The International Communications Market 2010

6 Telecoms

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Figure 6.1 Key telecoms indicators, 2009

	UK	FRA	GER	ITA	USA	CAN	JPN	AUS
Telecoms service revenues (£bn)	27.4	32.6	37.2	25.6	183.8	18.1	73.0	13.3
Telecoms revenues per capita (£)	442	506	452	440	599	540	574	626
Fixed lines per 100 population	53.9	37.0	57.5	37.3	46.0	55.6	39.1	48.2
Monthly outbound fixed mins per capita	179	141	161	117	167	174	57	213
Mobile connections per 100 population	129.1	95.1	131.5	151.7	93.0	69.9	87.1	119.2
Share of mobile post-pay connections	41%	69%	44%	13%	80%	77%	99%	56%
3G connections per 100 population	41.0	23.8	31.6	56.6	36.3	9.2	83.6	70.5
Monthly outbound mobile mins per capita	159	131	92	163	618	312	91	254
Fixed broadband conn per 100 popn	29.3	30.3	30.3	21.2	27.3	30.8	25.0	25.0
DSL as a proportion of fixed bb conns	79%	94%	90%	97%	37%	43%	32%	78%
Mobile broadband conns per 100 popn	4.1	3.2	1.6	6.8	11.5	7.7	7.5	10.2
VoIP subscriptions per 100 population	5.4	26.3	10.6	9.5	9.9	10.0	17.6	14.0

	ESP	NED	SWE	IRL	POL	BRA	RUS	IND	CHN
Telecoms service revenues (£bn)	21.4	8.7	3.9	2.4	5.9	30.0	16.4	10.3	60.8
Telecoms revenues per capita (£)	462	522	427	529	155	151	117	9	46
Fixed lines per 100 population	42.7	36.5	56.8	42.5	25.7	20.8	32.5	3.2	23.7
Monthly outbound fixed mins per capita	122	114	202	150	34	91	-	-	10
Mobile connections per 100 population	117.4	124.9	133.1	115.0	117.3	87.0	148.8	45.1	56.3
Share of mobile post-pay connections	62%	51%	62%	33%	48%	17%	5%	9%	28%
3G connections per 100 population	49.8	17.9	60.5	48.2	20.9	2.1	3.2	0.1	0.8
Monthly outbound mobile mins per capita	128	199	182	185	107	54	165	103	248
Fixed broadband conns per 100 popn	20.8	37.0	32.5	21.2	13.6	5.6	10.6	0.7	7.8
DSL as a proportion of fixed bb conns	80%	59%	57%	73%	54%	69%	37%	85%	81%
Mobile broadband conns per 100 popn	4.2	3.2	14.4	4.3	2.9	-	-	-	-
VoIP subscriptions per 100 population	3.4	20.1	10.8	5.7	1.3	-	-	-	-

Source: IDATE / industry data / Ofcom
Notes: USA, CAN and CHN mobile use includes both outbound and inbound calls; 3G includes W-CDMA and CDMA20000 1xEV-DO but not CDMA2000; BRIC country revenues exclude fixed broadband

Global telecoms service revenues amounted to £878bn in 2009 – nearly four times the revenues of the television and radio sectors combined and approximately equivalent to the total GDP of Canada or Spain. However, it is in terms of its transformative social impact that the recent growth of the telecoms sector is most significant. By the end of 2009 there were around 4.5 billion mobile connections, 500 million more than at the end of 2008 and approximately equivalent to six connections for every ten people in the world. And increasingly these mobile connections are being used to access the internet. The number of fixed-line internet connections grew by 16% in the year, to reach 480 million[96]; but by the

[96] All data from IDATE, *DigiWorld Yearbook 2010*

end of 2010 there are likely to be more mobile internet connections than fixed-line connections[97].

Yet analysis of our comparator countries shows that 2009 was a difficult year for the telecoms industries. Revenues flattened or declined in most markets, as the economic downturn coincided with structural changes in saturated markets, where fixed-line voice revenues have long been in decline - mainly from substitution for mobile, but also increasingly from Voice over Internet Protocol (VoIP) telephony in some countries. Mobile revenues are coming under pressure as increasing data revenues struggle to offset the decline in voice revenues; and fixed broadband revenues are slowing down as the market becomes saturated and the service becomes commoditised. Revenues from the BRIC countries (Brazil, Russia, India and China) continued to grow as a result of continuing increases in mobile take-up, but revenues per connection are falling and growth in take-up is slowing.

Nevertheless, despite the global slowdown, 2009 and the first half of 2010 saw a great deal of investment in the telephony infrastructure of the future. Europe has lagged behind North America and Asia in building fibre networks, but operator investment programmes mean that by 2012 at least 40% of homes in the UK, France, Germany and Spain will be passed by fibre networks. Meanwhile, the first 'super-fast' mobile networks have arrived, with 4G networks launching commercially in Sweden and the US.

The telecoms chapter looks at the fixed and mobile voice markets and those for fixed broadband and mobile data services among our 17 comparator countries. As such, the analysis excludes narrowband internet and corporate data services.

The chapter is split into three parts:

- **Key market developments** – this section provides an overall context and highlights key developments in international telecoms markets in 2009 and 2010, including changing revenues, investment in superfast networks and the growth of Voice over IP (VoIP).

- **The telecoms industry** – provides a 'top-down' approach by looking at the telecoms sector from the point of view of operators, and compares and contrasts trends in revenues and market structures across our comparator countries before looking specifically at voice and data markets.

- **The telecoms user** – provides a 'bottom-up' approach from the point of view of consumers, and looks at the overall take-up of communications services before focusing specifically on consumers' experience of fixed-line voice, mobile and broadband use.

In this first section we examine four of the key developments which are transforming the global telecoms market:

- First, we provide an overview of the changing revenue mix in the telecoms sector, focusing on the long-term shift from fixed-line to mobile and from voice to data, and looking in particular at how revenues were affected by structural and cyclical changes in the market in 2009. We compare and contrast the fortunes of telecoms sectors in our comparator countries to that of the UK, which saw an overall decline in revenues for the first time in 2009.

[97] IDC estimate that there were more than 450 million mobile internet users worldwide in 2009, http://smartphone.biz-news.com/news/2009/12/10/0003

- We then focus on super-fast broadband. The UK currently lags behind most other countries in the take-up of fibre services. We examine why different countries are at different levels of development and look ahead to explore how announced investment plans are intended to transform the telecoms infrastructure in the next five years.

- Having looked at fibre-based fixed-line networks, we then look at recent developments in the roll-out of high-speed mobile networks, including the launch of '4G' services in Sweden and the US.

- We conclude this introductory section to the Telecoms chapter by looking at the impact of VoIP. Take-up has so far been comparatively low in the UK, at least for residential consumers, but in some countries (in particular France, Japan and Sweden), it has been rapidly gaining share of voice traffic and is central to broadband propositions offered by the major ISPs.

6.1.2 Revenues flat in 2009

BRIC countries offset falling revenues in our other comparator countries

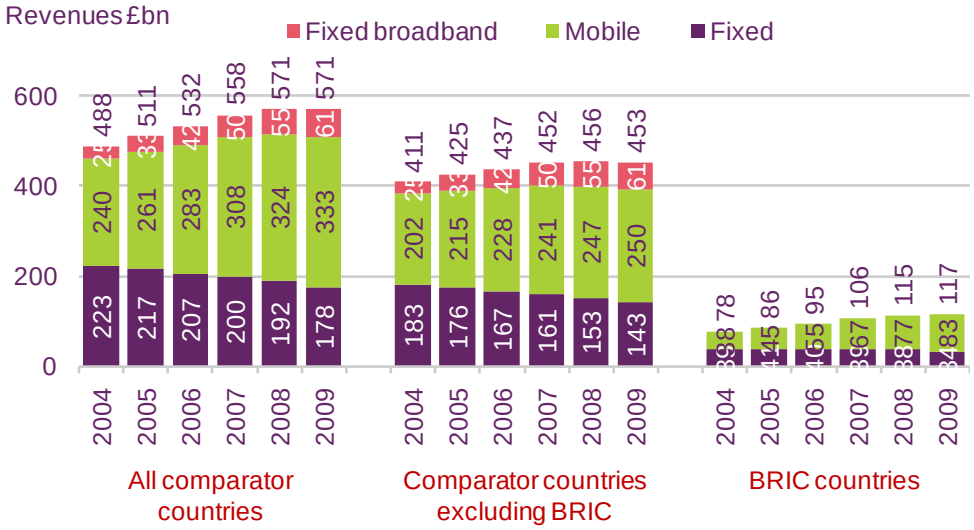
The total telecoms revenues generated in our 17 comparator countries increased by just £0.1bn to £557bn in 2009, as the rate of decline in fixed-line revenues increased and growth in revenues from mobile and fixed broadband services slowed (Figure 6.2). Falling telecoms revenues in our non-BRIC comparator countries were offset by continuing growth in the BRIC countries, where revenues increased by 2.2% to £117bn in 2009, and even in the BRIC countries this represented a significant slowdown, from growth of 8.0% in 2008[98]. Excluding the BRIC countries, total telecoms revenues declined for the first time in 2009, by 0.5% to £453bn.

In aggregate, among all 17 countries the rate of growth of revenues from mobile services fell from 5.0% in 2008 to 2.7% in 2009 and those from fixed broadband services from 11.2% to 9.5%, while the decline in revenues from fixed voice services increased from 4.4% to 7.3%. However, because of take-up of bundled services, broadband revenues in some countries may include an element of VoIP and IPTV revenues.

It is likely that there were two drivers behind this decline in revenues: structural changes within markets and the economic climate.

[98] This analysis excludes revenue from fixed broadband services in the BRIC countries as data were not available

Figure 6.2 Telecoms revenues by service, 2004 to 2009



Source: IDATE / industry data / Ofcom
Note: Excludes fixed-line broadband revenues for the BRIC countries as data were not available

Mobile revenue growth no longer offsets decline in fixed-line revenues

The most prominent structural change affecting telecoms revenues is ongoing fixed to mobile substitution. As the average cost of mobile services falls, consumers' use of mobile services increases, and a growing number of consumers cease to have a fixed-line phone at home. Figure 6.3 indicates that in aggregate the number of fixed-line voice connections and fixed-line voice volumes fell in 2009 in our comparator countries.

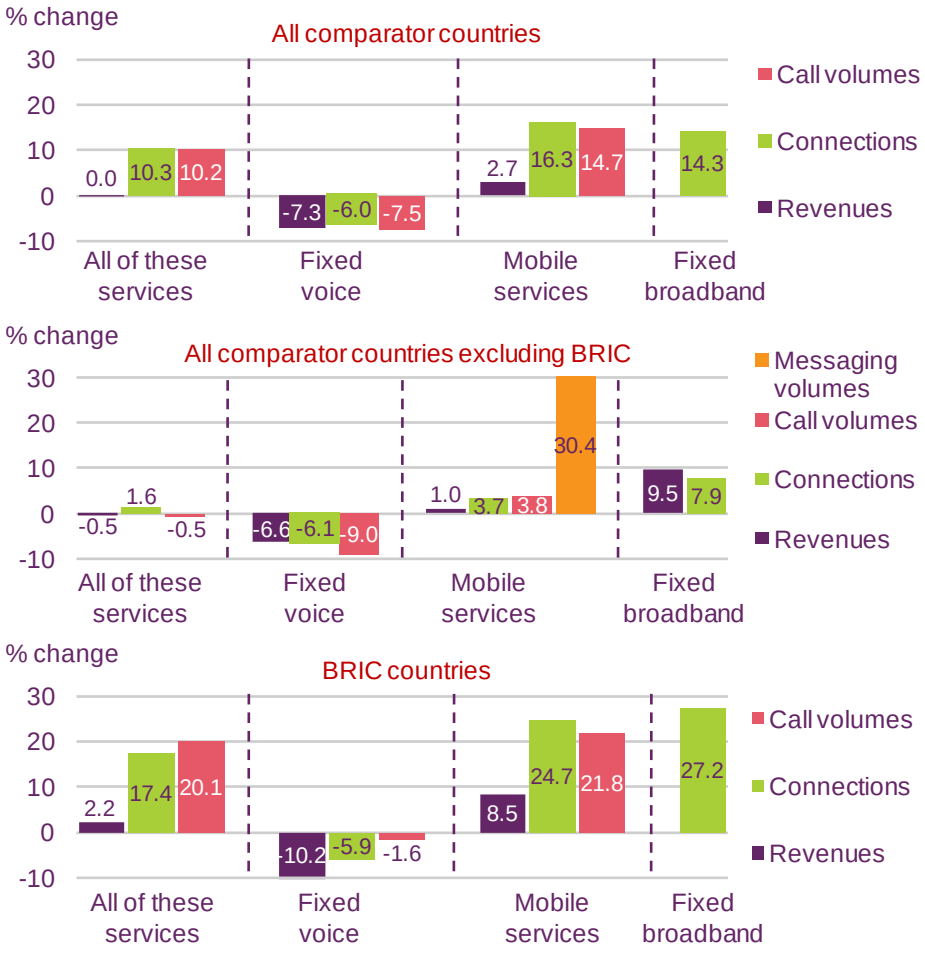
A second structural change is that mobile and fixed broadband take-up is slowing, particularly in the non-BRIC countries. Previously, strong growth in mobile and fixed broadband services had been more than sufficient to offset falling fixed voice revenues, but as take-up of mobile and fixed broadband services increases, growth in the number of connections (and revenues) slows. This is particularly the case outside the BRIC countries, where mobile connections and voice volumes increased by less than 4% in 2009 as markets approached saturation.

A third factor, evident in Figure 6.3, is that increases in revenues from mobile are not keeping pace with increases in take-up and use. Across all 17 countries, mobile connections increased by 16.3% and call volumes increased by 14.7% in 2009, but revenues increased by just 2.7%. Overall, mobile accounted for 58% of total telecoms revenues in the 17 countries in 2009 (up from 49% in 2004), but it is not driving growth to the same extent as previously, with total mobile revenues having increased by an average annual growth rate of 8% between 2004 and 2008. This is likely to be due to markets becoming saturated, and operators focusing increasingly on retention rather than acquisition; for example, in the UK 24-month mobile contracts now account for the majority of new pay-monthly contracts, while SIM-only contracts, offering a relatively large number of inclusive minutes within the monthly fee, are becoming increasingly popular[99].

[99] In Q2 2010, 63% of new mobile contracts in the UK were for 24 months, compared just 3% in Q2 2008; around one in five new mobile contracts in the UK in 2009 were SIM-only, *UK Communications Market* 2010 pp302-304, http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf

The final factor exerting downward pressure on telecoms revenues was the economic downturn. Continued increasing use of mobile services suggests that the downturn may not have had a large impact on use of telecoms services. However, our consumer research, published in Section 1.1.4 of this report, finds that in the six countries surveyed, between 14% (US) and 24% (Italy) of consumers said that they had reduced their mobile phone expenditure in the 12 months up to October 2010. This indicates that consumers may have been more prepared to shop around for the best deal. Meanwhile, competitive pressures are driving down the prices available to consumers. Our international pricing analysis in Section 2 of this report finds that mobile and broadband pricing fell between July 2009 and July 2010 in all six countries analysed (the UK, France, Germany, Italy, Spain and the US).

Figure 6.3 Change in telecoms connections, use and revenues, 2009



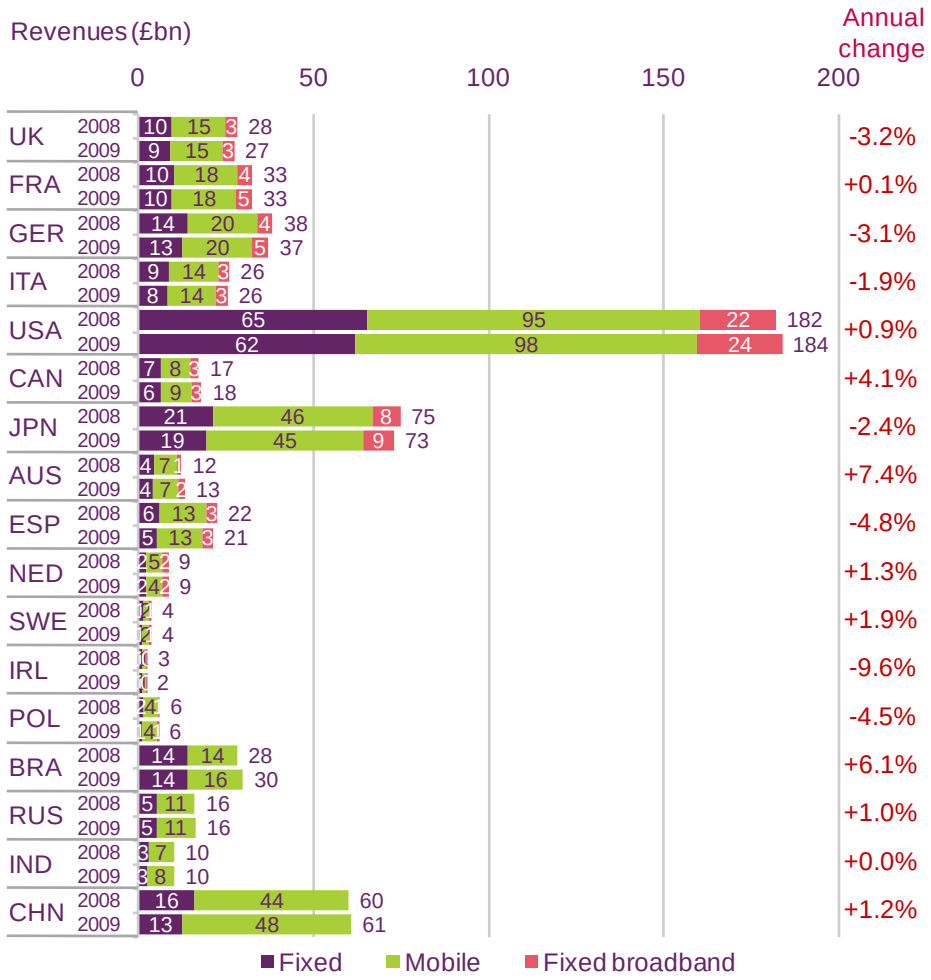
Source: IDATE / industry data / Ofcom
Note: Messaging volumes and fixed broadband revenues not available for BRIC countries

Telecoms revenues declined in seven of our comparator countries in 2009

Analysis of total revenues from fixed voice, mobile and fixed broadband services in 2009 (and from fixed voice and mobile in the BRIC countries, as no broadband figures were available) shows that total telecoms revenues fell in seven of our 17 comparator countries in 2009 (Figure 6.4). The fall in revenues was greatest in Ireland (where both fixed and mobile voice revenues declined as a result of falling connections and use) at 9.6%, while in the UK total telecoms revenues fell by 3.2%, the fourth highest rate of decline among our comparator countries.

While revenues from fixed voice services fell in 2009 in all but one of our comparator countries (Brazil, where it increased by 0.5%), mobile service revenues continued to grow in the majority (9 out of 17) of the countries for which figures were available (by comparison, mobile revenues increased in 15 of the 17 countries in 2008). The UK was unique among our comparator countries as it was the only nation in which fixed broadband revenues fell in 2009. This was the result of increasing take-up of lower-cost LLU-based DSL services from alternative network operators such as Sky, TalkTalk and O2, particularly those purchased in a 'double-play' (voice and broadband) or 'triple-play' (voice, broadband and pay-TV) service, and meant that the UK was the only country in which revenues fell for all of the three services for which we had data.

Figure 6.4 Telecoms revenues, by service and country, 2008 and 2009



Source: IDATE / industry data / Ofcom
Note: Figures for the BRIC countries exclude fixed broadband revenues

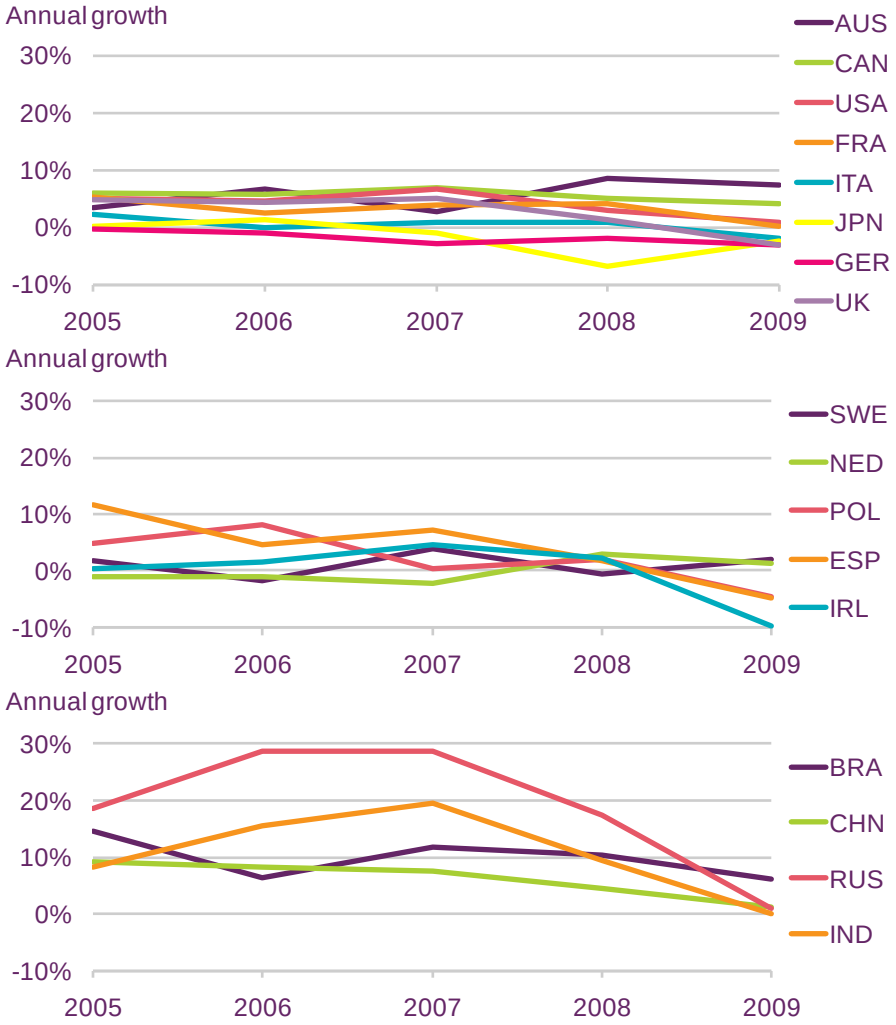
BRIC countries have seen the most marked decline in revenue growth

Although the BRIC countries are at different stages of market development to the other countries included in this report, it is notable that they shared the same decline in revenue growth in 2009 (it should be noted that figures for these countries exclude fixed broadband revenues, and growth is therefore likely to be understated) (Figure 6.5). Total fixed voice and mobile revenues were unchanged in India in 2009, when just two years previously in 2007 they had increased by around 20%. Similarly, in the two years to 2009 telecoms revenue growth in Russia fell from 29% to 1%, while in China the decline was from 7% to 1%. Brazil

was the BRIC country with the highest telecoms revenue growth in 2009, at 6%, although this was only around half the 12% level of growth in 2007.

On average, across the BRIC countries telecoms revenue growth fell by almost ten percentage points between 2007 and 2009, more than twice the average 3.9% figure across our non-BRIC comparator countries.

Figure 6.5 Growth in total telecoms revenues, 2005 to 2009



Source: IDATE / industry data / Ofcom
Note: Figures for the BRIC countries exclude fixed broadband revenues

6.1.3 Looking to a super-fast future

Investment in next-generation access networks gathers pace

In all of the European countries covered in this report, the majority of broadband connections were delivered via DSL at the end of 2009, i.e. via the copper wiring initially laid for voice connections, which runs from the local telephone exchange to the consumer's premises. While upgrades in recent years have increased the speeds available via ADSL, the limit of the technology means that speeds of higher than 20Mbit/s can rarely be delivered, and speeds much lower than this are typical, as speed degrades as the length of the line increases.

There is emerging consensus among industry players and policy-makers that these DSL networks will not be sufficient for the 'internet of the future', in which high-bandwidth services such as high-definition video will become commonplace, multiple connected devices will share a household's broadband connection, and upload speeds will become increasingly important for video communications, file sharing and storage on the 'cloud'. In this context, Ofcom identified implementing regulation to support effective competition and efficient investment in super-fast broadband as one of the nine priorities in its Annual Plan for 2010/11[100].

In order to provide this 'next-generation' performance, it is necessary to bring optical-fibre connections, which are capable of transporting data at high speeds without degradation, closer to the end-consumer. These 'next-generation' connections can broadly be categorised as follows:

- fibre-to-the-home (FTTH) or fibre-to-the-building (FTTB), where a fibre connection is in place all the way from the exchange to the end user's premises with existing in-building copper wiring often used for the final part of the delivery;

- fibre-to-the-cabinet (FTTC), where a fibre connection is laid from the exchange to a street cabinet. The final part of the delivery (typically less than 500m) is over the existing copper wire connections (known as sub-loops); and

- hybrid fibre/co-axial cable networks, via a DOCSIS 3.0 upgrade to an existing cable TV (CATV) system. Sometimes, analogue cable services are upgraded by deploying optical fibre up to the location of the last amplifier before the subscriber (known as fibre-to-the-last-amplifier, or FTTLA).

Figure 6.6 below summarises recent NGA announcements and developments among our key comparator countries.

[100] http://www.ofcom.org.uk/files/2010/06/annplan1011.pdf

Figure 6.6 Major NGA developments among key comparator countries since 2008

Country	Major NGA developments
UK	**January 2010:** BT launches 40Mbit/s FTTC service, with roll-out of fibre services to 40% of households by end of 2012 (three quarters of which are expected to be FTTC, with a quarter FTTH) **May 2010**: BT announces plans to expand fibre footprint to two thirds of households by 2015 **October 2010:** Government announces funding for rural NGA trials in Scottish Highlands, North Yorkshire, Herefordshire and Cumbria **October 2010**: Virgin Media announces planned upgrade of cable network (covering 48% of UK households) to offer 100Mbit/s **November 2010**: Ofcom publishes Wholesale Broadband Access Review detailing requirements for BT of offer wholesale access to its NGA networks and provide access to its ducts and poles
FRA	**February 2010:** President announces of task-force devoted to ultra-fast broadband deployment, with targets of 75% population coverage by 2012 and 100% by 2025. **February 2010**: Orange announces €2bn fibre investment in five years to 2015 **April 2010:** Launch of Digital Society fund with €2bn funding for ultra-fast broadband roll-out **August 2010**: Launch of national programme for ultra-fast broadband
GER	**March 2010**: Deutsche Telekom announces €10bn investment in the next three years in fibre optics, new mobile communications technologies and IT processes
ITA	**May 2010**: Italy's largest three alt-net operators, FastWeb, Wind and Vodafone, announced a joint FTTB/H project, Fibre for Italy. Involves deployment of an open access network to 10m inhabitants in 15 cities by 2015, followed by extension to all cities with over 20,000 inhabitants (representing 50% of the population). **November 2010**: Government announces an agreement to create a new body to be responsible for building a basic fibre-optic next-generation network, funded by a combination of public and private investment. It will have an executive committee chaired by the Industry Ministry and will include one representative from each of the seven telecoms operators
USA	**February 2010:** Google announces "experimental" plan to deploy 1Gbit/s broadband, initially to at least 50,000 homes **March 2010:** National broadband plan includes a target of providing 100 million homes (over 80% of households) with access to 50Mbit/s broadband by 2015 and 100Mbit/s by 2020
JPN	**September 2008**: KDDI launches service offering up to 1Gbit/s upload and download speeds
AUS	**July 2010**: Launch of first FTTH services delivered by the National Broadband Network(NBN), in parts of Tasmania. The NBN is a government-funded enterprise, investing up to AUS$43bn to provide fibre connectivity to 90% of population by 2018. The NBN will build the core and access fibre network, which it will then lease to other operators to offer retail NGA-based services
European Commission	**August 2010:** Digital Agenda sets targets of basic broadband coverage for all EU citizens by 2013 and 30MB/s by 2020, with at least half European households subscribing 100Mbit/s. **September 2010:** Publication of three complementary measures to the Digital Agenda: • Recommendation on Regulated Access to Next Generation Access (NGA) networks, setting out a common regulatory approach for access to new high-speed fibre networks • Proposal for a Decision by the European Parliament and Council to establish a 5 year policy programme to promote efficient radio spectrum management, and ensure spectrum is made available by 2013 for wireless broadband (especially for rural areas) • Broadband Communication setting out a framework for meeting the Digital Agenda's broadband targets

Source: Ofcom

Development patterns vary between countries

However, while there is an emerging consensus among operators and policy-makers about the importance of super-fast broadband in the future, there is much variation in patterns of national deployment. The reasons for differing patterns of development are complex, and rooted in individual national contexts, but the following variables all influence decisions to invest in next-generation access networks:

- **The existing telecoms network infrastructure**
    - The length of loops and sub-loops in copper-based telecoms networks determine both the feasibility and the cost of delivering FTTC or FTTH/B. For example, the relatively short typical lengths of sub-loops in Germany have

enabled Deutsche Telekom to make FTTC services available to more than a quarter of households, and the large cabinet size used in the deployment of FTTC in Germany reduces civil engineering costs. By contrast, the longer sub-loops in much of France make FTTC unfeasible. In the UK BT has identified FTTC as the most economic means of providing fibre services to most households.

- The cost of upgrading cable networks to offer high-speed broadband is often significantly less than the cost of replacing a copper network. Among the countries covered by this report, in the UK, the Netherlands, France, Ireland and Australia cable operators were the first to offer widely available super-fast broadband services.

- **Population distribution and topography**

  - The distribution of population is a major determinant of the cost of deploying next-generation networks. Japan was one of the first large countries in the world to have a widely available next-generation network; in part, because 32% of the population live on just 4.5% of the land mass, while high population densities in Sweden and the Netherlands have contributed to their NGA leadership in Europe.

  - Housing patterns are also an important contributory factor to the cost of NGA deployments. Deployments of fibre-to-the-home or building have been slower in the UK (where 85% of people live in single-family homes) and Ireland (95% in single-family homes) than in Italy, Germany, Spain, Japan and the Netherlands, where over 50% of the population live in multiple dwelling units (MDUs) and can therefore share the cost of deployment through FTTB rather than FTTH.

  - Civil engineering costs for laying fibre can be reduced massively if a city's infrastructure allows for installation in existing routes or ducts. This is the case in Paris, which had early deployment of fibre, partly because of the relative simplicity of laying cable through the city's sewer system.

- **Regulatory approaches and government intervention**

  - In the UK, the review of the wholesale local access market (October 2010) sought to promote competition and investment in next-generation access by requiring BT to provide access to both its NGA capability (where deployed) and its duct and pole infrastructure.

  - In the US, a regulatory policy of 'forbearance' has been adopted, which removes the obligation for fibre operators to offer wholesale access or to unbundle fibre loops, thereby incentivising operators to invest in NGA with the promise of monopoly returns. This has promoted widespread investment in FTTH in the US, predominantly by Verizon (which accounts for 66% of US FTTH subscribers). This policy is more suited to markets with competition between end-to-end infrastructure owners, as is the case in the US, where local duopolies typically exist between cable and telco operators.

  - In Australia, the government has looked on the construction of a nationwide fibre network as a civil infrastructure project and has established a government business enterprise, the National Broadband Network (NBN), to design, build and operate an open access FTTB/H network, with around

£16bn of government funding. The network will be leased to other providers to offer retail NGA-based services. Work began in 2010 and the network is planned to cover 90% of the Australian population by 2018.

- In Japan, the national strategy for the provision of high-speed broadband involves nationwide NGA roll-out based on infrastructure-based competition. Policy-makers initially pursued a light-touch approach to wholesale access pricing regulation, to stimulate the roll-out of fibre networks, but now that NGA roll-out has reached the majority of the population, they have taken a more interventionist stance, which has resulted in reduced wholesale access prices.

- In many countries, public funding has contributed to the roll-out of NGA networks. Local government-funded 'munifibre' schemes have contributed to the widespread roll-out of NGA in Sweden (where a particular feature is the involvement of property owners and landlords in upgrading the in-building infrastructure in return for small increases in tenants' rent), while local deployments in the US and France are also often part-publicly funded.

- Governments and regulators also have a role to play in facilitating the civil engineering associated with NGA roll-out. In Japan, permitting overhead cabling has significantly reduced costs, while in many countries, including the UK and France, regulatory and government policy has promoted obligations for shared duct access, so that multiple providers can share the same channelling. In autumn 2009, the French regulator ARCEP introduced measures to encourage multi-fibre network roll-outs within multiple-dwelling units by requiring the entity responsible for first installing the lines under contract with the property owner to install additional dedicated fibres on behalf of other operators on reasonable request, with installation costs shared with the requesting operators.

- An overview of the regulatory context of next-generation access networks is provided in Section 1.3.

- **The competitive context**

  - The early investment by incumbent NTT in Japan in a FTTH/B network was partly motivated by a perceived imperative to win back broadband share from new entrants. A similar strategy can be seen in the investment in the US by local incumbent telecoms operators AT&T and Verizon in response to cable companies winning broadband share. In contrast, Italy's Fastweb and Sweden's B2 are alt-net providers which were early exponents of FTTH/B roll-out in Europe, taking advantages of the opportunity to gain access to the passive infrastructure of incumbent operators Telecom Italia and TeliaSonera (which have since launched major fibre deployments of their own).

- **Consumer demand**

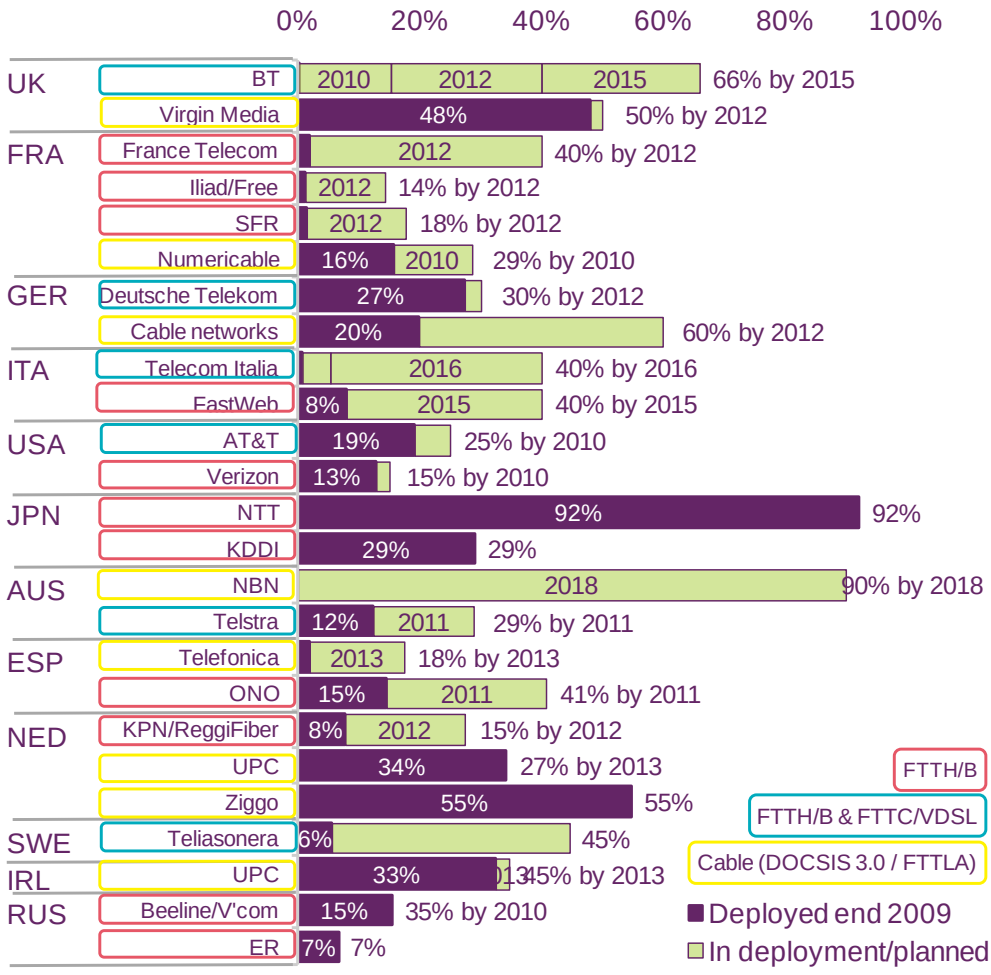
  - In the last couple of years there has been an increasing emphasis on the quality of broadband performance, largely related to increasing use of high-bandwidth services including video services, file-sharing and gaming.

  - However, the most obvious current commercial proposition for super-fast broadband is IPTV, where ADSL networks are typically not able to support the speed needed for the delivery of multiple simultaneous channels into a

household, and for high-definition TV. Triple-play offers, incorporating IPTV, have been central to the FTTH propositions offered by operators like Verizon in the US, FastWeb in Italy and Free in France. By contrast, there may not have been the same incentive for early investment in NGA in the UK. Here, there appears to be less scope for growth in IPTV, possibly because of early take-up of multichannel digital television (more than 53% of homes had digital TV by the end of 2004), and a mature pay-TV market, in which cable and satellite operators have built on existing installed TV customer bases to compete in the triple-play market.

All of these factors have contributed to different patterns of development among our comparator countries (Figure 6.7). It is notable that operators in European countries have been slower to invest in FTTH/B than in the US or (particularly) Japan. However, in all the European countries, significant investment in fibre deployment is planned for the next five years.

Figure 6.7 NGA deployments and planned deployments



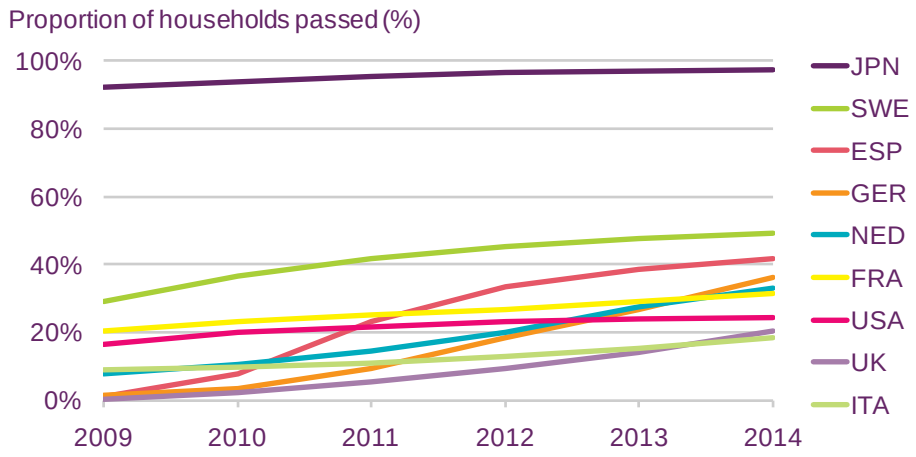
Source: Ofcom, based on operator announcements and third-party data including Cullen International and IDATE

Notes: Includes announcements from the largest operators only; estimates have been used where there is lack of clarity on timelines; deployments are typically gradual and incremental – the year given marks the end of a planned deployment phase

Japan leads the way among our comparator countries in fibre availability

Figure 6.8 provides estimated forecasts from industry analysts IDATE on the availability of fibre-to-the-home or building (excluding cable). It indicates very different deployment curves among the European nations, but a degree of convergence. In the UK and Germany, the viability of VDSL-based FTTC services means that incumbents BT and Deutsche Telekom have focused on these. By contrast, due to a combination of long sub-loops and relatively easy laying of fibre in the sewer systems of Paris, France had early deployment of FTTH/B, which is slowing as deployment costs increase.

Figure 6.8 Actual and forecast availability of FTTH/B (excludes cable)



Source: IDATE, World FTTx markets, October 2010

Different approaches to extending super-fast broadband to all

In general, operators invest in laying fibre networks first to areas where the cost per household is relatively low. So as fibre deployments extend more widely, the incremental cost of adding households generally increases. In all countries, therefore, there is a point where fibre deployment is unlikely to be delivered by market-led investment alone. The UK government's *Digital Britain* report, published in 2009, estimated that the economics of next-generation broadband deployment, in the absence of public funding, would leave around a third of the population unserved by next-generation broadband networks. It estimated the public funds required to deliver a minimum of 40Mbit/s broadband to 90% of the population by 2015 at £2-3bn. However, there are high levels of uncertainty about how far market-led investment will go and the levels of public funding that would be required to extend superfast networks further. In November 2010 BT's chief executive Ian Livingstone claimed that the company would be able to provide fibre broadband to 90% of UK homes by 2017 if it was given the £830m which the UK government has said can be taken from the BBC licence fee over the next seven years for broadband infrastructure projects.[101]

Figure 6.9 provides an overview of key government announcements and publicly-funded initiatives to extend super-fast broadband networks. It indicates a range of different approaches:

- Some governments are taking the lead in providing funding for investment in open access networks, whereby a publicly-funded enterprise builds the network with service providers paying for wholesale access and competing for retail customers. In Australia the government has set up the National Broadband Network (NBN)

[101] http://www.broadbandchoice.co.uk/news/bt-chief-targets-90-fibre-broadband-coverage-800232261/

company to provide fibre access to 90% of households by 2018, and plans to gradually withdraw from the NBN company and privatise it fully when the network has been running for five years.

- By contrast, the US National Broadband Plan approach is more devolved, with funding available from a number of national organisations which are charged with allocating subsidies and loans to local infrastructure development projects. Meanwhile, in order to drive economic development, hundreds of municipalities all around the country have already invested in fibre networks (often in partnership with a private infrastructure company).

- In Europe, government approaches vary. France has ambitious plans for NGA access for all by 2025, and in 2010 set aside €2bn for broadband investment in sparsely-populated areas. Italy and Spain have not announced any central plans or funding for NGA projects. In Sweden, local authorities have been heavily involved in building FTTH/B networks, built on open access models, in which property owners and housing authorities have extended fibre-to the-kerb services to FTTH, deploying the in-building infrastructure in return for higher rent from tenants.

- However, all countries in the European Union are required to conform to European Commission guidelines on state aid, which are designed to minimise the distortion of competition by public funding. Guidelines issued in September 2009 permit public funding in areas where there is no NGA network, no plan by private investors to roll out such an infrastructure within three years, no other traditional broadband infrastructure, or where rolling out an NGA network would be unprofitable (there are other circumstances where state aid is also permitted).

Figure 6.9 Public funding of NGA broadband among key comparator countries

Country	Major government announcements and commitments
UK	The Government's National Infrastructure Plan 2010 reaffirmed commitment to spend £530m of public funds on providing the UK with "the best superfast broadband in Europe by 2015". Four pilot projects in North Yorkshire, Cumbria, Herefordshire and the Highlands and Islands of Scotland will be launched to test and develop methods for delivering fibre networks to rural areas. A National Broadband Strategy is scheduled for publication in December 2010.
FRA	In June 2010 the government published a plan to allocate €2bn for operators or public authorities to invest in broadband to sparsely populated areas , including those deploying fibre networks. The France national broadband plan has a target of 70% of the population with access to 100Mbit/s services by 2020, and 100% of the population by 2025.
GER	The government broadband strategy has targets of 50Mbit/s broadband available to 75% of the population by 2015 and 100% of the population "as soon as possible". State aid schemes are available for the funding of broadband in rural areas from national, regional and local budgets.
SWE	The government's broadband strategy (November 2009) set targets of 40% population coverage of 100Mbit/s broadband by 2015 and 90% by 2020. Public funding will be available for extension of broadband networks to underserved areas, while local and regional authorities are also encouraged to invest in passive infrastructure (ducts and dark fibre)
NED	The CityNet FTTH network in Amsterdam is one of the larges troll-outs initiated by a local authority, with investment of €300m in an open access network aimed at covering 420,00 households and businesses by 2012. An ultra-fast broadband task force with representatives from local and national governments, industry and academics is preparing policy suggestions. Initial suggested targets were 100% population coverage at 20Mbit/s by 2015 an d 100% coverage of 75Mbit/s by 2020.
USA	The Broadband Stimulus programme (part of the National Broadband Plan) announced in 2009 has set a target of 100million households (85%) with 50Mbit/s by 2015, and 100Mbit/s by 2020. Many local authorities have also invested in deploying open access fibre networks. As of mid-2010 more than 600 FTTH rollouts have been performed by municipalities, according to Broadband Properties magazine.
JPN	In 2006 the government announced 'next generation broadband Strategy 2012' aiming to make superfast broadband available to 90% of the population. This was achieved by the end of 2010, and the government is now targeting the availability of fibre broadband to 100% of the population by 2015.
AUS	The Government is investing around £16bn in the National Broadband Network which is targeted to provide fibre connectivity to 90% of population by 2018.
European Commission	The Commission's Digital Agenda (endorsed in 2010) has set a target of fast (<30Mbit/s) broadband availability for all Europeans and 'ultra-fast' (>100Mbit/s) for all by 2020. In September 2009 it provided guidelines on state aid (i.e. public funding) for both conventional and superfast broadband, with different rules relating to three scenarios (areas that lack connectivity; areas where only one network infrastructure is available; areas where at least two competing infrastructures are available)

Source: Ofcom, based on operator announcements and third-party data including Cullen International and IDATE

But take-up still very low in most countries

In each of the 'big five' European countries (the UK, France, Italy, Germany and Spain), less than one in fifty households had a super-fast broadband connection at the end of 2009 (Figure 6.10), whereas take-up has been much higher in Japan, the US and Sweden.

Three factors seem to drive the take-up of super-fast services as an alternative to basic services.

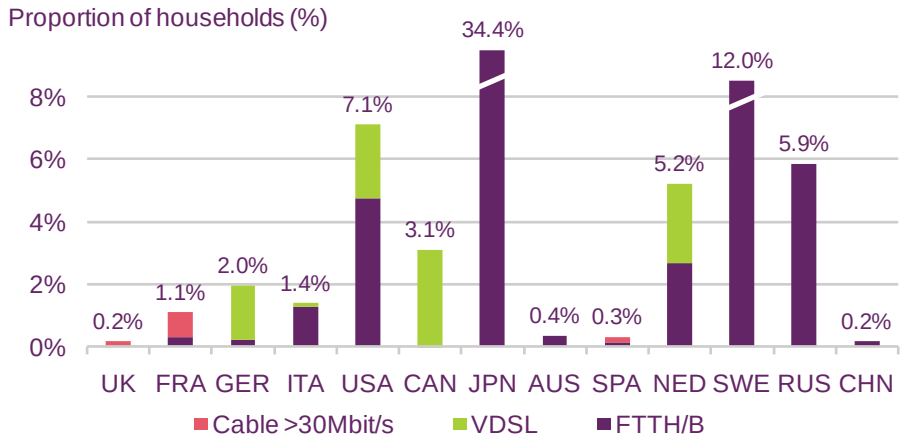
- The relative cost of super-fast services compared to basic services is likely to be a key driver. In the UK, Virgin Media's top-tier 'up to' 50Mbit/s cable service (£25 per month in November 2010) is double the price of its basic 'up to' 10Mbit/s service

(£12.50 per month excluding line rental), and only around 2% of its subscriber base took the 50Mbit/s service by the end of September 2010[102]. In contrast, in Japan the incumbent NTT retails its 100Mbit/s service at a less than 10% premium to its basic ADSL service, and the number of FTTB/H subscribers in Japan has exceeded the number of DSL subscribers since September 2008.

- The relative difference in performance between 'super-fast' and alternative broadband packages is also likely to be a factor driving take-up. Around 16% of Virgin Media's UK cable subscribers take the 'up to' 20Mbit/s service, which they may feel is sufficient for their needs, while the 'up to' 10Mbit/s service, with typical speeds of around 9Mbit/s, is sufficient for most applications, including high-definition video services. In contrast, in countries where ADSL is the main alternative and speeds vary significantly with line length, for many consumers super-fast services may represent the only way of achieving acceptable performance for high-bandwidth services.

- Thirdly, in some countries fibre has had the highest take-up when it is associated with the delivery of triple-play services, incorporating premium TV services. At the end of 2009, Verizon had achieved take-up of 22% among the 15.4 million households it passes with its FTTB/H service, and of these, 83% took its IPTV service. Similarly, in France, the majority of fibre subscribers buy it within a triple-play package including IPTV. However, in Japan, Sweden and the Netherlands, IPTV penetration remains low, despite high take-up of FTTB/H services.

Figure 6.10 Household take-up of super-fast broadband, end 2009



Source: Ofcom, based on operator announcements and third-party data including Cullen International and IDATE

6.1.4 The emergence of super-fast mobile networks

Sweden has the world's first mobile network using the LTE standard

A key trend in the last couple of years has been the increasing use of data services accessed via mobile networks, either on internet-enabled phones (see Section 5.1.2), or on a PC via a mobile broadband 'dongle' or datacard (see Figure 5.15 5.2.2). A key enabler of this has been the migration from 2G networks (offering theoretical speeds of up to 115kbit/s via GPRS – which is sometimes referred to as 2.5G), to 3G networks (offering theoretical

[102] http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9Njc2NTd8Q2hpbGRJRD0tMXxUeXBlPTM=&t=1

speeds from ‘up to’ 512kbit/s to ‘up to’ 7.2Mbit/s on HSPA-enabled (3.5G) to ‘up to’ 42Mbit/son HSPA+ (‘3.75G’ networks).

By 2009, HSPA network coverage was available to at least 85% of the population in most of our comparator countries (93% in the UK) (see Figure 6.51 in the Telecoms User section below). In addition, operators in many countries have begun roll-out of higher-speed HSPA+ networks. Figure 6.11 details the highest theoretical speeds commercially available in 13 countries in October 2010. It should be treated with some caution, as in all countries there is a large gap between theoretical speeds and the actual speeds being delivered. For example, research by measurement company Epitiro in the UK in June 2009 found that average download speeds for services offering theoretical speeds of ‘up to’ 3.6Mbit/s or 7.2Mbit/s were around 1Mbit/s[103]. In addition, the availability of the network varies considerably; while over 90% of the UK and France populations have access to a HSPA network offering theoretical speeds of 7.2Mbit/s, the availability of HSPA+ and LTE networks in other countries is much lower.

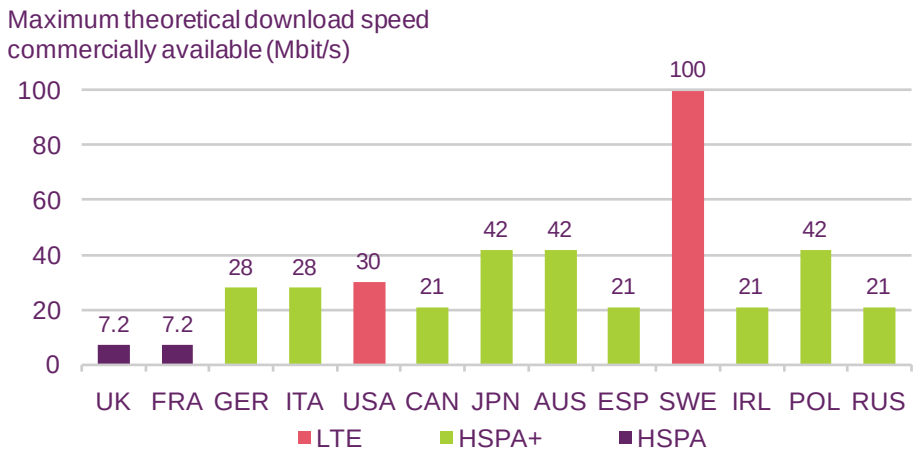
In December 2009, ‘super-fast’ mobile broadband became a reality as Swedish operator TeliaSonera launched the world’s first mobile network using the LTE standard (often branded as ‘4G’) in parts of Sweden and Norway, offering theoretical download speeds of ‘up to’ 100Mbit/s but actual speeds of 20-80Mbit/s[104]. In September 2010, US regional operator MetroPCS offered the first commercially-available LTE mobile handset (the Samsung Craft), and also launched an LTE network, initially available in Las Vegas, extended to Dallas/Fort Worth in the following month, with further roll-outs planned throughout late 2010 and early 2011.

With the exceptions of the UK and France, all of the highest-speed services, in every country, launched in 2009 or 2010. This indicates the pace of change, and the fact that a ‘critical mass’ has been reached, from a supplier perspective, in terms of network infrastructure and consumer hardware. Nevertheless, the evolution of mobile networks is happening at a different pace in different countries; relatively late upgrades in the UK and France may indicate limited spectrum availability or uncertainly about future spectrum availability, while the early launch of high-speed LTE services in Sweden followed a 2.6GHz spectrum auction, and also comes in the context of high mobile broadband take-up.

Figure 6.11 also shows that while the technology (LTE, HSPA, HSPA+) is a determinant of the theoretical speeds available, network configuration, backhaul capacity and the spectrum bandwidth used also determine network speeds, while consumer hardware may also be a constraint. Teliasonera’s LTE network in Sweden uses a 20MHz downlink carrier to offer theoretical speeds of 100Mbit/s, while the LTE network deployed by MetroPCS in parts of the US uses 5MHz of spectrum, and has a lower theoretical maximum speed.

[103] http://www.epitiro.com/assets/files/ukmobilebroadband_final.pdf
[104] ComputerWorld’s testing of TeliaSonera’s LTE network found average download speeds of 33Mbit/s against a theoretical maximum of 100Mbit/s, http://www.ispreview.co.uk/story/2010/09/28/average-uk-mobile-broadband-speeds-still-falling-below-1-2mbps.html

Figure 6.11 Maximum theoretical download speeds available via mobile networks, October 2010



Source: Ofcom, Global mobile Suppliers Association (GSA), Technology Update, 29 October 2010

Over 50 LTE networks should be in commercial service by the end of 2012

A flurry of launches of 4G network services is expected over the next couple of years as spectrum becomes available. The 800MHz 'digital dividend' band (which will become available in most countries between 2010 and 2013 following the switchover to digital) is viewed as particularly important because of the high level of coverage it can potentially provide. However, there is also much interest across Europe in the 2.6GHz band: many operators seek a combination of lower-frequency (typically sub-1GHz) and high-frequency spectrum, the lower frequencies being good for providing coverage and the higher frequencies important for capacity (further discussion is available in Section 1.3.7 above). In October 2010, the Global mobile Suppliers Association (GSA) stated that 156 operators in 64 countries were investing in LTE, and forecast that at least 55 LTE networks would be in commercial service by the end of 2012[105].

Figure 6.12. shows the LTE deployment plans from the largest operators in a selection of comparator countries. The availability of enabled devices and infrastructure solutions at economically viable prices remains critical to roll-out and take-up of LTE around the world; for example, the Polish regulator UKE delayed its tender of 2.6GHz frequencies for LTE until 2011 after receiving requests from operators to delay, since they believed that LTE was not ready to be launched commercially. Different national contexts will also determine the timing and pattern of deployment. The following factors are all important:

- **The availability of spectrum suitable for LTE**. Early digital switchover in Germany, together with a decision to make available spectrum across four bands on a technology-neutral ('liberalised') basis facilitated the acquisition of suitable spectrum by all four mobile operators, with commercial deployment in 2011/12.

- **Levels of mobile data usage**. LTE not only increases speeds, but also increases capacity, massively reducing the cost per GB of serving mobile data. There is therefore more incentive for early roll-out of LTE network in countries with high mobile data use, such as Japan.

- **Policy in licensing spectrum for mobile broadband**. Wireless broadband is often seen as the most viable solution for extending broadband provision to areas poorly

[105] GSA, GSM/3G Market/Technology update, 29 October 2010

served by fixed broadband networks (typically, rural areas). Governments therefore sometimes link spectrum awards to policy goals of extending broadband coverage. This was the case in Germany, where a condition of spectrum awards was that networks should be built in four stages, starting with rural areas with no current fixed-line broadband infrastructure, and progressing to a fourth deployment stage in towns and cities with more than 50,000 inhabitants. Transition to a subsequent stage cannot take place until 90% of the population in the previous stage have been provided with access. The Swedish regulator has indicated that it wants to impose similar conditions on some of the 'digital dividend' spectrum blocks that it will auction.

Figure 6.12 LTE deployments and plans, October 2010

Country	Major NGA developments
UK	**Everything Everywhere** has stated that it aims to start building an LTE network in 2011 In May 2010, **O2** announced a new trial of LTE in the 800MHz band **Vodafone** is committed to beginning commercial LTE roll-out as part of its pan-European plans
FRA	**Orange** has stated plans to roll out a commercial LTE network by 2012 **SFR** and **Bouygues** are still at the trial stage **Free** (along with Orange and SFR) was awarded a licence in the 2.1GHz band in May 2010 which may signal its intention to invest in LTE
GER	In May 2010, Europe's first major auction of 'digital dividend' spectrum (800Mhz band) (run concurrently with auctions in three higher frequency bands) resulted in spectrum awards to all four MNOs. **Deutsche Telekom**, **Vodafone** and O2 have all outlined deployment plans and launches in 2010/11, and have also confirmed that they are in discussions about infrastructure sharing **E-Plus** did not win 800Mhz spectrum but has stated that it plans to build its network using a combination of its existing spectrum and higher frequencies it acquired in the higher bands
ITA	**Telecom Italia** is trialling LTE and has stated that it expects to begin commercial roll-out by the end of 2012 Vodafone and Wind have stated their intentions to evolve to LTE, but have not set timetables.
SWE	**Teliasonera** launched the world's first LTE network in 2009, and plans to roll-out 4G services to cover 228 cities by the end of 2011. **Tele2** and **Telenor** have formed a joint venture to launch services in five cities by the end of 2010, with roll-out to 100 cities by the end of 2012
USA	**MetroCPS** launched LTE in Las Vegas in September 2010 and is rolling out to 13 other cities by early 2011 **Verizon** is targeting having the largest LTE network in the world, planning to cover 110 million people and 38 cities at launch by the end of 2010 **AT&T** (2011) and **T-Mobile** (TBC) as well as regional operators have announced their intention to launch LTE networks.
JPN	**NTT DoCoMo** and **Emobile** are planning commercial launches in some cities by the end of 2010. **Softbank** is set to launch in 2011 **KDDI** is planning to launch in 2012 with targeted 96.5% population coverage by the end of 2014

Source: Global mobile Suppliers Association (GSA), Evolution to LTE Information paper, 26 October 2010

6.1.5 Take-up of VoIP has increased but varies across comparator nations

The number of VoIP lines globally increased by 46% during 2009

Fixed voice revenues have been in decline in most countries for a number of years (see Figure 6.2 above), predominantly as a result of consumers increasingly using mobile networks. However, another driver of falling fixed-voice revenues is the take-up of Voice over Internet Protocol (VoIP) services, in which voice calls are made over the internet, rather than routed through the public switched telephony network (PSTN). VoIP calls generally cost

less than the equivalent PSTN calls (and PC-to-PC calls are typically free). IDATE estimates that the global number of fixed VoIP lines increased by 46% during 2009[106].

VoIP providers are able to offer comparatively cheap services as calls are routed over the internet; providers do not have to roll out the costly trunk networks required by traditional voice telephony services. VoIP services and VoIP use fall into two broad categories:

- PC-based VoIP calls, where users make calls using a PC (or sometimes a mobile phone) using VoIP software (for example, Skype or Google Voice). These are primarily PC-to-PC calls, or those that would be expensive using standard fixed telephone lines, such as international calls, and they generally offer no revenue to internet service providers.

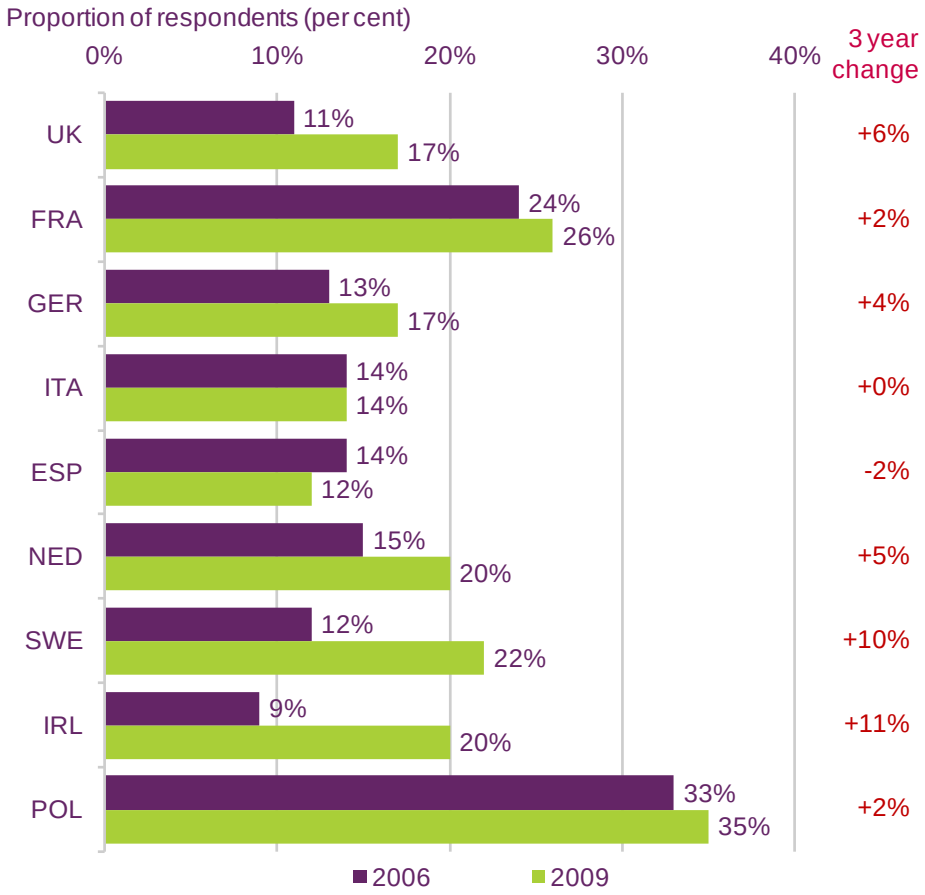
- The use of VoIP as a substitute for a standard (PSTN) telephone line. Callers typically use a VoIP-compatible digital cordless phone connected to an internet router, or a standard home phone connected to VoIP operator-provided hardware (which is then connected to a router). Some ISPs have been able to monetise VoIP calls by providing the hardware and offering managed VoIP calls as the voice element within double-play (voice and broadband) or triple-play (voice, broadband and TV) packages. The user experience is virtually indistinguishable from that of making a call on a traditional fixed network; indeed, many consumers may not even be aware that they are using VoIP.

PC-based VoIP calls are most popular in countries where there is high demand for international calls

Survey data published by the European Commission show that PC-based VoIP calls increased in most countries between 2006 and 2009 (Figure 6.13). People in Poland were the highest users of VoIP in November to December 2009, with 35% of people claiming to use the internet to make voice calls. This may be due to the large Polish diaspora, as VoIP typically offers lower-cost international calls, and generally free calls when they are made PC-to-PC. The lowest household use of VoIP services was in Spain (12%), where reported use was two percentage points lower than the equivalent figure for 2006. In the UK 17% of homes used VoIP in 2009, six percentage points more than had done so in 2006. The largest reported growth in VoIP use in the three years to 2009 was in Ireland, where the proportion of homes using VoIP increased by 11 percentage points to 20%.

[106] IDATE, DigiWorld Yearbook 2010, p80

Figure 6.13 Do you or another member of your household use a PC to make phone calls over the internet?



Source: European Commission E-Communications Household Survey Report, October 2010

Use of VoIP as a substitute for a standard fixed line is highest in France

Excluding users who make only PC-to-PC calls, the number of VoIP subscribers per 100 people was highest in France, at 26, among the comparator countries for which figures were available (Figure 6.14). The high take-up of VoIP in France is to a large extent due to low-cost double- and triple-play services, including VoIP, provided by all the leading broadband operators (including incumbent France Telecom), where a standard telephone handset can be plugged into the DSL, cable or FTTx modem. These managed VoIP services are simple to use; consumers are often unaware that they are using VoIP rather than a standard landline, and the services may include generous inclusive call bundles, such as unlimited free calls to landlines in France.

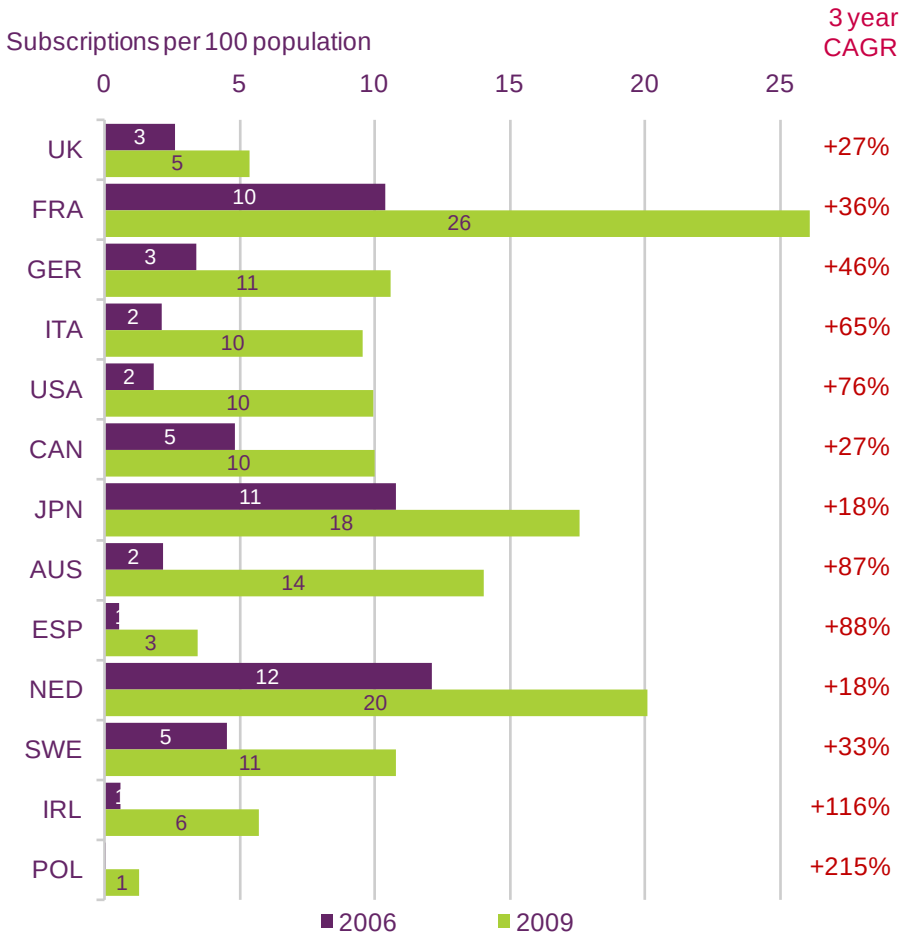
Migrating all fixed-line calls to VoIP removes the need to have a standard voice telephone line. For this reason, VoIP use is particularly high in countries where internet access is offered alone and costs less than an internet connection with a PSTN voice line. These may be 'naked DSL' products (i.e. DSL broadband without a voice line), which is common in France, or cable broadband (such as in the Netherlands, the US and Canada) or fibre-based broadband (such as in Japan).

In the UK, levels of VoIP take-up, excluding consumers making only PC-to-PC calls, were a fifth of those in France, at five subscribers per 100 population (the third-lowest level among the nations for which figures were available). This figure increased by an average of 27% in the three years to 2009. Limited take-up of VoIP in the UK can be linked to the fact that

PSTN voice lines often come with bundled voice calls, including 'unlimited' offers, similar to the managed VoIP offers in other countries. Few of the major ISPs have chosen to offer or promote managed VoIP services.

At the end of 2009, there was just one subscriber per 100 people in Poland. This suggests that while claimed VoIP use in Poland is high (as shown in Figure 6.13) the vast majority of this use is people making free PC-to-PC calls and it is rarely used as an alternative to having a standard fixed line.

Figure 6.14 VoIP subscribers per 100 population, 2006 and 2009

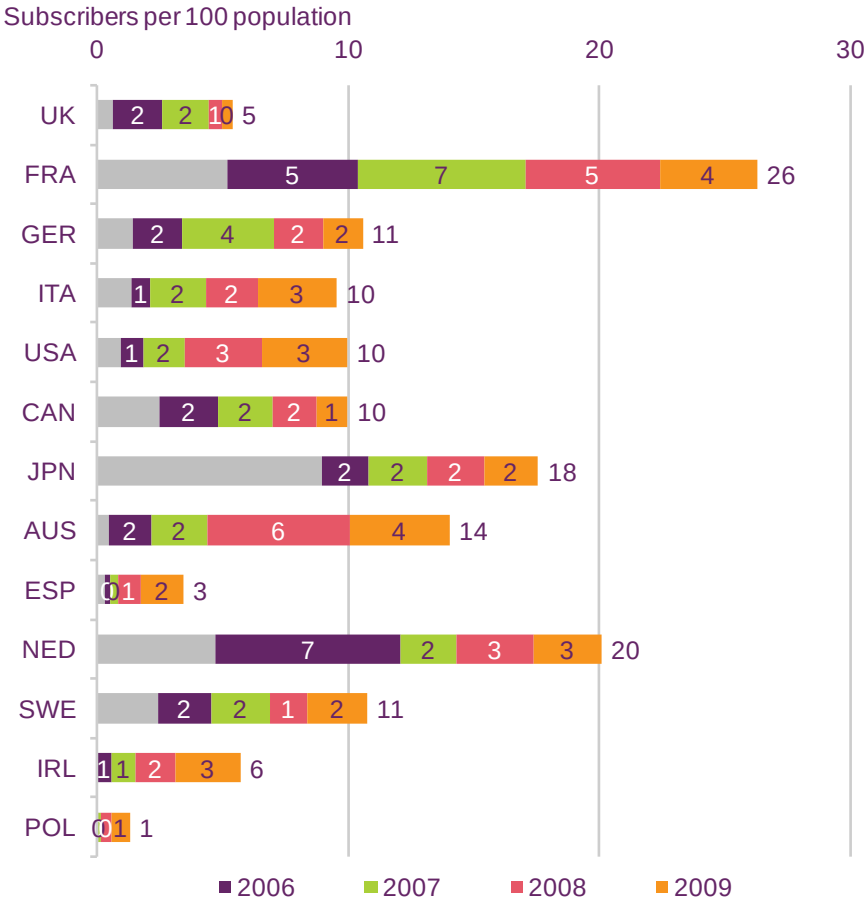


Source: IDATE
Note: Excludes those making only PC-to-PC VoIP calls

Growth in VoIP slowing in UK as it gains pace in some other countries

Analysis of the growth in the number of VoIP subscriptions per 100 people shows very different patterns of development among our comparator countries. While the increase in VoIP subscribers per 100 people was higher in 2009 than 2008 in Italy, the US, Spain, Sweden, Ireland and Poland, it was lower in our other comparator countries, including the UK, possibly as a result of competition in fixed voice and bundled services (Figure 6.15). Across the countries for which figures were available, the average growth in VoIP subscribers per 100 people was 2.5 in 2009, unchanged from 2008. Australia had the highest growth in VoIP users per 100 population in 2009, at 4.0, while in the UK it was much lower than the average, at just 0.4 users per 100 people, equating to around a quarter of a million new VoIP users in the UK in 2009.

Figure 6.15 Growth in VoIP subscribers per 100 population, 2006 to 2009



Source: IDATE
Note: Excludes those making only PC-to-PC VoIP calls

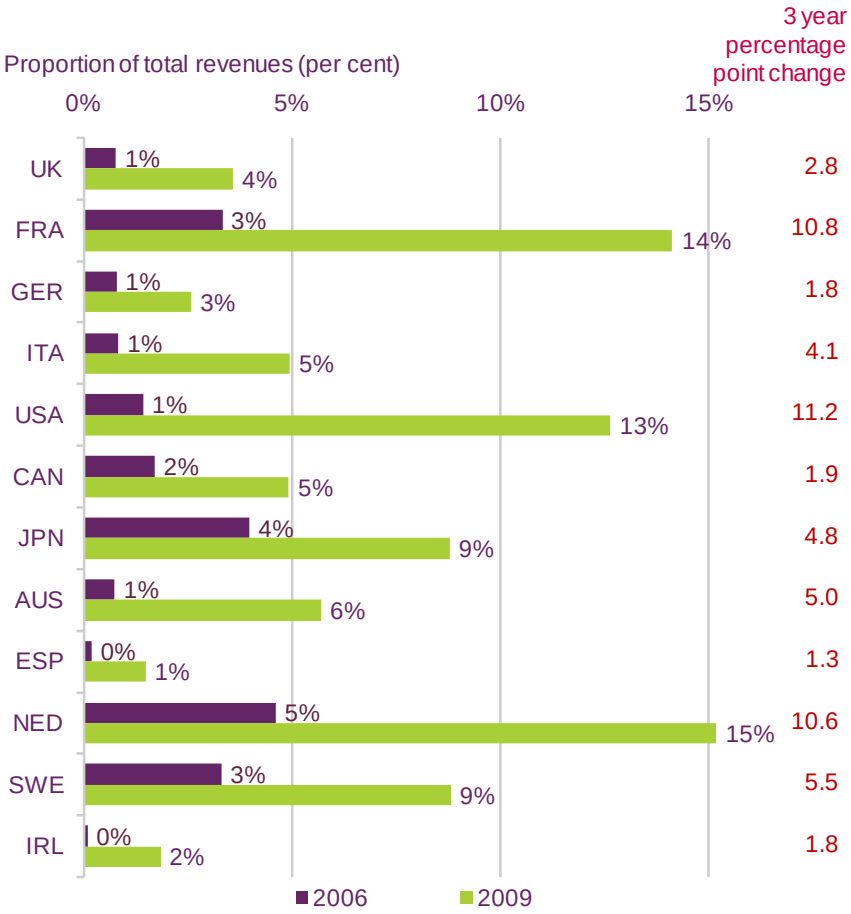
VoIP's share of fixed telephony revenues was highest in the Netherlands in 2009

While France had the highest number of VoIP subscribers making calls to standard fixed and mobile telephones per 100 population (see Figure 6.14), the proportion of fixed telephony revenues generated by VoIP was highest in the Netherlands in 2009 at 15%, one percentage point higher than the 14% figure for France (Figure 6.16). This suggests either that VoIP users in the Netherlands make more VoIP calls on average than those in France (separate VoIP call volume data were not available to confirm this) or that the cost of VoIP calls, compared to those made over a standard fixed line, is higher in the Netherlands than in France.

As noted earlier in this section, VoIP services in France often include unlimited calls to landlines, so this could explain the difference. A further factor could be higher VoIP use by businesses in the Netherlands (the figures include business VoIP use), as businesses typically make larger volumes of more costly calls (peak-time, calls to mobiles and international) than residential users, and thereby push up the average cost of VoIP calls.

In the UK it is estimated that VoIP services contributed 4% of total fixed line revenues in 2009, the fourth lowest proportion among the 12 nations for which figures were available and a one percentage point increase on 2008. Spain had the lowest proportion of fixed voice revenues generated by VoIP in 2009, at just 1%, while the percentage point change in the proportion of fixed revenues from VoIP in the three years to 2009 was highest in the US, at 11.2%.

Figure 6.16 VoIP share of fixed telephony revenues, 2006 and 2009



Source: IDATE
Note: Excludes those making only PC-to-PC VoIP calls

6.2 The telecoms industry

6.2.1 Introduction

In this section we consider the major trends in telecommunications markets in the 17 nations covered in this report, from an industry and operator perspective. In general, we have looked at trends over the five years to 2009 although we provide year-on-year analysis where trends have changed significantly over the period.

In the first part of this section we provide an overview of the industry as a whole, considering recent developments in revenue growth. We then look at each market individually, starting with fixed-voice, followed by mobile voice and data services and concluding with an overview of fixed-broadband services.

Some of the key points highlighted in this section include:

- **Total retail telecoms revenue in the 17 countries in this report was £571bn in 2009, unchanged from 2008**. The proportion of revenues generated by mobile services rose to 58% in 2009, while that from fixed services fell to under a third for the first time (page 280).

- **BRIC countries had the highest growth in telecoms revenues in the five years to 2009**. Total telecoms revenues in Russia grew by an average of 18.5% in the five years to 2009; in contrast, revenue growth in the non-BRIC countries was highest in Australia at 5.7% and in the UK it averaged 2.4% over the period (page 282).

- **Data's share of revenues has more than doubled since 2004**. The average contribution made by data revenues to total telecom revenues increased from 13% in 2004 to 30% in 2009, and in the UK data services generated 28% of telecoms revenues in 2009 (page 283).

- **Mobile accounts for over two-thirds of total telecoms spend in Poland**. Poland had the highest proportion of telecoms revenue from mobile services in 2009, at 68% (in the UK it was 54%), while mobile's share of revenue had the largest increase in Canada, rising by 14 percentage points over the period to 49% in 2009 (page 285)

- **Fixed voice volumes declined in most countries in the five years to 2009**. The steepest falls in fixed call volumes were in the US, Australia and Japan, at an average of 12% per year, and France and Canada were the only countries where there was an increase. In the UK, fixed call volumes fell by an average of 4% a year over the period (page 289).

- **China overtook Japan to become the second-largest mobile market in terms of revenue in 2009 (£48bn)**. Only the US was larger, generating almost £100bn in revenues in 2009, while in the UK the mobile market was worth £15bn in the same year (page 293).

- **27% of UK fixed broadband connections had a headline speed of 10Mbit/s or above at the end of June 2010**. This proportion was in line with Germany and France (both 28%) but was less than half the 57% in the Netherlands, where it was highest (page 311).

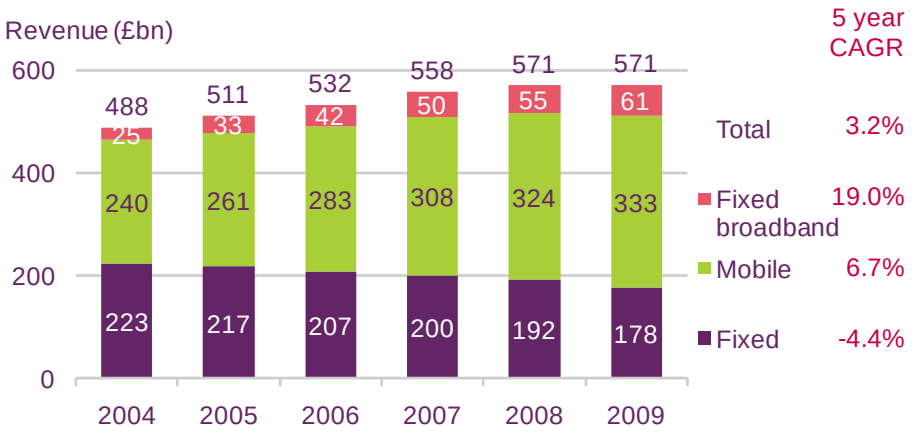
6.2.2 Overview

Fixed voice share of total telecoms revenues falls to less than a third

Total retail telecoms revenue generated in the 17 countries covered in this report amounted to £571bn in 2009, unchanged from 2008 and 18% higher than in 2004 (Figure 6.17)[107]. The proportion of total revenues generated by mobile services rose to 58% in 2009, up two percentage points year-on-year and by nine percentage points since 2004. In contrast, fixed-line voice revenue fell to 31% of total telecoms revenues, compared to 34% in 2008 and 46% in 2004.

Fixed broadband services continued to account for the smallest proportion of revenues, at 11%, although this was more than double the share in 2004 (5%) and one percentage point higher than in 2008. Over the five years to 2009, broadband revenue grew the fastest, increasing by an average of 19.0% annually from £25bn in 2004 to £61bn in 2009. Over the same period revenues from mobile services increased by an average of 6.7% a year while fixed-line voice revenues have fallen year on year, declining by an average of 4.4% annually from £223bn in 2004 to £178bn in 2009.

Figure 6.17 Total comparator country retail telecoms revenue, by sector, 2004 to 2009



Source: IDATE / industry data / Ofcom
Note: Excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN; covers only the 17 countries in the analysis; figures have been restated to reflect more accurate data

Mobile accounts for highest proportion of spend in all countries except Canada and Sweden

In 2009 the US was the largest telecoms market covered in this analysis, and in the world as a whole in terms of service revenues, generating £184bn (Figure 6.18). It was followed by Japan (£73bn) and China (£61bn). The UK was the seventh-largest telecoms market among our comparator countries, at £27bn, slightly ahead of Italy at £26bn but behind Germany (£37bn) and France (£32bn).

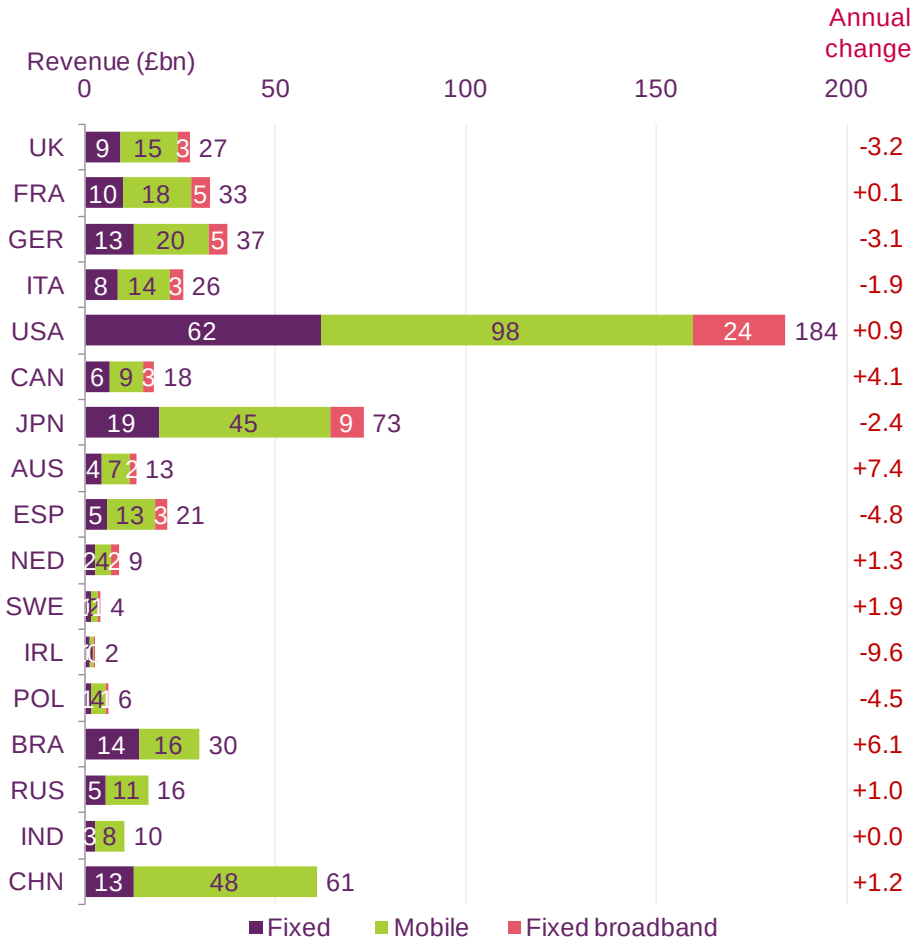
In most of the comparator countries, revenues from mobile services exceeded those from fixed voice and broadband revenues combined in 2009; Poland had the highest proportion of total revenues generated by mobile services (68%). The high take-up and use of mobiles for voice telephony in Poland meant that fixed-line voice accounted for the lowest share of revenues (21%) among our comparator nations. Canada and Sweden were the only two

[107] Excludes broadband revenues in Brazil, Russia, India and China

countries where revenues from mobile services accounted for less than half of total revenues (49% and 48% respectively), although based on recent growth trends, mobile revenues in both countries are likely to exceed the combined revenues from fixed voice and broadband services during 2010.

Ireland had the highest proportion of revenues generated by fixed voice services (40%) but the lowest proportion of revenues generated by fixed broadband services, at 10%, although this was up from 8% in 2008. The Netherlands had the highest proportion of total revenues generated by broadband services (22%) followed by Sweden (19%) and Canada (16%).

Figure 6.18 Telecoms service retail revenue, by nation and by sector, 2009



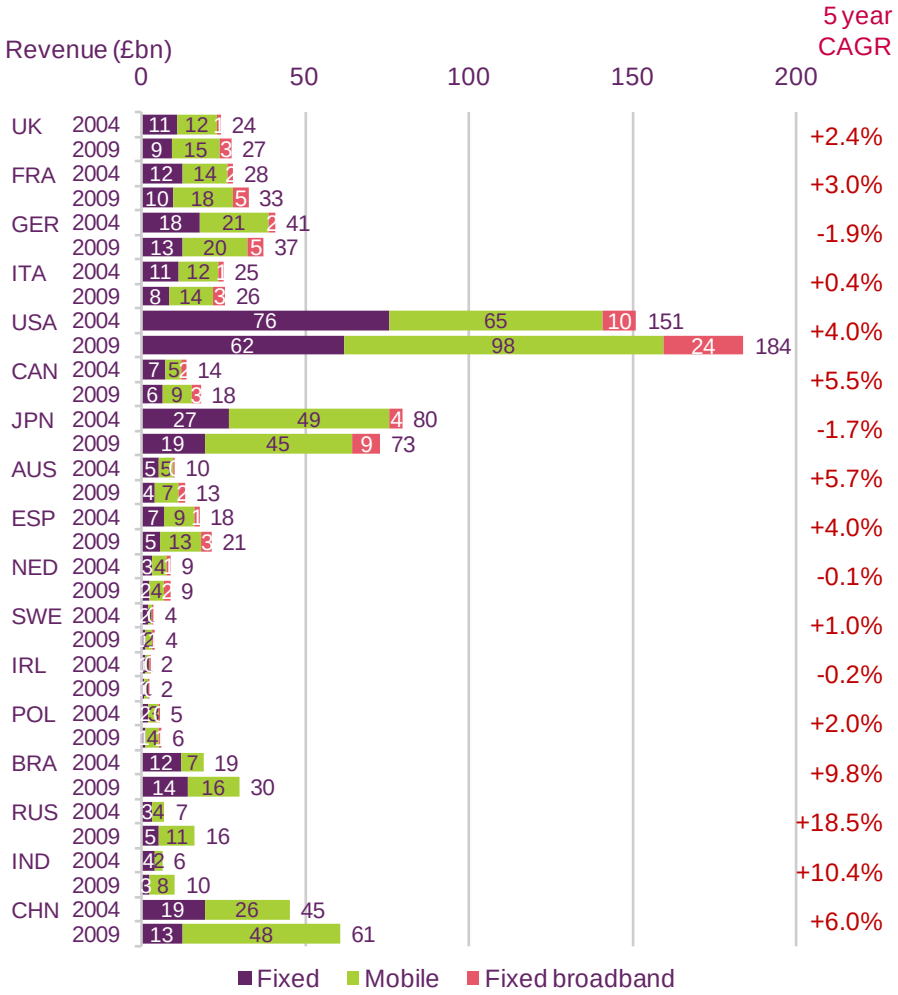
Source: IDATE / industry data / Ofcom
Note: Total service revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN

Russia had the highest growth in telecoms revenues in the five years to 2009

Russia had the highest average annual growth rate in telecoms revenues in the five years to 2009 at 18.5%, followed by India (10.4%) and Brazil (9.8%) (Figure 6.19). Among the non-BRIC comparator countries, revenue growth was highest in Australia (5.7%) and Canada (5.5%) over the same period, with the main driver in both countries being growth in mobile revenues. Similarly, in the UK, a 4.5% average annual increase in mobile revenues was the main driver behind a 2.4% average annual rise in total revenues.

The only comparator countries where revenue from telecoms services fell between 2004 and 2009 were Germany (down an average of 1.9% a year), Japan (down 1.7%), Ireland (down 0.2%) and the Netherlands (down 0.1%). These falls were largely caused by a fall in fixed voice revenues, reflecting declining fixed-line penetration, although mobile service revenues also fell over the period in Germany and Japan.

Figure 6.19 Telecoms service retail revenues, by sector, 2004 and 2009



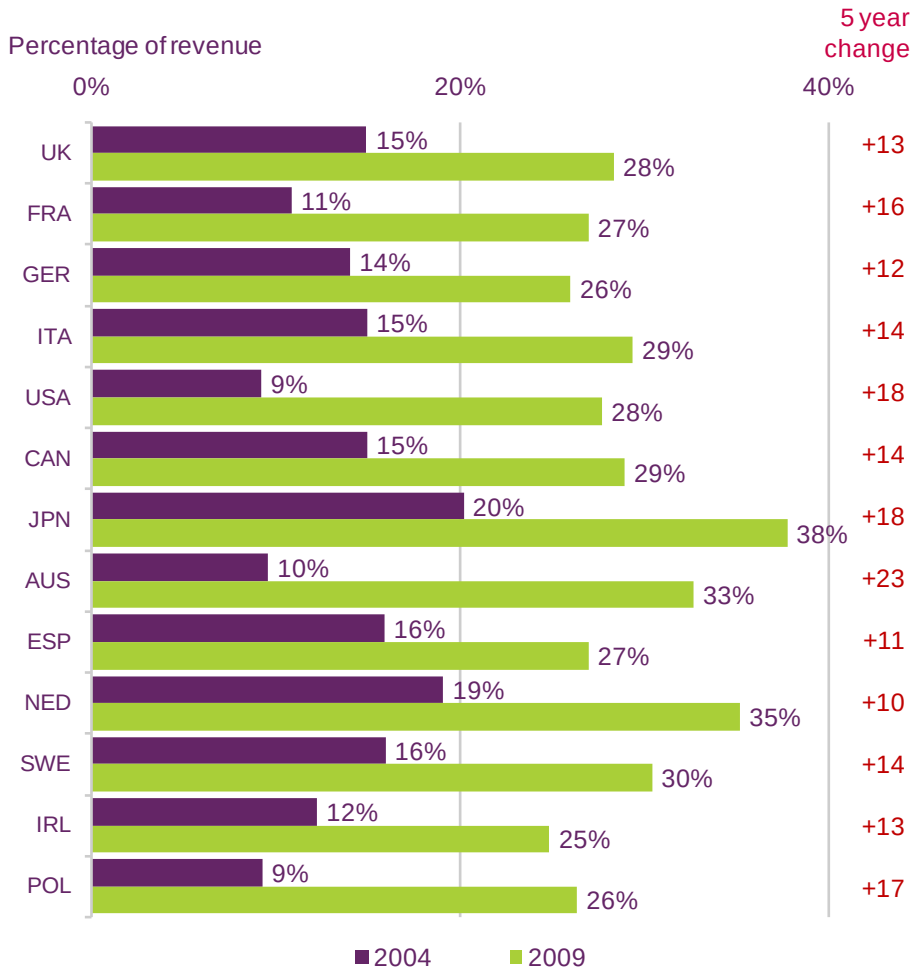
Source: IDATE / industry data / Ofcom
Note: Total service revenue excludes revenue from narrowband internet and corporate data services and broadband revenues for BRA, RUS, IND and CHN

Data's share of revenues has more than doubled since 2004

Over the five years to 2009, there has been a gradual shift in the sources of revenue for telecoms operators, with falling revenues from voice services being offset by rising revenue from both fixed broadband and mobile data services. Overall, the average contribution made by fixed broadband and mobile data to total telecom revenues increased from 13% in 2004 to 30% in 2009 among the 13 comparator countries for which fixed broadband revenue data were available (Figure 6.20).

Throughout this report, 'data service revenue' includes revenue from fixed broadband and mobile data services, but excludes revenue from narrowband internet and corporate data services (which are also excluded from our overall telecoms industry totals).

Figure 6.20 Data revenue as a proportion of total telecoms revenues, 2004 and 2009



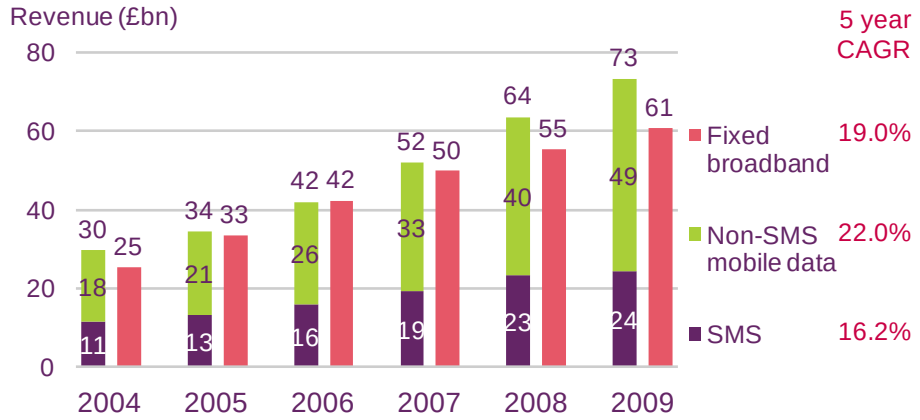
Source: IDATE / industry data / Ofcom
Note: Analysis excludes the BRIC countries

Mobile data revenues growing faster than those from fixed broadband

Figure 6.21 shows fixed broadband and mobile data revenues from 2004 to 2009 in the 13 comparator countries for which fixed broadband revenue data were available. This shows that mobile data revenues (£73bn) continued to be higher than those from fixed data services (£61bn) in 2009. Over the five-year period an interesting pattern emerges. Prior to 2006, rapid growth in the take-up of fixed broadband services led to revenues from fixed broadband services growing faster than those from mobile data services, and in 2006 the revenues from each service were equal at £42bn.

However, in 2007 fixed broadband revenue growth declined significantly (to 18% from 27% in 2006) as a result of declining average broadband prices and a slowdown in connection growth, while total mobile data revenue growth increased, mainly due to growing use of non-SMS services. While mobile data service revenue growth has since started to slow, it remains higher than fixed broadband revenue growth, and the gap between revenues from fixed and mobile data services has continued to increase.

Figure 6.21 Fixed broadband and mobile data revenues, 2004 to 2009



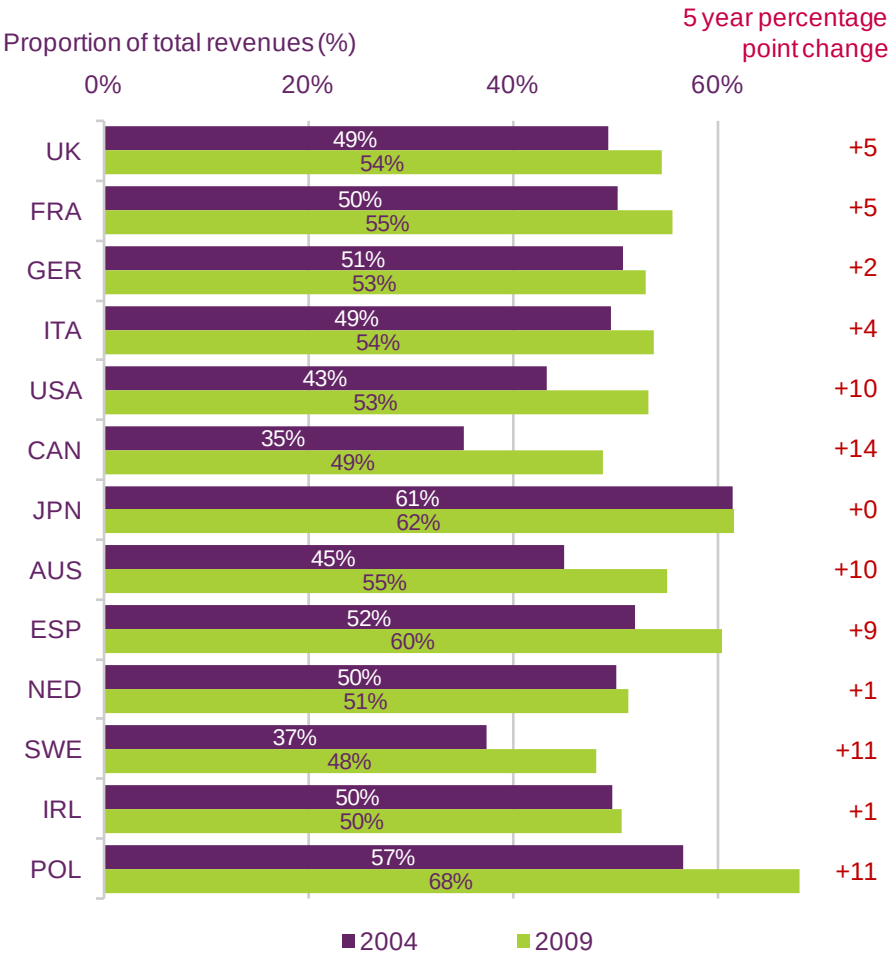
Source: IDATE / industry data / Ofcom
Note: Analysis excludes the BRIC countries

Mobile accounts for over two-thirds of total telecoms spend in Poland

Across the 13 comparator nations for which fixed broadband revenue data were available (which excludes the BRIC countries), mobile accounted for over half (55%) of total telecoms revenues on average in 2009, compared to 49% in 2004 (Figure 6.22). Poland had the highest proportion of telecoms revenue from mobile services in 2009, at 68%, while mobile's share of revenue had the largest increase in Canada, rising by 14 percentage points over the period, while mobile accounted for 49% of telecoms revenue in 2009.

Sweden had the lowest proportion of revenue attributed to mobile in 2009, at 48%, while Japan had the lowest increase in mobile's share of total telecoms revenues over the five years, at less than one percentage point. In the UK, mobile contributed 54% of total telecoms revenues in 2009, an increase of five percentage points on 2004.

Figure 6.22 Mobile as a proportion of total telecoms revenues, 2004 and 2009



Source: IDATE / industry data / Ofcom
Note: Analysis excludes the BRIC countries

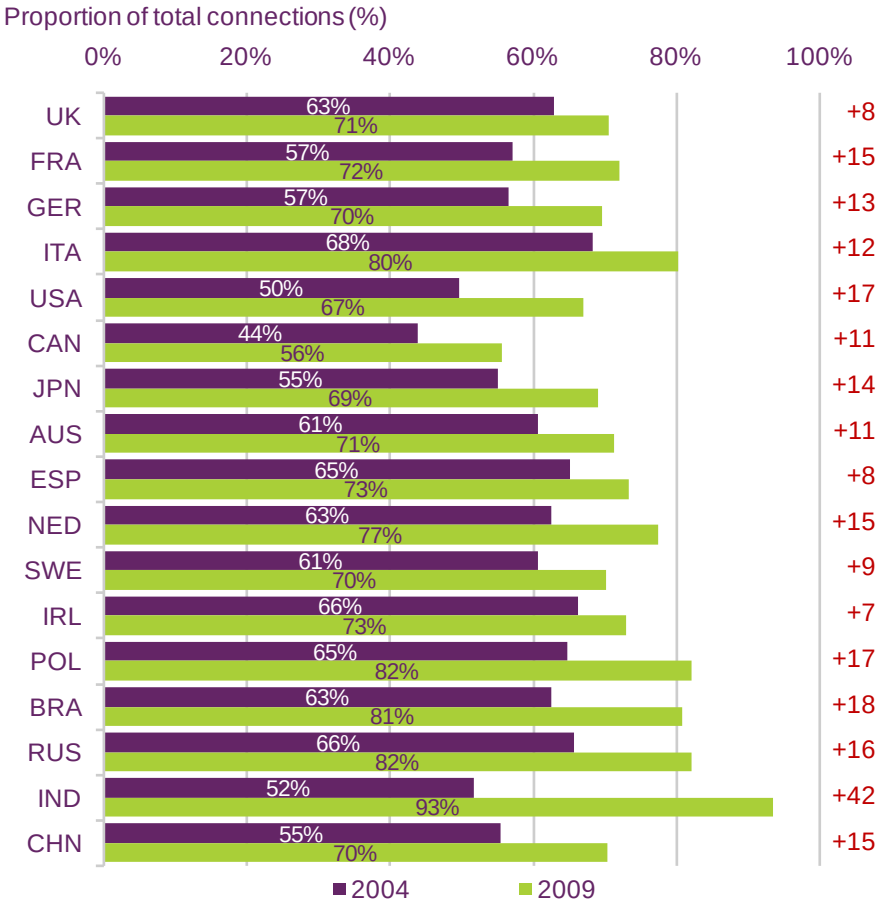
Mobile makes up the highest proportion of voice connections in India and Russia

On average, mobile accounted for 76% of total voice telecoms connections across our 17 comparator countries in 2009, compared to 57% in 2004; in the UK 71% of all telecom connections were mobile in 2009, up eight percentage points on 2004 (Figure 6.23).

The proportion of voice telecoms connections that were mobile was highest in India (93%) at the end of 2009, while among the European comparator countries Russia and Poland had the highest proportion at 82%. Several factors may be behind this high proportion of mobile connections relative to fixed, including low fixed-line availability, the comparatively high cost of fixed-line services and the prevalence of multiple mobile connections per person, often present in countries where pre-pay is the main way of purchasing mobile services (see Figure 6.41 below).

In contrast, the lowest proportions of mobile connections relative to total voice telecom connections were in Canada (56%), the US (67%) and Japan (69%), where the majority of mobile connections are purchased on a pay-monthly contract basis.

Figure 6.23 Mobile as a proportion of total voice connections, 2004 and 2009



Source: IDATE / industry data / Ofcom

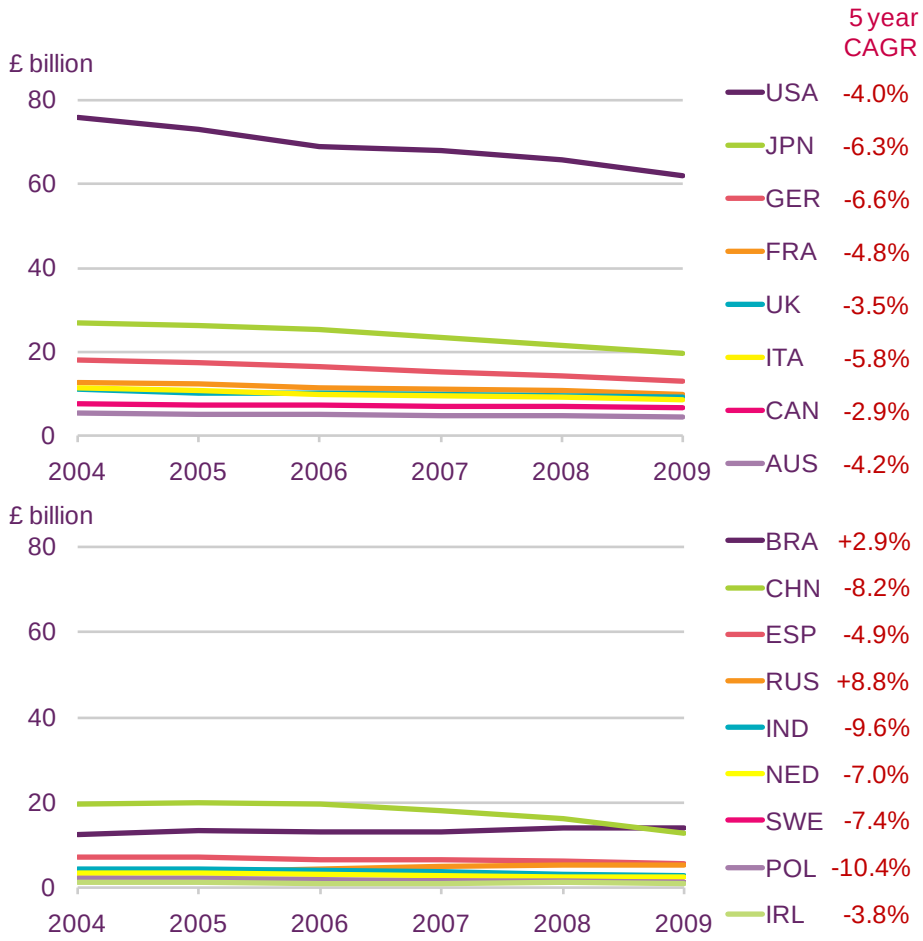
6.2.3 Fixed voice services

Fixed voice revenues fall in every country except Russia and Brazil

Fixed voice revenues fell in all our comparator countries with the exception of Brazil and Russia in the five years to 2009 (Figure 6.24). The steepest average annual decline was in Poland (10.4%), followed by China (8.2%), Sweden (7.4%) and the Netherlands (7.0%). In the US, the largest fixed voice market covered in this analysis, revenues fell by an average of 4.0% annually over the period to £62bn in 2009.

Across all 17 comparator countries fixed telephony revenues fell by an average of 4.4% a year between 2004 and 2009, However, in 2009 the rate of decline in fixed voice revenues increased in 13 of our comparator countries, and across all 17 countries it averaged 7.3% compared to 4.4% in 2008. Brazil was the only comparator country where fixed voice revenues increased in 2009 (up by 0.5%) while the decline was highest in China, at 21.8% during the year.

Figure 6.24 Fixed-line voice retail revenues, 2004 and 2009



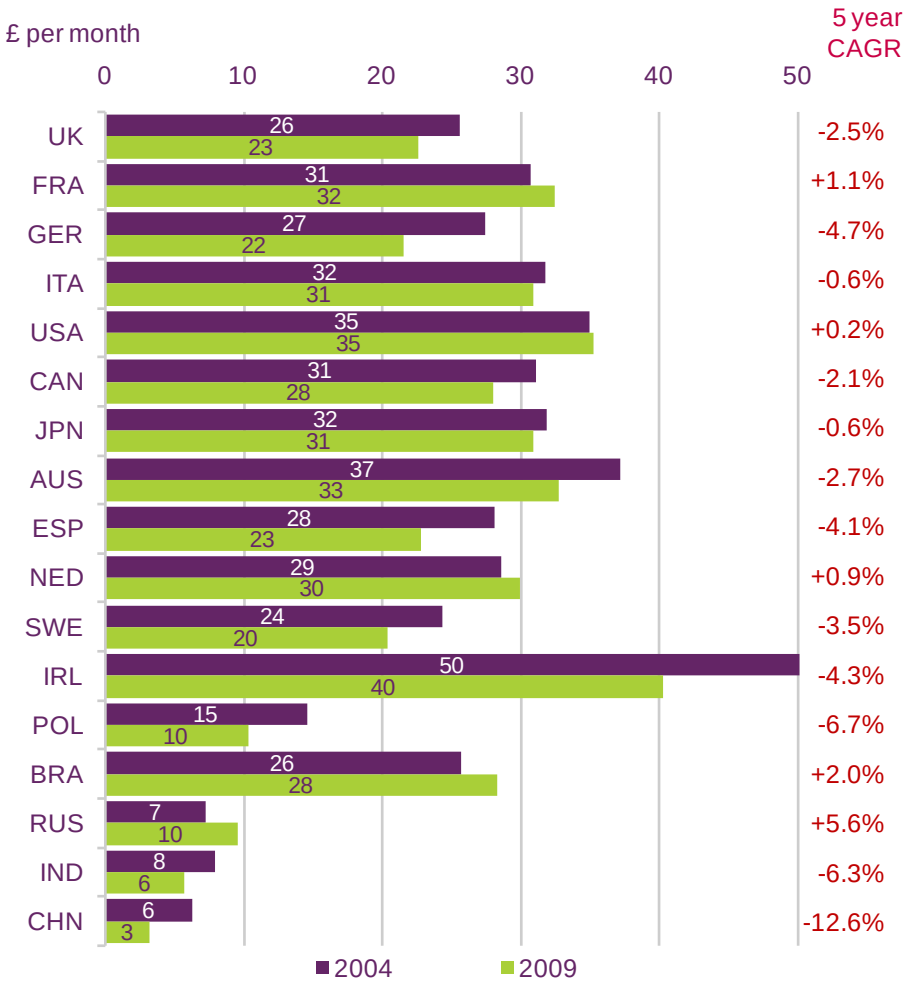
Source: IDATE / industry data / Ofcom

Average revenue per fixed line is highest in Ireland at £50 a month

There were significant variations in the average monthly revenue generated per fixed voice line during 2009 among the 17 countries covered in this report (Figure 6.25). The highest revenue per line was in Ireland at £50 per month, while it was just £3 per month in China. Average spend per fixed line in the UK was £23 in 2009, down an average of 2.5% a year since 2004. The average monthly revenue per line across the 17 countries was £17 in 2009, down from £27 in 2004, largely as a result of growth in the number of lines in the BRIC countries, where average revenue per line is lower.

Average revenue per fixed line fell in all but five of the countries covered in this analysis between 2004 and 2009, with the largest average annual declines in China (12.6%) and Poland (6.7%), where the accelerating shift towards mobile voice telephony is likely to be a major contributory factor. The largest increase in revenue per fixed voice line over the period was in Russia, where the increase averaged 5.6% a year to £10 per month in 2009, although most of this growth occurred in 2004 to 2007 and average revenue per line has remained largely unchanged since then.

Figure 6.25 Average monthly revenue per fixed line, 2004 and 2009



Source: IDATE / industry data / Ofcom

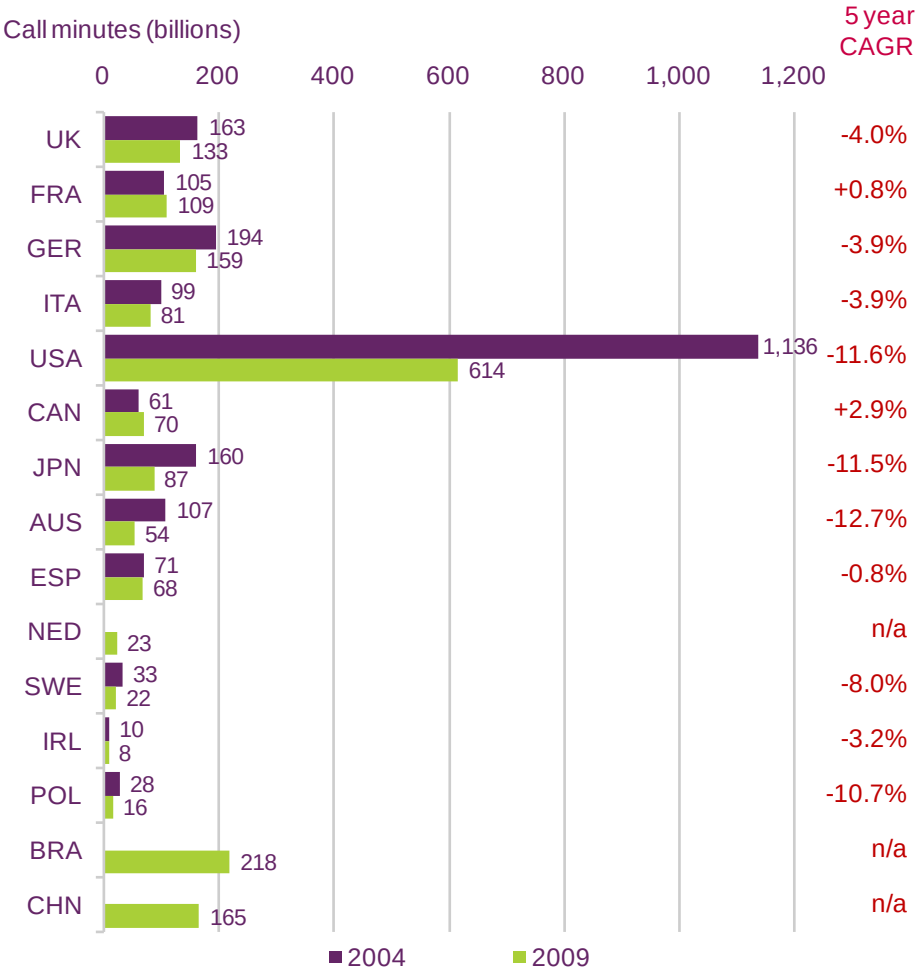
Fixed call volumes are declining fastest in Japan and the US

Fixed voice volumes declined in most countries in the five years to 2009, with the steepest average annual falls among the comparator countries for which time series data were available being in Australia (12.7%), the US (11.6%) and Japan (11.5%). The number of call minutes made over fixed lines almost halved in Australia over the period, from 107 billion in 2004 to 54 billion in 2009, largely due to increasing use of mobile telephony for voice calls. Call volumes from fixed lines in the UK fell by an average of 4.0% a year to 133 billion in 2009 (Figure 6.26).

Canada and France were the only countries for which we had data where fixed call volumes increased in the five years to 2009, growing by an average of 2.9% and 0.8% respectively over the period. In France this is due to high levels of VoIP use, while figures for Canada exclude VoIP call minutes and fixed call volume growth is therefore likely to be understated[108]. In both countries, however, the volume of fixed calls fell for the first time in 2009 due to increasing use of mobile telephony.

[108] VoIP calls other than PC-to-PC calls are included for all countries except the US and Canada, where data were not available

Figure 6.26 Fixed-line voice call volumes, 2004 and 2009



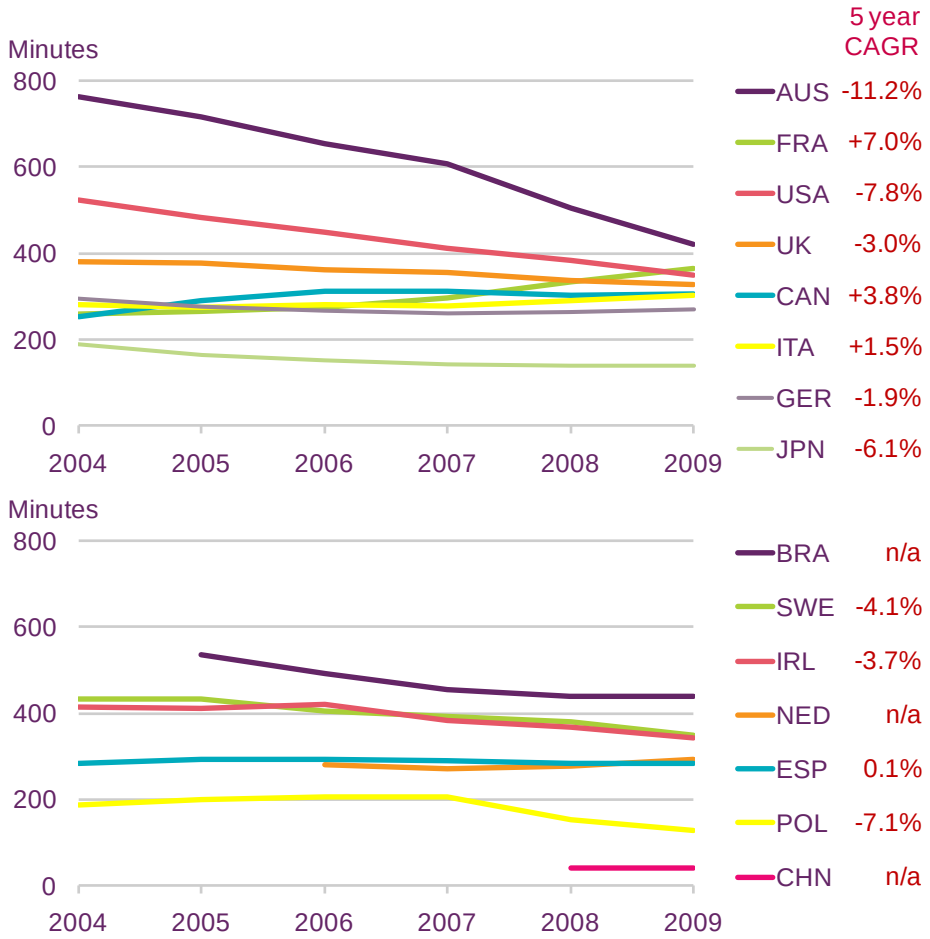
Source: IDATE / industry data / Ofcom
Note: Figures for USA and CAN exclude local and VoIP calls and include incoming mobile calls

Call minutes per fixed line were highest in Brazil in 2009

The average number of outgoing minutes per fixed line fell by an average of 4.6% a year in the five years to 2009 to 299 minutes across the 12 comparator countries for which full time series data were available (Figure 6.27). Brazil had the highest number of call minutes per fixed line, at 439 minutes a month in 2009, while China, where usage was less than one-tenth that in Brazil (at 42 minutes per line), had the lowest average use.

Average call volumes per fixed line in the UK fell to 327 minutes in 2009, an average decline of 3.0% a year since 2004. France, Canada, Italy and Spain were the only comparator countries for which time series data were available where call volumes per line increased during the five-year period, with the largest average annual rate of growth being in France, at 7.0% per year.

Figure 6.27 Monthly outbound minutes per fixed line, 2004 to 2009



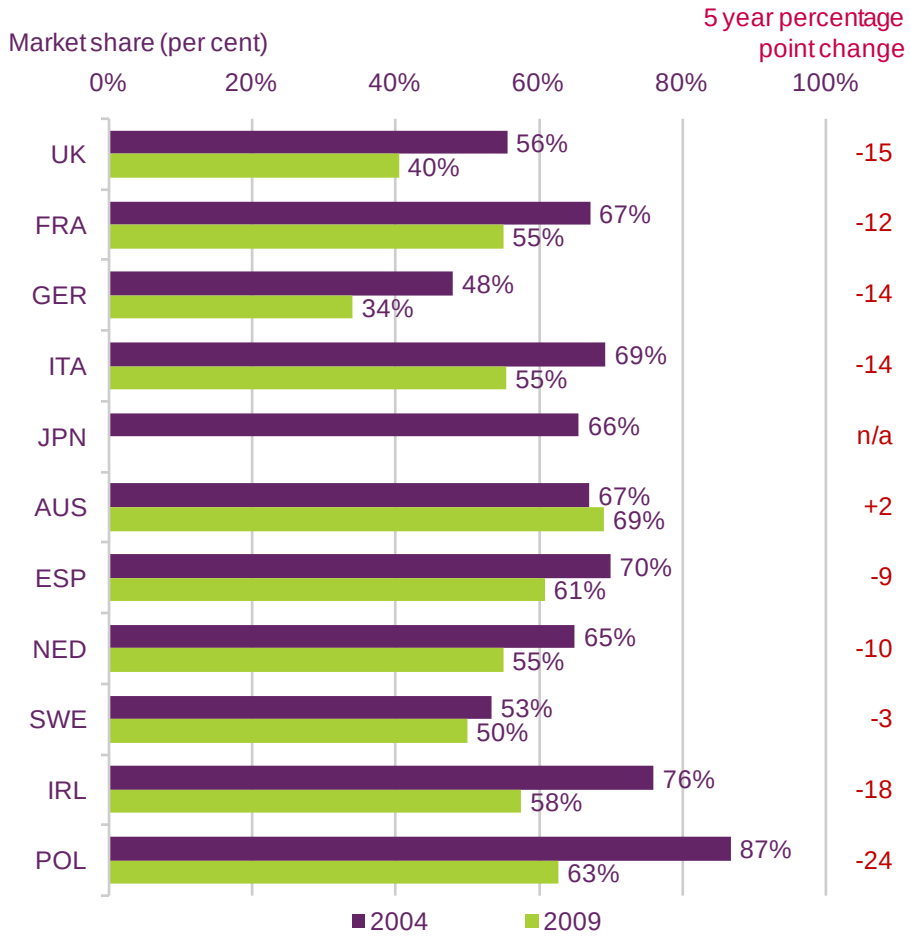
Source: IDATE / industry data / Ofcom
Note: Figures for USA and CAN exclude local and VoIP calls and include incoming mobile calls

Australia is the only nation where the incumbent's fixed call volume share increased

There were significant declines in the proportions of fixed call volumes which originated on the national incumbent operators' networks in most of the comparator countries for which figures were available in the five years to 2009 (Figure 6.28). The largest decline was in Poland, where Telekomunikacja Polska (TP)'s share of fixed voice calls fell by 24 percentage points to 63% over the period, although TP still had the largest share of all the countries in our analysis after Telstra in Australia (69%).

Australia was the only country in which the incumbent's share of fixed call volumes increased, with the volume of fixed voice traffic originating on Telstra's network growing by two percentage points over the five-year period. Deutsche Telekom in Germany had the lowest share of any incumbent in 2009 (34%), followed by BT in the UK (40%).Among the European countries, the smallest decline in the incumbent's share was in Sweden (down three percentage points),although incumbent TeliaSonera's share (at 50%) was still relatively low compared to most of the countries covered in this report.

Figure 6.28 Incumbent share of fixed voice call volumes, 2004 and 2009



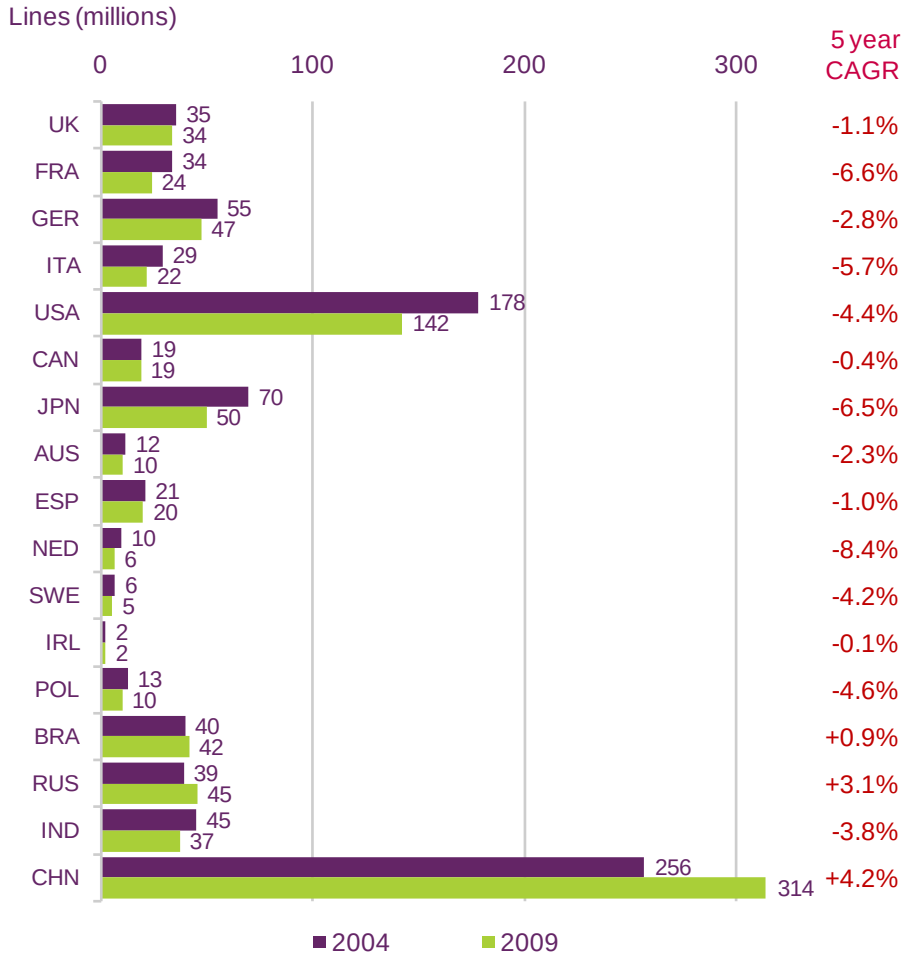
Source: IDATE / industry data / Ofcom

Take-up of VoIP drives decline in fixed lines in the Netherlands, France and Japan

The number of fixed lines fell in all of our comparator countries between 2004 and 2009, except in China, Russia and Brazil where the number of lines increased by averages of 4.2%, 3.1% and 0.9% respectively per year over the period (Figure 6.29). Despite an overall increase in the five years to 2009, the number of lines in China has been declining since 2007, when it peaked at 374 million.

The fastest average annual rate of decline in the number of fixed lines was in the Netherlands at 8.4%, followed by France and Japan, where the number of lines fell by averages of 6.6% and 6.5% a year respectively. Increasing take-up of VoIP services (see Section 6.1.5) over broadband connections, where no fixed voice line connection is required (via either 'naked' DSL or fibre), is likely to be a significant contributor to the rapid decline in these countries. In the UK the number of fixed lines fell by 1.1% a year on average over the five years to 2009, to 34 million.

Figure 6.29 Fixed exchange lines, 2004 and 2009



Source: IDATE / industry data / Ofcom

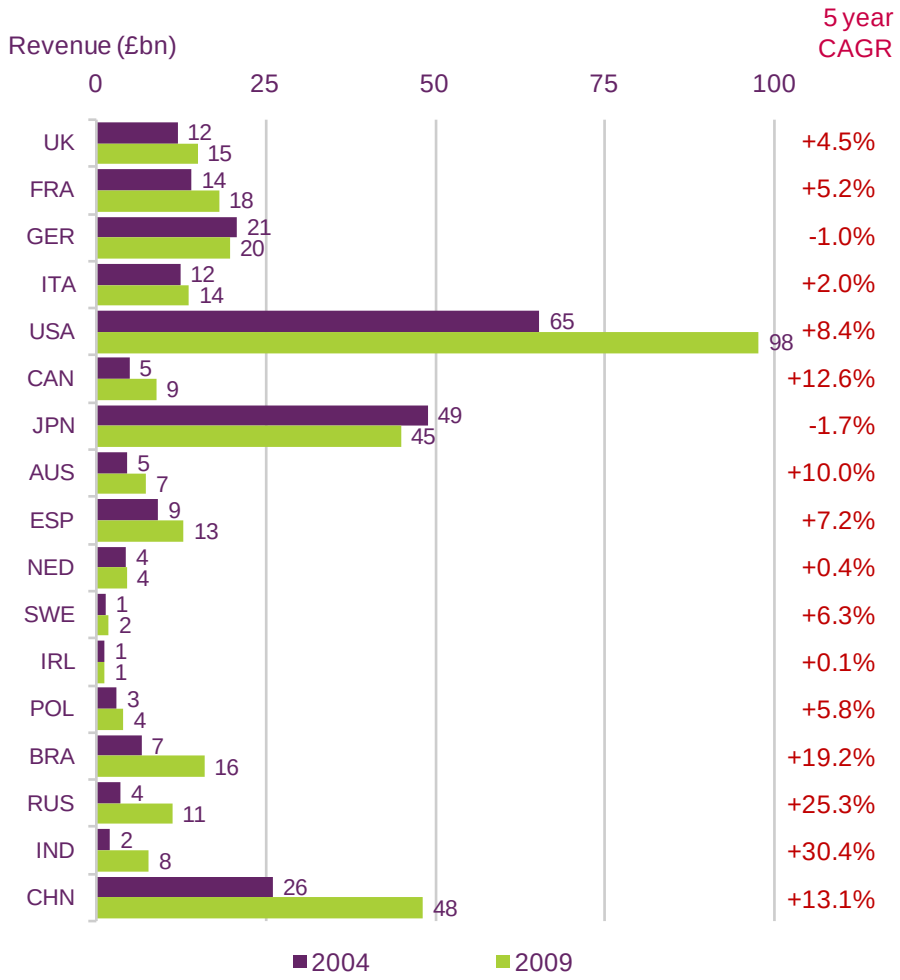
6.2.4 Mobile voice and data services

China becomes second largest mobile market in terms of revenues

During 2009 China overtook Japan to become the second largest mobile market in terms of revenues, after the US, which is by far the largest mobile market in the world and which generated nearly £100bn in revenue in 2009 (Figure 6.30). In contrast, the smallest mobile market in our analysis, with £1.2bn in mobile revenue, was Ireland, followed by Sweden at £1.9bn. These two countries have the smallest populations of all the countries covered in this report.

Growth in mobile revenues over the five years to 2009 was strongest in the BRIC countries, with India experiencing the largest average annual increase, at 30.4% a year from £2bn in 2004 to £8bn in 2009. However, growth in the BRIC countries slowed significantly in 2009, when it was 8.5% (compared to 14.1% in 2008 and 22.8% in 2007). Outside the BRIC countries revenue growth in the five years to 2009 was strong in Canada (12.6%) and Australia (10.0%), while in the UK revenue grew by an average of 4.5% each year. Germany and Japan were the only countries in which mobile revenues declined over the five-year period, with the sharpest fall being in Japan, where revenues dropped by an average of 1.7% a year.

Figure 6.30 Mobile revenues, 2004 and 2009



Source: IDATE / industry data / Ofcom
Note: USA, CAN and CHN include revenues from incoming calls

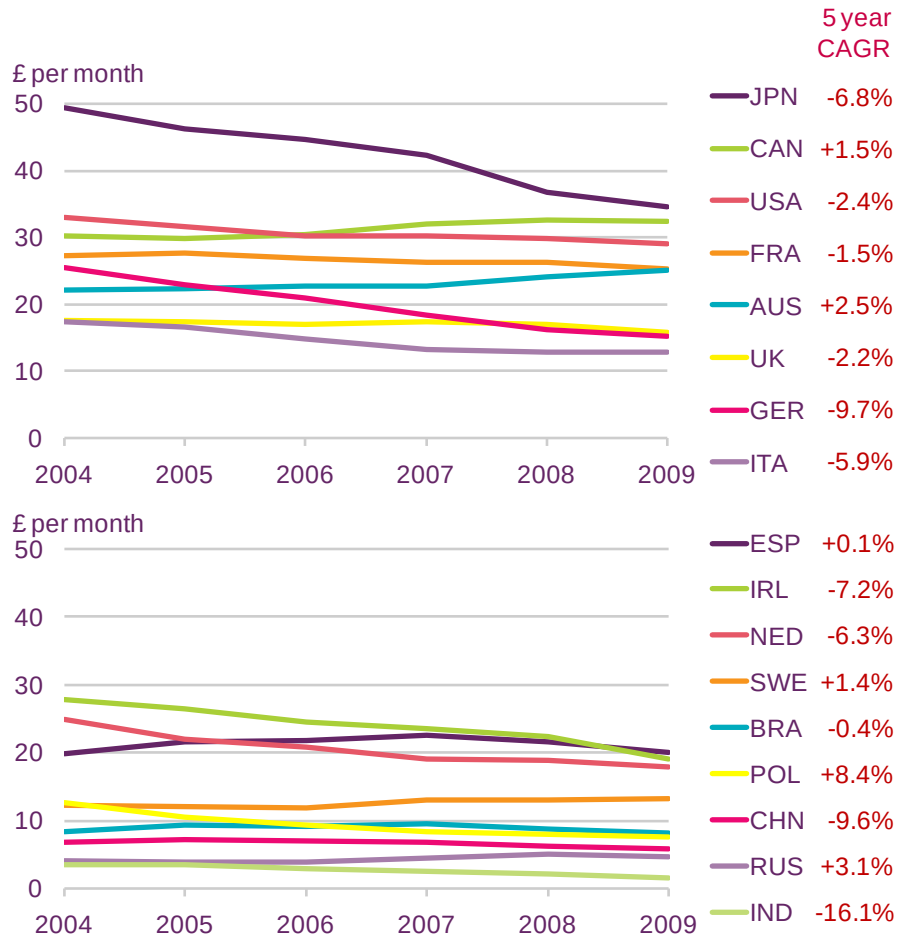
Revenue per mobile connection is lowest in India at just £1.50 per month

Revenue per mobile connection varied widely among our comparator countries, ranging from just £1.30 per month in India to £35 in Japan in 2009 (Figure 6.31). Differences in income levels are the main driver of these differences, although high levels of multiple connections per user, especially where pre-pay services are popular (such as in Italy and India), can also result in average revenue per connection being lower.

In most countries average revenue per connection declined in the five years to 2009, with the greatest average annual falls being in India (16.1%) and Germany (9.7%) where, despite increased call volumes per connection (see Figure 6.36), lower voice tariffs as a result of increased competition have pushed overall spend downwards. Falling mobile prices as a result of growing competition is the largest factor behind falling average mobile spend in most comparator countries, but it is likely that the global economic situation is also causing consumers to rein in their mobile spend. In the UK, average monthly spend fell by an average of 2.2% a year during the five-year period, to £16 per month in 2009.

Average spend per mobile connection increased in six of our comparator countries (Poland, Russia, Australia, Canada, Sweden and Spain) in the five years to 2009, while in 2009 itself average monthly revenue per mobile connection increased only in Australia (up 3.8% to £25) and Sweden (up 1.9% to £13).

Figure 6.31 Average monthly revenue per mobile connection, 2004 to 2009



Source: IDATE / industry data / Ofcom
Note: USA, CAN and CHN include revenues from incoming calls

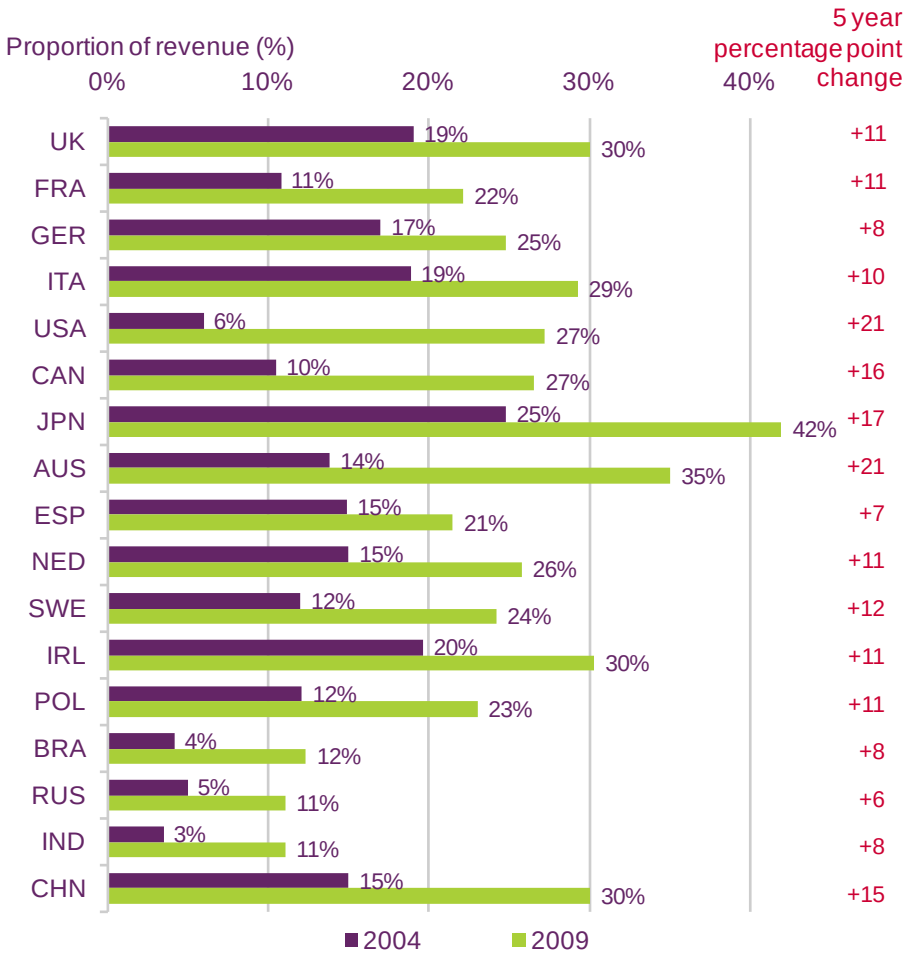
Mobile data service revenue grew strongly in the US and Australia

Over the past five years revenue from mobile data services (including SMS and MMS messaging) has become an increasingly large proportion of overall mobile revenue in all of our comparator countries (Figure 6.32). Indeed, with little or no overall growth in revenues from voice services, mobile data revenue has been the main driver of overall mobile revenue growth in most countries.

The average contribution of data services to overall mobile service revenues across all the nations in this report increased from 14.2% in 2004 to 27.6% in 2009, and the highest proportional growth was in the US and Australia, where there were increases of 21 percentage points to 27% and 35% respectively.

Japan had the highest proportion of mobile revenues generated by data services in 2009 (42%) while the lowest proportions were in India and Russia at 11%, where the availability of 3G networks that support advanced data services is less widespread, and the take-up of internet-enabled handsets is lower than in most other comparator countries. In the UK, data accounted for 30% of mobile revenue in 2009, an 11 percentage point rise since 2004.

Figure 6.32 Data as a proportion of total mobile service revenue, 2004 and 2009



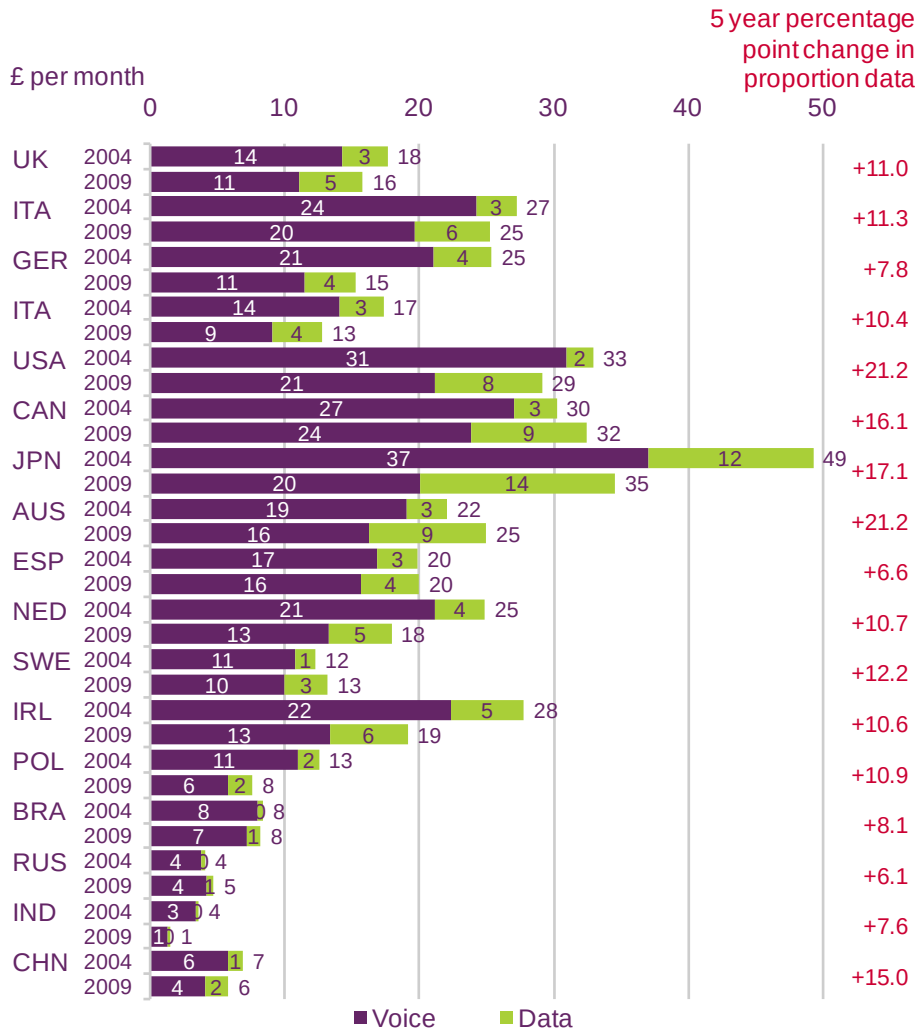
Source: IDATE / industry data / Ofcom
Note: USA, CAN and CHN include revenues from incoming calls

Mobile voice revenues per connection decline in all countries except Russia

In the five years to 2009 the average voice revenue per mobile connection fell in all 17 of our comparator countries except Russia, where it increased by an average of 1.7% a year to £4 a month over the period (Figure 6.33). Falling average fixed voice revenues per connection contributed to falling average total monthly revenue per mobile connection in all of our comparator countries except Australia, Canada, Sweden, Spain (where the increase in average data revenue per user was greater than the fall in voice revenue) and Russia.

The fastest fall in voice revenue per connection was in India, where it declined by an average of 17.5% a year in the five years to 2009, largely due to the growing use of mobiles. The largest rise in spend on data services over the same period was in the US, where revenues increased by an average of 32.0% a year. In the UK, average mobile data revenue per connection increased by £1 a month to £5, but this was offset by a £3 decline in spend on voice services to £11 in the five years to 2009.

Figure 6.33 Average monthly mobile voice and data revenue per connection, 2004 and 2009



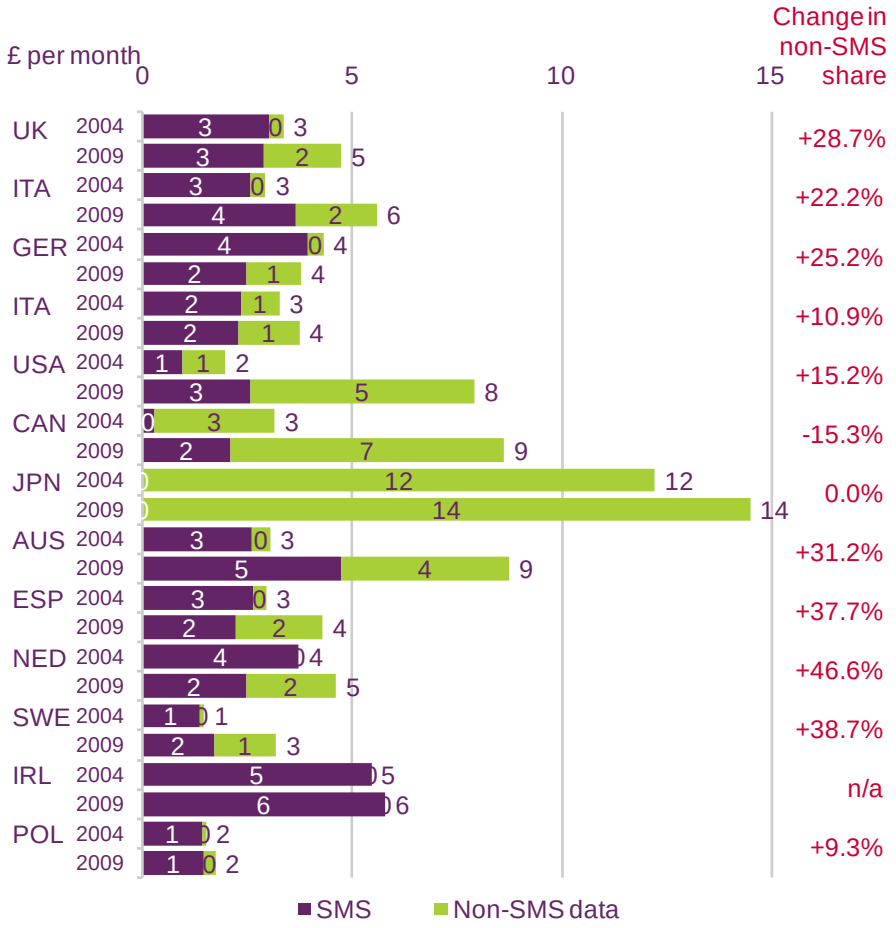
Source: IDATE / industry data / Ofcom
Note: USA, CAN and CHN include revenues from incoming calls

Share of non-SMS data services has increased in all countries since 2004

SMS continued to account for the majority of mobile data revenue per connection in most comparator nations in 2009 (Figure 6.34). However, while SMS spend remained largely flat or declined in most of the comparator countries for which data were available in the five years to 2009, due to falling prices, non-SMS data revenue increased in these countries, due to the rising take-up of advanced mobile data services accessed via either mobile handsets or via PCs/laptops using mobile broadband dongles or datacards.

The fastest rate of growth in average non-SMS revenue per connection was in Sweden (up by an average rate of 67.5% a year between 2004 and 2009) while the lowest non-SMS data revenue growth was in Japan, averaging just 3.5% per year. Spend in the UK on non-SMS data services increased by an average of 39.9% a year to £2 per month. The US, Canada and Japan were the only countries in which non-SMS data services accounted for the majority of mobile data revenue in 2009; in Japan, SMS has very low availability and is rarely used, with mobile users being much more likely to use email and instant messaging instead.

Figure 6.34 Average monthly SMS and non-SMS data revenue per mobile connection, 2004 and 2009

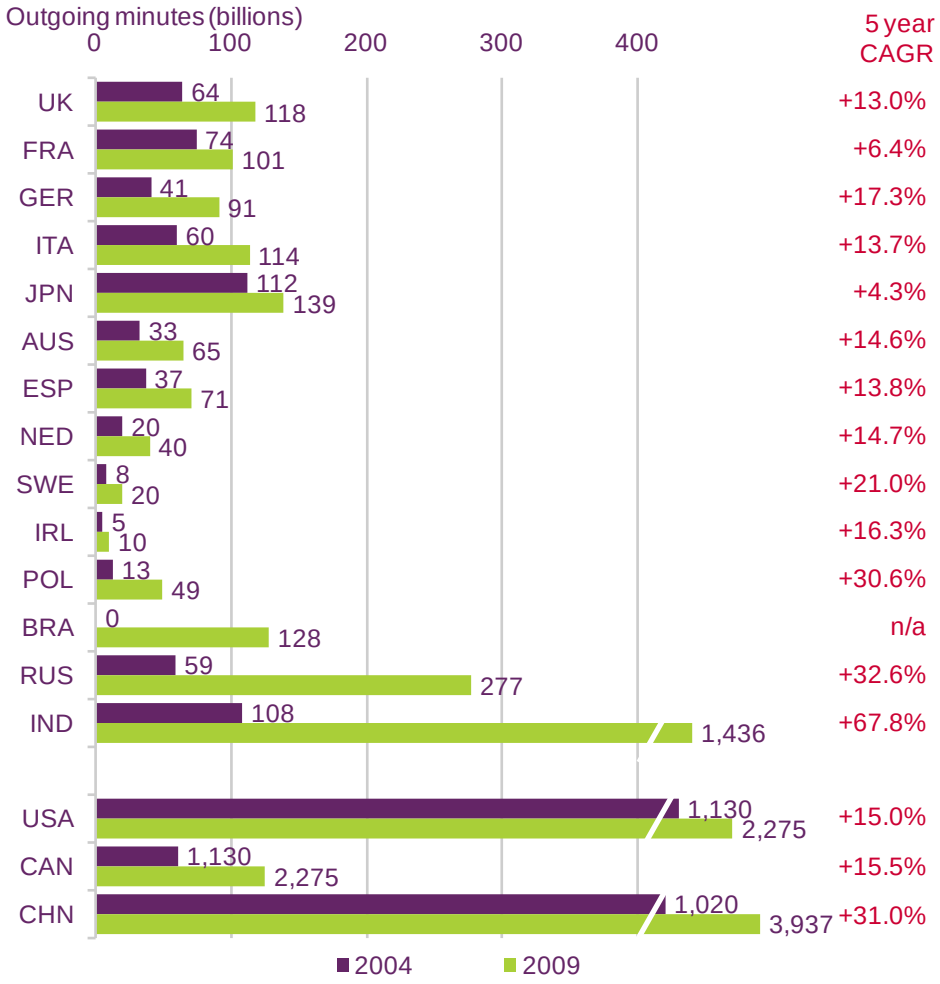


Source: IDATE / industry data / Ofcom

Mobile call volumes continue to grow, but growth rates vary

Mobile call volumes increased in the five years to 2009 in all the comparator nations for which data were available (Figure 6.35). The fastest average annual growth was among the BRIC nations, with the highest being in India at 67.8%, followed by Russia (32.6% a year), China (31.0%) and Poland (30.6%). Despite already having a high level of mobile take-up in 2004, mobile call volumes almost doubled in the UK in the five years to 2009 (an average annual increase of 13.0%), although this rate of increase was slower than in most of our comparator countries. The slowest mobile call volume growth among our comparator countries was in Japan, where call volumes increased by just 4.3% a year in the five years to 2009.

Figure 6.35 Mobile voice call volumes, 2004 and 2009



Source: IDATE / industry data / Ofcom
Note: USA, CAN and CHN include incoming calls

Mobile calls per connection fell in ten of our comparator countries in 2009

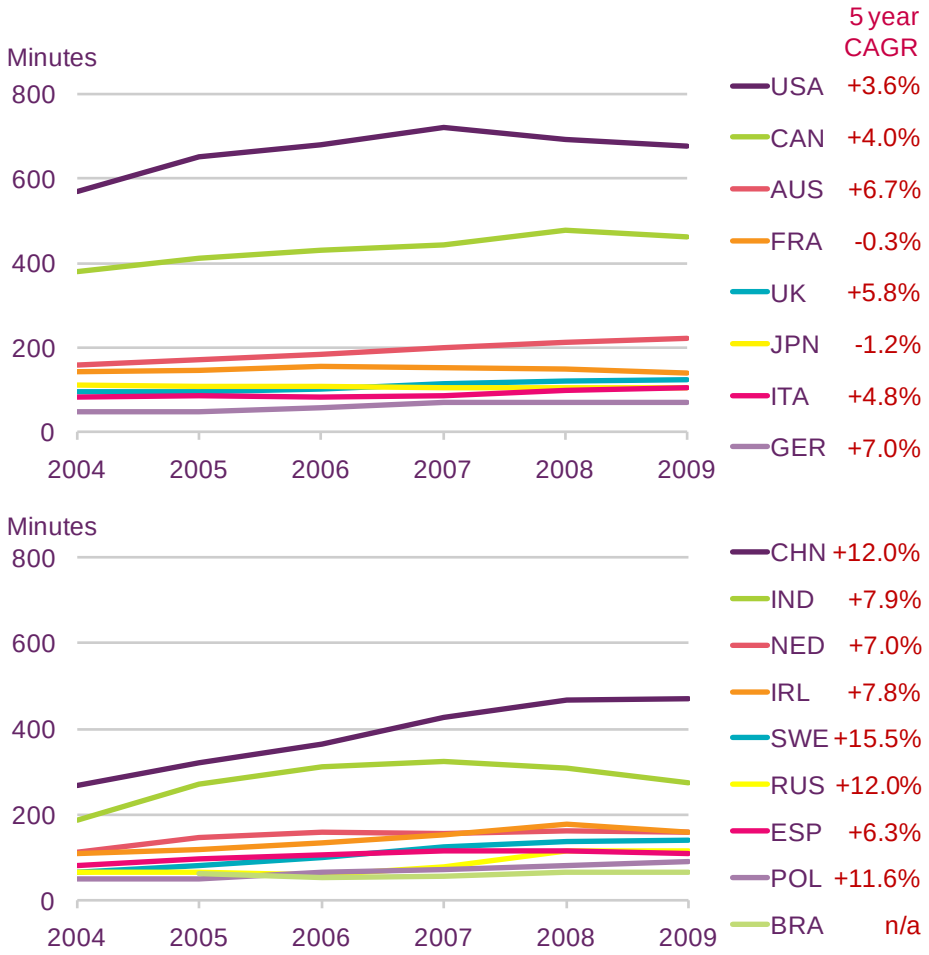
Much of the increase in mobile voice call volumes is due to growth in the number of mobile connections, which increased in all our comparator countries, as shown in Figure 6.39. However, in all of the countries covered in this report except Japan and France, call volumes per connection also increased in the five years to 2009 (Figure 6.36). The highest average use per mobile connection was in the US (678 minutes per month), although figures for the US (and China and Canada, with the second and third highest calls per connection respectively) also include incoming call minutes.

The fastest rates of call volume growth per connection over the period were in Sweden (up by an average of 15.5% a year), China (which also had the highest number of outgoing calls minutes per connection, and average growth of 12.0% a year) and Russia (also 12.0%). Call volumes per connection in the UK increased by an average of 5.8% per year over the same period, although this slowed to just 2.3% in 2009.

Average call volumes per mobile connection fell in ten of our comparator countries in 2009 as a result of high penetration rates and people having more than one mobile connection and therefore using each of them less. Japan and France were the only countries in which mobile call minutes per connection declined over the five-year period (by 1.2% and 0.3%

respectively). In France this was partly due to a lower degree of fixed-to-mobile substitution, as a result of the availability of cheap VoIP-based fixed-line services, offering generous call packages and relatively expensive mobile voice calls. In Japan, mobile voice calls are expensive and so consumers tend to use non-voice forms of mobile communication such as email instead. Details of average voice call use per person among our comparator countries can be found in Section 6.3.4.

Figure 6.36 Monthly outbound minutes per mobile connection, 2004 and 2009



Source: Ofcom consumer research
Note: USA, CAN and CHN include incoming calls

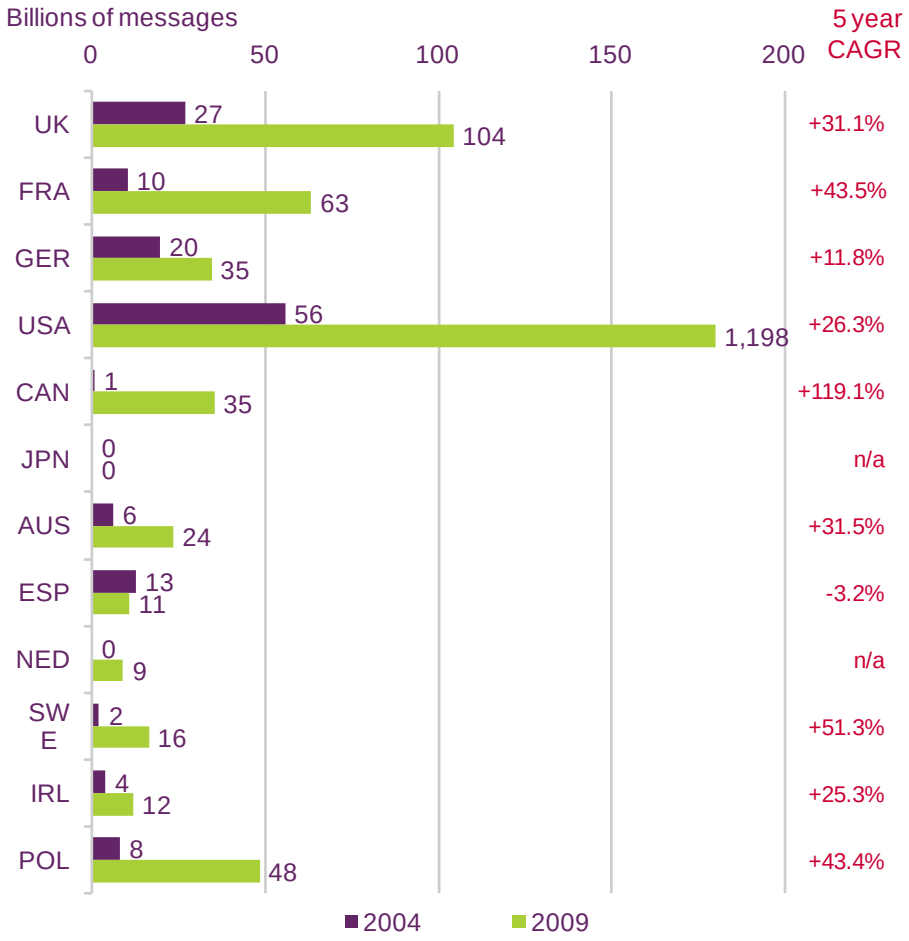
Mobile messaging volumes continue to increase in most comparator countries

In all of the comparator nations for which time series data were available, except Spain and Japan, mobile messaging volumes increased in the five years to 2009 (Figure 6.37). The fastest growth was in Canada, where message volumes rose by an average of 119.1% a year, due to a combination of rising take-up of mobile services and increased bundling of SMS in contract tariffs. In the UK, the increased availability of tariffs with large or unlimited bundles of SMS contributed to an average annual rise of 31.1% in SMS volumes during the period.

Spain was the only country in which mobile messaging volumes declined during the five-year period, falling from 13 billion in 2004 to 11 billion in 2009. Mobile messages are rarely included within pay-monthly tariffs in Spain and messages are relatively expensive to send, so overall use has remained low in comparison with our other comparator countries. Messaging volumes in Spain started to fall in 2007, and the decline in use may also be

related to the impact of the economic downturn on consumer spending on mobile services, and the increasing use of lower-cost alternatives to SMS and MMS message, such as instant messaging and email. MMS accounted for only 0.1% of total mobile messaging volumes among the comparator countries for which we have data in 2009, the remainder being SMS text messages.

Figure 6.37 Mobile messaging volumes, 2004 and 2009



Source: IDATE / industry data / Ofcom
Note: Figures for the USA include push-to-text and are not comparable to the other comparator countries

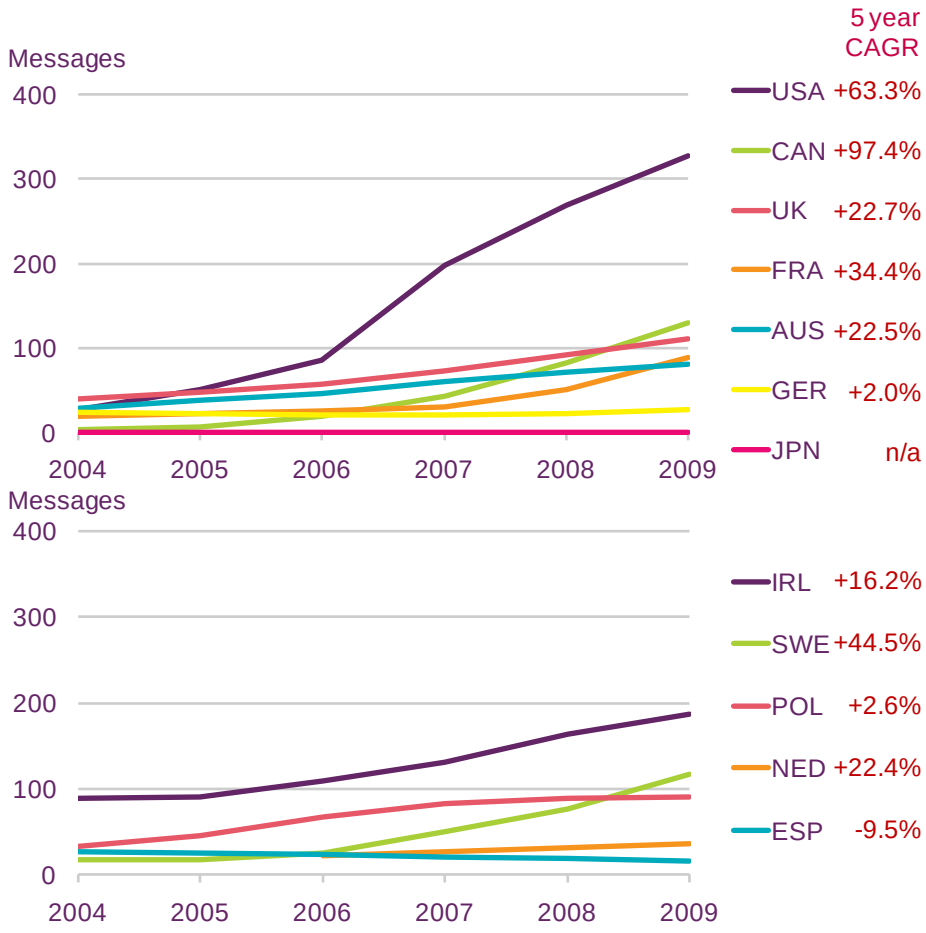
Mobile messaging use per connection is highest in the US

Average mobile messaging use per mobile connection increased in all of the comparator countries for which time series data were available, except Japan and Spain, in the five years to 2009 (Figure 6.38). The availability of tariffs with a large, or unlimited, number of text messages for a relatively low monthly line rental fee is the main driver behind substantial increase in SMS use in many of our comparator countries. The highest mobile messaging use in 2009 was in the US, where on average 327 messages were sent per mobile connection per month, although these figures include push-to-text messages and are therefore not comparable with figures for the other comparator countries.

Outside the US, the highest average mobile messaging use in 2009 was in Ireland, at 187 messages per connection per month, following an average annual increase of 16.2% over the five-year period. In the UK, the number of monthly mobile messages sent per connection

increased by an average of 22.7% a year to 111 messages per month. In countries where SMS is largely charged on a per-message basis, growth rates have been slower or have fallen. For example, in Spain the average number of monthly messages per mobile connection in 2009 was 17, down from 28 in 2004, while in Germany the average was 27 messages per month in 2009, up slightly from 24 in 2004.

Figure 6.38 Monthly outbound messages per mobile connection, 2004 to 2009



Source: IDATE / industry data / Ofcom
Note: Figures for the USA include push-to-text and are not comparable to the other comparator countries

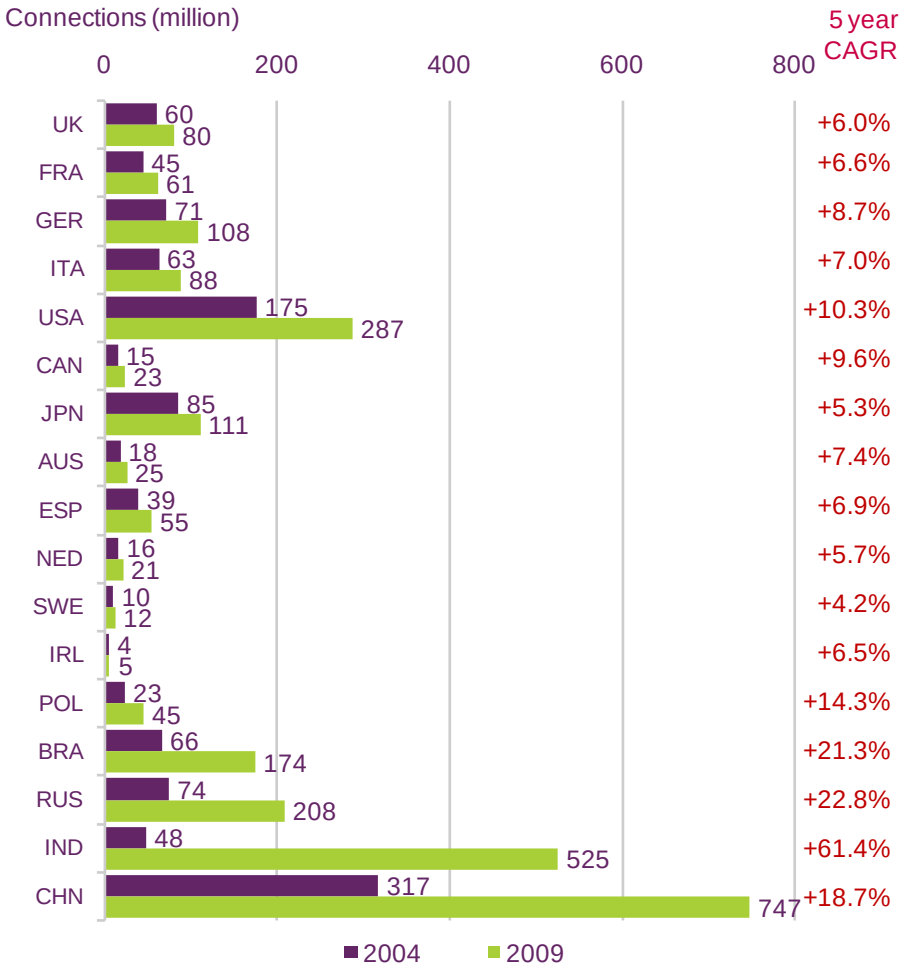
Massive growth in mobile connections in the BRIC countries

The total number of mobile connections continued to increase across all 17 countries covered in this report, rising by an average of 18.9% each year in the five years to 2009 (Figure 6.39). China added 430 million mobile connections over this period, and by the end of 2009 there were more active mobile connections (747 million) in China than in all of our European comparator countries and Japan, Canada and Australia combined.

The highest average annual growth rate between 2005 and 2009 among our comparator countries was in India (61.4%), reflecting the relatively low penetration of mobile services in 2004, when it was just four connections per 100 people, and a subsequent rapid rise in take-up over the period. Growth in both China and India looks set to continue, as take-up was still relatively low at the end of 2009 (56 connections per 100 people in China, and 45 per 100 people in India).

In more mature markets growth was much lower, with the slowest growth being in Sweden (up 4.2% a year) where there were already more mobile connections than people in 2004. Similarly, the growth of mobile connections was relatively low in the UK due to high take-up, rising by an average of 6.0% a year over the period. However, even in mature markets the number of mobile connections continues to rise, driven largely by multiple connections per person, either through multiple SIMs for the same device, or through use of multiple devices, for example a mobile handset and a mobile broadband dongle.

Figure 6.39 Mobile connections, 2004 and 2009



Source: IDATE / industry data / Ofcom

Mobile broadband pushes up overall mobile take-up

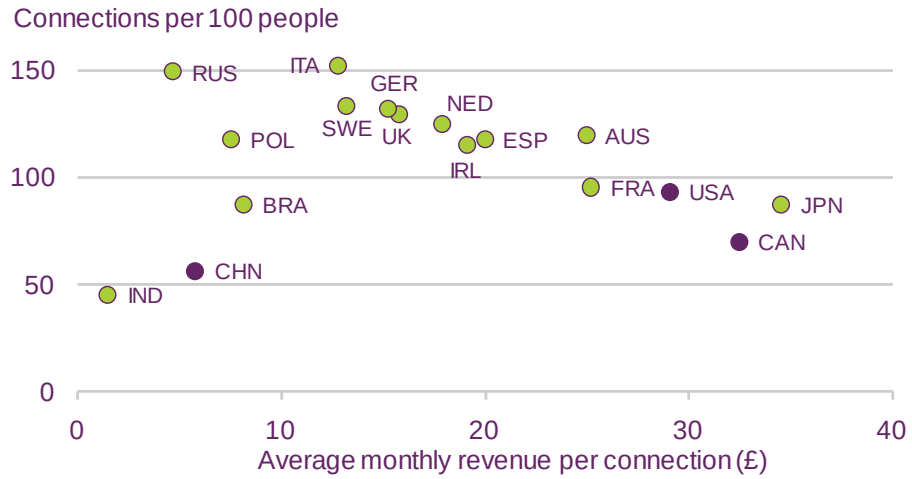
An analysis of the relationship between mobile take-up and average revenue per connection shows a strong correlation between the two among most of our comparator countries, with average spend per connection being lower in countries where mobile penetration is high (Figure 6.40). The main outliers in this analysis were countries where average monthly spend per connection was low (most noticeably India, China, Brazil Poland and Russia), a possible reason being that the straight currency conversion used in this analysis does not capture lower levels of GDP per capita in these countries, and the fact that the price of most goods and services will be lower in these countries.

In Italy and Russia, where the number of connections per 100 people were highest, the relatively low revenues per connection were largely due to consumers owning more than one pre-pay connection; this dilutes revenue per connection as it pushes up the number of

connections. In contrast, spend per connection was highest in Japan, Canada and the US, where there is a higher proportion of post-pay users and a user typically has just one connection.

The take-up of mobile broadband (using a PC/laptop datacard or dongle) also needs to be taken into account in this analysis, as this pushes up the overall number of connections but may contribute to lower average spend; typically, spend on mobile broadband tariffs is lower than on standard mobile phone tariffs. This is particularly relevant to the UK, Sweden, Italy and Ireland, where take-up of mobile broadband is relatively high.

Figure 6.40 Mobile take-up and average monthly revenue per connection, 2009



Source: IDATE / industry data / Ofcom
Note: USA, CAN and CHN include incoming call revenues

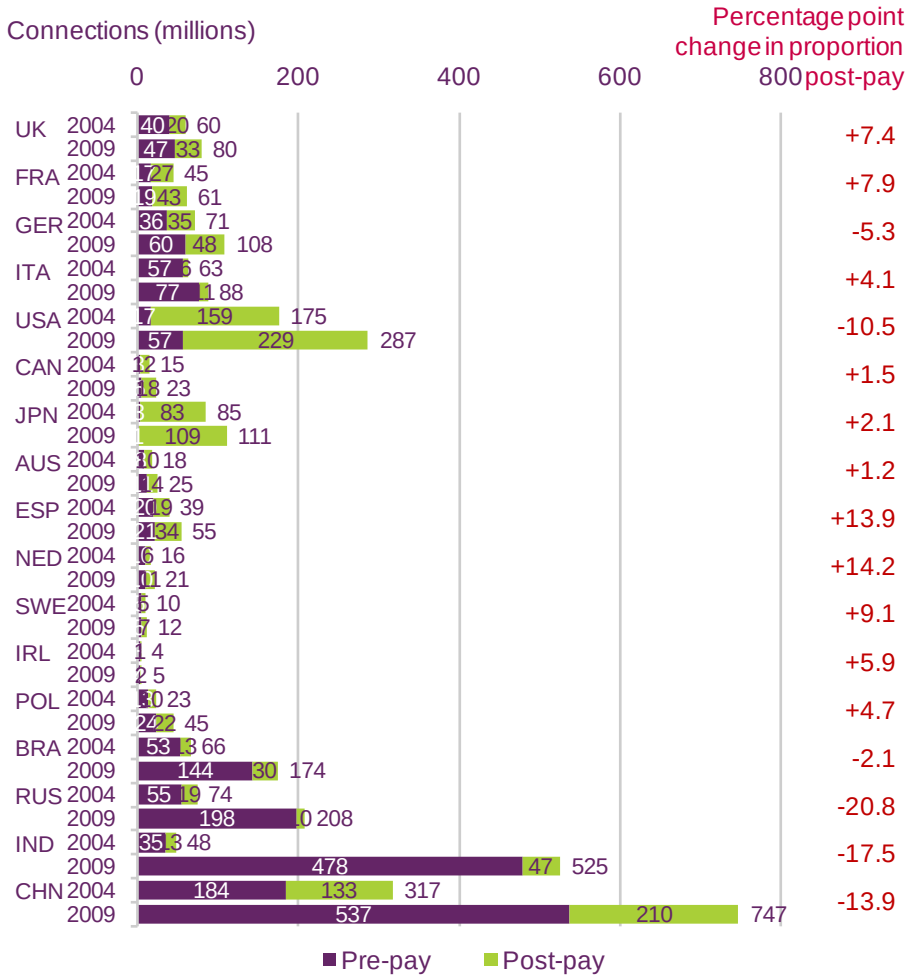
Post-pay accounts for a growing share of connections in most countries

In most of our comparator countries, there were more pre-pay (pay-as-you-go) than post-pay (pay monthly) mobile connections at the end of 2009 (Figure 6.41). A general trend in most of our comparator countries (11 out of 17) in the five years to 2009 has been the migration of connections from pre-pay to post-pay, although across our comparator countries as a whole the proportion of mobiles that were post-pay fell from 50.5% to 34.1% as a result of growth in the proportion of connections that are pre-pay in the larger nations (the US, Brazil, Russia, India and China).

Post-pay's share of total mobile connections had the largest percentage point increase in the Netherlands (14.2) and Spain (13.9) in the five years to 2009, increasing to 51.2% and 61.9% respectively, while in the UK post-pay's share increased by 7.4 percentage points to 41.1%. A number of factors are likely to be driving this. In mature markets, operators have increasingly focused on retention rather than acquisition and have therefore been incentivising consumers to commit to long-term post-pay contracts by offering prices lower than the pre-pay equivalents. In addition, the increasing take-up of smartphones is likely to have contributed to the number of post-pay contracts, as consumers look to spread the price of these more expensive handsets over the duration of a contract.

An additional factor in some countries in the last couple of years, and in particular in the UK, has been the emergence of low cost SIM-only post-pay tariffs that offer lower per-unit prices than pre-pay tariffs and often have similar flexibility, with many being available on 30-day rolling contracts. However, in Germany, the US and the BRIC countries, the proportion of connections using pre-pay increased over the period, with the largest proportional rise being in Russia, where its share increased by 20.8 percentage points to 95.2%.

Figure 6.41 Mobile connections, by type, 2004 and 2009



Source: IDATE / industry data / Ofcom

MVNOs have the highest market share in Germany among our comparator countries

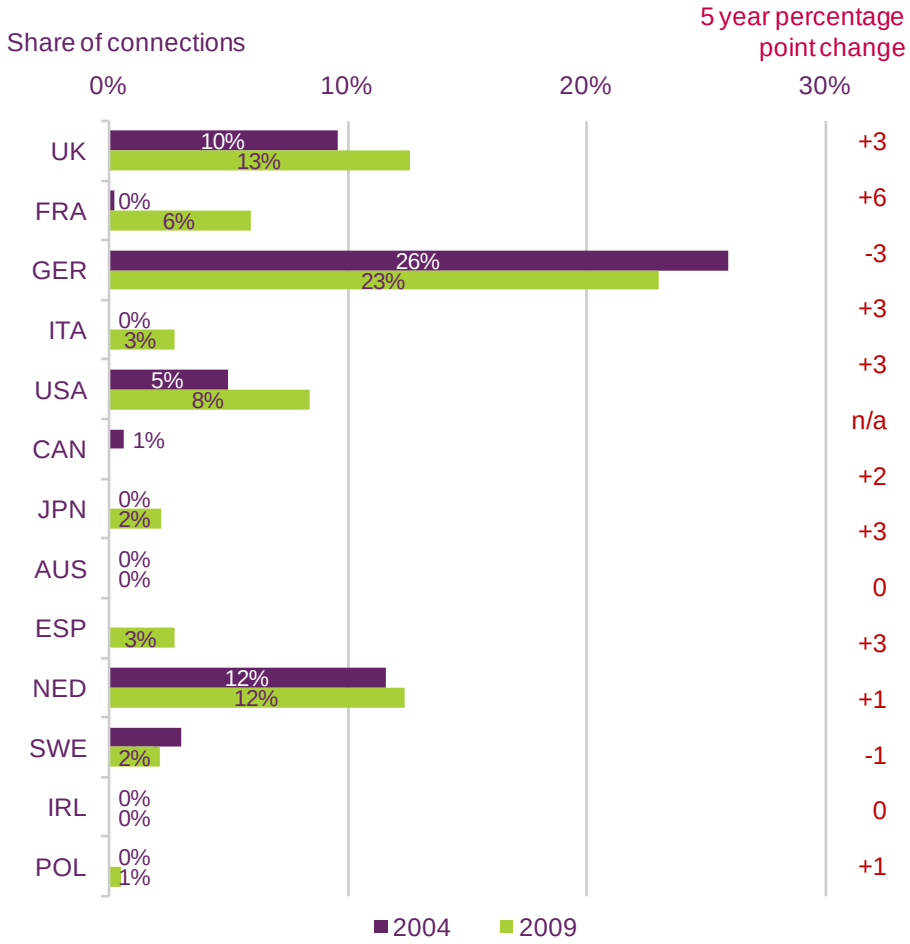
A mobile virtual network operator (MVNO) is a mobile provider that has neither its own spectrum allocation nor network infrastructure, and instead resells mobile services purchased on a wholesale basis from a network operator to its customers.

The share of mobile connections held by MVNOs at the end of 2009 ranged from zero in Australia and Ireland to 23% in Germany (including independent service providers, i.e. resellers) among the 13 comparator nations for which figures were available (Figure 6.42). In most countries MVNOs' share increased in the five years to 2009, with MVNOs being first introduced in Italy, Japan, Spain and Poland during this period. The strongest growth in MVNO share was in France, where it increased from 0.2% to 6%, largely driven by Virgin Mobile, which accounted for half of all MVNO connections in France in 2009.

In the UK, MVNOs accounted for 13% of mobile connections in 2009, up from 10% in 2004, driven by the emergence of supermarket MVNOs such as those run by Tesco and Asda, and MVNOs which target immigrant communities in the UK by offering low-cost international calls, such as Lebara Mobile and Lycamobile. While the MVNO share of connections was highest in Germany, along with Sweden, it was one of only two of the comparator countries for which data were available where MVNOs' connection share declined during the five-year

period, falling by three percentage points and one percentage point respectively, due to market consolidation as some MVNOs were acquired by the mobile network operators.

Figure 6.42 MVNO share of total mobile connections, 2004 and 2009



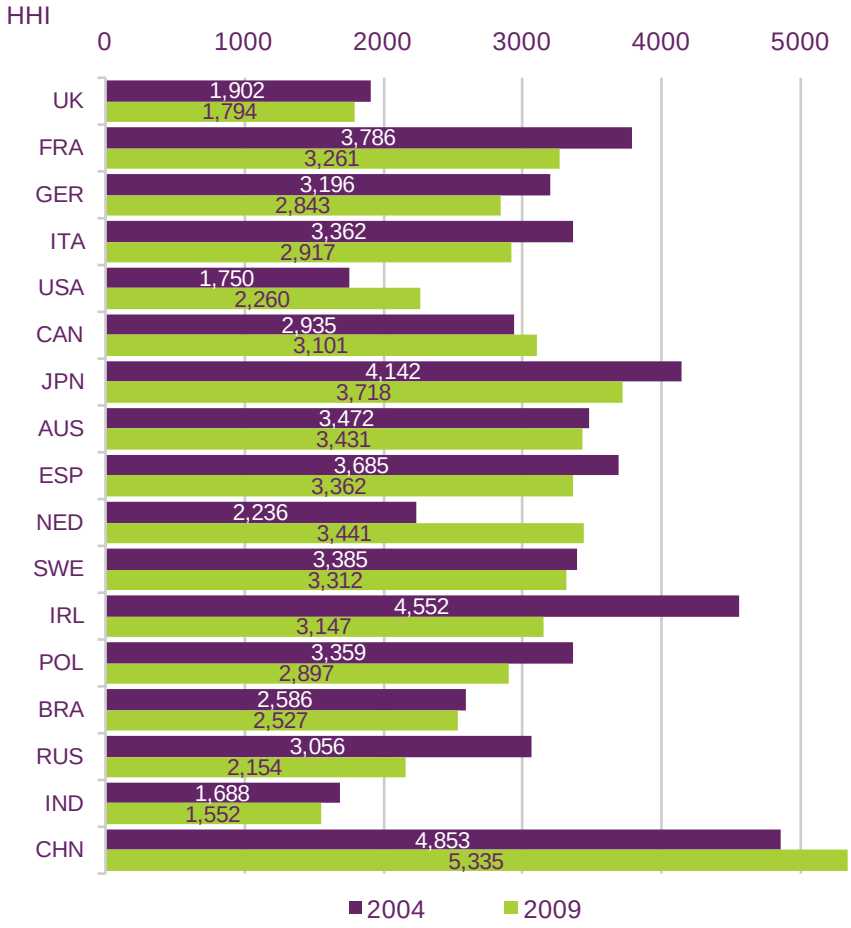
Source: IDATE / industry data / Ofcom
Note: UK and GER figures include resellers' connections in addition to full MVNOs'

India has the most competitive mobile market

The Herfindahl-Hirschman Index of market concentration (HHI) is based on the market share of individual mobile operators and is used as an indicator of levels of competition and market concentration. The HHI scale ranges from 0 (for a hypothetical, perfectly competitive market, having an infinite number of competitors with an equal market share of zero) to 10,000 for a monopoly.

India had the least concentrated market in terms of connections at the end of 2009, with an HHI index of 1,552 (Figure 6.43). This is due to a relatively large number of operators which offer services at different coverage levels, including regional, pan-regional and national. However, as a measure of competition this may be misleading, as many of the operators will not be in direct competition with each other. The UK had the second least concentrated mobile market at the end of 2009, as a result of no single operator having a connection share of more than 30%, although the HHI index for the UK will have subsequently increased, following the merger of the UK operations of Orange and T-Mobile into Everything Everywhere in July 2010.

Figure 6.43 Herfindahl-Hirschman index of mobile concentration, 2004 and 2009



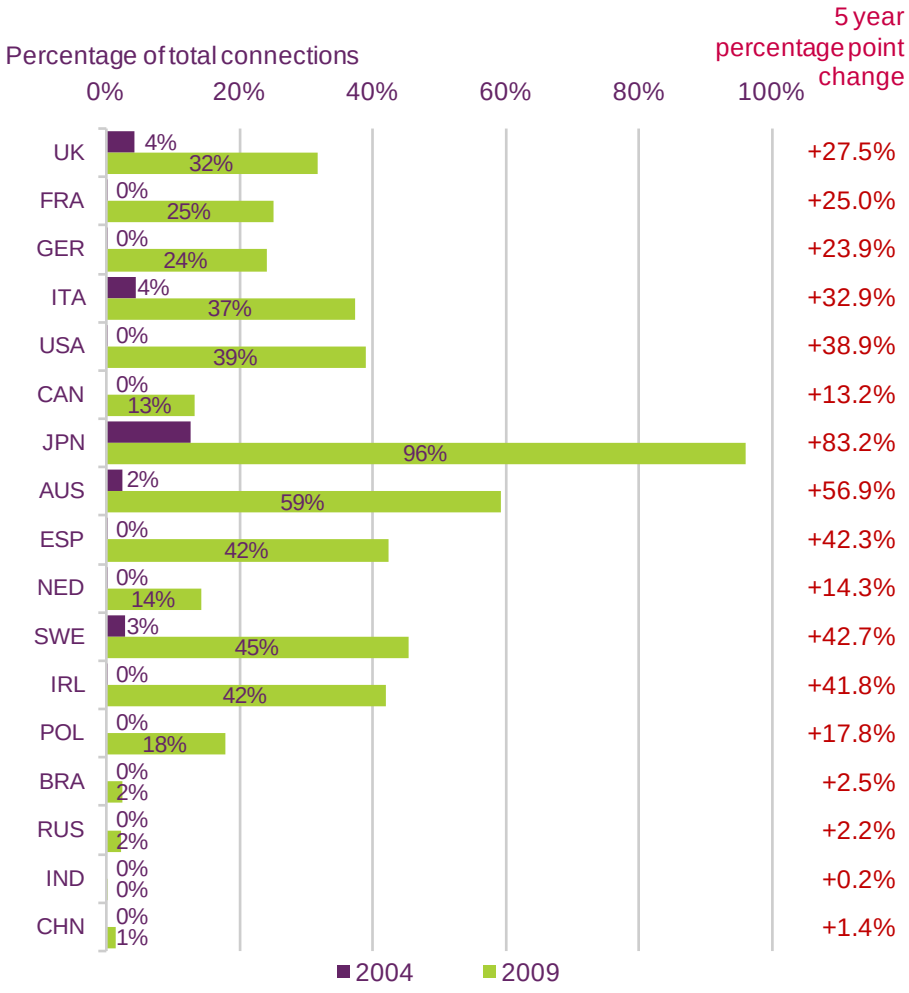
Source: IDATE / industry data / Ofcom

High take-up of 3G mobile services in Japan and Australia

The increased availability of networks offering 3G services, and the falling prices of 3G handsets, have resulted in widespread take-up of higher-speed 3G services across many of our comparator countries (Figure 6.44). In Japan, where operators were first to launch 3G services in 2001, adoption has been fastest, increasing from 13% at the end of 2004 to 96% by the end of 2009. Elsewhere, take-up has been particularly strong in Australia, where more than half (59%) of mobile connections were 3G by the end of 2009, compared to 2% in 2004. In the UK, nearly a third of mobile connections (32%) were 3G by the end of 2009, compared to just 4% at the end of 2004.

The BRIC countries had the lowest take-up of 3G services in 2009, ranging from less than 1% of connections in India to 2% in Russia and Brazil. This reflects the relatively recent roll-out of 3G services and the lower availability of 3G networks in these countries, and a lower propensity to purchase 3G handsets - which are typically more expensive than 2G equivalents.

Figure 6.44 3G as a proportion of total mobile connections, 2004 and 2009



Source: IDATE / industry data / Ofcom

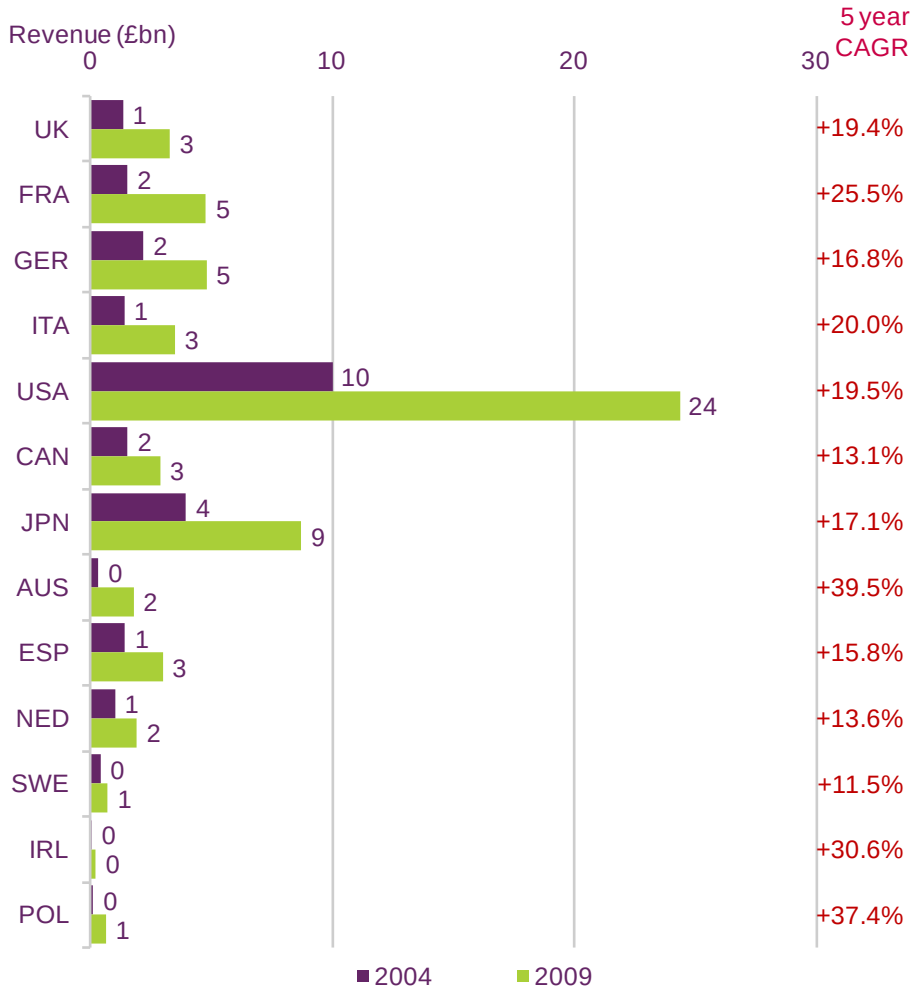
6.2.5 Broadband services

Annual broadband revenue growth averaged 19% between 2004 and 2009

Fixed broadband revenues more than doubled in most of the comparator countries for which figures were available between 2004 and 2009, the only exceptions being Sweden and Canada, although both of these nations also experienced strong revenue growth (Figure 6.45). This growth came as a result of increasing fixed broadband connections, as consumers either migrated from narrowband internet to broadband or chose a broadband connection when they subscribed to an internet service for the first time.

The highest average growth rates in the five years to 2009 were in Australia and Poland, where revenues increased by an average of 39.5% and 37.4% a year respectively, albeit from low starting points. The lowest rate of growth was in Sweden at 11.5% per year, while the annual average growth rate in the UK was 19.4%. The UK was also unique among the comparator countries for which figures were available, as it was the only country where fixed broadband revenues declined in 2009. This was as a result of falling broadband prices and increasing take-up of lower-cost, bundled, LLU-based DSL services.

Figure 6.45 Fixed broadband revenues, 2004 and 2009



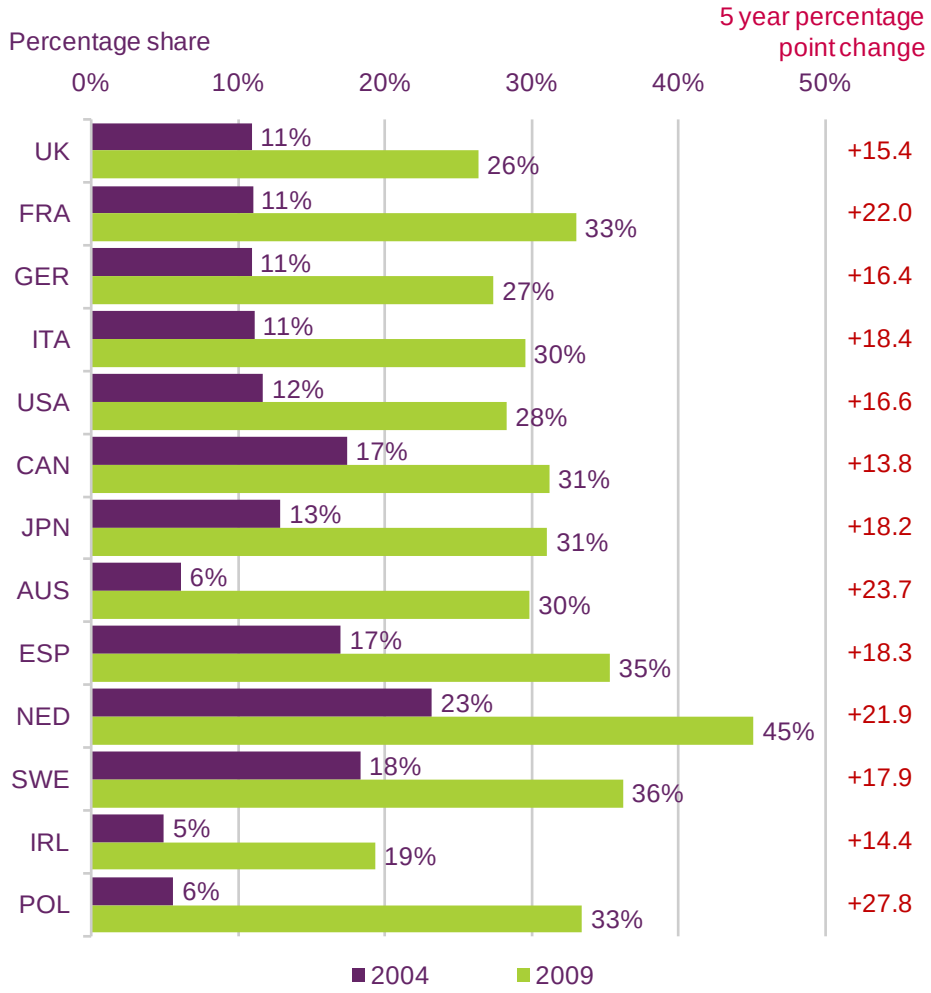
Source: IDATE / industry data / Ofcom

Broadband accounted for 30% of fixed telecoms revenues in 2009

In 2009, the average proportion of total fixed telecoms service revenues attributed to broadband across the 13 comparator countries for which figures were available, was 29.8%, up from 12.2% in 2004 (Figure 6.46). The proportion of fixed revenues generated by broadband ranged from 19% in Ireland to 45% in the Netherlands in 2009, while in the UK just over a quarter (26%) of fixed revenues were from broadband services.

The largest increase in the proportion of fixed revenues generated by broadband was in Poland, increasing by 27.8 percentage points to 33% in 2009, mainly as a result of increasing broadband take-up, but also driven by a significant decline in fixed-voice revenues (see Figure 6.24) over the period.

Figure 6.46 Fixed broadband as a proportion of total fixed revenues, 2004 and 2009



Source: IDATE / industry data / Ofcom

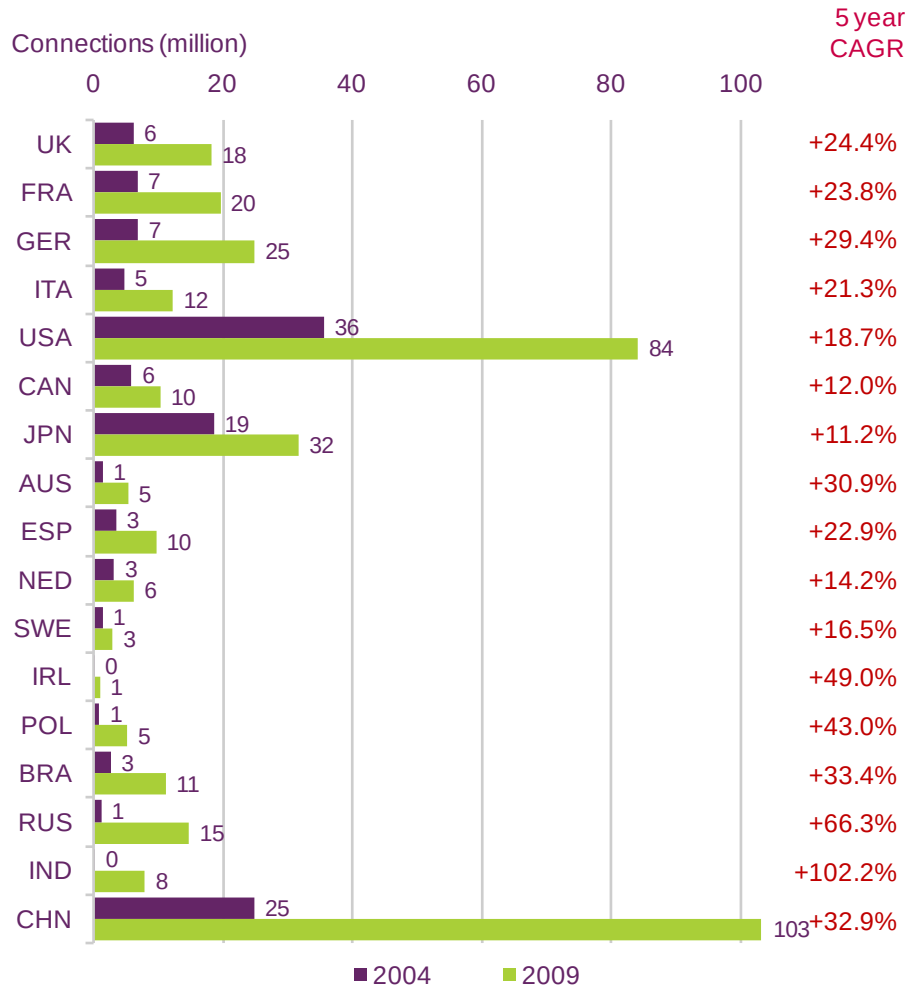
China has more fixed broadband connections than the US

China had 103 million fixed broadband connections at the end of 2009, the highest number of any country in the world (Figure 6.47).

On average, more than 15 million new fixed broadband connections were added a year in China in the five years to 2009 (representing an average annual growth rate of 32.9%), and growth looks set to continue as the number of broadband connections per 100 people in China was still only eight at the end of 2009 (it was highest in the Netherlands, among our comparator countries, at 37). However, despite the rapid fixed broadband connection growth in China, average annual growth rates in the five years to 2009 were higher in India (102.2%), Russia (66.3%), Ireland (49.0%), Poland (49.0%) and Brazil (33.4%).

Growth rates were lower among those comparator countries which had higher levels of take-up in 2004. Japan had the lowest average annual rate of growth in fixed broadband connections over the period (11.2% a year), while the number of broadband connections in the UK almost tripled between 2004 and 2009, an average annual increase of 24.4%.

Figure 6.47 Fixed broadband connections, 2004 and 2009



Source: IDATE / industry data / Ofcom

Over a quarter of UK fixed broadband connections have a headline speed of 10Mbit/s or above

A lack of availability of like-for-like performance data means that it is difficult to compare actual broadband speeds between countries. However, figures published by the European Commission do enable a comparison of the 'headline' speeds of broadband connections across selected member states. It should be noted that actual speeds delivered by DSL broadband are typically much slower than headline speeds, as a result of the degradation in performance as the length of the wire between local telephone exchange and consumer premises increases[109].

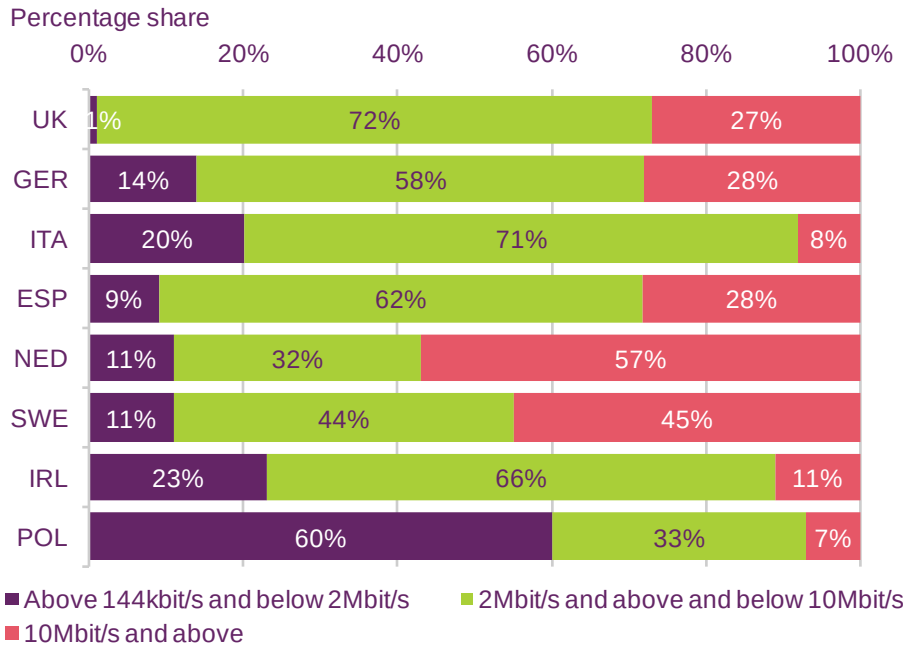
Nevertheless, the headline speeds of broadband connections do provide some insight, as they are typically related to the technology by which broadband is delivered. First-generation DSL broadband (ADSL1) delivers a maximum headline ('up to') speed of 8Mbit/s, while second-generation DSL broadband (ADSL2+) is theoretically capable of delivering 'up to'

[109] For details on how actual broadband performance relates to headline speeds, see Ofcom's research into broadband speeds, http://stakeholders.ofcom.org.uk/market-data-research/telecoms-research/broadband-speeds/broadband-speeds-2010/. The European Commission is also currently in the process of commissioning research which will compare actual broadband speeds across its member states.

24Mbit/s, and fibre services can deliver even faster speeds. Figure 6.48 indicates the split of fixed broadband connections by headline speed across a number of our European comparator countries at the end of June 2010 (figures were not available for France).

The proportion of connections with a headline speed of 'up to' 10Mbit/s and above is of interest as these connections will be provided by a technology superior to ADSL1. Of the countries for which figures were available, the Netherlands had the highest proportion of these higher-speed connections (57%), while Poland had the lowest proportion of such connections, at 7%. In the UK, over a quarter of connections (27%) offered headline speeds of 'up to' 10Mbit/s and above, a similar level to in Germany and Spain.

Figure 6.48 Split of fixed broadband connections by headline speed, Q2 2010



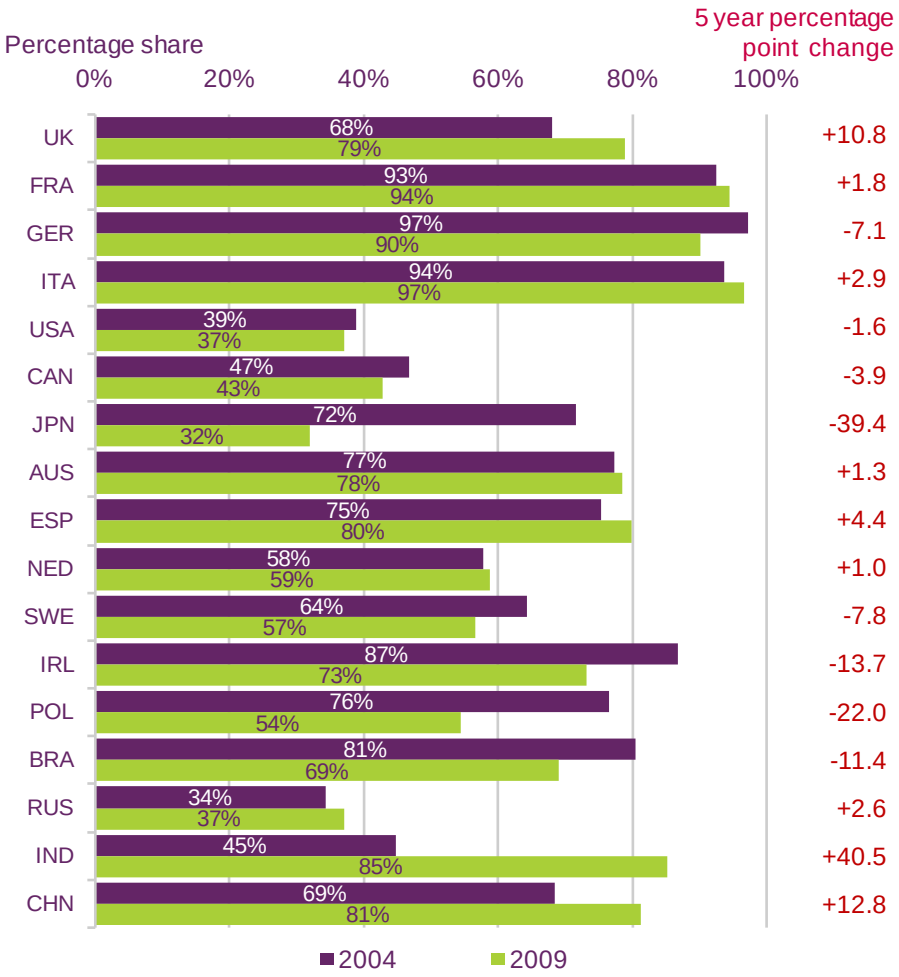
Source: European Commission / Ofcom

Fibre-based broadband beginning to erode DSL share in some countries

There was a mixed picture among the countries in this report in terms of changes in the proportions of fixed broadband connections that were DSL between 2004 and 2009 (Figure 6.49). In more than half of our comparator countries the proportion increased, with the largest increases being in India (40 percentage points), followed by the UK (11 percentage points), reflecting faster growth in take-up of broadband over DSL than over cable. In contrast, a higher rate of cable broadband adoption in Poland, Ireland, Brazil and Germany led to a decline in DSL's share of fixed broadband connections.

However, all countries are, to some extent, seeing investment in upgrading the broadband infrastructure to high-speed fibre networks (see Section 6.1.3), and in some countries fibre connections are already eroding the share of DSL (in particular in Japan, Sweden and the US). Most households in Japan have access to fibre broadband, and there was a 40 percentage point decline in the number of fixed broadband connections using DSL in the five years to the end of 2009, as take-up of fibre extended to over half of all broadband subscribers.

Figure 6.49 DSL as a proportion of all fixed broadband connections, 2004 and 2009



Source: IDATE / industry data / Ofcom

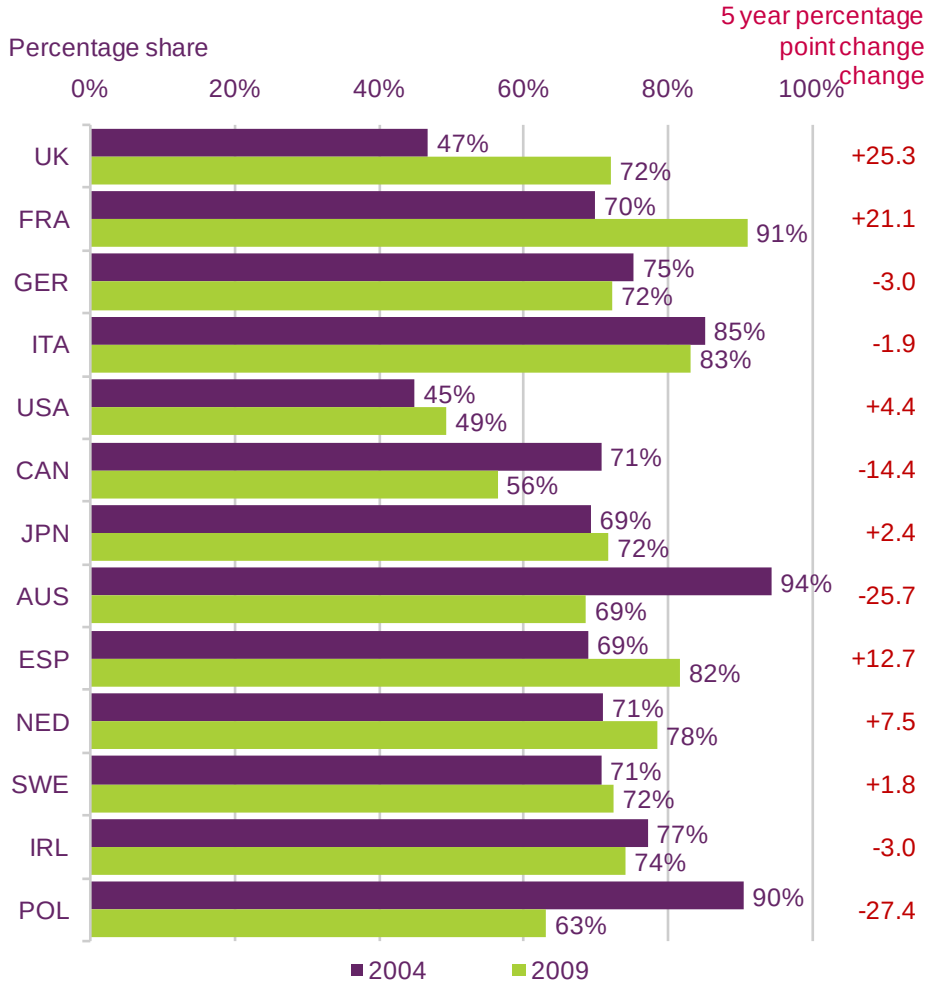
Total market share of the top three providers remains unchanged at 66%

The combined retail market share of the three largest broadband providers in each country (as shown in Figure 6.50) can be used as a measure of market concentration, and across the 13 comparator countries for which figures were available, the average share of the largest three providers was unchanged at 65.6% in 2009. The change in the market share of the largest three ISPs in the five years to 2009 among these comparator countries ranged from a 27.4 percentage point fall to 63% in Poland, to a 25.3 percentage point increase to 72% in the UK. In Poland this was as a result of smaller ISPs gaining market share at the expense of incumbent Telekomunikacja Polska (which saw its market share of fixed broadband connections fall from 78% to 44% over the period) while in the UK the increase in the aggregate market share of the three largest providers came was as a result of a series of mergers and acquisitions (in particular the acquisition of AOL Broadband and Tiscali by TalkTalk), and by the end of 2009 the three largest ISPs (BT, TalkTalk and Virgin Media) had a combined connection share of 72%.

The most concentrated broadband market at the end of 2009 was France, with the largest providers (Orange, Free and SFR) accounting for 91% of connections. Excluding the US and Canada (where infrastructure-based competition between local incumbent telecoms providers and cable operators makes the share of the largest three operators a less useful

measure of competition) the least concentrated broadband market among our comparator countries was in Poland.

Figure 6.50 Retail connection share of the top three fixed broadband providers, 2004 and 2009



Source: IDATE / industry data / Ofcom

6.3 The telecoms user

6.3.1 Introduction

This section looks at trends in the availability and use of telecoms services in the 17 countries covered by this report, starting with an overview of the availability, take-up, average spend and levels of switching for each service. This is followed by analyses of fixed and mobile voice, and fixed broadband and mobile data services, which take a deeper look at use and costs of these services.

The analysis is based on Ofcom figures for the UK telecoms market, which are collected as part of our regular data collection programme, international data that has been compiled for use in this report, and third-party sources. In addition, we commissioned consumer research, undertaken in October 2010, in six of our comparator countries (the UK, France, Germany, Italy, the US and Japan).

The key points highlighted in this section include:

- **Australia had the highest telecoms spend per person among our comparator countries in 2009 at £626, having overtaken the US and Ireland during the year**. In the UK the average spend per person was £442, £17 (4%) less than in 2008 (page 320).

- **Ofcom consumer research in six comparator countries suggested that levels of switching were highest in Germany**. 18% of respondents with a fixed line, a mobile or a fixed broadband connection in Germany had switched supplier in the previous year, and levels of switching in the UK were in line with these (page 324).

- **The UK fixed telephony market is proving resilient in comparison with many other nations.** In the UK the average number of lines per 100 people fell by 1.4 in 2009, the third lowest rate of decline among our 17 comparator countries (page 325).

- **The US and Italy had the highest proportion of mobile-only homes in October 2010.** Ofcom consumer research suggests that among six countries surveyed the US and Italy had the highest proportion of mobile-only homes (29%) while in the UK 13% used mobiles as their sole form of telephony (page 330).

- **The proportion of total voice calls made from mobile phones increased between 2004 and 2009 in all of the nations for which figures were available**. In the UK the proportion of voice calls originating on mobile phones increased by 19 percentage points to 47% over the period (page 333).

- **The average cost of an outgoing UK mobile voice call minute was 8.8 pence in 2009, 12% less than in 2008**. This was lower than in Japan, France, Germany and Spain, comparable to Italy, the Netherlands and Sweden, and higher than in Canada and the US (page 336).

- **43% of internet users in Japan said that they had used a mobile handset to access the internet at home**. This was the highest proportion among the six countries surveyed; the UK had the second highest level of use (at 29% of internet users), and use was lowest in Germany at 18% (page 341).

- **The UK was the only comparator country where average fixed broadband spend per person fell in 2009.** This was due to growth in the take-up of low-cost

bundled LLU DSL services, and came despite increasing connection speeds (page 323).

- **At the end of 2009 the Netherlands had the highest number of fixed broadband connections per 100 people, at 37**. This compared to 29 in the UK; the average among our comparator nations was ten, or 27 excluding the BRIC countries (page 338).

- **The UK had the second-lowest average monthly fixed broadband cost in 2009 at £15.42**. The average annual fall in the cost of a UK fixed broadband connection was 8.8% in the five years to 2009, while Australia and Japan were the only comparator countries where the average cost of a fixed broadband connection increased during the period (page 346).

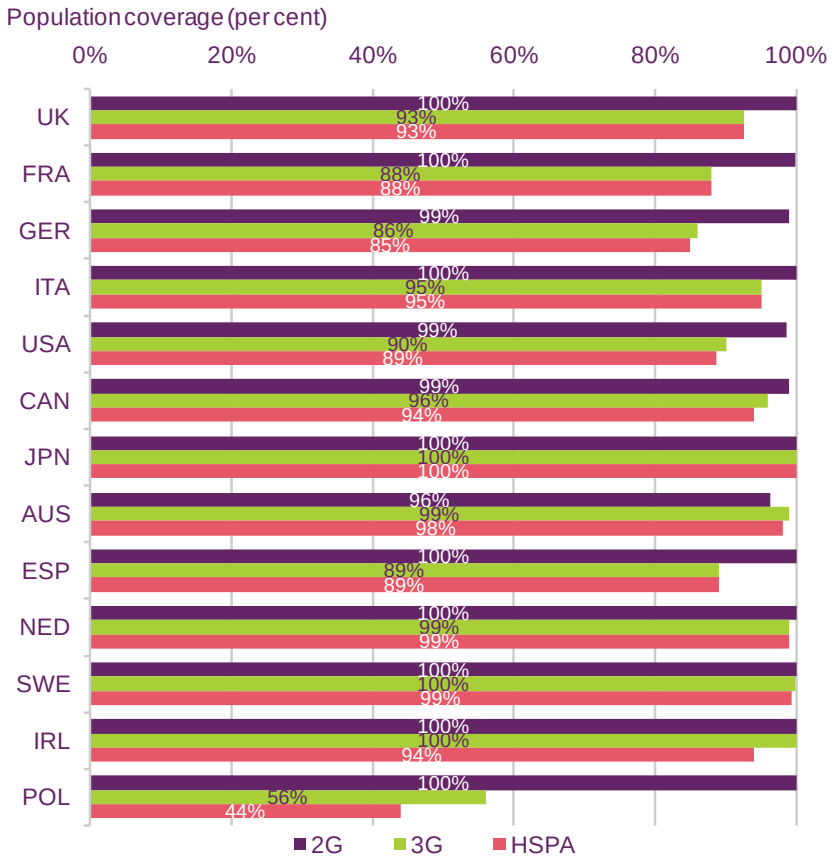
6.3.2 Availability of mobile and broadband services

3G population coverage is 85% or higher in all countries except Poland

It is difficult to compare mobile coverage, as operators and regulators use different methodologies for identifying coverage, and in most countries there is little information on the extent to which the footprints of the different operators' mobile networks overlap with each other. Figure 6.51 compares coverage using the most reliable data available to Ofcom, by depicting the network coverage of the operator in each country which has the largest coverage, but it should be treated with caution. By this analysis, Australia was the only one of the 13 comparator countries, for which figures were available, where less than 99% of people had access to mobile telephony services in 2009. In the UK almost all people (over 99%) were able to receive 2G services, very slightly higher than the average among our comparator countries.

The roll-out of 3G mobile networks over the last decade is also evident in the figures, with 3G and HSPA population coverage being 85% or higher in all comparator countries except Poland, where 3G population coverage was 56% and HSPA 44%. Levels of 3G and HSPA population coverage in the UK (both 93%) were again higher than the averages for the countries covered by this report, which were 91% for 3G services and 89% for HSPA.

Figure 6.51 Mobile availability for the largest operator, by technology, 2009



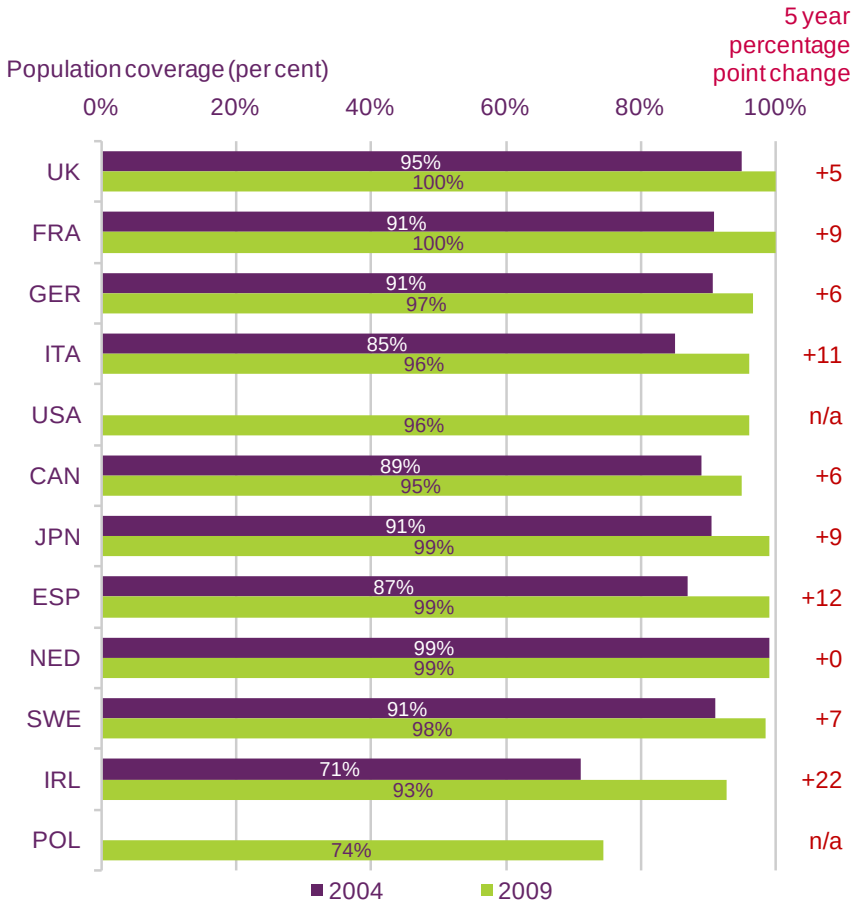
Source: IDATE
Note: Based on reported coverage of single operator with largest population coverage; CDMA 2000 EV-DO standards are available alongside HSPA in the USA and CAN

Fixed broadband population coverage is over 75% in all comparator countries except Poland

The availability of fixed broadband services increased in the five years to 2009 in all of the comparator countries for which figures were available except the Netherlands, where it was unchanged at 99% of the population (Figure 6.52). On average, 96% of people in these countries lived in an area where fixed broadband services were available in 2009, and, as with the availability of 3G and HSPA mobile services, the availability of fixed broadband was significantly lower in Poland than in the other countries covered by this report, with less than three-quarters of people (74%) living in an area where fixed broadband services were available. This is related to the fact that fixed-line voice services are available to only about 80% of the population in Poland.

Almost all people in the UK (over 99%) lived in an area where fixed broadband was available in 2009; four percentage points higher than the average for those countries for which we have data. However, it should be noted that the quality of the broadband service will vary significantly, due to factors such as the length, or the quality, of the line from the local telephone exchange to the customer premises, and the consumer's own in-house wiring.

Figure 6.52 Fixed broadband availability, 2004 and 2009



Source: IDATE

6.3.3 Take-up of telecoms services

Household mobile take-up highest in Italy in 2009 at 95%

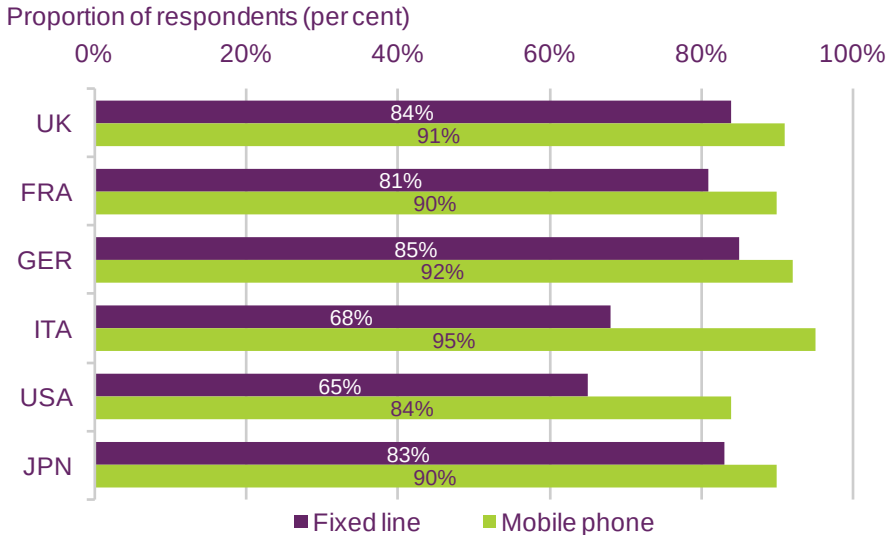
Ofcom consumer research undertaken in October 2010 asked internet users[110] in six of our comparator nations (the UK, France, Germany, Italy, the US and Japan) about their use of communications services. Among the countries covered by the research, respondents in Germany reported the highest levels of household fixed-line take-up (85%), while it was lowest in homes in the US at 65% (Figure 6.53), partly as a result of high levels of VoIP use, which is considered in more depth in Section 6.1.5 of this report.

According to our research, the US also had the lowest take-up of mobile telephony, with 84% of people saying that there was at least one mobile in their home, due to a large extent to the general lack of availability of low-cost tariffs (see Section 2). Mobile take-up was highest in Italy, where only one in 20 (5%) homes did not have a mobile, while in the UK 84% of respondents said that they had a landline, in line with Germany, and 91% of said that there was at least one mobile in their home.

Take-up of fixed broadband is examined in section 6.3.8.

[110] For practical reasons, our research methodology was to survey online panels in all six countries. Therefore the findings are applicable only to internet users in each country, not to the general population.

Figure 6.53 Household take-up of fixed and mobile telephony, 2010



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

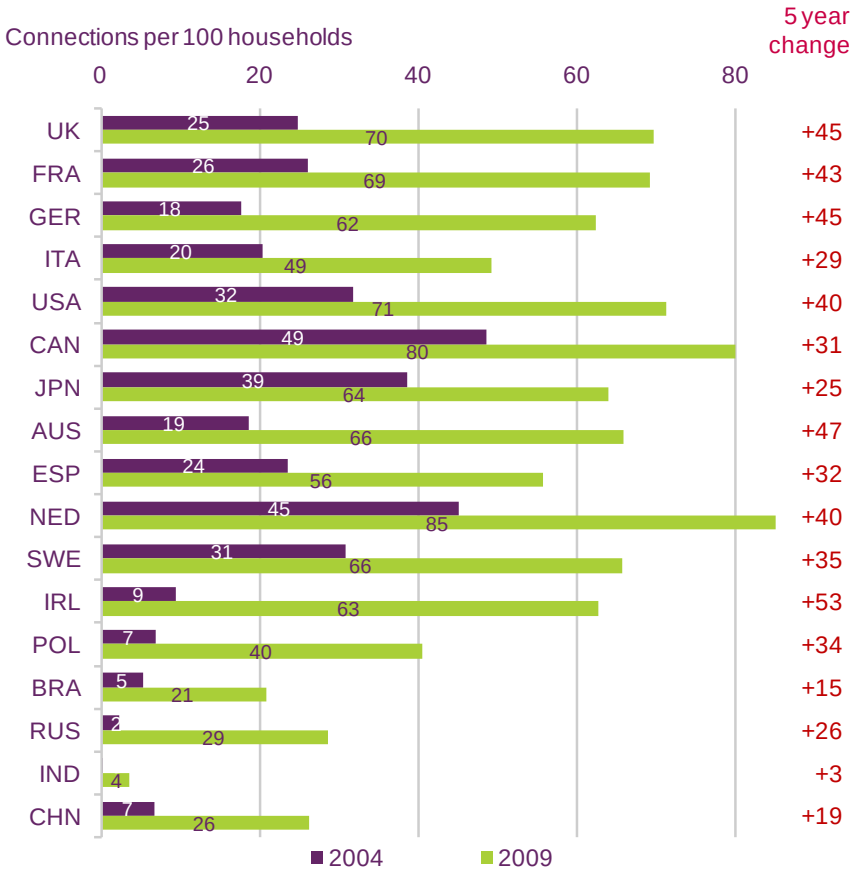
The Netherlands has the highest level of fixed broadband connections per 100 homes

At the end of 2009 the Netherlands had the highest number of fixed broadband connections per 100 households, at 85, compared to an average among our nations of 34 (or 66 excluding the BRIC countries (Figure 6.54)). The Netherlands has historically had high fixed broadband availability and take-up, as its population is largely urban, making the deployment of broadband networks very cost-effective for providers. It is important to note that this calculation includes some business broadband lines, and therefore the figures in the analysis do not equate to household fixed broadband take-up.

At the end of 2009 the UK had the fourth-highest number of fixed broadband connections per 100 households, at 70[111], and the joint third-highest increase in connections per home in the five years to 2009 (along with Germany) at 45 connections per 100 homes. Only Ireland (with 53 connections per 100 homes) and Australia (45) had a faster rate of fixed broadband connection growth over the period. The growth in fixed broadband take-up in Ireland over the past few years can be attributed to rapidly falling prices (as shown in section 6.3.10) along with a government initiative to encourage broadband network roll-out.

[111] Ofcom consumer research in Q4 2009 found that 66% of households had a fixed line; the difference is likely to be due to the inclusion of some business lines in the international comparative data.

Figure 6.54 Fixed broadband connections per 100 households, 2004 and 2009



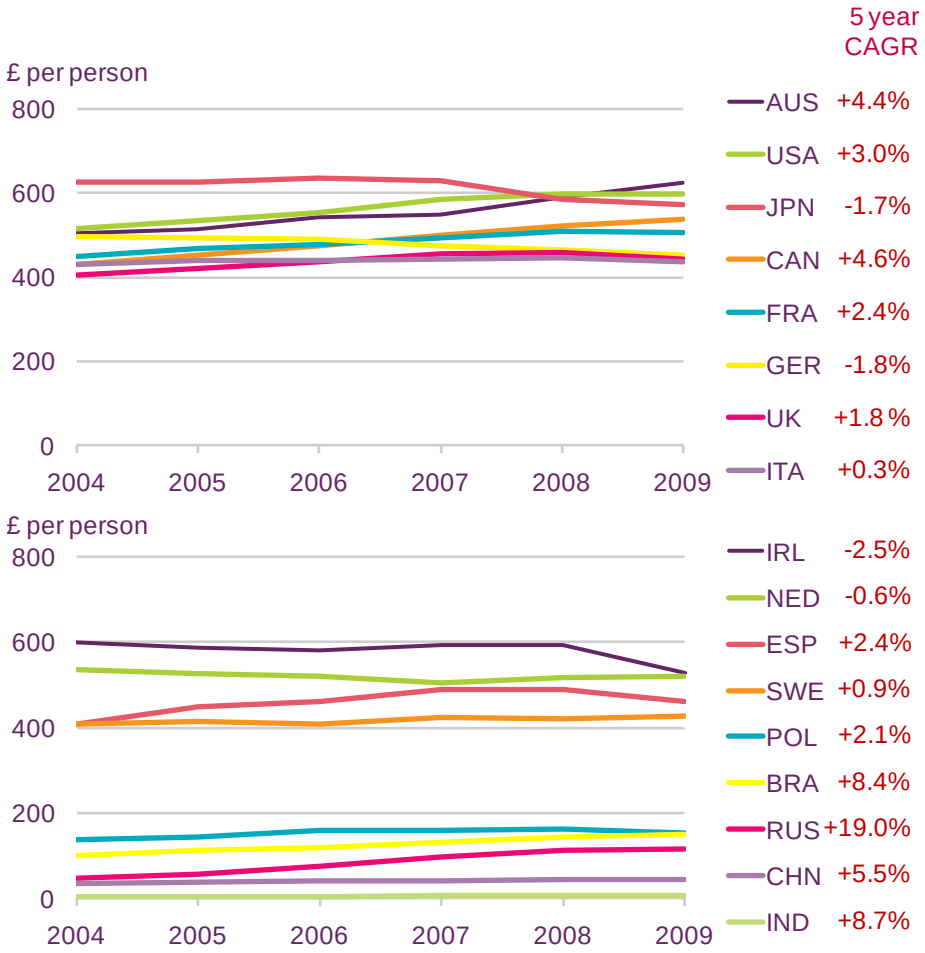
Source: IDATE / industry data / Ofcom

People in Australia spend most per person on telecoms services

Australia had the highest average telecoms spend per person among our comparator countries in 2009, at £626, having overtaken both the US and Ireland during the year (Figure 6.55). The main reason for the increase in average telecoms spend in Australia was a 9% increase in the number of mobile connections, although there was also strong growth in fixed broadband revenues, which increased by almost 20% during the year.

The UK had the tenth-highest average telecoms spend, at £442 per person, 3.8% (£17 per person) lower than in 2008 as a result of falling use of fixed voice services and declining mobile and fixed broadband prices. Ireland and Japan were the only countries which saw a decline in telecoms spend per person between 2005 and 2009, and there was a particularly notable dip in Ireland in 2009, when spending was 10.9% lower than in 2008, as competitive pressure, a saturated market and the economic downturn all combined to push down prices and constrain use. Over the five years Russia had the fastest growth in average spend per person, at 19.0% a year, to a large extent due to expansion in the mobile sector.

Figure 6.55 Total telecoms service retail revenue per person, 2004 to 2009



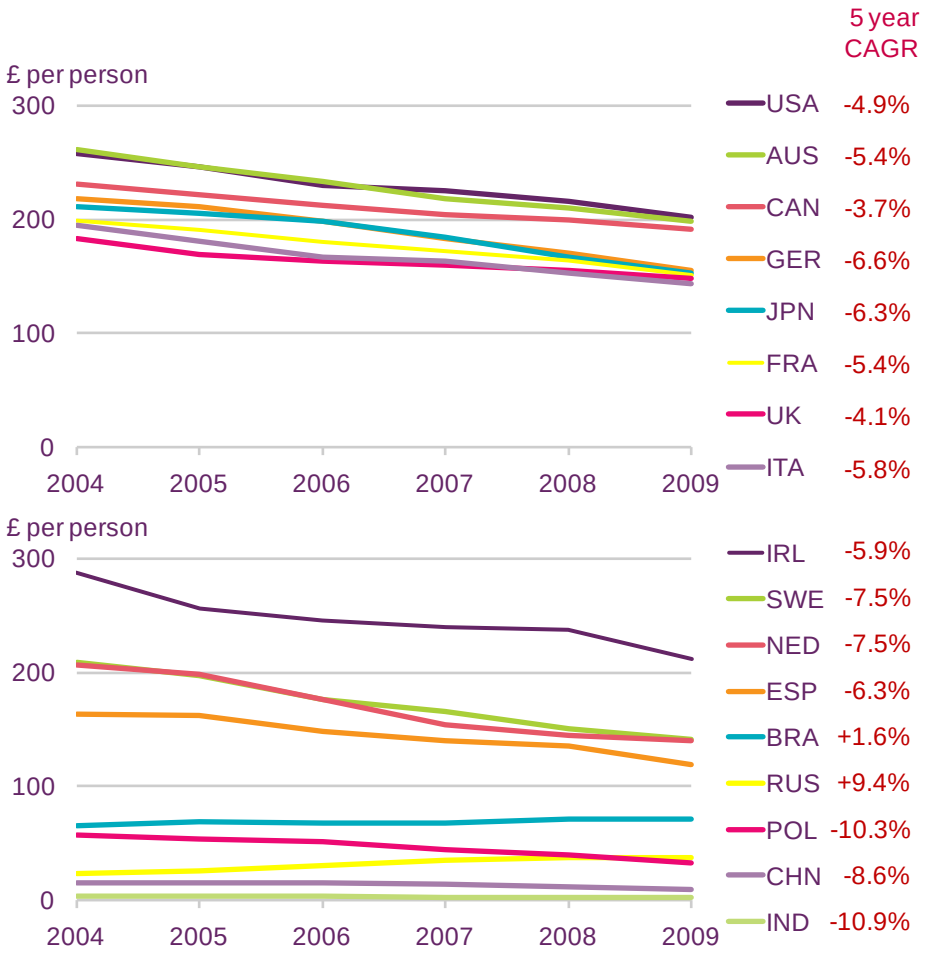
Source: IDATE / industry data / Ofcom
Note: Total telecoms service revenue excludes revenue from narrowband internet and corporate data services

Average fixed-line spend per person falls in all of our comparator countries

Average spend on fixed voice services fell in all of our 17 comparator countries in 2009, the decline ranging from 0.7% in Brazil to 22.1% in China (Figure 6.56). Ireland continued to have the highest average fixed-line spend per person in 2009 at £211, despite a drop of over 10% during the year as a result of a fall in the number of fixed lines and average use per line.

Average fixed-line spend per person was £148 in the UK in 2009, higher than the average among all comparator countries (£45) but 9% lower than the average excluding the BRIC countries (£161). Average UK fixed-line spend per person fell by 4.4% in 2009, slightly faster than the 4.1% average decrease in the UK in the five years to 2009, and lower than the average 8.1% fall among all of our comparator nations (7.2% excluding the BRIC countries).

Figure 6.56 Fixed-line voice retail revenue per person, 2004 to 2009



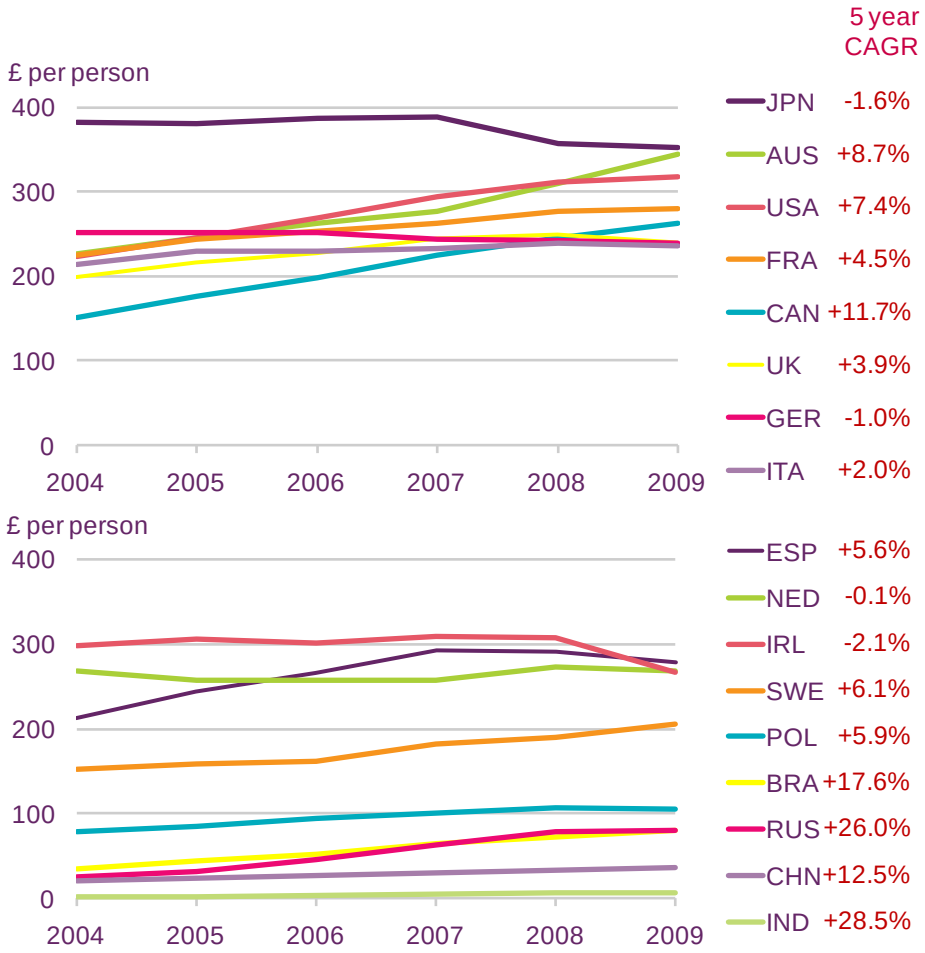
Source: IDATE / industry data / Ofcom

Average mobile spend per person fell in eight comparator countries during 2009

The UK was one of three countries where average mobile telephony spend per person fell for the first time in 2009 (the others being Italy and Poland). This meant that, including Germany, Japan, Spain, the Netherlands and Ireland, where spend had also fallen prior to 2009, average mobile spend fell in eight of our 17 comparator countries during the year (Figure 6.57). The decline in average spend came despite increasing connections per 100 people in all of these countries except Italy and Ireland (where inactive pre-pay connections have been removed from the overall mobile connection base), suggesting that in most countries, falling spend is a result of declining prices.

The average spend per person on mobile services among our comparator countries was £86 in 2009 (or £245 excluding the BRIC countries), 3.5% lower than in 2008 (2.5% excluding the BRIC countries). In the UK, average mobile spend per person fell by 4.0% to £240 in 2009, the ninth-highest spend among the countries in this report and 32% lower than the £353 average in Japan, where spend was highest. Growth in average mobile spend per person ranged from a 10.9% increase to £344 in Australia to a 13.1% fall to £267 in Ireland in 2009.

Figure 6.57 Mobile retail revenue per person, 2004 to 2009



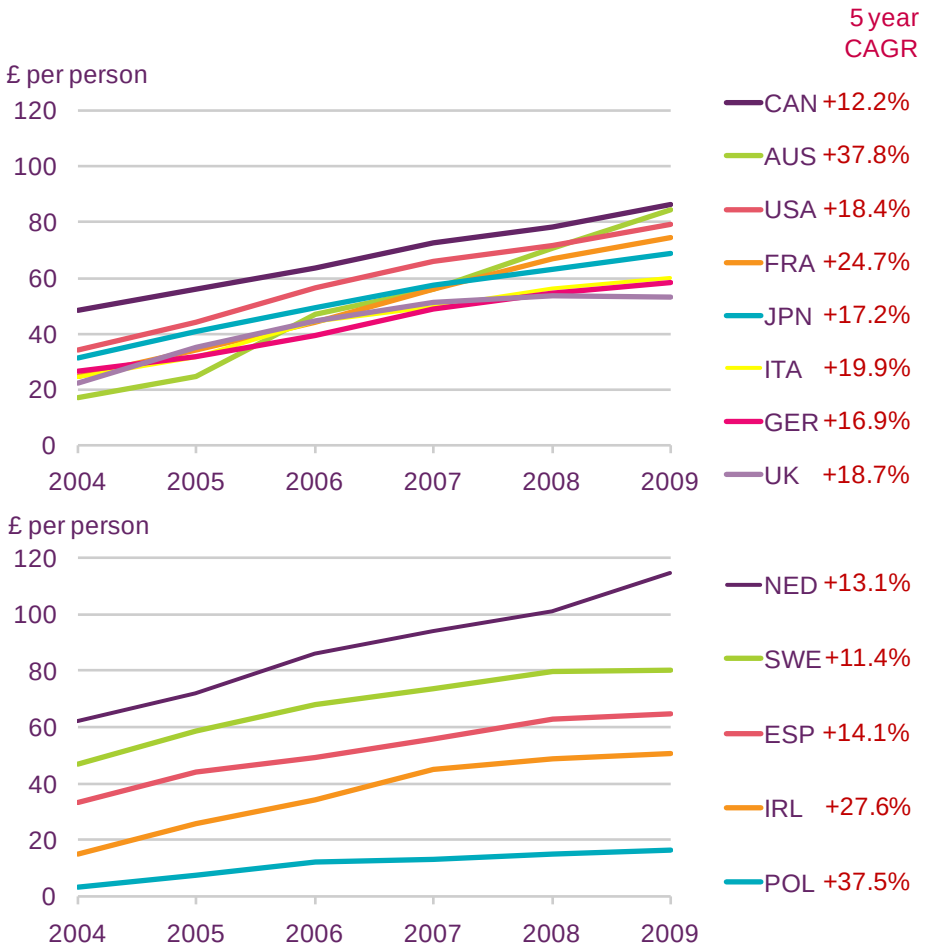
Source: IDATE / industry data / Ofcom
Note: USA, CAN and CHN include revenues from incoming calls

The UK is the only country where per-capita fixed broadband spend declined

The UK was unique among our comparator nations in 2009, as the only country in which average fixed broadband spend per person fell in 2009, down by 0.7% to £53 a year (Figure 6.58). This fall was due to declining prices and growth in the take-up of lower-cost bundled LLU-based DSL services (the average revenue per fixed broadband connection fell by 7.5% during the year) and was despite continued, albeit slowing, growth in the total number of UK fixed broadband connections. (It should be noted that broadband revenue data were not available for the BRIC countries and they are therefore excluded from this analysis).

In 2009 per-capita fixed broadband revenues ranged from £17 in Poland to £115 in the Netherlands (where the number of fixed broadband connections per household was highest). Growth in average fixed broadband spend in 2009 was highest in Australia, where there was a 19.8% increase to £83 per person during the year as consumers migrated to faster ADSL2+ packages and to cable services.

Figure 6.58 Fixed broadband retail revenue per person, 2004 to 2009



Source: IDATE / industry data / Ofcom

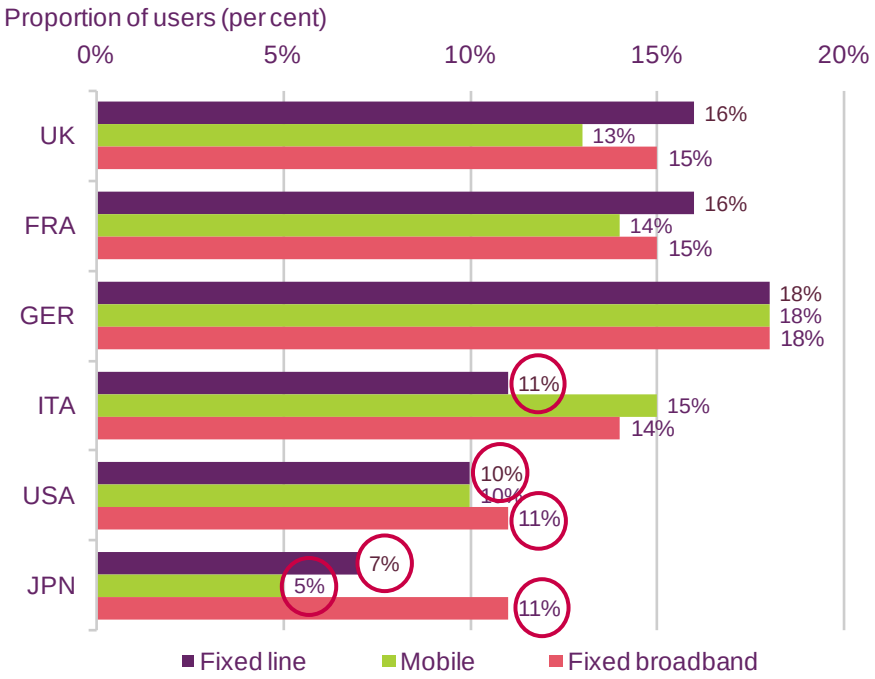
Levels of switching of all services are highest in Germany

Levels of consumer switching between communications providers is often an indicator of effectively operating competition, and one of Ofcom's nine priorities in our Annual Plan for 2001/11 is to ensure that consumers can switch communications providers by removing unnecessary barriers[112]. Our research in six comparator countries suggested that consumers in Germany were the most likely to have switched telecoms provider in the year to October 2010, with 18% of respondents with a fixed line saying that they had switched provider during the previous 12 months, 18% of those with a mobile and 18% of those with a fixed broadband connection (Figure 6.59).

Levels of switching in the UK were in line with those in Germany, at 16% for fixed-line telephony, 15% for fixed broadband and 13% for mobile voice and data services. Japan had the lowest levels of switching among respondents with a fixed line (7%) and a mobile phone (5%) and the joint lowest level of switching (with the US) for those with a fixed broadband connection (11%).

[112] http://www.ofcom.org.uk/files/2010/06/annplan1011.pdf

Figure 6.59 Proportion of users of a service who have switched provider in the last twelve months, 2010



Source: Ofcom consumer research, October 2010
Total sample: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001
Base: Proportion of people with each service

6.3.4 Voice services

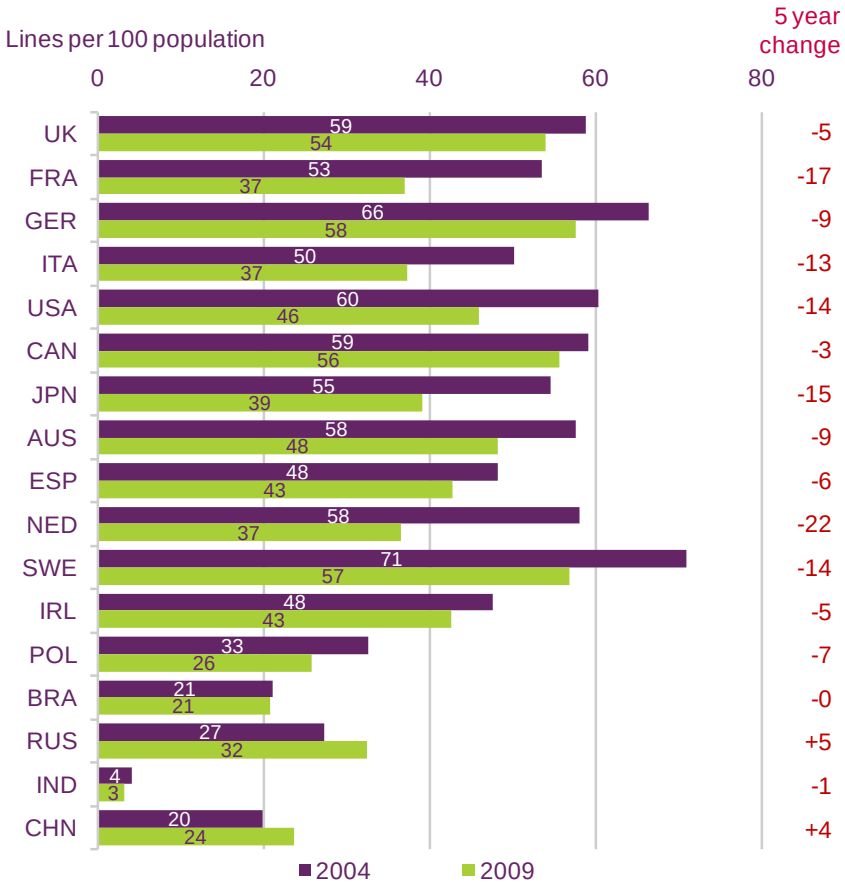
In this section we look at the take-up and use of both fixed and mobile voice services, including analysis of the cost of each. This section does not look at levels of Voice over Internet Protocol (VoIP) use among our comparator countries; this can be found in section 6.1.5 of this report.

Fixed lines per person falls in all comparator nations except Russia in 2009

Russia was the only country covered in this report where the number of fixed lines per 100 people did not fall in 2009. While in Russia the number of lines per 100 people was unchanged, at 32, on average it fell by 1.5 across all of our comparator countries (and 3.1 per 100 people excluding the BRIC countries). Again, it should be noted that this calculation includes business lines and the figures therefore should not be used to compare residential fixed-line penetration.

The UK fixed telephony market is proving resilient in comparison with many countries: the average number of lines per 100 people in the UK fell by 1.4 in 2009, the third-lowest rate of decline among our 17 comparator countries, and the UK also had the fourth-highest number of lines per 100 people (54) at the end of 2009 (Figure 6.60). Germany had the highest number of lines per 100 people at the end of 2009, at 58, while it was lowest in India, at just three. Despite rapid growth in the overall communications sectors in China, India and Brazil, the number of fixed voice lines is declining, as consumers and businesses use mobile (and to a smaller extent, VoIP) to fulfil their telephony needs.

Figure 6.60 Fixed lines per 100 population, 2004 and 2009



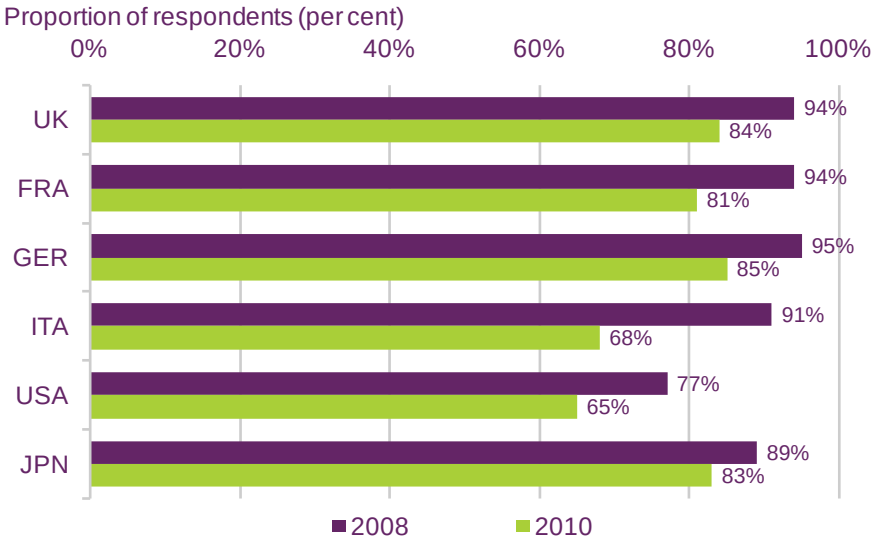
Source: IDATE / industry data / Ofcom

The US has experienced the fastest decline in fixed-line penetration since 2008.

Ofcom consumer research suggests that household fixed-line take-up among internet users ranged from 65% in the US (where levels of VoIP use are high) to 85% in Germany in October 2010 among the six comparator countries for which figures were available. In the UK, fixed line take-up was at a similar level to that in Germany, with 84% of people saying that there was a fixed line in their home, a ten percentage point drop over the previous two years.

Italy had the largest decline in fixed-line penetration in the two years to 2010, with household take-up falling by 23 percentage points to 68% (Figure 6.61), partly a result of high mobile penetration and mobile broadband penetration among homes in Italy (in many countries, the requirement to have a fixed voice line in order to receive DSL broadband services constrains the growth of mobile-only households). The lowest decline in fixed telephony penetration over the period was in Japan, where household take-up fell by six percentage points to 83%.

Figure 6.61 Household take-up of fixed-line services, 2008 and 2010



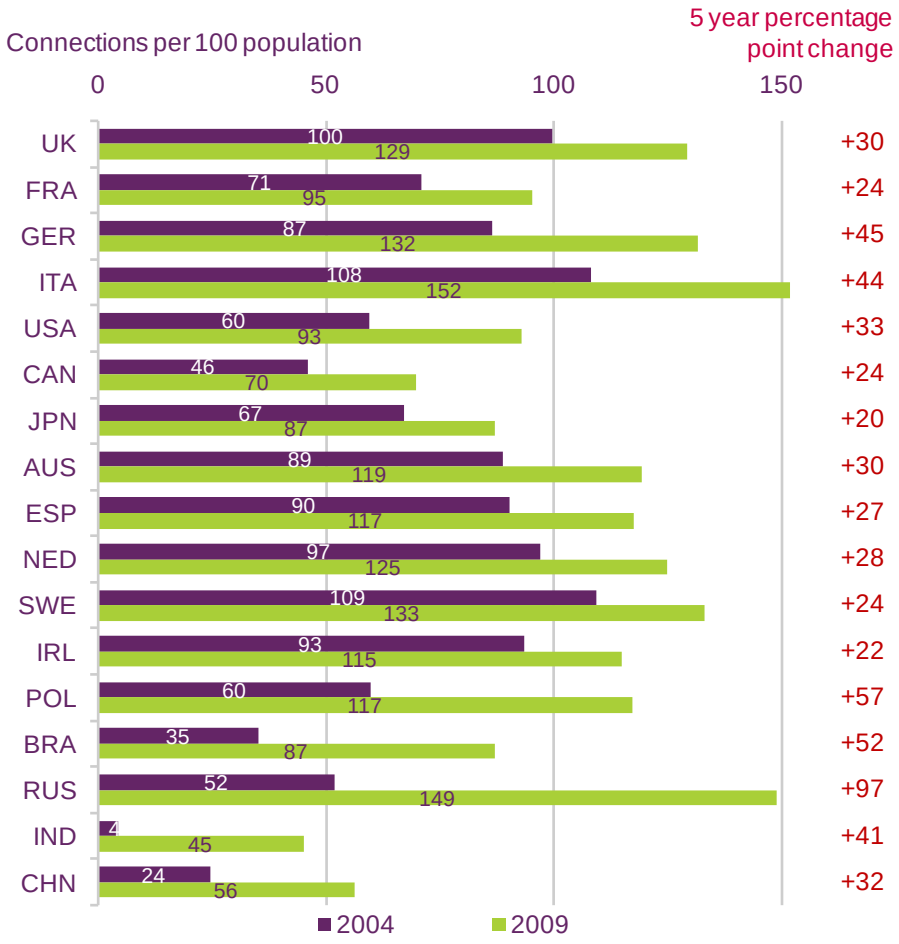
Source: Ofcom consumer research, October 2010
Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

There were more than 1.5 mobile connections per person in Italy at the end of 2009

At the end of 2009 the number of mobile connections per 100 people in our 17 comparator countries ranged from 45 in India to 152 in Italy (Figure 6.62). In Italy and Russia (where average mobile connections per person was the second highest at 149) this was largely the result of high take-up of pre-pay services and mobile users having more than one SIM or phone in order to take advantage of the different call rates provided by providers (as shown in Figure 6.64, 87% of mobile connections in Italy and 95% in Russia were pre-pay at the end of 2009).

The UK had the fifth-highest number of mobile connections per person among the countries in this report at the end of 2009, at 129. This represented an increase of five connections per 100 people during the year, a third of the largest increase among our comparator nations - 15 connections per 100 people in Russia and India. The average number of mobile connections per 100 population fell by four in Italy and by three in Ireland in 2009 as a result of saturated markets, a slow move towards post-pay (contract) rather than pre-pay connections, and because inactive pre-pay connections were removed from the overall connection bases.

Figure 6.62 Mobile connections per 100 population, 2004 and 2009

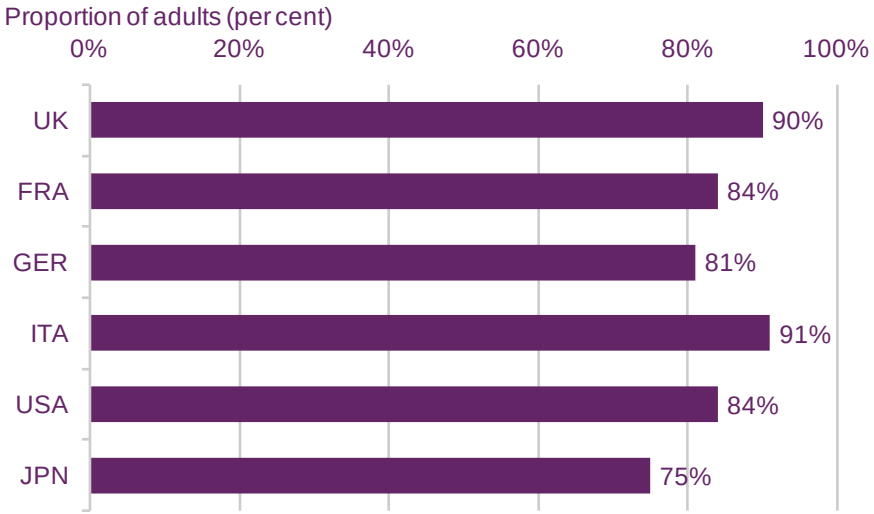


Source: IDATE / industry data / Ofcom

The proportion of adults with a mobile phone is highest in Italy and the UK

Ofcom consumer research suggests that household take-up of mobile telephony ranged from 75% in Japan to 90% in the UK and 91% in Italy among the six comparator countries in which the research took place in October 2010 (Figure 6.63).

Figure 6.63 Household take-up of mobile telephony services, 2010



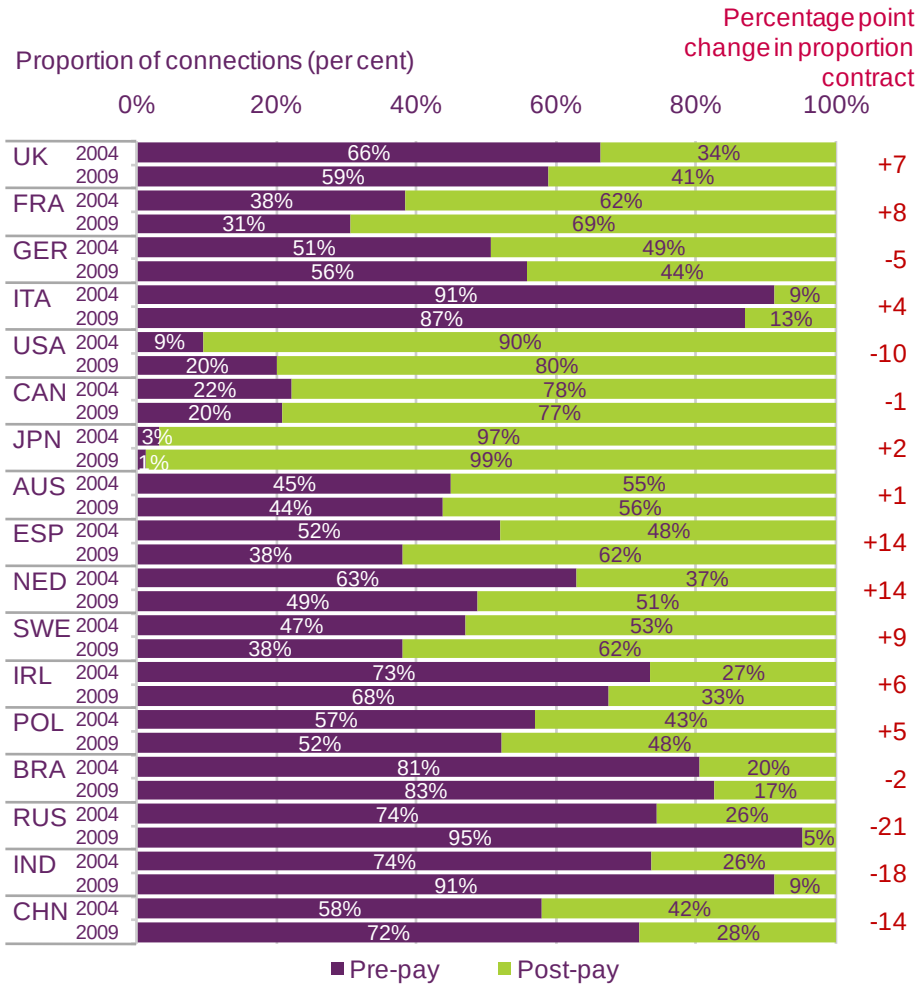
Source: Ofcom consumer research, October 2010
Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

Japan has the highest levels of post-pay take-up, at 99% of connections

We also looked at the way in which consumers in our comparator countries purchase mobile services, by looking at the proportion of total mobile connections that were pre-pay or bought on a monthly contract. This showed that consumers in Japan and the US had the highest proportion of mobiles on a monthly contract at the end of 2009 (99% and 80% respectively), while Russia (95%), India (91%) and Italy (also 91%) were the highest users of pre-pay (pay-as-you-go) services (Figure 6.64).

Use of pre-pay services was higher than average among all of the BRIC countries, where the proportion of connections that were pre-pay averaged 82%, compared to 66% among our 17 comparator nations as a whole. Italy had the highest proportion of mobile connections that were pre-pay, outside the BRIC countries (87%). In the UK 59% of mobile connections were pre-pay at the end of 2009, lower than the averages both including and excluding the BRIC countries, and seven percentage points lower than they had been in 2004.

Figure 6.64 Split of mobile connections by type, 2004 and 2009

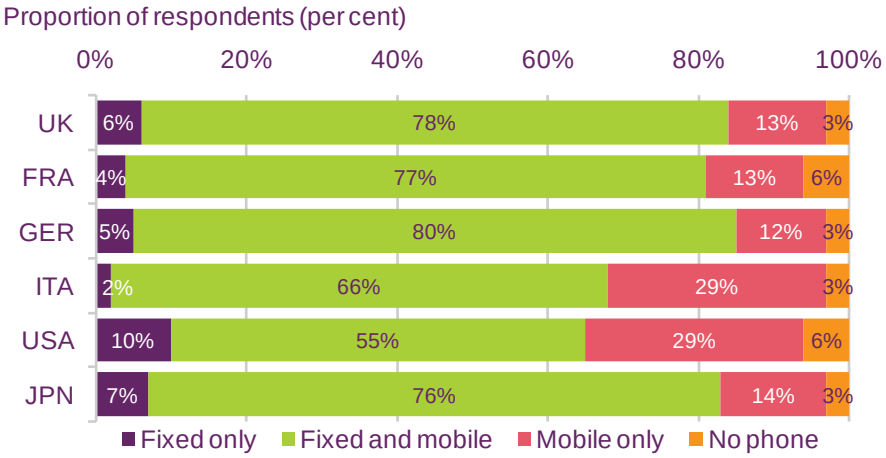


Source: IDATE / industry data / Ofcom

The US and Italy had the highest proportion of mobile-only homes in October 2010

Ofcom consumer research, conducted in October 2010, suggests that the US and Italy had the highest proportion of mobile-only homes among internet users, with almost three in ten (29%) respondents saying that their household used mobiles as its sole form of telephony (Figure 6.65). Germany had both the lowest proportion of homes that were mobile-only (12%) and also the highest proportion that used both a fixed line and mobile (80%), while the US had the highest proportion of homes that used only a fixed line, and the joint highest proportion without a fixed-line or mobile voice connection, along with France, at 6% (in both of these countries it is likely that many of these respondents use VoIP). In the UK almost four in five (78%) homes used both fixed and mobile phones, broadly in line with Germany, France, and Japan, and significantly higher than either the US or Italy.

Figure 6.65 Household penetration of fixed and mobile telephony, 2010



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

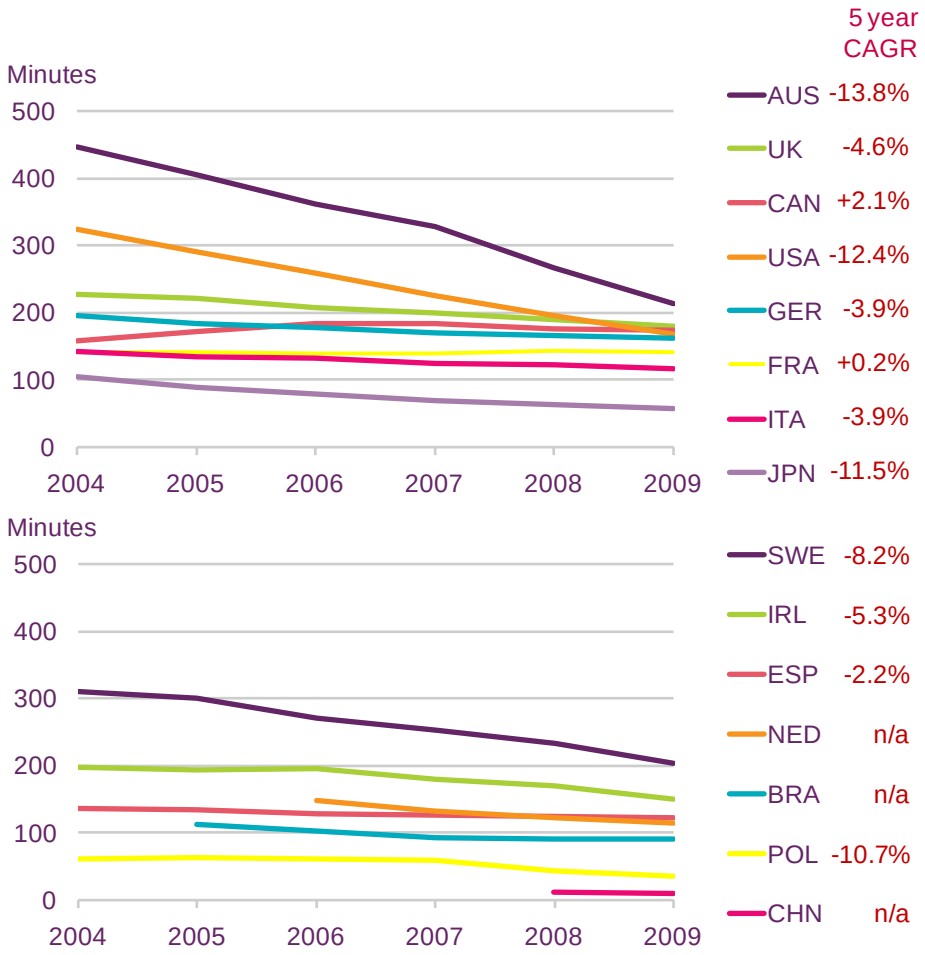
6.3.5 Use of voice services

Brazil is the only comparator country where fixed voice calls per person grew in 2009

France and Canada were the only countries for which figures were available where average outgoing fixed voice calls per person increased between 2004 and 2009 (Figure 6.66). Falling fixed-line penetration and the growing use of mobile voice services and non-voice forms of communication (such as SMS messaging, instant messaging and email) have been the main factors behind falling landline use in most countries over the last decade. The fixed-line market in France performed better than most in the five years to 2009, as a result of the success of VoIP services, which offer unlimited calls to landlines (note that the data below includes VoIP to landline calls, but excludes PC-to-PC VoIP calls), and in Canada, because of relatively low levels of mobile take-up and fixed-mobile substitution.

The only country where outgoing fixed voice call volumes per person increased in 2009 was Brazil (where growth was 1.1% during the year and overall use was relatively low at 91 minutes per person per month in 2009) as a result of rapid growth in the use of VoIP services during the year, and relatively high per-minute mobile prices. The UK had the third-highest average outgoing fixed-line use per person in 2009, at 176 minutes per month, due to the prevalence of cheap fixed-voice services, while average use per person was lowest in China, at just ten minutes per month, as a result of low fixed-line availability and the relatively high use of mobiles.

Figure 6.66 Monthly fixed-line voice call minutes per person, 2004 to 2009



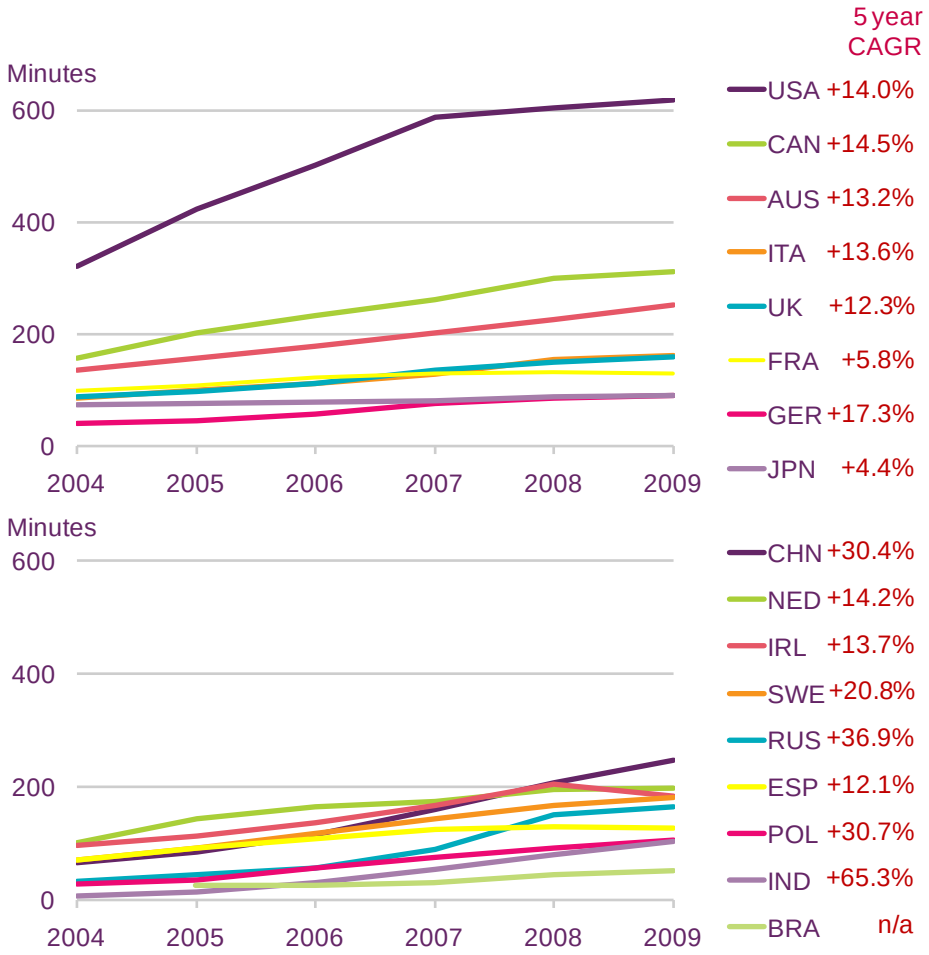
Source: IDATE / industry data / Ofcom
Note: Figures for USA and CAN exclude local and VoIP calls and include incoming mobile calls; data for BRA is only available from 2005, data for NED is only available from 2006 and data for CHN is only available from 2008

Average mobile call volumes per person declined in France and Spain in 2009

In all of the comparator countries for which data were available, average mobile voice call volumes per person increased between 2004 and 2009 (Figure 6.67) This was a result of growing mobile take-up and, in many markets, falling prices as markets approach saturation and competition between providers intensifies. However, in 2009 average mobile voice call use per person fell in France and Spain, the first time that this had happened in either country (there was also a fall in Ireland but this was largely due to a change in reporting by regulator ComReg, which stopped including WAP mobile data minutes in its reported figures from Q1 2009).

The falls in average voice call use in France and Spain were 1.1% and 1.2% respectively, and may be due to the increased use of SMS and email among younger mobile users (particularly in France), and reduced use as an impact of the economic downturn (particularly in Spain). Average monthly outgoing mobile call volumes per person ranged from 54 minutes per month in Brazil to 254 minutes in Australia. (Note that this analysis excludes the US, Canada and China, where call volume figures also include incoming calls). In the UK the average outgoing mobile voice call volume per person was ranked seventh out of the 14 comparator countries for which data were available, at 159 minutes per month.

Figure 6.67 Monthly mobile voice call minutes per person, 2004 to 2009

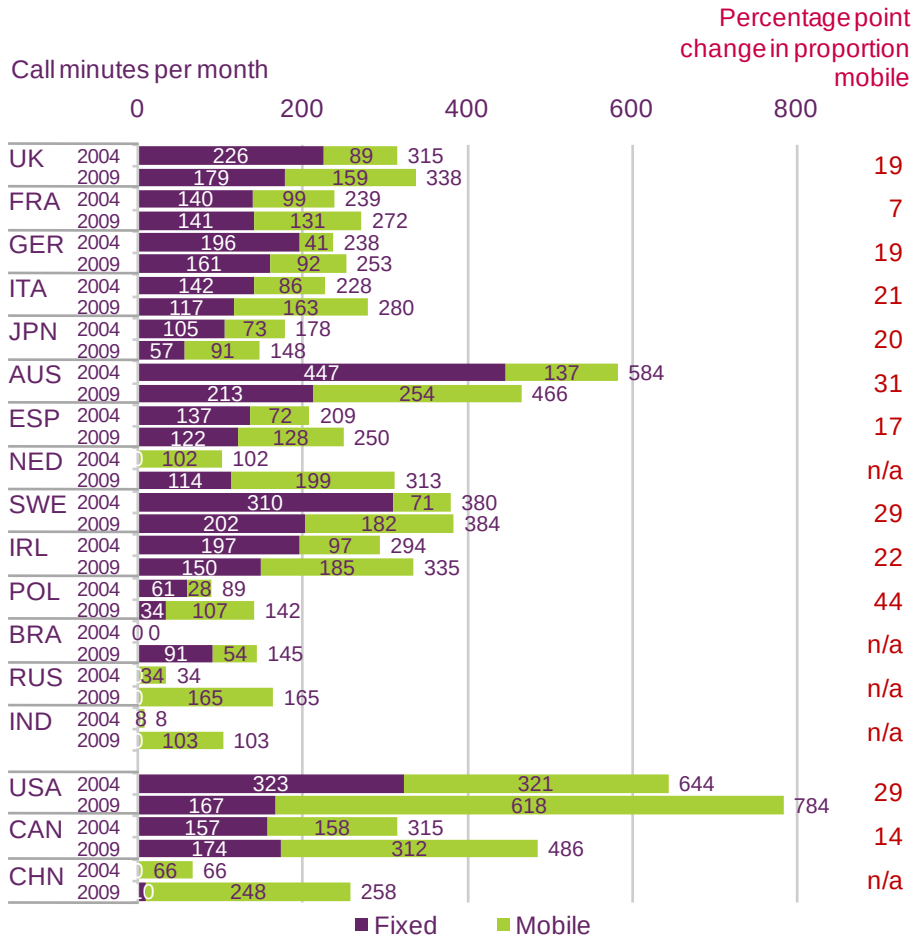


Source: IDATE / industry data / Ofcom
Note: Data for USA, CAN and CHN includes incoming calls

Fixed to mobile substitution continues across the board

Increasing use of mobiles (and declining average fixed-line use in most countries) meant that the proportion of total voice calls per person that originate on mobile phones increased among all of the nations for which comparable figures were available between 2004 and 2009 (Figure 6.68). The percentage point growth in the proportion of voice calls that originated on mobiles in the five years to 2009 among our comparator nations was greatest at 44 in Poland, where it increased from 32% to 76% as a result of low fixed-line availability (only around 80% of homes in Poland can get a fixed line). In the UK the proportion of voice calls which originate on mobile phones increased by 19 percentage points to 47% over the period.

Figure 6.68 Monthly fixed and mobile call volumes per person, 2004 and 2009

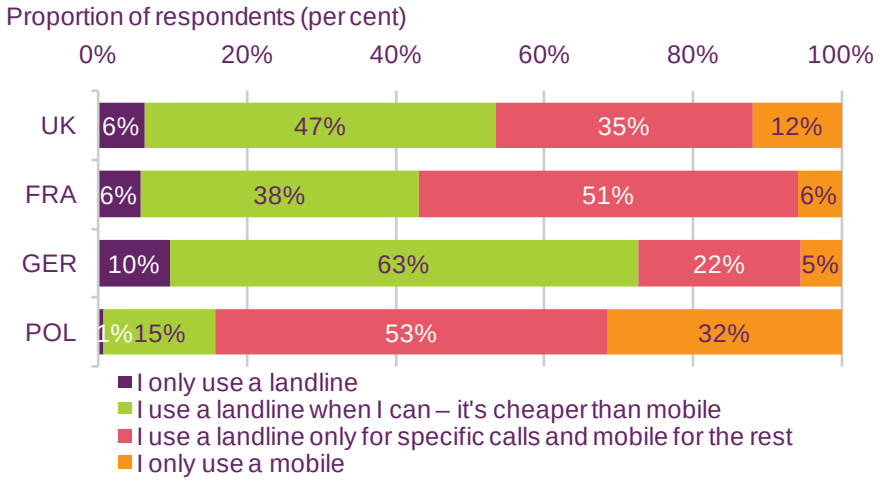


Source: IDATE / industry data / Ofcom
Note: Fixed figures for USA and CAN exclude local and VoIP calls; mobile figures for USA, CAN and CHN include incoming calls

Price seems to be the largest factor affecting levels of fixed-line and mobile use

Data from Analysys Mason sheds some light on differing levels of fixed and mobile voice call use among four of our comparator nations (Figure 6.69). This shows that the proportion of people who only use a landline, or use one whenever they can, ranged from 16% in Poland to 73% in Germany, while in the UK the figure was 53%. This can to a large extent be explained by the relative cost of calls in each of the countries: in Germany an average mobile voice call costs more than twice as much a minute as an average fixed-line call minute (as shown in Figure 6.72) while in Poland an average mobile voice call minute costs around 20% less than an average fixed-line voice call minute.

Figure 6.69 Use of telephony services, by country, 2009



Source: Analysys Mason Connected Consumer, 2009

6.3.6 Cost of voice services

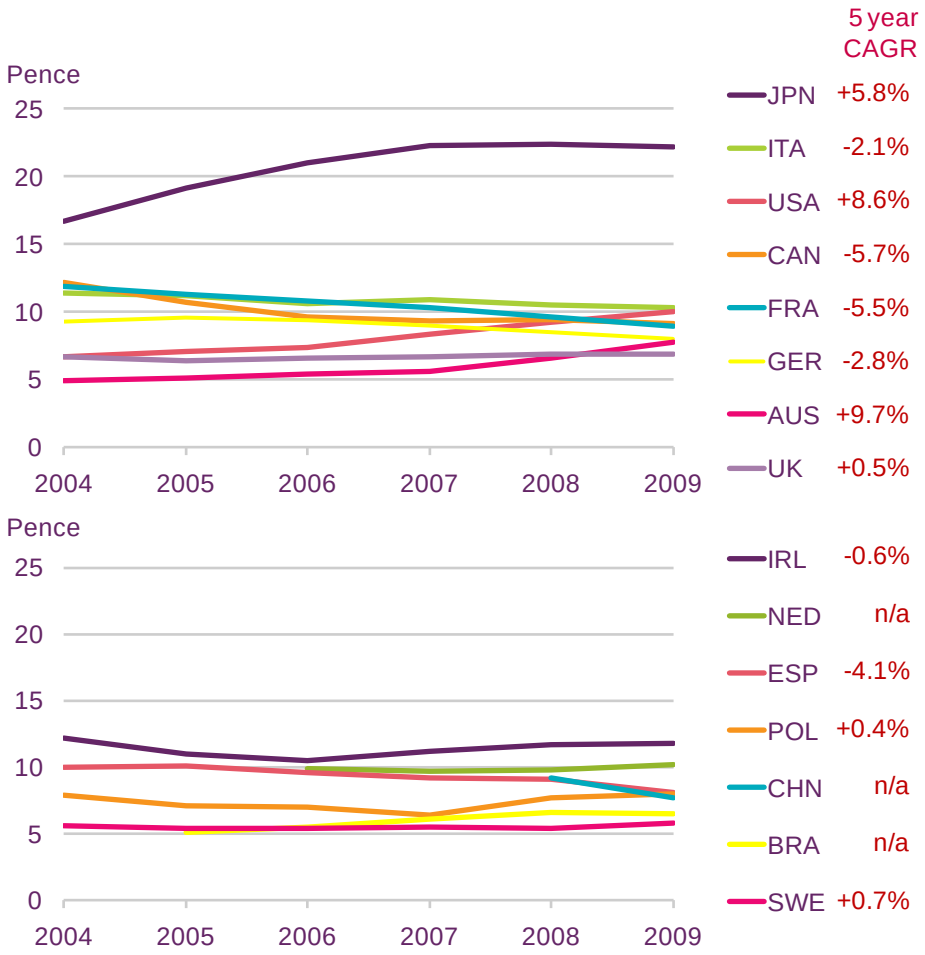
Average fixed voice call costs highest in Japan at 22.2 pence per minute

In order to compare call costs across our comparator countries we calculated an average cost per outgoing fixed voice call minute by dividing total fixed voice revenues (including rental charges) by total fixed voice call volumes. Although this measure is not perfect (as it does not take into account differing call type patterns in each country) it provides a useful high-level measure of the cost of using fixed-voice services. Japan, where, historically, fixed and mobile voice calls have been expensive, had by far the highest average cost per voice call minute among our comparator countries in 2009, at 22.2 pence per minute (ppm), over twice the 9.3ppm average across all of our comparator countries.

In the UK the average fixed voice cost was 6.9ppm, significantly lower than the average and the third lowest among those comparator countries for which figures were available, after Brazil and Sweden (Figure 6.70). The UK was one of seven comparator countries where the average cost of a voice call minute increased in nominal terms in 2009. In the UK this was as a result of a number of providers (including the incumbent, BT, and cable provider Virgin Media) increasing prices during the year, although at 0.7% the growth in average fixed voice call costs in the UK was the joint lowest among countries where there was an increase, along with Ireland.

Australia had the highest increase in average fixed call costs in 2009, at 18.7%, as a result of a higher proportion of total call volumes being more expensive long-distance, calls to mobiles and international calls, and despite a fall in overall levels of use.

Figure 6.70 Average cost of a fixed voice call minute, 2004 to 2009



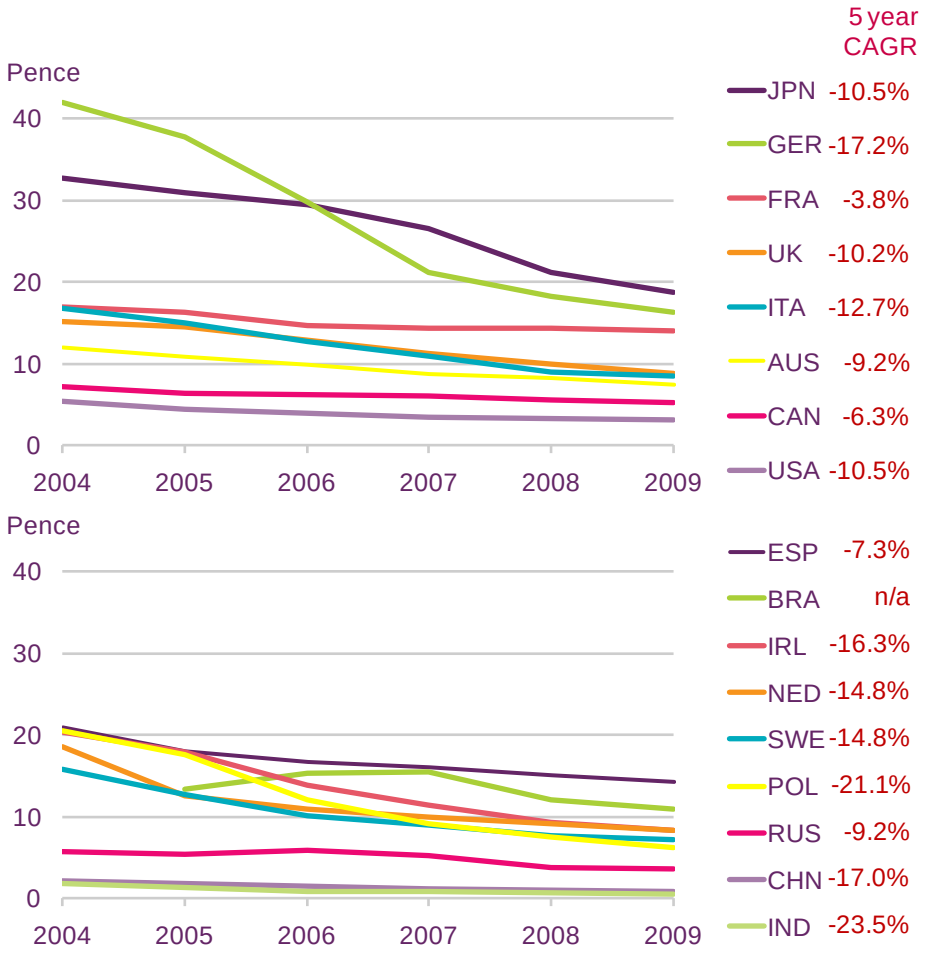
Source: IDATE / industry data / Ofcom

Average mobile voice call cost falls in all comparator countries in 2009

The average cost of a mobile voice call minute fell by 14% to 2.7ppm in 2009, with the annual fall in the BRIC countries (down 14% to 1.1ppm) being greater than that in our other comparator nations (where the drop was 8% to 5.5ppm). Whereas average fixed voice call prices increased in almost half of our comparator countries in 2009 (see Figure 6.70), the average cost of a mobile voice call minute fell in all comparator countries over both a one-year and a five-year timeframe (Figure 6.71).

As with fixed voice calls, Japan had the highest average cost of a mobile voice call minute in 2009, at 18.8ppm, while in the UK the average was 8.8ppm, higher than the averages among our comparator countries, both including and excluding the BRIC countries. The average mobile voice call cost in the UK fell by 12% in 2009, as a result of price competition between providers, the increasing use of SIM-only tariffs and the growth of 24-month post-pay contract terms offering lower prices or more inclusive minutes than comparable 18-month or 12-month contracts.

Figure 6.71 Average cost of an outgoing mobile voice call minute, 2004 to 2009



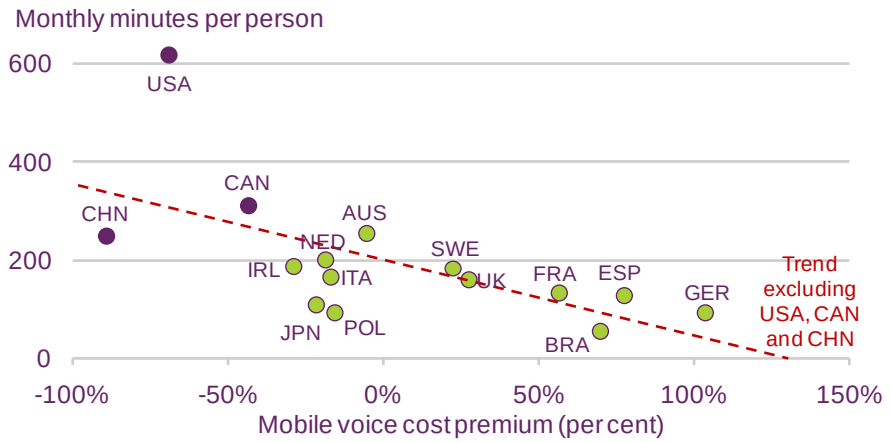
Source: IDATE / industry data / Ofcom
Note: USA, CAN and CHN calculation includes incoming calls

Correlation between relative cost of mobile calls and average use

In order to explore the relationship between average mobile voice call use and the comparative cost of mobile calls, we plotted the mobile voice cost premium (the additional percentage cost of the average mobile voice call minute over the average fixed voice call minute) against average monthly mobile voice call minutes per person for all of the comparator countries for which figures were available (Figure 6.72).

Unsurprisingly, this showed that as the cost premium of mobile voice calls over fixed lines increased, the average monthly call minute use fell (the trend line in the chart excludes the US, Canada and China, as data for these countries include revenues and volumes from incoming calls). In six of the comparator countries for which we had data (excluding the US, Canada and China from the analysis) it was, on average, cheaper to use a mobile than a fixed line.

Figure 6.72 Average mobile voice call use and the comparative cost of fixed and mobile voice calls, 2009



Source: IDATE / industry data / Ofcom
Note: USA, CAN and CHN include incoming calls

6.3.7 Data services

In this section we look at the take-up and use of data services by consumers, concentrating on fixed broadband internet access and mobile access, using either a mobile handset or a mobile broadband dongle. We also consider the cost of fixed broadband services, and look at the services that consumers are using their fixed and mobile data connections for.

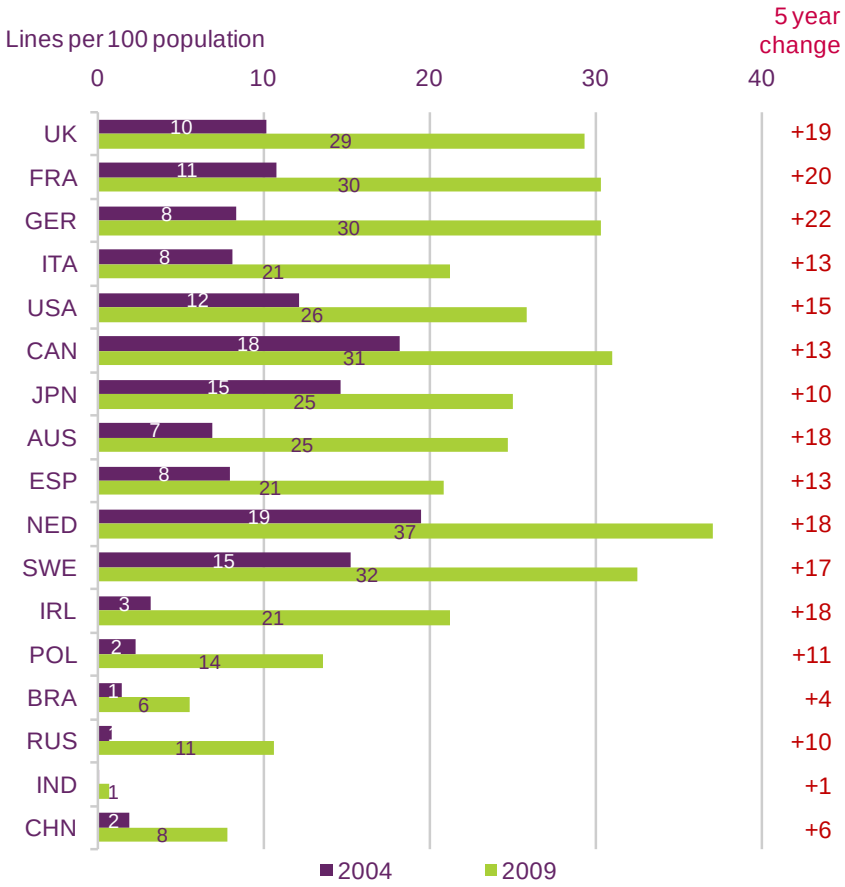
6.3.8 Take-up of data services

The Netherlands has the highest fixed broadband connections per 100 people, at 37

At the end of 2009 the Netherlands had the highest number of fixed broadband connections per 100 people among our comparator countries (37); the metric was lowest in India (where fixed broadband roll-out is concentrated in recently-developed areas) at one per 100 people (Figure 6.73). In the UK there were 29 fixed broadband lines per 100 people at the end of 2009, the sixth-highest level of take-up among the 17 countries covered by this report.

The number of fixed broadband connections per 100 people increased among all our comparator countries in the five years to 2009, although there was wide variation in the rate of this growth, from one connection per 100 people in India to 22 per 100 people in Germany. In the UK the increase was 19 connections per 100 people, the third highest growth among the countries included in this report, after Germany (22) and France (20).

Figure 6.73 Fixed broadband connections per 100 people, 2004 and 2009



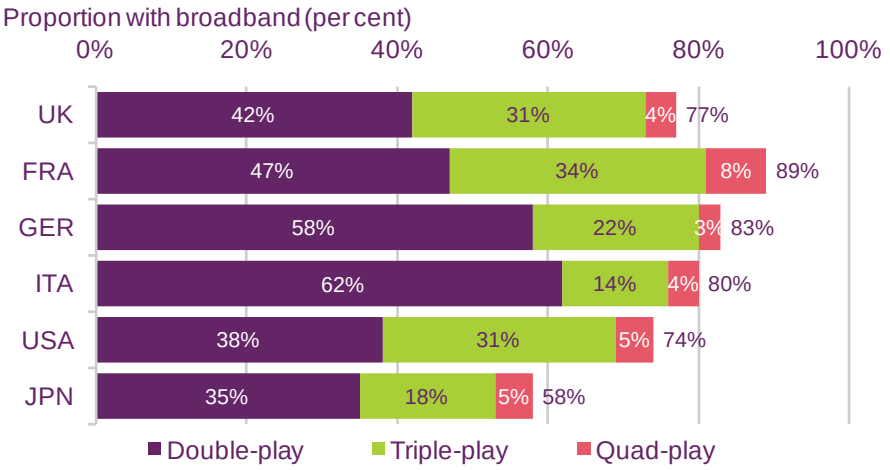
Source: IDATE / industry data / Ofcom

89% of fixed broadband users in France buy it in conjunction with another service

Ofcom consumer research suggests that the majority of consumers with a home fixed broadband connection bought it in conjunction with another service, from the same supplier, in all six of the countries surveyed in October 2010 (Figure 6.74). The proportion of people with a home fixed broadband connection who bundled it with another communications service ranged from 58% in Japan to 89% in France, where cheap LLU-based DSL broadband is frequently bundled with VoIP and IPTV services.

While France also had the highest proportion of home broadband purchased as either a triple or quad-play bundle, Germany had the highest proportion that was bought in a double-play bundle, mainly with fixed voice services. In the UK over three-quarters (77%) of home broadband was bought with another service from the same supplier, mainly as a double-play option with fixed voice services.

Figure 6.74 Proportion of consumers with fixed broadband who buy it in conjunction with another service, 2010

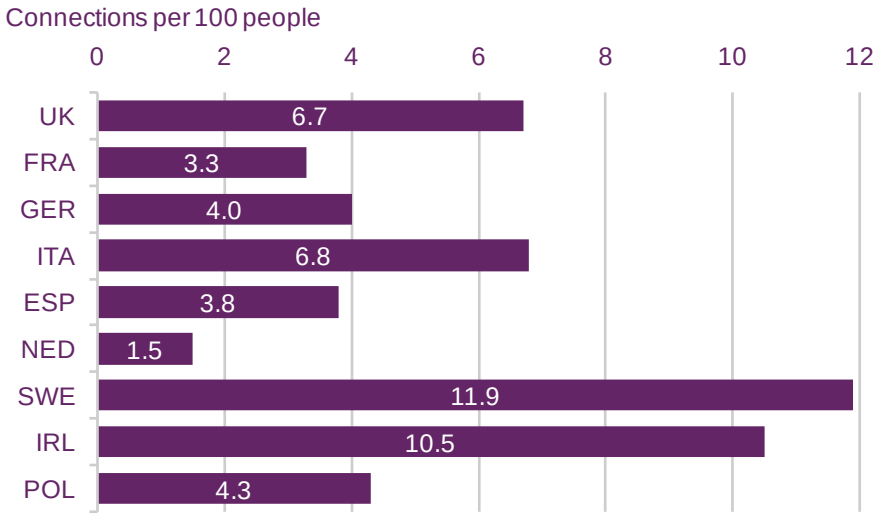


Source: Ofcom consumer research, October 2010
Base: All with a broadband connection
Base sizes: UK=930, France=993, Germany=793, Italy=844, USA=904, Japan=943

Sweden and Ireland have the highest levels of mobile broadband take-up

European Commission data show the number of mobile broadband connections per 100 population among comparator countries in the European Union in 2009 (Figure 6.75). Mobile broadband connections per 100 people were highest in Sweden (11.9) and Ireland (10.5) in 2009, and lowest in the Netherlands (where fixed broadband take-up was highest) at 1.5. The UK had the fourth-highest take-up of mobile broadband among the nine countries for which we have figures, at 6.7 connections per 100 people, in line with Ofcom's own consumer research which shows that 13% of UK homes had a mobile broadband connection in Q4 2009.

Figure 6.75 Mobile broadband connections per 100 population, 2009



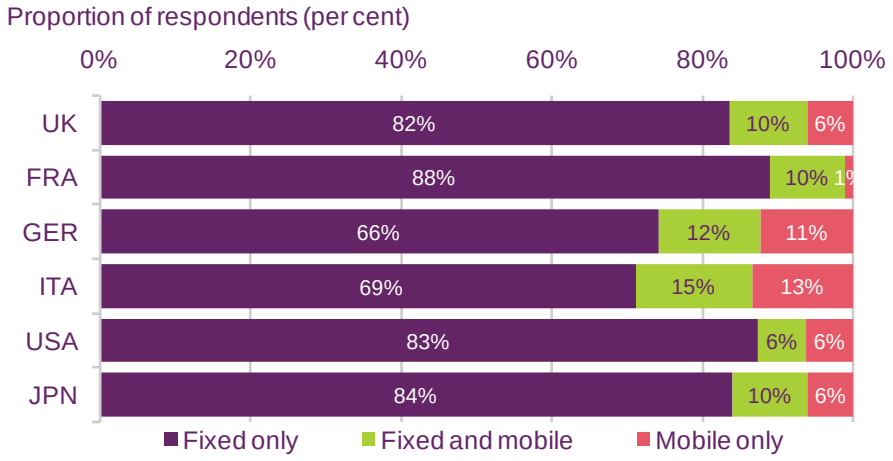
Source: European Commission's 15th Progress Report on the Single European Electronic Communications Market, 2009

Italy has the highest proportion of broadband homes solely using mobile broadband

Ofcom consumer research, conducted in October 2010, suggested that, among the six countries surveyed, broadband homes in Italy had the highest overall levels of mobile broadband take-up, use of both fixed and mobile broadband services, and use of mobile broadband as their sole broadband connection (Figure 6.76). The proportion of broadband homes that used mobile broadband ranged from 12% in the US to 28% in Italy, while the proportion that were mobile broadband-only was lowest in France (1%) and highest in Italy (13%). France also had the highest proportion of broadband homes which solely used fixed broadband (88%), a result of the availability of cheap bundled fixed broadband services.

Use of mobile broadband is high in Italy, because there is a high proportion of mobile-only homes (see Figure 6.65) and because mobile broadband services are relatively cheap (Section 2.2.5shows that mobile broadband prices in Italy are the lowest among the six countries in the analysis). In the UK 82% of broadband homes only used a fixed broadband connection, 6% only had mobile broadband and 10% used both.

Figure 6.76 Household penetration of fixed and mobile broadband, 2010



Source: Ofcom consumer research, October 2010
Base: All with a broadband connection
Base sizes: UK=930, France=993, Germany=793, Italy=844, USA=904, Japan=943

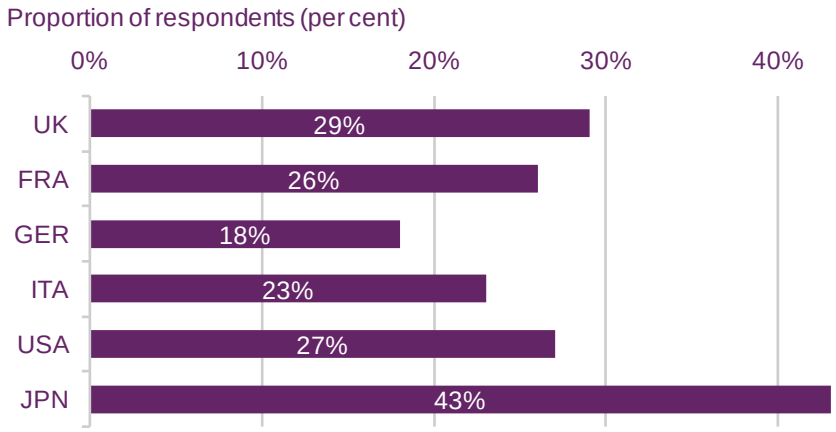
Use of a mobile handset to access the internet is highest in Japan

Ofcom consumer research shows that in October 2010 consumers in Japan had the highest levels of using a mobile handset to access the internet in the home, with 43% of internet users saying that they had ever done this (Figure 6.77). Among the countries surveyed, Japan had the most mature mobile data market, with virtually all mobile connections using a 3G network. The UK had the second-highest level of handset mobile internet use at home, among the countries for which figures were available, at 29%, while use was lowest in Germany, at 18%.

Separate figures from Orange's *Mobile Exposure 2010* study[113] show that the majority of people using mobile media (59%) in the four countries in which research was undertaken (the UK, France, Spain and Poland) were male, while almost two-thirds (63%) were under 35. The study also showed that 65% of those using mobile media were in full-time employment and 22% were students.

[113] http://exposure2010.orangeadvertisingnetwork.co.uk/pdf/orange-mobile-exposure-2010-press%20presentation-eng.pdf

Figure 6.77 Proportion of people using a mobile handset to access the internet at home, 2010



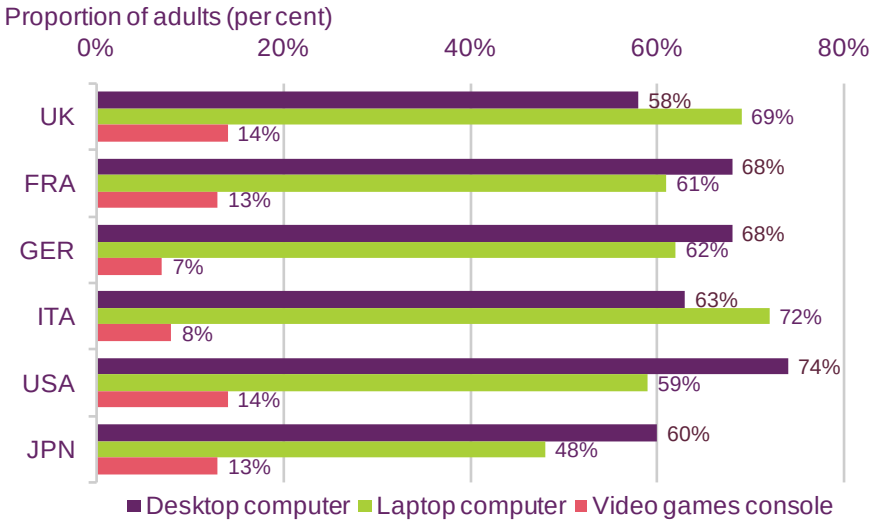
Source: Ofcom consumer research, October 2010
Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

6.3.9 Use of data services

People in the UK and the US are the most likely to use a games console to access the web

Ofcom consumer research shows that internet users in the UK and the US reported the highest levels of using a games console to access the internet at home in October 2010, with 14% of respondents in each country claiming to do this (Figure 6.78). The UK was also one of only two countries (with Italy) where more people used a laptop computer to access the internet at home than used a desktop. Italy had the highest proportion of people using a laptop to access the internet at home (72%), while the US had the highest proportion using a desktop to do so (74%).

Figure 6.78 Devices used to access the internet at home, 2010



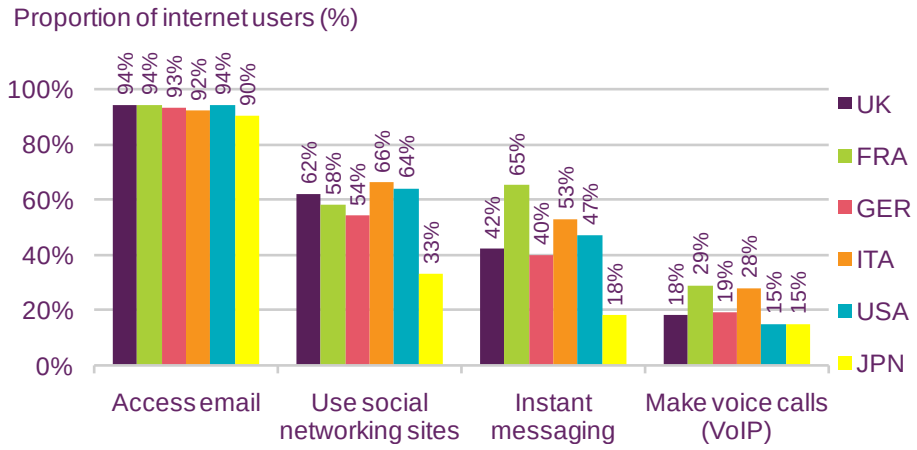
Source: Ofcom consumer research, October 2010
Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

Twice the proportion of internet users access social networking sites at home in Italy than in Japan

As part of our consumer research, we asked internet users in six comparator countries about the online activities which they undertook at home (Figure 6.79). In all of the six countries email was the most frequently-used online method of communication in the home, with 90% or more of respondents saying that they used email at home.

Levels of use of other online services varied more widely; for example, the proportion of internet users who accessed social networking sites at home was highest in Italy at 66%, twice the level in Japan (33%) where use was lowest (in the UK it was 62%). Similarly, the proportion of web users using instant messaging services in the home ranged from 18% in Japan to 65% in France, while in the UK 42% said that they did this. Use of VoIP was highest in France (29%) and Italy (28%) and lowest in the US and Japan (both 15%). Use of VoIP is covered in more depth in Section 6.1.5 above.

Figure 6.79 Online activities undertaken at home, 2010

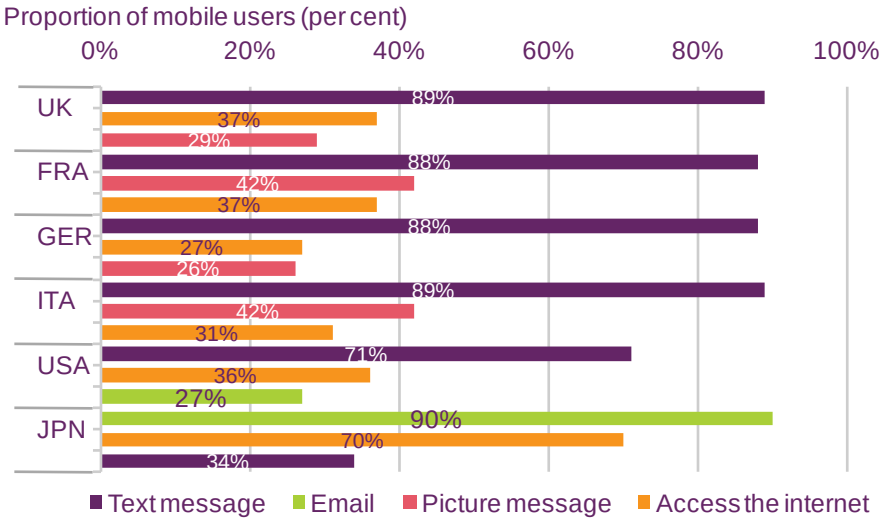


Source: Ofcom consumer research, October 2010
Base sizes: UK=1016, France=1017, Germany=1014, Italy=1002, USA=1017, Japan=1001

SMS is the most-used mobile data service in all countries surveyed except Japan

SMS messaging was the most frequently-mentioned mobile data service in all of the six countries in which we undertook consumer research in October 2010 except Japan, where it ranked third (Figure 6.80). Almost nine in ten (89%) mobile users in the UK claimed to use SMS messaging, in line with use in Italy (also 89%), France and Germany (both 88%), and higher than the US (71%). The most frequently-mentioned mobile data service in Japan was email, with 90% of mobile users in Japan saying that they used their mobile to send and receive emails: the US was the only other country where email featured in the top three most-mentioned services, although only 27% of respondents did this. Japan was also the country where using a mobile handset to access the internet was most frequently mentioned, with 70% of mobile users saying that they used the service (stated use was lowest in Germany, at 27%).

Figure 6.80 Three most frequently-mentioned mobile data services used, 2010



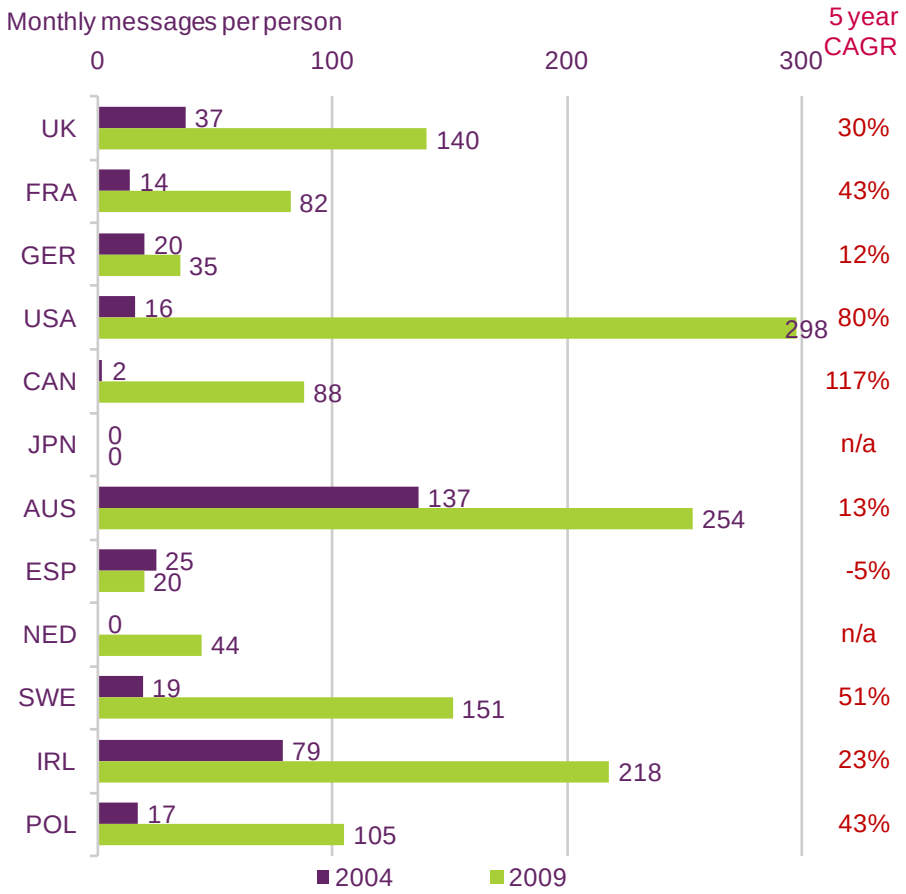
Source: Ofcom consumer research, October 2010
Base: all who own and use a mobile phone
Base sizes: UK=918, France=853, Germany=822, Italy=910, USA=854, Japan=750

Average monthly mobile messages per person is highest in Australia, at 254

Excluding the US (where messaging figures include push-to-text messages and figures are therefore not comparable to those for our other comparator countries) Australia had the highest average monthly mobile messaging use per person in 2009, at 254 messages per person per month (Figure 6.81). This was over 80% higher than the monthly average of 140 a month in the UK, which had the fifth-highest average use among the eleven comparator countries for which figures were available. Average messaging use increased in all of the countries for which figures were available in the five years to 2009, except in Spain, where they fell by an average of 5% a year over the period.

Canada had the highest growth in average messaging use in the five years to 2009; average monthly messages per person rose from two to 88 per person, an average increase of 117% a year. Despite this growth, average message use in Canada was much lower than the average of 153 messages per person among those countries for which figures were available.

Figure 6.81 Average monthly mobile messages per person, 2004 and 2009



Source: IDATE / industry data / Ofcom
Note: Figures for the USA include push-to-text and are not comparable to the other comparator countries

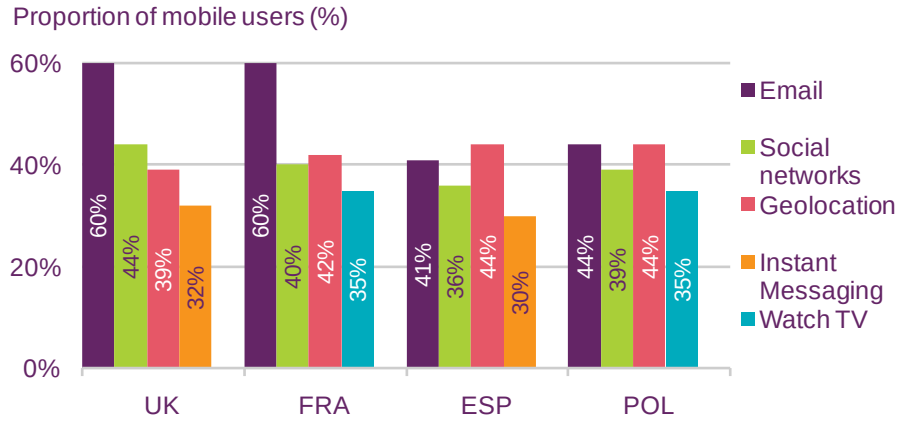
Email is the most used non-SMS mobile data application

Orange's *Mobile Exposure 2010*[114] investigated the most popular non-SMS types of data use used by mobile phone internet users in four of our comparator countries: the UK, France, Spain and Poland (Figure 6.82). In the UK, France and Poland, email was the most-used service, and in Spain location-based services ranked first and email second. Location-based services ranked second in France and Poland, and third in the UK.

Use of social networks also appeared in the top four in all four countries, with mobile internet users in the UK having the highest levels of use among the nations covered in Orange's study (44%). While email, location-based and social networking services occupied the top three spots in all four countries, there were differences in the fourth-ranked service. In the UK and Spain this was taken up by instant messaging, whereas in France and Poland the fourth most-used service was mobile TV.

[114] http://exposure2010.orangeadvertisingnetwork.co.uk/pdf/orange-mobile-exposure-2010-press%20presentation-eng.pdf

Figure 6.82 Four most frequently used non-SMS mobile data services, by country



Source: Orange Mobile Exposure 2010 study: http://exposure2010.orangeadvertisingnetwork.co.uk/pdf/Consumer-Orange-Exposure-English-FINAL.pdf

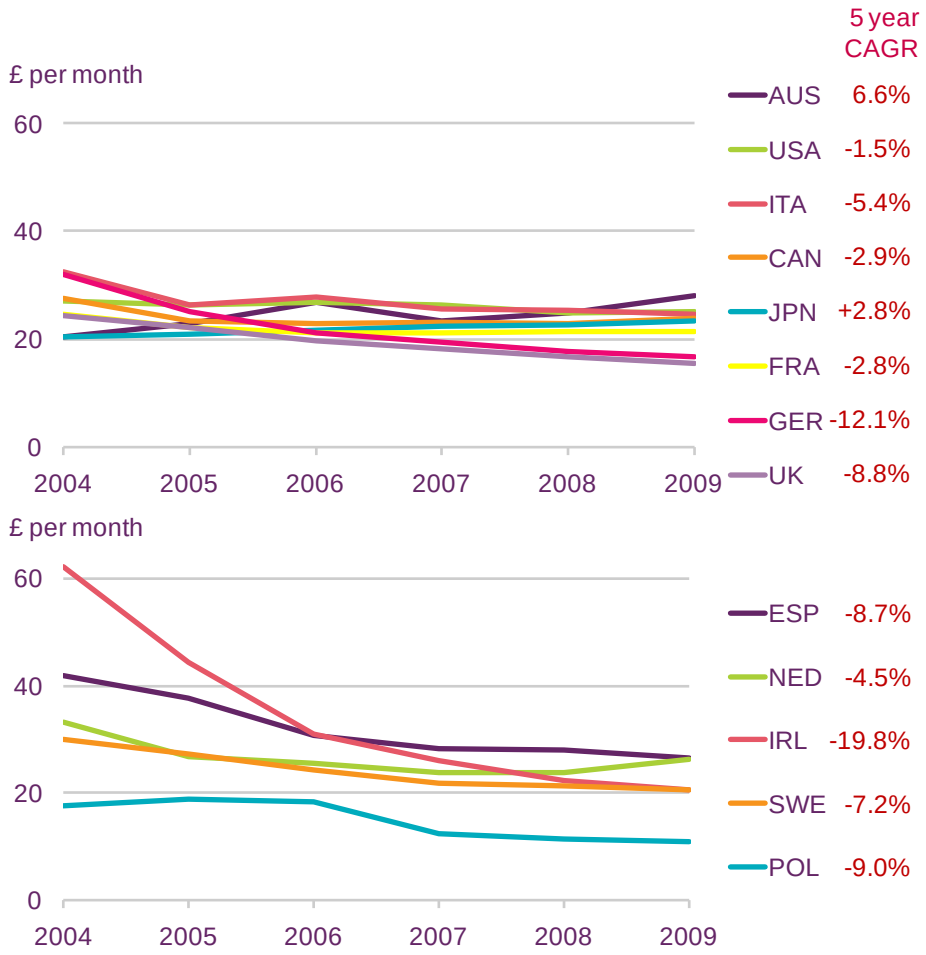
6.3.10 Cost of data services

UK has the second lowest average monthly fixed broadband cost, at £15.42

In 2009 the UK had the second-lowest average monthly cost per broadband connection among the comparator countries for which figures were available, at £15.42 a month, second only to Poland at £11.02 a month (Figure 6.83). In the UK the average annual fall in the cost of a fixed broadband connection was 8.8% in the five years to 2009.The decline was greatest in Ireland, where it averaged almost 20% per year, to a large extent due to the average cost of a broadband connections having been so high (at over £60 a month) in 2004.

Australia and Japan were the only comparator countries where the average cost of a broadband connection increased during the period. This was as a result of consumers switching to higher-speed services (to fibre-based connections in Japan and to ADSL2+ and cable in Australia), and in 2009 Australia had the highest average monthly cost of a fixed broadband connection among the nations in this report, at £27.98 a month.

Figure 6.83 Average monthly revenue per fixed broadband connection, 2004 to 2009



Source: IDATE / industry data / Ofcom

The UK had the cheapest bundled fixed-line 'up to' 8Mbit/s fixed broadband service in 2009

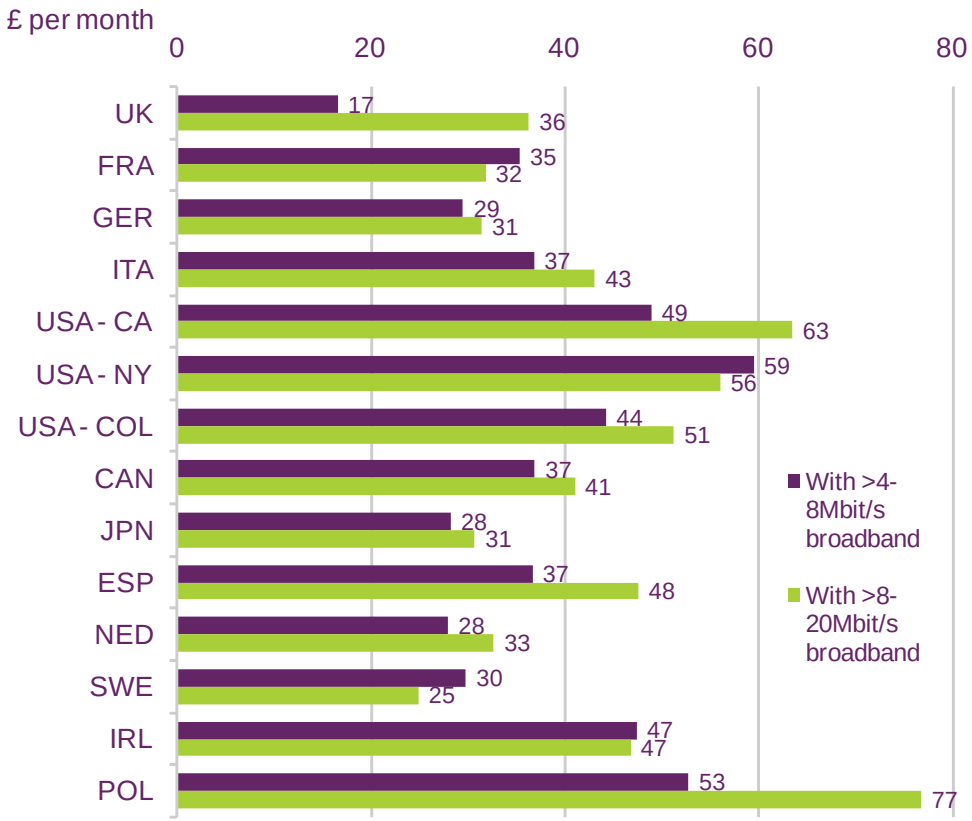
Fixed broadband connections are often supplied in conjunction with fixed voice services, and Figure 6.84 below shows the least expensive option for bundles of a fixed line and a fixed broadband connection, with a headline speed of either 'up to' >4Mbit/s to 8Mbit/s, or 'up to' >8Mbit/s to 20Mbit/s broadband connection, including at least 30GB of data or 20 hours of use, available from the largest ISPs in a number of our comparator countries.

These figures, which are taken from research commissioned by the European Commission, show that the UK was cheapest for a bundle including an 'up to' >4Mbit/s to 8Mbit/s connection in October 2009, at £17 a month, while a bundle of the same services was most expensive in New York, at £59 a month. Similarly, the range of monthly costs for a bundle of fixed telephony and an 'up to' >8Mbit/s to 20Mbit/s connection ranged from £25 a month in Sweden to £77 a month in Poland.

The report found that the cheapest bundle including 'up to' >8Mbit/s to 20Mbit/s broadband in the UK cost £36 a month, the sixth lowest among the comparator nations for which data were available. However, since the figures were compiled most of the major UK ISPs have started to migrate their 'up to' 8/10Mbit/s customers onto 'up to' 20/24Mbit/s services, usually without any additional charge.

The report also highlighted the differences in product offers available in different parts of the US, with the lowest-cost bundle in the three states in the report (which included an 'up to' >4Mbit/s to 8Mbit/s broadband connection) being in Colorado, at £44 a month, while the cost of a bundle with an 'up to' >8Mbit/s to 20Mbit/s connections ranged from £51 a month in Colorado to £63 in California.

Figure 6.84 Least expensive bundled offer of fixed-line and broadband connection, October 2009



Source: European Commission - Broadband Internet Access Cost, Second Semester 2009, http://ec.europa.eu/information_society/eeurope/i2010/docs/eda/biac_2009.pdf P134 and 139
Note: Figures show the cost of the least expensive tariff from those offered by the three largest ISPs in each territory and include a fixed telephone line and a broadband internet connection with 30GB or 20 hours per month of internet use The global communications industry in context