



The International Communications Market 2010

1 The UK in context

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1.1 The global communications industry in context

1.1.1 Introduction

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

- **The global communications industry in context:** (Section 1.1): We compare the size of the UK communications sector to that 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 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 for television and radio. IDATE / industry data / Ofcom for US and UK TV revenues and all telecoms revenues.

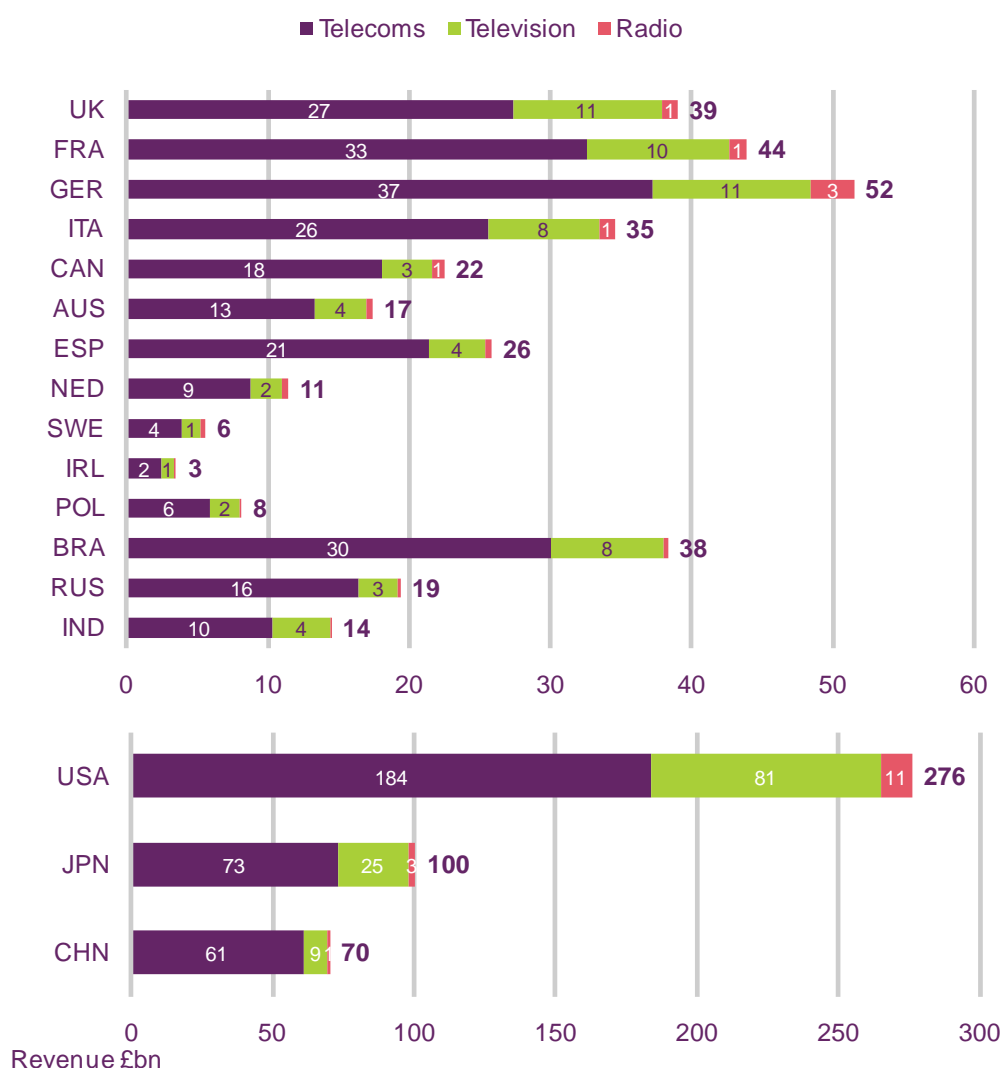
Interpretation and manipulation of data are solely Ofcom's responsibility. Ofcom has used an exchange rate of \$1.5643 to the GBP, representing the IMF average for 2009.

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

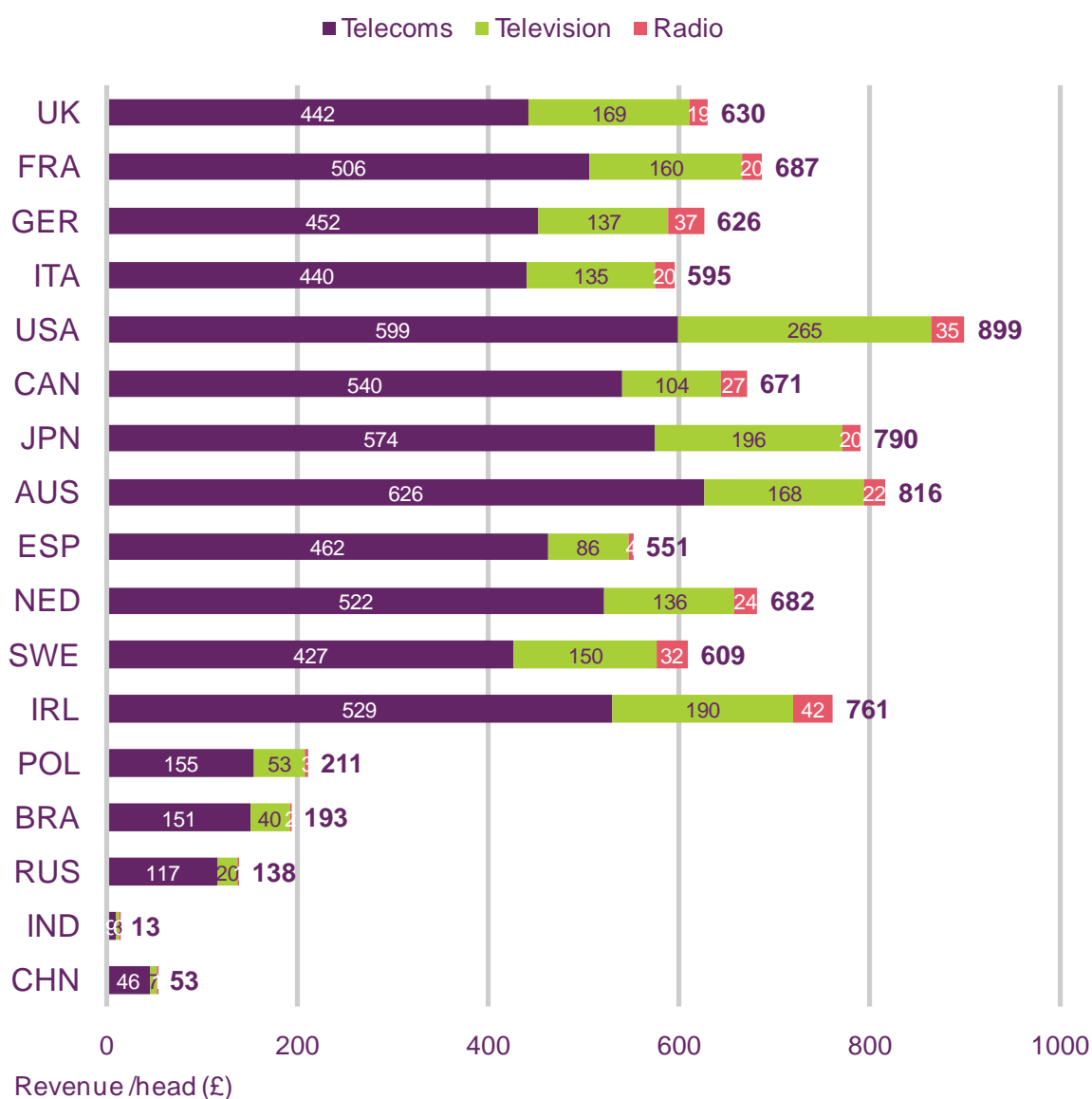


Source: Ofcom analysis based on Ofcom / IDATE data for telecommunications/TV and Ofcom analysis based on data taken from PricewaterhouseCoopers Global Entertainment and Media Outlook 2010-2014 @ www.pwc.com/outlook for radio. Interpretation and manipulation of data are solely Ofcom's responsibility. 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 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.

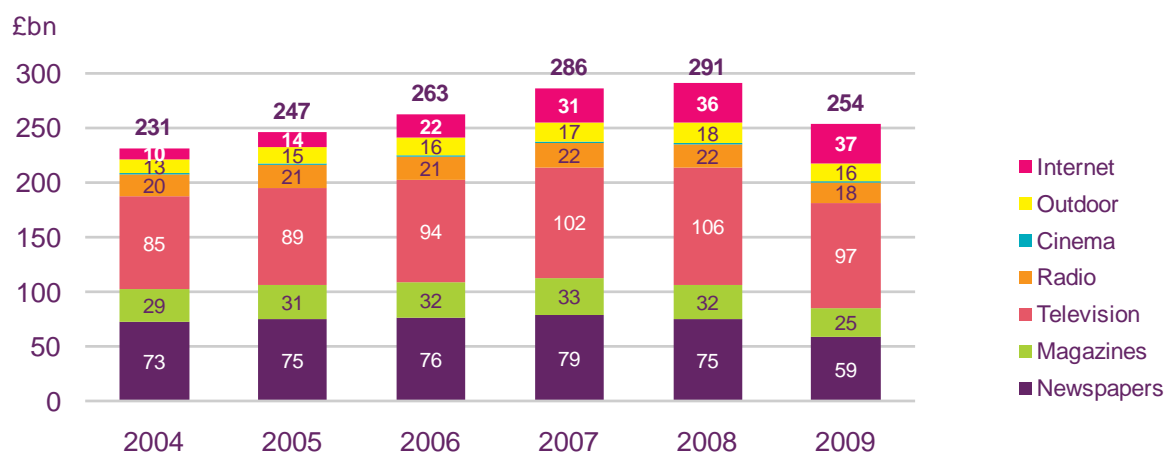
Notes: Telecoms revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN

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). 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

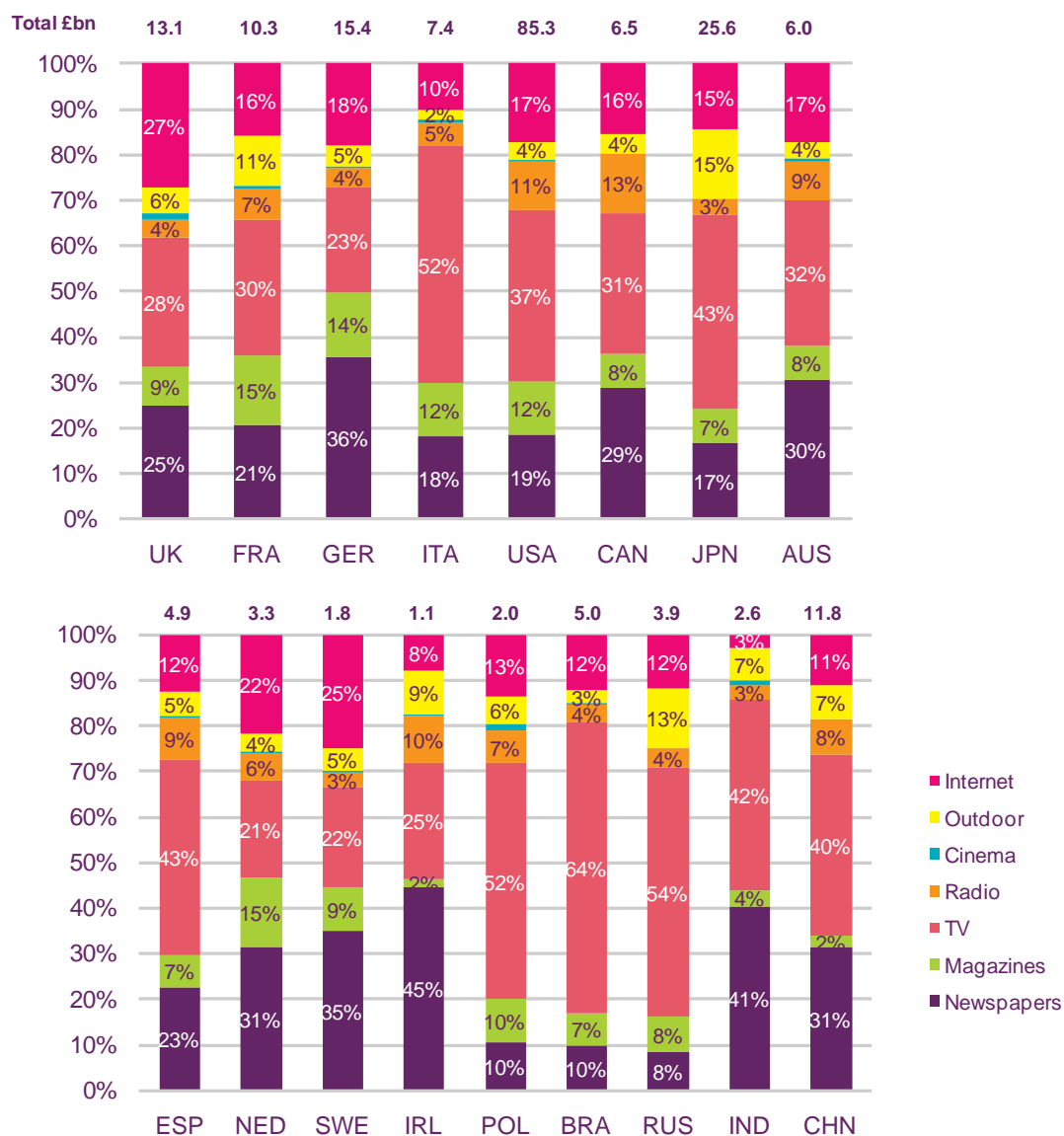
	Total advertising	Newspapers	Magazines	Television	Radio	Cinema	Outdoor	Internet
2004-2008 CAGR	+5.9%	+0.6%	+2.3%	+5.8%	+1.7%	+7.2%	+8.6%	+38.7%
2008-2009 annual growth	-12.8%	-20.5%	-21.6%	-9.0%	-14.8%	-6.4%	-13.3%	+1.1%
2004-2009 CAGR	+1.9%	-4.0%	-3.0%	+2.7%	-1.8%	+4.4%	+3.8%	+30.2%

Source: Warc data (www.warc.com), 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), 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%¹, 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

¹ 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.

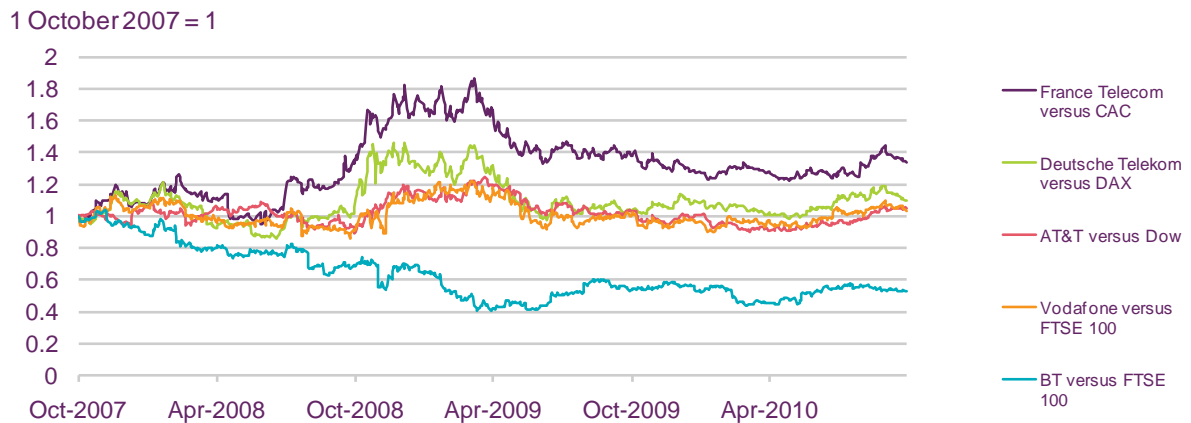
The impact of the economic downturn on publicly-quoted companies

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.

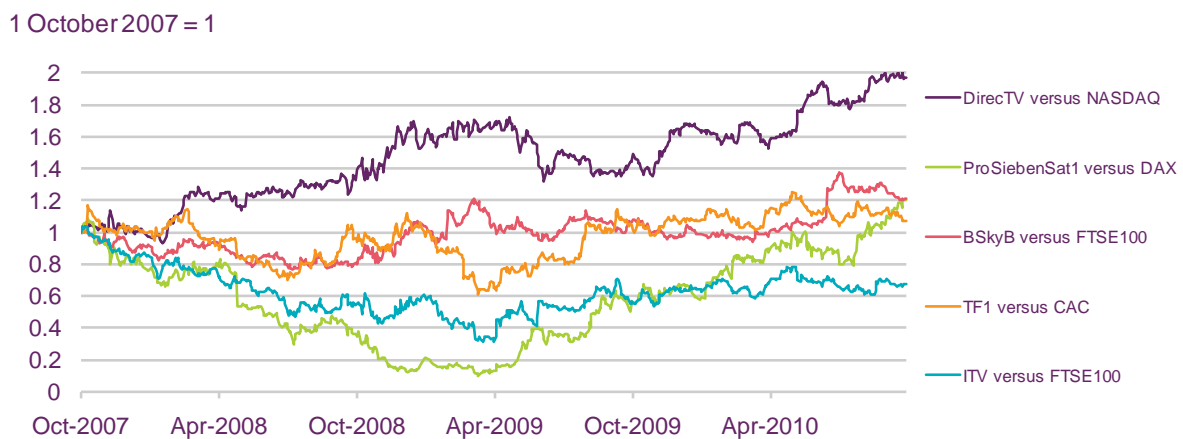
Between late 2008 and early 2009, telecoms shares outperformed the wider market, partly reflecting falls in other sectors, in particular financial stocks, in the light of the bank recapitalisations. Figure 1.8 shows that since 1 October 2007 (before the start of the credit crunch and economic downturn), 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



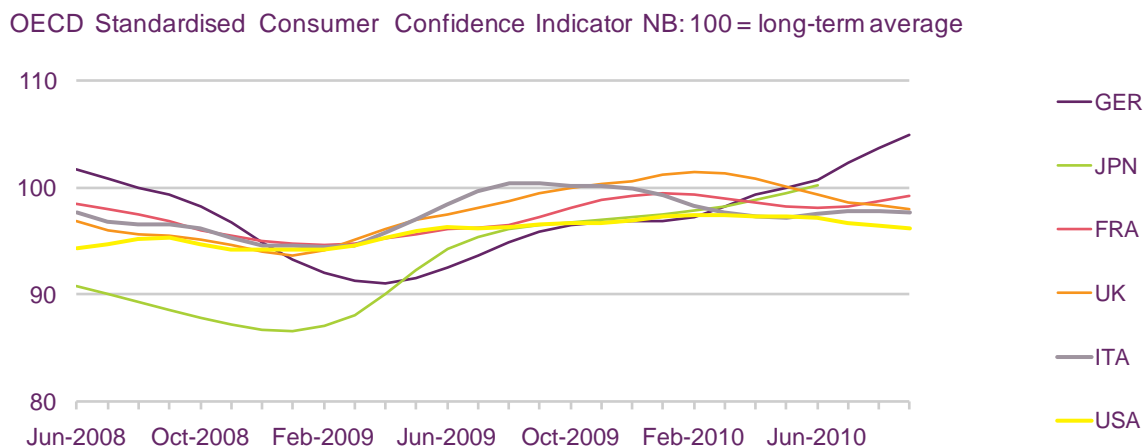
Source: Data from Yahoo! Finance, Ofcom calculations and analysis. Share price performance of companies is against relevant national markets rather than the other companies in the chart.

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.

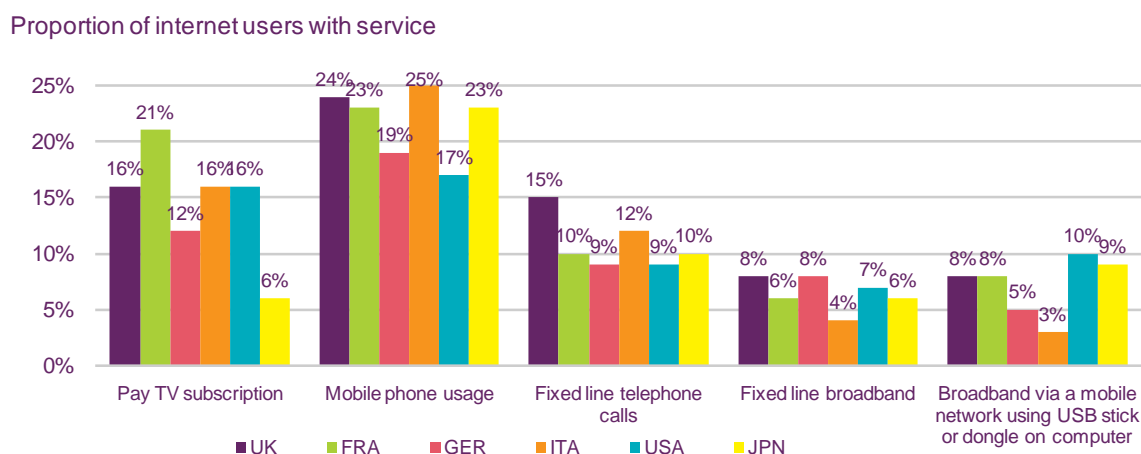
Consumers were most likely to have reduced their expenditure on mobile, with over a fifth in the UK, France, Italy and Japan having done so in the previous 12 months, a little ahead of Germany at 19% (Figure 1.11). In contrast, people in the US were least likely to have reduced expenditure, with 17% 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.²

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 HD³ or BBC World at €0.25/month⁴, 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).

² 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>

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

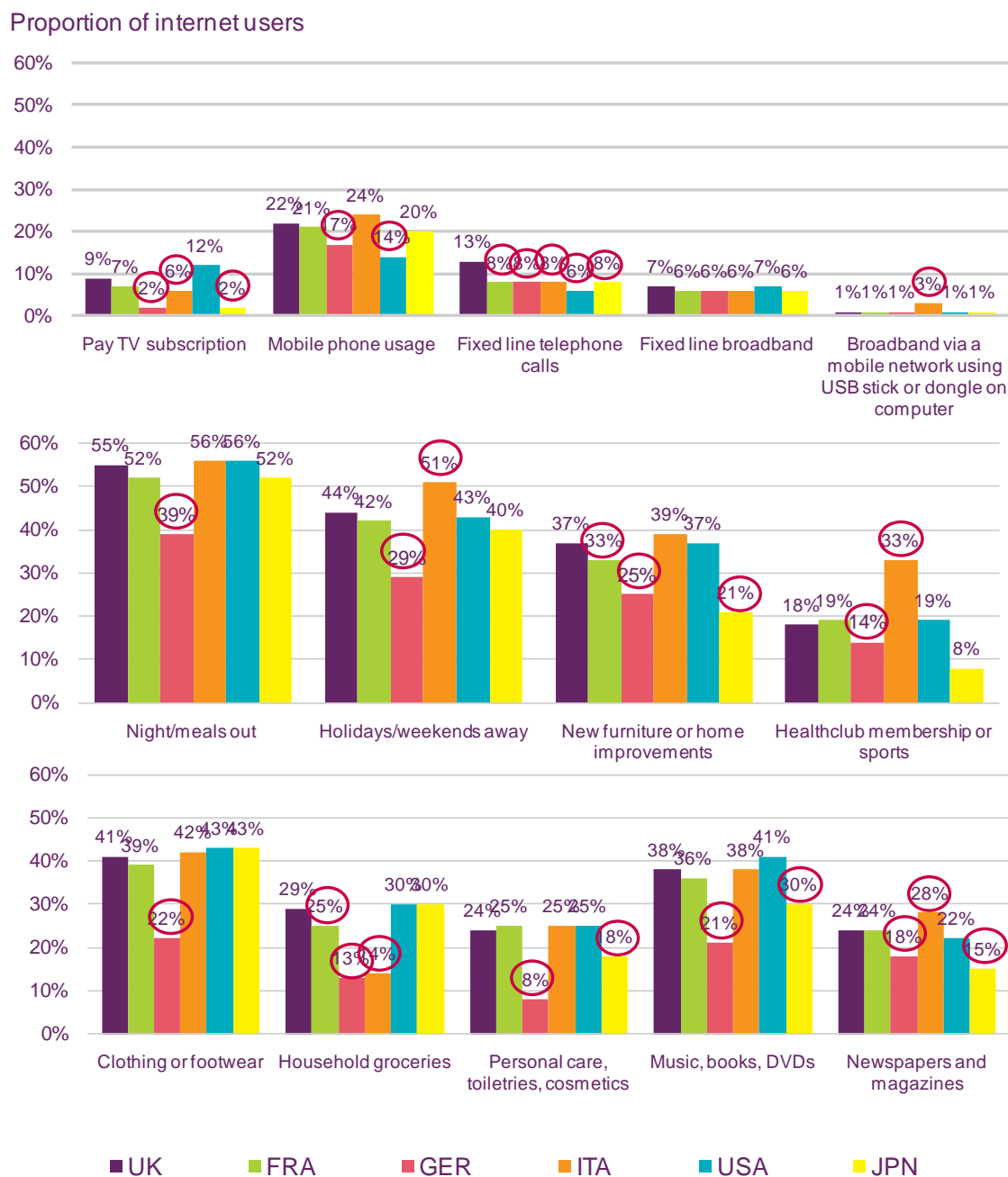
⁴ <http://www.free.fr/adsl/pages/television/services-de-television/acces-a-plus-250-chaines/chaines/chaine-86.html> [accessed November 2010]

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.

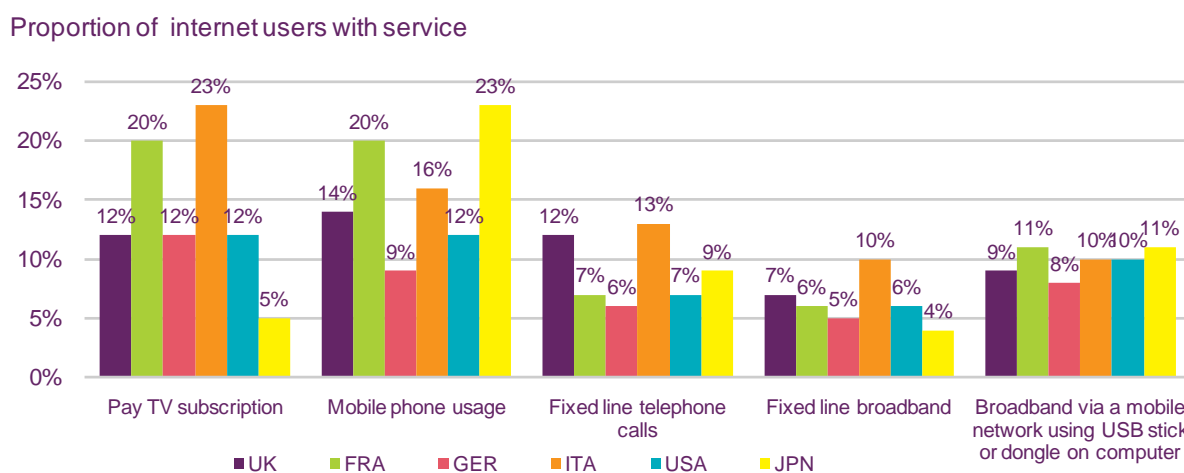
We also asked consumers about their intention to reduce spending in the coming year. The responses were broadly similar to reductions in the previous year, although in general a slightly smaller proportion of respondents said that they intended to reduce expenditure (perhaps an indication of increasing 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

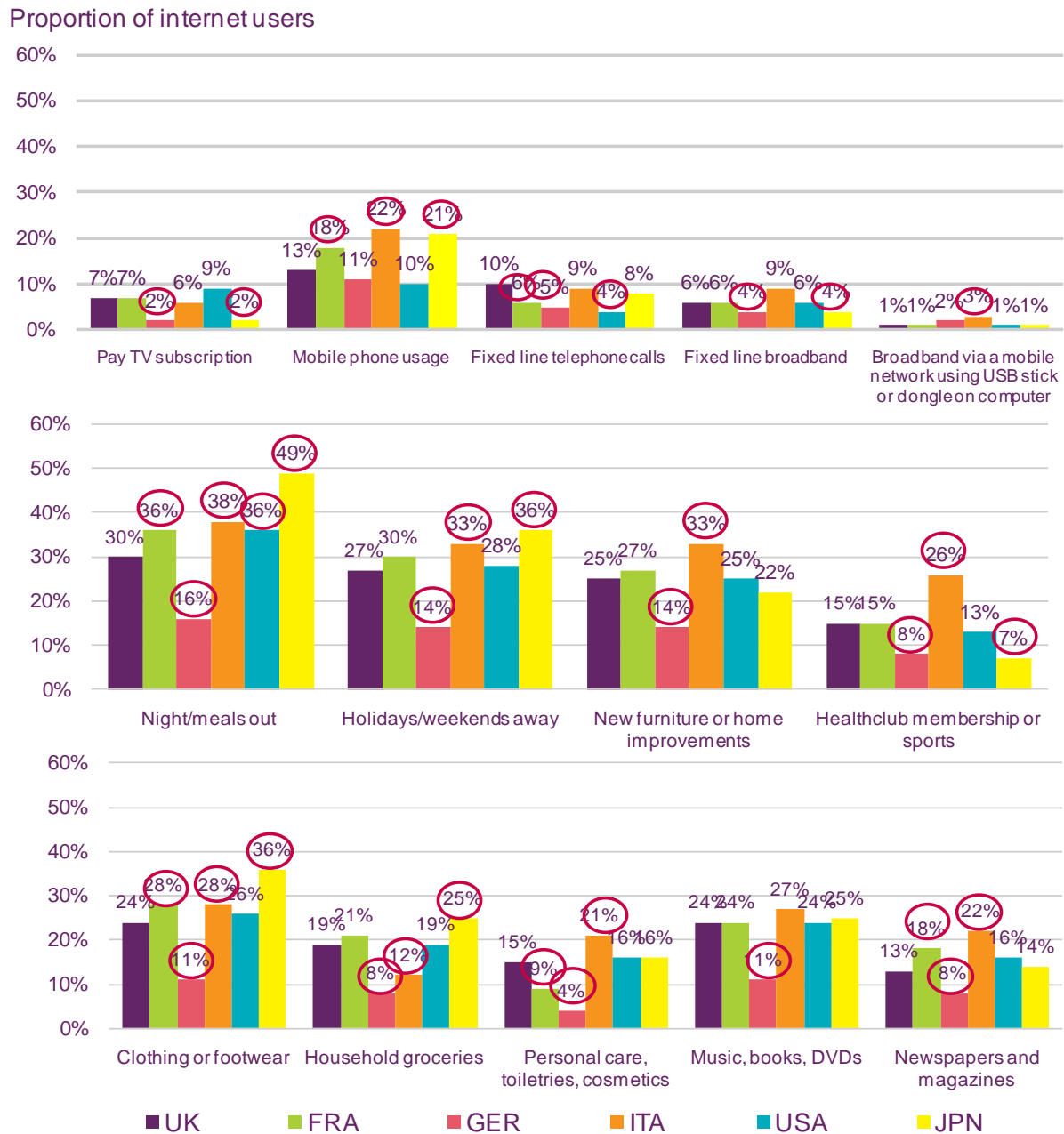
Base: Survey respondents with service. Total sample size: UK=1016, France=1017, Germany=1014, Italy=1002, US=1017, Japan=1001

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%).

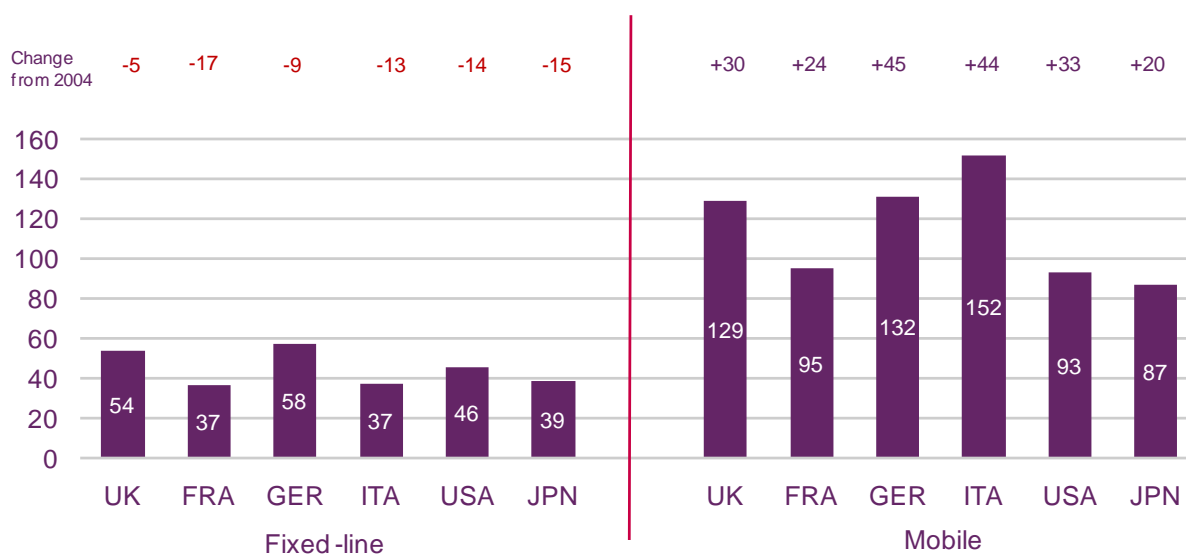
1.2.2 Take-up of services and bundles

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

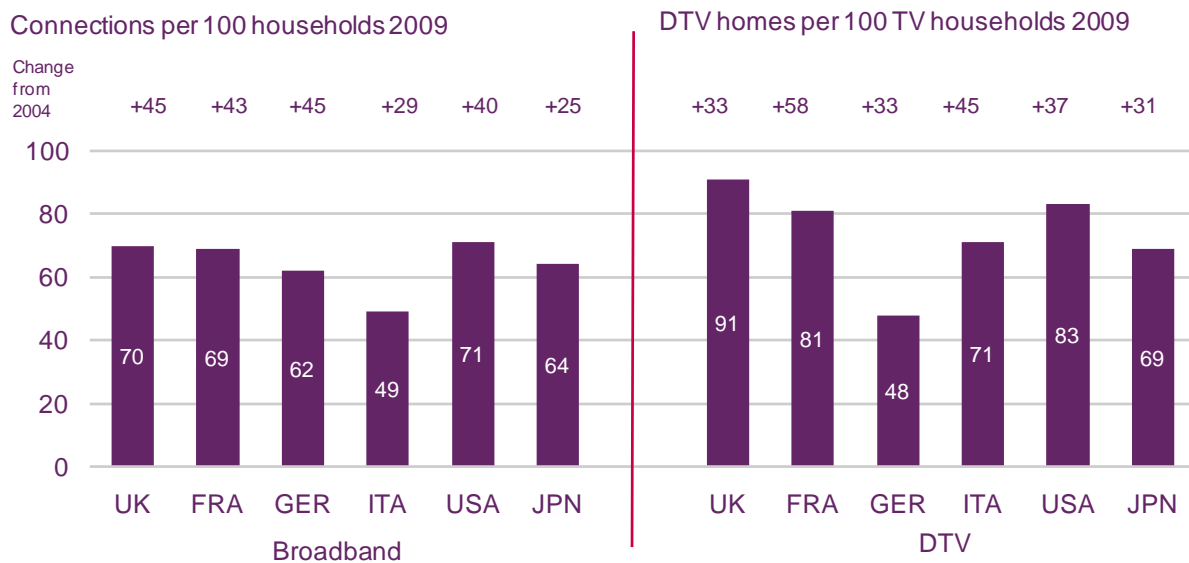
The US, the UK and France have the highest number of broadband connections per head in the six countries where we carried out our consumer research

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

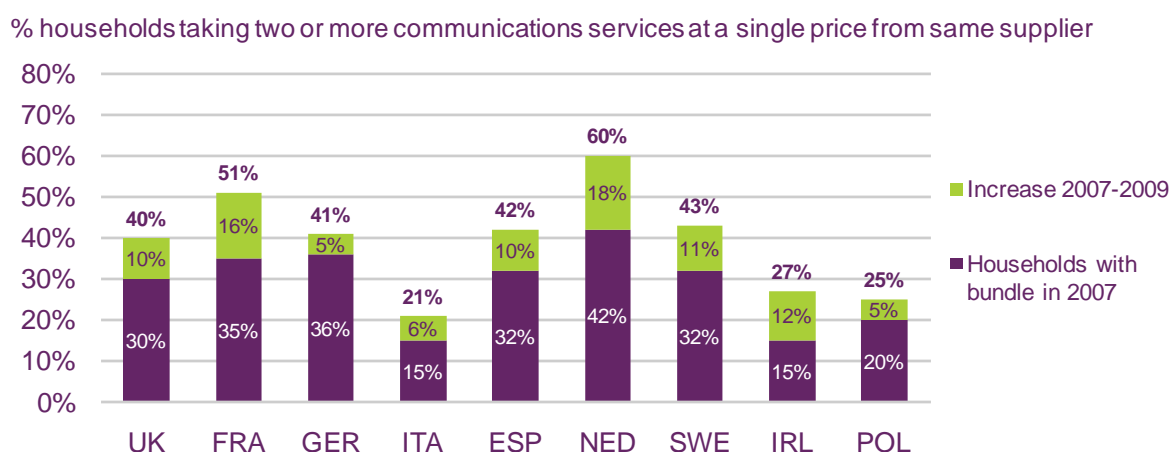
For further information on the penetration of specific communications services across all our comparator countries, please see the relevant section of this report.

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 335 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%).

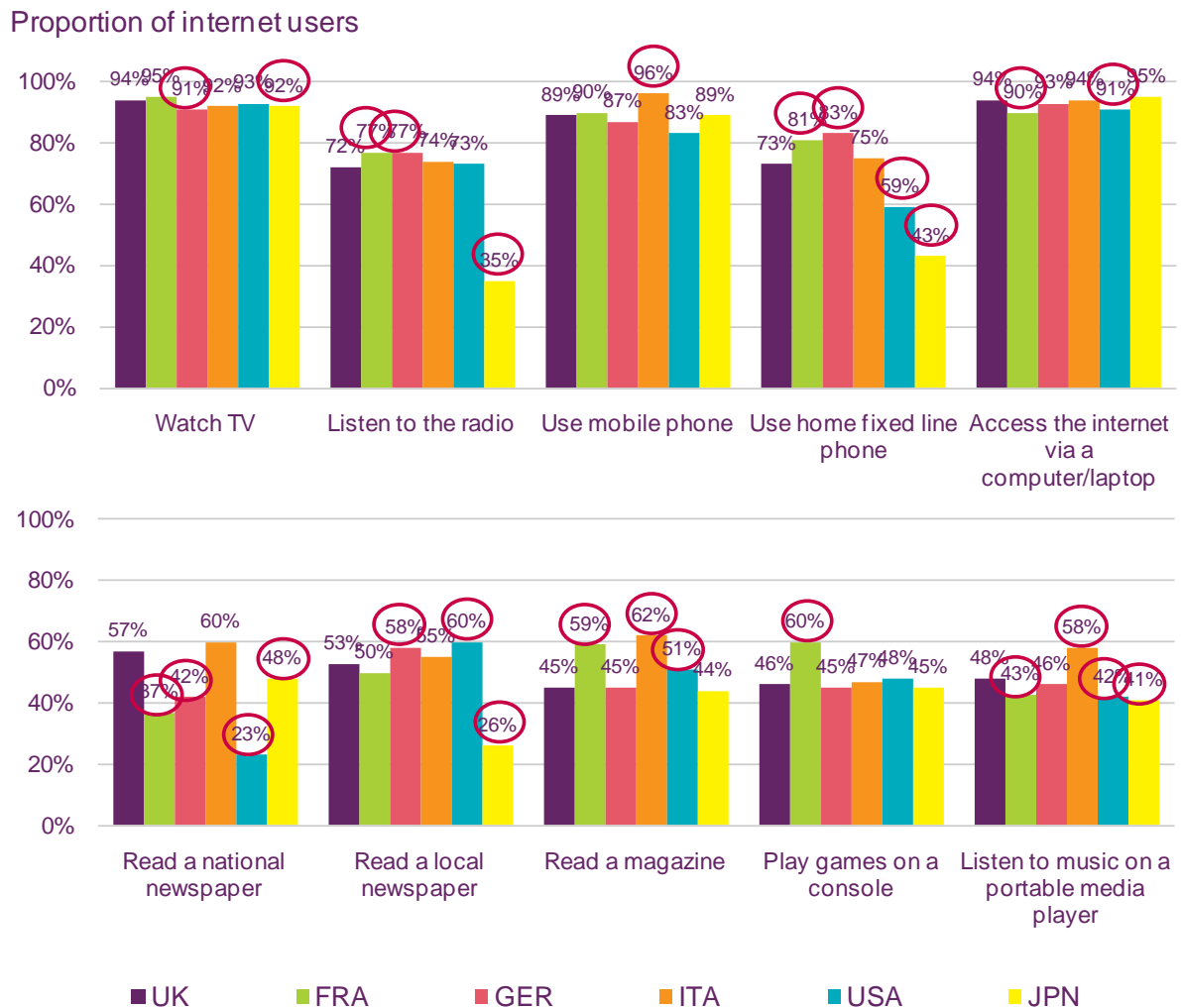
In France and Germany, internet users were more likely than UK participants (72%) to listen to the radio at least once a week. It was least common in Japan, with just 35% respondents saying they listened at least once a week.

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.

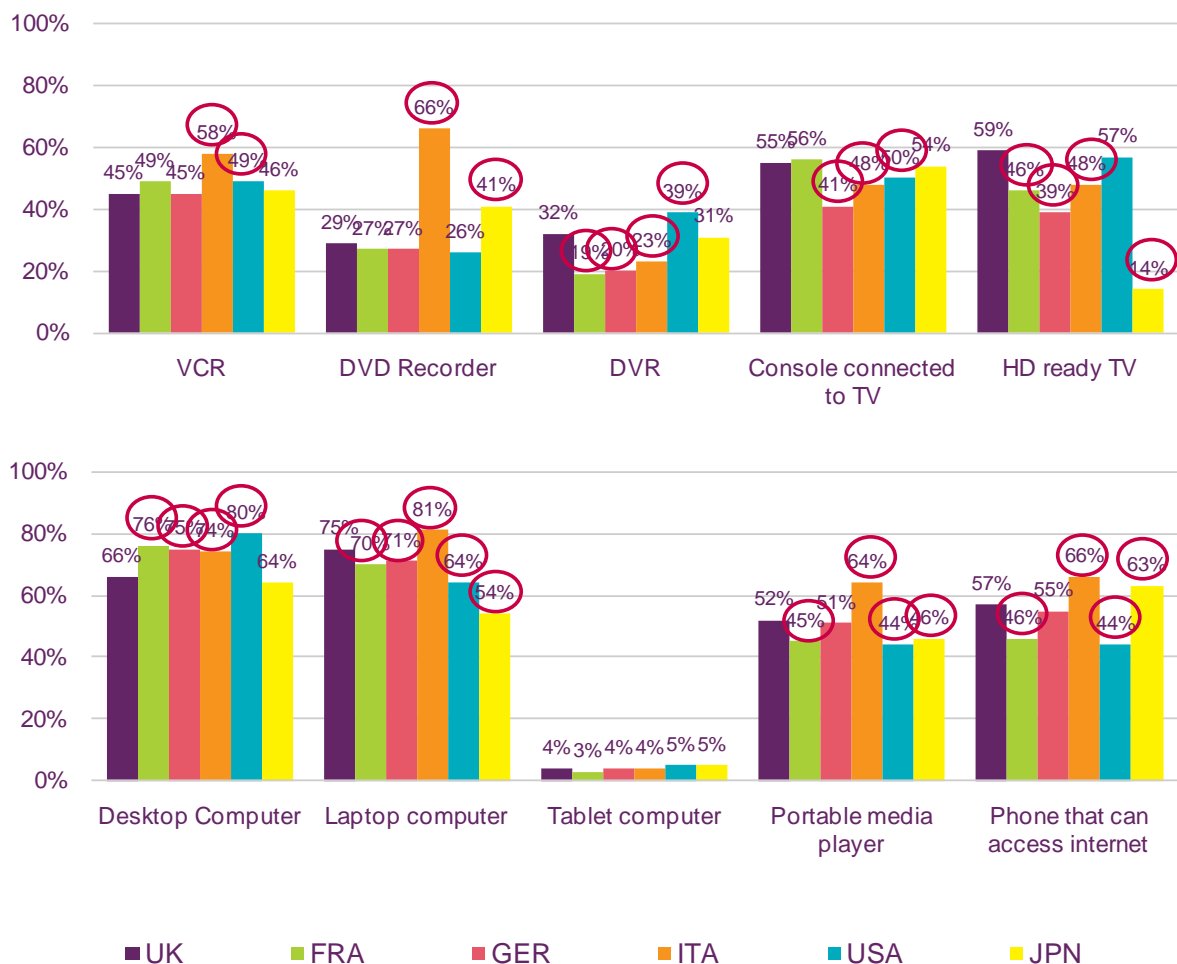
Reported ownership and use of HD-ready TVs was highest in the UK (59%) and the US (57%), and internet users in the UK are also more likely to own DVRs (32%) than in France, Germany and Italy (Figure 1.19). (The results for DVD recorders in Italy and HDTV in Japan may be partly influenced by terminology – 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
1st most missed	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
2nd	Watch TV	Watch TV	Watch TV	Use mobile phone	Watch TV	Use mobile phone
3rd	Use mobile phone	Use mobile phone	Listen to radio	TV	Use mobile phone	TV
4th	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

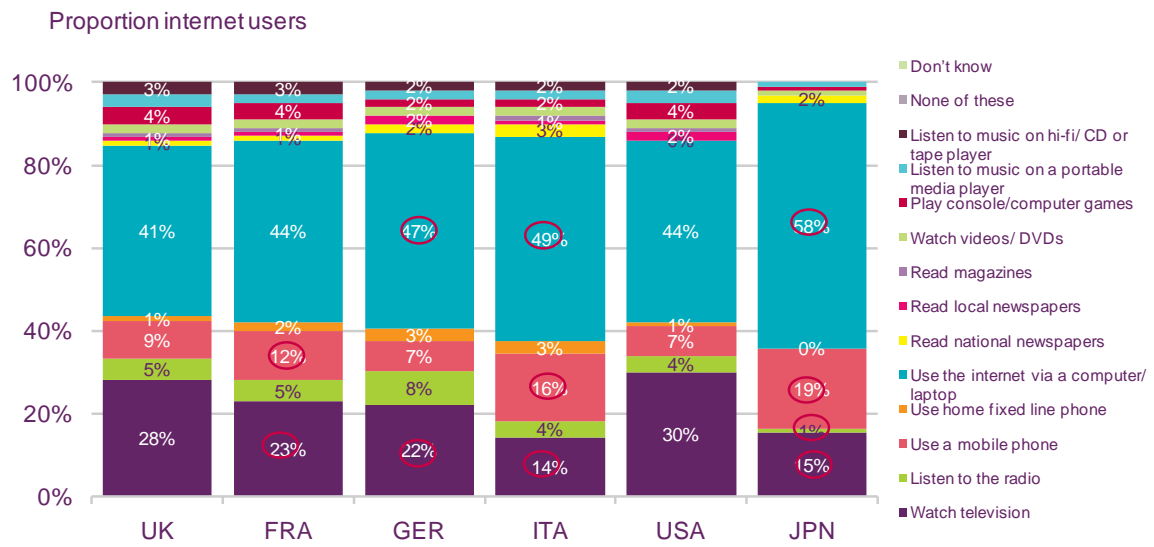
Q6: Which **++one++** of these media activities would you miss doing the most? Please select one

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 package⁵).

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 2009⁶.

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.

⁵ http://stakeholders.ofcom.org.uk/consultations/wnmr_statement_consultation/

⁶ 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



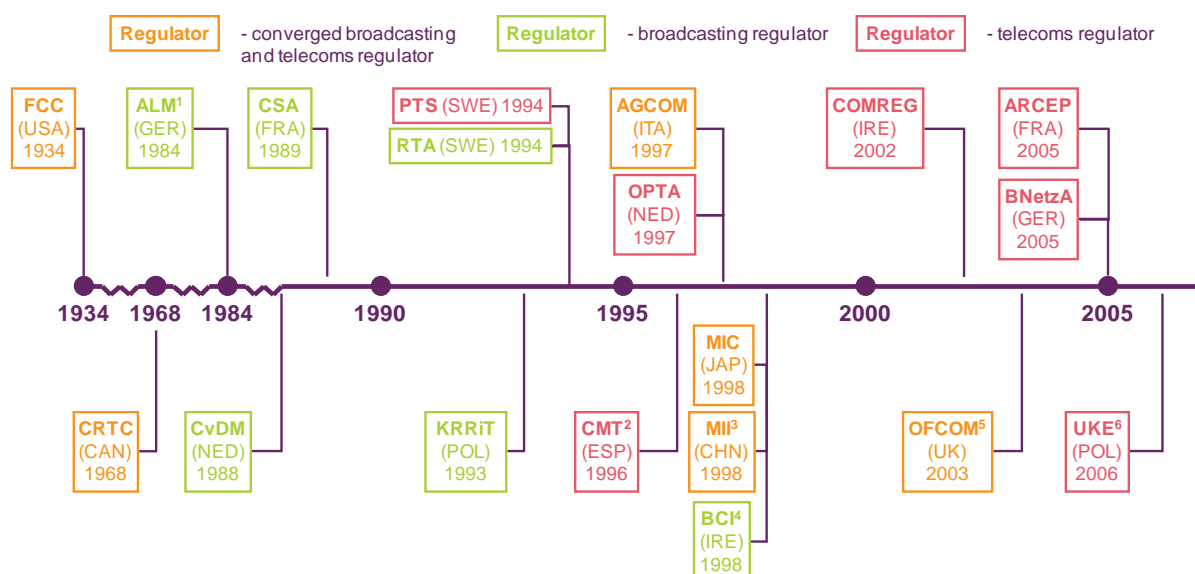
Source: ITU-D GSR Reports

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 (Ofcom), 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 2010⁷. 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.

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

The introduction of next-generation access (NGA)⁸, 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

⁸ 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.⁹ 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.

⁹ <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".¹⁰ 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

¹⁰ 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

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 laws¹¹ 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

¹¹ 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.¹²

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'¹³ 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

¹² 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.

¹³ 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.¹⁴

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.

¹⁴ 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

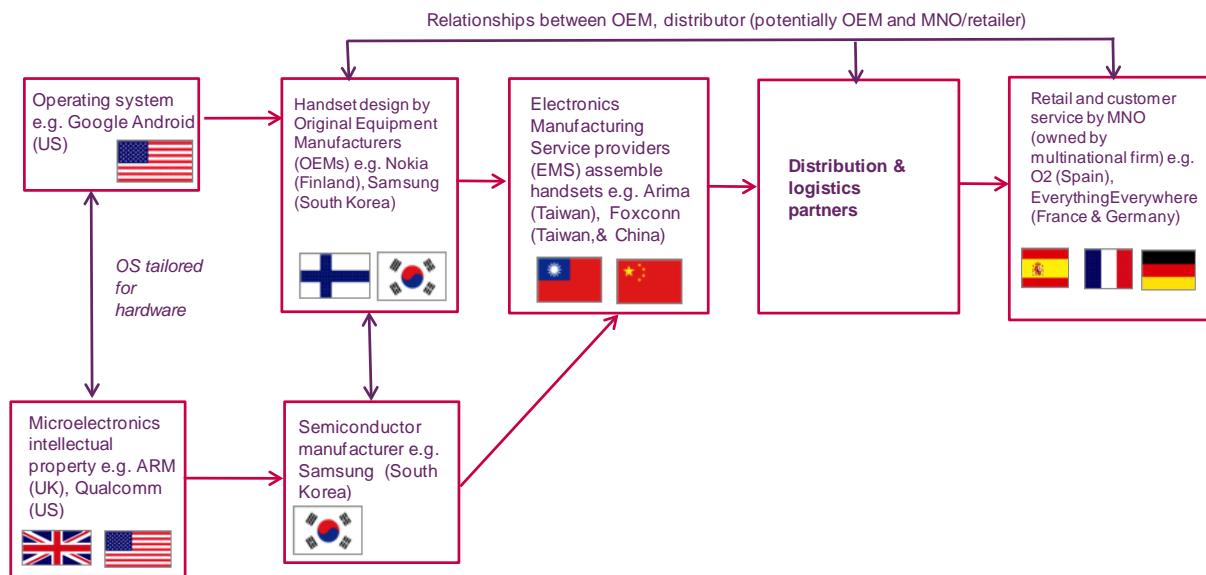
Globalisation in the communications sector can take many forms. Here we briefly take a look at three aspects: the internationalisation of supply chains for communications hardware, the export (and import) of content, and the multinational activities of communications companies.

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.

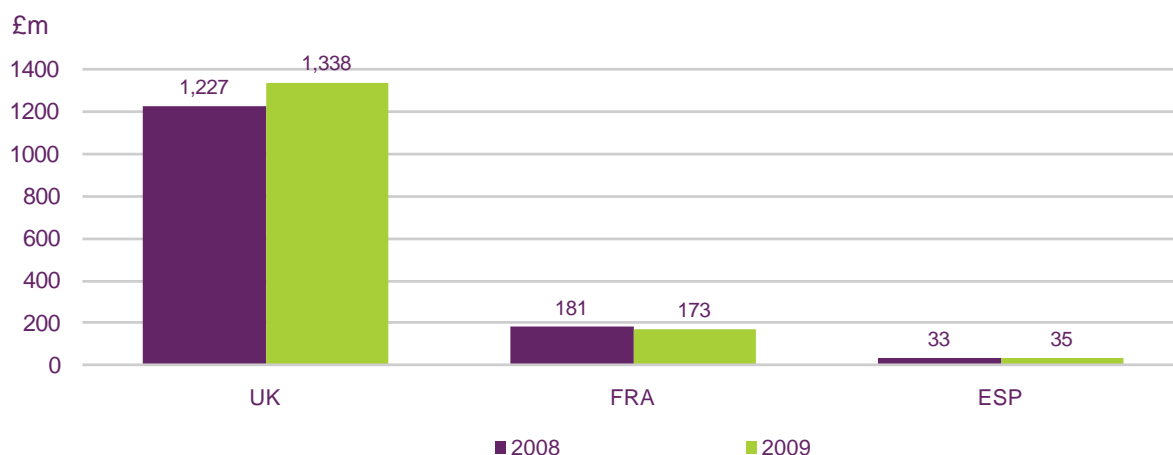
Growing international markets for TV programmes

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%).

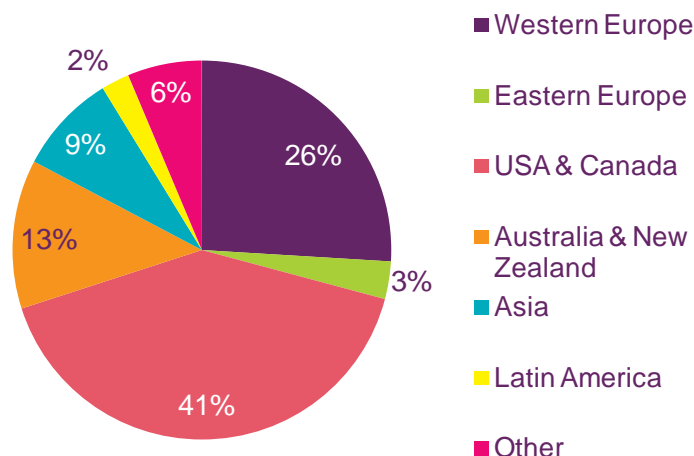
Figure 1.26 TV programme export revenues, 2008-2009



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

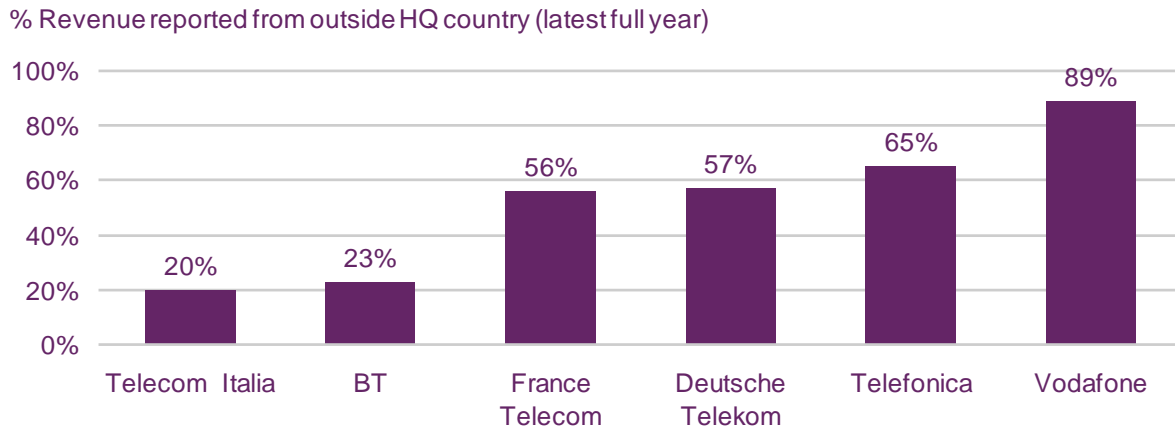
A deeper type of globalisation occurs when a firm based in one country provides services in another through a local presence. The strategic nature of the communications sector means that some countries place restrictions on foreign ownership of companies operating in the telecoms and broadcasting space. 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 NET¹⁵.

¹⁵ 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.