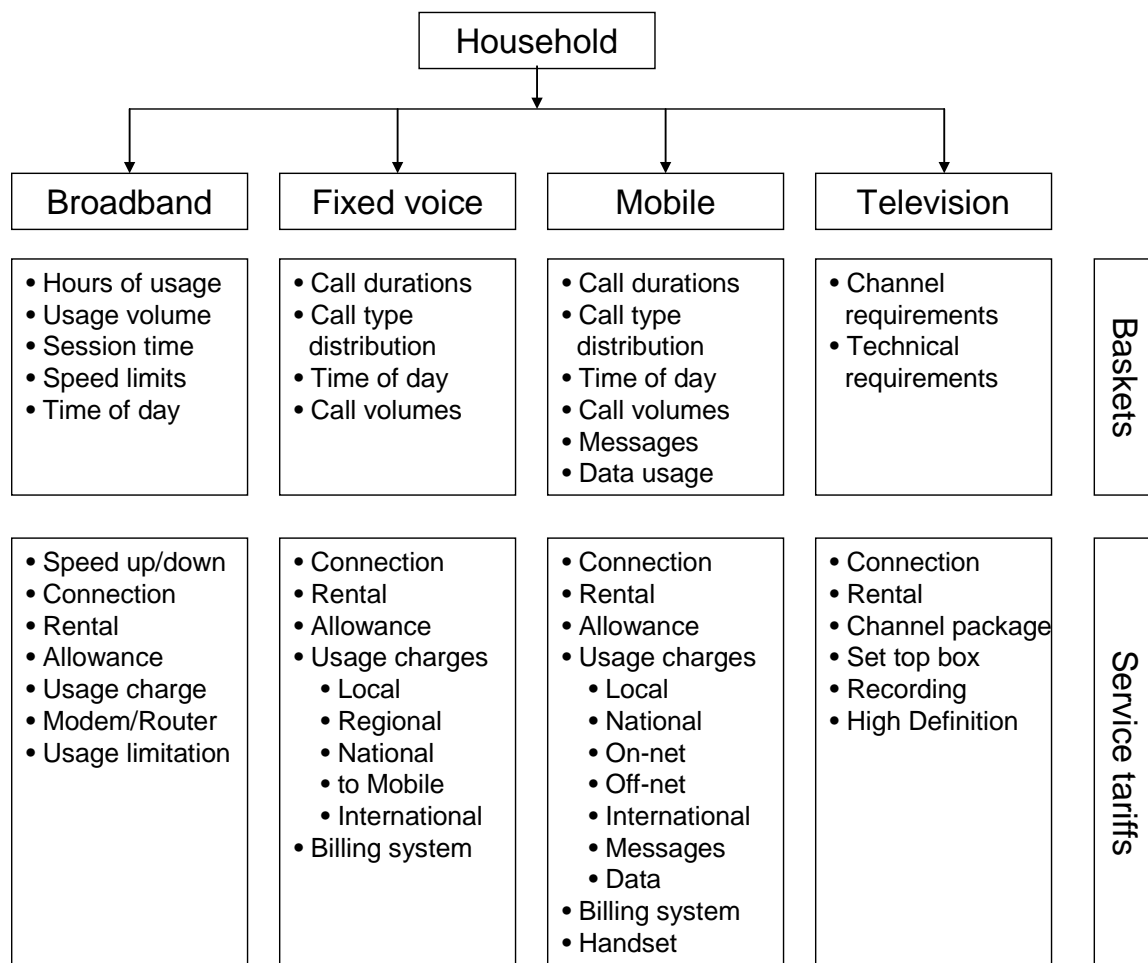
i) the first, which we call “average single service” pricing, illustrates the price of each individual service as defined by the average of the lowest price tariff from each of the three largest operators for each service in each country, weighted by the market share of the service provider in order to ensure fair representation; and

ii) 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.

### **9.1.2 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 9.1 Components of the pricing comparison model**



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 handset

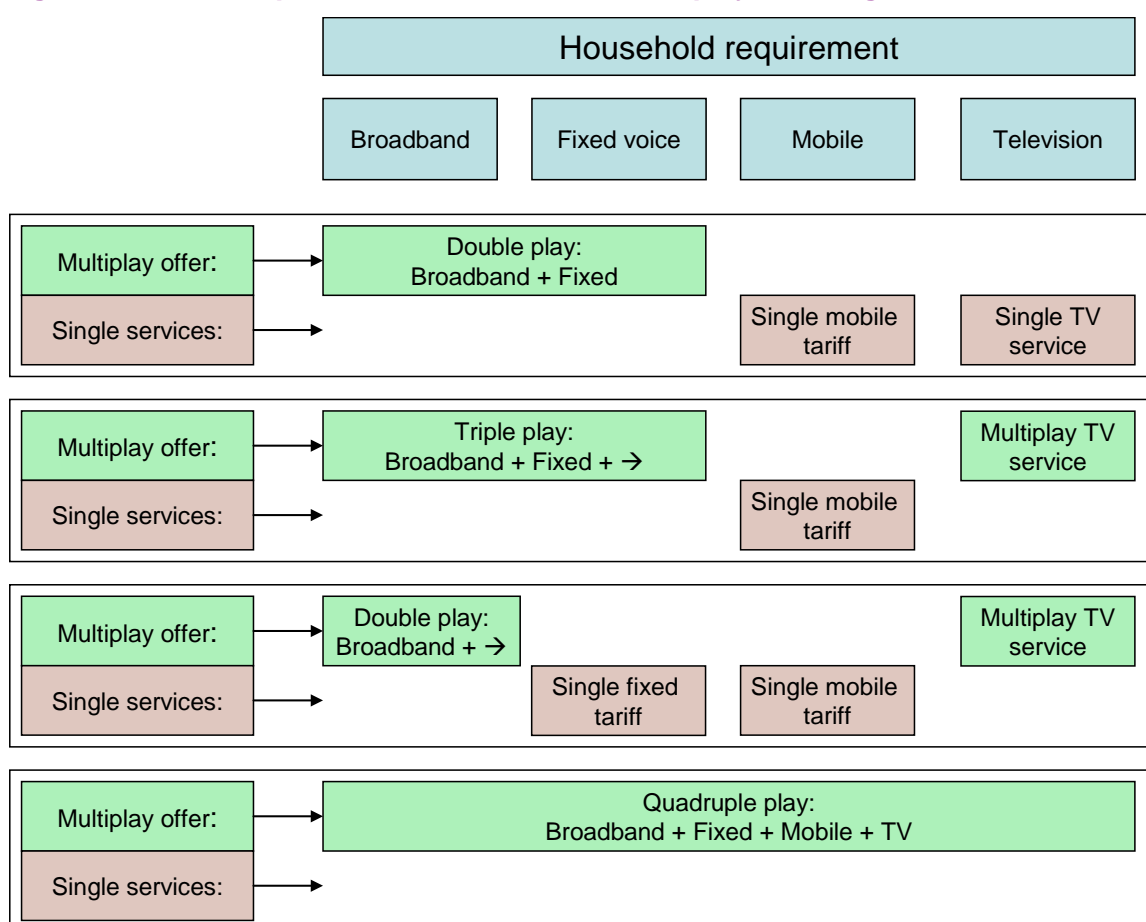
However mobile handsets, routers and set-top boxes / TV receivers are included as they are an integral part of the service offerings, and are often subsidised by operators who recoup the value of the hardware through the course of a contract

## 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 9.2** Examples of combinations of multi-play and single service offers



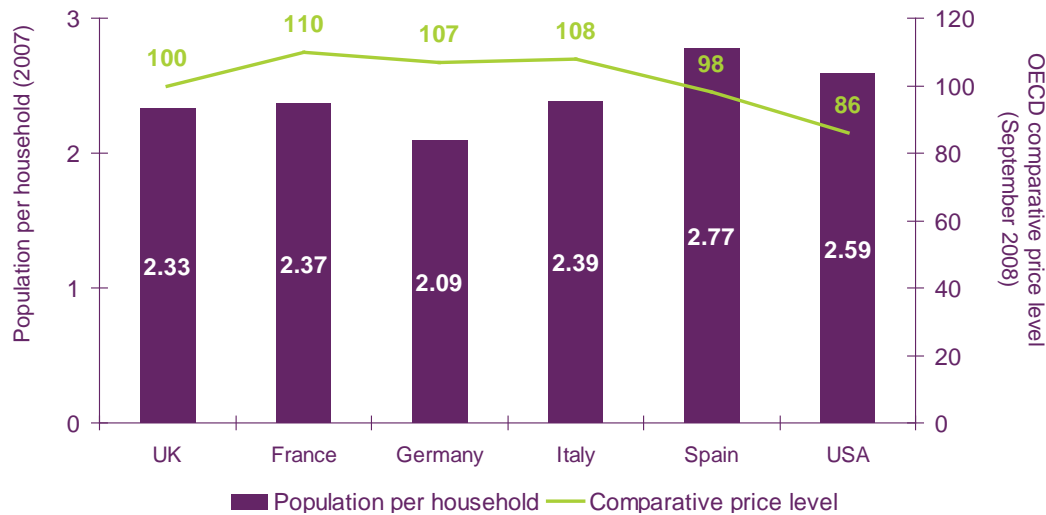
Source: Telegen

### 9.1.3 Geographic scope

Pricing comparisons are made between six countries – the UK, France, Germany, Italy, Spain and the United States. These countries have broadly similar socio-demographic, economic and communications-usage characteristics; high-level parameters such as population per household and comparative price levels (which is a proxy for cost of living) suggest that an economically fair comparison can be made.

Because of the existence of local markets in the USA, we have used tariffs available in the state of Illinois. This was chosen as 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 9.3 Demographic characteristics of core countries**



Source: Ofcom

### 9.1.4 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 ‘multiplay’ 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 and July 2010, 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 were available for the whole month.

**Figure 9.4 Operators included within the analysis**

	Fixed	Mobile	Broadband	Mobile broadband	Television
<b>UK</b>	BT Sky TalkTalk Virgin Media O2 Orange	O2 Orange T-Mobile Vodafone	BT O2 Orange Sky TalkTalk / AOL/ Virgin Media	O2 Orange Three T-Mobile Vodafone	BT Sky Virgin Media
<b>France</b>	Bouygues Telecom France Telecom Free Numericable SFR	Bouygues Orange SFR	Bouygues Telecom Free Orange SFR	Bouygues Orange SFR	TNT CanalSat France Telecom  Numericable
<b>Germany</b>	BW Kabel Freenet Telecolumbus T-Home Unity Media United Internet Vodafone	O2 T-Mobile Vodafone	BW Kabel Telecolumbus T-Home United Internet Unity Media Vodafone	O2 T-Home Vodafone	Kabel Deutschland Kable BW Telecolumbus T-Home Unity Media
<b>Italy</b>	FastWeb TeleTu Telecom Italia Tiscali Wind	TIM Vodafone Wind	FastWeb TeleTu Telecom Italia Tiscali Wind	Tre TIM Vodafone Wind	Fastweb Mediaset Sky Italia Telecom Italia Wind
<b>Spain</b>	Movistar Ono Orange	Movistar Orange Vodafone	Movistar Ono Orange	Euskaltel Movistar Orange	Digital Plus Ono Orange Movistar
<b>USA</b>	AT&T Comcast Frontier RCN	AT&T Sprint T-Mobile Verizon	AT&T Comcast Frontier Verizon	AT&T Sprint Nextel T-Mobile Verizon	AT&T Comcast Direct TV Frontier RCN

Source: Teligen

Note: Some operators for some services only included in multi-play analysis

### 9.1.5 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 9.5 Household types**

'Typical' household type		Fixed voice	Intern'l voice	Mobile voice	Mobile messaging	Fixed-line broadband	Mobile broadband	Television
1	A retired low-income couple	Low	-	-	-	-	-	Basic
2	A couple of late adopters	Medium	Low	Low	-	Low	-	Basic
3	A single mobile-only user	-	Medium	High	High	-	High	Pay TV
4	A 'networked' family	High	Medium	Medium	High	Medium	-	Pay TV
5	Affluent couple with sophisticated use	Low	High	High	Medium	High	-	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 9.6 Average take-up and use of communications services by country**

'Typical' household type	UK	France	Germany	Italy	Spain	USA	Average
People per household	2.33	2.37	2.09	2.34	2.77	2.59	2.42
Fixed-only households per 100 households	9	18	20	6	16	N/A	14
Outbound fixed voice minutes per access line per month	366	305	259	278	284	N/A	298
Mobile connections per household	2.82	2.06	2.47	3.61	2.97	2.21	2.69
Mobile-only households	15	16	11	37	25	N/A	21
Outbound mobile minutes per household per month	318	310	145	273	348	762	359
SMS per household per month	188.1	58.3	47.4	190.0	65.1	138.2	114.5
Broadband connections per 100 households	59.9	58.0	49.8	39.9	49.6	61.3	63.7
Pay-TV subscriptions per 100 households	46.8	51.1	65.8	20.1	24.6	83.3	48.6

Source: IDATE / European Commission

NOTE: 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

Notes: All data is for 2007 (the most recent data available when the baskets were defined; further details are available in the Telecoms and Television sections; data for some countries was not available when the baskets were defined. Where estimates have been used the data are in italics.

In order to address mitigate against potential biases associated with our baskets being 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 9.7 Alignment of average use across comparator households with average use across comparator countries**

	HH 1	HH 2	HH 3	HH 4	HH 5	Average per HH	Average across countries
Number of people	2	2	1	4	2	2.2	2.42
Fixed-only households	1	0	0	0	0	0.2	0.14
Mobile-only households	0	0	1	0	0	0.2	0.21
Outbound fixed minutes	225	430	0	600	250	301	298
Outbound mobile minutes	0	60	550	600	600	362	359
Outbound SMS HH	0	0	150	325	100	115	115
Fixed broadband subscriptions	0	1	0	1	1	0.6	0.53
Mobile broadband subscriptions	0	0	1	0	0	0.2	N/A
Pay-TV subscriptions	0	0	1	1	1	0.6	0.49

Source: Ofcom

### 9.1.6 Fixed-line voice services

#### Fixed voice tariff information

The fixed voice service is assumed as 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 an IP telephony service over a broadband connection. 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 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
  - Regional calls
  - National calls

- Calls to mobiles (for each network, weighted)
- International calls to ten destinations

The billing system information is used to determine the price elements included in a typical call. Seven types of billing are possible.

**Figure 9.8 Types of billing for fixed voice calls**

Calc types:	
1	Per sec.
2	Per unit
3	Per minute
4	Per sec. w/allowance
5	Per sec. w/initial minute
6	Per sec. 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 usage 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.

**Figure 9.9 Components of the fixed voice baskets**

	HH 1	HH 2	HH 3	HH 4	HH 5	
Call durations *			None			
Local	4	4		4	4	minutes
Regional	6	6		6	6	minutes
National	6	6		6	6	minutes
Fixed to Mobile	2	2		2	2	minutes
International	6	6		6	6	minutes
Destination weight			None			
Local	67	70		68	60	%
Regional	10	8		9	7	%
National	16	13		14	13	%
Fixed to Mobile	7	7		7	12	%
International	0	2		2	8	%
Time of day weight			None			
Day	58.3	58.3		59.2	55.5	%
Evening	24.5	24.5		24.9	25.0	%
Weekend	17.2	17.2		15.9	19.5	%
Depreciation	5	5	5	5	5	years

Source: Teligen

Note: \* All fixed call types are calculated with five different durations, below and above the number of minutes indicated.

International calls are weighted according to the table below, considering each originating country and each destination country.



**Figure 9.10 Fixed voice international call destinations for comparator countries**

	Canada	France	Germany	Italy	Japan	Russia	South Afric	Spain	UK	USA
Canada		2.2%	2.1%	1.7%	1.0%		0.3%		6.5%	86.2%
France	2.8%		25.2%	19.0%	1.4%			13.7%	24.7%	13.2%
Germany	2.7%	21.6%		20.0%	1.7%	2.3%	0.8%	8.6%	20.4%	22.0%
Italy	3.4%	26.5%	30.3%		1.0%			7.0%	15.6%	16.2%
Japan	4.4%	5.0%	6.8%	2.5%		1.6%		1.1%	11.5%	67.1%
Russia	2.2%	8.8%	35.1%	11.8%	2.0%			3.4%	10.6%	26.1%
South Afric	4.4%	5.0%	13.9%	4.4%	1.8%				46.7%	23.7%
Spain	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 is calculated the cheapest package per provider and per country is identified. These are the packages that are considered in the household cost scenarios.

The packages that are part of a 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. 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 are not considered.

## 9.1.7 Mobile services

### Mobile tariff information

The mobile service is assumed as a personal service where a household may have several users with individual usage profiles and requirements.

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 9.11 Types of billing for mobile voice calls**

Calc types:	
1	Per sec.
2	Per unit
3	Per minute
4	Per sec. w/allowance
5	Per sec. w/initial minute
6	Per sec. 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 usage 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:

**Figure 9.12 Components of the mobile baskets**

	HH 1	HH 2	HH 3	HH 4-1*	HH 4-2*	
Call durations **	None					
Local		1.5	1.7	1.8	1.8	minutes
National		1.5	1.7	1.8	1.8	minutes
On-net		1.6	1.9	1.9	1.9	minutes
Off-net		1.4	1.8	1.7	1.7	minutes
Voicemail		0.8	0.8	0.8	0.8	minutes
International		2	2	2	2	minutes
Destination weight	None					
Local		16	8	11	13	%
National		8	5	6	7	%
On-net		38	37	33	34	%
Off-net		38	37	33	34	%
Voicemail		0	7	7	12	%
International		0	6	10	0	%
Time of day weight	None					
Day		48	60	50	50	%
Evening		25	19	24	24	%
Weekend		27	21	26	26	%
Calls per month		37	396	159	82	calls
Messages	None					
On-net		50	50	50	50	%
Off-net		50	50	50	50	%
Peak		48	60	50	50	%
Off-peak		52	40	50	50	%
Depreciation	3	3	3	3	3	years

Source: Teligen

Notes:

\* The implementation of the model only allows for two mobiles per household. Therefore an additional basket (HH4-2) has been included to represent two of the four mobile connections in Household 4

\*\* 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 9.13 Mobile voice international call destinations for comparator countries**

	Canada	France	Germany	Italy	Japan	Russia	South Africa	Spain	UK	USA
Canada		2.2%	2.1%	1.7%	1.0%		0.3%		6.5%	86.2%
France	2.8%		25.2%	19.0%	1.4%			13.7%	24.7%	13.2%
Germany	2.7%	21.6%		20.0%	1.7%	2.3%	0.8%	8.6%	20.4%	22.0%
Italy	3.4%	26.5%	30.3%		1.0%			7.0%	15.6%	16.2%
Japan	4.4%	5.0%	6.8%	2.5%		1.6%		1.1%	11.5%	67.1%
Russia	2.2%	8.8%	35.1%	11.8%	2.0%			3.4%	10.6%	26.1%
South Africa	4.4%	5.0%	13.9%	4.4%	1.8%				46.7%	23.7%
Spain	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 be charging according to any of these two methods.

Handsets are defined in 3 categories:

1. Basic -2G, ideally without camera or MP3 player, if not then up to 2MP camera + MP3 player / FM radio
2. Mid-Range - 2.5G or Basic 3G, above 2MP camera, + MP3 player / FM radio
3. High-End - Nokia N95 where possible (not N95 8GB) otherwise equivalent phone with minimum 5MP camera.

### Basket logic

Once the cost of using each mobile package is calculated some checks will take place:

- Does the package offer include a handset, or can a suitable handset be included with the package? If not then the package will not be considered
- If the basket assumes an amount of data traffic then the package must also be able to offer this. If not the package will not be considered.

Then the cheapest package per provider and per country is identified. These are the packages that will be considered in the household cost scenarios. The packages that are part of a 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 per cent of Italian mobile connections are pre-pay, while around 90 per cent 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.

Mobile packages for 2G / 2.5G are covered. No data-only packages are included, but tariffs such as BlackBerry tariffs (which are data-focused but have a voice component) are.

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. The deduction of minutes and messages will follow the traffic weights defined by the basket profiles.

### **9.1.8 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, however 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 9.14 Components of the broadband baskets**

	HH 1	HH 2	HH 3	HH 4	HH 5	
Usage time	None	10	15	50	50	hours
Usage volume	None	0.5	3	5	5	GB
Session duration		20	20	20	20	minutes
Minimum speed		1,000	1,000	4,000	8,000	kb/s
Maximum speed		1,000,000	1,000,000	1,000,000	1,000,000	kb/s
Usage / day		30	30	30	30	%
Usage / evening		40	40	40	40	%
Usage / weekend		30	30	30	30	%
Depreciation		3	3	3	3	years
Type of service		Fixed	Mobile	Fixed	Fixed	

Source: Teligen

The headline 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 packages is also checked against the speed range give 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 with excess usage 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 usage.

- The monthly connection/set-up cost is the sum of all one-off charges 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 will take effect when the allowance is exceeded, the status of this limit has to be checked. If it turns out that the package is

not able to accommodate the traffic defined in the basket within this allowance, and that download speed will be limited as a result, the package cannot be considered.

- If the download speed of the package is outside the range defined by the basket, the package will not be considered.
- The basket will define whether a fixed or wireless package 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 considered, even though the upload speed is also covered.

Where available the prices for both self installation and engineer installation are covered. However, in some cases only one of these may be available. The cheapest option is always used.

It is common to have special offers with reduced rental for the first few months. This is included wherever it applies, given the promotional offer valid in the month of tariff data collection (July 2009 and July 2010). 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. Hence there will not always be single service offers for all providers listed.

## **9.1.9 Television services**

### **Television tariff information**

Television services are probably where there is most diversity and difference between the countries. In this benchmarking study the Television services covered will 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 first-run Hollywood movies

Additionally there are two parameters that 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)
- License fee

### 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 are related to the five defined households.

**Figure 9.15 Components of the television baskets**

	HH 1	HH 2	HH 3	HH 4	HH 5	
Antenna reception	Y	N	N	N	N	Y/N
HD capable	N	N	N	N	N	Y/N
DVR included	N	N	N	Y	Y	Y/N
Football channels	N	N	N	N	Y	Y/N
Movie channels	N	N	N	N	Y	Y/N
Depreciation	3	3	3	3	3	years

Source: Teligen

### Basket logic

Once the cost of using each television package is 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 Hollywood premieres 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 household cost assessment following.

### **Television data issues**

The television data has 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
- Premium pay-TV access, including premium channels showing first-run Hollywood movies 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.

### **9.1.10 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 2009 and an exchange rate based on the average exchange rate between 1 August 2000 and 1 October 2010

Comparative price levels represent the number of specified monetary units necessary to buy the same representative basket of consumer goods and services, relative to any specified country (in this case, the UK), and enable a comparison of relative consumer pricing for any product or service.

We have chosen to use the average exchange rate over a 12-month period in order to minimise distortions that are caused by currency fluctuations.

In addition, 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 exchange rate used for 2009 and applied it to 2008 data.

**Figure 9.16 Purchasing Power Parity conversion rates**

	Currency	Exchange rate (Aug 2009 – Jul 2010) (£)	Comparative price level (July 2010)	PPP adjusted rate (£)
UK	UK pound (£)	1.00	100	1.00
France	Euro (€)	1.23	116	1.39
Germany	Euro (€)	1.23	111	1.33
Italy	Euro (€)	1.23	115	1.38
Spain	Euro (€)	1.23	100	1.22
USA	US Dollar (US\$)	1.50	98	1.47

Source: Teligen using OECD data

### 9.1.11 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, Carphone Warehouse only offers broadband together with its fixed-voice service, while BSkyB only offers broadband together with digital television.

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 the TalkTalk’s standard broadband and voice tariffs, or Sky’s ‘triple-play’ offer which provides TV, voice and broadband, or 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 to 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 possible when looking at single-service pricing.

## Limitations

One of our key learnings in four years of constructing international price comparison models is that is a very problematical exercise, which requires assumptions to be made and imposes 'like-for-like' comparison on markets which are very different. In future years we will look to continue to improve our methodology, and we welcome feedback at:

[marketintelligence@ofcom.org.uk](mailto:marketintelligence@ofcom.org.uk)

We highlight the following limitations to the analysis:

- The analysis assumes a wholly 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. Clearly, in reality, many consumers do not act in this way, but we believe the assumption is necessary in order to provide effective international comparisons. It should be noted, however, that another measure of consumer choice and the competitive environment is the complexity of tariff structures and the ease of selecting an appropriate tariff, or 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, the benefits available from fixed line and mobile tariffs which include free or reduced rates to nominated 'friends and family' numbers.
- 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 data are not always available).
- Pay-TV services constitute a component of three of the baskets we examine. However, it has not been possible to compare like-for-like subscriptions 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 some communications services in some countries there are only two operators with nationwide coverage (or only one for many 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 is also true for cable TV and all types of broadband.
- 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 per cent of Italian mobile connections are pre-pay, while around 90 per cent 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.
- Representative pricing in the US as a whole is difficult due to large regional variations as a result of local incumbent telco operators and cable operators offering localised prices for fixed line services. We only use tariffs available within the state of Illinois, chosen as 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 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 exchange rate in 2010 and applied it to 2009 data. This means that there may be some distortions in the relative positions of countries compared to the findings in 2009 (although the PPP adjustment mitigates to some extent against this).



# The Communications Market 2008

## 10 Glossary & Table of Figures

# 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  $CAGR = (\text{present value}/\text{base value})^{(1/\#\text{of years})} - 1$

**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 in the UK.

**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).

**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 disc 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.

**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.

# Table of Figures

Figure 1.1	Global communications revenues .....	19
Figure 1.2	Source of global revenues for telecoms, radio and TV services .....	20
Figure 1.3	Communications sector revenues in 2009 .....	21
Figure 1.4	Communications sector revenues per head in 2009.....	22
Figure 1.5	Global advertising expenditure, by source .....	23
Figure 1.6	Global advertising expenditure growth .....	23
Figure 1.7	2009 Advertising expenditure analysis .....	24
Figure 1.8	Three year share price performance of selected telecoms operators against the wider market .....	26
Figure 1.9	Three year share-price performance of selected broadcasters against the wider market .....	26
Figure 1.10	Consumer confidence .....	27
Figure 1.11	Reduction in expenditure on communications services over past 12 months by communications service subscribers .....	28
Figure 1.12	Reduction in expenditure on goods and services in the previous 12 months by internet users .....	30
Figure 1.13	Intention of internet users to reduce spend on communications services in next 12 months (users of service) .....	31
Figure 1.14	Anticipated reduction in spend on a selection of goods and services in next 12 months.....	32
Figure 1.15	Fixed-line voice and mobile connections per head, 2009 .....	34
Figure 1.16	Fixed broadband and DTV penetration in 2009.....	35
Figure 1.17	Bundling prevalence in selected EU countries .....	36
Figure 1.18	Regular use of selected communications services / media .....	37
Figure 1.19	Ownership and use of devices .....	38
Figure 1.20	Summary of most-missed communications activities .....	39
Figure 1.21	Most-missed activity.....	40
Figure 1.22	Growth of telecommunications NRAs: 1990 - 2009.....	42
Figure 1.23	Foundation of NRAs.....	43
Figure 1.24	Digital switchover completion dates .....	58
Figure 1.25	Generic mobile handset supply chain.....	62
Figure 1.26	TV programme export revenues, 2008-2009.....	63
Figure 1.27	UK TV programme export revenues, by geography, 2009.....	63
Figure 1.28	Revenue, by geography, of selected EU-headquartered telecoms companies	65
Figure 2.1	Household types .....	69
Figure 2.2	Best prices available, including multi-play offers .....	75
Figure 2.3	Best prices available for stand-alone services.....	75
Figure 2.4	Comparative single-service 'weighted average' fixed-line voice pricing.....	77
Figure 2.5	Comparative single-service 'best offer' fixed-line voice pricing.....	77
Figure 2.6	Summary of mobile connections .....	80
Figure 2.7	Comparative single-service 'weighted average' mobile pricing.....	80
Figure 2.8	Comparative single-service 'best offer' mobile pricing.....	81
Figure 2.9	Comparative pricing for mobile tariffs with 1000 minutes and 4,000 minutes, July 2010 .....	82
Figure 2.10	Comparative single-service 'weighted average' fixed-line broadband pricing	84
Figure 2.11	Comparative single-service 'best offer' fixed-line broadband pricing .....	84
Figure 2.12	Comparative 'best offer' single-service mobile broadband pricing .....	85
Figure 2.13	Comparative single-service TV pricing .....	86
Figure 2.14	Composition of Basket 1 .....	88
Figure 2.15	Basket 1: 'weighted average' single-service pricing .....	89
Figure 2.16	Basket 1: comparative 'best offer' pricing.....	90
Figure 2.17	Composition of Basket 2 .....	90



Figure 2.18	Basket 2: 'weighted average' single-service pricing .....	92
Figure 2.19	Basket 2: comparative 'best offer' pricing.....	93
Figure 2.20	Composition of Basket 3 .....	94
Figure 2.21	Basket 3: 'weighted average' single-service pricing .....	95
Figure 2.22	Basket 3: comparative 'best offer' pricing.....	96
Figure 2.23	Composition of Basket 4 .....	97
Figure 2.24	Basket 4: 'weighted average' single service pricing.....	99
Figure 2.25	Basket 4: Comparative 'best-offer' pricing including multi-play tariffs .....	99
Figure 2.26	Composition of Basket 5 .....	100
Figure 2.27	Basket 5: 'weighted average' single-service pricing .....	102
Figure 2.28	Basket 5: comparative 'best-offer' pricing, including multi-play tariffs .....	103
Figure 2.29	Comparative 'weighted average' pricing of 'single services' for all countries .....	106
Figure 2.30	Comparative 'best offer' pricing of 'single services' for all countries .....	107
Figure 2.31	Comparative cost of lowest price services, including multi-play, for all countries .....	107
Figure 3.1	TV industry metrics 2009 .....	111
Figure 3.2	Global TV revenues .....	113
Figure 3.3	TV industry revenues, by source.....	114
Figure 3.4	Analogue and digital TV households, 2009 .....	115
Figure 3.5	Percentage point change in the proportion of DTV homes, 2008 and 2009 .....	115
Figure 3.6	Timeline for DSO .....	117
Figure 3.7	Selected pay-DTT services.....	118
Figure 3.8	Pay-DTT households, 2007-2009 .....	119
Figure 3.9	Percentage point change in the proportion of DTT (free and pay) and IPTV homes, 2008-2009 .....	120
Figure 3.10	TV reception devices connected to the main set in the home, 2008 - 2009 .....	120
Figure 3.11	Technology developments in pay and free-to-air TV .....	121
Figure 3.12	Adoption and use of key audio-visual services .....	122
Figure 3.13	Pay-TV take-up versus pay-TV ARPU, 2009.....	123
Figure 3.14	Viewing concentration – share of top, and top five, channels, 2009 .....	124
Figure 3.15	Public spending on channels per percentage point of audience share generated, 2009.....	125
Figure 3.16	Advertiser revenue generated for an hour of television viewing, 2009.....	126
Figure 3.17	TV industry revenues among comparator countries .....	128
Figure 3.18	TV industry revenue among European countries and Canada .....	129
Figure 3.19	Total TV industry revenues among BRIC countries.....	130
Figure 3.20	TV revenues among comparator countries by source, 2004 and 2009.....	131
Figure 3.21	TV revenue per head, by source, 2009 .....	132
Figure 3.22	Changes in components of TV revenues per head, 2008 to 2009 .....	133
Figure 3.23	Cost of a TV licence fee .....	133
Figure 3.24	Latest reported revenues from selected free-to-view TV operators, 2009 ..	134
Figure 3.25	Latest reported revenues from selected pay-TV operators, 2009 .....	136
Figure 3.26	Pay-TV ARPU by country, 2004 – 2009 .....	137
Figure 3.27	Latest reported ARPU for selected pay-TV operators, end 2009.....	138
Figure 3.28	Pay-TV take-up versus DVR take-up showing ARPU levels.....	139
Figure 3.29	Number of HDTV homes, by platform and country, end 2009 .....	140
Figure 3.30	Number of HDTV homes, by platform and country, end 2009 .....	141
Figure 3.31	Number of HDTV channels and HD penetration, end 2009* .....	142
Figure 3.32	Uses of HD TV sets .....	142
Figure 3.33	Pay-TV DVR subscribers, 2008 – 2009.....	144
Figure 3.34	Video on-demand use in Virgin Media and Ono homes.....	145
Figure 3.35	Take-up of video on demand on the TV, by country .....	146
Figure 3.36	Global pay-per-view and video-on-demand revenues .....	146
Figure 3.37	Accessing TV content over the internet.....	149

Figure 3.38	Online TV and video revenue per head.....	150
Figure 3.39	Online TV revenue by segment, 2009.....	150
Figure 3.40	PSB network output by genre, 2009.....	153
Figure 3.41	First run originations, acquisition and repeats, 2009 .....	154
Figure 3.42	First-run originations trends .....	154
Figure 3.43	Acquisition trends.....	155
Figure 3.44	Repeats trends .....	155
Figure 3.45	Changes in television distribution technology take-up, 2008-2009 .....	157
Figure 3.46	TV reception devices connected to the main set in the home, 2009.....	158
Figure 3.47	Proportion of main sets connected to the most popular TV reception devices, 2009.....	159
Figure 3.48	Proportion of main sets connected to DTT devices since platform launch..	159
Figure 3.49	Take-up of pay and free-to-air television, 2009 .....	160
Figure 3.50	Percentage point change in the proportion of pay-TV homes, 2008 and 2009 .....	161
Figure 3.51	Take-up of pay and free-to-air television across territories, 2008 and 2009	161
Figure 3.52	Pay TV homes, 2004-2009 .....	162
Figure 3.53	Television consumption per head per day, 2008 – 2009 .....	163
Figure 3.54	Patterns of viewing among the five most popular TV channels, 2008 – 2009 .....	164
Figure 3.55	The share commanded by channels receiving public funding, 2008 – 2009	165
Figure 3.56	The share of terrestrial / well-established TV channels, 2008 - 2009.....	166
Figure 3.57	Main source of news .....	167
Figure 3.58	Main source of other information.....	168
Figure 3.59	Potential coverage of selected local/regional TV services .....	170
Figure 3.60	Local and regional television services in selected European countries and the US .....	171
Figure 3.61	Summary of local and regional TV services in selected comparator countries in 2010.....	172
Figure 3.62	Features of local/regional television markets.....	176
Figure 3.63	Summary of local/regional TV service ownership and funding in selected countries .....	179
Figure 4.1	Key radio market indicators: 2009.....	183
Figure 4.2	Absolute changes in radio revenue by country, 2005 – 2009 .....	184
Figure 4.3	Proportional changes in radio revenues, 2005 - 2009 .....	185
Figure 4.4	The most substantial revenue swings, by component, 2005 - 2009 .....	186
Figure 4.5	The smaller revenue swings, by component, 2005 – 2009.....	187
Figure 4.6	Use of the internet to listen to the radio / download audio content (music tracks / podcasts).....	188
Figure 4.7	Mobile audio service use: listening to MP3 tracks, FM radio, podcasts .....	189
Figure 4.8	Global radio industry revenues, 2005 - 2009.....	192
Figure 4.9	Radio industry revenue, 2009 .....	193
Figure 4.10	Radio industry revenue annualised growth, 2005 - 2009.....	194
Figure 4.11	Proportion of radio industry revenue, by source .....	195
Figure 4.12	Radio industry revenues, per head .....	195
Figure 4.13	Radio advertising as a proportion of total advertising spend, and levels of public licence fee funding in 2009 .....	196
Figure 4.14	Digital music sales, 2008 and 2009.....	197
Figure 4.15	Digital music revenues, 2008 and 2009 .....	198
Figure 4.16	Adults regularly listening to the radio / music on a hi-fi.....	200
Figure 4.17	Adults owning and personally using: FM radio, digital radio, portable media player (MP3/MP4/iPod) .....	201
Figure 4.18	Do you ever watch TV and listen to a radio station / listen to music? .....	202
Figure 4.19	Weekly listening hours: 2009 .....	202
Figure 4.20	Share of PSB listening, 2009 .....	203



Figure 5.1	Internet and web-based content: key international statistics.....	207
Figure 5.2	Mobile phone take-up by functionality .....	210
Figure 5.3	Smartphone subscribers: January 2009 vs. January 2010 .....	211
Figure 5.4	Smartphone subscribers by payment tier, Jan 2010.....	212
Figure 5.5	Smartphone subscribers by operating system, Jan 2010 .....	213
Figure 5.6	Internet share of total advertising expenditure.....	214
Figure 5.7	Internet advertising spend per head.....	215
Figure 5.8	Internet advertising spend, by category.....	216
Figure 5.9	Share of search advertising market revenue .....	217
Figure 5.10	Online purchases and spend on online purchases in the past 6 months ....	218
Figure 5.11	Mobile internet advertising expenditure.....	219
Figure 5.12	Mobile behaviour in Japan, USA and Europe, June 2010 .....	219
Figure 5.13	Mobile internet advertising spend per head.....	220
Figure 5.14	Broadband connections per 100 households .....	223
Figure 5.15	Mobile broadband subscribers per 100 households .....	224
Figure 5.16	Take-up of home internet access platforms.....	225
Figure 5.17	Global broadband traffic, by application category.....	226
Figure 5.18	Global consumer broadband consumption by region, 2010.....	227
Figure 5.19	Global online universe, July 2010 .....	228
Figure 5.20	Unique online audience, by gender, August 2008 and August 2010 .....	228
Figure 5.21	Unique online audience, by age, August 2008 and August 2010.....	229
Figure 5.22	Unique online audience, by age and gender, August 2010 .....	230
Figure 5.23	Devices used to access the internet.....	231
Figure 5.24	Devices used to access the internet, by age .....	232
Figure 5.25	Top ten website brands per country .....	233
Figure 5.26	Most searched terms on Google in the last 12 months.....	234
Figure 5.27	Main reason for using the internet.....	235
Figure 5.28	Use of home internet connection.....	236
Figure 5.29	Respondents uploading video content via internet connection .....	237
Figure 5.30	Use of the internet to visit social network sites .....	238
Figure 5.31	Monthly unique audience visiting social network sites.....	239
Figure 5.32	Reach and use of social networking and blogging sites, by country .....	240
Figure 5.33	Use of the internet for social networking, by age.....	241
Figure 5.34	Daily unique visitors to global social network sites, Jan 2009 to Oct 2010 .	242
Figure 5.35	Facebook reach and use, by country .....	243
Figure 5.36	LinkedIn web penetration, top ten countries .....	244
Figure 5.37	Use of mobile phones for social networking .....	244
Figure 5.38	Use of mobile phones for social networking, by age.....	245
Figure 5.39	Twitter penetration among smartphone users .....	245
Figure 5.40	Mobile phone uses, by country.....	247
Figure 5.41	Internet access via mobile phone.....	248
Figure 5.42	Internet access via mobile phone among internet users, by age .....	249
Figure 5.43	Internet users who have downloaded applications to their phones.....	250
Figure 5.44	Users of mobile map and direction services, Feb 2010 .....	251
Figure 5.45	Mobile music users, Q1 2010.....	251
Figure 6.1	Key telecoms indicators, 2009 .....	255
Figure 6.2	Telecoms revenues by service, 2004 to 2009 .....	258
Figure 6.3	Change in telecoms connections, use and revenues, 2009.....	259
Figure 6.4	Telecoms revenues, by service and country, 2008 and 2009.....	260
Figure 6.5	Growth in total telecoms revenues, 2005 to 2009.....	261
Figure 6.6	Major NGA developments among key comparator countries since 2008....	263
Figure 6.7	NGA deployments and planned deployments .....	266
Figure 6.8	Actual and forecast availability of FTTH/B (excludes cable) .....	267
Figure 6.9	Public funding of NGA broadband among key comparator countries.....	269
Figure 6.10	Household take-up of super-fast broadband, end 2009.....	270

Figure 6.11	Maximum theoretical download speeds available via mobile networks, October 2010.....	272
Figure 6.12	LTE deployments and plans, October 2010 .....	273
Figure 6.13	Do you or another member of your household use a PC to make phone calls over the internet? .....	275
Figure 6.14	VoIP subscribers per 100 population, 2006 and 2009 .....	276
Figure 6.15	Growth in VoIP subscribers per 100 population, 2006 to 2009 .....	277
Figure 6.16	VoIP share of fixed telephony revenues, 2006 and 2009 .....	278
Figure 6.17	Total comparator country retail telecoms revenue, by sector, 2004 to 2009.....	280
Figure 6.18	Telecoms service retail revenue, by nation and by sector, 2009 .....	281
Figure 6.19	Telecoms service retail revenues, by sector, 2004 and 2009 .....	282
Figure 6.20	Data revenue as a proportion of total telecoms revenues, 2004 and 2009 ..	283
Figure 6.21	Fixed broadband and mobile data revenues, 2004 to 2009 .....	284
Figure 6.22	Mobile as a proportion of total telecoms revenues, 2004 and 2009.....	285
Figure 6.23	Mobile as a proportion of total voice connections, 2004 and 2009 .....	286
Figure 6.24	Fixed-line voice retail revenues, 2004 and 2009 .....	287
Figure 6.25	Average monthly revenue per fixed line, 2004 and 2009.....	288
Figure 6.26	Fixed-line voice call volumes, 2004 and 2009 .....	289
Figure 6.27	Monthly outbound minutes per fixed line, 2004 to 2009.....	290
Figure 6.28	Incumbent share of fixed voice call volumes, 2004 and 2009.....	291
Figure 6.29	Fixed exchange lines, 2004 and 2009.....	292
Figure 6.30	Mobile revenues, 2004 and 2009 .....	293
Figure 6.31	Average monthly revenue per mobile connection, 2004 to 2009 .....	294
Figure 6.32	Data as a proportion of total mobile service revenue, 2004 and 2009 .....	295
Figure 6.33	Average monthly mobile voice and data revenue per connection, 2004 and 2009.....	296
Figure 6.34	Average monthly SMS and non-SMS data revenue per mobile connection, 2004 and 2009.....	297
Figure 6.35	Mobile voice call volumes, 2004 and 2009.....	298
Figure 6.36	Monthly outbound minutes per mobile connection, 2004 and 2009 .....	299
Figure 6.37	Mobile messaging volumes, 2004 and 2009 .....	300
Figure 6.38	Monthly outbound messages per mobile connection, 2004 to 2009 .....	301
Figure 6.39	Mobile connections, 2004 and 2009.....	302
Figure 6.40	Mobile take-up and average monthly revenue per connection, 2009.....	303
Figure 6.41	Mobile connections, by type, 2004 and 2009 .....	304
Figure 6.42	MVNO share of total mobile connections, 2004 and 2009.....	305
Figure 6.43	Herfindahl-Hirschman index of mobile concentration, 2004 and 2009.....	306
Figure 6.44	3G as a proportion of total mobile connections, 2004 and 2009 .....	307
Figure 6.45	Fixed broadband revenues, 2004 and 2009.....	308
Figure 6.46	Fixed broadband as a proportion of total fixed revenues, 2004 and 2009 ..	309
Figure 6.47	Fixed broadband connections, 2004 and 2009.....	310
Figure 6.48	Split of fixed broadband connections by headline speed, Q2 2010 .....	311
Figure 6.49	DSL as a proportion of all fixed broadband connections, 2004 and 2009 ...	312
Figure 6.50	Retail connection share of the top three fixed broadband providers, 2004 and 2009.....	313
Figure 6.51	Mobile availability for the largest operator, by technology, 2009.....	316
Figure 6.52	Fixed broadband availability, 2004 and 2009 .....	317
Figure 6.53	Household take-up of fixed and mobile telephony, 2010 .....	318
Figure 6.54	Fixed broadband connections per 100 households, 2004 and 2009.....	319
Figure 6.55	Total telecoms service retail revenue per person, 2004 to 2009.....	320
Figure 6.56	Fixed-line voice retail revenue per person, 2004 to 2009 .....	321
Figure 6.57	Mobile retail revenue per person, 2004 to 2009 .....	322
Figure 6.58	Fixed broadband retail revenue per person, 2004 to 2009 .....	323
Figure 6.59	Proportion of users of a service who have switched provider in the last twelve months, 2010 .....	324

Figure 6.60	Fixed lines per 100 population, 2004 and 2009.....	325
Figure 6.61	Household take-up of fixed-line services, 2008 and 2010 .....	326
Figure 6.62	Mobile connections per 100 population, 2004 and 2009.....	327
Figure 6.63	Household take-up of mobile telephony services, 2010.....	328
Figure 6.64	Split of mobile connections by type, 2004 and 2009.....	329
Figure 6.65	Household penetration of fixed and mobile telephony, 2010 .....	330
Figure 6.66	Monthly fixed-line voice call minutes per person, 2004 to 2009.....	331
Figure 6.67	Monthly mobile voice call minutes per person, 2004 to 2009 .....	332
Figure 6.68	Monthly fixed and mobile call volumes per person, 2004 and 2009.....	333
Figure 6.69	Use of telephony services, by country, 2009 .....	334
Figure 6.70	Average cost of a fixed voice call minute, 2004 to 2009.....	335
Figure 6.71	Average cost of an outgoing mobile voice call minute, 2004 to 2009 .....	336
Figure 6.72	Average mobile voice call use and the comparative cost of fixed and mobile voice calls, 2009 .....	337
Figure 6.73	Fixed broadband connections per 100 people, 2004 and 2009 .....	338
Figure 6.74	Proportion of consumers with fixed broadband who buy it in conjunction with another service, 2010 .....	339
Figure 6.75	Mobile broadband connections per 100 population, 2009 .....	339
Figure 6.76	Household penetration of fixed and mobile broadband, 2010.....	340
Figure 6.77	Proportion of people using a mobile handset to access the internet at home, 2010.....	341
Figure 6.78	Devices used to access the internet at home, 2010 .....	341
Figure 6.79	Online activities undertaken at home, 2010.....	342
Figure 6.80	Three most frequently-mentioned mobile data services used, 2010.....	343
Figure 6.81	Average monthly mobile messages per person, 2004 and 2009 .....	344
Figure 6.82	Four most frequently used non-SMS mobile data services, by country .....	345
Figure 6.83	Average monthly revenue per fixed broadband connection, 2004 to 2009 .....	346
Figure 6.84	Least expensive bundled offer of fixed-line and broadband connection, October 2009.....	347
Figure 9.1	Components of the pricing comparison model .....	384
Figure 9.2	Examples of combinations of multi-play and single service offers .....	385
Figure 9.3	Demographic characteristics of core countries.....	386
Figure 9.4	Operators included within the analysis .....	387
Figure 9.5	Household types .....	388
Figure 9.6	Average take-up and use of communications services by country .....	388
Figure 9.7	Alignment of average use across comparator households with average use across comparator countries.....	389
Figure 9.8	Types of billing for fixed voice calls .....	390
Figure 9.9	Components of the fixed voice baskets.....	390
Figure 9.10	Fixed voice international call destinations for comparator countries .....	391
Figure 9.11	Types of billing for mobile voice calls .....	392
Figure 9.12	Components of the mobile baskets .....	393
Figure 9.13	Mobile voice international call destinations for comparator countries .....	394
Figure 9.14	Components of the broadband baskets.....	396
Figure 9.15	Components of the television baskets.....	398
Figure 9.16	Purchasing Power Parity conversion rates.....	400