



Comparative international pricing 2009

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Section 1

Introduction

There are many ways to compare the experience of UK consumers with those in other countries. In the international communications market data we publish, we benchmark the UK against other countries in terms of take-up of services, while Ofcom's international communications market data compares the UK with other countries across a range of metrics including availability, usage, range of services and development of innovative services.¹

However, when comparing markets for communications services across the world, the metric which probably matters most to the greatest number of consumers is the price they pay for their services.

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

To try to address these issues, we have developed a methodology for comparing prices which is based on consumption across 'typical' household types in the UK, France, Germany, Italy, Spain and the US (where we have used Illinois as a representative state), and which considers issues such as the impact of hardware subsidies and multi-service discounts. This is the fourth year that we have undertaken this analysis. However, for the first time this year we have retained exactly the same methodology and the same baskets as used in the previous year, so we are able to compare the price of services in July 2009 (when tariff data was collected) with the price of services in July 2008.

¹ International Communications Market, www.ofcom.org.uk/research/cm/

Section 2

Overview of Methodology

Full details of the methodology are provided in Annex 1, but the basic principles are as follows:

- We constructed five 'typical' household types, which collectively may be seen as representative of the average population across our countries and defined a basket of communications services (fixed-line voice, mobile, broadband, TV) appropriate for each household type.

Figure1: Household types

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

Source: Ofcom

- We included a wide range of components within the baskets to ensure as accurate as possible a representation of the real costs consumers pay. For example:
 - Fixed voice minutes were distributed by whether they were to fixed or mobile lines, by call distance (local, regional, national and international, including a range of international destinations), and time of day (day, evening, weekend).
 - In addition, mobile calls (and messaging) were split between 'on-net' and 'off-net', and voicemail was included.
 - Call set-up costs and per-minute charging were incorporated, and a range of call lengths were used (distributed around a defined mean based on averages across 30 OECD countries).
 - Incoming calls to mobile phones were included in recognition of the different pricing mechanism in the US.
 - The broadband component was defined both by minimum headline speed and by minimum data and time online requirements.
 - The television element included the licence fee, a digital receiver and (for some baskets) a digital video recorder (DVR). Because of difficulties in comparing channels and their programmes, two tiers of pay-TV were considered: the most basic pay service available over and above the channels available on free-to-air TV; and a premium service defined by first-run movies from the major Hollywood studios and the best package of top-tier football matches.

- The average monthly use across the baskets was adjusted to ensure that it was closely aligned with average use in households across the six countries (for example, based on operator and regulator data, the actual average number of SMS per households across the six countries in 2007 was 115, so our average number of SMS across our five households is 115).
- Mobile phones, broadband routers, digital set-top boxes and DVRs are included within the baskets (and amortised over an appropriate period in order to attribute a monthly cost). This is necessary because they are often inseparable from the service price, as operators frequently include subsidised or 'free' equipment (for example, a mobile phone or a wireless router), but seek to recoup the cost of these devices from subscriptions and service payments across the life of a contract. For similar reasons, we include connection and/or installation costs.
- In July 2008, detailed data of every tariff and every tariff combination from the largest three operators in each country by retail market share were collected (or for more than three operators, if required to ensure that a minimum of 80% of the overall market was represented). Multi-play tariffs (i.e. those which incorporate more than one service) were also collected. Only those tariffs which were published on the website of the operators were included.
- Across the six countries, the tariff data included consisted of:
 - fixed voice: 917 tariff options;
 - mobile: 2,537 tariff options;
 - broadband: 243 tariff options;
 - television: 284 tariff options; and
 - multi-play: 579 tariff options.
- Our model identifies the tariffs that offer the lowest price for meeting the requirements of each of the household baskets.
- All prices are converted back to UK currency using a Purchasing Power Parity (PPP) adjustment based on OECD comparative price levels and an exchange rate based on the average exchange rate between 7th October 2008 and 7th October 2009.

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

The first (which we call 'average single service' pricing) illustrates the price of each individual service, as defined by the average of the lowest price tariff offered by three operators which provide the service in each country. These are then weighted by the market share of the service provider in order to ensure fair representation. This provides a useful comparison of the relative costs of communications services, but an important limitation is that single-service offers are sometimes not available from leading suppliers. For example, in the UK, TalkTalk only offers broadband together with fixed voice. In Spain over 80% of broadband is purchased in association with another service.

The second type of analysis (which we call 'best offer' pricing) identifies the lowest price that a consumer could pay for this basket of services, including, where appropriate, by

purchasing 'bundled' services. Our view is that this type of analysis is essential in order to provide a true picture of the position of consumers in each market, since they increasingly buy multiple services from single operators. Examples in the UK are BSkyB's *TV, Talk & Broadband* 'triple-play' offer, and Virgin's 'quad-play' offer which includes TV, voice, broadband and mobile. However, there are two key limitations to this type of analysis. First, 'bundled' service offerings are typically not available to all consumers as they are generally geographically constrained to areas where premises are connected either to a cable network or to an unbundled telephone exchange. Second, even in areas where these services are available, they may not have high take-up. Therefore, although the 'best offer' provides insight into the lowest prices available to some customers, it is not as good a reflection of the prices that consumers are actually paying as the weighted average analysis - which is only possible when looking at single-service pricing.

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

- The analysis assumes a systematic and rational consumer who has a full understanding of his or her usage requirements and is prepared to shop around and undertake some often quite complex calculations to identify the tariff which offers the best value. In reality, many consumers do not act in this way, but we believe the assumption is necessary in order to provide effective international comparisons. It should be noted, however, that another measure of consumer choice and the competitive environment is the complexity of tariff structures and the ease of selecting an appropriate tariff, or switching to an appropriate tariff.
- In looking only at tariffs offered by the largest operators in each country, lower prices which might be available from smaller operators seeking to disrupt markets are not included, purely for practical reasons. Nevertheless, we believe that using the prices of the largest operators is appropriate, both because they are the best reflection of the general consumer experience and because their pricing both defines and is defined by the competitive environment in which they operate.
- Although we have been as comprehensive as possible, tariffs are often highly complicated and there are some components that we have been unable to incorporate into our model; for example, the benefits available from fixed-line and mobile tariffs which include free or reduced rates to nominated 'friends and family' numbers.
- In order to calculate the weighted average, we have used market share calculations based on operators' retail customers. It should be noted that market share calculations are based on the overall subscriber base, not the subscriber base for the particular tariff (for which data are not available).
- Pay-TV services constitute a component of three of the baskets we examine. However, it has not been possible to compare like-for-like subscriptions, principally because of differences in the composition of basic and premium channels across the six countries. As a consequence, quantitative comparison of international TV pricing is arguably less meaningful than for telecoms services. This is also an issue in the pricing of 'triple-play' services, where there is a wide variation in the types of TV content.
- For some communications services in some countries there are only two operators with nationwide coverage (or only one, for many premium TV offerings) and/or

significant market share. In these instances, we have identified the best-value tariff from each of them and calculated a blended average based on their market shares.

- To avoid 'skewing' the average single service pricing analysis, tariffs which are over 100% higher than that offered by the lowest price provider are excluded from the weighted average (the aim here is to exclude tariffs which are clearly not targeted at the usage profile we are analysing).
- Some services are not available nationwide. This is particularly true for services which are available only where local exchanges have been unbundled, and for IPTV, which requires a high-speed broadband connection, but is also true for cable TV and all types of broadband.
- We do not define whether the mobile phone component in a basket is pre-pay or post-pay. We believe this enables better international comparison, given the very different pre-pay / post-pay splits in different countries (for example, over 80% of Italian mobile connections are pre-pay, while over 80% of US mobile connections are post-pay). However, a consequence of this is that the analysis does not recognise the different characteristics of the services; for example, a pre-pay mobile may be the only option available to consumers with a poor credit rating and also offer advantages to those who vary their use month-by-month.
- Representative pricing in the US as a whole is difficult, due to large regional variations as a result of local incumbent telecommunication operators and cable operators offering localised prices for fixed-line services. We only use the tariffs available within the state of Illinois, chosen because it is reasonably representative of the US as a whole in terms of its relative wealth and rural-urban split (it incorporates the city of Chicago as well as large agricultural regions). Nevertheless, US pricing should not be viewed as representative of the whole country.
- In order to ensure that changes we identify within countries have been driven by changes in the market rather than simply by changes in the currency exchange rate, we have used the same exchange rate in 2009 and applied it to 2008 data. This means that there may be some distortions in the relative positions of countries compared to the findings in 2008 (in particular, the fall of the pound against the Euro means that UK pricing is presented as lower relative to France, Germany, Italy and Spain than it was in 2008 – although the PPP adjustment mitigates to some extent against this).

Section 3

Summary of findings

3.1 Multi-play

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

Figure 2 below indicates that the lowest price available in the UK for Basket 2, which includes a basic broadband connection and a fixed-line voice line, is around £32. This involves purchasing a combined 'voice and broadband' tariff from one operator, and saves over £7 compared to the lowest prices available by buying the services separately. However, the lowest price 'voice and broadband' tariff in the UK for this basket has increased by £3.58 since 2008. This is due to the general withdrawal of voice tariffs which include 'free broadband'; pricing structures in the UK now more commonly charge a combined price for a broadband connection and some inclusive calls which is charged in addition to the line rental fee.

Prices for 'voice and broadband' tariffs for this basket have also increased in France, Italy and Spain. The lowest price available for a 'voice and broadband' tariff for this basket was in Germany (as in 2008), where the price has also fallen significantly since 2008 as a result of new pricing structures from Arcor. In Germany and in Spain there are few standalone broadband services available (it is typically sold in a bundle with voice services), which explains why prices in Germany and Spain are so much higher when services are bought on a standalone rather than a multiplay basis.

For Basket 4, which includes a basic pay-TV deal, the lowest prices available in France, Germany, Italy and Spain involve purchasing broadband, fixed-line voice and television services in a 'triple-play' bundle. Once again, the greatest savings compared to purchasing the lowest priced standalone services are in Germany and Spain, where households can save £35-£40 a month by purchasing the triple-play service. In the UK, the lowest price available for this basket comes from a tariff offering discounted fixed-line broadband when a mobile phone contract is purchased.

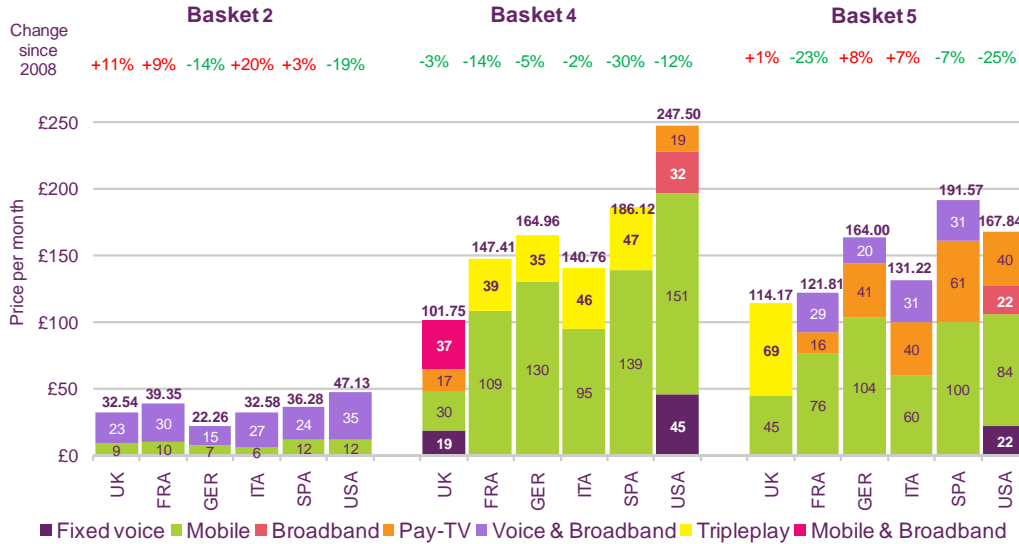
Basket 5 includes premium pay-TV services (top league domestic football and first-run Hollywood movies), and because these packages are typically offered as an 'add-on' to basic level services, they do not generally offer savings if bought within a triple-play subscription rather than on a standalone basis. The UK is the only country where the lowest price for this basket is achieved by purchasing the services within a triple-play offer. In all of the other European countries, the lowest prices achievable for this basket of services involve purchasing fixed-line voice and broadband together.

In the US, only Basket 2 offers savings by purchasing services in a 'bundle' (a combined 'voice and broadband' tariff) rather than purchasing the lowest price single services. This is probably the consequence of less diversification in local markets, with the incumbent telco and the local cable operator typically competing in a duopoly to serve voice, broadband and TV services to customers. In this environment, the bundling of heavily discounted broadband with voice and/or TV is value-destroying for operators who generally view voice, broadband and TV as three separate revenue streams.

This contrasts with Europe, where local loop unbundling and wholesale line rental with regulated price controls has led to a competitive landscape characterised by alternative

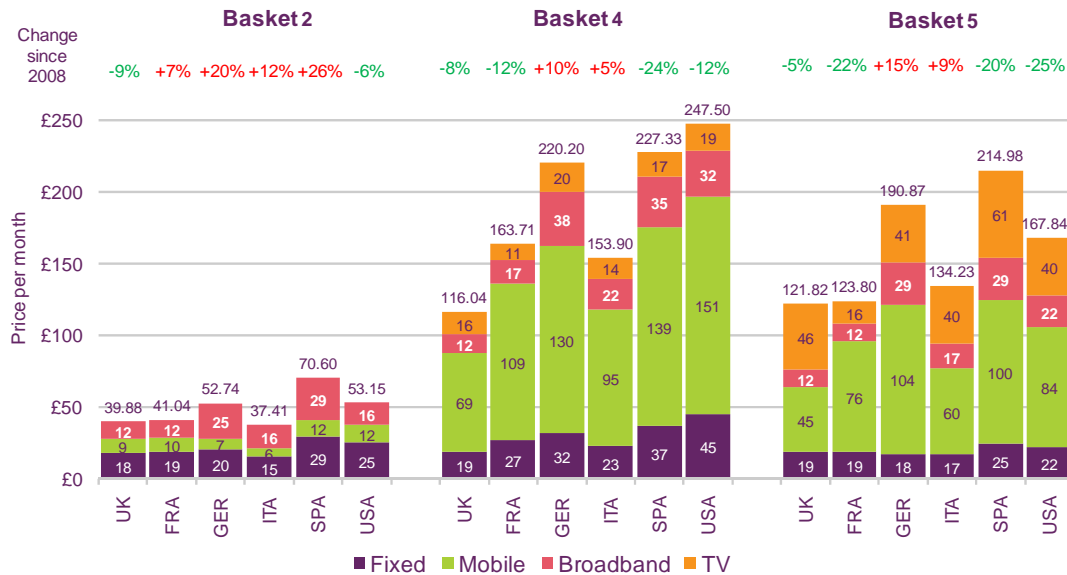
network operators building market share by launching bundled services (the incremental costs of adding a broadband service to a voice service are low, and the consumer benefits high) - and incumbents have responded by doing the same.

Figure 2: Best prices available, including multi-play offers



Source: Ofcom using data supplied by Teligen
 Note: Lowest tariff available for each service type from any of the three largest operators by market share in each country including multi-play offers July 2009; PPP adjusted.

Figure 3: Best prices available for standalone services



Source: Ofcom using data supplied by Teligen
 Note: Lowest tariff available for each service type from any of the three largest operators by market share in each country including multi-play offers July 2009; PPP adjusted

3.2 Fixed voice

Figure 4 and Figure 5 below look at the costs of the fixed-line voice components of those baskets which include a fixed-line phone. Overall, as calculated from the weighted average of the best value tariffs from the three largest operators in each country, the UK offers the lowest pricing. Moreover, prices have fallen for every basket in the UK since 2008, while they have either remained steady or increased slightly in other countries.

However, a feature of the UK market is that value seekers can potentially reduce prices by purchasing 'add-ons' to their basic line rental, which provide reduced or inclusive calls for certain call types in return for a fixed monthly payment. For example, for Baskets 2, 4 and 5, every single tariff which is included in the computation of the average pricing includes at least one 'add on', and for baskets 4 and 5 all tariffs include at least two 'add ons', offering inclusive anytime national calls, inclusive or lower priced calls to international numbers and/or reduced prices to mobile numbers.

In addition, the BT tariffs used (which have the most impact on the weighted average pricing, as BT has 61% market share) include those which are only available to customers committing to a 12-month rolling contract. Consumers who have not committed to the contract, or have not purchased additional add ons are likely to have seen prices rise since 2008²; BT's price changes in April 2009 included an extra £1 on the basic price of line rental³ and higher call set-up fees for those not committing to a 12-month contact and inclusive call packages, while at the same time offering improved offers on its Unlimited Anytime calls package, and its Friends and Family Mobile package. Therefore, while pricing in the UK appears to be falling and is relatively low compared to other countries, it should be noted that tariff structures are fairly complex and consumers typically only achieve the lowest prices if they are able to match the best tariff to their usage and are prepared to commit to an ongoing contract.

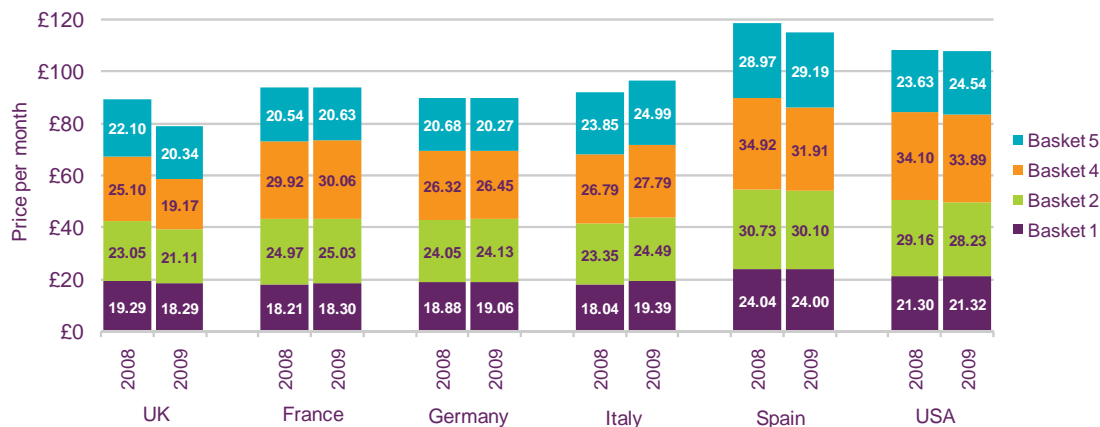
Spain comes out as the most expensive country due to the tariffs offered by incumbent Telefonica (which has around 80% market share) being more expensive than those of incumbents in the other European countries.

The US is more expensive than the European countries (other than Spain) despite offering low line rental and free local calls on all tariffs, due to the high cost of national calls (however, note that this may not be an entirely fair comparison, as national calls clearly cover a much longer geographical distance than national calls in the European countries). The US does have the lowest pricing for calls from fixed lines to mobiles (as a consequence of the 'receiving party pays' interconnect regime, which means that mobile users typically pay for incoming calls). However, as these calls only constitute a small element in our baskets, this feature of the US market has little impact on the overall findings.

² There is evidence that consumers in the UK are paying more per minute for fixed-line calls despite the increasing availability of inclusive calls within standard access tariffs as a result of falling call volumes and static or increasing line rental fees. Ofcom analysis finds that the average cost per minute for fixed calls increased from 6.7p in 2006 to 7.2p in 2007 and 7.4p in 2008. (*Communications Market Report 2009*, p245, www.ofcom.org.uk/research/cm/cmr09/)

³ Note, however, that the BT Basic Option, offering line rental at just £4.40 a month (compared to £12.50 standard line rental) is excluded from our analysis as it is only available to consumers on income support, receiving income-based jobseeker's allowance or in receipt of a guaranteed pension credit.

Figure 4: Comparative single-service 'weighted average' fixed-line voice pricing

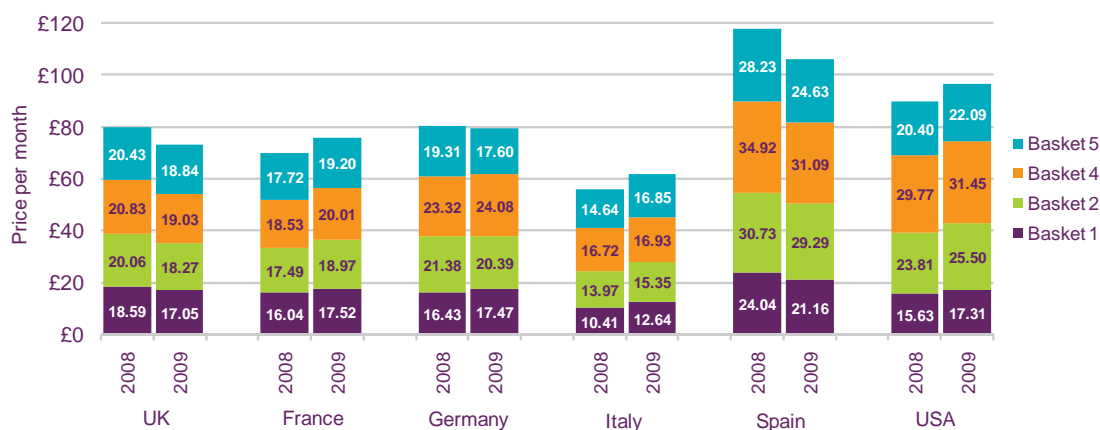


Source: Ofcom using data supplied by Teligen
 Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2009; PPP adjusted

While the 'weighted average' analysis is to a considerable extent a reflection of incumbent pricing (incumbent have retail market share of over 60% of fixed line connections in all the European countries), the 'best offer' analysis gives prominence to tariffs from the largest alternative network (alt-net) operators, which typically undercut incumbent pricing as they look to gain market share. In looking at the best tariff available from the three largest operators in each country (Figure 5), Italy offers the lowest prices overall as a result of much lower prices available from alternative network (alt-net operators) than from incumbent Telecom Italia. The best prices available in Italy are overall 36% lower than the weighted average pricing.

By contrast, in the UK the lowest prices available are overall just 8% lower than the 'weighted average'. This represents lower variation in pricing between operators in the UK than in other countries. The UK and Spain are the only European countries in which a tariff from the incumbent appears as a 'best offer' tariff in any of the baskets.

Figure 5: Comparative single-service 'best offer' fixed-line voice pricing



Source: Ofcom using data supplied by Teligen
 Note: Lowest tariff available for the fixed-line voice component of each basket from any of the three largest operators by market share in each country, July 2008 and July 2009; PPP adjusted. Data for Spain is not comparable with that published in 2008, as we have now excluded tariffs from Euskaltel (a regional operator based in the Basque region)

3.3 Mobile

The UK offers the lowest 'weighted average' prices for the mobile component of every basket except the lowest-use basket, where Italy offers the lowest mobile pricing, followed by Germany (Figure 6). In general, prices in the UK and Italy are lower than those in other countries.

This may be indicative of higher levels of price competition in the UK and Italy and driven by:

- Saturated markets – in both countries the number of mobile connections has exceeded the population since 2005;
- The disruption caused by new entrant Hutchison 3G (branded as '3') in Italy and the UK, which launched in both countries in 2003 and since then has sought to gain market share through low-priced offers. (Note that as Hutchison 3G is the fifth largest operator in the UK and the fourth largest in Italy, its tariffs are excluded from this analysis).
- A relatively low level of market concentration in both countries fosters intense competition between relatively equally matched operators. The UK is the only European market with five mobile network operators and the Herfindahl-Hirschman Index (HHI) (often used as an index of the level of competition in the market) finds that the UK has the least concentrated mobile market in Europe⁴, while in Italy there are four mobile network operators and the HHI index finds that the market is less concentrated than in France and Spain, and comparable to Germany.

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

In the UK, around 40% of mobile connections are post-pay, and these tariffs are characterised by heavily subsidised (or even 'free') handsets, with operators recouping the value over the course of the contract. Fixed monthly line rentals typically include a large number of inclusive any-time any-network minutes and SMS texts. The result is that high users tend to pay a 'flat-rate' for most of their use, and the value available from these tariffs is evident in the low relative prices for the high-use mobile connections in Basket 3, Basket 4 and Basket 5 (although of course, this assumes that consumers know their regular monthly usage level and select the correct tariff accordingly).

In the last year, 'SIM-only' tariffs have become increasingly popular, in which customers are not given a new handset when signing up for a contract, but are supplied only with a SIM card which they can use in a handset they already own. In June 2009, SIM-only tariffs offering at least 300 minutes were available for £15 or less from all five UK mobile network operators, and our analysis finds that SIM-only deals offer the lowest prices for all the UK connections with over 200 minutes (even though, in order to provide like-for-like comparison we also include the cost for buying a handset separately, and include a monthly cost based on a three-year amortisation).

By contrast, around 90% of mobile connections in Italy are pre-pay and there is little by way of handset subsidy even for post-pay tariffs, where line rental is typically much lower than in the UK, with correspondingly lower numbers of inclusive minutes and SMS. Indeed, there is little variation between pre- and post-pay in Italy; they tend to have the same basic call charges. The result is that Italian tariffs are characterised more by metered than 'flat rate'

⁴ See Ofcom International Communications Market data, www.ofcom.org.uk/research/cm/

pricing. Prices for consumers with low monthly use tend to be lower than in the UK (as in Basket 2, and for two of the connections in Basket 4).

Although not captured in our findings, this pricing structure has benefits to consumers in that it offers greater flexibility to consumers who either do not know their monthly usage or, typically, vary it from month to month. The range and complexity of UK tariffs is an issue which has recently been raised by Consumer Focus, who claimed that there were 1.3 million deals available which meant that consumers were often “bewildered” and overspending by signing up for an unsuitable package.⁵

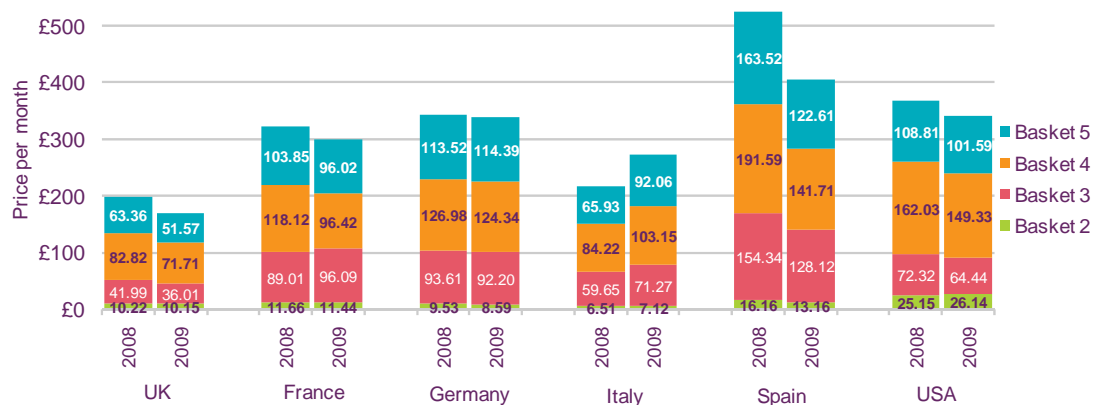
Although it remains the most expensive of our comparator countries, the most significant price falls in the last year have come in Spain, where overall prices fell by 22% between July 2008 and July 2009. Two factors appear to be driving this fall in prices:

- Firstly, mobile termination rates (MTRs) (i.e. the cost that a calling network must pay a receiving network in return for connecting the call) were reduced to a single price of €0.07 (5p) in April 2009, bringing them broadly into line with other European countries, and this may have translated into lower retail prices for consumers.
- Secondly, in the last year an increased range of Spanish post-pay tariffs have launched, offering inclusive minutes and messaging in return for a fixed line rental (historically, the Spanish contract market has been characterised by low line rental, but few inclusive minutes, with a much higher proportion of metered charging than is the case with tariffs in other countries).

Another feature of the Spanish mobile market worth noting is that it is characterised by an initial call set-up charge for most calls (typically of 15c (12p)). Call set-up fees constitute a large proportion of the overall price of calls and pricing in Spain would appear less expensive analysed on the basis of longer average call lengths (our approach is based on average call lengths across OECD countries has an average mobile call length of between 1.5 and 1.8 minutes, depending on the mobile profile).

In contrast, ‘weighted average’ pricing in Italy appears to have increased significantly between July 2008 and July 2009. This is driven by increased prices for the higher-use baskets, and results from changing tariff structures from the largest two operators in Italy (Telecom Italia Mobile and Vodafone) who have targeted high end users with *iPhone* tariffs. The result is that users requiring more than 200 minutes a month (as required for mobile connections in Baskets 3, 4 and 5) are best served by these *iPhone* tariffs, which are more expensive than comparable tariffs available in other countries (and indeed from other operators in Italy), as a result of the high cost of the inclusive *iPhone* handset.

⁵www.consumerfocus.org.uk/en/content/cms/News_Press_speech/Over_a_million_deals/Over_a_million_deals.aspx; our pricing analysis interrogates 857 UK mobile tariffs, more than in any other country.

Figure 6: Comparative single-service 'weighted average' mobile pricing

Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2008 and July 2009; PPP adjusted

The US mobile market is very different from that in Europe because of a different interconnect regime which results in charges for incoming as well as outgoing calls (in order to incorporate this, our analysis includes both inbound and outbound calls); a consequence is that US mobile contracts typically include a very high number of inclusive (inbound and outbound) minutes in order to provide a 'flat-rate'-style tariff which incentivises consumers to leave their phone switched on. Most contracts in the US include over 900 (inbound and outbound) minutes a month, and there are very few contracts available which include less than 450. Similarly pre-pay services have much lower take-up, with 82% of mobile connections being pay-monthly; and pay-as-you-go connections typically follow a different model to in Europe, offering a set number of inbound and outbound minutes to be used in a 30-day period, rather than charging by the minute.⁶

This fundamental difference in the US market has an impact on our pricing analysis in two related ways. Firstly, basic line rental is typically much higher in return for many more minutes, meaning that there are very few US tariffs targeted at the low users present in Basket 2 and Basket 4 of our analysis. Secondly, overall average mobile phone use in the US is much higher than in European countries (693 combined inbound and outbound minutes per mobile connection in 2008, compared to 150 outbound minutes in France, 123 outbound minutes in the UK, 115 outbound minutes in Spain, 90 outbound minutes in Italy and 69 outbound minutes in Germany). This means that, even though the baskets have been created to be representative of average use across the six countries, the mobile baskets collectively have a much lower usage profile than the US average. Because the baskets are less representative of the US market than of the European market, they contain a bias against the US.

Put simply, were our analysis to look at actual minutes of calls on a price-per-minute basis, rather than be based on a usage basket, the US would be relatively less expensive.⁷ Similarly, were our baskets to contain much higher mobile usage, the US would also be relatively less expensive. In order to examine this, we also looked at the prices for a basket of 1,000 minutes (Figure 7). This found that the UK was again the cheapest. The US offered the second lowest pricing. Additional analysis of UK and US mobile pricing, which explores

⁶ Differences between the UK and the US market, and the impact of the 'receiving party pays' interconnect regime are discussed in detail in Ofcom's consultation into mobile voice termination (May 2009), see: www.ofcom.org.uk/consult/condocs/mobilecallterm/annex9.pdf

⁷ Analysis published in Ofcom's finds that revenue per minute per subscriber in the US was around 50% lower than in the UK in 2007. See Annex 5 of Ofcom's consultation into mobile voice termination (May 2009), p7: www.ofcom.org.uk/consult/condocs/mobilecallterm/annex5.pdf

why the UK offers lower pricing for this basket even though it is known that average price-per-minute is lower in the US than in the UK, is provided in Section 9 of Annex 1 below.

Figure 7: Comparative pricing for mobile tariffs with 1000 minutes, July 2009

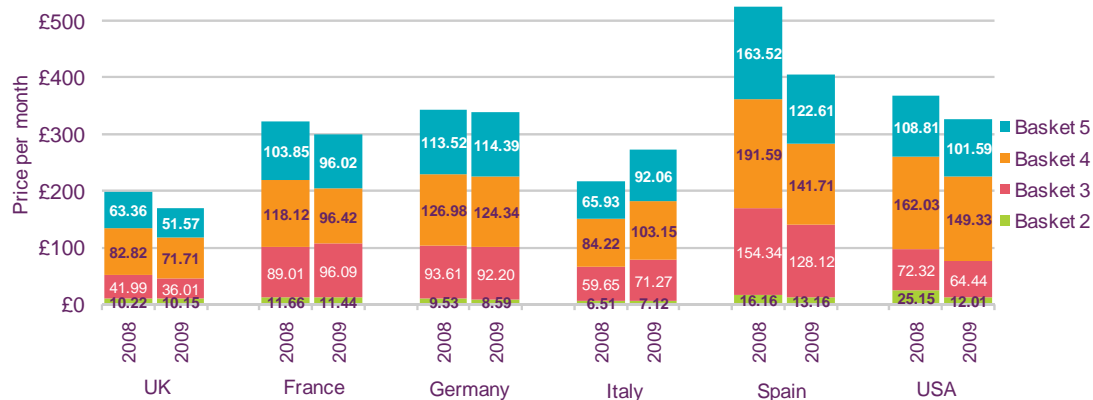


Source: Ofcom using data supplied by Teligen

Notes: Includes 1,000 inbound and 1,000 outbound minutes (34% on-net, 34% to off-net mobile; 32% to national geographic numbers); weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2009; PPP adjusted

In looking at the lowest prices available for the mobile phone components of each basket, the pattern is broadly similar to the 'weighted average' analysis. Generally, in all countries, there is a greater proportional difference between the 'average' pricing and the 'best offer' pricing for the higher-use baskets, largely as a result of greater variation between post-pay and pre-pay tariffs (see Figure 8).

As for fixed-line pricing, there is less variation between the 'weighted average' and 'best offer' pricing in the UK than in other countries (overall, 'best offer' pricing is just 8% lower than the 'weighted average', indicating that there is less variation in pricing between operators). The greatest difference is in Italy, where 'best offer' pricing is overall 31% lower than the weighted average pricing. As discussed above, this is the consequence of lower priced tariffs being available for high-end users on Wind (the third largest operator) than on the largest two operators, who have focused on *iPhone* tariffs for this segment of the market.

Figure 8: Comparative single-service 'best offer' mobile pricing

Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for the mobile phone component of each basket from the largest operators by market share in each country, July 2008 and July 2009; PPP adjusted

3.3 Fixed-line broadband

Single-service broadband pricing comparison should be treated with some caution, as broadband is very frequently bought as part of a multi-service bundle, and many operators do not even offer standalone broadband. In the UK, all of the largest operators except BT heavily incentivise consumers to purchase other services along with their broadband connection (for example by including free calls packages), while Sky offers broadband only to its pay-TV customers; in Spain, none of the largest three broadband operators offer a standalone product (it is always bundled with voice), in Germany among the largest operators only Arcor offer a standalone broadband product; in France every broadband package from the largest provider, France Telecom, has IPTV included (although not all consumers are able to receive IPTV services).

Our broadband baskets are defined by the headline speed of the connection, and require a minimum of 2Mbit/s, 4Mbit/s or 8Mbit/s. The lowest overall prices are available in the UK and in France (Figure 9), and it is a characteristic of both countries that that the most basic packages from all the leading operators meet the requirements of the highest specification basket (8Mbit/s and 5GB per month). In fact, in France, there is little price differentiation between broadband at different speeds. Rather, the speed available is defined by location. For example, French cable operator Numericable make no pricing distinction between those who are able to receive 100Mbit/s or 30Mbit/s services. By comparison, the UK market is characterised by tiered pricing by headline speed; in June 2009 the price of 'up to' 16Mbit/s services was typically higher than for 'up to' 8Mbit/s services (although this is now changing as BT and Orange are offering 'up to' 20Mbit/s as their basic service), and Virgin Media priced its cable services according to three speed offerings (10Mbit/s, 20Mbit/s and 50Mbit/s).

However, it should be noted that none of our baskets include genuinely high-speed broadband. This is because the very limited availability of next-generation access broadband in most countries would make price comparisons meaningless. Nevertheless, it should be recognised that high-speed alternatives, often at no great incremental cost, are available to many households in the US and to significant numbers of households in Italy, France and Germany. In the UK, only Virgin Media cable (with its ‘up to’ 50Mbit/s package) provides a widely available service offering headline speeds of higher than ‘up to’ 25Mbit/s.

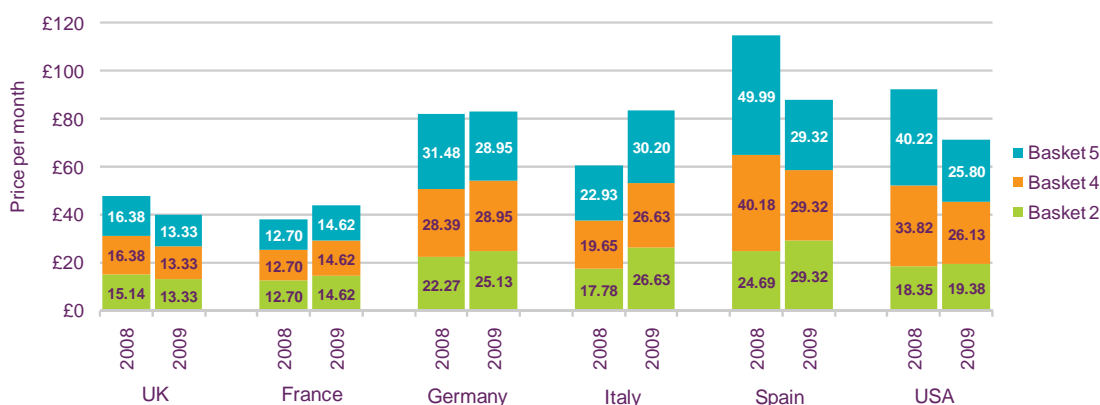
Relatively low prices in the UK are maintained by a competitive environment in which no single provider has more than 30% market share, and consumers are able to choose from a range of services provided by operators offering service via wholesale line rental (WLR) (available to virtually 100% of the population), local loop unbundling (LLU) (available to 84% of the population) and cable (available to 49% of the population).⁸

Pricing in Germany is higher relative to the other countries, because of the requirement to pay an installation fee and purchase a router, both of which are typically offered ‘free’ or at a much lower price in other countries. However, a benefit to the German consumer is that the broadband connection is not generally associated with a minimum contract length, whereas a commitment of between 12 and 24 months is generally required for broadband subscriptions in the other countries.

Spain has the highest overall prices for broadband. High broadband prices and relatively slow speeds has recently drawn criticism from the Spanish Association of Internet Users, who claim that Spain is falling behind the rest of Europe with just 23% of homes having a broadband connection, and an additional 16% continuing to use a dial-up connection⁹ (in the UK, the comparable figures are that 67% of homes have a fixed-line broadband connection, and just 1% of homes still use dial-up internet access).

Whereas in 2008 some of the tariffs used in the analysis for Italy and Germany included usage charges in addition to the monthly rental, all of the tariffs which are used in calculating the weighted average for 2009 are monthly rental prices, with no additional charges for volume usage. This reflects a general move towards flat-rate pricing.

Figure 9: Comparative single-service ‘weighted average’ fixed-line broadband pricing

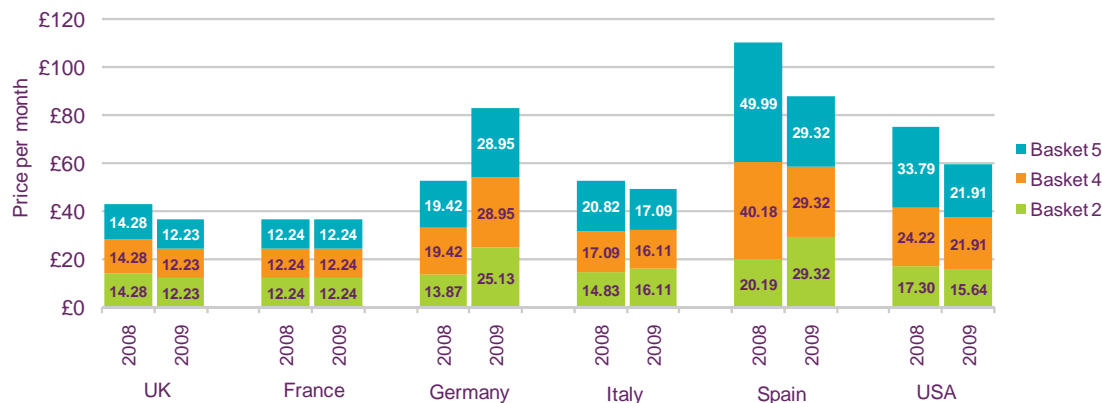


Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2008 and July 2009; PPP adjusted

⁸ See the Glossary for a definition of WLR and LLU

⁹ www.costatropicalnews.com/rant-and-raves/the-internet-leaving-spain-behind/

Figure 10: Comparative single-service 'best offer' fixed-line broadband pricing

Source: Ofcom using data supplied by Teligen

Note: Lowest tariff among the largest operators by market share in each country; July and July 2009; PPP adjusted

3.4 Summary of findings: TV

The variation in numbers and types of channels and different types of programme content means that like-for-like comparison of the pricing of television services is difficult. However, we have included television tariffs within our analysis in order to include comparisons of 'triple-play' (voice, broadband and TV) packages, which have had increasing take-up in all countries. Comparative pricing of television services is an issue which has been discussed in some detail in the context of Ofcom's pay-TV market investigation¹⁰. Our current view is that it is difficult to draw strong conclusions from an analysis of comparative pricing levels for pay-TV packages¹¹. For the purposes of this analysis we have used some headline prices of common pay-TV packages, but this is not intended to either supplement or replace the analysis conducted for the pay-TV investigation.

Licence fees are highest in Germany and the UK (Figure 11), which have the highest investment per head in public service broadcasting. There is no licence fee in Spain and the US, where public funding is raised by alternative means.

'Basic pay-TV' is defined as the lowest subscription required to receive channels in addition to those available on free-to-view television. France, Italy and the US offer the lowest costs for this 'entry-level' service, but the type of service varies significantly. In France the leading satellite operators' entry-level service is available for €12.90 (£10) a month, with the first three months free of charge, and provides 23 channels. A similar priced service is available from a satellite operator in Italy, but only includes six channels, and in the US via an IPTV provider, including seven channels.

Prices for basic pay-TV as a standalone service are higher in the UK than in all other countries. However, at £16.50 per month the service from satellite operator Sky includes more basic channels (270) than in any other country, while the rival service from Virgin Media (also at £16.50 per month) includes 65 channels and a Virgin phone line.

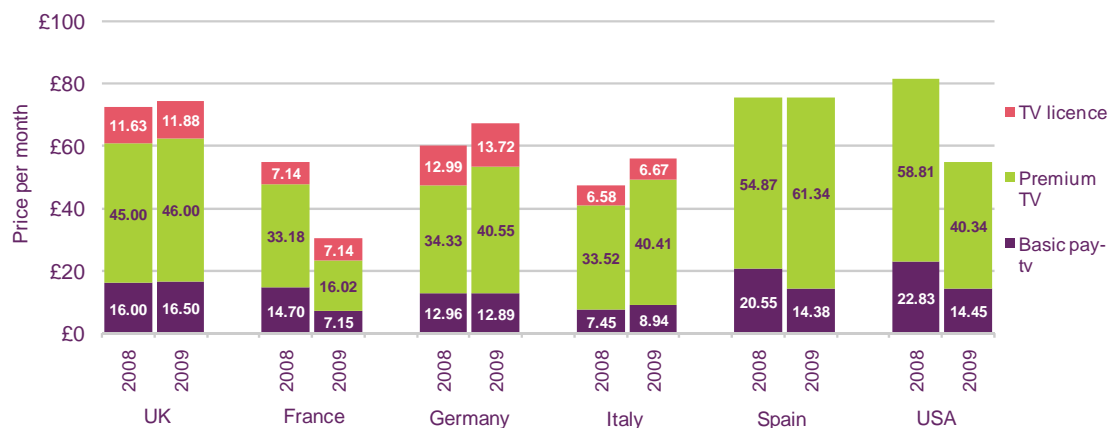
We also looked at the price for a basket of 'premium' services, consisting of the best package of top-flight football (NFL in the US) and first-run major Hollywood studio movies. Because of the variation of content it is difficult to compare packages, and apparent falls in

¹⁰ <http://www.ofcom.org.uk/tv/paytv/>

¹¹ See paragraphs 7.56 to 7.71 of the Pay TV Second Consultation:
http://www.ofcom.org.uk/consult/condocs/second_paytv/

the prices in France and the US between 2008 and 2009 have more to do with changing package structures than genuine offers of the same for less. Lower prices in France are the result of consumers now being able to purchase a combined football and movies package whereas in 2008 they had to be purchased as separate add-ons.

Figure 11: Comparative single-service TV pricing



Source: Ofcom using data supplied by Teligen

Note: Basic pay-TV is defined as the minimum price required to purchase a pay-TV packages which includes channels not available over free-to-air TV; Premium TV is defined as the best package of top-league football (NFL in the US and first run films from major Hollywood studios)

Section 4

Baskets analysis

4.1 Basket 1: a low-use household with basic needs

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

Figure 12: Composition of Basket 1

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

Source: Ofcom

Using a weighted average of the best-value tariffs from the three largest operators in each country, the lowest prices for the fixed-voice calls component of this basket of are available in the UK and France.

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

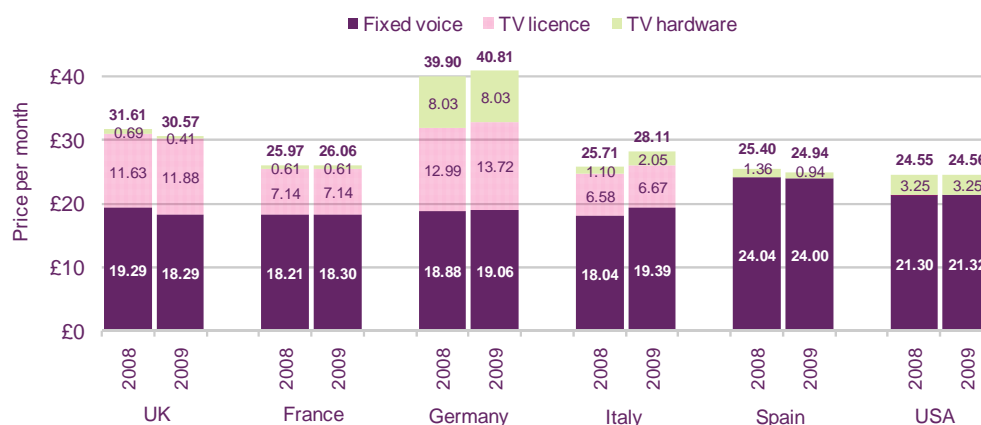
As these data represent an average of the lowest prices available from the largest operators, weighted by the market share of this operator, the fixed voice pricing, to a large extent, reflects the pricing of incumbent operators, which have over 60% retail market share in each of the European countries. The relatively high pricing in Spain is the consequence of incumbent operator Telefonica having 80% market share and not having a suitably priced ‘add-on’ available for this basket of use – meaning that although the price of line rental is in line with other countries, the metered price of calls is significantly more expensive.

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

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

Digital terrestrial television is the largest platform for basic TV services in the UK, France, Italy and Spain - so the prices in Figure 13 are an accurate reflection of what the majority of people pay. Digital terrestrial television has also been used for the US as the cheapest way of receiving basic multichannel services, despite only about 15% of homes receive terrestrial rather than cable or satellite television. In Germany, because less than 5% of homes receive terrestrial television on their main set, we have used the free satellite service (received by over 20% of households) as the basic service, resulting in higher hardware and installation costs. The largest TV platform in Germany is cable (with around 60% market share), with monthly prices for access to a basic set of channels beginning at around €4 (£3.50) for apartment dwellers to €17 (£15) for those living in houses.

Figure 13: Basket 1: 'weighted average' single-service pricing



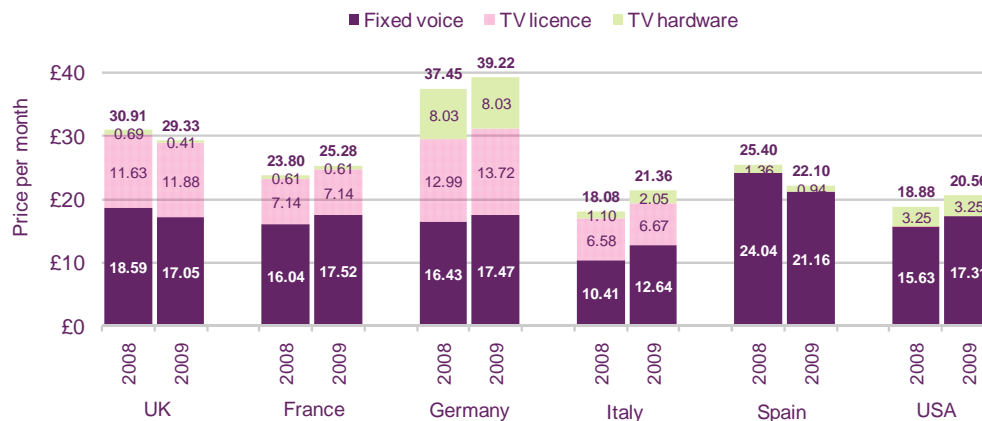
Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2008 and July 2009; PPP adjusted

There are significant differences when looking at the lowest priced fixed-line voice tariff available from any of the largest operators, rather than the weighted average of tariffs (Figure 14). (Note that the television component remains the same, because the basket has free-to-air television, where the only costs are the licence fee and hardware).

In Italy, the third largest operator (Tele2), with 8% market share, offers a price that is 38% lower than the best deal available from the incumbent, Telecom Italia. By contrast there is much less variation between the prices of the three largest operators in the UK, France and Germany.

Figure 14: Basket 1: comparative 'best offer' pricing



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2008 and July 2009; PPP adjusted

4.2 A broadband household with basic needs

The second basket is representative of a couple of 'late adopters' who are fairly heavy users of the fixed-line phone, have one mobile between them which they use occasionally and have a basic broadband connection.

Table 5: Composition of Basket 2

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

Source: Ofcom

In comparing the 'weighted average' cost of the fixed-line voice component of this basket, the UK is 13% cheaper than any other country. This reflects the potential value available to UK consumers in purchasing 'add-ons' or paying a higher monthly line rental in order to receive inclusive calls. UK costs are just 15% higher than for Basket 1, despite this basket including almost twice as many minutes. By comparison, fixed-line voice prices in France are 37% higher than for basket 1 and 32% higher in the US than for basket 1. Prices are highest in Spain and the US. This is due to less availability of 'all inclusive' call packages and (in the US) higher prices for international calls and national calls, meaning that costs increase proportionally more with higher use.

The low use of the mobile phone in this basket is typical of a pre-pay mobile user, About 90% of mobile connections in Italy are pre-pay, resulting in competition which focuses heavily on price-per-minute charges. This is reflected in the fact that Italy offers the lowest pricing for this basket. However, low monthly rental contract tariffs are also becoming increasingly offered in many countries. Whereas in June 2008, the lowest price mobile tariffs

for this basket from the three largest operators in the UK, Germany and Spain were all pre-pay tariffs, by July 2009 one of the lowest price tariffs in the UK was a contract tariff (a £10 a month offer providing 100 inclusive minutes on a 24-month contract). In addition, two of the lowest price tariffs in Germany were contract tariffs, and all three of the lowest price tariffs in Spain were contract tariffs.

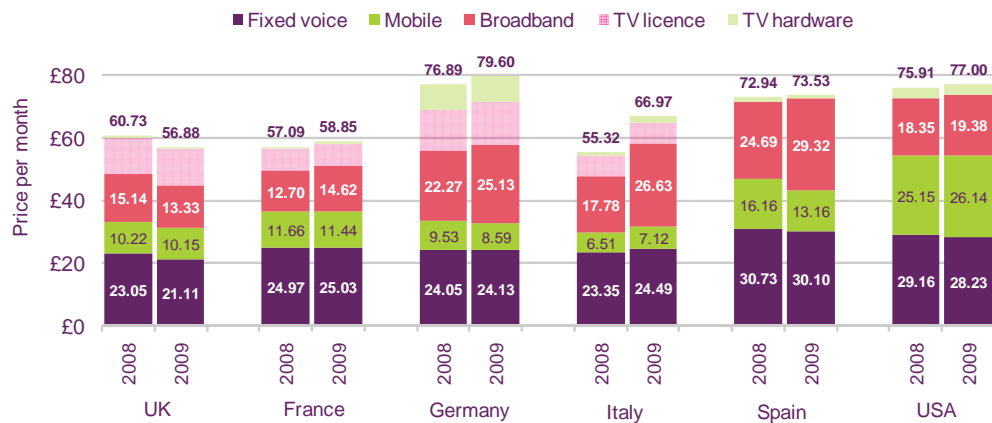
For this basket, Spain has seen the biggest fall in the price of the mobile component, which was 19% lower in July 2008 than in July 2008, driven by a combination of an increased focus on low-cost monthly contracts by all the largest three operators, and a fall in the mobile termination rates (from April 2009), which appears to have had an impact on retail pricing. Nevertheless, mobile prices in Spain are still substantially higher than in other European countries, with prices 15% higher than in France (the next most expensive European country). This is largely due to Spanish mobile pricing being characterised by call set-up charges in addition to per-second charging (the other countries in our analysis generally have only per-second or per-minute charging). This basket, like the other mobile baskets, has average mobile call lengths of less than two minutes, which gives heavy weight to these call set-up charges. Our call lengths are based on the OECD average, but if Spanish mobile call lengths are longer than this average, then our pricing for Spain is over-stated.

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

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

The UK offers the lowest pricing for the basic broadband requirements of this basket, with all of the three largest operators offering a monthly rental for an 'up to' 8Mbit/s service for less than £14 (note that this excludes the price of line rental and also includes any introductory promotions such as a reduced price for the first three months of the contract, which are incorporated into calculating the average monthly price for a 12-month period). This is perhaps a reflection of a relatively mature market with long-established alternative networks and no one provider having more than a 30% retail market share of broadband connections.

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

Figure 15: Basket 2: 'weighted average' single-service pricing

Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2008 and July 2009; PPP adjusted

In all six countries, the lowest prices available for this basket of services are available when consumers buy broadband in a package which includes fixed voice (Figure 16). In the UK a combined voice and broadband tariff (including line rental) is available for £23.16 a month from an LLU operator, whereas the lowest price available by purchasing voice and broadband separately is £30.50.

The lowest price available for combined voice and broadband services is in Germany, from the second-largest fixed-line provider, Arcor (which has been solely owned by Vodafone since May 2008).

The most expensive price for a combined voice and broadband tariff meeting the requirements of this basket is in the US. This is probably related to the market structure in the US, where, in the majority of areas, a local duopoly is in place with the incumbent telecoms company in competition with the local cable operator for the supply of voice and broadband services. Whereas in European countries new entrants have sought to gain market share by offering bundled services, the US has not seen the same level of market disruption and operators offer fewer discounts for purchasing services in a 'multi-play' bundle.

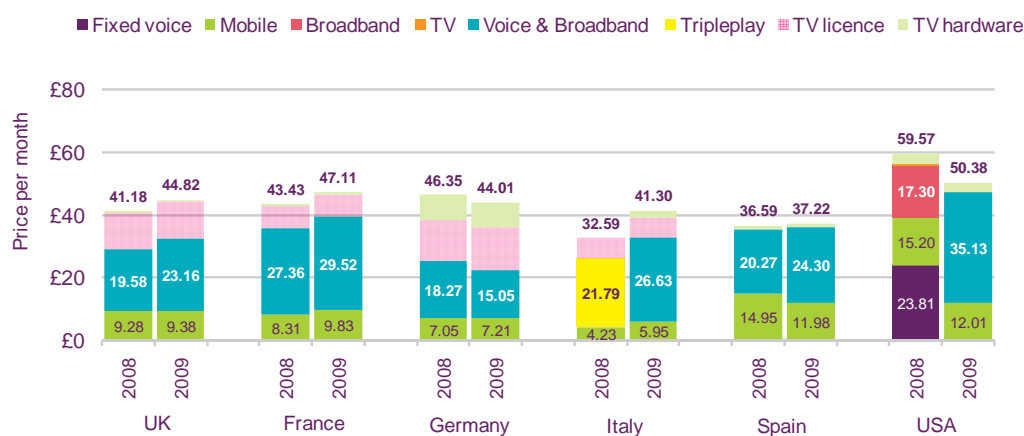
Although the requirements of this basket are for a basic broadband service with a headline download speed of 1Mbit/s or more, the lowest price packages in all of the countries except the US offer headline speeds considerably in excess of this – tariffs in Germany and Spain offer speeds of 'up to' 6Mbit/s, the UK 'up to' 8Mbit/s, Italy 'up to' 20Mbit/s and France 'up to' 22Mbit/s.

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

The lowest price offer in the US for this basket is less than half the cost of the 'weighted average' price. This is driven entirely by the availability of a pre-pay tariff from T-Mobile USA which offers 1,000 minutes, which can be used in 12 months when topping up with \$100. By

comparison, pre-pay tariffs from other operators typically require that top-ups are used within 30 days.

Figure 16: Basket 2: comparative 'best offer' pricing



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2008 and July 2009; PPP adjusted

4.3 Basket 3: A mobile 'power user'

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

Figure 17: Composition of Basket 3

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

Source: Ofcom

There is greater variation between countries in the total cost of this basket than for any other, ranging from £77.17 in the UK to £178.57 in Spain (Figure 18).

The relatively low pricing of the mobile phone component in the UK comes as all three of the largest operators offer tariffs which deliver a lower cost for this basket than any tariff in any other country. Two of the best value tariffs are SIM-only tariffs which offer 600 any-time, any-

network minutes for £20 a month (note that as this basket includes a high-end mobile phone, there is an additional cost of £6.07 a month¹² when such a phone is not included in the tariff price), while the third tariff includes a high-end mobile phone and 600 minutes a month over a 24-month contract. All three of these tariffs also involve the consumer purchasing both a monthly 'add-on' which provides reduced price or inclusive international calls. Therefore in order to achieve the lowest prices, consumers in the UK have to understand their usage requirements and purchase the necessary add-ons.

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

Italy offers the next lowest prices. However, two of the three tariffs included in the 'weighted average' pricing are *iPhone* tariffs, which include Apple's popular handset. These also include fewer inclusive minutes and SMS messages than the UK tariffs, meaning that tariffs in Italy 32% of the pricing in Italy is usage-related, compared to just 18% of the total price of the UK tariffs.

Tariffs in Spain do not typically include any-time, any-network minutes, or SMS, within monthly line rental fees, and this, combined with call set-up charges and high metered data charging means that the metered usage charges are much higher than in the other countries. Usage-based charging (as opposed to monthly rental fees or handset costs) accounts for over 90% of the total price of the Spain tariffs.

Mobile broadband prices are lowest in Italy and the UK. This indicates that the competitive dynamics which are delivering lower prices for mobile phone tariffs are also reflected in mobile broadband. 3G and HSPA networks were launched relatively early in these countries, with three operators offering HSPA networks by the end of 2006, and by early 2008 mobile broadband had launched as a mass market consumer proposition in both countries. 3G-only operator, 3, has been active in both countries in promoting mobile broadband, as a differentiator which builds market share and utilises spare capacity in their network, and to develop new revenue streams and compete with fixed broadband suppliers (unlike most of the leading mobile operators, 3 does not have a fixed broadband network).

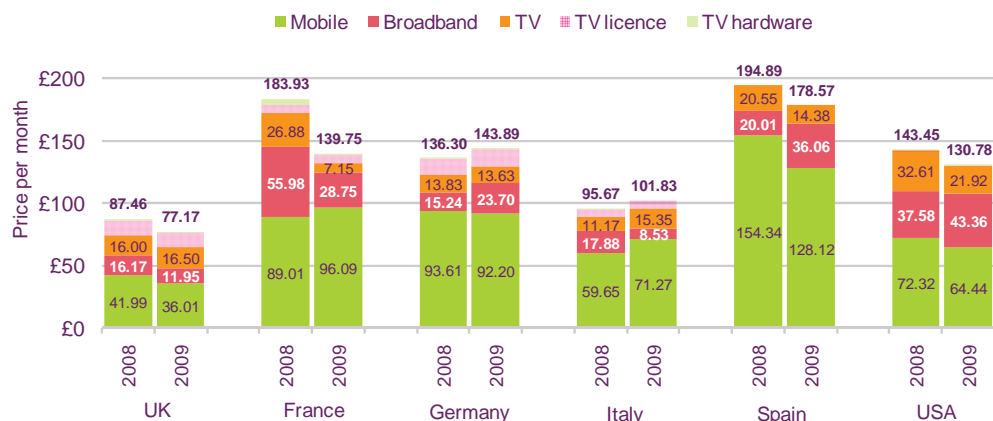
In both the UK and Italy, the price for mobile broadband compares favourably with the price of the basic fixed-line broadband connection in Basket 2. In addition, mobile broadband does not require the availability of a fixed phone line, as is required for DSL broadband. However, it should be noted that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

This basket also includes basic 'entry-level' pay-TV services, which is defined as the lowest subscription required to receive channels in addition to those available on free-to-view television. Because of the variation in numbers and types of channels and quality of programming, like-for-like comparison is more problematic than for telecoms services. The

¹² The monthly cost of the phone is calculated as the price of the lowest cost handset with a 5-mega pixel camera which is available from the operator, and the monthly cost is calculated by amortising the cost over 36 months. See the Methodology section for more details.

UK has the highest price for this package of services, with satellite and cable tariffs starting at £16.50 per month. However, these services include more basic channels than in any other country – the tariff from satellite operator Sky includes 270 channels, while the rival cable service from Virgin Media includes 65 channels and also includes a Virgin phone line.

Figure 18: Basket 3: ‘weighted average’ single-service pricing



Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2008 and July 2009; PPP adjusted

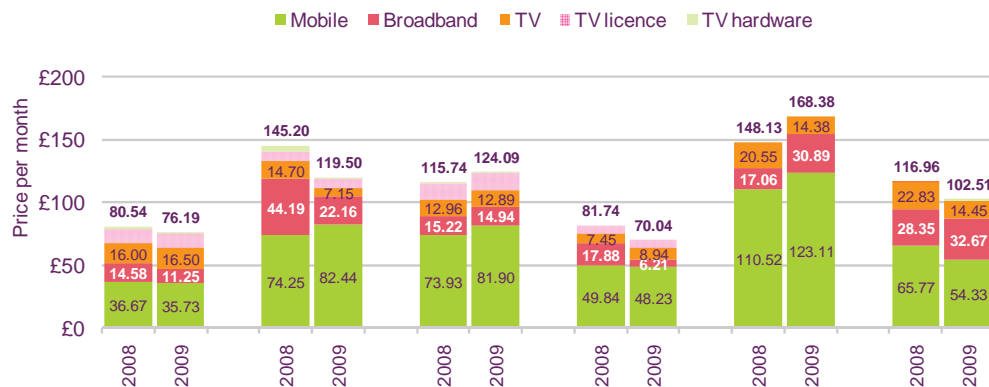
In the UK, the lowest price available for the mobile phone component of this basket is only marginally lower than the weighted average, reflecting that all three of the largest operators offer very similar prices. At £35.73 a month, the best value tariff from the least expensive operator is only 7p a month less than the best value tariff from the second most expensive operator. Both tariffs include 600 any-time, any-network minutes; however, one tariff is SIM-only on a 30-day contract, while the other includes a premium handset on a 24-month contract (note that the requirements of the basket include a premium handset, so the overall cost of the SIM-only tariff also includes the separate purchase of a handset).

The greatest difference between the ‘weighted average’ price and the ‘best offer’ price for the mobile phone component is in Italy, where the lowest price offer is from the third largest operator (with 19% market share). Unlike the lowest price offers from the largest and second largest operators, this tariff does not include an iPhone (it includes a less expensive handset, which also meets the requirements for being a ‘premium’ handset). Clearly some consumers would value the inclusion of an iPhone, but this dimension is not captured in our modelling.

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

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

Figure 19: Basket 3: comparative 'best offer' pricing



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2008 and July 2009; PPP adjusted

4.4 Basket 4: A family household with multiple needs

Basket 4 represents a family of two parents and two teenage children, all with their own mobile handset but with different mobile needs, with the adults using more voice and the children more messaging. However, they are cost conscious and favour using the fixed-line phone whenever possible, which gets fairly heavy use. The family are also heavy users of the internet, requiring a minimum connection speed of 4Mbit/s, and subscribe to entry-level pay-TV services.

Figure 20: Composition of Basket 4

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

Source: Ofcom

Overall, the UK has the lowest prices for this basket, and the US has the highest prices, driven mainly by the mobile phone costs, which account for over 50% of the total costs of this basket in every country (Figure 21).

Of all the five baskets we examine, this one has the highest volume of fixed-line voice calls. The UK has significantly lower costs than any other country for this component as a result of the combination of the availability (from all of the leading three operators) of 'Anytime' plans, which offer inclusive calls to any fixed line in the UK, and separate 'add-ons' which offer savings on calls to mobile and international calls. Although the weighted average cost of the best value tariffs from the three largest operators is lower in the UK, the two lowest price tariffs of all are available from alternative network operators in Italy. However, the 'weighted

average' is to a large extent a reflection of the 'best value' tariffs available from the incumbents, and for this particular basket prices available from BT are 36% lower than those available from the incumbent in Italy, Telecom Italia.

Germany has the least variation between the prices offered by the three largest operators, with the most expensive tariff just 12% more expensive than the cheapest. Among the European countries, France has the highest pricing from an incumbent operator for this basket. Basic line rental charges and local and regional calls are low in the US, but overall, the pricing for this basket is higher than for most of the European countries because of the higher prices for national and international calls.

This basket includes four mobile phones, one with relatively high voice usage (300 minutes a month), one with average voice usage (180mins a month) and two with low voice use (60mins a month). In most countries, the two mobile phones with the highest usage requirements (connections 1 and 2) achieve the lowest prices with post-pay tariffs, and the two phones with the lowest usage (connections 3 and 4) achieve the lowest pricing with pre-pay tariffs. Overall, the lowest prices (as defined by the 'weighted average') for all four connections are available in the UK, although individual tariffs in Germany and Italy offer lower prices for connections 3 and 4. For connections 1 and 2, tariffs available from all three of the largest operators in the UK are less expensive than any tariff available in any of the other countries.

Among the European countries, the highest mobile costs are in Spain, largely as a consequence of call set-up charges, as detailed in the analysis of Basket 2.

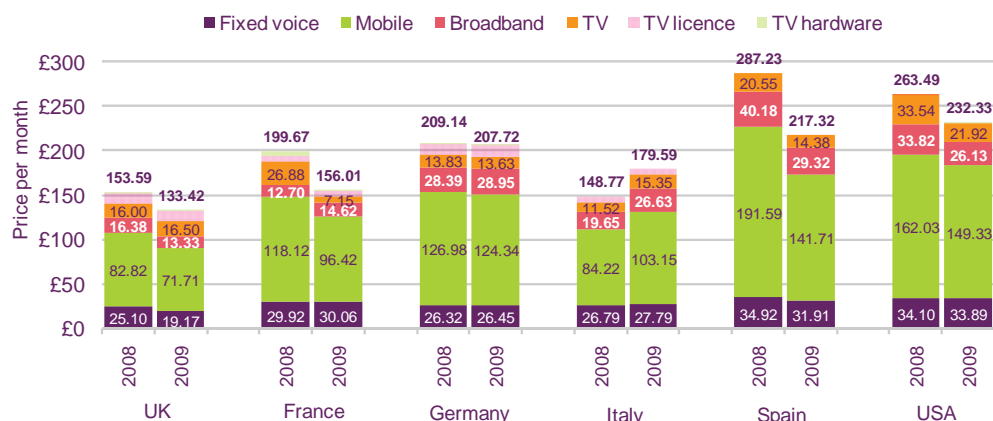
Pricing in the US compares favourably to most of the European countries for mobile connections 1 and 2, and would be the second cheapest after the UK for connection 1 but for the much higher cost of the international call component. International calls from US mobiles cost typically more than double those from European mobiles, largely as a result of the introduction of the Euro-tariff in the European Union in 2007, which put a cap on the prices of mobile calls between EU countries. However, pricing for the lower-use connections 3 and 4 in the US are more than double that in France, Germany, Italy and the UK; this is the result of tariffs being structured to favour much higher use (for example, the lowest price pay-monthly tariff available from any of the three largest operators in the US in July 2009 was \$29.99 (£20), and includes 200 minutes a month – this tariff is one of the lowest cost tariffs for both connections 3 and 4).

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

Prices for broadband are highest in Germany and Spain. However, part of the explanation for this is that in both countries the leading operators tend not to offer broadband as a standalone service, but rather offer it only in combination with voice services. Indeed, in Spain none of the largest three operators offer broadband as a standalone service (our theoretical consumer in Spain is therefore purchasing two voice services in the single-service analysis in Figure 21 – one to meet the requirements for the fixed voice component, and another which is included with the broadband connection). An additional factor driving up broadband pricing in Germany is that operators typically charge an installation fee and charge for the router, both of which are typically offered 'free' or at a much lower price in other countries (as a result, in Germany consumers are typically not tied into a minimum contract length, whereas in the other countries contracts of 18 months or 24 months are typical).

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

Figure 21: Basket 4: ‘weighted average’ single service pricing



Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2008 and July 2009; PPP adjusted

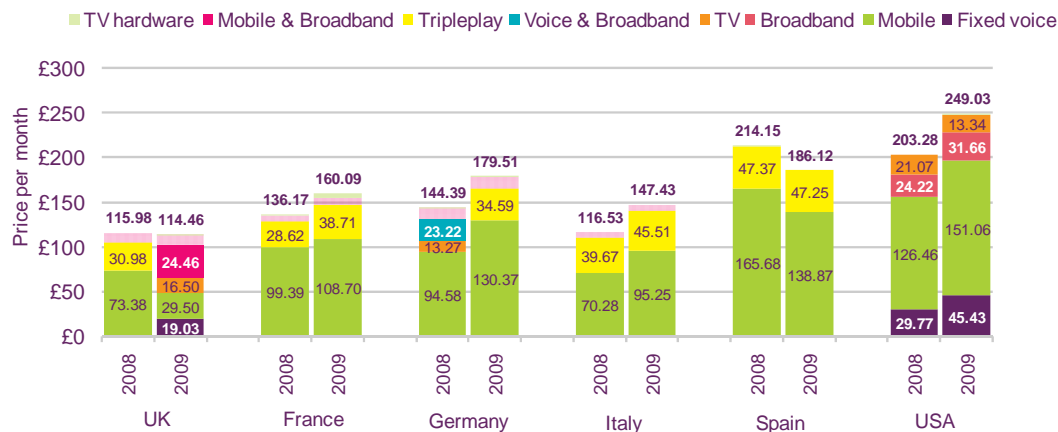
As with Basket 2, there are considerable savings to be made in all European countries by purchasing services within a bundle (Figure 22). In France, Germany, Italy and Spain the lowest prices were available by purchasing a ‘triple-play’ service incorporating fixed-line voice, broadband and basic pay-TV. In the UK, a relatively unusual tariff combining fixed-line broadband and a mobile phone contract offers slightly lower overall pricing than combined fixed-voice and broadband tariffs or triple-play tariffs.

The UK ‘mobile and broadband’ tariff is from a mobile operator who also has an LLU-based fixed-line broadband network and offers its standard broadband package at a 25% discount to its mobile customers. This type of pricing is becoming more typical in the UK, where multi-service providers rarely now offer inclusive broadband for the same price as a single service (an exception is another mobile operator, but this requires a minimum monthly spend of £30 on a mobile contract).

Prices for triple-play services providing the fixed voice, broadband and basic pay-TV requirements of this basket are lowest in France and Germany where the lowest tariffs are available from cable operators. The lowest price available in Italy is from a pay-TV satellite operator, while in Spain the lowest price comes from an IPTV package offered by the incumbent Telco. Although not shown in Figure 22 as it does not deliver the lowest overall price, the prices for a comparable triple-play service in the UK for this basket are higher than in any of the other European countries as a result of the requirement to pay a phone line rental in addition to pay-TV charges, an incremental broadband fee and telephone usage charges.

While the basic requirements of the Pay-TV element are the same as for basket 3, it is notable that many of these triple-play tariffs provide services in excess of the least expensive available on a standalone basis. For example, the triple play offer in France includes 138 channels (compared to 18 for the lowest price standalone service).

Figure 22: Basket 4: Comparative 'best offer' pricing including multi-play tariffs



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2008 and July 2009; PPP adjusted

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

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

Figure 23: Composition of Basket 5

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

Source: Ofcom

As for Baskets 3 and 4, the UK offers the lowest pricing for this basket because of significantly lower prices for the mobile component than in the other countries (Figure 24)

For the fixed-line component, prices are similar to those of Basket 1, which has a similar volume of calls. In all countries, prices for the fixed-line component are slightly higher than for Basket 1, which has a similar volume of calls, as a result of the higher proportion of calls to international and mobile numbers. However, prices are proportionally higher in Italy and Spain than in the other countries, largely as a result of the lack of availability of suitable 'add ons' offering reduced prices for these calls from the incumbents, Telefonica (in Spain) and Telecom Italia. However, overall the lowest price tariff in all six countries for this basket is in Italy from an alternative network provider offering low line rental and a large number of inclusive calls.

The UK offers the lowest price for both of the mobile connections in this household. Mobile connection 1 includes 56 minutes of international calls and also internet browsing, and tariffs including 'add ons' for web browsing and for international calls are available from all of the largest three UK operators. Two of the operators offer the lowest overall costs on SIM-only tariffs (with the handset bought separately). With 200 minutes of use a month, mobile connection 2 represents lower than average use for the average contract pay-monthly customer in the UK, and higher than average use for the average pre-pay customer¹³. As such, it is interesting that one of the UK's three largest operators offers the lowest price for this basket with a pre-pay tariff, another operator offers the lowest price on a £15 a month 30-day SIM only tariff, and the third operator's lowest price is on a 24-month contract with a handset included.

Overall, prices for the mobile component in the US are in the middle of the range. However, it has the second least expensive tariffs for mobile connection 1 and the most expensive tariffs for mobile connection 2. Once again, this highlights the characteristics of the US market whereby low-use tariffs are relatively expensive, but high-use tariffs offer relatively good value (the consequence of the 'receiving party pays' interconnect regime which has resulted in tariffs tending to offer a high number of inclusive minutes, but where monthly rental or pre-pay 'top up' costs are high).

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

This basket also includes a premium TV component. Among the European countries, Spain, Germany and the UK have the most expensive TV pricing for this top-end package of premium top-league football rights and first-run movies from the major Hollywood studios. This is partly a consequence of the channel bundling strategies of the operators. BSkyB in the UK and Audiovisual Sport in Spain both own rights to most of the biggest football matches, and control access to them by bundling them for a relatively high monthly fee (the requirements of this bundle are that the 'best package' of football rights is purchased; for example, the package offered by ESPN in the UK does not meet this criterion). By contrast, in Germany Premiere's segmentation whereby (via its distribution partners), it offers matches on a pay-per-view basis as well as within an 'all inclusive' monthly tariff. Therefore in Germany consumers have the choice to purchase the top matches on an individual basis, or within a monthly 'bundle'.

In Italy a fragmented football rights market creates more pressure on pricing; rights are sold on a club-by-club basis, and separate packages are sold to the terrestrial and satellite platforms. As a result, even though satellite operator Sky Italia has been able to secure a

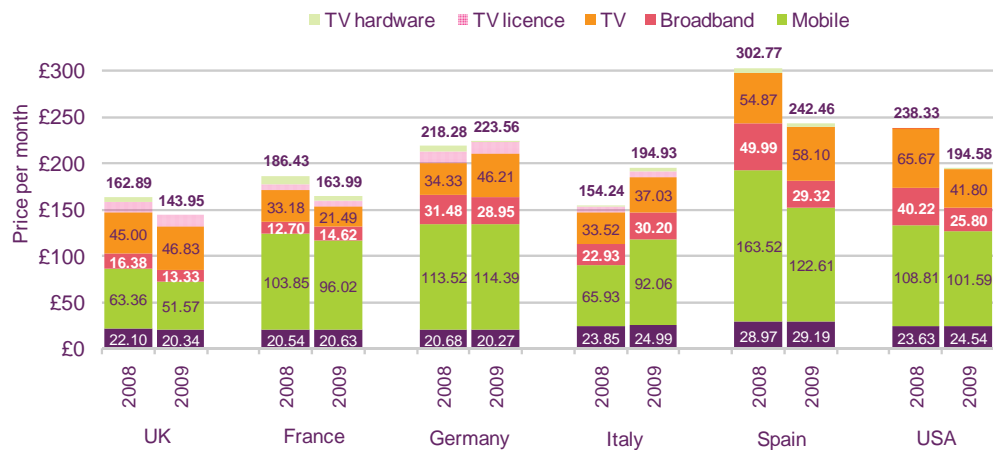
¹³ In 2008, contract mobile connections in the UK used an average of 234 outbound minutes a month, and pre-pay mobile connections used an average of 56 outbound minutes a month (UK Communications Market Report, 2009, p254, www.ofcom.org.uk/research/cm/cmr09/cmr09.pdf)

better overall package of rights than its competitors, the availability of a wide range of matches on digital terrestrial television (many on a pay-per-view basis) combines to create competition between the two platforms, while also putting an added burden on the wallet of the committed fan who wishes to purchase services from both suppliers. The fall in pricing in France since 2008 is the result of combined ‘football and movies’ tariff now being available from both satellite operator CanalSat and rival satellite and IPTV operator Orange, whereas in 2008 the services needed to be purchased separately.

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

This basket does not contain the requirement for high-definition (HD) television, because of its low take-up in some countries. However, it is worth noting that the services in France and the US do include HD channels, an HD receiver and a DVR. If HD were included as a requirement, the relative pricing of this premium television package would be even higher in the UK, with an additional £9.75 monthly fee for the HD sports and movies.

Figure 24: Basket 5: ‘weighted average’ single-service pricing

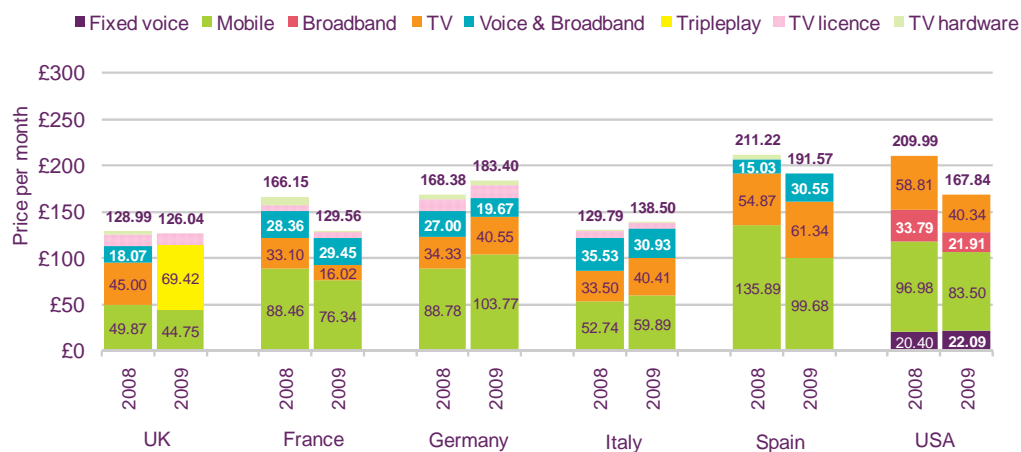


Source: Ofcom using data supplied by Teligen

Note: Weighted average of best-value tariff from each of the three largest operators by market share in each country; July 2008 and July 2009; PPP adjusted

There are not many triple-play tariffs in any of the countries which meet the requirement of containing premium football and movies. Premium television packages are typically offered as an ‘add-on’ to a basic level service and so do not generally offer savings if purchased within a triple-play subscription rather than on a standalone basis. Only in the UK does a combined ‘triple-play’ tariff offer better value than purchasing TV separately. In the other four European countries, a voice and broadband bundle offers the best value and the largest savings, compared to purchased services on a standalone basis, are found in Spain and Italy.

Figure 25: Basket 5: comparative 'best offer' pricing including multi-play tariffs



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the largest operators by market share in each country, July 2008 and July 2009; PPP adjusted

Section 5

Conclusion

Figure 26, Figure 27 and Figure 28 below summarise the service pricing of each basket in each country (TV licence and equipment costs are excluded). The findings enable us to draw some general conclusions about the pricing of communications services, as well as highlighting differences between the six countries.

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

Compared to other countries, there is little variation in mobile, fixed-line and mobile pricing in the UK between the 'weighted average' price and the lowest price. This indicates very similar pricing from all the largest operators. For example, the difference between the weighted average' pricing of the fixed voice component and the best price available is never more than £3 a month (in Basket 2, where the lowest price is 13% lower than the average price). By comparison, in Italy 'best offer' prices for fixed line voice are up to a third cheaper than the weighted average. Similarly in mobile the biggest difference between the 'best offer' and the 'weighted average' pricing in the UK is much lower than in other countries; the biggest difference between the 'weighted average' and 'best offer' pricing in the UK is 13% (Basket 4), whereas in the USA there is a bigger difference in all baskets, with the best pricing for Basket 2 more than 50% less expensive than the weighted average pricing.

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

- Lower prices in the UK may be a reflection of competition between five operators (compared to three in France; four in Germany, Italy and Spain, and four nationwide operators plus regional operators in the US).
- The 'receiving party pays' interconnect regime in the US to a large extent define the structure of tariffs, which typically include a large number of inclusive minutes. This in turn means that 'low use' baskets are expensive compared to other countries, whereas higher use basket are less expensive (this is of course also reflected in consumer behaviour, with much higher usage per connection in the US than in other countries).
- Nearly 30% of Germany's mobile connections are with mobile virtual network operators (MVNOs). This provides part of the explanation why the low usage baskets are relatively low priced, as MVNOs have in particular driven competition at the low end of the market.
- The Italian market is 90% pre-pay, whereas the US market is 90% post-pay; as a result pricing in Italy tends to be more usage-based (i.e. metered), and US pricing is

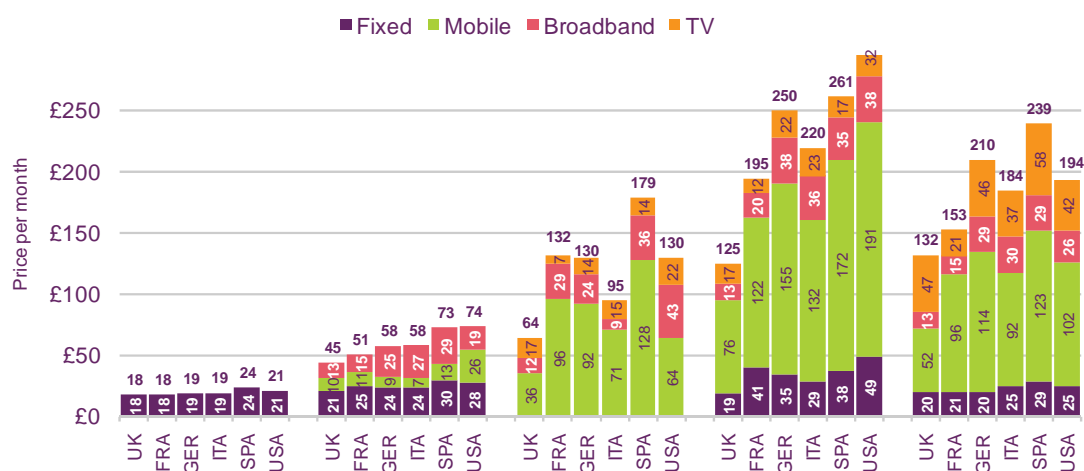
characterised by ‘flat rate pricing’. The result is that Italy offers relatively low prices for low use connections, while the US is more competitive for high use connections.

- In Italy and the UK the award of 3G licences led to a new 3G-only operator entering the market, whereas in Germany, Spain and France 3G licences only went to existing operators. The resulting disruption in the Italy and UK markets caused by a new operator seeking to rapidly gain market share may be reflected in lower overall prices than in the other countries.

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

Like-for-like TV pricing is not really possible due to variations in channel numbers and package content. However, we have felt the need to include it in order to include comparisons of ‘triple-play’ (voice, broadband and TV) packages, which have had increasing take-up in all countries. ‘Triple-play’ services deliver the lowest prices for basket 4 in France, Germany, Italy and Spain, where the requirement is for a basic pay-TV service. By contrast, prices for basic triple-play packages in the UK are more expensive than in the other European countries for this basic pay-TV package and do not offer the lowest price for this basket (this is due to relatively high pricing of entry-level pay-TV combined with the need to pay incremental phone line rental and broadband access charges). However, for Basket 5, which includes premium TV services, the UK is the only country where a ‘triple-play’ service offers lower prices than purchasing a ‘double-play’ (voice and broadband) service with a separate pay-TV service.

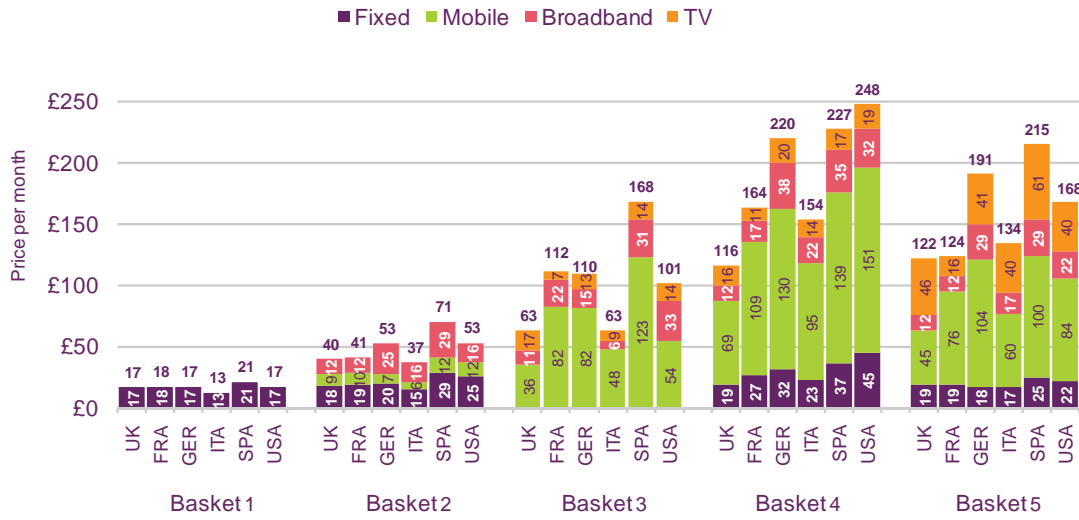
Figure 26: Comparative ‘weighted average’ pricing of ‘single services’ for all countries



Source: Ofcom using data supplied by Teligen

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

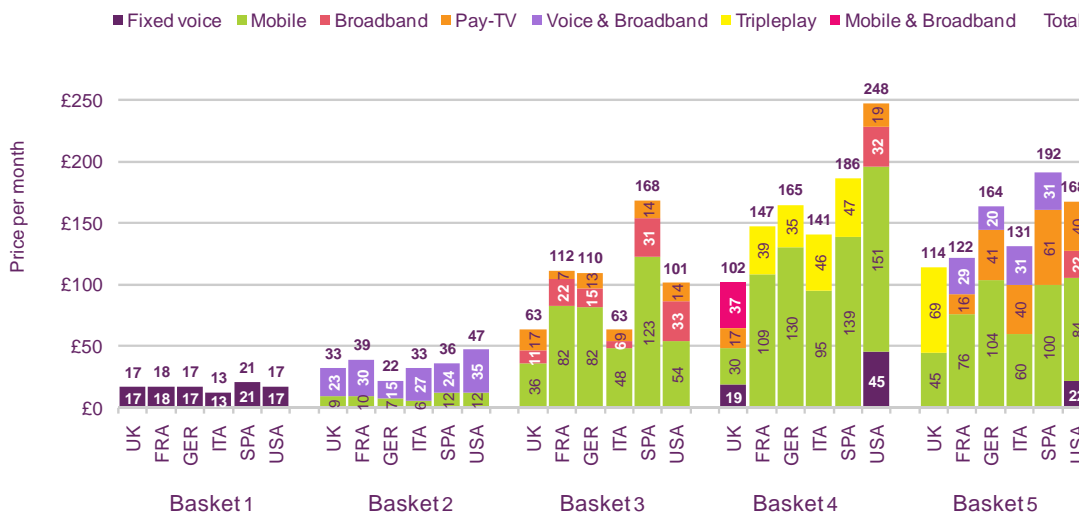
Figure 27: Comparative 'best offer pricing of 'single services' for all countries



Source: Ofcom using data supplied by Teligen

Note: Lowest price tariffs from each of the three largest operators by market share in each country; July 2009; PPP adjusted

Figure 28: Comparative cost of lowest price services, including multi-play, for all countries



Source: Ofcom using data supplied by Teligen

Note: Lowest tariff available for each service type from any of the three largest operators by market share in each country including multi-play offers July 2009; PPP adjusted

Annex 1

Methodology

1. Introduction and objectives

For the 2009 international price benchmarking Ofcom utilised the same methodology deployed in the 2008 analysis, and retained exactly the same baskets in order to allow for year-on-year comparison.

This is the second year we have used a bespoke model commissioned from telecoms pricing consultancy Teligen, which Teligen have populated with specifically-sourced tariff data for fixed-line voice, mobile phone, fixed broadband, mobile broadband, television and 'multi-play' (i.e. tariffs incorporating more than one service such as 'triple-play' fixed voice, broadband and television tariffs) services in the UK, France, Italy, Germany, Spain and the USA.

The key objectives were as follows:

- to identify and compare the pricing that is available for consumers buying fixed-line voice services, pre-pay and post-pay mobile services, broadband internet and TV services;
- to identify and compare the pricing that is available by purchasing communications services within 'bundled' tariffs (for example, 'triple-play' services which typically offer a single bill for the delivery of fixed-line voice, broadband and television services);
- to compare pricing across a wide range of service usage scenarios, from the requirements of those with basic needs to those of consumers with more sophisticated consumption;
- to incorporate the cost of hardware such as set-top boxes or mobile handsets in order to reflect the real prices that consumers pay, and to compare like-with-like by allowing for equipment subsidies when they are included within propositions from service providers; and
- to represent average or typical use as accurately as possible across the five countries in order to avoid biases associated with comparing pricing based on usage characteristics that are more typical of one country than another.

2. Basic methodology

Further detail is provided below, but the basic principles are as follows.

- We constructed five 'typical' household types, which collectively may be seen as representative of the average population across our countries, and defined a basket of communications services (fixed-line voice, mobile, broadband, TV) appropriate for each household type.
- A wide range of components were included within the baskets to ensure as accurate as possible a representation of the real costs consumers pay. For example:

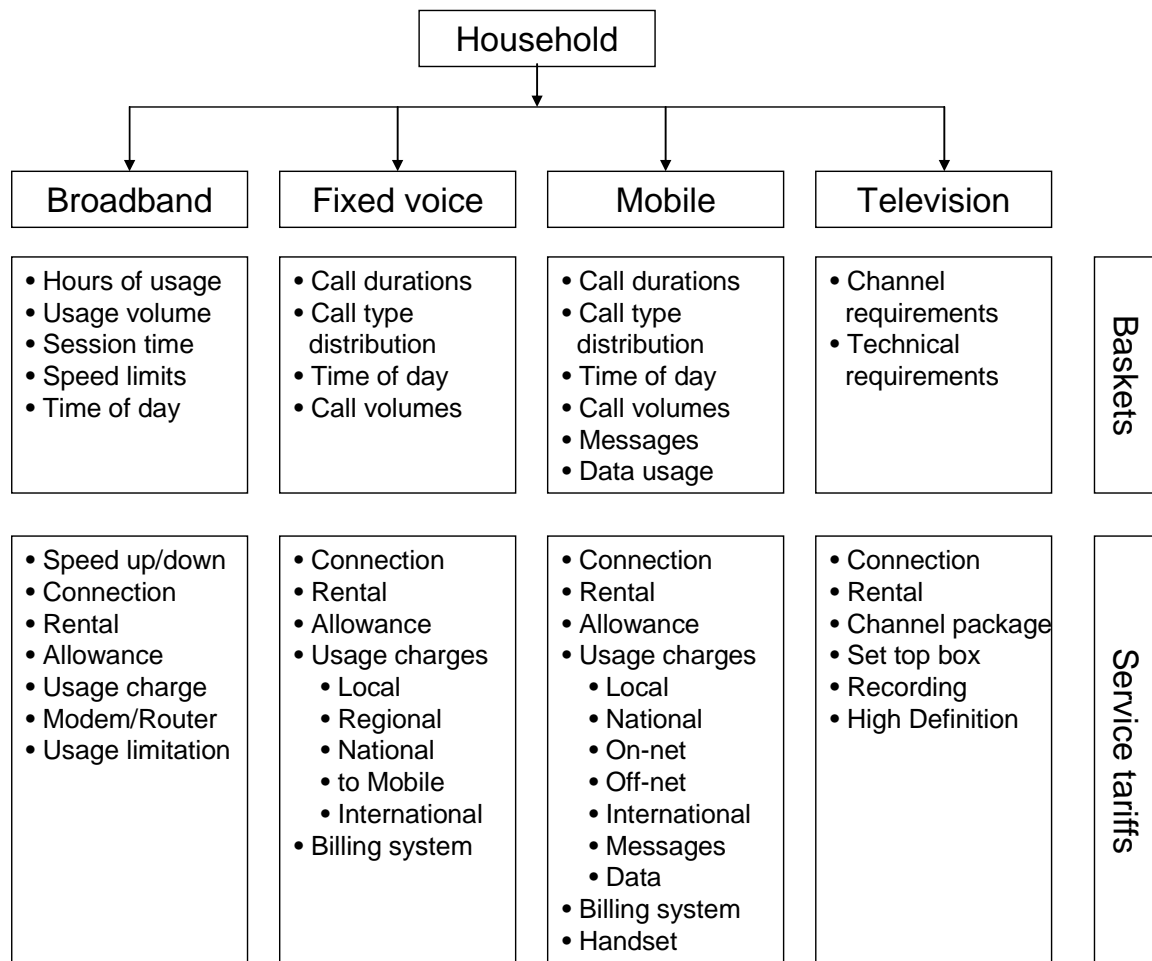
- Fixed voice minutes were distributed by whether they were to fixed or mobile lines, by call distance (local, regional, national and international, including a range of international destinations), and time of day (day, evening, weekend).
- In addition, mobile calls (and messaging) were split between on-net and off-net and voicemail was included.
- Call set-up and per-minute charging was incorporated, and a range of call lengths were used (distributed around a defined mean based on averages across 30 OECD countries).
- Incoming calls were included in recognition of the different pricing mechanism in the USA.
- The broadband component was defined both by minimum headline speed and by minimum data and time online requirements (in recognition that in some markets some broadband service providers charge by time spent online in addition to or in place of data-based charging).
- The television element included the licence fee (where applicable), a digital receiver and, for some baskets, a digital video recorder (DVR). Because of difficulties in comparing programming bundles, two tiers of pay-TV were considered: the most basic service available above the channels available on free-to-air TV; and a premium service defined by first-run movies from the major Hollywood studios and the best package of top-tier football matches
- The average monthly use across all of the baskets was adjusted to ensure that it was closely aligned with average use across the households (for example, the average number of outbound minutes per fixed line across the six countries in 2007 was 298 minutes, our average number of fixed minutes across our five households is 300 minutes).
- Mobile phones, broadband routers, digital set top boxes and DVRs are included within the baskets (and amortised over an appropriate period in order to attribute a monthly cost). This is necessary because they are often inseparable from the service price as operators frequently include subsidised or 'free' equipment (for example a mobile phone or a wireless router) within the monthly subscription. For similar reasons, connection and/or installation costs are included.
- In July 2008 and July 2009, detailed data of every tariff and every tariff combination from the largest three operators in each country by retail market share were collected (or for more than three operators if required to ensure that a minimum of 80 per cent of the overall market was represented in terms of share of retail connections). Multi-play tariffs (i.e. those which incorporate more than one service) were also collected. Only tariffs available on the web site of the operators were included.
- Across the six countries, the tariff data in 2009 consisted of:
 - fixed voice: 917 tariff options;
 - mobile: 2,537 tariff options;
 - broadband: 243 tariff options;
 - pay-television: 284 tariff options;

- Multi-play: 579 tariff options.
- Our model identifies the tariffs that offer the lowest price for meeting the requirements of each of the household baskets.
- All sales taxes and surcharges have also been included, in order to reflect the prices that consumers actually pay (although we do not account for differences in other areas of personal taxation policy within each country).
- All prices are converted back to UK currency using a Purchasing Power Parity (PPP) adjustment based on OECD comparative price levels and an exchange rate based on the average exchange rate between 7th October 2008 and 7th October 2009.
- In order to provide both an illustration of representative prices for the individual services in each country, and an illustration of the best value that consumers could get for their full 'basket' of services, we have provided two types of analysis for each basket:
 - i) the first, which we call "average single service" pricing, illustrates the price of each individual service as defined by the average of the lowest price tariff from each of the three largest operators for each service in each country, weighted by the market share of the service provider in order to ensure fair representation; and
 - ii) the second, which we call "best offer" pricing, identifies the lowest price a consumer could pay for this basket of services, including, where appropriate, by purchasing 'bundled' services.

3. Principles of the model

The model developed for Ofcom by Teligen uses individual consumption baskets for each of the services in the pricing analysis, combined in a structure that allows definition of household baskets of any combination of services.

Figure 29: Components of the pricing comparison model



Source: Teligen

Each household definition may include any of the four services, with any combination of basket parameters, describing the use of each service within the household. For the mobile service the system allows definitions of multiple users, for each member of the household.

The tariff information contains all charges and elements that will typically be part of a service offering. Some costs have been excluded as beyond the scope of the current analysis:

- PC/laptop(s) for use with the broadband service
- Television set(s)
- Recording equipment beyond those built into digital decoders
- Fixed telephone handset

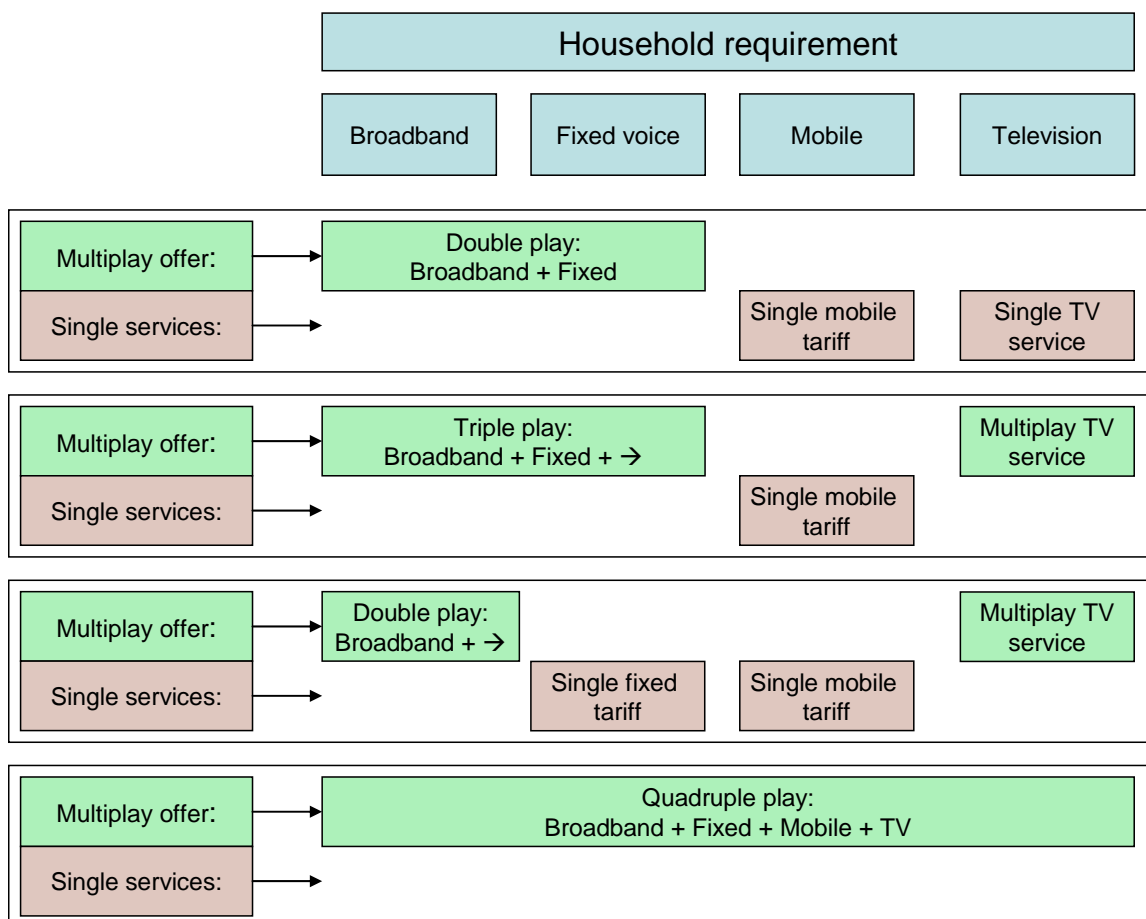
However mobile handsets, routers and set-top boxes / TV receivers are included as they are an integral part of the service offerings, and are often subsidised by operators who recoup the value of the hardware through the course of a contract.

Multi-play service offerings

An important part of the analysis is the inclusion of ‘multi-play’ service offers available in each of the study countries, whereby more than one service is purchased from a single service provider, often at a substantial discount from purchasing the services separately.

As the household definition determines which services are required by the household, and as this may or may not correspond with the multi-play offerings available, it is necessary to combine the multi-play offerings with the available single service tariffs in each market. Where the multi-play offer does not cover the household requirement for a particular service, a suitable single service tariff is used to fill the gap. In such cases the best possible tariff (the cheapest single offer that can fulfil the usage requirements) is used.

Figure 30: Examples of combinations of multi-play and single service offers



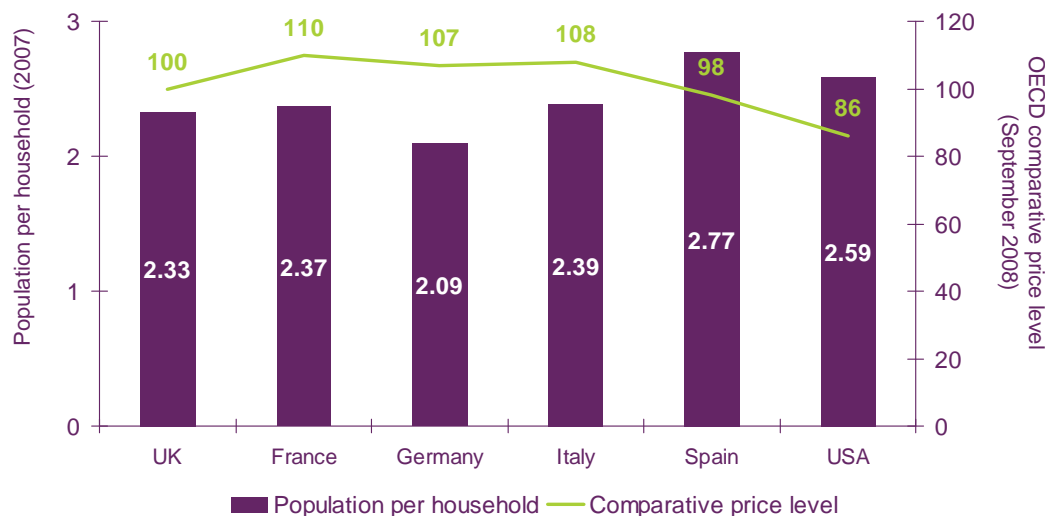
Source: Teligen

4. Geographic scope

Pricing comparisons are made between six countries – the UK, France, Germany, Italy, Spain and the United States. These countries have broadly similar socio-demographic, economic and communications-usage characteristics; high-level parameters such as population per household and comparative price levels (which is a proxy for cost of living) suggest that an economically fair comparison can be made.

Because of the existence of local markets in the USA, we have used tariffs available in the state of Illinois. This was chosen as reasonably representative of the US as a whole in terms of its relative wealth and rural-urban split (it incorporates the city of Chicago as well as large agricultural regions). Nevertheless, US pricing should not be viewed as being representative of the whole country.

Figure 31: Demographic characteristics of core countries



Source: OECD / IMF / US census bureau

5. Tariff data

For practical reasons, it was not possible to incorporate every tariff from all of the operators in every country. Instead, we set a requirement that the analysis included the three largest operators by retail market share for each service and represented at least 80% of the retail market. Therefore in markets where the three largest operators had collective market share of over 80% we limited our analysis to tariffs from these three operators; otherwise we also included the fourth and fifth largest operators to ensure that we represented a minimum of 80% of the market. All operators included by these criteria were also considered for 'multiplay' offers. While this methodology excludes smaller operators, which may offer the lowest prices for some services, we believe that using the prices of the largest operators is appropriate, both because they are the best reflection of the general consumer experience and because they are in large part defined by the competitive environment in which they operate.

Research was undertaken in July 2008 and again in July 2009, and only tariffs detailed on the web sites of the operators were included. Special offers and promotions (for example, reduced line rental for a number of months, or 'free' installation or hardware) were included, but only if they were available to all new customers and were available for the whole month.

Figure 32: Operators included within the analysis

	Fixed	Mobile	Broadband	Mobile broadband	Television
UK	BT Sky TalkTalk Virgin Media	O2 Orange T-Mobile Vodafone	BT Sky TalkTalk / AOL/ Tiscali Virgin Media	O2 Orange Three T-Mobile Vodafone	Sky Virgin Media
France	Bouygues Telecom France Telecom Free Neuf Cegetel Numericable SFR	Bouygues Orange SFR	Bouygues Telecom Free Neuf Cegetel Orange SFR	Bouygues Orange SFR	TNT CanalSat Free Neuf Cegetel Numericable
Germany	Arcor BW Kabel Freenet Telecolumbus T-Home Unity Media	E-Plus T-Mobile Vodafone	Alice Arcor BW Kabel Freenet Telecolumbus T-Home United Internet	E-Plus T-Home Vodafone	Arcor Alice Hansenet Kabel Deutschland Kabel BW Telecolumbus Premiere T-Home Unity Media
Italy	Tele2 Italia Telecom Italia Tiscali Wind	TIM Vodafone Wind	FastWeb Tele2 Telecom Italia Tiscali Wind	Three TIM Vodafone Wind	Fastweb Mediaset RAI Sky Italia Wind
Spain	Ono Orange Telefonica	Movistar Orange Vodafone	Telefonica Ono Orange	Movistar Ono Orange	Digital Plus Impulsa TNT Ono Orange Telefonica
USA	AT&T Verizon Frontier	AT&T (Cingular) Sprint Nextel T-Mobile Verizon Wireless	AT&T Comcast Frontier Verizon	Sprint Nextel T-Mobile Verizon	AT&T Comcast Cable Direct TV Frontier RCN Verizon

Source: Teligen

6. Household types

For this study we make reference to five hypothetical 'typical' households, and have defined their requirements for communications services. These household types are designed to be collectively broadly representative of the overall population of the five countries; however, in order to provide comparison across the full range, from very basic to advanced communications-service users, we have created significant variation in the contents of the baskets of communications services.

The details of the basket composition are provided in Section 2 above.

Figure 33: Household types

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

Source: Ofcom

7. The relationship between basket composition and usage by country

There is significant variation in the take-up and use of communications services across the six comparator countries.

Figure 34: Average take-up and use of communications services by country

'Typical' household type	UK	France	Germany	Italy	Spain	USA	Average
People per household	2.33	2.37	2.09	2.34	2.77	2.59	2.42
Fixed-only households per 100 households	9	18	20	6	16	N/A	14
Outbound fixed voice minutes per access line per month	366	305	259	278	284	N/A	298
Mobile connections per household	2.82	2.06	2.47	3.61	2.97	2.21	2.69
Mobile-only households	15	16	11	37	25	N/A	21
Outbound mobile minutes per household per month	318	310	145	273	348	762	359
SMS per household per month	188.1	58.3	47.4	190.0	65.1	138.2	114.5
Broadband connections per 100 households	59.9	58.0	49.8	39.9	49.6	61.3	53.1
Pay-TV subscriptions per 100 households	46.8	51.1	65.8	20.1	24.6	83.3	48.6

Source: IDATE / European Commission

Notes: As combined outbound and inbound call and SMS volumes are the only data available, this total has been halved as a proxy to represent outbound calls / SMS only. All data is for 2007; further details are available in the Telecoms and Television sections; data for some countries was not available when the baskets were defined. Where estimates have been used the data are in italics.

In order to address mitigate against potential biases associated with our baskets being more closely aligned with the usage profiles of some countries than others, we have adjusted the overall average use across the five baskets to ensure that it closely matches the average use across the six countries. Nevertheless, the variations in the average use should be considered when looking at the output from the individual baskets.

Figure 35: Alignment of average use across comparator households with average use across comparator countries

	HH 1	HH 2	HH 3	HH 4	HH 5	Average per HH	Average across countries
Number of people	2	2	1	4	2	2.2	2.42
Fixed-only households	1	0	0	0	0	0.2	0.14
Mobile-only households	0	0	1	0	0	0.2	0.21
Outbound fixed minutes	225	430	0	600	250	301	298
Outbound mobile minutes	0	60	550	600	600	362	359
Outbound SMS HH	0	0	150	325	100	115	115
Fixed broadband subscriptions	0	1	0	1	1	0.6	0.53
Mobile broadband subscriptions	0	0	1	0	0	0.2	N/A
Pay-TV subscriptions	0	0	1	1	1	0.6	0.49

Source: Ofcom

8. Fixed-line voice services

Fixed voice tariff information

The fixed voice service is assumed as a home based fixed telephony service. A household is assumed to have not more than one fixed line service.

Single fixed voice services are normally offered on a dedicated analogue line (PSTN services). In the context of multi-play the fixed voice service is often delivered as an IP telephony service over a broadband connection. From a user point of view these services are exchangeable, but from a technical point of view they are very different. As connection and line rental charges are covered by the broadband service the multi-play fixed voice services will often have zero or very small fixed charges over and above the broadband charges.

Typically Fixed Voice tariffs incorporate some or all of the following types of charging:

- Connection charge and takeover charge
- Monthly rental charge, plus the monthly charge for any additional options taken
- Allowances in terms of minutes included per month, or a value deducted from usage each month. These allowances are mapped onto the different types of calls and times of day.
- Billing system information
- Call charges for day, evening and weekend
- Local calls
- Regional calls
- National calls

- Calls to mobiles (for each network, weighted)
- International calls to ten destinations

The billing system information is used to determine the price elements included in a typical call. Seven types of billing are possible.

Figure 36: Types of billing for fixed voice calls

Calc types:
1 Per sec.
2 Per unit
3 Per minute
4 Per sec. w/allowance
5 Per sec. w/initial minute
6 Per sec. capped
7 Per minute capped

Source: Teligen

Each tariff is handled individually, and will have the most appropriate call cost calculation system applied.

Fixed voice Basket

The fixed voice basket defines the usage per month for the household, and calculates the monthly cost of using the fixed voice service. The basket elements are listed below, with values for each of the five households.

Figure 37: Components of the fixed voice baskets

	HH 1	HH 2	HH 3	HH 4	HH 5	
Call durations *			None			
Local	4	4		4	4	minutes
Regional	6	6		6	6	minutes
National	6	6		6	6	minutes
Fixed to Mobile	2	2		2	2	minutes
International	6	6		6	6	minutes
Destination weight			None			
Local	67	70		68	60	%
Regional	10	8		9	7	%
National	16	13		14	13	%
Fixed to Mobile	7	7		7	12	%
International	0	2		2	8	%
Time of day weight			None			
Day	58.3	58.3		59.2	55.5	%
Evening	24.5	24.5		24.9	25.0	%
Weekend	17.2	17.2		15.9	19.5	%
Depreciation	5	5	5	5	5	years

Source: Teligen

Note: * All fixed call types are calculated with five different durations, below and above the number of minutes indicated

International calls are weighted according to the table below, considering each originating country and each destination country.

Figure 38: Fixed voice international call destinations for comparator countries

	Canada	France	Germany	Italy	Japan	Russia	South Africa	Spain	UK	USA
Canada		2.2%	2.1%	1.7%	1.0%		0.3%		6.5%	86.2%
France	2.8%		25.2%	19.0%	1.4%			13.7%	24.7%	13.2%
Germany	2.7%	21.6%		20.0%	1.7%	2.3%	0.8%	8.6%	20.4%	22.0%
Italy	3.4%	26.5%	30.3%		1.0%			7.0%	15.6%	16.2%
Japan	4.4%	5.0%	6.8%	2.5%		1.6%		1.1%	11.5%	67.1%
Russia	2.2%	8.8%	35.1%	11.8%	2.0%			3.4%	10.6%	26.1%
South Africa	4.4%	5.0%	13.9%	4.4%	1.8%				46.7%	23.7%
Spain	0.8%	27.6%	23.8%	11.2%	0.7%	0.7%	0.2%		24.0%	10.9%
UK	6.2%	18.1%	19.5%	8.7%	2.8%		2.7%	8.0%		34.0%
USA	47.9%	5.6%	12.2%	4.6%	8.7%	1.3%	0.8%	2.2%	16.7%	

Source: Teligen

Note: Vertical axis is "From", and horizontal is "To"

Basket logic

Once the cost of using each fixed voice package is calculated the cheapest package per provider and per country is identified. These are the packages that are considered in the

household cost scenarios.

The packages that are part of a multi-play offering are identified separately from the single packages.

Fixed voice data issues

Fixed voice services are covered with both direct and indirect services. Any line installation and monthly rental charges incurred by those using indirect services are included in the service costs.

Some providers offer a wide range of add-on options for their tariff packages, with possible cost reductions. These have been incorporated in order to identify the lowest prices available for a basket of services.

Tariff packages offering free or reduced price calls to specific destinations or selectable numbers are not considered.

9. Mobile services

Mobile tariff information

The mobile service is assumed as a personal service where a household may have several users with individual usage profiles and requirements.

Typically the Mobile tariffs will use some or all of the following charge categories:

- Connection charge
- Monthly rental charge, plus the monthly charge for any additional options taken
- Allowances in terms of call minutes and/or messages included per month, or a value deducted from usage each month. These allowances are mapped onto the different types of calls and times of day.
- Billing system information
- Call charges for day, evening and weekend
- Local calls
- National calls
- On-net calls to mobiles
- Off-net calls to mobiles (for each network, weighted)
- Voicemail calls
- International calls to ten destinations
- Data use
- Messages

The billing system information is used to determine the price elements included in a typical call. Seven types of billing are possible:

Figure 39: Types of billing for mobile voice calls

Calc types:	
1	Per sec.
2	Per unit
3	Per minute
4	Per sec. w/allowance
5	Per sec. w/initial minute
6	Per sec. capped
7	Per minute capped

Source: Teligen

Each tariff is handled individually, and will have the most appropriate call calculation system applied.

Mobile basket

The mobile basket defines the usage per month for the user, and calculates the monthly cost of using the mobile service. The basket elements are listed below, with values for some of the typical user types:

Figure 40: Components of the mobile baskets

	HH 1	HH 2	HH 3	HH 4-1*	HH 4-2*	
Call durations **	None					
Local		1.5	1.7	1.8	1.8	minutes
National		1.5	1.7	1.8	1.8	minutes
On-net		1.6	1.9	1.9	1.9	minutes
Off-net		1.4	1.8	1.7	1.7	minutes
Voicemail		0.8	0.8	0.8	0.8	minutes
International		2	2	2	2	minutes
Destination weight	None					
Local		16	8	11	13	%
National		8	5	6	7	%
On-net		38	37	33	34	%
Off-net		38	37	33	34	%
Voicemail		0	7	7	12	%
International		0	6	10	0	%
Time of day weight	None					
Day		48	60	50	50	%
Evening		25	19	24	24	%
Weekend		27	21	26	26	%
Calls per month		37	396	159	82	calls
Messages	None					
On-net		50	50	50	50	%
Off-net		50	50	50	50	%
Peak		48	60	50	50	%
Off-peak		52	40	50	50	%
Depreciation	3	3	3	3	3	years

Source: Teligen

Notes: * The implementation of the model only allows for two mobiles per household. Therefore an additional basket (HH4-2) has been included to represent two of the four mobile connections in Household 4

** All mobile call types are calculated with five different durations, below and above the number of minutes indicated.

International calls are weighted according to the table below, considering each originating country and each destination country.

Figure 41: Mobile voice international call destinations for comparator countries

	Canada	France	Germany	Italy	Japan	Russia	South Africa	Spain	UK	USA
Canada		2.2%	2.1%	1.7%	1.0%		0.3%		6.5%	86.2%
France	2.8%		25.2%	19.0%	1.4%			13.7%	24.7%	13.2%
Germany	2.7%	21.6%		20.0%	1.7%	2.3%	0.8%	8.6%	20.4%	22.0%
Italy	3.4%	26.5%	30.3%		1.0%			7.0%	15.6%	16.2%
Japan	4.4%	5.0%	6.8%	2.5%		1.6%		1.1%	11.5%	67.1%
Russia	2.2%	8.8%	35.1%	11.8%	2.0%			3.4%	10.6%	26.1%
South Africa	4.4%	5.0%	13.9%	4.4%	1.8%				46.7%	23.7%
Spain	0.8%	27.6%	23.8%	11.2%	0.7%	0.7%	0.2%		24.0%	10.9%
UK	6.2%	18.1%	19.5%	8.7%	2.8%		2.7%	8.0%		34.0%
USA	47.9%	5.6%	12.2%	4.6%	8.7%	1.3%	0.8%	2.2%	16.7%	

Source: Teligen

Note: Vertical axis is "From", and horizontal is "To".

The Internet traffic is defined as both MegaBytes of download volume and minutes of use, as tariffs may be charging according to any of these two methods.

Handsets are defined in 3 categories:

1. Basic -2G, ideally without camera or MP3 player, if not then up to 2MP camera + MP3 player / FM radio
2. Mid-Range - 2.5G or Basic 3G, above 2MP camera, + MP3 player / FM radio
3. High-End - Nokia N95 where possible (not N95 8GB) otherwise equivalent phone with minimum 5MP camera.

Basket logic

Once the cost of using each mobile package is calculated some checks are performed:

- Does the package offer include a handset, or can a suitable handset be included with the package? If not then the package will not be considered
- If the basket assumes an amount of data traffic then the package must also be able to offer this. If not the package will not be considered.

Then the cheapest package per provider and per country is identified. These are the packages that will be considered in the household cost scenarios. The packages that are part of a multi-play offering will be identified separately from the single packages.

Mobile service data issues

Although the model allows for pre-pay and post-pay services to be considered separately, we have not defined whether the mobile phone component in a basket is pre-pay or post-pay. We believe this enables better international comparison given the very different pre-pay / post-pay splits in different countries (for example, around 90 per cent of Italian mobile connections are pre-pay, while around 90 per cent of US mobile connections are post-pay). However, a consequence of this is that the analysis does not recognise the different characteristics of the services; for example, a pre-pay mobile may be the only option available to consumers with a poor credit rating and also offer advantages to those who vary their usage month-by-month.

Mobile packages for 2G / 2.5G are covered. No data-only packages are included, but tariffs such as *BlackBerry* tariffs (which are data-focused but have a voice component) are.

The effect of free or discounted calls to specific destinations or selectable numbers is not included.

Allowances or free minutes/message/data volumes are included in the tariffs, and are treated as close to the billing system principles as possible. The deduction of minutes and messages will follow the traffic weights defined by the basket profiles.

Why is pricing for all mobile baskets lower in the UK than in the US, when overall cost-per-minute is known to be higher in the UK ?

The fact that our model shows UK mobile pricing to be lower than that in the US highlights the differences between our model and pricing analysis which is based on overall considerations of the price-per minute.

We find that the lowest price offers from operators in the UK are lower than the lowest price offers from operators in the US for all the baskets we consider. This is the case even for a 1,000-minute-a-month mobile basket (which we would expect to have lower price in the UK given the tariff structure in which most tariffs include over 900 minutes a month).

This appears to contradict analysis published in our consultation into mobile termination¹⁴ which finds that average price per minute (calculated by total voice volumes divided by total voice revenues) in the US is around 50% of the average price per minute in the UK.

Although in our consultation we highlighted a number of problems with the underlying data which taken at face value may therefore be misleading, here we explore how we can reconcile these two apparently contradictory results. In other words, if the average US price is below that of the UK, how is it possible that for the chosen price indices the US is always more expensive?

The answer probably lies mainly in the distribution (or mix) of usage profiles in the two countries. Most consumers in the UK are on low-use baskets with high pence per minute charges while in the US the opposite occurs, as most consumers are on high-use baskets with low per minute charges.

Average use per mobile connection is much lower in the UK than in the US (123 outbound mobile minutes per connection per month in the UK compared to 693 combined inbound and outbound minutes in the US). This reflects the fact that in the UK over 60% of mobile connections are pre-pay. In contrast, over 80% of US mobile tariffs are post-pay, and the majority of tariffs include over 900 (inbound and outbound) minutes a month, and there are very few contracts available which include less than 450 minutes. Pre-pay connections also follow a different model in the US, typically offering a set number of inbound and outbound minutes to be used in a 30-day period, rather than charging by the minute.

There are therefore very different distributions of usage profile in the UK and in the US. In the UK there are a large proportion of consumers using 200 minutes a month or less, who are paying a relatively high price-per-minute. By contrast in the US there are a very few consumers who use less than 100 minutes, but a much larger proportion who use over 800 minutes. Table 19 provides a simple theoretical distribution of mobile usage into four

¹⁴ See Annex 5 of Ofcom's consultation into mobile voice termination (May 2009), p7: www.ofcom.org.uk/consult/condocs/mobilecallterm/annex5.pdf

baskets. It illustrates that even though the price in the UK is lower for every basket, overall the average price per minute in the US is lower as a result of a much higher proportion of consumers taking up the high-use basket (which offers a lower average price per minute).

Figure 42: Theoretical illustration of how differing take-up can offer lower average price-per-minute even when tariffs are more expensive

	Mins	UK			USA			
		Price/month	Price/min	Take-up	Price/month	Price/min	Take-up	
Basket 1	100	£15	£0.15	50%	£25	£0.25	5%	
Basket 2	200	£20	£0.10	30%	£30	£0.15	15%	
Basket 3	400	£30	£0.08	15%	£40	£0.10	30%	
Basket 4	1000	£40	£0.04	5%	£50	£0.05	50%	
		Average price per minute			£0.12	Average price per minute		£0.09

Source: Ofcom

There are two other factors which could also form part of the explanation as to why our basket-based analysis differs so much from the price-per-minute analysis.

- Our model identifies the optimal tariff for a particular usage profile. Therefore the prices we identify will be lower than the average price paid by consumers for this usage, as many consumers will make sub-optimal choices. If a higher proportion of UK consumers make sub-optimal choices than in the US, then the gap between the prices identified and the (higher) actual prices paid will be larger in the UK than in the US. It is likely that this plays some part in reducing our prices in the UK compared to the US, as UK tariffs appear to be significantly more complex in the UK than in the US. As an illustration, our model includes 867 UK tariffs from the UK's four largest operators, compared to only 250 tariffs from the largest four operators in the US. The range and complexity of UK tariffs is an issue which has recently been raised by Consumer Focus, who claimed that there were 1.3 million deals available which meant that consumers were often "bewildered" and ended up overspending by signing up for an unsuitable package¹⁵.
- In order to incorporate the fact that US mobile consumers are charged for incoming as well as outbound calls (as a consequence of the receiving party pays interconnect regime), the baskets include the same number of inbound as outbound calls. Therefore, for example, the 1,000-minute basket requires that the US consumer has a total of 2,000 minutes in order to cover the incoming calls. This may potentially not be a fair representation, as a consumer making 1,000 minutes of outgoing calls may receive significantly fewer than 1,000 inbound calls. In other words it is possible that those with low usage receive more calls than they make and that high usage subscribers make more calls than they receive.

10. Broadband services

Broadband tariff information

The broadband services covered may be on any platform typical for home use, the most common ones being DSL and cable. Wireless broadband is also included wherever possible,

¹⁵ www.consumerfocus.org.uk/en/content/cms/News_Press_speech/Over_a_million_deals/Over_a_million_deals.aspx.

however these services are most often provided by mobile service providers. Tariffs are categorised by headline speed.

Typically broadband tariffs use some or all of the following charge categories:

- Connection charge
- Installation charge, for either self install or engineer install (the cheapest solution is used)
- Purchase price for modem and possibly router
- Any specific connection charges paid to the incumbent operator
- Monthly rental for broadband service
- Possibly, a monthly price for modem and router rental
- Any specific rental charges paid to the incumbent operator
 - Usage time allowance
 - Usage time limit
 - Usage time charge (per minute or hour beyond allowance)
 - Usage data volume allowance
 - Usage data volume limit
 - Usage data volume charge (per MB or GB beyond allowance)
 - Maximum cost per month

Broadband basket

The broadband basket is relatively simple, and basically calculates the monthly cost of using a broadband service in a home environment. The basket parameters are generally given per month. The values below are related to the five defined households.

Figure 43: Components of the broadband baskets

	HH 1	HH 2	HH 3	HH 4	HH 5	
Usage time	None	10	15	50	50	hours
Usage volume	None	0.5	3	5	5	GB
Session duration		20	20	20	20	minutes
Minimum speed		1,000	1,000	4,000	8,000	kb/s
Maximum speed		1,000,000	1,000,000	1,000,000	1,000,000	kb/s
Usage / day		30	30	30	30	%
Usage /		40	40	40	40	%

evening						
Usage / weekend		30	30	30	30	%
Depreciation		3	3	3	3	years
Type of service		Fixed	Mobile	Fixed	Fixed	

Source: Teligen

The headline speed of each tariff package is checked against the usage volume, and if the speed is too low to accommodate the traffic indicated the tariff is excluded from the analysis.

The speed of each tariff packages is also checked against the speed range give by the basket, and if the speed is outside this range the tariff is excluded from the analysis.

If the tariff package has a penalty with excess usage whereby the speed delivered is 'throttled', the tariff is excluded from the analysis once this penalty takes effect.

The resulting cost is presented as connection/set-up cost, rental and usage.

The monthly connection/set-up cost is the sum of all one-off charges amortised over three years.

The rental cost is the sum of all monthly charges.

The usage cost is calculated from any per-minute or per-MB charges. The session durations and usage volumes of the baskets are used for this calculation, along with any time or volume allowances.

Basket logic

Once the cost of using each package is calculated a number of checks will take place:

- If the package uses a limiting mechanism that will take effect when the allowance is exceeded, the status of this limit has to be checked. If it turns out that the package is not able to accommodate the traffic defined in the basket within this allowance, and that download speed will be limited as a result, the package cannot be considered.
- If the download speed of the package is outside the range defined by the basket, the package will not be considered.
- The basket will define whether a fixed or wireless package shall be used, and this will also be checked.
- The resulting total monthly cost of the remaining packages will be compared, and the cheapest package from each provider and also for each country will be identified.

Broadband data issues

Broadband services of different types are covered: DSL, cable as well as wireless. The bitrates used are the headline 'up to' speeds published by the provider, not considering any speed reductions caused by local circumstances. Only the download speed is considered, even though the upload speed is also covered.

Where available the prices for both self installation and engineer installation are covered. However, in some cases only one of these may be available. The cheapest option is always

used.

It is common to have special offers with reduced rental for the first few months. This is included wherever it applies, given the promotional offer valid in the month of tariff data collection (July 2008 and July 2009). The monthly rental is then averaged over the depreciation period of three years.

The research shows that some providers will only offer broadband services bundled with other services, as a multi-play package. Hence there will not always be single service offers for all providers listed.

11. Television services

Television tariff information

Television services are probably where there is most diversity and difference between the countries. In this benchmarking study the Television services covered will typically fall into three categories:

- Basic service, with a range of “free-to-air” channels
- Basic pay TV service, with a basic set of channels beyond the “free-to-air” channels
- Premium service, based on the providers top-of-the-range offering, including top league football/NFL matches and first-run Hollywood movies

Additionally there are two parameters that will be considered:

- Whether or not a digital recording (DVR) facility is included in the set top box.
- Whether or not high-definition (HD) services are included.

The basket definitions below will show how these parameters are defined for each of the households.

Television services will cover the most relevant offerings from each provider based on the two broad definitions above. Typically television tariffs will use some or all of the following charge categories:

- Connection charge
- One-off charges for the set top box (STB) and digital video recorder (DVR)
- Monthly rental for basic television service
- Monthly rental for additional channel packages
- Monthly rental for hardware (STB, DVR)
- License fee

Television basket

The Television basket is relatively simple, and calculates the monthly cost of having the relevant channel package together with the cost of relevant installation and/or equipment amortised over three years. The basket parameters are generally given per month. The values below are related to the five defined households.

Figure 44: Components of the television baskets

	HH 1	HH 2	HH 3	HH 4	HH 5	
Antenna reception	Y	N	N	N	N	Y/N
HD capable	N	N	N	N	N	Y/N
DVR included	N	N	N	Y	Y	Y/N
Football channels	N	N	N	N	Y	Y/N
Movie channels	N	N	N	N	Y	Y/N
Depreciation	3	3	3	3	3	years

Source: Teligen

Basket logic

Once the cost of using each television package is calculated some checks take place:

- Is the number of channels offered in the package equal or above the minimum number of channels defined in the basket?
- Is HD capability required by the basket and offered by the package?
- Are Hollywood premieres and top level football / NFL required by the basket and offered by the package?

If any of these are answered with a “no” then the package will not be considered.

The cheapest package is identified for each provider and for each country, and these are used in the household cost assessment following.

Television data issues

The television data has been limited to packages offering channels that are within the basket definition, largely resulting in three categories of offers:

- Basic “free-to-air” packages over a digital transmission network
- Basic pay-TV access with no special programming requirements
- Premium pay-TV access, including premium channels showing first-run Hollywood movies and top choice football/NFL matches. This option also requires hardware with a DVR capability.

A vast number of optional offers exist, and it is not feasible to cover them all.

12. Purchasing power parity adjustment

All prices have been converted back to UK currency, using a Purchasing Power Parity (PPP) adjustment based on OECD comparative price levels in July 2009 and an exchange rate based on the average exchange rate between 7th October 2008 and 7th October 2009

Comparative price levels represent the number of specified monetary units necessary to buy the same representative basket of consumer goods and services, relative to any specified country (in this case, the UK), and enable a comparison of relative consumer pricing for any product or service.

We have chosen to use the average exchange rate over a 12-month period in order to minimise distortions that are caused by currency fluctuations.

In addition, in order to ensure that changes we identify within countries have been driven by changes in the market rather than simply by changes in the currency exchange rate, we have used the exchange rate used for 2009 and applied it to 2008 data.

Figure 45: Purchasing Power Parity conversion rates

	Currency	Exchange rate (Oct 08 to Oct 09) (£)	Comparative price level (July 2009)	PPP adjusted rate (£)
UK	UK pound (£)	1.00	100	1.00
France	Euro (€)	1.14	119	1.35
Germany	Euro (€)	1.14	115	1.31
Italy	Euro (€)	1.14	118	1.34
Spain	Euro (€)	1.14	104	1.18
USA	US Dollar (US\$)	1.55	93	1.44

Source: Teligen using OECD data

13. Analysis

Having identified the lowest prices for each single service from each of the three largest operators in each country, and the lowest-price 'bundled' services appropriate to meet the needs of all, or part of, each basket, we performed two types of analysis, which are detailed in the write-up of the findings:

- i) The "average single service" pricing available for each of the components in every basket (fixed-line voice, broadband, post-pay mobile, pre-pay mobile, pay-TV). This was calculated as the average of the lowest price tariffs from three operators for each service in each country, weighted by the market share of the service provider in order to ensure fair representation.
- ii) The "best offer" pricing available for the overall basket. This identifies the lowest price that a consumer could pay for this basket of services, including, where appropriate, by purchasing 'bundled' services. This was calculated by identifying the lowest price from any tariff for each component of every basket, together with the lowest-price bundled services suitable for the basket, and identifying the overall lowest price available.

We believe both types of analysis are important for providing an overall understanding of comparative pricing.

Single-service pricing provides a useful comparison of the relative costs of communications services, and, because it is an average weighted by market share, it also provides a good indication of the prices that many consumers are actually paying. However, an important limitation is that single-service offers are sometimes not available from leading suppliers. For example, in the UK, Carphone Warehouse only offers broadband together with its fixed-voice service, while BSkyB only offers broadband together with digital television.

We believe the inclusion of 'bundles' within "best offer" pricing is also essential to understand the pricing of communications services, which are increasingly being delivered as multi-service propositions (examples in the UK include the 'free' broadband offer with TalkTalk's voice service, or Sky's *See, Surf, Talk* 'triple-play' offer which provides TV, voice and broadband, or Virgin's 'quad-play' offer which includes TV, voice, broadband and mobile.) However, a limitation is that 'bundled' service offerings are typically not available to all consumers, as they are generally geographically constrained to areas where premises are connected either to a cable network or to an unbundled telephone exchange. And although focusing on the 'best offer' provides insight to the lowest prices available to some customers, it is not as good a reflection of the prices that consumers are actually paying as the weighted average analysis which is possible when looking at single-service pricing.

14. Limitations

One of our key learnings in four years of constructing international price comparison models is that is a very problematical exercise, which requires assumptions to be made and imposes 'like-for-like' comparison on markets which are very different. In future years we will look to continue to improve our methodology, and we welcome feedback at: marketintelligence@ofcom.org.uk

We highlight the following limitations to the analysis:

- The analysis assumes a wholly rational consumer who has a full understanding of his or her usage requirements and is prepared to shop around and undertake some, often quite complex, calculations to identify the tariff which offers the best value. Clearly, in reality, many consumers do not act in this way, but we believe the assumption is necessary in order to provide effective international comparisons. It should be noted, however, that another measure of consumer choice and the competitive environment is the complexity of tariff structures and the ease of selecting an appropriate tariff, or switching to, an appropriate tariff.
- In looking only at tariffs offered by the largest operators in each country, lower prices which might be available from smaller operators seeking to disrupt markets are not included, purely for practical reasons. Nevertheless, we believe that using the prices of the largest operators is appropriate, both because they are the best reflection of the general consumer experience and because their pricing both defines and is defined by the competitive environment in which they operate.
- Although we have been as comprehensive as possible, tariffs are often highly complicated and there are some components that we have been unable to incorporate into our model, for example, the benefits available from fixed line and mobile tariffs which include free or reduced rates to nominated 'friends and family' numbers.

- In order to calculate the weighted average, we have used market share calculations based on operators' retail customers. It should be noted that market share calculations are based on the overall subscriber base, not the subscriber base for the particular tariff (for which data are not always available).
- Pay-TV services constitute a component of three of the baskets we examine. However, it has not been possible to compare like-for-like subscriptions because of differences in the composition of basic and premium channels across the six countries. As a consequence, quantitative comparison of international TV pricing is arguably less meaningful than for telecoms services. This is also an issue in the pricing of 'triple-play' services, where there is a wide variation in the types of TV content.
- For some communications services in some countries there are only two operators with nationwide coverage (or only one for many premium TV offerings) and/or significant market share. In these instances, we have identified the best-value tariff from each of them and calculated a blended average based on their market shares.
- To avoid 'skewing' the average single service pricing analysis, tariffs which are over 100% higher than that offered by the lowest price provider are excluded from the weighted average (the aim here is to exclude tariffs which are clearly not targeted at the usage profile we are analysing).
- Some services are not available nationwide. This is particularly true for services which are available only where local exchanges have been unbundled, and for IPTV, which requires a high-speed broadband connection, but is also true for cable TV and all types of broadband.
- We have not defined whether the mobile phone component in a basket is pre-pay or post-pay. We believe this enables better international comparison given the very different pre-pay / post-pay splits in different countries (for example, around 90 per cent of Italian mobile connections are pre-pay, while around 90 per cent of US mobile connections are post-pay). However, a consequence of this is that the analysis does not recognise the different characteristics of the services; for example, a pre-pay mobile may be the only option available to consumers with a poor credit rating and also offer advantages to those who vary their usage month-by-month.
- Representative pricing in the US as a whole is difficult due to large regional variations as a result of local incumbent telco operators and cable operators offering localised prices for fixed line services. We only use tariffs available within the state of Illinois, chosen as reasonably representative of the US as a whole in terms of its relative wealth and rural-urban split (it incorporates the city of Chicago as well as large agricultural regions). Nevertheless, US pricing should not be viewed as representative of the whole country.
- In order to ensure that changes we identify within countries have been driven by changes in the market rather than simply by changes in the currency exchange rate, we have used the same exchange rate in 2009 and applied it to 2008 data. This means that there may be some distortions in the relative positions of countries compared to the findings in 2008 (in particular, the fall of the pound against the Euro means that UK pricing is presented as lower relative to France, Germany, Italy and Spain than it was in 2008 – although the PPP adjustment mitigates to some extent against this).